FLORIDA DEPARTMENT OF HEALTH

Florida Onsite Sewage Nitrogen Reduction Strategies Study

Task C.17

S&GW Test Facility Data Summary Report No. 4

Progress Report

June 2013

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In association with

SCHOOL OF MINES 1874 COLORADO

AET
Applied Environmental Technology

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Florida Onsite Sewage Nitrogen Reduction Strategies Study

TASK C.17
PROGRESS REPORT

S&GW Test Facility
Data Summary Report No. 4

Prepared for:

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Bureau of Environmental Health
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1.0 Background

Task C of the Florida Onsite Sewage Nitrogen Reduction Strategies Study includes monitoring at field sites in Florida to evaluate nitrogen reduction in soil and groundwater, to assess groundwater impacts from various onsite wastewater systems, and to provide data for parameter estimation, verification, and validation of models developed in Task D. The controlled pilot-scale testing at the Gulf Coast Research and Education Center (GCREC) soil and groundwater (S&GW) test facility is being monitored for a range of operating conditions and to determine mechanisms critical for nitrogen reduction. The Task C.5 QAPP documents the objectives, monitoring framework, sample frequency and duration, and analytical methods to be used at the GCREC S&GW test facility.

2.0 Purpose

This data summary report documents data collected from the fourth S&GW test facility monitoring and sampling event conducted January 4 through January 11, 2013. This monitoring event consisted of measurement of flowrates dosed to the system, groundwater elevation measured within the standpipe piezometers, measurement of field parameters, and collection of unsaturated zone and groundwater samples and their analyses by a NELAC certified laboratory.

3.0 Materials and Methods

3.1 Project Site

The S&GW test facility is located at the University of Florida Gulf Coast Research and Education Center (GCREC) in southeast Hillsborough County, Florida. The specially designed pilot-scale test areas are representative of typical mounded onsite sewage treatment and disposal systems and enables controlled testing and evaluation of nitrogen reduction in soil and groundwater. Each test area consists of the above ground mound system to which effluent is dosed. Four test areas were established, to which either septic tank effluent (STE) or aerobic treatment unit (ATU) effluent was delivered to the mound/soil system via a pressure dosed mound with a gravel trench or a mound with drip dispersal system (Table 1). In addition to the mound/soil systems, two in-situ

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passive nitrogen reduction stacked biofilter systems are being tested specifically for wastewater treatment performance (Table 1 TA5 and TA6). The source of the influent wastewater is the septic tank effluent from the existing onsite wastewater system serving the GCREC (Figure 1). As shown in Figure 1, two separate feed systems supply the test areas with water, each system supplies either STE or aerobic treatment unit (ATU) effluent to 3 test areas. The treatment unit preceding three of the test areas shown in Figure 1 is a 500 gpd aerobic treatment unit (ATU) with a continuous air supply. Details of the design and construction of the S&GW test facility were presented previously in Task C.6, C.7, C.8, C10, C.11, C.12, A.15 and A.17 documents.

Table 1
S&GW Test Facility Test Areas

Test Area ID	Effluent Quality	Design HLR (gpd/ft^2)	Soil Treatment Unit Design
TA1	STE	0.8	pressure dosed mound[1], gravel trench
TA2	ATU effluent	0.8	pressure dosed mound[1], gravel trench
TA3	STE	0.8	mound with drip dispersal
TA4	ATU effluent	0.8	mound with drip dispersal
TA5	STE effluent (Task A PNRS II)	0.8	mounded drip dispersal, vertically stacked biofilter; nitrification media over denitrification media
TA6	ATU effluent (Task A PNRS II)	0.8	mounded drip dispersal, vertically stacked biofilter; nitrification media over denitrification media

[1]pressure dosed via drip tubing in gravel trench to maintain uniform application along trench length.

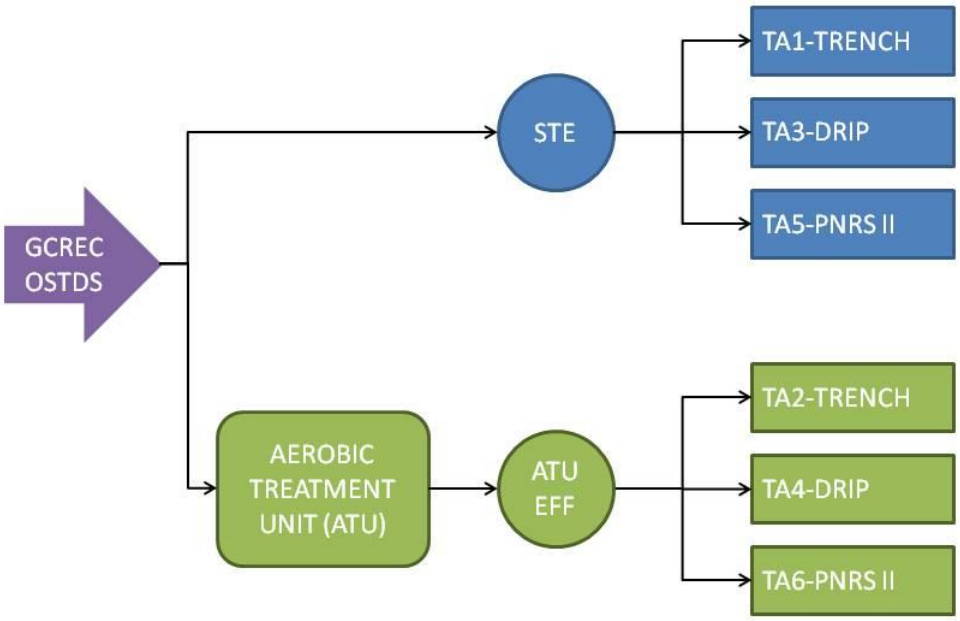

Figure 1
S&GW Test Facility System Schematic

3.2 Modifications to S&GW Test Facility

The results of previous sample events and careful observation of the S&GW test facility were used to formulate recommendations for modifications to the test systems. The modifications that were made following Sample Event No. 3 are presented in this section.

3.2.1 Adaptive Monitoring

Sample events No. 1, 2 and 3 shallow piezometer NOX results indicate that the test area plumes appear to be confined in a southwesterly direction from the center of each of the test areas. However, to better capture the eastern boundary of the plumes, additional shallow piezometers (PZ54 through PZ57) were installed prior to this sample event as depicted in Appendix A, Figures A.1 and A2.

3.3 Monitoring and Sampling Locations and Identification

Each test area is monitored for operational conditions, unsaturated and saturated nitrogen concentrations, soil properties, groundwater properties, and weather conditions. The

PNRS II systems are monitored primarily for wastewater treatment performance, especially related to nitrogen reduction, and are not monitored as intensely for soil and groundwater parameters.

3.3.1 Unsaturated Zone Monitoring

The test areas are equipped with varying levels of unsaturated and shallow saturated zone monitoring instrumentation. The instrumentation includes suction lysimeters, stainless steel pan lysimeters, soil moisture probes, and tensiometers located at various depths below the bottom of the gravel trenches or below the drip emitters. A complete list of all installed monitoring devices and associated sample identification is included in Appendix A.

3.3.2 Saturated Monitoring

Saturated zone monitoring includes groundwater quality, depth of groundwater table, and gradient (i.e. water level contours). A sampling network for groundwater screening was developed for each of the test areas. Transect lines A through U are parallel to the northern edge of the mound and increase (higher letter identification) moving southward from the mound. Transect lines 0 through 20 (numbered from east to west) are perpendicular to the northern edge of the mound. Groundwater monitoring points were installed in November 2011, March 2012, May 2012, and October 2012. Standpipe piezometers were installed using either hand or drilling methods. Standpipe piezometers consist of either ¾-in., 1-in., or 2-in. diameter PVC with 1-ft, 2.5-ft, 5-ft, or 10-ft long 0.010 slot PVC screens and PVC riser extending to the ground surface (refer to the Task C QAPP and Task C.10/C.11/C.12 Progress Report for additional detail).

3.3.3 Sample Locations and Identification

Each monitoring location has been assigned a unique identification indicating the type of monitoring point (LY = lysimeter, PZ = standpipe piezometer, T = tensiometer, SM = soil moisture, OBS = observation port, etc.), grid location (self explanatory), and depth below ground surface (bottom of the well screen in feet). For example TA1-PZ-11-J4 is a test area 1, standpipe piezometer sampler located 11 ft below natural ground surface on the grid at J4. Detailed schematics of the STE systems and ATU effluent systems are provided in Appendix A. Figure 2 depicts a typical schematic of the test area instrumentation. Figure 3 shows a photograph of the instrumented test area 3 with installed ¾-in. diameter PVC standpipe piezometers downgradient of the test area. A complete list of all installed monitoring devices is included in Appendix A.

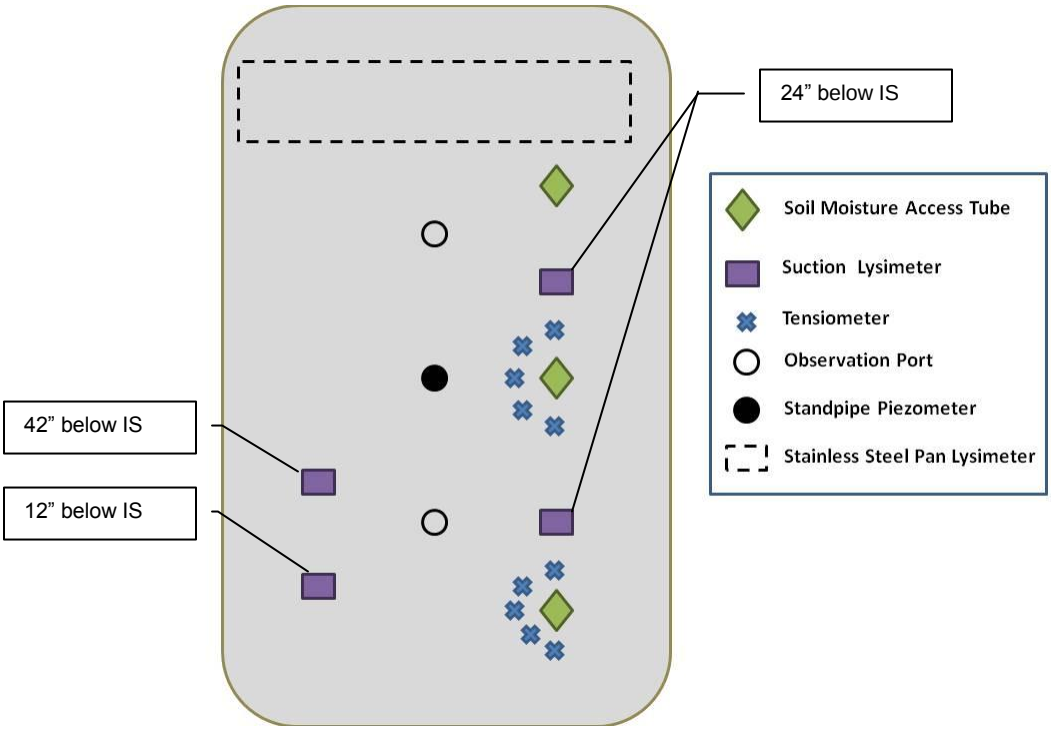

Figure 2
Typical Instrumentation of Test Area, Top View (example Test Area 3)

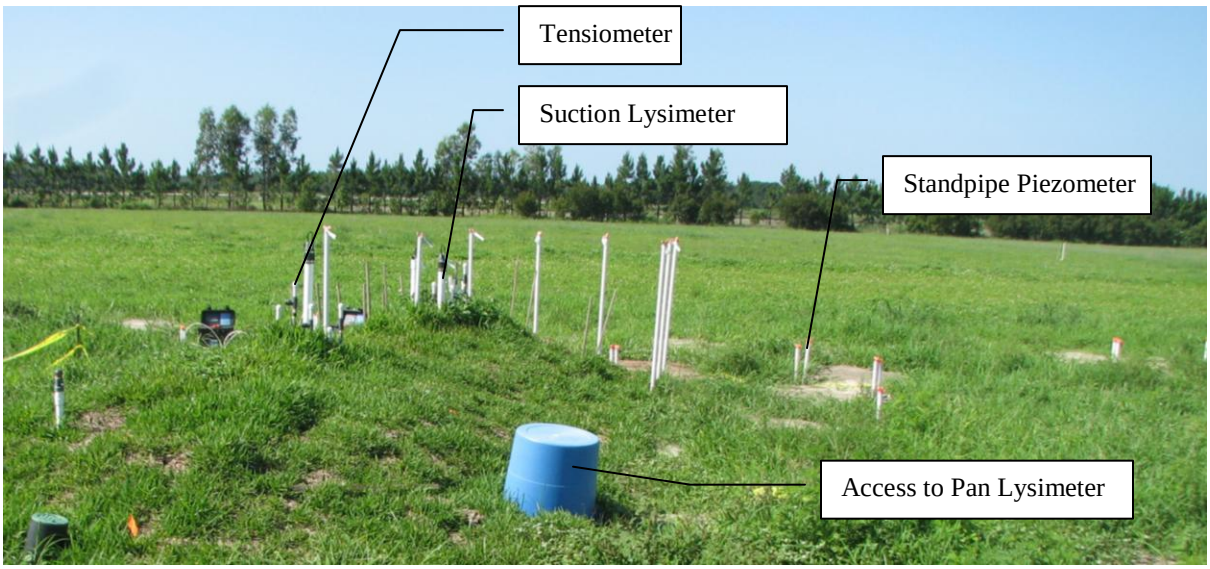

Figure 3
Photo of Instrumented Test Area 3

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3.4 Operational Monitoring

Operational monitoring conditions include effluent quality, calculation of the hydraulic loading rate to the soil, and ponding on the soil infiltrative surface or at the fill/natural soil interface.

3.4.1 Flow Monitoring

The feed and return flows were measured, recorded, and adjusted as necessary to maintain flow rates consistent with the experimental design following the sample event. Each of the two systems has wastewater flow measured via two flow meters; one (1) flow meter located on the feed line to the three test areas, and; one (1) flow meter located on the return line to the dose tank. The flow meters were installed in November 2011. Table 2 summarizes the recorded wastewater flow data since start-up occurred May 9, 2012. The drip lines are automatically scoured (field flushed) every 25 dosing cycles. The field flush volume bypasses the return flow meter but not the feed flow meter; therefore the field flush volume must be accounted for when determining the dosed volume (Table 2).

The target dose volume to each of the test areas is 32 gallons per day which equates to 96 gallons per day for each drip dispersal system. The systems are dosed six doses per day. The total recorded flow for the STE (1.3%) and ATU effluent (19.3%) systems were almost within the 15% operational target that is considered acceptable. The ATU effluent dose pump failed on November 11, 2012 and was started up again December 17, 2012. Long term tracking will better determine if the dose runtime needs to be adjusted.

Table 2
S&GW Test Facility Measured Wastewater Flow Data

	Flow Meter Totalized Feed to Mounds (gallons)	Flow Meter Totalized Return from Mounds (gallons)	Number of Field Flush Occurrences for time period (#)	Average Recorded Flow (gpd)	RE% Measured/ Target (%)	Average Recorded Flow since start-up (gpd)
STE System						
5/9/12 2:35 PM	13,733.08	5,188.14				
6/18/12 3:10 PM	20,987.62	8,620.71	9[1]	93.36	-2.8%	
7/18/12 9:42 AM	25,535.66	10,270.72	7[1]	95.11	-0.9%	94.10
8/20/12 2:15 PM	30,410.69	11,466.12	8[1]	108.58	13.1%	98.77
10/12/12 12:17 PM	36,657.27	12,105.76	12[1]	103.80	8.1%	100.48
11/27/12 8:00 AM	42,640.60	13,235.29	11[1]	103.65	8.0%	101.20
1/2/13 8:35 AM	47,150.94	14,236.27	8[1]	95.31	-0.7%	100.30
1/9/13 2:45 PM	48,046.90	14,407.34	2[1]	97.27	1.3%	100.21
ATU Effluent System						
5/9/12 3:22 PM	38,415.90	33,861.96				
6/18/12 3:05 PM	63,382.59	53,711.43	9[2]	121.15	26.2%	
7/18/12 9:35 AM	78,364.51	65,072.22	7[2]	114.51	19.3%	118.32
8/3/12 10:45 AM	86,970.09	71,635.06	4[2]	119.73	24.7%	118.58
August 3, 2012 at 11:00 am: Revised dose cycle time to 11.66 minutes from 15 minutes						
8/20/12 2:33 PM	94,220.74	77,093.73	5[3]	95.61	1.3%	
10/12/12 12:42 PM	115,503.15	92,789.06	12[3]	98.70	2.8%	109.30
11/27/12 8:00 AM	129,268.69	102,319.17	11[3]	85.19	-11.3%	103.83
Pump failed 11/27/12, started up again 12/17/12						
12/17/12 4:00 PM	129,334.25	102,362.07		ND	ND	ND
1/2/13 8:20 AM	135,223.41	106,272.92	4[3]	118.43	23.4%	96.00
1/9/13 2:40 PM	137,926.05	108,083.28	2[3]	114.50	19.3%	96.55

[1]STE system additional field flush cycle volume is 9.5 gallons
[2]ATU system additional field flush cycle volume is 30.3 gallons
[3]ATU system additional field flush cycle volume following dose cycle time revision is 24.6 gallons

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3.4.2 Meteorological Monitoring

A weather station is located at the GCREC facility with weather conditions recorded every minute and stored on a private website. Table 3 provides the recorded meteorological data daily averages leading up to and during the sample event. Appendix B provides a summary table of the average daily recorded meteorological data since the previous sample event.

Table 3
Meteorological Data Daily Averages Measured January 1 through January 11, 2013

Date	Temp Avg 60 cm (°F)	Temp Avg 2m (°F)	Temp Avg 10 m (°F)	Temp Soil Avg -10 cm (°F)	Dewpoint Avg 2m (°F)	Relative Humidity Avg 2m (%)	Rain Total 2m (in)	Wind Speed Avg 10m (mph)	ET (in)
1-Jan-13	61.47	62.51	63.79	62.47	56.16	82	0	4.40	0.06
2-Jan-13	65.56	66.18	66.52	63.99	62.00	88	0	4.98	0.06
3-Jan-13	65.74	65.85	65.59	65.88	63.11	92	0.13	4.68	0.06
4-Jan-13	58.44	58.45	58.12	65.33	57.00	95	0.01	7.06	0.04
5-Jan-13	64.51	64.61	64.12	65.46	58.79	82	0	6.33	0.06
6-Jan-13	67.83	68.09	67.80	67.09	65.11	91	0.03	5.27	0.07
7-Jan-13	62.16	62.37	62.10	66.91	59.68	91	0	8.07	0.04
8-Jan-13	69.74	70.05	69.65	67.01	64.74	85	0.04	7.19	0.07
9-Jan-13	73.78	74.43	74.03	68.91	67.88	82	0	8.68	0.08
10-Jan-13	72.31	72.95	72.57	69.46	66.18	81	0	8.71	0.07
11-Jan-13	70.52	71.21	71.02	69.29	65.09	83	0	7.35	0.08

3.4.3 Soil Moisture Monitoring

In situ soil tension and soil moisture measurements are collected for model development in Task D. Soil moisture tension is monitored in two test areas (TA1 and TA3) in two locations (center and south side of the mound). Tensiometers are installed at 5 depths as specified in Appendix C. Tensiometers have a ceramic cup and tube assembly equipped with a pressure transducer. The pressure transducer allows for precise measurement of the soil water potential. The tensiometers are automated to enable recording of soil moisture tension at 15 minute intervals to evaluate short-term changes in soil moisture status associated with wastewater dosing events. The daily averages since the previous sample event are presented in Appendix C. Figures C.1 and C.2 display the 15

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minute interval data for soil tension, rainfall, temperature and dose occurrence during this monitoring event for TA1 and TA3, respectively. The recorded tensiometer data provides a relative difference comparison between locations but has not been calibrated to a true soil moisture value.

Soil moisture is measured through Sentek™ sensor access tubes. Volumetric soil moisture content is measured by responses to changes in the dielectric constant of the soil by inserting the sensor probe into the access tube (Figure 4) which takes readings every 10 cm the entire length of the access tube (Appendix D). The 0 cm reading is at the infiltrative surface of each test area. No ponding was observed within the test area observation ports.

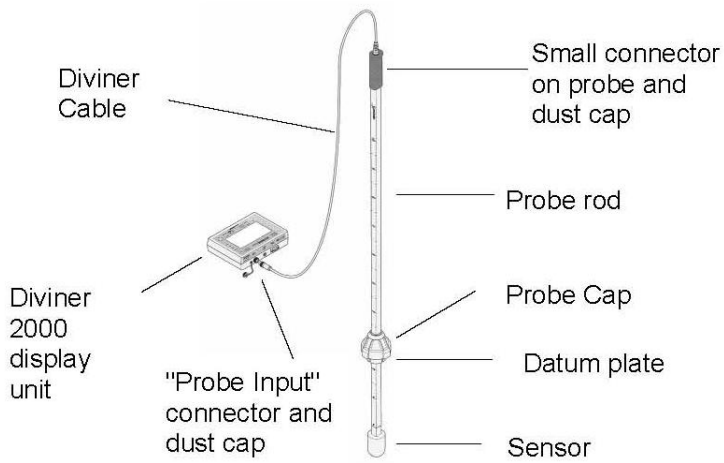

Figure 4
Sentek™ Diviner 2000
Source: Diviner 2000 User Guide V1.5

3.5 Groundwater Elevation Measurements

Groundwater level measurements are used to determine hydraulic gradients and directions of groundwater flow. Groundwater levels are measured by inserting into monitoring wells a hand-cranked steel tape graduated in feet, to the nearest 0.01 ft. These measurements are then converted to groundwater surface elevations by using the surveyed elevation of the top of the monitor well casing.

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3.6 Water Quality Sample Collection and Analyses

Septic tank effluent, ATU effluent, groundwater, and soil moisture samples were collected January 4 through January 11, 2013 for water quality analysis. A peristaltic pump was used to collect STE and ATU effluent by placing the suction inlet tubing in the mid-section of the clear liquid phase in the effluent holding tanks. Similarly, a sample was collected from the PNRS II Tank 1, which supplies STE to the S&GW test facility nitrification unit and STE dose tank. The effluent was directed into the analysis-specific containers supplied by the analytical laboratory. Field parameters (temperature (Temp), pH, specific conductance (SC), oxidation-reduction potential (ORP) and dissolved oxygen (DO)) were measured using portable electronic probes with probe tips placed directly into the tanks.

Groundwater samples were obtained using a peristaltic pump and dedicated standpipe piezometer tubing. Prior to groundwater sample collection, the piezometer was micropurged using low-flow purging and sampling methods. Micropurging continued until water quality indicators (temp, pH, SC, DO and turbidity) were stabilized (three consecutive measurements within the limits). Groundwater sample was then collected into the analysis-specific containers.

Soil moisture samples from the suction lysimeters were also collected using a peristaltic pump and dedicated tubing. The tubing routed the samples directly into analysis-specific containers after sufficient flushing of the tubing had occurred. Field parameters (Temp, pH, SC, ORP, DO) were then recorded in an external reservoir.

The analysis-specific containers were supplied by the analytical laboratory and contained appropriate preservatives. The analysis-specific containers were labeled, placed in coolers and transported on ice to the analytical laboratory. Each sample container was secured in packing material as appropriate to prevent damage and spills, and was recorded on chain-of-custody forms, provided in Appendix E, supplied by the laboratory.

In addition, equipment blank, field blank, and field sample duplicates were taken. The equipment blank was collected by pumping deionized water (provided by the laboratory) through the cleaned pump tubing. These samples were then analyzed for the same parameters as the GW samples. One field blank was collected by filling sample containers with deionized water that had been transported from the laboratory into the field along with other sample containers. The field sample duplicates were collected immediately subsequent to the regular samples.

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All samples were analyzed by the laboratory for chloride, total Kjeldahl nitrogen (TKN-N), ammonia nitrogen (NH_3-N), and nitrate/nitrite nitrogen (NO_X-N). Additionally, for the effluent samples and some of the water samples total alkalinity, carbonaceous biochemical oxygen demand ($CBOD_5$), total phosphorus (TP), total solids (TS), total suspended solids (TSS), fecal coliform (fecal), anions and cations were included. In addition, chemical oxygen demand (COD) and dissolved organic carbon (DOC) were included at some of the water sample locations. For the two in-situ passive nitrogen reduction mounded systems (TA5 and TA6) samples, sulfate and hydrogen sulfide were also included. All analyses were performed by an independent and fully NELAC certified analytical laboratory (Southern Analytical Laboratory). Table 4 lists the analytical parameters, analytical methods, and detection limits for these analyses.

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Table 4
Analytical Parameters, Method of Analysis, and Detection Limits

Analytical Parameter	Method of Analysis	Laboratory Detection Limit (mg/L)
Total Alkalinity as $CaCO_3$	SM 2320B	2 mg/L
Chemical Oxygen Demand (COD)	EPA 410.4	10 mg/L
Total Kjeldahl Nitrogen (TKN-N)	EPA 351.2	0.05 mg/L
Ammonia Nitrogen (NH_3-N)	EPA 350.1	0.005 mg/L
Nitrate/Nitrite Nitrogen (NO_X-N)	EPA 300.0	0.02 mg/L
Total Phosphorus	SM 4500P-E	0.01 mg/L
Carbonaceous Biological Oxygen Demand ($CBOD_5$)	SM 5210B	2 mg/L
Total Solids (TS)	EPA 160.3	0.01% by wt
Total Suspended Solids (TSS)	SM 2540D	1 mg/L
Total Organic Carbon (TOC)	SM 5310B	0.5 mg/L
Dissolved Organic Carbon (DOC)	SM 5310B	0.5 mg/L
Fecal Coliform (fecal)	SM 9222D	2 ct/100 mL
Anions		
Fluoride	EPA 300.0	0.01 mg/L
Chloride	EPA 300.0	0.05 mg/L
Nitrate-N	EPA 300.0	0.01 mg/L
Nitrite-N	EPA 300.0	0.01 mg/L
Orthophosphate-P	EPA 300.0	0.01 mg/L
Sulfate	EPA 300.0	0.20 mg/L
Cations		
Boron	EPA 200.7	0.05 mg/L
Calcium	EPA 200.7	0.01 mg/L
Iron	EPA 200.7	0.02 mg/L
Magnesium	EPA 200.7	0.01 mg/L
Manganese	EPA 200.7	0.001 mg/L
Potassium	EPA 200.7	0.01 mg/L
Sodium	EPA 200.7	0.01 mg/L
Hydrogen Sulfide (unionized)	SM 4550SF	0.01 mg/L
Sulfide	SM 4500SF	0.01 mg/L

4.0 Results

4.1 Groundwater Levels

Figures 5 through 8 illustrate the surficial groundwater contours as derived from measurements within the standpipe piezometers representative of the four sample events. Figure 8 illustrates the surficial groundwater contours as derived from measurements

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within the standpipe piezometers on January 4, 2013 representative of this sample event, and Table 8 shows the actual measured water levels. Monitoring well locations are shown on Figures A.1 and A.2 within Appendix A. By continued monitoring of the groundwater elevations, a clearer picture of the gradient at the site will be gained.

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Table 5
Standpipe Piezometer Groundwater Level Measured

Identification/ Location	Water Table Elevation1 (ft)	Identification/ Location	Water Table Elevation1 (ft)
	January 4, 2013		January 4, 2013
TA1-PZ-11-EF2	123.41	TA2-PZ-16-I7	122.82
TA1-PZ-11-J4	123.33	TA2-PZ-09-L8	122.81
TA1-PZ-11-K4	123.35	TA2-PZ-16-L8	122.78
TA1-PZ-11-L2	123.33	TA2-PZ-09-TU19	122.58
TA1-PZ-11-L3	123.34	TA2-PZ-16-TU19	122.57
TA1-PZ-11-L4	123.32	TA2-PZ-09-TU21	122.55
TA1-PZ-11-L5	123.33	TA2-PZ-16-TU21	122.57
TA1-PZ-09-N3	123.31	TA3-PZ-11-EF2	123.23
TA1-PZ-16-N3	123.29	TA3-PZ-11-I2	123.17
TA1-PZ-09-O7	123.28	TA3-PZ-10-J5	123.14
TA1-PZ-16-O7	123.27	TA3-PZ-10-K5	123.09
TA1-PZ-09-M9	123.30	TA3-PZ-11-L2	123.11
TA1-PZ-16-M9	123.28	TA3-PZ-11-L3	123.11
TA1-PZ-09-I7	123.37	TA3-PZ-11-L4	123.11
TA1-PZ-16-I7	123.38	TA3-PZ-10-L5	123.11
TA1-PZ-09-RS16	123.14	TA3-PZ-09-N3	123.14
TA1-PZ-16-RS16	120.14	TA3-PZ-16-N3	123.15
TA1-PZ-09-RS18	123.12	TA3-PZ-09-O7	123.11
TA1-PZ-16-RS18	123.13	TA3-PZ-16-O7	123.10
TA2-PZ-10-EF2	122.90	TA3-PZ-09-I7	123.16
TA2-PZ-10-H5	122.84	TA3-PZ-16-I7	123.16
TA2-PZ-10-J5	122.81	TA3-PZ-09-M9	123.11
TA2-PZ-10-K5	122.77	TA3-PZ-16-M9	123.12
TA2-PZ-10-L2	122.80	TA3-PZ-09-ST14	123.00
TA2-PZ-10-L3	122.79	TA3-PZ-16-ST14	123.00
TA2-PZ-10-L4	122.79	TA3-PZ-09-ST16	122.98
TA2-PZ-10-L5	127.67	TA3-PZ-16-ST16	122.99
TA2-PZ-10-L6	127.72	TA4-PZ-11-EF2	122.78
TA2-PZ-09-M4	122.80	TA4-PZ-10-H5	122.65
TA2-PZ-16-M4	122.79	TA4-PZ-10-J5	122.60
TA2-PZ-09-N7	122.78	TA4-PZ-10-K5	121.61
TA2-PZ-16-N7	122.75	TA4-PZ-11-L2	122.62
TA2-PZ-09-I7	122.85	TA4-PZ-11-L3	122.61

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Table 5 (continued)
Standpipe Piezometer Groundwater Level Measured

Identification/ Location	Water Table Elevation[1] (ft)	Identification/ Location	Water Table Elevation[1] (ft)
	4-Jan-13		4-Jan-13
TA4-PZ-11-L4	122.59	PZ34-BKG-26	123.50
TA4-PZ-11-L5	122.59	PZ35-BKG-09	122.91
TA4-PZ-11-L6	122.60	PZ36-BKG-16	122.84
TA4-PZ-09-M4	122.61	PZ37-BKG-26	122.83
TA4-PZ-16-M4	122.59	PZ38-BKG-09	121.73
TA4-PZ-09-N7	126.14	PZ39-BKG-16	121.66
TA4-PZ-16-N7	122.71	PZ40-BKG-26	121.69
TA4-PZ-09-I7	122.65	PZ-41	123.32
TA4-PZ-16-I7	122.62	PZ-42	123.35
TA4-PZ-09-L8	122.60	PZ-43	123.51
TA4-PZ-16-L8	122.59	PZ-44	123.11
TA4-PZ-09-TU14	122.49	PZ-45	123.16
TA4-PZ-16-TU14	122.46	PZ-46	123.32
TA4-PZ-09-TU16	122.46	PZ-47	123.32
TA4-PZ-16-TU16	122.43	PZ-48	123.28
TA5-PZ-I	123.02	PZ-49	122.81
TA6-PZ-I	122.45	PZ-50	122.84
PZ01-BKG-09	123.99	PZ-51	122.86
PZ04-BKG-09	122.57	PZ-52	122.62
PZ24-BKG-26	122.58	PZ-53	122.65
PZ29-BKG-09	123.15	PZ-54	122.61
PZ30-BKG-16	123.12	PZ-55	122.77
PZ31-BKG-26	123.14	PZ-56	123.08
PZ32-BKG-09	123.48	PZ-57	122.56
PZ33-BKG-16	123.49		

[1]Elevation above mean sea level based on NGVD 1929

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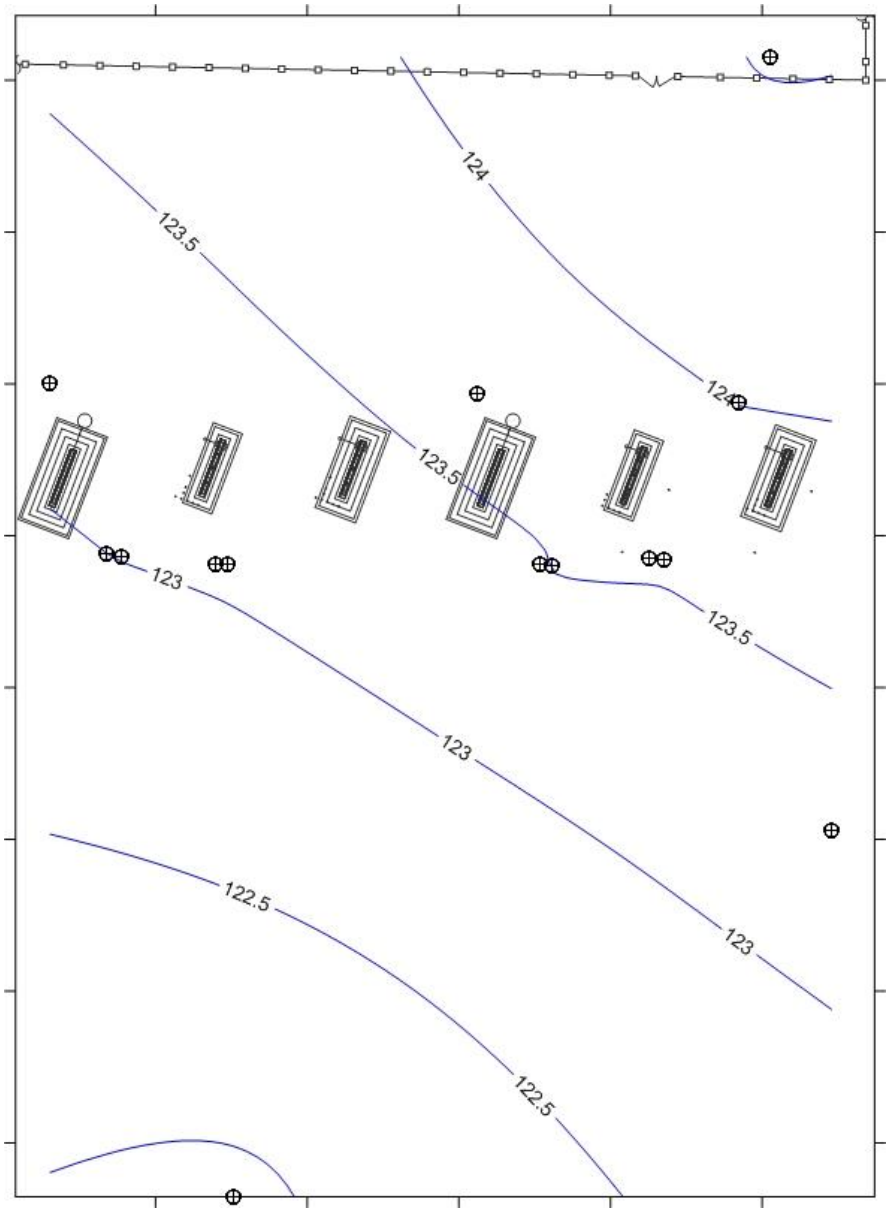

Figure 5
Surficial Groundwater Contours (Elev. ft above MSL)
June 18 through 21, 2012, representative of SE No. 1
⊕ denotes piezometers

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Note: Significant rain occurred over the sampling period

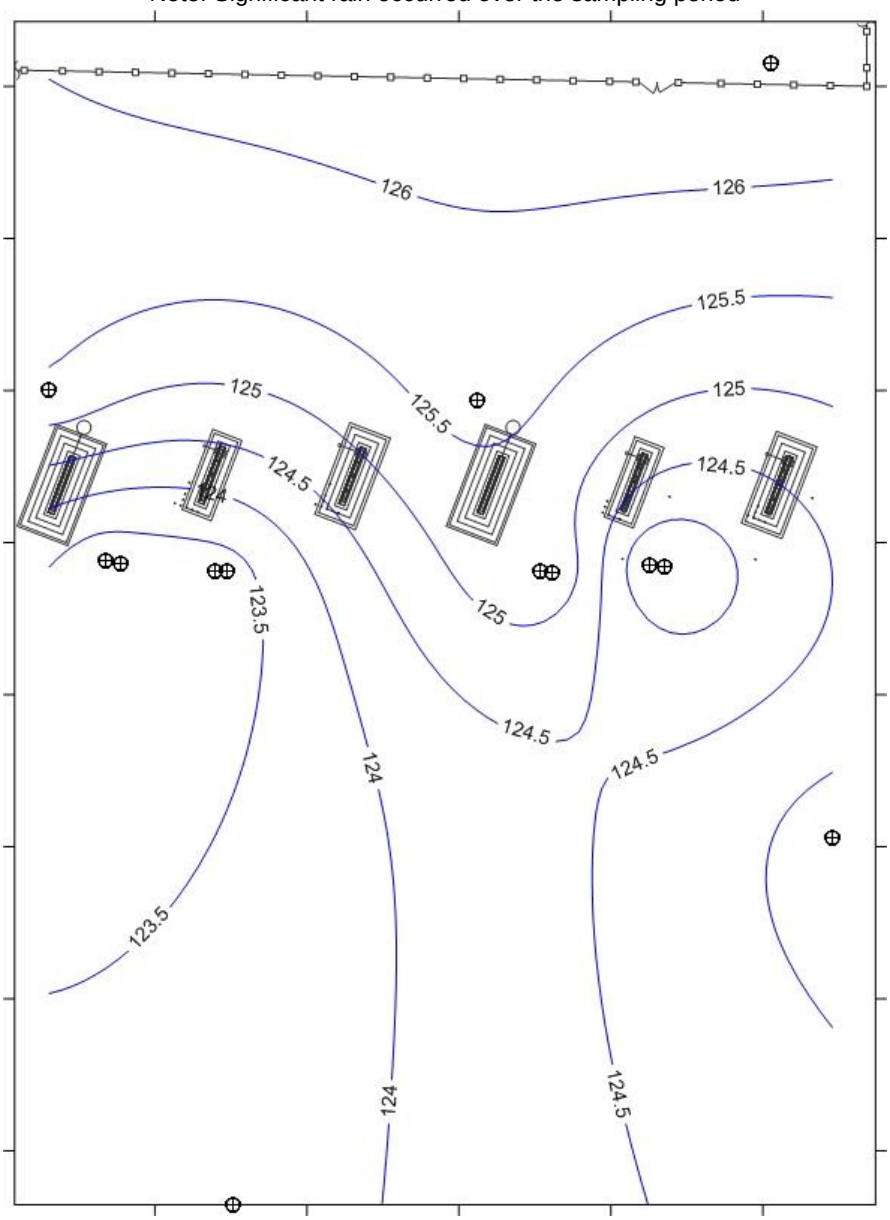

Figure 6
Surficial Groundwater Contours (Elev. ft above MSL)
August 20 through 23, 2012, representative of SE No. 2[1]
⊕ denotes piezometers

[1]Significant rainfall (>6 inches) was measured at the site prior to and during this sample event, and no doubt influenced the contours above.

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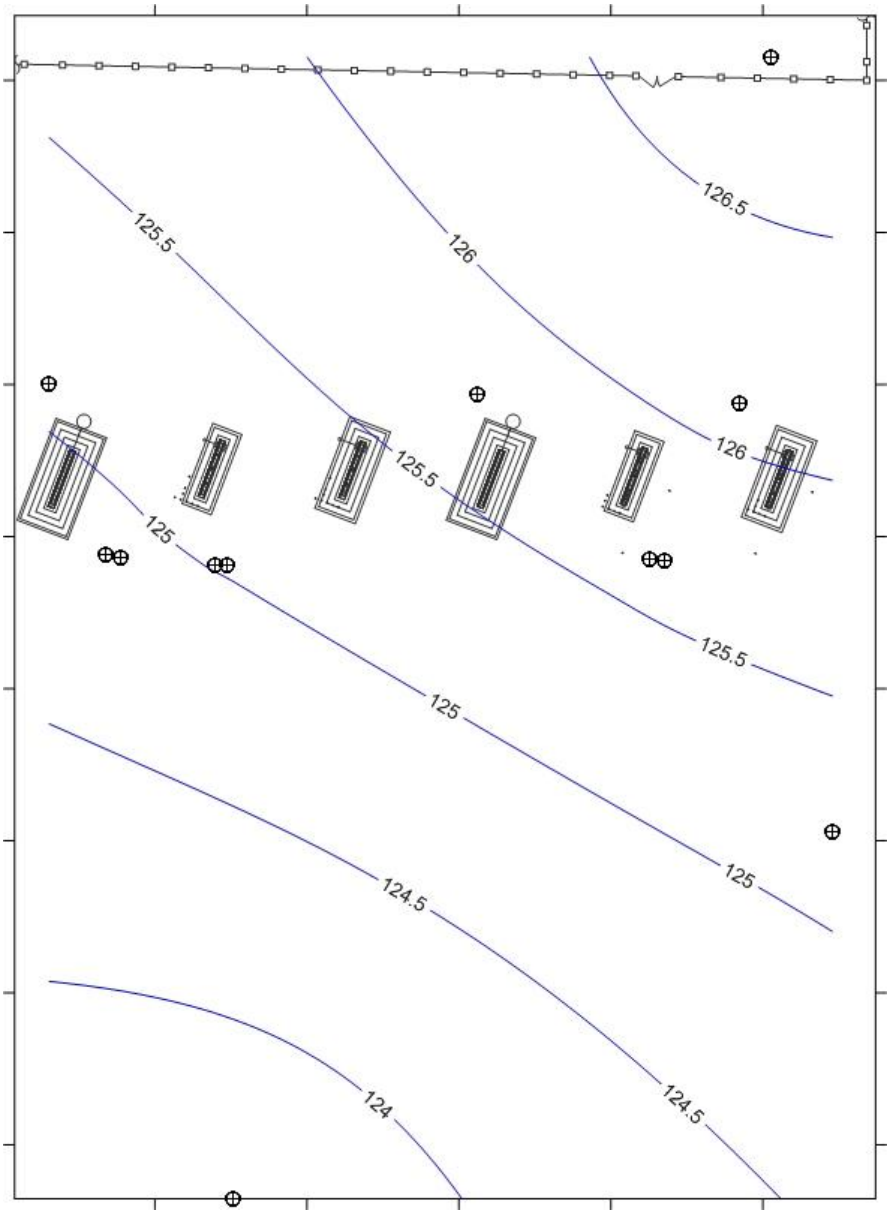

Figure 7
Surficial Groundwater Contours (Elev. ft above MSL)
October 11, 2012, representative of SE No. 3
⊕ denotes piezometers

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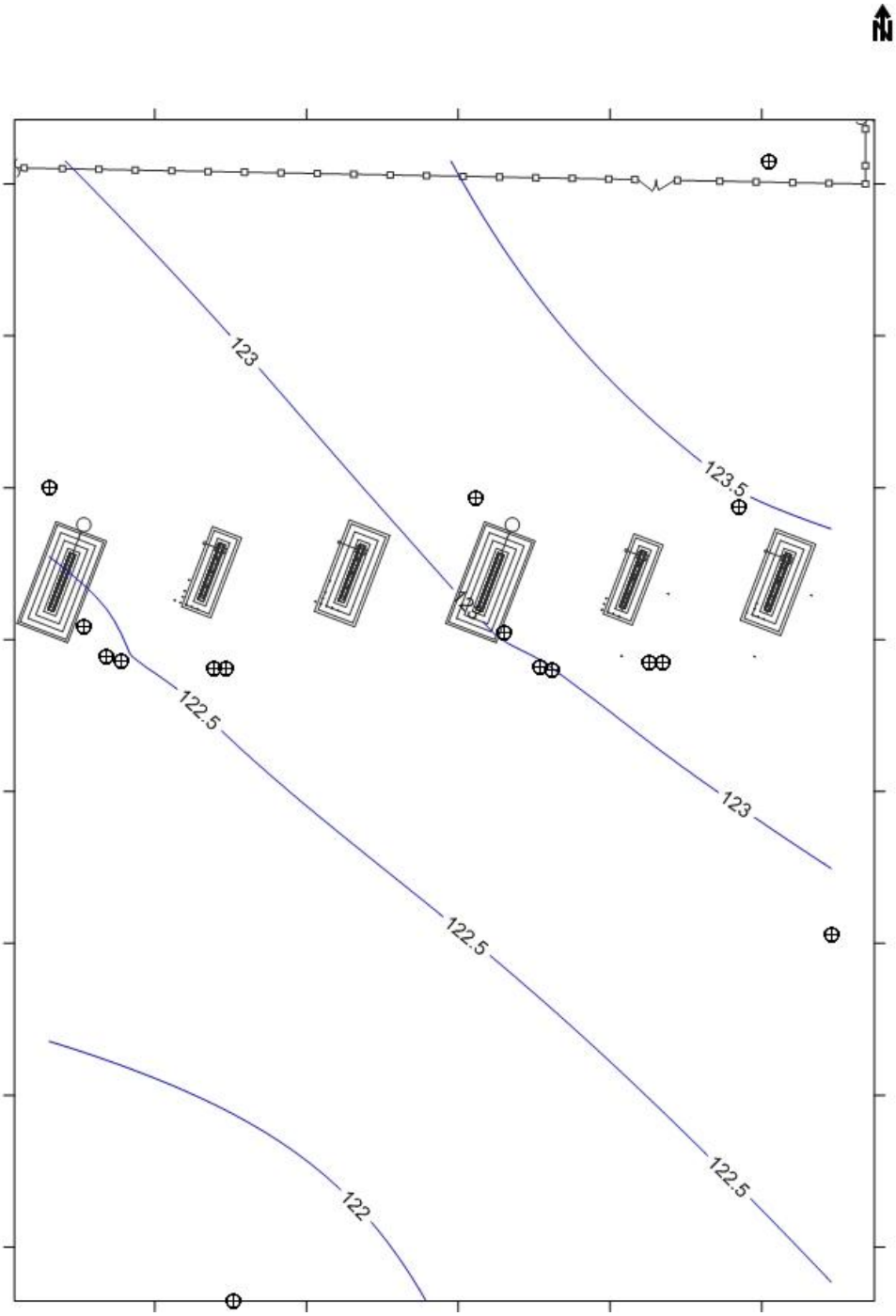

Figure 8
Surficial Groundwater Contours (Elev. ft above MSL)
January 4, 2013 representative of SE No. 4
⊕ denotes piezometers

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4.2 Water Quality Analyses

4.2.1 Field Parameters

Field parameters (temperature, pH, dissolved oxygen (DO), and specific conductivity) were measured at all the sampling locations during the January 2013 sampling event. The complete field parameter data set is included in Appendix F.

4.2.2 Correlations

Correlations between nitrogen parameters were investigated to determine if simple to measure field parameters could continue to be used to locate contaminant plumes. Figures 9 and 10 show scatters plots of nitrogen vs conductivity and chloride, respectively, for groundwater samples. The graph shows that increasing groundwater conductivity around the test systems is generally associated with increased groundwater nitrogen concentrations. A stronger linear correlation is observed for chloride (Figure 10).

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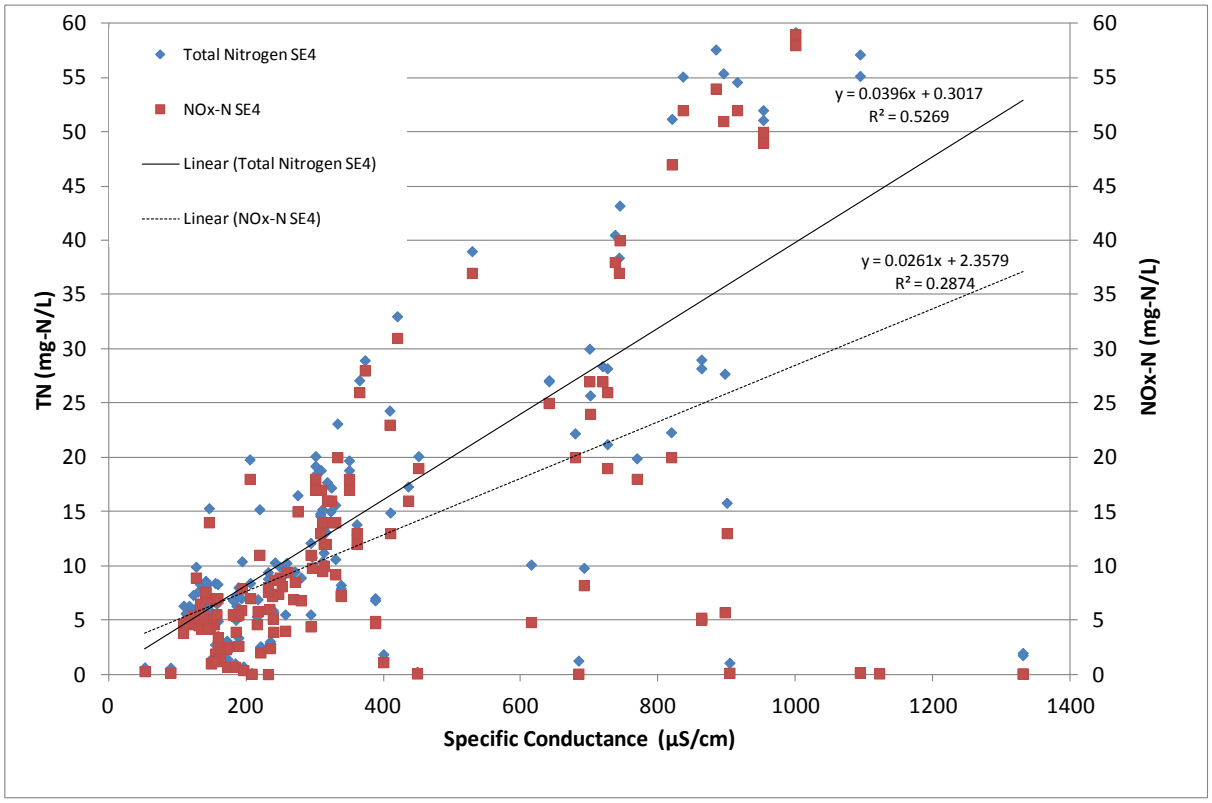

Figure 9
Correlation Between the Specific Conductance (uS/cm) and Concentrations of NOX and TN (mg-N/L) for groundwater samples

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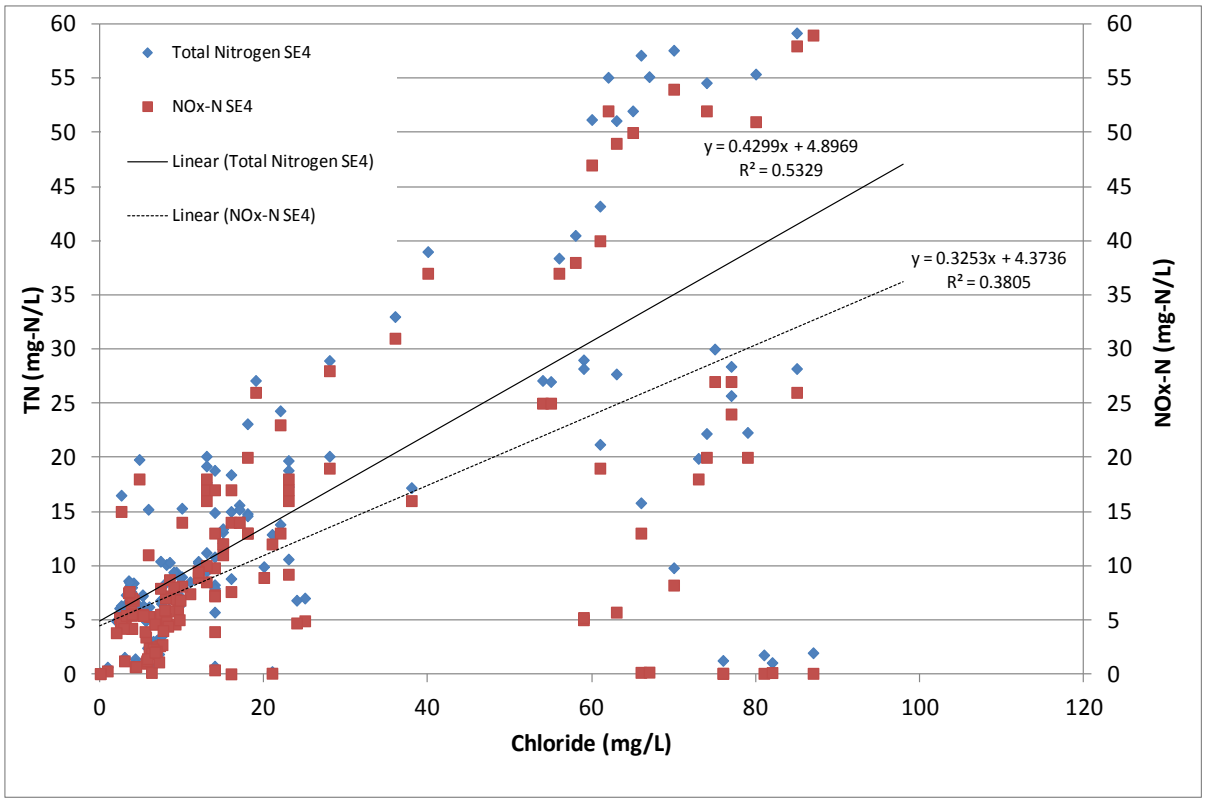

Figure 10
Correlation Between the Chloride (mg/L) and
Concentrations of NOX and TN (mg-N/L) for groundwater samples

4.3.3 Analytical Parameters

In addition to measuring field parameters, all samples were analyzed for chloride. Some of the samples were additionally analyzed for: total alkalinity (as $CaCO_3$), total Kjeldahl nitrogen (TKN-N), ammonia nitrogen (NH3-N), and nitrate/nitrite nitrogen (NOX-N), total organic carbon (TOC), dissolved organic carbon (DOC), chemical oxygen demand (COD), and cations and anions. The January sampling event provides continued insight into the development of nitrogen plumes from the test areas. The complete water quality analytical results for Sample Event No. 4 are listed in Table 1, Appendix F, and the statistical summary of the water quality is presented in Table 1, Appendix G. The laboratory report containing the raw analytical data is included in Appendix E.

4.3.3.1 Influent Water Quality

STE is pumped from the first GCREC septic tank to a holding tank near the test areas (PNRS II STE-Tank 1). A portion of the STE from this holding tank is directed to an aerobic treatment unit for nitrification, with the treated effluent held in a separate tank as the source of the ATU effluent (ATU Effluent Pump Tank). A separate portion of the STE from the holding tank is directed to a separate tank as the source of the STE effluent (STE Pump Tank). The water quality characteristics of STE collected in Sample Event 4

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were within the range that has been typically reported for Florida single family residence STE. The measured STE total nitrogen (TN) concentration was 65 mg-N/L. The STE pump tank and ATU effluent pump tank total nitrogen concentrations were 57 and 29 mg-N/L, respectively; and the NOX-N concentrations were 0.14 and 5 mg-N/L, respectively. The ATU is not converting all ammonium to oxidized nitrogen (ATU clarifier NH3 concentration of 22 mg-N/L; NOx concentration of 5.7 mg-N/L). It appears that the unit is also providing denitrification (nitrogen reduction). The performance of the aerobic treatment unit will continue to be evaluated and monitored.

4.3.3.2 Unsaturated Zone Results

The test areas are equipped with varying levels of unsaturated and shallow saturated zone monitoring instrumentation. TA1, TA2, TA3 and TA4 instrumentation includes 2-inch diameter soil suction lysimeters (see Appendix A, Figures A.1 and A.2 for placement). The nitrogen results are summarized in Tables 9 through 12 for each of the test areas. All four test areas exhibit high total nitrogen concentrations at a depth 42-inches below the infiltrative surface and complete ammonia nitrification 12-inches below the infiltrative surface. The ATU effluent test areas show substantially lower nitrogen concentrations than the STE test areas, as would be expected based on the effluent quality being fed to the test areas.

Table 9
Test Area 1 (STE fed Trench System) Unsaturated Zone Monitoring

	TA1-LY-12-S	TA1-LY-24-C	TA1-LY-24-S	TA1-LY-42-S
	12” Below IS	24” Below IS	24” Below IS	42” Below IS
TKN, mg N/L	2	3.6	4.2	3.1
NH3, mg N/L	0.013	0.033	0.009	0.009
NOx, mg N/L	50	54	47	52
TN, mg N/L	52	57.6	51.2	55.1

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Table 10
Test Area 3 (STE fed Drip System) Unsaturated Zone Monitoring

	TA3-LY-12-S	TA3-LY-24-C	TA3-LY-24-S	TA3-LY-42-S
	12” Below IS	24” Below IS	24” Below IS	42” Below IS
TKN, mg N/L	2.1	1.2	3.2	4.4
NH3, mg N/L	0.009	0.009	0.009	0.009
NOx, mg N/L	25	74	40	51
TN, mg N/L	27.1	75.2	43.2	55.4

Table 11
Test Area 2 (ATU Eff fed Trench System) Unsaturated Zone Monitoring

	TA2-LY-12-S	TA2-LY-24-C	TA2-LY-24-S	TA2-LY-42-S
	12” Below IS	24” Below IS	24” Below IS	42” Below IS
TKN, mg N/L	1.9	2.3	1.7	2.2
NH3, mg N/L	0.009	0.012	0.01	0.009
NOx, mg N/L	18	20	24	36
TN, mg N/L	19.9	22.3	25.7	28.2

Table 12
Test Area 4 (ATU Eff. fed Drip System) Unsaturated Zone Monitoring

	TA4-LY-12-S	TA4-LY-24-C	TA4-LY-24-S	TA4-LY-42-S
	12” Below IS	24” Below IS	24” Below IS	42” Below IS
TKN, mg N/L	2.2	2.2	3	1.4
NH3, mg N/L	0.009	0.011	0.009	0.013
NOx, mg N/L	19	20	27	27
TN, mg N/L	21.2	22.2	30	28.4

4.3.3.2 Nitrate/Nitrite Concentrations with Groundwater Depth

Surfer™ is a useful tool for contour mapping; however, it cannot project a 3-dimensional view of concentrations with depth. Therefore the concentrations of parameters were “lumped” from the different sampling locations into “slices” of similar depth, allowing the different “slices” to be compared.

Based on the distribution of points with depth, two “slices” were chosen for the ground-water data for test areas 1 through 4. The two slices were separated by elevation above sea level (NGVD29 datum). A **Surfer** schematic illustrating the “slices” of NOX concentration with depth from January 2013 for each test area are presented in Figures 10 through 14. The maps show contours of the concentrations as estimated using the “natural neighbor” gridding method in **Surfer™**. This method was used because it did not

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extend results past data points, as was noted on previous project results. The shallow piezometer NOX results (Figures 11 and 13) show that the test area plumes appear to be confined in a southwesterly direction from the center of each of the test areas. The deeper piezometers (Figures 12 and 14) indicate relatively low NOX concentrations at this point in time, similar to background levels (Figures 15, 16, and 17).

As discussed in Section 3.2.1, additional shallow piezometers (PZ54 through PZ57) were installed prior to this fourth sample event to better capture the eastern boundary of the plumes.

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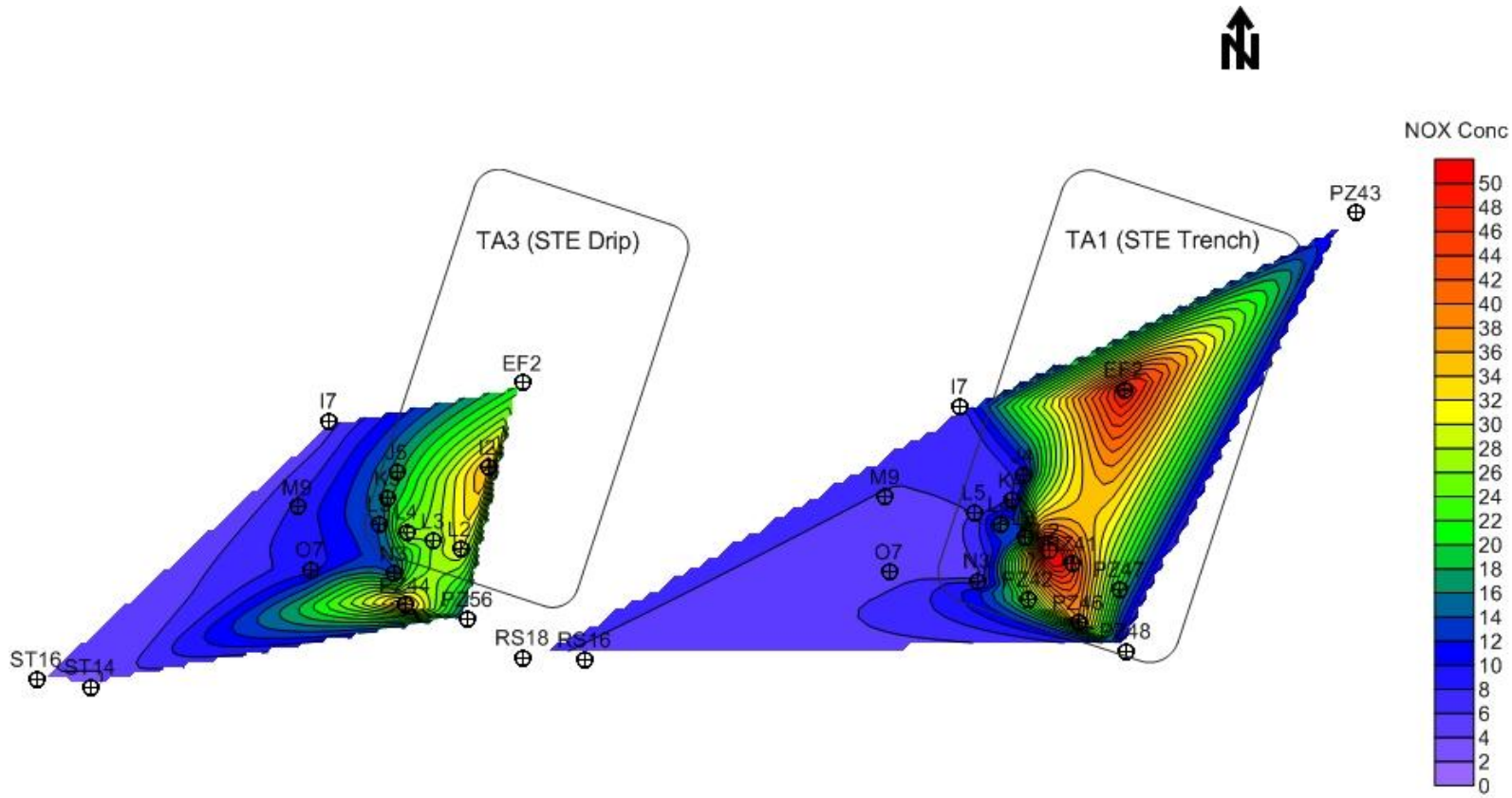

Figure 11
TA1 and TA3 Shallow Elev 118.5-126.01 ft above MSL (January 2013 Sample Event)
Schematic (using Surfer) illustrating NOX concentrations in the subsurface

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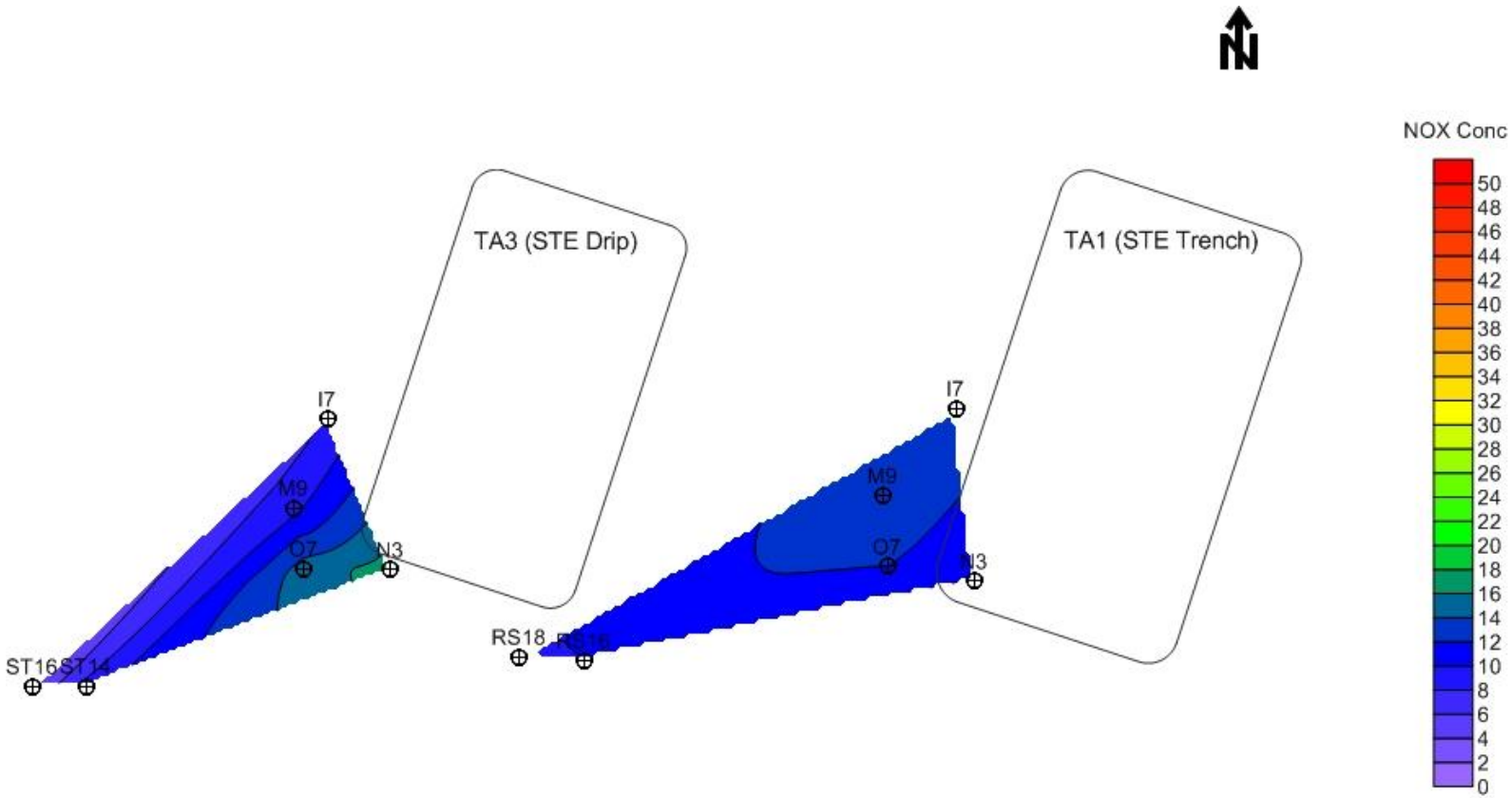

Figure 12
TA1 and TA3 Deep Elev 112-118.5 ft above MSL (January 2013 Sample Event) Schematic (using Surfer) illustrating NOX concentrations in the subsurface

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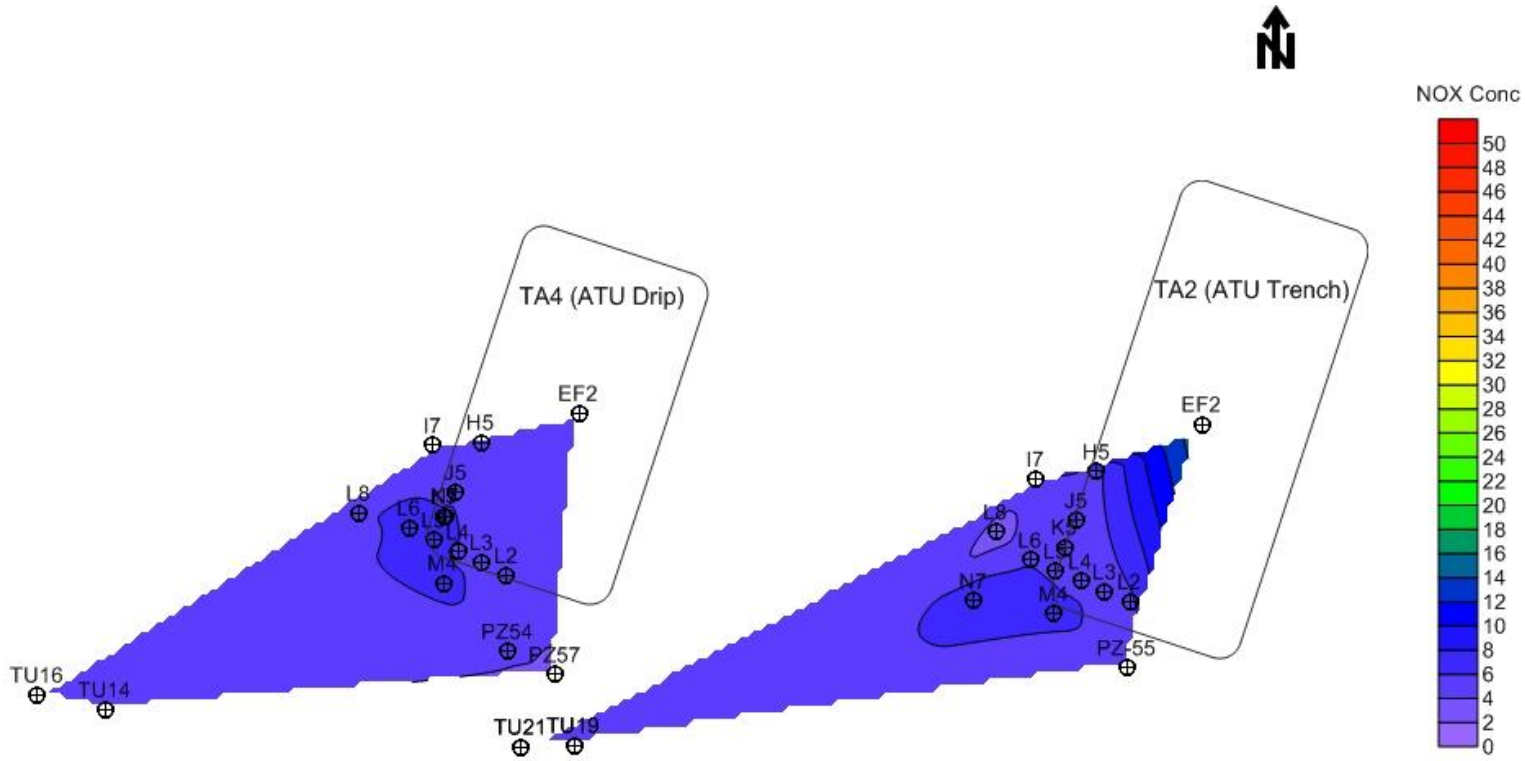

Figure 13
TA2 and TA4 Shallow Elev 117.7-125.4 ft above MSL (January 2013 Sample Event)
Schematic (using Surfer) illustrating NOX concentrations in the subsurface

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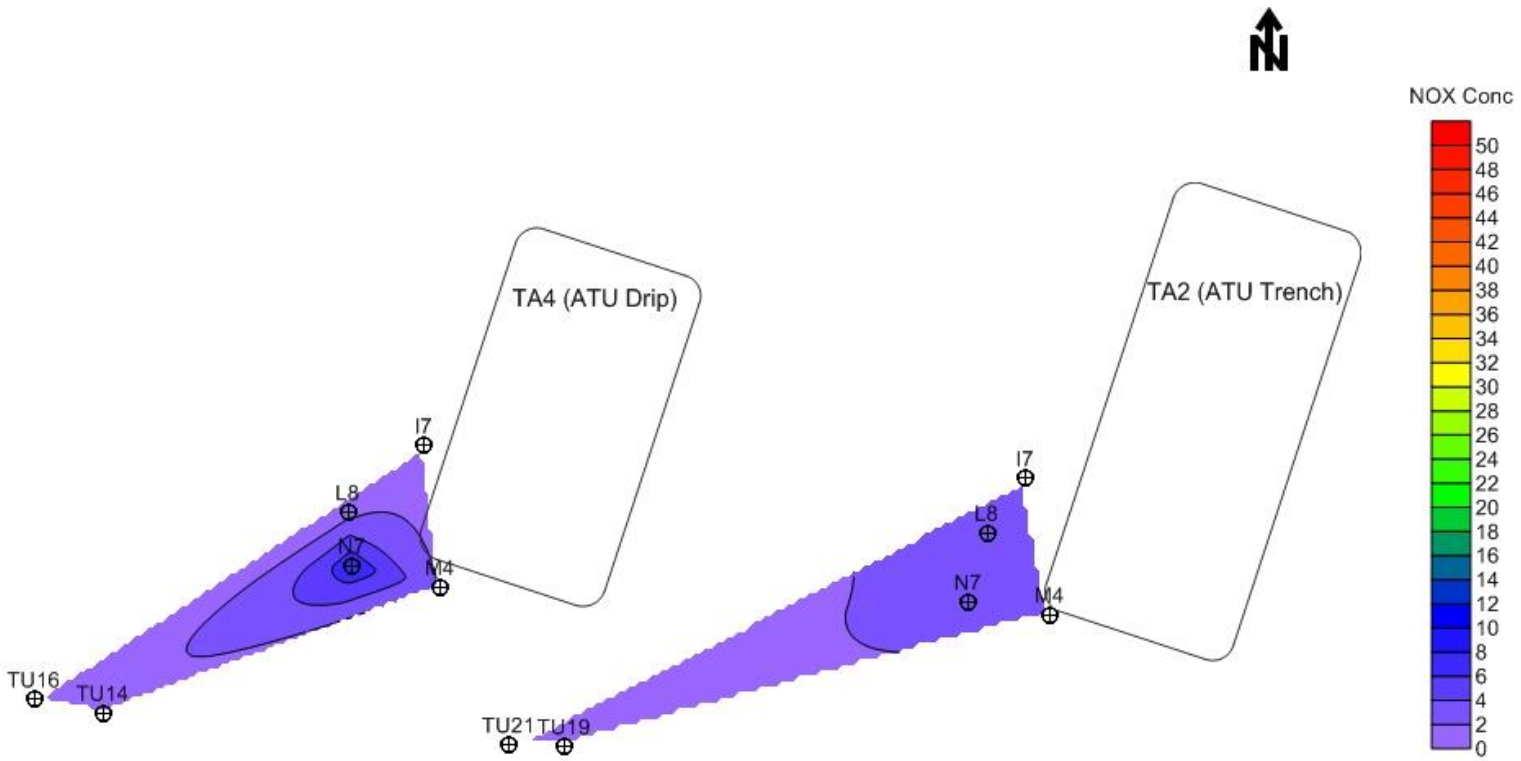

Figure 14
TA2 and TA4 Deep Elev 111-117.7 ft above MSL (January 2013 Sample Event)
Schematic (using Surfer) illustrating NOX concentrations in the subsurface

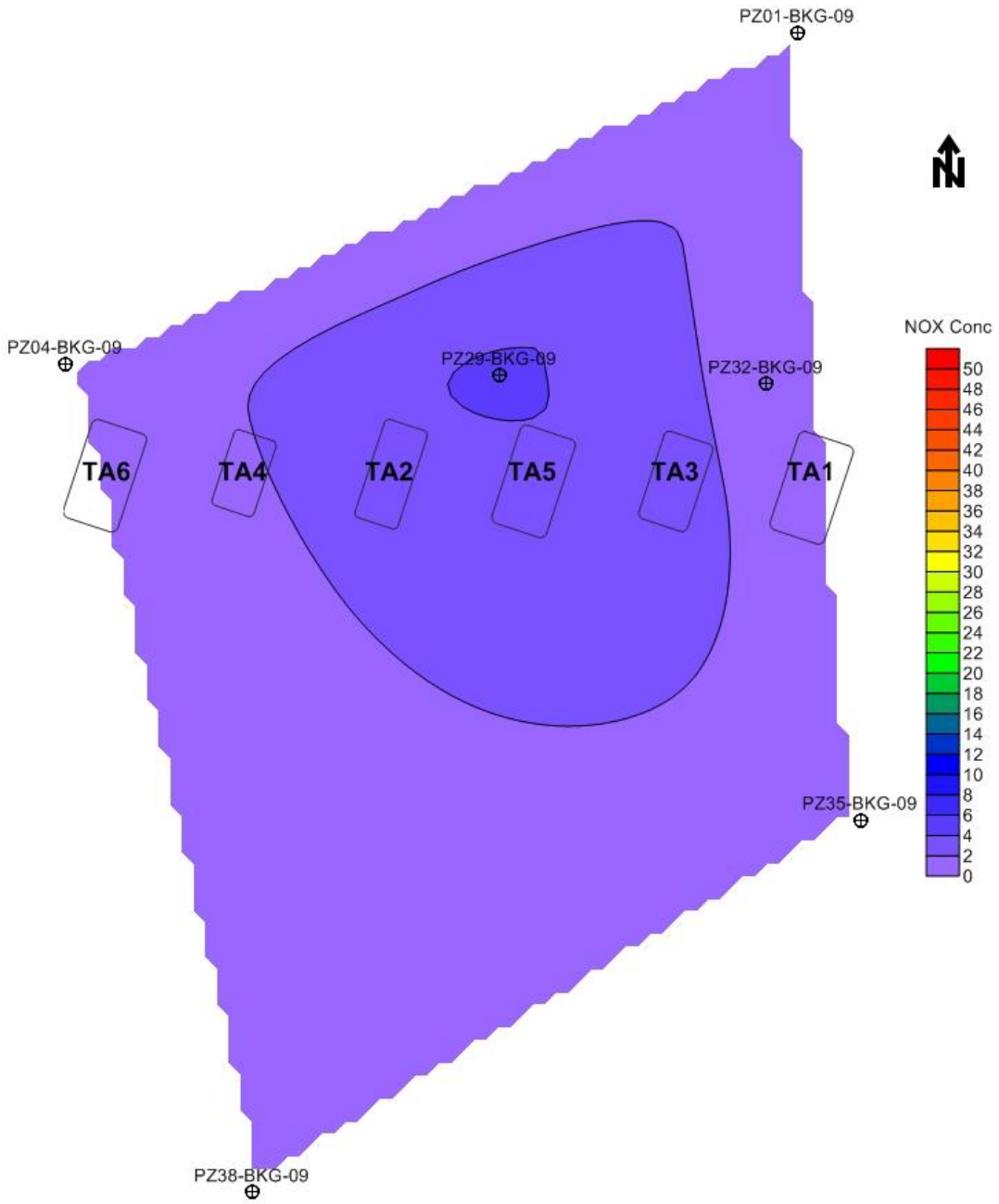

Figure 15
Background Shallow Elev 117-126.8 ft above MSL (January 2013 Sample Event) Schematic (using Surfer) illustrating NOX concentrations in the subsurface excluding samples below test areas

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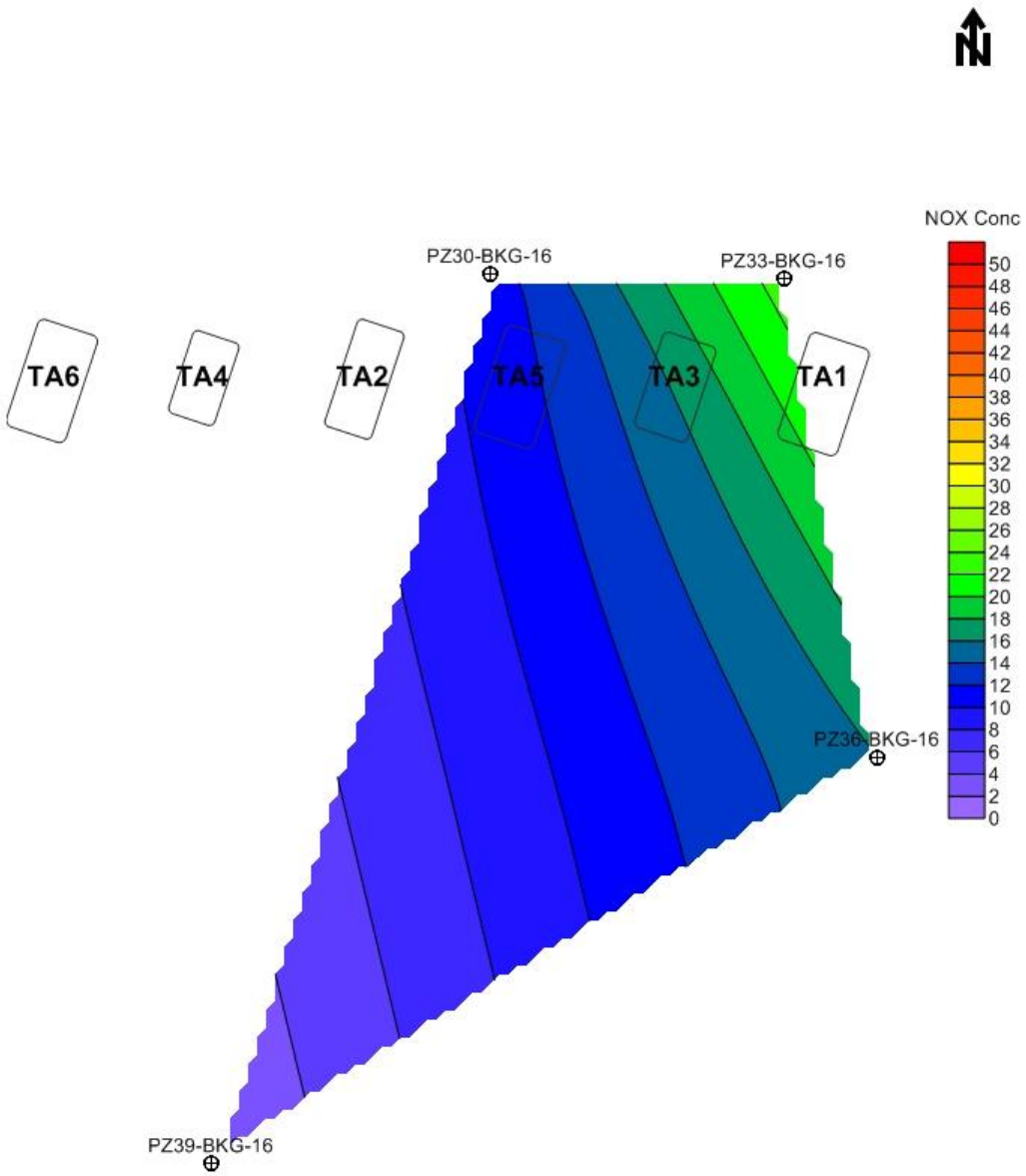

Figure 16
Background Middle Elev 110-118 ft above MSL (January 2013 Sample Event) Schematic (using Surfer) illustrating NOX concentrations in the subsurface excluding samples below test areas

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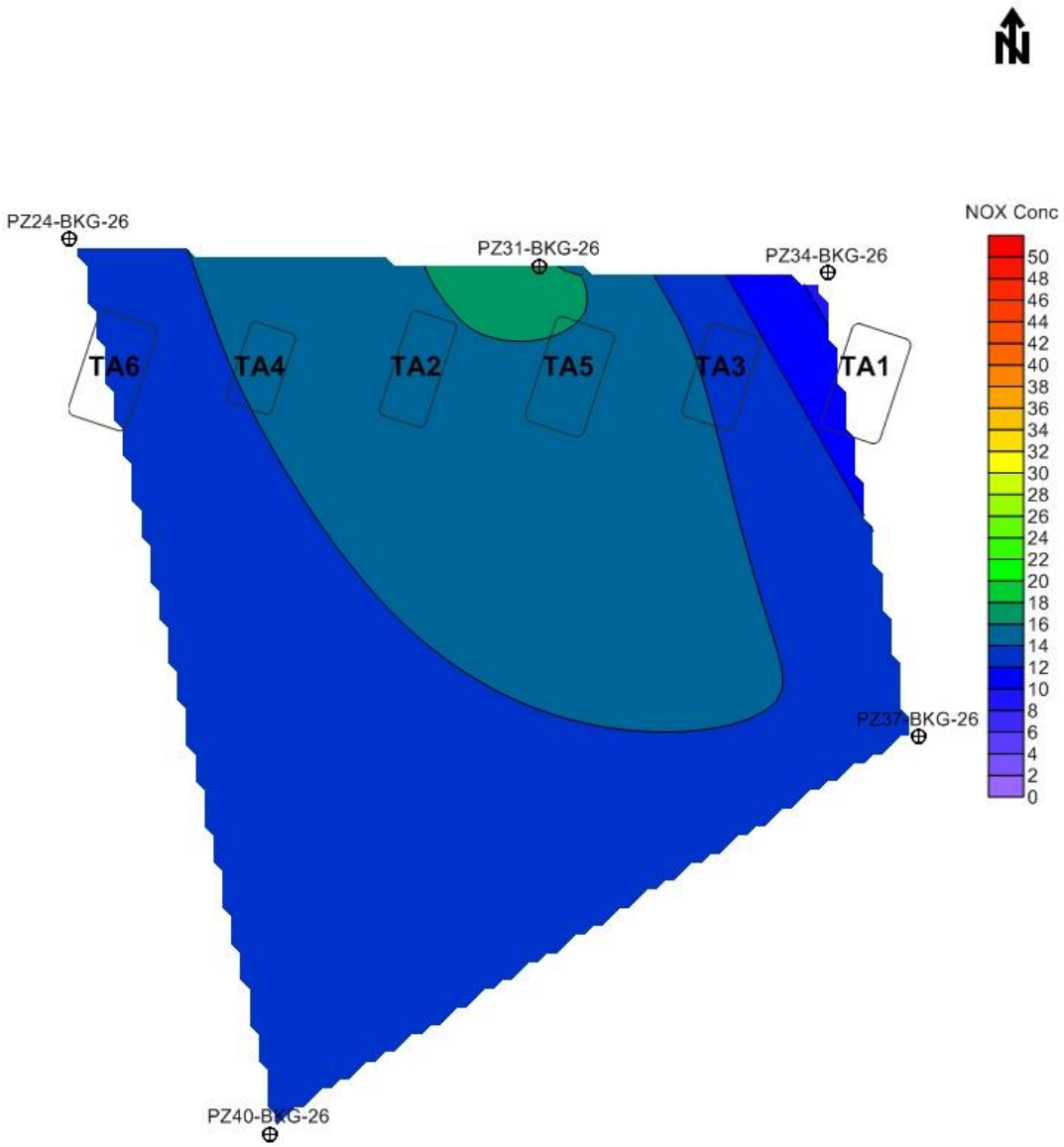

Figure 17
Background Deep Elev 101-110 ft above MSL (January 2013 Sample Event) Schematic (using Surfer) illustrating NOX concentrations in the subsurface excluding samples below test areas

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4.3.3.3 PNRS II Vertically Stacked Biofilter Results

Test area 5 (TA5) and test area 6 (TA6) are the PNRS II in-ground vertically stacked biofilter systems being tested primarily for wastewater treatment. TA5 receives STE while TA6 should receive nitrified effluent, if the ATU is functioning properly. Effluent is dispersed above an 18-inch layer of mound sand (slightly limited sand). Underlying the sand is a 9-inch layer of lignocellulosic and sand media mixture above a 60-mil plastic liner. The liner effluent is conveyed to a denitrification tank containing elemental sulfur reactive media for additional treatment. The denitrified effluent is discharged to the natural soil via an infiltrator system.

Both test area denite tanks exhibited low effluent NOx-N of less than or equal to 0.05 mg/L and effluent SO_4 concentration of 280 and 89 mg/L for TA5 and TA6, respectively. The liner effluent sample NOx-N concentration was 13 mg/L for TA5 and 0.12 mg/L for TA6. The suction lysimeters (LY), installed at the sand and lignocellosic/sand media mixture interface, NOx-N concentrations were 37 and 8.2 mg/L, for TA5 and TA6 respectively. This again suggests that significant nitrate removal was occurring within the lignocellulosic/sand media mixture prior to the denite tank containing the sulfur media. The nitrogen results are graphically displayed in Figures 18 and 19. A standpipe piezometer (PZ) was installed downgradient of the infiltrator system for both test areas. The NOx-N concentrations for the PZs were 7.3 and 7.5 mg/L for TA5 and TA6, respectively.

As discussed in previous sample event data summary reports, the background piezometers surrounding the test areas indicate that there is potentially residual nitrogen upgradient of the test areas from an unknown source. To better determine whether the nitrogen is wastewater derived within these piezometers, sucralose (Splenda) analyses are again recommended to be included in the fifth sample event. It appears that the TA5 and TA6 piezometers may be impacted by wastewater, however the source of this impact is unclear at this time.

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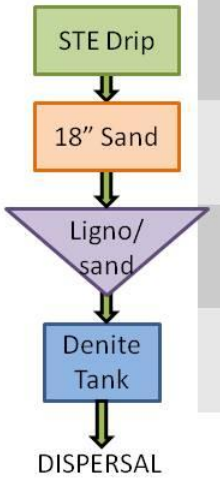
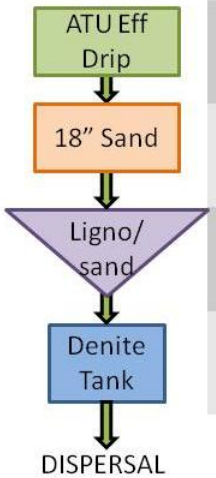


	TKN mg N/L	NH_3 mg N/L	NO_x mg N/L	TN mg N/L	Fecal Coliform (Ct/100 mL)
STE Drip	57	51	0.14	57.14	74,000
18" Sand	1.4	0.019	29	37	1
Ligno/ sand	2.8	0.009	13	15.8	1
Denite Tank	1.9	0.35	0.05	1.95	1

Figure 18
TA5 Graphical Representation of Nitrogen Results



	TKN mg N/L	NH_3 mg N/L	NO_x mg N/L	TN mg N/L	Fecal Coliform (Ct/100 mL)
ATU Eff Drip	24	19	5	29	610
18" Sand	1.6	0.009	8.2	9.8	1
Ligno/ sand	0.92	0.009	0.12	1.04	1
Denite Tank	1.2	0.062	0.04	1.24	1

Figure 19
TA6 Graphical Representation of Nitrogen Results

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5.0 S&GW Test Facility Data Summary Report No. 4: Summary and Recommendations

5.1 Summary

The results of this fourth sampling event served to identify the general trend of the nitrogen transformations and NOx plume for each of the test areas and provide the basis upon which to make adjustments and modifications to the future monitoring locations. Results of Sample Event No. 4 indicate that:

- The ATU is not converting all ammonium to oxidized nitrogen; however, it is now providing significant nitrification relative to previous sample events. It is not nitrifying as effectively as desired. In addition, the unit is also providing denitrification (nitrogen reduction).
- The background piezometers surrounding the test areas indicate that there is residual nitrogen up-gradient of the test areas from an unknown source. This will be investigated further in subsequent monitoring events, but it appears that agricultural operations in the surrounding area may be impacting groundwater nitrogen concentrations.
- The nitrogen plume appears to be flowing in a southwesterly direction and similar to the groundwater contours.
- The PNRS II treatment in-ground vertically stacked systems are functioning as intended. Both TA5 and TA6 produced effluent NOx-N equal to or less than 0.05 mg/L.

5.2 Recommendations

The following recommendations are based on the existing available information in order to improve performance and data collected from the S&GW test facility. The project team will continue to evaluate all results including those that result from implementation of the recommendations and make further adaptations as needed (observational method). Following is a list with select recommendations to be addressed prior to the next sample event.

5.2.1 Aerobic Treatment Unit

As discussed in Section 4.3.3.1, the ATU is not converting all ammonium to oxidized nitrogen (ATU clarifier NH3 concentration of 22 mg-N/L; NOx concentration of 5.7 mg-N/L). The performance of the aerobic treatment unit will continue to be evaluated and monitored.

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5.2.2 PNRS II Infiltrator Standpipe Piezometers

As discussed in Section 4.3.3.3, the background piezometers surrounding the test areas indicate that there is residual nitrogen up-gradient of the test areas from an unknown source. To better determine whether the nitrogen is wastewater derived within these piezometers, sucralose (Splenda) analyses are again recommended to be included in the fifth sample event. It appears that the TA5 and TA6 piezometers may be impacted by wastewater, however the source of this impact is unclear at this time.

