FLORIDA DEPARTMENT OF HEALTH

Florida Onsite Sewage Nitrogen Reduction Strategies Study

Task C.17

S&GW Test Facility Data Summary Report No. 1

Progress Report

September 2012

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HAZEN AND SAWYER
Environmental Engineers & Scientists

In association with

SCHOOL OF MINES 1874 COLORADO

AET
Applied Environmental Technology

OTIS ENVIRONMENTAL CONSULTANTS, LLC

Florida Onsite Sewage Nitrogen Reduction Strategies Study

TASK C.17
PROGRESS REPORT

S&GW Test Facility
Data Summary Report No. 1

Prepared for:

Florida Department of Health
Division of Environmental Health
Bureau of Onsite Sewage Programs
4042 Bald Cypress Way Bin #A-08
Tallahassee, FL 32399-1713

FDOH Contract CORCL

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Prepared by:

HAZEN AND SAWYER
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S&GW Test Facility Monitoring Data Summary Report No. 1

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 and field monitoring 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 first S&GW test facility monitoring and sampling event conducted June 18, 2012 through June 21, 2012. 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 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 passive nitrogen reduction stacked biofilter systems (PNRS II) 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 nitrified effluent to 3 test areas. The nitrification unit preceding three of the units 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	in situ STE effluent (Task A PNRS II)	0.8	mounded drip dispersal over denitrification media
TA6	in situ ATU effluent (Task A PNRS II)	0.8	mounded drip dispersal over denitrification media

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

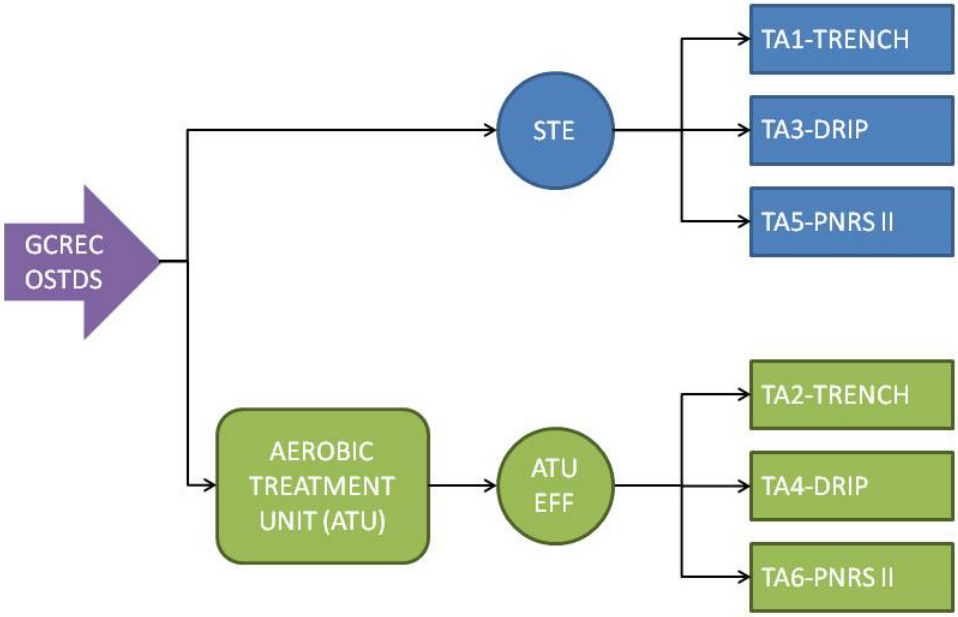

Figure 1
S&GW Test Facility System Schematic

3.2 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.

3.2.1 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 or below the drip emitters. A complete list of all installed monitoring devices and associated sample identification is included in Appendix A.

3.2.2 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 as depicted in Figures 2 and 3. 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, and May 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).

3.2.3 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' below natural ground surface on the grid at J4. Schematics of the STE and nitrified systems monitoring network are shown in Figures 2 and 3, in addition detailed schematics of the STE systems and nitrified effluent systems are provided in Appendix A. Figure 4 depicts a typical schematic of the test area instrumentation. Figure 5 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.

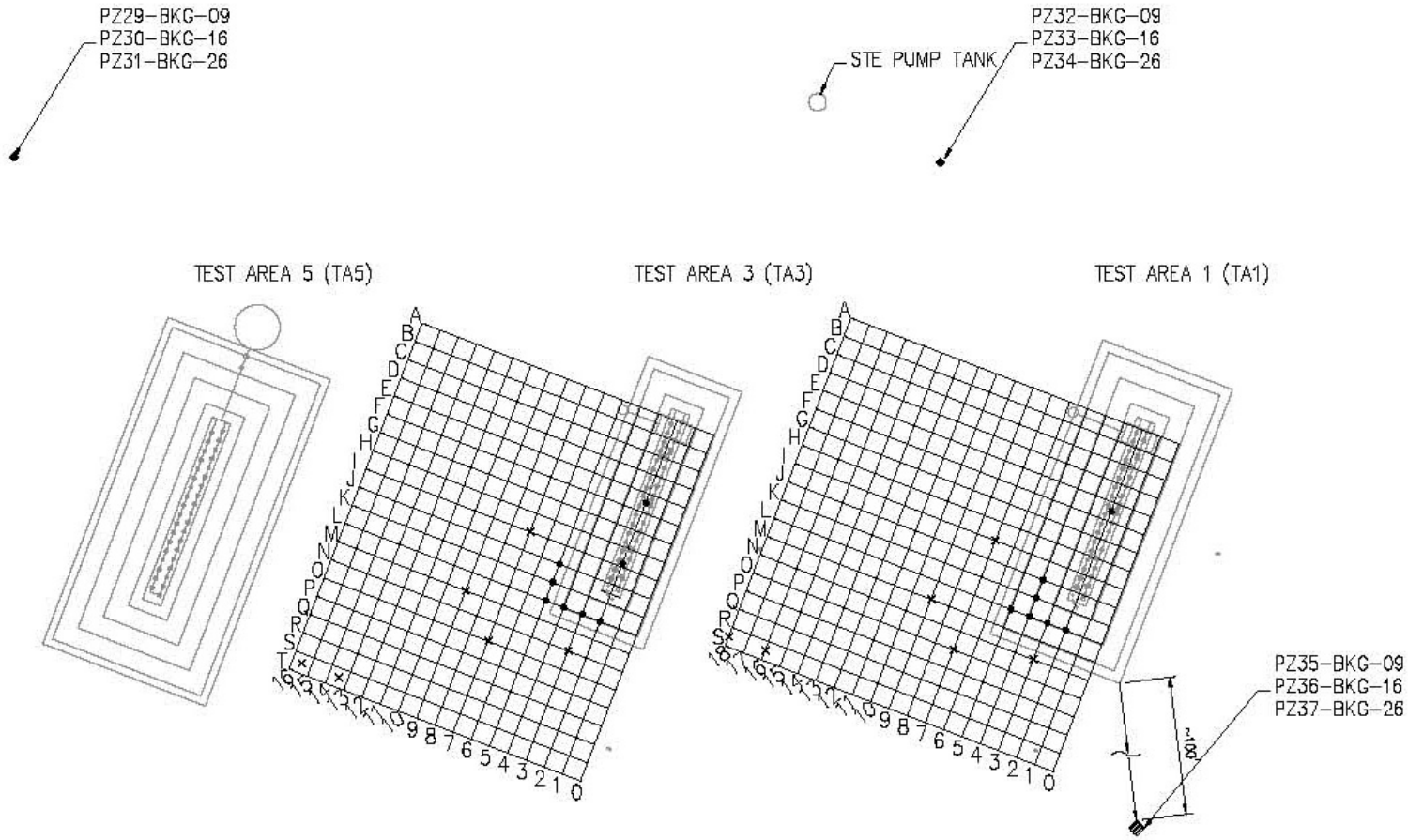

Figure 2
Schematic of STE System
S&GW Test Facility Monitoring Network

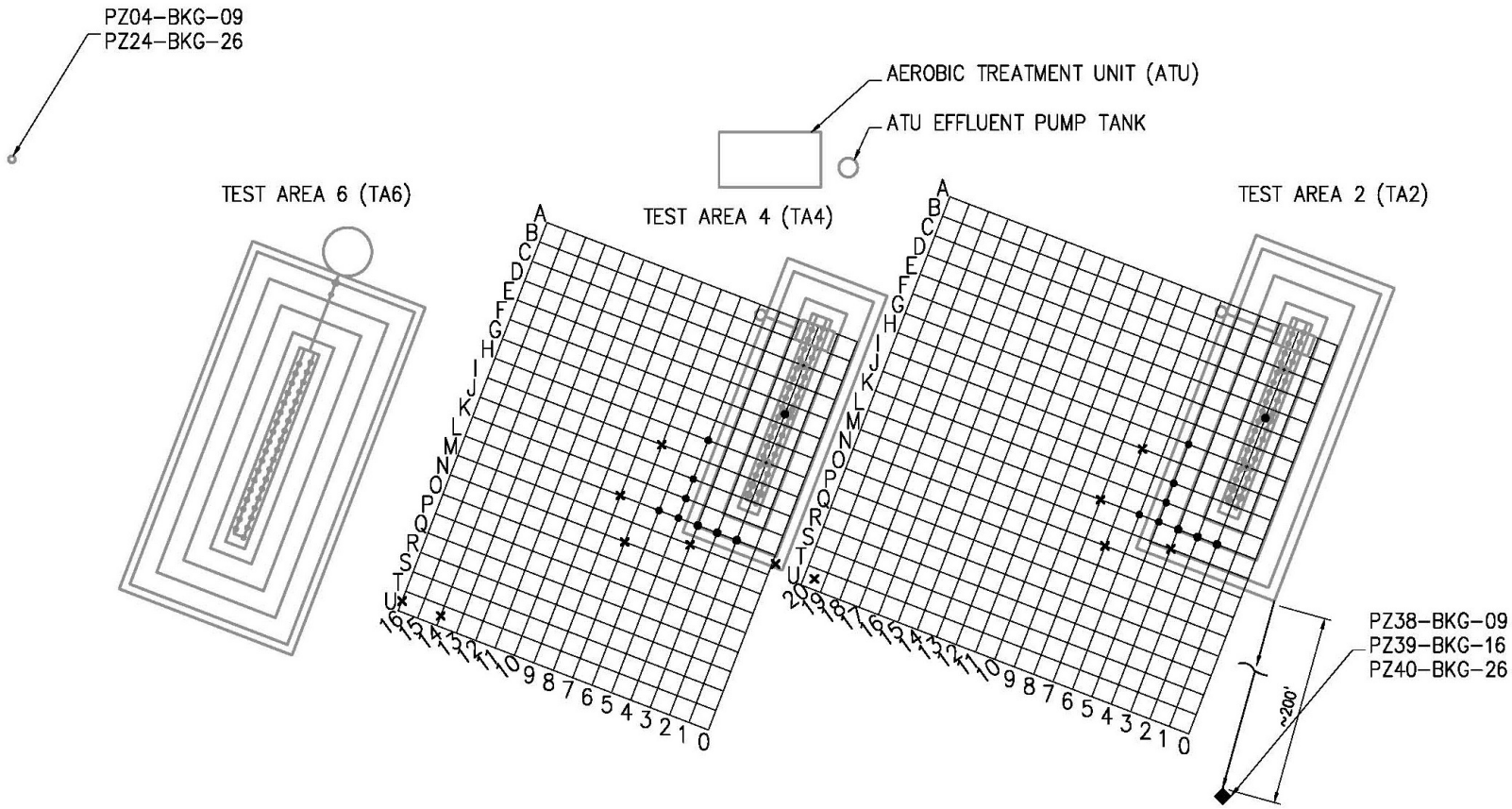

Figure 3
Schematic of ATU Effluent System
S&GW Test Facility Monitoring Network

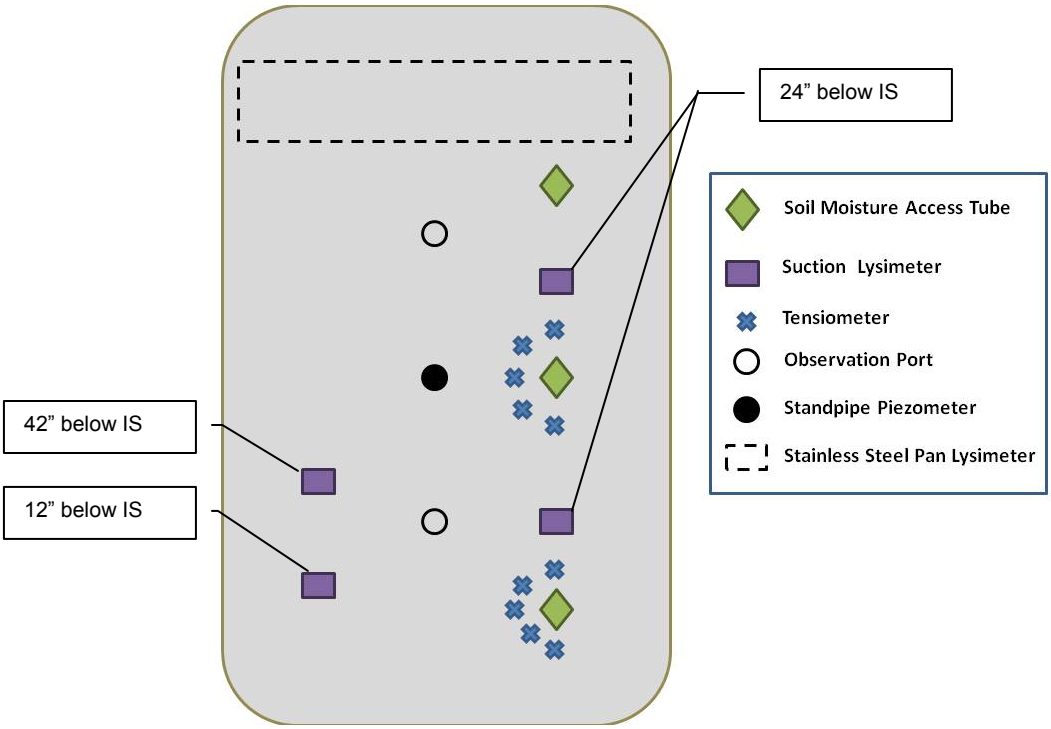

Figure 4
Typical Instrumentation of Test Area, Top View (example Test Area 3)

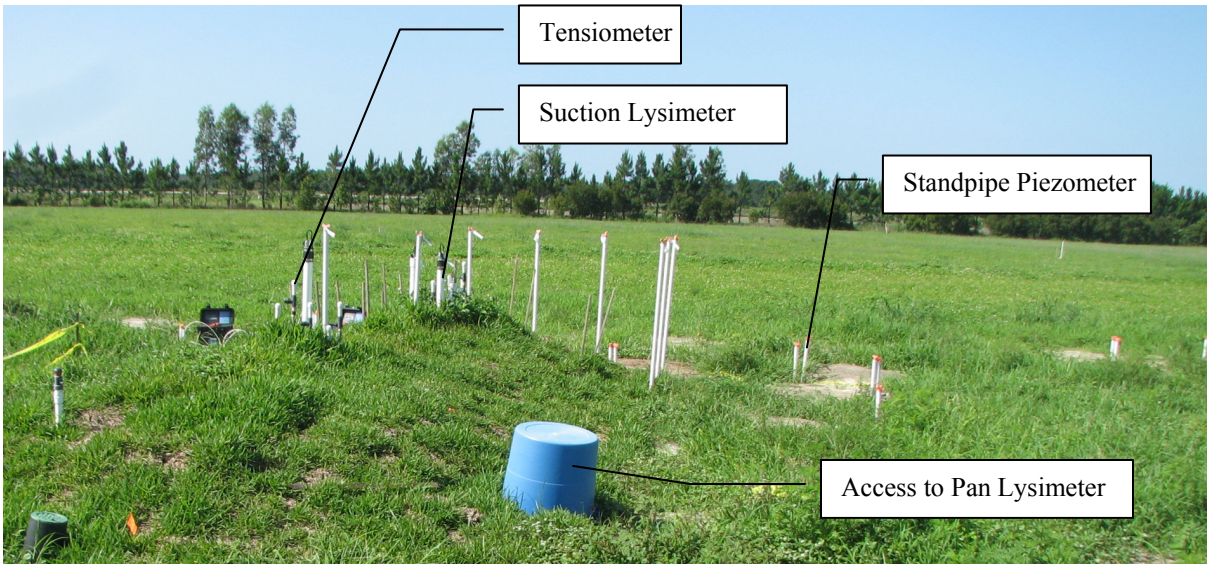

Figure 5
Photo of Instrumented Test Area 3

3.3 Operational Monitoring

Operational conditions include effluent quality, hydraulic loading rate to the soil, and ponding on the soil infiltrative surface or at the fill/natural soil interface. The STE and ATU effluent quality was monitored weekly for the first month following start-up as summarized in Appendix B. The STE quality is characteristic of typical household STE quality. However, the ATU is not efficiently oxidizing ammonia to nitrate as indicated by the low nitrate concentration in the ATU effluent.

3.3.1 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 system. The systems are dosed six doses per day. The total recorded flow for the STE system was within the 15% operational target that is considered acceptable. The ATU system was +26.2% of the target volume. After evaluating the recorded flow, flow testing and adjustment was conducted on the ATU system.

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[1] Occurrences (#)	Average Recorded Flow (gpd)	RE% Measured/ Target (%)
STE System					
5/9/12 2:35 PM	13,733.08	5,188.14	15		
6/18/12 3:10 PM	20,987.62	8,620.71	24	93.36	-2.8%
ATU System					
5/9/12 3:22 PM	38,415.90	33,861.96	25		
6/18/12 3:05 PM	63,382.59	53,711.43	34	121.15	26.2%

[1]STE system additional field flush cycle volume is 9.5 gallons, ATU system additional field flush cycle volume is 30.3 gallons

3.3.2 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 C provides a summary table of the daily recorded meteorological data since start-up.

Table 3
Meteorological Data Daily Averages Measured June 14, 2012 – June 22, 2012

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)
June 14, 2012	78.52	79.17	78.52	82.68	73.40	84	0	5.64	0.16
June 15, 2012	76.11	76.78	76.06	81.78	71.26	85	0.02	5.93	0.16
June 16, 2012	78.80	79.48	78.47	81.94	68.89	73	0	9.87	0.22
June 17, 2012	76.82	77.62	76.94	81.88	66.81	72	0	8.09	0.21
June 18, 2012	76.81	77.45	77.14	81.97	65.96	71	0	8.63	0.20
June 19, 2012	75.51	76.30	75.97	81.57	67.14	75	0	9.60	0.16
June 20, 2012	75.73	76.44	75.81	80.78	72.55	88	0.27	9.95	0.11
June 21, 2012	77.40	77.95	77.21	80.44	74.29	89	0.13	7.61	0.14
June 22, 2012	77.25	77.75	77.01	80.55	74.76	91	0.40	6.26	0.13

3.3.3 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 D. 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 start-up are presented in Appendix D. Appendix D, Figures D.1 and D.2 summarize TA1 and TA3, respectively, 15 minute interval data preceding and during the sample event for soil tension, rainfall, and dose occurrence.

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 6) which takes readings every 10 cm the entire length of the access tube. The 0 cm reading is at the infiltrative surface of each test area. Soil moisture content was collected daily (Appendix E). No ponding was observed within the test area observation ports.

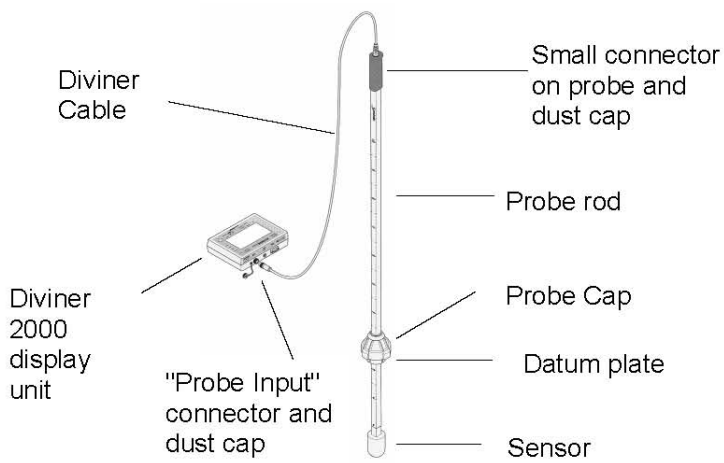

Figure 6
Sentek™ Diviner 2000
Source: Diviner 2000 User Guide V1.5

3.4 Soil Characteristics

During the instrumentation of the S&GW test facility, soil cores were collected at two locations; MM (located between TA2 and TA5) and TT (north of the tracer test area). At location MM a continuous soil core was collected to the confining Hawthorn clay layer. The shallow soil cores will provide information on vadose zone properties, and the deep soil core will provide a general idea of the soil properties within the aquifer. The information will be used when determining appropriate parameters to be used in model development. In addition, a test pit was dug south of the S&GW test facility and east of the GCREC mound into the spodic layer approximately 6 feet below ground surface (Figure 7).

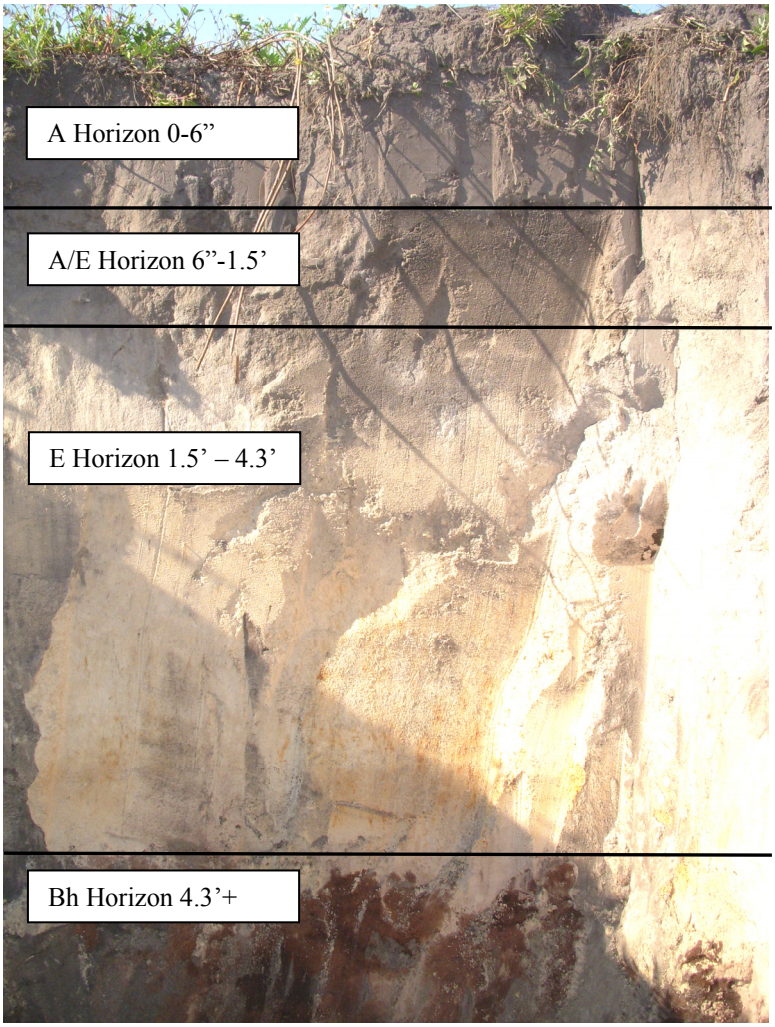

Figure 7
Photograph of Test Pit Soil Profile

3.5 Groundwater Elevation Measurements

Groundwater level measurements are used to determine hydraulic gradients and directions of groundwater flow. Groundwater levels were measured using 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.

3.6 Water Quality Sample Collection and Analyses

Effluent, groundwater, and soil moisture samples were collected June 18, 2012 through June 21, 2012 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, sample was collected from the PNRS II Tank 1, which supplies STE to the S&GW test facility ATU 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 F, 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.

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. At some of the water sample locations chemical oxygen demand (COD) and dissolved organic carbon (DOC) were included. For the two in-situ passive nitrogen reduction mounded systems (TA5 and TA6) samples, sulfate was also included. All analyses were performed by an independent and fully certified analytical laboratory (Southern Analytical Laboratory). Table 4 lists the analytical parameters, analytical methods, and detection limits for these analyses.

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
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

4.0 Results

4.1 Soil Characteristics

During the instrumentation of the S&GW test facility, split spoon soil samples were collected at two-foot intervals at two locations MM; (located between TA2 and TA5) and TT (north of the tracer test area). At location MM a continuous soil core was collected to the confining Hawthorn clay layer. In addition, a test pit was dug, at a location south of the S&GW test facility and east of the GCREC mound, into the spodic layer approximately 6 feet below ground surface. The soil descriptions are presented in Table 5. The top few inches at the site are typically a darker, brown or grey fine sandy soil, followed

by a light-colored, grey and/or pale yellow fine sand. Mottling is commonly visible between 4 to 5 feet below the ground surface. The spodic layer is approximately 2.5 and 6.75 feet thick at the TT and MM locations, respectively; and the soil below the spodic layer is a light or yellowish brown, fine to medium sand (Table 5). The Hawthorne clay is considered a confining layer at the site and lies approximately 27 to 30 feet below the ground surface.