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Appendix A: S&GW Test Facility Sample Identification

Table A.1
S&GW Test Facility Sample Identification

ID #	Sample Identification	Test Area	Grid Location	Northing	Easting	Elev NGVD 29	Notes
1	TA1-PAN-12-N	TA1	North				2' x 3.3' SST pan lysimeter
2	TA1-OBS-N	TA1	North	1244816.74	582859.20	132.50	4"D observation port with slots
3	TA1-OBS-S	TA1	South	1244807.75	582855.08	132.88	4"D observation port without slots
4	TA1-SM-39-N	TA1	North	1244817.38	582860.13	130.27	2"D soil moisture tube with 6" casing
5	TA1-SM-39-C	TA1	Center	1244812.80	582858.09	130.23	2"D soil moisture tube with 6" casing
6	TA1-SM-39-S	TA1	South	1244803.79	582854.15	130.24	2"D soil moisture tube with 6" casing
7	TA1-SM-BKG-S	TA1	South	1244778.23	582851.49	128.69	2"D soil moisture tube with 6" casing
8	TA1-SM-BKG-E	TA1	East	1244814.73	582868.76	129.29	2"D soil moisture tube with 6" casing
9	TA1-PZ-11-EF2	TA1	EF2	1244812.14	582857.35	133.59	1"D standpipe piezometer, 5' screen
10	TA1-LY-24-C	TA1	Center	1244811.87	582857.75	133.69	2"D suction lysimeter, 9" cup
11	TA1-LY-12-S	TA1	South	1244804.42	582853.25	132.60	2"D suction lysimeter, 9" cup
12	TA1-LY-24-S	TA1	South	1244804.42	582854.46	134.14	2"D suction lysimeter, 9" cup
13	TA1-LY-42-S	TA1	South	1244805.37	582853.79	132.66	2"D suction lysimeter, 9" cup
14	TA1-T-6-C	TA1	Center	1244813.56	582858.66	132.34	tensiometer
15	TA1-T-12-C	TA1	Center	1244813.75	582858.12	132.34	tensiometer
16	TA1-T-24-C	TA1	Center	1244813.77	582857.64	132.33	tensiometer
17	TA1-T-36-C	TA1	Center	1244813.80	582857.36	132.36	tensiometer
18	TA1-T-42-C	TA1	Center	1244813.34	582857.00	132.88	tensiometer
19	TA1-T-6-S	TA1	South	1244804.28	582853.77	132.32	tensiometer
20	TA1-T-12-S	TA1	South	1244803.87	582852.93	132.35	tensiometer
21	TA1-T-24-S	TA1	South	1244803.71	582852.77	132.36	tensiometer
22	TA1-T-36-S	TA1	South	1244803.49	582852.89	132.38	tensiometer
23	TA1-T-42-S	TA1	South	1244803.01	582853.26	132.80	tensiometer
24	TA1-PZ-11-J4	TA1	J4	1244805.79	582849.87	133.57	1"D standpipe piezometer, 5' screen
25	TA1-PZ-11-K4	TA1	K4	1244803.97	582849.03	133.58	1"D standpipe piezometer, 5' screen
26	TA1-PZ-11-L2	TA1	L2	1244800.25	582851.77	133.57	1"D standpipe piezometer, 5' screen
27	TA1-PZ-11-L3	TA1	L3	1244801.20	582849.94	133.57	1"D standpipe piezometer, 5' screen
28	TA1-PZ-11-L4	TA1	L4	1244802.21	582848.15	133.57	1"D standpipe piezometer, 5' screen

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Table A.1
S&GW Test Facility Sample Identification

ID #	Sample Identification	Test Area	Grid Location	Northing	Easting	Elev NGVD 29	Notes
29	TA1-PZ-11-L5	TA1	L5	1244803.08	582846.26	133.57	1"D standpipe piezometer, 5' screen
30	TA1-PZ-09-N3	TA1	N3	1244798.01	582846.48	130.43	1"D standpipe piezometer, 5' screen
31	TA1-PZ-16-N3	TA1	N3	1244798.02	582846.37	130.44	1"D standpipe piezometer, 2.5' screen
32	TA1-PZ-09-O7	TA1	O7	1244798.67	582839.96	130.08	1"D standpipe piezometer, 5' screen
33	TA1-PZ-16-O7	TA1	O7	1244799.11	582839.97	130.30	1"D standpipe piezometer, 2.5' screen
34	TA1-PZ-09-M9	TA1	M9	1244804.22	582839.66	130.60	1"D standpipe piezometer, 5' screen
35	TA1-PZ-16-M9	TA1	M9	1244804.35	582839.62	130.64	1"D standpipe piezometer, 2.5' screen
36	TA1-PZ-09-I7	TA1	I7	1244810.91	582845.19	130.27	1"D standpipe piezometer, 5' screen
37	TA1-PZ-16-I7	TA1	I7	1244810.78	582845.02	130.33	1"D standpipe piezometer, 2.5' screen
38	TA1-PZ-09-RS16	TA1	RS16	1244792.19	582817.42	129.65	1"D standpipe piezometer, 5' screen
39	TA1-PZ-16-RS16	TA1	RS16	1244792.14	582817.50	129.72	1"D standpipe piezometer, 2.5' screen
40	TA1-PZ-09-RS18	TA1	RS18	1244792.34	582812.82	130.25	1"D standpipe piezometer, 5' screen
41	TA1-PZ-16-RS18	TA1	RS18	1244792.43	582812.72	130.25	1"D standpipe piezometer, 2.5' screen
42	TA2-PAN-12-N	TA2	North				2' x 3.3' SST pan lysimeter
43	TA2-OBS-N	TA2	North	1244818.77	582722.04	131.67	4"D observation port with slots
44	TA2-OBS-S	TA2	South	1244809.76	582718.30	132.27	4"D observation port without slots
45	TA2-SM-39-C	TA2	Center	1244814.95	582721.02	129.80	2"D soil moisture tube with 6" casing
46	TA2-PZ-10-EF2	TA2	EF2	1244814.23	582720.22	133.90	1"D standpipe piezometer, 5' screen
47	TA2-LY-24-C	TA2	Center	1244814.09	582720.59	132.60	2"D suction lysimeter, 9" cup
48	TA2-LY-12-S	TA2	South	1244806.60	582716.48	132.02	2"D suction lysimeter, 9" cup
49	TA2-LY-24-S	TA2	South	1244806.64	582717.52	132.62	2"D suction lysimeter, 9" cup
50	TA2-LY-42-S	TA2	South	1244807.39	582716.98	133.11	2"D suction lysimeter, 9" cup
51	TA2-PZ-10-H5	TA2	H5	1244810.74	582712.43	133.76	1"D standpipe piezometer, 5' screen
52	TA2-PZ-10-J5	TA2	J5	1244807.11	582710.94	133.73	1"D standpipe piezometer, 5' screen
53	TA2-PZ-10-K5	TA2	K5	1244805.14	582710.05	133.74	1"D standpipe piezometer, 5' screen
54	TA2-PZ-10-L2	TA2	L2	1244801.12	582714.87	133.74	1"D standpipe piezometer, 5' screen
55	TA2-PZ-10-L3	TA2	L3	1244801.83	582713.03	133.73	1"D standpipe piezometer, 5' screen
56	TA2-PZ-10-L4	TA2	L4	1244802.60	582711.25	133.52	1"D standpipe piezometer, 5' screen
57	TA2-PZ-10-L5	TA2	L5	1244803.37	582709.39	133.73	1"D standpipe piezometer, 5' screen

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Table A.1
S&GW Test Facility Sample Identification

ID #	Sample Identification	Test Area	Grid Location	Northing	Easting	Elev NGVD 29	Notes
58	TA2-PZ-10-L6	TA2	L6	1244804.19	582707.50	133.72	1"D standpipe piezometer, 5' screen
59	TA2-PZ-09-M4	TA2	M4	1244800.19	582709.27	129.51	1"D standpipe piezometer, 5' screen
60	TA2-PZ-16-M4	TA2	M4	1244800.27	582709.49	129.50	1"D standpipe piezometer, 2.5' screen
61	TA2-PZ-09-N7	TA2	N7	1244801.15	582703.29	129.36	1"D standpipe piezometer, 5' screen
62	TA2-PZ-16-N7	TA2	N7	1244801.21	582703.43	129.37	1"D standpipe piezometer, 2.5' screen
63	TA2-PZ-09-I7	TA2	I7	1244810.20	582707.91	129.10	1"D standpipe piezometer, 5' screen
64	TA2-PZ-16-I7	TA2	I7	1244810.37	582707.66	129.52	1"D standpipe piezometer, 2.5' screen
65	TA2-PZ-09-L8	TA2	L8	1244806.27	582704.93	129.28	1"D standpipe piezometer, 5' screen
66	TA2-PZ-16-L8	TA2	L8	1244806.33	582704.81	129.27	1"D standpipe piezometer, 2.5' screen
67	TA2-PZ-09-TU19	TA2	TU19	1244790.44	582673.66	128.68	1"D standpipe piezometer, 5' screen
68	TA2-PZ-16-TU19	TA2	TU19	1244790.49	582673.49	128.62	1"D standpipe piezometer, 2.5' screen
69	TA2-PZ-09-TU21	TA2	TU21	1244790.32	582669.75	128.58	1"D standpipe piezometer, 5' screen
70	TA2-PZ-16-TU21	TA2	TU21	1244790.60	582669.40	128.98	1"D standpipe piezometer, 2.5' screen
71	TA3-PAN-12-N	TA3	North				2' x 3.3' SST pan lysimeter
72	TA3-OBS-N	TA3	North	1244817.49	582814.57	131.20	4"D observation port with slots
73	TA3-OBS-S	TA3	South	1244808.15	582811.07	131.11	4"D observation port without slots
74	TA3-SM-39-N	TA3	North	1244817.96	582815.53	130.59	2"D soil moisture tube with 6" casing
75	TA3-SM-39-C	TA3	Center	1244813.53	582813.63	130.60	2"D soil moisture tube with 6" casing
76	TA3-SM-39-S	TA3	South	1244804.15	582809.89	130.57	2"D soil moisture tube with 6" casing
77	TA3-SM-BKG-S	TA3	South	1244795.29	582807.19	129.32	2"D soil moisture tube with 6" casing
78	TA3-SM-BKG-E	TA3	East				2"D soil moisture tube with 6" casing
79	TA3-LY-24-C	TA3	Center	1244812.47	582813.21	133.45	2"D suction lysimeter, 9" cup
80	TA3-LY-12-S	TA3	South	1244804.97	582809.16	132.24	2"D suction lysimeter, 9" cup
81	TA3-LY-24-S	TA3	South	1244804.93	582810.17	132.90	2"D suction lysimeter, 9" cup
82	TA3-LY-42-S	TA3	South	1244805.73	582809.79	132.98	2"D suction lysimeter, 9" cup
83	TA3-T-6-C	TA3	Center	1244814.37	582813.76	132.19	tensiometer
84	TA3-T-12-C	TA3	Center	1244814.50	582813.46	132.70	tensiometer
85	TA3-T-24-C	TA3	Center	1244814.56	582813.15	132.23	tensiometer
86	TA3-T-36-C	TA3	Center	1244814.31	582812.76	131.70	tensiometer

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Table A.1
S&GW Test Facility Sample Identification

ID #	Sample Identification	Test Area	Grid Location	Northing	Easting	Elev NGVD 29	Notes
87	TA3-T-42-C	TA3	Center	1244813.89	582812.49	132.20	tensiometer
88	TA3-T-6-S	TA3	South	1244805.33	582809.71	132.19	tensiometer
89	TA3-T-12-S	TA3	South	1244804.36	582809.00	132.69	tensiometer
90	TA3-T-24-S	TA3	South	1244803.69	582808.77	132.22	tensiometer
91	TA3-T-36-S	TA3	South	1244803.59	582808.72	131.71	tensiometer
92	TA3-T-42-S	TA3	South	1244803.27	582809.06	132.21	tensiometer
93	TA3-PZ-11-EF2	TA3	EF2	1244812.64	582812.80	133.82	1"D standpipe piezometer, 5' screen
94	TA3-PZ-11-I2	TA3	I2	1244806.39	582810.24	133.54	1"D standpipe piezometer, 5' screen
95	TA3-PZ-10-J5	TA3	J5	1244806.06	582803.49	133.49	1"D standpipe piezometer, 5' screen
96	TA3-PZ-10-K5	TA3	K5	1244804.12	582802.85	133.49	1"D standpipe piezometer, 5' screen
97	TA3-PZ-11-L2	TA3	L2	1244800.38	582808.17	133.51	1"D standpipe piezometer, 5' screen
98	TA3-PZ-11-L3	TA3	L3	1244800.93	582806.21	133.51	1"D standpipe piezometer, 5' screen
99	TA3-PZ-11-L4	TA3	L4	1244801.63	582804.23	133.50	1"D standpipe piezometer, 5' screen
100	TA3-PZ-10-L5	TA3	L5	1244802.21	582802.23	133.49	1"D standpipe piezometer, 5' screen
101	TA3-PZ-09-N3	TA3	N3	1244798.56	582803.29	129.88	1"D standpipe piezometer, 5' screen
102	TA3-PZ-16-N3	TA3	N3	1244798.87	582803.18	129.89	1"D standpipe piezometer, 2.5' screen
103	TA3-PZ-09-O7	TA3	O7	1244798.85	582797.09	130.06	1"D standpipe piezometer, 5' screen
104	TA3-PZ-16-O7	TA3	O7	1244798.94	582796.81	130.26	1"D standpipe piezometer, 2.5' screen
105	TA3-PZ-09-I7	TA3	I7	1244809.85	582798.46	130.06	1"D standpipe piezometer, 5' screen
106	TA3-PZ-16-I7	TA3	I7	1244810.00	582798.53	130.06	1"D standpipe piezometer, 2.5' screen
107	TA3-PZ-09-M9	TA3	M9	1244803.45	582796.14	130.18	1"D standpipe piezometer, 5' screen
108	TA3-PZ-16-M9	TA3	M9	1244803.44	582796.02	130.12	1"D standpipe piezometer, 2.5' screen
109	TA3-PZ-09-ST14	TA3	ST14	1244790.15	582780.80	129.88	1"D standpipe piezometer, 5' screen
110	TA3-PZ-16-ST14	TA3	ST14	1244790.27	582780.68	129.81	1"D standpipe piezometer, 2.5' screen
111	TA3-PZ-09-ST16	TA3	ST16	1244790.74	582776.81	129.54	1"D standpipe piezometer, 5' screen
112	TA3-PZ-16-ST16	TA3	ST16	1244790.24	582776.71	130.00	1"D standpipe piezometer, 2.5' screen
113	TA4-PAN-12-N	TA4	North				2' x 3.3' SST pan lysimeter
114	TA4-OBS-N	TA4	North	1244819.86	582676.19	129.91	4"D observation port with slots
115	TA4-OBS-S	TA4	South	1244810.58	582672.01	129.85	4"D observation port without slots

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Table A.1
S&GW Test Facility Sample Identification

ID #	Sample Identification	Test Area	Grid Location	Northing	Easting	Elev NGVD 29	Notes
116	TA4-SM-39-C	TA4	Center	1244815.85	582674.87	129.25	2"D soil moisture tube with 6" casing
117	TA4-LY-24-C	TA4	Center	1244814.82	582674.46	132.10	2"D suction lysimeter, 9" cup
118	TA4-LY-12-S	TA4	South	1244807.65	582670.18	130.89	2"D suction lysimeter, 9" cup
119	TA4-LY-24-S	TA4	South	1244807.45	582671.38	132.75	2"D suction lysimeter, 9" cup
120	TA4-LY-42-S	TA4	South	1244808.40	582670.62	132.57	2"D suction lysimeter, 9" cup
121	TA4-PZ-11-EF2	TA4	EF2	1244815.06	582674.02	132.53	1"D standpipe piezometer, 5' screen
122	TA4-PZ-10-H5	TA4	H5	1244812.91	582666.75	132.48	1"D standpipe piezometer, 5' screen
123	TA4-PZ-10-J5	TA4	J5	1244809.21	582664.90	132.47	1"D standpipe piezometer, 5' screen
124	TA4-PZ-10-K5	TA4	K5	1244807.45	582664.07	132.47	1"D standpipe piezometer, 5' screen
125	TA4-PZ-11-L2	TA4	L2	1244803.06	582668.66	132.47	1"D standpipe piezometer, 5' screen
126	TA4-PZ-11-L3	TA4	L3	1244804.02	582666.85	132.48	1"D standpipe piezometer, 5' screen
127	TA4-PZ-11-L4	TA4	L4	1244804.79	582665.10	132.46	1"D standpipe piezometer, 5' screen
128	TA4-PZ-11-L5	TA4	L5	1244805.65	582663.28	132.46	1"D standpipe piezometer, 5' screen
129	TA4-PZ-11-L6	TA4	L6	1244806.56	582661.46	132.46	1"D standpipe piezometer, 5' screen
130	TA4-PZ-09-M4	TA4	M4	1244802.46	582663.97	128.96	1"D standpipe piezometer, 5' screen
131	TA4-PZ-16-M4	TA4	M4	1244802.29	582664.28	129.54	1"D standpipe piezometer, 5' screen
132	TA4-PZ-09-N7	TA4	N7	1244807.44	582664.14	132.47	1"D standpipe piezometer, 5' screen
133	TA4-PZ-16-N7	TA4	N7	1244803.91	582657.76	128.94	1"D standpipe piezometer, 5' screen
134	TA4-PZ-09-I7	TA4	I7	1244812.68	582663.21	128.83	1"D standpipe piezometer, 5' screen
135	TA4-PZ-16-I7	TA4	I7	1244812.80	582663.08	129.25	1"D standpipe piezometer, 5' screen
136	TA4-PZ-09-L8	TA4	L8	1244807.67	582657.70	128.63	1"D standpipe piezometer, 5' screen
137	TA4-PZ-16-L8	TA4	L8	1244807.84	582657.44	128.92	1"D standpipe piezometer, 5' screen
138	TA4-PZ-09-TU14	TA4	TU14	1244793.10	582638.92	128.32	1"D standpipe piezometer, 5' screen
139	TA4-PZ-16-TU14	TA4	TU14	1244792.96	582639.30	129.06	1"D standpipe piezometer, 5' screen
140	TA4-PZ-09-TU16	TA4	TU16	1244794.18	582633.89	128.57	1"D standpipe piezometer, 5' screen
141	TA4-PZ-16-TU16	TA4	TU16	1244793.99	582634.17	128.70	1"D standpipe piezometer, 5' screen
142	TA5-OBS-I	TA5	Center	1244812.47	582770.36	132.52	4"D observation port, for infiltrator system
143	TA5-OBS-N	TA5	North	1244817.64	582767.53	132.87	3"D observation port connected to collection pipe at bottom of sloped liner
144	TA5-OBS-S	TA5	South	1244810.89	582764.74	132.91	3"D observation port connected to collection pipe at bottom of sloped

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Table A.1
S&GW Test Facility Sample Identification

ID #	Sample Identification	Test Area	Grid Location	Northing	Easting	Elev NGVD 29	Notes
							liner
145	TA5-PZ-I	TA5	South	1244802.11	582764.97	133.23	1"D standpipe piezometer, 5' screen south of infiltrator
146	TA5-LY-C	TA5	Center	1244814.05	582766.03	133.15	2"D suction lysimeter, 9" cup at mixture and sand interface
147	TA5-LINER-SP	TA5	North	1244827.69	582771.40	131.20	3"D sample port
148	TA5-CLEANOUT	TA5	North	1244829.07	582772.03	131.60	4"D clean-out
149	TA5-Denite Tank	TA5	North	1244831.25	582772.19	129.90	
150	TA6-OBS-I	TA6	Center	1244814.51	582630.94	131.40	4"D observation port, for infiltrator system
151	TA6-OBS-N	TA6	North	1244819.57	582628.85	131.94	3"D observation port connected to collection pipe at bottom of sloped liner
152	TA6-OBS-S	TA6	South	1244812.49	582625.84	132.28	3"D observation port connected to collection pipe at bottom of sloped liner
153	TA6-PZ-I	TA6	South	1244804.06	582626.81	133.43	1"D standpipe piezometer, 5' screen south of infiltrator
154	TA6-LY-C	TA6	Center	1244815.99	582627.26	132.41	2"D suction lysimeter, 9" cup at mixture and sand interface
155	TA6-LINER-SP	TA6	North	1244829.10	582632.72	130.89	3"D sample port
156	TA6-CLEANOUT	TA6	North	1244830.50	582633.21	130.48	4"D clean-out
157	TA6-Denite Tank	TA6	North	1244832.30	582633.85	128.98	
158	PZ01-BKG-09	BKG		1244957.50	582852.42	131.28	1.25”D standpipe piezometer, 5’ screen
159	LY01-BKG-24	BKG		1244957.82	582856.59	131.60	2"D suction lysimeter, 9" cup
160	LY02-BKG-42	BKG		1244960.88	582857.29	132.03	2"D suction lysimeter, 9" cup
161	BKG-SM-N	BKG		1244959.90	582854.52	130.62	2"D soil moisture tube with 6" casing
162	PZ04-BKG-09	BKG		1244850.25	582615.24	129.45	1.25”D standpipe piezometer, 5’ screen
163	PZ24-BKG-26	BKG		1244854.09	582614.74	132.38	2”D standpipe piezometer, 5’ screen
164	PZ29-BKG-09	BKG		1244846.58	582755.86	130.93	¾”D standpipe piezometer, 5’ screen
165	PZ30-BKG-16	BKG		1244845.66	582758.17	132.29	1"D standpipe piezometer, 5' screen
166	PZ31-BKG-26	BKG		1244845.87	582757.80	128.99	1"D standpipe piezometer, 5' screen
167	PZ32-BKG-09	BKG		1244843.82	582842.31	133.51	1"D standpipe piezometer, 5' screen
168	PZ33-BKG-16	BKG		1244844.30	582845.33	132.84	1"D standpipe piezometer, 5' screen
169	PZ34-BKG-26	BKG		1244843.73	582845.24	130.45	1"D standpipe piezometer, 5' screen

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Table A.1
S&GW Test Facility Sample Identification

ID #	Sample Identification	Test Area	Grid Location	Northing	Easting	Elev NGVD 29	Notes
170	PZ35-BKG-09	BKG		1244702.71	582872.85	129.18	1"D standpipe piezometer, 5' screen
171	PZ36-BKG-16	BKG		1244702.63	582873.08	131.84	1"D standpipe piezometer, 5' screen
172	PZ37-BKG-26	BKG		1244702.80	582872.92	128.31	1"D standpipe piezometer, 5' screen
173	PZ38-BKG-09	BKG		1244582.29	582675.83	126.66	1"D standpipe piezometer, 5' screen
174	PZ39-BKG-16	BKG		1244582.30	582675.42	129.60	1"D standpipe piezometer, 5' screen
175	PZ40-BKG-26	BKG		1244582.13	582675.66	126.10	1"D standpipe piezometer, 5' screen
176	STE Pump Tank			1244840.78	582676.05	129.10	STE effluent dose tank
177	ATU Clarifier			1244841.16	582671.78	129.12	
178	ATU Eff Pump Tank			1244840.54	582681.28	129.16	Nitrified effluent dose tank
179	GCREC Pump Station						GCREC mound lift station
180	PNRS II STE-Tank 1						PNRS II Tank 1
181	PZ41	TA1		1244799.29	582853.53	132.29	1"D standpipe piezometer, 5' screen
182	PZ42	TA1		1244796.65	582850.26	132.99	1"D standpipe piezometer, 5' screen
183	PZ43	TA1		1244825.21	582874.55	131.34	1"D standpipe piezometer, 5' screen
184	PZ44	TA3		1244796.21	582804.15	131.82	1"D standpipe piezometer, 5' screen
185	PZ45	TA3		1244799.84	582810.10	132.48	1"D standpipe piezometer, 5' screen
186	PZ46	TA1		1244794.92	582853.97	131.81	1"D standpipe piezometer, 5' screen
187	PZ47	TA1		1244797.39	582857.04	131.78	1"D standpipe piezometer, 5' screen
188	PZ48	TA1		1244792.81	582857.49	129.70	1"D standpipe piezometer, 5' screen
189	PZ49	TA2		1244797.70	582710.95	131.91	1"D standpipe piezometer, 5' screen
190	PZ50	TA2		1244800.34	582716.87	131.76	1"D standpipe piezometer, 5' screen
191	PZ51	TA4		1244828.71	582693.52	131.90	1"D standpipe piezometer, 5' screen
192	PZ52	TA4		1244799.14	582665.17	131.69	1"D standpipe piezometer, 5' screen
193	PZ53	TA4		1244802.18	582670.34	131.57	1"D standpipe piezometer, 5' screen
194	PZ54	TA4		1244797.40	582668.77	128.85	1"D standpipe piezometer, 5' screen
195	PZ55	TA2		1244796.18	582714.66	129.61	1"D standpipe piezometer, 5' screen
196	PZ56	TA3		1244795.18	5825808.75	130.86	1"D standpipe piezometer, 5' screen
197	PZ57	TA4		1244795.69	582672.29	128.99	3/4"D standpipe piezometer, 5' screen

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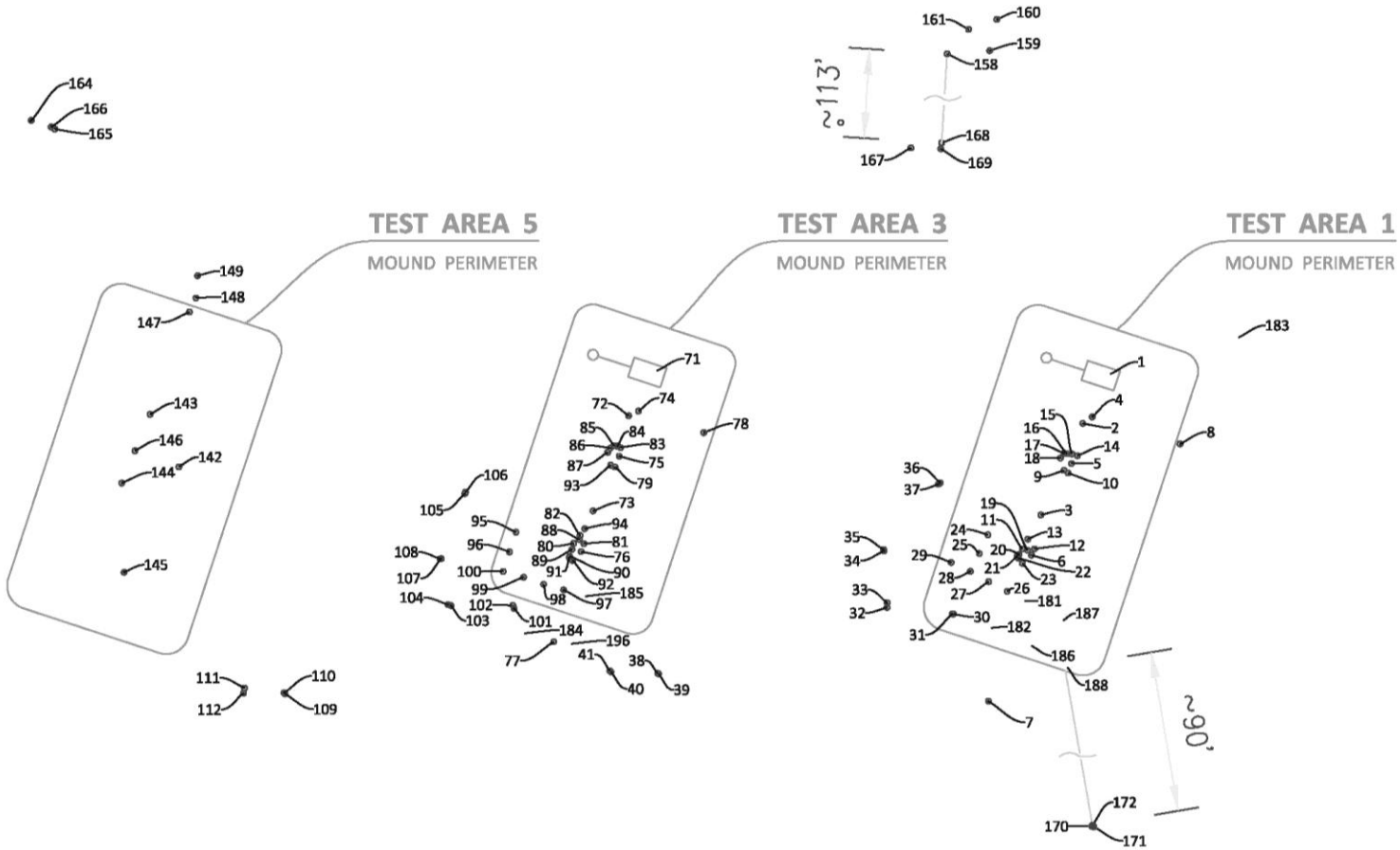

Figure A.1
S&GW Test Facility System Schematic of TA1, TA3, and TA5 (STE System)
[1]Location identification corresponds to Table A.1 ID #

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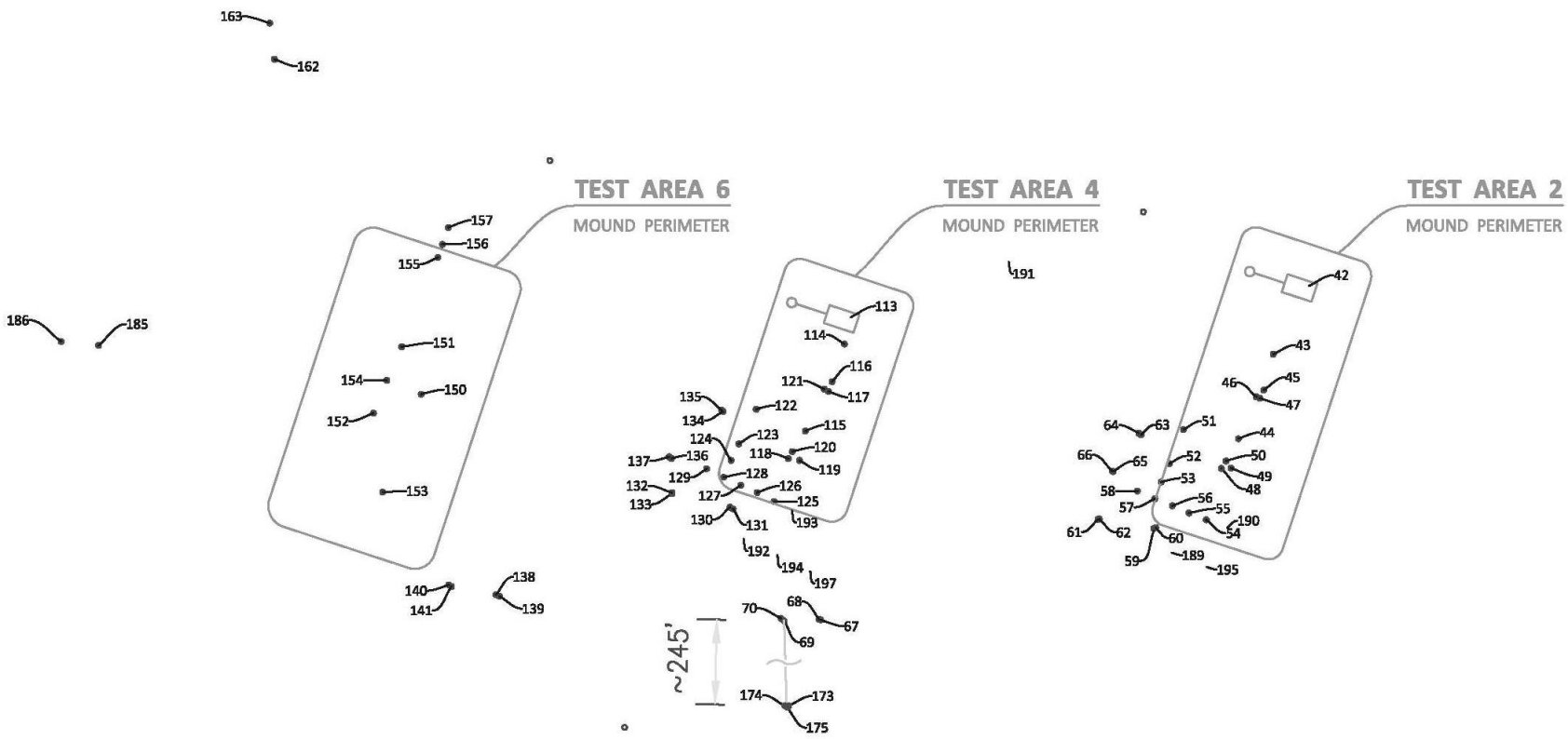

Figure A.2
S&GW Test Facility System Schematic of TA2, TA4, and TA6 (ATU Effluent System)
[1]Location identification corresponds to Table A.1 ID #

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Appendix B: GCREC Weather Station Data

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Table B.1
Daily Recorded Meteorological Data

Period	60cm T avg (F)	60cm T min (F)	60cm T max (F)	Tsoil avg - 10cm (F)	Tsoil min (avg) - 10cm (F)	Tsoil max (avg) - 10cm (F)	2m Dew Pt avg (F)	Relative Humidity avg 2m (pct)	2m Rain total (in)	2m Rain max over 15min (in)	10m Wind avg (mph)	10m Wind min (mph)	10m Wind max (mph)	ET (in)
1-Nov-12	64.41	53.58	75.54	70.78	69.42	72.23	60.66	86	0	0	4.15	0.07	16.4	0.07
2-Nov-12	63.11	50.02	77.72	70.67	69.04	72.30	54.85	76	0	0	3.96	0	42.2	0.08
3-Nov-12	65.26	48.43	83.26	70.69	68.76	72.66	60.17	84	0	0	2.94	0.03	13.83	0.08
4-Nov-12	67.12	55.42	81.30	71.81	70.41	73.51	61.24	83	0	0	3.34	0	15.57	0.08
5-Nov-12	67.08	57.97	77.68	71.89	70.79	73.02	62.59	85	0	0	3.37	0	11.63	0.07
6-Nov-12	63.40	53.37	74.41	71.32	70.29	72.48	60.49	89	0.07	0.01	4.05	0	14.33	0.07
7-Nov-12	57.45	46.80	67.24	69.76	68.95	70.97	51.52	80	0	0	7.03	0.07	22.13	0.07
8-Nov-12	55.71	44.35	68.09	68.20	67.01	69.26	43.57	66	0	0	5.87	0.13	21.33	0.06
9-Nov-12	56.62	40.92	73.40	67.19	65.64	68.70	46.35	70	0	0	5.75	0.6	17.63	0.07
10-Nov-12	61.60	49.46	76.39	67.44	66.00	68.90	52.69	73	0	0	6.67	0.7	19.47	0.07
11-Nov-12	64.94	53.58	79.52	68.24	66.87	69.67	59.34	82	0	0	7.72	2.87	22.67	0.08
12-Nov-12	69.64	58.62	82.08	69.43	67.93	71.02	64.33	84	0	0	5.93	0.43	19.73	0.08
13-Nov-12	69.48	61.43	81.57	70.75	69.55	72.00	63.08	80	0.03	0.01	4.41	0	32.67	0.08
14-Nov-12	66.22	58.91	76.71	70.24	69.24	71.31	63.46	89	0	0	5.75	1.37	15.1	0.07
15-Nov-12	64.61	59.47	68.63	70.38	69.96	70.90	62.80	93	0	0	5.75	1.4	13.67	0.05
16-Nov-12	59.80	56.30	66.69	69.55	68.90	70.23	57.34	90	0	0	5.95	1.27	13.77	0.05
17-Nov-12	65.99	56.32	78.80	69.41	68.18	70.92	59.35	80	0	0	8.39	1.03	19.93	0.08
18-Nov-12	63.31	51.21	72.5	69.72	68.97	70.72	58.62	84	0	0	8.53	0.93	20.5	0.07
19-Nov-12	56.16	48.16	65.19	68.19	67.06	69.37	53.30	89	0	0	6.12	0	14.13	0.05
20-Nov-12	63.08	56.34	74.77	68.58	67.46	70.03	56.19	78	0	0	6.13	1.47	20.07	0.07
21-Nov-12	60.95	52.3	72.99	68.04	66.92	69.08	52.30	75	0	0	6.46	1.6	19.8	0.07

Table B.1 (continued)
Daily Recorded Meteorological Data

Period	60cm T avg (F)	60cm T min (F)	60cm T max (F)	Tsoil avg - 10cm (F)	Tsoil min (avg) - 10cm (F)	Tsoil max (avg) - 10cm (F)	2m Dew Pt avg (F)	Relative Humidity avg 2m (pct)	2m Rain total (in)	2m Rain max over 15min (in)	10m Wind avg (mph)	10m Wind min (mph)	10m Wind max (mph)	ET (in)
22-Nov-12	57.56	45.01	72.46	66.67	65.53	67.84	42.29	60	0	0	7.64	1.23	26.10	0.06
23-Nov-12	54.76	38.46	72.34	65.25	63.66	66.69	39.85	59	0	0	4.90	0	15.90	0.06
24-Nov-12	55.99	42.35	73.35	65.09	63.36	66.92	50.53	80	0	0	4.81	0	17.97	0.06
25-Nov-12	53.90	40.45	71.10	64.40	62.85	65.95	39.33	61	0	0	4.53	0.10	12.90	0.05
26-Nov-12	59.30	41.38	78.26	64.43	62.38	66.54	50.82	72	0	0	4.45	0.03	15.37	0.06
27-Nov-12	64.91	54.16	80.11	65.93	64.33	67.73	60.55	84	0	0	4.84	0.13	16.60	0.07
28-Nov-12	63.32	55.20	75.76	66.99	66.20	68.27	58.91	86	0	0	6.83	0	19.30	0.06
29-Nov-12	62.38	50.47	77.85	66.82	65.53	68.09	54.81	77	0	0	8.52	1.53	21.43	0.07
30-Nov-12	64.12	53.74	78.67	66.96	65.62	68.36	55.10	73	0	0	7.41	1.83	21.97	0.07
1-Dec-12	63.76	52.12	78.49	67.11	65.68	68.45	56.95	78	0	0	7.05	1.30	19.57	0.07
2-Dec-12	67.54	58.41	81.30	67.79	66.65	69.21	59.85	78	0	0	6.92	0.63	24.23	0.07
3-Dec-12	67.51	57.58	81.52	68.58	67.57	69.93	59.80	77	0	0	6.51	1.53	19.07	0.07
4-Dec-12	64.89	53.33	79.57	68.08	66.56	69.44	55.92	74	0	0	6.53	1.77	16.73	0.06
5-Dec-12	65.88	53.82	79.86	68.13	66.58	69.53	58.81	77	0	0	5.19	0.07	15.50	0.06
6-Dec-12	68.13	60.06	80.62	69.19	68.04	70.56	61.71	80	0	0	5.71	0.90	16.27	0.07
7-Dec-12	66.10	59.81	79.43	69.35	68.38	70.70	62.37	87	0	0	5.31	0.33	13.60	0.06
8-Dec-12	70.14	61.65	82.47	70.03	69.01	71.40	65.92	87	0.20	0.05	4.62	0.30	13.17	0.07
9-Dec-12	68.80	59.23	79.83	70.63	69.24	72.19	65.97	90	0.01	0.01	3.14	0	46.07	0.06
10-Dec-12	69.98	59.27	82.63	70.08	68.83	71.15	67.87	91	0.67	0.29	6.92	0.07	22.33	0.07
11-Dec-12	71.01	66.13	79.14	70.80	69.89	71.89	70.01	95	0.22	0.15	4.87	0	15.80	0.06

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Table B.1 (continued)
Daily Recorded Meteorological Data

Period	60cm T avg (F)	60cm T min (F)	60cm T max (F)	Tsoil avg - 10cm (F)	Tsoil min (avg) - 10cm (F)	Tsoil max (avg) - 10cm (F)	2m Dew Pt avg (F)	Relative Humidity avg 2m (pct)	2m Rain total (in)	2m Rain max over 15min (in)	10m Wind avg (mph)	10m Wind min (mph)	10m Wind max (mph)	ET (in)
12-Dec-12	72.19	64.65	81.50	71.39	70.25	72.61	70.02	92	0.05	0.05	4.97	0.07	16.33	0.06
13-Dec-12	63.81	54.64	70.11	70.91	69.53	71.76	60.22	88	0	0	8.81	2.10	20.43	0.05
14-Dec-12	58.71	54.3	69.13	68.61	67.87	69.46	55.72	90	0	0	7.91	2.10	16.70	0.05
15-Dec-12	62.96	53.94	77.52	68.22	66.96	69.87	59.49	88	0	0	5.24	0.70	13.90	0.06
16-Dec-12	66.67	55.81	80.85	68.30	66.67	69.96	61.95	85	0	0	4.38	0.07	15.57	0.06
17-Dec-12	68.21	55.76	80.56	68.90	67.37	70.34	64.11	86	0	0	5.34	0	18.93	0.06
18-Dec-12	68.34	53.82	78.67	69.73	68.90	71.08	64.93	88	0	0	6.21	0.83	21.53	0.06
19-Dec-12	58.20	41.67	79.09	67.20	65.50	68.86	47.66	70	0	0	3.71	0.07	13.13	0.05
20-Dec-12	67.50	50.25	82.13	66.88	65.10	68.76	61.84	82	0.57	0.25	9.10	1.23	23.43	N/A
21-Dec-12	55.83	40.08	68.54	66.71	64.47	68.72	44.50	66	0.02	0.01	10.85	1.23	28.03	0.05
22-Dec-12	47.51	33.93	63.70	62.81	61.54	64.36	29.88	55	0	0	5.91	0.73	18.07	0.04
23-Dec-12	50.14	33.11	70.39	61.24	59.34	63.05	37.26	63	0	0	3.89	0.07	23.30	0.04
24-Dec-12	56.86	46.42	67.15	62.39	61.25	63.54	50.82	78	0	0	3.85	0.17	14.30	0.05
25-Dec-12	62.23	50.79	75.07	63.04	61.39	64.69	57.23	82	0	0	5.81	0.07	18.77	0.06
26-Dec-12	64.62	52.95	78.57	64.66	63.64	65.98	60.46	85	0.22	0.21	10.88	0.97	31.10	0.07
27-Dec-12	50.15	36.85	63.41	62.72	61.12	64.33	43.86	79	0	0	4.43	0.10	12.97	0.04
28-Dec-12	56.32	37.73	72.30	61.62	59.59	63.55	51.27	84	0.34	0.11	5.56	0.27	14.67	0.05
29-Dec-12	66.04	53.82	72.68	64.95	63.57	66.38	63.20	89	0.15	0.06	11.00	2.37	25.63	0.06
30-Dec-12	46.57	37.51	57.13	61.84	60.55	64.11	38.16	73	0	0	8.63	1.27	22.20	0.04
31-Dec-12	56.39	42.12	74.32	61.11	59.14	63.41	49.97	79	0	0	5.54	0	17.33	0.05

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Table B.1 (continued)
Daily Recorded Meteorological Data

Period	60cm T avg (F)	60cm T min (F)	60cm T max (F)	Tsoil avg - 10cm (F)	Tsoil min (avg) - 10cm (F)	Tsoil max (avg) - 10cm (F)	2m Dew Pt avg (F)	Relative Humidity avg 2m (pct)	2m Rain total (in)	2m Rain max over 15min (in)	10m Wind avg (mph)	10m Wind min (mph)	10m Wind max (mph)	ET (in)
1-Jan-13	61.47	48.29	77.20	62.47	60.53	64.69	56.16	82	0	0	4.40	0	18.73	0.06
2-Jan-13	65.56	53.60	79.93	63.99	62.17	66.15	62.00	88	0	0	4.98	0	16.00	0.06
3-Jan-13	65.74	56.98	78.96	65.88	64.71	67.44	63.11	92	0.13	0.03	4.68	0.07	18.77	0.06
4-Jan-13	58.44	55.35	63.21	65.33	64.76	66.45	57.00	95	0.01	0.01	7.06	1.53	15.60	0.04
5-Jan-13	64.51	55.58	76.53	65.46	64.11	67.08	58.79	82	0	0	6.33	1.33	15.63	0.06
6-Jan-13	67.83	58.68	80.73	67.09	65.50	69.10	65.11	91	0.03	0.02	5.27	0	16.67	0.07
7-Jan-13	62.16	59.31	65.71	66.91	66.07	68.07	59.68	91	0	0	8.07	2.47	20.97	0.04
8-Jan-13	69.74	59.72	82.65	67.01	65.26	69.24	64.74	85	0.04	0.02	7.19	1.10	16.27	0.07
9-Jan-13	73.78	65.73	85.10	68.91	67.69	70.50	67.88	82	0	0	8.68	2.70	22.13	0.08
10-Jan-13	72.31	64.72	81.88	69.46	68.41	70.48	66.18	81	0	0	8.71	1.80	23.67	0.07
11-Jan-13	70.52	61.29	82.87	69.29	67.71	70.90	65.09	83	0	0	7.35	1.17	21.40	0.08
12-Jan-13	70.35	60.08	82.78	69.47	68.07	70.92	64.07	80	0	0	7.04	0.63	23.13	0.07
13-Jan-13	70.18	60.57	81.99	69.71	68.16	71.22	63.93	80	0	0	5.80	0.03	15.83	0.07
14-Jan-13	67.35	57.87	80.71	69.49	68.11	70.79	61.39	81	0	0	5.08	0	20.13	N/A
15-Jan-13	67.81	53.85	82.06	68.84	67.03	70.68	62.15	82	0	0	4.32	0.20	16.20	0.07
16-Jan-13	68.28	55.94	83.64	69.45	67.87	71.01	61.53	80	0	0	4.27	0	16.67	0.07
17-Jan-13	60.71	55.00	72.28	68.12	66.96	69.24	57.81	89	0.04	0.01	8.64	0	26.00	0.06
18-Jan-13	52.86	38.45	64.45	65.53	63.97	66.88	46.50	80	0.01	0.01	9.23	1.60	22.83	0.05
19-Jan-13	62.78	52.7	74.79	65.98	64.67	67.46	56.07	79	0	0	9.38	1.67	23.57	0.07
20-Jan-13	64.46	58.23	75.34	66.94	65.86	68.34	60.05	85	0	0	6.29	1.20	17.03	0.06
21-Jan-13	64.42	58.53	75.00	67.48	66.47	68.79	58.94	82	0	0	4.88	0.07	15.93	0.06

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Table B.1 (continued)
Daily Recorded Meteorological Data

Period	60cm T avg (F)	60cm T min (F)	60cm T max (F)	Tsoil avg - 10cm (F)	Tsoil min (avg) - 10cm (F)	Tsoil max (avg) - 10cm (F)	2m Dew Pt avg (F)	Relative Humidity avg 2m (pct)	2m Rain total (in)	2m Rain max over 15min (in)	10m Wind avg (mph)	10m Wind min (mph)	10m Wind max (mph)	ET (in)
22-Jan-13	56.75	46.44	66.49	66.15	65.14	67.46	42.30	60	0	0	6.62	0.97	19.03	0.06
23-Jan-13	54.15	41.77	71.33	64.24	62.53	65.95	36.56	54	0	0	5.40	0.50	17.10	0.06
24-Jan-13	55.37	37.34	73.40	63.56	61.54	65.66	45.08	70	0	0	5.01	0.23	16.80	0.06
25-Jan-13	58.29	41.75	75.70	63.94	61.95	66.15	49.15	74	0	0	4.11	0.33	14.97	0.07
26-Jan-13	58.31	40.81	75.96	64.07	61.90	66.27	51.96	80	0	0	3.73	0.13	12.70	0.07
27-Jan-13	61.96	45.90	78.13	64.56	62.58	66.60	54.13	76	0	0	6.35	0.90	18.53	0.08
28-Jan-13	66.90	54.52	81.03	65.69	64.02	67.59	60.90	82	0	0	7.19	1.57	19.07	0.08
29-Jan-13	68.91	56.46	82.13	67.09	65.48	68.79	63.89	84	0	0	6.41	1.03	20.60	0.08
30-Jan-13	71.00	63.25	82.22	68.27	66.96	69.76	64.99	82	0	0	12.67	2.73	30.80	0.10
31-Jan-13	57.55	40.23	68.67	67.86	65.79	69.01	44.19	66	0.04	0.01	7.81	0.93	27.57	0.07

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Appendix C: S&GW Test Facility Tensiometer Data

Table C.1
S&GW Test Facility Test Area 3
Daily Average Tensiometer Data (mbar)

	TA3-Center					TA3-South				
Depth below IS:	6"	12"	24"	36"	42"	6"	12"	24"	36"	42"
Date	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar
11/05/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
11/06/12	7.440	5.422	4.591	3.879	3.523	2.930	2.811	2.336	2.099	1.624
11/07/12	31.890	29.753	27.617	28.329	25.955	27.261	25.125	26.668	24.650	25.481
11/08/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
11/09/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
11/10/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
11/11/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
11/12/12	NAN	NAN	NAN	NAN	NAN	NAN	3.879	3.404	2.930	2.930
11/13/12	35.451	32.839	32.127	30.466	31.296	29.041	30.940	28.210	30.228	27.854
11/14/12	33.314	30.347	29.160	29.160	27.498	28.448	26.668	28.092	26.074	27.380
11/15/12	37.468	35.925	32.721	33.670	31.652	32.127	31.296	31.178	31.178	30.110
11/16/12	65.835	60.969	59.782	58.832	58.002	57.764	57.052	57.408	56.221	56.933
11/17/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
11/18/12	32.246	32.721	28.448	30.703	27.736	29.160	27.973	27.854	28.329	26.549
11/19/12	19.665	17.528	15.867	15.867	14.680	14.799	14.086	13.968	13.493	13.256
11/20/12	6.253	4.829	3.998	2.336	3.760	0.674	3.523	-0.394	2.930	-0.750
11/21/12	-12.975	-14.637	-15.586	-15.705	-16.892	-16.180	-17.604	-16.773	-18.197	-17.366
11/22/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
11/23/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
11/24/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
11/25/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
11/26/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
11/27/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
11/28/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
11/29/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
11/30/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
12/01/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
12/02/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
12/03/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
12/04/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
12/05/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
12/06/12	NAN	NAN	NAN	NAN	-9.177	-10.245	-9.889	-10.957	-10.601	-11.432
12/07/12	14.680	12.187	11.831	9.220	11.594	7.796	11.356	6.965	10.644	6.846
12/08/12	41.860	36.756	36.756	35.213	34.857	34.738	33.789	34.501	32.839	34.382
12/09/12	64.174	59.782	58.358	58.358	56.933	58.120	56.459	57.764	55.865	57.646
12/10/12	50.287	46.014	46.370	43.165	45.658	41.979	45.421	41.385	44.352	41.622
12/11/12	64.767	58.595	58.239	56.221	55.984	55.390	54.916	55.034	53.729	54.678
12/12/12	201.854	194.258	192.952	193.071	192.715	194.258	193.546	194.020	192.834	195.089
12/13/12	196.394	189.866	187.967	189.035	187.849	190.578	188.798	189.510	188.205	191.291
12/14/12	92.778	87.081	88.624	84.470	88.030	83.995	87.793	84.113	86.369	85.063
12/15/12	40.317	34.382	35.925	32.127	34.264	31.415	33.195	31.296	31.534	31.534

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Table C.1 (continued)
S&GW Test Facility Test Area 3
Daily Average Tensiometer Data (mbar)

	TA3-Center					TA3-South				
Depth below IS:	6"	12"	24"	36"	42"	6"	12"	24"	36"	42"
Date	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar
12/16/12	60.138	55.865	54.678	54.560	52.779	54.204	51.830	53.966	51.118	53.610
12/17/12	37.350	32.009	33.077	30.228	31.415	29.753	30.228	29.516	28.804	29.753
12/18/12	36.044	33.670	31.771	31.178	30.703	29.872	30.347	28.923	29.753	28.329
12/19/12	107.851	101.680	101.917	100.255	101.086	100.849	100.967	100.849	100.018	101.680
12/20/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
12/21/12	8.864	7.440	5.541	5.185	4.710	3.760	4.354	2.692	3.998	1.980
12/22/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
12/23/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
12/24/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
12/25/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
12/26/12	17.884	14.086	13.374	11.950	11.594	10.882	10.526	10.170	9.576	9.576
12/27/12	72.957	67.853	66.547	65.360	65.004	64.055	64.174	63.580	63.461	63.105
12/28/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
12/29/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
12/30/12	204.346	195.801	194.970	195.919	195.207	197.225	196.513	198.293	195.207	197.937
12/31/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	11.000	10.763
01/01/13	15.629	14.561	12.306	12.781	11.119	11.831	10.644	10.644	10.288	9.814
01/02/13	22.869	20.496	19.427	18.715	18.122	17.766	17.410	17.054	16.698	16.579
01/03/13	58.714	55.390	53.848	52.898	52.779	51.830	52.423	50.999	51.830	50.762
01/04/13	89.098	84.232	82.570	81.740	80.909	80.909	80.315	80.315	79.603	79.959
01/05/13	120.077	113.311	112.362	110.700	110.463	109.632	109.632	109.632	108.564	109.513
01/06/13	72.363	68.446	67.616	66.547	66.547	65.598	65.954	65.360	65.242	65.242
01/07/13	83.283	78.298	77.111	76.161	75.449	75.330	74.737	74.974	74.025	74.737
01/08/13	122.806	115.922	115.329	113.667	113.193	112.955	112.124	113.311	111.175	113.193

NAN (not-a-number) indicates an exceptional occurrence in datalogger function or processing occurred (an invalid measurement).

NR indicates no reading occurred.

EM indicates an equipment malfunction occurred. We are in the process of troubleshooting the problem.

NEG indicates negative soil tensiometer readings were recorded which is being investigated

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Table C.2
S&GW Test Facility Test Area 1
Daily Average Tensiometer Data (mbar)

	TA1-Center					TA1-South				
Depth below IS:	6"	12"	24"	36"	42"	6"	12"	24"	36"	42"
Date	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar
11/05/12	NAN	NAN	NAN	NAN	NAN	NAN	-219.021	NAN	-358.719	NAN
11/06/12	1.387	1.149	0.912	0.674	0.437	0.318	-224.006	NAN	-358.363	NAN
11/07/12	24.531	24.412	24.531	23.463	24.650	22.751	-263.767	NAN	-357.057	NAN
11/08/12	NAN	NAN	14.086	18.122	13.018	18.359	-262.699	NAN	-355.396	NAN
11/09/12	NAN	NAN	NAN	NAN	NAN	NAN	-262.105	NAN	-360.737	NAN
11/10/12	NAN	NAN	NAN	NAN	NAN	NAN	-261.156	-318.839	-359.312	NAN
11/11/12	NAN	NAN	NAN	NAN	NAN	NAN	-263.292	NAN	-364.179	NAN
11/12/12	2.099	2.573	1.505	2.217	1.030	1.624	-266.378	NAN	-365.722	NAN
11/13/12	29.397	27.854	28.329	28.092	27.498	28.448	-266.734	NAN	-367.621	NAN
11/14/12	25.955	26.549	25.955	25.837	26.074	25.125	-266.022	NAN	-367.977	NAN
11/15/12	31.059	29.160	30.703	28.804	30.347	28.804	-266.022	NAN	-367.977	NAN
11/16/12	55.984	56.221	55.628	55.865	55.628	55.628	-263.767	NAN	-367.265	NAN
11/17/12	NAN	NAN	NAN	NAN	NAN	NAN	-258.782	NAN	-366.434	NAN
11/18/12	28.923	25.599	28.804	25.243	28.448	25.599	-258.189	NAN	-368.452	NAN
11/19/12	13.137	12.543	12.781	12.069	12.425	11.713	-257.595	NAN	-368.570	NAN
11/20/12	1.861	-0.513	0.556	-0.156	-0.631	0.437	-259.019	NAN	-367.739	NAN
11/21/12	-18.435	-18.079	-18.553	-18.791	-18.672	-19.384	-262.936	NAN	-369.045	NAN
11/22/12	NAN	NAN	NAN	-3.836	-1.462	-4.429	-264.479	NAN	-368.452	NAN
11/23/12	NAN	NAN	NAN	NAN	NAN	NAN	-262.936	NAN	-367.502	NAN
11/24/12	NAN	NAN	NAN	NAN	NAN	NAN	-252.847	NAN	-367.739	-402.990
11/25/12	NAN	NAN	NAN	NAN	NAN	NAN	-251.779	NAN	-368.926	NAN
11/26/12	NAN	NAN	NAN	NAN	NAN	NAN	-250.711	NAN	-368.570	NAN
11/27/12	NAN	NAN	NAN	NAN	NAN	NAN	-252.373	NAN	-369.876	NAN
11/28/12	-11.788	-11.195	-12.500	-11.432	-13.212	-11.788	-254.509	NAN	-369.994	NAN
11/29/12	2.573	2.573	2.573	1.980	2.336	1.505	-254.984	NAN	-371.063	NAN
11/30/12	NAN	NAN	NAN	2.217	2.336	2.573	-259.138	NAN	-368.926	NAN
12/01/12	NAN	NAN	6.965	6.846	6.372	6.728	-262.936	-320.263	-365.010	NAN
12/02/12	NAN	NAN	NAN	NAN	NAN	NAN	-264.360	-319.907	-368.095	NAN
12/03/12	NAN	22.988	19.902	21.920	20.496	20.496	-266.022	-321.688	-367.977	NAN
12/04/12	NAN	NAN	NAN	NAN	NAN	NAN	-266.141	NAN	-367.383	NAN
12/05/12	NAN	NAN	-2.174	-5.379	-2.768	-5.379	-266.497	NAN	-366.434	NAN
12/06/12	-11.313	-11.669	-11.907	-12.025	-12.500	-12.263	-267.802	NAN	-367.146	NAN
12/07/12	9.457	7.321	8.033	8.033	6.728	8.864	-267.209	NAN	-372.131	NAN
12/08/12	32.483	34.026	32.246	33.552	32.246	32.839	-264.123	NAN	-372.487	NAN
12/09/12	56.221	57.052	56.221	56.696	56.577	56.221	-264.479	NAN	-372.606	NAN
12/10/12	43.403	42.216	42.097	42.928	41.029	43.640	-261.631	NAN	-372.250	NAN
12/11/12	53.373	54.085	52.898	53.729	52.661	53.373	-260.918	NAN	-370.588	NAN
12/12/12	195.089	193.902	195.445	195.089	195.563	195.089	-253.204	NAN	-366.078	NAN
12/13/12	191.409	189.866	191.528	190.460	191.647	190.222	-255.577	NAN	-362.992	NAN
12/14/12	86.131	85.894	84.826	86.725	84.113	87.555	-256.052	NAN	-361.211	NAN
12/15/12	30.347	31.771	29.279	31.652	28.685	31.415	-256.764	-313.142	-342.696	-423.642

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Table C.2 (continued)
S&GW Test Facility Test Area 1
Daily Average Tensiometer Data (mbar)

	TA1-Center					TA1-South				
Depth below IS:	6"	12"	24"	36"	42"	6"	12"	24"	36"	42"
Date	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar
12/16/12	51.355	52.661	51.474	51.948	51.948	51.118	-259.138	-316.584	-364.535	-424.355
12/17/12	27.973	29.635	27.261	29.516	27.024	29.041	-260.681	-318.602	-366.434	-423.761
12/18/12	29.397	27.854	28.685	27.736	28.092	27.854	-261.512	-320.619	-367.621	-424.948
12/19/12	100.730	101.205	100.374	101.917	100.493	101.561	-262.224	-322.281	-368.214	-424.355
12/20/12	NAN	NAN	NAN	NAN	NAN	NAN	-259.850	-321.332	-365.247	-425.067
12/21/12	3.523	1.505	2.811	1.505	1.980	1.624	-262.580	-324.418	-365.840	-420.556
12/22/12	NAN	NAN	NAN	NAN	NAN	NAN	-253.441	NAN	-363.941	-437.054
12/23/12	NAN	NAN	NAN	NAN	NAN	NAN	-254.628	NAN	-358.600	NAN
12/24/12	NAN	NAN	NAN	NAN	NAN	NAN	-257.476	NAN	-360.499	NAN
12/25/12	NAN	NAN	NAN	NAN	NAN	NAN	-258.901	NAN	-362.636	NAN
12/26/12	8.745	9.220	8.152	8.627	7.796	8.152	-259.613	NAN	-364.891	NAN
12/27/12	63.105	62.749	62.393	62.512	62.156	62.393	-260.325	NAN	-366.078	NAN
12/28/12	NAN	NAN	NAN	NAN	NAN	8.152	-254.272	NAN	-363.110	NAN
12/29/12	NAN	NAN	NAN	NAN	NAN	NAN	-256.764	NAN	-363.704	NAN
12/30/12	197.106	196.513	197.937	197.700	197.937	196.632	-250.830	NAN	-364.535	NAN
12/31/12	10.407	10.526	9.932	10.170	9.457	9.814	-247.981	NAN	-358.125	NAN
01/01/13	10.170	9.101	9.932	8.508	9.457	8.271	-254.628	NAN	-360.499	NAN
01/02/13	16.341	16.104	15.867	15.748	15.511	15.392	-258.901	NAN	-362.517	NAN
01/03/13	51.592	50.406	50.999	50.406	50.524	50.643	-261.393	NAN	-363.941	NAN
01/04/13	79.485	79.485	79.128	79.128	79.010	78.891	-262.343	NAN	-364.772	NAN
01/05/13	108.445	109.157	107.970	109.038	108.089	108.801	-258.189	NAN	-363.348	NAN
01/06/13	65.242	65.004	64.648	65.004	64.530	65.004	-261.631	NAN	-367.265	NAN
01/07/13	73.906	74.262	73.550	74.025	73.669	73.669	-264.360	NAN	-368.214	NAN
01/08/13	111.056	112.718	110.937	112.362	111.293	111.887	-261.987	NAN	-366.671	NAN

NAN (not-a-number) indicates an exceptional occurrence in datalogger function or processing occurred (an invalid measurement).
NR indicates no reading occurred.
EM indicates an equipment malfunction occurred. We are in the process of troubleshooting the problem.
NEG indicates negative soil tensiometer readings were recorded which is being investigated

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Figure C.1
TA1 S&GW Test Facility
Soil Tension (mbar), Rainfall (inches) and Dose
15 Minute Interval

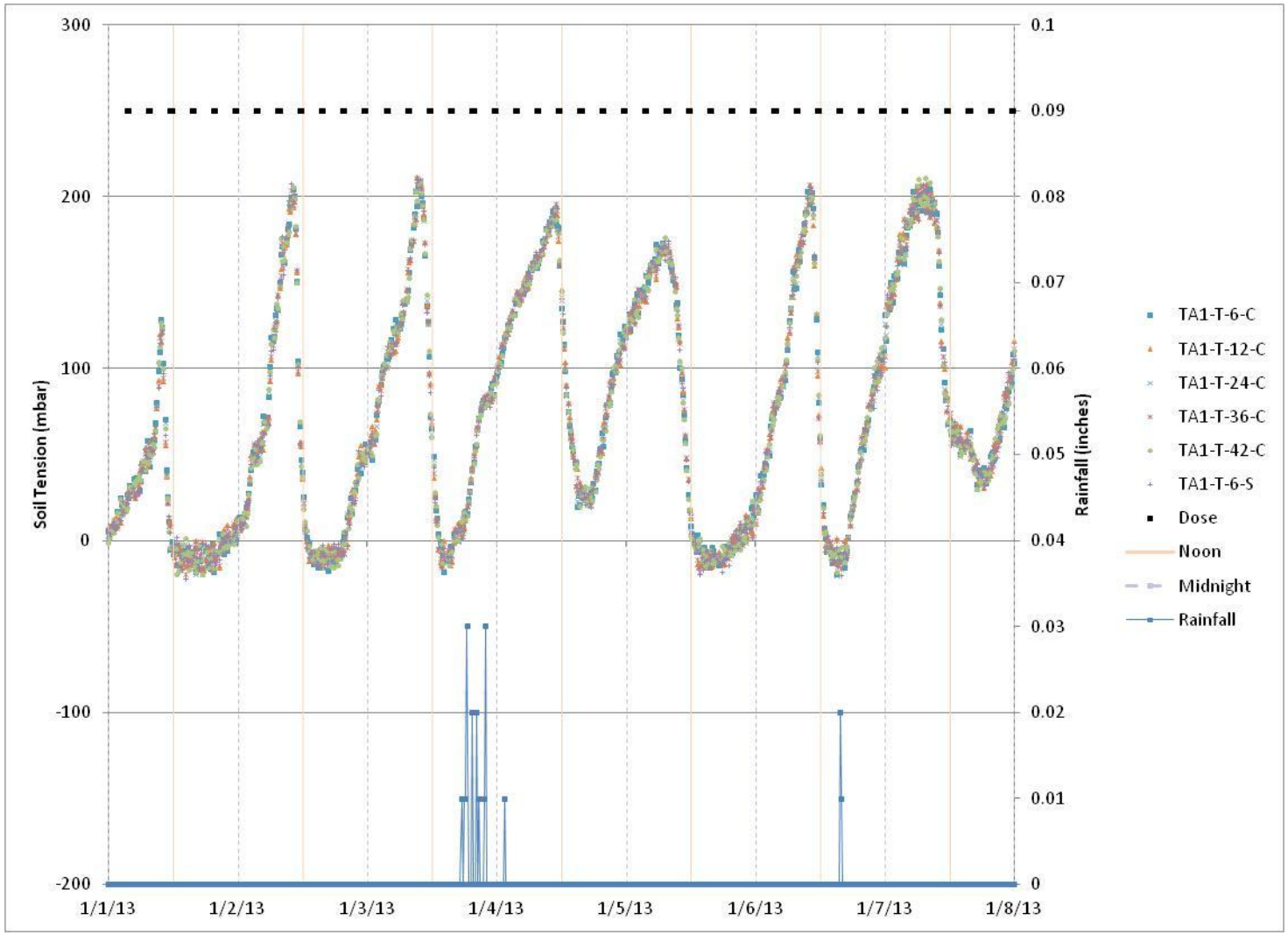

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Figure C.2
TA1 S&GW Test Facility
Soil Tension (mbar), Temperature (F) and Dose
15 Minute Interval

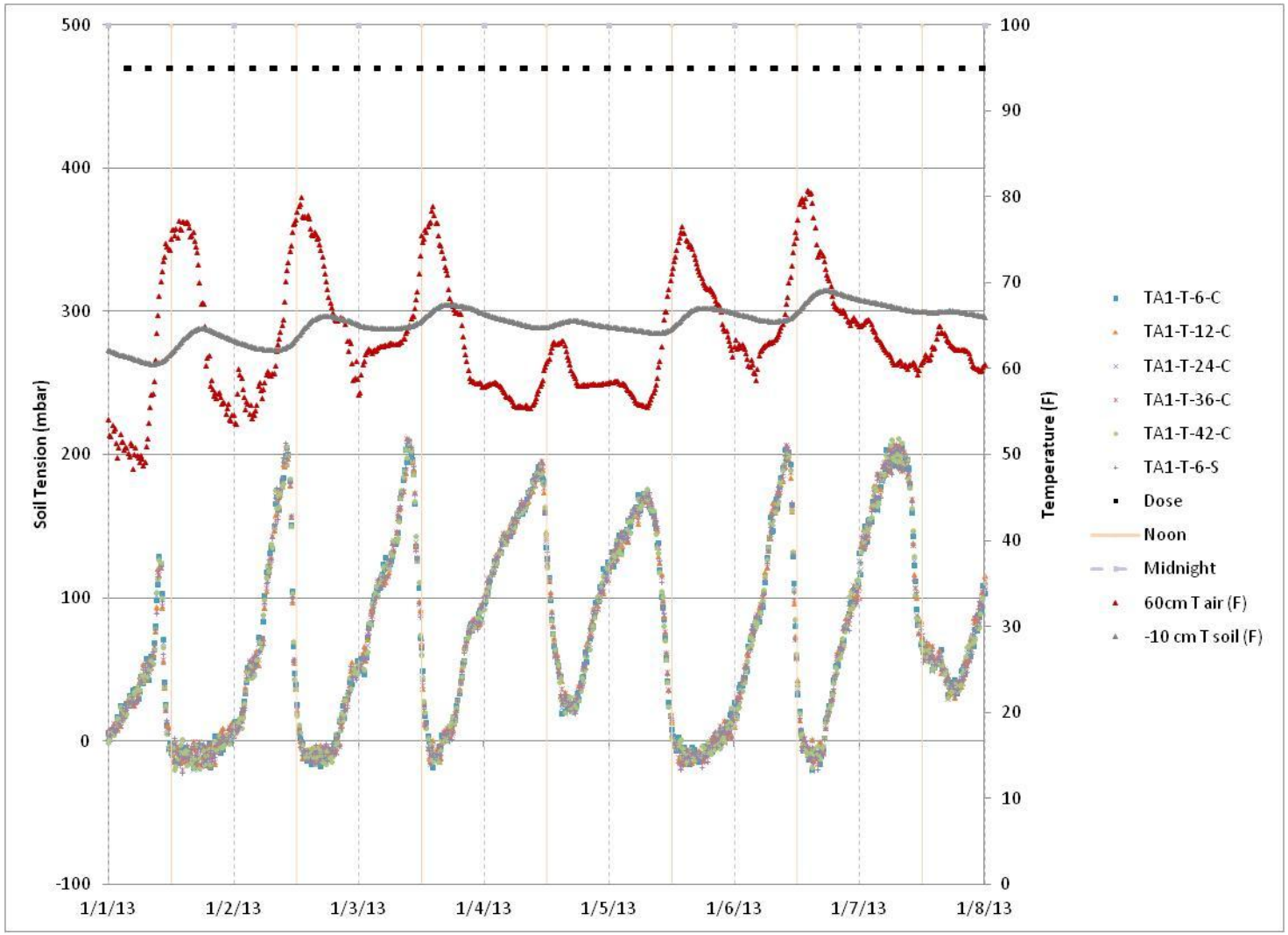

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Figure C.3
TA3 S&GW Test Facility
Soil Tension (mbar), Rainfall (inches) and Dose
15 Minute Interval

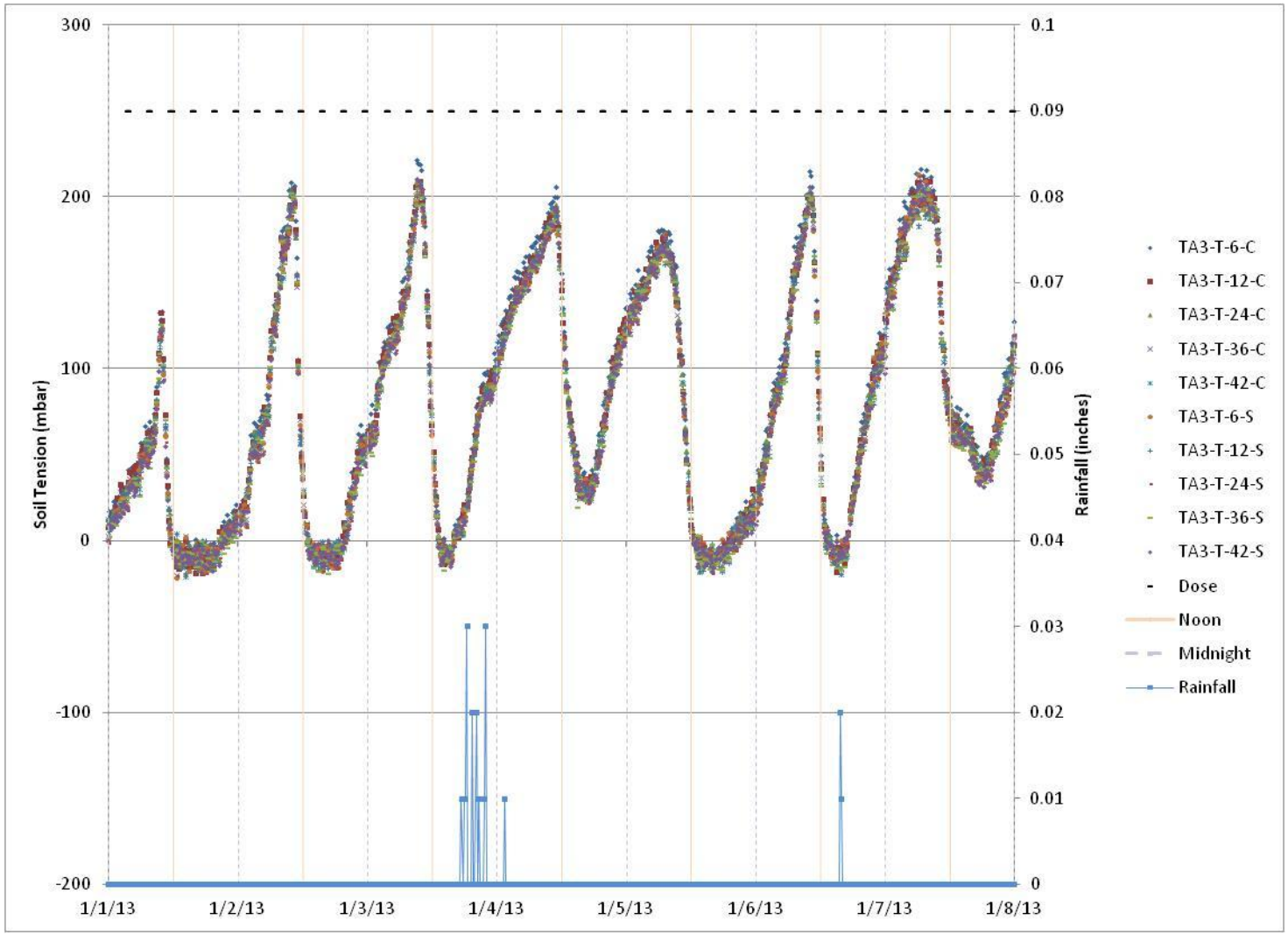

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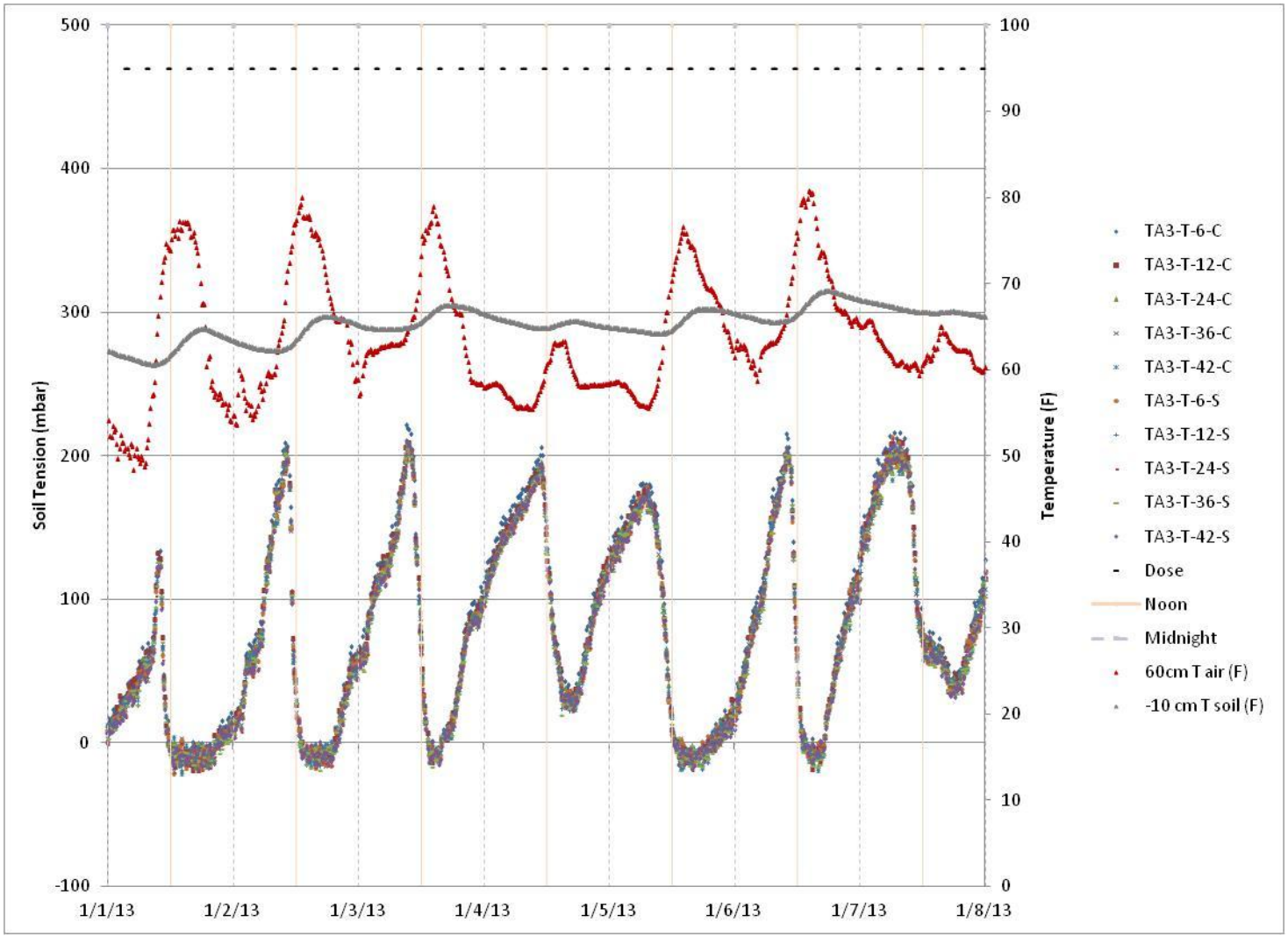
Figure C.4
TA3 S&GW Test Facility
Soil Tension (mbar), Temperature (F) and Dose
15 Minute Interval



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Appendix D: S&GW Test Facility Soil Moisture Data

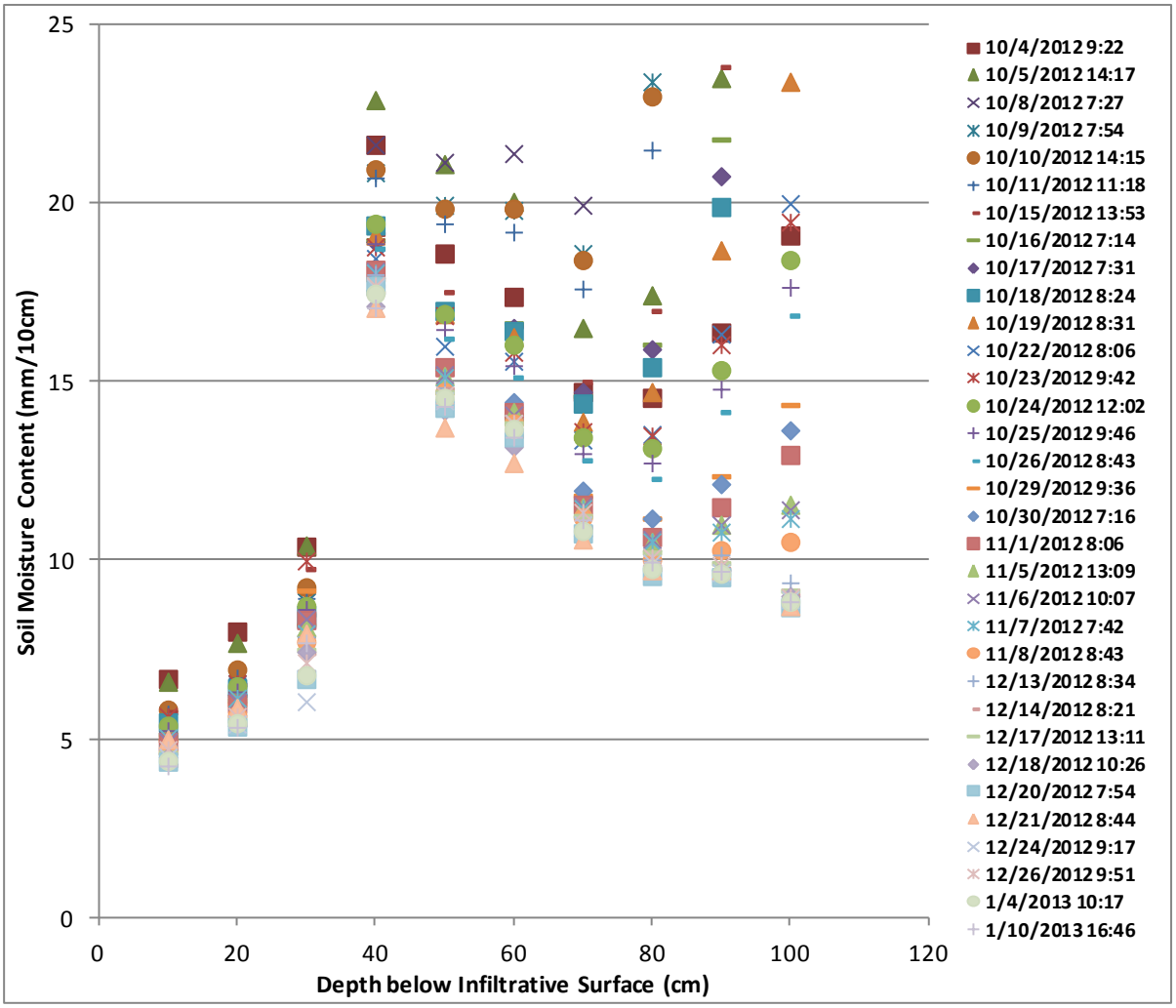

Figure D.1

Soil Moisture Test Area 1 North

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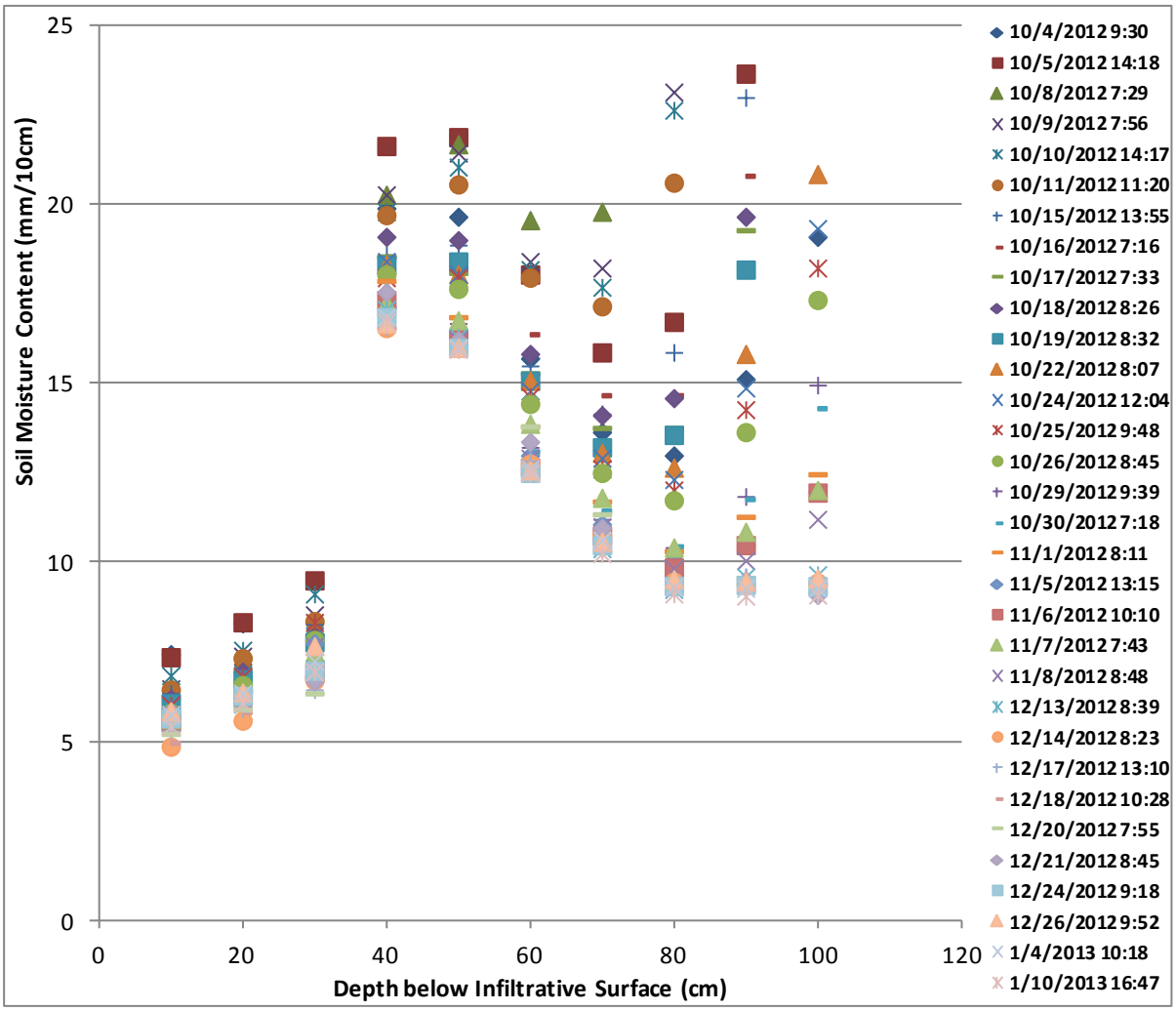

Figure D.2
Soil Moisture Test Area 1 Center

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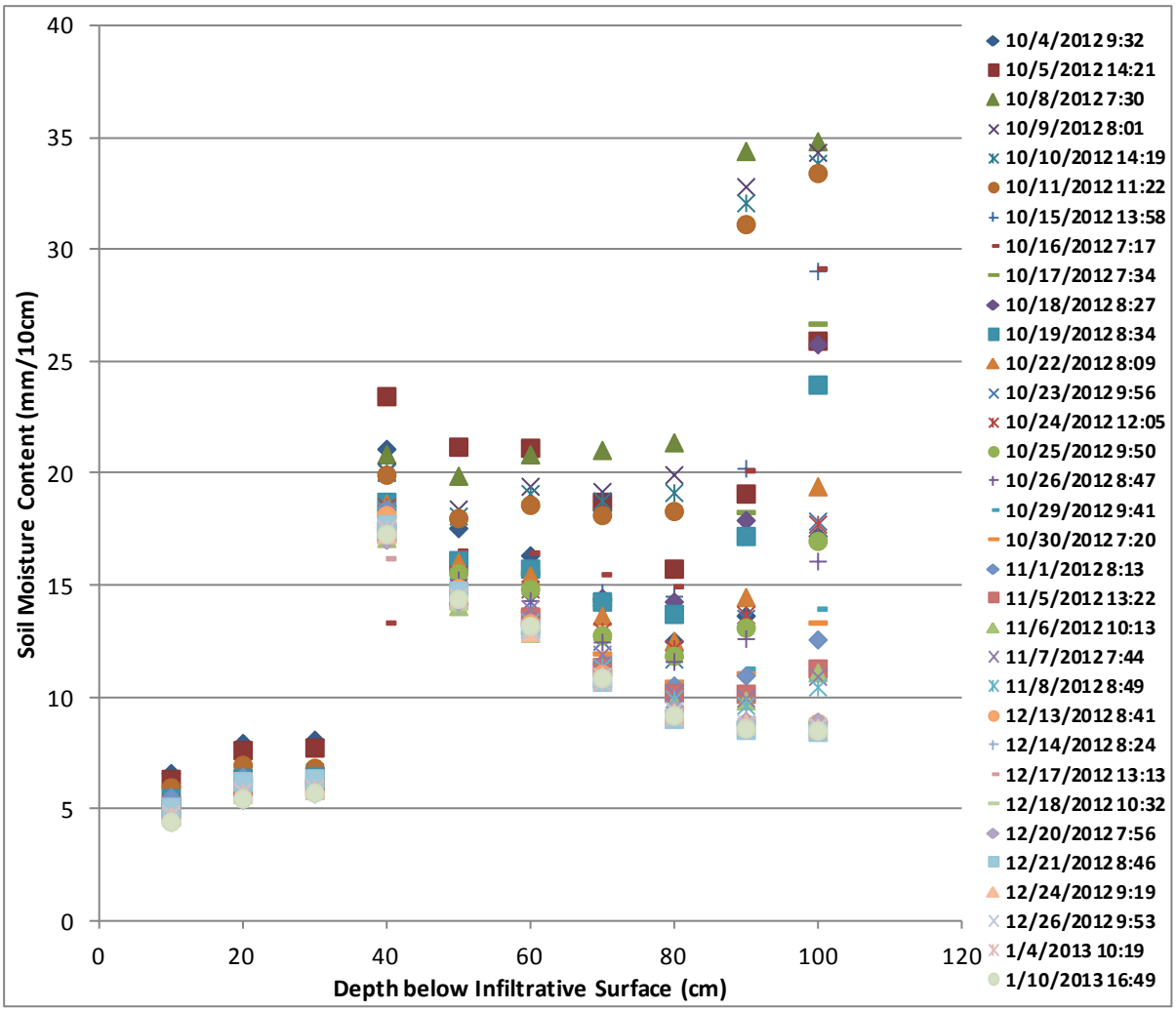

Figure D.3
Soil Moisture Test Area 1 South

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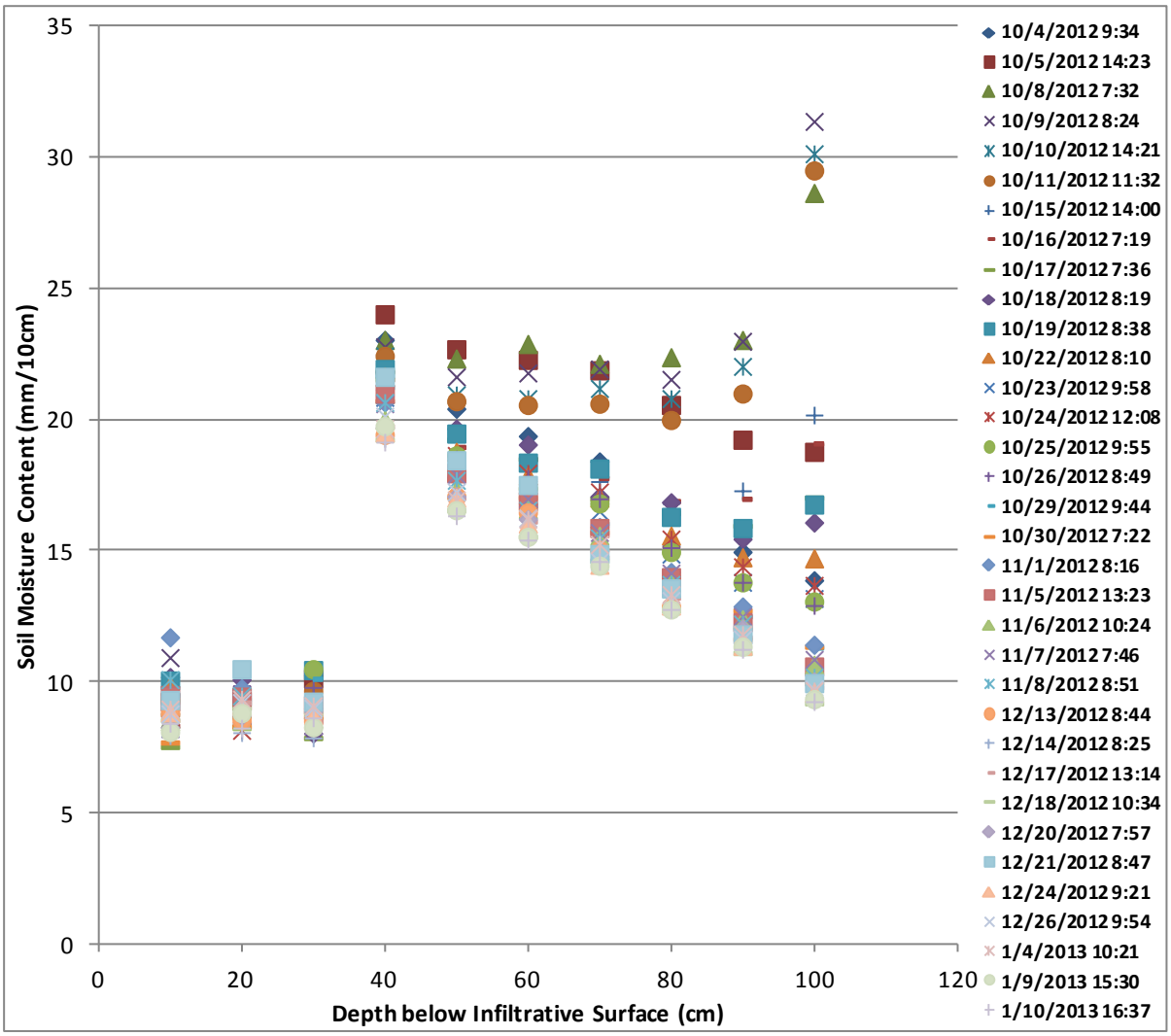

Figure D.4
Soil Moisture Test Area 3 North

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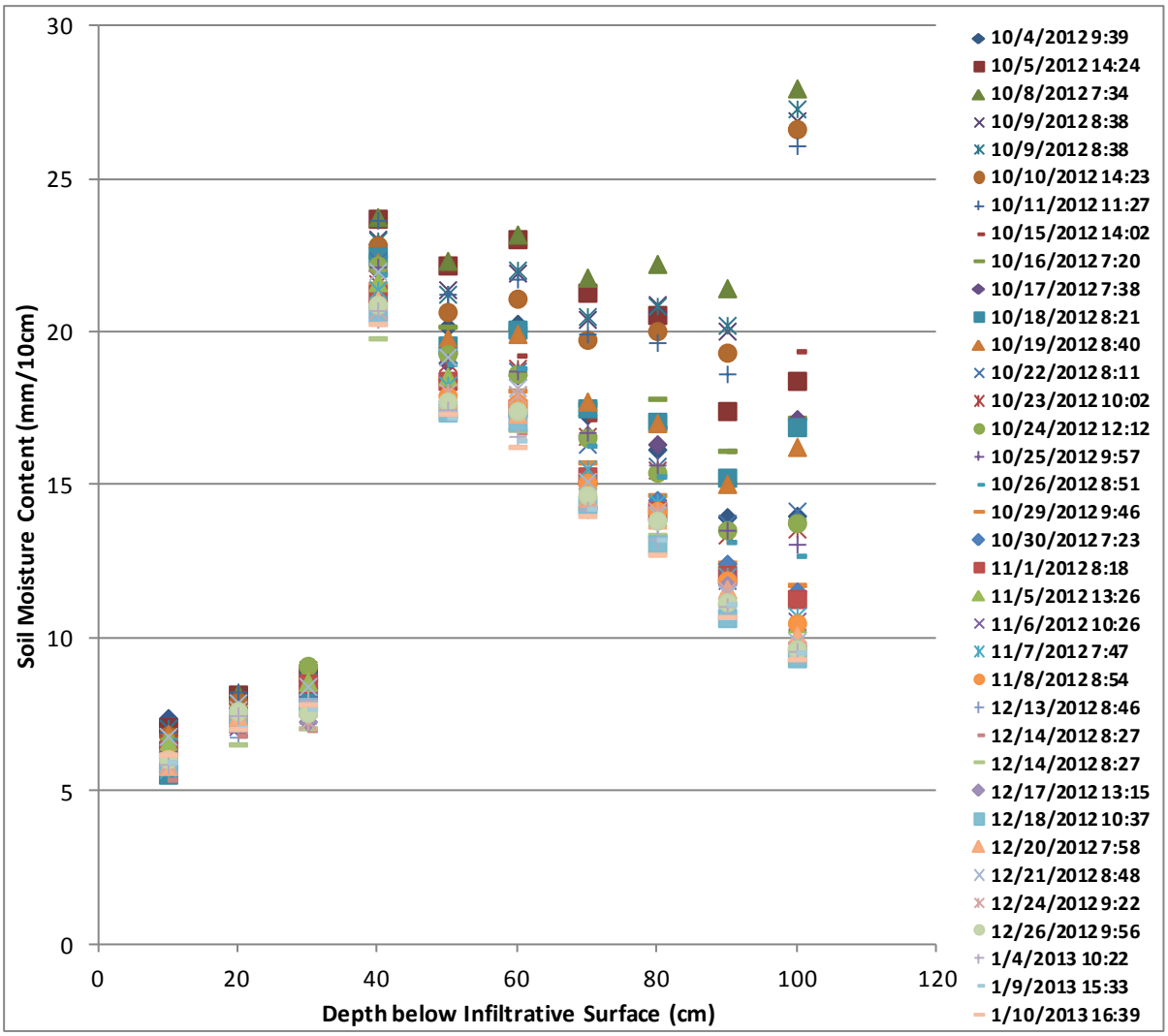

Figure D.5
Soil Moisture Test Area 3 Center

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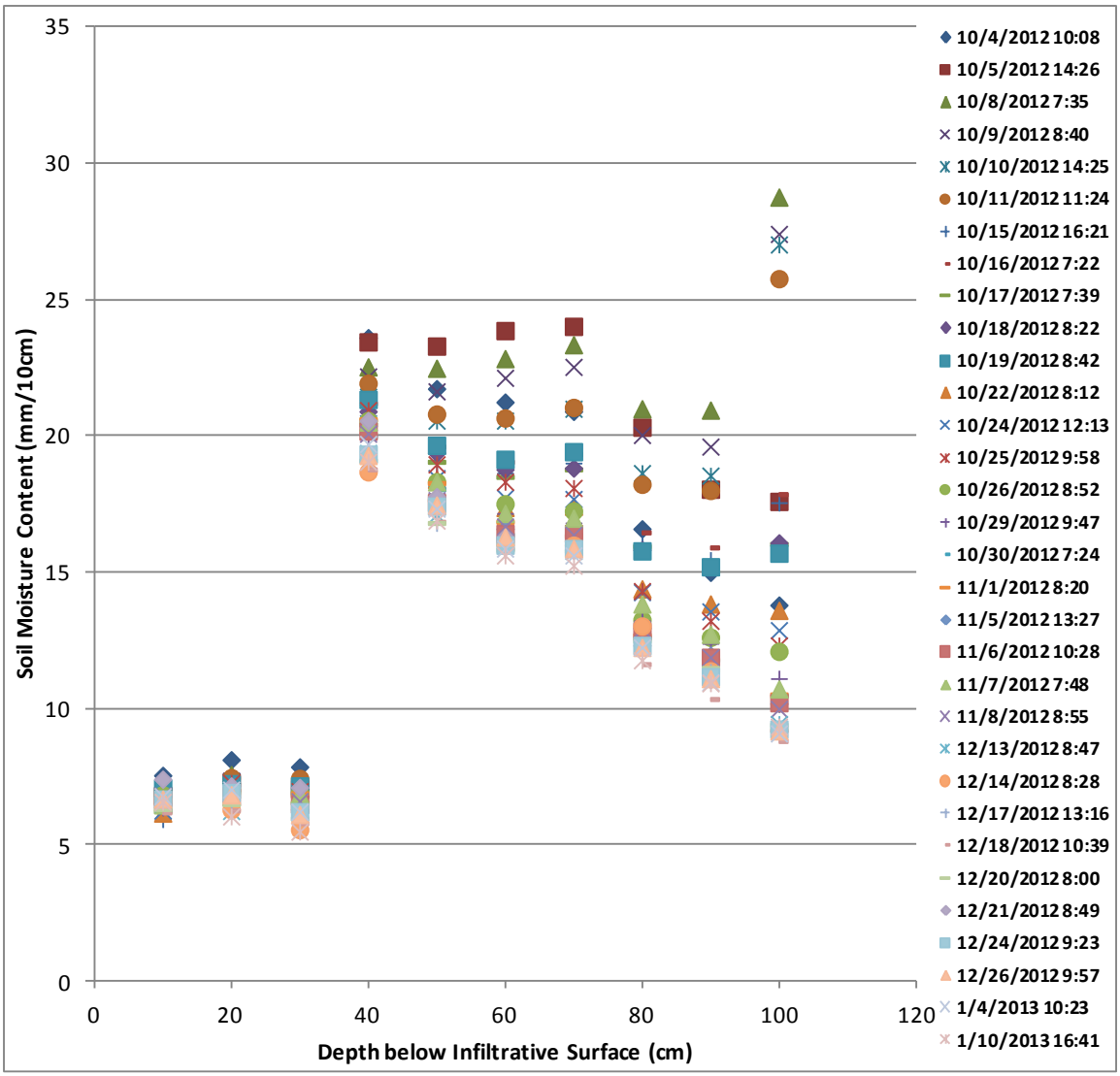