Subsequently, handheld methods were used to better determine the actual elevation of the spodic layer (Table 6) at several additional locations across the site. Figure 8 illustrates the top elevation of the spodic layer at the site as determined by the handheld methods.

Table 5
May 2012 Soil Core Descriptions

Grid Location	Identifier	Approximate Surface Elevation[1] (ft)	Depth bgs (ft)	Description
North of tracer test #2 area	TT	131.5	2-2.5'	10YR3/1 fine sand
			2.5-3.5'	10YR3/2 fine sand
			3.5-5.5'	10YR7/2 fine sand
			5.5-7'	Transition to Bh (spodic horizon)
			7-9.5'	10YR2/2 fine sand Bh (spodic horizon)
			9.5-14'	10YR5/3 fine sand
			14-15.5'	10YR4/3 fine sand
			15.5-16'+	10YR4/4 fine sand
Between TA2 and TA5	MM	130.5	0-2'	A Horizon top soil
			2.5-5.75'	10YR6/3 fine sand
			5.75-12.5'	10YR2/2 fine sand Bh (spodic horizon)
			12.5-17'	10YR4/4 fine sand
			17-27'	10YR5/4 fine sand
			27'+	Hawthorne clay
Test pit south of the S&GW test facility east of the GCREC mound	TP	127.0	0-6"	A horizon
			6"-1.5'	A/E horizon
			1.5-4.3'	E horizon
			4.3'+	Bh spodic horizon

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

Table 6
The Top Elevation of the Spodic Horizon as Determined by Hand Methods

Location	Elevation[1] (ft)	Location	Elevation[1] (ft)
SB-1	122.47	SB-4	123.40
SB-2	122.97	SB-5	121.96
SB-3	124.20	SB-6	121.96

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

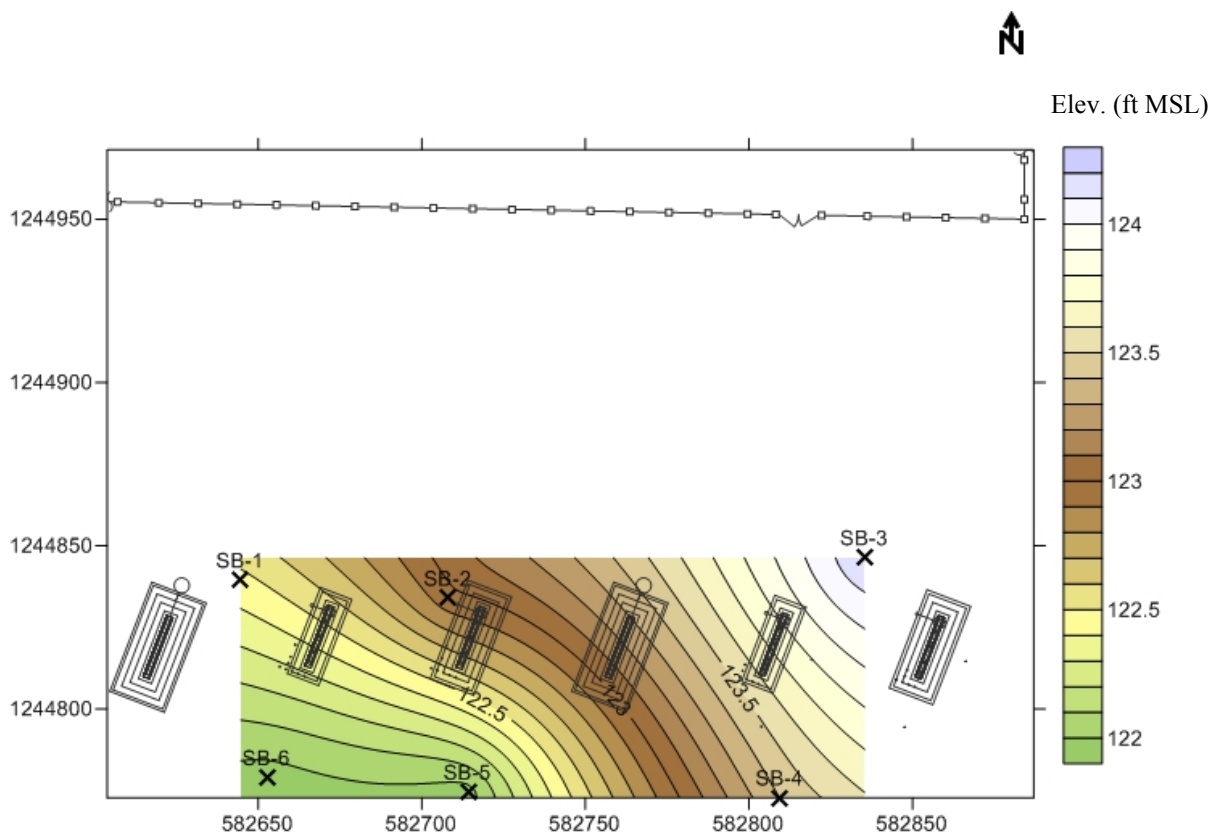

Figure 8
Elevations of spodic (Bh) horizon as determined by hand methods
(the locations of the soil borings are provided for reference)

The MM, TT and test pit soil samples were submitted to the University of Florida IFAS Analytical Services Laboratories and University of Florida SWS Mineralogy Core Laboratory for analysis. The soil samples were analyzed for pH, organic matter, cation exchange

capacity (CEC), ammonia, nitrate, TKN, phosphorus, potassium, calcium, magnesium, and sodium concentrations as well as particle size distribution summarized in Table 7. The complete soil data set is included Appendix G.

Table 7
Soil Grain Size Distribution in Percent (%)

ID	Depth Bgs (ft)	Sand Fractions (%)					Total (%)			Texture Class
		Very Fine	Fine	Medium	Coarse	Very Coarse	Sand	Silt	Clay	
		0.05-0.1 mm	0.25-0.1 mm	0.25-0.5 mm	0.5-1.0 mm	1.0-2.0 mm	0.05-2 mm	0.002-0.05 mm	<0.002 mm	
TT	2-3'	8.4	45.9	31.7	6.1	0.8	95.6	1.2	3.2	Sand
	3.5-5.5'	7.9	44.3	35.6	7.7	1.1	96.4	1.2	2.4	Sand
	7.5-9.5'	5.4	55.0	26.7	5.0	1.3	93.0	2.9	4.1	Sand
	10.5-12'	3.7	49.9	30.3	7.2	3.5	95.0	1.8	3.2	Sand
	12-14'	3.2	52.4	29.0	6.5	3.4	94.9	2.7	2.4	Sand
	14-15.5'	1.1	62.9	28.6	4.2	1.1	98.1	0.3	1.6	Sand
	14-15.5'	1.6	65.2	26.2	4.0	1.1	98.2	0.1	1.6	Sand
	15.5-16'	4.8	51.1	33.3	4.7	1.2	95.6	2.8	1.6	Sand
MM	2-2.5'	7.9	45.4	30.2	6.3	1.1	95.6	1.2	3.2	Sand
	2.5-4'	7.9	47.3	29.4	8.2	1.6	94.9	3.4	3.2	Sand
	4-5'	9.3	47.1	25.7	6.4	1.5	90.3	8.1	1.6	Sand
	6-7'	3.1	55.2	28.5	5.2	2.4	95.1	4.0	1.6	Sand
	7-8'	3.7	50.9	34.6	4.6	0.3	95.6	2.7	1.7	Sand
	8-9'	2.3	35.3	47.7	5.1	0.4	93.7	5.4	0.8	Sand
	9-10'	3.6	25.1	60.8	5.4	0.7	96.0	1.5	2.5	Sand
	12.5-14'	1.8	35.3	54.2	4.5	0.6	96.7	3.3	0.0	Sand
	14.5-16'	2.9	38.9	42.1	5.4	1.8	91.3	6.1	2.5	Sand
	17-18'	3.4	40.7	37.9	7.1	1.5	90.7	9.3	BDL	Sand
	19-20'	1.6	35.3	51.1	7.1	1.5	96.4	1.2	2.4	Sand
	23-24'	1.2	29.4	52.8	8.1	0.6	91.9	5.7	2.4	Sand
	25-26'	2.0	43.2	38.8	0.7	0.8	89.3	9.1	1.6	Sand
	26-27'	1.3	37.6	48.6	7.1	1.1	95.6	2.7	1.6	Sand
Test Pit	0-6"	10.1	49.4	29.2	5.3	1.0	94.9	1.0	4.1	Sand
	1'	6.8	47.4	34.0	7.1	1.2	94.6	2.2	3.2	Sand
	3'	9.9	47.7	27.4	7.1	1.7	93.9	3.6	2.5	Sand
	6'	4.7	44.7	39.1	6.4	1.3	96.3	1.2	2.5	Sand
	6'	4.8	45.8	35.1	5.5	1.6	92.8	5.5	1.7	Sand

4.2 Groundwater Levels

Figure 9 illustrates the surficial groundwater contours as derived from measurements within the standpipe piezometers on June 18 through 21, 2012 representative of the first sample event. Table 8 shows the actual measured water levels. Based on the output illustrated in these plots the direction of flow is generally to the southwest. Slight variations in flow direction are apparent in Figure 9 across the site.

Table 8
Standpipe Piezometer Groundwater Level Measured

Identification/ Location	Water Table Elevation[1] (ft)	Identification/ Location	Water Table Elevation[1] (ft)
	June 18, 2012		June 18, 2012
TA1-PZ-11-EF2	124.55	PZ01-BKG-09	124.33
TA1-PZ-11-L5	124.45	PZ04-BKG-09	123.72
TA1-PZ-16-RS16	124.11	PZ24-BKG-26	123.72
TA2-PZ-10-EF2	124.02	PZ29-BKG-09	124.32
TA2-PZ-10-H5	123.97	PZ30-BKG-16	124.32
TA2-PZ-10-L6	123.89	PZ32-BKG-09	124.67
TA2-PZ-09-N7	123.95	PZ33-BKG-16	124.69
TA2-PZ-16-N7	123.86	PZ34-BKG-26	124.69
TA2-PZ-09-TU19	123.67	PZ35-BKG-09	123.80
TA2-PZ-16-TU19	123.66	PZ36-BKG-16	123.78
TA3-PZ-11-EF2	124.36	PZ37-BKG-26	123.74
TA3-PZ-11-I2	124.30	PZ38-BKG-09	122.37
TA3-PZ-10-J5	124.27	PZ39-BKG-16	122.31
TA3-PZ-10-L5	124.22	PZ40-BKG-26	122.32
TA3-PZ-09-ST14	124.11		
TA3-PZ-16-ST14	124.09		
TA4-PZ-11-EF2	123.87		
TA4-PZ-10-H5	123.76		
TA4-PZ-11-L5	123.70		
TA4-PZ-09-L8	123.71		
TA4-PZ-16-L8	123.67		
TA4-PZ-09-TU14	123.54		
TA4-PZ-16-TU14	123.53		
TA5-PZ-I	124.13		
TA6-PZ-I	123.49		

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

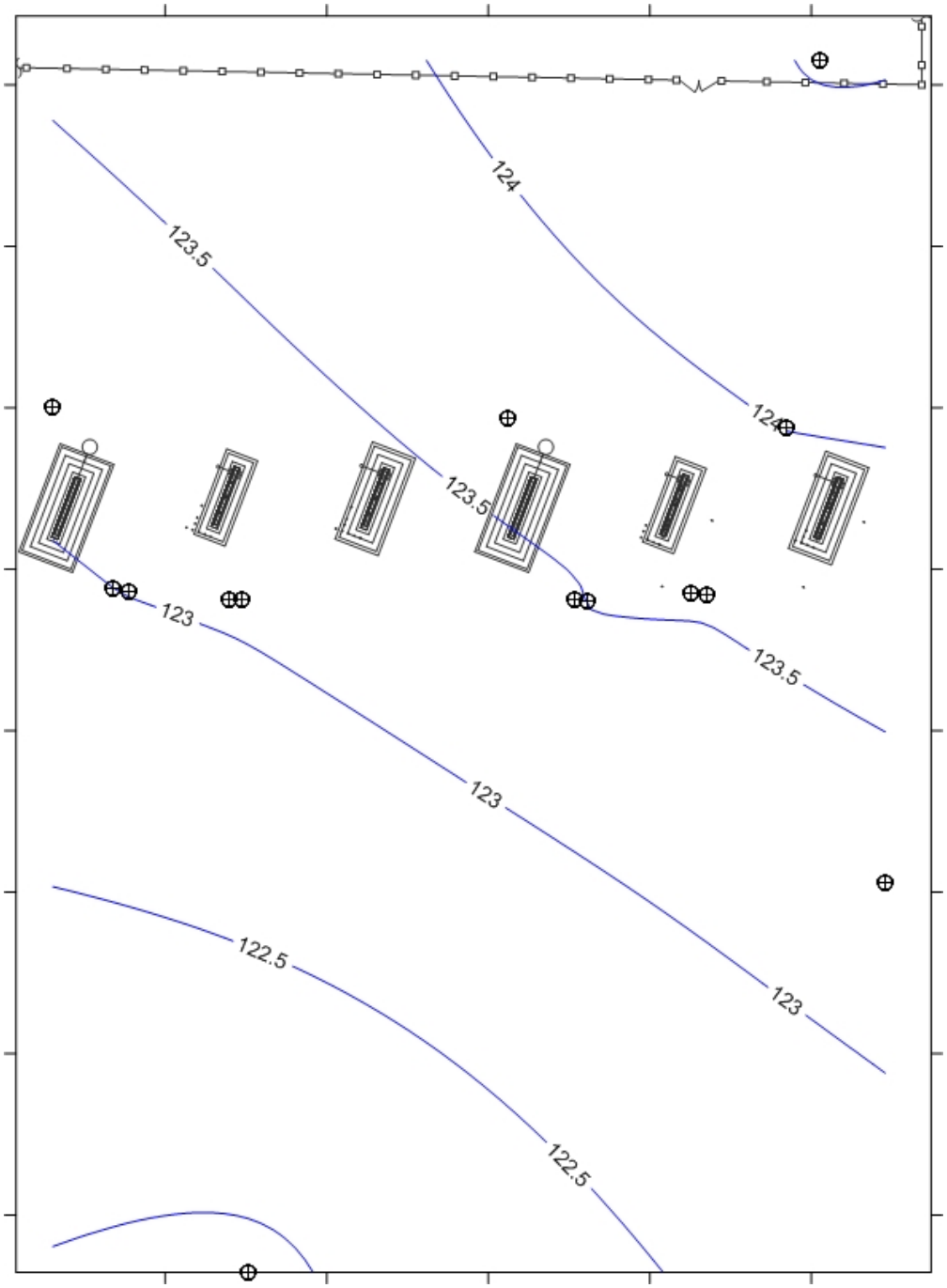

Figure 9
Surficial Groundwater Contours (Elev. ft above MSL)
June 18 through 21, 2012, representative of SE No. 1
⊕ denotes piezometers

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4.3 Water Quality Analyses

4.3.1 Field Parameters

Field parameters (temperature, pH, dissolved oxygen (DO), and specific conductivity) were measured at all the sampling locations during the June 2012 sampling event. The complete field parameter data set is included in Appendix H.

4.3.2 Correlations

Correlations between nitrogen parameters were investigated to determine if simple to measure field parameters could continue to be used to locate contaminant plumes. Figure 10 shows a scatter plot of nitrogen vs conductivity for groundwater samples. While no strong linear correlation is observed, the graph shows that increasing groundwater conductivity around the test systems is generally associated with increased groundwater nitrogen concentrations.

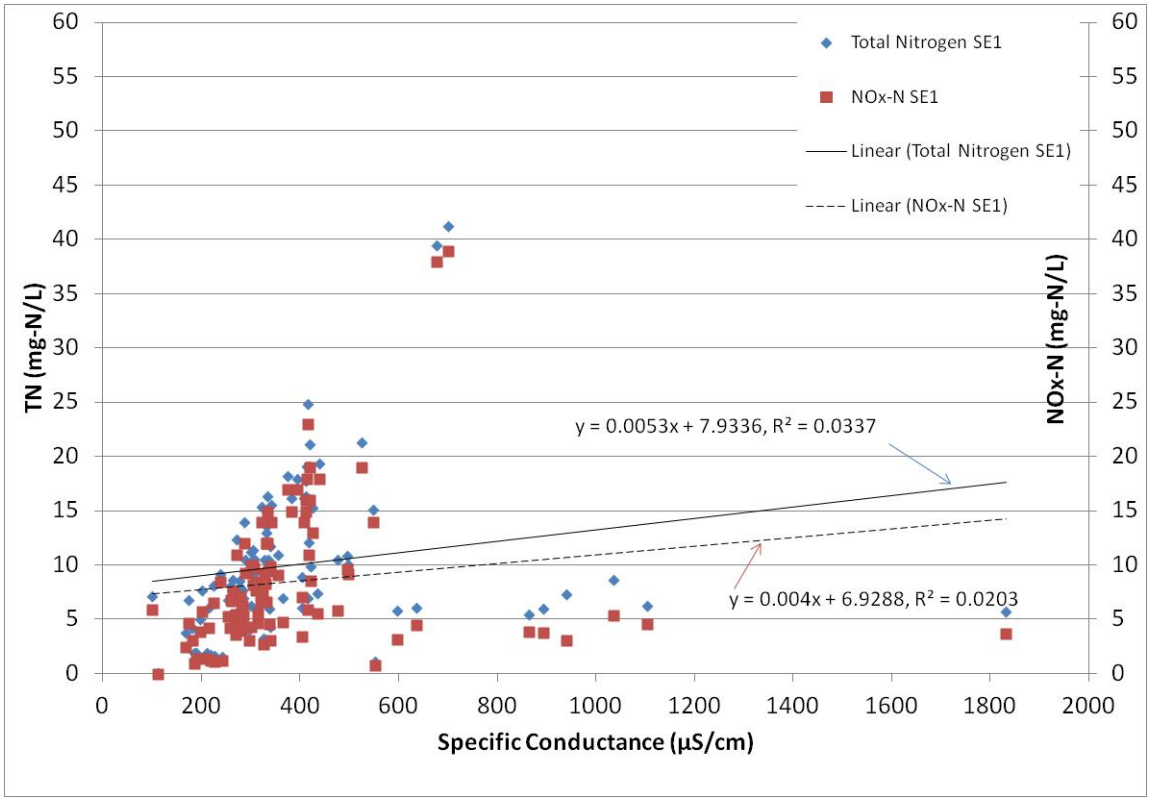


Figure 10
Correlation Between the Specific Conductance (uS/cm) and Concentrations of NOX and TN(mg-N/L) for groundwater samples

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 June sampling event provides insight into the development of nitrogen plumes from the test areas. The complete water quality analytical results for Sample Event No. 1 are listed in Table 1, Appendix H. The laboratory report containing the raw analytical data is included in Appendix F.

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 nitrified 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 1 were within the range that has been typically reported for Florida single family residence STE. The measured STE total nitrogen (TN) concentration was 71 mg-N/L. The STE pump tank and ATU effluent pump tank total nitrogen concentrations were 65 and 60 mg-N/L, respectively; and the NOX-N concentrations were 0.03 and 0.28 mg-N/L, respectively. The ATU is not operating as intended in converting ammonium to oxidized nitrogen.

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 Figure 4 for placement). The nitrogen results are summarized in Tables 9 through 12 for each of the test areas. All four test areas exhibit total nitrogen concentrations greater than 30 mg/L at a depth 42-inches below the infiltrative surface and complete ammonia nitrification 12-inches below the infiltrative surface. The groundwater level was at approximately 68 inches below the infiltrative surface during this sample event.

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	3	12	6.6	10
NH3, mg N/L	0.012	0.07	0.051	0.009
NO3, mg N/L	46	18	53	36
NO2, mg N/L	0.01	0.01	0.01	0.01
NOx, mg N/L	46.01	18.01	53.01	36.01
TN, mg N/L	49.01	30.01	59.61	46.01

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	1.7	2.8	3.1	7.1
NH3, mg N/L	0.009	0.015	0.037	0.009
NO3, mg N/L	24	27	28	23
NO2, mg N/L	0.01	0.01	0.01	0.01
NOx, mg N/L	24.01	27.01	28.01	23.01
TN, mg N/L	25.71	29.81	31.11	30.11

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	3.2	6	3.1	3
NH3, mg N/L	0.024	0.012	0.009	0.009
NO3, mg N/L	50	47	53	34
NO2, mg N/L	0.01	0.01	0.31	0.12
NOx, mg N/L	50.01	47.01	53.31	34.12
TN, mg N/L	53.21	53.01	56.41	37.12

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	2.4	4.8	3.7	4.9
NH3, mg N/L	0.051	0.009	0.009	0.015
NO3, mg N/L	37	34	45	27
NO2, mg N/L	0.01	0.01	0.01	0.01
NOx, mg N/L	37.01	34.01	45.01	27.01
TN, mg N/L	39.41	38.81	48.71	31.91

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 June 2012 groundwater data for test areas 1 through 4. The two slices were separated by elevation above sea level (NGVD29 datum) into the following ranges: 115 to 125 ft, and 105 to 115 ft. A **Surfer** schematic illustrating the “slices” of NOX concentration with depth from June 2012 for each test area are presented in Figures 11 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 extend results past data points, as was noted on previous project results. The shallow piezometer NOX results (Figures 11 and 13) from the June sampling event 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, similar to background levels.

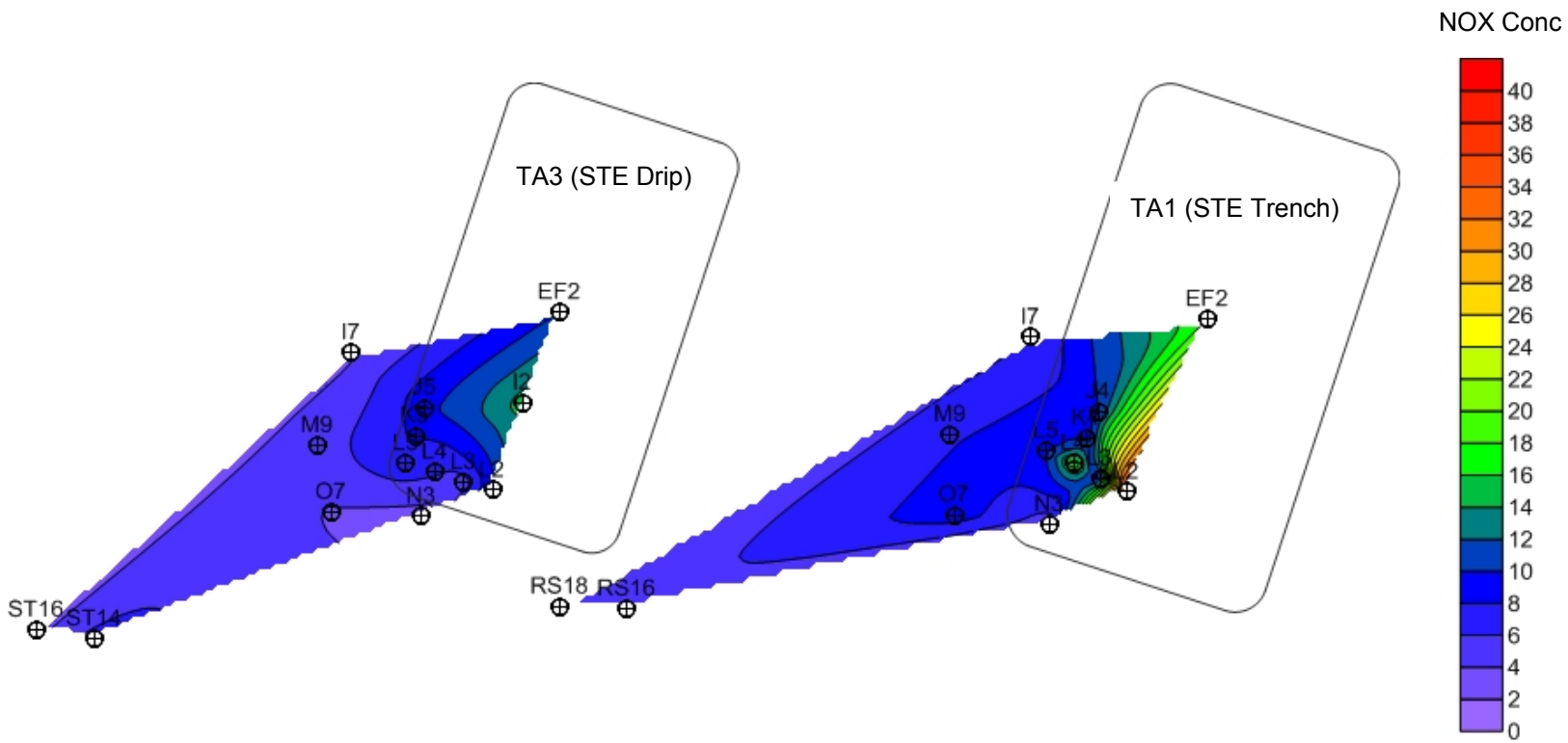


Figure 11
TA1 and TA3 Shallow Elev 118.5-124 ft above MSL (June 2012 Sample Event)
Schematic (using Surfer) illustrating NOX concentrations in the subsurface