Figure D.6
Soil Moisture Test Area 3 South

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Appendix E: Laboratory Report

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SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 24, 2013
Work Order: 1214066

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**PNRS II STE-Tank 1**						
Matrix		**Wastewater**						
SAL Sample Number		**1214066-01**						
Date/Time Collected		**01/08/13 15:10**						
Collected by		**Client**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		6.66						
Temperature		22.5 °C						
Conductivity		1122 umhos						
Dissolved Oxygen		0.1 mg/L						
Inorganics								
Ammonia as N	mg/L	56	EPA 350.1	4.0	0.95		01/09/13 13:56	100
Ammonium as NH4	mg/L	72	EPA 350.1	0.05	0.01	01/15/13 15:44	01/15/13 15:45	1
Carbonaceous BOD	mg/L	130	SM 5210B	2	2	01/09/13 09:16	01/14/13 16:37	1
Chloride	mg/L	76	EPA 300.0	0.20	0.050		01/21/13 17:05	1
Nitrate (as N)	mg/L	0.06	EPA 300.0	0.04	0.01		01/10/13 14:00	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/10/13 14:00	1
Phosphorous - Total as P	mg/L	15	SM 4500P-E	1.0	0.26	01/09/13 13:27	01/15/13 09:22	25.71
Total Alkalinity	mg/L	340	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	65	EPA 351.2	0.20	0.05	01/11/13 08:49	01/14/13 15:33	20
Total Solids	mg/L	600	SM 2540B	10	10	01/10/13 10:38	01/11/13 15:52	1
Total Suspended Solids	mg/L	28	SM 2540D	1	1	01/09/13 11:27	01/10/13 09:11	1
Nitrate+Nitrite (N)	mg/L	0.06 I	EPA 300.0	0.08	0.02		01/10/13 14:00	1
Microbiology								
Fecal Coliforms	CFU/100 ml	32,000	SM 9222D	1	1	01/08/13 17:04	01/09/13 15:17	1

Sample Description		**STE Pump Tank**						
Matrix		**Wastewater**						
SAL Sample Number		**1214066-02**						
Date/Time Collected		**01/08/13 14:10**						
Collected by		**Client**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		7.07						
Temperature		21.4 °C						
Conductivity		1094 umhos						
Dissolved Oxygen		0.17 mg/L						
Inorganics								
Ammonia as N	mg/L	51	EPA 350.1	4.0	0.95		01/09/13 13:57	100
Ammonium as NH4	mg/L	65	EPA 350.1	0.05	0.01	01/15/13 15:44	01/15/13 15:45	1
Carbonaceous BOD	mg/L	46	SM 5210B	2	2	01/09/13 09:16	01/14/13 16:37	1
Chloride	mg/L	66	EPA 300.0	0.20	0.050		01/21/13 17:05	1

Florida Certification Number: E84129
NELAP Accredited

Francis I. Daniels, Laboratory Director
Leslie C. Boardman, Q.A. Manager

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 24, 2013
Work Order: 1214066

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**STE Pump Tank**						
Matrix		**Wastewater**						
SAL Sample Number		**1214066-02**						
Date/Time Collected		**01/08/13 14:10**						
Collected by		**Client**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		7.07						
Temperature		21.4 °C						
Conductivity		1094 umhos						
Dissolved Oxygen		0.17 mg/L						
Fluoride	mg/L	0.24	EPA 300.0	0.040	0.010		01/10/13 14:00	1
Nitrate (as N)	mg/L	0.14	EPA 300.0	0.04	0.01		01/10/13 14:00	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/10/13 14:00	1
Orthophosphate as P	mg/L	4.1	EPA 300.0	0.040	0.010		01/10/13 14:00	1
Phosphorous - Total as P	mg/L	14	SM 4500P-E	1.0	0.26	01/09/13 13:27	01/15/13 09:22	25.71
Sulfate	mg/L	29	EPA 300.0	0.60	0.20		01/10/13 14:00	1
Total Alkalinity	mg/L	370	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	57	EPA 351.2	0.20	0.05	01/11/13 08:49	01/14/13 15:34	20
Total Solids	mg/L	560	SM 2540B	10	10	01/10/13 10:38	01/11/13 15:52	1
Total Suspended Solids	mg/L	16	SM 2540D	1	1	01/09/13 11:27	01/10/13 09:11	1
Nitrate+Nitrite (N)	mg/L	0.14	EPA 300.0	0.08	0.02		01/10/13 14:00	1
Metals								
Boron	mg/L	0.079 I	EPA 200.7	0.10	0.050	01/09/13 08:50	01/10/13 15:44	1
Calcium	mg/L	56	EPA 200.7	0.50	0.042	01/09/13 08:50	01/10/13 15:44	1
Iron	mg/L	0.30	EPA 200.7	0.10	0.020	01/09/13 08:50	01/10/13 15:44	1
Magnesium	mg/L	18	EPA 200.7	0.50	0.020	01/09/13 08:50	01/10/13 15:44	1
Manganese	mg/L	0.040	EPA 200.7	0.010	0.0010	01/09/13 08:50	01/10/13 15:44	1
Potassium	mg/L	28	EPA 200.7	0.050	0.010	01/09/13 08:50	01/10/13 15:44	1
Sodium	mg/L	53	EPA 200.7	0.50	0.13	01/09/13 08:50	01/10/13 15:44	1
Microbiology								
Fecal Coliforms	CFU/100 ml	74,000	SM 9222D	1	1	01/08/13 17:04	01/09/13 15:17	1
Sample Description		**STE Pump Tank DUP**						
Matrix		**Wastewater**						
SAL Sample Number		**1214066-03**						
Date/Time Collected		**01/08/13 14:15**						
Collected by		**Client**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		7.07						
Temperature		21.4 °C						
Conductivity		1094 umhos						

SOUTHERN ANALYTICAL LABORATORIES, INC.
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10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 24, 2013
Work Order: 1214066

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**STE Pump Tank DUP**						
Matrix		**Wastewater**						
SAL Sample Number		**1214066-03**						
Date/Time Collected		**01/08/13 14:15**						
Collected by		**Client**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		7.07						
Temperature		21.4 °C						
Conductivity		1094 umhos						
Dissolved Oxygen		0.17 mg/L						
Inorganics								
Ammonia as N	mg/L	54	EPA 350.1	4.0	0.95		01/09/13 13:59	100
Ammonium as NH4	mg/L	69	EPA 350.1	0.05	0.01	01/15/13 15:44	01/15/13 15:45	1
Carbonaceous BOD	mg/L	48	SM 5210B	2	2	01/09/13 09:16	01/14/13 16:37	1
Chloride	mg/L	67	EPA 300.0	0.20	0.050		01/14/13 17:20	1
Fluoride	mg/L	0.27	EPA 300.0	0.040	0.010		01/09/13 10:00	1
Nitrate+Nitrite (N)	mg/L	0.16	EPA 353.2	0.04	0.01		01/11/13 14:54	1
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 11:23	1
Orthophosphate as P	mg/L	4.0	EPA 300.0	0.040	0.010		01/09/13 10:00	1
Phosphorous - Total as P	mg/L	14	SM 4500P-E	1.0	0.26	01/09/13 13:27	01/15/13 09:23	25.71
Sulfate	mg/L	29	EPA 300.0	0.60	0.20		01/09/13 10:00	1
Total Alkalinity	mg/L	370	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	55	EPA 351.2	0.20	0.05	01/11/13 08:49	01/14/13 15:35	20
Total Solids	mg/L	560	SM 2540B	10	10	01/10/13 10:38	01/11/13 15:52	1
Total Suspended Solids	mg/L	12	SM 2540D	1	1	01/09/13 11:27	01/10/13 09:11	1
Nitrate (as N)	mg/L	0.16	EPA 353.2	0.08	0.02		01/11/13 14:54	1
Metals								
Boron	mg/L	0.081 I	EPA 200.7	0.10	0.050	01/09/13 08:50	01/10/13 15:47	1
Calcium	mg/L	56	EPA 200.7	0.50	0.042	01/09/13 08:50	01/10/13 15:47	1
Iron	mg/L	0.27	EPA 200.7	0.10	0.020	01/09/13 08:50	01/10/13 15:47	1
Magnesium	mg/L	17	EPA 200.7	0.50	0.020	01/09/13 08:50	01/10/13 15:47	1
Manganese	mg/L	0.041	EPA 200.7	0.010	0.0010	01/09/13 08:50	01/10/13 15:47	1
Potassium	mg/L	27	EPA 200.7	0.050	0.010	01/09/13 08:50	01/10/13 15:47	1
Sodium	mg/L	54	EPA 200.7	0.50	0.13	01/09/13 08:50	01/10/13 15:47	1
Microbiology								
Fecal Coliforms	CFU/100 ml	50,000	SM 9222D	1	1	01/08/13 17:04	01/09/13 15:17	1

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Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**ATU Clarifier**						
Matrix		**Wastewater**						
SAL Sample Number		**1214066-04**						
Date/Time Collected		**01/08/13 13:40**						
Collected by		**Client**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		7.50						
Temperature		20.8 °C						
Conductivity		897 umhos						
Dissolved Oxygen		0.81 mg/L						
Inorganics								
Ammonia as N	mg/L	22	EPA 350.1	4.0	0.95		01/09/13 14:01	100
Ammonium as NH4	mg/L	28	EPA 350.1	0.05	0.01	01/15/13 15:44	01/15/13 15:45	1
Carbonaceous BOD	mg/L	13	SM 5210B	2	2	01/09/13 09:16	01/14/13 16:37	1
Chloride	mg/L	63	EPA 300.0	0.20	0.050		01/21/13 17:05	1
Nitrate+Nitrite (N)	mg/L	5.7	EPA 353.2	0.79	0.20		01/11/13 13:51	19.79
Nitrite (as N)	mg/L	0.58	SM 4500NO2-B	0.40	0.10		01/10/13 11:23	10
Total Kjeldahl Nitrogen	mg/L	22	EPA 351.2	0.20	0.05	01/11/13 08:49	01/14/13 15:36	41.67
Total Solids	mg/L	510	SM 2540B	10	10	01/10/13 10:38	01/11/13 15:52	1
Total Suspended Solids	mg/L	4	SM 2540D	1	1	01/09/13 11:27	01/10/13 09:11	1
Nitrate (as N)	mg/L	5.1	EPA 353.2	1.2	0.30		01/11/13 13:51	20

Sample Description		**ATU Eff Pump Tank**						
Matrix		**Wastewater**						
SAL Sample Number		**1214066-05**						
Date/Time Collected		**01/08/13 13:35**						
Collected by		**Client**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		7.26						
Temperature		20.7 °C						
Conductivity		863 umhos						
Dissolved Oxygen		1.07 mg/L						
Inorganics								
Ammonia as N	mg/L	19	EPA 350.1	4.0	0.95		01/09/13 14:02	100
Ammonium as NH4	mg/L	24	EPA 350.1	0.05	0.01	01/15/13 15:44	01/15/13 15:45	1
Carbonaceous BOD	mg/L	5	SM 5210B	2	2	01/09/13 09:16	01/14/13 16:37	1
Chloride	mg/L	59	EPA 300.0	0.20	0.050		01/14/13 17:20	1
Nitrate (as N)	mg/L	4.6	EPA 300.0	0.04	0.01		01/10/13 02:36	1
Nitrite (as N)	mg/L	0.39	EPA 300.0	0.04	0.01		01/10/13 02:36	1
Phosphorous - Total as P	mg/L	9.9	SM 4500P-E	0.20	0.050	01/09/13 13:27	01/15/13 09:09	5

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Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**ATU Eff Pump Tank**						
Matrix		**Wastewater**						
SAL Sample Number		**1214066-05**						
Date/Time Collected		**01/08/13 13:35**						
Collected by		**Client**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		7.26						
Temperature		20.7 °C						
Conductivity		863 umhos						
Dissolved Oxygen		1.07 mg/L						
Sulfate	mg/L	54	EPA 300.0	0.60	0.20		01/10/13 02:36	1
Total Alkalinity	mg/L	220	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	24	EPA 351.2	0.20	0.05	01/11/13 08:51	01/14/13 14:45	9.62
Total Solids	mg/L	500	SM 2540B	10	10	01/10/13 10:38	01/11/13 15:52	1
Total Suspended Solids	mg/L	1 U	SM 2540D	1	1	01/09/13 11:27	01/10/13 09:11	1
Nitrate+Nitrite (N)	mg/L	5.0	EPA 300.0	0.08	0.02		01/10/13 02:36	1
Microbiology								
Fecal Coliforms	CFU/100 ml	610	SM 9222D	1	1	01/08/13 17:04	01/09/13 15:17	1
Sample Description		**ATU Eff Pump Tank DUP**						
Matrix		**Wastewater**						
SAL Sample Number		**1214066-06**						
Date/Time Collected		**01/08/13 13:40**						
Collected by		**Client**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		7.26						
Temperature		20.7 °C						
Conductivity		863 umhos						
Dissolved Oxygen		1.07 mg/L						
Inorganics								
Ammonia as N	mg/L	18	EPA 350.1	4.0	0.95		01/09/13 14:04	100
Ammonium as NH4	mg/L	23	EPA 350.1	0.05	0.01	01/15/13 15:44	01/15/13 15:45	1
Carbonaceous BOD	mg/L	5	SM 5210B	2	2	01/09/13 09:16	01/14/13 16:37	1
Chloride	mg/L	59	EPA 300.0	0.20	0.050		01/14/13 17:20	1
Nitrate+Nitrite (N)	mg/L	5.2	EPA 353.2	0.79	0.20		01/11/13 13:53	19.79
Nitrite (as N)	mg/L	0.26	SM 4500NO2-B	0.20	0.05		01/10/13 11:23	5
Phosphorous - Total as P	mg/L	11	SM 4500P-E	1.0	0.26	01/09/13 13:27	01/15/13 09:24	25.71
Sulfate	mg/L	48	EPA 300.0	0.60	0.20		01/14/13 17:20	1
Total Alkalinity	mg/L	230	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	23	EPA 351.2	0.20	0.05	01/11/13 08:51	01/14/13 14:46	9.62

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Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**ATU Eff Pump Tank DUP**						
Matrix		**Wastewater**						
SAL Sample Number		**1214066-06**						
Date/Time Collected		**01/08/13 13:40**						
Collected by		**Client**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		7.26						
Temperature		20.7 °C						
Conductivity		863 umhos						
Dissolved Oxygen		1.07 mg/L						
Total Solids	mg/L	500	SM 2540B	10	10	01/10/13 10:38	01/11/13 15:52	1
Total Suspended Solids	mg/L	1	SM 2540D	1	1	01/09/13 11:27	01/10/13 09:11	1
Nitrate (as N)	mg/L	5.0	EPA 353.2	0.99	0.25		01/11/13 13:53	20
Microbiology								
Fecal Coliforms	CFU/100 ml	730	SM 9222D	1	1	01/08/13 17:04	01/09/13 15:17	1

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30910 - BOD										
Blank (BA30910-BLK1)					Prepared: 01/09/13 Analyzed: 01/14/13					
Carbonaceous BOD	2 U	2	2	mg/L						
Blank (BA30910-BLK2)					Prepared: 01/09/13 Analyzed: 01/14/13					
Carbonaceous BOD	2 U	2	2	mg/L						
LCS (BA30910-BS1)					Prepared: 01/09/13 Analyzed: 01/14/13					
Carbonaceous BOD	201	2	2	mg/L	200		100	85-115		
LCS (BA30910-BS2)					Prepared: 01/09/13 Analyzed: 01/14/13					
Carbonaceous BOD	190	2	2	mg/L	200		95	85-115		
LCS Dup (BA30910-BSD1)					Prepared: 01/09/13 Analyzed: 01/14/13					
Carbonaceous BOD	207	2	2	mg/L	200		104	85-115	3	200
LCS Dup (BA30910-BSD2)					Prepared: 01/09/13 Analyzed: 01/14/13					
Carbonaceous BOD	191	2	2	mg/L	200		95	85-115	0.5	200
Duplicate (BA30910-DUP1)		**Source: 1300194-01**			Prepared: 01/09/13 Analyzed: 01/14/13					
Carbonaceous BOD	130	2	2	mg/L		130			0.4	25
Duplicate (BA30910-DUP2)		**Source: 1300285-01**			Prepared: 01/09/13 Analyzed: 01/14/13					
Carbonaceous BOD	230	2	2	mg/L		220			3	25
Batch BA30917 - Ammonia by SEAL										
Blank (BA30917-BLK1)					Prepared & Analyzed: 01/09/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30917 - Ammonia by SEAL										
LCS (BA30917-BS1)					Prepared & Analyzed: 01/09/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50		102	90-110		
Matrix Spike (BA30917-MS1)		**Source: 1214067-04**			Prepared & Analyzed: 01/09/13					
Ammonia as N	0.54	0.040	0.009	mg/L	0.50	0.013	106	90-110		
Matrix Spike (BA30917-MS2)		**Source: 1214072-06**			Prepared & Analyzed: 01/09/13					
Ammonia as N	0.55	0.040	0.009	mg/L	0.50	ND	110	90-110		
Matrix Spike Dup (BA30917-MSD1)		**Source: 1214067-04**			Prepared & Analyzed: 01/09/13					
Ammonia as N	0.55	0.040	0.009	mg/L	0.50	0.013	107	90-110	1	10
Matrix Spike Dup (BA30917-MSD2)		**Source: 1214072-06**			Prepared & Analyzed: 01/09/13					
Ammonia as N	0.54	0.040	0.009	mg/L	0.50	ND	108	90-110	1	10
Batch BA30919 - Ion Chromatography 300.0 Prep										
Blank (BA30919-BLK1)					Prepared & Analyzed: 01/10/13					
Sulfate	0.20 U	0.60	0.20	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BA30919-BS1)					Prepared & Analyzed: 01/10/13					
Nitrate (as N)	1.70	0.04	0.01	mg/L	1.7		100	85-115		
Sulfate	8.93	0.60	0.20	mg/L	9.0		99	85-115		
Nitrite (as N)	1.43	0.04	0.01	mg/L	1.4		102	85-115		
LCS Dup (BA30919-BSD1)					Prepared & Analyzed: 01/10/13					
Nitrite (as N)	1.33	0.04	0.01	mg/L	1.4		95	85-115	7	200
Nitrate (as N)	1.67	0.04	0.01	mg/L	1.7		98	85-115	2	200
Sulfate	8.89	0.60	0.20	mg/L	9.0		99	85-115	0.4	200

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30919 - Ion Chromatography 300.0 Prep										
Matrix Spike (BA30919-MS1)		**Source: 1300019-03**			Prepared & Analyzed: 01/10/13					
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7	0.0371	97	85-115		
Nitrite (as N)	1.50	0.04	0.01	mg/L	1.4	ND	107	85-115		
Sulfate	9.53	0.60	0.20	mg/L	9.0	0.903	96	85-115		
Matrix Spike (BA30919-MS2)		**Source: 1300216-01**			Prepared & Analyzed: 01/10/13					
Nitrite (as N)	1.38	0.04	0.01	mg/L	1.4	ND	99	85-115		
Sulfate	21.8	0.60	0.20	mg/L	9.0	12.3	106	85-115		
Nitrate (as N)	1.81	0.04	0.01	mg/L	1.7	0.0354	104	85-115		
Batch BA30924 - TSS prep										
Blank (BA30924-BLK1)					Prepared: 01/09/13 Analyzed: 01/10/13					
Total Suspended Solids	1 U	1	1	mg/L						
LCS (BA30924-BS1)					Prepared: 01/09/13 Analyzed: 01/10/13					
Total Suspended Solids	51.2	1	1	mg/L	50		102	85-115		
Duplicate (BA30924-DUP1)		**Source: 1214066-01**			Prepared: 01/09/13 Analyzed: 01/10/13					
Total Suspended Solids	26.0	1	1	mg/L		28.0			7	30
Duplicate (BA30924-DUP2)		**Source: 1214066-02**			Prepared: 01/09/13 Analyzed: 01/10/13					
Total Suspended Solids	14.0	1	1	mg/L		16.0			13	30
Batch BA30934 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BA30934-BLK1)					Prepared: 01/09/13 Analyzed: 01/15/13					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30934 - Digestion for TP by EPA 365.2/SM4500PE										
LCS (BA30934-BS1)					Prepared: 01/09/13 Analyzed: 01/15/13					
Phosphorous - Total as P	0.756	0.040	0.010	mg/L	0.80		94	90-110		
Matrix Spike (BA30934-MS1)		**Source: 1300224-01**			Prepared: 01/09/13 Analyzed: 01/15/13					
Phosphorous - Total as P	1.44	0.040	0.010	mg/L	1.0	0.456	99	90-110		
Matrix Spike (BA30934-MS2)		**Source: 1300301-10**			Prepared: 01/09/13 Analyzed: 01/15/13					
Phosphorous - Total as P	1.11	0.040	0.010	mg/L	1.0	0.0882	103	90-110		
Matrix Spike Dup (BA30934-MSD1)		**Source: 1300224-01**			Prepared: 01/09/13 Analyzed: 01/15/13					
Phosphorous - Total as P	1.55	0.040	0.010	mg/L	1.0	0.456	109	90-110	7	25
Matrix Spike Dup (BA30934-MSD2)		**Source: 1300301-10**			Prepared: 01/09/13 Analyzed: 01/15/13					
Phosphorous - Total as P	1.15	0.040	0.010	mg/L	1.0	0.0882	106	90-110	3	25
Batch BA31013 - TS prep										
Blank (BA31013-BLK1)					Prepared: 01/10/13 Analyzed: 01/11/13					
Total Solids	10 U	10	10	mg/L						
Duplicate (BA31013-DUP1)		**Source: 1214066-01**			Prepared: 01/10/13 Analyzed: 01/11/13					
Total Solids	595	10	10	mg/L		596			0.2	20
Batch BA31016 - Ion Chromatography 300.0 Prep										
Blank (BA31016-BLK1)					Prepared & Analyzed: 01/11/13					
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31016 - Ion Chromatography 300.0 Prep										
LCS (BA31016-BS1)					Prepared & Analyzed: 01/11/13					
Orthophosphate as P	0.859	0.040	0.010	mg/L	0.90		95	85-115		
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115		
Chloride	2.88	0.20	0.050	mg/L	3.0		96	85-115		
Fluoride	0.853	0.040	0.010	mg/L	0.90		95	85-115		
Nitrite (as N)	1.32	0.04	0.01	mg/L	1.4		94	85-115		
Sulfate	8.84	0.60	0.20	mg/L	9.0		98	85-115		
LCS Dup (BA31016-BSD1)					Prepared & Analyzed: 01/11/13					
Fluoride	0.881	0.040	0.010	mg/L	0.90		98	85-115	3	200
Orthophosphate as P	0.914	0.040	0.010	mg/L	0.90		102	85-115	6	200
Nitrite (as N)	1.33	0.04	0.01	mg/L	1.4		95	85-115	0.8	200
Sulfate	8.88	0.60	0.20	mg/L	9.0		99	85-115	0.5	200
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115	0	200
Chloride	2.89	0.20	0.050	mg/L	3.0		96	85-115	0.3	200
Matrix Spike (BA31016-MS1)		**Source: 1300360-01**			Prepared & Analyzed: 01/11/13					
Sulfate	14.0	0.60	0.20	mg/L	9.0	4.62	104	85-115		
Nitrate (as N)	1.76	0.04	0.01	mg/L	1.7	ND	104	85-115		
Fluoride	0.920	0.040	0.010	mg/L	0.90	0.0821	93	85-115		
Chloride	21.2	0.20	0.050	mg/L	3.0	17.8	113	80-120		
Orthophosphate as P	0.893	0.040	0.010	mg/L	0.90	ND	99	85-115		
Nitrite (as N)	1.32	0.04	0.01	mg/L	1.4	ND	94	85-115		
Matrix Spike (BA31016-MS2)		**Source: 1214066-02**			Prepared & Analyzed: 01/11/13					
Orthophosphate as P	3.76	0.040	0.010	mg/L	0.90	4.06	NR	85-115		
Nitrate (as N)	1.71	0.04	0.01	mg/L	1.7	0.144	92	85-115		
Nitrite (as N)	1.42	0.04	0.01	mg/L	1.4	ND	101	85-115		
Sulfate	43.2	0.60	0.20	mg/L	9.0	29.4	153	85-115		
Chloride	41.8 +O	0.20	0.050	mg/L	3.0	41.3	17	80-120		
Fluoride	1.17	0.040	0.010	mg/L	0.90	0.244	103	85-115		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31018 - Nitrite SM 4500NO2-B by seal										
Blank (BA31018-BLK1)					Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BA31018-BS1)					Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.0748	0.04	0.01	mg/L	0.080		94	90-110		
Matrix Spike (BA31018-MS1)		**Source: 1214074-27**			Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.0835	0.04	0.01	mg/L	0.10	ND	84	77-119		
Matrix Spike (BA31018-MS2)		**Source: 1214078-16**			Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.0981	0.04	0.01	mg/L	0.10	ND	98	77-119		
Matrix Spike Dup (BA31018-MSD1)		**Source: 1214074-27**			Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.0815	0.04	0.01	mg/L	0.10	ND	82	77-119	2	20
Matrix Spike Dup (BA31018-MSD2)		**Source: 1214078-16**			Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.0986	0.04	0.01	mg/L	0.10	ND	99	77-119	0.5	20
Batch BA31108 - Digestion for TKN by EPA 351.2										
Blank (BA31108-BLK1)					Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BA31108-BS1)					Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	2.53	0.20	0.05	mg/L	2.5		100	90-110		
Matrix Spike (BA31108-MS1)		**Source: 1214072-17**			Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	3.68	0.20	0.05	mg/L	2.5	1.39	90	90-110		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31108 - Digestion for TKN by EPA 351.2										
Matrix Spike (BA31108-MS2)		**Source: 1214072-29**			Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	2.81	0.20	0.05	mg/L	2.5	0.290	100	90-110		
Matrix Spike Dup (BA31108-MSD1)		**Source: 1214072-17**			Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	3.76	0.20	0.05	mg/L	2.5	1.39	93	90-110	2	20
Matrix Spike Dup (BA31108-MSD2)		**Source: 1214072-29**			Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	2.88	0.20	0.05	mg/L	2.5	0.290	102	90-110	2	20
Batch BA31109 - Digestion for TKN by EPA 351.2										
Blank (BA31109-BLK1)					Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BA31109-BS1)					Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	2.50	0.20	0.05	mg/L	2.5		99	90-110		
Matrix Spike (BA31109-MS1)		**Source: 1214079-09**			Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	3.64	0.20	0.05	mg/L	2.5	1.06	102	90-110		
Matrix Spike Dup (BA31109-MSD1)		**Source: 1214079-09**			Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	3.55	0.20	0.05	mg/L	2.5	1.06	98	90-110	2	20
Batch BA31126 - Ion Chromatography 300.0 Prep										
Blank (BA31126-BLK1)					Prepared & Analyzed: 01/11/13					
Sulfate	0.20 U	0.60	0.20	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31126 - Ion Chromatography 300.0 Prep										
LCS (BA31126-BS1)					Prepared & Analyzed: 01/11/13					
Fluoride	0.883	0.040	0.010	mg/L	0.90		98	85-115		
Sulfate	8.84	0.60	0.20	mg/L	9.0		98	85-115		
Orthophosphate as P	0.891	0.040	0.010	mg/L	0.90		99	85-115		
LCS Dup (BA31126-BSD1)					Prepared & Analyzed: 01/11/13					
Orthophosphate as P	0.913	0.040	0.010	mg/L	0.90		101	85-115	2	200
Fluoride	0.883	0.040	0.010	mg/L	0.90		98	85-115	0	200
Sulfate	8.88	0.60	0.20	mg/L	9.0		99	85-115	0.5	200
Matrix Spike (BA31126-MS1)		**Source: 1300025-09**			Prepared & Analyzed: 01/11/13					
Fluoride	0.932	0.040	0.010	mg/L	0.90	0.0478	98	85-115		
Orthophosphate as P	0.845	0.040	0.010	mg/L	0.90	ND	94	85-115		
Sulfate	24.4	0.60	0.20	mg/L	9.0	15.2	102	85-115		
Matrix Spike (BA31126-MS2)		**Source: 1214067-07**			Prepared & Analyzed: 01/11/13					
Fluoride	1.02	0.040	0.010	mg/L	0.90	0.106	102	85-115		
Orthophosphate as P	0.826	0.040	0.010	mg/L	0.90	ND	92	85-115		
Sulfate	63.3	0.60	0.20	mg/L	9.0	53.8	106	85-115		
Batch BA31134 - Nitrate 353.2 by seal										
Blank (BA31134-BLK1)					Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BA31134-BS1)					Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	0.737	0.04	0.01	mg/L	0.80		92	90-110		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31134 - Nitrate 353.2 by seal										
Matrix Spike (BA31134-MS1)		**Source: 1300236-01**			Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	1.03	0.04	0.01	mg/L	1.0	0.0486	98	90-110		
Matrix Spike (BA31134-MS2)		**Source: 1300236-03**			Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	1.11	0.04	0.01	mg/L	1.0	0.115	99	90-110		
Matrix Spike Dup (BA31134-MSD1)		**Source: 1300236-01**			Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	1.08	0.04	0.01	mg/L	1.0	0.0486	103	90-110	5	20
Matrix Spike Dup (BA31134-MSD2)		**Source: 1300236-03**			Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	1.11	0.04	0.01	mg/L	1.0	0.115	100	90-110	0.5	20
Batch BA31411 - alkalinity										
Blank (BA31411-BLK1)					Prepared & Analyzed: 01/14/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BA31411-BLK2)					Prepared & Analyzed: 01/14/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BA31411-BS1)					Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
LCS (BA31411-BS2)					Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
Matrix Spike (BA31411-MS1)		**Source: 1214067-14**			Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	2.1	98	80-120		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31411 - alkalinity										
Matrix Spike (BA31411-MS2)		**Source: 1214074-13**			Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	ND	100	80-120		
Matrix Spike Dup (BA31411-MSD1)		**Source: 1214067-14**			Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	2.1	98	80-120	0	26
Matrix Spike Dup (BA31411-MSD2)		**Source: 1214074-13**			Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	ND	100	80-120	0	26
Batch BA31420 - Ion Chromatography 300.0 Prep										
Blank (BA31420-BLK1)					Prepared & Analyzed: 01/14/13					
Sulfate	0.20 U	0.60	0.20	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BA31420-BS1)					Prepared & Analyzed: 01/14/13					
Sulfate	8.77	0.60	0.20	mg/L	9.0		97	85-115		
Chloride	2.83	0.20	0.050	mg/L	3.0		94	85-115		
LCS Dup (BA31420-BSD1)					Prepared & Analyzed: 01/14/13					
Sulfate	8.76	0.60	0.20	mg/L	9.0		97	85-115	0.1	200
Chloride	2.85	0.20	0.050	mg/L	3.0		95	85-115	0.7	200
Matrix Spike (BA31420-MS1)		**Source: 1214067-09**			Prepared & Analyzed: 01/14/13					
Sulfate	232 J5	0.60	0.20	mg/L	90	58.7	193	85-115		
Chloride	121	0.20	0.050	mg/L	30	86.8	114	80-120		
Matrix Spike (BA31420-MS2)		**Source: 1300198-02**			Prepared & Analyzed: 01/14/13					
Chloride	11.9	0.20	0.050	mg/L	3.0	8.55	112	80-120		
Sulfate	11.5	0.60	0.20	mg/L	9.0	2.53	100	85-115		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA32113 - Ion Chromatography 300.0 Prep										
Blank (BA32113-BLK1)					Prepared & Analyzed: 01/21/13					
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BA32113-BS1)					Prepared & Analyzed: 01/21/13					
Chloride	3.01	0.20	0.050	mg/L	3.0		100	85-115		
LCS Dup (BA32113-BSD1)					Prepared & Analyzed: 01/21/13					
Chloride	3.06	0.20	0.050	mg/L	3.0		102	85-115	2	200
Matrix Spike (BA32113-MS1)		**Source: 1300537-01**			Prepared & Analyzed: 01/21/13					
Chloride	214	0.20	0.050	mg/L	30	183	103	80-120		
Matrix Spike (BA32113-MS2)		**Source: 1214074-14**			Prepared & Analyzed: 01/21/13					
Chloride	34.6	0.20	0.050	mg/L	6.0	27.7	115	80-120		

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Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30904 - Metals Preparation for EPA Method 200.7										
Blank (BA30904-BLK1)					Prepared: 01/09/13 Analyzed: 01/10/13					
Iron	0.020 U	0.10	0.020	mg/L						
Sodium	0.13 U	0.50	0.13	mg/L						
Boron	0.050 U	0.10	0.050	mg/L						
Potassium	0.23	0.050	0.010	mg/L						
Calcium	0.042 U	0.50	0.042	mg/L						
Magnesium	0.022 I	0.50	0.020	mg/L						
Manganese	0.0010 U	0.010	0.0010	mg/L						
LCS (BA30904-BS1)					Prepared: 01/09/13 Analyzed: 01/10/13					
Calcium	20	0.50	0.042	mg/L	20		102	85-115		
Potassium	21	0.050	0.010	mg/L	20		103	85-115		
Iron	8.2	0.10	0.020	mg/L	8.0		103	85-115		
Magnesium	20	0.50	0.020	mg/L	20		101	85-115		
Boron	0.46	0.10	0.050	mg/L	0.40		114	85-115		
Sodium	21	0.50	0.13	mg/L	20		103	85-115		
Manganese	0.42	0.010	0.0010	mg/L	0.40		106	85-115		
Matrix Spike (BA30904-MS1)		**Source: 1214078-13**			Prepared: 01/09/13 Analyzed: 01/10/13					
Potassium	32	0.050	0.010	mg/L	20	10	109	70-130		
Iron	9.2	0.10	0.020	mg/L	8.0	ND	115	70-130		
Calcium	57	0.50	0.042	mg/L	20	37	100	70-130		
Sodium	26	0.50	0.13	mg/L	20	7.7	93	70-130		
Manganese	0.85	0.010	0.0010	mg/L	0.40	0.43	105	70-130		
Boron	0.50	0.10	0.050	mg/L	0.40	ND	125	70-130		
Magnesium	32	0.50	0.020	mg/L	20	11	104	70-130		
Matrix Spike (BA30904-MS2)		**Source: 1300019-06**			Prepared: 01/09/13 Analyzed: 01/10/13					
Potassium	67	0.050	0.010	mg/L	20	50	87	70-130		
Boron	0.50	0.10	0.050	mg/L	0.40	ND	126	70-130		
Calcium	61	0.50	0.042	mg/L	20	41	103	70-130		
Iron	18	0.10	0.020	mg/L	8.0	10	100	70-130		
Magnesium	45	0.50	0.020	mg/L	20	25	103	70-130		
Manganese	0.59	0.010	0.0010	mg/L	0.40	0.17	104	70-130		
Sodium	43	0.50	0.13	mg/L	20	23	105	70-130		

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Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30904 - Metals Preparation for EPA Method 200.7										
Matrix Spike Dup (BA30904-MSD1)		**Source: 1214078-13**			Prepared: 01/09/13 Analyzed: 01/10/13					
Boron	0.50	0.10	0.050	mg/L	0.40	ND	125	70-130	0.2	30
Calcium	55	0.50	0.042	mg/L	20	37	87	70-130	5	30
Iron	8.9	0.10	0.020	mg/L	8.0	ND	112	70-130	3	30
Potassium	30	0.050	0.010	mg/L	20	10	98	70-130	7	30
Magnesium	31	0.50	0.020	mg/L	20	11	99	70-130	3	30
Manganese	0.84	0.010	0.0010	mg/L	0.40	0.43	101	70-130	2	30
Sodium	25	0.50	0.13	mg/L	20	7.7	88	70-130	4	30
Matrix Spike Dup (BA30904-MSD2)		**Source: 1300019-06**			Prepared: 01/09/13 Analyzed: 01/10/13					
Calcium	62	0.50	0.042	mg/L	20	41	106	70-130	0.9	30
Iron	17	0.10	0.020	mg/L	8.0	10	88	70-130	6	30
Boron	0.51	0.10	0.050	mg/L	0.40	ND	128	70-130	1	30
Potassium	63	0.050	0.010	mg/L	20	50	66	70-130	6	30
Magnesium	45	0.50	0.020	mg/L	20	25	101	70-130	0.9	30
Manganese	0.60	0.010	0.0010	mg/L	0.40	0.17	108	70-130	3	30
Sodium	45	0.50	0.13	mg/L	20	23	115	70-130	4	30

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Microbiology - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30903 - FC-MF										
Blank (BA30903-BLK1)					Prepared: 01/08/13 Analyzed: 01/09/13					
Fecal Coliforms	1 U	1	1	CFU/100 ml						
Duplicate (BA30903-DUP1)		**Source: 1214081-01**			Prepared: 01/08/13 Analyzed: 01/09/13					
Fecal Coliforms	1 U	1	1	CFU/100 ml		ND				200

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* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below.

J5 Matrix spike of this sample was outside typical range. All other QC criteria were acceptable.
+O Matrix spike source sample was over the reccommended range for the method.

Questions regarding this report should be directed to :

Kathryn Nordmark
Telephone (813) 855-1844 FAX (813) 855-2218
Kathryn@southernanalyticallabs.com

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SOUTHERN ANALYTICAL LABORATORIES, INC.
11D BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (STE & ATU)

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	1LP, Cool NOx, Cl, Total Alkalinity, CBOD, TS, TSS	250mL P, H_2SO_4 TKN, NH_4, TP	125mL P, $Na_2S_2O_3$ FC-MF	1LP, Cool NOx, Cl, SO_4, Total Alkalinity, CBOD, TS, TSS, F, OP	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl, CBOD, TS, TSS	1LP, Cool NOx, Cl, SO_4, Total Alkalinity, CBOD, TS, TSS					Field pH	Field Temperature	Field Conductivity	Field DO
01	PNRS II STE-Tank 1	01/08/13	15:10	WW		X	1	1	2										6.66	22.5	1122	0.1
02	STE Pump Tank	01/08/13	14:10	WW		X		1	2	1	1								7.07	21.4	1094	0.17
03	STE Pump Tank DUP	01/08/13	14:15	WW		X		1	2	1	1								7.07	21.4	1094	0.17
04	ATU Clarifier	01/08/13	13:40	WW		X						1	1						7.50	20.8	897	0.81
05	ATU Eff Pump Tank	01/08/13	13:35	WW		X		1	2					1					7.26	20.7	863	1.07
06	ATU Eff Pump Tank DUP	01/08/13	13:40	WW		X		1	2					1					7.26	20.7	863	1.07

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
J Chambers	12-7-12 14:45	[illegible]	
[illegible]	1/8/13 1635	K Nordmark	1/8/13 1635

Seal intact? Y N N/A
Samples intact upon arrival? Y N N/A
Received on ice? Temp_____ Y N N/A
Proper preservatives indicated? Y N N/A
Rec'd within holding time? Y N N/A
Volatiles rec'd w/out headspace? Y N N/A
Proper containers used? Y N N/A

Instructions / Remarks:

SOUTHERN ANALYTICAL LABORATORIES, INC.
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10002 Princess Palm Ave, Suite 200
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Work Order: 1214067

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA1-PZ-11-EF2**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-02**						
Date/Time Collected		**01/10/13 11:47**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		4.55						
Temperature		24.8 °C						
Conductivity		915 umhos						
Dissolved Oxygen		7.04 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 15:19	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/23/13 14:08	01/23/13 14:09	1
Chloride	mg/L	74	EPA 300.0	0.20	0.050		01/14/13 17:20	1
Nitrate (as N)	mg/L	52	EPA 300.0	0.04	0.01		01/11/13 18:06	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/11/13 18:06	1
Total Kjeldahl Nitrogen	mg/L	2.6	EPA 351.2	0.20	0.05	01/11/13 08:48	01/14/13 10:08	1
Nitrate+Nitrite (N)	mg/L	52	EPA 300.0	0.08	0.02		01/11/13 18:06	1

Sample Description		**TA1-LY-24-C**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-03**						
Date/Time Collected		**01/07/13 10:50**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		6.1						
Temperature		17.8 °C						
Conductivity		884 umhos						
Dissolved Oxygen		7.6 mg/L						
Inorganics								
Ammonia as N	mg/L	0.033 I	EPA 350.1	0.040	0.009		01/09/13 12:24	1
Ammonium as NH4	mg/L	0.04 I	EPA 350.1	0.05	0.01		01/21/13 10:09	1
Chloride	mg/L	70	EPA 300.0	0.20	0.050		01/12/13 11:06	1
Nitrate (as N)	mg/L	54	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Total Kjeldahl Nitrogen	mg/L	3.6	EPA 351.2	0.20	0.05	01/16/13 16:31	01/18/13 10:39	1
Nitrate+Nitrite (N)	mg/L	54	EPA 300.0	0.08	0.02		01/08/13 16:45	1

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

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Tampa, FL 33619

January 24, 2013
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Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA1-LY-12-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-04**						
Date/Time Collected		**01/07/13 11:00**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		6.8						
Temperature		17.5 °C						
Conductivity		953 umhos						
Dissolved Oxygen		8.2 mg/L						
Inorganics								
Ammonia as N	mg/L	0.013 I	EPA 350.1	0.040	0.009		01/09/13 12:26	1
Ammonium as NH4	mg/L	0.02 I	EPA 350.1	0.05	0.01		01/21/13 10:09	1
Chloride	mg/L	65	EPA 300.0	0.20	0.050		01/12/13 11:06	1
Nitrate (as N)	mg/L	50	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Total Kjeldahl Nitrogen	mg/L	2.0	EPA 351.2	0.20	0.05	01/16/13 16:31	01/18/13 12:07	1
Nitrate+Nitrite (N)	mg/L	50	EPA 300.0	0.08	0.02		01/08/13 16:45	1
Sample Description		**TA1-LY-24-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-05**						
Date/Time Collected		**01/07/13 11:07**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		6.4						
Temperature		17.2 °C						
Conductivity		820 umhos						
Dissolved Oxygen		7.2 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 12:28	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01		01/21/13 10:09	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/08/13 09:15	01/08/13 11:40	1
Chloride	mg/L	60	EPA 300.0	0.20	0.050		01/12/13 11:06	1
Nitrate (as N)	mg/L	47	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Phosphorous - Total as P	mg/L	0.11	SM 4500P-E	0.040	0.010	01/08/13 10:14	01/10/13 12:49	1
Total Alkalinity	mg/L	31	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	4.2	EPA 351.2	0.20	0.05	01/16/13 16:31	01/18/13 10:42	1
Nitrate+Nitrite (N)	mg/L	47	EPA 300.0	0.08	0.02		01/08/13 16:45	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA1-LY-42-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-06**						
Date/Time Collected		**01/07/13 11:15**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		5.1						
Temperature		17.9 °C						
Conductivity		836 umhos						
Dissolved Oxygen		7.5 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 12:30	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01		01/21/13 10:09	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/08/13 09:15	01/08/13 11:40	1
Chloride	mg/L	62	EPA 300.0	0.20	0.050		01/12/13 11:06	1
Nitrate (as N)	mg/L	52	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Phosphorous - Total as P	mg/L	0.029 I	SM 4500P-E	0.040	0.010	01/08/13 10:14	01/10/13 12:50	1
Total Alkalinity	mg/L	5.3 I	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	3.1	EPA 351.2	0.20	0.05	01/16/13 16:31	01/18/13 10:44	1
Nitrate+Nitrite (N)	mg/L	52	EPA 300.0	0.08	0.02		01/08/13 16:45	1

Sample Description		**TA1-PZ-11-J4**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-07**						
Date/Time Collected		**01/10/13 12:05**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		4.60						
Temperature		25.4 °C						
Conductivity		271 umhos						
Dissolved Oxygen		5.32 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 15:21	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/23/13 14:08	01/23/13 14:09	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/11/13 11:40	01/11/13 14:20	1
Chloride	mg/L	13	EPA 300.0	0.20	0.050		01/11/13 18:06	1
Nitrate (as N)	mg/L	8.5	EPA 300.0	0.04	0.01		01/11/13 18:06	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/11/13 18:06	1
Phosphorous - Total as P	mg/L	0.037 I	SM 4500P-E	0.040	0.010	01/16/13 11:09	01/23/13 13:53	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/14/13 12:36	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA1-PZ-11-J4**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-07**						
Date/Time Collected		**01/10/13 12:05**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		4.60						
Temperature		25.4 °C						
Conductivity		271 umhos						
Dissolved Oxygen		5.32 mg/L						
Total Kjeldahl Nitrogen	mg/L	0.96	EPA 351.2	0.20	0.05	01/11/13 08:48	01/14/13 10:10	1
Nitrate+Nitrite (N)	mg/L	8.5	EPA 300.0	0.08	0.02		01/11/13 18:06	1
Sample Description		**TA1-PZ-11-K4**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-08**						
Date/Time Collected		**01/10/13 12:22**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		4.74						
Temperature		25.4 °C						
Conductivity		247 umhos						
Dissolved Oxygen		5.95 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 15:24	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/23/13 14:08	01/23/13 14:09	1
Chemical Oxygen Demand	mg/L	10 I	EPA 410.4	25	10	01/11/13 11:40	01/11/13 14:20	1
Chloride	mg/L	11	EPA 300.0	0.20	0.050		01/12/13 02:53	1
Nitrate (as N)	mg/L	7.4	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Phosphorous - Total as P	mg/L	0.026 I	SM 4500P-E	0.040	0.010	01/16/13 11:09	01/23/13 13:53	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	01/11/13 08:48	01/14/13 10:11	1
Nitrate+Nitrite (N)	mg/L	7.4	EPA 300.0	0.08	0.02		01/12/13 02:53	1
Sample Description		**TA1-PZ-11-L2**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-09**						
Date/Time Collected		**01/10/13 11:06**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA1-PZ-11-L2**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-09**						
Date/Time Collected		**01/10/13 11:06**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		4.65						
Temperature		25.6 °C						
Conductivity		1000 umhos						
Dissolved Oxygen		6.98 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 15:26	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/23/13 14:08	01/23/13 14:09	1
Chemical Oxygen Demand	mg/L	26	EPA 410.4	25	10	01/11/13 11:40	01/11/13 14:20	1
Chloride	mg/L	87	EPA 300.0	0.20	0.050		01/14/13 17:20	1
Fluoride	mg/L	0.064	EPA 300.0	0.040	0.010		01/12/13 02:53	1
Nitrate (as N)	mg/L	59	EPA 300.0	0.04	0.01		01/11/13 18:06	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		01/12/13 02:53	1
Phosphorous - Total as P	mg/L	0.036 I	SM 4500P-E	0.040	0.010	01/16/13 11:09	01/23/13 13:54	1
Sulfate	mg/L	59	EPA 300.0	0.60	0.20		01/12/13 02:53	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	01/11/13 08:48	01/14/13 11:17	1
Total Organic Carbon	mg/L	3.4	SM 5310B	1.0	0.50		01/11/13 10:01	1
Nitrate+Nitrite (N)	mg/L	59	EPA 300.0	0.08	0.02		01/12/13 02:53	1
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	3.4	SM 5310B	1.0	0.50		01/11/13 10:01	1
Metals								
Boron	mg/L	0.11	EPA 200.7	0.10	0.050	01/16/13 08:00	01/16/13 14:58	1
Calcium	mg/L	62	EPA 200.7	0.50	0.042	01/16/13 08:00	01/16/13 14:58	1
Iron	mg/L	0.022 I	EPA 200.7	0.10	0.020	01/16/13 08:00	01/16/13 14:58	1
Magnesium	mg/L	15	EPA 200.7	0.50	0.020	01/16/13 08:00	01/16/13 14:58	1
Manganese	mg/L	0.0092 I	EPA 200.7	0.010	0.0010	01/16/13 08:00	01/16/13 14:58	1
Potassium	mg/L	18	EPA 200.7	0.050	0.010	01/16/13 08:00	01/16/13 14:58	1
Sodium	mg/L	61	EPA 200.7	0.50	0.13	01/16/13 08:00	01/16/13 14:58	1

Sample Description	**TA1-PZ-11-L2-DUP**
Matrix	**Groundwater**
SAL Sample Number	**1214067-10**
Date/Time Collected	**01/10/13 11:11**
Collected by	**Sean Schmidt**
Date/Time Received	**01/10/13 16:00**

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA1-PZ-11-L2-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-10**						
Date/Time Collected		**01/10/13 11:11**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		4.63						
Temperature		25.6 °C						
Conductivity		1000 umhos						
Dissolved Oxygen		6.98 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 15:28	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/23/13 14:08	01/23/13 14:09	1
Chemical Oxygen Demand	mg/L	17 I	EPA 410.4	25	10	01/11/13 11:40	01/11/13 14:20	1
Chloride	mg/L	85	EPA 300.0	0.20	0.050		01/14/13 17:20	1
Fluoride	mg/L	0.073	EPA 300.0	0.040	0.010		01/12/13 02:53	1
Nitrate (as N)	mg/L	58	EPA 300.0	0.04	0.01		01/11/13 18:06	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		01/12/13 02:53	1
Phosphorous - Total as P	mg/L	0.044	SM 4500P-E	0.040	0.010	01/16/13 11:09	01/23/13 13:55	1
Sulfate	mg/L	58	EPA 300.0	0.60	0.20		01/12/13 02:53	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	01/11/13 08:48	01/14/13 11:18	1
Total Organic Carbon	mg/L	3.8	SM 5310B	1.0	0.50		01/11/13 10:01	1
Nitrate+Nitrite (N)	mg/L	58	EPA 300.0	0.08	0.02		01/12/13 02:53	1
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	3.5	SM 5310B	1.0	0.50		01/11/13 10:01	1
Metals								
Boron	mg/L	0.11	EPA 200.7	0.10	0.050	01/16/13 08:00	01/16/13 15:01	1
Calcium	mg/L	63	EPA 200.7	0.50	0.042	01/16/13 08:00	01/16/13 15:01	1
Iron	mg/L	0.020 U	EPA 200.7	0.10	0.020	01/16/13 08:00	01/16/13 15:01	1
Magnesium	mg/L	15	EPA 200.7	0.50	0.020	01/16/13 08:00	01/16/13 15:01	1
Manganese	mg/L	0.0091 I	EPA 200.7	0.010	0.0010	01/16/13 08:00	01/16/13 15:01	1
Potassium	mg/L	19	EPA 200.7	0.050	0.010	01/16/13 08:00	01/16/13 15:01	1
Sodium	mg/L	63	EPA 200.7	0.50	0.13	01/16/13 08:00	01/16/13 15:01	1

Sample Description	**TA1-PZ-11-L3**
Matrix	**Groundwater**
SAL Sample Number	**1214067-11**
Date/Time Collected	**01/10/13 11:49**
Collected by	**Sean Schmidt**
Date/Time Received	**01/10/13 16:00**

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA1-PZ-11-L3**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-11**						
Date/Time Collected		**01/10/13 11:49**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		4.82						
Temperature		25.6 °C						
Conductivity		361 umhos						
Dissolved Oxygen		7.36 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 15:30	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/23/13 14:08	01/23/13 14:09	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/11/13 11:40	01/11/13 14:20	1
Chloride	mg/L	22	EPA 300.0	0.20	0.050		01/12/13 02:53	1
Nitrate (as N)	mg/L	13	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Phosphorous - Total as P	mg/L	0.066	SM 4500P-E	0.040	0.010	01/16/13 11:07	01/18/13 13:09	1
Total Alkalinity	mg/L	2.1 I	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	0.81	EPA 351.2	0.20	0.05	01/11/13 08:48	01/14/13 10:16	1
Nitrate+Nitrite (N)	mg/L	13	EPA 300.0	0.08	0.02		01/12/13 02:53	1
Sample Description		**TA1-PZ-11-L3-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-12**						
Date/Time Collected		**01/10/13 11:54**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		4.82						
Temperature		29.6 °C						
Conductivity		361 umhos						
Dissolved Oxygen		7.36 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 15:32	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/23/13 14:08	01/23/13 14:09	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/11/13 11:40	01/11/13 14:20	1
Chloride	mg/L	21	EPA 300.0	0.20	0.050		01/12/13 02:53	1
Nitrate (as N)	mg/L	12	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Phosphorous - Total as P	mg/L	0.057	SM 4500P-E	0.040	0.010	01/16/13 11:07	01/18/13 11:54	1
Total Alkalinity	mg/L	2.1 I	SM 2320B	8.0	2.0		01/14/13 12:36	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA1-PZ-11-L3-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-12**						
Date/Time Collected		**01/10/13 11:54**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		4.82						
Temperature		29.6 °C						
Conductivity		361 umhos						
Dissolved Oxygen		7.36 mg/L						
Total Kjeldahl Nitrogen	mg/L	0.88	EPA 351.2	0.20	0.05	01/11/13 08:48	01/14/13 10:18	1
Nitrate+Nitrite (N)	mg/L	12	EPA 300.0	0.08	0.02		01/12/13 02:53	1
Sample Description		**TA1-PZ-11-L4**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-13**						
Date/Time Collected		**01/10/13 12:11**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		4.56						
Temperature		24.8 °C						
Conductivity		436 umhos						
Dissolved Oxygen		2.76 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 15:34	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/23/13 14:08	01/23/13 14:09	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/11/13 11:40	01/11/13 14:20	1
Chloride	mg/L	23	EPA 300.0	0.20	0.050		01/12/13 02:53	1
Nitrate (as N)	mg/L	16	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Phosphorous - Total as P	mg/L	0.076	SM 4500P-E	0.040	0.010	01/16/13 11:07	01/18/13 11:16	1
Total Alkalinity	mg/L	2.1 I	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	01/11/13 08:48	01/14/13 10:20	1
Nitrate+Nitrite (N)	mg/L	16	EPA 300.0	0.08	0.02		01/12/13 02:53	1
Sample Description		**TA1-PZ-11-L5**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-14**						
Date/Time Collected		**01/10/13 11:12**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA1-PZ-11-L5**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-14**						
Date/Time Collected		**01/10/13 11:12**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		4.61						
Temperature		24.9 °C						
Conductivity		234 umhos						
Dissolved Oxygen		5.13 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 15:36	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/23/13 14:08	01/23/13 14:09	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/11/13 11:40	01/11/13 14:20	1
Chloride	mg/L	9.5	EPA 300.0	0.20	0.050		01/12/13 02:53	1
Nitrate (as N)	mg/L	6.0	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Phosphorous - Total as P	mg/L	0.018 I	SM 4500P-E	0.040	0.010	01/16/13 11:07	01/18/13 11:17	1
Total Alkalinity	mg/L	2.1 I	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	01/11/13 08:48	01/14/13 10:21	1
Nitrate+Nitrite (N)	mg/L	6.0	EPA 300.0	0.08	0.02		01/12/13 02:53	1

Sample Description		**TA1-PZ-09-N3**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-15**						
Date/Time Collected		**01/10/13 10:38**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		6.49						
Temperature		24.7 °C						
Conductivity		388 umhos						
Dissolved Oxygen		4.70 mg/L						
Inorganics								
Ammonia as N	mg/L	0.039 I	EPA 350.1	0.040	0.009		01/18/13 15:38	1
Ammonium as NH4	mg/L	0.05	EPA 350.1	0.05	0.01	01/23/13 14:08	01/23/13 14:09	1
Chloride	mg/L	25	EPA 300.0	0.20	0.050		01/12/13 02:53	1
Nitrate (as N)	mg/L	4.8	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Nitrite (as N)	mg/L	0.09	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Total Kjeldahl Nitrogen	mg/L	2.1	EPA 351.2	0.20	0.05	01/11/13 08:48	01/14/13 11:20	1
Nitrate+Nitrite (N)	mg/L	4.9	EPA 300.0	0.08	0.02		01/12/13 02:53	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA1-PZ-09-N3-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-16**						
Date/Time Collected		**01/10/13 10:43**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		6.44						
Temperature		24.7 °C						
Conductivity		388 umhos						
Dissolved Oxygen		4.70 mg/L						
Inorganics								
Ammonia as N	mg/L	0.031 I	EPA 350.1	0.040	0.009		01/18/13 15:48	1
Ammonium as NH4	mg/L	0.04 I	EPA 350.1	0.05	0.01	01/23/13 14:08	01/23/13 14:09	1
Chloride	mg/L	24	EPA 300.0	0.20	0.050		01/12/13 02:53	1
Nitrate (as N)	mg/L	4.6	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Nitrite (as N)	mg/L	0.12	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Total Kjeldahl Nitrogen	mg/L	2.1	EPA 351.2	0.20	0.05	01/11/13 08:48	01/14/13 11:23	1
Nitrate+Nitrite (N)	mg/L	4.7	EPA 300.0	0.08	0.02		01/12/13 02:53	1

Sample Description		**TA1-PZ-16-N3**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-17**						
Date/Time Collected		**01/10/13 11:00**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		5.23						
Temperature		25.7 °C						
Conductivity		296 umhos						
Dissolved Oxygen		3.40 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 15:50	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/23/13 14:08	01/23/13 14:09	1
Chloride	mg/L	14	EPA 300.0	0.20	0.050		01/12/13 02:53	1
Nitrate (as N)	mg/L	9.8	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Total Kjeldahl Nitrogen	mg/L	1.0	EPA 351.2	0.20	0.05	01/11/13 08:48	01/14/13 10:33	1
Nitrate+Nitrite (N)	mg/L	9.8	EPA 300.0	0.08	0.02		01/12/13 02:53	1

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Sample Description		**TA1-PZ-09-O7**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-18**						
Date/Time Collected		**01/10/13 10:29**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		5.46						
Temperature		24.1 °C						
Conductivity		240 umhos						
Dissolved Oxygen		5.23 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 15:52	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/23/13 14:08	01/23/13 14:09	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/11/13 11:40	01/11/13 14:20	1
Chloride	mg/L	14	EPA 300.0	0.20	0.050		01/12/13 02:53	1
Nitrate (as N)	mg/L	3.9	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Phosphorous - Total as P	mg/L	0.25	SM 4500P-E	0.040	0.010	01/16/13 11:07	01/18/13 11:18	1
Total Alkalinity	mg/L	6.3 I	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	01/11/13 08:48	01/14/13 10:35	1
Nitrate+Nitrite (N)	mg/L	3.9	EPA 300.0	0.08	0.02		01/12/13 02:53	1

Sample Description		**TA1-PZ-16-O7**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-19**						
Date/Time Collected		**01/10/13 10:43**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		5.30						
Temperature		24.8 °C						
Conductivity		316 umhos						
Dissolved Oxygen		3.68 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 15:54	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/23/13 14:08	01/23/13 14:09	1
Chemical Oxygen Demand	mg/L	20 I	EPA 410.4	25	10	01/11/13 11:40	01/11/13 14:20	1
Chloride	mg/L	15	EPA 300.0	0.20	0.050		01/12/13 02:53	1
Nitrate (as N)	mg/L	12	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Phosphorous - Total as P	mg/L	0.39	SM 4500P-E	0.040	0.010	01/16/13 11:07	01/18/13 11:19	1
Total Alkalinity	mg/L	5.3 I	SM 2320B	8.0	2.0		01/14/13 12:36	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA1-PZ-16-O7**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-19**						
Date/Time Collected		**01/10/13 10:43**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		5.30						
Temperature		24.8 °C						
Conductivity		316 umhos						
Dissolved Oxygen		3.68 mg/L						
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	01/11/13 08:48	01/14/13 10:36	1
Nitrate+Nitrite (N)	mg/L	12	EPA 300.0	0.08	0.02		01/12/13 02:53	1
Sample Description		**TA1-PZ-09-M9**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-20**						
Date/Time Collected		**01/10/13 10:01**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		5.81						
Temperature		24.2 °C						
Conductivity		216.9 umhos						
Dissolved Oxygen		4.23 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 15:56	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/23/13 14:08	01/23/13 14:09	1
Chloride	mg/L	8.4	EPA 300.0	0.20	0.050		01/12/13 02:53	1
Nitrate (as N)	mg/L	5.8	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	01/11/13 08:48	01/14/13 10:37	1
Nitrate+Nitrite (N)	mg/L	5.8	EPA 300.0	0.08	0.02		01/12/13 02:53	1
Sample Description		**TA1-PZ-16-M9**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-21**						
Date/Time Collected		**01/10/13 10:12**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		5.37						

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Sample Description		**TA1-PZ-16-M9**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-21**						
Date/Time Collected		**01/10/13 10:12**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		5.37						
Temperature		25.0 °C						
Conductivity		330 umhos						
Dissolved Oxygen		4.37 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/23/13 13:03	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/23/13 14:08	01/23/13 14:09	1
Chloride	mg/L	17	EPA 300.0	0.20	0.050		01/12/13 02:53	1
Nitrate (as N)	mg/L	14	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	01/11/13 08:48	01/14/13 10:38	1
Nitrate+Nitrite (N)	mg/L	14	EPA 300.0	0.08	0.02		01/12/13 02:53	1

Sample Description		**TA1-PZ-09-17**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-22**						
Date/Time Collected		**01/10/13 09:31**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		5.70						
Temperature		23.7 °C						
Conductivity		238 umhos						
Dissolved Oxygen		3.16 mg/L						
Inorganics								
Ammonia as N	mg/L	0.032 I	EPA 350.1	0.040	0.009		01/23/13 13:05	1
Ammonium as NH4	mg/L	0.04 I	EPA 350.1	0.05	0.01	01/23/13 14:08	01/23/13 14:09	1
Chloride	mg/L	8.5	EPA 300.0	0.20	0.050		01/12/13 02:53	1
Nitrate (as N)	mg/L	7.2	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	01/11/13 08:48	01/14/13 10:40	1
Nitrate+Nitrite (N)	mg/L	7.2	EPA 300.0	0.08	0.02		01/12/13 02:53	1

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Sample Description		**TA1-PZ-16-17**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-23**						
Date/Time Collected		**01/10/13 09:40**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		5.37						
Temperature		25.2 °C						
Conductivity		323 umhos						
Dissolved Oxygen		3.66 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/23/13 11:28	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/23/13 14:08	01/23/13 14:09	1
Chloride	mg/L	16	EPA 300.0	0.20	0.050		01/12/13 02:53	1
Nitrate (as N)	mg/L	14	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Total Kjeldahl Nitrogen	mg/L	1.0	EPA 351.2	0.20	0.05	01/11/13 08:48	01/14/13 10:41	1
Nitrate+Nitrite (N)	mg/L	14	EPA 300.0	0.08	0.02		01/12/13 02:53	1

Sample Description		**TA1-PZ-09-RS16**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-24**						
Date/Time Collected		**01/10/13 08:56**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		5.72						
Temperature		23.0 °C						
Conductivity		239 umhos						
Dissolved Oxygen		4.90 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/23/13 10:22	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/23/13 14:08	01/23/13 14:09	1
Chloride	mg/L	8.0	EPA 300.0	0.20	0.050		01/12/13 02:53	1
Nitrate (as N)	mg/L	5.1	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Total Kjeldahl Nitrogen	mg/L	0.79	EPA 351.2	0.20	0.05	01/11/13 08:48	01/14/13 10:42	1
Nitrate+Nitrite (N)	mg/L	5.1	EPA 300.0	0.08	0.02		01/12/13 02:53	1

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Sample Description		**TA1-PZ-16-RS16**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-25**						
Date/Time Collected		**01/10/13 09:07**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		5.45						
Temperature		24.1 °C						
Conductivity		313 umhos						
Dissolved Oxygen		4.93 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/23/13 10:24	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/23/13 14:08	01/23/13 14:09	1
Chloride	mg/L	13	EPA 300.0	0.20	0.050		01/12/13 02:53	1
Nitrate (as N)	mg/L	10	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	01/11/13 08:48	01/14/13 10:43	1
Nitrate+Nitrite (N)	mg/L	10	EPA 300.0	0.08	0.02		01/12/13 02:53	1

Sample Description		**TA1-PZ-09-RS18**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-26**						
Date/Time Collected		**01/10/13 08:26**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		5.89						
Temperature		22.3 °C						
Conductivity		269 umhos						
Dissolved Oxygen		5.57 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/23/13 10:26	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/23/13 14:08	01/23/13 14:09	1
Chloride	mg/L	9.3	EPA 300.0	0.20	0.050		01/12/13 02:53	1
Nitrate (as N)	mg/L	6.9	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Total Kjeldahl Nitrogen	mg/L	2.5	EPA 351.2	0.20	0.05	01/11/13 08:49	01/14/13 13:32	1
Nitrate+Nitrite (N)	mg/L	6.9	EPA 300.0	0.08	0.02		01/12/13 02:53	1

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 24, 2013
Work Order: 1214067

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA1-PZ-16-RS18**						
Matrix		**Groundwater**						
SAL Sample Number		**1214067-27**						
Date/Time Collected		**01/10/13 08:36**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		5.64						
Temperature		23.6 °C						
Conductivity		311 umhos						
Dissolved Oxygen		4.33 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/23/13 10:28	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/23/13 14:08	01/23/13 14:09	1
Chloride	mg/L	12	EPA 300.0	0.20	0.050		01/12/13 02:53	1
Nitrate (as N)	mg/L	9.5	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/12/13 02:53	1
Total Kjeldahl Nitrogen	mg/L	0.89	EPA 351.2	0.20	0.05	01/11/13 08:49	01/14/13 13:34	1
Nitrate+Nitrite (N)	mg/L	9.5	EPA 300.0	0.08	0.02		01/12/13 02:53	1

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30806 - COD prep										
Blank (BA30806-BLK1)					Prepared & Analyzed: 01/08/13					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BA30806-BS1)					Prepared & Analyzed: 01/08/13					
Chemical Oxygen Demand	54	25	10	mg/L	50		108	90-110		
Matrix Spike (BA30806-MS1)		**Source: 1214076-11**			Prepared & Analyzed: 01/08/13					
Chemical Oxygen Demand	56	25	10	mg/L	50	ND	112	85-115		
Matrix Spike Dup (BA30806-MSD1)		**Source: 1214076-11**			Prepared & Analyzed: 01/08/13					
Chemical Oxygen Demand	56	25	10	mg/L	50	ND	112	85-115	0	32
Batch BA30811 - Ion Chromatography 300.0 Prep										
Blank (BA30811-BLK1)					Prepared & Analyzed: 01/08/13					
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BA30811-BS1)					Prepared & Analyzed: 01/08/13					
Nitrite (as N)	1.35	0.04	0.01	mg/L	1.4		96	85-115		
LCS Dup (BA30811-BSD1)					Prepared & Analyzed: 01/08/13					
Nitrite (as N)	1.34	0.04	0.01	mg/L	1.4		96	85-115	0.7	200
Matrix Spike (BA30811-MS1)		**Source: 1214074-03**			Prepared & Analyzed: 01/08/13					
Nitrite (as N)	1.50	0.04	0.01	mg/L	1.4	ND	107	85-115		
Matrix Spike (BA30811-MS2)		**Source: 1214076-08**			Prepared & Analyzed: 01/08/13					
Nitrite (as N)	1.47	0.04	0.01	mg/L	1.4	ND	105	85-115		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30815 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BA30815-BLK1)					Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BA30815-BS1)					Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	0.742	0.040	0.010	mg/L	0.80		93	90-110		
Matrix Spike (BA30815-MS1)		**Source: 1214067-05**			Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	1.05	0.040	0.010	mg/L	1.0	0.113	93	90-110		
Matrix Spike (BA30815-MS2)		**Source: 1300195-07**			Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	0.976	0.040	0.010	mg/L	1.0	0.0535	92	90-110		
Matrix Spike Dup (BA30815-MSD1)		**Source: 1214067-05**			Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	1.06	0.040	0.010	mg/L	1.0	0.113	94	90-110	0.9	25
Matrix Spike Dup (BA30815-MSD2)		**Source: 1300195-07**			Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	1.02	0.040	0.010	mg/L	1.0	0.0535	96	90-110	4	25
Batch BA30816 - alkalinity										
Blank (BA30816-BLK1)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BA30816-BLK2)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BA30816-BS1)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30816 - alkalinity										
LCS (BA30816-BS2)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
Matrix Spike (BA30816-MS1)		**Source: 1214076-16**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	190	8.0	2.0	mg/L	120	62	100	80-120		
Matrix Spike (BA30816-MS2)		**Source: 1214081-03**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	21	83	80-120		
Matrix Spike Dup (BA30816-MSD1)		**Source: 1214076-16**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	190	8.0	2.0	mg/L	120	62	100	80-120	0	26
Matrix Spike Dup (BA30816-MSD2)		**Source: 1214081-03**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	21	83	80-120	0	26
Batch BA30917 - Ammonia by SEAL										
Blank (BA30917-BLK1)					Prepared & Analyzed: 01/09/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BA30917-BS1)					Prepared & Analyzed: 01/09/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50		102	90-110		
Matrix Spike (BA30917-MS1)		**Source: 1214067-04**			Prepared & Analyzed: 01/09/13					
Ammonia as N	0.54	0.040	0.009	mg/L	0.50	0.013	106	90-110		
Matrix Spike (BA30917-MS2)		**Source: 1214072-06**			Prepared & Analyzed: 01/09/13					
Ammonia as N	0.55	0.040	0.009	mg/L	0.50	ND	110	90-110		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30917 - Ammonia by SEAL										
Matrix Spike Dup (BA30917-MSD1)		**Source: 1214067-04**			Prepared & Analyzed: 01/09/13					
Ammonia as N	0.55	0.040	0.009	mg/L	0.50	0.013	107	90-110	1	10
Matrix Spike Dup (BA30917-MSD2)		**Source: 1214072-06**			Prepared & Analyzed: 01/09/13					
Ammonia as N	0.54	0.040	0.009	mg/L	0.50	ND	108	90-110	1	10
Batch BA31107 - Digestion for TKN by EPA 351.2										
Blank (BA31107-BLK1)					Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BA31107-BS1)					Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	2.41	0.20	0.05	mg/L	2.5		95	90-110		
Matrix Spike (BA31107-MS1)		**Source: 1214067-02**			Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	5.00	0.20	0.05	mg/L	2.5	2.63	93	90-110		
Matrix Spike (BA31107-MS2)		**Source: 1214067-17**			Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	3.64	0.20	0.05	mg/L	2.5	1.05	102	90-110		
Matrix Spike Dup (BA31107-MSD1)		**Source: 1214067-02**			Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	4.96	0.20	0.05	mg/L	2.5	2.63	92	90-110	0.9	20
Matrix Spike Dup (BA31107-MSD2)		**Source: 1214067-17**			Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	3.36	0.20	0.05	mg/L	2.5	1.05	91	90-110	8	20
Batch BA31108 - Digestion for TKN by EPA 351.2										
Blank (BA31108-BLK1)					Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31108 - Digestion for TKN by EPA 351.2										
LCS (BA31108-BS1)					Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	2.53	0.20	0.05	mg/L	2.5		100	90-110		
Matrix Spike (BA31108-MS1)		**Source: 1214072-17**			Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	3.68	0.20	0.05	mg/L	2.5	1.39	90	90-110		
Matrix Spike (BA31108-MS2)		**Source: 1214072-29**			Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	2.81	0.20	0.05	mg/L	2.5	0.290	100	90-110		
Matrix Spike Dup (BA31108-MSD1)		**Source: 1214072-17**			Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	3.76	0.20	0.05	mg/L	2.5	1.39	93	90-110	2	20
Matrix Spike Dup (BA31108-MSD2)		**Source: 1214072-29**			Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	2.88	0.20	0.05	mg/L	2.5	0.290	102	90-110	2	20
Batch BA31116 - TOC prep										
Blank (BA31116-BLK1)					Prepared & Analyzed: 01/11/13					
Total Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BA31116-BS1)					Prepared & Analyzed: 01/11/13					
Total Organic Carbon	10.1	1.0	0.50	mg/L	10		101	90-110		
Matrix Spike (BA31116-MS1)		**Source: 1300407-02**			Prepared & Analyzed: 01/11/13					
Total Organic Carbon	12.3	1.0	0.50	mg/L	10	2.10	102	85-115		
Matrix Spike Dup (BA31116-MSD1)		**Source: 1300407-02**			Prepared & Analyzed: 01/11/13					
Total Organic Carbon	12.6	1.0	0.50	mg/L	10	2.10	105	85-115	3	10

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31126 - Ion Chromatography 300.0 Prep										
Blank (BA31126-BLK1)					Prepared & Analyzed: 01/11/13					
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BA31126-BS1)					Prepared & Analyzed: 01/11/13					
Chloride	2.88	0.20	0.050	mg/L	3.0		96	85-115		
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115		
Nitrite (as N)	1.34	0.04	0.01	mg/L	1.4		96	85-115		
LCS Dup (BA31126-BSD1)					Prepared & Analyzed: 01/11/13					
Nitrite (as N)	1.35	0.04	0.01	mg/L	1.4		96	85-115	0.7	200
Chloride	2.90	0.20	0.050	mg/L	3.0		97	85-115	0.7	200
Nitrate (as N)	1.69	0.04	0.01	mg/L	1.7		99	85-115	0.6	200
Matrix Spike (BA31126-MS1)		**Source: 1300025-09**			Prepared & Analyzed: 01/11/13					
Chloride	46.5 +O	0.20	0.050	mg/L	3.0	109	NR	80-120		
Nitrate (as N)	1.79	0.04	0.01	mg/L	1.7	0.127	98	85-115		
Nitrite (as N)	1.49	0.04	0.01	mg/L	1.4	ND	106	85-115		
Matrix Spike (BA31126-MS2)		**Source: 1214067-07**			Prepared & Analyzed: 01/11/13					
Nitrite (as N)	1.48	0.04	0.01	mg/L	1.4	ND	106	85-115		
Nitrate (as N)	10.4	0.04	0.01	mg/L	1.7	8.53	110	85-115		
Chloride	16.3	0.20	0.050	mg/L	3.0	12.9	113	80-120		
Batch BA31127 - Ion Chromatography 300.0 Prep										
Blank (BA31127-BLK1)					Prepared & Analyzed: 01/12/13					
Chloride	0.050 U	0.20	0.050	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31127 - Ion Chromatography 300.0 Prep										
LCS (BA31127-BS1)					Prepared & Analyzed: 01/12/13					
Chloride	3.11	0.20	0.050	mg/L	3.0		104	85-115		
Nitrate (as N)	1.71	0.04	0.01	mg/L	1.7		101	85-115		
Orthophosphate as P	0.915	0.040	0.010	mg/L	0.90		102	85-115		
Sulfate	9.05	0.60	0.20	mg/L	9.0		101	85-115		
Nitrite (as N)	1.40	0.04	0.01	mg/L	1.4		100	85-115		
Fluoride	0.816	0.040	0.010	mg/L	0.90		91	85-115		
LCS Dup (BA31127-BSD1)					Prepared & Analyzed: 01/12/13					
Chloride	3.10	0.20	0.050	mg/L	3.0		103	85-115	0.3	200
Nitrate (as N)	1.70	0.04	0.01	mg/L	1.7		100	85-115	0.6	200
Fluoride	0.844	0.040	0.010	mg/L	0.90		94	85-115	3	200
Orthophosphate as P	0.900	0.040	0.010	mg/L	0.90		100	85-115	2	200
Nitrite (as N)	1.40	0.04	0.01	mg/L	1.4		100	85-115	0	200
Sulfate	8.97	0.60	0.20	mg/L	9.0		100	85-115	0.9	200
Matrix Spike (BA31127-MS1)		**Source: 1214067-17**			Prepared & Analyzed: 01/12/13					
Sulfate	65.6	0.60	0.20	mg/L	9.0	57.3	92	85-115		
Orthophosphate as P	0.837	0.040	0.010	mg/L	0.90	ND	93	85-115		
Nitrate (as N)	11.4	0.04	0.01	mg/L	1.7	9.79	95	85-115		
Nitrite (as N)	1.43	0.04	0.01	mg/L	1.4	ND	102	85-115		
Fluoride	0.917	0.040	0.010	mg/L	0.90	0.0157	100	85-115		
Chloride	17.1	0.20	0.050	mg/L	3.0	14.1	100	80-120		
Matrix Spike (BA31127-MS2)		**Source: 1214067-27**			Prepared & Analyzed: 01/12/13					
Chloride	15.7	0.20	0.050	mg/L	3.0	12.5	107	80-120		
Fluoride	0.985	0.040	0.010	mg/L	0.90	0.0238	107	85-115		
Nitrate (as N)	11.3	0.04	0.01	mg/L	1.7	9.46	108	85-115		
Nitrite (as N)	1.48	0.04	0.01	mg/L	1.4	ND	106	85-115		
Orthophosphate as P	0.846	0.040	0.010	mg/L	0.90	ND	94	85-115		
Sulfate	75.7	0.60	0.20	mg/L	9.0	67.3	93	85-115		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31128 - Ion Chromatography 300.0 Prep										
Blank (BA31128-BLK1)					Prepared & Analyzed: 01/12/13					
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BA31128-BS1)					Prepared & Analyzed: 01/12/13					
Nitrate (as N)	1.72	0.04	0.01	mg/L	1.7		101	85-115		
Chloride	3.15	0.20	0.050	mg/L	3.0		105	85-115		
LCS Dup (BA31128-BSD1)					Prepared & Analyzed: 01/12/13					
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115	2	200
Chloride	2.87	0.20	0.050	mg/L	3.0		96	85-115	9	200
Matrix Spike (BA31128-MS1)		**Source: 1300427-04**			Prepared & Analyzed: 01/12/13					
Chloride	5.22	0.20	0.050	mg/L	3.0	1.99	108	80-120		
Nitrate (as N)	5.66	0.04	0.01	mg/L	1.7	3.80	109	85-115		
Matrix Spike (BA31128-MS2)		**Source: 1214074-02**			Prepared & Analyzed: 01/12/13					
Nitrate (as N)	92.4	0.04	0.01	mg/L	17	73.8	109	85-115		
Chloride	132	0.20	0.050	mg/L	30	97.8	114	80-120		
Batch BA31131 - COD prep										
Blank (BA31131-BLK1)					Prepared & Analyzed: 01/11/13					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BA31131-BS1)					Prepared & Analyzed: 01/11/13					
Chemical Oxygen Demand	49	25	10	mg/L	50		98	90-110		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31131 - COD prep										
Matrix Spike (BA31131-MS1)		**Source: 1214067-07**			Prepared & Analyzed: 01/11/13					
Chemical Oxygen Demand	49	25	10	mg/L	50	ND	98	85-115		
Matrix Spike Dup (BA31131-MSD1)		**Source: 1214067-07**			Prepared & Analyzed: 01/11/13					
Chemical Oxygen Demand	51	25	10	mg/L	50	ND	102	85-115	4	32
Batch BA31411 - alkalinity										
Blank (BA31411-BLK1)					Prepared & Analyzed: 01/14/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BA31411-BLK2)					Prepared & Analyzed: 01/14/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BA31411-BS1)					Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
LCS (BA31411-BS2)					Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
Matrix Spike (BA31411-MS1)		**Source: 1214067-14**			Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	2.1	98	80-120		
Matrix Spike (BA31411-MS2)		**Source: 1214074-13**			Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	ND	100	80-120		
Matrix Spike Dup (BA31411-MSD1)		**Source: 1214067-14**			Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	2.1	98	80-120	0	26

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31411 - alkalinity										
Matrix Spike Dup (BA31411-MSD2)		**Source: 1214074-13**			Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	ND	100	80-120	0	26
Batch BA31420 - Ion Chromatography 300.0 Prep										
Blank (BA31420-BLK1)					Prepared & Analyzed: 01/14/13					
Sulfate	0.20 U	0.60	0.20	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BA31420-BS1)					Prepared & Analyzed: 01/14/13					
Nitrate (as N)	1.66	0.04	0.01	mg/L	1.7		98	85-115		
Orthophosphate as P	0.892	0.040	0.010	mg/L	0.90		99	85-115		
Chloride	2.83	0.20	0.050	mg/L	3.0		94	85-115		
Nitrite (as N)	1.32	0.04	0.01	mg/L	1.4		94	85-115		
Sulfate	8.77	0.60	0.20	mg/L	9.0		97	85-115		
LCS Dup (BA31420-BSD1)					Prepared & Analyzed: 01/14/13					
Chloride	2.85	0.20	0.050	mg/L	3.0		95	85-115	0.7	200
Nitrite (as N)	1.33	0.04	0.01	mg/L	1.4		95	85-115	0.8	200
Sulfate	8.76	0.60	0.20	mg/L	9.0		97	85-115	0.1	200
Nitrate (as N)	1.67	0.04	0.01	mg/L	1.7		98	85-115	0.6	200
Orthophosphate as P	0.897	0.040	0.010	mg/L	0.90		100	85-115	0.6	200
Matrix Spike (BA31420-MS1)		**Source: 1214067-09**			Prepared & Analyzed: 01/14/13					
Sulfate	232 J5	0.60	0.20	mg/L	90	54.4	197	85-115		
Orthophosphate as P	8.65	0.040	0.010	mg/L	9.0	ND	96	85-115		
Nitrate (as N)	77.9	0.04	0.01	mg/L	17	58.6	114	85-115		
Nitrite (as N)	13.9	0.04	0.01	mg/L	14	ND	99	85-115		
Chloride	121	0.20	0.050	mg/L	30	86.8	114	80-120		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31420 - Ion Chromatography 300.0 Prep										
Matrix Spike (BA31420-MS2)		**Source: 1300198-02**			Prepared & Analyzed: 01/14/13					
Chloride	11.9	0.20	0.050	mg/L	3.0	8.55	112	80-120		
Orthophosphate as P	0.954	0.040	0.010	mg/L	0.90	0.125	92	85-115		
Sulfate	11.5	0.60	0.20	mg/L	9.0	2.53	100	85-115		
Nitrite (as N)	1.27	0.04	0.01	mg/L	1.4	ND	91	85-115		
Nitrate (as N)	1.89	0.04	0.01	mg/L	1.7	0.0893	106	85-115		
Batch BA31613 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BA31613-BLK1)					Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BA31613-BS1)					Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	0.726	0.040	0.010	mg/L	0.80		91	90-110		
Matrix Spike (BA31613-MS1)		**Source: 1214067-11**			Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	0.968	0.040	0.010	mg/L	1.0	0.0665	90	90-110		
Matrix Spike (BA31613-MS2)		**Source: 1214074-13**			Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	1.10	0.040	0.010	mg/L	1.0	0.130	97	90-110		
Matrix Spike Dup (BA31613-MSD1)		**Source: 1214067-11**			Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	1.07	0.040	0.010	mg/L	1.0	0.0665	100	90-110	10	25
Matrix Spike Dup (BA31613-MSD2)		**Source: 1214074-13**			Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	1.17	0.040	0.010	mg/L	1.0	0.130	104	90-110	6	25

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31614 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BA31614-BLK1)					Prepared: 01/16/13 Analyzed: 01/23/13					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BA31614-BS1)					Prepared: 01/16/13 Analyzed: 01/23/13					
Phosphorous - Total as P	0.815	0.040	0.010	mg/L	0.80		102	90-110		
Matrix Spike (BA31614-MS1)		**Source: 1214067-07**			Prepared: 01/16/13 Analyzed: 01/23/13					
Phosphorous - Total as P	1.10	0.040	0.010	mg/L	1.0	0.0368	107	90-110		
Matrix Spike Dup (BA31614-MSD1)		**Source: 1214067-07**			Prepared: 01/16/13 Analyzed: 01/23/13					
Phosphorous - Total as P	1.08	0.040	0.010	mg/L	1.0	0.0368	104	90-110	2	25
Batch BA31643 - Digestion for TKN by EPA 351.2										
Blank (BA31643-BLK1)					Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BA31643-BS1)					Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	2.62	0.20	0.05	mg/L	2.5		103	90-110		
Matrix Spike (BA31643-MS1)		**Source: 1214067-03**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	6.39	0.20	0.05	mg/L	2.5	3.65	108	90-110		
Matrix Spike (BA31643-MS2)		**Source: 1214076-05**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	28.0	0.20	0.05	mg/L	25	2.97	99	90-110		
Matrix Spike Dup (BA31643-MSD1)		**Source: 1214067-03**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	6.27	0.20	0.05	mg/L	2.5	3.65	103	90-110	2	20

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31643 - Digestion for TKN by EPA 351.2										
Matrix Spike Dup (BA31643-MSD2)		**Source: 1214076-05**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	26.6	0.20	0.05	mg/L	25	2.97	93	90-110	5	20
Batch BA31830 - Ammonia by SEAL										
Blank (BA31830-BLK1)					Prepared & Analyzed: 01/18/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BA31830-BS1)					Prepared & Analyzed: 01/18/13					
Ammonia as N	0.53	0.040	0.009	mg/L	0.50		106	90-110		
Matrix Spike (BA31830-MS1)		**Source: 1300575-07**			Prepared & Analyzed: 01/18/13					
Ammonia as N	0.49	0.040	0.009	mg/L	0.50	0.010	97	90-110		
Matrix Spike (BA31830-MS2)		**Source: 1300638-01**			Prepared & Analyzed: 01/18/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	0.045	92	90-110		
Matrix Spike Dup (BA31830-MSD1)		**Source: 1300575-07**			Prepared & Analyzed: 01/18/13					
Ammonia as N	0.52	0.040	0.009	mg/L	0.50	0.010	103	90-110	6	10
Matrix Spike Dup (BA31830-MSD2)		**Source: 1300638-01**			Prepared & Analyzed: 01/18/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.045	91	90-110	0.8	10
Batch BA32303 - Ammonia by SEAL										
Blank (BA32303-BLK1)					Prepared & Analyzed: 01/23/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA32303 - Ammonia by SEAL										
LCS (BA32303-BS1)					Prepared & Analyzed: 01/23/13					
Ammonia as N	0.49	0.040	0.009	mg/L	0.50		98	90-110		
Matrix Spike (BA32303-MS1)		**Source: 1214067-23**			Prepared & Analyzed: 01/23/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	ND	101	90-110		
Matrix Spike (BA32303-MS2)		**Source: 1300701-07**			Prepared & Analyzed: 01/23/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.040	91	90-110		
Matrix Spike Dup (BA32303-MSD1)		**Source: 1214067-23**			Prepared & Analyzed: 01/23/13					
Ammonia as N	0.49	0.040	0.009	mg/L	0.50	ND	98	90-110	2	10
Matrix Spike Dup (BA32303-MSD2)		**Source: 1300701-07**			Prepared & Analyzed: 01/23/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.040	92	90-110	0.5	10
Batch BA32315 - Ammonia by SEAL										
Blank (BA32315-BLK1)					Prepared & Analyzed: 01/23/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BA32315-BS1)					Prepared & Analyzed: 01/23/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50		101	90-110		
Matrix Spike (BA32315-MS1)		**Source: 1300758-07**			Prepared & Analyzed: 01/23/13					
Ammonia as N	0.52	0.040	0.009	mg/L	0.50	0.038	96	90-110		
Matrix Spike (BA32315-MS2)		**Source: 1300767-07**			Prepared & Analyzed: 01/23/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.023	95	90-110		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA32315 - Ammonia by SEAL										
Matrix Spike Dup (BA32315-MSD1)		**Source: 1300758-07**			Prepared & Analyzed: 01/23/13					
Ammonia as N	0.52	0.040	0.009	mg/L	0.50	0.038	96	90-110	0.2	10
Matrix Spike Dup (BA32315-MSD2)		**Source: 1300767-07**			Prepared & Analyzed: 01/23/13					
Ammonia as N	0.49	0.040	0.009	mg/L	0.50	0.023	94	90-110	2	10

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Inorganic, Dissolved - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31117 - TOC prep										
Blank (BA31117-BLK1)					Prepared & Analyzed: 01/11/13					
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BA31117-BS1)					Prepared & Analyzed: 01/11/13					
Dissolved Organic Carbon	9.54	1.0	0.50	mg/L	10		95	90-110		
Matrix Spike (BA31117-MS1)		**Source: 1214067-10**			Prepared & Analyzed: 01/11/13					
Dissolved Organic Carbon	12.9	1.0	0.50	mg/L	10	3.51	94	85-125		
Matrix Spike Dup (BA31117-MSD1)		**Source: 1214067-10**			Prepared & Analyzed: 01/11/13					
Dissolved Organic Carbon	13.1	1.0	0.50	mg/L	10	3.51	96	85-125	1	25

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Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31507 - Metals Preparation for EPA Method 200.7										
Blank (BA31507-BLK1)					Prepared & Analyzed: 01/16/13					
Magnesium	0.020 U	0.50	0.020	mg/L						
Calcium	0.042 U	0.50	0.042	mg/L						
Sodium	0.13 U	0.50	0.13	mg/L						
Manganese	0.0010 U	0.010	0.0010	mg/L						
Potassium	0.010 U	0.050	0.010	mg/L						
Boron	0.050 U	0.10	0.050	mg/L						
Iron	0.020 U	0.10	0.020	mg/L						
LCS (BA31507-BS1)					Prepared & Analyzed: 01/16/13					
Iron	7.7	0.10	0.020	mg/L	8.0		96	85-115		
Boron	0.41	0.10	0.050	mg/L	0.40		103	85-115		
Manganese	0.39	0.010	0.0010	mg/L	0.40		97	85-115		
Calcium	19	0.50	0.042	mg/L	20		96	85-115		
Magnesium	19	0.50	0.020	mg/L	20		96	85-115		
Sodium	19	0.50	0.13	mg/L	20		95	85-115		
Potassium	18	0.050	0.010	mg/L	20		91	85-115		
Matrix Spike (BA31507-MS1)		**Source: 1300022-01**			Prepared & Analyzed: 01/16/13					
Potassium	18	0.050	0.010	mg/L	20	1.1	87	70-130		
Magnesium	30	0.50	0.020	mg/L	20	13	85	70-130		
Sodium	29	0.50	0.13	mg/L	20	12	86	70-130		
Manganese	0.38	0.010	0.0010	mg/L	0.40	0.018	90	70-130		
Boron	0.41	0.10	0.050	mg/L	0.40	ND	103	70-130		
Calcium	51	0.50	0.042	mg/L	20	34	81	70-130		
Iron	7.8	0.10	0.020	mg/L	8.0	0.39	92	70-130		
Matrix Spike (BA31507-MS2)		**Source: 1300473-01**			Prepared & Analyzed: 01/16/13					
Manganese	0.38	0.010	0.0010	mg/L	0.40	0.0015	94	70-130		
Boron	0.43	0.10	0.050	mg/L	0.40	ND	108	70-130		
Iron	7.7	0.10	0.020	mg/L	8.0	0.044	96	70-130		
Magnesium	20	0.50	0.020	mg/L	20	0.87	94	70-130		
Potassium	38	0.050	0.010	mg/L	20	20	91	70-130		
Calcium	24	0.50	0.042	mg/L	20	5.1	93	70-130		
Sodium	75	0.50	0.13	mg/L	20	52	112	70-130		

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Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31507 - Metals Preparation for EPA Method 200.7										
Matrix Spike Dup (BA31507-MSD1)		**Source: 1300022-01**			Prepared & Analyzed: 01/16/13					
Boron	0.45	0.10	0.050	mg/L	0.40	ND	113	70-130	9	30
Iron	8.1	0.10	0.020	mg/L	8.0	0.39	96	70-130	4	30
Manganese	0.40	0.010	0.0010	mg/L	0.40	0.018	95	70-130	6	30
Sodium	32	0.50	0.13	mg/L	20	12	97	70-130	8	30
Potassium	19	0.050	0.010	mg/L	20	1.1	89	70-130	2	30
Calcium	53	0.50	0.042	mg/L	20	34	94	70-130	5	30
Magnesium	32	0.50	0.020	mg/L	20	13	95	70-130	6	30
Matrix Spike Dup (BA31507-MSD2)		**Source: 1300473-01**			Prepared & Analyzed: 01/16/13					
Magnesium	20	0.50	0.020	mg/L	20	0.87	96	70-130	2	30
Iron	7.7	0.10	0.020	mg/L	8.0	0.044	96	70-130	0.07	30
Calcium	24	0.50	0.042	mg/L	20	5.1	94	70-130	0.8	30
Potassium	37	0.050	0.010	mg/L	20	20	88	70-130	2	30
Manganese	0.37	0.010	0.0010	mg/L	0.40	0.0015	93	70-130	2	30
Boron	0.42	0.10	0.050	mg/L	0.40	ND	105	70-130	2	30
Sodium	68	0.50	0.13	mg/L	20	52	79	70-130	9	30

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* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below.

J5 Matrix spike of this sample was outside typical range. All other QC criteria were acceptable.
+O Matrix spike source sample was over the reccommended range for the method.

Questions regarding this report should be directed to :

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SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

1214067

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (TA1)

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, Alkalinity	1LP, Cool NOx, Cl, Alkalinity, F, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na					Field pH	Field Temperature	Field Conductivity	Field DO
01	TA1-PAN-12-N			GW		X	1	1														
02	TA1-PZ-11-EF2			GW		X	1	1														
03	TA1-LY-24-C	01/07/13	10:50	GW		X	1	1											6.1	17.8	884	7.6
04	TA1-LY-12-S	01/07/13	11:00	GW		X	1	1											6.8	17.5	953	8.2
05	TA1-LY-24-S	01/07/13	11:07	GW		X			1	1									6.4	17.2	820	7.2
06	TA1-LY-42-S	01/07/13	11:15	GW		X			1	1									5.1	17.9	836	7.5
07	TA1-PZ-11-J4			GW		X			1	1												
08	TA1-PZ-11-K4			GW		X			1	1												
09	TA1-PZ-11-L2			GW		X			1		1	1	2	1								
10	TA1-PZ-11-L2 DUP			GW		X			1		1	1	2	1								
11	TA1-PZ-11-L3			GW		X			1	1												
12	TA1-PZ-11-L3 DUP			GW		X			1	1												

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished: J. Chamberg	12-7-12 13:00		1500 12 7 12
Relinquished:	1600 1/7/13	Received: K Mudmeat	1/7/13 1600
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

Seal intact? Y N (N/A)
Samples intact upon arrival? (Y) N N/A
Received on ice? Temp_____ (Y) N N/A
Proper preservatives indicated? (Y) N N/A
Rec'd within holding time? (Y) N N/A
Volatiles rec'd w/out headspace? Y N (N/A)
Proper containers used? (Y) N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

1214067

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SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (TA1)

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, Alkalinity	1LP, Cool NOx, Cl, Alkalinity, F, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na					Field pH	Field Temperature	Field Conductivity	Field DO
01	TA1-PAN-12-N			GW		X	1	1														
02	TA1-PZ-11-EF2	1/10/13	1147	GW		X	1	1											4.55	24.8	915	7.04
03	TA1-LY-24-C			GW		X	1	1														
04	TA1-LY-12-S			GW		X	1	1														
05	TA1-LY-24-S			GW		X			1	1												
06	TA1-LY-42-S			GW		X			1	1												
07	TA1-PZ-11-J4		1205	GW		X			1	1									4.60	25.4	271	5.32
08	TA1-PZ-11-K4		1222	GW		X			1	1									4.74	25.4	247	5.95
09	TA1-PZ-11-L2		1106	GW		X			1		1	1	2	1					4.63	25.6	1000	6.98
10	TA1-PZ-11-L2 DUP		1112	GW		X			1		1	1	2	1					4.63	25.6	1000	6.98
11	TA1-PZ-11-L3		1149	GW		X			1	1									4.82	25.6	361	7.36
12	TA1-PZ-11-L3 DUP		1154	GW		X			1	1									4.82	25.6	361	7.36

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ J. Chambers	12-7-12 13:00		
	1600 1/10/13	K Nudmark	1600 1/10/13

Seal intact? Y N (N/A)

Samples intact upon arrival? (Y) N N/A

Received on ice? Temp_____ (Y) N N/A

Proper preservatives indicated? (Y) N N/A

Rec'd within holding time? (Y) N N/A

Volatiles rec'd w/out headspace? Y N (N/A)

Proper containers used? (Y) N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

1214067

1214067

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (TA1)

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, Alkalinity	1LP, Cool NOx, Cl, Alkalinity, F, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na					Field pH	Field Temperature	Field Conductivity	Field DO
13	TA1-PZ-11-L4	1/10/13	1211	GW		X			1	1									4.56	24.8	436	2.76
14	TA1-PZ-11-L5		1112	GW		X			1	1									4.61	24.8	234	5.13
15	TA1-PZ-09-N3		~~1100~~	1038 GW		X	1	1							6.44	24.7	388	4.70	~~5.23~~	~~25.7~~	~~296~~	~~3.40~~
16	TA1-PZ-09-N3 DUP		~~1105~~	1043 GW		X	1	1							6.44	24.7	381	4.10	~~5.23~~	~~25.7~~	~~296~~	~~3.40~~
17	TA1-PZ-16-N3		1100	GW		X	1	1											5.23	25.7	296	3.40
18	TA1-PZ-09-O7		1029	GW		X			1	1									5.46	24.1	270	5.21
19	TA1-PZ-16-O7		1043	GW		X			1	1									5.30	24.8	316	3.68
20	TA1-PZ-09-M9		1001	GW		X	1	1											5.81	24.2	216.9	4.23
21	TA1-PZ-16-M9		1012	GW		X	1	1											5.37	25.0	330	4.37
22	TA1-PZ-09-I7		0931	GW		X	1	1											5.70	23.7	238	3.16
23	TA1-PZ-16-I7		0940	GW		X	1	1											5.37	25.2	323	3.66
24	TA1-PZ-09-RS16		0859	GW		X	1	1											5.72	23.0	239	4.90

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished: J. Clapberg	12-7-12 12:25		
	1/10/13 1600	K Mudnock	1/10/13 1600

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace? Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

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SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (TA1)

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, Alkalinity	1LP, Cool NOx, Cl, Alkalinity, F, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na					Field pH	Field Temperature	Field Conductivity	Field DO
25	TA1-PZ-16-RS16	1/10/13	0907	GW		X	1	1											5.45	24.1	313	4.93
26	TA1-PZ-09-RS18		0826	GW		X	1	1											5.89	22.3	269	5.57
27	TA1-PZ-16-RS18		0836	GW		X	1	1											5.64	23.6	311	4.33

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
J. Chambers	12-7-12 12:25		
Relinquished:	Date/Time: 1600 1/10/13	Received: K Medmark	Date/Time: 1/10/13 1600
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

Seal intact? Y N (N/A)

Samples intact upon arrival? (Y) N N/A

Received on ice? Temp_____ (Y) N N/A

Proper preservatives indicated? (Y) N N/A

Rec'd within holding time? (Y) N N/A

Volatiles rec'd w/out headspace? Y N (N/A)

Proper containers used? (Y) N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev Date 11/19/01

Chain of Custody

1214067

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 24, 2013
Work Order: 1214072

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA2-LY-24-C**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-02**						
Date/Time Collected		**01/07/13 09:25**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		3.3						
Temperature		17.6 °C						
Conductivity		819 umhos						
Dissolved Oxygen		7.9 mg/L						
Inorganics								
Ammonia as N	mg/L	0.012 I	EPA 350.1	0.040	0.009		01/09/13 12:41	1
Ammonium as NH4	mg/L	0.02 I	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chloride	mg/L	79	EPA 300.0	0.20	0.050		01/19/13 02:38	1
Nitrate (as N)	mg/L	20	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Total Kjeldahl Nitrogen	mg/L	2.3	EPA 351.2	0.20	0.05	01/16/13 16:31	01/18/13 10:45	1
Nitrate+Nitrite (N)	mg/L	20	EPA 300.0	0.08	0.02		01/08/13 16:45	1

Sample Description		**TA2-LY-12-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-03**						
Date/Time Collected		**01/07/13 09:32**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		6.4						
Temperature		17.7 °C						
Conductivity		769 umhos						
Dissolved Oxygen		8.5 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 12:43	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chloride	mg/L	73	EPA 300.0	0.20	0.050		01/19/13 02:38	1
Nitrate (as N)	mg/L	18	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	01/16/13 16:31	01/18/13 10:47	1
Nitrate+Nitrite (N)	mg/L	18	EPA 300.0	0.08	0.02		01/08/13 16:45	1

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 24, 2013
Work Order: 1214072

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA2-LY-24-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-04**						
Date/Time Collected		**01/07/13 09:40**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		6.1						
Temperature		17.5 °C						
Conductivity		701 umhos						
Dissolved Oxygen		6.9 mg/L						
Inorganics								
Ammonia as N	mg/L	0.010 I	EPA 350.1	0.040	0.009		01/09/13 12:45	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chemical Oxygen Demand	mg/L	15 I	EPA 410.4	25	10	01/08/13 09:15	01/08/13 11:40	1
Chloride	mg/L	77	EPA 300.0	0.20	0.050		01/12/13 11:06	1
Nitrate (as N)	mg/L	24	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Nitrite (as N)	mg/L	0.27	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Phosphorous - Total as P	mg/L	0.23	SM 4500P-E	0.040	0.010	01/08/13 10:14	01/10/13 12:51	1
Total Alkalinity	mg/L	23	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	01/16/13 16:31	01/18/13 10:49	1
Nitrate+Nitrite (N)	mg/L	24	EPA 300.0	0.08	0.02		01/08/13 16:45	1

Sample Description		**TA2-LY-42-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-05**						
Date/Time Collected		**01/07/13 09:45**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		5.6						
Temperature		18.2 °C						
Conductivity		726 umhos						
Dissolved Oxygen		7.3 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 12:47	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chemical Oxygen Demand	mg/L	13 I	EPA 410.4	25	10	01/08/13 09:15	01/08/13 11:40	1
Chloride	mg/L	85	EPA 300.0	0.20	0.050		01/12/13 11:06	1
Fluoride	mg/L	0.016 I	EPA 300.0	0.040	0.010		01/08/13 16:45	1
Nitrate (as N)	mg/L	26	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Nitrite (as N)	mg/L	0.13	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		01/08/13 16:45	1

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 24, 2013
Work Order: 1214072

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA2-LY-42-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-05**						
Date/Time Collected		**01/07/13 09:45**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		5.6						
Temperature		18.2 °C						
Conductivity		726 umhos						
Dissolved Oxygen		7.3 mg/L						
Phosphorous - Total as P	mg/L	0.13	SM 4500P-E	0.040	0.010	01/08/13 10:14	01/10/13 12:52	1
Sulfate	mg/L	70	EPA 300.0	0.60	0.20		01/08/13 16:45	1
Total Alkalinity	mg/L	5.3 I	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	2.2	EPA 351.2	0.20	0.05	01/16/13 16:31	01/18/13 10:50	1
Nitrate+Nitrite (N)	mg/L	26	EPA 300.0	0.08	0.02		01/08/13 16:45	1
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	12	SM 5310B	1.0	0.50		01/09/13 09:58	1

Sample Description		**TA2-PZ-10-EF2**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-06**						
Date/Time Collected		**01/08/13 13:57**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.49						
Temperature		24.5 °C						
Conductivity		324 umhos						
Dissolved Oxygen		4.74 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 12:49	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chloride	mg/L	38	EPA 300.0	0.20	0.050		01/19/13 10:51	1
Nitrate (as N)	mg/L	16	EPA 300.0	0.04	0.01		01/10/13 13:30	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/10/13 13:30	1
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	01/09/13 14:28	01/11/13 15:28	1
Nitrate+Nitrite (N)	mg/L	16	EPA 300.0	0.08	0.02		01/10/13 13:30	1

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 24, 2013
Work Order: 1214072

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA2-PZ-10-H5**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-07**						
Date/Time Collected		**01/08/13 13:13**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.50						
Temperature		25.1 °C						
Conductivity		186 umhos						
Dissolved Oxygen		3.28 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 12:50	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chemical Oxygen Demand	mg/L	15 I	EPA 410.4	25	10	01/09/13 12:30	01/09/13 15:10	1
Chloride	mg/L	5.2	EPA 300.0	0.20	0.050		01/09/13 17:50	1
Nitrate (as N)	mg/L	5.4	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Phosphorous - Total as P	mg/L	0.039 I	SM 4500P-E	0.040	0.010	01/09/13 13:24	01/14/13 12:03	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	01/09/13 14:28	01/11/13 15:30	1
Nitrate+Nitrite (N)	mg/L	5.4	EPA 300.0	0.08	0.02		01/09/13 17:50	1

Sample Description		**TA2-PZ-10-J5**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-08**						
Date/Time Collected		**01/08/13 12:50**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.73						
Temperature		24.4 °C						
Conductivity		117 umhos						
Dissolved Oxygen		3.60 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 12:52	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/09/13 12:30	01/09/13 15:10	1
Chloride	mg/L	9.2	EPA 300.0	0.20	0.050		01/09/13 17:50	1
Nitrate (as N)	mg/L	4.6	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Phosphorous - Total as P	mg/L	0.076	SM 4500P-E	0.040	0.010	01/09/13 13:24	01/14/13 12:57	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/14/13 12:36	1

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 24, 2013
Work Order: 1214072

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA2-PZ-10-J5**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-08**						
Date/Time Collected		**01/08/13 12:50**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.73						
Temperature		24.4 °C						
Conductivity		117 umhos						
Dissolved Oxygen		3.60 mg/L						
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	01/09/13 14:28	01/11/13 15:32	1
Nitrate+Nitrite (N)	mg/L	4.6	EPA 300.0	0.08	0.02		01/09/13 17:50	1
Sample Description		**TA2-PZ-10-J5-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-09**						
Date/Time Collected		**01/08/13 12:55**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.73						
Temperature		24.4 °C						
Conductivity		117 umhos						
Dissolved Oxygen		3.60 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 12:54	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/09/13 12:30	01/09/13 15:10	1
Chloride	mg/L	9.7	EPA 300.0	0.20	0.050		01/09/13 17:50	1
Nitrate (as N)	mg/L	5.0	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Phosphorous - Total as P	mg/L	0.070	SM 4500P-E	0.040	0.010	01/09/13 13:24	01/14/13 12:58	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	01/09/13 14:28	01/11/13 15:33	1
Nitrate+Nitrite (N)	mg/L	5.0	EPA 300.0	0.08	0.02		01/09/13 17:50	1
Sample Description		**TA2-PZ-10-K5**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-10**						
Date/Time Collected		**01/08/13 12:40**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 24, 2013
Work Order: 1214072

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA2-PZ-10-K5**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-10**						
Date/Time Collected		**01/08/13 12:40**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.65						
Temperature		25.0 °C						
Conductivity		153 umhos						
Dissolved Oxygen		3.48 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 12:55	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chemical Oxygen Demand	mg/L	10 I	EPA 410.4	25	10	01/09/13 12:30	01/09/13 15:10	1
Chloride	mg/L	6.7	EPA 300.0	0.20	0.050		01/09/13 17:50	1
Nitrate (as N)	mg/L	4.6	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Phosphorous - Total as P	mg/L	0.079	SM 4500P-E	0.040	0.010	01/09/13 13:24	01/14/13 12:05	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	0.05 U	EPA 351.2	0.20	0.05	01/09/13 14:28	01/11/13 15:34	1
Nitrate+Nitrite (N)	mg/L	4.6	EPA 300.0	0.08	0.02		01/09/13 17:50	1

Sample Description		**TA2-PZ-10-L2**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-11**						
Date/Time Collected		**01/08/13 11:24**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.44						
Temperature		24.4 °C						
Conductivity		188 umhos						
Dissolved Oxygen		2.86 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 12:57	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chemical Oxygen Demand	mg/L	20 I	EPA 410.4	25	10	01/09/13 12:30	01/09/13 15:10	1
Chloride	mg/L	5.2	EPA 300.0	0.20	0.050		01/09/13 17:50	1
Nitrate (as N)	mg/L	5.5	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Phosphorous - Total as P	mg/L	0.048	SM 4500P-E	0.040	0.010	01/09/13 13:24	01/14/13 12:06	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/14/13 12:36	1

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Sample Description		**TA2-PZ-10-L2**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-11**						
Date/Time Collected		**01/08/13 11:24**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.44						
Temperature		24.4 °C						
Conductivity		188 umhos						
Dissolved Oxygen		2.86 mg/L						
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	01/09/13 14:28	01/11/13 15:35	1
Nitrate+Nitrite (N)	mg/L	5.5	EPA 300.0	0.08	0.02		01/09/13 17:50	1
Sample Description		**TA2-PZ-10-L3**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-12**						
Date/Time Collected		**01/08/13 11:36**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.41						
Temperature		24.9 °C						
Conductivity		186 umhos						
Dissolved Oxygen		3.39 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 14:39	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/09/13 12:30	01/09/13 15:10	1
Chloride	mg/L	4.4	EPA 300.0	0.20	0.050		01/09/13 17:50	1
Nitrate (as N)	mg/L	5.5	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Phosphorous - Total as P	mg/L	0.21	SM 4500P-E	0.040	0.010	01/09/13 13:24	01/14/13 12:07	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	0.79	EPA 351.2	0.20	0.05	01/09/13 14:28	01/11/13 15:37	1
Nitrate+Nitrite (N)	mg/L	5.5	EPA 300.0	0.08	0.02		01/09/13 17:50	1
Sample Description		**TA2-PZ-10-L4**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-13**						
Date/Time Collected		**01/08/13 11:48**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						

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Sample Description		**TA2-PZ-10-L4**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-13**						
Date/Time Collected		**01/08/13 11:48**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.59						
Temperature		23.8 °C						
Conductivity		148 umhos						
Dissolved Oxygen		3.65 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 14:41	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/09/13 12:30	01/09/13 15:10	1
Chloride	mg/L	7.5	EPA 300.0	0.20	0.050		01/09/13 17:50	1
Nitrate (as N)	mg/L	5.0	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Phosphorous - Total as P	mg/L	0.033 I	SM 4500P-E	0.040	0.010	01/09/13 13:24	01/14/13 12:08	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	01/09/13 14:28	01/11/13 15:38	1
Nitrate+Nitrite (N)	mg/L	5.0	EPA 300.0	0.08	0.02		01/09/13 17:50	1
Sample Description		**TA2-PZ-10-L5**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-14**						
Date/Time Collected		**01/08/13 12:12**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.44						
Temperature		28.4 °C						
Conductivity		181 umhos						
Dissolved Oxygen		3.78 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 14:43	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/09/13 12:30	01/09/13 15:10	1
Chloride	mg/L	7.6	EPA 300.0	0.20	0.050		01/09/13 17:50	1
Nitrate (as N)	mg/L	5.5	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Phosphorous - Total as P	mg/L	0.14	SM 4500P-E	0.040	0.010	01/09/13 13:24	01/14/13 13:23	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/14/13 12:36	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA2-PZ-10-L5**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-14**						
Date/Time Collected		**01/08/13 12:12**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.44						
Temperature		28.4 °C						
Conductivity		181 umhos						
Dissolved Oxygen		3.78 mg/L						
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	01/11/13 08:49	01/14/13 13:36	1
Nitrate+Nitrite (N)	mg/L	5.5	EPA 300.0	0.08	0.02		01/09/13 17:50	1
Sample Description		**TA2-PZ-10-L5-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-15**						
Date/Time Collected		**01/08/13 12:17**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.47						
Temperature		24.7 °C						
Conductivity		151 umhos						
Dissolved Oxygen		3.78 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 14:45	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chemical Oxygen Demand	mg/L	10 I	EPA 410.4	25	10	01/09/13 12:30	01/09/13 15:10	1
Chloride	mg/L	7.4	EPA 300.0	0.20	0.050		01/09/13 17:50	1
Nitrate (as N)	mg/L	5.5	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Phosphorous - Total as P	mg/L	0.13	SM 4500P-E	0.040	0.010	01/09/13 13:24	01/14/13 13:00	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	01/11/13 08:49	01/14/13 13:37	1
Nitrate+Nitrite (N)	mg/L	5.5	EPA 300.0	0.08	0.02		01/09/13 17:50	1
Sample Description		**TA2-PZ-10-L6**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-16**						
Date/Time Collected		**01/08/13 12:25**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						

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Sample Description		**TA2-PZ-10-L6**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-16**						
Date/Time Collected		**01/08/13 12:25**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.52						
Temperature		24.5 °C						
Conductivity		193 umhos						
Dissolved Oxygen		3.50 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 14:47	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/09/13 12:30	01/09/13 15:10	1
Chloride	mg/L	7.9	EPA 300.0	0.20	0.050		01/09/13 17:50	1
Nitrate (as N)	mg/L	5.9	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Phosphorous - Total as P	mg/L	0.10	SM 4500P-E	0.040	0.010	01/09/13 13:24	01/14/13 12:11	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	01/09/13 14:28	01/11/13 15:39	1
Nitrate+Nitrite (N)	mg/L	5.9	EPA 300.0	0.08	0.02		01/09/13 17:50	1

Sample Description		**TA2-PZ-09-M4**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-17**						
Date/Time Collected		**01/08/13 10:57**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.73						
Temperature		24.1 °C						
Conductivity		206 umhos						
Dissolved Oxygen		3.51 mg/L						
Inorganics								
Ammonia as N	mg/L	0.024 I	EPA 350.1	0.040	0.009		01/09/13 14:49	1
Ammonium as NH4	mg/L	0.03 I	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chemical Oxygen Demand	mg/L	24 I	EPA 410.4	25	10	01/09/13 12:30	01/09/13 15:10	1
Chloride	mg/L	8.0	EPA 300.0	0.20	0.050		01/09/13 17:50	1
Nitrate (as N)	mg/L	7.0	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Phosphorous - Total as P	mg/L	1.4	SM 4500P-E	0.040	0.010	01/09/13 13:24	01/14/13 12:15	1
Total Alkalinity	mg/L	3.2 I	SM 2320B	8.0	2.0		01/14/13 12:36	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA2-PZ-09-M4**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-17**						
Date/Time Collected		**01/08/13 10:57**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.73						
Temperature		24.1 °C						
Conductivity		206 umhos						
Dissolved Oxygen		3.51 mg/L						
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	01/11/13 08:49	01/14/13 13:39	1
Nitrate+Nitrite (N)	mg/L	7.0	EPA 300.0	0.08	0.02		01/09/13 17:50	1
Sample Description		**TA2-PZ-16-M4**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-18**						
Date/Time Collected		**01/08/13 11:07**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		5.60						
Temperature		25.7 °C						
Conductivity		235 umhos						
Dissolved Oxygen		3.34 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 14:51	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chloride	mg/L	6.0	EPA 300.0	0.20	0.050		01/09/13 17:50	1
Nitrate (as N)	mg/L	2.4	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Total Kjeldahl Nitrogen	mg/L	0.62	EPA 351.2	0.20	0.05	01/11/13 08:49	01/14/13 13:41	1
Nitrate+Nitrite (N)	mg/L	2.4	EPA 300.0	0.08	0.02		01/09/13 17:50	1
Sample Description		**TA2-PZ-09-N7**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-19**						
Date/Time Collected		**01/08/13 10:24**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		5.44						

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA2-PZ-09-N7**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-19**						
Date/Time Collected		**01/08/13 10:24**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		5.44						
Temperature		23.5 °C						
Conductivity		232 umhos						
Dissolved Oxygen		3.37 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 14:53	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chemical Oxygen Demand	mg/L	13 I	EPA 410.4	25	10	01/09/13 12:30	01/09/13 15:10	1
Chloride	mg/L	16	EPA 300.0	0.20	0.050		01/09/13 17:50	1
Nitrate (as N)	mg/L	7.6	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Phosphorous - Total as P	mg/L	0.68	SM 4500P-E	0.040	0.010	01/09/13 13:24	01/14/13 12:16	1
Total Alkalinity	mg/L	6.3 I	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	01/11/13 08:49	01/14/13 13:49	1
Nitrate+Nitrite (N)	mg/L	7.6	EPA 300.0	0.08	0.02		01/09/13 17:50	1

Sample Description		**TA2-PZ-09-N7-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-20**						
Date/Time Collected		**01/08/13 10:29**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:30**						
Client Provided Field Data								
pH		5.44						
Temperature		23.5 °C						
Conductivity		232 umhos						
Dissolved Oxygen		3.37 mg/L						
Inorganics								
Ammonia as N	mg/L	0.016 I	EPA 350.1	0.040	0.009		01/16/13 12:22	1
Ammonium as NH4	mg/L	0.02 I	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chemical Oxygen Demand	mg/L	12 I	EPA 410.4	25	10	01/17/13 10:30	01/17/13 13:00	1
Chloride	mg/L	16	EPA 300.0	0.20	0.050		01/19/13 10:51	1
Phosphorous - Total as P	mg/L	0.35	SM 4500P-E	0.040	0.010	01/15/13 13:18	01/16/13 12:46	1
Total Alkalinity	mg/L	5.3 I	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	0.97	EPA 351.2	0.20	0.05	01/16/13 16:31	01/18/13 10:52	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA2-PZ-16-N7**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-21**						
Date/Time Collected		**01/08/13 10:34**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		5.51						
Temperature		23.6 °C						
Conductivity		189 umhos						
Dissolved Oxygen		3.04 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 14:55	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chloride	mg/L	7.3	EPA 300.0	0.20	0.050		01/09/13 17:50	1
Nitrate (as N)	mg/L	2.6	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Total Kjeldahl Nitrogen	mg/L	0.75	EPA 351.2	0.20	0.05	01/11/13 08:49	01/14/13 13:51	1
Nitrate+Nitrite (N)	mg/L	2.6	EPA 300.0	0.08	0.02		01/09/13 17:50	1

Sample Description		**TA2-PZ-09-I7**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-22**						
Date/Time Collected		**01/08/13 09:25**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		5.00						
Temperature		22.6 °C						
Conductivity		157 umhos						
Dissolved Oxygen		3.06 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 14:57	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chloride	mg/L	4.5	EPA 300.0	0.20	0.050		01/09/13 17:50	1
Nitrate (as N)	mg/L	5.5	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Total Kjeldahl Nitrogen	mg/L	1.0	EPA 351.2	0.20	0.05	01/11/13 08:49	01/14/13 13:52	1
Nitrate+Nitrite (N)	mg/L	5.5	EPA 300.0	0.08	0.02		01/09/13 17:50	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA2-PZ-16-I7**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-23**						
Date/Time Collected		**01/08/13 09:36**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		5.44						
Temperature		23.9 °C						
Conductivity		172 umhos						
Dissolved Oxygen		2.66 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 15:08	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chloride	mg/L	6.9	EPA 300.0	0.20	0.050		01/09/13 17:50	1
Nitrate (as N)	mg/L	2.5	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Total Kjeldahl Nitrogen	mg/L	0.58	EPA 351.2	0.20	0.05	01/11/13 08:49	01/14/13 13:54	1
Nitrate+Nitrite (N)	mg/L	2.5	EPA 300.0	0.08	0.02		01/09/13 17:50	1

Sample Description		**TA2-PZ-09-L8**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-24**						
Date/Time Collected		**01/08/13 09:55**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		5.25						
Temperature		22.7 °C						
Conductivity		159 umhos						
Dissolved Oxygen		3.09 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 15:10	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chloride	mg/L	7.6	EPA 300.0	0.20	0.050		01/09/13 17:50	1
Nitrate (as N)	mg/L	2.7	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Total Kjeldahl Nitrogen	mg/L	0.83	EPA 351.2	0.20	0.05	01/11/13 08:49	01/14/13 13:56	1
Nitrate+Nitrite (N)	mg/L	2.7	EPA 300.0	0.08	0.02		01/09/13 17:50	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA2-PZ-16-L8**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-25**						
Date/Time Collected		**01/08/13 10:05**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		5.36						
Temperature		24.1 °C						
Conductivity		171 umhos						
Dissolved Oxygen		2.80 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 15:12	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chloride	mg/L	6.5	EPA 300.0	0.20	0.050		01/09/13 17:50	1
Nitrate (as N)	mg/L	2.3	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Total Kjeldahl Nitrogen	mg/L	0.71	EPA 351.2	0.20	0.05	01/11/13 08:49	01/14/13 13:58	1
Nitrate+Nitrite (N)	mg/L	2.3	EPA 300.0	0.08	0.02		01/09/13 17:50	1

Sample Description		**TA2-PZ-09-TU19**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-26**						
Date/Time Collected		**01/08/13 08:58**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.44						
Temperature		21.8 °C						
Conductivity		131 umhos						
Dissolved Oxygen		31.6 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 15:14	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chloride	mg/L	3.1	EPA 300.0	0.20	0.050		01/09/13 17:50	1
Nitrate (as N)	mg/L	4.5	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	01/11/13 08:49	01/14/13 13:59	1
Nitrate+Nitrite (N)	mg/L	4.5	EPA 300.0	0.08	0.02		01/09/13 17:50	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA2-PZ-16-TU19**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-27**						
Date/Time Collected		**01/08/13 09:08**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		5.42						
Temperature		23.4 °C						
Conductivity		149 umhos						
Dissolved Oxygen		2.54 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 15:16	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chloride	mg/L	5.8	EPA 300.0	0.20	0.050		01/09/13 17:50	1
Nitrate (as N)	mg/L	1.0	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Total Kjeldahl Nitrogen	mg/L	0.40	EPA 351.2	0.20	0.05	01/11/13 08:49	01/14/13 14:01	1
Nitrate+Nitrite (N)	mg/L	1.0	EPA 300.0	0.08	0.02		01/09/13 17:50	1

Sample Description		**TA2-PZ-09-TU21**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-28**						
Date/Time Collected		**01/08/13 08:28**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.44						
Temperature		21.7 °C						
Conductivity		142 umhos						
Dissolved Oxygen		2.53 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 15:18	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chloride	mg/L	3.1	EPA 300.0	0.20	0.050		01/10/13 02:36	1
Nitrate (as N)	mg/L	5.1	EPA 300.0	0.04	0.01		01/10/13 02:36	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/10/13 02:36	1
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	01/11/13 08:49	01/14/13 14:03	1
Nitrate+Nitrite (N)	mg/L	5.1	EPA 300.0	0.08	0.02		01/10/13 02:36	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA2-PZ-16-TU21**						
Matrix		**Groundwater**						
SAL Sample Number		**1214072-29**						
Date/Time Collected		**01/08/13 08:40**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		5.37						
Temperature		23.4 °C						
Conductivity		149 umhos						
Dissolved Oxygen		2.72 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 15:19	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/16/13 15:04	01/16/13 15:05	1
Chloride	mg/L	5.6	EPA 300.0	0.20	0.050		01/10/13 02:36	1
Nitrate (as N)	mg/L	1.0	EPA 300.0	0.04	0.01		01/10/13 02:36	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/10/13 02:36	1
Total Kjeldahl Nitrogen	mg/L	0.29	EPA 351.2	0.20	0.05	01/11/13 08:49	01/14/13 14:04	1
Nitrate+Nitrite (N)	mg/L	1.0	EPA 300.0	0.08	0.02		01/10/13 02:36	1

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30806 - COD prep										
Blank (BA30806-BLK1)					Prepared & Analyzed: 01/08/13					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BA30806-BS1)					Prepared & Analyzed: 01/08/13					
Chemical Oxygen Demand	54	25	10	mg/L	50		108	90-110		
Matrix Spike (BA30806-MS1)		**Source: 1214076-11**			Prepared & Analyzed: 01/08/13					
Chemical Oxygen Demand	56	25	10	mg/L	50	ND	112	85-115		
Matrix Spike Dup (BA30806-MSD1)		**Source: 1214076-11**			Prepared & Analyzed: 01/08/13					
Chemical Oxygen Demand	56	25	10	mg/L	50	ND	112	85-115	0	32
Batch BA30811 - Ion Chromatography 300.0 Prep										
Blank (BA30811-BLK1)					Prepared & Analyzed: 01/08/13					
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
LCS (BA30811-BS1)					Prepared & Analyzed: 01/08/13					
Sulfate	8.91	0.60	0.20	mg/L	9.0		99	85-115		
Nitrite (as N)	1.35	0.04	0.01	mg/L	1.4		96	85-115		
Orthophosphate as P	0.933	0.040	0.010	mg/L	0.90		104	85-115		
Nitrate (as N)	1.69	0.04	0.01	mg/L	1.7		99	85-115		
Fluoride	0.867	0.040	0.010	mg/L	0.90		96	85-115		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30811 - Ion Chromatography 300.0 Prep										
LCS Dup (BA30811-BSD1)					Prepared & Analyzed: 01/08/13					
Nitrite (as N)	1.34	0.04	0.01	mg/L	1.4		96	85-115	0.7	200
Fluoride	0.892	0.040	0.010	mg/L	0.90		99	85-115	3	200
Orthophosphate as P	0.865	0.040	0.010	mg/L	0.90		96	85-115	8	200
Sulfate	8.81	0.60	0.20	mg/L	9.0		98	85-115	1	200
Nitrate (as N)	1.67	0.04	0.01	mg/L	1.7		98	85-115	1	200
Matrix Spike (BA30811-MS1)		**Source: 1214074-03**			Prepared & Analyzed: 01/08/13					
Orthophosphate as P	3.16	0.040	0.010	mg/L	0.90	2.29	97	85-115		
Sulfate	57.4	0.60	0.20	mg/L	9.0	48.9	94	85-115		
Nitrite (as N)	1.50	0.04	0.01	mg/L	1.4	ND	107	85-115		
Nitrate (as N)	22.6 +O	0.04	0.01	mg/L	1.7	24.7	NR	85-115		
Fluoride	1.02	0.040	0.010	mg/L	0.90	0.189	92	85-115		
Matrix Spike (BA30811-MS2)		**Source: 1214076-08**			Prepared & Analyzed: 01/08/13					
Sulfate	43.2	0.60	0.20	mg/L	9.0	33.3	110	85-115		
Nitrate (as N)	7.02	0.04	0.01	mg/L	1.7	5.17	109	85-115		
Nitrite (as N)	1.47	0.04	0.01	mg/L	1.4	ND	105	85-115		
Orthophosphate as P	0.855	0.040	0.010	mg/L	0.90	ND	95	85-115		
Fluoride	1.05	0.040	0.010	mg/L	0.90	0.0855	107	85-115		
Batch BA30815 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BA30815-BLK1)					Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BA30815-BS1)					Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	0.742	0.040	0.010	mg/L	0.80		93	90-110		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30815 - Digestion for TP by EPA 365.2/SM4500PE										
Matrix Spike (BA30815-MS1)		**Source: 1214067-05**			Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	1.05	0.040	0.010	mg/L	1.0	0.113	93	90-110		
Matrix Spike (BA30815-MS2)		**Source: 1300195-07**			Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	0.976	0.040	0.010	mg/L	1.0	0.0535	92	90-110		
Matrix Spike Dup (BA30815-MSD1)		**Source: 1214067-05**			Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	1.06	0.040	0.010	mg/L	1.0	0.113	94	90-110	0.9	25
Matrix Spike Dup (BA30815-MSD2)		**Source: 1300195-07**			Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	1.02	0.040	0.010	mg/L	1.0	0.0535	96	90-110	4	25
Batch BA30816 - alkalinity										
Blank (BA30816-BLK1)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BA30816-BLK2)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BA30816-BS1)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
LCS (BA30816-BS2)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
Matrix Spike (BA30816-MS1)		**Source: 1214076-16**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	190	8.0	2.0	mg/L	120	62	100	80-120		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30816 - alkalinity										
Matrix Spike (BA30816-MS2)		**Source: 1214081-03**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	21	83	80-120		
Matrix Spike Dup (BA30816-MSD1)		**Source: 1214076-16**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	190	8.0	2.0	mg/L	120	62	100	80-120	0	26
Matrix Spike Dup (BA30816-MSD2)		**Source: 1214081-03**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	21	83	80-120	0	26
Batch BA30911 - COD prep										
Blank (BA30911-BLK1)					Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BA30911-BS1)					Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	51	25	10	mg/L	50		102	90-110		
Matrix Spike (BA30911-MS1)		**Source: 1214072-08**			Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	51	25	10	mg/L	50	ND	102	85-115		
Matrix Spike Dup (BA30911-MSD1)		**Source: 1214072-08**			Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	51	25	10	mg/L	50	ND	102	85-115	0	32
Batch BA30917 - Ammonia by SEAL										
Blank (BA30917-BLK1)					Prepared & Analyzed: 01/09/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30917 - Ammonia by SEAL										
LCS (BA30917-BS1)					Prepared & Analyzed: 01/09/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50		102	90-110		
Matrix Spike (BA30917-MS1)		**Source: 1214067-04**			Prepared & Analyzed: 01/09/13					
Ammonia as N	0.54	0.040	0.009	mg/L	0.50	0.013	106	90-110		
Matrix Spike (BA30917-MS2)		**Source: 1214072-06**			Prepared & Analyzed: 01/09/13					
Ammonia as N	0.55	0.040	0.009	mg/L	0.50	ND	110	90-110		
Matrix Spike Dup (BA30917-MSD1)		**Source: 1214067-04**			Prepared & Analyzed: 01/09/13					
Ammonia as N	0.55	0.040	0.009	mg/L	0.50	0.013	107	90-110	1	10
Matrix Spike Dup (BA30917-MSD2)		**Source: 1214072-06**			Prepared & Analyzed: 01/09/13					
Ammonia as N	0.54	0.040	0.009	mg/L	0.50	ND	108	90-110	1	10
Batch BA30918 - Ion Chromatography 300.0 Prep										
Blank (BA30918-BLK1)					Prepared & Analyzed: 01/09/13					
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BA30918-BS1)					Prepared & Analyzed: 01/09/13					
Nitrite (as N)	1.35	0.04	0.01	mg/L	1.4		96	85-115		
Chloride	2.87	0.20	0.050	mg/L	3.0		96	85-115		
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115		
LCS Dup (BA30918-BSD1)					Prepared & Analyzed: 01/09/13					
Nitrate (as N)	1.70	0.04	0.01	mg/L	1.7		100	85-115	1	200
Nitrite (as N)	1.49	0.04	0.01	mg/L	1.4		106	85-115	10	200
Chloride	3.14	0.20	0.050	mg/L	3.0		105	85-115	9	200

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30918 - Ion Chromatography 300.0 Prep										
Matrix Spike (BA30918-MS1)		**Source: 1214072-16**			Prepared & Analyzed: 01/09/13					
Nitrite (as N)	1.41	0.04	0.01	mg/L	1.4	ND	101	85-115		
Chloride	11.2	0.20	0.050	mg/L	3.0	7.93	109	80-120		
Nitrate (as N)	7.82	0.04	0.01	mg/L	1.7	5.88	114	85-115		
Matrix Spike (BA30918-MS2)		**Source: 1214072-27**			Prepared & Analyzed: 01/09/13					
Nitrate (as N)	2.75	0.04	0.01	mg/L	1.7	1.03	101	85-115		
Nitrite (as N)	1.43	0.04	0.01	mg/L	1.4	ND	102	85-115		
Chloride	9.04	0.20	0.050	mg/L	3.0	5.84	107	80-120		
Batch BA30919 - Ion Chromatography 300.0 Prep										
Blank (BA30919-BLK1)					Prepared & Analyzed: 01/10/13					
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BA30919-BS1)					Prepared & Analyzed: 01/10/13					
Nitrite (as N)	1.43	0.04	0.01	mg/L	1.4		102	85-115		
Chloride	3.18	0.20	0.050	mg/L	3.0		106	85-115		
Nitrate (as N)	1.70	0.04	0.01	mg/L	1.7		100	85-115		
LCS Dup (BA30919-BSD1)					Prepared & Analyzed: 01/10/13					
Nitrite (as N)	1.33	0.04	0.01	mg/L	1.4		95	85-115	7	200
Nitrate (as N)	1.67	0.04	0.01	mg/L	1.7		98	85-115	2	200
Chloride	2.98	0.20	0.050	mg/L	3.0		99	85-115	6	200
Matrix Spike (BA30919-MS1)		**Source: 1300019-03**			Prepared & Analyzed: 01/10/13					
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7	0.0371	97	85-115		
Chloride	17.6	0.20	0.050	mg/L	3.0	14.9	90	80-120		
Nitrite (as N)	1.50	0.04	0.01	mg/L	1.4	ND	107	85-115		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30919 - Ion Chromatography 300.0 Prep										
Matrix Spike (BA30919-MS2)		**Source: 1300216-01**			Prepared & Analyzed: 01/10/13					
Chloride	20.1	0.20	0.050	mg/L	3.0	17.0	103	80-120		
Nitrite (as N)	1.38	0.04	0.01	mg/L	1.4	ND	99	85-115		
Nitrate (as N)	1.81	0.04	0.01	mg/L	1.7	0.0354	104	85-115		
Batch BA30932 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BA30932-BLK1)					Prepared: 01/09/13 Analyzed: 01/14/13					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BA30932-BS1)					Prepared: 01/09/13 Analyzed: 01/14/13					
Phosphorous - Total as P	0.876	0.040	0.010	mg/L	0.80		109	90-110		
Matrix Spike (BA30932-MS1)		**Source: 1300224-04**			Prepared: 01/09/13 Analyzed: 01/14/13					
Phosphorous - Total as P	1.68	0.040	0.010	mg/L	1.0	0.618	107	90-110		
Matrix Spike (BA30932-MS2)		**Source: 1300236-01**			Prepared: 01/09/13 Analyzed: 01/14/13					
Phosphorous - Total as P	0.987	0.040	0.010	mg/L	1.0	0.0791	91	90-110		
Matrix Spike Dup (BA30932-MSD1)		**Source: 1300224-04**			Prepared: 01/09/13 Analyzed: 01/14/13					
Phosphorous - Total as P	1.57	0.040	0.010	mg/L	1.0	0.618	96	90-110	7	25
Matrix Spike Dup (BA30932-MSD2)		**Source: 1300236-01**			Prepared: 01/09/13 Analyzed: 01/14/13					
Phosphorous - Total as P	1.05	0.040	0.010	mg/L	1.0	0.0791	97	90-110	6	25
Batch BA30942 - Ammonia by SEAL										
Blank (BA30942-BLK1)					Prepared & Analyzed: 01/09/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30942 - Ammonia by SEAL										
LCS (BA30942-BS1)					Prepared & Analyzed: 01/09/13					
Ammonia as N	0.49	0.040	0.009	mg/L	0.50		98	90-110		
Matrix Spike (BA30942-MS1)		**Source: 1214072-12**			Prepared & Analyzed: 01/09/13					
Ammonia as N	0.54	0.040	0.009	mg/L	0.50	ND	109	90-110		
Matrix Spike (BA30942-MS2)		**Source: 1214072-23**			Prepared & Analyzed: 01/09/13					
Ammonia as N	0.54	0.040	0.009	mg/L	0.50	ND	108	90-110		
Matrix Spike Dup (BA30942-MSD1)		**Source: 1214072-12**			Prepared & Analyzed: 01/09/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	ND	102	90-110	6	10
Matrix Spike Dup (BA30942-MSD2)		**Source: 1214072-23**			Prepared & Analyzed: 01/09/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	ND	102	90-110	5	10
Batch BA30945 - Digestion for TKN by EPA 351.2										
Blank (BA30945-BLK1)					Prepared: 01/09/13 Analyzed: 01/11/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BA30945-BS1)					Prepared: 01/09/13 Analyzed: 01/11/13					
Total Kjeldahl Nitrogen	2.73	0.20	0.05	mg/L	2.5		108	90-110		
Matrix Spike (BA30945-MS1)		**Source: 1300301-14**			Prepared: 01/09/13 Analyzed: 01/11/13					
Total Kjeldahl Nitrogen	2.75	0.20	0.05	mg/L	2.5	0.190	101	90-110		
Matrix Spike Dup (BA30945-MSD1)		**Source: 1300301-14**			Prepared: 01/09/13 Analyzed: 01/11/13					
Total Kjeldahl Nitrogen	2.71	0.20	0.05	mg/L	2.5	0.190	99	90-110	2	20

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31016 - Ion Chromatography 300.0 Prep										
Blank (BA31016-BLK1)					Prepared & Analyzed: 01/11/13					
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BA31016-BS1)					Prepared & Analyzed: 01/11/13					
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115		
Nitrite (as N)	1.32	0.04	0.01	mg/L	1.4		94	85-115		
LCS Dup (BA31016-BSD1)					Prepared & Analyzed: 01/11/13					
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115	0	200
Nitrite (as N)	1.33	0.04	0.01	mg/L	1.4		95	85-115	0.8	200
Matrix Spike (BA31016-MS1)		**Source: 1300360-01**			Prepared & Analyzed: 01/11/13					
Nitrite (as N)	1.32	0.04	0.01	mg/L	1.4	ND	94	85-115		
Nitrate (as N)	1.76	0.04	0.01	mg/L	1.7	ND	104	85-115		
Matrix Spike (BA31016-MS2)		**Source: 1214066-02**			Prepared & Analyzed: 01/11/13					
Nitrite (as N)	1.42	0.04	0.01	mg/L	1.4	ND	101	85-115		
Nitrate (as N)	1.71	0.04	0.01	mg/L	1.7	0.144	92	85-115		
Batch BA31108 - Digestion for TKN by EPA 351.2										
Blank (BA31108-BLK1)					Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BA31108-BS1)					Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	2.53	0.20	0.05	mg/L	2.5		100	90-110		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31108 - Digestion for TKN by EPA 351.2										
Matrix Spike (BA31108-MS1)		**Source: 1214072-17**			Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	3.68	0.20	0.05	mg/L	2.5	1.39	90	90-110		
Matrix Spike (BA31108-MS2)		**Source: 1214072-29**			Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	2.81	0.20	0.05	mg/L	2.5	0.290	100	90-110		
Matrix Spike Dup (BA31108-MSD1)		**Source: 1214072-17**			Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	3.76	0.20	0.05	mg/L	2.5	1.39	93	90-110	2	20
Matrix Spike Dup (BA31108-MSD2)		**Source: 1214072-29**			Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	2.88	0.20	0.05	mg/L	2.5	0.290	102	90-110	2	20
Batch BA31128 - Ion Chromatography 300.0 Prep										
Blank (BA31128-BLK1)					Prepared & Analyzed: 01/12/13					
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BA31128-BS1)					Prepared & Analyzed: 01/12/13					
Nitrate (as N)	1.72	0.04	0.01	mg/L	1.7		101	85-115		
Chloride	3.15	0.20	0.050	mg/L	3.0		105	85-115		
LCS Dup (BA31128-BSD1)					Prepared & Analyzed: 01/12/13					
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115	2	200
Chloride	2.87	0.20	0.050	mg/L	3.0		96	85-115	9	200
Matrix Spike (BA31128-MS1)		**Source: 1300427-04**			Prepared & Analyzed: 01/12/13					
Chloride	5.22	0.20	0.050	mg/L	3.0	1.99	108	80-120		
Nitrate (as N)	5.66	0.04	0.01	mg/L	1.7	3.80	109	85-115		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31128 - Ion Chromatography 300.0 Prep										
Matrix Spike (BA31128-MS2)		**Source: 1214074-02**			Prepared & Analyzed: 01/12/13					
Nitrate (as N)	92.4	0.04	0.01	mg/L	17	73.8	109	85-115		
Chloride	132	0.20	0.050	mg/L	30	97.8	114	80-120		
Batch BA31411 - alkalinity										
Blank (BA31411-BLK1)					Prepared & Analyzed: 01/14/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BA31411-BLK2)					Prepared & Analyzed: 01/14/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BA31411-BS1)					Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
LCS (BA31411-BS2)					Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
Matrix Spike (BA31411-MS1)		**Source: 1214067-14**			Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	2.1	98	80-120		
Matrix Spike (BA31411-MS2)		**Source: 1214074-13**			Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	ND	100	80-120		
Matrix Spike Dup (BA31411-MSD1)		**Source: 1214067-14**			Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	2.1	98	80-120	0	26
Matrix Spike Dup (BA31411-MSD2)		**Source: 1214074-13**			Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	ND	100	80-120	0	26

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31524 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BA31524-BLK1)					Prepared: 01/15/13 Analyzed: 01/16/13					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BA31524-BS1)					Prepared: 01/15/13 Analyzed: 01/16/13					
Phosphorous - Total as P	0.799	0.040	0.010	mg/L	0.80		100	90-110		
Matrix Spike (BA31524-MS1)		**Source: 1300022-01**			Prepared: 01/15/13 Analyzed: 01/16/13					
Phosphorous - Total as P	1.53	0.040	0.010	mg/L	1.0	0.517	101	90-110		
Matrix Spike (BA31524-MS2)		**Source: 1300022-02**			Prepared: 01/15/13 Analyzed: 01/16/13					
Phosphorous - Total as P	3.23	0.080	0.020	mg/L	1.0	2.26	96	90-110		
Matrix Spike Dup (BA31524-MSD1)		**Source: 1300022-01**			Prepared: 01/15/13 Analyzed: 01/16/13					
Phosphorous - Total as P	1.52	0.040	0.010	mg/L	1.0	0.517	101	90-110	0.2	25
Matrix Spike Dup (BA31524-MSD2)		**Source: 1300022-02**			Prepared: 01/15/13 Analyzed: 01/16/13					
Phosphorous - Total as P	3.23	0.080	0.020	mg/L	1.0	2.26	97	90-110	0.07	25
Batch BA31618 - Ammonia by SEAL										
Blank (BA31618-BLK1)					Prepared & Analyzed: 01/16/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BA31618-BS1)					Prepared & Analyzed: 01/16/13					
Ammonia as N	0.47	0.040	0.009	mg/L	0.50		95	90-110		
Matrix Spike (BA31618-MS1)		**Source: 1214076-08**			Prepared & Analyzed: 01/16/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	ND	102	90-110		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31618 - Ammonia by SEAL										
Matrix Spike (BA31618-MS2)		**Source: 1214076-16**			Prepared & Analyzed: 01/16/13					
Ammonia as N	0.54	0.040	0.009	mg/L	0.50	0.028	102	90-110		
Matrix Spike Dup (BA31618-MSD1)		**Source: 1214076-08**			Prepared & Analyzed: 01/16/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	ND	101	90-110	0.4	10
Matrix Spike Dup (BA31618-MSD2)		**Source: 1214076-16**			Prepared & Analyzed: 01/16/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	0.028	97	90-110	5	10
Batch BA31643 - Digestion for TKN by EPA 351.2										
Blank (BA31643-BLK1)					Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BA31643-BS1)					Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	2.62	0.20	0.05	mg/L	2.5		103	90-110		
Matrix Spike (BA31643-MS1)		**Source: 1214067-03**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	6.39	0.20	0.05	mg/L	2.5	3.65	108	90-110		
Matrix Spike (BA31643-MS2)		**Source: 1214076-05**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	28.0	0.20	0.05	mg/L	25	2.97	99	90-110		
Matrix Spike Dup (BA31643-MSD1)		**Source: 1214067-03**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	6.27	0.20	0.05	mg/L	2.5	3.65	103	90-110	2	20
Matrix Spike Dup (BA31643-MSD2)		**Source: 1214076-05**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	26.6	0.20	0.05	mg/L	25	2.97	93	90-110	5	20

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31705 - COD prep										
Blank (BA31705-BLK1)					Prepared & Analyzed: 01/17/13					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BA31705-BS1)					Prepared & Analyzed: 01/17/13					
Chemical Oxygen Demand	46	25	10	mg/L	50		92	90-110		
Matrix Spike (BA31705-MS1)		**Source: 1214072-20**			Prepared & Analyzed: 01/17/13					
Chemical Oxygen Demand	61	25	10	mg/L	50	12	98	85-115		
Matrix Spike Dup (BA31705-MSD1)		**Source: 1214072-20**			Prepared & Analyzed: 01/17/13					
Chemical Oxygen Demand	61	25	10	mg/L	50	12	98	85-115	0	32
Batch BA31735 - alkalinity										
Blank (BA31735-BLK1)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BA31735-BLK2)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BA31735-BS1)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
LCS (BA31735-BS2)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
Matrix Spike (BA31735-MS1)		**Source: 1214078-06**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	3.2	97	80-120		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31735 - alkalinity										
Matrix Spike (BA31735-MS2)		**Source: 1214542-27**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	160	8.0	2.0	mg/L	120	31	100	80-120		
Matrix Spike Dup (BA31735-MSD1)		**Source: 1214078-06**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	3.2	97	80-120	0	26
Matrix Spike Dup (BA31735-MSD2)		**Source: 1214542-27**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	160	8.0	2.0	mg/L	120	31	100	80-120	0	26
Batch BA31817 - Ion Chromatography 300.0 Prep										
Blank (BA31817-BLK1)					Prepared & Analyzed: 01/19/13					
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BA31817-BS1)					Prepared & Analyzed: 01/19/13					
Chloride	3.04	0.20	0.050	mg/L	3.0		101	85-115		
LCS Dup (BA31817-BSD1)					Prepared & Analyzed: 01/19/13					
Chloride	3.14	0.20	0.050	mg/L	3.0		105	85-115	3	200
Matrix Spike (BA31817-MS1)		**Source: 1300416-03**			Prepared & Analyzed: 01/19/13					
Chloride	12.0	0.20	0.050	mg/L	3.0	9.09	97	80-120		
Matrix Spike (BA31817-MS2)		**Source: 1214072-03**			Prepared & Analyzed: 01/19/13					
Chloride	109	0.20	0.050	mg/L	30	73.4	119	80-120		
Batch BA31818 - Ion Chromatography 300.0 Prep										
Blank (BA31818-BLK1)					Prepared & Analyzed: 01/19/13					
Chloride	0.050 U	0.20	0.050	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31818 - Ion Chromatography 300.0 Prep										
LCS (BA31818-BS1)					Prepared & Analyzed: 01/19/13					
Chloride	3.10	0.20	0.050	mg/L	3.0		103	85-115		
LCS Dup (BA31818-BSD1)					Prepared & Analyzed: 01/19/13					
Chloride	3.06	0.20	0.050	mg/L	3.0		102	85-115	1	200
Matrix Spike (BA31818-MS1)		**Source: 1300015-01**			Prepared & Analyzed: 01/19/13					
Chloride	286	0.20	0.050	mg/L	30	252	113	80-120		
Matrix Spike (BA31818-MS2)		**Source: 1300761-01**			Prepared & Analyzed: 01/19/13					
Chloride	11.5	0.20	0.050	mg/L	3.0	7.92	119	80-120		

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10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 24, 2013
Work Order: 1214072

Inorganic, Dissolved - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30915 - TOC prep										
Blank (BA30915-BLK1)					Prepared & Analyzed: 01/09/13					
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BA30915-BS1)					Prepared & Analyzed: 01/09/13					
Dissolved Organic Carbon	10.1	1.0	0.50	mg/L	10		101	90-110		
Matrix Spike (BA30915-MS1)		**Source: 1214076-16**			Prepared & Analyzed: 01/09/13					
Dissolved Organic Carbon	14.5	1.0	0.50	mg/L	10	5.30	92	85-125		
Matrix Spike Dup (BA30915-MSD1)		**Source: 1214076-16**			Prepared & Analyzed: 01/09/13					
Dissolved Organic Carbon	14.5	1.0	0.50	mg/L	10	5.30	92	85-125	0.4	25

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January 24, 2013
Work Order: 1214072

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below.

+O Matrix spike source sample was over the reccommended range for the method.

Questions regarding this report should be directed to :

Kathryn Nordmark
Telephone (813) 855-1844 FAX (813) 855-2218
Kathryn@southernanalyticallabs.com

Kathryn@southernanalyticallabs.com

1214072

SOUTHERN ANALYTICAL LABORATORIES, INC.

11D BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (TA2)

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, Alkalinity	1LP, Cool NOx, Cl, Alkalinity, F, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na					Field pH	Field Temperature	Field Conductivity	Field DO
01	TA2-PAN-12-N			GW		X	1	1														
02	TA2-LY-24-C	01/07/13	9:25am	GW		X	1	1											3.3	17.6	819	7.9
03	TA2-LY-12-S	01/07/13	9:32am	GW		X	1	1											6.4	17.7	769	8.5
04	TA2-LY-24-S	01/07/13	9:40am	GW		X			1	1									6.1	17.5	701	6.9
05	TA2-LY-42-S	01/07/13	9:45am	GW		X			1		1	1							5.6	18.2	726	7.3
06	TA2-PZ-10-EF2			GW		X	1	1														
07	TA2-PZ-10-H5			GW		X			1	1												
08	TA2-PZ-10-J5			GW		X			1	1												
09	TA2-PZ-10-J5 DUP			GW		X			1	1												
10	TA2-PZ-10-K5			GW		X			1	1												
11	TA2-PZ-10-L2			GW		X			1	1												
12	TA2-PZ-10-L3			GW		X			1	1												

Relinquished	Date/Time	Received	Date/Time
Containers Prepared/ J. Chambers	12-7-12 15:20	UPS	
UPS			
	1600 1/7/13	K Mudmah	1/7/13 1600

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace? Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

1214072

1214072

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: SAGW Test Facility SE #4 (TA2)

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, Alkalinity	1LP, Cool NOx, Cl, Alkalinity, F, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na					Field pH	Field Temperature	Field Conductivity	Field DO
01	TA2-PAN-12-N			GW		X	1	1														
02	TA2-LY-24-C	1/8/13		GW		X	1	1														
03	TA2-LY-12-S			GW		X	1	1														
04	TA2-LY-24-S			GW		X			1	1												
05	TA2-LY-42-S			GW		X			1		1	1										
06	TA2-PZ-10-EF2		1357	GW		X	1	1											4.49	24.5	324	4.54
07	TA2-PZ-10-H5		1313	GW		X			1	1									4.50	25.1	186	3.28
08	TA2-PZ-10-J5		1250	GW		X			1	1									4.73	24.4	117	3.60
09	TA2-PZ-10-J5 DUP		1255	GW		X			1	1									4.73	24.4	117	3.60
10	TA2-PZ-10-K5		1240	GW		X			1	1									4.65	25.0	153	3.48
11	TA2-PZ-10-L2		1124	GW		X			1	1									4.44	24.4	188	2.86
12	TA2-PZ-10-L3		1136	GW		X			1	1									4.41	24.9	186	3.39

Relinquished	Date/Time	Received	Date/Time
Containers Prepared/ Relinquished: J. Chambers	12-7-12 15:20	UPS	
Relinquished: UPS		Received:	
Relinquished:	1635 1/8/13	Received: R Nudmark	1/8/13 1635
Relinquished:		Received:	
Relinquished:		Received:	

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace? Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

1214072

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (TA2)

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, Alkalinity	1LP, Cool NOx, Cl, Alkalinity, F, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na					Field pH	Field Temperature	Field Conductivity	Field DO
13	TA2-PZ-10-L4	1/8/13	1148	GW		X			1	1									4.59	23.8	148	3.65
14	TA2-PZ-10-L5		1212	GW		X			1	1									4.44	24.4	181	3.78
15	TA2-PZ-10-L5 DUP		1217	GW		X			1	1									4.47	24.4	181	3.78
16	TA2-PZ-10-L6		1225	GW		X			1	1									4.52	24.5	193	3.56
17	TA2-PZ-09-M4		1057	GW		X			1	1									4.73	24.1	206	3.57
18	TA2-PZ-16-M4		1107	GW		X	1	1											5.60	25.7	235	3.33
19	TA2-PZ-09-N7		1024	GW		X			1	1									5.44	23.5	232	3.37
20	TA2-PZ-09-N7 DUP		1029	GW		X			1	1									5.44	23.5	232	3.37
21	TA2-PZ-16-N7		1034	GW		X	1	1											5.51	23.6	189	3.04
22	TA2-PZ-09-I7	0925	~~1024~~	GW		X	1	1							5.00	22.6	157	3.06	~~5.44~~	~~23.5~~	~~232~~	~~3.37~~
23	TA2-PZ-16-I7	0926	~~1034~~	GW		X	1	1							5.44	23.9	172	2.66	~~5.51~~	~~23.6~~	~~189~~	~~3.09~~
24	TA2-PZ-09-L8		0955	GW		X	1	1											5.25	22.7	159	3.09

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
O. Chambers	1/7-12 9:30	UPS	
UPS			
	1635 1/8/13	K Mudmark	1/8/13 1635

Seal intact? Y N (N/A)
Samples intact upon arrival? (Y) N N/A
Received on ice? Temp_____ (Y) N N/A
Proper preservatives indicated? (Y) N N/A
Rec'd within holding time? (Y) N N/A
Volatiles rec'd w/out headspace? Y N (N/A)
Proper containers used? (Y) N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

1214072

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (TA2)

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, Alkalinity	1LP, Cool NOx, Cl, Alkalinity, F, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na					Field pH	Field Temperature	Field Conductivity	Field DO
25	TA2-PZ-16-L8	1/8/13	1005	GW		X	1	1											5.36	24.1	171	2.80
26	TA2-PZ-09-TU19		0858	GW		X	1	1											4.44	21.8	131	3.16
27	TA2-PZ-16-TU19		0908	GW		X	1	1											5.42	23.4	149	2.54
28	TA2-PZ-09-TU21		0828	GW		X	1	1											4.44	21.7	142	2.53
29	TA2-PZ-16-TU21		0840	GW		X	1	1											5.34	23.4	149	2.72

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
J. Chambers	12-7-12 9:30	UPS	
UPS			
	1635 1/8/13		1/8/13 1635

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace? Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

1214072

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 24, 2013
Work Order: 1214074

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA3-LY-24-C**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-02**						
Date/Time Collected		**01/07/13 10:07**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 15:21	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chloride	mg/L	98	EPA 300.0	0.20	0.050		01/12/13 11:06	1
Nitrate (as N)	mg/L	74	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Nitrite (as N)	mg/L	0.04	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	01/16/13 16:31	01/18/13 11:00	1
Nitrate+Nitrite (N)	mg/L	74	EPA 300.0	0.08	0.02		01/08/13 16:45	1
Sample Description		**TA3-LY-12-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-03**						
Date/Time Collected		**01/07/13 10:15**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 15:22	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/08/13 09:15	01/08/13 11:40	1
Chloride	mg/L	54	EPA 300.0	0.20	0.050		01/13/13 11:44	1
Nitrate (as N)	mg/L	25	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Phosphorous - Total as P	mg/L	3.3	SM 4500P-E	0.40	0.10	01/08/13 10:14	01/10/13 14:26	10
Total Alkalinity	mg/L	50	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	2.1	EPA 351.2	0.20	0.05	01/16/13 16:31	01/18/13 11:44	1
Nitrate+Nitrite (N)	mg/L	25	EPA 300.0	0.08	0.02		01/08/13 16:45	1
Sample Description		**TA3-LY-12-S-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-04**						
Date/Time Collected		**01/07/13 10:20**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/09/13 15:24	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 24, 2013
Work Order: 1214074

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA3-LY-12-S-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-04**						
Date/Time Collected		**01/07/13 10:20**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/08/13 09:15	01/08/13 11:40	1
Chloride	mg/L	55	EPA 300.0	0.20	0.050		01/13/13 11:44	1
Nitrate (as N)	mg/L	25	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Phosphorous - Total as P	mg/L	3.7	SM 4500P-E	0.40	0.10	01/08/13 10:14	01/10/13 14:27	10
Total Alkalinity	mg/L	52	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	2.0	EPA 351.2	0.20	0.05	01/16/13 16:31	01/18/13 11:45	1
Nitrate+Nitrite (N)	mg/L	25	EPA 300.0	0.08	0.02		01/08/13 16:45	1
Sample Description		**TA3-LY-24-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-05**						
Date/Time Collected		**01/07/13 10:25**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/14/13 14:00	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/08/13 09:15	01/08/13 11:40	1
Chloride	mg/L	61	EPA 300.0	0.20	0.050		01/13/13 11:44	1
Fluoride	mg/L	0.10	EPA 300.0	0.040	0.010		01/08/13 16:45	1
Nitrate (as N)	mg/L	40	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Orthophosphate as P	mg/L	0.30	EPA 300.0	0.040	0.010		01/08/13 16:45	1
Phosphorous - Total as P	mg/L	0.13	SM 4500P-E	0.040	0.010	01/08/13 10:14	01/10/13 12:55	1
Sulfate	mg/L	52	EPA 300.0	0.60	0.20		01/08/13 16:45	1
Total Alkalinity	mg/L	21	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	3.2	EPA 351.2	0.20	0.05	01/16/13 16:31	01/18/13 11:05	1
Nitrate+Nitrite (N)	mg/L	40	EPA 300.0	0.08	0.02		01/08/13 16:45	1
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	9.0	SM 5310B	1.0	0.50		01/09/13 09:58	1
Metals								
Boron	mg/L	0.15	EPA 200.7	0.10	0.050	01/09/13 08:52	01/09/13 13:37	1
Calcium	mg/L	35	EPA 200.7	0.50	0.042	01/09/13 08:52	01/09/13 13:37	1
Iron	mg/L	0.027 I	EPA 200.7	0.10	0.020	01/09/13 08:52	01/09/13 13:37	1
Magnesium	mg/L	12	EPA 200.7	0.50	0.020	01/09/13 08:52	01/09/13 13:37	1
Manganese	mg/L	0.0010 U	EPA 200.7	0.010	0.0010	01/09/13 08:52	01/09/13 13:37	1

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 24, 2013
Work Order: 1214074

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA3-LY-24-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-05**						
Date/Time Collected		**01/07/13 10:25**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Potassium	mg/L	7.4	EPA 200.7	0.050	0.010	01/09/13 08:52	01/09/13 13:37	1
Sodium	mg/L	77	EPA 200.7	0.50	0.13	01/09/13 08:52	01/09/13 13:37	1
Sample Description		**TA3-LY-42-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-06**						
Date/Time Collected		**01/07/13 10:35**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/14/13 14:02	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chloride	mg/L	80	EPA 300.0	0.20	0.050		01/13/13 11:44	1
Nitrate (as N)	mg/L	51	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Total Kjeldahl Nitrogen	mg/L	4.4	EPA 351.2	0.20	0.05	01/16/13 16:31	01/18/13 11:06	1
Nitrate+Nitrite (N)	mg/L	51	EPA 300.0	0.08	0.02		01/08/13 16:45	1
Sample Description		**TA3-PZ-11-EF2**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-07**						
Date/Time Collected		**01/09/13 13:15**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Inorganics								
Ammonia as N	mg/L	1.0	EPA 350.1	0.040	0.009		01/18/13 10:29	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/10/13 08:20	01/10/13 11:11	1
Chloride	mg/L	18	EPA 300.0	0.20	0.050		01/21/13 17:05	1
Nitrate+Nitrite (N)	mg/L	20	EPA 353.2	0.04	0.01		01/11/13 11:11	1
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 13:53	1
Phosphorous - Total as P	mg/L	0.039 I	SM 4500P-E	0.040	0.010	01/16/13 11:07	01/18/13 11:20	1
Total Alkalinity	mg/L	2.1 I	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	3.1	EPA 351.2	0.20	0.05	01/16/13 16:33	01/18/13 14:45	1
Nitrate (as N)	mg/L	20	EPA 353.2	0.08	0.02		01/11/13 11:11	1

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January 24, 2013
Work Order: 1214074

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA3-PZ-11-I2**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-08**						
Date/Time Collected		**01/09/13 13:02**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Inorganics								
Ammonia as N	mg/L	0.61	EPA 350.1	0.040	0.009		01/18/13 10:31	1
Ammonium as NH4	mg/L	1.3	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/10/13 08:20	01/10/13 11:11	1
Chloride	mg/L	40	EPA 300.0	0.20	0.050		01/21/13 17:05	1
Nitrate+Nitrite (N)	mg/L	37	EPA 353.2	0.79	0.20		01/11/13 11:45	19.79
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 13:54	1
Phosphorous - Total as P	mg/L	0.022 I	SM 4500P-E	0.040	0.010	01/16/13 11:07	01/18/13 11:21	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	2.0	EPA 351.2	0.20	0.05	01/16/13 16:33	01/18/13 14:47	1
Nitrate (as N)	mg/L	37	EPA 353.2	0.83	0.21		01/11/13 11:45	20
Sample Description		**TA3-PZ-10-J5**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-09**						
Date/Time Collected		**01/09/13 12:47**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Inorganics								
Ammonia as N	mg/L	0.31	EPA 350.1	0.040	0.009		01/18/13 10:33	1
Ammonium as NH4	mg/L	0.79	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chloride	mg/L	13	EPA 300.0	0.20	0.050		01/21/13 17:05	1
Nitrate+Nitrite (N)	mg/L	17	EPA 353.2	0.79	0.20		01/11/13 11:47	19.79
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 13:54	1
Total Kjeldahl Nitrogen	mg/L	2.2	EPA 351.2	0.20	0.05	01/16/13 16:33	01/18/13 14:49	1
Nitrate (as N)	mg/L	17	EPA 353.2	0.83	0.21		01/11/13 11:47	20
Sample Description		**TA3-PZ-10-J5-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-10**						
Date/Time Collected		**01/09/13 12:52**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Inorganics								
Ammonia as N	mg/L	0.30	EPA 350.1	0.040	0.009		01/18/13 10:35	1

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Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA3-PZ-10-J5-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-10**						
Date/Time Collected		**01/09/13 12:52**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Ammonium as NH4	mg/L	0.40	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chloride	mg/L	13	EPA 300.0	0.20	0.050		01/21/13 17:05	1
Nitrate+Nitrite (N)	mg/L	18	EPA 353.2	0.79	0.20		01/11/13 11:50	19.79
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 13:55	1
Total Kjeldahl Nitrogen	mg/L	2.1	EPA 351.2	0.20	0.05	01/16/13 16:33	01/18/13 14:50	1
Nitrate (as N)	mg/L	18	EPA 353.2	0.83	0.21		01/11/13 11:50	20
Sample Description		**TA3-PZ-10-K5**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-11**						
Date/Time Collected		**01/09/13 12:31**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Inorganics								
Ammonia as N	mg/L	0.42	EPA 350.1	0.040	0.009		01/18/13 10:37	1
Ammonium as NH4	mg/L	0.39	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/10/13 08:20	01/10/13 11:11	1
Chloride	mg/L	14	EPA 300.0	0.20	0.050		01/21/13 17:05	1
Nitrate+Nitrite (N)	mg/L	17	EPA 353.2	0.79	0.20		01/11/13 11:52	19.79
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 13:55	1
Phosphorous - Total as P	mg/L	0.052	SM 4500P-E	0.040	0.010	01/16/13 11:07	01/18/13 11:22	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	01/16/13 16:33	01/18/13 14:52	1
Nitrate (as N)	mg/L	17	EPA 353.2	0.83	0.21		01/11/13 11:52	20
Sample Description		**TA3-PZ-11-L2**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-12**						
Date/Time Collected		**01/09/13 11:29**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Inorganics								
Ammonia as N	mg/L	0.34	EPA 350.1	0.040	0.009		01/18/13 10:39	1
Ammonium as NH4	mg/L	0.55	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/10/13 08:20	01/10/13 11:11	1

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Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA3-PZ-11-L2**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-12**						
Date/Time Collected		**01/09/13 11:29**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Chloride	mg/L	36	EPA 300.0	0.20	0.050		01/23/13 16:37	1
Fluoride	mg/L	0.075	EPA 300.0	0.040	0.010		01/21/13 17:05	1
Nitrate+Nitrite (N)	mg/L	31	EPA 353.2	0.79	0.20		01/11/13 11:54	19.79
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 13:56	1
Orthophosphate as P	mg/L	0.039 I	SM 4500P-E	0.040	0.012		01/11/13 08:43	1
Phosphorous - Total as P	mg/L	0.040	SM 4500P-E	0.040	0.010	01/16/13 11:07	01/18/13 15:19	1
Sulfate	mg/L	51	EPA 300.0	0.60	0.20		01/21/13 17:05	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	2.0	EPA 351.2	0.20	0.05	01/16/13 16:33	01/18/13 14:54	1
Total Organic Carbon	mg/L	2.2	SM 5310B	1.0	0.50		01/11/13 10:01	1
Nitrate (as N)	mg/L	31	EPA 353.2	0.83	0.21		01/11/13 11:54	20
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	2.2	SM 5310B	1.0	0.50		01/11/13 10:01	1
Metals								
Boron	mg/L	0.051 I	EPA 200.7	0.10	0.050	01/11/13 08:30	01/11/13 16:56	1
Calcium	mg/L	33	EPA 200.7	0.50	0.042	01/11/13 08:30	01/11/13 16:56	1
Iron	mg/L	0.020 U	EPA 200.7	0.10	0.020	01/11/13 08:30	01/11/13 16:56	1
Magnesium	mg/L	11	EPA 200.7	0.50	0.020	01/11/13 08:30	01/11/13 16:56	1
Manganese	mg/L	0.074	EPA 200.7	0.010	0.0010	01/11/13 08:30	01/11/13 16:56	1
Potassium	mg/L	8.6	EPA 200.7	0.050	0.010	01/11/13 08:30	01/11/13 16:56	1
Sodium	mg/L	24	EPA 200.7	0.50	0.13	01/11/13 08:30	01/11/13 16:56	1
Sample Description		**TA3-PZ-11-L3**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-13**						
Date/Time Collected		**01/09/13 11:47**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Inorganics								
Ammonia as N	mg/L	0.76	EPA 350.1	0.040	0.009		01/18/13 10:41	1
Ammonium as NH4	mg/L	0.44	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/10/13 08:20	01/10/13 11:11	1
Chloride	mg/L	19	EPA 300.0	0.20	0.050		01/23/13 16:37	1
Fluoride	mg/L	0.19	EPA 300.0	0.040	0.010		01/21/13 17:05	1
Nitrate+Nitrite (N)	mg/L	26	EPA 353.2	0.79	0.20		01/11/13 11:57	19.79
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 13:56	1

SOUTHERN ANALYTICAL LABORATORIES, INC.
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January 24, 2013
Work Order: 1214074

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA3-PZ-11-L3**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-13**						
Date/Time Collected		**01/09/13 11:47**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Orthophosphate as P	mg/L	0.054	SM 4500P-E	0.040	0.012		01/11/13 08:44	1
Phosphorous - Total as P	mg/L	0.13	SM 4500P-E	0.040	0.010	01/16/13 11:07	01/18/13 11:27	1
Sulfate	mg/L	100	EPA 300.0	0.60	0.20		01/21/13 17:05	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	01/16/13 16:34	01/18/13 15:35	1
Total Organic Carbon	mg/L	1.9	SM 5310B	1.0	0.50		01/11/13 10:01	1
Nitrate (as N)	mg/L	26	EPA 353.2	0.83	0.21		01/11/13 11:57	20
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	1.9	SM 5310B	1.0	0.50		01/11/13 10:01	1
Metals								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	01/11/13 08:30	01/11/13 17:00	1
Calcium	mg/L	30	EPA 200.7	0.50	0.042	01/11/13 08:30	01/11/13 17:00	1
Iron	mg/L	0.028 I	EPA 200.7	0.10	0.020	01/11/13 08:30	01/11/13 17:00	1
Magnesium	mg/L	9.2	EPA 200.7	0.50	0.020	01/11/13 08:30	01/11/13 17:00	1
Manganese	mg/L	0.086	EPA 200.7	0.010	0.0010	01/11/13 08:30	01/11/13 17:00	1
Potassium	mg/L	9.3	EPA 200.7	0.050	0.010	01/11/13 08:30	01/11/13 17:00	1
Sodium	mg/L	16	EPA 200.7	0.50	0.13	01/11/13 08:30	01/11/13 17:00	1
Sample Description		**TA3-PZ-11-L4**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-14**						
Date/Time Collected		**01/09/13 12:08**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Inorganics								
Ammonia as N	mg/L	0.93	EPA 350.1	0.040	0.009		01/18/13 10:43	1
Ammonium as NH4	mg/L	0.97	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/10/13 08:20	01/10/13 11:11	1
Chloride	mg/L	28	EPA 300.0	0.20	0.050		01/21/13 17:05	1
Nitrate+Nitrite (N)	mg/L	28	EPA 353.2	0.79	0.20		01/11/13 11:59	19.79
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 13:57	1
Phosphorous - Total as P	mg/L	0.031 I	SM 4500P-E	0.040	0.010	01/16/13 11:07	01/18/13 11:28	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/14/13 12:36	1
Total Kjeldahl Nitrogen	mg/L	0.94	EPA 351.2	0.20	0.05	01/16/13 16:34	01/18/13 15:37	1
Nitrate (as N)	mg/L	28	EPA 353.2	0.83	0.21		01/11/13 11:59	20

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Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA3-PZ-10-L5**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-15**						
Date/Time Collected		**01/09/13 12:20**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Inorganics								
Ammonia as N	mg/L	0.35	EPA 350.1	0.040	0.009		01/18/13 10:45	1
Ammonium as NH4	mg/L	1.2	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/10/13 08:20	01/10/13 11:11	1
Chloride	mg/L	10	EPA 300.0	0.20	0.050		01/22/13 01:52	1
Nitrate+Nitrite (N)	mg/L	14	EPA 353.2	0.79	0.20		01/11/13 12:01	19.79
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 13:57	1
Phosphorous - Total as P	mg/L	0.077	SM 4500P-E	0.040	0.010	01/16/13 11:07	01/18/13 11:29	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	01/16/13 16:34	01/18/13 15:39	1
Nitrate (as N)	mg/L	14	EPA 353.2	0.83	0.21		01/11/13 12:01	20

Sample Description		**TA3-PZ-09-N3**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-16**						
Date/Time Collected		**01/09/13 10:57**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Inorganics								
Ammonia as N	mg/L	0.81	EPA 350.1	0.040	0.009		01/18/13 10:47	1
Ammonium as NH4	mg/L	0.45	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chemical Oxygen Demand	mg/L	20 I	EPA 410.4	25	10	01/10/13 08:20	01/10/13 11:11	1
Chloride	mg/L	14	EPA 300.0	0.20	0.050		01/22/13 01:52	1
Nitrate+Nitrite (N)	mg/L	13	EPA 353.2	0.79	0.20		01/11/13 12:03	19.79
Nitrite (as N)	mg/L	0.01 I	SM 4500NO2-B	0.04	0.01		01/10/13 13:58	1
Phosphorous - Total as P	mg/L	0.046	SM 4500P-E	0.040	0.010	01/16/13 11:07	01/18/13 11:30	1
Total Alkalinity	mg/L	3.2 I	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	01/16/13 16:34	01/18/13 15:40	1
Nitrate (as N)	mg/L	13	EPA 353.2	0.83	0.21		01/11/13 12:03	20

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Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA3-PZ-16-N3**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-17**						
Date/Time Collected		**01/09/13 11:08**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 11:08**						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 10:58	1
Ammonium as NH4	mg/L	1.0	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/10/13 08:20	01/10/13 11:11	1
Chloride	mg/L	16	EPA 300.0	0.20	0.050		01/22/13 01:52	1
Nitrate+Nitrite (N)	mg/L	17	EPA 353.2	0.79	0.20		01/11/13 12:06	19.79
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 14:00	1
Phosphorous - Total as P	mg/L	0.062	SM 4500P-E	0.040	0.010	01/16/13 11:07	01/18/13 11:31	1
Total Alkalinity	mg/L	6.3 I	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	01/16/13 16:34	01/18/13 15:41	1
Nitrate (as N)	mg/L	17	EPA 353.2	0.83	0.21		01/11/13 12:06	20
Sample Description		**TA3-PZ-09-O7**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-18**						
Date/Time Collected		**01/09/13 10:20**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Inorganics								
Ammonia as N	mg/L	0.078	EPA 350.1	0.040	0.009		01/18/13 11:00	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chloride	mg/L	12	EPA 300.0	0.20	0.050		01/22/13 01:52	1
Nitrate+Nitrite (N)	mg/L	8.9	EPA 353.2	0.40	0.10		01/11/13 12:08	9.9
Nitrite (as N)	mg/L	0.07	SM 4500NO2-B	0.04	0.01		01/10/13 14:01	1
Total Kjeldahl Nitrogen	mg/L	1.0	EPA 351.2	0.20	0.05	01/16/13 16:34	01/18/13 15:43	1
Nitrate (as N)	mg/L	8.8	EPA 353.2	0.44	0.11		01/11/13 12:08	10
Sample Description		**TA3-PZ-16-O7**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-19**						
Date/Time Collected		**01/09/13 10:39**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 11:02	1

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Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA3-PZ-16-O7**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-19**						
Date/Time Collected		**01/09/13 10:39**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Ammonium as NH4	mg/L	0.10	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chloride	mg/L	2.6	EPA 300.0	0.20	0.050		01/22/13 01:52	1
Nitrate+Nitrite (N)	mg/L	15	EPA 353.2	0.40	0.10		01/11/13 12:10	9.9
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 14:01	1
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	01/16/13 16:34	01/18/13 15:44	1
Nitrate (as N)	mg/L	15	EPA 353.2	0.44	0.11		01/11/13 12:10	10
Sample Description		**TA3-PZ-09-I7**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-20**						
Date/Time Collected		**01/09/13 09:11**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Inorganics								
Ammonia as N	mg/L	0.14	EPA 350.1	0.040	0.009		01/18/13 11:04	1
Ammonium as NH4	mg/L	0.18	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chloride	mg/L	8.1	EPA 300.0	0.20	0.050		01/22/13 01:52	1
Nitrate+Nitrite (N)	mg/L	4.8	EPA 353.2	0.40	0.10		01/11/13 12:12	9.9
Nitrite (as N)	mg/L	0.06	SM 4500NO2-B	0.04	0.01		01/10/13 14:02	1
Total Kjeldahl Nitrogen	mg/L	5.3	EPA 351.2	0.20	0.05	01/16/13 16:34	01/18/13 15:45	1
Nitrate (as N)	mg/L	4.7	EPA 353.2	0.44	0.11		01/11/13 12:12	10
Sample Description		**TA3-PZ-16-I7**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-21**						
Date/Time Collected		**01/09/13 09:20**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 11:06	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chloride	mg/L	10	EPA 300.0	0.20	0.050		01/22/13 01:52	1
Nitrate+Nitrite (N)	mg/L	8.1	EPA 353.2	0.40	0.10		01/11/13 12:15	9.9
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 14:02	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA3-PZ-16-I7**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-21**						
Date/Time Collected		**01/09/13 09:20**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Total Kjeldahl Nitrogen	mg/L	0.86	EPA 351.2	0.20	0.05	01/16/13 16:34	01/18/13 15:46	1
Nitrate (as N)	mg/L	8.1	EPA 353.2	0.44	0.11		01/11/13 12:15	10
Sample Description		**TA3-PZ-09-M9**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-22**						
Date/Time Collected		**01/09/13 09:43**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Inorganics								
Ammonia as N	mg/L	0.040	EPA 350.1	0.040	0.009		01/18/13 11:07	1
Ammonium as NH4	mg/L	0.05	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chloride	mg/L	8.5	EPA 300.0	0.20	0.050		01/22/13 01:52	1
Nitrate+Nitrite (N)	mg/L	8.7	EPA 353.2	0.40	0.10		01/11/13 12:17	9.9
Nitrite (as N)	mg/L	0.05	SM 4500NO2-B	0.04	0.01		01/10/13 14:03	1
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	01/16/13 16:34	01/18/13 15:48	1
Nitrate (as N)	mg/L	8.7	EPA 353.2	0.44	0.11		01/11/13 12:17	10
Sample Description		**TA3-PZ-16-M9**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-23**						
Date/Time Collected		**01/09/13 09:54**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 11:09	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chloride	mg/L	12	EPA 300.0	0.20	0.050		01/22/13 01:52	1
Nitrate+Nitrite (N)	mg/L	9.4	EPA 353.2	0.40	0.10		01/11/13 12:19	9.9
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 14:03	1
Total Kjeldahl Nitrogen	mg/L	0.85	EPA 351.2	0.20	0.05	01/18/13 08:50	01/22/13 13:07	1
Nitrate (as N)	mg/L	9.4	EPA 353.2	0.44	0.11		01/11/13 12:19	10

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA3-PZ-09-ST14**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-24**						
Date/Time Collected		**01/09/13 08:40**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 11:11	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chloride	mg/L	5.6	EPA 300.0	0.20	0.050		01/22/13 01:52	1
Nitrate+Nitrite (N)	mg/L	3.4	EPA 353.2	0.40	0.10		01/11/13 12:22	9.9
Nitrite (as N)	mg/L	0.01 I	SM 4500NO2-B	0.04	0.01		01/10/13 14:04	1
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	01/18/13 08:50	01/22/13 13:09	1
Nitrate (as N)	mg/L	3.3	EPA 353.2	0.44	0.11		01/11/13 12:22	10
Sample Description		**TA3-PZ-16-ST14**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-25**						
Date/Time Collected		**01/09/13 08:49**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 11:12	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chloride	mg/L	20	EPA 300.0	0.20	0.050		01/22/13 01:52	1
Nitrate+Nitrite (N)	mg/L	8.9	EPA 353.2	0.40	0.10		01/11/13 12:24	9.9
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 14:04	1
Total Kjeldahl Nitrogen	mg/L	1.0	EPA 351.2	0.20	0.05	01/18/13 08:50	01/22/13 13:10	1
Nitrate (as N)	mg/L	8.9	EPA 353.2	0.44	0.11		01/11/13 12:24	10
Sample Description		**TA3-PZ-09-ST16**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-26**						
Date/Time Collected		**01/09/13 08:10**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 11:14	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chloride	mg/L	5.5	EPA 300.0	0.20	0.050		01/22/13 01:52	1
Nitrate+Nitrite (N)	mg/L	3.9	EPA 353.2	0.40	0.10		01/11/13 12:26	9.9

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA3-PZ-09-ST16**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-26**						
Date/Time Collected		**01/09/13 08:10**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 14:05	1
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	01/18/13 08:48	01/22/13 12:17	1
Nitrate (as N)	mg/L	3.9	EPA 353.2	0.44	0.11		01/11/13 12:26	10
Sample Description		**TA3-PZ-16-ST16**						
Matrix		**Groundwater**						
SAL Sample Number		**1214074-27**						
Date/Time Collected		**01/09/13 08:22**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 13:22	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 14:12	01/18/13 14:13	1
Chloride	mg/L	9.0	EPA 300.0	0.20	0.050		01/22/13 01:52	1
Nitrate+Nitrite (N)	mg/L	8.0	EPA 353.2	0.40	0.10		01/11/13 13:55	9.9
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 15:19	1
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	01/18/13 08:48	01/22/13 12:18	1
Nitrate (as N)	mg/L	8.0	EPA 353.2	0.44	0.11		01/11/13 13:55	10

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30806 - COD prep										
Blank (BA30806-BLK1)					Prepared & Analyzed: 01/08/13					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BA30806-BS1)					Prepared & Analyzed: 01/08/13					
Chemical Oxygen Demand	54	25	10	mg/L	50		108	90-110		
Matrix Spike (BA30806-MS1)		**Source: 1214076-11**			Prepared & Analyzed: 01/08/13					
Chemical Oxygen Demand	56	25	10	mg/L	50	ND	112	85-115		
Matrix Spike Dup (BA30806-MSD1)		**Source: 1214076-11**			Prepared & Analyzed: 01/08/13					
Chemical Oxygen Demand	56	25	10	mg/L	50	ND	112	85-115	0	32
Batch BA30811 - Ion Chromatography 300.0 Prep										
Blank (BA30811-BLK1)					Prepared & Analyzed: 01/08/13					
Sulfate	0.20 U	0.60	0.20	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
LCS (BA30811-BS1)					Prepared & Analyzed: 01/08/13					
Chloride	2.87	0.20	0.050	mg/L	3.0		96	85-115		
Fluoride	0.867	0.040	0.010	mg/L	0.90		96	85-115		
Sulfate	8.91	0.60	0.20	mg/L	9.0		99	85-115		
Orthophosphate as P	0.933	0.040	0.010	mg/L	0.90		104	85-115		
Nitrite (as N)	1.35	0.04	0.01	mg/L	1.4		96	85-115		
Nitrate (as N)	1.69	0.04	0.01	mg/L	1.7		99	85-115		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30811 - Ion Chromatography 300.0 Prep										
LCS Dup (BA30811-BSD1)					Prepared & Analyzed: 01/08/13					
Fluoride	0.892	0.040	0.010	mg/L	0.90		99	85-115	3	200
Orthophosphate as P	0.865	0.040	0.010	mg/L	0.90		96	85-115	8	200
Nitrite (as N)	1.34	0.04	0.01	mg/L	1.4		96	85-115	0.7	200
Nitrate (as N)	1.67	0.04	0.01	mg/L	1.7		98	85-115	1	200
Sulfate	8.81	0.60	0.20	mg/L	9.0		98	85-115	1	200
Chloride	2.85	0.20	0.050	mg/L	3.0		95	85-115	0.7	200
Matrix Spike (BA30811-MS1)		**Source: 1214074-03**			Prepared & Analyzed: 01/08/13					
Nitrite (as N)	1.50	0.04	0.01	mg/L	1.4	ND	107	85-115		
Orthophosphate as P	3.16	0.040	0.010	mg/L	0.90	2.29	97	85-115		
Fluoride	1.02	0.040	0.010	mg/L	0.90	0.189	92	85-115		
Sulfate	57.4	0.60	0.20	mg/L	9.0	48.9	94	85-115		
Chloride	40.5 +O	0.20	0.050	mg/L	3.0	40.0	17	80-120		
Nitrate (as N)	22.6 +O	0.04	0.01	mg/L	1.7	21.9	41	85-115		
Matrix Spike (BA30811-MS2)		**Source: 1214076-08**			Prepared & Analyzed: 01/08/13					
Nitrite (as N)	1.47	0.04	0.01	mg/L	1.4	ND	105	85-115		
Chloride	5.61	0.20	0.050	mg/L	3.0	2.39	107	80-120		
Sulfate	43.2	0.60	0.20	mg/L	9.0	33.3	110	85-115		
Fluoride	1.05	0.040	0.010	mg/L	0.90	0.0855	107	85-115		
Orthophosphate as P	0.855	0.040	0.010	mg/L	0.90	ND	95	85-115		
Nitrate (as N)	7.02	0.04	0.01	mg/L	1.7	5.17	109	85-115		
Batch BA30815 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BA30815-BLK1)					Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30815 - Digestion for TP by EPA 365.2/SM4500PE										
LCS (BA30815-BS1)					Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	0.742	0.040	0.010	mg/L	0.80		93	90-110		
Matrix Spike (BA30815-MS1)		**Source: 1214067-05**			Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	1.05	0.040	0.010	mg/L	1.0	0.113	93	90-110		
Matrix Spike (BA30815-MS2)		**Source: 1300195-07**			Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	0.976	0.040	0.010	mg/L	1.0	0.0535	92	90-110		
Matrix Spike Dup (BA30815-MSD1)		**Source: 1214067-05**			Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	1.06	0.040	0.010	mg/L	1.0	0.113	94	90-110	0.9	25
Matrix Spike Dup (BA30815-MSD2)		**Source: 1300195-07**			Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	1.02	0.040	0.010	mg/L	1.0	0.0535	96	90-110	4	25
Batch BA30816 - alkalinity										
Blank (BA30816-BLK1)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BA30816-BLK2)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BA30816-BS1)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
LCS (BA30816-BS2)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30816 - alkalinity										
Matrix Spike (BA30816-MS1)		**Source: 1214076-16**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	190	8.0	2.0	mg/L	120	62	100	80-120		
Matrix Spike (BA30816-MS2)		**Source: 1214081-03**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	21	83	80-120		
Matrix Spike Dup (BA30816-MSD1)		**Source: 1214076-16**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	190	8.0	2.0	mg/L	120	62	100	80-120	0	26
Matrix Spike Dup (BA30816-MSD2)		**Source: 1214081-03**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	21	83	80-120	0	26
Batch BA30942 - Ammonia by SEAL										
Blank (BA30942-BLK1)					Prepared & Analyzed: 01/09/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BA30942-BS1)					Prepared & Analyzed: 01/09/13					
Ammonia as N	0.49	0.040	0.009	mg/L	0.50		98	90-110		
Matrix Spike (BA30942-MS1)		**Source: 1214072-12**			Prepared & Analyzed: 01/09/13					
Ammonia as N	0.54	0.040	0.009	mg/L	0.50	ND	109	90-110		
Matrix Spike (BA30942-MS2)		**Source: 1214072-23**			Prepared & Analyzed: 01/09/13					
Ammonia as N	0.54	0.040	0.009	mg/L	0.50	ND	108	90-110		
Matrix Spike Dup (BA30942-MSD1)		**Source: 1214072-12**			Prepared & Analyzed: 01/09/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	ND	102	90-110	6	10

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30942 - Ammonia by SEAL										
Matrix Spike Dup (BA30942-MSD2)		**Source: 1214072-23**			Prepared & Analyzed: 01/09/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	ND	102	90-110	5	10
Batch BA31004 - COD prep										
Blank (BA31004-BLK1)					Prepared & Analyzed: 01/10/13					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BA31004-BS1)					Prepared & Analyzed: 01/10/13					
Chemical Oxygen Demand	51	25	10	mg/L	50		102	90-110		
Matrix Spike (BA31004-MS1)		**Source: 1214074-07**			Prepared & Analyzed: 01/10/13					
Chemical Oxygen Demand	49	25	10	mg/L	50	ND	98	85-115		
Matrix Spike Dup (BA31004-MSD1)		**Source: 1214074-07**			Prepared & Analyzed: 01/10/13					
Chemical Oxygen Demand	49	25	10	mg/L	50	ND	98	85-115	0	32
Batch BA31017 - Nitrite SM 4500NO2-B by seal										
Blank (BA31017-BLK1)					Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BA31017-BS1)					Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.0796	0.04	0.01	mg/L	0.080		100	90-110		
Matrix Spike (BA31017-MS1)		**Source: 1214074-07**			Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.0992	0.04	0.01	mg/L	0.10	ND	99	77-119		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31017 - Nitrite SM 4500NO2-B by seal										
Matrix Spike (BA31017-MS2)		**Source: 1214074-17**			Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.0993	0.04	0.01	mg/L	0.10	ND	99	77-119		
Matrix Spike Dup (BA31017-MSD1)		**Source: 1214074-07**			Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.0980	0.04	0.01	mg/L	0.10	ND	98	77-119	1	20
Matrix Spike Dup (BA31017-MSD2)		**Source: 1214074-17**			Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.0989	0.04	0.01	mg/L	0.10	ND	99	77-119	0.4	20
Batch BA31018 - Nitrite SM 4500NO2-B by seal										
Blank (BA31018-BLK1)					Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BA31018-BS1)					Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.0748	0.04	0.01	mg/L	0.080		94	90-110		
Matrix Spike (BA31018-MS1)		**Source: 1214074-27**			Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.0835	0.04	0.01	mg/L	0.10	ND	84	77-119		
Matrix Spike (BA31018-MS2)		**Source: 1214078-16**			Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.0981	0.04	0.01	mg/L	0.10	ND	98	77-119		
Matrix Spike Dup (BA31018-MSD1)		**Source: 1214074-27**			Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.0815	0.04	0.01	mg/L	0.10	ND	82	77-119	2	20
Matrix Spike Dup (BA31018-MSD2)		**Source: 1214078-16**			Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.0986	0.04	0.01	mg/L	0.10	ND	99	77-119	0.5	20

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31101 - Ortho phosphorus SM4500P-E by seal										
Blank (BA31101-BLK1)					Prepared & Analyzed: 01/11/13					
Orthophosphate as P	0.012 U	0.040	0.012	mg/L						
LCS (BA31101-BS1)					Prepared & Analyzed: 01/11/13					
Orthophosphate as P	0.752	0.040	0.012	mg/L	0.80		94	90-110		
Matrix Spike (BA31101-MS1)		**Source: 1300439-01**			Prepared & Analyzed: 01/11/13					
Orthophosphate as P	1.22	0.040	0.012	mg/L	1.0	0.199	102	90-110		
Matrix Spike (BA31101-MS2)		**Source: 1300439-06**			Prepared & Analyzed: 01/11/13					
Orthophosphate as P	1.52	0.040	0.012	mg/L	1.0	0.493	103	90-110		
Matrix Spike Dup (BA31101-MSD1)		**Source: 1300439-01**			Prepared & Analyzed: 01/11/13					
Orthophosphate as P	1.21	0.040	0.012	mg/L	1.0	0.199	101	90-110	1	25
Matrix Spike Dup (BA31101-MSD2)		**Source: 1300439-06**			Prepared & Analyzed: 01/11/13					
Orthophosphate as P	1.54	0.040	0.012	mg/L	1.0	0.493	104	90-110	1	25
Batch BA31106 - Nitrate 353.2 by seal										
Blank (BA31106-BLK1)					Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BA31106-BS1)					Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	0.806	0.04	0.01	mg/L	0.80		101	90-110		
Matrix Spike (BA31106-MS1)		**Source: 1214074-07**			Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	126	4.0	1.0	mg/L	100	20.3	105	90-110		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31106 - Nitrate 353.2 by seal										
Matrix Spike (BA31106-MS2)		**Source: 1214074-17**			Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	117	4.0	1.0	mg/L	100	16.9	100	90-110		
Matrix Spike Dup (BA31106-MSD1)		**Source: 1214074-07**			Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	130	4.0	1.0	mg/L	100	20.3	110	90-110	3	20
Matrix Spike Dup (BA31106-MSD2)		**Source: 1214074-17**			Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	113	4.0	1.0	mg/L	100	16.9	96	90-110	4	20
Batch BA31116 - TOC prep										
Blank (BA31116-BLK1)					Prepared & Analyzed: 01/11/13					
Total Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BA31116-BS1)					Prepared & Analyzed: 01/11/13					
Total Organic Carbon	10.1	1.0	0.50	mg/L	10		101	90-110		
Matrix Spike (BA31116-MS1)		**Source: 1300407-02**			Prepared & Analyzed: 01/11/13					
Total Organic Carbon	12.3	1.0	0.50	mg/L	10	2.10	102	85-115		
Matrix Spike Dup (BA31116-MSD1)		**Source: 1300407-02**			Prepared & Analyzed: 01/11/13					
Total Organic Carbon	12.6	1.0	0.50	mg/L	10	2.10	105	85-115	3	10
Batch BA31128 - Ion Chromatography 300.0 Prep										
Blank (BA31128-BLK1)					Prepared & Analyzed: 01/12/13					
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31128 - Ion Chromatography 300.0 Prep										
LCS (BA31128-BS1)					Prepared & Analyzed: 01/12/13					
Nitrite (as N)	1.45	0.04	0.01	mg/L	1.4		104	85-115		
Nitrate (as N)	1.72	0.04	0.01	mg/L	1.7		101	85-115		
Chloride	3.15	0.20	0.050	mg/L	3.0		105	85-115		
LCS Dup (BA31128-BSD1)					Prepared & Analyzed: 01/12/13					
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115	2	200
Nitrite (as N)	1.33	0.04	0.01	mg/L	1.4		95	85-115	9	200
Chloride	2.87	0.20	0.050	mg/L	3.0		96	85-115	9	200
Matrix Spike (BA31128-MS1)		**Source: 1300427-04**			Prepared & Analyzed: 01/12/13					
Nitrite (as N)	1.40	0.04	0.01	mg/L	1.4	ND	100	85-115		
Chloride	5.22	0.20	0.050	mg/L	3.0	1.99	108	80-120		
Nitrate (as N)	5.66	0.04	0.01	mg/L	1.7	3.80	109	85-115		
Matrix Spike (BA31128-MS2)		**Source: 1214074-02**			Prepared & Analyzed: 01/12/13					
Nitrite (as N)	14.4	0.04	0.01	mg/L	14	ND	103	85-115		
Nitrate (as N)	92.4	0.04	0.01	mg/L	17	73.8	109	85-115		
Chloride	132	0.20	0.050	mg/L	30	97.8	114	80-120		
Batch BA31129 - Ion Chromatography 300.0 Prep										
Blank (BA31129-BLK1)					Prepared & Analyzed: 01/13/13					
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BA31129-BS1)					Prepared & Analyzed: 01/13/13					
Nitrate (as N)	1.75	0.04	0.01	mg/L	1.7		103	85-115		
Chloride	3.16	0.20	0.050	mg/L	3.0		105	85-115		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31129 - Ion Chromatography 300.0 Prep										
LCS Dup (BA31129-BSD1)					Prepared & Analyzed: 01/13/13					
Nitrate (as N)	1.78	0.04	0.01	mg/L	1.7		105	85-115	2	200
Chloride	2.99	0.20	0.050	mg/L	3.0		100	85-115	6	200
Matrix Spike (BA31129-MS1)		**Source: 1214081-03**			Prepared & Analyzed: 01/13/13					
Nitrate (as N)	56.1	0.04	0.01	mg/L	17	37.0	112	85-115		
Chloride	91.1	0.20	0.050	mg/L	30	56.1	117	80-120		
Matrix Spike (BA31129-MS2)		**Source: 1300466-01**			Prepared & Analyzed: 01/13/13					
Nitrate (as N)	5.60	0.04	0.01	mg/L	1.7	3.67	114	85-115		
Chloride	13.4	0.20	0.050	mg/L	3.0	9.90	117	80-120		
Batch BA31134 - Nitrate 353.2 by seal										
Blank (BA31134-BLK1)					Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BA31134-BS1)					Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	0.737	0.04	0.01	mg/L	0.80		92	90-110		
Matrix Spike (BA31134-MS1)		**Source: 1300236-01**			Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	1.03	0.04	0.01	mg/L	1.0	0.0486	98	90-110		
Matrix Spike (BA31134-MS2)		**Source: 1300236-03**			Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	1.11	0.04	0.01	mg/L	1.0	0.115	99	90-110		
Matrix Spike Dup (BA31134-MSD1)		**Source: 1300236-01**			Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	1.08	0.04	0.01	mg/L	1.0	0.0486	103	90-110	5	20