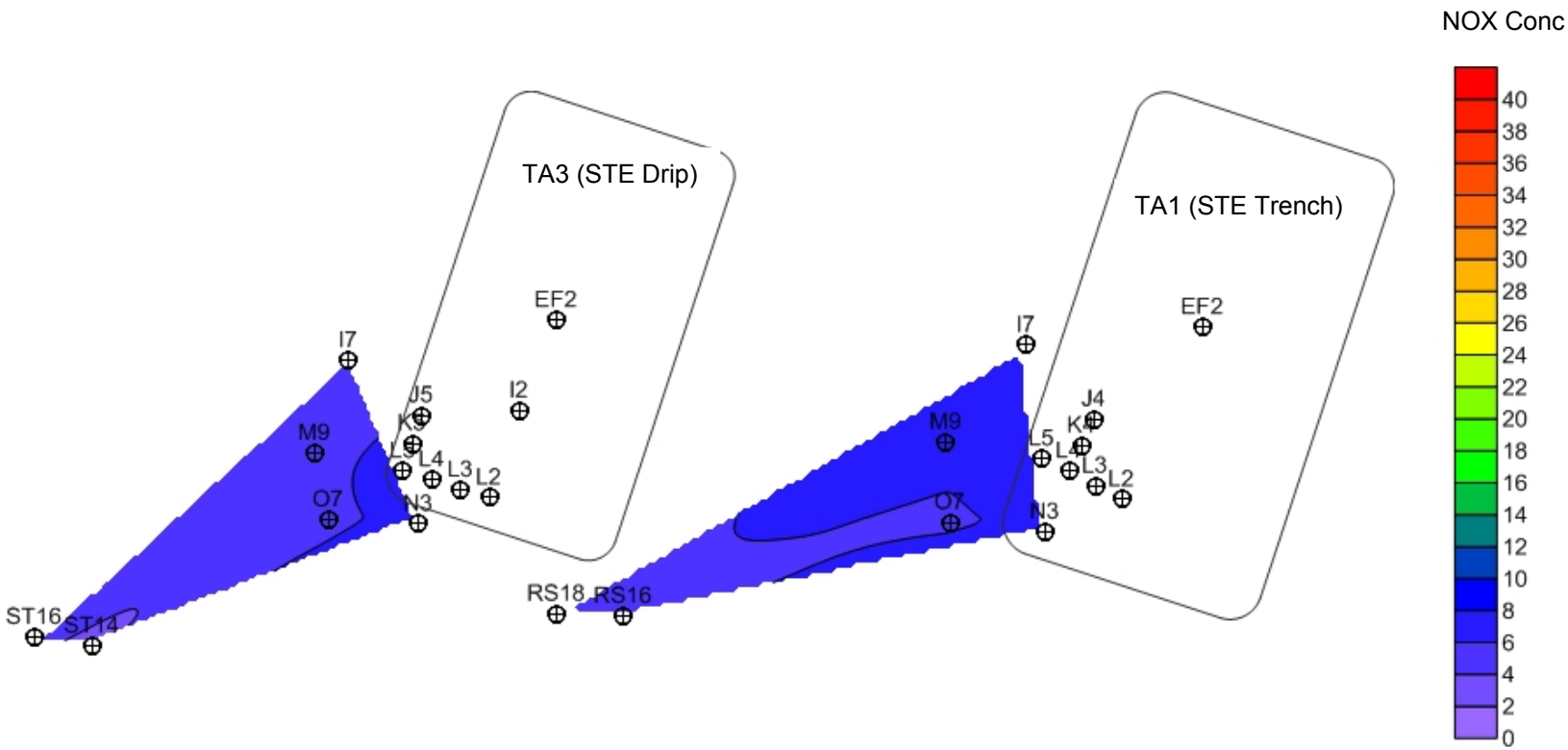


Figure 12
TA1 and TA3 Deep Elev 112-118.5 ft above MSL (June 2012 Sample Event)
Schematic (using Surfer) illustrating NOX concentrations in the subsurface

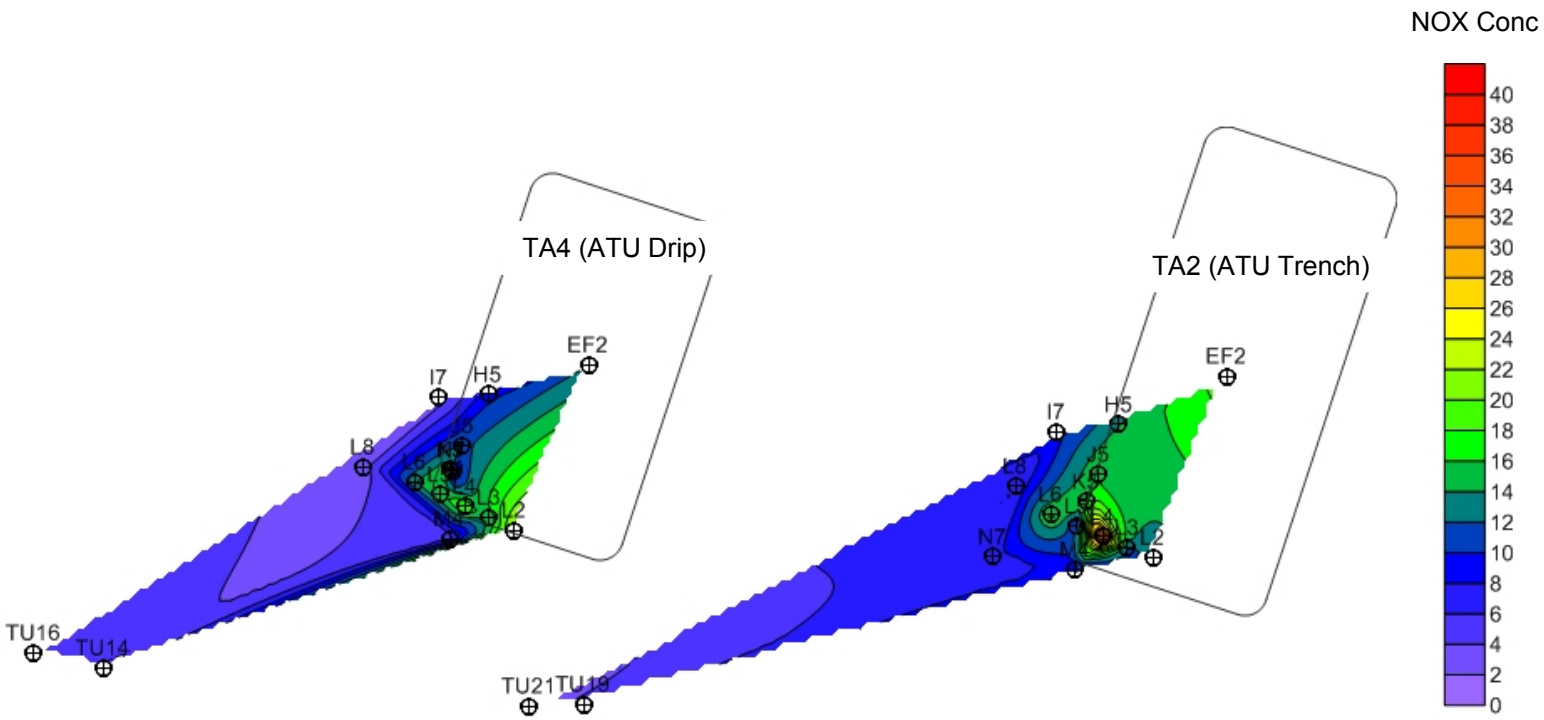


Figure 13
TA2 and TA4 Shallow Elev 118-124 ft above MSL (June 2012 Sample Event)
Schematic (using Surfer) illustrating NOX concentrations in the subsurface

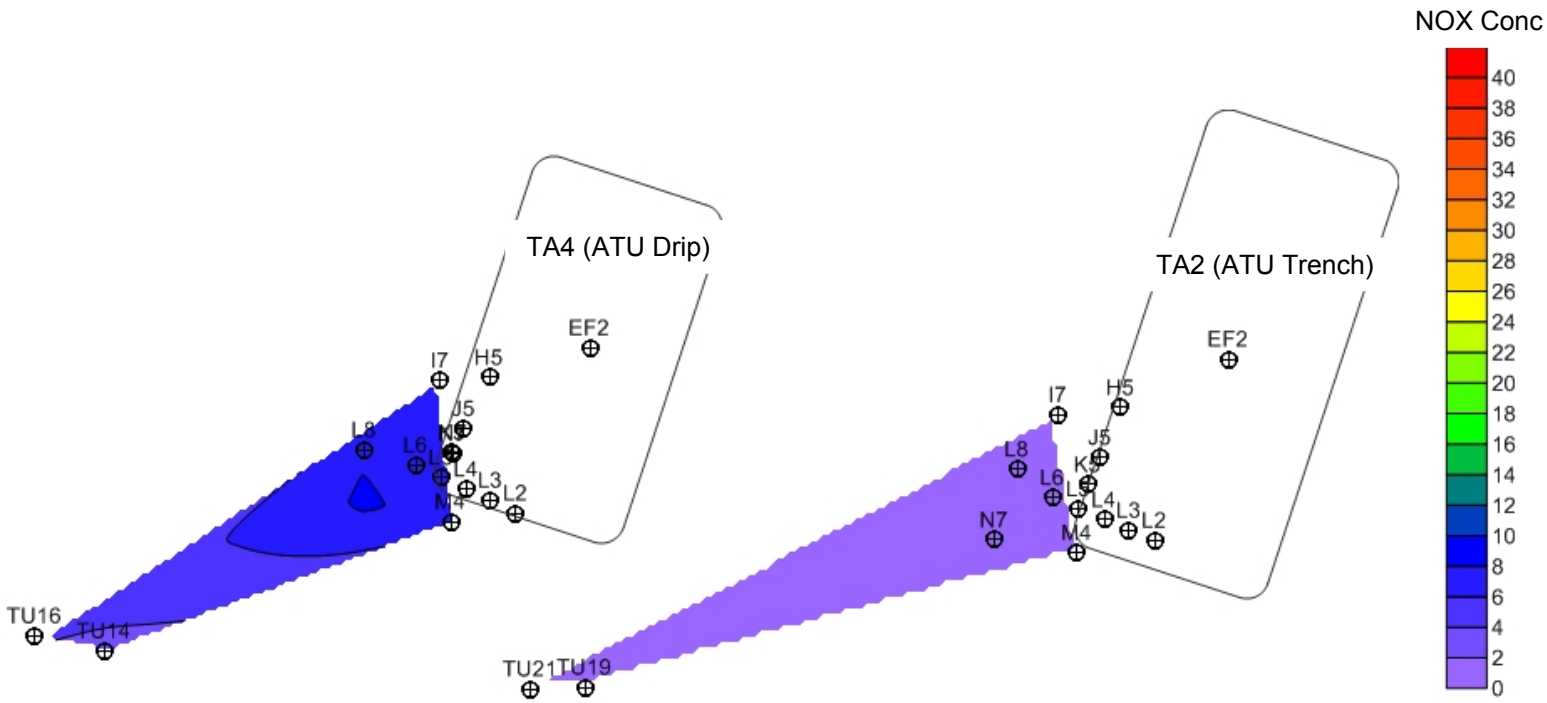
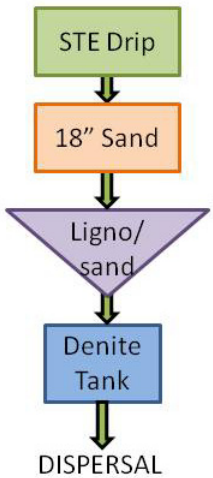


Figure 14
TA2 and TA4 Deep Elev 111-118 ft above MSL (June 2012 Sample Event)
Schematic (using Surfer) illustrating NOX concentrations in the subsurface

4.3.3.3 PNRS II Results

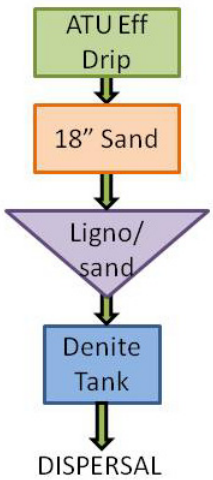
Test area 5 (TA5) and test area 6 (TA6) are the PNRS II in-ground vertically stacked biofilter systems being tested primarily for wastewater treatment. TA5 receives STE while TA6 should receive nitrified effluent, if the ATU is functioning properly. Effluent is dispersed above an 18-inch layer of mound sand. 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 concentrations of 140 and 100 mg/L, for TA5 and TA6 respectively. The liner effluent sample NOx-N concentrations were 0.3 and 0.1 mg/L for TA5 and TA6 respectively. The suction lysimeters (LY), installed at the sand and lignocellosic/sand media mixture interface, NOx-N concentrations were 35 and 19 mg/L, for TA5 and TA6 respectively. This 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 15 and 16. A standpipe piezometer (PZ) was installed downgradient of the infiltrator system for both test areas. The NOx-N concentrations for the PZs were 16 and 14 mg/L for TA5 and TA6, respectively which was somewhat surprising. The background piezometers surrounding the test areas indicate that there is potentially residual nitrogen up-gradient of the test areas from an unknown source. This will be investigated further in subsequent monitoring events.



	TKN mg N/L	NH_3 mg N/L	NO_x mg N/L	TN mg N/L
STE Drip	65	55	0.03	65.03
18" Sand	2.1	0.009	35.01	37.11
Ligno/ sand	1.1	0.03	0.3	1.4
Denite Tank	2	0.51	0.03	2.03

Figure 15
TA5 Graphical Representation of Nitrogen Results



TKN mg N/L	NH_3 mg N/L	NO_x mg N/L	TN mg N/L
60	53	0.28	60.28
2.3	0.009	19.01	21.31
2.5	0.14	0.1	2.6
2.6	0.6	0.05	2.65

Figure 16
TA6 Graphical Representation of Nitrogen Results

5.0 S&GW Test Facility Data Summary Report No. 1: Summary and Recommendations

5.1 Summary

The results of this first 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. 1 indicate that:

- The ATU is not operating as intended in converting ammonium to oxidized nitrogen.
- The background piezometers surrounding the test areas indicate that there is potentially residual nitrogen up-gradient of the test areas from an unknown source. This will be investigated further in subsequent monitoring events.
- 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 operating as intended in converting ammonium to oxidized nitrogen (NOx concentration of 0.28 mg-N/L). One possible solution is seeding the aeration chamber of the unit with activated sludge from a wastewater treatment plant to promote the growth of nitrifying bacteria.

5.2.2 PNRS II Infiltrator Standpipe Piezometers

As discussed in Section 4.3.3.3, the standpipe piezometers installed downgradient of the infiltrator systems for both PNRS II test areas (TA5 and TA6) showed NOx-N concentrations greater than 10 mg/L. The background piezometers surrounding the test areas indicate that there is potentially residual nitrogen from an unknown source. To better determine whether the nitrogen is wastewater derived within these piezometers, it is recommended to include Splenda (sucralose) analyses in the next sample event. If the source wastewater contains sucralose, then this parameter could be used to determine if background nitrogen concentrations, or other sample points, are impacted by wastewater sources.

Appendix A: S&GW Test Facility Sample Identification

Table A.1
S&GW Test Facility Sample Identification

ID Number	Sample Identification	Test Area	Grid Location	Notes
1	TA1-PAN-12-N	TA1	North	2' x 3.3' SST pan lysimeter
2	TA1-OBS-N	TA1	North	4"D observation port with slots
3	TA1-OBS-S	TA1	South	4"D observation port without slots
4	TA1-SM-39-N	TA1	North	2"D soil moisture tube with 6" casing
5	TA1-SM-39-C	TA1	Center	2"D soil moisture tube with 6" casing
6	TA1-SM-39-S	TA1	South	2"D soil moisture tube with 6" casing
7	TA1-PZ-11-EF2	TA1	EF2	1"D standpipe piezometer, 5' screen
8	TA1-LY-24-C	TA1	Center	2"D suction lysimeter, 9" cup
9	TA1-LY-12-S	TA1	South	2"D suction lysimeter, 9" cup
10	TA1-LY-24-S	TA1	South	2"D suction lysimeter, 9" cup
11	TA1-LY-42-S	TA1	South	2"D suction lysimeter, 9" cup
12	TA1-T-6-C	TA1	Center	tensiometer
13	TA1-T-12-C	TA1	Center	tensiometer
14	TA1-T-24-C	TA1	Center	tensiometer
15	TA1-T-36-C	TA1	Center	tensiometer
16	TA1-T-42-C	TA1	Center	tensiometer
17	TA1-T-6-S	TA1	South	tensiometer
18	TA1-T-12-S	TA1	South	tensiometer
19	TA1-T-24-S	TA1	South	tensiometer
20	TA1-T-36-S	TA1	South	tensiometer
21	TA1-T-42-S	TA1	South	tensiometer
22	TA1-PZ-11-J4	TA1	J4	1"D standpipe piezometer, 5' screen
23	TA1-PZ-11-K4	TA1	K4	1"D standpipe piezometer, 5' screen
24	TA1-PZ-11-L2	TA1	L2	1"D standpipe piezometer, 5' screen
25	TA1-PZ-11-L3	TA1	L3	1"D standpipe piezometer, 5' screen
26	TA1-PZ-11-L4	TA1	L4	1"D standpipe piezometer, 5' screen
27	TA1-PZ-11-L5	TA1	L5	1"D standpipe piezometer, 5' screen
28	TA1-PZ-09-N3	TA1	N3	1"D standpipe piezometer, 5' screen
29	TA1-PZ-16-N3	TA1	N3	1"D standpipe piezometer, 2.5' screen

Table A.1
S&GW Test Facility Sample Identification

ID Number	Sample Identification	Test Area	Grid Location	Notes
30	TA1-PZ-09-O7	TA1	O7	1"D standpipe piezometer, 5' screen
31	TA1-PZ-16-O7	TA1	O7	1"D standpipe piezometer, 2.5' screen
32	TA1-PZ-09-M9	TA1	M9	1"D standpipe piezometer, 5' screen
33	TA1-PZ-16-M9	TA1	M9	1"D standpipe piezometer, 2.5' screen
34	TA1-PZ-09-I7	TA1	I7	1"D standpipe piezometer, 5' screen
35	TA1-PZ-16-I7	TA1	I7	1"D standpipe piezometer, 2.5' screen
36	TA1-PZ-09-RS16	TA1	RS16	1"D standpipe piezometer, 5' screen
37	TA1-PZ-16-RS16	TA1	RS16	1"D standpipe piezometer, 2.5' screen
38	TA1-PZ-09-RS18	TA1	RS18	1"D standpipe piezometer, 5' screen
39	TA1-PZ-16-RS18	TA1	RS18	1"D standpipe piezometer, 2.5' screen
40	TA2-PAN-12-N	TA2	North	2' x 3.3' SST pan lysimeter
41	TA2-OBS-N	TA2	North	4"D observation port with slots
42	TA2-OBS-S	TA2	South	4"D observation port without slots
43	TA2-SM-39-C	TA2	Center	2"D soil moisture tube with 6" casing
44	TA2-PZ-10-EF2	TA2	EF2	1"D standpipe piezometer, 5' screen
45	TA2-LY-24-C	TA2	Center	2"D suction lysimeter, 9" cup
46	TA2-LY-12-S	TA2	South	2"D suction lysimeter, 9" cup
47	TA2-LY-24-S	TA2	South	2"D suction lysimeter, 9" cup
48	TA2-LY-42-S	TA2	South	2"D suction lysimeter, 9" cup
49	TA2-PZ-10-H5	TA2	H5	1"D standpipe piezometer, 5' screen
50	TA2-PZ-10-J5	TA2	J5	1"D standpipe piezometer, 5' screen
51	TA2-PZ-10-K5	TA2	K5	1"D standpipe piezometer, 5' screen
52	TA2-PZ-10-L2	TA2	L2	1"D standpipe piezometer, 5' screen
53	TA2-PZ-10-L3	TA2	L3	1"D standpipe piezometer, 5' screen
54	TA2-PZ-10-L4	TA2	L4	1"D standpipe piezometer, 5' screen
55	TA2-PZ-10-L5	TA2	L5	1"D standpipe piezometer, 5' screen
56	TA2-PZ-10-L6	TA2	L6	1"D standpipe piezometer, 5' screen
57	TA2-PZ-09-M4	TA2	M4	1"D standpipe piezometer, 5' screen
58	TA2-PZ-16-M4	TA2	M4	1"D standpipe piezometer, 2.5' screen
59	TA2-PZ-09-N7	TA2	N7	1"D standpipe piezometer, 5' screen
60	TA2-PZ-16-N7	TA2	N7	1"D standpipe piezometer, 2.5' screen
61	TA2-PZ-09-I7	TA2	I7	1"D standpipe piezometer, 5' screen

Table A.1
S&GW Test Facility Sample Identification

ID Number	Sample Identification	Test Area	Grid Location	Notes
62	TA2-PZ-16-I7	TA2	I7	1"D standpipe piezometer, 2.5' screen
63	TA2-PZ-09-L8	TA2	L8	1"D standpipe piezometer, 5' screen
64	TA2-PZ-16-L8	TA2	L8	1"D standpipe piezometer, 2.5' screen
65	TA2-PZ-09-TU19	TA2	TU19	1"D standpipe piezometer, 5' screen
66	TA2-PZ-16-TU19	TA2	TU19	1"D standpipe piezometer, 2.5' screen
67	TA2-PZ-09-TU21	TA2	TU21	1"D standpipe piezometer, 5' screen
68	TA2-PZ-16-TU21	TA2	TU21	1"D standpipe piezometer, 2.5' screen
69	TA3-PAN-12-N	TA3	North	2' x 3.3' SST pan lysimeter
70	TA3-OBS-N	TA3	North	4"D observation port with slots
71	TA3-OBS-S	TA3	South	4"D observation port without slots
72	TA3-SM-39-N	TA3	North	2"D soil moisture tube with 6" casing
73	TA3-SM-39-C	TA3	Center	2"D soil moisture tube with 6" casing
74	TA3-SM-39-S	TA3	South	2"D soil moisture tube with 6" casing
75	TA3-LY-24-C	TA3	Center	2"D suction lysimeter, 9" cup
76	TA3-LY-12-S	TA3	South	2"D suction lysimeter, 9" cup
77	TA3-LY-24-S	TA3	South	2"D suction lysimeter, 9" cup
78	TA3-LY-42-S	TA3	South	2"D suction lysimeter, 9" cup
79	TA3-T-6-C	TA3	Center	tensiometer
80	TA3-T-12-C	TA3	Center	tensiometer
81	TA3-T-24-C	TA3	Center	tensiometer
82	TA3-T-36-C	TA3	Center	tensiometer
83	TA3-T-42-C	TA3	Center	tensiometer
84	TA3-T-6-S	TA3	South	tensiometer
85	TA3-T-12-S	TA3	South	tensiometer
86	TA3-T-24-S	TA3	South	tensiometer
87	TA3-T-36-S	TA3	South	tensiometer
88	TA3-T-42-S	TA3	South	tensiometer
89	TA3-PZ-11-EF2	TA3	EF2	1"D standpipe piezometer, 5' screen
90	TA3-PZ-11-I2	TA3	I2	1"D standpipe piezometer, 5' screen
91	TA3-PZ-10-J5	TA3	J5	1"D standpipe piezometer, 5' screen
92	TA3-PZ-10-K5	TA3	K5	1"D standpipe piezometer, 5' screen
93	TA3-PZ-11-L2	TA3	L2	1"D standpipe piezometer, 5' screen

Table A.1
S&GW Test Facility Sample Identification

ID Number	Sample Identification	Test Area	Grid Location	Notes
94	TA3-PZ-11-L3	TA3	L3	1"D standpipe piezometer, 5' screen
95	TA3-PZ-11-L4	TA3	L4	1"D standpipe piezometer, 5' screen
96	TA3-PZ-10-L5	TA3	L5	1"D standpipe piezometer, 5' screen
97	TA3-PZ-09-N3	TA3	N3	1"D standpipe piezometer, 5' screen
98	TA3-PZ-16-N3	TA3	N3	1"D standpipe piezometer, 2.5' screen
99	TA3-PZ-09-O7	TA3	O7	1"D standpipe piezometer, 5' screen
100	TA3-PZ-16-O7	TA3	O7	1"D standpipe piezometer, 2.5' screen
101	TA3-PZ-09-I7	TA3	I7	1"D standpipe piezometer, 5' screen
102	TA3-PZ-16-I7	TA3	I7	1"D standpipe piezometer, 2.5' screen
103	TA3-PZ-09-M9	TA3	M9	1"D standpipe piezometer, 5' screen
104	TA3-PZ-16-M9	TA3	M9	1"D standpipe piezometer, 2.5' screen
105	TA3-PZ-09-ST14	TA3	ST14	1"D standpipe piezometer, 5' screen
106	TA3-PZ-16-ST14	TA3	ST14	1"D standpipe piezometer, 2.5' screen
107	TA3-PZ-09-ST16	TA3	ST16	1"D standpipe piezometer, 5' screen
108	TA3-PZ-16-ST16	TA3	ST16	1"D standpipe piezometer, 2.5' screen
109	TA4-PAN-12-N	TA4	North	2' x 3.3' SST pan lysimeter
110	TA4-OBS-N	TA4	North	4"D observation port with slots
111	TA4-OBS-S	TA4	South	4"D observation port without slots
112	TA4-SM-39-C	TA4	Center	2"D soil moisture tube with 6" casing
113	TA4-LY-24-C	TA4	Center	2"D suction lysimeter, 9" cup
114	TA4-LY-12-S	TA4	South	2"D suction lysimeter, 9" cup
115	TA4-LY-24-S	TA4	South	2"D suction lysimeter, 9" cup
116	TA4-LY-42-S	TA4	South	2"D suction lysimeter, 9" cup
117	TA4-PZ-11-EF2	TA4	EF2	1"D standpipe piezometer, 5' screen
118	TA4-PZ-10-H5	TA4	H5	1"D standpipe piezometer, 5' screen
119	TA4-PZ-10-J5	TA4	J5	1"D standpipe piezometer, 5' screen
120	TA4-PZ-10-K5	TA4	K5	1"D standpipe piezometer, 5' screen
121	TA4-PZ-11-L2	TA4	L2	1"D standpipe piezometer, 5' screen
122	TA4-PZ-11-L3	TA4	L3	1"D standpipe piezometer, 5' screen
123	TA4-PZ-11-L4	TA4	L4	1"D standpipe piezometer, 5' screen
124	TA4-PZ-11-L5	TA4	L5	1"D standpipe piezometer, 5' screen
125	TA4-PZ-11-L6	TA4	L6	1"D standpipe piezometer, 5' screen