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31134 - Nitrate 353.2 by seal										
Matrix Spike Dup (BA31134-MSD2)		**Source: 1300236-03**			Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	1.11	0.04	0.01	mg/L	1.0	0.115	100	90-110	0.5	20
Batch BA31411 - alkalinity										
Blank (BA31411-BLK1)					Prepared & Analyzed: 01/14/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BA31411-BLK2)					Prepared & Analyzed: 01/14/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BA31411-BS1)					Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
LCS (BA31411-BS2)					Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
Matrix Spike (BA31411-MS1)		**Source: 1214067-14**			Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	2.1	98	80-120		
Matrix Spike (BA31411-MS2)		**Source: 1214074-13**			Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	ND	100	80-120		
Matrix Spike Dup (BA31411-MSD1)		**Source: 1214067-14**			Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	2.1	98	80-120	0	26
Matrix Spike Dup (BA31411-MSD2)		**Source: 1214074-13**			Prepared & Analyzed: 01/14/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	ND	100	80-120	0	26

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31416 - Ammonia by SEAL										
Blank (BA31416-BLK1)					Prepared & Analyzed: 01/14/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BA31416-BS1)					Prepared & Analyzed: 01/14/13					
Ammonia as N	0.55	0.040	0.009	mg/L	0.50		110	90-110		
Matrix Spike (BA31416-MS1)		**Source: 1300224-09**			Prepared & Analyzed: 01/14/13					
Ammonia as N	0.90	0.040	0.009	mg/L	0.50	0.41	98	90-110		
Matrix Spike (BA31416-MS2)		**Source: 1300454-01**			Prepared & Analyzed: 01/14/13					
Ammonia as N	0.53	0.040	0.009	mg/L	0.50	ND	106	90-110		
Matrix Spike Dup (BA31416-MSD1)		**Source: 1300224-09**			Prepared & Analyzed: 01/14/13					
Ammonia as N	0.88	0.040	0.009	mg/L	0.50	0.41	93	90-110	3	10
Matrix Spike Dup (BA31416-MSD2)		**Source: 1300454-01**			Prepared & Analyzed: 01/14/13					
Ammonia as N	0.53	0.040	0.009	mg/L	0.50	ND	106	90-110	0.5	10
Batch BA31613 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BA31613-BLK1)					Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BA31613-BS1)					Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	0.726	0.040	0.010	mg/L	0.80		91	90-110		
Matrix Spike (BA31613-MS1)		**Source: 1214067-11**			Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	0.968	0.040	0.010	mg/L	1.0	0.0665	90	90-110		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31613 - Digestion for TP by EPA 365.2/SM4500PE										
Matrix Spike (BA31613-MS2)		**Source: 1214074-13**			Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	1.10	0.040	0.010	mg/L	1.0	0.130	97	90-110		
Matrix Spike Dup (BA31613-MSD1)		**Source: 1214067-11**			Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	1.07	0.040	0.010	mg/L	1.0	0.0665	100	90-110	10	25
Matrix Spike Dup (BA31613-MSD2)		**Source: 1214074-13**			Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	1.17	0.040	0.010	mg/L	1.0	0.130	104	90-110	6	25
Batch BA31643 - Digestion for TKN by EPA 351.2										
Blank (BA31643-BLK1)					Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BA31643-BS1)					Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	2.62	0.20	0.05	mg/L	2.5		103	90-110		
Matrix Spike (BA31643-MS1)		**Source: 1214067-03**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	6.39	0.20	0.05	mg/L	2.5	3.65	108	90-110		
Matrix Spike (BA31643-MS2)		**Source: 1214076-05**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	28.0	0.20	0.05	mg/L	25	2.97	99	90-110		
Matrix Spike Dup (BA31643-MSD1)		**Source: 1214067-03**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	6.27	0.20	0.05	mg/L	2.5	3.65	103	90-110	2	20
Matrix Spike Dup (BA31643-MSD2)		**Source: 1214076-05**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	26.6	0.20	0.05	mg/L	25	2.97	93	90-110	5	20

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31644 - Digestion for TKN by EPA 351.2										
Blank (BA31644-BLK1)					Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BA31644-BS1)					Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	2.37	0.20	0.05	mg/L	2.5		94	90-110		
Matrix Spike (BA31644-MS1)		**Source: 1300519-02**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	3.35	0.20	0.05	mg/L	2.5	0.907	96	90-110		
Matrix Spike (BA31644-MS2)		**Source: 1300529-07**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	3.46	0.20	0.05	mg/L	2.5	0.974	98	90-110		
Matrix Spike Dup (BA31644-MSD1)		**Source: 1300519-02**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	3.51	0.20	0.05	mg/L	2.5	0.907	103	90-110	5	20
Matrix Spike Dup (BA31644-MSD2)		**Source: 1300529-07**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	3.69	0.20	0.05	mg/L	2.5	0.974	107	90-110	7	20
Batch BA31645 - Digestion for TKN by EPA 351.2										
Blank (BA31645-BLK1)					Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BA31645-BS1)					Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	2.52	0.20	0.05	mg/L	2.5		99	90-110		
Matrix Spike (BA31645-MS1)		**Source: 1214074-13**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	3.85	0.20	0.05	mg/L	2.5	1.10	108	90-110		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31645 - Digestion for TKN by EPA 351.2										
Matrix Spike Dup (BA31645-MSD1)		**Source: 1214074-13**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	3.38	0.20	0.05	mg/L	2.5	1.10	90	90-110	13	20
Batch BA31735 - alkalinity										
Blank (BA31735-BLK1)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BA31735-BLK2)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BA31735-BS1)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
LCS (BA31735-BS2)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
Matrix Spike (BA31735-MS1)		**Source: 1214078-06**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	3.2	97	80-120		
Matrix Spike (BA31735-MS2)		**Source: 1214542-27**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	160	8.0	2.0	mg/L	120	31	100	80-120		
Matrix Spike Dup (BA31735-MSD1)		**Source: 1214078-06**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	3.2	97	80-120	0	26
Matrix Spike Dup (BA31735-MSD2)		**Source: 1214542-27**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	160	8.0	2.0	mg/L	120	31	100	80-120	0	26

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31805 - Ammonia by SEAL										
Blank (BA31805-BLK1)					Prepared & Analyzed: 01/18/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BA31805-BS1)					Prepared & Analyzed: 01/18/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50		102	90-110		
Matrix Spike (BA31805-MS1)		**Source: 1214074-07**			Prepared & Analyzed: 01/18/13					
Ammonia as N	1.5	0.040	0.009	mg/L	0.50	1.0	97	90-110		
Matrix Spike (BA31805-MS2)		**Source: 1214074-17**			Prepared & Analyzed: 01/18/13					
Ammonia as N	0.48	0.040	0.009	mg/L	0.50	ND	96	90-110		
Matrix Spike Dup (BA31805-MSD1)		**Source: 1214074-07**			Prepared & Analyzed: 01/18/13					
Ammonia as N	1.5	0.040	0.009	mg/L	0.50	1.0	91	90-110	2	10
Matrix Spike Dup (BA31805-MSD2)		**Source: 1214074-17**			Prepared & Analyzed: 01/18/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	ND	101	90-110	5	10
Batch BA31806 - Digestion for TKN by EPA 351.2										
Blank (BA31806-BLK1)					Prepared: 01/18/13 Analyzed: 01/22/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BA31806-BS1)					Prepared: 01/18/13 Analyzed: 01/22/13					
Total Kjeldahl Nitrogen	es at 90.6%	0.20	0.05	mg/L	2.5		89	90-110		
Matrix Spike (BA31806-MS1)		**Source: 1214074-26**			Prepared: 01/18/13 Analyzed: 01/22/13					
Total Kjeldahl Nitrogen	3.48	0.20	0.05	mg/L	2.5	1.10	94	90-110		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31806 - Digestion for TKN by EPA 351.2										
Matrix Spike (BA31806-MS2)		**Source: 1214078-15**			Prepared: 01/18/13 Analyzed: 01/22/13					
Total Kjeldahl Nitrogen	3.41	0.20	0.05	mg/L	2.5	0.730	106	90-110		
Matrix Spike Dup (BA31806-MSD1)		**Source: 1214074-26**			Prepared: 01/18/13 Analyzed: 01/22/13					
Total Kjeldahl Nitrogen	3.71	0.20	0.05	mg/L	2.5	1.10	103	90-110	6	20
Matrix Spike Dup (BA31806-MSD2)		**Source: 1214078-15**			Prepared: 01/18/13 Analyzed: 01/22/13					
Total Kjeldahl Nitrogen	3.40	0.20	0.05	mg/L	2.5	0.730	105	90-110	0.2	20
Batch BA31807 - Digestion for TKN by EPA 351.2										
Blank (BA31807-BLK1)					Prepared: 01/18/13 Analyzed: 01/22/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BA31807-BS1)					Prepared: 01/18/13 Analyzed: 01/22/13					
Total Kjeldahl Nitrogen	2.34	0.20	0.05	mg/L	2.5		92	90-110		
Matrix Spike (BA31807-MS1)		**Source: 1300701-07**			Prepared: 01/18/13 Analyzed: 01/22/13					
Total Kjeldahl Nitrogen	3.29	0.20	0.05	mg/L	2.5	0.908	94	90-110		
Matrix Spike Dup (BA31807-MSD1)		**Source: 1300701-07**			Prepared: 01/18/13 Analyzed: 01/22/13					
Total Kjeldahl Nitrogen	3.39	0.20	0.05	mg/L	2.5	0.908	98	90-110	3	20
Batch BA31822 - Ammonia by SEAL										
Blank (BA31822-BLK1)					Prepared & Analyzed: 01/18/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31822 - Ammonia by SEAL										
LCS (BA31822-BS1)					Prepared & Analyzed: 01/18/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50		103	90-110		
Matrix Spike (BA31822-MS1)		**Source: 1300638-02**			Prepared & Analyzed: 01/18/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	0.046	92	90-110		
Matrix Spike (BA31822-MS2)		**Source: 1300638-05**			Prepared & Analyzed: 01/18/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	0.046	93	90-110		
Matrix Spike Dup (BA31822-MSD1)		**Source: 1300638-02**			Prepared & Analyzed: 01/18/13					
Ammonia as N	0.53	0.040	0.009	mg/L	0.50	0.046	97	90-110	4	10
Matrix Spike Dup (BA31822-MSD2)		**Source: 1300638-05**			Prepared & Analyzed: 01/18/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.046	91	90-110	2	10
Batch BA32113 - Ion Chromatography 300.0 Prep										
Blank (BA32113-BLK1)					Prepared & Analyzed: 01/21/13					
Fluoride	0.010 U	0.040	0.010	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BA32113-BS1)					Prepared & Analyzed: 01/21/13					
Chloride	3.01	0.20	0.050	mg/L	3.0		100	85-115		
Sulfate	8.87	0.60	0.20	mg/L	9.0		99	85-115		
Fluoride	0.815	0.040	0.010	mg/L	0.90		91	85-115		
LCS Dup (BA32113-BSD1)					Prepared & Analyzed: 01/21/13					
Fluoride	0.869	0.040	0.010	mg/L	0.90		97	85-115	6	200
Chloride	3.06	0.20	0.050	mg/L	3.0		102	85-115	2	200
Sulfate	8.87	0.60	0.20	mg/L	9.0		99	85-115	0	200

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA32113 - Ion Chromatography 300.0 Prep										
Matrix Spike (BA32113-MS1)		**Source: 1300537-01**			Prepared & Analyzed: 01/21/13					
Sulfate	133	0.60	0.20	mg/L	90	34.1	110	85-115		
Fluoride	8.25	0.040	0.010	mg/L	9.0	0.0218	91	85-115		
Chloride	214	0.20	0.050	mg/L	30	183	103	80-120		
Matrix Spike (BA32113-MS2)		**Source: 1214074-14**			Prepared & Analyzed: 01/21/13					
Fluoride	1.84	0.040	0.010	mg/L	1.8	0.0722	98	85-115		
Chloride	34.6	0.20	0.050	mg/L	6.0	27.7	115	80-120		
Sulfate	79.8	0.60	0.20	mg/L	18	60.5	107	85-115		
Batch BA32114 - Ion Chromatography 300.0 Prep										
Blank (BA32114-BLK1)					Prepared & Analyzed: 01/22/13					
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BA32114-BS1)					Prepared & Analyzed: 01/22/13					
Chloride	3.02	0.20	0.050	mg/L	3.0		101	85-115		
LCS Dup (BA32114-BSD1)					Prepared & Analyzed: 01/22/13					
Chloride	2.93	0.20	0.050	mg/L	3.0		98	85-115	3	200
Matrix Spike (BA32114-MS1)		**Source: 1214074-24**			Prepared & Analyzed: 01/22/13					
Chloride	8.33	0.20	0.050	mg/L	3.0	5.63	90	80-120		
Matrix Spike (BA32114-MS2)		**Source: 1214078-11**			Prepared & Analyzed: 01/22/13					
Chloride	25.2	0.20	0.050	mg/L	3.0	22.7	83	80-120		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA32212 - Ion Chromatography 300.0 Prep										
Blank (BA32212-BLK1)					Prepared & Analyzed: 01/23/13					
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BA32212-BS1)					Prepared & Analyzed: 01/23/13					
Chloride	2.97	0.20	0.050	mg/L	3.0		99	85-115		
LCS Dup (BA32212-BSD1)					Prepared & Analyzed: 01/23/13					
Chloride	3.18	0.20	0.050	mg/L	3.0		106	85-115	7	200
Matrix Spike (BA32212-MS1)		**Source: 1214078-14**			Prepared & Analyzed: 01/23/13					
Chloride	25.9	0.20	0.050	mg/L	3.0	23.2	90	80-120		
Matrix Spike (BA32212-MS2)		**Source: 1300697-01**			Prepared & Analyzed: 01/23/13					
Chloride	150	0.20	0.050	mg/L	30	119	103	80-120		

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Inorganic, Dissolved - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30915 - TOC prep										
Blank (BA30915-BLK1)					Prepared & Analyzed: 01/09/13					
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BA30915-BS1)					Prepared & Analyzed: 01/09/13					
Dissolved Organic Carbon	10.1	1.0	0.50	mg/L	10		101	90-110		
Matrix Spike (BA30915-MS1)		**Source: 1214076-16**			Prepared & Analyzed: 01/09/13					
Dissolved Organic Carbon	14.5	1.0	0.50	mg/L	10	5.30	92	85-125		
Matrix Spike Dup (BA30915-MSD1)		**Source: 1214076-16**			Prepared & Analyzed: 01/09/13					
Dissolved Organic Carbon	14.5	1.0	0.50	mg/L	10	5.30	92	85-125	0.4	25
Batch BA31117 - TOC prep										
Blank (BA31117-BLK1)					Prepared & Analyzed: 01/11/13					
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BA31117-BS1)					Prepared & Analyzed: 01/11/13					
Dissolved Organic Carbon	9.54	1.0	0.50	mg/L	10		95	90-110		
Matrix Spike (BA31117-MS1)		**Source: 1214067-10**			Prepared & Analyzed: 01/11/13					
Dissolved Organic Carbon	12.9	1.0	0.50	mg/L	10	3.51	94	85-125		
Matrix Spike Dup (BA31117-MSD1)		**Source: 1214067-10**			Prepared & Analyzed: 01/11/13					
Dissolved Organic Carbon	13.1	1.0	0.50	mg/L	10	3.51	96	85-125	1	25

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Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30823 - Metals Preparation for EPA Method 200.7										
Blank (BA30823-BLK1)					Prepared: 01/08/13 Analyzed: 01/09/13					
Sodium	0.13 U	0.50	0.13	mg/L						
Boron	0.050 U	0.10	0.050	mg/L						
Iron	0.020 U	0.10	0.020	mg/L						
Magnesium	0.020 U	0.50	0.020	mg/L						
Calcium	0.042 U	0.50	0.042	mg/L						
Manganese	0.0010 U	0.010	0.0010	mg/L						
Potassium	0.010 U	0.050	0.010	mg/L						
LCS (BA30823-BS1)					Prepared: 01/08/13 Analyzed: 01/09/13					
Boron	0.43	0.10	0.050	mg/L	0.40		108	85-115		
Calcium	21	0.50	0.042	mg/L	20		103	85-115		
Sodium	21	0.50	0.13	mg/L	20		103	85-115		
Iron	8.3	0.10	0.020	mg/L	8.0		104	85-115		
Magnesium	21	0.50	0.020	mg/L	20		103	85-115		
Manganese	0.40	0.010	0.0010	mg/L	0.40		101	85-115		
Potassium	19	0.050	0.010	mg/L	20		97	85-115		
Matrix Spike (BA30823-MS1)		**Source: 1214074-05**			Prepared: 01/08/13 Analyzed: 01/09/13					
Iron	8.2	0.10	0.020	mg/L	8.0	0.027	103	70-130		
Potassium	26	0.050	0.010	mg/L	20	7.4	92	70-130		
Boron	0.59	0.10	0.050	mg/L	0.40	0.15	110	70-130		
Magnesium	31	0.50	0.020	mg/L	20	12	96	70-130		
Manganese	0.41	0.010	0.0010	mg/L	0.40	ND	102	70-130		
Calcium	54	0.50	0.042	mg/L	20	35	97	70-130		
Sodium	93	0.50	0.13	mg/L	20	77	84	70-130		
Matrix Spike (BA30823-MS2)		**Source: 1300018-05**			Prepared: 01/08/13 Analyzed: 01/09/13					
Iron	9.7	0.10	0.020	mg/L	8.0	1.6	102	70-130		
Manganese	0.40	0.010	0.0010	mg/L	0.40	0.0077	99	70-130		
Boron	0.47	0.10	0.050	mg/L	0.40	ND	116	70-130		
Magnesium	25	0.50	0.020	mg/L	20	4.8	103	70-130		
Potassium	)00,000,000 +O	0.050	0.010	mg/L	20	00000000	0	70-130		
Calcium	48	0.50	0.042	mg/L	20	28	102	70-130		
Sodium	60	0.50	0.13	mg/L	20	41	93	70-130		

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Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30823 - Metals Preparation for EPA Method 200.7										
Matrix Spike Dup (BA30823-MSD1)		**Source: 1214074-05**			Prepared: 01/08/13 Analyzed: 01/09/13					
Potassium	26	0.050	0.010	mg/L	20	7.4	94	70-130	2	30
Magnesium	31	0.50	0.020	mg/L	20	12	93	70-130	2	30
Calcium	52	0.50	0.042	mg/L	20	35	86	70-130	4	30
Sodium	92	0.50	0.13	mg/L	20	77	79	70-130	1	30
Manganese	0.40	0.010	0.0010	mg/L	0.40	ND	99	70-130	4	30
Boron	0.58	0.10	0.050	mg/L	0.40	0.15	107	70-130	2	30
Iron	8.0	0.10	0.020	mg/L	8.0	0.027	100	70-130	3	30
Matrix Spike Dup (BA30823-MSD2)		**Source: 1300018-05**			Prepared: 01/08/13 Analyzed: 01/09/13					
Calcium	48	0.50	0.042	mg/L	20	28	100	70-130	0.8	30
Potassium	)00,000,000 +O	0.050	0.010	mg/L	20	00000000	0	70-130	0	30
Magnesium	25	0.50	0.020	mg/L	20	4.8	101	70-130	1	30
Sodium	60	0.50	0.13	mg/L	20	41	95	70-130	0.7	30
Boron	0.48	0.10	0.050	mg/L	0.40	ND	119	70-130	2	30
Manganese	0.42	0.010	0.0010	mg/L	0.40	0.0077	103	70-130	3	30
Iron	10	0.10	0.020	mg/L	8.0	1.6	105	70-130	2	30
Batch BA30947 - Metals Preparation for EPA Method 200.7										
Blank (BA30947-BLK1)					Prepared & Analyzed: 01/11/13					
Magnesium	0.020 U	0.50	0.020	mg/L						
Iron	0.020 U	0.10	0.020	mg/L						
Potassium	0.11	0.050	0.010	mg/L						
Boron	0.050 U	0.10	0.050	mg/L						
Sodium	0.13 U	0.50	0.13	mg/L						
Calcium	0.042 U	0.50	0.042	mg/L						
Manganese	0.0010 U	0.010	0.0010	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30947 - Metals Preparation for EPA Method 200.7										
LCS (BA30947-BS1)					Prepared & Analyzed: 01/11/13					
Magnesium	18	0.50	0.020	mg/L	20		92	85-115		
Manganese	0.39	0.010	0.0010	mg/L	0.40		98	85-115		
Sodium	20	0.50	0.13	mg/L	20		100	85-115		
Calcium	19	0.50	0.042	mg/L	20		95	85-115		
Potassium	18	0.050	0.010	mg/L	20		88	85-115		
Boron	0.40	0.10	0.050	mg/L	0.40		100	85-115		
Iron	8.0	0.10	0.020	mg/L	8.0		100	85-115		
Matrix Spike (BA30947-MS1)		**Source: 1300013-01**			Prepared & Analyzed: 01/11/13					
Sodium	29	0.50	0.13	mg/L	20	9.6	95	70-130		
Potassium	28	0.050	0.010	mg/L	20	12	78	70-130		
Manganese	0.41	0.010	0.0010	mg/L	0.40	0.0067	100	70-130		
Iron	9.2	0.10	0.020	mg/L	8.0	1.1	100	70-130		
Magnesium	21	0.50	0.020	mg/L	20	3.0	92	70-130		
Calcium	26	0.50	0.042	mg/L	20	7.8	93	70-130		
Boron	0.44	0.10	0.050	mg/L	0.40	ND	111	70-130		
Matrix Spike (BA30947-MS2)		**Source: 1300314-01**			Prepared & Analyzed: 01/11/13					
Potassium	30	0.050	0.010	mg/L	20	8.4	106	70-130		
Sodium	2,600	50	13	mg/L	20	540	NR	70-130		
Calcium	97	0.50	0.042	mg/L	20	74	116	70-130		
Boron	0.45	0.10	0.050	mg/L	0.40	ND	114	70-130		
Iron	10	0.10	0.020	mg/L	8.0	1.6	104	70-130		
Magnesium	25	0.50	0.020	mg/L	20	4.3	102	70-130		
Manganese	0.43	0.010	0.0010	mg/L	0.40	0.024	102	70-130		
Matrix Spike Dup (BA30947-MSD1)		**Source: 1300013-01**			Prepared & Analyzed: 01/11/13					
Calcium	27	0.50	0.042	mg/L	20	7.8	96	70-130	3	30
Iron	9.1	0.10	0.020	mg/L	8.0	1.1	100	70-130	0.2	30
Sodium	30	0.50	0.13	mg/L	20	9.6	103	70-130	5	30
Manganese	0.41	0.010	0.0010	mg/L	0.40	0.0067	101	70-130	0.6	30
Boron	0.45	0.10	0.050	mg/L	0.40	ND	112	70-130	1	30
Magnesium	22	0.50	0.020	mg/L	20	3.0	96	70-130	3	30
Potassium	29	0.050	0.010	mg/L	20	12	85	70-130	5	30

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30947 - Metals Preparation for EPA Method 200.7										
Matrix Spike Dup (BA30947-MSD2)		**Source: 1300314-01**			Prepared: 01/11/13 Analyzed: 01/14/13					
Sodium	2,500	50	13	mg/L	20	540	NR	70-130	1	30
Calcium	100	0.50	0.042	mg/L	20	74	129	70-130	3	30
Boron	0.45	0.10	0.050	mg/L	0.40	ND	112	70-130	1	30
Iron	10	0.10	0.020	mg/L	8.0	1.6	104	70-130	0.004	30
Potassium	32	0.050	0.010	mg/L	20	8.4	117	70-130	7	30
Magnesium	26	0.50	0.020	mg/L	20	4.3	109	70-130	6	30
Manganese	0.43	0.010	0.0010	mg/L	0.40	0.024	102	70-130	0.8	30

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* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below.

+O Matrix spike source sample was over the reccommended range for the method.

Questions regarding this report should be directed to :

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1214074

SOUTHERN ANALYTICAL LABORATORIES, INC.

11D BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (TA3)

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, Alkalinity	1LP, Cool NOx, Cl, Alkalinity, F, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na					Field pH	Field Temperature	Field Conductivity	Field DO
01	TA3-PAN-12-N			GW		X	1	1														
02	TA3-LY-24-C	01/07/13	10:07	GW		X	1	1											6.0	17.6	830	7.4
03	TA3-LY-12-S	01/07/13	10:15	GW		X			1	1									6.4	17.6	641	8.5
04	TA3-LY-12-S DUP	01/07/13	10:20	GW		X			1	1									6.4	17.6	641	8.5
05	TA3-LY-24-S	01/07/13	10:25	GW		X			1		1	1		1					6.2	17.6	744	8.2
06	TA3-LY-42-S	01/07/13	10:35	GW		X	1	1											6.1	18.0	895	6.9
07	TA3-PZ-11-EF2			GW		X			1	1												
08	TA3-PZ-11-I2			GW		X			1	1												
09	TA3-PZ-10-J5			GW		X	1	1														
10	TA3-PZ-10-J5 DUP			GW		X	1	1														
11	TA3-PZ-10-K5			GW		X			1	1												
12	TA3-PZ-11-L2			GW		X			1		1	1	2	1								

Containers Prepared/ Relinquished:	Date/Time: 1355 12-07-12	Received:	Date/Time:
Relinquished:	Date/Time: 1600 1/7/13	Received: K Nordmark	Date/Time: 1/7/13 1602
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace? Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

1214074

1214074

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (TA3)

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, Alkalinity	1LP, Cool NOx, Cl, Alkalinity, F, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na					Field pH	Field Temperature	Field Conductivity	Field DO
01	TA3-PAN-12-N			GW		X	1	1														
02	TA3-LY-24-C	1/9/13		GW		X	1	1														
03	TA3-LY-12-S			GW		X			1	1												
04	TA3-LY-12-S DUP			GW		X			1	1												
05	TA3-LY-24-S			GW		X			1		1	1		1								
06	TA3-LY-42-S			GW		X	1	1														
07	TA3-PZ-11-EF2		1315	GW		X			1	1									4.79	24.2	333	3.42
08	TA3-PZ-11-I2		1302	GW		X			1	1									4.61	24.6	528	4.84
09	TA3-PZ-10-J5		1247	GW		X	1	1											4.34	25.3	301	3.60
10	TA3-PZ-10-J5 DUP		1252	GW		X	1	1											4.34	25.3	301	3.60
11	TA3-PZ-10-K5		1231	GW		X			1	1									4.40	24.7	309	3.86
12	TA3-PZ-11-L2		1129	GW		X			1		1	1	2	1					4.64	24.6	420	4.02

	Date/Time	Received	Date/Time
Containers Prepared / Relinquished:	1355 12-07-12		
Relinquished:	1515 1/9/13	K Medmond	1/9/13 1515
Relinquished:			
Relinquished:			
Relinquished:			

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace? Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

1214074

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

1214074

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (TA3)

Samplers: (Signature)

Matrix Codes:
DW-Drinking Water WW-Wastewater
SW-SurfaceWater SL-Sludge SO-Soil
GW-Groundwater SA-Saline Water O-Other
R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, Alkalinity	1LP, Cool NOx, Cl, Alkalinity, F, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na					Field pH	Field Temperature	Field Conductivity	Field DO
13	TA3-PZ-11-L3	1/9/13	1147	GW		X			1		1	1	2	1					4.49	24.9	365	3.58
14	TA3-PZ-11-L4		1208	GW		X			1	1									4.45	24.5	373	3.47
15	TA3-PZ-10-L5		1220	GW		X			1	1									4.51	24.5	146	3.02
16	TA3-PZ-09-N3		1057	GW		X			1	1									6.87	24.5	410	2.45
17	TA2-PZ-16-N3		1108	GW		X			1	1									5.65	24.6	301	3.04
18	TA3-PZ-09-O7		1020	GW		X	1	1											5.05	23.7	249	1.79
19	TA3-PZ-16-O7		1059	GW		X	1	1											5.34	24.6	275	1.90
20	TA3-PZ-09-I7		0911	GW		X	1	1											7.33	23.2	615	3.80
21	TA3-PZ-16-I7		0920	GW		X	1	1											5.92	24.1	252	2.55
22	TA3-PZ-09-M9		0943	GW		X	1	1											5.86	23.1	242	2.12
23	TA3-PZ-16-M9		0954	GW		X	1	1											5.51	24.1	258	2.90
24	TA3-PZ-09-ST14		0840	GW		X	1	1											4.99	22.6	159	4.95

Containers Prepared:	Date/Time: 1358	Received:	Date/Time:
Relinquished: H Hazuitly	12-07-12		
Relinquished:	Date/Time: 1515 1/9/13	Received: K Mudmach	Date/Time: 1/9/13 1515
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

Seal intact? Y N (N/A)
Samples intact upon arrival? (Y) N N/A
Received on ice? Temp_____ (Y) N N/A
Proper preservatives indicated? (Y) N N/A
Rec'd within holding time? (Y) N N/A
Volatiles rec'd w/out headspace? Y N (N/A)
Proper containers used? (Y) N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

1214074

1214074

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (TA3)

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, Alkalinity	1LP, Cool NOx, Cl, Alkalinity, F, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na					Field pH	Field Temperature	Field Conductivity	Field DO
25	TA3-PZ-16-ST14	1/9/13	0849	GW		X	1	1											5.39	23.5	127	2.45
26	TA3-PZ-09-ST16		0810	GW		X	1	1											5.39	22.4	189	2.25
27	TA3-PZ-16-ST16		0822	GW		X	1	1											5.39	23.6	232	2.87

Containers Prepared by / Relinquished:	Date/Time:	Received:	Date/Time:
H Harwood	1355 12-07-12		
Relinquished:	Date/Time: 1515 1/9/13	Received: K Mudmond	Date/Time: 1/9/13 1515
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace? Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

1214074

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 21, 2013
Work Order: 1214076

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA4-LY-24-C**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-02**						
Date/Time Collected		**01/07/13 08:30**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		6.2						
Temperature		18.5 °C						
Conductivity		679 umhos						
Dissolved Oxygen		7.2 mg/L						
Inorganics								
Ammonia as N	mg/L	0.011 I	EPA 350.1	0.040	0.009		01/14/13 14:04	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/08/13 09:15	01/08/13 11:40	1
Chloride	mg/L	74	EPA 300.0	0.20	0.050		01/13/13 11:44	1
Nitrate (as N)	mg/L	20	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Phosphorous - Total as P	mg/L	0.17	SM 4500P-E	0.040	0.010	01/08/13 10:14	01/10/13 12:56	1
Total Alkalinity	mg/L	31	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	2.2	EPA 351.2	0.20	0.05	01/16/13 16:31	01/18/13 11:07	1
Nitrate+Nitrite (N)	mg/L	20	EPA 300.0	0.08	0.02		01/08/13 16:45	1

Sample Description		**TA4-LY-12-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-03**						
Date/Time Collected		**01/07/13 08:40**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		6.80						
Temperature		18.1 °C						
Conductivity		726 umhos						
Dissolved Oxygen		8.6 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/14/13 14:06	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/08/13 09:15	01/08/13 11:40	1
Chloride	mg/L	61	EPA 300.0	0.20	0.050		01/13/13 11:44	1
Fluoride	mg/L	0.29	EPA 300.0	0.040	0.010		01/08/13 16:45	1
Nitrate (as N)	mg/L	19	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Orthophosphate as P	mg/L	2.4	EPA 300.0	0.040	0.010		01/08/13 16:45	1

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 21, 2013
Work Order: 1214076

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA4-LY-12-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-03**						
Date/Time Collected		**01/07/13 08:40**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		6.80						
Temperature		18.1 °C						
Conductivity		726 umhos						
Dissolved Oxygen		8.6 mg/L						
Phosphorous - Total as P	mg/L	4.7	SM 4500P-E	0.40	0.10	01/08/13 10:14	01/10/13 15:34	10
Sulfate	mg/L	58	EPA 300.0	0.60	0.20		01/08/13 16:45	1
Total Alkalinity	mg/L	93	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	2.2	EPA 351.2	0.20	0.05	01/16/13 16:31	01/18/13 11:09	1
Nitrate+Nitrite (N)	mg/L	19	EPA 300.0	0.08	0.02		01/08/13 16:45	1
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	6.5	SM 5310B	1.0	0.50		01/09/13 09:58	1
Metals								
Boron	mg/L	0.14	EPA 200.7	0.10	0.050	01/09/13 08:52	01/09/13 13:47	1
Calcium	mg/L	47	EPA 200.7	0.50	0.042	01/09/13 08:52	01/09/13 13:47	1
Iron	mg/L	0.020 I	EPA 200.7	0.10	0.020	01/09/13 08:52	01/09/13 13:47	1
Magnesium	mg/L	16	EPA 200.7	0.50	0.020	01/09/13 08:52	01/09/13 13:47	1
Manganese	mg/L	0.0010 U	EPA 200.7	0.010	0.0010	01/09/13 08:52	01/09/13 13:47	1
Potassium	mg/L	23	EPA 200.7	0.050	0.010	01/09/13 08:52	01/09/13 13:47	1
Sodium	mg/L	52	EPA 200.7	0.50	0.13	01/09/13 08:52	01/09/13 13:47	1
Sample Description		**TA1-LY-12-S DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-04**						
Date/Time Collected		**01/07/13 11:05**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		6.8						
Temperature		17.5 °C						
Conductivity		953 umhos						
Dissolved Oxygen		8.2 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/14/13 14:08	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/08/13 09:15	01/08/13 11:40	1
Chloride	mg/L	63	EPA 300.0	0.20	0.050		01/13/13 11:44	1

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 21, 2013
Work Order: 1214076

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA1-LY-12-S DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-04**						
Date/Time Collected		**01/07/13 11:05**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		6.8						
Temperature		17.5 °C						
Conductivity		953 umhos						
Dissolved Oxygen		8.2 mg/L						
Fluoride	mg/L	0.14	EPA 300.0	0.040	0.010		01/08/13 16:45	1
Nitrate (as N)	mg/L	49	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Orthophosphate as P	mg/L	1.2	EPA 300.0	0.040	0.010		01/08/13 16:45	1
Phosphorous - Total as P	mg/L	4.5	SM 4500P-E	0.40	0.10	01/08/13 10:14	01/10/13 15:17	10
Sulfate	mg/L	52	EPA 300.0	0.60	0.20		01/08/13 16:45	1
Total Alkalinity	mg/L	93	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	2.1	EPA 351.2	0.20	0.05	01/16/13 16:31	01/18/13 12:11	1
Nitrate+Nitrite (N)	mg/L	49	EPA 300.0	0.08	0.02		01/08/13 16:45	1
Sample Description		**TA4-LY-24-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-05**						
Date/Time Collected		**01/07/13 08:55**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		6.4						
Temperature		18.0 °C						
Conductivity		700 umhos						
Dissolved Oxygen		7.8 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/14/13 14:10	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chloride	mg/L	75	EPA 300.0	0.20	0.050		01/13/13 11:44	1
Nitrate (as N)	mg/L	27	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Total Kjeldahl Nitrogen	mg/L	3.0	EPA 351.2	0.20	0.05	01/16/13 16:31	01/18/13 11:11	1
Nitrate+Nitrite (N)	mg/L	27	EPA 300.0	0.08	0.02		01/08/13 16:45	1

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 21, 2013
Work Order: 1214076

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA4-LY-42-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-06**						
Date/Time Collected		**01/07/13 09:00**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		6.0						
Temperature		18.3 °C						
Conductivity		719 umhos						
Dissolved Oxygen		6.9 mg/L						
Inorganics								
Ammonia as N	mg/L	0.013 I	EPA 350.1	0.040	0.009		01/14/13 14:12	1
Ammonium as NH4	mg/L	0.02 I	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chloride	mg/L	77	EPA 300.0	0.20	0.050		01/13/13 11:44	1
Nitrate (as N)	mg/L	27	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	01/16/13 16:33	01/18/13 14:55	1
Nitrate+Nitrite (N)	mg/L	27	EPA 300.0	0.08	0.02		01/08/13 16:45	1

Sample Description		**TA4-PZ-11-EF2**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-07**						
Date/Time Collected		**01/07/13 13:15**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		4.32						
Temperature		21.4 °C						
Conductivity		138 umhos						
Dissolved Oxygen		3.23 mg/L						
Inorganics								
Ammonia as N	mg/L	0.032 I	EPA 350.1	0.040	0.009		01/16/13 12:24	1
Ammonium as NH4	mg/L	0.04 I	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/08/13 09:15	01/08/13 11:40	1
Chloride	mg/L	6.0	EPA 300.0	0.20	0.050		01/08/13 16:45	1
Nitrate (as N)	mg/L	5.3	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Phosphorous - Total as P	mg/L	0.20	SM 4500P-E	0.040	0.010	01/08/13 10:14	01/10/13 13:02	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	0.89	EPA 351.2	0.20	0.05	01/16/13 16:33	01/18/13 14:57	1
Nitrate+Nitrite (N)	mg/L	5.3	EPA 300.0	0.08	0.02		01/08/13 16:45	1

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Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA4-PZ-10-H5**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-08**						
Date/Time Collected		**01/07/13 10:50**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		4.4						
Temperature		21.4 °C						
Conductivity		126 umhos						
Dissolved Oxygen		2.16 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/16/13 12:26	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/08/13 09:15	01/08/13 11:40	1
Chloride	mg/L	2.4	EPA 300.0	0.20	0.050		01/08/13 16:45	1
Nitrate (as N)	mg/L	5.2	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Phosphorous - Total as P	mg/L	0.14	SM 4500P-E	0.040	0.010	01/08/13 10:14	01/10/13 13:03	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	0.87	EPA 351.2	0.20	0.05	01/16/13 16:33	01/18/13 14:59	1
Nitrate+Nitrite (N)	mg/L	5.2	EPA 300.0	0.08	0.02		01/08/13 16:45	1

Sample Description		**TA4-PZ-10-J5**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-09**						
Date/Time Collected		**01/07/13 11:02**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		4.4						
Temperature		21.5 °C						
Conductivity		112 umhos						
Dissolved Oxygen		3.58 mg/L						
Inorganics								
Ammonia as N	mg/L	0.017 I	EPA 350.1	0.040	0.009		01/16/13 12:28	1
Ammonium as NH4	mg/L	0.02 I	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/08/13 09:15	01/08/13 11:40	1
Chloride	mg/L	2.5	EPA 300.0	0.20	0.050		01/09/13 01:32	1
Nitrate (as N)	mg/L	4.7	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Phosphorous - Total as P	mg/L	0.17	SM 4500P-E	0.040	0.010	01/08/13 10:14	01/10/13 13:04	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/08/13 13:35	1

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Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA4-PZ-10-J5**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-09**						
Date/Time Collected		**01/07/13 11:02**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		4.4						
Temperature		21.5 °C						
Conductivity		112 umhos						
Dissolved Oxygen		3.58 mg/L						
Total Kjeldahl Nitrogen	mg/L	0.90	EPA 351.2	0.20	0.05	01/16/13 16:33	01/18/13 15:00	1
Nitrate+Nitrite (N)	mg/L	4.7	EPA 300.0	0.08	0.02		01/09/13 01:32	1
Sample Description		**TA4-PZ-10-K5**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-10**						
Date/Time Collected		**01/07/13 11:13**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		4.4						
Temperature		21.2 °C						
Conductivity		133 umhos						
Dissolved Oxygen		2.95 mg/L						
Inorganics								
Ammonia as N	mg/L	0.015 I	EPA 350.1	0.040	0.009		01/16/13 12:30	1
Ammonium as NH4	mg/L	0.02 I	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/08/13 09:15	01/08/13 11:40	1
Chloride	mg/L	3.8	EPA 300.0	0.20	0.050		01/09/13 01:32	1
Fluoride	mg/L	0.13	EPA 300.0	0.040	0.010		01/09/13 01:32	1
Nitrate (as N)	mg/L	6.5	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		01/09/13 01:32	1
Phosphorous - Total as P	mg/L	0.14	SM 4500P-E	0.040	0.010	01/08/13 10:14	01/10/13 13:05	1
Sulfate	mg/L	38	EPA 300.0	0.60	0.20		01/09/13 01:32	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	01/16/13 16:33	01/18/13 15:09	1
Total Organic Carbon	mg/L	3.6	SM 5310B	1.0	0.50		01/09/13 09:58	1
Nitrate+Nitrite (N)	mg/L	6.5	EPA 300.0	0.08	0.02		01/09/13 01:32	1
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	2.8	SM 5310B	1.0	0.50		01/09/13 09:58	1
Metals								

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA4-PZ-10-K5**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-10**						
Date/Time Collected		**01/07/13 11:13**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		4.4						
Temperature		21.2 °C						
Conductivity		133 umhos						
Dissolved Oxygen		2.95 mg/L						
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	01/09/13 08:52	01/09/13 13:51	1
Calcium	mg/L	15	EPA 200.7	0.50	0.042	01/09/13 08:52	01/09/13 13:51	1
Iron	mg/L	0.033 I	EPA 200.7	0.10	0.020	01/09/13 08:52	01/09/13 13:51	1
Magnesium	mg/L	3.3	EPA 200.7	0.50	0.020	01/09/13 08:52	01/09/13 13:51	1
Manganese	mg/L	0.034	EPA 200.7	0.010	0.0010	01/09/13 08:52	01/09/13 13:51	1
Potassium	mg/L	3.7	EPA 200.7	0.050	0.010	01/09/13 08:52	01/09/13 13:51	1
Sodium	mg/L	2.6	EPA 200.7	0.50	0.13	01/09/13 08:52	01/09/13 13:51	1
Sample Description		**TA4-PZ-11-L2**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-11**						
Date/Time Collected		**01/07/13 12:22**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		4.85						
Temperature		21.5 °C						
Conductivity		109 umhos						
Dissolved Oxygen		3.12 mg/L						
Inorganics								
Ammonia as N	mg/L	0.020 I	EPA 350.1	0.040	0.009		01/16/13 12:32	1
Ammonium as NH4	mg/L	0.03 I	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/08/13 09:15	01/08/13 11:40	1
Chloride	mg/L	2.6	EPA 300.0	0.20	0.050		01/09/13 01:32	1
Fluoride	mg/L	0.11	EPA 300.0	0.040	0.010		01/09/13 01:32	1
Nitrate (as N)	mg/L	4.6	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		01/09/13 01:32	1
Phosphorous - Total as P	mg/L	0.038 I	SM 4500P-E	0.040	0.010	01/08/13 10:14	01/10/13 13:06	1
Sulfate	mg/L	35	EPA 300.0	0.60	0.20		01/09/13 01:32	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	01/16/13 16:33	01/18/13 15:10	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA4-PZ-11-L2**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-11**						
Date/Time Collected		**01/07/13 12:22**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		4.85						
Temperature		21.5 °C						
Conductivity		109 umhos						
Dissolved Oxygen		3.12 mg/L						
Total Organic Carbon	mg/L	3.4	SM 5310B	1.0	0.50		01/09/13 09:58	1
Nitrate+Nitrite (N)	mg/L	4.6	EPA 300.0	0.08	0.02		01/09/13 01:32	1
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	2.6	SM 5310B	1.0	0.50		01/09/13 09:58	1
Metals								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	01/09/13 08:52	01/09/13 13:54	1
Calcium	mg/L	14	EPA 200.7	0.50	0.042	01/09/13 08:52	01/09/13 13:54	1
Iron	mg/L	0.020 U	EPA 200.7	0.10	0.020	01/09/13 08:52	01/09/13 13:54	1
Magnesium	mg/L	2.5	EPA 200.7	0.50	0.020	01/09/13 08:52	01/09/13 13:54	1
Manganese	mg/L	0.065	EPA 200.7	0.010	0.0010	01/09/13 08:52	01/11/13 14:22	1
Potassium	mg/L	2.9	EPA 200.7	0.050	0.010	01/09/13 08:52	01/09/13 13:54	1
Sodium	mg/L	2.0	EPA 200.7	0.50	0.13	01/09/13 08:52	01/09/13 13:54	1
Sample Description		**TA4-PZ-11-L3**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-12**						
Date/Time Collected		**01/07/13 12:09**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		4.47						
Temperature		21.3 °C						
Conductivity		130 umhos						
Dissolved Oxygen		3.26 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/16/13 12:34	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/08/13 09:15	01/08/13 11:40	1
Chloride	mg/L	3.8	EPA 300.0	0.20	0.050		01/09/13 01:32	1
Nitrate (as N)	mg/L	5.4	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Phosphorous - Total as P	mg/L	0.070	SM 4500P-E	0.040	0.010	01/08/13 10:14	01/10/13 13:07	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA4-PZ-11-L3**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-12**						
Date/Time Collected		**01/07/13 12:09**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		4.47						
Temperature		21.3 °C						
Conductivity		130 umhos						
Dissolved Oxygen		3.26 mg/L						
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	2.2	EPA 351.2	0.20	0.05	01/16/13 16:33	01/18/13 15:12	1
Nitrate+Nitrite (N)	mg/L	5.4	EPA 300.0	0.08	0.02		01/09/13 01:32	1
Sample Description		**TA4-PZ-11-L4**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-13**						
Date/Time Collected		**01/07/13 11:55**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		4.35						
Temperature		21.7 °C						
Conductivity		138 umhos						
Dissolved Oxygen		3.69 mg/L						
Inorganics								
Ammonia as N	mg/L	0.036 I	EPA 350.1	0.040	0.009		01/16/13 12:36	1
Ammonium as NH4	mg/L	0.05	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/08/13 09:15	01/08/13 11:40	1
Chloride	mg/L	5.3	EPA 300.0	0.20	0.050		01/09/13 01:32	1
Nitrate (as N)	mg/L	5.4	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Phosphorous - Total as P	mg/L	0.086	SM 4500P-E	0.040	0.010	01/08/13 10:14	01/10/13 13:08	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	0.88	EPA 351.2	0.20	0.05	01/16/13 16:33	01/18/13 15:14	1
Nitrate+Nitrite (N)	mg/L	5.4	EPA 300.0	0.08	0.02		01/09/13 01:32	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA4-PZ-11-L5**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-14**						
Date/Time Collected		**01/07/13 11:42**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		4.31						
Temperature		21.4 °C						
Conductivity		155 umhos						
Dissolved Oxygen		2.89 mg/L						
Inorganics								
Ammonia as N	mg/L	0.022 I	EPA 350.1	0.040	0.009		01/16/13 12:38	1
Ammonium as NH4	mg/L	0.03 I	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chemical Oxygen Demand	mg/L	13 I	EPA 410.4	25	10	01/09/13 09:15	01/09/13 11:35	1
Chloride	mg/L	4.1	EPA 300.0	0.20	0.050		01/09/13 01:32	1
Nitrate (as N)	mg/L	6.8	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Phosphorous - Total as P	mg/L	0.32	SM 4500P-E	0.040	0.010	01/08/13 10:14	01/10/13 13:08	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	01/16/13 16:33	01/18/13 15:15	1
Nitrate+Nitrite (N)	mg/L	6.8	EPA 300.0	0.08	0.02		01/09/13 01:32	1

Sample Description		**TA4-PZ-11-L6**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-15**						
Date/Time Collected		**01/07/13 11:30**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		4.34						
Temperature		21.2 °C						
Conductivity		142 umhos						
Dissolved Oxygen		3.04 mg/L						
Inorganics								
Ammonia as N	mg/L	0.025 I	EPA 350.1	0.040	0.009		01/16/13 12:40	1
Ammonium as NH4	mg/L	0.03 I	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chemical Oxygen Demand	mg/L	13 I	EPA 410.4	25	10	01/09/13 09:15	01/09/13 11:35	1
Chloride	mg/L	3.7	EPA 300.0	0.20	0.050		01/09/13 01:32	1
Nitrate (as N)	mg/L	7.0	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Phosphorous - Total as P	mg/L	0.20	SM 4500P-E	0.040	0.010	01/15/13 13:18	01/16/13 12:47	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		01/08/13 13:35	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA4-PZ-11-L6**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-15**						
Date/Time Collected		**01/07/13 11:30**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		4.34						
Temperature		21.2 °C						
Conductivity		142 umhos						
Dissolved Oxygen		3.04 mg/L						
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	01/16/13 16:33	01/18/13 15:17	1
Nitrate+Nitrite (N)	mg/L	7.0	EPA 300.0	0.08	0.02		01/09/13 01:32	1
Sample Description		**TA4-PZ-09-M4**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-16**						
Date/Time Collected		**01/07/13 12:45**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		6.88						
Temperature		21.7 °C						
Conductivity		280 umhos						
Dissolved Oxygen		2.71 mg/L						
Inorganics								
Ammonia as N	mg/L	0.028 I	EPA 350.1	0.040	0.009		01/16/13 12:50	1
Ammonium as NH4	mg/L	0.04 I	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chemical Oxygen Demand	mg/L	20 I	EPA 410.4	25	10	01/09/13 09:15	01/09/13 11:35	1
Chloride	mg/L	9.8	EPA 300.0	0.20	0.050		01/09/13 01:32	1
Fluoride	mg/L	0.014 I	EPA 300.0	0.040	0.010		01/09/13 01:32	1
Nitrate (as N)	mg/L	6.5	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Nitrite (as N)	mg/L	0.23	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		01/09/13 01:32	1
Phosphorous - Total as P	mg/L	0.32	SM 4500P-E	0.040	0.010	01/15/13 13:18	01/16/13 12:48	1
Sulfate	mg/L	49	EPA 300.0	0.60	0.20		01/09/13 01:32	1
Total Alkalinity	mg/L	62	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	2.1	EPA 351.2	0.20	0.05	01/16/13 16:33	01/18/13 15:19	1
Total Organic Carbon	mg/L	5.8	SM 5310B	1.0	0.50		01/09/13 09:58	1
Nitrate+Nitrite (N)	mg/L	6.8	EPA 300.0	0.08	0.02		01/09/13 01:32	1
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	5.3	SM 5310B	1.0	0.50		01/09/13 09:58	1
Metals								

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA4-PZ-09-M4**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-16**						
Date/Time Collected		**01/07/13 12:45**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		6.88						
Temperature		21.7 °C						
Conductivity		280 umhos						
Dissolved Oxygen		2.71 mg/L						
Boron	mg/L	0.061 I	EPA 200.7	0.10	0.050	01/09/13 08:52	01/09/13 13:58	1
Calcium	mg/L	32	EPA 200.7	0.50	0.042	01/09/13 08:52	01/09/13 13:58	1
Iron	mg/L	0.025 I	EPA 200.7	0.10	0.020	01/09/13 08:52	01/09/13 13:58	1
Magnesium	mg/L	4.6	EPA 200.7	0.50	0.020	01/09/13 08:52	01/09/13 13:58	1
Manganese	mg/L	0.060	EPA 200.7	0.010	0.0010	01/09/13 08:52	01/11/13 14:26	1
Potassium	mg/L	4.6	EPA 200.7	0.050	0.010	01/09/13 08:52	01/09/13 13:58	1
Sodium	mg/L	22	EPA 200.7	0.50	0.13	01/09/13 08:52	01/09/13 13:58	1
Sample Description		**TA4-PZ-16-M4**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-17**						
Date/Time Collected		**01/07/13 13:00**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		5.42						
Temperature		23.2 °C						
Conductivity		155 umhos						
Dissolved Oxygen		2.35 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/16/13 12:52	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chloride	mg/L	6.3	EPA 300.0	0.20	0.050		01/09/13 01:32	1
Nitrate (as N)	mg/L	1.9	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Total Kjeldahl Nitrogen	mg/L	0.82	EPA 351.2	0.20	0.05	01/15/13 15:46	01/17/13 16:36	1
Nitrate+Nitrite (N)	mg/L	1.9	EPA 300.0	0.08	0.02		01/09/13 01:32	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA4-PZ-09-N7**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-18**						
Date/Time Collected		**01/07/13 09:35**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		5.5						
Temperature		21.1 °C						
Conductivity		194 umhos						
Dissolved Oxygen		1.40 mg/L						
Inorganics								
Ammonia as N	mg/L	0.12	EPA 350.1	0.040	0.009		01/16/13 12:55	1
Ammonium as NH4	mg/L	0.16	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chemical Oxygen Demand	mg/L	63	EPA 410.4	25	10	01/09/13 09:15	01/09/13 11:35	1
Chloride	mg/L	7.4	EPA 300.0	0.20	0.050		01/09/13 01:32	1
Nitrate (as N)	mg/L	7.9	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Nitrite (as N)	mg/L	0.04	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Phosphorous - Total as P	mg/L	6.4	SM 4500P-E	0.40	0.10	01/15/13 13:18	01/16/13 13:27	10
Total Alkalinity	mg/L	9.5	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	2.5	EPA 351.2	0.20	0.05	01/15/13 15:46	01/17/13 16:38	1
Nitrate+Nitrite (N)	mg/L	7.9	EPA 300.0	0.08	0.02		01/09/13 01:32	1

Sample Description		**TA4-PZ-16-N7**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-19**						
Date/Time Collected		**01/07/13 09:46**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		5.3						
Temperature		23.2 °C						
Conductivity		162 umhos						
Dissolved Oxygen		1.07 mg/L						
Inorganics								
Ammonia as N	mg/L	0.026 I	EPA 350.1	0.040	0.009		01/16/13 12:57	1
Ammonium as NH4	mg/L	0.03 I	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chloride	mg/L	6.9	EPA 300.0	0.20	0.050		01/09/13 01:32	1
Nitrate (as N)	mg/L	2.1	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Total Kjeldahl Nitrogen	mg/L	0.77	EPA 351.2	0.20	0.05	01/15/13 15:46	01/17/13 16:40	1
Nitrate+Nitrite (N)	mg/L	2.1	EPA 300.0	0.08	0.02		01/09/13 01:32	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA4-PZ-09-I7**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-20**						
Date/Time Collected		**01/07/13 10:25**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		5.4						
Temperature		21.4 °C						
Conductivity		123 umhos						
Dissolved Oxygen		2.50 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/16/13 12:59	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chloride	mg/L	3.2	EPA 300.0	0.20	0.050		01/09/13 01:32	1
Nitrate (as N)	mg/L	5.4	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	01/15/13 15:46	01/17/13 16:41	1
Nitrate+Nitrite (N)	mg/L	5.4	EPA 300.0	0.08	0.02		01/09/13 01:32	1

Sample Description		**TA4-PZ-16-I7**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-21**						
Date/Time Collected		**01/07/13 10:35**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		5.3						
Temperature		23.2 °C						
Conductivity		162 umhos						
Dissolved Oxygen		1.24 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/16/13 13:00	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chloride	mg/L	5.7	EPA 300.0	0.20	0.050		01/09/13 01:32	1
Nitrate (as N)	mg/L	1.2	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Total Kjeldahl Nitrogen	mg/L	0.31	EPA 351.2	0.20	0.05	01/15/13 15:46	01/17/13 16:43	1
Nitrate+Nitrite (N)	mg/L	1.2	EPA 300.0	0.08	0.02		01/09/13 01:32	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA4-PZ-09-L8**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-22**						
Date/Time Collected		**01/07/13 10:02**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		6.2						
Temperature		21.2 °C						
Conductivity		189 umhos						
Dissolved Oxygen		1.28 mg/L						
Inorganics								
Ammonia as N	mg/L	0.034 I	EPA 350.1	0.040	0.009		01/16/13 13:02	1
Ammonium as NH4	mg/L	0.04 I	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chloride	mg/L	3.9	EPA 300.0	0.20	0.050		01/09/13 01:32	1
Nitrate (as N)	mg/L	5.4	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Nitrite (as N)	mg/L	0.13	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Total Kjeldahl Nitrogen	mg/L	2.5	EPA 351.2	0.20	0.05	01/15/13 15:46	01/17/13 16:45	1
Nitrate+Nitrite (N)	mg/L	5.5	EPA 300.0	0.08	0.02		01/09/13 01:32	1

Sample Description		**TA4-PZ-16-L8**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-23**						
Date/Time Collected		**01/07/13 10:10**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		5.3						
Temperature		22.8 °C						
Conductivity		162 umhos						
Dissolved Oxygen		1.76 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/16/13 13:04	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chloride	mg/L	5.8	EPA 300.0	0.20	0.050		01/09/13 01:32	1
Nitrate (as N)	mg/L	1.4	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Total Kjeldahl Nitrogen	mg/L	1.0	EPA 351.2	0.20	0.05	01/15/13 15:39	01/17/13 15:46	1
Nitrate+Nitrite (N)	mg/L	1.4	EPA 300.0	0.08	0.02		01/09/13 01:32	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA4-PZ-09-TU14**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-24**						
Date/Time Collected		**01/07/13 09:10**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		4.50						
Temperature		21.7 °C						
Conductivity		148 umhos						
Dissolved Oxygen		1.30 mg/L						
Inorganics								
Ammonia as N	mg/L	0.018 I	EPA 350.1	0.040	0.009		01/16/13 13:05	1
Ammonium as NH4	mg/L	0.02 I	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chloride	mg/L	3.9	EPA 300.0	0.20	0.050		01/09/13 01:32	1
Nitrate (as N)	mg/L	4.2	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Nitrite (as N)	mg/L	0.01 I	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	01/15/13 15:39	01/17/13 15:48	1
Nitrate+Nitrite (N)	mg/L	4.2	EPA 300.0	0.08	0.02		01/09/13 01:32	1

Sample Description		**TA4-PZ-15-TU14**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-25**						
Date/Time Collected		**01/07/13 09:22**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		5.25						
Temperature		22.8 °C						
Conductivity		173 umhos						
Dissolved Oxygen		1.16 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/16/13 13:07	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chloride	mg/L	4.3	EPA 300.0	0.20	0.050		01/09/13 01:32	1
Nitrate (as N)	mg/L	0.66	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Total Kjeldahl Nitrogen	mg/L	0.73	EPA 351.2	0.20	0.05	01/15/13 15:39	01/17/13 15:50	1
Nitrate+Nitrite (N)	mg/L	0.66	EPA 300.0	0.08	0.02		01/09/13 01:32	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA4-PZ-09-TU16**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-26**						
Date/Time Collected		**01/07/13 08:45**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		4.65						
Temperature		21.4 °C						
Conductivity		135 umhos						
Dissolved Oxygen		1.27 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/17/13 09:05	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chloride	mg/L	3.9	EPA 300.0	0.20	0.050		01/09/13 01:32	1
Nitrate (as N)	mg/L	4.2	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Nitrite (as N)	mg/L	0.02 I	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	01/15/13 15:39	01/17/13 15:51	1
Nitrate+Nitrite (N)	mg/L	4.3	EPA 300.0	0.08	0.02		01/09/13 01:32	1

Sample Description		**TA4-PZ-16-TU16**						
Matrix		**Groundwater**						
SAL Sample Number		**1214076-27**						
Date/Time Collected		**01/07/13 08:55**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		5.26						
Temperature		22.9 °C						
Conductivity		184 umhos						
Dissolved Oxygen		1.00 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/17/13 09:07	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chloride	mg/L	4.4	EPA 300.0	0.20	0.050		01/09/13 01:32	1
Nitrate (as N)	mg/L	0.67	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Total Kjeldahl Nitrogen	mg/L	0.32	EPA 351.2	0.20	0.05	01/12/13 08:43	01/15/13 13:20	1
Nitrate+Nitrite (N)	mg/L	0.67	EPA 300.0	0.08	0.02		01/09/13 01:32	1

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30806 - COD prep										
Blank (BA30806-BLK1)					Prepared & Analyzed: 01/08/13					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BA30806-BS1)					Prepared & Analyzed: 01/08/13					
Chemical Oxygen Demand	54	25	10	mg/L	50		108	90-110		
Matrix Spike (BA30806-MS1)		**Source: 1214076-11**			Prepared & Analyzed: 01/08/13					
Chemical Oxygen Demand	56	25	10	mg/L	50	ND	112	85-115		
Matrix Spike Dup (BA30806-MSD1)		**Source: 1214076-11**			Prepared & Analyzed: 01/08/13					
Chemical Oxygen Demand	56	25	10	mg/L	50	ND	112	85-115	0	32
Batch BA30807 - COD prep										
Blank (BA30807-BLK1)					Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BA30807-BS1)					Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	51	25	10	mg/L	50		102	90-110		
Matrix Spike (BA30807-MS1)		**Source: 1214076-14**			Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	58	25	10	mg/L	50	13	90	85-115		
Matrix Spike Dup (BA30807-MSD1)		**Source: 1214076-14**			Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	60	25	10	mg/L	50	13	94	85-115	3	32
Batch BA30811 - Ion Chromatography 300.0 Prep										
Blank (BA30811-BLK1)					Prepared & Analyzed: 01/08/13					
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30811 - Ion Chromatography 300.0 Prep										
LCS (BA30811-BS1)					Prepared & Analyzed: 01/08/13					
Nitrite (as N)	1.35	0.04	0.01	mg/L	1.4		96	85-115		
Sulfate	8.91	0.60	0.20	mg/L	9.0		99	85-115		
Fluoride	0.867	0.040	0.010	mg/L	0.90		96	85-115		
Orthophosphate as P	0.933	0.040	0.010	mg/L	0.90		104	85-115		
Chloride	2.87	0.20	0.050	mg/L	3.0		96	85-115		
Nitrate (as N)	1.69	0.04	0.01	mg/L	1.7		99	85-115		
LCS Dup (BA30811-BSD1)					Prepared & Analyzed: 01/08/13					
Nitrite (as N)	1.34	0.04	0.01	mg/L	1.4		96	85-115	0.7	200
Sulfate	8.81	0.60	0.20	mg/L	9.0		98	85-115	1	200
Fluoride	0.892	0.040	0.010	mg/L	0.90		99	85-115	3	200
Orthophosphate as P	0.865	0.040	0.010	mg/L	0.90		96	85-115	8	200
Nitrate (as N)	1.67	0.04	0.01	mg/L	1.7		98	85-115	1	200
Chloride	2.85	0.20	0.050	mg/L	3.0		95	85-115	0.7	200
Matrix Spike (BA30811-MS1)		**Source: 1214074-03**			Prepared & Analyzed: 01/08/13					
Nitrite (as N)	1.50	0.04	0.01	mg/L	1.4	ND	107	85-115		
Sulfate	57.4	0.60	0.20	mg/L	9.0	48.9	94	85-115		
Fluoride	1.02	0.040	0.010	mg/L	0.90	0.189	92	85-115		
Nitrate (as N)	22.6 +O	0.04	0.01	mg/L	1.7	24.7	NR	85-115		
Chloride	40.5 +O	0.20	0.050	mg/L	3.0	53.7	NR	80-120		
Orthophosphate as P	3.16	0.040	0.010	mg/L	0.90	2.29	97	85-115		
Matrix Spike (BA30811-MS2)		**Source: 1214076-08**			Prepared & Analyzed: 01/08/13					
Fluoride	1.05	0.040	0.010	mg/L	0.90	0.0855	107	85-115		
Nitrite (as N)	1.47	0.04	0.01	mg/L	1.4	ND	105	85-115		
Nitrate (as N)	7.02	0.04	0.01	mg/L	1.7	5.17	109	85-115		
Orthophosphate as P	0.855	0.040	0.010	mg/L	0.90	ND	95	85-115		
Chloride	5.61	0.20	0.050	mg/L	3.0	2.39	107	80-120		
Sulfate	43.2	0.60	0.20	mg/L	9.0	33.3	110	85-115		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30812 - Ion Chromatography 300.0 Prep										
Blank (BA30812-BLK1)					Prepared & Analyzed: 01/09/13					
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
LCS (BA30812-BS1)					Prepared & Analyzed: 01/09/13					
Orthophosphate as P	0.876	0.040	0.010	mg/L	0.90		97	85-115		
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115		
Nitrite (as N)	1.34	0.04	0.01	mg/L	1.4		96	85-115		
Chloride	2.88	0.20	0.050	mg/L	3.0		96	85-115		
Fluoride	0.894	0.040	0.010	mg/L	0.90		99	85-115		
Sulfate	8.89	0.60	0.20	mg/L	9.0		99	85-115		
LCS Dup (BA30812-BSD1)					Prepared & Analyzed: 01/09/13					
Nitrite (as N)	1.34	0.04	0.01	mg/L	1.4		96	85-115	0	200
Chloride	2.81	0.20	0.050	mg/L	3.0		94	85-115	2	200
Orthophosphate as P	0.875	0.040	0.010	mg/L	0.90		97	85-115	0.1	200
Sulfate	8.89	0.60	0.20	mg/L	9.0		99	85-115	0	200
Nitrate (as N)	1.69	0.04	0.01	mg/L	1.7		99	85-115	0.6	200
Fluoride	0.862	0.040	0.010	mg/L	0.90		96	85-115	4	200
Matrix Spike (BA30812-MS1)		**Source: 1214076-18**			Prepared & Analyzed: 01/09/13					
Nitrite (as N)	1.49	0.04	0.01	mg/L	1.4	0.0412	103	85-115		
Fluoride	0.879	0.040	0.010	mg/L	0.90	0.0504	92	85-115		
Chloride	10.5	0.20	0.050	mg/L	3.0	7.38	104	80-120		
Sulfate	55.8	0.60	0.20	mg/L	9.0	47.5	92	85-115		
Orthophosphate as P	0.819	0.040	0.010	mg/L	0.90	ND	91	85-115		
Nitrate (as N)	9.59	0.04	0.01	mg/L	1.7	7.88	101	85-115		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30812 - Ion Chromatography 300.0 Prep										
Matrix Spike (BA30812-MS2)		**Source: 1214080-01**			Prepared & Analyzed: 01/09/13					
Nitrate (as N)	9.30	0.04	0.01	mg/L	1.7	7.53	104	85-115		
Nitrite (as N)	1.44	0.04	0.01	mg/L	1.4	ND	103	85-115		
Chloride	6.72	0.20	0.050	mg/L	3.0	3.48	108	80-120		
Sulfate	39.4	0.60	0.20	mg/L	9.0	30.2	102	85-115		
Fluoride	1.13	0.040	0.010	mg/L	0.90	0.156	108	85-115		
Orthophosphate as P	0.825	0.040	0.010	mg/L	0.90	ND	92	85-115		
Batch BA30815 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BA30815-BLK1)					Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BA30815-BS1)					Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	0.742	0.040	0.010	mg/L	0.80		93	90-110		
Matrix Spike (BA30815-MS1)		**Source: 1214067-05**			Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	1.05	0.040	0.010	mg/L	1.0	0.113	93	90-110		
Matrix Spike (BA30815-MS2)		**Source: 1300195-07**			Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	0.976	0.040	0.010	mg/L	1.0	0.0535	92	90-110		
Matrix Spike Dup (BA30815-MSD1)		**Source: 1214067-05**			Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	1.06	0.040	0.010	mg/L	1.0	0.113	94	90-110	0.9	25
Matrix Spike Dup (BA30815-MSD2)		**Source: 1300195-07**			Prepared: 01/08/13 Analyzed: 01/10/13					
Phosphorous - Total as P	1.02	0.040	0.010	mg/L	1.0	0.0535	96	90-110	4	25

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30816 - alkalinity										
Blank (BA30816-BLK1)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BA30816-BLK2)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BA30816-BS1)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
LCS (BA30816-BS2)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
Matrix Spike (BA30816-MS1)		**Source: 1214076-16**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	190	8.0	2.0	mg/L	120	62	100	80-120		
Matrix Spike (BA30816-MS2)		**Source: 1214081-03**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	21	83	80-120		
Matrix Spike Dup (BA30816-MSD1)		**Source: 1214076-16**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	190	8.0	2.0	mg/L	120	62	100	80-120	0	26
Matrix Spike Dup (BA30816-MSD2)		**Source: 1214081-03**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	21	83	80-120	0	26
Batch BA30914 - TOC prep										
Blank (BA30914-BLK1)					Prepared & Analyzed: 01/09/13					
Total Organic Carbon	0.50 U	1.0	0.50	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30914 - TOC prep										
LCS (BA30914-BS1)					Prepared & Analyzed: 01/09/13					
Total Organic Carbon	10.5	1.0	0.50	mg/L	10		105	90-110		
Matrix Spike (BA30914-MS1)		**Source: 1300206-01**			Prepared & Analyzed: 01/09/13					
Total Organic Carbon	10.2	1.0	0.50	mg/L	10	ND	102	85-115		
Matrix Spike Dup (BA30914-MSD1)		**Source: 1300206-01**			Prepared & Analyzed: 01/09/13					
Total Organic Carbon	10.8	1.0	0.50	mg/L	10	ND	108	85-115	6	10
Batch BA31129 - Ion Chromatography 300.0 Prep										
Blank (BA31129-BLK1)					Prepared & Analyzed: 01/13/13					
Chloride	0.050 U	0.20	0.050	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BA31129-BS1)					Prepared & Analyzed: 01/13/13					
Chloride	3.16	0.20	0.050	mg/L	3.0		105	85-115		
Nitrate (as N)	1.75	0.04	0.01	mg/L	1.7		103	85-115		
LCS Dup (BA31129-BSD1)					Prepared & Analyzed: 01/13/13					
Nitrate (as N)	1.78	0.04	0.01	mg/L	1.7		105	85-115	2	200
Chloride	2.99	0.20	0.050	mg/L	3.0		100	85-115	6	200
Matrix Spike (BA31129-MS1)		**Source: 1214081-03**			Prepared & Analyzed: 01/13/13					
Nitrate (as N)	56.1	0.04	0.01	mg/L	17	37.0	112	85-115		
Chloride	91.1	0.20	0.050	mg/L	30	56.1	117	80-120		
Matrix Spike (BA31129-MS2)		**Source: 1300466-01**			Prepared & Analyzed: 01/13/13					
Chloride	13.4	0.20	0.050	mg/L	3.0	9.90	117	80-120		
Nitrate (as N)	5.60	0.04	0.01	mg/L	1.7	3.67	114	85-115		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31206 - Digestion for TKN by EPA 351.2										
Blank (BA31206-BLK1)					Prepared: 01/12/13 Analyzed: 01/15/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BA31206-BS1)					Prepared: 01/12/13 Analyzed: 01/15/13					
Total Kjeldahl Nitrogen	2.54	0.20	0.05	mg/L	2.5		100	90-110		
Matrix Spike (BA31206-MS1)		**Source: 1214076-27**			Prepared: 01/12/13 Analyzed: 01/15/13					
Total Kjeldahl Nitrogen	2.72	0.20	0.05	mg/L	2.5	0.321	95	90-110		
Matrix Spike Dup (BA31206-MSD1)		**Source: 1214076-27**			Prepared: 01/12/13 Analyzed: 01/15/13					
Total Kjeldahl Nitrogen	es with 91%	0.20	0.05	mg/L	2.5	0.321	90	90-110	4	20
Batch BA31416 - Ammonia by SEAL										
Blank (BA31416-BLK1)					Prepared & Analyzed: 01/14/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BA31416-BS1)					Prepared & Analyzed: 01/14/13					
Ammonia as N	0.55	0.040	0.009	mg/L	0.50		110	90-110		
Matrix Spike (BA31416-MS1)		**Source: 1300224-09**			Prepared & Analyzed: 01/14/13					
Ammonia as N	0.90	0.040	0.009	mg/L	0.50	0.41	98	90-110		
Matrix Spike (BA31416-MS2)		**Source: 1300454-01**			Prepared & Analyzed: 01/14/13					
Ammonia as N	0.53	0.040	0.009	mg/L	0.50	ND	106	90-110		
Matrix Spike Dup (BA31416-MSD1)		**Source: 1300224-09**			Prepared & Analyzed: 01/14/13					
Ammonia as N	0.88	0.040	0.009	mg/L	0.50	0.41	93	90-110	3	10

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31416 - Ammonia by SEAL										
Matrix Spike Dup (BA31416-MSD2)		**Source: 1300454-01**			Prepared & Analyzed: 01/14/13					
Ammonia as N	0.53	0.040	0.009	mg/L	0.50	ND	106	90-110	0.5	10
Batch BA31524 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BA31524-BLK1)					Prepared: 01/15/13 Analyzed: 01/16/13					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BA31524-BS1)					Prepared: 01/15/13 Analyzed: 01/16/13					
Phosphorous - Total as P	0.799	0.040	0.010	mg/L	0.80		100	90-110		
Matrix Spike (BA31524-MS1)		**Source: 1300022-01**			Prepared: 01/15/13 Analyzed: 01/16/13					
Phosphorous - Total as P	1.53	0.040	0.010	mg/L	1.0	0.517	101	90-110		
Matrix Spike (BA31524-MS2)		**Source: 1300022-02**			Prepared: 01/15/13 Analyzed: 01/16/13					
Phosphorous - Total as P	3.23	0.080	0.020	mg/L	1.0	2.26	96	90-110		
Matrix Spike Dup (BA31524-MSD1)		**Source: 1300022-01**			Prepared: 01/15/13 Analyzed: 01/16/13					
Phosphorous - Total as P	1.52	0.040	0.010	mg/L	1.0	0.517	101	90-110	0.2	25
Matrix Spike Dup (BA31524-MSD2)		**Source: 1300022-02**			Prepared: 01/15/13 Analyzed: 01/16/13					
Phosphorous - Total as P	3.23	0.080	0.020	mg/L	1.0	2.26	97	90-110	0.07	25
Batch BA31530 - Digestion for TKN by EPA 351.2										
Blank (BA31530-BLK1)					Prepared: 01/15/13 Analyzed: 01/17/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31530 - Digestion for TKN by EPA 351.2										
LCS (BA31530-BS1)					Prepared: 01/15/13	Analyzed: 01/17/13				
Total Kjeldahl Nitrogen	2.67	0.20	0.05	mg/L	2.5		105	90-110		
Matrix Spike (BA31530-MS1)		**Source: 1214076-23**			Prepared: 01/15/13	Analyzed: 01/17/13				
Total Kjeldahl Nitrogen	3.35	0.20	0.05	mg/L	2.5	1.00	93	90-110		
Matrix Spike (BA31530-MS2)		**Source: 1214542-31**			Prepared: 01/15/13	Analyzed: 01/18/13				
Total Kjeldahl Nitrogen	3.57	0.20	0.05	mg/L	2.5	1.03	100	90-110		
Matrix Spike Dup (BA31530-MSD1)		**Source: 1214076-23**			Prepared: 01/15/13	Analyzed: 01/18/13				
Total Kjeldahl Nitrogen	3.65	0.20	0.05	mg/L	2.5	1.00	105	90-110	9	20
Matrix Spike Dup (BA31530-MSD2)		**Source: 1214542-31**			Prepared: 01/15/13	Analyzed: 01/18/13				
Total Kjeldahl Nitrogen	3.50	0.20	0.05	mg/L	2.5	1.03	98	90-110	2	20
Batch BA31532 - Digestion for TKN by EPA 351.2										
Blank (BA31532-BLK1)					Prepared: 01/15/13	Analyzed: 01/18/13				
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BA31532-BS1)					Prepared: 01/15/13	Analyzed: 01/17/13				
Total Kjeldahl Nitrogen	2.56	0.20	0.05	mg/L	2.5		101	90-110		
Matrix Spike (BA31532-MS1)		**Source: 1214076-17**			Prepared: 01/15/13	Analyzed: 01/18/13				
Total Kjeldahl Nitrogen	3.10	0.20	0.05	mg/L	2.5	0.816	90	90-110		
Matrix Spike Dup (BA31532-MSD1)		**Source: 1214076-17**			Prepared: 01/15/13	Analyzed: 01/17/13				
Total Kjeldahl Nitrogen	3.42	0.20	0.05	mg/L	2.5	0.816	103	90-110	10	20

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31618 - Ammonia by SEAL										
Blank (BA31618-BLK1)					Prepared & Analyzed: 01/16/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BA31618-BS1)					Prepared & Analyzed: 01/16/13					
Ammonia as N	0.47	0.040	0.009	mg/L	0.50		95	90-110		
Matrix Spike (BA31618-MS1)		**Source: 1214076-08**			Prepared & Analyzed: 01/16/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	ND	102	90-110		
Matrix Spike (BA31618-MS2)		**Source: 1214076-16**			Prepared & Analyzed: 01/16/13					
Ammonia as N	0.54	0.040	0.009	mg/L	0.50	0.028	102	90-110		
Matrix Spike Dup (BA31618-MSD1)		**Source: 1214076-08**			Prepared & Analyzed: 01/16/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	ND	101	90-110	0.4	10
Matrix Spike Dup (BA31618-MSD2)		**Source: 1214076-16**			Prepared & Analyzed: 01/16/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	0.028	97	90-110	5	10
Batch BA31641 - Ammonia by SEAL										
Blank (BA31641-BLK1)					Prepared & Analyzed: 01/17/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BA31641-BS1)					Prepared & Analyzed: 01/17/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50		99	90-110		
Matrix Spike (BA31641-MS1)		**Source: 1300022-01**			Prepared & Analyzed: 01/17/13					
Ammonia as N	0.54	0.040	0.009	mg/L	0.50	0.014	106	90-110		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31641 - Ammonia by SEAL										
Matrix Spike (BA31641-MS2)		**Source: 1300022-07**			Prepared & Analyzed: 01/17/13					
Ammonia as N	7.7	0.40	0.095	mg/L	5.0	3.0	94	90-110		
Matrix Spike Dup (BA31641-MSD1)		**Source: 1300022-01**			Prepared & Analyzed: 01/17/13					
Ammonia as N	0.56	0.040	0.009	mg/L	0.50	0.014	109	90-110	3	10
Matrix Spike Dup (BA31641-MSD2)		**Source: 1300022-07**			Prepared & Analyzed: 01/17/13					
Ammonia as N	8.0	0.40	0.095	mg/L	5.0	3.0	99	90-110	3	10
Batch BA31643 - Digestion for TKN by EPA 351.2										
Blank (BA31643-BLK1)					Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BA31643-BS1)					Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	2.62	0.20	0.05	mg/L	2.5		103	90-110		
Matrix Spike (BA31643-MS1)		**Source: 1214067-03**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	6.39	0.20	0.05	mg/L	2.5	3.65	108	90-110		
Matrix Spike (BA31643-MS2)		**Source: 1214076-05**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	28.0	0.20	0.05	mg/L	25	2.97	99	90-110		
Matrix Spike Dup (BA31643-MSD1)		**Source: 1214067-03**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	6.27	0.20	0.05	mg/L	2.5	3.65	103	90-110	2	20
Matrix Spike Dup (BA31643-MSD2)		**Source: 1214076-05**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	26.6	0.20	0.05	mg/L	25	2.97	93	90-110	5	20

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31644 - Digestion for TKN by EPA 351.2										
Blank (BA31644-BLK1)					Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BA31644-BS1)					Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	2.37	0.20	0.05	mg/L	2.5		94	90-110		
Matrix Spike (BA31644-MS1)		**Source: 1300519-02**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	3.35	0.20	0.05	mg/L	2.5	0.907	96	90-110		
Matrix Spike (BA31644-MS2)		**Source: 1300529-07**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	3.46	0.20	0.05	mg/L	2.5	0.974	98	90-110		
Matrix Spike Dup (BA31644-MSD1)		**Source: 1300519-02**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	3.51	0.20	0.05	mg/L	2.5	0.907	103	90-110	5	20
Matrix Spike Dup (BA31644-MSD2)		**Source: 1300529-07**			Prepared: 01/16/13 Analyzed: 01/18/13					
Total Kjeldahl Nitrogen	3.69	0.20	0.05	mg/L	2.5	0.974	107	90-110	7	20

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Tampa, FL 33619

January 21, 2013
Work Order: 1214076

Inorganic, Dissolved - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30915 - TOC prep										
Blank (BA30915-BLK1)					Prepared & Analyzed: 01/09/13					
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BA30915-BS1)					Prepared & Analyzed: 01/09/13					
Dissolved Organic Carbon	10.1	1.0	0.50	mg/L	10		101	90-110		
Matrix Spike (BA30915-MS1)		**Source: 1214076-16**			Prepared & Analyzed: 01/09/13					
Dissolved Organic Carbon	14.5	1.0	0.50	mg/L	10	5.30	92	85-125		
Matrix Spike Dup (BA30915-MSD1)		**Source: 1214076-16**			Prepared & Analyzed: 01/09/13					
Dissolved Organic Carbon	14.5	1.0	0.50	mg/L	10	5.30	92	85-125	0.4	25

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January 21, 2013
Work Order: 1214076

Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30823 - Metals Preparation for EPA Method 200.7										
Blank (BA30823-BLK1)					Prepared: 01/08/13 Analyzed: 01/09/13					
Iron	0.020 U	0.10	0.020	mg/L						
Potassium	0.010 U	0.050	0.010	mg/L						
Magnesium	0.020 U	0.50	0.020	mg/L						
Manganese	0.0010 U	0.010	0.0010	mg/L						
Sodium	0.13 U	0.50	0.13	mg/L						
Boron	0.050 U	0.10	0.050	mg/L						
Calcium	0.042 U	0.50	0.042	mg/L						
LCS (BA30823-BS1)					Prepared: 01/08/13 Analyzed: 01/09/13					
Boron	0.43	0.10	0.050	mg/L	0.40		108	85-115		
Iron	8.3	0.10	0.020	mg/L	8.0		104	85-115		
Magnesium	21	0.50	0.020	mg/L	20		103	85-115		
Manganese	0.40	0.010	0.0010	mg/L	0.40		101	85-115		
Potassium	19	0.050	0.010	mg/L	20		97	85-115		
Sodium	21	0.50	0.13	mg/L	20		103	85-115		
Calcium	21	0.50	0.042	mg/L	20		103	85-115		
Matrix Spike (BA30823-MS1)		**Source: 1214074-05**			Prepared: 01/08/13 Analyzed: 01/09/13					
Magnesium	31	0.50	0.020	mg/L	20	12	96	70-130		
Potassium	26	0.050	0.010	mg/L	20	7.4	92	70-130		
Iron	8.2	0.10	0.020	mg/L	8.0	0.027	103	70-130		
Sodium	93	0.50	0.13	mg/L	20	77	84	70-130		
Boron	0.59	0.10	0.050	mg/L	0.40	0.15	110	70-130		
Calcium	54	0.50	0.042	mg/L	20	35	97	70-130		
Manganese	0.41	0.010	0.0010	mg/L	0.40	ND	102	70-130		
Matrix Spike (BA30823-MS2)		**Source: 1300018-05**			Prepared: 01/08/13 Analyzed: 01/09/13					
Potassium	)00,000,000 +O	0.050	0.010	mg/L	20	00000000	0	70-130		
Magnesium	25	0.50	0.020	mg/L	20	4.8	103	70-130		
Iron	9.7	0.10	0.020	mg/L	8.0	1.6	102	70-130		
Sodium	60	0.50	0.13	mg/L	20	41	93	70-130		
Calcium	48	0.50	0.042	mg/L	20	28	102	70-130		
Boron	0.47	0.10	0.050	mg/L	0.40	ND	116	70-130		
Manganese	0.40	0.010	0.0010	mg/L	0.40	0.0077	99	70-130		

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Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30823 - Metals Preparation for EPA Method 200.7										
Matrix Spike Dup (BA30823-MSD1)		**Source: 1214074-05**			Prepared: 01/08/13 Analyzed: 01/09/13					
Manganese	0.40	0.010	0.0010	mg/L	0.40	ND	99	70-130	4	30
Sodium	92	0.50	0.13	mg/L	20	77	79	70-130	1	30
Magnesium	31	0.50	0.020	mg/L	20	12	93	70-130	2	30
Potassium	26	0.050	0.010	mg/L	20	7.4	94	70-130	2	30
Iron	8.0	0.10	0.020	mg/L	8.0	0.027	100	70-130	3	30
Boron	0.58	0.10	0.050	mg/L	0.40	0.15	107	70-130	2	30
Calcium	52	0.50	0.042	mg/L	20	35	86	70-130	4	30
Matrix Spike Dup (BA30823-MSD2)		**Source: 1300018-05**			Prepared: 01/08/13 Analyzed: 01/09/13					
Magnesium	25	0.50	0.020	mg/L	20	4.8	101	70-130	1	30
Manganese	0.42	0.010	0.0010	mg/L	0.40	0.0077	103	70-130	3	30
Iron	10	0.10	0.020	mg/L	8.0	1.6	105	70-130	2	30
Calcium	48	0.50	0.042	mg/L	20	28	100	70-130	0.8	30
Boron	0.48	0.10	0.050	mg/L	0.40	ND	119	70-130	2	30
Sodium	60	0.50	0.13	mg/L	20	41	95	70-130	0.7	30
Potassium	)00,000,000 +O	0.050	0.010	mg/L	20	00000000	0	70-130	0	30

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January 21, 2013
Work Order: 1214076

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below.

+O Matrix spike source sample was over the reccommended range for the method.

Questions regarding this report should be directed to :

Kathryn Nordmark
Telephone (813) 855-1844 FAX (813) 855-2218
Kathryn@southernanalyticallabs.com

Kathryn@southernanalyticallabs.com

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

1214076

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (TA4)

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, Alkalinity	1LP, Cool NOx, Cl, Alkalinity, F, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na					Field pH	Field Temperature	Field Conductivity	Field DO
01	TA4-PAN-12-N			GW		X	1	1														
02	TA4-LY-24-C	1/7/13	0830	GW		X			1	1									6.2	18.5	679	7.2
03	TA4-LY-12-S		0840	GW		X			1		1	1		1					6.80	18.1	726	8.6
04	TA4-LY-12-S DUP 35		1105	GW		X			1		1	✓		✓	NW 1/9/13				6.8	17.5	953	8.2
05	TA4-LY-24-S		0855	GW		X	1	1											6.4	18.0	700	7.8
06	TA4-LY-42-S		0900	GW		X	1	1											6.0	18.3	719	6.9
07	TA4-PZ-11-EF2		1315	GW		X			1	1									4.32	21.4	138	3.23
08	TA4-PZ-10-H5		1050	GW		X			1	1									4.4	21.4	126	2.16
09	TA4-PZ-10-J5		1102	GW		X			1	1									4.4	21.5	112	3.58
10	TA4-PZ-10-K5		1113	GW		X			1		1	1	2	1					4.4	21.2	133	2.95
11	TA4-PZ-11-L2		1222	GW		X			1		1	1	2	1					4.83	21.5	109	3.12
12	TA4-PZ-11-L3		1209	GW		X			1	1									4.47	21.5	150	3.26

Containers Prepared:			
Relinquished: H Hamilton	Date/Time: 1600 12-07-12	Received:	Date/Time: 1600 120712
Relinquished:	Date/Time: 1600 1/7/13	Received: K Mudmenk	Date/Time: 1/7/13 1600
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

Seal intact? Y N (N/A)
Samples intact upon arrival? (Y) N N/A
Received on ice? Temp_____ (Y) N N/A
Proper preservatives indicated? (Y) N N/A
Rec'd within holding time? (Y) N N/A
Volatiles rec'd w/out headspace? Y N (N/A)
Proper containers used? (Y) N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

1214076

1214076

SOUTHERN ANALYTICAL LABORATORIES, INC.

11D BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (TA4)

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, Alkalinity	1LP, Cool NOx, Cl, Alkalinity, F, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na					Field pH	Field Temperature	Field Conductivity	Field DO
13	TA4-PZ-11-L4	1/7/13	1155	GW		X			1	1									4.35	21.7	138	3.69
14	TA4-PZ-11-L5		1142	GW		X			1	1									4.31	21.4	155	2.87
15	TA4-PZ-11-L6		1130	GW		X			1	1									4.34	21.2	142	3.04
16	TA4-PZ-09-M4		1245	GW		X			1		1	1	2	1					6.88	21.7	280	2.71
17	TA4-PZ-16-M4		1300	GW		X	1	1											5.42	23.2	155	2.35
18	TA4-PZ-09-N7		0835	GW		X			1	1									5.5	21.1	194	1.40
19	TA4-PZ-16-N7		0948	GW		X	1	1											5.3	23.2	162	1.07
20	TA4-PZ-09-I7		1025	GW		X	1	1											5.4	21.4	123	2.56
21	TA4-PZ-16-I7		1035	GW		X	1	1											5.3	23.2	162	1.24
22	TA4-PZ-09-L8		1002	GW		X	1	1											6.2	21.2	189	1.28
23	TA4-PZ-16-L8		1010	GW		X	1	1											5.3	22.8	162	1.76
24	TA4-PZ-09-TU14		0910	GW		X	1	1											4.90	21.7	148	1.30

Containers Prepared/ Relinquished:	Date/Time: 1600 12-07-13	Received:	Date/Time:
Relinquished:	Date/Time: 1900 1/7/13	Received: K Mudmach	Date/Time: 1/7/13 1600
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace? Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

1214076

1214076

SOUTHERN ANALYTICAL LABORATORIES, INC.