Table A.1
S&GW Test Facility Sample Identification

ID Number	Sample Identification	Test Area	Grid Location	Notes
126	TA4-PZ-09-M4	TA4	M4	1"D standpipe piezometer, 5' screen
127	TA4-PZ-16-M4	TA4	M4	1"D standpipe piezometer, 5' screen
128	TA4-PZ-09-N7	TA4	N7	1"D standpipe piezometer, 5' screen
129	TA4-PZ-16-N7	TA4	N7	1"D standpipe piezometer, 5' screen
130	TA4-PZ-09-I7	TA4	I7	1"D standpipe piezometer, 5' screen
131	TA4-PZ-16-I7	TA4	I7	1"D standpipe piezometer, 5' screen
132	TA4-PZ-09-L8	TA4	L8	1"D standpipe piezometer, 5' screen
133	TA4-PZ-16-L8	TA4	L8	1"D standpipe piezometer, 5' screen
134	TA4-PZ-09-TU14	TA4	TU14	1"D standpipe piezometer, 5' screen
135	TA4-PZ-16-TU14	TA4	TU14	1"D standpipe piezometer, 5' screen
136	TA4-PZ-09-TU16	TA4	TU16	1"D standpipe piezometer, 5' screen
137	TA4-PZ-16-TU16	TA4	TU16	1"D standpipe piezometer, 5' screen
138	TA5-OBS-N	TA5	North	3"D observation port connected to collection pipe at bottom of sloped liner
139	TA5-OBS-S	TA5	South	3"D observation port connected to collection pipe at bottom of sloped liner
140	TA5-OBS-I	TA5	Center	3"D observation port connected to collection pipe at bottom of sloped liner
141	TA5-PZ-I	TA5	South	1"D standpipe piezometer, 5' screen south of infiltrator
142	TA5-LY-C	TA5	Center	2"D suction lysimeter, 9" cup at mixture and sand interface
143	TA5-LINER-SP	TA5	North	3”D sample port
144	TA5-Denite Tank	TA5	North	
145	TA6-OBS-N	TA6	North	3"D observation port connected to collection pipe at bottom of sloped liner
146	TA6-OBS-S	TA6	South	3"D observation port connected to collection pipe at bottom of sloped liner
147	TA6-OBS-I	TA6	Center	3"D observation port connected to collection pipe at bottom of sloped liner
148	TA6-PZ-I	TA6	South	1"D standpipe piezometer, 5' screen south of infiltrator
149	TA6-LY-C	TA6	Center	2"D suction lysimeter, 9" cup at mixture and sand interface
150	TA6-LINER-SP	TA6	North	3”D sample port
151	TA6-Denite Tank	TA6	North	
152	PZ01-BKG-09	BKG		1 ¼”D standpipe piezometer, 5’ screen

Table A.1
S&GW Test Facility Sample Identification

ID Number	Sample Identification	Test Area	Grid Location	Notes
153	LY01-BKG-24	BKG		2"D suction lysimeter, 9" cup
154	LY02-BKG-42	BKG		2"D suction lysimeter, 9" cup
155	PZ04-BKG-09	BKG		1 ¼"D standpipe piezometer, 5' screen
156	PZ24-BKG-26	BKG		2"D standpipe piezometer, 5' screen
157	PZ29-BKG-09	BKG		¾"D standpipe piezometer, 5' screen
158	PZ30-BKG-16	BKG		1"D standpipe piezometer, 5' screen
159	PZ31-BKG-26	BKG		1"D standpipe piezometer, 5' screen
160	PZ32-BKG-09	BKG		1"D standpipe piezometer, 5' screen
161	PZ33-BKG-16	BKG		1"D standpipe piezometer, 5' screen
162	PZ34-BKG-26	BKG		1"D standpipe piezometer, 5' screen
163	PZ35-BKG-09	BKG		1"D standpipe piezometer, 5' screen
164	PZ36-BKG-16	BKG		1"D standpipe piezometer, 5' screen
165	PZ37-BKG-26	BKG		1"D standpipe piezometer, 5' screen
166	PZ38-BKG-09	BKG		1"D standpipe piezometer, 5' screen
167	PZ39-BKG-16	BKG		1"D standpipe piezometer, 5' screen
168	PZ40-BKG-26	BKG		1"D standpipe piezometer, 5' screen
169	GCREC Pump Station			GCREC mound lift station
170	PNRS II STE-Tank 1			PNRS II Tank 1
171	STE Pump Tank			STE effluent dose tank
172	ATU Eff Pump Tank			Nitrified effluent dose tank

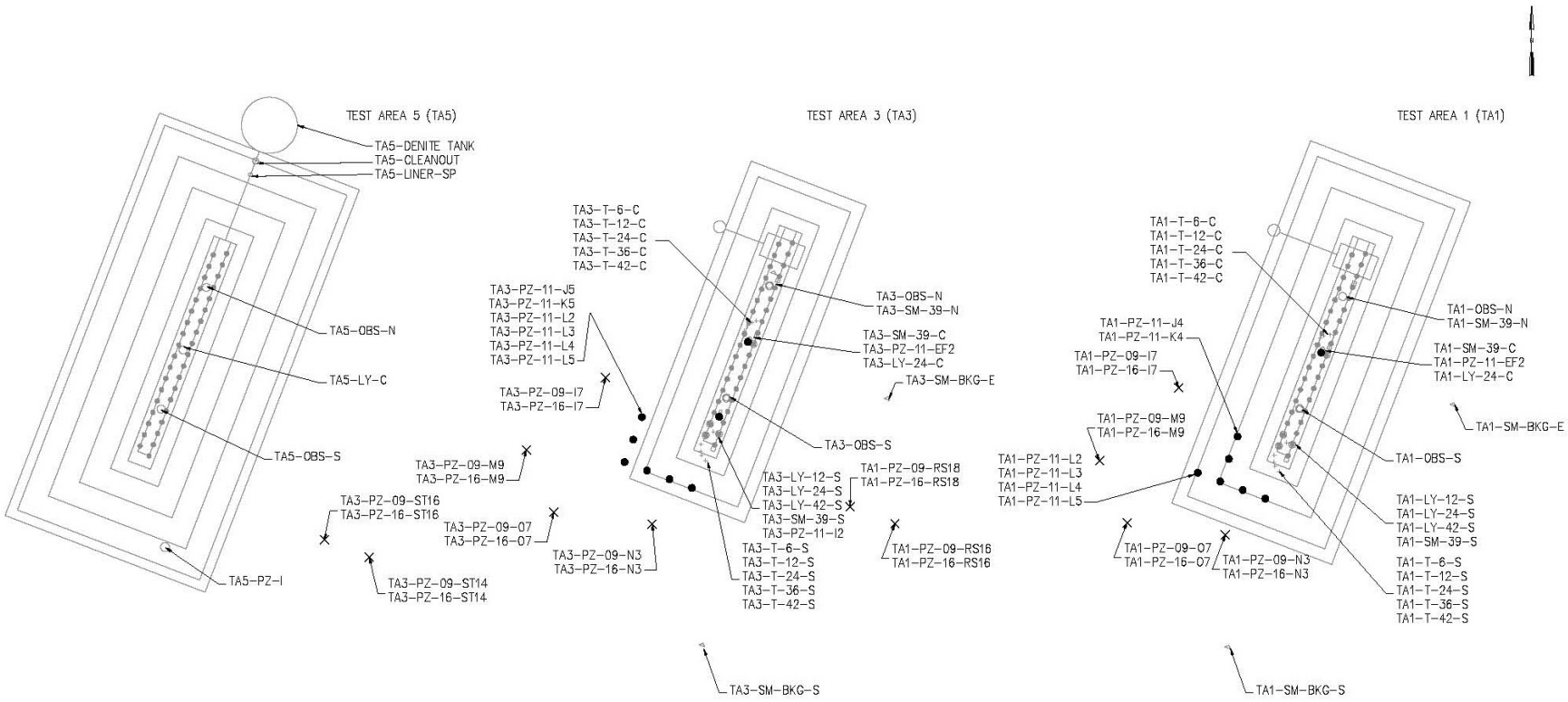


Figure A.1
S&GW Test Facility System Schematic of TA1, TA3, and TA5 (STE System)

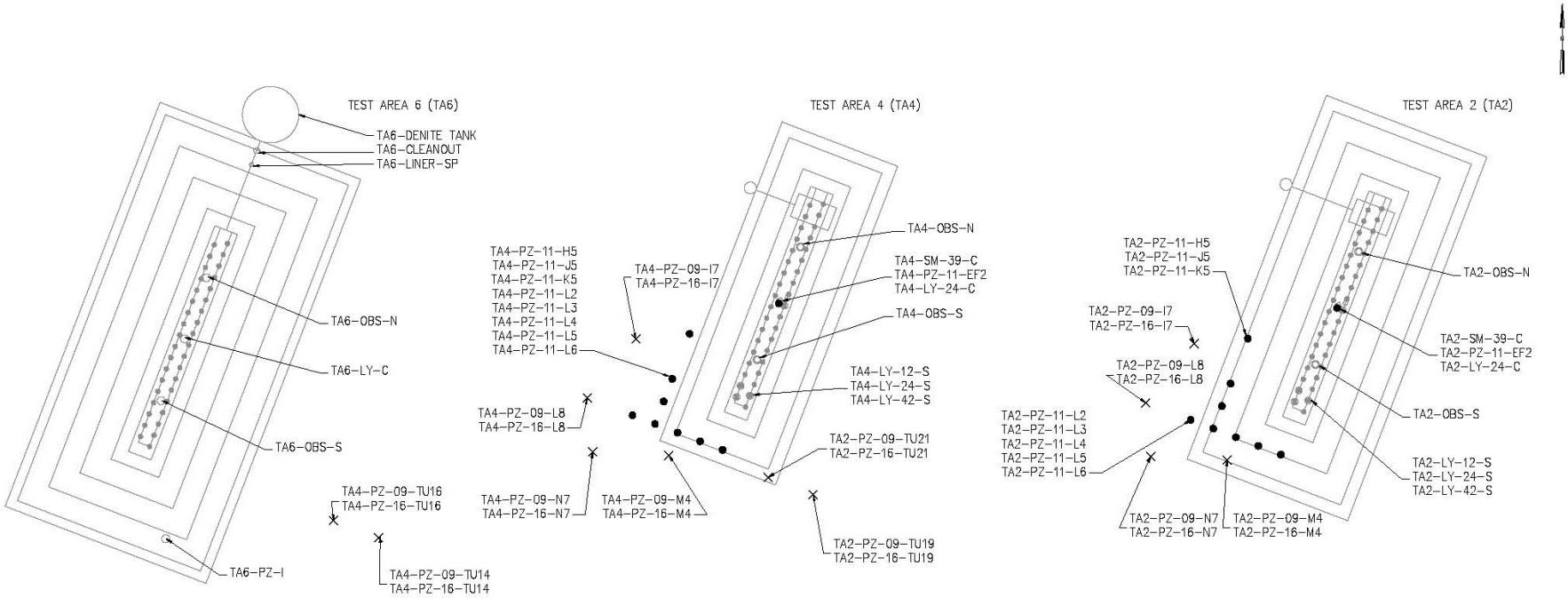


Figure A.2
S&GW Test Facility System Schematic of TA2, TA4, and TA6 (ATU Effluent System)

Appendix B: S&GW Test Facility Effluent Quality Data

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Table B.1
S&GW Test Facility Effluent Quality

Identification	Week	Date	Temp (°C)	pH	Specific Conductance (µS)	DO (mg/L)	ORP	Total Alkalinity (mg/L)	CBOD5 (mg/L)	TN (mg-N/L)	TKN (mg-N/L)	Organic N (mg-N/L)	NH3-N (mg-N/L)	NOx-N (mg-N/L)	TIN (mg-N/L)	TP (mg-P/L)	Chloride (mg/L)	TSS (mg/L)	TS (mg/L)	Fecal (cfu/100 mL)
STE Drip Tank	Week 1	5/16/2012 8:50	27.4	7.47	1,066	0.1	-236.1	340	66	52.0	52	1	51	0.02	51.0	6.7	78	24	500	80,000
	Week 2	5/23/2012 9:55	28.3	7.25	1,068	0.1	-388.2			58.0	58	4	54	0.01	54.0		63			
	Week 3	5/30/2012 9:13		6.93	1,006	0.1	-389.8	370	61	63.0	63	15	48	0.03	48.0	5.5	48	24	400	80,000
	Week 4	6/6/2012 9:15	27.8	7.26	1,216	0.1	-298.7			74.0	74	6	68	0.04	68.0		68			
ATU Eff Drip Tank	Week 1	5/16/2012 9:20	27.3	7.86	1,036	0.6	46.1	320	11	51.3	51	3	48	0.27	48.3	6.0	72	6	500	56,000
	Week 2	5/23/2012 9:45	28.1	7.70	1,037	0.1	-151.9			72.2	72	21	51	0.22	51.2		61			
	Week 3	5/30/2012 9:50		7.57	1,025	4.8	-25.4	300	25	63.1	56	15	41	7.10	48.1	4.6	64	8	400	46,000
	Week 4	6/6/2012 8:45	27.3	7.53	1,177	0.2	82.7			65.2	65	2	63	0.16	63.2		72			

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.

Table B.2
S&GW Test Facility Effluent Quality Anions and Cations

Identification	Week	Date	Anions (mg/L)					Cations (mg/L)						
			F-	NO3-N-	NO2-N-	PO4-P-	SO4-	B	Ca	Fe	Mg	Mn	K	Na
STE Drip Tank	Week 1	5/16/2012 8:50												
	Week 2	5/23/2012 9:55												
	Week 3	5/30/2012 9:13	1.8	0.01	0.01	5	29	0.15	51	0.16		0.028	16	40
	Week 4	6/6/2012 9:15												
ATU Eff Drip Tank	Week 1	5/16/2012 9:20												
	Week 2	5/23/2012 9:45												
	Week 3	5/30/2012 9:50	0.41	0.35	7.1	5	53	0.12	49	0.079	17		22	
	Week 4	6/6/2012 8:45												

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

Appendix C: GCREC Weather Station Data

Table C.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 DewPt avg (F)	RelHum avg 2m (pct)	2m Rain tot (in)	2m Rain max over 15min(in)	10m Wind avg (mph)	10m Wind min (mph)	10m Wind max (mph)	WDir avg 10m (deg)	N (# obs)	ET (in)
8-May-12	75.09	62.20	87.89	80.88	78.15	83.75	67.73	80	0	0	5.32	0.27	19.60	258	96	0.18
9-May-12	76.69	64.60	87.91	81.25	78.98	83.50	70.18	81	0	0	6.82	0.00	26.93	233	96	0.17
10-May-12	75.76	62.37	86.97	81.67	79.34	84.40	65.34	72	0	0	6.12	0.00	18.77	322	96	0.19
11-May-12	75.81	58.59	90.84	80.82	78.53	82.96	63.50	67	0	0	9.06	0.37	22.97	75	96	0.17
12-May-12	76.67	62.02	90.57	80.84	78.71	82.90	64.09	67	0	0	10.53	2.50	22.87	95	96	0.18
13-May-12	76.29	62.64	88.16	80.51	78.75	82.18	65.44	70	0	0	7.50	0.37	20.23	112	96	0.15
14-May-12	77.40	69.73	88.95	81.00	79.41	82.78	69.44	77	0	0	5.99	0.23	14.47	174	96	0.14
15-May-12	78.02	67.01	92.75	81.81	79.38	84.67	68.95	75	0	0	5.52	0.10	33.10	188	96	0.19
16-May-12	71.83	66.60	82.78	80.59	78.57	82.90	69.85	92	1.04	0.19	3.94	0.00	13.43	130	96	0.08
17-May-12	76.00	67.19	86.67	79.47	77.31	82.02	69.21	81	0.07	0.03	4.81	0.13	15.90	246	96	0.18
18-May-12	76.85	63.16	89.44	79.86	77.32	82.44	67.20	74	0	0	4.63	0.00	16.23	314	96	0.19
19-May-12	76.93	65.97	89.64	80.06	78.12	81.95	67.19	74	0	0	7.21	0.43	21.17	54	96	0.18
20-May-12	76.51	63.84	90.27	80.60	78.22	83.25	63.29	67	0	0	6.10	0.17	16.67	25	96	0.2
21-May-12	76.06	60.04	90.16	80.85	78.06	83.84	59.83	61	0	0	5.22	0.13	16.03	359	96	0.2
22-May-12	76.48	60.08	91.09	81.44	78.46	84.60	63.08	68	0	0	4.20	0.00	26.40	288	96	0.2
23-May-12	78.65	60.87	94.68	82.10	79.02	85.24	65.45	69	0	0	4.13	0.03	15.20	184	96	0.2
24-May-12	79.96	67.84	93.49	82.85	80.64	85.01	70.66	75	0	0	8.49	1.17	28.87	84	96	0.19
25-May-12	81.10	68.72	94.14	83.08	80.80	85.35	70.42	72	0	0	7.47	0.73	27.00	63	96	0.2
26-May-12	80.55	64.87	95.18	83.13	80.56	85.51	66.88	66	0	0	6.34	0.30	20.20	70	96	0.2
27-May-12	80.08	65.35	89.62	83.52	80.94	86.18	70.03	71	0	0	7.69	0.00	23.77	257	96	0.2
28-May-12	78.07	70.63	87.17	82.03	80.37	84.49	73.61	85	0.7	0.26	9.36	1.87	26.83	212	96	0.16
29-May-12	76.54	71.73	84.11	80.41	79.59	81.27	73.16	87	0.01	0.01	7.20	1.50	19.97	217	96	0.11
30-May-12	79.92	73.20	88.05	80.81	78.89	83.17	75.02	84	0	0	7.01	0.97	19.47	255	96	0.19
31-May-12	79.10	69.40	89.91	81.48	79.50	83.48	73.04	82	0	0	5.19	0.03	20.67	231	96	0.17

Table C.1 (continued)
Monthly 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 DewPt avg (F)	RelHum avg 2m (pct)	2m Rain tot (in)	2m Rain max over 15min(in)	10m Wind avg (mph)	10m Wind min (mph)	10m Wind max (mph)	WDir avg 10m (deg)	N (# obs)	ET (in)
1-Jun-12	71.82	69.98	75.58	79.20	77.47	81.77	71.90	98	1.12	0.4	5.60	1.00	20.47	171	96	0.05
2-Jun-12	77.52	67.80	86.59	78.97	76.84	81.39	72.17	83	0	0	6.03	0.30	18.80	260	96	0.18
3-Jun-12	78.49	64.27	90.66	79.75	77.09	82.54	70.47	77	0	0	3.78	0.10	19.53	278	96	0.19
4-Jun-12	77.51	63.93	86.94	80.29	78.01	82.27	72.29	83	0	0	6.22	0.00	20.67	248	96	0.17
5-Jun-12	77.53	72.18	86.70	80.51	79.47	81.68	73.95	87	0.05	0.03	6.39	0.07	21.77	248	96	0.13
6-Jun-12	74.60	70.48	85.69	79.40	78.66	80.22	72.64	92	0.27	0.08	6.24	0.03	32.70	179	96	0.1
7-Jun-12	74.91	71.31	82.71	78.06	77.04	78.93	74.13	95	1.92	0.37	5.55	0.10	22.20	144	96	0.08
8-Jun-12	75.24	69.42	87.91	78.11	76.77	80.74	73.15	92	2.03	0.61	4.85	0.07	22.07	120	96	0.14
9-Jun-12	79.34	69.35	91.08	79.01	76.42	82.00	73.81	83	0.04	0.01	6.64	0.07	16.90	163	96	0.19
10-Jun-12	80.43	72.18	93.15	80.89	78.53	83.53	74.60	83	0	0	7.08	0.53	26.83	136	96	0.21
11-Jun-12	80.24	68.81	92.39	81.79	79.34	84.15	73.12	80	0.05	0.03	5.41	0.07	24.07	106	96	N/A
12-Jun-12	79.90	68.59	92.80	82.31	79.79	84.96	71.77	77	0	0	4.72	0.13	17.43	115	96	0.22
13-Jun-12	80.64	69.69	90.99	82.67	80.24	85.24	73.66	79	0	0	5.34	0.13	16.27	263	96	0.21
14-Jun-12	78.52	67.75	90.30	82.68	81.25	84.13	73.40	84	0	0	5.64	0.03	27.70	354	96	0.16
15-Jun-12	76.11	66.06	90.09	81.78	80.06	83.61	71.26	85	0.02	0.01	5.93	0.00	24.63	49	96	0.16
16-Jun-12	78.80	68.34	89.46	81.94	80.24	83.80	68.89	73	0	0	9.87	0.60	34.77	64	96	0.22
17-Jun-12	76.82	64.87	88.61	81.88	79.77	84.04	66.81	72	0	0	8.09	0.40	26.80	68	96	0.21
18-Jun-12	76.81	63.64	89.40	81.97	79.88	84.11	65.96	71	0	0	8.63	2.07	24.53	89	96	0.2
19-Jun-12	75.51	64.06	87.58	81.57	79.95	83.05	67.14	75	0	0	9.60	2.60	25.23	80	96	0.16
20-Jun-12	75.73	68.79	83.75	80.78	80.10	81.59	72.55	88	0.27	0.08	9.95	3.73	30.03	82	96	0.11

Appendix D: S&GW Test Facility Tensiometer Data

Table D.1
S&GW Test Facility 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
05/09/12	108.089	146.070	168.146	183.220	NR	111.768	146.070	195.801	207.670	26.668
05/10/12	106.783	139.660	156.633	175.030	NR	110.700	141.559	185.712	205.059	25.481
05/11/12	112.836	152.004	165.772	177.048	NR	116.397	150.224	181.795	196.988	25.599
05/12/12	111.650	152.479	174.199	186.306	NR	115.092	151.529	193.427	203.160	36.044
05/13/12	112.006	152.835	174.793	188.679	NR	115.804	151.411	197.225	206.839	40.436
05/14/12	109.988	152.242	173.250	188.086	NR	113.786	150.105	196.632	208.026	48.269
05/15/12	109.751	151.648	172.775	186.543	NR	113.667	150.105	195.682	208.857	46.251
05/16/12	111.768	152.954	174.080	187.018	NR	114.854	151.292	196.394	209.331	34.501
05/17/12	106.665	147.731	169.452	182.864	NR	108.564	145.358	191.765	206.958	71.176
05/18/12	110.344	118.771	154.141	168.502	NR	113.193	141.559	162.449	187.374	52.779
05/19/12	113.549	158.176	173.843	183.694	NR	116.278	152.954	183.576	191.528	39.367
05/20/12	112.243	156.633	177.166	189.510	NR	115.922	154.141	195.089	202.091	39.367
05/21/12	112.362	156.158	177.285	190.222	NR	116.160	153.784	198.412	206.127	38.655
05/22/12	112.718	155.209	178.116	191.409	NR	115.922	154.022	202.210	209.331	47.913
05/23/12	113.193	154.734	178.947	192.003	NR	115.566	153.310	205.652	212.299	47.676
05/25/12	116.160	156.158	181.795	195.089	NR	117.347	155.565	207.907	216.097	34.145
05/26/12	114.854	150.342	178.472	193.308	NR	116.278	153.310	203.872	215.503	35.569
05/27/12	130.403	174.555	188.442	198.887	NR	130.403	163.754	213.486	216.809	38.774
05/28/12	155.090	208.026	204.940	209.687	NR	145.595	190.104	223.456	219.895	43.165
05/29/12	125.655	185.119	213.960	217.046	NR	124.112	159.244	232.832	223.218	63.105
05/30/12	117.228	164.941	202.447	217.877	NR	118.652	150.936	229.034	217.758	77.467
05/31/12	115.922	162.449	204.228	218.114	NR	115.566	161.618	205.652	217.640	60.494
06/01/12	106.308	140.016	173.250	205.889	NR	107.733	144.645	227.728	222.269	60.138
06/02/12	101.442	138.355	148.087	169.808	NR	103.341	134.201	187.611	193.071	96.101
06/03/12	113.311	160.787	175.386	186.306	NR	115.566	153.903	182.151	174.555	75.924
06/04/12	114.498	160.550	184.881	196.632	NR	116.991	156.396	220.844	197.225	60.969
06/05/12	114.498	159.244	185.119	197.700	NR	115.804	153.903	226.067	202.803	64.292
06/06/12	112.955	157.939	183.576	197.225	NR	113.786	152.954	227.016	204.584	71.176
06/07/12	109.038	153.191	177.641	193.427	NR	110.225	146.070	233.782	205.415	87.318
06/08/12	105.122	145.595	154.141	172.894	NR	107.021	135.031	217.996	182.982	92.540
06/09/12	110.107	154.378	161.381	175.149	NR	111.887	143.696	169.214	169.096	85.300
06/10/12	114.854	160.431	168.739	179.540	NR	117.347	151.055	197.462	171.351	69.871
06/11/12	116.516	164.585	185.000	196.157	NR	118.296	157.227	233.663	193.427	61.325
06/12/12	11.713	162.805	187.136	199.718	NR	117.940	156.514	232.120	201.854	56.696
06/13/12	NR	161.737	186.780	199.955	NR	116.753	154.853	249.686	206.245	54.678
06/14/12	NR	161.381	188.205	201.142	NR	116.041	153.784	244.108	208.975	51.474
06/15/12	NR	159.363	186.899	200.904	NR	114.498	151.767	257.638	209.806	59.426
06/16/12	NR	157.464	184.881	199.718	NR	113.549	149.749	260.368	209.331	72.363
06/17/12	NR	158.532	186.187	200.311	NR	114.973	151.648	238.885	211.230	65.123
06/18/12	NR	156.752	187.730	201.973	NR	114.735	152.716	235.799	211.705	70.464
06/19/12	NR	156.158	186.899	202.447	NR	114.617	152.004	231.883	212.417	70.939
06/20/12	NR	154.022	185.831	201.735	NR	112.836	151.292	241.971	212.536	82.808

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.

Figure D.2
TA3 S&GW Test Facility
Soil Tension (mbar), Rainfall (inches) and Dose
15 Minute Interval
Table D.1
S&GW Test Facility 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
05/09/12	137.049	154.853	19.665	235.325	192.834	130.284	EM	EM	EM	EM
05/10/12	130.046	147.969	23.107	234.138	259.300	128.622	EM	EM	EM	EM
05/11/12	132.183	146.426	27.498	225.829	251.704	134.913	EM	EM	EM	EM
05/12/12	135.506	154.497	50.287	230.340	255.383	134.319	EM	EM	EM	EM
05/13/12	135.388	156.633	50.524	234.256	259.893	135.031	EM	EM	EM	EM
05/14/12	136.456	157.108	49.931	235.562	227.728	133.845	EM	EM	EM	EM
05/15/12	134.794	156.158	49.931	236.037	191.409	133.726	EM	EM	EM	EM
05/16/12	134.319	155.327	49.575	235.799	227.966	134.319	EM	EM	EM	EM
05/17/12	130.403	152.598	43.878	234.612	206.839	129.572	EM	EM	EM	EM
05/18/12	125.536	140.847	53.135	224.286	265.234	129.097	EM	EM	EM	EM
05/19/12	130.759	153.191	52.898	227.016	247.906	134.438	EM	EM	EM	EM
05/20/12	131.233	155.684	50.406	232.595	107.258	134.438	EM	EM	EM	EM
05/21/12	129.928	155.446	34.264	235.918	49.100	133.726	EM	EM	EM	EM
05/22/12	128.860	153.310	19.783	237.817	178.472	133.607	EM	EM	EM	EM
05/23/12	128.622	153.072	37.231	239.360	226.898	134.082	EM	EM	EM	EM
05/25/12	130.759	156.633	40.079	241.734	179.303	135.269	EM	EM	EM	EM
05/26/12	131.708	154.141	37.587	241.615	180.965	134.201	EM	EM	EM	EM
05/27/12	143.340	159.363	45.777	241.734	210.637	144.527	EM	EM	EM	EM
05/28/12	159.838	174.199	47.320	245.413	269.151	151.411	EM	EM	EM	EM
05/29/12	174.555	183.576	48.625	248.499	271.881	152.360	EM	EM	EM	EM
05/30/12	182.389	188.561	49.456	250.992	274.136	147.969	EM	EM	EM	EM
05/31/12	181.439	191.053	49.456	253.721	276.985	139.067	EM	EM	EM	EM
06/01/12	175.030	188.679	48.388	254.552	277.934	125.299	EM	EM	EM	EM
06/02/12	143.933	151.529	49.219	235.799	264.166	120.670	EM	EM	EM	EM
06/03/12	139.067	154.022	50.524	220.607	245.532	133.607	EM	EM	EM	EM
06/04/12	142.746	161.618	36.875	234.850	258.469	135.506	EM	EM	EM	EM
06/05/12	142.390	161.025	30.703	238.885	262.742	134.557	EM	EM	EM	EM
06/06/12	140.373	159.007	28.210	239.123	263.217	134.082	EM	EM	EM	EM
06/07/12	137.761	155.090	17.884	238.292	262.386	130.996	EM	EM	EM	EM
06/08/12	126.961	138.236	17.291	226.660	253.484	124.468	EM	EM	EM	EM
06/09/12	NAN	141.559	32.009	217.284	243.514	128.266	EM	EM	EM	EM
06/10/12	NAN	146.426	49.812	216.572	242.565	133.251	EM	EM	EM	EM
06/11/12	NAN	160.550	36.400	229.865	250.517	136.812	EM	EM	EM	EM
06/12/12	NAN	162.924	22.988	233.544	252.772	137.405	EM	EM	EM	EM
06/13/12	NAN	162.924	23.225	236.155	254.434	136.337	EM	EM	EM	EM
06/14/12	NAN	161.855	27.261	237.224	255.739	136.931	EM	EM	EM	EM
06/15/12	NAN	159.956	38.299	237.936	257.638	136.931	EM	EM	EM	EM
06/16/12	NAN	157.939	46.963	237.817	258.350	135.625	EM	EM	EM	EM
06/17/12	233.307	158.057	50.049	239.123	259.537	136.693	EM	EM	EM	EM
06/18/12	NAN	159.363	46.489	239.716	261.080	136.931	EM	EM	EM	EM
06/19/12	274.967	159.838	46.963	241.378	262.861	136.100	EM	EM	EM	EM
06/20/12	250.517	159.244	48.981	241.496	263.810	135.031	EM	EM	EM	EM

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.

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

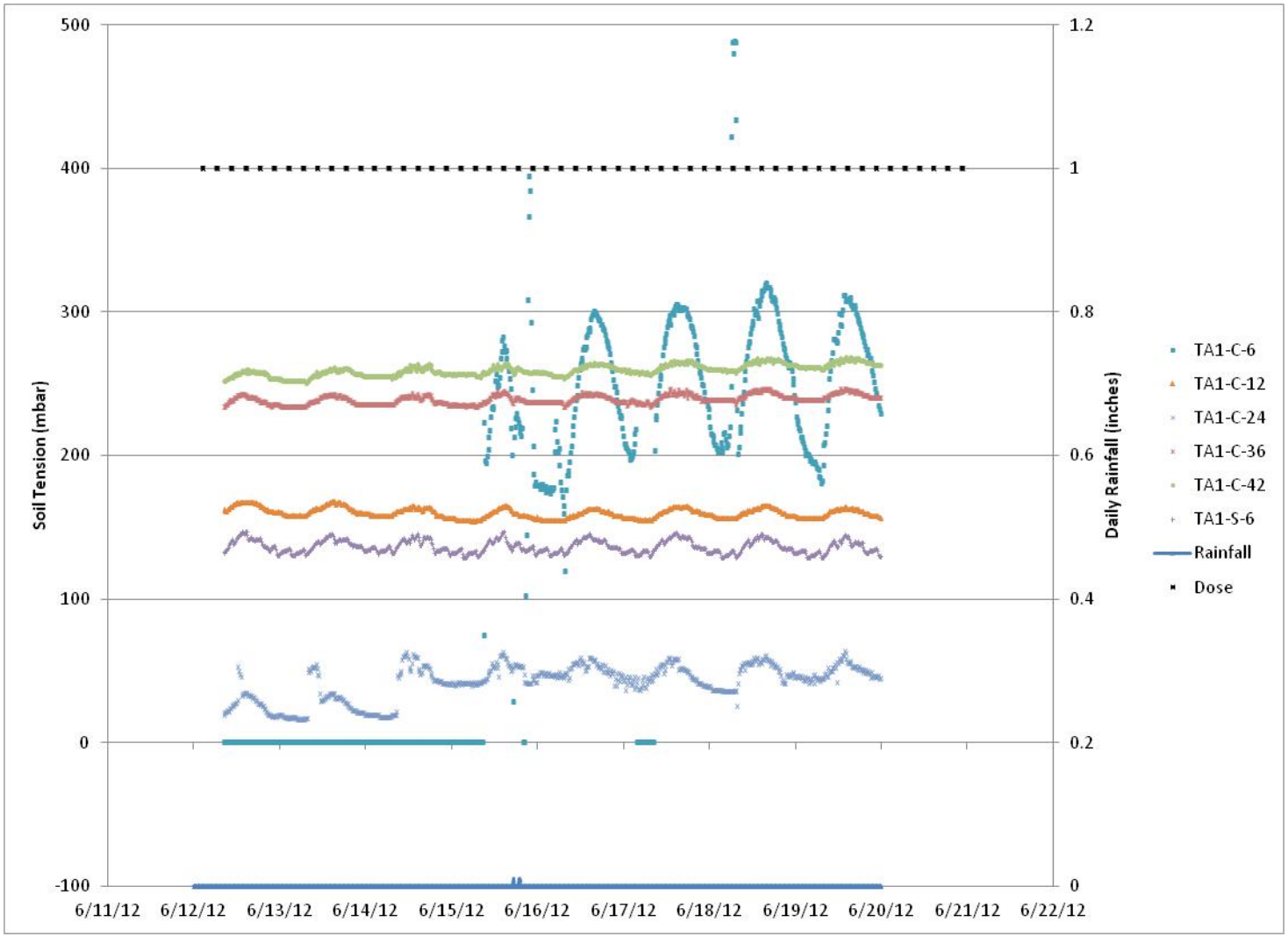
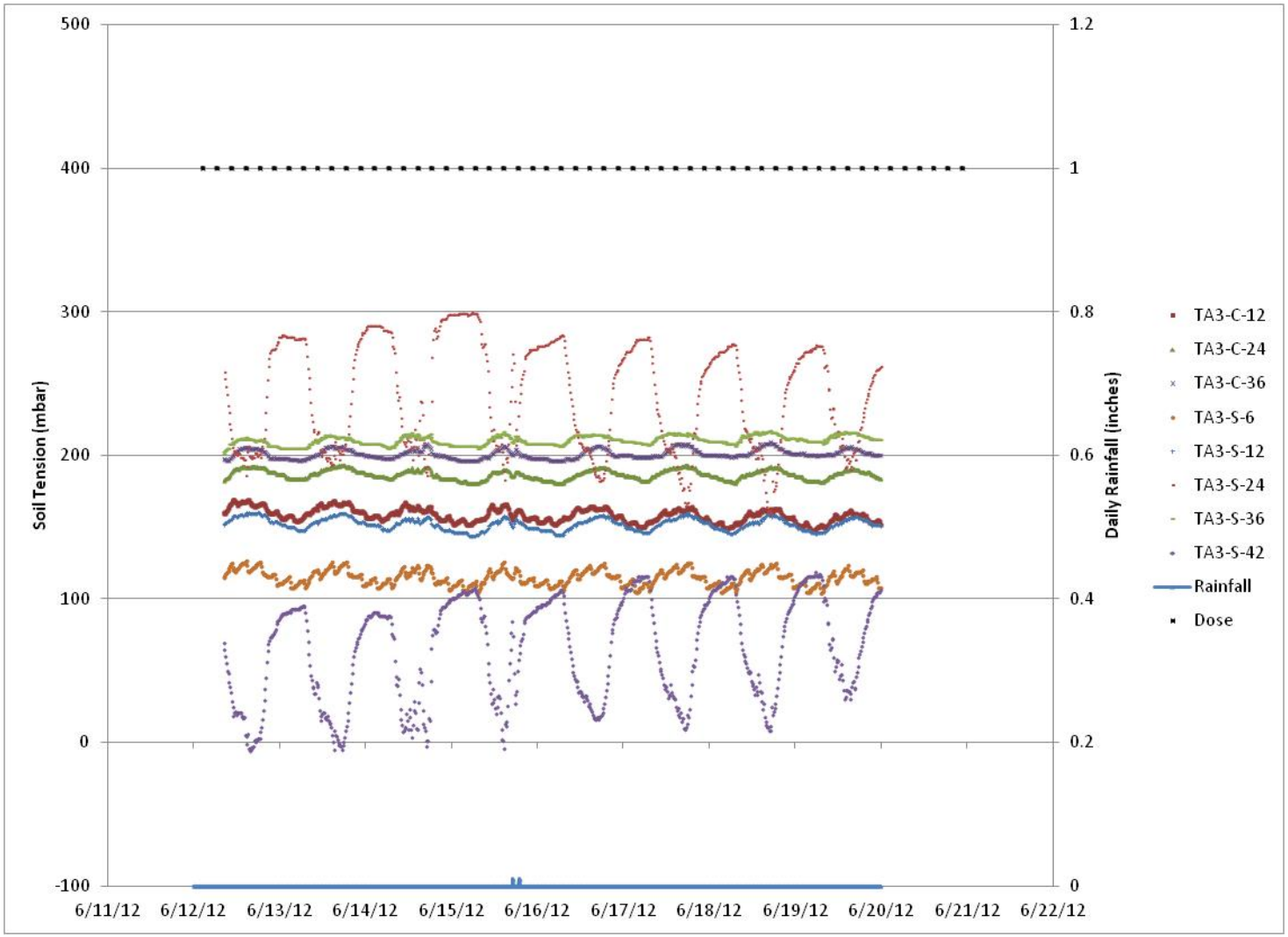


Figure D.2
TA3 S&GW Test Facility
Soil Tension (mbar), Rainfall (inches) and Dose
15 Minute Interval



Appendix E: S&GW Test Facility Soil Moisture Data

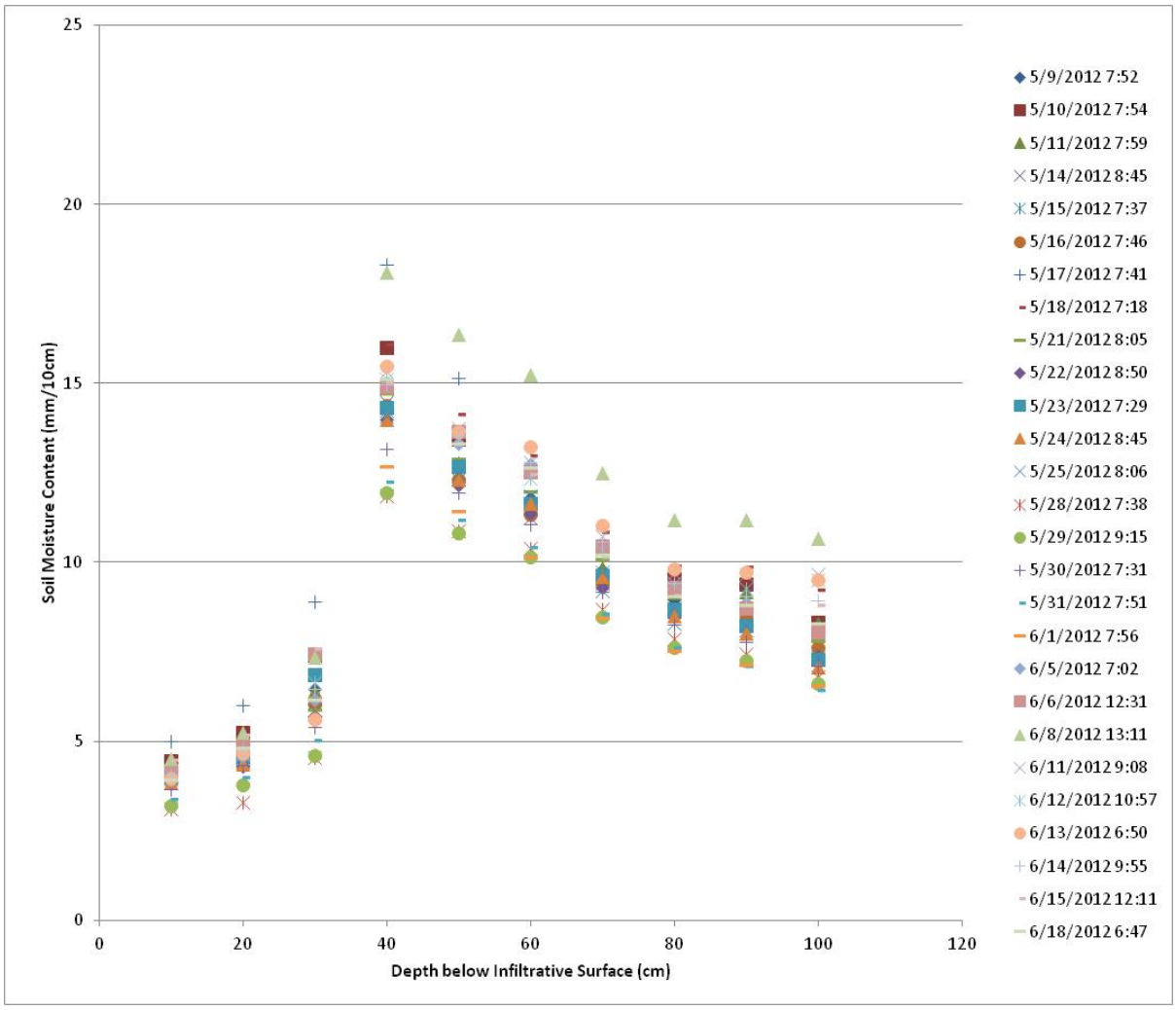


Figure E.1

Soil Moisture Test Area 1 North

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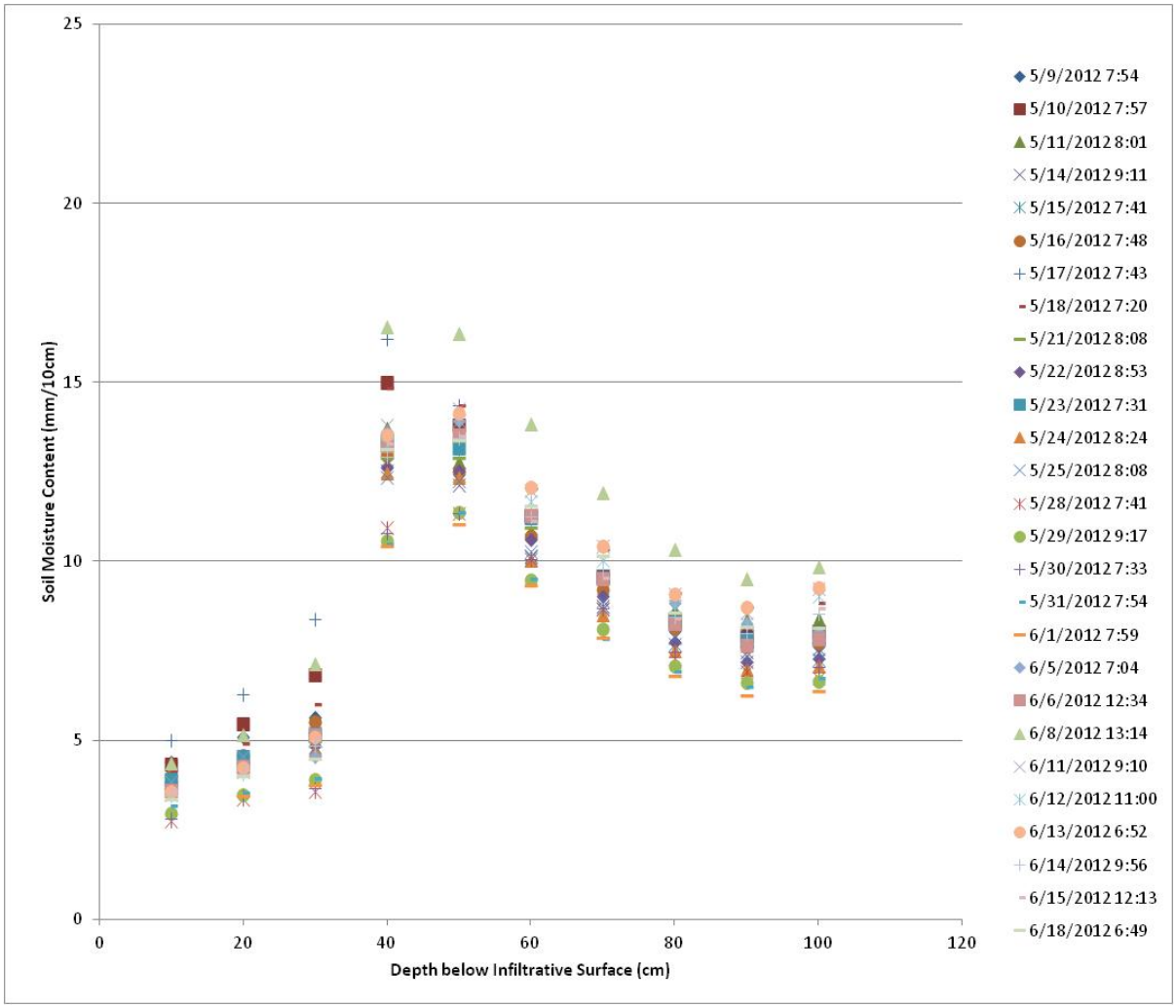

Figure E.2
Soil Moisture Test Area 1 Center

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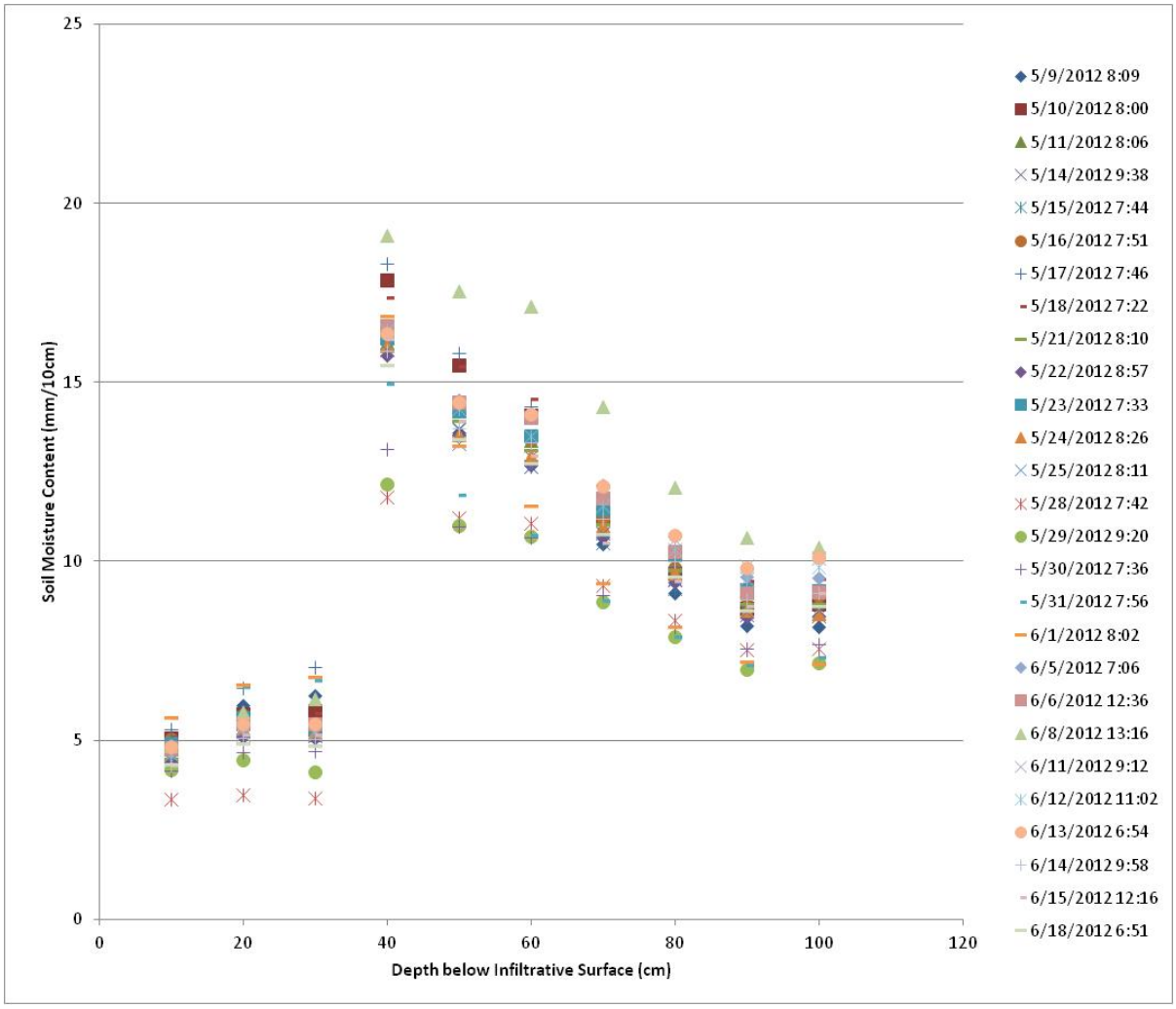