11D BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (TA4)

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, Alkalinity	1LP, Cool NOx, Cl, Alkalinity, F, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na					Field pH	Field Temperature	Field Conductivity	Field DO
25	TA4-PZ-15-TU14	1/7/13	0922	GW		X	1	1											5.25	22.8	173	1.16
26	TA4-PZ-09-TU16		0845	GW		X	1	1											4.65	21.7	135	1.27
27	TA4-PZ-16-TU16		0855	GW		X	1	1											5.26	22.9	188	1.00

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
H Harville	1600 12-07-12		
Relinquished:	Date/Time:	Received:	Date/Time:
	1600 01/7/13	K Mudment	1/7/13 1600
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace? Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

1214076

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 24, 2013
Work Order: 1214078

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**PZ01-BKG-09**						
Matrix		**Groundwater**						
SAL Sample Number		**1214078-01**						
Date/Time Collected		**01/09/13 13:33**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/09/13 15:15**						
Client Provided Field Data								
pH		4.80						
Temperature		24.6 °C						
Conductivity		90 umhos						
Dissolved Oxygen		4.83 mg/L						
Inorganics								
Ammonia as N	mg/L	0.063	EPA 350.1	0.040	0.009		01/18/13 13:24	1
Ammonium as NH4	mg/L	0.08	EPA 350.1	0.05	0.01	01/18/13 15:03	01/18/13 15:04	1
Chloride	mg/L	6.3	EPA 300.0	0.20	0.050		01/22/13 01:52	1
Nitrate+Nitrite (N)	mg/L	0.13	EPA 353.2	0.04	0.01		01/11/13 14:56	1
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 15:20	1
Total Kjeldahl Nitrogen	mg/L	0.45	EPA 351.2	0.20	0.05	01/18/13 08:48	01/22/13 12:20	1
Nitrate (as N)	mg/L	0.13	EPA 353.2	0.08	0.02		01/11/13 14:56	1

Sample Description		**PZ04-BKG-09**						
Matrix		**Groundwater**						
SAL Sample Number		**1214078-04**						
Date/Time Collected		**01/09/13 08:15**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/09/13 15:15**						
Client Provided Field Data								
pH		4.96						
Temperature		21.8 °C						
Conductivity		52.3 umhos						
Dissolved Oxygen		1.96 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 13:26	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 15:03	01/18/13 15:04	1
Chloride	mg/L	0.92	EPA 300.0	0.20	0.050		01/22/13 01:52	1
Nitrate+Nitrite (N)	mg/L	0.27	EPA 353.2	0.04	0.01		01/11/13 14:57	1
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 15:20	1
Total Kjeldahl Nitrogen	mg/L	0.35	EPA 351.2	0.20	0.05	01/18/13 08:48	01/22/13 12:22	1
Nitrate (as N)	mg/L	0.27	EPA 353.2	0.08	0.02		01/11/13 14:57	1

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 24, 2013
Work Order: 1214078

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**PZ05-BKG-09**						
Matrix		**Groundwater**						
SAL Sample Number		**1214078-05**						
Date/Time Collected		**01/09/13 12:15**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/09/13 15:15**						
Client Provided Field Data								
pH		5.09						
Temperature		23.6 °C						
Conductivity		205.3 umhos						
Dissolved Oxygen		2.59 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 13:28	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 15:03	01/18/13 15:04	1
Chloride	mg/L	4.8	EPA 300.0	0.20	0.050		01/22/13 01:52	1
Nitrate+Nitrite (N)	mg/L	18	EPA 353.2	0.40	0.10		01/11/13 14:02	9.9
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 15:21	1
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	01/18/13 08:48	01/22/13 12:24	1
Nitrate (as N)	mg/L	18	EPA 353.2	0.44	0.11		01/11/13 14:02	10

Sample Description		**PZ24-BKG-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1214078-06**						
Date/Time Collected		**01/09/13 09:15**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/09/13 15:15**						
Client Provided Field Data								
pH		5.24						
Temperature		25.1 °C						
Conductivity		308 umhos						
Dissolved Oxygen		3.34 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 13:30	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 15:03	01/18/13 15:04	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/10/13 08:20	01/10/13 11:11	1
Chloride	mg/L	18	EPA 300.0	0.20	0.050		01/22/13 01:52	1
Nitrate+Nitrite (N)	mg/L	13	EPA 353.2	0.40	0.10		01/11/13 14:04	9.9
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 15:22	1
Phosphorous - Total as P	mg/L	0.022 I	SM 4500P-E	0.040	0.010	01/16/13 11:07	01/18/13 11:32	1
Total Alkalinity	mg/L	3.2 I	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	01/18/13 08:48	01/22/13 14:02	1
Nitrate (as N)	mg/L	13	EPA 353.2	0.44	0.11		01/11/13 14:04	10

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 24, 2013
Work Order: 1214078

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**PZ24-BKG-26 DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214078-07**						
Date/Time Collected		**01/09/13 09:20**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/09/13 15:15**						
Client Provided Field Data								
pH		5.24						
Temperature		25.1 °C						
Conductivity		308 umhos						
Dissolved Oxygen		3.34 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 13:32	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 15:03	01/18/13 15:04	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/10/13 08:20	01/10/13 11:11	1
Chloride	mg/L	18	EPA 300.0	0.20	0.050		01/22/13 01:52	1
Nitrate+Nitrite (N)	mg/L	13	EPA 353.2	0.40	0.10		01/11/13 14:07	9.9
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 15:23	1
Phosphorous - Total as P	mg/L	0.027 I	SM 4500P-E	0.040	0.010	01/16/13 11:07	01/18/13 11:32	1
Total Alkalinity	mg/L	3.2 I	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	01/18/13 08:48	01/22/13 14:03	1
Nitrate (as N)	mg/L	13	EPA 353.2	0.44	0.11		01/11/13 14:07	10

Sample Description		**PZ29-BKG-09**
Matrix		**Groundwater**
SAL Sample Number		**1214078-08**
Date/Time Collected		**01/08/13 08:47**
Collected by		**Sean Schmidt**
Date/Time Received		**01/08/13 16:35**
Client Provided Field Data		
pH		4.92
Temperature		22.8 °C
Conductivity		215.7 umhos
Dissolved Oxygen		0.83 mg/L
Inorganics		
Ammonia as N	mg/L	0.009 U
Ammonium as NH4	mg/L	0.01 U
Chemical Oxygen Demand	mg/L	10 U
Chloride	mg/L	6.7
Nitrate (as N)	mg/L	4.6
Nitrite (as N)	mg/L	0.01 U
Phosphorous - Total as P	mg/L	0.043

Parameters	Method	PQL	MDL	Prepared	Analyzed	Dilution
Ammonia as N	EPA 350.1	0.040	0.009		01/14/13 11:44	1
Ammonium as NH4	EPA 350.1	0.05	0.01	01/18/13 15:03	01/18/13 15:04	1
Chemical Oxygen Demand	EPA 410.4	25	10	01/09/13 12:30	01/09/13 15:10	1
Chloride	EPA 300.0	0.20	0.050		01/10/13 02:36	1
Nitrate (as N)	EPA 300.0	0.04	0.01		01/10/13 02:36	1
Nitrite (as N)	EPA 300.0	0.04	0.01		01/10/13 02:36	1
Phosphorous - Total as P	SM 4500P-E	0.040	0.010	01/09/13 13:27	01/15/13 08:38	1

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Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**PZ29-BKG-09**						
Matrix		**Groundwater**						
SAL Sample Number		**1214078-08**						
Date/Time Collected		**01/08/13 08:47**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.92						
Temperature		22.8 °C						
Conductivity		215.7 umhos						
Dissolved Oxygen		0.83 mg/L						
Total Alkalinity	mg/L	2.1 I	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	0.71	EPA 351.2	0.20	0.05	01/11/13 08:51	01/14/13 14:19	1
Nitrate+Nitrite (N)	mg/L	4.6	EPA 300.0	0.08	0.02		01/10/13 02:36	1
Sample Description		**PZ30-BKG-16**						
Matrix		**Groundwater**						
SAL Sample Number		**1214078-09**						
Date/Time Collected		**01/08/13 09:21**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		5.47						
Temperature		24.2 °C						
Conductivity		294 umhos						
Dissolved Oxygen		1.36 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/14/13 11:46	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 15:03	01/18/13 15:04	1
Chemical Oxygen Demand	mg/L	17 I	EPA 410.4	25	10	01/09/13 12:30	01/09/13 15:10	1
Chloride	mg/L	15	EPA 300.0	0.20	0.050		01/10/13 02:36	1
Nitrate (as N)	mg/L	11	EPA 300.0	0.04	0.01		01/10/13 02:36	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/10/13 02:36	1
Phosphorous - Total as P	mg/L	0.075	SM 4500P-E	0.040	0.010	01/09/13 13:27	01/15/13 08:39	1
Total Alkalinity	mg/L	6.3 I	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	01/11/13 08:51	01/14/13 14:20	1
Nitrate+Nitrite (N)	mg/L	11	EPA 300.0	0.08	0.02		01/10/13 02:36	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**PZ31-BKG-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1214078-10**						
Date/Time Collected		**01/09/13 09:50**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/09/13 15:15**						
Client Provided Field Data								
pH		5.06						
Temperature		25.5 °C						
Conductivity		350 umhos						
Dissolved Oxygen		4.06 mg/L						
Inorganics								
Ammonia as N	mg/L	0.066	EPA 350.1	0.040	0.009		01/18/13 13:34	1
Ammonium as NH4	mg/L	0.08	EPA 350.1	0.05	0.01	01/18/13 15:03	01/18/13 15:04	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/10/13 08:20	01/10/13 11:11	1
Chloride	mg/L	23	EPA 300.0	0.20	0.050		01/22/13 01:52	1
Nitrate+Nitrite (N)	mg/L	17	EPA 353.2	0.40	0.10		01/11/13 14:09	9.9
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 15:23	1
Phosphorous - Total as P	mg/L	0.033 I	SM 4500P-E	0.040	0.010	01/16/13 11:07	01/18/13 11:33	1
Total Alkalinity	mg/L	4.2 I	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	01/18/13 08:48	01/22/13 14:04	1
Nitrate (as N)	mg/L	17	EPA 353.2	0.44	0.11		01/11/13 14:09	10
Sample Description		**PZ31-BKG-26 DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214078-11**						
Date/Time Collected		**01/09/13 09:55**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/09/13 15:15**						
Client Provided Field Data								
pH		5.06						
Temperature		25.5 °C						
Conductivity		350 umhos						
Dissolved Oxygen		4.06 mg/L						
Inorganics								
Ammonia as N	mg/L	0.072	EPA 350.1	0.040	0.009		01/18/13 13:36	1
Ammonium as NH4	mg/L	0.09	EPA 350.1	0.05	0.01	01/18/13 15:03	01/18/13 15:04	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/10/13 08:20	01/10/13 11:11	1
Chloride	mg/L	23	EPA 300.0	0.20	0.050		01/22/13 01:52	1
Nitrate+Nitrite (N)	mg/L	18	EPA 353.2	0.40	0.10		01/11/13 14:20	9.9
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 15:24	1
Phosphorous - Total as P	mg/L	0.028 I	SM 4500P-E	0.040	0.010	01/16/13 11:07	01/18/13 11:34	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**PZ31-BKG-26 DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214078-11**						
Date/Time Collected		**01/09/13 09:55**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/09/13 15:15**						
Client Provided Field Data								
pH		5.06						
Temperature		25.5 °C						
Conductivity		350 umhos						
Dissolved Oxygen		4.06 mg/L						
Total Alkalinity	mg/L	4.2 I	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	01/18/13 08:48	01/22/13 14:06	1
Nitrate (as N)	mg/L	18	EPA 353.2	0.44	0.11		01/11/13 14:20	10

Sample Description		**PZ32-BKG-09**						
Matrix		**Groundwater**						
SAL Sample Number		**1214078-12**						
Date/Time Collected		**01/08/13 09:50**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.63						
Temperature		22.7 °C						
Conductivity		154.8 umhos						
Dissolved Oxygen		1.28 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/14/13 11:48	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 15:03	01/18/13 15:04	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/09/13 12:30	01/09/13 15:10	1
Chloride	mg/L	3.0	EPA 300.0	0.20	0.050		01/10/13 02:36	1
Nitrate (as N)	mg/L	1.2	EPA 300.0	0.04	0.01		01/10/13 02:36	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/10/13 02:36	1
Phosphorous - Total as P	mg/L	0.033 I	SM 4500P-E	0.040	0.010	01/09/13 13:27	01/15/13 08:39	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	0.33	EPA 351.2	0.20	0.05	01/11/13 08:51	01/14/13 14:22	1
Nitrate+Nitrite (N)	mg/L	1.2	EPA 300.0	0.08	0.02		01/10/13 02:36	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**PZ33-BKG-16**						
Matrix		**Groundwater**						
SAL Sample Number		**1214078-13**						
Date/Time Collected		**01/08/13 10:15**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		5.16						
Temperature		24.8 °C						
Conductivity		409 umhos						
Dissolved Oxygen		1.41 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/14/13 11:50	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 15:03	01/18/13 15:04	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/09/13 12:30	01/09/13 15:10	1
Chloride	mg/L	22	EPA 300.0	0.20	0.050		01/10/13 02:36	1
Fluoride	mg/L	0.010 U	EPA 300.0	0.040	0.010		01/10/13 02:36	1
Nitrate (as N)	mg/L	23	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/10/13 02:36	1
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		01/10/13 02:36	1
Phosphorous - Total as P	mg/L	0.060	SM 4500P-E	0.040	0.010	01/09/13 13:27	01/15/13 08:40	1
Sulfate	mg/L	35	EPA 300.0	0.60	0.20		01/10/13 02:36	1
Total Alkalinity	mg/L	3.2 I	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	01/11/13 08:51	01/14/13 14:23	1
Total Organic Carbon	mg/L	1.3	SM 5310B	1.0	0.50		01/09/13 09:58	1
Nitrate+Nitrite (N)	mg/L	23	EPA 300.0	0.08	0.02		01/10/13 02:36	1
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	1.3	SM 5310B	1.0	0.50		01/09/13 09:58	1
Metals								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	01/09/13 08:50	01/10/13 15:50	1
Calcium	mg/L	37	EPA 200.7	0.50	0.042	01/09/13 08:50	01/10/13 15:50	1
Iron	mg/L	0.020 U	EPA 200.7	0.10	0.020	01/09/13 08:50	01/10/13 15:50	1
Magnesium	mg/L	11	EPA 200.7	0.50	0.020	01/09/13 08:50	01/10/13 15:50	1
Manganese	mg/L	0.43	EPA 200.7	0.010	0.0010	01/09/13 08:50	01/10/13 15:50	1
Potassium	mg/L	10	EPA 200.7	0.050	0.010	01/09/13 08:50	01/10/13 15:50	1
Sodium	mg/L	7.7	EPA 200.7	0.50	0.13	01/09/13 08:50	01/10/13 15:50	1

Sample Description	**PZ34-BKG-26**
Matrix	**Groundwater**
SAL Sample Number	**1214078-14**
Date/Time Collected	**01/09/13 10:35**
Collected by	**Josephine Edeback-Hirst**
Date/Time Received	**01/09/13 15:15**

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**PZ34-BKG-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1214078-14**						
Date/Time Collected		**01/09/13 10:35**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/09/13 15:15**						
Client Provided Field Data								
pH		5.27						
Temperature		25.4 °C						
Conductivity		330 umhos						
Dissolved Oxygen		2.56 mg/L						
Inorganics								
Ammonia as N	mg/L	0.081	EPA 350.1	0.040	0.009		01/18/13 13:38	1
Ammonium as NH4	mg/L	0.10	EPA 350.1	0.05	0.01	01/18/13 15:03	01/18/13 15:04	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/10/13 08:20	01/10/13 11:11	1
Chloride	mg/L	23	EPA 300.0	0.20	0.050		01/23/13 16:37	1
Nitrate+Nitrite (N)	mg/L	9.2	EPA 353.2	0.40	0.10		01/11/13 14:22	9.9
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 15:25	1
Phosphorous - Total as P	mg/L	0.57	SM 4500P-E	0.040	0.010	01/16/13 11:04	01/17/13 10:55	1
Total Alkalinity	mg/L	6.3 I	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	01/18/13 08:48	01/22/13 12:32	1
Nitrate (as N)	mg/L	9.2	EPA 353.2	0.44	0.11		01/11/13 14:22	10

Sample Description		**PZ35-BKG-09**						
Matrix		**Groundwater**						
SAL Sample Number		**1214078-15**						
Date/Time Collected		**01/09/13 11:04**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/09/13 15:15**						
Client Provided Field Data								
pH		6.57						
Temperature		24.1 °C						
Conductivity		400 umhos						
Dissolved Oxygen		5.61 mg/L						
Inorganics								
Ammonia as N	mg/L	0.048	EPA 350.1	0.040	0.009		01/18/13 13:40	1
Ammonium as NH4	mg/L	0.06	EPA 350.1	0.05	0.01	01/18/13 15:03	01/18/13 15:04	1
Chloride	mg/L	7.2	EPA 300.0	0.20	0.050		01/24/13 01:24	1
Nitrate+Nitrite (N)	mg/L	1.1	EPA 353.2	0.40	0.10		01/11/13 14:25	9.9
Nitrite (as N)	mg/L	0.03 I	SM 4500NO2-B	0.04	0.01		01/10/13 15:25	1
Total Alkalinity	mg/L	100	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	0.73	EPA 351.2	0.20	0.05	01/18/13 08:48	01/22/13 12:40	1

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**PZ35-BKG-09**						
Matrix		**Groundwater**						
SAL Sample Number		**1214078-15**						
Date/Time Collected		**01/09/13 11:04**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/09/13 15:15**						
Client Provided Field Data								
pH		6.57						
Temperature		24.1 °C						
Conductivity		400 umhos						
Dissolved Oxygen		5.61 mg/L						
Nitrate (as N)	mg/L	1.1	EPA 353.2	0.44	0.11		01/11/13 14:25	10
Sample Description		**PZ36-BKG-16**						
Matrix		**Groundwater**						
SAL Sample Number		**1214078-16**						
Date/Time Collected		**01/09/13 11:23**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/09/13 15:15**						
Client Provided Field Data								
pH		5.05						
Temperature		24.7 °C						
Conductivity		318 umhos						
Dissolved Oxygen		0.85 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 13:50	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 15:03	01/18/13 15:04	1
Chloride	mg/L	13	EPA 300.0	0.20	0.050		01/24/13 01:24	1
Nitrate+Nitrite (N)	mg/L	16	EPA 353.2	0.40	0.10		01/11/13 14:27	9.9
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 15:28	1
Total Alkalinity	mg/L	4.2 I	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	01/18/13 08:48	01/22/13 12:42	1
Nitrate (as N)	mg/L	16	EPA 353.2	0.44	0.11		01/11/13 14:27	10
Sample Description		**PZ37-BKG-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1214078-17**						
Date/Time Collected		**01/09/13 11:54**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/09/13 15:15**						
Client Provided Field Data								
pH		5.20						

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**PZ37-BKG-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1214078-17**						
Date/Time Collected		**01/09/13 11:54**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/09/13 15:15**						
Client Provided Field Data								
pH		5.20						
Temperature		25.1 °C						
Conductivity		311 umhos						
Dissolved Oxygen		4.03 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 13:52	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 15:03	01/18/13 15:04	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/10/13 08:20	01/10/13 11:11	1
Chloride	mg/L	17	EPA 300.0	0.20	0.050		01/24/13 01:24	1
Nitrate+Nitrite (N)	mg/L	14	EPA 353.2	0.40	0.10		01/11/13 14:29	9.9
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 15:28	1
Phosphorous - Total as P	mg/L	0.035 I	SM 4500P-E	0.040	0.010	01/16/13 11:04	01/17/13 10:56	1
Total Alkalinity	mg/L	4.2 I	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	01/18/13 08:48	01/22/13 12:44	1
Nitrate (as N)	mg/L	14	EPA 353.2	0.44	0.11		01/11/13 14:29	10

Sample Description		**PZ38-BKG-09**						
Matrix		**Groundwater**						
SAL Sample Number		**1214078-18**						
Date/Time Collected		**01/09/13 13:01**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/09/13 15:15**						
Client Provided Field Data								
pH		5.67						
Temperature		25.0 °C						
Conductivity		196.1 umhos						
Dissolved Oxygen		1.72 mg/L						
Inorganics								
Ammonia as N	mg/L	0.25	EPA 350.1	0.040	0.009		01/18/13 13:55	1
Ammonium as NH4	mg/L	0.32	EPA 350.1	0.05	0.01	01/18/13 15:03	01/18/13 15:04	1
Chloride	mg/L	14	EPA 300.0	0.20	0.050		01/24/13 01:24	1
Nitrate+Nitrite (N)	mg/L	0.37	EPA 353.2	0.04	0.01		01/11/13 14:58	1
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 15:29	1
Total Alkalinity	mg/L	31	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	0.34	EPA 351.2	0.20	0.05	01/18/13 08:48	01/22/13 12:45	1

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January 24, 2013
Work Order: 1214078

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**PZ38-BKG-09**						
Matrix		**Groundwater**						
SAL Sample Number		**1214078-18**						
Date/Time Collected		**01/09/13 13:01**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/09/13 15:15**						
Client Provided Field Data								
pH		5.67						
Temperature		25.0 °C						
Conductivity		196.1 umhos						
Dissolved Oxygen		1.72 mg/L						
Nitrate (as N)	mg/L	0.37	EPA 353.2	0.08	0.02		01/11/13 14:58	1
Sample Description		**PZ39-BKG-16**						
Matrix		**Groundwater**						
SAL Sample Number		**1214078-19**						
Date/Time Collected		**01/09/13 13:30**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/09/13 15:15**						
Client Provided Field Data								
pH		5.79						
Temperature		25.0 °C						
Conductivity		221 umhos						
Dissolved Oxygen		2.23 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 13:57	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 15:03	01/18/13 15:04	1
Chloride	mg/L	6.7	EPA 300.0	0.20	0.050		01/24/13 01:24	1
Nitrate+Nitrite (N)	mg/L	2.0	EPA 353.2	0.40	0.10		01/11/13 14:34	9.9
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 15:29	1
Total Alkalinity	mg/L	10	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	0.57	EPA 351.2	0.20	0.05	01/18/13 08:48	01/22/13 12:47	1
Nitrate (as N)	mg/L	2.0	EPA 353.2	0.44	0.11		01/11/13 14:34	10
Sample Description		**PZ40-BKG-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1214078-20**						
Date/Time Collected		**01/09/13 13:52**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/09/13 15:15**						
Client Provided Field Data								
pH		5.23						

SOUTHERN ANALYTICAL LABORATORIES, INC.
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Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**PZ40-BKG-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1214078-20**						
Date/Time Collected		**01/09/13 13:52**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/09/13 15:15**						
Client Provided Field Data								
pH		5.23						
Temperature		25.1 °C						
Conductivity		313 umhos						
Dissolved Oxygen		3.49 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/18/13 13:59	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/18/13 15:03	01/18/13 15:04	1
Chloride	mg/L	15	EPA 300.0	0.20	0.050		01/24/13 01:24	1
Nitrate+Nitrite (N)	mg/L	12	EPA 353.2	0.40	0.10		01/11/13 14:36	9.9
Nitrite (as N)	mg/L	0.01 U	SM 4500NO2-B	0.04	0.01		01/10/13 15:30	1
Total Alkalinity	mg/L	3.2 I	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	01/18/13 08:48	01/22/13 12:49	1
Nitrate (as N)	mg/L	12	EPA 353.2	0.44	0.11		01/11/13 14:36	10

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30911 - COD prep										
Blank (BA30911-BLK1)					Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BA30911-BS1)					Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	51	25	10	mg/L	50		102	90-110		
Matrix Spike (BA30911-MS1)		**Source: 1214072-08**			Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	51	25	10	mg/L	50	ND	102	85-115		
Matrix Spike Dup (BA30911-MSD1)		**Source: 1214072-08**			Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	51	25	10	mg/L	50	ND	102	85-115	0	32
Batch BA30914 - TOC prep										
Blank (BA30914-BLK1)					Prepared & Analyzed: 01/09/13					
Total Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BA30914-BS1)					Prepared & Analyzed: 01/09/13					
Total Organic Carbon	10.5	1.0	0.50	mg/L	10		105	90-110		
Matrix Spike (BA30914-MS1)		**Source: 1300206-01**			Prepared & Analyzed: 01/09/13					
Total Organic Carbon	10.2	1.0	0.50	mg/L	10	ND	102	85-115		
Matrix Spike Dup (BA30914-MSD1)		**Source: 1300206-01**			Prepared & Analyzed: 01/09/13					
Total Organic Carbon	10.8	1.0	0.50	mg/L	10	ND	108	85-115	6	10
Batch BA30919 - Ion Chromatography 300.0 Prep										
Blank (BA30919-BLK1)					Prepared & Analyzed: 01/10/13					
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30919 - Ion Chromatography 300.0 Prep										
LCS (BA30919-BS1)					Prepared & Analyzed: 01/10/13					
Orthophosphate as P	0.984	0.040	0.010	mg/L	0.90		109	85-115		
Nitrate (as N)	1.70	0.04	0.01	mg/L	1.7		100	85-115		
Chloride	3.18	0.20	0.050	mg/L	3.0		106	85-115		
Fluoride	0.975	0.040	0.010	mg/L	0.90		108	85-115		
Sulfate	8.93	0.60	0.20	mg/L	9.0		99	85-115		
Nitrite (as N)	1.43	0.04	0.01	mg/L	1.4		102	85-115		
LCS Dup (BA30919-BSD1)					Prepared & Analyzed: 01/10/13					
Orthophosphate as P	0.890	0.040	0.010	mg/L	0.90		99	85-115	10	200
Chloride	2.98	0.20	0.050	mg/L	3.0		99	85-115	6	200
Nitrate (as N)	1.67	0.04	0.01	mg/L	1.7		98	85-115	2	200
Nitrite (as N)	1.33	0.04	0.01	mg/L	1.4		95	85-115	7	200
Fluoride	0.896	0.040	0.010	mg/L	0.90		100	85-115	8	200
Sulfate	8.89	0.60	0.20	mg/L	9.0		99	85-115	0.4	200
Matrix Spike (BA30919-MS1)		**Source: 1300019-03**			Prepared & Analyzed: 01/10/13					
Orthophosphate as P	0.857	0.040	0.010	mg/L	0.90	ND	95	85-115		
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7	0.0371	97	85-115		
Fluoride	2.01	0.040	0.010	mg/L	0.90	1.10	101	85-115		
Nitrite (as N)	1.50	0.04	0.01	mg/L	1.4	ND	107	85-115		
Chloride	17.6	0.20	0.050	mg/L	3.0	14.9	90	80-120		
Sulfate	9.53	0.60	0.20	mg/L	9.0	0.903	96	85-115		
Matrix Spike (BA30919-MS2)		**Source: 1300216-01**			Prepared & Analyzed: 01/10/13					
Sulfate	21.8	0.60	0.20	mg/L	9.0	12.3	106	85-115		
Nitrite (as N)	1.38	0.04	0.01	mg/L	1.4	ND	99	85-115		
Fluoride	1.07	0.040	0.010	mg/L	0.90	0.115	106	85-115		
Nitrate (as N)	1.81	0.04	0.01	mg/L	1.7	0.0354	104	85-115		
Chloride	20.1	0.20	0.050	mg/L	3.0	17.0	103	80-120		
Orthophosphate as P	0.852	0.040	0.010	mg/L	0.90	ND	95	85-115		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30934 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BA30934-BLK1)					Prepared: 01/09/13 Analyzed: 01/15/13					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BA30934-BS1)					Prepared: 01/09/13 Analyzed: 01/15/13					
Phosphorous - Total as P	0.756	0.040	0.010	mg/L	0.80		94	90-110		
Matrix Spike (BA30934-MS1)		**Source: 1300224-01**			Prepared: 01/09/13 Analyzed: 01/15/13					
Phosphorous - Total as P	1.44	0.040	0.010	mg/L	1.0	0.456	99	90-110		
Matrix Spike (BA30934-MS2)		**Source: 1300301-10**			Prepared: 01/09/13 Analyzed: 01/15/13					
Phosphorous - Total as P	1.11	0.040	0.010	mg/L	1.0	0.0882	103	90-110		
Matrix Spike Dup (BA30934-MSD1)		**Source: 1300224-01**			Prepared: 01/09/13 Analyzed: 01/15/13					
Phosphorous - Total as P	1.55	0.040	0.010	mg/L	1.0	0.456	109	90-110	7	25
Matrix Spike Dup (BA30934-MSD2)		**Source: 1300301-10**			Prepared: 01/09/13 Analyzed: 01/15/13					
Phosphorous - Total as P	1.15	0.040	0.010	mg/L	1.0	0.0882	106	90-110	3	25
Batch BA31004 - COD prep										
Blank (BA31004-BLK1)					Prepared & Analyzed: 01/10/13					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BA31004-BS1)					Prepared & Analyzed: 01/10/13					
Chemical Oxygen Demand	51	25	10	mg/L	50		102	90-110		
Matrix Spike (BA31004-MS1)		**Source: 1214074-07**			Prepared & Analyzed: 01/10/13					
Chemical Oxygen Demand	49	25	10	mg/L	50	ND	98	85-115		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31004 - COD prep										
Matrix Spike Dup (BA31004-MSD1)		**Source: 1214074-07**			Prepared & Analyzed: 01/10/13					
Chemical Oxygen Demand	49	25	10	mg/L	50	ND	98	85-115	0	32
Batch BA31018 - Nitrite SM 4500NO2-B by seal										
Blank (BA31018-BLK1)					Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BA31018-BS1)					Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.0748	0.04	0.01	mg/L	0.080		94	90-110		
Matrix Spike (BA31018-MS1)		**Source: 1214074-27**			Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.0835	0.04	0.01	mg/L	0.10	ND	84	77-119		
Matrix Spike (BA31018-MS2)		**Source: 1214078-16**			Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.0981	0.04	0.01	mg/L	0.10	ND	98	77-119		
Matrix Spike Dup (BA31018-MSD1)		**Source: 1214074-27**			Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.0815	0.04	0.01	mg/L	0.10	ND	82	77-119	2	20
Matrix Spike Dup (BA31018-MSD2)		**Source: 1214078-16**			Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.0986	0.04	0.01	mg/L	0.10	ND	99	77-119	0.5	20
Batch BA31109 - Digestion for TKN by EPA 351.2										
Blank (BA31109-BLK1)					Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31109 - Digestion for TKN by EPA 351.2										
LCS (BA31109-BS1)					Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	2.50	0.20	0.05	mg/L	2.5		99	90-110		
Matrix Spike (BA31109-MS1)		**Source: 1214079-09**			Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	3.64	0.20	0.05	mg/L	2.5	1.06	102	90-110		
Matrix Spike Dup (BA31109-MSD1)		**Source: 1214079-09**			Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	3.55	0.20	0.05	mg/L	2.5	1.06	98	90-110	2	20
Batch BA31128 - Ion Chromatography 300.0 Prep										
Blank (BA31128-BLK1)					Prepared & Analyzed: 01/12/13					
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BA31128-BS1)					Prepared & Analyzed: 01/12/13					
Nitrate (as N)	1.72	0.04	0.01	mg/L	1.7		101	85-115		
LCS Dup (BA31128-BSD1)					Prepared & Analyzed: 01/12/13					
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115	2	200
Matrix Spike (BA31128-MS1)		**Source: 1300427-04**			Prepared & Analyzed: 01/12/13					
Nitrate (as N)	5.66	0.04	0.01	mg/L	1.7	3.80	109	85-115		
Matrix Spike (BA31128-MS2)		**Source: 1214074-02**			Prepared & Analyzed: 01/12/13					
Nitrate (as N)	92.4	0.04	0.01	mg/L	17	73.8	109	85-115		
Batch BA31134 - Nitrate 353.2 by seal										
Blank (BA31134-BLK1)					Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31134 - Nitrate 353.2 by seal										
LCS (BA31134-BS1)					Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	0.737	0.04	0.01	mg/L	0.80		92	90-110		
Matrix Spike (BA31134-MS1)		**Source: 1300236-01**			Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	1.03	0.04	0.01	mg/L	1.0	0.0486	98	90-110		
Matrix Spike (BA31134-MS2)		**Source: 1300236-03**			Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	1.11	0.04	0.01	mg/L	1.0	0.115	99	90-110		
Matrix Spike Dup (BA31134-MSD1)		**Source: 1300236-01**			Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	1.08	0.04	0.01	mg/L	1.0	0.0486	103	90-110	5	20
Matrix Spike Dup (BA31134-MSD2)		**Source: 1300236-03**			Prepared & Analyzed: 01/11/13					
Nitrate+Nitrite (N)	1.11	0.04	0.01	mg/L	1.0	0.115	100	90-110	0.5	20
Batch BA31406 - Ammonia by SEAL										
Blank (BA31406-BLK1)					Prepared & Analyzed: 01/14/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BA31406-BS1)					Prepared & Analyzed: 01/14/13					
Ammonia as N	0.49	0.040	0.009	mg/L	0.50		98	90-110		
Matrix Spike (BA31406-MS1)		**Source: 1300192-01**			Prepared & Analyzed: 01/14/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	ND	100	90-110		
Matrix Spike (BA31406-MS2)		**Source: 1300224-01**			Prepared & Analyzed: 01/14/13					
Ammonia as N	0.92	0.040	0.009	mg/L	0.50	0.46	92	90-110		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31406 - Ammonia by SEAL										
Matrix Spike Dup (BA31406-MSD1)		**Source: 1300192-01**			Prepared & Analyzed: 01/14/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	ND	100	90-110	0.2	10
Matrix Spike Dup (BA31406-MSD2)		**Source: 1300224-01**			Prepared & Analyzed: 01/14/13					
Ammonia as N	0.91	0.040	0.009	mg/L	0.50	0.46	90	90-110	0.9	10
Batch BA31612 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BA31612-BLK1)					Prepared: 01/16/13 Analyzed: 01/17/13					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BA31612-BS1)					Prepared: 01/16/13 Analyzed: 01/17/13					
Phosphorous - Total as P	0.777	0.040	0.010	mg/L	0.80		97	90-110		
Matrix Spike (BA31612-MS1)		**Source: 1300486-02**			Prepared: 01/16/13 Analyzed: 01/17/13					
Phosphorous - Total as P	0.946	0.040	0.010	mg/L	1.0	0.0330	91	90-110		
Matrix Spike (BA31612-MS2)		**Source: 1300529-07**			Prepared: 01/16/13 Analyzed: 01/17/13					
Phosphorous - Total as P	1.00	0.040	0.010	mg/L	1.0	0.0610	94	90-110		
Matrix Spike Dup (BA31612-MSD1)		**Source: 1300486-02**			Prepared: 01/16/13 Analyzed: 01/17/13					
Phosphorous - Total as P	0.975	0.040	0.010	mg/L	1.0	0.0330	94	90-110	3	25
Matrix Spike Dup (BA31612-MSD2)		**Source: 1300529-07**			Prepared: 01/16/13 Analyzed: 01/17/13					
Phosphorous - Total as P	1.08	0.040	0.010	mg/L	1.0	0.0610	102	90-110	8	25
Batch BA31613 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BA31613-BLK1)					Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						

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10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 24, 2013
Work Order: 1214078

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31613 - Digestion for TP by EPA 365.2/SM4500PE										
LCS (BA31613-BS1)					Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	0.726	0.040	0.010	mg/L	0.80		91	90-110		
Matrix Spike (BA31613-MS1)		**Source: 1214067-11**			Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	0.968	0.040	0.010	mg/L	1.0	0.0665	90	90-110		
Matrix Spike (BA31613-MS2)		**Source: 1214074-13**			Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	1.10	0.040	0.010	mg/L	1.0	0.130	97	90-110		
Matrix Spike Dup (BA31613-MSD1)		**Source: 1214067-11**			Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	1.07	0.040	0.010	mg/L	1.0	0.0665	100	90-110	10	25
Matrix Spike Dup (BA31613-MSD2)		**Source: 1214074-13**			Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	1.17	0.040	0.010	mg/L	1.0	0.130	104	90-110	6	25
Batch BA31735 - alkalinity										
Blank (BA31735-BLK1)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BA31735-BLK2)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BA31735-BS1)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
LCS (BA31735-BS2)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		

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Work Order: 1214078

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31735 - alkalinity										
Matrix Spike (BA31735-MS1)		**Source: 1214078-06**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	3.2	97	80-120		
Matrix Spike (BA31735-MS2)		**Source: 1214542-27**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	160	8.0	2.0	mg/L	120	31	100	80-120		
Matrix Spike Dup (BA31735-MSD1)		**Source: 1214078-06**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	3.2	97	80-120	0	26
Matrix Spike Dup (BA31735-MSD2)		**Source: 1214542-27**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	160	8.0	2.0	mg/L	120	31	100	80-120	0	26
Batch BA31806 - Digestion for TKN by EPA 351.2										
Blank (BA31806-BLK1)					Prepared: 01/18/13 Analyzed: 01/22/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BA31806-BS1)					Prepared: 01/18/13 Analyzed: 01/22/13					
Total Kjeldahl Nitrogen	es at 90.6%	0.20	0.05	mg/L	2.5		89	90-110		
Matrix Spike (BA31806-MS1)		**Source: 1214074-26**			Prepared: 01/18/13 Analyzed: 01/22/13					
Total Kjeldahl Nitrogen	3.48	0.20	0.05	mg/L	2.5	1.10	94	90-110		
Matrix Spike (BA31806-MS2)		**Source: 1214078-15**			Prepared: 01/18/13 Analyzed: 01/22/13					
Total Kjeldahl Nitrogen	3.41	0.20	0.05	mg/L	2.5	0.730	106	90-110		
Matrix Spike Dup (BA31806-MSD1)		**Source: 1214074-26**			Prepared: 01/18/13 Analyzed: 01/22/13					
Total Kjeldahl Nitrogen	3.71	0.20	0.05	mg/L	2.5	1.10	103	90-110	6	20

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January 24, 2013
Work Order: 1214078

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31806 - Digestion for TKN by EPA 351.2										
Matrix Spike Dup (BA31806-MSD2)		**Source: 1214078-15**			Prepared: 01/18/13 Analyzed: 01/22/13					
Total Kjeldahl Nitrogen	3.40	0.20	0.05	mg/L	2.5	0.730	105	90-110	0.2	20
Batch BA31822 - Ammonia by SEAL										
Blank (BA31822-BLK1)					Prepared & Analyzed: 01/18/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BA31822-BS1)					Prepared & Analyzed: 01/18/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50		103	90-110		
Matrix Spike (BA31822-MS1)		**Source: 1300638-02**			Prepared & Analyzed: 01/18/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	0.046	92	90-110		
Matrix Spike (BA31822-MS2)		**Source: 1300638-05**			Prepared & Analyzed: 01/18/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	0.046	93	90-110		
Matrix Spike Dup (BA31822-MSD1)		**Source: 1300638-02**			Prepared & Analyzed: 01/18/13					
Ammonia as N	0.53	0.040	0.009	mg/L	0.50	0.046	97	90-110	4	10
Matrix Spike Dup (BA31822-MSD2)		**Source: 1300638-05**			Prepared & Analyzed: 01/18/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.046	91	90-110	2	10
Batch BA32114 - Ion Chromatography 300.0 Prep										
Blank (BA32114-BLK1)					Prepared & Analyzed: 01/22/13					
Chloride	0.050 U	0.20	0.050	mg/L						

Hazen and Sawyer
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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA32114 - Ion Chromatography 300.0 Prep										
LCS (BA32114-BS1)					Prepared & Analyzed: 01/22/13					
Chloride	3.02	0.20	0.050	mg/L	3.0		101	85-115		
LCS Dup (BA32114-BSD1)					Prepared & Analyzed: 01/22/13					
Chloride	2.93	0.20	0.050	mg/L	3.0		98	85-115	3	200
Matrix Spike (BA32114-MS1)		**Source: 1214074-24**			Prepared & Analyzed: 01/22/13					
Chloride	8.33	0.20	0.050	mg/L	3.0	5.63	90	80-120		
Matrix Spike (BA32114-MS2)		**Source: 1214078-11**			Prepared & Analyzed: 01/22/13					
Chloride	25.2	0.20	0.050	mg/L	3.0	22.7	83	80-120		
Batch BA32212 - Ion Chromatography 300.0 Prep										
Blank (BA32212-BLK1)					Prepared & Analyzed: 01/23/13					
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BA32212-BS1)					Prepared & Analyzed: 01/23/13					
Chloride	2.97	0.20	0.050	mg/L	3.0		99	85-115		
LCS Dup (BA32212-BSD1)					Prepared & Analyzed: 01/23/13					
Chloride	3.18	0.20	0.050	mg/L	3.0		106	85-115	7	200
Matrix Spike (BA32212-MS1)		**Source: 1214078-14**			Prepared & Analyzed: 01/23/13					
Chloride	25.9	0.20	0.050	mg/L	3.0	23.2	90	80-120		
Matrix Spike (BA32212-MS2)		**Source: 1300697-01**			Prepared & Analyzed: 01/23/13					
Chloride	150	0.20	0.050	mg/L	30	119	103	80-120		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA32213 - Ion Chromatography 300.0 Prep										
Blank (BA32213-BLK1)					Prepared & Analyzed: 01/24/13					
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BA32213-BS1)					Prepared & Analyzed: 01/24/13					
Chloride	3.22	0.20	0.050	mg/L	3.0		107	85-115		
LCS Dup (BA32213-BSD1)					Prepared & Analyzed: 01/24/13					
Chloride	3.19	0.20	0.050	mg/L	3.0		106	85-115	0.9	200
Matrix Spike (BA32213-MS1)		**Source: 1300004-05**			Prepared & Analyzed: 01/24/13					
Chloride	740	0.20	0.050	mg/L	300	417	108	80-120		
Matrix Spike (BA32213-MS2)		**Source: 1300641-01**			Prepared & Analyzed: 01/24/13					
Chloride	35.9	0.20	0.050	mg/L	6.0	29.5	107	80-120		

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Inorganic, Dissolved - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30915 - TOC prep										
Blank (BA30915-BLK1)					Prepared & Analyzed: 01/09/13					
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BA30915-BS1)					Prepared & Analyzed: 01/09/13					
Dissolved Organic Carbon	10.1	1.0	0.50	mg/L	10		101	90-110		
Matrix Spike (BA30915-MS1)		**Source: 1214076-16**			Prepared & Analyzed: 01/09/13					
Dissolved Organic Carbon	14.5	1.0	0.50	mg/L	10	5.30	92	85-125		
Matrix Spike Dup (BA30915-MSD1)		**Source: 1214076-16**			Prepared & Analyzed: 01/09/13					
Dissolved Organic Carbon	14.5	1.0	0.50	mg/L	10	5.30	92	85-125	0.4	25

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Metals - Quality Control

Analyte	Result		PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30904 - Metals Preparation for EPA Method 200.7											
Blank (BA30904-BLK1)						Prepared: 01/09/13 Analyzed: 01/10/13					
Potassium	0.23		0.050	0.010	mg/L						
Boron	0.050	U	0.10	0.050	mg/L						
Calcium	0.042	U	0.50	0.042	mg/L						
Sodium	0.13	U	0.50	0.13	mg/L						
Magnesium	0.022	I	0.50	0.020	mg/L						
Manganese	0.0010	U	0.010	0.0010	mg/L						
Iron	0.020	U	0.10	0.020	mg/L						
LCS (BA30904-BS1)						Prepared: 01/09/13 Analyzed: 01/10/13					
Boron	0.46		0.10	0.050	mg/L	0.40		114	85-115		
Calcium	20		0.50	0.042	mg/L	20		102	85-115		
Iron	8.2		0.10	0.020	mg/L	8.0		103	85-115		
Sodium	21		0.50	0.13	mg/L	20		103	85-115		
Potassium	21		0.050	0.010	mg/L	20		103	85-115		
Magnesium	20		0.50	0.020	mg/L	20		101	85-115		
Manganese	0.42		0.010	0.0010	mg/L	0.40		106	85-115		
Matrix Spike (BA30904-MS1)			**Source: 1214078-13**			Prepared: 01/09/13 Analyzed: 01/10/13					
Iron	9.2		0.10	0.020	mg/L	8.0	ND	115	70-130		
Magnesium	32		0.50	0.020	mg/L	20	11	104	70-130		
Sodium	26		0.50	0.13	mg/L	20	7.7	93	70-130		
Potassium	32		0.050	0.010	mg/L	20	10	109	70-130		
Manganese	0.85		0.010	0.0010	mg/L	0.40	0.43	105	70-130		
Boron	0.50		0.10	0.050	mg/L	0.40	ND	125	70-130		
Calcium	57		0.50	0.042	mg/L	20	37	100	70-130		
Matrix Spike (BA30904-MS2)			**Source: 1300019-06**			Prepared: 01/09/13 Analyzed: 01/10/13					
Magnesium	45		0.50	0.020	mg/L	20	25	103	70-130		
Calcium	61		0.50	0.042	mg/L	20	41	103	70-130		
Potassium	67		0.050	0.010	mg/L	20	50	87	70-130		
Manganese	0.59		0.010	0.0010	mg/L	0.40	0.17	104	70-130		
Iron	18		0.10	0.020	mg/L	8.0	10	100	70-130		
Boron	0.50		0.10	0.050	mg/L	0.40	ND	126	70-130		
Sodium	43		0.50	0.13	mg/L	20	23	105	70-130		

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January 24, 2013
Work Order: 1214078

Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30904 - Metals Preparation for EPA Method 200.7										
Matrix Spike Dup (BA30904-MSD1)		**Source: 1214078-13**			Prepared: 01/09/13 Analyzed: 01/10/13					
Boron	0.50	0.10	0.050	mg/L	0.40	ND	125	70-130	0.2	30
Calcium	55	0.50	0.042	mg/L	20	37	87	70-130	5	30
Iron	8.9	0.10	0.020	mg/L	8.0	ND	112	70-130	3	30
Potassium	30	0.050	0.010	mg/L	20	10	98	70-130	7	30
Sodium	25	0.50	0.13	mg/L	20	7.7	88	70-130	4	30
Manganese	0.84	0.010	0.0010	mg/L	0.40	0.43	101	70-130	2	30
Magnesium	31	0.50	0.020	mg/L	20	11	99	70-130	3	30
Matrix Spike Dup (BA30904-MSD2)		**Source: 1300019-06**			Prepared: 01/09/13 Analyzed: 01/10/13					
Boron	0.51	0.10	0.050	mg/L	0.40	ND	128	70-130	1	30
Manganese	0.60	0.010	0.0010	mg/L	0.40	0.17	108	70-130	3	30
Iron	17	0.10	0.020	mg/L	8.0	10	88	70-130	6	30
Potassium	63	0.050	0.010	mg/L	20	50	66	70-130	6	30
Magnesium	45	0.50	0.020	mg/L	20	25	101	70-130	0.9	30
Sodium	45	0.50	0.13	mg/L	20	23	115	70-130	4	30
Calcium	62	0.50	0.042	mg/L	20	41	106	70-130	0.9	30

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January 24, 2013
Work Order: 1214078

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below.

Questions regarding this report should be directed to :

Kathryn Nordmark
Telephone (813) 855-1844 FAX (813) 855-2218
Kathryn@southernanalyticallabs.com

Kathryn@southernanalyticallabs.com

1214078

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (BKG)

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, Alkalinity	1LP, Cool NOx, Cl, Alkalinity, F, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na					Field pH	Field Temperature	Field Conductivity	Field DO
01	PZ01-BKG-09			GW		X	1	1														
02	LY01-BKG-24			GW		X	1	1														
03	LY02-BKG-42			GW		X	1	1														
04	PZ04-BKG-09			GW		X	1	1														
05	PZ05-BKG-09			GW		X	1	1														
06	PZ24-BKG-26			GW		X			1	1												
07	PZ24-BKG-26 DUP			GW		X			1	1												
08	PZ29-BKG09	01/08/13	8:47	GW		X			1	1									4.92	22.8	215.7	0.83
09	PZ30-BKG-16	01/08/13	9:21	GW		X			1	1									5.47	24.2	294	1.36
10	PZ31-BKG-26			GW		X			1	1												
11	PZ31-BKG-26 DUP			GW		X			1	1												
12	PZ32-BKG09	01/08/13	9:50	GW		X			1	1									4.63	22.7	154.8	1.28

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
J. Chambers	1/7/13 14:38		
Relinquished:	Date/Time: 1635 1/8/13	Received: K Mudmark	Date/Time: 1/8/13 1635
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

Seal intact? Y N (N/A)

Samples intact upon arrival? (Y) N N/A

Received on ice? Temp_____ (Y) N N/A

Proper preservatives indicated? (Y) N N/A

Rec'd within holding time? (Y) N N/A

Volatiles rec'd w/out headspace? Y N (N/A)

Proper containers used? (Y) N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/18/01

Chain of Custody

1214078

1214078

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (BKG)

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, Alkalinity	1LP, Cool NOx, Cl, Alkalinity, F, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na					Field pH	Field Temperature	Field Conductivity	Field DO
13	PZ33-BKG-16	01/08/13	10:15	GW		X			1		1	1	2	1					5.16	24.8	409	1.41
14	PZ34-BKG-26			GW		X			1	1												
15	PZ35-BKG09			GW		X	1			1												
16	PZ36-BKG-16			GW		X	1			1												
17	PZ37-BKG-26			GW		X			1	1												
18	PZ38-BKG09			GW		X	1			1												
19	PZ39-BKG-16			GW		X	1			1												
20	PZ40-BKG-26			GW		X	1			1												

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
J. Champkey	1-7-13 14:30		
Relinquished:	Date/Time: 1635 1/8/13	Received: K Mudmeck	Date/Time: 1/8/13 1635
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace? Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

1214078

1214078

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (BKG)

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, Alkalinity	1LP, Cool NOx, Cl, Alkalinity, F, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na					Field pH	Field Temperature	Field Conductivity	Field DO
01	PZ01-BKG-09	1/9/13	1333	GW		X	1	1											4.80	24.6	90	4.83
02	LY01-BKG-24			GW		X	1	1														
03	LY02-BKG-42			GW		X	1	1														
04	PZ04-BKG-09			GW		X	1	1														
05	PZ05-BKG-09			GW		X	1	1														
06	PZ24-BKG-26			GW		X			1	1												
07	PZ24-BKG-26 DUP			GW		X			1	1												
08	PZ29-BKG09			GW		X			1	1												
09	PZ30-BKG-16			GW		X			1	1												
10	PZ31-BKG-26			GW		X			1	1												
11	PZ31-BKG-26 DUP			GW		X			1	1												
12	PZ32-BKG09			GW		X			1	1												

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
J. Chambers	1/9/13 4:38		
Relinquished:	Date/Time: 1/9/13 1515	Received: K Nordmark	Date/Time: 1/9/13 1515
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace? Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

1214078

1214078

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (BKG)

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, Alkalinity	1LP, Cool NOx, Cl, Alkalinity, F, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na					Field pH	Field Temperature	Field Conductivity	Field DO
01	PZ01-BKG-09			GW		X	1	1														
02	LY01-BKG-24			GW		X	1	1														
03	LY02-BKG-42			GW		X	1	1														
04	PZ04-BKG-09	01/09/13	8:15	GW		X	1	1											4.96	21.8	523	1.96
05	PZ05-BKG-09	01/09/13	12:15	GW		X	1	1											5.09	27.6	205.3	2.59
06	PZ24-BKG-26	01/09/13	9:15	GW		X			1	1									5.24	25.1	308	3.34
07	PZ24-BKG-26 DUP	01/09/13	9:20	GW		X			1	1									5.24	25.1	308	3.34
08	PZ29-BKG09			GW		X			1	1												
09	PZ30-BKG-16			GW		X			1	1												
10	PZ31-BKG-26	01/09/13	9:50	GW		X			1	1									5.06	25.5	350	4.06
11	PZ31-BKG-26 DUP	01/09/13	9:55	GW		X			1	1									5.06	25.5	350	4.06
12	PZ32-BKG09			GW		X			1	1												

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
	1/9/13 14:38		
Relinquished:	Date/Time: 1/9/13 1515	Received:	Date/Time: 1/9/13 1515
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace? Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

1214078

1214078

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (BKG)

Samplers: (Signature) [signature]

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, Alkalinity	1LP, Cool NOx, Cl, Alkalinity, F, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na					Field pH	Field Temperature	Field Conductivity	Field DO
13	PZ33-BKG-16			GW		X			1		1	1	2	1								
14	PZ34-BKG-26	01/09/13	10:35	GW		X			1	1									5.27	25.4	330	2.56
15	PZ35-BKG09	01/09/13	11:04	GW		X	1			1									6.57	24.1	400	5.61
16	PZ36-BKG-16	01/09/13	11:23	GW		X	1			1									5.05	24.7	318	0.85
17	PZ37-BKG-26	01/09/13	11:54	GW		X			1	1									5.20	25.1	311	4.03
18	PZ38-BKG09	01/09/13	~~12:15~~ 12:01	GW		X	1			1								5.67	~~5.09~~	~~23.6~~	~~345.3~~	~~2.54~~ 1.72
19	PZ39-BKG-16	01/09/13	13:30	GW		X	1			1									5.79	25.0 25.0	196.1 221	2.23
20	PZ40-BKG-26	01/09/13	13:52	GW		X	1			1									5.23	25.1	313	3.49

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
J. Chambers	1-7-13 14:30	[signature]	
[signature]	1/9/13 1515	K Mudmark	1/9/13 1575

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace? Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

1214078

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 24, 2013
Work Order: 1214079

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**PZ-43**						
Matrix		**Groundwater**						
SAL Sample Number		**1214079-04**						
Date/Time Collected		**01/10/13 13:38**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		4.84						
Temperature		24.7 °C						
Conductivity		158.5 umhos						
Dissolved Oxygen		5.51 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/23/13 10:30	1
Ammonium as NH4	mg/L	0.02 I	EPA 350.1	0.05	0.01	01/23/13 14:11	01/23/13 14:12	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/11/13 11:40	01/11/13 14:20	1
Chloride	mg/L	3.9	EPA 300.0	0.20	0.050		01/12/13 11:06	1
Nitrate (as N)	mg/L	7.0	EPA 300.0	0.04	0.01		01/12/13 11:06	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/12/13 11:06	1
Phosphorous - Total as P	mg/L	0.028 I	SM 4500P-E	0.040	0.010	01/16/13 11:07	01/18/13 11:35	1
Total Alkalinity	mg/L	2.1 I	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	01/11/13 08:51	01/14/13 14:24	1
Nitrate+Nitrite (N)	mg/L	7.0	EPA 300.0	0.08	0.02		01/12/13 11:06	1

Sample Description		**PZ-44**						
Matrix		**Groundwater**						
SAL Sample Number		**1214079-05**						
Date/Time Collected		**01/08/13 11:05**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.75						
Temperature		26.2 °C						
Conductivity		737 umhos						
Dissolved Oxygen		7.32 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/14/13 11:52	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01		01/22/13 16:20	1
Chemical Oxygen Demand	mg/L	13 I	EPA 410.4	25	10	01/09/13 12:30	01/09/13 15:10	1
Chloride	mg/L	58	EPA 300.0	0.20	0.050		01/12/13 11:06	1
Nitrate (as N)	mg/L	38	EPA 300.0	0.04	0.01		01/09/13 17:50	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/10/13 02:36	1
Phosphorous - Total as P	mg/L	0.040	SM 4500P-E	0.040	0.010	01/09/13 13:27	01/15/13 08:41	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1

Florida Certification Number: E84129
NELAP Accredited

Francis I. Daniels, Laboratory Director
Leslie C. Boardman, Q.A. Manager

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 24, 2013
Work Order: 1214079

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**PZ-44**						
Matrix		**Groundwater**						
SAL Sample Number		**1214079-05**						
Date/Time Collected		**01/08/13 11:05**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.75						
Temperature		26.2 °C						
Conductivity		737 umhos						
Dissolved Oxygen		7.32 mg/L						
Total Kjeldahl Nitrogen	mg/L	2.5	EPA 351.2	0.20	0.05	01/11/13 08:51	01/14/13 14:25	1
Nitrate+Nitrite (N)	mg/L	38	EPA 300.0	0.08	0.02		01/10/13 02:36	1
Sample Description		**PZ-47**						
Matrix		**Groundwater**						
SAL Sample Number		**1214079-08**						
Date/Time Collected		**01/10/13 00:00**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		4.65						
Temperature		25.5 °C						
Conductivity		451 umhos						
Dissolved Oxygen		5.97 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/23/13 10:32	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/23/13 14:11	01/23/13 14:12	1
Chloride	mg/L	28	EPA 300.0	0.20	0.050		01/12/13 11:06	1
Nitrate (as N)	mg/L	19	EPA 300.0	0.04	0.01		01/11/13 18:06	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/11/13 18:06	1
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	01/11/13 08:51	01/14/13 14:27	1
Nitrate+Nitrite (N)	mg/L	19	EPA 300.0	0.08	0.02		01/11/13 18:06	1
Sample Description		**PZ-48**						
Matrix		**Groundwater**						
SAL Sample Number		**1214079-09**						
Date/Time Collected		**01/10/13 00:00**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		4.50						

SOUTHERN ANALYTICAL LABORATORIES, INC.
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Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 24, 2013
Work Order: 1214079

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**PZ-48**						
Matrix		**Groundwater**						
SAL Sample Number		**1214079-09**						
Date/Time Collected		**01/10/13 00:00**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		4.50						
Temperature		25.7 °C						
Conductivity		294 umhos						
Dissolved Oxygen		4.53 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/23/13 10:34	1
Ammonium as NH4	mg/L	0.16	EPA 350.1	0.05	0.01	01/23/13 14:11	01/23/13 14:12	1
Chloride	mg/L	8.3	EPA 300.0	0.20	0.050		01/12/13 11:06	1
Nitrate (as N)	mg/L	4.4	EPA 300.0	0.04	0.01		01/11/13 18:06	1
Nitrite (as N)	mg/L	0.01 I	EPA 300.0	0.04	0.01		01/11/13 18:06	1
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	01/11/13 08:51	01/14/13 14:28	1
Nitrate+Nitrite (N)	mg/L	4.4	EPA 300.0	0.08	0.02		01/11/13 18:06	1

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 24, 2013
Work Order: 1214079

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30911 - COD prep										
Blank (BA30911-BLK1)					Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BA30911-BS1)					Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	51	25	10	mg/L	50		102	90-110		
Matrix Spike (BA30911-MS1)		**Source: 1214072-08**			Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	51	25	10	mg/L	50	ND	102	85-115		
Matrix Spike Dup (BA30911-MSD1)		**Source: 1214072-08**			Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	51	25	10	mg/L	50	ND	102	85-115	0	32
Batch BA30919 - Ion Chromatography 300.0 Prep										
Blank (BA30919-BLK1)					Prepared & Analyzed: 01/10/13					
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BA30919-BS1)					Prepared & Analyzed: 01/10/13					
Nitrite (as N)	1.43	0.04	0.01	mg/L	1.4		102	85-115		
LCS Dup (BA30919-BSD1)					Prepared & Analyzed: 01/10/13					
Nitrite (as N)	1.33	0.04	0.01	mg/L	1.4		95	85-115	7	200
Matrix Spike (BA30919-MS1)		**Source: 1300019-03**			Prepared & Analyzed: 01/10/13					
Nitrite (as N)	1.50	0.04	0.01	mg/L	1.4	ND	107	85-115		
Matrix Spike (BA30919-MS2)		**Source: 1300216-01**			Prepared & Analyzed: 01/10/13					
Nitrite (as N)	1.38	0.04	0.01	mg/L	1.4	ND	99	85-115		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30934 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BA30934-BLK1)					Prepared: 01/09/13 Analyzed: 01/15/13					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BA30934-BS1)					Prepared: 01/09/13 Analyzed: 01/15/13					
Phosphorous - Total as P	0.756	0.040	0.010	mg/L	0.80		94	90-110		
Matrix Spike (BA30934-MS1)		**Source: 1300224-01**			Prepared: 01/09/13 Analyzed: 01/15/13					
Phosphorous - Total as P	1.44	0.040	0.010	mg/L	1.0	0.456	99	90-110		
Matrix Spike (BA30934-MS2)		**Source: 1300301-10**			Prepared: 01/09/13 Analyzed: 01/15/13					
Phosphorous - Total as P	1.11	0.040	0.010	mg/L	1.0	0.0882	103	90-110		
Matrix Spike Dup (BA30934-MSD1)		**Source: 1300224-01**			Prepared: 01/09/13 Analyzed: 01/15/13					
Phosphorous - Total as P	1.55	0.040	0.010	mg/L	1.0	0.456	109	90-110	7	25
Matrix Spike Dup (BA30934-MSD2)		**Source: 1300301-10**			Prepared: 01/09/13 Analyzed: 01/15/13					
Phosphorous - Total as P	1.15	0.040	0.010	mg/L	1.0	0.0882	106	90-110	3	25
Batch BA31109 - Digestion for TKN by EPA 351.2										
Blank (BA31109-BLK1)					Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BA31109-BS1)					Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	2.50	0.20	0.05	mg/L	2.5		99	90-110		
Matrix Spike (BA31109-MS1)		**Source: 1214079-09**			Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	3.64	0.20	0.05	mg/L	2.5	1.06	102	90-110		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31109 - Digestion for TKN by EPA 351.2										
Matrix Spike Dup (BA31109-MSD1)		**Source: 1214079-09**			Prepared: 01/11/13 Analyzed: 01/14/13					
Total Kjeldahl Nitrogen	3.55	0.20	0.05	mg/L	2.5	1.06	98	90-110	2	20
Batch BA31128 - Ion Chromatography 300.0 Prep										
Blank (BA31128-BLK1)					Prepared & Analyzed: 01/12/13					
Chloride	0.050 U	0.20	0.050	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BA31128-BS1)					Prepared & Analyzed: 01/12/13					
Nitrite (as N)	1.45	0.04	0.01	mg/L	1.4		104	85-115		
Chloride	3.15	0.20	0.050	mg/L	3.0		105	85-115		
Nitrate (as N)	1.72	0.04	0.01	mg/L	1.7		101	85-115		
LCS Dup (BA31128-BSD1)					Prepared & Analyzed: 01/12/13					
Nitrite (as N)	1.33	0.04	0.01	mg/L	1.4		95	85-115	9	200
Chloride	2.87	0.20	0.050	mg/L	3.0		96	85-115	9	200
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115	2	200
Matrix Spike (BA31128-MS1)		**Source: 1300427-04**			Prepared & Analyzed: 01/12/13					
Chloride	5.22	0.20	0.050	mg/L	3.0	1.99	108	80-120		
Nitrite (as N)	1.40	0.04	0.01	mg/L	1.4	ND	100	85-115		
Nitrate (as N)	5.66	0.04	0.01	mg/L	1.7	3.80	109	85-115		
Matrix Spike (BA31128-MS2)		**Source: 1214074-02**			Prepared & Analyzed: 01/12/13					
Chloride	132	0.20	0.050	mg/L	30	97.8	114	80-120		
Nitrate (as N)	92.4	0.04	0.01	mg/L	17	73.8	109	85-115		
Nitrite (as N)	14.4	0.04	0.01	mg/L	14	0.0368	103	85-115		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31131 - COD prep										
Blank (BA31131-BLK1)					Prepared & Analyzed: 01/11/13					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BA31131-BS1)					Prepared & Analyzed: 01/11/13					
Chemical Oxygen Demand	49	25	10	mg/L	50		98	90-110		
Matrix Spike (BA31131-MS1)		**Source: 1214067-07**			Prepared & Analyzed: 01/11/13					
Chemical Oxygen Demand	49	25	10	mg/L	50	ND	98	85-115		
Matrix Spike Dup (BA31131-MSD1)		**Source: 1214067-07**			Prepared & Analyzed: 01/11/13					
Chemical Oxygen Demand	51	25	10	mg/L	50	ND	102	85-115	4	32
Batch BA31406 - Ammonia by SEAL										
Blank (BA31406-BLK1)					Prepared & Analyzed: 01/14/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BA31406-BS1)					Prepared & Analyzed: 01/14/13					
Ammonia as N	0.49	0.040	0.009	mg/L	0.50		98	90-110		
Matrix Spike (BA31406-MS1)		**Source: 1300192-01**			Prepared & Analyzed: 01/14/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	ND	100	90-110		
Matrix Spike (BA31406-MS2)		**Source: 1300224-01**			Prepared & Analyzed: 01/14/13					
Ammonia as N	0.92	0.040	0.009	mg/L	0.50	0.46	92	90-110		
Matrix Spike Dup (BA31406-MSD1)		**Source: 1300192-01**			Prepared & Analyzed: 01/14/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	ND	100	90-110	0.2	10

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January 24, 2013
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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31406 - Ammonia by SEAL										
Matrix Spike Dup (BA31406-MSD2)		**Source: 1300224-01**			Prepared & Analyzed: 01/14/13					
Ammonia as N	0.91	0.040	0.009	mg/L	0.50	0.46	90	90-110	0.9	10
Batch BA31613 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BA31613-BLK1)					Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BA31613-BS1)					Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	0.726	0.040	0.010	mg/L	0.80		91	90-110		
Matrix Spike (BA31613-MS1)		**Source: 1214067-11**			Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	0.968	0.040	0.010	mg/L	1.0	0.0665	90	90-110		
Matrix Spike (BA31613-MS2)		**Source: 1214074-13**			Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	1.10	0.040	0.010	mg/L	1.0	0.130	97	90-110		
Matrix Spike Dup (BA31613-MSD1)		**Source: 1214067-11**			Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	1.07	0.040	0.010	mg/L	1.0	0.0665	100	90-110	10	25
Matrix Spike Dup (BA31613-MSD2)		**Source: 1214074-13**			Prepared: 01/16/13 Analyzed: 01/18/13					
Phosphorous - Total as P	1.17	0.040	0.010	mg/L	1.0	0.130	104	90-110	6	25
Batch BA31735 - alkalinity										
Blank (BA31735-BLK1)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						

Hazen and Sawyer
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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31735 - alkalinity										
Blank (BA31735-BLK2)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BA31735-BS1)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
LCS (BA31735-BS2)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
Matrix Spike (BA31735-MS1)		**Source: 1214078-06**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	3.2	97	80-120		
Matrix Spike (BA31735-MS2)		**Source: 1214542-27**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	160	8.0	2.0	mg/L	120	31	100	80-120		
Matrix Spike Dup (BA31735-MSD1)		**Source: 1214078-06**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	3.2	97	80-120	0	26
Matrix Spike Dup (BA31735-MSD2)		**Source: 1214542-27**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	160	8.0	2.0	mg/L	120	31	100	80-120	0	26
Batch BA32303 - Ammonia by SEAL										
Blank (BA32303-BLK1)					Prepared & Analyzed: 01/23/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BA32303-BS1)					Prepared & Analyzed: 01/23/13					
Ammonia as N	0.49	0.040	0.009	mg/L	0.50		98	90-110		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA32303 - Ammonia by SEAL										
Matrix Spike (BA32303-MS1)		**Source: 1214067-23**			Prepared & Analyzed: 01/23/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	ND	101	90-110		
Matrix Spike (BA32303-MS2)		**Source: 1300701-07**			Prepared & Analyzed: 01/23/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.040	91	90-110		
Matrix Spike Dup (BA32303-MSD1)		**Source: 1214067-23**			Prepared & Analyzed: 01/23/13					
Ammonia as N	0.49	0.040	0.009	mg/L	0.50	ND	98	90-110	2	10
Matrix Spike Dup (BA32303-MSD2)		**Source: 1300701-07**			Prepared & Analyzed: 01/23/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.040	92	90-110	0.5	10

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* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below.

Questions regarding this report should be directed to :

Kathryn Nordmark
Telephone (813) 855-1844 FAX (813) 855-2218
Kathryn@southernanalyticallabs.com

Kathryn@southernanalyticallabs.com

1214079

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (PZ41-53)

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, Alkalinity	1LP, Cool NOx, Cl, Alkalinity, F, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na					Field pH	Field Temperature	Field Conductivity	Field DO
01	PZ-41			GW		X			1	1												
02	PZ-42			GW		X			1		1	1	2	1								
03	PZ-42 DUP			GW		X			1		1	1	2	1								
04	PZ-43			GW		X			1	1												
05	PZ-44	01/08/13	11:05	GW		X			1	1									4.75	26.2	737	7.32
06	PZ-45			GW		X	1	1														
07	PZ-46			GW		X			1	1												
08	PZ-47			GW		X	1	1														
09	PZ-48			GW		X	1	1														
10	PZ-49			GW		X			1		1	1	2	1								
11	PZ-50			GW		X	1	1														
12	PZ-51			GW		X	1	1														

Containers Prepared/ Relinquished:	Date/Time: 1445 12-07-12	Received:	Date/Time:
Relinquished:	Date/Time: 1635 1/8/13	Received: K Mcdneal	Date/Time: 1/8/13 1635
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace? Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

1214079

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

1214079

Client Name	Contact / Phone:
Hazen and Sawyer	
Project Name / Location: S&GW Test Facility SE #4 (PZ41-53)	
Samplers: (Signature)	

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, Alkalinity	1LP, Cool NOx, Cl, Alkalinity, F, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na					Field pH	Field Temperature	Field Conductivity	Field DO
01	PZ-41			GW		X			1	1												
02	PZ-42			GW		X			1		1	1	2	1								
03	PZ-42 DUP			GW		X			1		1	1	2	1								
04	PZ-43	1/10/13	1338	GW		X			1	1									4.84	24.7	158.5	5.57
05	PZ-44			GW		X			1	1												
06	PZ-45			GW		X	1	1														
07	PZ-46			GW		X			1	1												
08	PZ-47	1/10/13		GW		X	1	1											4.65	25.5	451	5.97
09	PZ-48			GW		X	1	1											4.50	25.7	394	4.53
10	PZ-49			GW		X			1		1	1	2	1								
11	PZ-50			GW		X	1	1														
12	PZ-51			GW		X	1	1														

Containers Prepared/ Relinquished:	Date/Time: 1445 12-07-12	Received:	Date/Time:
Relinquished:	Date/Time: 1600 1/10/13	Received: K Lindmark	Date/Time: 1/10/13 1600
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

Seal intact? Y N N/A
Samples intact upon arrival? Y N N/A
Received on ice? Temp_____ Y N N/A
Proper preservatives indicated? Y N N/A
Rec'd within holding time? Y N N/A
Volatiles rec'd w/out headspace? Y N N/A
Proper containers used? Y N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

1214079

SOUTHERN ANALYTICAL LABORATORIES, INC.
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Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 21, 2013
Work Order: 1214080

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA6-PZ-1**						
Matrix		**Groundwater**						
SAL Sample Number		**1214080-01**						
Date/Time Collected		**01/07/13 13:35**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	0.17	SM 4550SF	0.04	0.01	01/08/13 15:31	01/21/13 10:23	1
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/17/13 09:09	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01		01/21/13 10:09	1
Chemical Oxygen Demand	mg/L	11 I	EPA 410.4	25	10	01/09/13 09:15	01/09/13 11:35	1
Chloride	mg/L	3.5	EPA 300.0	0.20	0.050		01/09/13 01:32	1
Nitrate (as N)	mg/L	7.5	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 01:32	1
Phosphorous - Total as P	mg/L	0.020 I	SM 4500P-E	0.040	0.010	01/15/13 13:18	01/16/13 12:50	1
Sulfate	mg/L	30	EPA 300.0	0.60	0.20		01/09/13 01:32	1
Sulfide	mg/L	0.18 I	SM 4500SF	0.40	0.10		01/08/13 15:31	1
Total Alkalinity	mg/L	4.2 I	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	01/12/13 08:43	01/15/13 13:21	1
Total Suspended Solids	mg/L	10	SM 2540D	1	1	01/08/13 07:39	01/08/13 16:38	1
Nitrate+Nitrite (N)	mg/L	7.5	EPA 300.0	0.08	0.02		01/09/13 01:32	1
Microbiology								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	01/07/13 16:26	01/08/13 15:29	1
Sample Description		**TA6-PZ-1 DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214080-02**						
Date/Time Collected		**01/07/13 13:40**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	0.17	SM 4550SF	0.04	0.01	01/08/13 15:31	01/21/13 10:23	1
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/17/13 09:11	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01		01/21/13 10:09	1
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	01/09/13 09:16	01/14/13 16:37	1
Chemical Oxygen Demand	mg/L	13 I	EPA 410.4	25	10	01/09/13 09:15	01/09/13 11:35	1
Chloride	mg/L	3.6	EPA 300.0	0.20	0.050		01/09/13 09:45	1
Nitrate (as N)	mg/L	7.6	EPA 300.0	0.04	0.01		01/09/13 09:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 09:45	1
Phosphorous - Total as P	mg/L	0.025 I	SM 4500P-E	0.040	0.010	01/15/13 13:18	01/16/13 12:51	1

Florida Certification Number: E84129
NELAP Accredited

Francis I. Daniels, Laboratory Director
Leslie C. Boardman, Q.A. Manager

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 21, 2013
Work Order: 1214080

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA6-PZ-1 DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214080-02**						
Date/Time Collected		**01/07/13 13:40**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
Sulfate	mg/L	30	EPA 300.0	0.60	0.20		01/09/13 09:45	1
Sulfide	mg/L	0.18 I	SM 4500SF	0.40	0.10		01/08/13 15:31	1
Total Alkalinity	mg/L	4.2 I	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	0.86	EPA 351.2	0.20	0.05	01/12/13 08:43	01/15/13 13:23	1
Total Suspended Solids	mg/L	4	SM 2540D	1	1	01/08/13 07:39	01/08/13 16:38	1
Nitrate+Nitrite (N)	mg/L	7.6	EPA 300.0	0.08	0.02		01/09/13 09:45	1
Microbiology								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	01/07/13 16:26	01/08/13 15:29	1

Sample Description		**TA6-LY-C**						
Matrix		**Groundwater**						
SAL Sample Number		**1214080-03**						
Date/Time Collected		**01/07/13 13:50**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		6.6						
Temperature		18.2 °C						
Conductivity		692 umhos						
Dissolved Oxygen		8.0 mg/L						
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	0.15	SM 4550SF	0.04	0.01	01/11/13 15:10	01/11/13 15:39	1
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/17/13 09:13	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01		01/21/13 10:09	1
Chemical Oxygen Demand	mg/L	40	EPA 410.4	25	10	01/09/13 09:15	01/09/13 11:35	1
Chloride	mg/L	70	EPA 300.0	0.20	0.050		01/19/13 10:51	1
Nitrate (as N)	mg/L	8.2	EPA 300.0	0.04	0.01		01/09/13 09:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 09:45	1
Phosphorous - Total as P	mg/L	1.8	SM 4500P-E	0.40	0.10	01/15/13 13:18	01/16/13 13:28	10
Sulfate	mg/L	57	EPA 300.0	0.60	0.20		01/09/13 09:45	1
Sulfide	mg/L	0.22 I	SM 4500SF	0.40	0.10		01/08/13 15:31	1
Total Alkalinity	mg/L	110	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	01/12/13 08:43	01/15/13 13:24	1
Total Suspended Solids	mg/L	1 U	SM 2540D	1	1	01/08/13 07:39	01/08/13 16:38	1
Nitrate+Nitrite (N)	mg/L	8.2	EPA 300.0	0.08	0.02		01/09/13 09:45	1

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Tampa, FL 33619

January 21, 2013
Work Order: 1214080

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA6-LY-C**						
Matrix		**Groundwater**						
SAL Sample Number		**1214080-03**						
Date/Time Collected		**01/07/13 13:50**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		6.6						
Temperature		18.2 °C						
Conductivity		692 umhos						
Dissolved Oxygen		8.0 mg/L						
Microbiology								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	01/07/13 16:26	01/08/13 15:29	1
Sample Description		**TA6-LINER-SP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214080-04**						
Date/Time Collected		**01/07/13 14:05**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		6.4						
Temperature		18.5 °C						
Conductivity		904 umhos						
Dissolved Oxygen		2.9 mg/L						
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	0.14	SM 4550SF	0.04	0.01	01/11/13 15:10	01/11/13 15:39	1
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/17/13 09:15	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01		01/21/13 10:09	1
Chemical Oxygen Demand	mg/L	140	EPA 410.4	25	10	01/09/13 09:15	01/09/13 11:35	1
Chloride	mg/L	82	EPA 300.0	0.20	0.050		01/19/13 10:51	1
Nitrate (as N)	mg/L	0.12	EPA 300.0	0.04	0.01		01/09/13 09:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 09:45	1
Phosphorous - Total as P	mg/L	1.3	SM 4500P-E	0.040	0.010	01/15/13 13:18	01/16/13 12:52	1
Sulfate	mg/L	50	EPA 300.0	0.60	0.20		01/09/13 09:45	1
Sulfide	mg/L	0.18 I	SM 4500SF	0.40	0.10		01/08/13 15:31	1
Total Alkalinity	mg/L	280	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	0.92	EPA 351.2	0.20	0.05	01/12/13 08:43	01/15/13 13:26	1
Total Suspended Solids	mg/L	1 U	SM 2540D	1	1	01/08/13 07:39	01/08/13 16:38	1
Nitrate+Nitrite (N)	mg/L	0.12	EPA 300.0	0.08	0.02		01/09/13 09:45	1
Microbiology								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	01/07/13 16:26	01/08/13 15:29	1

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Tampa, FL 33619

January 21, 2013
Work Order: 1214080

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA6-Denite Tank**						
Matrix		**Groundwater**						
SAL Sample Number		**1214080-05**						
Date/Time Collected		**01/07/13 13:57**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		6.69						
Temperature		18.6 °C						
Conductivity		684 umhos						
Dissolved Oxygen		0.44 mg/L						
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	5.8	SM 4550SF	0.04	0.01	01/11/13 15:10	01/11/13 15:39	1
Ammonia as N	mg/L	0.062	EPA 350.1	0.040	0.009		01/17/13 09:17	1
Ammonium as NH4	mg/L	0.08	EPA 350.1	0.05	0.01		01/21/13 10:09	1
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	01/09/13 09:16	01/14/13 16:37	1
Chemical Oxygen Demand	mg/L	150	EPA 410.4	25	10	01/09/13 09:15	01/09/13 11:35	1
Chloride	mg/L	76	EPA 300.0	0.20	0.050		01/19/13 10:51	1
Nitrate (as N)	mg/L	0.04	EPA 300.0	0.04	0.01		01/09/13 09:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 09:45	1
Phosphorous - Total as P	mg/L	1.8	SM 4500P-E	0.040	0.010	01/15/13 13:18	01/16/13 12:53	1
Sulfate	mg/L	89	EPA 300.0	0.60	0.20		01/09/13 09:45	1
Sulfide	mg/L	8.7	SM 4500SF	0.40	0.10		01/08/13 15:31	1
Total Alkalinity	mg/L	300	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	01/12/13 08:43	01/15/13 13:27	1
Total Suspended Solids	mg/L	5	SM 2540D	1	1	01/08/13 07:39	01/08/13 16:38	1
Nitrate+Nitrite (N)	mg/L	0.04 I	EPA 300.0	0.08	0.02		01/09/13 09:45	1
Microbiology								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	01/07/13 16:26	01/08/13 15:29	1

Hazen and Sawyer
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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30801 - TSS prep										
Blank (BA30801-BLK1)					Prepared & Analyzed: 01/08/13					
Total Suspended Solids	1 U	1	1	mg/L						
LCS (BA30801-BS1)					Prepared & Analyzed: 01/08/13					
Total Suspended Solids	48.5	1	1	mg/L	50		97	85-115		
Duplicate (BA30801-DUP1)		**Source: 1214080-01**			Prepared & Analyzed: 01/08/13					
Total Suspended Solids	9.00	1	1	mg/L		9.50			5	30
Duplicate (BA30801-DUP2)		**Source: 1214080-02**			Prepared & Analyzed: 01/08/13					
Total Suspended Solids	5.50	1	1	mg/L		4.50			20	30
Batch BA30807 - COD prep										
Blank (BA30807-BLK1)					Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BA30807-BS1)					Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	51	25	10	mg/L	50		102	90-110		
Matrix Spike (BA30807-MS1)		**Source: 1214076-14**			Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	58	25	10	mg/L	50	13	90	85-115		
Matrix Spike Dup (BA30807-MSD1)		**Source: 1214076-14**			Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	60	25	10	mg/L	50	13	94	85-115	3	32
Batch BA30812 - Ion Chromatography 300.0 Prep										
Blank (BA30812-BLK1)					Prepared & Analyzed: 01/09/13					
Sulfate	0.20 U	0.60	0.20	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30812 - Ion Chromatography 300.0 Prep										
LCS (BA30812-BS1)					Prepared & Analyzed: 01/09/13					
Nitrite (as N)	1.34	0.04	0.01	mg/L	1.4		96	85-115		
Sulfate	8.89	0.60	0.20	mg/L	9.0		99	85-115		
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115		
Chloride	2.88	0.20	0.050	mg/L	3.0		96	85-115		
LCS Dup (BA30812-BSD1)					Prepared & Analyzed: 01/09/13					
Chloride	2.81	0.20	0.050	mg/L	3.0		94	85-115	2	200
Nitrate (as N)	1.69	0.04	0.01	mg/L	1.7		99	85-115	0.6	200
Sulfate	8.89	0.60	0.20	mg/L	9.0		99	85-115	0	200
Nitrite (as N)	1.34	0.04	0.01	mg/L	1.4		96	85-115	0	200
Matrix Spike (BA30812-MS1)		**Source: 1214076-18**			Prepared & Analyzed: 01/09/13					
Nitrite (as N)	1.49	0.04	0.01	mg/L	1.4	0.0412	103	85-115		
Sulfate	55.8	0.60	0.20	mg/L	9.0	47.5	92	85-115		
Nitrate (as N)	9.59	0.04	0.01	mg/L	1.7	7.88	101	85-115		
Chloride	10.5	0.20	0.050	mg/L	3.0	7.38	104	80-120		
Matrix Spike (BA30812-MS2)		**Source: 1214080-01**			Prepared & Analyzed: 01/09/13					
Sulfate	39.4	0.60	0.20	mg/L	9.0	30.2	102	85-115		
Nitrite (as N)	1.44	0.04	0.01	mg/L	1.4	ND	103	85-115		
Nitrate (as N)	9.30	0.04	0.01	mg/L	1.7	7.53	104	85-115		
Chloride	6.72	0.20	0.050	mg/L	3.0	3.48	108	80-120		
Batch BA30813 - Ion Chromatography 300.0 Prep										
Blank (BA30813-BLK1)					Prepared & Analyzed: 01/09/13					
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30813 - Ion Chromatography 300.0 Prep										
LCS (BA30813-BS1)					Prepared & Analyzed: 01/09/13					
Sulfate	8.98	0.60	0.20	mg/L	9.0		100	85-115		
Nitrate (as N)	1.70	0.04	0.01	mg/L	1.7		100	85-115		
Nitrite (as N)	1.35	0.04	0.01	mg/L	1.4		96	85-115		
Chloride	2.82	0.20	0.050	mg/L	3.0		94	85-115		
LCS Dup (BA30813-BSD1)					Prepared & Analyzed: 01/09/13					
Chloride	2.82	0.20	0.050	mg/L	3.0		94	85-115	0	200
Nitrite (as N)	1.35	0.04	0.01	mg/L	1.4		96	85-115	0	200
Sulfate	8.93	0.60	0.20	mg/L	9.0		99	85-115	0.6	200
Nitrate (as N)	1.69	0.04	0.01	mg/L	1.7		99	85-115	0.6	200
Matrix Spike (BA30813-MS1)		**Source: 1300018-01**			Prepared & Analyzed: 01/09/13					
Nitrite (as N)	1.50	0.04	0.01	mg/L	1.4	ND	107	85-115		
Nitrate (as N)	1.83	0.04	0.01	mg/L	1.7	0.0316	106	85-115		
Chloride	38.0 +O	0.20	0.050	mg/L	3.0	36.8	40	80-120		
Sulfate	86.1	0.60	0.20	mg/L	9.0	77.4	97	85-115		
Matrix Spike (BA30813-MS2)		**Source: 1300193-02**			Prepared & Analyzed: 01/09/13					
Nitrate (as N)	1.74 J5	0.04	0.01	mg/L	1.7	ND	102	85-115		
Chloride	3.71	0.20	0.050	mg/L	3.0	0.153	119	80-120		
Nitrite (as N)	1.51	0.04	0.01	mg/L	1.4	ND	108	85-115		
Sulfate	9.26	0.60	0.20	mg/L	9.0	0.209	101	85-115		
Batch BA30816 - alkalinity										
Blank (BA30816-BLK1)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30816 - alkalinity										
Blank (BA30816-BLK2)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BA30816-BS1)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
LCS (BA30816-BS2)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
Matrix Spike (BA30816-MS1)		**Source: 1214076-16**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	190	8.0	2.0	mg/L	120	62	100	80-120		
Matrix Spike (BA30816-MS2)		**Source: 1214081-03**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	21	83	80-120		
Matrix Spike Dup (BA30816-MSD1)		**Source: 1214076-16**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	190	8.0	2.0	mg/L	120	62	100	80-120	0	26
Matrix Spike Dup (BA30816-MSD2)		**Source: 1214081-03**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	21	83	80-120	0	26
Batch BA30836 - Sulfide prep										
Blank (BA30836-BLK1)					Prepared & Analyzed: 01/08/13					
Sulfide	0.10 U	0.40	0.10	mg/L						
LCS (BA30836-BS1)					Prepared & Analyzed: 01/08/13					
Sulfide	4.95	0.40	0.10	mg/L	5.0		99	85-115		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30836 - Sulfide prep										
Matrix Spike (BA30836-MS1)		**Source: 1214081-06**			Prepared & Analyzed: 01/08/13					
Sulfide	4.95	0.40	0.10	mg/L	5.0	0.180	95	85-115		
Matrix Spike Dup (BA30836-MSD1)		**Source: 1214081-06**			Prepared & Analyzed: 01/08/13					
Sulfide	4.95	0.40	0.10	mg/L	5.0	0.180	95	85-115	0	14
Batch BA30910 - BOD										
Blank (BA30910-BLK1)					Prepared: 01/09/13 Analyzed: 01/14/13					
Carbonaceous BOD	2 U	2	2	mg/L						
Blank (BA30910-BLK2)					Prepared: 01/09/13 Analyzed: 01/14/13					
Carbonaceous BOD	2 U	2	2	mg/L						
LCS (BA30910-BS1)					Prepared: 01/09/13 Analyzed: 01/14/13					
Carbonaceous BOD	201	2	2	mg/L	200		100	85-115		
LCS (BA30910-BS2)					Prepared: 01/09/13 Analyzed: 01/14/13					
Carbonaceous BOD	190	2	2	mg/L	200		95	85-115		
LCS Dup (BA30910-BSD1)					Prepared: 01/09/13 Analyzed: 01/14/13					
Carbonaceous BOD	207	2	2	mg/L	200		104	85-115	3	200
LCS Dup (BA30910-BSD2)					Prepared: 01/09/13 Analyzed: 01/14/13					
Carbonaceous BOD	191	2	2	mg/L	200		95	85-115	0.5	200
Duplicate (BA30910-DUP1)		**Source: 1300194-01**			Prepared: 01/09/13 Analyzed: 01/14/13					
Carbonaceous BOD	130	2	2	mg/L		130			0.4	25

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30910 - BOD										
Duplicate (BA30910-DUP2)		**Source: 1300285-01**			Prepared: 01/09/13	Analyzed: 01/14/13				
Carbonaceous BOD	230	2	2	mg/L		220			3	25
Batch BA31206 - Digestion for TKN by EPA 351.2										
Blank (BA31206-BLK1)					Prepared: 01/12/13	Analyzed: 01/15/13				
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BA31206-BS1)					Prepared: 01/12/13	Analyzed: 01/15/13				
Total Kjeldahl Nitrogen	2.54	0.20	0.05	mg/L	2.5		100	90-110		
Matrix Spike (BA31206-MS1)		**Source: 1214076-27**			Prepared: 01/12/13	Analyzed: 01/15/13				
Total Kjeldahl Nitrogen	2.72	0.20	0.05	mg/L	2.5	0.321	95	90-110		
Matrix Spike Dup (BA31206-MSD1)		**Source: 1214076-27**			Prepared: 01/12/13	Analyzed: 01/15/13				
Total Kjeldahl Nitrogen	es with 91%	0.20	0.05	mg/L	2.5	0.321	90	90-110	4	20
Batch BA31524 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BA31524-BLK1)					Prepared: 01/15/13	Analyzed: 01/16/13				
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BA31524-BS1)					Prepared: 01/15/13	Analyzed: 01/16/13				
Phosphorous - Total as P	0.799	0.040	0.010	mg/L	0.80		100	90-110		
Matrix Spike (BA31524-MS1)		**Source: 1300022-01**			Prepared: 01/15/13	Analyzed: 01/16/13				
Phosphorous - Total as P	1.53	0.040	0.010	mg/L	1.0	0.517	101	90-110		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31524 - Digestion for TP by EPA 365.2/SM4500PE										
Matrix Spike (BA31524-MS2)		**Source: 1300022-02**			Prepared: 01/15/13 Analyzed: 01/16/13					
Phosphorous - Total as P	3.23	0.080	0.020	mg/L	1.0	2.26	96	90-110		
Matrix Spike Dup (BA31524-MSD1)		**Source: 1300022-01**			Prepared: 01/15/13 Analyzed: 01/16/13					
Phosphorous - Total as P	1.52	0.040	0.010	mg/L	1.0	0.517	101	90-110	0.2	25
Matrix Spike Dup (BA31524-MSD2)		**Source: 1300022-02**			Prepared: 01/15/13 Analyzed: 01/16/13					
Phosphorous - Total as P	3.23	0.080	0.020	mg/L	1.0	2.26	97	90-110	0.07	25
Batch BA31641 - Ammonia by SEAL										
Blank (BA31641-BLK1)					Prepared & Analyzed: 01/17/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BA31641-BS1)					Prepared & Analyzed: 01/17/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50		99	90-110		
Matrix Spike (BA31641-MS1)		**Source: 1300022-01**			Prepared & Analyzed: 01/17/13					
Ammonia as N	0.54	0.040	0.009	mg/L	0.50	0.014	106	90-110		
Matrix Spike (BA31641-MS2)		**Source: 1300022-07**			Prepared & Analyzed: 01/17/13					
Ammonia as N	7.7	0.40	0.095	mg/L	5.0	3.0	94	90-110		
Matrix Spike Dup (BA31641-MSD1)		**Source: 1300022-01**			Prepared & Analyzed: 01/17/13					
Ammonia as N	0.56	0.040	0.009	mg/L	0.50	0.014	109	90-110	3	10
Matrix Spike Dup (BA31641-MSD2)		**Source: 1300022-07**			Prepared & Analyzed: 01/17/13					
Ammonia as N	8.0	0.40	0.095	mg/L	5.0	3.0	99	90-110	3	10

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31818 - Ion Chromatography 300.0 Prep										
Blank (BA31818-BLK1)					Prepared & Analyzed: 01/19/13					
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BA31818-BS1)					Prepared & Analyzed: 01/19/13					
Chloride	3.10	0.20	0.050	mg/L	3.0		103	85-115		
LCS Dup (BA31818-BSD1)					Prepared & Analyzed: 01/19/13					
Chloride	3.06	0.20	0.050	mg/L	3.0		102	85-115	1	200
Matrix Spike (BA31818-MS1)		**Source: 1300015-01**			Prepared & Analyzed: 01/19/13					
Chloride	286	0.20	0.050	mg/L	30	252	113	80-120		
Matrix Spike (BA31818-MS2)		**Source: 1300761-01**			Prepared & Analyzed: 01/19/13					
Chloride	11.5	0.20	0.050	mg/L	3.0	7.92	119	80-120		

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Microbiology - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30725 - FC-MF										
Blank (BA30725-BLK1)					Prepared: 01/07/13 Analyzed: 01/08/13					
Fecal Coliforms	1 U	1	1	CFU/100 ml						
Duplicate (BA30725-DUP1)		**Source: 1214080-01**			Prepared: 01/07/13 Analyzed: 01/08/13					
Fecal Coliforms	1 U	1	1	CFU/100 ml		ND				200

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* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below.

J5 Matrix spike of this sample was outside typical range. All other QC criteria were acceptable.
+O Matrix spike source sample was over the reccommended range for the method.