Figure E.3
Soil Moisture Test Area 1 South

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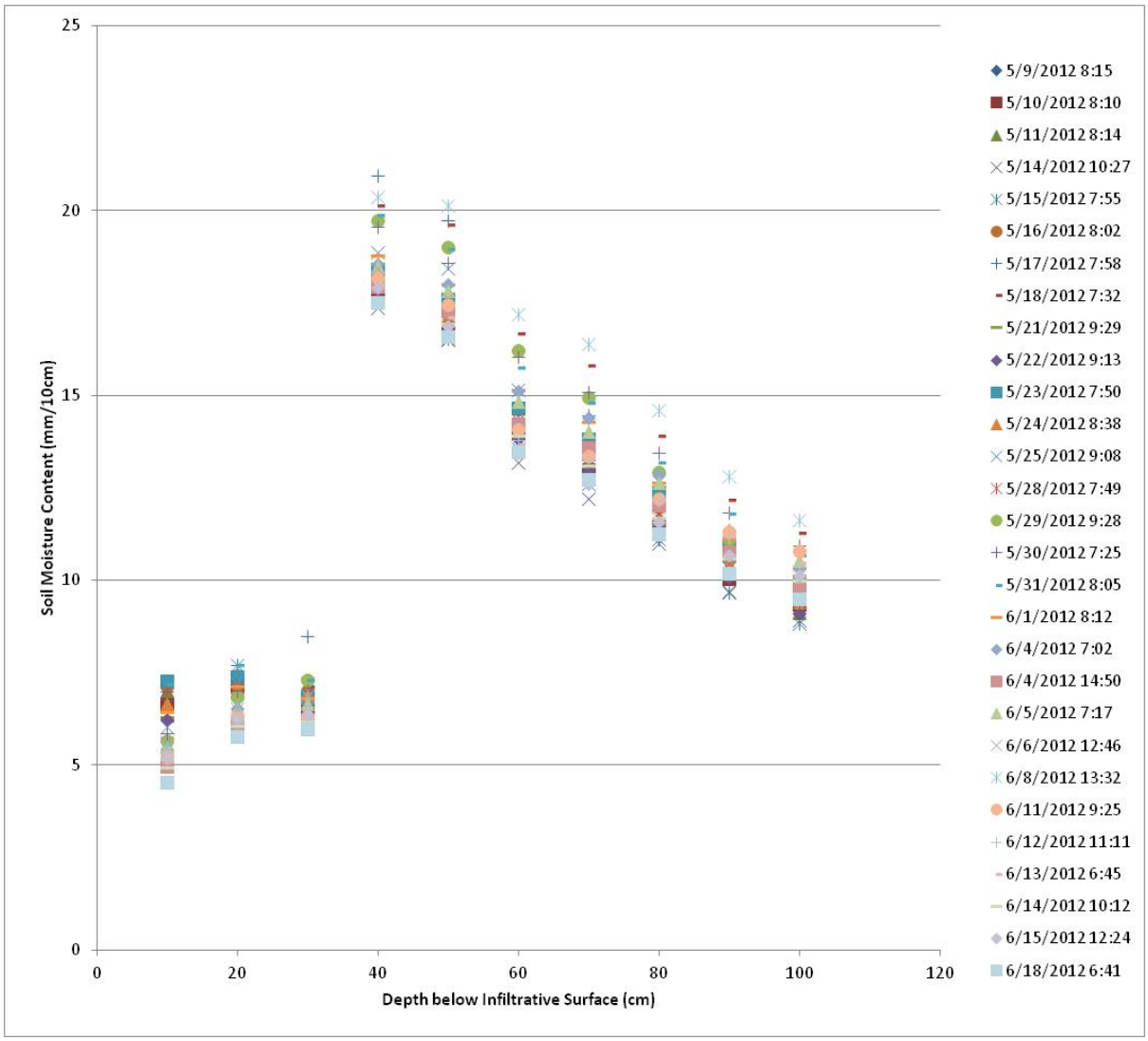

Figure E.4
Soil Moisture Test Area 2 Center

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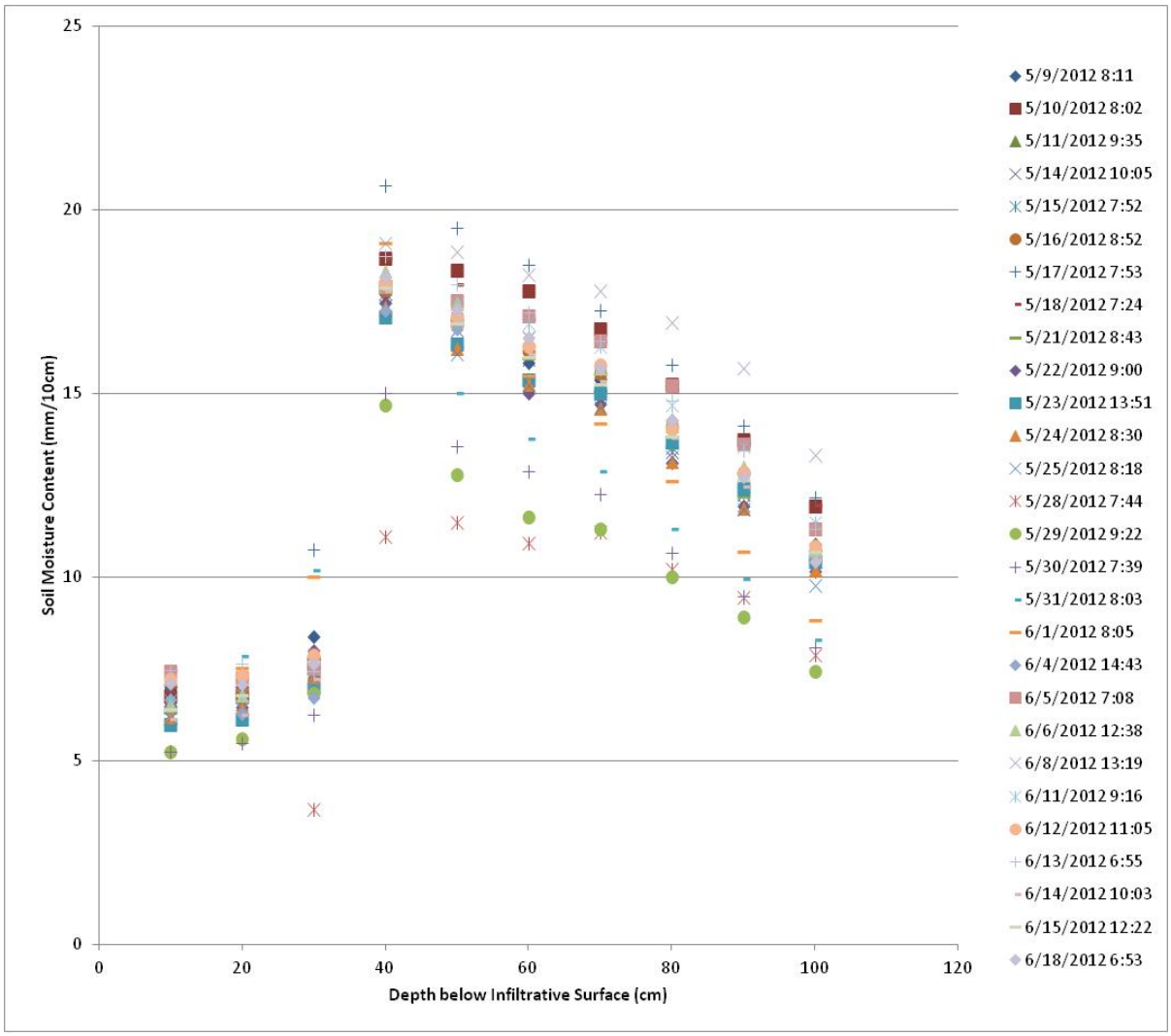

Figure E.5
Soil Moisture Test Area 3 North

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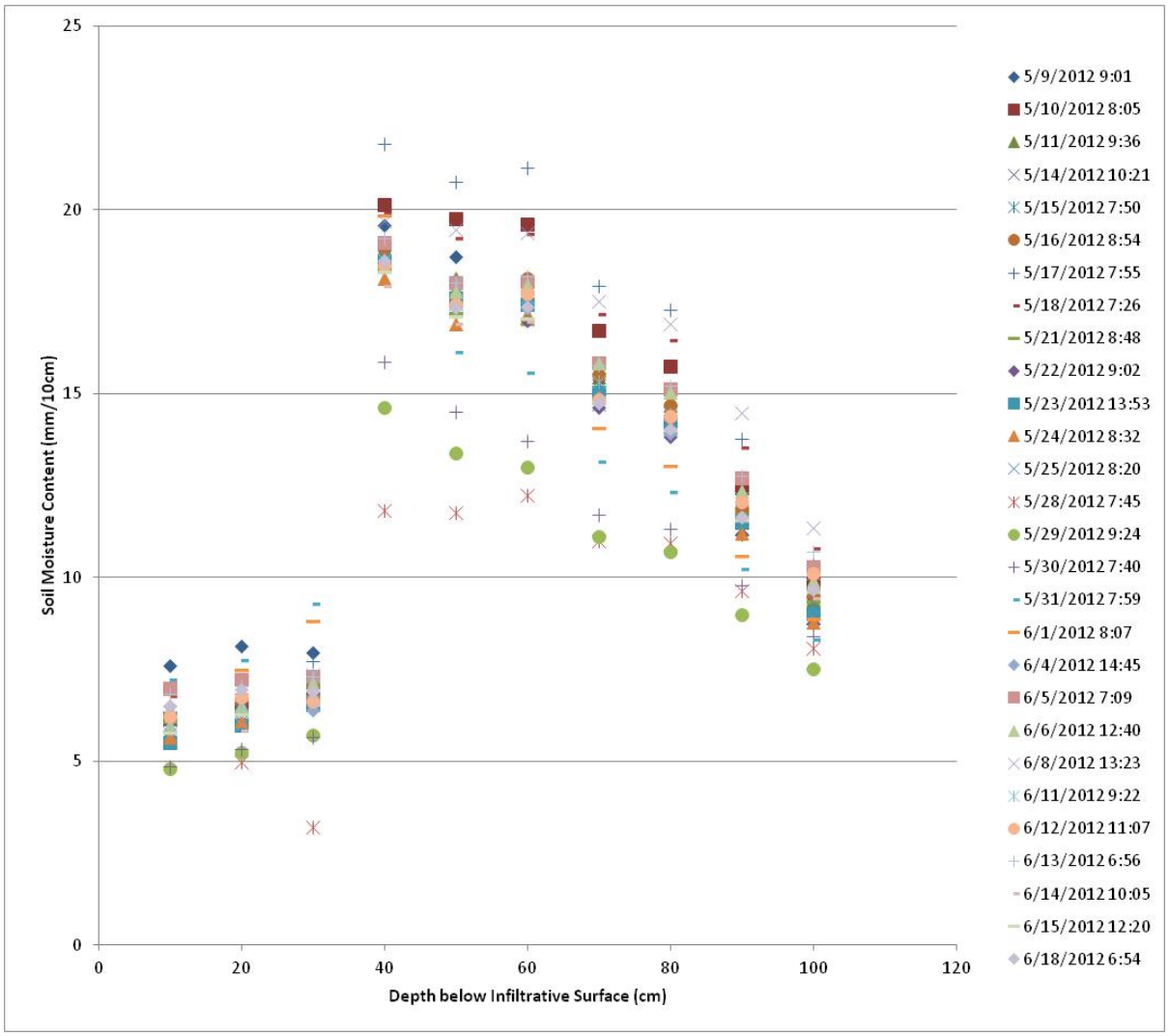

Figure E.6
Soil Moisture Test Area 3 Center

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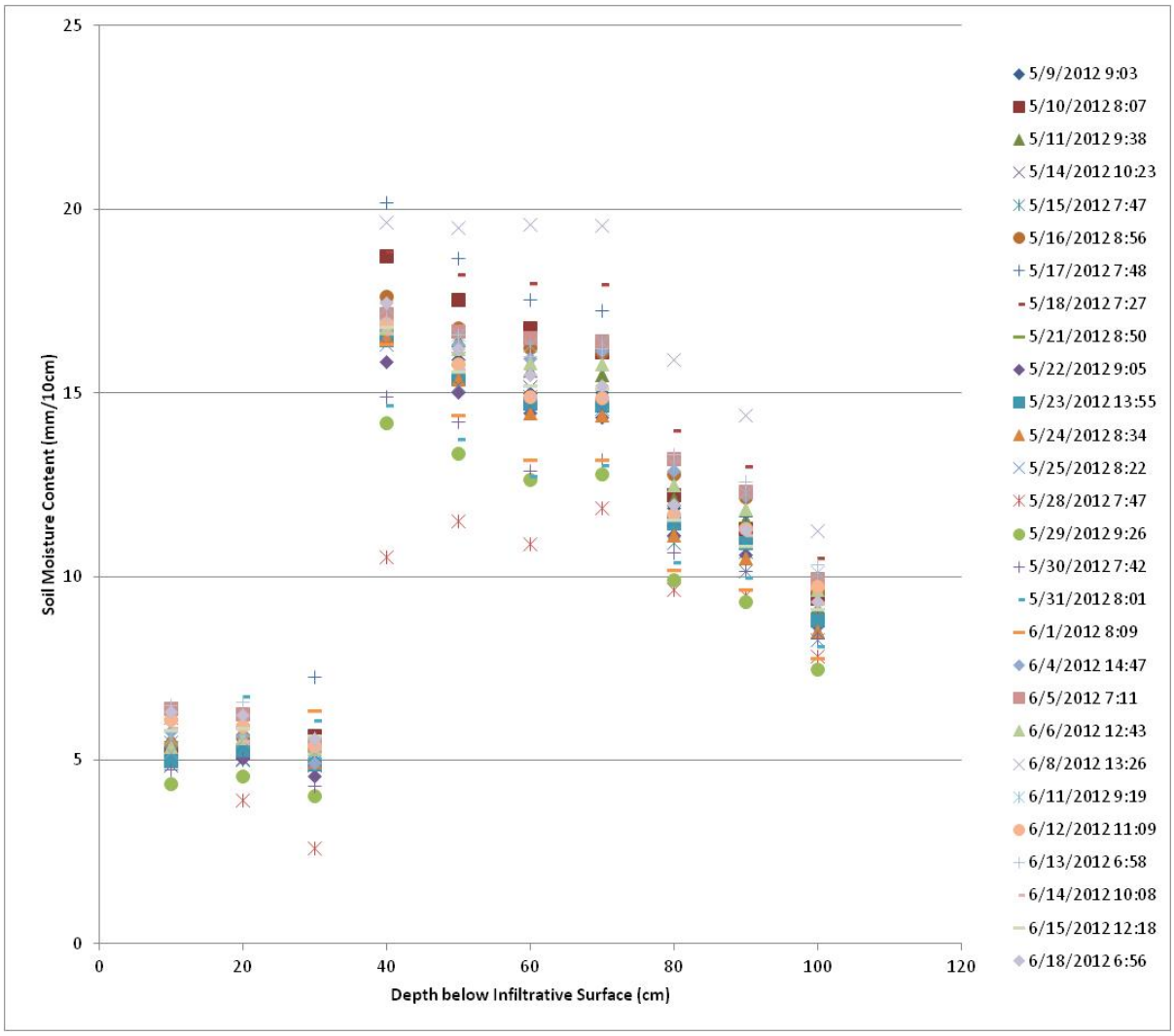

Figure E.7
Soil Moisture Test Area 3 South

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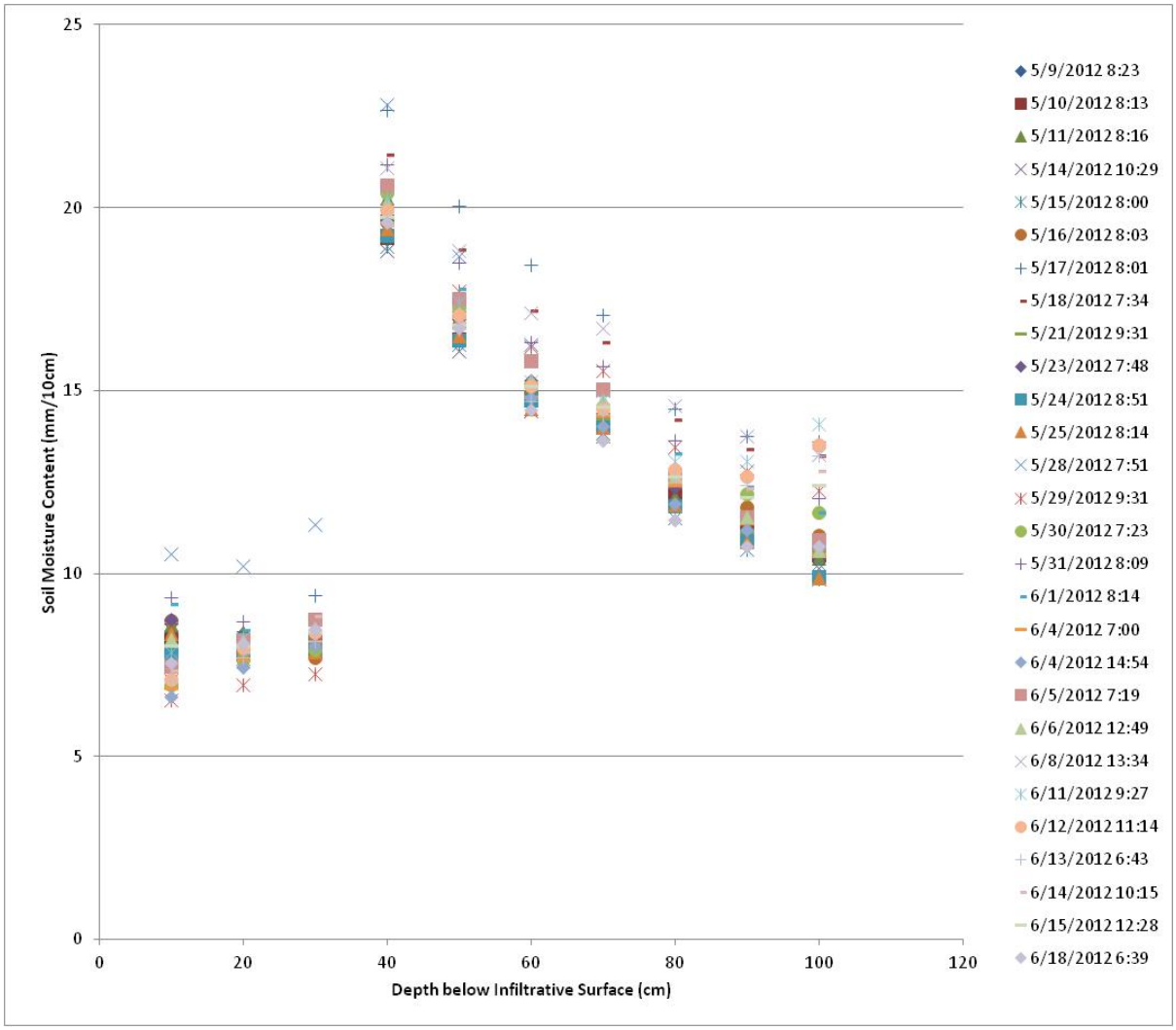

Figure E.8
Soil Moisture Test Area 4 Center

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Appendix F: 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

August 9, 2012
Work Order: 1206569
Revised Report

Laboratory Report

Project Name **S&GW Test Facility SE #1 Set 1**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**PNRS II STE-Tank 1**						
Matrix		**Wastewater**						
SAL Sample Number		**1206569-01**						
Date/Time Collected		**06/21/12 14:30**						
Collected by		**Sean Schmidt**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.9	DEP FT1100	0.1	0.1		06/21/12 14:30	SAS
Water Temperature	°C	27.0	DEP FT1400	0.1	0.1		06/21/12 14:30	SAS
Specific conductance	umhos/cm	1,164	DEP FT1200	0.1	0.1		06/21/12 14:30	SAS
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		06/21/12 14:30	SAS
Inorganics								
Ammonia as N	mg/L	54	EPA 350.1	4.0	0.95		07/03/12 16:14	MMF
Ammonium as NH4	mg/L	68	EPA 350.1	0.01	0.005	07/03/12 16:40	07/03/12 16:42	MMF
Carbonaceous BOD	mg/L	260	SM 5210B	2	2	06/22/12 15:23	06/27/12 13:51	MEJ
Chloride	mg/L	100	EPA 300.0	0.20	0.050		06/28/12 09:50	JAG
Nitrate+Nitrite (N)	mg/L	0.05	EPA 353.2	0.04	0.01		07/03/12 10:35	MMF
Phosphorous - Total as P	mg/L	15	SM 4500P-E	1.0	0.26	06/22/12 13:42	06/23/12 12:19	KTC
Total Alkalinity	mg/L	300	SM 2320B	8.0	2.0		06/26/12 15:52	MBC
Total Kjeldahl Nitrogen	mg/L	71	EPA 351.2	0.20	0.05	06/28/12 14:25	07/02/12 14:09	MMF
Total Solids	mg/L	700	SM 2540B	10	10	06/25/12 14:32	06/26/12 15:21	AES
Total Suspended Solids	mg/L	34	SM 2540D	1	1	06/25/12 08:54	06/25/12 14:50	AES
Microbiology								
Fecal Coliforms	CFU/100 ml	42,000	SM 9222D	1	1	06/21/12 16:45	06/22/12 14:45	HKG
Sample Description		**STE Pump Tank**						
Matrix		**Wastewater**						
SAL Sample Number		**1206569-02**						
Date/Time Collected		**06/21/12 14:00**						
Collected by		**Sean Schmidt**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	7.1	DEP FT1100	0.1	0.1		06/21/12 14:00	SAS
Water Temperature	°C	28.7	DEP FT1400	0.1	0.1		06/21/12 14:00	SAS
Specific conductance	umhos/cm	1,167	DEP FT1200	0.1	0.1		06/21/12 14:00	SAS
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		06/21/12 14:00	SAS
Inorganics								
Ammonia as N	mg/L	55	EPA 350.1	4.0	0.95		07/03/12 16:15	MMF
Ammonium as NH4	mg/L	70	EPA 350.1	0.01	0.005	07/03/12 16:40	07/03/12 16:42	MMF
Carbonaceous BOD	mg/L	93	SM 5210B	2	2	06/22/12 15:23	06/27/12 13:51	MEJ
Chloride	mg/L	94	EPA 300.0	0.20	0.050		06/26/12 02:30	JAG
Fluoride	mg/L	3.7	EPA 300.0	0.040	0.010		06/22/12 16:57	JAG
Nitrate (as N)	mg/L	0.01 I	EPA 300.0	0.04	0.01		06/22/12 16:57	JAG
Nitrate+Nitrite (N)	mg/L	0.03 I	EPA 353.2	0.04	0.01		07/03/12 10:38	MMF

SOUTHERN ANALYTICAL LABORATORIES, INC.
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Tampa, FL 33619

August 9, 2012
Work Order: 1206569
Revised Report

Laboratory Report

Project Name **S&GW Test Facility SE #1 Set 1**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**STE Pump Tank**						
Matrix		**Wastewater**						
SAL Sample Number		**1206569-02**						
Date/Time Collected		**06/21/12 14:00**						
Collected by		**Sean Schmidt**						
Date/Time Received		**06/18/12 16:27**						
Orthophosphate as P	mg/L	4.1	EPA 300.0	0.040	0.010		06/22/12 16:57	JAG
Phosphorous - Total as P	mg/L	14	SM 4500P-E	1.0	0.26	06/22/12 13:42	06/23/12 12:20	KTC
Sulfate	mg/L	12	EPA 300.0	0.60	0.20		06/22/12 16:57	JAG
Total Alkalinity	mg/L	370	SM 2320B	8.0	2.0		06/26/12 15:52	MBC
Total Kjeldahl Nitrogen	mg/L	65	EPA 351.2	0.20	0.05	06/28/12 14:25	07/02/12 14:10	MMF
Total Solids	mg/L	600	SM 2540B	10	10	06/25/12 14:32	06/26/12 15:21	AES
Total Suspended Solids	mg/L	24	SM 2540D	1	1	06/25/12 08:54	06/25/12 14:50	AES
Metals								
Boron	mg/L	0.12	EPA 200.7	0.10	0.050	06/22/12 11:12	06/25/12 15:54	VWC
Calcium	mg/L	56	EPA 200.7	0.50	0.042	06/22/12 11:12	06/25/12 15:54	VWC
Iron	mg/L	0.30	EPA 200.7	0.10	0.020	06/22/12 11:12	06/25/12 15:54	VWC
Magnesium	mg/L	18	EPA 200.7	0.50	0.020	06/22/12 11:12	06/25/12 15:54	VWC
Manganese	mg/L	0.051	EPA 200.7	0.010	0.0010	06/22/12 11:12	06/26/12 13:47	VWC
Potassium	mg/L	34	EPA 200.7	0.050	0.010	06/22/12 11:12	06/25/12 15:54	VWC
Sodium	mg/L	60	EPA 200.7	0.50	0.13	06/22/12 11:12	06/25/12 15:54	VWC
Microbiology								
Fecal Coliforms	CFU/100 ml	184,000	SM 9222D	1	1	06/21/12 16:45	06/22/12 14:45	HKG
Sample Description		**STE Pump Tank-DUP**						
Matrix		**Wastewater**						
SAL Sample Number		**1206569-03**						
Date/Time Collected		**06/14/12 14:05-06/21/12 14:05**						
Collected by		**Sean Schmidt**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	7.1	DEP FT1100	0.1	0.1		06/21/12 14:05	SAS
Water Temperature	°C	28.7	DEP FT1400	0.1	0.1		06/21/12 14:05	SAS
Specific conductance	umhos/cm	1,167	DEP FT1200	0.1	0.1		06/21/12 14:05	SAS
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		06/21/12 14:05	SAS
Inorganics								
Ammonia as N	mg/L	58	EPA 350.1	4.0	0.95		07/03/12 16:17	MMF
Ammonium as NH4	mg/L	74	EPA 350.1	0.01	0.005	07/03/12 16:40	07/03/12 16:42	MMF
Carbonaceous BOD	mg/L	100	SM 5210B	2	2	06/22/12 15:23	06/27/12 13:51	MEJ
Chloride	mg/L	96	EPA 300.0	0.20	0.050		06/26/12 02:30	JAG
Fluoride	mg/L	3.7	EPA 300.0	0.040	0.010		06/22/12 16:57	JAG
Nitrate (as N)	mg/L	0.02 I	EPA 300.0	0.04	0.01		06/22/12 16:57	JAG
Nitrate+Nitrite (N)	mg/L	0.04	EPA 353.2	0.04	0.01		07/03/12 10:40	MMF
Orthophosphate as P	mg/L	4.3	EPA 300.0	0.040	0.010		06/22/12 16:57	JAG