Questions regarding this report should be directed to :

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SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

1214080

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (TA6)

Samplers: (Signature)

Matrix Codes:
DW-Drinking Water WW-Wastewater
SW-SurfaceWater SL-Sludge SO-Soil
GW-Groundwater SA-Saline Water O-Other
R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, SO_4, Alkalinity, CBOD, TSS	1LP, NaOH, Zn Acetate H_2S	125mL P, $Na_2S_2O_3$ FC-MF	Field pH	Field Temperature	Field Conductivity	Field DO
01	TA6-PZ-1	1/7/13	1335	GW		X	1	1	1	2				
02	TA6-PZ-1 DUP	1/7/13	1340	GW		X	1	1	1	2				
03	TA6-LY-C	01/07/13	13:50	GW		X	1	1	1	2	6.6	18.2	692	8.0
04	TA6-LINER-SP	01/07/13	14:05	GW		X	1	1	1	2	6.4	18.5	904	2.9
05	TA6-Denite Tank	01/07/13	13:57	GW		X	1	1	1	2	6.69	18.6	684	0.44

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
J. Chambers	12-7-12 14:45	UPS	
Relinquished: UPS	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time: 1600 1/7/13	Received: K Mudmenk	Date/Time: 1/7/13 1600
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace? Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

1214080

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 21, 2013
Work Order: 1214081

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA5-PZ-1**						
Matrix		**Groundwater**						
SAL Sample Number		**1214081-01**						
Date/Time Collected		**01/08/13 12:25**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.64						
Temperature		26.2 °C						
Conductivity		338 umhos						
Dissolved Oxygen		0.69 mg/L						
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	0.01 U	SM 4550SF	0.04	0.01	01/11/13 15:10	01/11/13 15:39	1
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/17/13 09:19	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	01/09/13 09:16	01/14/13 16:37	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/10/13 08:20	01/10/13 11:11	1
Chloride	mg/L	14	EPA 300.0	0.20	0.050		01/10/13 10:49	1
Nitrate (as N)	mg/L	7.3	EPA 300.0	0.04	0.01		01/10/13 10:49	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/10/13 10:49	1
Phosphorous - Total as P	mg/L	0.055	SM 4500P-E	0.040	0.010	01/15/13 13:18	01/16/13 12:54	1
Sulfate	mg/L	88	EPA 300.0	0.60	0.20		01/10/13 10:49	1
Sulfide	mg/L	0.10 U	SM 4500SF	0.40	0.10		01/11/13 14:52	1
Total Alkalinity	mg/L	2.1 I	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	0.93	EPA 351.2	0.20	0.05	01/12/13 08:43	01/15/13 13:28	1
Total Suspended Solids	mg/L	2	SM 2540D	1	1	01/09/13 11:27	01/10/13 09:11	1
Nitrate+Nitrite (N)	mg/L	7.3	EPA 300.0	0.08	0.02		01/10/13 10:49	1
Microbiology								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	01/08/13 17:04	01/09/13 15:17	1

Sample Description		**TA5-PZ-1 DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214081-02**						
Date/Time Collected		**01/08/13 12:30**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.64						
Temperature		26.2 °C						
Conductivity		338 umhos						
Dissolved Oxygen		0.69 mg/L						
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	0.01 U	SM 4550SF	0.04	0.01	01/11/13 15:10	01/11/13 15:39	1

Florida Certification Number: E84129
NELAP Accredited

Francis I. Daniels, Laboratory Director
Leslie C. Boardman, Q.A. Manager

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

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Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA5-PZ-1 DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214081-02**						
Date/Time Collected		**01/08/13 12:30**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/08/13 16:35**						
Client Provided Field Data								
pH		4.64						
Temperature		26.2 °C						
Conductivity		338 umhos						
Dissolved Oxygen		0.69 mg/L						
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/17/13 09:21	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	01/09/13 09:16	01/14/13 16:37	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/10/13 08:20	01/10/13 11:11	1
Chloride	mg/L	14	EPA 300.0	0.20	0.050		01/10/13 10:49	1
Nitrate (as N)	mg/L	7.2	EPA 300.0	0.04	0.01		01/10/13 10:49	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/10/13 10:49	1
Phosphorous - Total as P	mg/L	0.026 I	SM 4500P-E	0.040	0.010	01/15/13 13:18	01/16/13 12:59	1
Sulfate	mg/L	88	EPA 300.0	0.60	0.20		01/10/13 10:49	1
Sulfide	mg/L	0.10 U	SM 4500SF	0.40	0.10		01/11/13 14:52	1
Total Alkalinity	mg/L	2.1 I	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	0.71	EPA 351.2	0.20	0.05	01/12/13 08:43	01/15/13 13:29	1
Total Suspended Solids	mg/L	8	SM 2540D	1	1	01/09/13 11:27	01/10/13 09:11	1
Nitrate+Nitrite (N)	mg/L	7.2	EPA 300.0	0.08	0.02		01/10/13 10:49	1
Microbiology								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	01/08/13 17:04	01/09/13 15:17	1

Sample Description		**TA5-LY-C**						
Matrix		**Groundwater**						
SAL Sample Number		**1214081-03**						
Date/Time Collected		**01/07/13 12:50**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		5.6						
Temperature		17.9 °C						
Conductivity		743 umhos						
Dissolved Oxygen		8.1 mg/L						
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	0.01 U	SM 4550SF	0.04	0.01	01/11/13 15:10	01/11/13 15:39	1
Ammonia as N	mg/L	0.019 I	EPA 350.1	0.040	0.009		01/17/13 10:32	1
Ammonium as NH4	mg/L	0.02 I	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1

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Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA5-LY-C**						
Matrix		**Groundwater**						
SAL Sample Number		**1214081-03**						
Date/Time Collected		**01/07/13 12:50**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		5.6						
Temperature		17.9 °C						
Conductivity		743 umhos						
Dissolved Oxygen		8.1 mg/L						
Chemical Oxygen Demand	mg/L	31	EPA 410.4	25	10	01/09/13 09:15	01/09/13 11:35	1
Chloride	mg/L	56	EPA 300.0	0.20	0.050		01/13/13 11:44	1
Nitrate (as N)	mg/L	37	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 09:45	1
Phosphorous - Total as P	mg/L	6.4	SM 4500P-E	0.40	0.10	01/15/13 13:18	01/16/13 13:32	10
Sulfate	mg/L	55	EPA 300.0	0.60	0.20		01/09/13 09:45	1
Sulfide	mg/L	0.10 U	SM 4500SF	0.40	0.10		01/08/13 15:31	1
Total Alkalinity	mg/L	21	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	01/12/13 08:43	01/15/13 13:31	1
Total Suspended Solids	mg/L	1 U	SM 2540D	1	1	01/08/13 07:39	01/08/13 16:38	1
Nitrate+Nitrite (N)	mg/L	37	EPA 300.0	0.08	0.02		01/09/13 09:45	1
Microbiology								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	01/07/13 16:41	01/08/13 15:29	1

Sample Description		**TA5-LY-C**						
Matrix		**Groundwater**						
SAL Sample Number		**1214081-03RE1**						
Date/Time Collected		**01/07/13 12:50**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		5.6						
Temperature		17.9 °C						
Conductivity		743 umhos						
Dissolved Oxygen		8.1 mg/L						
Inorganics								
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/08/13 16:45	1
Nitrate+Nitrite (N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/08/13 16:45	1

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Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA5-LINER-SP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214081-04**						
Date/Time Collected		**01/07/13 13:05**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		6.3						
Temperature		17.6 °C						
Conductivity		900 umhos						
Dissolved Oxygen		4.1 mg/L						
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	0.50	SM 4550SF	0.04	0.01	01/11/13 15:10	01/11/13 15:39	1
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/17/13 09:33	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Chemical Oxygen Demand	mg/L	83	EPA 410.4	25	10	01/09/13 09:15	01/09/13 11:35	1
Chloride	mg/L	66	EPA 300.0	0.20	0.050		01/19/13 10:51	1
Nitrate (as N)	mg/L	13	EPA 300.0	0.04	0.01		01/09/13 09:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 09:45	1
Phosphorous - Total as P	mg/L	8.1	SM 4500P-E	0.40	0.10	01/15/13 13:18	01/16/13 13:33	10
Sulfate	mg/L	45	EPA 300.0	0.60	0.20		01/09/13 09:45	1
Sulfide	mg/L	0.60	SM 4500SF	0.40	0.10		01/08/13 15:31	1
Total Alkalinity	mg/L	260	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	2.8	EPA 351.2	0.20	0.05	01/12/13 08:43	01/15/13 13:32	1
Total Suspended Solids	mg/L	8	SM 2540D	1	1	01/08/13 07:39	01/08/13 16:38	1
Nitrate+Nitrite (N)	mg/L	13	EPA 300.0	0.08	0.02		01/09/13 09:45	1
Microbiology								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	01/07/13 16:41	01/08/13 15:29	1

Sample Description	**TA5-Denite Tank**	
Matrix	**Groundwater**	
SAL Sample Number	**1214081-05**	
Date/Time Collected	**01/07/13 13:15**	
Collected by	**Sean Schmidt**	
Date/Time Received	**01/07/13 16:00**	
Client Provided Field Data		
pH	7.0	
Temperature	18.4 °C	
Conductivity	1331 umhos	
Dissolved Oxygen	1.8 mg/L	
Inorganics		
Hydrogen Sulfide (Unionized)	mg/L	0.09
Ammonia as N	mg/L	0.35

Method	PQL	MDL	Prepared	Analyzed	Dilution
SM 4550SF	0.04	0.01	01/11/13 15:10	01/11/13 15:39	1
EPA 350.1	0.040	0.009		01/17/13 09:35	1

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Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA5-Denite Tank**						
Matrix		**Groundwater**						
SAL Sample Number		**1214081-05**						
Date/Time Collected		**01/07/13 13:15**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		7.0						
Temperature		18.4 °C						
Conductivity		1331 umhos						
Dissolved Oxygen		1.8 mg/L						
Ammonium as NH4	mg/L	0.46	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	01/09/13 09:16	01/14/13 16:37	1
Chemical Oxygen Demand	mg/L	88	EPA 410.4	25	10	01/09/13 09:15	01/09/13 11:35	1
Chloride	mg/L	87	EPA 300.0	0.20	0.050		01/19/13 10:51	1
Nitrate (as N)	mg/L	0.05	EPA 300.0	0.04	0.01		01/09/13 09:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 09:45	1
Phosphorous - Total as P	mg/L	5.9	SM 4500P-E	0.40	0.10	01/15/13 13:18	01/16/13 13:34	10
Sulfate	mg/L	280	EPA 300.0	0.60	0.20		01/19/13 10:51	1
Sulfide	mg/L	0.18 I	SM 4500SF	0.40	0.10		01/08/13 15:31	1
Total Alkalinity	mg/L	250	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	01/12/13 08:40	01/15/13 12:29	1
Total Suspended Solids	mg/L	6	SM 2540D	1	1	01/08/13 07:39	01/08/13 16:38	1
Nitrate+Nitrite (N)	mg/L	0.05 I	EPA 300.0	0.08	0.02		01/09/13 09:45	1
Microbiology								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	01/07/13 16:41	01/08/13 15:29	1

Sample Description		**TA5-Denite Tank DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214081-06**						
Date/Time Collected		**01/07/13 13:20**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		7.0						
Temperature		18.4 °C						
Conductivity		1331 umhos						
Dissolved Oxygen		1.8 mg/L						
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	0.09	SM 4550SF	0.04	0.01	01/11/13 15:10	01/11/13 15:39	1
Ammonia as N	mg/L	0.34	EPA 350.1	0.040	0.009		01/17/13 09:37	1
Ammonium as NH4	mg/L	0.43	EPA 350.1	0.05	0.01	01/17/13 15:11	01/17/13 15:14	1
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	01/09/13 09:16	01/14/13 16:37	1

SOUTHERN ANALYTICAL LABORATORIES, INC.
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Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**TA5-Denite Tank DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1214081-06**						
Date/Time Collected		**01/07/13 13:20**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/07/13 16:00**						
Client Provided Field Data								
pH		7.0						
Temperature		18.4 °C						
Conductivity		1331 umhos						
Dissolved Oxygen		1.8 mg/L						
Chemical Oxygen Demand	mg/L	120	EPA 410.4	25	10	01/09/13 09:15	01/09/13 11:35	1
Chloride	mg/L	81	EPA 300.0	0.20	0.050		01/19/13 10:51	1
Nitrate (as N)	mg/L	0.05	EPA 300.0	0.04	0.01		01/09/13 09:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/09/13 09:45	1
Phosphorous - Total as P	mg/L	5.9	SM 4500P-E	0.40	0.10	01/15/13 13:18	01/16/13 13:35	10
Sulfate	mg/L	260	EPA 300.0	0.60	0.20		01/19/13 10:51	1
Sulfide	mg/L	0.18 I	SM 4500SF	0.40	0.10		01/08/13 15:31	1
Total Alkalinity	mg/L	250	SM 2320B	8.0	2.0		01/08/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	01/12/13 08:40	01/15/13 12:31	1
Total Suspended Solids	mg/L	2	SM 2540D	1	1	01/08/13 07:39	01/08/13 16:38	1
Nitrate+Nitrite (N)	mg/L	0.05 I	EPA 300.0	0.08	0.02		01/09/13 09:45	1
Microbiology								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	01/07/13 16:41	01/08/13 15:29	1

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30801 - TSS prep										
Blank (BA30801-BLK1)					Prepared & Analyzed: 01/08/13					
Total Suspended Solids	1 U	1	1	mg/L						
LCS (BA30801-BS1)					Prepared & Analyzed: 01/08/13					
Total Suspended Solids	48.5	1	1	mg/L	50		97	85-115		
Duplicate (BA30801-DUP1)		**Source: 1214080-01**			Prepared & Analyzed: 01/08/13					
Total Suspended Solids	9.00	1	1	mg/L		9.50			5	30
Duplicate (BA30801-DUP2)		**Source: 1214080-02**			Prepared & Analyzed: 01/08/13					
Total Suspended Solids	5.50	1	1	mg/L		4.50			20	30
Batch BA30807 - COD prep										
Blank (BA30807-BLK1)					Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BA30807-BS1)					Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	51	25	10	mg/L	50		102	90-110		
Matrix Spike (BA30807-MS1)		**Source: 1214076-14**			Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	58	25	10	mg/L	50	13	90	85-115		
Matrix Spike Dup (BA30807-MSD1)		**Source: 1214076-14**			Prepared & Analyzed: 01/09/13					
Chemical Oxygen Demand	60	25	10	mg/L	50	13	94	85-115	3	32
Batch BA30813 - Ion Chromatography 300.0 Prep										
Blank (BA30813-BLK1)					Prepared & Analyzed: 01/09/13					
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30813 - Ion Chromatography 300.0 Prep										
LCS (BA30813-BS1)					Prepared & Analyzed: 01/09/13					
Sulfate	8.98	0.60	0.20	mg/L	9.0		100	85-115		
Nitrite (as N)	1.35	0.04	0.01	mg/L	1.4		96	85-115		
Nitrate (as N)	1.70	0.04	0.01	mg/L	1.7		100	85-115		
LCS Dup (BA30813-BSD1)					Prepared & Analyzed: 01/09/13					
Sulfate	8.93	0.60	0.20	mg/L	9.0		99	85-115	0.6	200
Nitrate (as N)	1.69	0.04	0.01	mg/L	1.7		99	85-115	0.6	200
Nitrite (as N)	1.35	0.04	0.01	mg/L	1.4		96	85-115	0	200
Matrix Spike (BA30813-MS1)		**Source: 1300018-01**			Prepared & Analyzed: 01/09/13					
Sulfate	86.1	0.60	0.20	mg/L	9.0	77.4	97	85-115		
Nitrate (as N)	1.83	0.04	0.01	mg/L	1.7	0.0316	106	85-115		
Nitrite (as N)	1.50	0.04	0.01	mg/L	1.4	ND	107	85-115		
Matrix Spike (BA30813-MS2)		**Source: 1300193-02**			Prepared & Analyzed: 01/09/13					
Nitrite (as N)	1.51	0.04	0.01	mg/L	1.4	ND	108	85-115		
Nitrate (as N)	1.74 J5	0.04	0.01	mg/L	1.7	ND	102	85-115		
Sulfate	9.26	0.60	0.20	mg/L	9.0	0.209	101	85-115		
Batch BA30816 - alkalinity										
Blank (BA30816-BLK1)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BA30816-BLK2)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30816 - alkalinity										
LCS (BA30816-BS1)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
LCS (BA30816-BS2)					Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
Matrix Spike (BA30816-MS1)		**Source: 1214076-16**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	190	8.0	2.0	mg/L	120	62	100	80-120		
Matrix Spike (BA30816-MS2)		**Source: 1214081-03**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	21	83	80-120		
Matrix Spike Dup (BA30816-MSD1)		**Source: 1214076-16**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	190	8.0	2.0	mg/L	120	62	100	80-120	0	26
Matrix Spike Dup (BA30816-MSD2)		**Source: 1214081-03**			Prepared & Analyzed: 01/08/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	21	83	80-120	0	26
Batch BA30836 - Sulfide prep										
Blank (BA30836-BLK1)					Prepared & Analyzed: 01/08/13					
Sulfide	0.10 U	0.40	0.10	mg/L						
LCS (BA30836-BS1)					Prepared & Analyzed: 01/08/13					
Sulfide	4.95	0.40	0.10	mg/L	5.0		99	85-115		
Matrix Spike (BA30836-MS1)		**Source: 1214081-06**			Prepared & Analyzed: 01/08/13					
Sulfide	4.95	0.40	0.10	mg/L	5.0	0.180	95	85-115		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30836 - Sulfide prep										
Matrix Spike Dup (BA30836-MSD1)		**Source: 1214081-06**			Prepared & Analyzed: 01/08/13					
Sulfide	4.95	0.40	0.10	mg/L	5.0	0.180	95	85-115	0	14
Batch BA30910 - BOD										
Blank (BA30910-BLK1)					Prepared: 01/09/13 Analyzed: 01/14/13					
Carbonaceous BOD	2 U	2	2	mg/L						
Blank (BA30910-BLK2)					Prepared: 01/09/13 Analyzed: 01/14/13					
Carbonaceous BOD	2 U	2	2	mg/L						
LCS (BA30910-BS1)					Prepared: 01/09/13 Analyzed: 01/14/13					
Carbonaceous BOD	201	2	2	mg/L	200		100	85-115		
LCS (BA30910-BS2)					Prepared: 01/09/13 Analyzed: 01/14/13					
Carbonaceous BOD	190	2	2	mg/L	200		95	85-115		
LCS Dup (BA30910-BSD1)					Prepared: 01/09/13 Analyzed: 01/14/13					
Carbonaceous BOD	207	2	2	mg/L	200		104	85-115	3	200
LCS Dup (BA30910-BSD2)					Prepared: 01/09/13 Analyzed: 01/14/13					
Carbonaceous BOD	191	2	2	mg/L	200		95	85-115	0.5	200
Duplicate (BA30910-DUP1)		**Source: 1300194-01**			Prepared: 01/09/13 Analyzed: 01/14/13					
Carbonaceous BOD	130	2	2	mg/L		130			0.4	25
Duplicate (BA30910-DUP2)		**Source: 1300285-01**			Prepared: 01/09/13 Analyzed: 01/14/13					
Carbonaceous BOD	230	2	2	mg/L		220			3	25

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30920 - Ion Chromatography 300.0 Prep										
Blank (BA30920-BLK1)					Prepared & Analyzed: 01/10/13					
Chloride	0.050 U	0.20	0.050	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BA30920-BS1)					Prepared & Analyzed: 01/10/13					
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115		
Chloride	3.12	0.20	0.050	mg/L	3.0		104	85-115		
Nitrite (as N)	1.41	0.04	0.01	mg/L	1.4		101	85-115		
Sulfate	8.95	0.60	0.20	mg/L	9.0		99	85-115		
LCS Dup (BA30920-BSD1)					Prepared & Analyzed: 01/10/13					
Sulfate	8.94	0.60	0.20	mg/L	9.0		99	85-115	0.1	200
Nitrate (as N)	1.69	0.04	0.01	mg/L	1.7		99	85-115	0.6	200
Chloride	3.22	0.20	0.050	mg/L	3.0		107	85-115	3	200
Nitrite (as N)	1.43	0.04	0.01	mg/L	1.4		102	85-115	1	200
Matrix Spike (BA30920-MS1)		**Source: 1300224-08**			Prepared & Analyzed: 01/10/13					
Sulfate	18.5	0.60	0.20	mg/L	9.0	9.19	103	85-115		
Nitrate (as N)	2.06	0.04	0.01	mg/L	1.7	0.350	101	85-115		
Chloride	47.3 +O	0.20	0.050	mg/L	3.0	47.4	NR	80-120		
Nitrite (as N)	1.31	0.04	0.01	mg/L	1.4	ND	94	85-115		
Matrix Spike (BA30920-MS2)		**Source: 1214081-02**			Prepared & Analyzed: 01/10/13					
Sulfate	95.1 +O	0.60	0.20	mg/L	9.0	88.1	78	85-115		
Chloride	16.8	0.20	0.050	mg/L	3.0	13.6	107	80-120		
Nitrate (as N)	8.98	0.04	0.01	mg/L	1.7	7.15	108	85-115		
Nitrite (as N)	1.53	0.04	0.01	mg/L	1.4	ND	109	85-115		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30924 - TSS prep										
Blank (BA30924-BLK1)					Prepared: 01/09/13 Analyzed: 01/10/13					
Total Suspended Solids	1 U	1	1	mg/L						
LCS (BA30924-BS1)					Prepared: 01/09/13 Analyzed: 01/10/13					
Total Suspended Solids	51.2	1	1	mg/L	50		102	85-115		
Duplicate (BA30924-DUP1)		**Source: 1214066-01**			Prepared: 01/09/13 Analyzed: 01/10/13					
Total Suspended Solids	26.0	1	1	mg/L		28.0			7	30
Duplicate (BA30924-DUP2)		**Source: 1214066-02**			Prepared: 01/09/13 Analyzed: 01/10/13					
Total Suspended Solids	14.0	1	1	mg/L		16.0			13	30
Batch BA31004 - COD prep										
Blank (BA31004-BLK1)					Prepared & Analyzed: 01/10/13					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BA31004-BS1)					Prepared & Analyzed: 01/10/13					
Chemical Oxygen Demand	51	25	10	mg/L	50		102	90-110		
Matrix Spike (BA31004-MS1)		**Source: 1214074-07**			Prepared & Analyzed: 01/10/13					
Chemical Oxygen Demand	49	25	10	mg/L	50	ND	98	85-115		
Matrix Spike Dup (BA31004-MSD1)		**Source: 1214074-07**			Prepared & Analyzed: 01/10/13					
Chemical Oxygen Demand	49	25	10	mg/L	50	ND	98	85-115	0	32
Batch BA31129 - Ion Chromatography 300.0 Prep										
Blank (BA31129-BLK1)					Prepared & Analyzed: 01/13/13					
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31129 - Ion Chromatography 300.0 Prep										
LCS (BA31129-BS1)					Prepared & Analyzed: 01/13/13					
Chloride	3.16	0.20	0.050	mg/L	3.0		105	85-115		
Nitrite (as N)	1.39	0.04	0.01	mg/L	1.4		99	85-115		
Nitrate (as N)	1.75	0.04	0.01	mg/L	1.7		103	85-115		
LCS Dup (BA31129-BSD1)					Prepared & Analyzed: 01/13/13					
Chloride	2.99	0.20	0.050	mg/L	3.0		100	85-115	6	200
Nitrate (as N)	1.78	0.04	0.01	mg/L	1.7		105	85-115	2	200
Nitrite (as N)	1.37	0.04	0.01	mg/L	1.4		98	85-115	1	200
Matrix Spike (BA31129-MS1)		**Source: 1214081-03**			Prepared & Analyzed: 01/13/13					
Nitrite (as N)	15.0	0.04	0.01	mg/L	14	ND	107	85-115		
Chloride	91.1	0.20	0.050	mg/L	30	56.1	117	80-120		
Nitrate (as N)	56.1	0.04	0.01	mg/L	17	37.0	112	85-115		
Matrix Spike (BA31129-MS2)		**Source: 1300466-01**			Prepared & Analyzed: 01/13/13					
Chloride	13.4	0.20	0.050	mg/L	3.0	9.90	117	80-120		
Nitrite (as N)	1.45	0.04	0.01	mg/L	1.4	ND	104	85-115		
Nitrate (as N)	5.60	0.04	0.01	mg/L	1.7	3.67	114	85-115		
Batch BA31133 - Sulfide prep										
Blank (BA31133-BLK1)					Prepared & Analyzed: 01/11/13					
Sulfide	0.10 U	0.40	0.10	mg/L						
LCS (BA31133-BS1)					Prepared & Analyzed: 01/11/13					
Sulfide	4.95	0.40	0.10	mg/L	5.0		99	85-115		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31133 - Sulfide prep										
Matrix Spike (BA31133-MS1)		**Source: 1214081-01**			Prepared & Analyzed: 01/11/13					
Sulfide	4.95	0.40	0.10	mg/L	5.0	ND	99	85-115		
Matrix Spike Dup (BA31133-MSD1)		**Source: 1214081-01**			Prepared & Analyzed: 01/11/13					
Sulfide	4.95	0.40	0.10	mg/L	5.0	ND	99	85-115	0	14
Batch BA31205 - Digestion for TKN by EPA 351.2										
Blank (BA31205-BLK1)					Prepared: 01/12/13 Analyzed: 01/15/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BA31205-BS1)					Prepared: 01/12/13 Analyzed: 01/15/13					
Total Kjeldahl Nitrogen	2.30	0.20	0.05	mg/L	2.5		91	90-110		
Matrix Spike (BA31205-MS1)		**Source: 1300415-07**			Prepared: 01/12/13 Analyzed: 01/15/13					
Total Kjeldahl Nitrogen	3.10	0.20	0.05	mg/L	2.5	0.597	99	90-110		
Matrix Spike (BA31205-MS2)		**Source: 1300447-07**			Prepared: 01/12/13 Analyzed: 01/15/13					
Total Kjeldahl Nitrogen	3.25	0.20	0.05	mg/L	2.5	0.581	105	90-110		
Matrix Spike Dup (BA31205-MSD1)		**Source: 1300415-07**			Prepared: 01/12/13 Analyzed: 01/15/13					
Total Kjeldahl Nitrogen	2.99	0.20	0.05	mg/L	2.5	0.597	95	90-110	4	20
Matrix Spike Dup (BA31205-MSD2)		**Source: 1300447-07**			Prepared: 01/12/13 Analyzed: 01/15/13					
Total Kjeldahl Nitrogen	3.14	0.20	0.05	mg/L	2.5	0.581	101	90-110	3	20
Batch BA31206 - Digestion for TKN by EPA 351.2										
Blank (BA31206-BLK1)					Prepared: 01/12/13 Analyzed: 01/15/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31206 - Digestion for TKN by EPA 351.2										
LCS (BA31206-BS1)					Prepared: 01/12/13 Analyzed: 01/15/13					
Total Kjeldahl Nitrogen	2.54	0.20	0.05	mg/L	2.5		100	90-110		
Matrix Spike (BA31206-MS1)		**Source: 1214076-27**			Prepared: 01/12/13 Analyzed: 01/15/13					
Total Kjeldahl Nitrogen	2.72	0.20	0.05	mg/L	2.5	0.321	95	90-110		
Matrix Spike Dup (BA31206-MSD1)		**Source: 1214076-27**			Prepared: 01/12/13 Analyzed: 01/15/13					
Total Kjeldahl Nitrogen	es with 91%	0.20	0.05	mg/L	2.5	0.321	90	90-110	4	20
Batch BA31524 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BA31524-BLK1)					Prepared: 01/15/13 Analyzed: 01/16/13					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BA31524-BS1)					Prepared: 01/15/13 Analyzed: 01/16/13					
Phosphorous - Total as P	0.799	0.040	0.010	mg/L	0.80		100	90-110		
Matrix Spike (BA31524-MS1)		**Source: 1300022-01**			Prepared: 01/15/13 Analyzed: 01/16/13					
Phosphorous - Total as P	1.53	0.040	0.010	mg/L	1.0	0.517	101	90-110		
Matrix Spike (BA31524-MS2)		**Source: 1300022-02**			Prepared: 01/15/13 Analyzed: 01/16/13					
Phosphorous - Total as P	3.23	0.080	0.020	mg/L	1.0	2.26	96	90-110		
Matrix Spike Dup (BA31524-MSD1)		**Source: 1300022-01**			Prepared: 01/15/13 Analyzed: 01/16/13					
Phosphorous - Total as P	1.52	0.040	0.010	mg/L	1.0	0.517	101	90-110	0.2	25
Matrix Spike Dup (BA31524-MSD2)		**Source: 1300022-02**			Prepared: 01/15/13 Analyzed: 01/16/13					
Phosphorous - Total as P	3.23	0.080	0.020	mg/L	1.0	2.26	97	90-110	0.07	25

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31641 - Ammonia by SEAL										
Blank (BA31641-BLK1)					Prepared & Analyzed: 01/17/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BA31641-BS1)					Prepared & Analyzed: 01/17/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50		99	90-110		
Matrix Spike (BA31641-MS1)		**Source: 1300022-01**			Prepared & Analyzed: 01/17/13					
Ammonia as N	0.54	0.040	0.009	mg/L	0.50	0.014	106	90-110		
Matrix Spike (BA31641-MS2)		**Source: 1300022-07**			Prepared & Analyzed: 01/17/13					
Ammonia as N	7.7	0.40	0.095	mg/L	5.0	3.0	94	90-110		
Matrix Spike Dup (BA31641-MSD1)		**Source: 1300022-01**			Prepared & Analyzed: 01/17/13					
Ammonia as N	0.56	0.040	0.009	mg/L	0.50	0.014	109	90-110	3	10
Matrix Spike Dup (BA31641-MSD2)		**Source: 1300022-07**			Prepared & Analyzed: 01/17/13					
Ammonia as N	8.0	0.40	0.095	mg/L	5.0	3.0	99	90-110	3	10
Batch BA31735 - alkalinity										
Blank (BA31735-BLK1)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BA31735-BLK2)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BA31735-BS1)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31735 - alkalinity										
LCS (BA31735-BS2)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
Matrix Spike (BA31735-MS1)		**Source: 1214078-06**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	3.2	97	80-120		
Matrix Spike (BA31735-MS2)		**Source: 1214542-27**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	160	8.0	2.0	mg/L	120	31	100	80-120		
Matrix Spike Dup (BA31735-MSD1)		**Source: 1214078-06**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	3.2	97	80-120	0	26
Matrix Spike Dup (BA31735-MSD2)		**Source: 1214542-27**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	160	8.0	2.0	mg/L	120	31	100	80-120	0	26
Batch BA31818 - Ion Chromatography 300.0 Prep										
Blank (BA31818-BLK1)					Prepared & Analyzed: 01/19/13					
Sulfate	0.20 U	0.60	0.20	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BA31818-BS1)					Prepared & Analyzed: 01/19/13					
Chloride	3.10	0.20	0.050	mg/L	3.0		103	85-115		
Sulfate	8.86	0.60	0.20	mg/L	9.0		98	85-115		
LCS Dup (BA31818-BSD1)					Prepared & Analyzed: 01/19/13					
Sulfate	8.87	0.60	0.20	mg/L	9.0		99	85-115	0.1	200
Chloride	3.06	0.20	0.050	mg/L	3.0		102	85-115	1	200

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31818 - Ion Chromatography 300.0 Prep										
Matrix Spike (BA31818-MS1)		**Source: 1300015-01**			Prepared & Analyzed: 01/19/13					
Sulfate	212	0.60	0.20	mg/L	90	116	107	85-115		
Chloride	286	0.20	0.050	mg/L	30	252	113	80-120		
Matrix Spike (BA31818-MS2)		**Source: 1300761-01**			Prepared & Analyzed: 01/19/13					
Chloride	11.5	0.20	0.050	mg/L	3.0	7.92	119	80-120		
Sulfate	9.36	0.60	0.20	mg/L	9.0	0.362	100	85-115		

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Microbiology - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA30726 - FC-MF										
Blank (BA30726-BLK1)					Prepared: 01/07/13	Analyzed: 01/08/13				
Fecal Coliforms	1 U	1	1	CFU/100 ml						
Duplicate (BA30726-DUP1)		**Source: 1214081-05**			Prepared: 01/07/13	Analyzed: 01/08/13				
Fecal Coliforms	1 U	1	1	CFU/100 ml		ND				200
Batch BA30903 - FC-MF										
Blank (BA30903-BLK1)					Prepared: 01/08/13	Analyzed: 01/09/13				
Fecal Coliforms	1 U	1	1	CFU/100 ml						
Duplicate (BA30903-DUP1)		**Source: 1214081-01**			Prepared: 01/08/13	Analyzed: 01/09/13				
Fecal Coliforms	1 U	1	1	CFU/100 ml		ND				200

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* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below.

J5 Matrix spike of this sample was outside typical range. All other QC criteria were acceptable.
+O Matrix spike source sample was over the reccommended range for the method.

Questions regarding this report should be directed to :

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1214081

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (TA5)

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, SO_4, Alkalinity, CBOD, TSS	1LP, NaOH, Zn Acetate H_2S	125mL P, $Na_2S_2O_3$ FC-MF								Field pH	Field Temperature	Field Conductivity	Field DO
01	TA5-PZ-1	~~1/9/13~~ 1/8/13	~~12:35~~	GW		X	1	1	1	2								4.88	21.1	123	3.84
02	TA5-PZ-1 Dup	~~"~~	~~12:40~~	GW		X	1	1	1	2								4.88	21.1	123	3.84
03	TA5-LY-C	01/07/13	12:50	GW		X	1	1	1	2								5.6	17.9	743	6.1
04	TA5-LINER-SP	01/07/13	13:05	GW		X	1	1	1	2								6.3	17.6	900	4.1
05	TA5-Denite Tank	01/07/13	13:15	GW		X	1	1	1	2								7.0	18.4	1331	1.8
06	TA5-Denite Tank DUP	01/07/13	13:20	GW		X	1	1	1	2								7.0	18.4	1331	1.8

Relinquished:	Date/Time:	Received:	Date/Time:
J. Chambers	12-7-12 15:00	UPS	
UPS			
	1600 1/7/13		1600 1/7/13

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace? Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

1214081

1214081

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (TA5)

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NOx, Cl, SO_4, Alkalinity, CBOD, TSS	1LP, NaOH, Zn Acetate H_2S	125mL P, $Na_2S_2O_3$ FC-MF								Field pH	Field Temperature	Field Conductivity	Field DO
01	TA5-PZ-1	01/08/13	12:25	GW		X	1	1	1	2								4.64	26.2	338	0.69
02	TA5-PZ-1 Dup	01/08/13	12:30	GW		X	1	1	1	2								4.64	26.2	338	0.69
03	TA5-LY-C			GW		X	1	1	1	2											
04	TA5-LINER-SP			GW		X	1	1	1	2											
05	TA5-Denite Tank			GW		X	1	1	1	2											
06	TA5-Denite Tank DUP			GW		X	1	1	1	2											

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
J. Chamberlin	1/8/13 15:00	UPS	
Relinquished: UPS	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time: 1635 1/8/13	Received: K Nordmark	Date/Time: 1/8/13 1635
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace? Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks:

Chain of Custody.xls
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Chain of Custody

1214081

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

January 24, 2013
Work Order: 1214084

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**FB-Tap**						
Matrix		**Groundwater**						
SAL Sample Number		**1214084-01**						
Date/Time Collected		**01/10/13 07:45**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		7.01						
Temperature		19.8 °C						
Conductivity		449 umhos						
Dissolved Oxygen		6.55 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/23/13 10:36	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/23/13 14:11	01/23/13 14:12	1
Chloride	mg/L	21	EPA 300.0	0.20	0.050		01/11/13 18:06	1
Nitrate (as N)	mg/L	0.06	EPA 300.0	0.04	0.01		01/11/13 18:06	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/11/13 18:06	1
Total Alkalinity	mg/L	130	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	0.15 I	EPA 351.2	0.20	0.05	01/19/13 09:09	01/23/13 10:17	1
Nitrate+Nitrite (N)	mg/L	0.06 I	EPA 300.0	0.08	0.02		01/11/13 18:06	1

Sample Description		**FB-DI**						
Matrix		**Groundwater**						
SAL Sample Number		**1214084-02**						
Date/Time Collected		**01/10/13 07:50**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		7.51						
Temperature		20.2 °C						
Conductivity		208 umhos						
Dissolved Oxygen		9.17 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/23/13 10:38	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/23/13 14:11	01/23/13 14:12	1
Chloride	mg/L	0.050 U	EPA 300.0	0.20	0.050		01/11/13 18:06	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/11/13 18:06	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/11/13 18:06	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	0.05 U	EPA 351.2	0.20	0.05	01/19/13 09:09	01/23/13 12:19	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		01/11/13 18:06	1

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Tampa, FL 33619

January 24, 2013
Work Order: 1214084

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**EB**						
Matrix		**Groundwater**						
SAL Sample Number		**1214084-03**						
Date/Time Collected		**01/10/13 07:55**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		7.51						
Temperature		20.2 °C						
Conductivity		208 umhos						
Dissolved Oxygen		9.17 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		01/23/13 10:48	1
Ammonium as NH4	mg/L	0.01 U	EPA 350.1	0.05	0.01	01/23/13 14:11	01/23/13 14:12	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	01/11/13 11:40	01/11/13 14:20	1
Chloride	mg/L	0.050 U	EPA 300.0	0.20	0.050		01/11/13 18:06	1
Fluoride	mg/L	0.010 U	EPA 300.0	0.040	0.010		01/11/13 18:06	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/11/13 18:06	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/11/13 18:06	1
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		01/11/13 18:06	1
Sulfate	mg/L	0.20 U	EPA 300.0	0.60	0.20		01/11/13 18:06	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	01/17/13 14:00	01/17/13 16:04	1
Total Kjeldahl Nitrogen	mg/L	0.05 U	EPA 351.2	0.20	0.05	01/19/13 09:09	01/23/13 10:21	1
Total Organic Carbon	mg/L	0.50 U	SM 5310B	1.0	0.50		01/11/13 10:01	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		01/11/13 18:06	1
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	0.50 U	SM 5310B	1.0	0.50		01/11/13 10:01	1
Metals								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	01/11/13 09:55	01/11/13 12:59	1
Calcium	mg/L	0.042 U	EPA 200.7	0.50	0.042	01/11/13 09:55	01/11/13 12:59	1
Iron	mg/L	0.020 U	EPA 200.7	0.10	0.020	01/11/13 09:55	01/11/13 12:59	1
Magnesium	mg/L	0.020 U	EPA 200.7	0.50	0.020	01/11/13 09:55	01/11/13 12:59	1
Manganese	mg/L	0.0010 U	EPA 200.7	0.010	0.0010	01/11/13 09:55	01/11/13 12:59	1
Potassium	mg/L	0.010 U	EPA 200.7	0.050	0.010	01/11/13 09:55	01/14/13 12:12	1
Sodium	mg/L	0.13 U	EPA 200.7	0.50	0.13	01/11/13 09:55	01/11/13 12:59	1

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31116 - TOC prep										
Blank (BA31116-BLK1)					Prepared & Analyzed: 01/11/13					
Total Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BA31116-BS1)					Prepared & Analyzed: 01/11/13					
Total Organic Carbon	10.1	1.0	0.50	mg/L	10		101	90-110		
Matrix Spike (BA31116-MS1)		**Source: 1300407-02**			Prepared & Analyzed: 01/11/13					
Total Organic Carbon	12.3	1.0	0.50	mg/L	10	2.10	102	85-115		
Matrix Spike Dup (BA31116-MSD1)		**Source: 1300407-02**			Prepared & Analyzed: 01/11/13					
Total Organic Carbon	12.6	1.0	0.50	mg/L	10	2.10	105	85-115	3	10
Batch BA31128 - Ion Chromatography 300.0 Prep										
Blank (BA31128-BLK1)					Prepared & Analyzed: 01/12/13					
Fluoride	0.010 U	0.040	0.010	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BA31128-BS1)					Prepared & Analyzed: 01/12/13					
Fluoride	0.960	0.040	0.010	mg/L	0.90		107	85-115		
Sulfate	9.00	0.60	0.20	mg/L	9.0		100	85-115		
Orthophosphate as P	0.879	0.040	0.010	mg/L	0.90		98	85-115		
Nitrite (as N)	1.45	0.04	0.01	mg/L	1.4		104	85-115		
Chloride	3.15	0.20	0.050	mg/L	3.0		105	85-115		
Nitrate (as N)	1.72	0.04	0.01	mg/L	1.7		101	85-115		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31128 - Ion Chromatography 300.0 Prep										
LCS Dup (BA31128-BSD1)					Prepared & Analyzed: 01/12/13					
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115	2	200
Sulfate	8.87	0.60	0.20	mg/L	9.0		99	85-115	1	200
Orthophosphate as P	0.872	0.040	0.010	mg/L	0.90		97	85-115	0.8	200
Fluoride	0.891	0.040	0.010	mg/L	0.90		99	85-115	7	200
Chloride	2.87	0.20	0.050	mg/L	3.0		96	85-115	9	200
Nitrite (as N)	1.33	0.04	0.01	mg/L	1.4		95	85-115	9	200
Matrix Spike (BA31128-MS1)		**Source: 1300427-04**			Prepared & Analyzed: 01/12/13					
Orthophosphate as P	0.865	0.040	0.010	mg/L	0.90	ND	96	85-115		
Fluoride	0.947	0.040	0.010	mg/L	0.90	0.0850	96	85-115		
Chloride	5.22	0.20	0.050	mg/L	3.0	1.99	108	80-120		
Nitrite (as N)	1.40	0.04	0.01	mg/L	1.4	ND	100	85-115		
Nitrate (as N)	5.66	0.04	0.01	mg/L	1.7	3.80	109	85-115		
Sulfate	29.2	0.60	0.20	mg/L	9.0	19.6	107	85-115		
Matrix Spike (BA31128-MS2)		**Source: 1214074-02**			Prepared & Analyzed: 01/12/13					
Orthophosphate as P	9.72	0.040	0.010	mg/L	9.0		108	85-115		
Fluoride	9.71	0.040	0.010	mg/L	9.0		108	85-115		
Nitrate (as N)	92.4	0.04	0.01	mg/L	17	73.8	109	85-115		
Nitrite (as N)	14.4	0.04	0.01	mg/L	14	0.0368	103	85-115		
Sulfate	171	0.60	0.20	mg/L	90		190	85-115		
Chloride	132	0.20	0.050	mg/L	30	97.8	114	80-120		
Batch BA31131 - COD prep										
Blank (BA31131-BLK1)					Prepared & Analyzed: 01/11/13					
Chemical Oxygen Demand	10 U	25	10	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31131 - COD prep										
LCS (BA31131-BS1)					Prepared & Analyzed: 01/11/13					
Chemical Oxygen Demand	49	25	10	mg/L	50		98	90-110		
Matrix Spike (BA31131-MS1)		**Source: 1214067-07**			Prepared & Analyzed: 01/11/13					
Chemical Oxygen Demand	49	25	10	mg/L	50	ND	98	85-115		
Matrix Spike Dup (BA31131-MSD1)		**Source: 1214067-07**			Prepared & Analyzed: 01/11/13					
Chemical Oxygen Demand	51	25	10	mg/L	50	ND	102	85-115	4	32
Batch BA31735 - alkalinity										
Blank (BA31735-BLK1)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BA31735-BLK2)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BA31735-BS1)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
LCS (BA31735-BS2)					Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
Matrix Spike (BA31735-MS1)		**Source: 1214078-06**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	3.2	97	80-120		
Matrix Spike (BA31735-MS2)		**Source: 1214542-27**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	160	8.0	2.0	mg/L	120	31	100	80-120		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31735 - alkalinity										
Matrix Spike Dup (BA31735-MSD1)		**Source: 1214078-06**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	120	8.0	2.0	mg/L	120	3.2	97	80-120	0	26
Matrix Spike Dup (BA31735-MSD2)		**Source: 1214542-27**			Prepared & Analyzed: 01/17/13					
Total Alkalinity	160	8.0	2.0	mg/L	120	31	100	80-120	0	26
Batch BA31903 - Digestion for TKN by EPA 351.2										
Blank (BA31903-BLK1)					Prepared: 01/19/13 Analyzed: 01/23/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BA31903-BS1)					Prepared: 01/19/13 Analyzed: 01/23/13					
Total Kjeldahl Nitrogen	2.56	0.20	0.05	mg/L	2.5		101	90-110		
Matrix Spike (BA31903-MS1)		**Source: 1300749-01**			Prepared: 01/19/13 Analyzed: 01/23/13					
Total Kjeldahl Nitrogen	3.30	0.20	0.05	mg/L	2.5	0.898	95	90-110		
Matrix Spike (BA31903-MS2)		**Source: 1300758-07**			Prepared: 01/19/13 Analyzed: 01/23/13					
Total Kjeldahl Nitrogen	3.31	0.20	0.05	mg/L	2.5	0.884	96	90-110		
Matrix Spike Dup (BA31903-MSD1)		**Source: 1300749-01**			Prepared: 01/19/13 Analyzed: 01/23/13					
Total Kjeldahl Nitrogen	3.61	0.20	0.05	mg/L	2.5	0.898	107	90-110	9	20
Matrix Spike Dup (BA31903-MSD2)		**Source: 1300758-07**			Prepared: 01/19/13 Analyzed: 01/23/13					
Total Kjeldahl Nitrogen	3.50	0.20	0.05	mg/L	2.5	0.884	103	90-110	5	20
Batch BA32303 - Ammonia by SEAL										
Blank (BA32303-BLK1)					Prepared & Analyzed: 01/23/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA32303 - Ammonia by SEAL										
LCS (BA32303-BS1)					Prepared & Analyzed: 01/23/13					
Ammonia as N	0.49	0.040	0.009	mg/L	0.50		98	90-110		
Matrix Spike (BA32303-MS1)		**Source: 1214067-23**			Prepared & Analyzed: 01/23/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	ND	101	90-110		
Matrix Spike (BA32303-MS2)		**Source: 1300701-07**			Prepared & Analyzed: 01/23/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.040	91	90-110		
Matrix Spike Dup (BA32303-MSD1)		**Source: 1214067-23**			Prepared & Analyzed: 01/23/13					
Ammonia as N	0.49	0.040	0.009	mg/L	0.50	ND	98	90-110	2	10
Matrix Spike Dup (BA32303-MSD2)		**Source: 1300701-07**			Prepared & Analyzed: 01/23/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.040	92	90-110	0.5	10

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Inorganic, Dissolved - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31117 - TOC prep										
Blank (BA31117-BLK1)					Prepared & Analyzed: 01/11/13					
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BA31117-BS1)					Prepared & Analyzed: 01/11/13					
Dissolved Organic Carbon	9.54	1.0	0.50	mg/L	10		95	90-110		
Matrix Spike (BA31117-MS1)		**Source: 1214067-10**			Prepared & Analyzed: 01/11/13					
Dissolved Organic Carbon	12.9	1.0	0.50	mg/L	10	3.51	94	85-125		
Matrix Spike Dup (BA31117-MSD1)		**Source: 1214067-10**			Prepared & Analyzed: 01/11/13					
Dissolved Organic Carbon	13.1	1.0	0.50	mg/L	10	3.51	96	85-125	1	25

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Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31114 - Metals Preparation for EPA Method 200.7										
Blank (BA31114-BLK1)					Prepared & Analyzed: 01/11/13					
Manganese	0.0010 U	0.010	0.0010	mg/L						
Sodium	0.13 U	0.50	0.13	mg/L						
Boron	0.050 U	0.10	0.050	mg/L						
Magnesium	0.020 U	0.50	0.020	mg/L						
Calcium	0.042 U	0.50	0.042	mg/L						
Iron	0.020 U	0.10	0.020	mg/L						
Potassium	0.010 U	0.050	0.010	mg/L						
LCS (BA31114-BS1)					Prepared & Analyzed: 01/11/13					
Potassium	19	0.050	0.010	mg/L	20		93	85-115		
Magnesium	20	0.50	0.020	mg/L	20		99	85-115		
Iron	8.2	0.10	0.020	mg/L	8.0		102	85-115		
Manganese	0.42	0.010	0.0010	mg/L	0.40		104	85-115		
Calcium	20	0.50	0.042	mg/L	20		101	85-115		
Boron	0.43	0.10	0.050	mg/L	0.40		107	85-115		
Sodium	20	0.50	0.13	mg/L	20		98	85-115		
Matrix Spike (BA31114-MS1)		**Source: 1300258-01**			Prepared & Analyzed: 01/11/13					
Potassium	19	0.050	0.010	mg/L	20	1.1	92	70-130		
Manganese	0.38	0.010	0.0010	mg/L	0.40	0.0031	94	70-130		
Calcium	92	0.50	0.042	mg/L	20	76	80	70-130		
Magnesium	24	0.50	0.020	mg/L	20	5.0	94	70-130		
Boron	0.38	0.10	0.050	mg/L	0.40	ND	96	70-130		
Iron	7.7	0.10	0.020	mg/L	8.0	ND	97	70-130		
Sodium	26	0.50	0.13	mg/L	20	7.0	94	70-130		
Matrix Spike (BA31114-MS2)		**Source: 1300365-01**			Prepared & Analyzed: 01/11/13					
Boron	0.40	0.10	0.050	mg/L	0.40	ND	100	70-130		
Iron	76	1.0	0.20	mg/L	8.0	0.021	950	70-130		
Calcium	270	5.0	0.42	mg/L	20	93	891	70-130		
Manganese	0.39	0.010	0.0010	mg/L	0.40	0.0018	97	70-130		
Sodium	36	0.50	0.13	mg/L	20	19	85	70-130		
Potassium	18	0.050	0.010	mg/L	20	1.8	82	70-130		
Magnesium	25	0.50	0.020	mg/L	20	7.6	88	70-130		

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Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31114 - Metals Preparation for EPA Method 200.7										
Matrix Spike Dup (BA31114-MSD1)		**Source: 1300258-01**			Prepared & Analyzed: 01/11/13					
Sodium	25	0.50	0.13	mg/L	20	7.0	91	70-130	2	30
Boron	0.39	0.10	0.050	mg/L	0.40	ND	98	70-130	2	30
Potassium	19	0.050	0.010	mg/L	20	1.1	89	70-130	3	30
Manganese	0.39	0.010	0.0010	mg/L	0.40	0.0031	96	70-130	2	30
Calcium	91	0.50	0.042	mg/L	20	76	78	70-130	0.4	30
Magnesium	23	0.50	0.020	mg/L	20	5.0	92	70-130	2	30
Iron	6.6	0.10	0.020	mg/L	8.0	ND	83	70-130	15	30
Matrix Spike Dup (BA31114-MSD2)		**Source: 1300365-01**			Prepared: 01/11/13 Analyzed: 01/14/13					
Iron	76	1.0	0.20	mg/L	8.0	0.021	955	70-130	0.5	30
Calcium	270	5.0	0.42	mg/L	20	93	907	70-130	1	30
Manganese	0.39	0.010	0.0010	mg/L	0.40	0.0018	98	70-130	0.7	30
Boron	0.41	0.10	0.050	mg/L	0.40	ND	102	70-130	2	30
Potassium	20	0.050	0.010	mg/L	20	1.8	89	70-130	7	30
Sodium	38	0.50	0.13	mg/L	20	19	92	70-130	4	30
Magnesium	26	0.50	0.020	mg/L	20	7.6	91	70-130	2	30

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Work Order: 1214084

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below.

Questions regarding this report should be directed to :

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1214084

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE #4 (FB & EB)

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NOx, Cl	250mL P, H_2SO_4 TKN, NH_4, COD	1LP, Cool NOx, Cl, Alkalinity	1LP, Cool NOx, Cl, Alkalinity, F, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na					Field pH	Field Temperature	Field Conductivity	Field DO
01	FB - Tap	1/10/13	0745	DW		X	1			1									7.01	19.8	448	6.55
02	FB - DI		0750	R		X	1			1									7.57	20.2	208	9.17
03	EB		0755	R		X			1		1	1	2	1					7.57	20.2	208	9.17

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
H Harwell	12-07-12 1550		
	1/10/13 1600	K Mudmand	1/10/13 1600

Seal intact? Y N (NA)

Samples intact upon arrival? (Y) N N/A

Received on ice? Temp_____ (Y) N N/A

Proper preservatives indicated? (Y) N N/A

Rec'd within holding time? (Y) N N/A

Volatiles rec'd w/out headspace? Y N (NA)

Proper containers used? (Y) N N/A

Instructions / Remarks:

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

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January 24, 2013
Work Order: 1300427

Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**PZ-54**						
Matrix		**Groundwater**						
SAL Sample Number		**1300427-01**						
Date/Time Collected		**01/10/13 14:08**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		5.09						
Temperature		24.5 °C						
Conductivity		143.5 umhos						
Dissolved Oxygen		4.60 mg/L						
Inorganics								
Ammonia as N	mg/L	0.012 I	EPA 350.1	0.040	0.009		01/23/13 10:50	1
Chloride	mg/L	2.9	EPA 300.0	0.20	0.050		01/12/13 11:06	1
Nitrate (as N)	mg/L	4.2	EPA 300.0	0.04	0.01		01/12/13 11:06	1
Nitrite (as N)	mg/L	0.05	EPA 300.0	0.04	0.01		01/12/13 11:06	1
Total Kjeldahl Nitrogen	mg/L	0.96	EPA 351.2	0.20	0.05	01/19/13 09:09	01/23/13 10:26	1
Nitrate+Nitrite (N)	mg/L	4.2	EPA 300.0	0.08	0.02		01/12/13 11:06	1

Sample Description		**PZ-55**						
Matrix		**Groundwater**						
SAL Sample Number		**1300427-02**						
Date/Time Collected		**01/10/13 13:50**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		5.50						
Temperature		23.9 °C						
Conductivity		257 umhos						
Dissolved Oxygen		2.89 mg/L						
Inorganics								
Ammonia as N	mg/L	0.017 I	EPA 350.1	0.040	0.009		01/23/13 10:52	1
Chloride	mg/L	7.7	EPA 300.0	0.20	0.050		01/12/13 11:06	1
Nitrate (as N)	mg/L	4.0	EPA 300.0	0.04	0.01		01/12/13 11:06	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/12/13 11:06	1
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	01/19/13 09:09	01/23/13 10:27	1
Nitrate+Nitrite (N)	mg/L	4.0	EPA 300.0	0.08	0.02		01/12/13 11:06	1

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January 24, 2013
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Laboratory Report

Project Name **S&GW Test Facility SE#4**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		**PZ-56**						
Matrix		**Groundwater**						
SAL Sample Number		**1300427-03**						
Date/Time Collected		**01/10/13 13:19**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		4.48						
Temperature		24.9 °C						
Conductivity		219.5 umhos						
Dissolved Oxygen		4.53 mg/L						
Inorganics								
Ammonia as N	mg/L	0.011 I	EPA 350.1	0.040	0.009		01/23/13 10:54	1
Chloride	mg/L	5.9	EPA 300.0	0.20	0.050		01/12/13 11:06	1
Nitrate (as N)	mg/L	11	EPA 300.0	0.04	0.01		01/12/13 11:06	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/12/13 11:06	1
Total Kjeldahl Nitrogen	mg/L	4.2	EPA 351.2	0.20	0.05	01/19/13 09:09	01/23/13 10:29	1
Nitrate+Nitrite (N)	mg/L	11	EPA 300.0	0.08	0.02		01/12/13 11:06	1

Sample Description		**PZ-57**						
Matrix		**Groundwater**						
SAL Sample Number		**1300427-04**						
Date/Time Collected		**01/10/13 14:05**						
Collected by		**Sean Schmidt**						
Date/Time Received		**01/10/13 16:00**						
Client Provided Field Data								
pH		5.13						
Temperature		23.9 °C						
Conductivity		108.3 umhos						
Dissolved Oxygen		2.62 mg/L						
Inorganics								
Ammonia as N	mg/L	0.12	EPA 350.1	0.040	0.009		01/23/13 10:56	1
Chloride	mg/L	2.0	EPA 300.0	0.20	0.050		01/12/13 11:06	1
Nitrate (as N)	mg/L	3.8	EPA 300.0	0.04	0.01		01/12/13 11:06	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		01/12/13 11:06	1
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	01/19/13 09:09	01/23/13 10:31	1
Nitrate+Nitrite (N)	mg/L	3.8	EPA 300.0	0.08	0.02		01/12/13 11:06	1

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January 24, 2013
Work Order: 1300427

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31128 - Ion Chromatography 300.0 Prep										
Blank (BA31128-BLK1)					Prepared & Analyzed: 01/12/13					
Chloride	0.050 U	0.20	0.050	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BA31128-BS1)					Prepared & Analyzed: 01/12/13					
Nitrite (as N)	1.45	0.04	0.01	mg/L	1.4		104	85-115		
Chloride	3.15	0.20	0.050	mg/L	3.0		105	85-115		
Nitrate (as N)	1.72	0.04	0.01	mg/L	1.7		101	85-115		
LCS Dup (BA31128-BSD1)					Prepared & Analyzed: 01/12/13					
Chloride	2.87	0.20	0.050	mg/L	3.0		96	85-115	9	200
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115	2	200
Nitrite (as N)	1.33	0.04	0.01	mg/L	1.4		95	85-115	9	200
Matrix Spike (BA31128-MS1)		**Source: 1300427-04**			Prepared & Analyzed: 01/12/13					
Nitrate (as N)	5.66	0.04	0.01	mg/L	1.7	3.80	109	85-115		
Chloride	5.22	0.20	0.050	mg/L	3.0	1.99	108	80-120		
Nitrite (as N)	1.40	0.04	0.01	mg/L	1.4	ND	100	85-115		
Matrix Spike (BA31128-MS2)		**Source: 1214074-02**			Prepared & Analyzed: 01/12/13					
Nitrate (as N)	92.4	0.04	0.01	mg/L	17	73.8	109	85-115		
Nitrite (as N)	14.4	0.04	0.01	mg/L	14	0.0368	103	85-115		
Chloride	132	0.20	0.050	mg/L	30	97.8	114	80-120		
Batch BA31903 - Digestion for TKN by EPA 351.2										
Blank (BA31903-BLK1)					Prepared: 01/19/13 Analyzed: 01/23/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						

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January 24, 2013
Work Order: 1300427

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA31903 - Digestion for TKN by EPA 351.2										
LCS (BA31903-BS1)					Prepared: 01/19/13 Analyzed: 01/23/13					
Total Kjeldahl Nitrogen	2.56	0.20	0.05	mg/L	2.5		101	90-110		
Matrix Spike (BA31903-MS1)		**Source: 1300749-01**			Prepared: 01/19/13 Analyzed: 01/23/13					
Total Kjeldahl Nitrogen	3.30	0.20	0.05	mg/L	2.5	0.898	95	90-110		
Matrix Spike (BA31903-MS2)		**Source: 1300758-07**			Prepared: 01/19/13 Analyzed: 01/23/13					
Total Kjeldahl Nitrogen	3.31	0.20	0.05	mg/L	2.5	0.884	96	90-110		
Matrix Spike Dup (BA31903-MSD1)		**Source: 1300749-01**			Prepared: 01/19/13 Analyzed: 01/23/13					
Total Kjeldahl Nitrogen	3.61	0.20	0.05	mg/L	2.5	0.898	107	90-110	9	20
Matrix Spike Dup (BA31903-MSD2)		**Source: 1300758-07**			Prepared: 01/19/13 Analyzed: 01/23/13					
Total Kjeldahl Nitrogen	3.50	0.20	0.05	mg/L	2.5	0.884	103	90-110	5	20
Batch BA32303 - Ammonia by SEAL										
Blank (BA32303-BLK1)					Prepared & Analyzed: 01/23/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BA32303-BS1)					Prepared & Analyzed: 01/23/13					
Ammonia as N	0.49	0.040	0.009	mg/L	0.50		98	90-110		
Matrix Spike (BA32303-MS1)		**Source: 1214067-23**			Prepared & Analyzed: 01/23/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	ND	101	90-110		
Matrix Spike (BA32303-MS2)		**Source: 1300701-07**			Prepared & Analyzed: 01/23/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.040	91	90-110		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BA32303 - Ammonia by SEAL										
Matrix Spike Dup (BA32303-MSD1)		**Source: 1214067-23**			Prepared & Analyzed: 01/23/13					
Ammonia as N	0.49	0.040	0.009	mg/L	0.50	ND	98	90-110	2	10
Matrix Spike Dup (BA32303-MSD2)		**Source: 1300701-07**			Prepared & Analyzed: 01/23/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.040	92	90-110	0.5	10

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A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below.

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Appendix F: Water Quality Analytical Results

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Table F.1
Water Quality Analytical Results
(January 4 through January 11, 2013)

Sample ID	Sample Date/Time	Temp	pH	Total Alkalinity	DO	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	TOC (mg/L)	DOC (mg/L)	Anions						Cations							Hydrogen Sulfide (Unionized)	Sulfide	TS	Sucralose (ug/L)
																					F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na				
Effluent Samples																																						
PNRS II STE-Tank 1	1/8/13 15:10	22.5	6.66	340	0.1	1122		28	130		65.06	65	9	56	0.06	56.06	15	32000				76	0.06	0.01													600	
STE Pump Tank	1/8/13 14:10	21.4	7.07	370	0.17	1094		16	46		57.14	57	6	51	0.14	51.14	14	74000			0.24	66	0.14	0.01	4.1	29	0.079	56	0.3	18	0.04	28	53			560	
STE Pump Tank DUP	1/8/13 14:15	21.4	7.07	370	0.17	1094		12	48		55.16	55	1	54	0.16	54.16	14	50000			0.27	67	0.16	0.01	4	29	0.081	56	0.27	17	0.041	27	54			560	
ATU Clarifier	1/8/13 13:40	20.8	7.5		0.81	897		4	13		27.7	22	0	22	5.7	27.7						63	5.1	0.58												510	
ATU Pump Tank	1/8/13 13:35	20.7	7.26	220	1.07	863		1	5		29	24	5	19	5	24	9.9	610				59	4.6	0.39		54										500	
ATU Pump Tank - DUP	1/8/13 13:40	20.7	7.26	230	1.07	863		1	5		28.2	23	5	18	5.2	23.2	11	730				59	5	0.26		48										500	
Soil moisture samples																																						
TA1-LY-24-C	1/7/13 10:50	17.8	6.12		7.61	884					57.6	3.6	3.567	0.033	54	54.033						70	54	0.01													
TA1-LY-12-S	1/7/13 11:00	17.5	6.83		8.21	953					52	2	1.987	0.013	50	50.013						65	50	0.01													
TA1-LY-12-S DUP	1/7/13 11:05	17.5	6.83	93	8.21	953				10	51.1	2.1	2.091	0.009	49	49.009	4.5				0.14	63	49	0.01	1.2	52											
TA1-LY-24-S	1/7/13 11:07	17.2	6.37	31	7.22	820				10	51.2	4.2	4.191	0.009	47	47.009	0.11					60	47	0.01													
TA1-LY-42-S	1/7/13 11:15	17.9	5.14	5.3	7.45	836				10	55.1	3.1	3.091	0.009	52	52.009	0.029					62	52	0.01													
TA2-LY-24-C	1/7/13 9:25	17.6	3.25		7.86	819					22.3	2.3	2.288	0.012	20	20.012						79	20	0.01													
TA2-LY-12-S	1/7/13 9:32	17.7	6.35		8.5	769					19.9	1.9	1.891	0.009	18	18.009						73	18	0.01													
TA2-LY-24-S	1/7/13 9:40	17.5	6.12	23	6.9	701				15	25.7	1.7	1.69	0.01	24	24.01	0.23					77	24	0.27													
TA2-LY-42-S	1/7/13 9:45	18.2	5.61	5.3	7.25	726				13	28.2	2.2	2.191	0.009	26	26.009	0.13				12	0.02	85	26	0.13	0.01	70										
TA3-LY-24-C	1/7/13 10:07	17.6	6.02		7.43	830					75.2	1.2	1.191	0.009	74	74.009						98	74	0.04													
TA3-LY-12-S	1/7/13 10:15	17.6	6.41	50	8.49	641				10	27.1	2.1	2.091	0.009	25	25.009	3.3					54	25	0.01													
TA3-LY-12-S DUP	1/7/13 10:20	17.6	6.41	52	8.49	641				10	27	2	1.991	0.009	25	25.009	3.7					55	25	0.01													
TA3-LY-24-S	1/7/13 10:25	17.6	6.18	21	8.24	744				10	43.2	3.2	3.191	0.009	40	40.009	0.13				9	0.1	61	40	0.01	0.3	52	0.15	35	0.027	12	0.001	7.4	77				
TA3-LY-42-S	1/7/13 10:35	18	6.09		6.87	895					55.4	4.4	4.391	0.009	51	51.009							80	51	0.01													
TA4-LY-24-C	1/7/13 8:30	18.5	6.18	31	7.17	679				10	22.2	2.2	2.189	0.011	20	20.011	0.17						74	20	0.01													
TA4-LY-12-S	1/7/13 8:40	18.1	6.79	93	8.64	726				10	21.2	2.2	2.191	0.009	19	19.009	4.7				6.5	0.29	61	19	0.01	2.4	58	0.14	47	0.02	16	0.001	23	52				
TA4-LY-24-S	1/7/13 8:55	18	6.37		7.83	700					30	3	2.991	0.009	27	27.009							75	27	0.01													
TA4-LY-42-S	1/7/13 9:00	18.3	6		6.9	719					28.4	1.4	1.387	0.013	27	27.013							77	27	0.01													
LY01-BKG-24																																						
LY02-BKG-42																																						
Groundwater Samples																																						
TA1-PZ-11-EF2	1/10/13 11:47	24.8	4.55		7.04	915					54.6	2.6	2.591	0.009	52	52.009						74	52	0.01													
TA1-PZ-11-J4	1/10/13 12:05	25.4	4.6	2	5.32	271				10	9.46	0.96	0.951	0.009	8.5	8.509	0.037					13	8.5	0.01													
TA1-PZ-11-K4	1/10/13 12:22	25.4	4.74	2	5.95	247				10	8.5	1.1	1.091	0.009	7.4	7.409	0.026					11	7.4	0.01													
TA1-PZ-11-L2	1/10/13 11:06	25.6	4.65	2	6.98	1000				26	60.2	1.2	1.191	0.009	59	59.009	0.036		3.4	3.4	0.06	87	59	0.01	0.01	59	0.11	62	0.02	15	0.009	18	61				
TA1-PZ-11-L2 DUP	1/10/13 11:11	25.6	4.63	2	6.98	1000				17	59.2	1.2	1.191	0.009	58	58.009	0.044		3.8	3.5	0.07	85	58	0.01	0.01	58	0.11	63	0.02	15	0.009	19	63				
TA1-PZ-11-L3	1/10/13 11:49	25.6	4.82	2.1	7.36	361				10	13.81	0.81	0.801	0.009	13	13.009	0.066					22	13	0.01													
TA1-PZ-11-L3 DUP	1/10/13 11:54	25.6	4.82	2.1	7.36	361				10	12.88	0.88	0.871	0.009	12	12.009	0.057					21	12	0.01													
TA1-PZ-11-L4	1/10/13 12:11	24.8	4.56	2.1	2.76	436				10	17.3	1.3	1.291	0.009	16	16.009	0.076					23	16	0.01													
TA1-PZ-11-L5	1/10/13 11:12	24.9	4.61	2.1	5.13	234				10	7.4	1.4	1.391	0.009	6	6.009	0.018					9.5	6	0.01													
TA1-PZ-09-N3	1/10/13 10:38	24.7	6.49		4.7	388					7	2.1	2.061	0.039	4.9	4.939						25	4.8	0.09													
TA1-PZ-09-N3 DUP	1/10/13 10:43	24.7	6.44		4.7	388					6.8	2.1	2.069	0.031	4.7	4.731						24	4.6	0.12													
TA1-PZ-16-N3	1/10/13 11:00	25.7	5.23		3.4	296					10.8	1	0.991	0.009	9.8	9.809						14	9.8	0.01													
TA1-PZ-09-O7	1/10/13 10:29	24.1	5.46	6.3	5.23	240				10	5.7	1.8	1.791	0.009	3.9	3.909	0.25					14	3.9	0.01													
TA1-PZ-16-O7	1/10/13 10:43	24.8	5.3	5.3	3.68	316				20	13.1	1.1	1.091	0.009	12	12.009	0.39					15	12	0.01													
TA1-PZ-09-M9	1/10/13 10:01	24.2	5.81		4.23	216.9					6.9	1.1	1.091	0.009	5.8	5.809						8.4	5.8	0.01													
TA1-PZ-16-M9	1/10/13 10:12	25	5.37		4.37	330					15.6	1.6	1.591	0.009	14	14.009						17	14	0.01													

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Table F.1 (continued)
Water Quality Analytical Results
(January 4 through January 11, 2013)

Sample ID	Sample Date/Time	Temp	pH	Total Alkalinity	DO	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	TOC (mg/L)	DOC (mg/L)	Anions						Cations							Hydrogen Sulfide (Unionized)	Sulfide	TS	Sucralose (ug/L)
																					F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na				
TA1-PZ-09-I7	1/10/13 9:31	23.7	5.7		3.16	238					8.7	1.5	1.468	0.032	7.2	7.232						8.5	7.2	0.01													
TA1-PZ-16-I7	1/10/13 9:40	25.2	5.37		3.66	323					15	1	0.991	0.009	14	14.009						16	14	0.01													
TA1-PZ-09-RS16	1/10/13 8:57	23	5.72		4.9	239					5.89	0.79	0.781	0.009	5.1	5.109						8	5.1	0.01													
TA1-PZ-16-RS16	1/10/13 9:07	24.1	5.45		4.93	313					11.2	1.2	1.191	0.009	10	10.009						13	10	0.01													
TA1-PZ-09-RS18	1/10/13 8:26	22.3	5.89		5.57	269					9.4	2.5	2.491	0.009	6.9	6.909						9.3	6.9	0.01													
TA1-PZ-16-RS18	1/10/13 8:36	23.6	5.64		4.33	311					10.39	0.89	0.881	0.009	9.5	9.509						12	9.5	0.01													
TA2-PZ-10-EF2	1/8/13 13:57	24.5	4.49		4.74	324					17.2	1.2	1.191	0.009	16	16.009						38	16	0.01													
TA2-PZ-10-H5	1/8/13 13:13	25.1	4.5	2	3.28	186				15	7.3	1.9	1.891	0.009	5.4	5.409	0.039					5.2	5.4	0.01													
TA2-PZ-10-J5	1/8/13 12:50	24.4	4.73	2	3.6	117				10	5.7	1.1	1.091	0.009	4.6	4.609	0.076					9.2	4.6	0.01													
TA2-PZ-10-J5 DUP	1/8/13 12:55	24.4	4.73	2	3.6	117				10	6.3	1.3	1.291	0.009	5	5.009	0.07					9.7	5	0.01													
TA2-PZ-10-K5	1/8/13 12:40	25	4.65	2	3.48	153				10	4.65	0.05	0.041	0.009	4.6	4.609	0.079					6.7	4.6	0.01													
TA2-PZ-10-L2	1/8/13 11:24	24.4	4.44	2	2.86	188				20	7.2	1.7	1.691	0.009	5.5	5.509	0.048					5.2	5.5	0.01													
TA2-PZ-10-L3	1/8/13 11:36	24.9	4.41	2	3.39	186				10	6.29	0.79	0.781	0.009	5.5	5.509	0.21					4.4	5.5	0.01													
TA2-PZ-10-L4	1/8/13 11:48	23.8	4.59	2	3.65	148				10	6.5	1.5	1.491	0.009	5	5.009	0.033					7.5	5	0.01													
TA2-PZ-10-L5	1/8/13 12:12	24.4	4.44	2	3.78	181				10	6.9	1.4	1.391	0.009	5.5	5.509	0.14					7.6	5.5	0.01													
TA2-PZ-10-L5 DUP	1/8/13 12:17	24.4	4.44	2	3.78	181				10	6.8	1.3	1.291	0.009	5.5	5.509	0.13					7.4	5.5	0.01													
TA2-PZ-10-L6	1/8/13 12:25	24.5	4.52	2	3.5	193				10	7	1.1	1.091	0.009	5.9	5.909	0.1					7.9	5.9	0.01													
TA2-PZ-09-M4	1/8/13 10:57	24.1	4.73	3.2	3.51	206				24	8.4	1.4	1.376	0.024	7	7.024	1.4					8	7	0.01													
TA2-PZ-16-M4	1/8/13 11:07	23.7	5.6		3.34	235					3.02	0.62	0.611	0.009	2.4	2.409						6	2.4	0.01													
TA2-PZ-09-N7	1/8/13 10:24	23.5	5.44	6.3	3.37	232				13	8.8	1.2	1.191	0.009	7.6	7.609	0.68					16	7.6	0.01													
TA2-PZ-09-N7 DUP	1/8/13 10:29	23.5	5.44	5.3	3.37	232				12		0.97	0.954	0.016			0.35					16															
TA2-PZ-16-N7	1/8/13 10:37	23.6	5.51		3.04	189					3.35	0.75	0.741	0.009	2.6	2.609						7.3	2.6	0.01													
TA2-PZ-09-I7	1/8/13 9:25	22.6	5		3.06	157					6.5	1	0.991	0.009	5.5	5.509						4.5	5.5	0.01													
TA2-PZ-16-I7	1/8/13 9:36	23.9	5.44		2.66	172					3.08	0.58	0.571	0.009	2.5	2.509						6.9	2.5	0.01													
TA2-PZ-09-L8	1/8/13 9:55	22.7	5.25		3.09	159					3.53	0.83	0.821	0.009	2.7	2.709						7.6	2.7	0.01													
TA2-PZ-16-L8	1/8/13 10:05	24.1	5.36		2.8	171					3.01	0.71	0.701	0.009	2.3	2.309						6.5	2.3	0.01													
TA2-PZ-09-TU19	1/8/13 8:58	21.8	4.44		3.16	131					6	1.5	1.491	0.009	4.5	4.509						3.1	4.5	0.01													
TA2-PZ-16-TU19	1/8/13 9:08	23.4	5.42		2.54	149					1.4	0.4	0.391	0.009	1	1.009						5.8	1	0.01													
TA2-PZ-09-TU21	1/8/13 8:28	21.7	4.44		2.53	142					6.4	1.3	1.291	0.009	5.1	5.109						3.1	5.1	0.01													
TA2-PZ-16-TU21	1/8/13 8:40	23.4	5.37		2.72	149					1.29	0.29	0.281	0.009	1	1.009						5.6	1	0.01													
TA3-PZ-11-EF2	1/9/13 13:15	24.2	4.79	2.1	3.42	333				10	23.1	3.1	2.1	1	20	21	0.039					18	20	0.01													
TA3-PZ-11-I2	1/9/13 13:02	24.6	4.61	2	4.94	529				10	39	2	1.39	0.61	37	37.61	0.022					40	37	0.01													
TA3-PZ-10-J5	1/9/13 12:47	25.3	4.34		3.6	301					19.2	2.2	1.89	0.31	17	17.31						13	17	0.01													
TA3-PZ-10-J5 DUP	1/9/13 12:52	25.3	4.34		3.6	301					20.1	2.1	1.8	0.3	18	18.3						13	18	0.01													
TA3-PZ-10-K5	1/9/13 12:31	24.7	4.4	2	3.96	309				10	18.8	1.8	1.38	0.42	17	17.42	0.052					14	17	0.01													
TA3-PZ-11-L2	1/9/13 11:29	24.6	4.64	2	4.02	420				10	33	2	1.66	0.34	31	31.34	0.04		2.2	2.2	0.08	36	31	0.01	0.039	51	0.051	33	0.02	11	0.074	8.6	24				
TA3-PZ-11-L3	1/9/13 11:47	24.9	4.49	2	3.58	365				10	27.1	1.1	0.34	0.76	26	26.76	0.13		1.9	1.9	0.19	19	26	0.01	0.054	100	0.05	30	0.028	9.2	0.086	9.3	16				
TA3-PZ-11-L4	1/9/13 12:08	24.5	4.45	2	3.47	373				10	28.94	0.94	0.01	0.93	28	28.93	0.031					28	28	0.01													
TA3-PZ-10-L5	1/9/13 12:20	24.5	4.51	2	3.02	146				10	15.3	1.3	0.95	0.35	14	14.35	0.077					10	14	0.01													
TA3-PZ-09-N3	1/9/13 10:57	24.5	6.87	3.2	2.15	410				20	14.9	1.9	1.09	0.81	13	13.81	0.046					14	13	0.01													
TA3-PZ-16-N3	1/9/13 11:08	24.6	5.65	6.3	3.04	301				10	18.4	1.4	1.391	0.009	17	17.009	0.062					16	17	0.01													
TA3-PZ-09-O7	1/9/13 10:20	23.7	5.05		1.79	249					9.9	1	0.922	0.078	8.9	8.978						12	8.8	0.07													
TA3-PZ-16-O7	1/9/12 10:39	24.6	5.34		1.9	275					16.5	1.5	1.491	0.009	15	15.009						2.6	15	0.01													

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Table F.1 (continued)
Water Quality Analytical Results
(January 4 through January 11, 2013)

Sample ID	Sample Date/Time	Temp	pH	Total Alkalinity	DO	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	TOC (mg/L)	DOC (mg/L)	Anions						Cations							Hydrogen Sulfide (Unionized)	Sulfide	TS	Sucralose (ug/L)
																					F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na				
TA3-PZ-09-I7	1/9/13 9:11	23.2	7.33		3.8	615					10.1	5.3	5.16	0.14	4.8	4.94						8.1	4.7	0.06														
TA3-PZ-16-I7	1/9/13 9:20	24.1	5.92		2.55	252					8.96	0.86	0.851	0.009	8.1	8.109						10	8.1	0.01														
TA3-PZ-09-M9	1/9/13 9:43	23.1	5.96		2.12	242					10.3	1.6	1.56	0.04	8.7	8.74						8.5	8.7	0.05														
TA3-PZ-16-M9	1/9/13 9:54	24.1	5.51		2.9	259					10.25	0.85	0.841	0.009	9.4	9.409						12	9.4	0.01														
TA3-PZ-09-ST14	1/9/13 8:40	22.6	4.49		1.95	159					4.9	1.5	1.491	0.009	3.4	3.409						5.6	3.3	0.01														
TA3-PZ-16-ST14	1/9/13 8:49	23.5	5.39		2.45	127					9.9	1	0.991	0.009	8.9	8.909						20	8.9	0.01														
TA3-PZ-09-ST16	1/9/13 8:10	22.4	5.39		2.25	185					5	1.1	1.091	0.009	3.9	3.909						5.5	3.9	0.01														
TA3-PZ-16-ST16	1/9/13 8:22	23.6	5.39		2.97	232					9.4	1.4	1.391	0.009	8	8.009						9	8	0.01														
TA4-PZ-11-EF2	1/7/13 13:15	21.4	4.32	2	3.23	138				10	6.19	0.89	0.858	0.032	5.3	5.332	0.2					6	5.3	0.01														
TA4-PZ-10-H5	1/7/13 10:50	21.4	4.37	2	2.16	126				10	6.07	0.87	0.861	0.009	5.2	5.209	0.14					2.4	5.2	0.01														
TA4-PZ-10-J5	1/7/13 11:02	21.5	4.41	2	3.58	112				10	5.6	0.9	0.883	0.017	4.7	4.717	0.17					2.5	4.7	0.01														
TA4-PZ-10-K5	1/7/13 11:13	21.2	4.38	2	2.95	133				10	8.3	1.8	1.785	0.015	6.5	6.515	0.14		3.6	2.8	0.13	3.8	6.5	0.01	0.01	38	0.05	15	0.033	3.3	0.034	3.7	2.6				
TA4-PZ-11-L2	1/7/13 12:22	21.5	4.85	2	3.12	109				10	6.3	1.7	1.68	0.02	4.6	4.62	0.038		3.4	2.6	0.11	2.6	4.6	0.01	0.01	35	0.05	14	0.02	2.5	0.065	2.9	2				
TA4-PZ-11-L3	1/7/13 12:09	21.3	4.47	2	3.26	130				10	7.6	2.2	2.191	0.009	5.4	5.409	0.07					3.8	5.4	0.01														
TA4-PZ-11-L4	1/7/13 11:55	21.7	4.35	2	3.69	138				10	6.28	0.88	0.844	0.036	5.4	5.436	0.086					5.3	5.4	0.01														
TA4-PZ-11-L5	1/7/13 11:42	21.4	4.31	2	2.89	155				13	8.4	1.6	1.578	0.022	6.8	6.822	0.32					4.1	6.8	0.01														
TA4-PZ-11-L6	1/7/13 11:30	21.2	4.34	2	3.04	142				13	8.2	1.2	1.175	0.025	7	7.025	0.2					3.7	7	0.01														
TA4-PZ-09-M4	1/7/13 12:45	21.7	6.88	62	2.71	280				20	8.9	2.1	2.072	0.028	6.8	6.828	0.32		5.8	5.3	0.01	9.8	6.5	0.23	0.01	49	0.061	32	0.025	4.6	0.06	4.6	22				
TA4-PZ-16-M4	1/7/13 13:00	23.2	5.42		2.35	155					2.72	0.82	0.811	0.009	1.9	1.909						6.3	1.9	0.01														
TA4-PZ-09-N7	1/7/13 9:35	21.1	5.53	9.5	1.38	194				63	10.4	2.5	2.38	0.12	7.9	8.02	6.4					7.4	7.9	0.04														
TA4-PZ-16-N7	1/7/13 9:46	23.2	5.26		1.07	162					2.87	0.77	0.744	0.026	2.1	2.126						6.9	2.1	0.01														
TA4-PZ-09-I7	1/7/13 10:25	21.4	5.36		2.48	123					7.3	1.9	1.891	0.009	5.4	5.409						3.2	5.4	0.01														
TA4-PZ-16-I7	1/7/13 10:35	23.2	5.26		1.24	162					1.51	0.31	0.301	0.009	1.2	1.209						5.7	1.2	0.01														
TA4-PZ-09-L8	1/7/13 10:02	21.2	6.22		1.78	189					8	2.5	2.466	0.034	5.5	5.534						3.9	5.4	0.13														
TA4-PZ-16-L8	1/7/13 10:10	22.8	5.33		1.76	162					2.4	1	0.991	0.009	1.4	1.409						5.8	1.4	0.01														
TA4-PZ-09-TU14	1/7/13 9:10	21.7	4.5		1.31	148					5.8	1.6	1.582	0.018	4.2	4.218						3.9	4.2	0.01														
TA4-PZ-16-TU14	1/7/13 9:22	22.8	5.25		1.16	173					1.39	0.73	0.721	0.009	0.66	0.669						4.3	0.66	0.01														
TA4-PZ-09-TU16	1/7/13 8:45	21.4	4.65		1.27	135					5.9	1.7	1.691	0.009	4.2	4.209						3.9	4.2	0.02														
TA4-PZ-16-TU16	1/7/13 8:55	22.9	5.26		1	184					0.99	0.32	0.311	0.009	0.67	0.679						4.4	0.67	0.01														
PZ01-BKG-09	1/9/13 13:33	24.6	4.8		4.83	90					0.58	0.45	0.387	0.063	0.13	0.193						6.3	0.13	0.01														
PZ04-BKG-09	1/9/13 8:15	21.8	4.96		1.96	52.3					0.62	0.35	0.341	0.009	0.27	0.279						0.92	0.27	0.01														
PZ05-BKG-09	1/9/13 12:15	23.6	5.09		2.59	205.3					19.8	1.8	1.791	0.009	18	18.009						4.8	18	0.01														
PZ24-BKG-26	1/9/13 9:15	25.1	5.24	3.2	3.34	308				10	14.8	1.8	1.791	0.009	13	13.009	0.022					18	13	0.01														
PZ24-BKG-26 DUP	1/9/13 9:20	25.1	5.24	3.2	3.34	308				10	14.6	1.6	1.591	0.009	13	13.009	0.027					18	13	0.01														
PZ29-BKG-09	1/8/13 8:47	22.8	4.92	2.1	0.83	215.7				10	5.31	0.71	0.701	0.009	4.6	4.609	0.043					6.7	4.6	0.01														
PZ30-BKG-16	1/8/13 9:21	24.2	5.47	6.3	1.36	294				17	12.1	1.1	1.091	0.009	11	11.009	0.075					15	11	0.01														
PZ31-BKG-26	1/9/13 9:50	25.5	5.06	4.2	4.06	350				10	18.8	1.8	1.734	0.066	17	17.066	0.033					23	17	0.01														
PZ31-BKG-26 DUP	1/9/13 9:55	25.5	5.06	4.2	4.06	350				10	19.7	1.7	1.628	0.072	18	18.072	0.028					23	18	0.01														
PZ32-BKG-09	1/8/13 9:50	22.7	4.63	2	1.28	154.8				10	1.53	0.33	0.321	0.009	1.2	1.209	0.033					3	1.2	0.01														
PZ33-BKG-16	1/8/13 10:15	24.8	5.16	3.2	1.41	409				10	24.3	1.3	1.291	0.009	23	23.009	0.06		1.3	1.3	0.01	22	23	0.01	0.01	35	0.05	37	0.02	11	0.43	10	7.7				
PZ34-BKG-26	1/9/13 10:35	25.4	5.27	6.3	2.56	330				10	10.6	1.4	1.319	0.081	9.2	9.281	0.57					23	9.2	0.01														
PZ35-BKG-09	1/9/13 11:04	24.1	6.57	100	5.61	400					1.83	0.73	0.682	0.048	1.1	1.148						7.2	1.1	0.03														

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Table F.1 (continued)
Water Quality Analytical Results
(January 4 through January 11, 2013)

Sample ID	Sample Date/Time	Temp	pH	Total Alkalinity	DO	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	TOC (mg/L)	DOC (mg/L)	Anions						Cations							Hydrogen Sulfide (Unionized)	Sulfide	TS	Sucralose (ug/L)
																					F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na				
PZ36-BKG-16	1/9/13 11:23	24.7	5.05	4.2	0.85	318					17.7	1.7	1.691	0.009	16	16.009						13	16	0.01														
PZ37-BKG-26	1/9/13 11:54	25.1	5.2	4.2	4.03	311				10	15.2	1.2	1.191	0.009	14	14.009	0.035					17	14	0.01														
PZ38-BKG-09	1/8/13 13:01	25	5.67	31	1.72	196.1					0.71	0.34	0.09	0.25	0.37	0.62						14	0.37	0.01														
PZ39-BKG-16	1/9/13 13:30	25	5.79	10	2.23	221					2.57	0.57	0.561	0.009	2	2.009						6.7	2	0.01														
PZ40-BKG-26	1/9/13 13:52	25.1	5.23	3.2	3.49	313					13.4	1.4	1.391	0.009	12	12.009						15	12	0.01														
PZ-41																																						
PZ-42																																						
PZ-43	1/10/13 13:38	24.7	4.84	2.1	5.51	158.5				10	8.3	1.3	1.291	0.009	7	7.009	0.028					3.9	7	0.01														
PZ-44	1/8/13 11:05	26.2	4.75	2	7.32	737				13	40.5	2.5	2.491	0.009	38	38.009	0.04					58	38	0.01														
PZ-45																																						
PZ-46																																						
PZ-47	1/10/13 12:48	25.5	4.65		5.97	451					20.1	1.1	1.091	0.009	19	19.009						28	19	0.01														
PZ-48	1/10/13 12:53	25.7	4.5		4.53	294					5.5	1.1	1.091	0.009	4.4	4.409						8.3	4.4	0.01														
PZ-49																																						
PZ-50																																						
PZ-51																																						
PZ-52																																						
PZ-53																																						
PZ-54	1/10/13 14:08	24.5	5.09		4.6	143.5					5.16	0.96	0.948	0.012	4.2	4.212						2.9	4.2	0.05														
PZ-55	1/10/13 13:50	23.9	5.5		2.89	257					5.5	1.5	1.483	0.017	4	4.017						7.7	4	0.01														
PZ-56	1/10/13 13:19	24.9	4.48		4.53	219.5					15.2	4.2	4.189	0.011	11	11.011						5.9	11	0.01														
PZ-57	1/10/13 14:05	23.9	5.13		2.62	108.3					4.9	1.1	0.98	0.12	3.8	3.92						2	3.8	0.01														
PNRS II Samples																																						
TA5-PZ-1	1/8/13 12:25	26.2	4.64	2.1	0.69	338		2	2	10	8.23	0.93	0.921	0.009	7.3	7.309	0.055	1				14	7.3	0.01		88								0.01	0.1		
TA5-PZ-1 DUP	1/8/13 12:30	26.2	4.64	2.1	0.69	338		8	2	10	7.91	0.71	0.701	0.009	7.2	7.209	0.026	1				14	7.2	0.01		88								0.01	0.1		
TA5-LY-C	1/7/13 12:50	17.9	5.6	21	8.1	743		1		31	38.4	1.4	1.381	0.019	37	37.019	6.4	1				56	37	0.01		55								0.01	0.1		
TA5-LINER-SP	1/7/13 13:05	17.6	6.3	260	4.1	900		8		83	15.8	2.8	2.791	0.009	13	13.009	8.1	1				66	13	0.01		45								0.5	0.6		
TA5-Denite Tank	1/7/13 13:15	18.4	7	250	1.8	1331		6	2	88	1.95	1.9	1.55	0.35	0.05	0.4	5.9	1				87	0.05	0.01		280								0.09	0.18		
TA5-Denite Tank DUP	1/7/13 13:20	18.4	7	250	1.8	1331		2	2	120	1.75	1.7	1.36	0.34	0.05	0.39	5.9	1				81	0.05	0.01		260								0.09	0.18		
TA6-PZ-1	1/7/13 13:35	24.8	4.98	4.2	3.28	141		10		11	8.6	1.1	1.091	0.009	7.5	7.509	0.02	1				3.5	7.5	0.01		30								0.17	0.18		
TA6-PZ-1 DUP	1/7/13 13:40	24.8	4.98	4.2	3.28	141		4	2	13	8.46	0.86	0.851	0.009	7.6	7.609	0.025	1				3.6	7.6	0.01		30								0.17	0.18		
TA6-LY-C	1/7/13 13:50	18.2	6.57	110	8	692		1		40	9.8	1.6	1.591	0.009	8.2	8.209	1.8	1				70	8.2	0.01		57								0.15	0.22		
TA6-LINER-SP	1/7/13 14:05	18.5	6.43	280	2.87	904		1		140	1.04	0.92	0.911	0.009	0.12	0.129	1.3	1				82	0.12	0.01		50								0.14	0.18		
TA6-Denite Tank	1/7/13 13:57	18.6	6.69	300	0.44	684		5	2	150	1.24	1.2	1.138	0.062	0.04	0.102	1.8	1				76	0.04	0.01		89								5.8	8.7		
Blanks																																						
FB-Tap	1/10/13 7:45	19.8	7.01	130	6.55	449					0.21	0.15	0.141	0.009	0.06	0.069						21	0.06	0.01														
FB-DI	1/10/13 7:50	20.2	7.51	2	9.17	208					0.07	0.05	0.041	0.009	0.02	0.029						0.05	0.01	0.01														
EB	1/10/13 7:55	20.2	7.51	2	9.17	208				10	0.07	0.05	0.041	0.009	0.02	0.029			0.5	0.5	0.01	0.05	0.01	0.01	0.01	0.2	0.05	0.042	0.02	0.02	0.001	0.01	0.13				

[1]Total Nitrogen (TN) is a calculated value equal to the sum of TKN and NO_X.

[2]Organic Nitrogen (ON) is a calculated value equal to the difference of TKN and NH_3.

[3]Total Inorganic Nitrogen (TIN) is a calculated value equal to the sum of NH_3 and NO_X.

D.O. - Dissolved oxygen

G - Grab sample

Gray-shaded data points indicate values below method detection level (mdl), mdl value used for statistical analyses.

Yellow-shaded data points indicate the reported value is between the laboratory method detection limit and the laboratory practical quantitation limit, value used for statistical analysis.

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Appendix G: Statistical Water Quality Summary

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Table G.1
Statistical Water Quality Summary

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	E-coli	TOC (mg/L)	DOC (mg/L)
Effluent samples																					
PNRS II STE-Tank 1	n	4	4	4	4	4		4	4		4	4	4	4	4	4	4	4			
	MEAN	25.8	6.9	345	0.3	1113		35.5	135.0		68.3	68.3	14	54.3	0.04	54.29	10.30	62,500			
	STD. DEV.	2.5	0.2	34	0.2	46		15.8	91.8		4.4	4.4	10.4	13.5	0.02	13.53	5.43	29,905			
	MIN	22.5	6.7	300	0.1	1052		22	40		64	64	3	37	0.02	37.02	5.50	32,000			
	MAX	28.2	7.0	380	0.5	1164		58	260		73	73	27	70	0.06	70.03	15	92,000			
STE Pump Tank	n	4	4	4	4	4		4	4		4	4	4	4	4	4	4	4			
	MEAN	26.4		355	0.4	1080		18.3	47.8		61.8	61.8	9.3	52.5	0.1	52.6	9.4				
	STD. DEV.	3.4		24	0.4	76		4	32		3.5	3.6	3.6	2.4	0.1	2.4	5.3				
	MIN	21.4	7.1	320	0.2	983		15	20		57.1	57	6	50	0.0	50	4.4	74,000			
	MAX	28.7	7.6	370	1.0	1167		24	93		65	65	14	55	0.1	55	14	184,000			
NO3 Clarifier	n	3	3		3	3		3	3		3	3	3	3	3	3					
	MEAN	24.8			0.9	803		5.7	10.3		26.1	19	5.9	13.1	7.1	20.2					
	STD. DEV.	3.6			0.7	140		4.7	2.5		9.7	6.1	6	8.1	4.3	9.2					
	MIN	20.8	7.5		0.2	643		2	8		15.7	12		6.3	3.7	10					
	MAX	27.8	7.7		1.6	897		11	13		35	23	12	22	12	27.7					
NO3 Pump Tank	n	4	4	4	4	4		4	4		4	4	4	4	4	4	4	4			
	MEAN	25.5	7.5	230	1.0	894		2.8	13.3		34.1	29.2	4.6	24.6	4.9	29.5	8.4	2,720			
	STD. DEV.	3.3	0.2	74	0.7	200		2.4	13.2		20.3	22.0	2.1	20.7	4.5	19.4	4.5	3,313			
	MIN	20.7	7.3	150	0.3	667		1	5		11.2	7.7	2	3.4	0.3	6.9	4.0	370			
	MAX	27.8	7.7	330	1.9	1154		6	33		60.3	60	7	53.0	11.0	53.3	14.0	7,500			
Soil moisture samples																					
TA1-LY-12-S	n	4	4	1	4	4				1	4	4	4	4	4	4	1				1
	MEAN	26.9	6.8	54	7.0	757				28	41.3	2	2	0.01	39.3	39.3	0.1				12
	STD. DEV.	6.4	0.1		0.8	186					17.8	0.7	0.7	0.00	17.6	17.6					
	MIN	17.5	6.7	54	6.4	546				28	14.7	1.4	1.4	0.01	13	13	0.1				12
	MAX	31.9	6.9	54	8.2	953				28	52	3	3	0.01	50	50	0.1				12
TA1-LY-24-C	n	4	4		4	4					4	4	4	4	4	4					
	MEAN	27.9	6.3		6.7	770					47.3	5	5	0.03	42.3	42.3					
	STD. DEV.	7.1	0.2		0.6	136					13	4.9	4.8	0.03	16.8	16.8					
	MIN	17.8	6.1		6.2	576					30	0.7	0.6	0.01	18	18					
	MAX	33.1	6.6		7.6	884					57.6	12.0	11.9	0.07	54	54					
TA1-LY-24-S	n	4	4	4	4	4				4	4	4	4	4	4	4	4				
	MEAN	27.3	6.4	38	6.5	785				34	49.5	3.5	3.5	0.02	46.0	46.0	0.32				
	STD. DEV.	6.9	0.2	19	0.6	71				32	7.9	2.5	2.5	0.02	5.8	5.8	0.23				
	MIN	17.2	6.2	22	5.8	718				10	41.4	0.7	0.7	0.01	39.0	39.0	0.11				
	MAX	32.7	6.7	65	7.2	868				81	59.6	6.6	6.5	0.05	53.0	53.1	0.65				
TA1-LY-42-S	n	4	4	3	4	4				3	4	4	4	4	4	4	3				
	MEAN	27.8	5.8	8.6	6.2	748				12	51.7	3.9	3.9	0.01	47.8	47.8	0.04				
	STD. DEV.	6.8	0.7	2.9	0.9	203				4	4.0	4.2	4.2		7.9	7.9	0.01				
	MIN	17.9	5.1	5.3	5.5	447				10	46.0	0.7	0.7	0.01	36	36	0.03				
	MAX	33.1	6.7	11	7.5	893				17	55.1	10.0	10.0	0.01	53	53	0.05				
TA2-LY-12-S	n	4	3	1	4	4				1	4	4	4	4	4	4	1				1
	MEAN	26.4	6.6	75	7.1	811				28	33.5	2.8	2.7	0.01	30.8	30.8	0.79				11
	STD. DEV.	5.9	0.2		0.9	151					16.7	0.8	0.8	0.01	16.1	16.1					
	MIN	17.7	6.4	75	6.5	616				28	19.3	1.9	1.9	0.01	17	17	0.79				11
	MAX	30.1	6.8	75	8.5	952				28	53.2	3.6	3.6	0.02	50	50	0.79				11
TA2-LY-24-C	n	4	4		4	4					4	4	4	4	4	4					
	MEAN	26.4	5.6		6.4	754					34.5	3.5	3.5	0.02	31	31					
	STD. DEV.	6.0	1.6		1.0	165					17.7	1.9	1.9	0.01	15.9	15.9					
	MIN	17.6	3.3		5.5	509					16.7	1.7	1.7	0.01	15	15					
	MAX	30.7	6.8		7.9	868					53.0	6.0	6.0	0.03	47	47					

Sample ID	Statistical Parameter	Anions						Cations							Hydrogen Sulfide (Unionized)	Sulfide	TS	Sucralose (ug/L)
		F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na				
Effluent samples																		
PNRS II STE-Tank 1	n		4	2	2										1	1	2	1
	MEAN		82.5	0.05	0.01												650	13.5
	STD. DEV.		16.3	0.02													70.7	19.1
	MIN		63	0.03	0.01												600	
	MAX		100	0.06	0.01												700	27
STE Pump Tank	n	2	4	3	2	2	4	2	2	2	2	2	2	2			2	
	MEAN	1.97	70.8	0.1	0.01	4.1	40.5	0.10	56	0.3	18	0.05	31	56.5			580	
	STD. DEV.	2.4	17.8	0.1			24.9	0.03				0.01	4.2	4.9			28.28	
	MIN	0.24	51	0.01	0.01	4.1	12	0.08	56	0.3	18	0.04	28	53			560	
	MAX	3.7	94	0.14	0.01	4.1	68	0.12	56	0.3	18	0.05	34	60			600	
NO3 Clarifier	n		3	2	2												1	
	MEAN		61.7	3.6	1.1												510	
	STD. DEV.		11.1	2.2	0.8													
	MIN		50	2	0.58												510	
	MAX		72	5.1	1.7												510	
NO3 Pump Tank	n	2	4	3	2	2	3	2	2	2	2	2	2	2			2	
	MEAN	0.33	68.8	3	0.6	4.0	53.7	0.1	53.5	0.1	17	0.02	20	52.5			500	
	STD. DEV.	0.01	18.8	1.5	0.3	2.5	4.5	0.0	2.1	0.0	1.4	0.01	1.4	10.6				
	MIN	0.32	49	1.6	0.4	2.2	49	0.1	52	0.1	16	0.01	19	45			500	
	MAX	0.33	92	4.6	0.8	5.7	58	0.1	55	0.1	18	0.03	21	60			500	
Soil moisture samples																		
TA1-LY-12-S	n		4	3	3													
	MEAN		61	48	0.01													
	STD. DEV.		4	2														
	MIN		56	46	0.01													
	MAX		65	50	0.01													
TA1-LY-24-C	n		3	2	3													
	MEAN		52	31	0.02													
	STD. DEV.		30	18	0.02													
	MIN		23	18	0.01													
	MAX		82	44	0.05													
TA1-LY-24-S	n		4	3	3													
	MEAN		60.3	48.3	0.01													
	STD. DEV.		8.0	4.2														
	MIN		49	45	0.01													
	MAX		66	53	0.01													
TA1-LY-42-S	n		4	3	3													
	MEAN		62.8	47.0	0.01													
	STD. DEV.		6.5	9.5														
	MIN		54	36	0.01													
	MAX		69	53	0.01													
TA2-LY-12-S	n		4	3	3													
	MEAN		64.5	28.3	0.01													
	STD. DEV.		13.3	18.8														
	MIN		45	17	0.01													
	MAX		73	50	0.01													
TA2-LY-24-C	n		4	3	3													
	MEAN		61.8	27.3	0.01													
	STD. DEV.		20	17.2														
	MIN		33	15	0.01													
	MAX		79	47	0.01													

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Table G.1 (continued)
Statistical Water Quality Summary

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	E-coli	TOC (mg/L)	DOC (mg/L)	Anions						Cations							Hydrogen Sulfide (Unionized)	Sulfide	TS	Sucralose (ug/L)
																						F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na				
TA2-LY-24-S	n	4	4	4	4	4				4	4	4	4	4	4	4	4							4	3	3												
	MEAN	27.1	6.4	39	5.3	775				45.0	38.9	2.8	2.8	0.02	36.1	36.1	0.4							65.3	31.3	0.2												
	STD. DEV.	6.6	0.3	18	1.1	211				25.8	19.2	1.1	1.1	0.01	18.3	18.3	0.2							19.3	19.1	0.1												
	MIN	17.5	6.1	23	4.6	510				15.0	19.1	1.7	1.7	0.01	17.0	17.0	0.2							37	17	0.1												
	MAX	32.3	6.7	65	6.9	954				75.0	56.4	4.2	4.2	0.03	53.3	53.3	0.8							78	53	0.3												
TA2-LY-42-S	n	4	4	3	4	4				3	4	4	4	4	4	4	3				3	3	4	4	3	3	3	2	2	2	2	2	2	2				
	MEAN	26.6	5.9	12.8	5.8	673				29.7	29.3	2.5	2.5	0.01	26.8	26.8	0.2				13.7	0.03	67	26	0.2	0.04	64	0.2	35.5	0.05	11.7	0.01	9.7	62.5				
	STD. DEV.	5.7	0.4	8.5	1.1	172				14.4	12.1	0.4	0.4		12.1	12.1	0.1				2.1	0.03	24	12	0.1	0.05	10.4	0.0	13.4	0.01	4.7	0.00	1.8	36.1				
	MIN	18.2	5.6	5.3	4.5	433				13.0	12.5	2.2	2.2	0.01	10.0	10.0	0.1				12	0.01	37	9.9	0.1	0.01	52	0.2	26.0	0.04	8.3	0.01	8.4	37				
	MAX	31.3	6.4	22.0	7.3	839				38.0	39.2	3.0	3.0	0.01	37.0	37.0	0.3				16	0.07	86	36	0.4	0.10	70	0.2	45.0	0.06	15	0.01	11	88				
TA3-LY-12-S	n	4	4	4	4	4				4	4	4	4	4	4	4	4						4	3	3													
	MEAN	26.8	6.9	97	7.2	689				20.6	18.0	1.7	1.6	0.01	16.3	16.4	1.2						63	20	0.01													
	STD. DEV.	5.2	0.3	30	0.7	98				7.0	11.8	0.4	0.4	0.00	11.5	11.5	1.4						11	9														
	MIN	17.6	6.4	50	6.8	589				10.0	2.5	1.0	1.0	0.01	1.5	1.5	0.0						51	6.2	0.01													
	MAX	30.1	7.1	120	8.5	794				26.0	27.1	2.1	2.1	0.02	25.0	25.0	3.3						75	25	0.01													
TA3-LY-24-C	n	4	4		4	4					4	4	4	4	4	4							4	3	3													
	MEAN	26.4	6.3		6.4	764					44.4	2.4	2.3	0.01	42.0	42.0							64	45	0.02													
	STD. DEV.	5.9	0.5		0.8	119					20.9	1.0	1.0	0.01	21.6	21.6							23	25	0.02													
	MIN	17.6	5.7		5.7	630					29.8	1.2	1.2	0.01	27.0	27.0							49	27	0.01													
	MAX	30.1	6.9		7.4	893					75.2	3.4	3.4	0.02	74.0	74.0							98	74	0.04													
TA3-LY-24-S	n	4	4	4	4	4				4	4	4	4	4	4	4	4				4	4	4	4	3	4	4	4	4	4	4	4	4	4				
	MEAN	26.5	6.3	26	6.7	647				29.3	28.6	2.6	2.5	0.02	26	26	0.22				14	0.1	62	26	0.01	0.2	59.3	0.1	31.3	0.04	13.3	0.003	3.1	66.8				
	STD. DEV.	5.9	0.1	11	1.0	84				13.3	11.5	1.1	1.1	0.01	10.7	10.7	0.06				3.7	0.0	1.5	10.7		0.1	6.8	0.0	3.9	0.01	1.5	0.003	2.9	9.5				
	MIN	17.6	6.2	19	6.2	549				10.0	16.0	1.0	1.0	0.01	15	15	0.13				9	0.1	60	15	0.01	0.01	52	0.1	27	0.03	12	0.001	0.7	54				
	MAX	30.2	6.3	43	8.2	744				38.0	43.2	3.2	3.2	0.04	40	40	0.28				18	0.16	63	40	0.01	0.3	66	0.2	35	0.05	15	0.007	7.4	77				
TA3-LY-42-S	n	4	4		4	4					4	4	4	4	4	4							4	3	3	1												
	MEAN	26.7	5.5		6.4	713					35.0	4.3	4.3	0.02	30.7	30.7							59	38	0.01	0.01												
	STD. DEV.	5.9	1.5		0.9	162					18.8	2.1	2.2	0.02	18.1	18.1							17	14														
	MIN	18.0	3.4		5.3	502					11.5	1.9	1.9	0.01	9.6	9.6							40	23	0.01	0.01												
	MAX	30.9	6.9		7.4	895					55.4	7.1	7.1	0.04	51	51							80	51	0.01	0.01												
TA4-LY-12-S	n	4	4	3	4	4				4	4	4	4	4	4	4	4				4	3	4	4	3	3	3	3	3	3	3	3	3	3				
	MEAN	27.0	6.7	59.7	7.5	535				18.0	28.0	2.0	2.0	0.03	26	26	4.0				8.6	0.3	66	23	0.01	3.1	59.3	0.1	46.3	0.02	14.3	0.001	13.2	51.7				
	STD. DEV.	7.0	0.2	30.9	0.9	257				5.4	11.0	0.7	0.7	0.02	11	11	1.9				1.8	0.0	8	10		2.3	6.1	0.01	1.2	0.00	1.5	0.000	8.9	4.5				
	MIN	18.1	6.4	32	6.4	267				10.0	16.4	1.0	1.0	0.01	14	14	1.9				6.5	0.29	58	14	0.01	1.3	54	0.14	45	0.02	13	0.001	5.5	47				
	MAX	35.2	6.8	93	8.6	781				22.0	39.4	2.4	2.4	0.05	37	37	6.3				11	0.38	73	37	0.01	5.7	66	0.15	47	0.02	16	0.001	23	56				
TA4-LY-24-C	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	3	3													
	MEAN	26.2	6.7	57	5.2	704				25.7	30.0	3.0	2.9	0.01	27	27	0.2						62	27	0.01													
	STD. DEV.	5.7	0.4	23	1.4	194				14.3	6.8	1.2	1.2	0.00	5.8	5.8	0.0						17	7														
	MIN	18.5	6.2	31	4.2	461				10.0	22.2	2.2	2.2	0.01	20	20	0.2						36	20	0.01													
	MAX	32.3	7.1	75	7.2	930				38.0	38.8	4.8	4.8	0.01	34	34	0.2						74	34	0.01													
TA4-LY-24-S	n	4	4		4	4				1	4	4	4	4	4	4	1						4	3	3													
	MEAN	26.9	6.5		6.7	675				110	36.3	3.3	3.2	0.02	33	33	0.6						60	29	0.01													
	STD. DEV.	6.6	0.2		1.0	100					15.1	0.4	0.4	0.02	15	15							13	15														
	MIN	18.0	6.4		5.5	527				110	17.8	2.8	2.8	0.01	15	15	0.6						44	15	0.01													
	MAX	33.5	6.8		7.8	747				110	48.7	3.7	3.7	0.05	45	45	0.6						75	45	0.01													
TA4-LY-42-S	n	4	4		4	4					4	4	4	4	4	4							4	3	3													
	MEAN	26.3	6.3		6.2	728					29.8	3.1	3.1	0.01	26.8	26.8							69	24	0.01													
	STD. DEV.	5.6	0.4		0.7	82					7.3	1.4	1.4	0.00	6.9	6.9							18	5														
	MIN	18.3	6.0		5.5	617					20.8	1.4	1.4	0.01	18	18							47	18	0.01													
	MAX	30.7	6.8		6.9	808					38.2	4.9	4.9	0.02	35	35							89	27	0.01													