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Tampa, FL 33619

August 9, 2012
Work Order: 1206569
Revised Report

Laboratory Report

Project Name **S&GW Test Facility SE #1 Set 1**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**STE Pump Tank-DUP**						
Matrix		**Wastewater**						
SAL Sample Number		**1206569-03**						
Date/Time Collected		**06/14/12 14:05-06/21/12 14:05**						
Collected by		**Sean Schmidt**						
Date/Time Received		**06/18/12 16:27**						
Phosphorous - Total as P	mg/L	15	SM 4500P-E	1.0	0.26	06/22/12 13:42	06/23/12 12:21	KTC
Sulfate	mg/L	22	EPA 300.0	0.60	0.20		06/22/12 16:57	JAG
Total Alkalinity	mg/L	360	SM 2320B	8.0	2.0		06/26/12 15:52	MBC
Total Kjeldahl Nitrogen	mg/L	63	EPA 351.2	0.20	0.05	06/28/12 14:25	07/02/12 14:12	MMF
Total Solids	mg/L	700	SM 2540B	10	10	06/25/12 14:32	06/26/12 15:21	AES
Total Suspended Solids	mg/L	22	SM 2540D	1	1	06/25/12 08:54	06/25/12 14:50	AES
Metals								
Boron	mg/L	0.12	EPA 200.7	0.10	0.050	06/22/12 11:12	06/25/12 16:04	VWC
Calcium	mg/L	62	EPA 200.7	0.50	0.042	06/22/12 11:12	06/25/12 16:04	VWC
Iron	mg/L	0.30	EPA 200.7	0.10	0.020	06/22/12 11:12	06/25/12 16:04	VWC
Magnesium	mg/L	20	EPA 200.7	0.50	0.020	06/22/12 11:12	06/25/12 16:04	VWC
Manganese	mg/L	0.051	EPA 200.7	0.010	0.0010	06/22/12 11:12	06/26/12 13:50	VWC
Potassium	mg/L	35	EPA 200.7	0.050	0.010	06/22/12 11:12	06/25/12 16:04	VWC
Sodium	mg/L	64	EPA 200.7	0.50	0.13	06/22/12 11:12	06/25/12 16:04	VWC
Microbiology								
Fecal Coliforms	CFU/100 ml	227,000	SM 9222D	1	1	06/21/12 16:45	06/22/12 14:45	HKG
Sample Description		**NO3 Pump Tank**						
Matrix		**Wastewater**						
SAL Sample Number		**1206569-04**						
Date/Time Collected		**06/21/12 14:15**						
Collected by		**Sean Schmidt**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	7.4	DEP FT1100	0.1	0.1		06/21/12 14:15	SAS
Water Temperature	°C	27.8	DEP FT1400	0.1	0.1		06/21/12 14:15	SAS
Specific conductance	umhos/cm	1,154	DEP FT1200	0.1	0.1		06/21/12 14:15	SAS
Dissolved Oxygen	mg/L	0.5	DEP FT1500	0.1	0.1		06/21/12 14:15	SAS
Inorganics								
Ammonia as N	mg/L	53	EPA 350.1	4.0	0.95		07/03/12 16:18	MMF
Ammonium as NH4	mg/L	67	EPA 350.1	0.01	0.005	07/03/12 16:40	07/03/12 16:42	MMF
Carbonaceous BOD	mg/L	33	SM 5210B	2	2	06/22/12 15:23	06/27/12 13:51	MEJ
Chloride	mg/L	92	EPA 300.0	0.20	0.050		06/28/12 09:50	JAG
Nitrate+Nitrite (N)	mg/L	0.28	EPA 353.2	0.04	0.01		07/03/12 10:42	MMF
Phosphorous - Total as P	mg/L	14	SM 4500P-E	1.0	0.26	06/22/12 13:42	06/23/12 12:22	KTC
Total Alkalinity	mg/L	330	SM 2320B	8.0	2.0		06/26/12 15:52	MBC
Total Kjeldahl Nitrogen	mg/L	60	EPA 351.2	0.20	0.05	06/28/12 14:25	07/02/12 14:14	MMF
Total Solids	mg/L	500	SM 2540B	10	10	06/25/12 14:32	06/26/12 15:21	AES

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Sample Description		**NO3 Pump Tank**						
Matrix		**Wastewater**						
SAL Sample Number		**1206569-04**						
Date/Time Collected		**06/21/12 14:15**						
Collected by		**Sean Schmidt**						
Date/Time Received		**06/18/12 16:27**						
Total Suspended Solids	mg/L	3	SM 2540D	1	1	06/25/12 08:54	06/25/12 14:50	AES
Microbiology								
Fecal Coliforms	CFU/100 ml	7,500	SM 9222D	1	1	06/21/12 16:45	06/22/12 14:45	HKG
Sample Description		**NO3 Pump Tank-DUP**						
Matrix		**Wastewater**						
SAL Sample Number		**1206569-05**						
Date/Time Collected		**06/21/12 14:20**						
Collected by		**Sean Schmidt**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	7.4	DEP FT1100	0.1	0.1		06/21/12 14:20	SAS
Water Temperature	°C	27.8	DEP FT1400	0.1	0.1		06/21/12 14:20	SAS
Specific conductance	umhos/cm	1,154	DEP FT1200	0.1	0.1		06/21/12 14:20	SAS
Dissolved Oxygen	mg/L	0.5	DEP FT1500	0.1	0.1		06/21/12 14:20	SAS
Inorganics								
Ammonia as N	mg/L	54	EPA 350.1	4.0	0.95		07/03/12 16:20	MMF
Ammonium as NH4	mg/L	69	EPA 350.1	0.01	0.005	07/03/12 16:40	07/03/12 16:42	MMF
Carbonaceous BOD	mg/L	28	SM 5210B	2	2	06/22/12 15:23	06/27/12 13:51	MEJ
Chloride	mg/L	94	EPA 300.0	0.20	0.050		06/28/12 09:50	JAG
Nitrate+Nitrite (N)	mg/L	0.27	EPA 353.2	0.04	0.01		07/03/12 10:44	MMF
Phosphorous - Total as P	mg/L	13	SM 4500P-E	1.0	0.26	06/22/12 13:42	06/23/12 12:23	KTC
Total Alkalinity	mg/L	330	SM 2320B	8.0	2.0		06/26/12 15:52	MBC
Total Kjeldahl Nitrogen	mg/L	65	EPA 351.2	0.20	0.05	06/28/12 14:25	07/02/12 14:15	MMF
Total Solids	mg/L	500	SM 2540B	10	10	06/25/12 14:32	06/26/12 15:21	AES
Total Suspended Solids	mg/L	5	SM 2540D	1	1	06/25/12 08:54	06/25/12 14:50	AES
Microbiology								
Fecal Coliforms	CFU/100 ml	11,000	SM 9222D	1	1	06/21/12 16:45	06/22/12 14:45	HKG
Sample Description		**TA1-PZ-11-EF2**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-07**						
Date/Time Collected		**06/21/12 09:55**						
Collected by		**Sean Schmidt**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.5	DEP FT1100	0.1	0.1		06/21/12 09:55	SAS

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Sample Description		**TA1-PZ-11-EF2**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-07**						
Date/Time Collected		**06/21/12 09:55**						
Collected by		**Sean Schmidt**						
Date/Time Received		**06/18/12 16:27**						
Water Temperature	°C	25.8	DEP FT1400	0.1	0.1		06/21/12 09:55	SAS
Specific conductance	umhos/cm	438	DEP FT1200	0.1	0.1		06/21/12 09:55	SAS
Dissolved Oxygen	mg/L	6.3	DEP FT1500	0.1	0.1		06/21/12 09:55	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		07/03/12 15:46	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/03/12 16:40	07/03/12 16:42	MMF
Chloride	mg/L	43	EPA 300.0	0.20	0.050		06/30/12 01:33	JAG
Nitrate+Nitrite (N)	mg/L	18	EPA 353.2	1.0	0.25		07/03/12 12:11	MMF
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	06/28/12 14:25	07/02/12 13:18	MMF
Sample Description		**TA1-PZ-11-EF2-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-08**						
Date/Time Collected		**06/21/12 10:00**						
Collected by		**Sean Schmidt**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.5	DEP FT1100	0.1	0.1	06/21/12 10:31	06/21/12 10:00	SAS
Water Elevation	ft., NGVD	25.80	DEP FS2211	0.01	0.01	06/21/12 10:31	06/21/12 10:00	SAS
Water Temperature	°C	25.8	DEP FT1400	0.1	0.1		06/21/12 10:00	RJS
Specific conductance	umhos/cm	438	DEP FT1200	0.1	0.1	06/21/12 10:31	06/21/12 10:00	SAS
Dissolved Oxygen	mg/L	6.3	DEP FT1500	0.1	0.1	06/21/12 10:31	06/21/12 10:00	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		07/03/12 15:48	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/03/12 16:40	07/03/12 16:42	MMF
Chloride	mg/L	44	EPA 300.0	0.20	0.050		06/28/12 09:50	JAG
Nitrate+Nitrite (N)	mg/L	19	EPA 353.2	1.0	0.25		07/03/12 12:14	MMF
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	06/28/12 14:25	07/02/12 13:20	MMF
Sample Description		**TA1-LY-24-C**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-09**						
Date/Time Collected		**06/18/12 13:15**						
Collected by		**Sean Schmidt**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.6	DEP FT1100	0.1	0.1		06/18/12 13:15	SAS

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Sample Description		**TA1-LY-24-C**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-09**						
Date/Time Collected		**06/18/12 13:15**						
Collected by		**Sean Schmidt**						
Date/Time Received		**06/18/12 16:27**						
Water Temperature	°C	32.7	DEP FT1400	0.1	0.1		06/18/12 13:15	SAS
Specific conductance	umhos/cm	576	DEP FT1200	0.1	0.1		06/18/12 13:15	SAS
Dissolved Oxygen	mg/L	6.2	DEP FT1500	0.1	0.1		06/18/12 13:15	SAS
Inorganics								
Ammonia as N	mg/L	0.070	EPA 350.1	0.040	0.009		06/20/12 11:11	MMF
Ammonium as NH4	mg/L	0.09	EPA 350.1	0.01	0.005	07/05/12 13:20	07/05/12 13:21	ARP
Chloride	mg/L	23	EPA 300.0	0.20	0.050		06/19/12 15:09	JAG
Nitrate (as N)	mg/L	18	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Total Kjeldahl Nitrogen	mg/L	12	EPA 351.2	0.20	0.05	06/19/12 08:39	06/20/12 15:18	MMF
Sample Description		**TA1-LY-12-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-10**						
Date/Time Collected		**06/18/12 13:25**						
Collected by		**Sean Schmidt**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.7	DEP FT1100	0.1	0.1		06/18/12 13:25	SAS
Water Temperature	°C	29.4	DEP FT1400	0.1	0.1		06/18/12 13:25	SAS
Specific conductance	umhos/cm	546	DEP FT1200	0.1	0.1		06/18/12 13:25	SAS
Dissolved Oxygen	mg/L	6.8	DEP FT1500	0.1	0.1		06/18/12 13:25	SAS
Inorganics								
Ammonia as N	mg/L	0.012 I	EPA 350.1	0.040	0.009		06/20/12 11:12	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005	07/05/12 13:20	07/05/12 13:21	ARP
Chemical Oxygen Demand	mg/L	28	EPA 410.4	25	10	06/20/12 08:45	06/20/12 13:50	LAS
Chloride	mg/L	61	EPA 300.0	0.20	0.050		06/19/12 15:09	JAG
Nitrate (as N)	mg/L	46	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Phosphorous - Total as P	mg/L	0.14	SM 4500P-E	0.040	0.010	06/22/12 13:42	06/23/12 11:08	KTC
Total Alkalinity	mg/L	54	SM 2320B	8.0	2.0		06/19/12 13:28	MBC
Total Kjeldahl Nitrogen	mg/L	3.0	EPA 351.2	0.20	0.05	06/19/12 08:39	06/20/12 14:06	MMF
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	12	SM 5310B	1.0	0.50		06/22/12 12:10	ARP

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Sample Description		**TA1-LY-24-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-16**						
Date/Time Collected		**06/18/12 13:36**						
Collected by		**Sean Schmidt**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.7	DEP FT1100	0.1	0.1		06/18/12 13:36	SAS
Water Temperature	°C	30.4	DEP FT1400	0.1	0.1		06/18/12 13:36	SAS
Specific conductance	umhos/cm	718	DEP FT1200	0.1	0.1		06/18/12 13:36	SAS
Dissolved Oxygen	mg/L	6.7	DEP FT1500	0.1	0.1		06/18/12 13:36	SAS
Inorganics								
Ammonia as N	mg/L	0.051	EPA 350.1	0.040	0.009		06/20/12 11:14	MMF
Ammonium as NH4	mg/L	0.07	EPA 350.1	0.01	0.005	07/05/12 13:20	07/05/12 13:21	ARP
Chemical Oxygen Demand	mg/L	81	EPA 410.4	25	10	06/20/12 08:45	06/20/12 13:50	LAS
Chloride	mg/L	66	EPA 300.0	0.20	0.050		06/19/12 15:09	JAG
Nitrate (as N)	mg/L	53	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Phosphorous - Total as P	mg/L	0.65	SM 4500P-E	0.040	0.010	06/22/12 13:42	06/23/12 11:09	KTC
Total Alkalinity	mg/L	65	SM 2320B	8.0	2.0		06/19/12 13:28	MBC
Total Kjeldahl Nitrogen	mg/L	6.6	EPA 351.2	0.20	0.05	06/19/12 08:39	06/20/12 15:19	MMF
Sample Description		**TA1-LY-42-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-17**						
Date/Time Collected		**06/18/12 13:45**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.7	DEP FT1100	0.1	0.1		06/18/12 13:45	SAS
Water Temperature	°C	33.1	DEP FT1400	0.1	0.1		06/18/12 13:45	SAS
Specific conductance	umhos/cm	447	DEP FT1200	0.1	0.1		06/18/12 13:45	SAS
Dissolved Oxygen	mg/L	5.8	DEP FT1500	0.1	0.1		06/18/12 13:45	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 11:16	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/05/12 13:20	07/05/12 13:21	ARP
Chloride	mg/L	54	EPA 300.0	0.20	0.050		06/19/12 15:09	JAG
Nitrate (as N)	mg/L	36	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Total Kjeldahl Nitrogen	mg/L	10	EPA 351.2	0.20	0.05	06/19/12 08:39	06/20/12 15:20	MMF

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Sample Description		**TA1-PZ-11-J4**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-18**						
Date/Time Collected		**06/20/12 11:35**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.4	DEP FT1100	0.1	0.1		06/20/12 11:35	RJS
Water Temperature	°C	27.2	DEP FT1400	0.1	0.1		06/20/12 11:35	RJS
Specific conductance	umhos/cm	300	DEP FT1200	0.1	0.1		06/20/12 11:35	RJS
Dissolved Oxygen	mg/L	3.4	DEP FT1500	0.1	0.1		06/20/12 11:35	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 15:15	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	22	EPA 300.0	0.20	0.050		06/23/12 09:56	JAG
Nitrate+Nitrite (N)	mg/L	10	EPA 353.2	0.40	0.10		07/06/12 11:48	MMF
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	06/28/12 14:25	07/02/12 13:21	MMF
Sample Description		**TA1-PZ-11-K4**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-19**						
Date/Time Collected		**06/20/12 11:50**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.4	DEP FT1100	0.1	0.1		06/20/12 11:50	RJS
Water Temperature	°C	26.4	DEP FT1400	0.1	0.1		06/20/12 11:50	RJS
Specific conductance	umhos/cm	289	DEP FT1200	0.1	0.1		06/20/12 11:50	RJS
Dissolved Oxygen	mg/L	3.2	DEP FT1500	0.1	0.1		06/20/12 11:50	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 15:17	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	19	EPA 300.0	0.20	0.050		06/23/12 09:56	JAG
Nitrate+Nitrite (N)	mg/L	9.3	EPA 353.2	0.40	0.10		07/06/12 11:50	MMF
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	06/28/12 14:25	07/02/12 13:23	MMF
Sample Description		**TA1-PZ-11-L2**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-20**						
Date/Time Collected		**06/20/12 14:45**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								

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Sample Description		**TA1-PZ-11-L2**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-20**						
Date/Time Collected		**06/20/12 14:45**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**06/18/12 16:27**						
pH	SU	4.4	DEP FT1100	0.1	0.1		06/20/12 14:45	RJS
Water Temperature	°C	25.6	DEP FT1400	0.1	0.1		06/20/12 14:45	RJS
Specific conductance	umhos/cm	676	DEP FT1200	0.1	0.1		06/20/12 14:45	RJS
Dissolved Oxygen	mg/L	5.9	DEP FT1500	0.1	0.1		06/20/12 14:45	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 15:20	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	58	EPA 300.0	0.20	0.050		06/28/12 09:50	JAG
Nitrate+Nitrite (N)	mg/L	38	EPA 353.2	1.0	0.25		07/06/12 12:17	MMF
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	06/28/12 14:25	07/02/12 13:25	MMF
Sample Description		**TA1-PZ-11-L3**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-21**						
Date/Time Collected		**06/20/12 14:25**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.5	DEP FT1100	0.1	0.1		06/20/12 14:25	RJS
Water Temperature	°C	25.5	DEP FT1400	0.1	0.1		06/20/12 14:25	RJS
Specific conductance	umhos/cm	310	DEP FT1200	0.1	0.1		06/20/12 14:25	RJS
Dissolved Oxygen	mg/L	4.9	DEP FT1500	0.1	0.1		06/20/12 14:25	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 15:22	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	28	EPA 300.0	0.20	0.050		06/26/12 02:30	JAG
Nitrate+Nitrite (N)	mg/L	8.5	EPA 353.2	0.40	0.10		07/06/12 11:55	MMF
Total Kjeldahl Nitrogen	mg/L	0.98	EPA 351.2	0.20	0.05	06/28/12 14:25	07/02/12 14:18	MMF
Sample Description		**TA1-PZ-11-L4**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-22**						
Date/Time Collected		**06/21/12 09:05**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.4	DEP FT1100	0.1	0.1		06/21/12 09:05	RJS

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Sample Description		**TA1-PZ-11-L4**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-22**						
Date/Time Collected		**06/21/12 09:05**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**06/18/12 16:27**						
Water Temperature	°C	25.7	DEP FT1400	0.1	0.1		06/21/12 09:05	RJS
Specific conductance	umhos/cm	414	DEP FT1200	0.1	0.1		06/21/12 09:05	RJS
Dissolved Oxygen	mg/L	4.4	DEP FT1500	0.1	0.1		06/21/12 09:05	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		07/03/12 12:17	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/03/12 13:43	07/03/12 13:44	ARP
Chloride	mg/L	25	EPA 300.0	0.20	0.050		06/26/12 02:30	JAG
Nitrate+Nitrite (N)	mg/L	18	EPA 353.2	0.40	0.10		07/06/12 11:57	MMF
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	06/28/12 14:25	07/02/12 14:19	MMF
Sample Description		**TA1-PZ-11-L4-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-23**						
Date/Time Collected		**06/21/12 09:15**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.4	DEP FT1100	0.1	0.1		06/21/12 09:15	RJS
Water Temperature	°C	25.7	DEP FT1400	0.1	0.1		06/21/12 09:15	RJS
Specific conductance	umhos/cm	414	DEP FT1200	0.1	0.1		06/21/12 09:15	RJS
Dissolved Oxygen	mg/L	4.4	DEP FT1500	0.1	0.1		06/21/12 09:15	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		07/03/12 12:19	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/03/12 13:43	07/03/12 13:44	ARP
Chloride	mg/L	24	EPA 300.0	0.20	0.050		06/26/12 02:30	JAG
Nitrate+Nitrite (N)	mg/L	17	EPA 353.2	0.40	0.10		07/06/12 11:59	MMF
Total Kjeldahl Nitrogen	mg/L	1.0	EPA 351.2	0.20	0.05	06/28/12 14:25	07/02/12 14:20	MMF
Sample Description		**TA1-PZ-11-L5**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-24**						
Date/Time Collected		**06/20/12 13:45**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.6	DEP FT1100	0.1	0.1		06/20/12 13:45	RJS
Water Temperature	°C	27.4	DEP FT1400	0.1	0.1		06/20/12 13:45	RJS

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Sample Description		**TA1-PZ-11-L5**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-24**						
Date/Time Collected		**06/20/12 13:45**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**06/18/12 16:27**						
Specific conductance	umhos/cm	306	DEP FT1200	0.1	0.1		06/20/12 13:45	RJS
Dissolved Oxygen	mg/L	2.8	DEP FT1500	0.1	0.1		06/20/12 13:45	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 15:28	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	18	EPA 300.0	0.20	0.050		06/26/12 02:30	JAG
Nitrate+Nitrite (N)	mg/L	9.7	EPA 353.2	0.40	0.10		07/06/12 12:01	MMF
Total Kjeldahl Nitrogen	mg/L	0.96	EPA 351.2	0.20	0.05	06/28/12 14:25	07/02/12 14:22	MMF
Sample Description		**TA1-PZ-09-N3**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-25**						
Date/Time Collected		**06/20/12 16:30**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.6	DEP FT1100	0.1	0.1		06/21/12 16:30	RJS
Water Temperature	°C	27.3	DEP FT1400	0.1	0.1		06/21/12 16:30	RJS
Specific conductance	umhos/cm	1,103	DEP FT1200	0.1	0.1		06/21/12 16:30	RJS
Dissolved Oxygen	mg/L	4.2	DEP FT1500	0.1	0.1		06/21/12 16:30	RJS
Inorganics								
Ammonia as N	mg/L	0.069	EPA 350.1	0.040	0.009		07/03/12 12:21	MMF
Ammonium as NH4	mg/L	0.09	EPA 350.1	0.01	0.005	07/05/12 13:20	07/05/12 13:21	ARP
Chloride	mg/L	33	EPA 300.0	0.20	0.050		06/26/12 02:30	JAG
Nitrate+Nitrite (N)	mg/L	4.6	EPA 353.2	0.40	0.10		07/06/12 12:04	MMF
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	06/28/12 14:25	07/02/12 14:23	MMF
Sample Description		**TA1-PZ-16-N3**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-26**						
Date/Time Collected		**06/21/12 11:52**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	5.7	DEP FT1100	0.1	0.1		06/21/12 11:52	SAS
Water Temperature	°C	24.9	DEP FT1400	0.1	0.1		06/21/12 11:52	SAS
Specific conductance	umhos/cm	277	DEP FT1200	0.1	0.1		06/21/12 11:52	SAS

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Sample Description		**TA1-PZ-16-N3**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-26**						
Date/Time Collected		**06/21/12 11:52**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**06/18/12 16:27**						
Dissolved Oxygen	mg/L	0.6	DEP FT1500	0.1	0.1		06/21/12 11:52	SAS
Inorganics								
Ammonia as N	mg/L	0.025 I	EPA 350.1	0.040	0.009		07/03/12 12:23	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/03/12 13:43	07/03/12 13:44	ARP
Chloride	mg/L	15	EPA 300.0	0.20	0.050		06/26/12 02:30	JAG
Nitrate+Nitrite (N)	mg/L	6.9	EPA 353.2	0.40	0.10		07/06/12 12:06	MMF
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	06/28/12 14:25	07/02/12 14:24	MMF
Sample Description		**TA1-PZ-09-O7**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-27**						
Date/Time Collected		**06/20/12 15:40**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	5.4	DEP FT1100	0.1	0.1		06/20/12 15:40	RJS
Water Temperature	°C	27.1	DEP FT1400	0.1	0.1		06/20/12 15:40	RJS
Specific conductance	umhos/cm	497	DEP FT1200	0.1	0.1		06/20/12 15:40	RJS
Dissolved Oxygen	mg/L	1.7	DEP FT1500	0.1	0.1		06/20/12 15:40	RJS
Inorganics								
Ammonia as N	mg/L	0.014 I	EPA 350.1	0.040	0.009		07/03/12 12:25	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005	07/05/12 13:20	07/05/12 13:21	ARP
Chloride	mg/L	28	EPA 300.0	0.20	0.050		06/26/12 02:30	JAG
Nitrate+Nitrite (N)	mg/L	9.2	EPA 353.2	0.40	0.10		07/06/12 12:08	MMF
Total Kjeldahl Nitrogen	mg/L	0.88	EPA 351.2	0.20	0.05	07/02/12 10:42	07/05/12 12:11	MMF
Sample Description		**TA1-PZ-16-O7**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-28**						
Date/Time Collected		**06/21/12 11:32**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	5.8	DEP FT1100	0.1	0.1		06/21/12 11:32	SAS
Water Temperature	°C	25.0	DEP FT1400	0.1	0.1		06/21/12 11:32	SAS
Specific conductance	umhos/cm	268	DEP FT1200	0.1	0.1		06/21/12 11:32	SAS
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		06/21/12 11:32	SAS