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Table G.1 (continued)
Statistical Water Quality Summary

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	E-coli	TOC (mg/L)	DOC (mg/L)	Anions						Cations							Hydrogen Sulfide (Unionized)	Sulfide	TS	Sucralose (ug/L)
																						F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na				
LY01-BKG-24	n	3	3		3	3					3	3	3	3	3	3							3	1	1													
	MEAN	27.8	6.6		6.6	205					1.6	1.6	1.6	0.03	0.02	0.05							5.87	0.01	0.01													
	STD. DEV.	2.1	0.5		0.1	87					0.2	0.2	0.2	0.01	0.01	0.02							2.78															
	MIN	26.3	6.3		6.5	107					1.5	1.5	1.5	0.01	0.01	0.03							2.9	0.01	0.01													
	MAX	30.2	7.2		6.7	272					1.8	1.8	1.8	0.03	0.03	0.06							8.4	0.01	0.01													
LY02-BKG-42	n	2	2		2	2						1	1	1	1								1															
	MEAN	29.5	6.6		6.2	522						9.8	9.5	0.26	0.01								12															
	STD. DEV.	4.4	0.1		0.6	14																																
	MIN	26.4	6.5		5.7	512						9.8	9.5	0.26	0.01								12															
	MAX	32.6	6.7		6.6	532						9.8	9.5	0.26	0.01								12															
TA1-PAN-12-N	n	1	1			1					1	1	1	1	1	1							1															
	MEAN	29.0	6.2			686					37.6	5.6	5.4	0.2	32	32							68															
	STD. DEV.																																					
	MIN	29.0	6.2			686					37.6	5.6	5.4	0.2	32	32							68															
	MAX	29.0	6.2			686					37.6	5.6	5.4	0.2	32	32							68															
TA2-PAN-12-N	n	1	1		1	1					1	1	1	1	1	1							1															
	MEAN	32.9	6.8		5.5	430					23.2	6.2	5.2	1	17	18							65															
	STD. DEV.																																					
	MIN	32.9	6.8		5.5	430					23.2	6.2	5.2	1	17	18							65															
	MAX	32.9	6.8		5.5	430					23.2	6.2	5.2	1	17	18							65															
TA3-PAN-12-N	n	1	1		1	1					1	1	1	1	1	1							1															
	MEAN	29.1	5.9		4.0	324					16.3	6.6	6.1	0.6	9.7	10.3							29															
	STD. DEV.																																					
	MIN	29.1	5.9		4.0	324					16.3	6.6	6.1	0.6	9.7	10.3							29															
	MAX	29.1	5.9		4.0	324					16.3	6.6	6.1	0.6	9.7	10.3							29															
TA4-PAN-12-N	n	1	1		1	1					1	1	1	1	1	1							1															
	MEAN	27.7	6.5		4.0	331					11.7	5.7	5.3	0.4	6	6.4							25															
	STD. DEV.																																					
	MIN	27.7	6.5		4.0	331					11.7	5.7	5.3	0.4	6	6.4							25															
	MAX	27.7	6.5		4.0	331					11.7	5.7	5.3	0.4	6	6.4							25															
Groundwater samples																																						
TA1-PZ-09-I7	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.5	5.6		2.4	282					8.5	1.2	1.2	0.02	7.3	7.3							11.7	8.6	0.01													
	STD. DEV.	1.4	0.1		1.2	92					1.4	0.6	0.6	0.01	1.9	1.9							4.9	1.9														
	MIN	23.7	5.5		0.8	209					7.0	0.4	0.4	0.01	5.9	5.9							7.3	7.2	0.01													
	MAX	27.0	5.7		3.5	415					10.3	1.8	1.8	0.03	9.9	9.9							18	9.9	0.01													
TA1-PZ-09-M9	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	26.1	5.6		2.0	250					7.5	0.9	0.8	0.03	6.6	6.6							13.6	6.5	0.01													
	STD. DEV.	1.3	0.3		1.7	41					0.8	0.3	0.3	0.02	1.0	1.0							4.8	1.0														
	MIN	24.2	5.3		0.6	217					6.7	0.5	0.4	0.01	5.6	5.6							8.4	5.8	0.01													
	MAX	27.1	6.0		4.2	309					8.5	1.1	1.1	0.04	7.7	7.7							20	7.2	0.01													
TA1-PZ-09-N3	n	4	4	1	4	4				1	4	4	4	4	4	4	1			1	1	2	4	2	2	1	1	1	1	1	1	1	1				
	MEAN	27.2	6.5	65	3.2	698				72	12.5	1.9	1.9	0.06	10.6	10.7	4.2			18	16	12.5	32	9.9	0.20	0.01	62	0.1	31	0.1	7.7	0.1	10	69				
	STD. DEV.	1.8	0.1		1.6	297					6.9	1.0	1.0	0.02	6.8	6.8							6.3	7.2	0.15													
	MIN	24.7	6.3	65	1.1	388				72	6.3	0.8	0.7	0.04	4.6	4.7	4.2			18	16	0.01	25	4.8	0.09	0.01	62	0.1	31	0.1	7.7	0.1	10	69				
	MAX	28.6	6.6	65	4.7	1103				72	20.1	3.1	3.0	0.09	17.0	17.1	4.2			18	16	25	40	15	0.3	0.01	62	0.1	31	0.1	7.7	0.1	10	69				
TA1-PZ-09-O7	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2													
	MEAN	26.4	5.5	11.8	2.1	341				28.3	8.3	1.4	1.4	0.02	6.9	6.9	1.6						19.5	4.3	0.02													
	STD. DEV.	1.6	0.1	5.4	2.1	113				16.5	3.2	0.7	0.7	0.01	3.0	3.0	1.2						6.5	0.5	0.01													
	MIN	24.1	5.4	6.3	0.7	240				10	5.5	0.8	0.8	0.01	3.9	3.9	0.3						14	3.9	0.01													
	MAX	27.6	5.6	17	5.2	497				42	11.8	2.1	2.1	0.03	9.7	9.7	2.6						28	4.6	0.02													

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Table G.1 (continued)
Statistical Water Quality Summary

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	E-coli	TOC (mg/L)	DOC (mg/L)	Anions						Cations							Hydrogen Sulfide (Unionized)	Sulfide	TS	Sucralose (ug/L)
																						F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na				
TA1-PZ-09-RS16	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.3	5.9		1.8	262					6.6	1.9	1.9	0.06	4.7	4.7							7.9	4.2	0.01													
	STD. DEV.	1.6	0.3		2.1	59					2.4	1.7	1.6	0.05	1.0	1.0							1.2	1.3														
	MIN	23	5.7		0.5	189					4.3	0.8	0.8	0.01	3.3	3.4							6.8	3.3	0.01													
	MAX	26.6	6.2		4.9	314					10.0	4.4	4.3	0.13	5.6	5.7							9.6	5.1	0.01													
TA1-PZ-09-RS18	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.3	5.9		2.8	293					9.2	1.9	1.9	0.02	7.3	7.3							11.8	6.8	0.01													
	STD. DEV.	2.0	0.3		2.7	73					3.0	0.5	0.5	0.01	2.7	2.7							5.5	0.1														
	MIN	22.3	5.5		0.3	200					6.0	1.4	1.4	0.01	4.6	4.6							8.2	6.7	0.01													
	MAX	26.6	6.3		5.6	363					13.1	2.5	2.5	0.04	11.0	11.0							20	6.9	0.01													
TA1-PZ-11-EF2	n	4	4	1	4	4				1	4	4	4	4	4	4	1			1	1	1	4	3	2	1	1	1	1	1	1	1	1	1				
	MEAN	26.1	4.4	2.0	3.9	476				10.0	23.2	1.6	1.6	0.01	21.6	21.6	0.1			2.1	2	0.1	38	19.1	0.01	0.01	56	0.05	23	0.02	5.5	0.02	9.4	16				
	STD. DEV.	1.0	0.2		3.3	306					21.6	0.7	0.7		20.9	20.9							27.4	28.6														
	MIN	24.8	4.2	2.0	0.8	225				10.0	6.7	1.0	1.0	0.01	5.4	5.4	0.1			2.1	2	0.1	11	0.01	0.01	0.01	56	0.05	23	0.02	5.5	0.02	9.4	16				
	MAX	27.0	4.6	2.0	7.0	915				10.0	54.6	2.6	2.6	0.01	52.0	52.0	0.1			2.1	2	0.1	74	52	0.01	0.01	56	0.05	23	0.02	5.5	0.02	9.4	16				
TA1-PZ-11-J4	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2													
	MEAN	27.0	4.6	2.0	2.6	260				10.3	8.8	1.1	1.1	0.01	7.7	7.7	0.1						15.3	6.6	0.01													
	STD. DEV.	1.1	0.1		2.2	32				0.6	2.4	0.3	0.3		2.2	2.2	0.04						5.1	2.7														
	MIN	25.4	4.4	2.0	0.4	233				10.0	5.5	0.8	0.8	0.01	4.7	4.7	0.04						10	4.7	0.01													
	MAX	27.9	4.7	2.0	5.3	300				11.0	11.2	1.5	1.5	0.01	10.0	10.0	0.1						22	8.5	0.01													
TA1-PZ-11-K4	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2													
	MEAN	26.8	4.5	2.0	2.7	253				10.0	8.4	1.3	1.3	0.01	7.1	7.1	0.05						13.4	6.1	0.01													
	STD. DEV.	1.1	0.2		2.5	25					1.9	0.4	0.4		1.9	1.9	0.02						4.1	1.8														
	MIN	25.4	4.3	2.0	0.4	231				10.0	5.8	1.0	1.0	0.01	4.8	4.8	0.03						9.7	4.8	0.01													
	MAX	27.8	4.7	2.0	6.0	289				10.0	10.5	1.8	1.8	0.01	9.3	9.3	0.1						19	7.4	0.01													
TA1-PZ-11-L2	n	4	4	3	4	4				3	4	4	4	4	4	4	3			3	3	3	4	3	2	3	3	3	3	3	3	3	3	3				
	MEAN	26.6	4.4	2.0	3.8	793				18.7	59.7	2.2	2.1	0.01	57.5	57.5	0.1			3.9	3.3	0.06	73.8	47	0.01	0.01	49	0.1	50	0.03	18.3	0.02	12.1	53.7				
	STD. DEV.	1.1	0.2		3.1	145				8.1	25.1	1.2	1.2	0.00	24.1	24.1	0.1			0.5	0.4	0.02	20.2	10.4			9.2	0.0	10.6	0.01	3.1	0.01	6.5	8.7				
	MIN	25.6	4.2	2.0	0.5	676				10.0	39.5	1.2	1.2	0.01	38.0	38.0	0.0			3.4	2.8	0.05	55	40	0.01	0.01	41	0.1	42	0.02	15	0.01	5.2	44				
	MAX	27.7	4.7	2.0	7.0	1000				26.0	94.8	3.8	3.8	0.01	91.0	91.0	0.3			4.2	3.6	0.08	95	59	0.01	0.01	59	0.1	62	0.04	21	0.02	18	61				
TA1-PZ-11-L3	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2													
	MEAN	26.6	4.7	2.1	3.7	352				10.0	14.0	1.1	1.1	0.01	12.9	12.9	0.1						26.5	15.0	0.01													
	STD. DEV.	1.2	0.2		3.1	41					3.5	0.3	0.3		3.5	3.5	0.0						3.1	2.8														
	MIN	25.5	4.5	2.1	0.5	310				10.0	9.5	0.8	0.8	0.01	8.5	8.5	0.1						22	13	0.01													
	MAX	27.7	4.8	2.1	7.4	406				10.0	18.1	1.6	1.6	0.01	17.0	17.0	0.1						29	17	0.01													
TA1-PZ-11-L4	n	3	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2													
	MEAN	25.8	4.6	2.4	2.6	339				12.3	13.5	1.6	1.6	0.01	11.9	11.9	0.2						18.5	10.8	0.01													
	STD. DEV.	1.1	0.2	0.7	1.4	100				4.0	5.5	0.7	0.7		6.0	6.0	0.2						6.5	7.4														
	MIN	24.8	4.4	2.0	1.0	252				10.0	8.3	1.1	1.1	0.01	5.6	5.6	0.0						12	5.6	0.01													
	MAX	26.9	4.8	3.2	4.4	436				17.0	19.1	2.7	2.7	0.01	18.0	18.0	0.4						25	16	0.01													
TA1-PZ-11-L5	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2													
	MEAN	26.9	4.6	2.1	2.4	267				10.0	9.1	1.1	1.1	0.01	8.0	8.0	0.0						13.4	6.1	0.01													
	STD. DEV.	1.3	0.2	0.1	2.1	31					2.2	0.3	0.3		2.2	2.2	0.0						3.9	0.1														
	MIN	24.9	4.4	2.0	0.3	234				10.0	6.9	0.7	0.7	0.01	6.0	6.0	0.0						9.5	6	0.01													
	MAX	27.8	4.9	2.1	5.1	306				10.0	11.3	1.4	1.4	0.01	10.0	10.0	0.0						18	6.2	0.01													
TA1-PZ-16-I7	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.8	5.4		1.3	311					12.6	1.5	1.5	0.02	11.2	11.2							15	13	0.01													
	STD. DEV.	0.6	0.5		1.6	14					3.1	0.4	0.4	0.02	3.2	3.2							1.4	1.4														
	MIN	25.2	5.0		0.3	291					8.0	1.0	1.0	0.01	6.6	6.6							13	12	0.01													
	MAX	26.4	6.2		3.7	323					15.0	2.0	2.0	0.05	14.0	14.0							16	14	0.01													

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Table G.1 (continued)
Statistical Water Quality Summary

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	E-coli	TOC (mg/L)	DOC (mg/L)	Anions						Cations							Hydrogen Sulfide (Unionized)	Sulfide	TS	Sucralose (ug/L)
																						F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na				
TA1-PZ-16-M9	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.8	5.3		1.5	304					11.9	1.2	1.2	0.01	10.8	10.8							15.0	12.5	0.01													
	STD. DEV.	0.8	0.4		2.0	23					3.2	0.5	0.5	0.01	2.9	2.9							1.8	2.1														
	MIN	25.0	4.9		0.2	275					7.9	0.6	0.6	0.01	7	7							13	11	0.01													
	MAX	26.5	5.9		4.4	330					15.6	1.6	1.6	0.03	14	14							17	14	0.01													
TA1-PZ-16-N3	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	26.0	5.3		1.2	285					9.6	1.3	1.3	0.01	8.3	8.3							14.5	9	0.01													
	STD. DEV.	0.9	0.3		1.5	8					1.0	0.5	0.5	0.01	1.2	1.2							0.6	1.2														
	MIN	24.9	5.0		0.2	277					8.6	0.8	0.8	0.01	6.9	6.9							14	8.1	0.01													
	MAX	27.0	5.7		3.4	296					10.8	1.7	1.7	0.03	9.8	9.8							15	9.8	0.01													
TA1-PZ-16-O7	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2													
	MEAN	25.8	5.3	5.6	1.1	301				20.7	10.2	1.0	1.0	0.01	9.2	9.2	0.8						13.5	10.9	0.01													
	STD. DEV.	1.0	0.3	0.6	1.7	23				8	2.6	0.5	0.5	0.01	2.7	2.7	1.0						1.7	1.6														
	MIN	24.8	5.0	5.2	0.2	268				13	6.9	0.2	0.2	0.01	5.5	5.5	0.1						11	9.7	0.01													
	MAX	26.7	5.8	6.3	3.7	319				29	13.1	1.4	1.4	0.03	12	12	1.9						15	12	0.01													
TA1-PZ-16-RS16	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.2	5.7		1.4	342					9.8	1.8	1.7	0.0	8	8							13.8	9	0.02													
	STD. DEV.	1.0	0.5		2.4	63					1.7	0.5	0.5	0.01	1.8	1.8							1.0	1.5	0.01													
	MIN	24.1	5.1		0.1	296					7.4	1.2	1.2	0.01	5.6	5.6							13	7.9	0.01													
	MAX	26.4	6.2		4.9	434					11.2	2.4	2.4	0.04	10	10							15	10	0.03													
TA1-PZ-16-RS18	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.4	5.8		2.3	310					7.8	1	1	0.02	6.8	6.8							11.2	8.3	0.02													
	STD. DEV.	1.2	0.4		2.5	26					1.8	0.5	0.5	0.01	2.1	2							1.0	1.8	0.01													
	MIN	23.6	5.4		0.1	275					6	0.3	0.3	0.01	4.6	4.6							9.8	7	0.01													
	MAX	26.3	6.3		4.6	338					10.4	1.4	1.4	0.03	9.5	9.5							12	9.5	0.02													
TA2-PZ-10-EF2	n	3	3	1	3	3				1	3	3	3	3	3	3	1			1	1	1	3	2	2	1	1	1	1	1	1	1	1				
	MEAN	25.3	4.7	2.1	3.9	346				26	14.4	1.7	1.7	0.01	12.7	12.7	0.1			9	8.4	0.1	34.7	9.6	0.01	0.01	37.0	0.1	14	0.05	3.4	0.03	4	11				
	STD. DEV.	0.7	0.4		0.8	169					8.6	0.6	0.6	0.00	8.4	8.4							25.2	9.1														
	MIN	24.5	4.4	2.1	3.3	189				26	4.7	1.2	1.2	0.01	3.1	3.1	0.1			9	8.4	0.1	8	3.1	0.01	0.01	37.0	0.1	14	0.05	3.4	0.03	4	11				
	MAX	25.8	5.2	2.1	4.7	524				26	21.3	2.3	2.3	0.01	19.0	19.0	0.1			9	8.4	0.1	58	16	0.01	0.01	37.0	0.1	14	0.05	3.4	0.03	4	11				
TA2-PZ-09-I7	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.7	5.4		1.6	262					8.2	1.6	1.5	0.03	6.7	6.7							13.9	5.6	0.01													
	STD. DEV.	2.2	0.4		1.3	81					2.0	0.5	0.5	0.03	1.7	1.7							9.2	0.1														
	MIN	22.6	5.0		0.3	157					6.5	1	1	0.01	5.5	5.5							4.5	5.5	0.01													
	MAX	27.7	5.8		3.1	354					11.0	2	2	0.06	9.1	9.1							26	5.6	0.01													
TA2-PZ-09-L8	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	26.2	6.0		2.6	377					7.3	2.4	2.4	0.05	4.9	5.0							15.9	3.2	0.03													
	STD. DEV.	2.4	0.6		1.4	147					3.6	1.8	1.7	0.05	2.1	2.1							6.6	0.7	0.02													
	MIN	22.7	5.3		0.6	159					3.5	0.8	0.8	0.01	2.7	2.7							7.6	2.7	0.01													
	MAX	27.7	6.6		3.8	475					10.5	4.7	4.6	0.13	7.4	7.5							23.0	3.7	0.04													
TA2-PZ-09-M4	n	4	4	2	4	4				2	4	4	4	4	4	4	2			1	1	1	4	2	2	1	1	1	1	1	1	1	1				
	MEAN	25.9	5.4	5.8	1.4	378				36.5	14.6	3.2	3.2	0.03	11.4	11.4	2.1			3.1	2.5	0.03	17.0	9	0.01	0.01	57	0.1	30	0.04	7	0.1	9.1	24				
	STD. DEV.	1.3	0.5	3.7	1.4	127				17.7	8.4	3.1	3.1	0.02	5.3	5.3	1.0						11.1	2.8														
	MIN	24.1	4.7	3.2	0.5	206				24.0	8.4	1.3	1.3	0.01	7.0	7.0	1.4			3.1	2.5	0.03	6.9	7	0.01	0.01	57	0.1	30	0.04	7	0.1	9.1	24				
	MAX	27.1	6.0	8.4	3.5	509				49.0	26.8	7.8	7.8	0.06	19.0	19.0	2.8			3.1	2.5	0.03	28	11	0.01	0.01	57	0.1	30	0.04	7	0.1	9.1	24				
TA2-PZ-09-N7	n	4	4	2	4	4				2	4	4	4	4	4	4	2						4	2	2													
	MEAN	26.1	5.7	7.9	1.1	329				14.0	13.9	2.7	2.7	0.03	11.2	11.2	0.8						24.5	10.3	0.01													
	STD. DEV.	1.8	0.4	2.2	1.5	101				1.4	6.9	2.5	2.5	0.03	4.7	4.7	0.2						10.1	3.8														
	MIN	23.5	5.4	6.3	0.3	232				13.0	8.8	1.2	1.2	0.01	7.1	7.2	0.7						16	7.6	0.01													
	MAX	27.7	6.3	9.4	3.4	429				15.0	23.4	6.4	6.4	0.08	17.0	17.0	1.0						36	13	0.01													
TA2-PZ-09-TU19	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.4	4.5		1.4	170					7.2	1.8	1.8	0.03	5.4	5.4							3.8	5.6	0.01													
	STD. DEV.	2.4	0.2		1.2	27					1.2	0.5	0.5	0.03	1.0	1.0							0.8	1.5														
	MIN	21.8	4.2		0.2	131					6.0	1.3	1.3	0.01	4.5	4.5							3.1	4.5	0.01													
	MAX	26.8	4.7		3.2	188					8.9	2.3	2.3	0.07	6.6	6.6							4.9	6.6	0.01													

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Table G.1 (continued)
Statistical Water Quality Summary

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	E-coli	TOC (mg/L)	DOC (mg/L)	Anions						Cations							Hydrogen Sulfide (Unionized)	Sulfide	TS	Sucralose (ug/L)
																						F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na				
TA2-PZ-09-TU21	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.2	4.5		0.9	163					5.3	1.2	1.2	0.03	4.1	4.1							3.5	4.8	0.01													
	STD. DEV.	2.4	0.1		1.1	14					1.2	0.3	0.4	0.01	1.1	1.1							0.8	0.5														
	MIN	21.7	4.4		0.3	142					3.8	0.8	0.7	0.01	2.5	2.5							2.7	4.4	0.01													
	MAX	26.8	4.6		2.5	170					6.4	1.6	1.6	0.04	5.1	5.1							4.6	5.1	0.01													
TA2-PZ-10-H5	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2													
	MEAN	26	4.5	2.0	2.1	304				16.3	11.9	1.8	1.8	0.01	10.1	10.1	0.10						18.3	7.7	0.01													
	STD. DEV.	1.0	0.3		1.3	91				7.1	3.6	0.4	0.4	0.00	3.6	3.6	0.12						11.6	3.3														
	MIN	25.1	4.3	2.0	0.4	186				10.0	7.3	1.3	1.3	0.01	5.4	5.4	0.03						5.2	5.4	0.01													
	MAX	27.3	4.9	2.0	3.3	407				24.0	16.2	2.2	2.2	0.02	14.0	14.0	0.24						33	10	0.01													
TA2-PZ-10-J5	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2													
	MEAN	26.2	4.6	2.0	2.7	352				13.3	15.2	1.5	1.5	0.01	13.7	13.7	0.15						28.6	9.3	0.01													
	STD. DEV.	1.4	0.4	0.1	1.5	168				3.5	6.9	0.5	0.5	0.00	6.5	6.5	0.16						17.9	6.6														
	MIN	24.4	4.3	2.0	0.5	117				10.0	5.7	1.0	1.0	0.01	4.6	4.6	0.04						9.2	4.6	0.01													
	MAX	27.7	5.1	2.1	3.7	512				17.0	22.1	2.1	2.1	0.02	20.0	20.0	0.34						52	14	0.01													
TA2-PZ-10-K5	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2													
	MEAN	26.5	4.6	2.0	2.7	383				13.7	14.5	1.1	1.1	0.01	13.4	13.4	0.06						28.4	9.8	0.01													
	STD. DEV.	1.4	0.3		1.5	160				5.5	6.8	0.7	0.7	0.01	6.2	6.2	0.02						17.0	7.4														
	MIN	25	4.3	2.0	0.4	153				10.0	4.7	0.1	0.0	0.01	4.6	4.6	0.05						6.7	4.6	0.01													
	MAX	27.8	5.0	2.0	3.5	523				20.0	20.5	1.5	1.5	0.03	19.0	19.0	0.08						48	15	0.01													
TA2-PZ-10-L2	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2													
	MEAN	25.9	4.4	2.0	1.7	292				15.0	9.2	1.7	1.7	0.01	7.5	7.5	0.15						15.3	5.9	0.01													
	STD. DEV.	1.2	0.2		1.2	99				5.0	4.1	0.4	0.4	0.00	3.7	3.7	0.11						11.7	0.5														
	MIN	24.4	4.2	2.0	0.4	188				10.0	6.7	1.4	1.4	0.01	5.2	5.2	0.05						5.2	5.5	0.01													
	MAX	26.9	4.6	2.0	2.9	425				20.0	15.3	2.3	2.3	0.01	13.0	13.0	0.26						32	6.2	0.01													
TA2-PZ-10-L3	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2													
	MEAN	26	4.4	2.0	1.8	297				11.7	9.0	1.3	1.3	0.01	7.8	7.8	0.16						16.1	7.2	0.01													
	STD. DEV.	1.0	0.1		1.3	95				2.9	2.7	0.4	0.4	0.00	2.6	2.6	0.11						10.7	2.3														
	MIN	24.9	4.2	2.0	0.4	186				10.0	6.3	0.8	0.8	0.01	5.5	5.5	0.03						4.4	5.5	0.01													
	MAX	26.9	4.5	2.0	3.4	418				15.0	12.1	1.7	1.7	0.01	11.0	11.0	0.23						30	8.8	0.01													
TA2-PZ-10-L4	n	4	4	3	4	4				3	4	4	4	4	4	4	3			2	2	2	4	3	2	2	2	2	2	2	2	2	2	2				
	MEAN	26	4.5	2.0	2.2	462				11.0	21.5	2.0	1.9	0.01	19.5	19.5	0.03			3.4	3.0	0.1	38.6	13.7	0.01	0.01	62	0.12	31.0	0.04	8.8	0.03	10.5	35.5				
	STD. DEV.	1.6	0.1		1.5	233				1.7	14.6	0.5	0.5		14.3	14.3	0.01			0.9	1.0	0.0	25.0	8.1			2.8	0.01	5.7	0.00	1.8	0.01	0.7	0.7				
	MIN	23.8	4.3	2.0	0.2	148				10.0	6.5	1.5	1.5	0.01	5.0	5.0	0.02			2.7	2.3	0.1	7.5	5	0.01	0.01	60	0.11	27	0.04	7.5	0.02	10	35				
	MAX	27.2	4.6	2.0	3.7	700				13.0	41.3	2.4	2.4	0.01	39.0	39.0	0.04			4.0	3.7	0.1	67	21	0.01	0.01	64	0.12	35	0.04	10	0.04	11	36				
TA2-PZ-10-L5	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2													
	MEAN	26.2	4.5	2.0	2.2	398				11.7	13.2	1.5	1.4	0.01	11.8	11.8	0.1						30.4	8.8	0.01													
	STD. DEV.	1.4	0.2		1.3	151				2.9	6.1	0.2	0.2	0.01	6.1	6.1	0.0						16.5	4.6														
	MIN	24.4	4.2	2.0	0.8	181				10.0	6.9	1.3	1.3	0.01	5.5	5.5	0.1						7.6	5.5	0.01													
	MAX	27.4	4.8	2.0	3.8	504				15.0	21.3	1.8	1.8	0.03	20.0	20.0	0.1						46	12	0.01													
TA2-PZ-10-L6	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2													
	MEAN	26.2	4.5	2.0	2.3	367				20.7	15.0	1.5	1.5	0.02	13.5	13.5	0.3						27.0	9.0	0.01													
	STD. DEV.	1.3	0.1		1.4	121				18.5	5.7	0.9	0.8	0.01	5.8	5.8	0.3						14.3	4.3														
	MIN	24.5	4.3	2.0	0.7	193				10.0	7.0	1.0	1.0	0.01	5.9	5.9	0.1						7.9	5.9	0.01													
	MAX	27.5	4.6	2.0	3.5	461				42.0	20.0	2.8	2.8	0.03	19.0	19.0	0.7						41	12	0.01													
TA2-PZ-16-I7	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.5	5.4		0.8	200					2.9	0.6	0.6	0.01	2.3	2.3							6.9	2.2	0.01													
	STD. DEV.	1.4	0.2		1.2	19					1.1	0.3	0.3	0.01	0.9	0.9							0.5	0.4														
	MIN	23.9	5.2		0.2	172					2.0	0.3	0.2	0.01	1.4	1.4							6.1	1.9	0.01													
	MAX	26.9	5.7		2.7	214					4.5	1.0	1.0	0.02	3.5	3.5							7.3	2.5	0.01													

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Table G.1 (continued)
Statistical Water Quality Summary

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	E-coli	TOC (mg/L)	DOC (mg/L)	Anions						Cations							Hydrogen Sulfide (Unionized)	Sulfide	TS	Sucralose (ug/L)
																						F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na				
TA2-PZ-16-L8	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.8	5.6		0.8	207					2.9	0.7	0.7	0.01	2.2	2.2							6.6	2.1	0.01													
	STD. DEV.	1.5	0.2		1.3	25					1.3	0.3	0.3	0.01	1.1	1.0							0.5	0.4														
	MIN	24.1	5.4		0.1	171					1.7	0.5	0.5	0.01	1.1	1.1							6.0	1.8	0.01													
	MAX	27.3	5.8		2.8	226					4.7	1.1	1.1	0.03	3.6	3.6							7.1	2.3	0.01													
TA2-PZ-16-M4	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.3	5.5		1.0	229					2.4	0.6	0.5	0.02	1.8	1.8							6.3	2.2	0.01													
	STD. DEV.	1.3	0.2		1.5	13					0.6	0.1	0.1	0.01	0.5	0.5							0.6	0.4														
	MIN	23.7	5.3		0.1	212					1.6	0.4	0.4	0.01	1.2	1.2							5.9	1.9	0.01													
	MAX	26.5	5.7		3.3	241					3.0	0.6	0.6	0.02	2.4	2.4							7.2	2.4	0.01													
TA2-PZ-16-N7	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.4	5.6		1.0	208					2.6	0.6	0.6	0.03	2.1	2.1							6.4	2.0	0.01													
	STD. DEV.	1.4	0.4		1.4	13					1.1	0.3	0.2	0.04	0.9	0.9							0.8	0.8														
	MIN	23.6	5.3		0.1	189					1.6	0.2	0.2	0.01	1.2	1.2							5.6	1.4	0.01													
	MAX	26.7	6.1		3.0	219					3.8	0.8	0.7	0.08	3.0	3.1							7.3	2.6	0.01													
TA2-PZ-16-TU19	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.1	5.3		0.9	185					3.0	0.6	0.6	0.02	2.4	2.4							6.1	1.5	0.01													
	STD. DEV.	1.1	0.1		1.1	25					2.0	0.1	0.1	0.03	1.9	1.9							0.3	0.7														
	MIN	23.4	5.2		0.2	149					1.4	0.4	0.4	0.01	1.0	1.0							5.8	1.0	0.01													
	MAX	25.9	5.4		2.5	206					5.9	0.7	0.7	0.06	5.2	5.3							6.5	2.0	0.01													
TA2-PZ-16-TU21	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.1	5.2		0.9	178					2.3	0.6	0.6	0.01	1.6	1.7							5.4	1.2	0.01													
	STD. DEV.	1.2	0.2		1.2	20					1.4	0.4	0.4	0.00	1.1	1.1							0.3	0.2														
	MIN	23.4	5.0		0.2	149					1.3	0.3	0.3	0.01	1.0	1.0							5.0	1.0	0.01													
	MAX	25.9	5.4		2.7	192					4.3	1.0	0.9	0.02	3.3	3.3							5.6	1.3	0.01													
TA3-PZ-09-I7	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	26.2	7.1		3.6	1005					8.7	3.0	2.9	0.06	5.8	5.8							15.8	5.6	0.1													
	STD. DEV.	2.1	0.2		0.3	563					2.1	1.6	1.5	0.06	1.9	1.8							9.8	1.3														
	MIN	23.2	7.0		3.3	615					5.7	2.0	1.9	0.01	3.7	3.8							8.1	4.7	0.1													
	MAX	27.9	7.3		3.8	1832					10.1	5.3	5.2	0.14	7.9	7.9							30.0	6.5	0.1													
TA3-PZ-09-M9	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.6	6.3		1.3	525					9.4	2.4	2.3	0.04	7.0	7.0							14.6	7.2	0.1													
	STD. DEV.	1.8	0.2		0.8	351					1.5	0.8	0.8	0.02	1.7	1.7							6.2	2.2														
	MIN	23.1	6.0		0.3	242					7.5	1.6	1.6	0.02	5.4	5.5							8.5	5.6	0.1													
	MAX	27.4	6.5		2.1	1035					10.9	3.3	3.2	0.06	8.7	8.7							23.0	8.7	0.1													
TA3-PZ-09-N3	n	4	4	2	4	4				2	4	4	4	4	4	4	2						4	2	2													
	MEAN	26.2	6.6	34.1	0.9	614				39.0	11.3	2.6	2.3	0.28	8.7	8.9	1.0						19.5	12.0	0.02													
	STD. DEV.	1.3	0.2	43.7	0.8	228				26.9	3.5	1.1	1.3	0.35	4.3	4.6	1.3						4.4	1.4														
	MIN	24.5	6.4	3.2	0.4	410				20.0	7.3	1.9	1.1	0.07	3.1	3.2	0.0						14.0	11.0	0.01													
	MAX	27.5	6.9	65.0	2.2	940				58.0	14.9	4.2	4.1	0.81	13.0	13.8	1.9						24.0	13.0	0.03													
TA3-PZ-09-O7	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.6	6.1		0.9	507					9.1	2.0	1.9	0.10	7.1	7.2							17.0	8.0	0.09													
	STD. DEV.	1.3	0.7		0.6	276					2.1	0.7	0.7	0.04	2.3	2.3							4.2	1.1														
	MIN	23.7	5.1		0.3	249					6.0	1.0	0.9	0.08	3.8	3.9							12.0	7.2	0.07													
	MAX	26.7	6.6		1.8	894					10.5	2.5	2.3	0.16	8.9	9.0							22.0	8.8	0.11													
TA3-PZ-09-ST14	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.4	4.6		0.9	205					5.9	1.3	1.2	0.01	4.7	4.7							5.9	3.4	0.01													
	STD. DEV.	1.9	0.1		0.7	43					1.7	0.3	0.3	0.01	1.6	1.6							1.4	0.1														
	MIN	22.6	4.5		0.4	159					4.3	0.8	0.8	0.01	3.4	3.4							4.9	3.3	0.01													
	MAX	26.9	4.6		2.0	259					8.1	1.5	1.5	0.03	6.8	6.8							8.0	3.5	0.01													

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Table G.1 (continued)
Statistical Water Quality Summary

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	E-coli	TOC (mg/L)	DOC (mg/L)	Anions					Cations							Hydrogen Sulfide (Unionized)	Sulfide	TS	Sucralose (ug/L)
																						F^-	Cl^-	NO_3-N	NO_2-N	PO_4-P	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na				
TA3-PZ-09-ST16	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.7	5.5		1.4	286					6.1	1.7	1.7	0.03	4.4	4.4							6.6	4.2	0.01													
	STD. DEV.	2.2	0.1		0.7	94					0.9	0.7	0.7	0.03	1.0	1.0							2.0	0.4														
	MIN	22.4	5.4		0.5	185					5.0	1.1	1.1	0.01	3.4	3.5							5.5	3.9	0.01													
	MAX	27.1	5.7		2.3	404					7.2	2.7	2.6	0.08	5.7	5.7							9.6	4.4	0.01													
TA3-PZ-10-J5	n	4	4	1	4	4				1	4	4	4	4	4	4	1						4	2	2													
	MEAN	26.3	4.5	2.0	2.2	319				10.0	12.3	1.4	1.3	0.15	10.9	11.0	0.03						15.8	13.5	0.01													
	STD. DEV.	0.8	0.4		1.1	17					4.8	0.5	0.4	0.16	4.3	4.4							2.2	4.9														
	MIN	25.3	4.3	2.0	1.0	301				10.0	8.2	1.0	0.9	0.01	7.0	7.0	0.03						13.0	10.0	0.01													
	MAX	26.9	5.1	2.0	3.6	336				10.0	19.2	2.2	1.9	0.31	17.0	17.3	0.03						18.0	17.0	0.01													
TA3-PZ-10-K5	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2													
	MEAN	26	4.6	2.0	2.0	333				11.3	13.0	1.6	1.4	0.19	11.5	11.6	0.04						12.5	14.5	0.01													
	STD. DEV.	1.1	0.3		1.4	26				1.5	4.3	0.3	0.1	0.21	4.1	4.3	0.02						8.7	3.5														
	MIN	24.7	4.4	2.0	0.5	309				10.0	9.6	1.3	1.3	0.01	8.3	8.3	0.02						0.1	12.0	0.01													
	MAX	27	5.0	2.0	4.0	370				13.0	18.8	1.8	1.5	0.42	17.0	17.4	0.05						20.0	17.0	0.01													
TA3-PZ-10-L5	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2													
	MEAN	26.1	4.6	2.0	1.6	310				15.7	13.4	1.5	1.4	0.14	11.9	12.0	0.1						19.8	14.5	0.01													
	STD. DEV.	1.3	0.3		1.1	117				5.1	3.6	0.2	0.3	0.16	3.4	3.5	0.1						7.5	0.7														
	MIN	24.5	4.4	2.0	0.3	146				10.0	8.7	1.3	1.0	0.01	7.4	7.4	0.0						10.0	14.0	0.01													
	MAX	27.1	5.0	2.0	3.0	424				20.0	16.8	1.8	1.6	0.35	15.0	15.2	0.3						28.0	15.0	0.01													
TA3-PZ-11-EF2	n	4	4	3	4	4				3	4	4	4	4	4	4	3			1	1	1	4	3	2	1	1	1	1	1	1	1	1				
	MEAN	26.0	4.9	2.1	2.8	310				11.7	16.0	1.8	1.4	0.40	14.2	14.6	0.04			0.8	0.6	0.02	15.8	15.4	0.01	0.01	48	0.1	24	0.02	6.5	0.1	9.5	8.7				
	STD. DEV.	1.4	0.2	0.1	1.9	30				2.9	5.8	0.9	0.5	0.47	5.1	5.6	0.01						5.2	5.5													
	MIN	24.2	4.8	2.0	0.4	269				10.0	11.1	1.2	0.9	0.02	9.9	9.9	0.02			0.8	0.6	0.02	11	9.3	0.01	0.01	48	0.1	24	0.02	6.5	0.1	9.5	8.7				
	MAX	27.4	5.3	2.1	5.0	333				15.0	23.1	3.1	2.1	1.0	20.0	21.0	0.04			0.8	0.6	0.02	22	20	0.01	0.01	48	0.1	24	0.02	6.5	0.1	9.5	8.7				
TA3-PZ-11-I2	n	4	4	3	4	4				3	4	4	4	4	4	4	3			2	2	2	4	3	2	2	2	2	2	2	2	2	2				1
	MEAN	26.0	4.6	2.0	3.0	415				12.3	22.4	1.4	1.2	0.17	21.0	21.2	0.04			1.8	1.2	0.1	30	23	0.01	0.01	46.5	0.1	25.5	0.02	9.4	0.1	7.8	17.5				4.3
	STD. DEV.	1.2	0.3		1.7	76				4.0	11.2	0.4	0.2	0.29	10.8	11.1	0.04			0.9	0.5	0.0	8.6	12.3			12.0		0.7			0.0	0.4					
	MIN	24.6	4.3	2.0	0.8	373				10.0	15.1	1.1	1.0	0.01	14.0	14.0	0.02			1.1	0.9	0.1	19	14	0.01	0.01	38	0.1	25	0.02	9.4	0.1	7.5	16				4.3
	MAX	27.4	5.0	2.0	4.9	529				17.0	39.0	2.0	1.4	0.61	37.0	37.6	0.08			2.4	1.6	0.1	40	37	0.01	0.01	55	0.1	26	0.02	9.4	0.1	8.1	19				4.3
TA3-PZ-11-L2	n	4	4	3	4	4				3	4	4	4	4	4	4	3			3	3	3	4	3	2	3	3	3	3	3	3	3	3				
	MEAN	26.1	4.7	2.0	2.6	434				11.7	23.1	2.1	2.0	0.11	21.0	21.1	0.06			2.5	2.3	0.07	34.3	24.3	0.01	0.02	52.3	0.1	32	0.02	11.9	0.1	8.7	27				
	STD. DEV.	1.3	0.5	0.1	1.2	126				2.9	11.1	0.8	0.8	0.16	10.6	10.7	0.01			1.1	1.0	0.05	5.3	9.9		0.02	3.2	0.0	5.6	0.00	3.8	0.0	0.4	6.1				
	MIN	24.6	4.4	2.0	1.1	340				10.0	11.8	1.4	1.4	0.01	9.9	10.0	0.04			1.5	1.4	0.01	30	13	0.01	0.01	50	0.1	26	0.02	8.6	0.1	8.4	23				
	MAX	27.7	5.4	2.1	4.0	617				15.0	33.0	3.2	3.2	0.34	31.0	31.3	0.07			3.7	3.3	0.11	41	31	0.01	0.04	56	0.1	37	0.03	16	0.1	9.2	34				
TA3-PZ-11-L3	n	4	4	3	4	4				3	4	4	4	4	4	4	3			2	2	2	4	2	2	2	2	2	2	2	2	2	2	2				
	MEAN	26	4.5	2.0	2.2	380				10.0	17.6	1.6	1.4	0.20	16.0	16.2	0.11			2.0	1.8	0.1	24	23.5	0.01	0.03	75.5	0.07	31.5	0.03	10.6	0.07	9.1	22				
	STD. DEV.	1.1	0.4	0.1	1.1	102					9.7	0.9	1.1	0.38	9.4	9.7	0.05			0.1	0.1	0.1	7.1	3.5		0.03	34.6	0.02	2.1	0.00	2	0.03	0.3					
	MIN	24.9	4.3	2.0	1.3	279				10.0	6.0	1.1	0.3	0.01	4.9	4.9	0.06			1.9	1.7	0.1	19	21	0.01	0.01	51	0.05	30	0.02	9.2	0.04	8.9	16				
	MAX	27.4	5.1	2.1	3.6	522				10.0	27.1	3.0	3.0	0.76	26.0	26.8	0.15			2.0	1.9	0.2	34	26	0.01	0.05	100	0.08	33	0.03	12	0.09	9.3	28				
TA3-PZ-11-L4	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2													
	MEAN	26.2	4.6	2.0	2.2	377				13.3	17.0	1.2	0.92	0.29	15.8	16.1	0.04						25.3	23	0.01													
	STD. DEV.	1.3	0.3		1.1	88				3.5	9.3	0.2	0.62	0.44	9.4	9.8	0.01						5.3	7.1														
	MIN	24.5	4.4	2.0	0.7	283				10.0	7.7	0.9	0.01	0.01	6.3	6.3	0.03						19	18	0.01													
	MAX	27.2	5.1	2.0	3.5	494				17.0	28.9	1.4	1.39	0.93	28.0	28.9	0.06						31	28	0.01													
TA3-PZ-16-I7	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.5	5.9		0.8	280					6.7	1.3	1.3	0.02	5.3	5.3							8.8	6.1	0.01													
	STD. DEV.	1.2	0.2		1.1	19					1.8	0.4	0.4	0.02	1.9	1.9							0.9	2.9														
	MIN	24.1	5.7		0.1	252					5.2	0.9	0.9	0.01	4.0	4.0							8	4	0.01													
	MAX	26.9	6.1		2.6	294					9.0	1.9	1.9	0.05	8.1	8.1							10.0	8.1	0.01													

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Table G.1 (continued)
Statistical Water Quality Summary

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	E-coli	TOC (mg/L)	DOC (mg/L)	Anions					Cations							Hydrogen Sulfide (Unionized)	Sulfide	TS	Sucralose (ug/L)
																						F^-	Cl^-	NO_3-N	NO_2-N	PO_4-P	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na				
TA3-PZ-16-M9	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.4	5.6		0.9	279					7.5	1.2	1.2	0.02	6.3	6.3							10.1	6.8	0.01													
	STD. DEV.	1.0	0.2		1.3	14					2.1	0.4	0.4	0.02	2.2	2.2							1.4	3.7														
	MIN	24.1	5.4		0.2	259					5.2	0.9	0.8	0.01	4.2	4.2							8.5	4.2	0.01													
	MAX	26.4	5.8		2.9	288					10.3	1.6	1.6	0.05	9.4	9.4							12.0	9.4	0.01													
TA3-PZ-16-N3	n	4	4	1	4	4				2	4	4	4	4	4	4	2						4	2	2													
	MEAN	25.4	5.6	6.3	0.9	312				32.0	13.2	1.6	1.6	0.02	11.6	11.6	1.8						16.3	13.5	0.01													
	STD. DEV.	0.8	0.1		1.4	14				31.1	3.8	0.7	0.7	0.02	3.8	3.8	2.4						0.5	4.9														
	MIN	24.6	5.5	6.3	0.2	301				10.0	9.2	1.0	1.0	0.01	8.2	8.2	0.1						16.0	10.0	0.01													
	MAX	26.1	5.8	6.3	3.0	333				54.0	18.4	2.7	2.7	0.04	17.0	17.0	3.5						17.0	17.0	0.01													
TA3-PZ-16-O7	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.4	5.4		0.7	296					10.6	1.6	1.6	0.02	9.0	9.0							9.7	11.8	0.01													
	STD. DEV.	0.6	0.2		0.8	17					4.3	0.5	0.4	0.01	4.4	4.4							4.9	4.5														
	MIN	24.6	5.3		0.1	275					6.3	1.0	1.0	0.01	4.3	4.3							2.6	8.6	0.01													
	MAX	25.8	5.7		1.9	315					16.5	2.0	2.0	0.03	15.0	15.0							13.0	15.0	0.01													
TA3-PZ-16-ST14	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.1	5.2		0.9	239					7.2	1.0	1.0	0.01	6.2	6.2							11.5	7.3	0.01													
	STD. DEV.	1.1	0.1		1.0	75					2.2	0.2	0.2		2.2	2.2							5.7	2.3														
	MIN	23.5	5.1		0.3	127					4.8	0.7	0.7	0.01	3.6	3.6							8.2	5.6	0.01													
	MAX	25.9	5.4		2.5	288					9.9	1.2	1.2	0.01	8.9	8.9							20.0	8.9	0.01													
TA3-PZ-16-ST16	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.2	5.3		0.9	258					6.8	1.2	1.2	0.01	5.6	5.6							8.3	6.2	0.01													
	STD. DEV.	1.2	0.1		1.4	18					1.8	0.4	0.4	0.00	1.7	1.7							0.7	2.6														
	MIN	23.6	5.2		0.2	232					5.4	0.7	0.7	0.01	4.3	4.3							7.3	4.3	0.01													
	MAX	26.3	5.4		3.0	273					9.4	1.7	1.7	0.02	8.0	8.0							9.0	8.0	0.01													
TA4-PZ-09-I7	n	4	4		4	4					4	4	4	4	4	4							4	2	2											1		
	MEAN	25.7	5.4		1.4	253					7.3	2.2	2.2	0.05	5.1	5.1							9.0	5.2	0.02											6.8		
	STD. DEV.	3.0	0.4		0.7	96					3.0	1.3	1.2	0.09	1.8	1.8							4.5	0.3														
	MIN	21.4	5.0		1.0	123					3.3	0.6	0.6	0.01	2.7	2.7							3.2	5.0	0.01											6.8		
	MAX	27.9	5.9		2.5	326					10.4	3.4	3.2	0.18	7.0	7.2							14.0	5.4	0.02											6.8		
TA4-PZ-09-L8	n	4	4		4	4					4	4	4	4	4	4							4	2	2											1		
	MEAN	25.4	6.3		1.2	361					7.7	2.4	2.3	0.07	5.3	5.3							8.0	4.9	0.1											5.2		
	STD. DEV.	2.9	0.1		0.7	173					2.1	0.2	0.2	0.05	2.1	2.1							3.7	0.8														
	MIN	21.2	6.2		0.4	189					5.8	2.1	2.0	0.03	3.2	3.3							3.9	4.3	0.1											5.2		
	MAX	27.6	6.4		1.8	596					10.4	2.6	2.5	0.14	8.1	8.2							12.0	5.4	0.1											5.2		
TA4-PZ-09-M4	n	4	4	2	4	4				2	4	4	4	4	4	4	2			1	1	1	4	2	2	1	1	1	1	1	1	1	1	1				
	MEAN	25.3	6.6	63.5	1.1	497				22.0	10.7	1.8	1.8	0.03	8.8	8.9	0.3			5.8	5.3	0.01	20.0	9.3	0.2	0.01	49.0	0.1	32.0	0.03	4.6	0.1	4.6	22.0				
	STD. DEV.	2.5	0.2	2.1	1.1	153				2.8	3.8	0.3	0.3	0.04	3.8	3.8	0.0						9.1	3.9														
	MIN	21.7	6.3	62	0.3	280				20.0	6.1	1.5	1.5	0.01	4.5	4.6	0.3			5.8	5.3	0.01	9.8	6.5	0.2	0.01	49.0	0.1	32.0	0.03	4.6	0.1	4.6	22.0				
	MAX	27.3	6.9	65	2.7	636				24.0	14.1	2.1	2.1	0.08	12.0	12.0	0.3			5.8	5.3	0.01	29.0	12.0	0.2	0.01	49.0	0.1	32.0	0.03	4.6	0.1	4.6	22.0				
TA4-PZ-09-N7	n	4	4	2	4	4				2	4	4	4	4	4	4	2						4	2	2											1		
	MEAN	25.4	5.5	9.8	1.4	284				73.0	12.2	3.2	3.1	0.1	9.0	9.1	5.2						11.2	11.5	0.03											2.2		
	STD. DEV.	3.0	0.2	0.4	0.4	74				14.1	5.0	0.9	0.9	0.0	4.3	4.3	1.8						4.0	5.0	0.02													
	MIN	21.1	5.2	9.5	1.0	194				63.0	7.0	2.2	2.1	0.1	4.8	4.9	3.9						7.4	7.9	0.01											2.2		
	MAX	27.4	5.6	10	1.9	364				83.0	18.8	4.1	4.0	0.1	15.0	15.1	6.4						16.0	15.0	0.04											2.2		
TA4-PZ-09-TU14	n	4	4		4	4					4	4	4	4	4	4							4	2	2											1		
	MEAN	25.5	4.8		0.8	175					5.5	1.0	1.0	0.04	4.5	4.5							4.6	5.4	0.01											0.9		
	STD. DEV.	2.7	0.4		0.4	26					0.9	0.6	0.6	0.03	1.4	1.4							0.6	1.6														
	MIN	21.7	4.5		0.4	148					4.6	0.1	0.1	0.02	3.4	3.5							3.9	4.2	0.01											0.9		
	MAX	27.6	5.4		1.3	198					6.6	1.6	1.6	0.08	6.5	6.5							5.2	6.5	0.01											0.9		

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Table G.1 (continued)
Statistical Water Quality Summary

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	E-coli	TOC (mg/L)	DOC (mg/L)	Anions						Cations							Hydrogen Sulfide (Unionized)	Sulfide	TS	Sucralose (ug/L)
																						F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na				
TA4-PZ-09-TU16	n	4	4		4	4					4	4	4	4	4	4							4	2	2											1		
	MEAN	25.4	5.1		0.9	199					8.4	2.5	2.4	0.03	5.9	6.0							4.6	6.5	0.02											0.1		
	STD. DEV.	2.8	0.3		0.3	56					2.1	1.1	1.1	0.04	2.0	2.0							0.9	3.3														
	MIN	21.4	4.7		0.6	135					5.9	1.7	1.7	0.01	4.2	4.2							3.9	4.2	0.01											0.1		
	MAX	27.5	5.4		1.3	271					10.8	4.1	4.0	0.09	8.8	8.8							5.8	8.8	0.02											0.1		
TA4-PZ-10-H5	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2											1		
	MEAN	25.6	4.5	2.0	1.6	217				10.7	8.4	1.5	1.5	0.01	7.0	7.0	0.1						10.4	5.4	0.01											1.7		
	STD. DEV.	2.8	0.7		0.4	86				0.6	2.3	0.7	0.7		1.9	1.9	0.1						10.2	0.2														
	MIN	21.4	4.0	2.0	1.2	126				10.0	6.1	0.9	0.9	0.01	5.2	5.2	0.0						2.4	5.2	0.01											1.7		
	MAX	27.4	5.5	2.0	2.2	327				11.0	10.5	2.5	2.5	0.01	9.2	9.2	0.1						25.0	5.5	0.01											1.7		
TA4-PZ-10-J5	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2											1		
	MEAN	25.6	4.6	2.0	2.6	278				10.0	10.6	1.7	1.7	0.02	8.9	8.9	0.08						15.1	6.4	0.01											0.9		
	STD. DEV.	2.8	0.7		0.7	118					4.1	0.9	0.9	0.03	3.3	3.3	0.08						9.9	2.3														
	MIN	21.5	4.0	2.0	2.1	112				10.0	5.6	0.9	0.9	0.01	4.7	4.7	0.03						2.5	4.7	0.01											0.9		
	MAX	27.6	5.6	2.0	3.6	382				10.0	14.8	2.8	2.7	0.06	12.0	12.1	0.17						23.0	8.0	0.01											0.9		
TA4-PZ-10-K5	n	4	4	3	4	4				3	4	4	4	4	4	4	3			3	3	3	4	3	2	3	3	3	3	3	3	3	3	3		1		
	MEAN	25.5	4.5	2.0	2.1	313				10.0	14.1	1.4	1.4	0.04	12.6	12.7	0.2			2.6	1.9	0.2	22.5	10.8	0.01	0.01	48.0	0.1	23.0	0.04	5.3	0.03	5.8	13.9		21.0		
	STD. DEV.	2.9	0.5		0.8	123					4.6	0.4	0.4	0.06	4.9	4.9	0.1			0.9	0.8	0.0	13.7	4.3			9.2	0.0	8.0	0.02	2.1	0.00	2.6	10.1				
	MIN	21.2	4.2	2.0	1.2	133				10.0	8.3	1.0	0.9	0.01	6.5	6.5	0.1			1.8	1.2	0.1	3.8	6.5	0.01	0.01	38.0	0.1	15.0	0.03	3.3	0.03	3.7	2.6		21.0		
	MAX	27.4	5.3	2.0	3.0	394				10.0	18.0	1.8	1.8	0.14	17.0	17.1	0.3			3.6	2.8	0.2	36.0	15.0	0.01	0.01	56.0	0.1	31.0	0.06	7.5	0.03	8.7	22.0		21.0		
TA4-PZ-11-EF2	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2											1		
	MEAN	25.6	4.2	2.0	1.9	211				14.3	8.7	1.4	1.4	0.01	7.3	7.3	0.08						10.9	5.9	0.01											0.1		
	STD. DEV.	2.9	0.2		0.9	84				6.7	3.4	0.5	0.5	0.01	3.2	3.2	0.10						10.8	0.8														
	MIN	21.4	3.9	2.0	1.4	138				10.0	6.2	0.9	0.9	0.01	5.3	5.3	0.02						3.9	5.3	0.01											0.1		
	MAX	27.8	4.3	2.0	3.2	332				22.0	13.6	2.1	2.1	0.03	12.0	12.0	0.20						27.0	6.4	0.01											0.1		
TA4-PZ-11-L2	n	4	4	3	4	4				3	4	4	4	4	4	4	3			3	3	3	4	3	2	3	3	3	3	3	3	3	3					1
	MEAN	26.0	4.7	2.0	2.0	268				10.0	14.1	1.7	1.7	0.02	12.4	12.4	0.04			2.6	1.9	0.1	14.5	8.7	0.01	0.01	46.0	0.05	23.0	0.02	4.3	0.1	4.9	6.0				0.5
	STD. DEV.	3.2	0.2	0.1	0.9	125					7.8	0.1	0.1	0.02	7.7	7.7	0.01			0.7	0.6	0.0	12.6	3.8			12.8	0.00	7.9		1.6	0.0	1.8	3.7				
	MIN	21.5	4.5	2.0	0.9	109				10.0	6.3	1.6	1.6	0.01	4.6	4.6	0.03			2.1	1.4	0.1	2.6	4.6	0.01	0.01	35.0	0.05	14.0	0.02	2.5	0.1	2.9	2.0				0.5
	MAX	29.1	4.9	2.1	3.1	415				10.0	24.9	1.9	1.9	0.04	23.0	23.0	0.04			3.4	2.6	0.2	32.0	12.0	0.01	0.01	60.0	0.05	29.0	0.02	5.6	0.1	6.2	9.3				0.5
TA4-PZ-11-L3	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2													
	MEAN	25.4	4.3	2.0	1.7	252				14.7	10.7	1.6	1.6	0.03	9.1	9.1	0.08						15.2	7.4	0.01													
	STD. DEV.	2.8	0.1		1.1	90				4.0	3.5	0.4	0.4	0.03	3.7	3.7	0.05						8.5	2.8														
	MIN	21.3	4.2	2.0	0.9	130				10.0	7.6	1.2	1.2	0.01	5.4	5.4	0.03						3.8	5.4	0.01													
	MAX	27.5	4.5	2.0	3.3	342				17.0	15.6	2.2	2.2	0.07	14.0	14.1	0.13						24.0	9.4	0.01													
TA4-PZ-11-L4	n	4	4	3	4	4				3	4	4	4	4	4	4	3			2	2	2	4	3	2	2	2	2	2	2	2	2	2	2				
	MEAN	25.5	4.3	2.0	2.2	309				11.7	13.7	1.6	1.6	0.03	12.1	12.1	0.05			1.5	1.3	0.1	23.3	9.5	0.01	0.01	52.5	0.1	24.0	0.03	6.1	0.04	5.9	21.0				
	STD. DEV.	2.6	0.1		1.0	120				2.9	6.2	0.6	0.5	0.03	5.6	5.6	0.03			0.8	0.7	0.0	12.4	3.6			0.7	0.0	4.2	0.01	0.8	0.00	0.8	1.4				
	MIN	21.7	4.2	2.0	1.6	138				10.0	6.3	0.9	0.8	0.01	5.4	5.4	0.02			1.0	0.9	0.1	5.3	5.4	0.01	0.01	52.0	0.1	21.0	0.02	5.5	0.04	5.3	20.0				
	MAX	27.4	4.4	2.0	3.7	420				15.0	21.2	2.2	2.1	0.07	19.0	19.1	0.09			2.1	1.8	0.2	32.0	12.0	0.01	0.01	53.0	0.1	27.0	0.03	6.6	0.04	6.4	22.0				
TA4-PZ-11-L5	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2													
	MEAN	25.3	4.5	2.0	1.8	326				12.3	14.9	2.0	2.0	0.01	13.0	13.0	0.2						23.3	8.9	0.01													
	STD. DEV.	2.7	0.5		0.8	118				1.2	5.4	0.8	0.8	0.01	5.0	5.0	0.1						13.8	3.0														
	MIN	21.4	4.2	2.0	0.9	155				11.0	8.4	1.6	1.6	0.01	6.8	6.8	0.1						4.1	6.8	0.01													
	MAX	27.1	5.2	2.0	2.9	419				13.0	19.6	3.1	3.1	0.02	18.0	18.0	0.3						36.0	11.0	0.01													

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Table G.1 (continued)
Statistical Water Quality Summary

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	E-coli	TOC (mg/L)	DOC (mg/L)	Anions						Cations							Hydrogen Sulfide (Unionized)	Sulfide	TS	Sucralose (ug/L)
																						F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na				
TA4-PZ-11-L6	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2													
	MEAN	25.4	4.5	2.0	1.8	347				17.3	13.3	1.6	1.5	0.01	11.8	11.8	0.1						20.7	9.0	0.01													
	STD. DEV.	2.8	0.4		1.0	166				10.2	3.7	0.5	0.5	0.01	3.6	3.6	0.1						13.0	2.8														
	MIN	21.2	4.3	2.0	0.7	142				10.0	8.2	1.1	1.1	0.01	7.0	7.0	0.1						3.7	7.0	0.01													
	MAX	27.1	5.2	2.0	3.0	547				29.0	16.6	2.3	2.3	0.03	15.0	15.0	0.2						35.0	11.0	0.01													
TA4-PZ-16-I7	n	4	4		4	4					4	4	4	4	4	4							3	1	1													
	MEAN	25.3	5.1		0.6	217					4.2	0.8	0.7	0.01	3.4	3.4							7.2	1.4	0.01													
	STD. DEV.	1.5	0.3		0.5	41					2.9	0.3	0.3	0.01	2.6	2.6							1.9															
	MIN	23.2	4.7		0.2	162					1.5	0.3	0.3	0.01	1.2	1.2							5.2	1.4	0.01													
	MAX	26.6	5.5		1.2	261					7.7	1.0	1.0	0.03	6.7	6.7							8.9	1.4	0.01													
TA4-PZ-16-L8	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.2	5.3		0.7	220					5.3	1.2	1.1	0.03	4.2	4.2							7.3	1.8	0.01													
	STD. DEV.	1.7	0.2		0.7	43					3.1	0.4	0.3	0.03	2.9	2.9							1.7	0.6														
	MIN	22.8	5.1		0.2	162					2.4	0.9	0.8	0.01	1.4	1.4							5.8	1.4	0.01													
	MAX	26.6	5.5		1.8	264					8.7	1.7	1.6	0.07	7.6	7.6							9.1	2.2	0.01													
TA4-PZ-16-M4	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.1	5.3		0.7	210					6.4	1.8	1.8	0.01	4.6	4.6							8.0	2.8	0.01													
	STD. DEV.	1.5	0.1		1.1	36					2.7	0.8	0.8		2.3	2.3							1.5	1.2														
	MIN	23.2	5.2		0.1	155					2.7	0.8	0.8	0.01	1.9	1.9							6.3	1.9	0.01													
	MAX	26.7	5.4		2.4	232					8.6	2.7	2.7	0.01	6.5	6.5							9.9	3.6	0.01													
TA4-PZ-16-N7	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.3	5.2		0.4	218					6.5	1.1	1.1	0.02	5.5	5.5							8.8	2.5	0.01													
	STD. DEV.	1.6	0.1		0.5	39					3.4	0.5	0.5	0.01	3.5	3.5							2.4	0.5														
	MIN	23.2	5.1		0.1	162					2.9	0.7	0.7	0.01	2.1	2.1							6.9	2.1	0.01													
	MAX	26.7	5.3		1.1	252					9.6	1.7	1.7	0.03	8.5	8.5							12.0	2.8	0.01													
TA4-PZ-16-TU14	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.2	5.4		0.4	231					2.3	0.8	0.7	0.01	1.5	1.5							4.8	0.7	0.01													
	STD. DEV.	1.8	0.4		0.5	51					1.2	0.1	0.1	0.01	1.1	1.1							1.0	0.1														
	MIN	22.8	5.1		0.1	173					1.4	0.6	0.6	0.01	0.7	0.7							4.1	0.7	0.01													
	MAX	26.6	6.0		1.2	297					4.0	0.9	0.9	0.02	3.1	3.1							6.2	0.8	0.01													
TA4-PZ-16-TU16	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.1	5.2		0.4	230					2.9	0.7	0.7	0.01	2.2	2.2							5.0	1.1	0.0													
	STD. DEV.	1.7	0.1		0.4	32					1.9	0.4	0.4	0.01	1.5	1.5							0.5	0.6														
	MIN	22.9	5.1		0.2	184					1.0	0.3	0.3	0.01	0.7	0.7							4.4	0.7	0.0													
	MAX	26.4	5.3		1.0	257					5.4	1.2	1.2	0.03	4.2	4.2							5.7	1.5	0.0													
PZ01-BKG-09	n	4	4		4	4					4	4	4	4	4	4							4	2	2													
	MEAN	27.7	4.7		3.3	76					0.4	0.3	0.3	0.02	0.05	0.07							5.3	0.07	0.01													
	STD. DEV.	2.1	0.3		1.8	30					0.2	0.2	0.1	0.03	0.06	0.08							0.8	0.08														
	MIN	24.6	4.3		0.8	48					0.1	0.1	0.1	0.01	0.01	0.02							4.4	0.01	0.01													
	MAX	29.1	4.9		4.8	111					0.6	0.5	0.4	0.06	0.13	0.19							6.3	0.13	0.01													
PZ04-BKG-09	n	4	4		4	4					4	4	4	4	4	4							3	2	2													
	MEAN	25.5	5.2		3.4	106					5.7	1.4	1.4	0.01	4.3	4.3							3.0	0.6	0.01													
	STD. DEV.	2.6	0.2		1.3	47					5.3	0.9	0.9	0.00	4.6	4.6							2.6	0.5														
	MIN	21.8	5.0		2.0	52					0.6	0.4	0.3	0.01	0.3	0.3							0.9	0.3	0.01													
	MAX	27.6	5.5		4.5	167					12.5	2.5	2.5	0.02	10.0	10.0							6.0	1.0	0.01													
PZ05-BKG-09	n	1	1		1	1					1	1	1	1	1	1							1	1	1													
	MEAN	25.9	5.3		0.2	66					1.8	1.2	1.2	0.01	0.64	0.65							3.1	0.6	0.01													
	STD. DEV.																																					
	MIN	25.9	5.3		0.2	66					1.8	1.2	1.2	0.01	0.64	0.65							3.1	0.6	0.01													
	MAX	25.9	5.3		0.2	66					1.8	1.2	1.2	0.01	0.64	0.65							3.1	0.6	0.01													
PZ24-BKG-26	n	4	4	3	4	4				3	4	4	4	4	4	4	3						4	2	2													
	MEAN	25.4	5.1	4.2	2.0	293				10.0	13.3	1.7	1.7	0.01	11.6	11.6	0.3						17.0	11.2	0.01													
	STD. DEV.	0.3	0.1	1.0	1.2	11					2.0	0.5	0.5	0.00	1.6	1.6	0.4						0.8	2.6														
	MIN	25.1	5.0	3.2	0.5	283				10.0	10.3	1.0	1.0	0.01	9.3	9.3	0.0						16.0	9.3	0.01													
	MAX	25.8	5.2	5.2	3.3	308				10.0	14.8	2.0	2.0	0.01	13.0	13.0	0.7						18.0	13.0	0.01													

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Table G.1 (continued)
Statistical Water Quality Summary

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Cf/100 mL)	E-coli	TOC (mg/L)	DOC (mg/L)	Anions						Cations							Hydrogen Sulfide (Unionized)	Sulfide	TS	Sucralose (ug/L)
																						F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na				
PZ29-BKG09	n	4	4	4	4	4				3	4	4	4	4	4	4	3						4	2	2													1
	MEAN	26.5	5.1	2.7	1.3	214				10.0	5.5	1.3	1.3	0.01	4.3	4.3	0.1						6.8	4.7	0.01													0.01
	STD. DEV.	2.9	0.3	0.6	0.4	2					0.8	0.5	0.5		0.5	0.5	0.0						0.6	0.1														
	MIN	22.8	4.9	2.1	0.8	211				10.0	4.6	0.7	0.7	0.01	3.6	3.6	0.0						6.4	4.6	0.01													0.01
	MAX	29.8	5.5	3.2	1.7	216				10.0	6.2	1.9	1.9	0.01	4.7	4.7	0.1						7.7	4.7	0.01													0.01
PZ30-BKG-16	n	4	4	4	4	4				3	4	4	4	4	4	4	3						4	2	2													1
	MEAN	26.0	5.5	11.0	1.4	305				14.0	12.2	1.1	1.1	0.01	11.1	11.1	0.1						15.8	10.3	0.01													0.01
	STD. DEV.	1.2	0.1	7.4	0.8	19				3.6	1.0	0.2	0.2	0.00	1.2	1.2	0.0						1.0	1.1														
	MIN	24.2	5.3	6.3	0.4	288				10.0	10.9	0.9	0.8	0.01	9.5	9.5	0.0						15.0	9.5	0.01													0.01
	MAX	26.7	5.6	22.0	2.4	332				17.0	13.0	1.4	1.4	0.01	12.0	12.0	0.1						17.0	11.0	0.01													0.01
PZ31-BKG-26	n	4	4	4	4	4				3	4	4	4	4	4	4	3						4	2	2													1
	MEAN	26.3	5.1	4.5	2.5	328				10.0	15.7	1.5	1.3	0.1	14.3	14.4	0.07						20	15	0.01													0.01
	STD. DEV.	0.5	0.0	0.5	1.6	15					2.1	0.3	0.3	0.1	1.9	1.9	0.05						2.0	2.8														
	MIN	25.5	5.0	4.2	1.2	316				10.0	14.2	1.2	1.1	0.0	13.0	13.1	0.03						19	13	0.01													0.01
	MAX	26.7	5.1	5.2	4.1	350				10.0	18.8	1.8	1.7	0.2	17.0	17.1	0.12						23	17	0.01													0.01
PZ32-BKG09	n	4	4	4	4	4				3	4	4	4	4	4	4	3						4	2	2													1
	MEAN	27.0	4.5	2.0	2.9	187				10.3	4.4	1.0	1.0	0.01	3.4	3.4	0.03						4.9	2.5	0.01													0.01
	STD. DEV.	3.0	0.1		1.5	43				0.6	2.2	0.5	0.5	0.00	1.8	1.8	0.01						1.7	1.8														
	MIN	22.7	4.4	2.0	1.3	155				10.0	1.5	0.3	0.3	0.01	1.2	1.2	0.02						3.0	1.2	0.01													0.01
	MAX	29.2	4.6	2.0	4.9	249				11.0	6.9	1.4	1.4	0.02	5.5	5.5	0.04						6.9	3.8	0.01													0.01
PZ33-BKG-16	n	4	4	4	4	4				3	4	4	4	4	4	4	3			1	1	1	4	2	2	1	1	1	1	1	1	1	1	1				1
	MEAN	26.6	5.1	4.2	1.1	324				10.0	17.1	1.6	1.5	0.04	15.5	15.5	0.03			1.3	1.3	0.01	17	20	0.01	0.01	35	0.1	37	0.02	11	0.4	10	7.7				0.01
	STD. DEV.	1.2	0.1	0.8	0.5	65					5.9	0.6	0.6	0.04	5.7	5.7	0.02						3.6	4.2														
	MIN	24.8	4.9	3.2	0.4	270				10.0	12.1	1.1	1.0	0.01	11.0	11.0	0.01			1.3	1.3	0.01	14	17	0.01	0.01	35	0.1	37	0.02	11	0.4	10	7.7				0.01
	MAX	27.4	5.2	5.2	1.5	409				10.0	24.3	2.5	2.4	0.09	23.0	23.0	0.06			1.3	1.3	0.01	22	23	0.01	0.01	35	0.1	37	0.02	11	0.4	10	7.7				0.01
PZ34-BKG-26	n	4	4	4	4	4				3	4	4	4	4	4	4	3						4	2	2													1
	MEAN	26.3	5.5	10.0	2.1	324				10.0	9.5	2.1	2.0	0.1	7.4	7.5	0.5						21.8	7.2	0.01													0.01
	STD. DEV.	0.6	0.3	5.5	0.7	8					1.0	1.1	1.1	0.1	1.9	1.9	0.1						1.3	2.9														
	MIN	25.4	5.2	6.3	1.2	316				10.0	8.4	1.4	1.2	0.1	5.1	5.2	0.4						20.0	5.1	0.01													0.01
	MAX	26.8	5.9	18.0	2.8	331				10.0	10.6	3.7	3.6	0.2	9.2	9.3	0.7						23.0	9.2	0.01													0.01
PZ35-BKG09	n	4	4	4	4	4					4	4	4	4	4	4							4	2	2													
	MEAN	26.0	6.4	115	2.3	575					5.0	1.6	1.6	0.03	3.4	3.5							10.9	2.1	0.05													
	STD. DEV.	1.3	0.3	12.9	2.3	203					2.3	0.6	0.6	0.02	1.9	1.9							4.3	1.3	0.02													
	MIN	24.1	6.0	100	0.3	400					1.8	0.7	0.7	0.01	1.1	1.1							7.2	1.1	0.03													
	MAX	26.9	6.6	130	5.6	863					7.4	2.2	2.2	0.05	5.6	5.6							17.0	3.0	0.06													
PZ36-BKG-16	n	4	4	4	4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.6	5.2	6.4	0.5	286					12.3	1.6	1.6	0.02	10.7	10.7							11	15	0.01													
	STD. DEV.	0.6	0.2	4.5	0.3	39					5.5	0.6	0.6	0.02	5.2	5.1							3.6	1.4														
	MIN	24.7	5.1	3.2	0.2	251					6.8	0.9	0.9	0.01	5.3	5.3							7.8	14	0.01													
	MAX	26.1	5.4	13.0	0.9	321					17.7	2.3	2.3	0.06	16.0	16.0							15	16	0.01													
PZ37-BKG-26	n	3	4	4	4	4				3	4	4	4	4	4	4	3						4	2	2													
	MEAN	25.3	5.1	4.7	1.6	319				10.3	15.5	1.5	1.5	0.01	14	14	0.73						17.5	14	0.01													
	STD. DEV.	0.2	0.1	1.1	1.8	15				0.6	1.1	0.6	0.6	0.00	0.8	0.8	0.87						1.7															
	MIN	25.1	5.0	4.2	0.1	302				10.0	14.1	1.1	1.1	0.01	13	13	0.04						16	14	0.01													
	MAX	25.4	5.2	6.3	4.0	333				11.0	16.4	2.4	2.4	0.02	15	15	1.70						20	14	0.01													
PZ38-BKG09	n	4	4	4	4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.7	6.0	37.3	0.6	298					1.2	0.6	0.5	0.07	0.7	0.7							9.2	0.5	0.01													
	STD. DEV.	0.7	0.2	25.6	0.7	171					0.4	0.3	0.4	0.12	0.3	0.2							3.7	0.1														
	MIN	25.0	5.7	21.0	0.2	196					0.7	0.3	0.1	0.01	0.4	0.6							6.2	0.4	0.01													
	MAX	26.6	6.2	75.0	1.7	552					1.6	1.0	1.0	0.25	1.0	1.0							14.0	0.6	0.01													

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Table G.1 (continued)
Statistical Water Quality Summary

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	E-coli	TOC (mg/L)	DOC (mg/L)	Anions						Cations							Hydrogen Sulfide (Unionized)	Sulfide	TS	Sucralose (ug/L)
																						F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na				
PZ39-BKG-16	n	4	4	4	4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.3	5.9	32	0.8	256					3.7	1.1	1.1	0.01	2.6	2.6							6.5	2	0.01													
	STD. DEV.	0.6	0.2	18	1.0	56					0.8	0.5	0.5	0.00	0.7	0.7							0.5															
	MIN	24.6	5.8	10	0.2	221					2.6	0.6	0.6	0.01	2.0	2.0							5.8	2	0.01													
	MAX	25.9	6.2	54	2.2	340					4.4	1.7	1.7	0.02	3.3	3.3							7.0	2	0.01													
PZ40-BKG-26	n	4	4	4	4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.0	5.2	4.2	1.4	300					10.9	1.3	1.3	0.01	9.6	9.6							14.5	10.8	0.01													
	STD. DEV.	0.1	0.1	0.8	1.6	16					2.3	0.5	0.5	0.01	2.0	2.0							1.0	1.7														
	MIN	24.9	5.0	3.2	0.1	279					8.0	0.8	0.8	0.01	7.2	7.2							13.0	9.6	0.01													
	MAX	25.1	5.2	5.2	3.5	313					13.4	2.0	2.0	0.03	12.0	12.0							15.0	12.0	0.01													
PZ-41	n	1	1		1	1					1	1	1	1	1	1							1	1	1													
	MEAN	27.8	5.0		6.8	901					59.4	8.4	8.4	0.02	51	51							68	51	0.01													
	STD. DEV.																																					
	MIN	27.8	5.0		6.8	901					59.4	8.4	8.4	0.02	51	51							68	51	0.01													
	MAX	27.8	5.0		6.8	901					59.4	8.4	8.4	0.02	51	51							68	51	0.01													
PZ-42	n	1	1		1	1					1	1	1	1	1	1							1	1	1													
	MEAN	27.6	5.0		5.8	882					56.8	4.8	4.7	0.1	52	52.1							73	52	0.05													
	STD. DEV.																																					
	MIN	27.6	5.0		5.8	882					56.8	4.8	4.7	0.1	52	52.1							73	52	0.05													
	MAX	27.6	5.0		5.8	882					56.8	4.8	4.7	0.1	52	52.1							73	52	0.05													
PZ-43	n	2	2	1	2	2				1	2	2	2	2	2	2	1						2	2	2													
	MEAN	26.2	4.9	2.1	5.1	128				10	6.2	1.4	1.3	0.01	4.9	4.9	0.03						2.8	4.9	0.01													
	STD. DEV.	2.1	0.1		0.6	43					3.0	0.1	0.1	0.00	3.0	3.0							1.6	3.0														
	MIN	24.7	4.8	2.1	4.7	98				10	4.1	1.3	1.3	0.01	2.7	2.7	0.03						1.7	2.7	0.01													
	MAX	27.7	5.0	2.1	5.5	159				10	8.3	1.4	1.4	0.01	7.0	7.0	0.03						3.9	7.0	0.01													
PZ-44	n	2	2	1	2	2				1	2	2	2	2	2	2	1						2	2	2													
	MEAN	27.4	4.7	2.0	5.1	784				13	46.2	3.2	3.2	0.01	43	43	0.04						62.5	43	0.01													
	STD. DEV.	1.6	0.1		3.2	66					8.1	1.0	1.0		7.1	7.1							6.4	7.1														
	MIN	26.2	4.6	2.0	2.8	737				13	40.5	2.5	2.5	0.01	38	38	0.04						58	38	0.01													
	MAX	28.5	4.8	2.0	7.3	831				13	51.9	3.9	3.9	0.01	48	48	0.04						67	48	0.01													
PZ-45	n	1	1		1	1					1	1	1	1	1	1							1	1	1													
	MEAN	28.3	4.6		3.5	371					15.5	2.5	2.4	0.1	13.0	13.1							22	13	0.01													
	STD. DEV.																																					
	MIN	28.3	4.6		3.5	371					15.5	2.5	2.4	0.1	13.0	13.1							22	13	0.01													
	MAX	28.3	4.6		3.5	371					15.5	2.5	2.4	0.1	13.0	13.1							22	13	0.01													
PZ-46	n	1	1		1	1					1	1	1	1	1	1							1	1	1													
	MEAN	26.7	4.6		1.2	730					43.6	2.6	2.6	0.01	41	41							60	41	0.01													
	STD. DEV.																																					
	MIN	26.7	4.6		1.2	730					43.6	2.6	2.6	0.01	41	41							60	41	0.01													
	MAX	26.7	4.6		1.2	730					43.6	2.6	2.6	0.01	41	41							60	41	0.01													
PZ-47	n	2	2		2	2					2	2	2	2	2	2							2	2	2													
	MEAN	26.3	4.7		3.8	382					14.1	1.1	1.1	0.01	13	13							25.5	13.0	0.01													
	STD. DEV.	1.1	0.1		3.0	98					8.6				8.6	8.6							3.5	8.6														
	MIN	25.5	4.7		1.7	313					8.0	1.1	1.1	0.01	6.9	6.9							23.0	6.9	0.01													
	MAX	27.0	4.8		6.0	451					20.1	1.1	1.1	0.01	19	19							28.0	19.0	0.01													
PZ-48	n	2	2		2	2					2	2	2	2	2	2							2	2	2													
	MEAN	26.2	4.6		2.4	245					4.3	0.9	0.9	0.01	3.4	3.4							8.6	3.4	0.01													
	STD. DEV.	0.7	0.1		3.0	70					1.7	0.2	0.3	0.00	1.5	1.5							0.4	1.5														
	MIN	25.7	4.5		0.3	195					3.1	0.8	0.7	0.01	2.3	2.3							8.3	2.3	0.01													
	MAX	26.7	4.7		4.5	294					5.5	1.1	1.1	0.01	4.4	4.4							8.9	4.4	0.01													

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Table G.1 (continued)
Statistical Water Quality Summary

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	E-coli	TOC (mg/L)	DOC (mg/L)	Anions						Cations							Hydrogen Sulfide (Unionized)	Sulfide	TS	Sucralose (ug/L)
																						F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na				
PZ-49	n	1	1		1	1					1	1	1	1	1	1							1	1	1													
	MEAN	26.4	4.6		2.6	434					17.6	1.6	1.6	0.01	16	16							32	16	0.01													
	STD. DEV.																																					
	MIN	26.4	4.6		2.6	434					17.6	1.6	1.6	0.01	16	16							32	16	0.01													
	MAX	26.4	4.6		2.6	434					17.6	1.6	1.6	0.01	16	16							32	16	0.01													
PZ-50	n	1	1		1	1					1	1	1	1	1	1							1	1	1													
	MEAN	26.9	5.5		4.7	191					5.2	1.7	1.7	0.03	3.5	3.5							5.3	3.5	0.01													
	STD. DEV.																																					
	MIN	26.9	5.5		4.7	191					5.2	1.7	1.7	0.03	3.5	3.5							5.3	3.5	0.01													
	MAX	26.9	5.5		4.7	191					5.2	1.7	1.7	0.03	3.5	3.5							5.3	3.5	0.01													
PZ-51	n	1	1		1	1					1	1	1	1	1	1							1	1	1													
	MEAN	26.1	5.6		3.6	112					1.5	0.7	0.7	0.01	0.7	0.7							1.5	0.7	0.01													
	STD. DEV.																																					
	MIN	26.1	5.6		3.6	112					1.5	0.7	0.7	0.01	0.7	0.7							1.5	0.7	0.01													
	MAX	26.1	5.6		3.6	112					1.5	0.7	0.7	0.01	0.7	0.7							1.5	0.7	0.01													
PZ-52	n	1	1		1	1					1	1	1	1	1	1							1	1	1													
	MEAN	25.6	5.9		5.0	531					22.1	2.1	2.1	0.01	20	20							30	20	0.01													
	STD. DEV.																																					
	MIN	25.6	5.9		5.0	531					22.1	2.1	2.1	0.01	20	20							30	20	0.01													
	MAX	25.6	5.9		5.0	531					22.1	2.1	2.1	0.01	20	20							30	20	0.01													
PZ-53	n	1	1		1	1					1	1	1	1	1	1							1	1	1													
	MEAN	26	5.3		2.7	135					5.7	1.1	1.1	0.01	4.6	4.6							2.1	4.6	0.01													
	STD. DEV.																																					
	MIN	26	5.3		2.7	135					5.7	1.1	1.1	0.01	4.6	4.6							2.1	4.6	0.01													
	MAX	26	5.3		2.7	135					5.7	1.1	1.1	0.01	4.6	4.6							2.1	4.6	0.01													
PZ-54	n	1	1		1	1					1	1	1	1	1	1							1	1	1													
	MEAN	24.5	5.1		4.6	144					5.2	1.0	0.9	0.01	4.2	4.2							2.9	4.2	0.05													
	STD. DEV.																																					
	MIN	24.5	5.1		4.6	144					5.2	1.0	0.9	0.01	4.2	4.2							2.9	4.2	0.05													
	MAX	24.5	5.1		4.6	144					5.2	1.0	0.9	0.01	4.2	4.2							2.9	4.2	0.05													
PZ-55	n	1	1		1	1					1	1	1	1	1	1							1	1	1													
	MEAN	23.9	5.5		2.9	257					5.5	1.5	1.5	0.02	4	4							7.7	4	0.01													
	STD. DEV.																																					
	MIN	23.9	5.5		2.9	257					5.5	1.5	1.5	0.02	4	4							7.7	4	0.01													
	MAX	23.9	5.5		2.9	257					5.5	1.5	1.5	0.02	4	4							7.7	4	0.01													
PZ-56	n	1	1		1	1					1	1	1	1	1	1							1	1	1													
	MEAN	24.9	4.5		4.5	220					15.2	4.2	4.2	0.01	11	11							5.9	11	0.01													
	STD. DEV.																																					
	MIN	24.9	4.5		4.5	220					15.2	4.2	4.2	0.01	11	11							5.9	11	0.01													
	MAX	24.9	4.5		4.5	220					15.2	4.2	4.2	0.01	11	11							5.9	11	0.01													
PZ-57	n	1	1		1	1					1	1	1	1	1	1							1	1	1													
	MEAN	23.9	5.1		2.6	108					4.9	1.1	1.0	0.1	3.8	3.9							2.0	3.8	0.01													
	STD. DEV.																																					
	MIN	23.9	5.1		2.6	108					4.9	1.1	1.0	0.1	3.8	3.9							2.0	3.8	0.01													
	MAX	23.9	5.1		2.6	108					4.9	1.1	1.0	0.1	3.8	3.9							2.0	3.8	0.01													

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Table G.1 (continued)
Statistical Water Quality Summary

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	E-coli	TOC (mg/L)	DOC (mg/L)	Anions					Cations							Hydrogen Sulfide (Unionized)	Sulfide	TS	Sucralose (ug/L)
																						F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na				
PNRS II samples																																					
TA5-Denite Tank	n	3	4	3	4	4		3	2	3	4	4	4	4	4	4	3	3					3	2	2		3								2	1		
	MEAN	24.6	6.2	223.3	0.5	1076		3.7	2.0	119.3	3.6	3.5	2.9	0.6	0.03	0.6	3.7	67.3					60	0.03	0.01										1.7	0.18		
	STD. DEV.	5.4	1.2	30.6	0.9	185		2.5		31	2.8	2.8	2.2	0.6	0.02	0.6	2.2	114.9					23.4	0.03			75.7								2.3			
	MIN	18.4	4.4	190	0.1	909		1.0	2.0	88	2.0	1.9	1.5	0.1	0.01	0.1	1.6	1.0					45	0.01	0.01		140								0.1	0.2		
	MAX	28.4	7.0	250	1.8	1331		6.0	2.0	150	7.7	7.7	6.2	1.5	0.05	1.5	5.9	200					87	0.05	0.01		280								3.3	0.2		
TA5-LINER-SP	n	4	4	2	4	4		2	1	3	5	5	5	5	5	5	3	1					3	3	3		2								2	1		
	MEAN	27.2	6.4	250	3.7	856		7.0	2.0	117.7	7.6	3.1	3.0	0.1	4.5	4.6	5.1	1.0					57	4.9	0.06		40.0								0.6	0.6		
	STD. DEV.	6.9	0.1	14.1	0.8	68		1.4		33.6	6.0	1.9	1.8	0.1	5.2	5.2	3.7						8.5	7.0	0.08		7.1								0.1			
	MIN	17.6	6.3	240	2.7	786		6.0	2.0	83	1.4	1.1	1.1	0.0	0.3	0.3	1.0	1.0					49	0.2	0.01		35								0.5	0.6		
	MAX	33.2	6.6	260	4.6	926		8.0	2.0	150	15.8	5.7	5.3	0.4	13	13	8.1	1.0					66	13.0	0.15		45								0.7	0.6		
TA5-LY-C	n	4	4	2	4	4		2	1	3	4	4	4	4	4	4	3	3					4	3	3		3								3	2		
	MEAN	27.4	6.5	48	6.7	735		1.0	2.0	44.3	34.0	3.0	2.9	0.01	31	31	3.9						57	33.7	0.01										0.7			
	STD. DEV.	7.2	0.7	38.2	1.0	105				27.5	5.5	1.6	1.6	0.00	6.3	6.3	2.6						4.2	4.2			8.2								1.0	0.1		
	MIN	17.9	5.6	21	5.9	653		1.0	2.0	26	26.2	1.4	1.4	0.01	23	23	1.2	1.0					52	29	0.01		50								0.0	0.1		
	MAX	35.3	7.2	75	8.1	880		1.0	2.0	76	38.4	5.1	5.1	0.02	37	37	6.4	1.0					62	37	0.01		66								1.8	0.3		
TA5-PZ-I	n	4	4	3	4	4		3	3	3	4	4	4	4	4	4	3	3					3	2	2		3								3	2		1
	MEAN	26.6	4.5	2.1	0.9	344		1.3	2.0	11.3	9.7	1.2	1.2	0.02	8.5	8.5	0.04	1.0					17.3	6.3	0.01		83.3								0.01	0.1		5.1
	STD. DEV.	0.4	0.2		0.4	27		0.6		1.5	5.4	0.6	0.6	0.02	5.1	5.1	0.02						4.9	1.4			8.1											
	MIN	26.2	4.2	2.1	0.4	312		1.0	2.0	10.0	5.8	0.5	0.5	0.01	5.3	5.3	0.02	1.0					14	5.3	0.01		74								0.01	0.1		5.1
	MAX	27.1	4.7	2.1	1.3	376		2.0	2.0	13.0	17.7	1.8	1.8	0.04	16	16	0.06	1.0					23	7.3	0.01		88								0.01	0.1		5.1
TA6-Denite Tank	n	4	4	3	4	4		3	3	3	4	4	4	4	4	4	3	3					4	2	2		4								3	3		
	MEAN	25.1	6.5	200	0.5	866		3.7	3.7	130	3.1	3.0	2.7	0.3	0.07	0.4	3.2	60.7					59.5	0.10	0.01		132.3								3.3	4.7		
	STD. DEV.	4.4	0.4	88.9	0.3	164		1.5	2.9	17.3	1.5	1.4	1.4	0.2	0.05	0.3	2.4	103.3					20.6	0.08			53.4								2.4	3.6		
	MIN	18.6	5.9	130	0.1	684		2.0	2.0	120	1.2	1.2	1.1	0.1	0.04	0.1	1.8	1.0					31	0.04	0.01		89								1.0	1.7		
	MAX	28.0	6.8	300	0.9	1082		5.0	7.0	150	4.5	4.3	3.9	0.6	0.15	0.7	5.9	180					76	0.15	0.01		210								5.8	8.7		
TA6-LINER-SP	n	3	3	2	3	3		2	1	2	3	3	3	3	3	3	2	2					3	2	2		2								2	1		
	MEAN	24.4	6.5	255	4.0	895		1.5	2.0	135	4.2	3.2	3.0	0.24	1.0	1.2	2.5	1.0					65.7	0.11	0.01		42.5								0.4	0.2		
	STD. DEV.	5.2	0.1	35.4	1.8	171		0.7		7.1	4.3	2.8	2.5	0.29	1.6	1.8	1.6						16.5	0.02			10.6								0.4			
	MIN	18.5	6.4	230	2.9	719		1.0	2.0	130	1.0	0.9	0.9	0.01	0.1	0.1	1.3	1.0					49	0.09	0.01		35								0.1	0.2		
	MAX	27.8	6.6	280	6.1	1061		2.0	2.0	140	9.1	6.3	5.7	0.57	2.8	3.4	3.6	1.0					82	0.12	0.01		50								0.7	0.2		
TA6-LY-C	n	4	4	4	4	4		2	1	4	4	4	4	4	4	4	4	3					4	3	3		3								3	3		
	MEAN	26.3	6.3	106.3	6.4	603		1.0	2.0	51.5	9.7	2.0	2.0	0.01	7.7	7.7	1.0	1					57	9.4	0.01		52								6.2	7.2		
	STD. DEV.	5.9	0.3	30.9	1.2	171				22.8	8.3	0.3	0.3	0.01	8.2	8.2	1.0						19.6	9.1			10.4								10.3	12.0		
	MIN	18.2	5.9	65	5.3	403		1.0	2.0	35.0	3.0	1.6	1.6	0.01	0.9	0.9	0.1	1.0					31	0.9	0.01		40								0.2	0.2		
	MAX	32.3	6.6	140	8.0	788		1.0	2.0	85.0	21.3	2.3	2.3	0.03	19.0	19.0	1.9	1.0					74	19.0	0.01		59								18.0	21.0		
TA6-PZ-I	n	4	4	3	4	4		3	2	3	4	4	4	4	4	4	3	3					4	2	2		3								3	2		1
	MEAN	27.3	5.3	22.5	2.5	291		7.3	2.0	26.7	15.5	1.9	1.9	0.01	13.6	13.6	0.03	1					10.8	10.3	0.01		45.7								0.12	0.2		0.01
	STD. DEV.	2.6	0.6	27.4	1.5	103		4.6		14.6	5.4	0.9	0.9		5.1	5.1	0.01						7.0	3.9			26.3								0.10	0.0		
	MIN	24.8	4.8	4.2	0.6	141		2.0	2.0	11.0	8.6	1.1	1.1	0.01	7.5	7.5	0.02	1.0					3.5	7.5	0.01		30								0.01	0.2		0.01
	MAX	30.9	6.1	54.0	4.0	374		10.0	2.0	40.0	21.7	3.2	3.2	0.01	20.0	20.0	0.04	1.0					20	13	0.01		76								0.18	0.2		0.01

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Table G.1 (continued)
Statistical Water Quality Summary

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	E-coli	TOC (mg/L)	DOC (mg/L)	Anions						Cations							Hydrogen Sulfide (Unionized)	Sulfide	TS	Sucralose (ug/L)
																						F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na				
Blanks																																						
EB	n	4	4	4	4	4				4	4	4	4	4	4	4				3	4	4	4	4	2	3	4	4	4	4	4	4	4	4				
	MEAN	23	7.6	2.0	5.0	55				10.0	0.1	0.1	0.04	0.01	0.02	0.02				0.5	0.7	0.02	0.1	0.01	0.01	0.01	0.2	0.1	0.04	0.02	0.02	0.00	0.01	0.1				
	STD. DEV.	1.9	0.6		2.8	102					0.0				0.01	0.01					0.4	0.03															
	MIN	20.2	6.8	2.0	3.4	2				10.0	0.1	0.1	0.04	0.01	0.01	0.02				0.5	0.5	0.01	0.1	0.01	0.01	0.01	0.2	0.1	0.04	0.02	0.02	0.00	0.01	0.1				
	MAX	24.5	8.2	2.0	9.2	208				10.0	0.1	0.1	0.04	0.01	0.02	0.03				0.5	1.2	0.06	0.1	0.01	0.01	0.01	0.2	0.1	0.04	0.02	0.02	0.00	0.01	0.1				
FB-DI	n	4	4	4	4	4					4	4	4	4	4	4							4	2	2													
	MEAN	24.7	7.5	2.0	5.3	55					0.1	0.1	0.04	0.01	0.02	0.02							0.10	0.01	0.01													
	STD. DEV.	4.3	0.6	0.1	2.6	102					0.0				0.01	0.01							0.09															
	MIN	20.2	6.8	2.0	3.6	2					0.1	0.1	0.04	0.01	0.01	0.02							0.05	0.01	0.01													
	MAX	30.5	8.2	2.1	9.2	208					0.1	0.1	0.04	0.01	0.02	0.03							0.23	0.01	0.01													
FB-Tap	n	4	4	4	4	4					4	4	4	4	4	4							4	2	2													
	MEAN	25.9	6.8	135	4.4	324					0.2	0.2	0.13	0.04	0.06	0.10							19.3	0.08	0.01													
	STD. DEV.	4.5	0.4	12.9	1.6	213					0.1	0.1	0.07	0.07	0.03	0.06							4.2	0.03														
	MIN	19.8	6.3	120	2.9	5					0.1	0.1	0.04	0.01	0.03	0.04							13.0	0.06	0.01													
	MAX	30.5	7.2	150	6.6	449					0.3	0.3	0.21	0.15	0.10	0.18							22.0	0.10	0.01													

Notes:

[1]Total Nitrogen (TN) is a calculated value equal to the sum of TKN and NO_X.

[2]Organic Nitrogen (ON) is a calculated value equal to the difference of TKN and NH_3.

[3]Total Inorganic Nitrogen (TIN) is a calculated value equal to the sum of NH_3 and NO_X.

D.O. - Dissolved oxygen

Gray-shaded data points indicate values below method detection level (mdl), mdl value used for statistical analyses.

Yellow-shaded data points indicate the reported value is between the laboratory method detection limit and the laboratory practical quantitation limit, value used for statistical analysis.

Orange - shaded data points indicate too many colonies were present. The numeric value represents the dilution factor times the maximum reportable number of colonies.

Purple-shaded data points indicate results based upon colony counts outside the method indicated ideal range.

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