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Sample Description		**TA1-PZ-16-O7**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-28**						
Date/Time Collected		**06/21/12 11:32**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**06/18/12 16:27**						
Inorganics								
Ammonia as N	mg/L	0.025 I	EPA 350.1	0.040	0.009		07/03/12 12:27	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/03/12 13:43	07/03/12 13:44	ARP
Chloride	mg/L	11	EPA 300.0	0.20	0.050		06/26/12 02:30	JAG
Nitrate+Nitrite (N)	mg/L	5.5	EPA 353.2	0.40	0.10		07/06/12 12:11	MMF
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	07/02/12 10:42	07/05/12 12:13	MMF
Sample Description		**TA1-PZ-09-M9**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-29**						
Date/Time Collected		**06/20/12 15:20**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	5.3	DEP FT1100	0.1	0.1		06/20/12 15:20	RJS
Water Temperature	°C	26.4	DEP FT1400	0.1	0.1		06/20/12 15:20	RJS
Specific conductance	umhos/cm	309	DEP FT1200	0.1	0.1		06/20/12 15:20	RJS
Dissolved Oxygen	mg/L	0.6	DEP FT1500	0.1	0.1		06/20/12 15:20	RJS
Inorganics								
Ammonia as N	mg/L	0.041	EPA 350.1	0.040	0.009		07/03/12 12:29	MMF
Ammonium as NH4	mg/L	0.05	EPA 350.1	0.01	0.005	07/05/12 13:20	07/05/12 13:21	ARP
Chloride	mg/L	20	EPA 300.0	0.20	0.050		06/26/12 02:30	JAG
Nitrate+Nitrite (N)	mg/L	7.7	EPA 353.2	0.20	0.05		07/03/12 11:40	MMF
Total Kjeldahl Nitrogen	mg/L	0.83	EPA 351.2	0.20	0.05	07/02/12 10:42	07/05/12 12:15	MMF
Sample Description		**TA1-PZ-16-M9**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-30**						
Date/Time Collected		**06/21/12 12:14**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	5.9	DEP FT1100	0.1	0.1		06/21/12 12:14	SAS
Water Temperature	°C	25.3	DEP FT1400	0.1	0.1		06/21/12 12:14	SAS
Specific conductance	umhos/cm	275	DEP FT1200	0.1	0.1		06/21/12 12:14	SAS
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		06/21/12 12:14	SAS
Inorganics								

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**TA1-PZ-16-M9**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-30**						
Date/Time Collected		**06/21/12 12:14**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Ammonia as N	mg/L	0.028 I	EPA 350.1	0.040	0.009		07/03/12 12:31	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/03/12 13:43	07/03/12 13:44	ARP
Chloride	mg/L	13	EPA 300.0	0.20	0.050		06/26/12 02:30	JAG
Nitrate+Nitrite (N)	mg/L	7.0	EPA 353.2	0.20	0.05		07/03/12 11:42	MMF
Total Kjeldahl Nitrogen	mg/L	0.90	EPA 351.2	0.20	0.05	07/02/12 10:42	07/05/12 12:16	MMF
Sample Description		**TA1-PZ-09-I7**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-31**						
Date/Time Collected		**06/20/12 15:00**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	5.6	DEP FT1100	0.1	0.1		06/20/12 15:00	RJS
Water Temperature	°C	25.7	DEP FT1400	0.1	0.1		06/20/12 15:00	RJS
Specific conductance	umhos/cm	415	DEP FT1200	0.1	0.1		06/20/12 15:00	RJS
Dissolved Oxygen	mg/L	2.0	DEP FT1500	0.1	0.1		06/20/12 15:00	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 15:30	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	18	EPA 300.0	0.20	0.050		06/26/12 02:30	JAG
Nitrate+Nitrite (N)	mg/L	5.9	EPA 353.2	0.20	0.05		07/03/12 11:44	MMF
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	07/02/12 10:42	07/05/12 12:18	MMF
Sample Description		**TA1-PZ-16-I7**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-32**						
Date/Time Collected		**06/21/12 13:49**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.2	DEP FT1100	0.1	0.1		06/21/12 13:49	SAS
Water Temperature	°C	25.3	DEP FT1400	0.1	0.1		06/21/12 13:49	SAS
Specific conductance	umhos/cm	319	DEP FT1200	0.1	0.1		06/21/12 13:49	SAS
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		06/21/12 13:49	SAS
Inorganics								
Ammonia as N	mg/L	0.045	EPA 350.1	0.040	0.009		07/03/12 12:34	MMF

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Sample Description		**TA1-PZ-16-I7**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-32**						
Date/Time Collected		**06/21/12 13:49**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Ammonium as NH4	mg/L	0.06	EPA 350.1	0.01	0.005	07/03/12 13:43	07/03/12 13:44	ARP
Chloride	mg/L	13	EPA 300.0	0.20	0.050		06/26/12 02:30	JAG
Nitrate+Nitrite (N)	mg/L	6.6	EPA 353.2	0.20	0.05		07/03/12 11:46	MMF
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	07/02/12 10:42	07/05/12 12:20	MMF
Sample Description		**TA1-PZ-09-RS16**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-33**						
Date/Time Collected		**06/21/12 08:54**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.2	DEP FT1100	0.1	0.1		06/21/12 08:54	SAS
Water Temperature	°C	25.6	DEP FT1400	0.1	0.1		06/21/12 08:54	SAS
Specific conductance	umhos/cm	314	DEP FT1200	0.1	0.1		06/21/12 08:54	SAS
Dissolved Oxygen	mg/L	1.2	DEP FT1500	0.1	0.1		06/21/12 08:54	SAS
Inorganics								
Ammonia as N	mg/L	0.027 I	EPA 350.1	0.040	0.009		07/03/12 12:36	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/03/12 13:43	07/03/12 13:44	ARP
Chloride	mg/L	9.6	EPA 300.0	0.20	0.050		06/26/12 02:30	JAG
Nitrate+Nitrite (N)	mg/L	4.7	EPA 353.2	0.20	0.05		07/03/12 11:49	MMF
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	07/02/12 10:42	07/05/12 12:21	MMF
Sample Description		**TA1-PZ-16-RS16**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-34**						
Date/Time Collected		**06/21/12 09:14**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.2	DEP FT1100	0.1	0.1		06/21/12 09:14	SAS
Water Temperature	°C	24.8	DEP FT1400	0.1	0.1		06/21/12 09:14	SAS
Specific conductance	umhos/cm	434	DEP FT1200	0.1	0.1		06/21/12 09:14	SAS
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		06/21/12 09:14	SAS
Inorganics								
Ammonia as N	mg/L	0.042	EPA 350.1	0.040	0.009		07/03/12 12:42	MMF
Ammonium as NH4	mg/L	0.05	EPA 350.1	0.01	0.005	07/03/12 13:43	07/03/12 13:44	ARP

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Sample Description		**TA1-PZ-16-RS16**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-34**						
Date/Time Collected		**06/21/12 09:14**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Chloride	mg/L	15	EPA 300.0	0.20	0.050		06/26/12 02:30	JAG
Nitrate+Nitrite (N)	mg/L	5.6	EPA 353.2	0.20	0.05		07/03/12 11:51	MMF
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	07/02/12 10:42	07/05/12 12:23	MMF
Sample Description		**TA1-PZ-09-RS18**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-35**						
Date/Time Collected		**06/21/12 08:14**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.3	DEP FT1100	0.1	0.1		06/21/12 08:14	SAS
Water Temperature	°C	25.8	DEP FT1400	0.1	0.1		06/21/12 08:14	SAS
Specific conductance	umhos/cm	338	DEP FT1200	0.1	0.1		06/21/12 08:14	SAS
Dissolved Oxygen	mg/L	4.6	DEP FT1500	0.1	0.1		06/21/12 08:14	SAS
Inorganics								
Ammonia as N	mg/L	0.033 I	EPA 350.1	0.040	0.009		07/03/12 12:44	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/03/12 13:43	07/03/12 13:44	ARP
Chloride	mg/L	9.8	EPA 300.0	0.20	0.050		06/28/12 09:50	JAG
Nitrate+Nitrite (N)	mg/L	4.6	EPA 353.2	0.20	0.05		07/03/12 11:53	MMF
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	07/02/12 10:42	07/05/12 12:25	MMF
Sample Description		**TA1-PZ-16-RS18**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-36**						
Date/Time Collected		**06/21/12 08:34**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.3	DEP FT1100	0.1	0.1		06/21/12 08:34	SAS
Water Temperature	°C	24.8	DEP FT1400	0.1	0.1		06/21/12 08:34	SAS
Specific conductance	umhos/cm	314	DEP FT1200	0.1	0.1		06/21/12 08:34	SAS
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		06/21/12 08:34	SAS
Inorganics								
Ammonia as N	mg/L	0.073	EPA 350.1	0.040	0.009		07/03/12 12:46	MMF
Ammonium as NH4	mg/L	0.09	EPA 350.1	0.01	0.005	07/03/12 13:43	07/03/12 13:44	ARP
Chloride	mg/L	12	EPA 300.0	0.20	0.050		06/28/12 09:50	JAG

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**TA1-PZ-16-RS18**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-36**						
Date/Time Collected		**06/21/12 08:34**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Nitrate+Nitrite (N)	mg/L	5.6	EPA 353.2	0.20	0.05		07/03/12 11:56	MMF
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	07/02/12 10:42	07/05/12 12:26	MMF
Sample Description		**TA2-PZ-10-EF2**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-38**						
Date/Time Collected		**06/20/12 09:21**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.4	DEP FT1100	0.1	0.1		06/20/12 09:21	SAS
Water Temperature	°C	25.6	DEP FT1400	0.1	0.1		06/20/12 09:21	SAS
Specific conductance	umhos/cm	524	DEP FT1200	0.1	0.1		06/20/12 09:21	SAS
Dissolved Oxygen	mg/L	3.6	DEP FT1500	0.1	0.1		06/20/12 09:21	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 15:32	MMF
Ammonium as NH4	mg/L	0.01	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	58	EPA 300.0	0.20	0.050		06/30/12 01:33	JAG
Nitrate+Nitrite (N)	mg/L	19	EPA 353.2	1.0	0.25		07/03/12 12:16	MMF
Total Kjeldahl Nitrogen	mg/L	2.3	EPA 351.2	0.20	0.05	07/02/12 10:42	07/05/12 12:32	MMF
Sample Description		**TA2-PZ-10-EF2-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-39**						
Date/Time Collected		**06/20/12 09:26**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.4	DEP FT1100	0.1	0.1		06/20/12 09:26	SAS
Water Temperature	°C	25.6	DEP FT1400	0.1	0.1		06/20/12 09:26	SAS
Specific conductance	umhos/cm	524	DEP FT1200	0.1	0.1		06/20/12 09:26	SAS
Dissolved Oxygen	mg/L	3.6	DEP FT1500	0.1	0.1		06/20/12 09:26	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 17:03	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	58	EPA 300.0	0.20	0.050		06/28/12 09:50	JAG
Nitrate+Nitrite (N)	mg/L	18	EPA 353.2	1.0	0.25		07/03/12 12:18	MMF

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Sample Description		**TA2-PZ-10-EF2-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-39**						
Date/Time Collected		**06/20/12 09:26**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Total Kjeldahl Nitrogen	mg/L	2.4	EPA 351.2	0.20	0.05	07/02/12 10:42	07/05/12 12:33	MMF
Sample Description		**TA2-LY-24-C**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-40**						
Date/Time Collected		**06/18/12 10:28**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.4	DEP FT1100	0.1	0.1		06/18/12 10:28	SAS
Water Temperature	°C	27.9	DEP FT1400	0.1	0.1		06/18/12 10:28	SAS
Specific conductance	umhos/cm	820	DEP FT1200	0.1	0.1		06/18/12 10:28	SAS
Dissolved Oxygen	mg/L	6.3	DEP FT1500	0.1	0.1		06/18/12 10:28	SAS
Inorganics								
Ammonia as N	mg/L	0.012 I	EPA 350.1	0.040	0.009		06/20/12 11:17	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005	07/05/12 13:20	07/05/12 13:21	ARP
Chloride	mg/L	66	EPA 300.0	0.20	0.050		06/19/12 15:09	JAG
Nitrate (as N)	mg/L	47	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Total Kjeldahl Nitrogen	mg/L	6.0	EPA 351.2	0.20	0.05	06/19/12 08:39	06/20/12 15:24	MMF
Sample Description		**TA2-LY-12-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-41**						
Date/Time Collected		**06/18/12 10:39**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
Reference Elevation (TOC)	ft., NGVD	0.01 U	DEP FS2200	0.01	0.01		06/18/12 10:39	SAS
Water Temperature	°C	27.7	DEP FT1400	0.1	0.1		06/18/12 10:39	SAS
Specific conductance	umhos/cm	952	DEP FT1200	0.1	0.1		06/18/12 10:39	SAS
Dissolved Oxygen	mg/L	6.8	DEP FT1500	0.1	0.1		06/18/12 10:39	SAS
Inorganics								
Ammonia as N	mg/L	0.024 I	EPA 350.1	0.040	0.009		06/20/12 11:19	MMF
Ammonium as NH4	mg/L	0.03	EPA 350.1	0.01	0.005	07/05/12 13:20	07/05/12 13:21	ARP
Chemical Oxygen Demand	mg/L	28	EPA 410.4	25	10	06/20/12 08:45	06/20/12 13:50	LAS
Chloride	mg/L	73	EPA 300.0	0.20	0.050		06/19/12 15:09	JAG

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Sample Description		**TA2-LY-12-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-41**						
Date/Time Collected		**06/18/12 10:39**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Nitrate (as N)	mg/L	50	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Phosphorous - Total as P	mg/L	0.79	SM 4500P-E	0.040	0.010	06/22/12 13:42	06/23/12 11:10	KTC
Total Alkalinity	mg/L	75	SM 2320B	8.0	2.0		06/19/12 13:28	MBC
Total Kjeldahl Nitrogen	mg/L	3.2	EPA 351.2	0.20	0.05	06/19/12 08:39	06/20/12 14:16	MMF
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	11	SM 5310B	1.0	0.50		06/22/12 12:10	ARP
Sample Description		**TA2-LY-24-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-42**						
Date/Time Collected		**06/18/12 10:47**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.7	DEP FT1100	0.1	0.1		06/18/12 10:47	SDH
Water Temperature	°C	28.8	DEP FT1400	0.1	0.1		06/18/12 10:47	SDH
Specific conductance	umhos/cm	954	DEP FT1200	0.1	0.1		06/18/12 10:47	SDH
Dissolved Oxygen	mg/L	5.1	DEP FT1500	0.1	0.1		06/18/12 10:47	SDH
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 15:07	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/05/12 13:20	07/05/12 13:21	ARP
Chemical Oxygen Demand	mg/L	55	EPA 410.4	25	10	06/20/12 08:45	06/20/12 13:50	LAS
Chloride	mg/L	69	EPA 300.0	0.20	0.050		06/19/12 15:09	JAG
Nitrate (as N)	mg/L	53	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Nitrite (as N)	mg/L	0.31	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Phosphorous - Total as P	mg/L	0.30	SM 4500P-E	0.040	0.010	06/22/12 13:42	06/23/12 11:12	KTC
Total Alkalinity	mg/L	37	SM 2320B	8.0	2.0		06/19/12 13:28	MBC
Total Kjeldahl Nitrogen	mg/L	3.1	EPA 351.2	0.20	0.05	06/19/12 08:39	06/20/12 14:18	MMF
Sample Description		**TA2-LY-42-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-43**						
Date/Time Collected		**06/18/12 10:48**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								

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Sample Description		**TA2-LY-42-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-43**						
Date/Time Collected		**06/18/12 10:48**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
pH	SU	6.4	DEP FT1100	0.1	0.1		06/18/12 10:48	SDH
Water Temperature	°C	28.2	DEP FT1400	0.1	0.1		06/18/12 10:48	SDH
Specific conductance	umhos/cm	693	DEP FT1200	0.1	0.1		06/18/12 10:48	SDH
Dissolved Oxygen	mg/L	5.5	DEP FT1500	0.1	0.1		06/18/12 10:48	SDH
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 15:09	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/05/12 13:20	07/05/12 13:21	ARP
Chloride	mg/L	58	EPA 300.0	0.20	0.050		06/19/12 15:09	JAG
Nitrate (as N)	mg/L	34	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Nitrite (as N)	mg/L	0.12	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Total Kjeldahl Nitrogen	mg/L	3.0	EPA 351.2	0.20	0.05	06/19/12 08:39	06/20/12 14:19	MMF
Sample Description		**TA2-PZ-10-H5**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-44**						
Date/Time Collected		**06/20/12 08:17**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.3	DEP FT1100	0.1	0.1		06/20/12 08:17	SDH
Water Temperature	°C	25.5	DEP FT1400	0.1	0.1		06/20/12 08:17	SDH
Specific conductance	umhos/cm	407	DEP FT1200	0.1	0.1		06/20/12 08:17	SDH
Dissolved Oxygen	mg/L	3.1	DEP FT1500	0.1	0.1		06/20/12 08:17	SDH
Inorganics								
Ammonia as N	mg/L	0.011 I	EPA 350.1	0.040	0.009		06/21/12 15:36	MMF
Ammonium as NH4	mg/L	0.01	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	33	EPA 300.0	0.20	0.050		06/23/12 09:56	JAG
Nitrate+Nitrite (N)	mg/L	14	EPA 353.2	1.0	0.25		07/03/12 12:20	MMF
Total Kjeldahl Nitrogen	mg/L	2.2	EPA 351.2	0.20	0.05	07/02/12 10:42	07/05/12 12:35	MMF
Sample Description		**TA2-PZ-10-J5**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-45**						
Date/Time Collected		**06/20/12 08:37**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								

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Sample Description		**TA2-PZ-10-J5**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-45**						
Date/Time Collected		**06/20/12 08:37**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
pH	SU	4.4	DEP FT1100	0.1	0.1		06/20/12 08:37	SDH
Water Temperature	°C	25.7	DEP FT1400	0.1	0.1		06/20/12 08:37	SDH
Specific conductance	umhos/cm	412	DEP FT1200	0.1	0.1		06/20/12 08:37	SDH
Dissolved Oxygen	mg/L	3.7	DEP FT1500	0.1	0.1		06/20/12 08:37	SDH
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 15:38	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	30	EPA 300.0	0.20	0.050		06/23/12 09:56	JAG
Nitrate+Nitrite (N)	mg/L	16	EPA 353.2	1.0	0.25		07/03/12 12:21	MMF
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	07/02/12 10:42	07/05/12 12:37	MMF
Sample Description		**TA2-PZ-10-K5**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-46**						
Date/Time Collected		**06/20/12 08:58**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.3	DEP FT1100	0.1	0.1		06/20/12 08:58	SDH
Water Temperature	°C	25.7	DEP FT1400	0.1	0.1		06/20/12 08:58	SDH
Specific conductance	umhos/cm	412	DEP FT1200	0.1	0.1		06/20/12 08:58	SDH
Dissolved Oxygen	mg/L	3.5	DEP FT1500	0.1	0.1		06/20/12 08:58	SDH
Inorganics								
Ammonia as N	mg/L	0.026 I	EPA 350.1	0.040	0.009		06/21/12 15:40	MMF
Ammonium as NH4	mg/L	0.03	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	31	EPA 300.0	0.20	0.050		06/23/12 09:56	JAG
Nitrate+Nitrite (N)	mg/L	15	EPA 353.2	1.0	0.25		07/03/12 12:22	MMF
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	07/02/12 10:42	07/05/12 12:38	MMF
Sample Description		**TA2-PZ-10-L2**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-47**						
Date/Time Collected		**06/20/12 09:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.6	DEP FT1100	0.1	0.1		06/20/12 09:30	SAS

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Sample Description		**TA2-PZ-10-L2**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-47**						
Date/Time Collected		**06/20/12 09:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Water Temperature	°C	25.6	DEP FT1400	0.1	0.1		06/20/12 09:30	SAS
Specific conductance	umhos/cm	425	DEP FT1200	0.1	0.1		06/20/12 09:30	SAS
Dissolved Oxygen	mg/L	2.6	DEP FT1500	0.1	0.1		06/20/12 09:30	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 15:42	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	32	EPA 300.0	0.20	0.050		06/23/12 09:56	JAG
Nitrate+Nitrite (N)	mg/L	13	EPA 353.2	1.0	0.25		07/02/12 15:58	MMF
Total Kjeldahl Nitrogen	mg/L	2.3	EPA 351.2	0.20	0.05	07/02/12 10:42	07/05/12 12:40	MMF
Sample Description		**TA2-PZ-10-L3**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-48**						
Date/Time Collected		**06/20/12 09:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.5	DEP FT1100	0.1	0.1		06/20/12 09:10	SAS
Water Temperature	°C	25.5	DEP FT1400	0.1	0.1		06/20/12 09:10	SAS
Specific conductance	umhos/cm	418	DEP FT1200	0.1	0.1		06/20/12 09:10	SAS
Dissolved Oxygen	mg/L	2.2	DEP FT1500	0.1	0.1		06/20/12 09:10	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 15:44	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	30	EPA 300.0	0.20	0.050		06/28/12 09:50	JAG
Nitrate+Nitrite (N)	mg/L	11	EPA 353.2	1.0	0.25		07/02/12 16:00	MMF
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	07/02/12 10:42	07/05/12 12:42	MMF
Sample Description		**TA2-PZ-10-L4**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-49**						
Date/Time Collected		**06/20/12 08:42**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.4	DEP FT1100	0.1	0.1		06/20/12 08:42	SAS
Water Temperature	°C	25.9	DEP FT1400	0.1	0.1		06/20/12 08:42	SAS

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Sample Description		**TA2-PZ-10-L4**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-49**						
Date/Time Collected		**06/20/12 08:42**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Specific conductance	umhos/cm	700	DEP FT1200	0.1	0.1		06/20/12 08:42	SAS
Dissolved Oxygen	mg/L	2.7	DEP FT1500	0.1	0.1		06/20/12 08:42	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 15:46	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	67	EPA 300.0	0.20	0.050		06/30/12 01:33	JAG
Nitrate+Nitrite (N)	mg/L	39	EPA 353.2	1.0	0.25		07/02/12 16:02	MMF
Total Kjeldahl Nitrogen	mg/L	2.3	EPA 351.2	0.20	0.05	07/02/12 10:42	07/05/12 12:43	MMF
Sample Description		**TA2-PZ-10-L5**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-50**						
Date/Time Collected		**06/20/12 08:26**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.8	DEP FT1100	0.1	0.1		06/20/12 08:26	SAS
Water Temperature	°C	25.8	DEP FT1400	0.1	0.1		06/20/12 08:26	SAS
Specific conductance	umhos/cm	496	DEP FT1200	0.1	0.1		06/20/12 08:26	SAS
Dissolved Oxygen	mg/L	2.7	DEP FT1500	0.1	0.1		06/20/12 08:26	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 16:00	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	38	EPA 300.0	0.20	0.050		06/30/12 01:33	JAG
Nitrate+Nitrite (N)	mg/L	9.6	EPA 353.2	0.20	0.05		07/02/12 15:35	MMF
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	07/02/12 10:47	07/05/12 12:58	MMF
Sample Description		**TA2-PZ-10-L6**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-51**						
Date/Time Collected		**06/20/12 08:06**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.6	DEP FT1100	0.1	0.1		06/20/12 08:06	SAS
Water Temperature	°C	25.9	DEP FT1400	0.1	0.1		06/20/12 08:06	SAS
Specific conductance	umhos/cm	375	DEP FT1200	0.1	0.1		06/20/12 08:06	SAS

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Sample Description		**TA2-PZ-10-L6**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-51**						
Date/Time Collected		**06/20/12 08:06**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Dissolved Oxygen	mg/L	3.4	DEP FT1500	0.1	0.1		06/20/12 08:06	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 16:02	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	25	EPA 300.0	0.20	0.050		06/28/12 09:50	JAG
Nitrate+Nitrite (N)	mg/L	17	EPA 353.2	1.0	0.25		07/02/12 16:04	MMF
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	07/02/12 10:47	07/05/12 13:00	MMF
Sample Description		**TA2-PZ-09-M4**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-52**						
Date/Time Collected		**06/20/12 09:52**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.0	DEP FT1100	0.1	0.1		06/20/12 09:52	SAS
Water Temperature	°C	25.7	DEP FT1400	0.1	0.1		06/20/12 09:52	SAS
Specific conductance	umhos/cm	422	DEP FT1200	0.1	0.1		06/20/12 09:52	SAS
Dissolved Oxygen	mg/L	0.5	DEP FT1500	0.1	0.1		06/20/12 09:52	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 16:04	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	28	EPA 300.0	0.20	0.050		06/28/12 09:50	JAG
Nitrate+Nitrite (N)	mg/L	8.6	EPA 353.2	0.40	0.10		06/21/12 16:12	MMF
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	07/02/12 10:47	07/05/12 13:02	MMF
Sample Description		**TA2-PZ-16-M4**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-53**						
Date/Time Collected		**06/20/12 10:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	5.7	DEP FT1100	0.1	0.1		06/20/12 10:10	SAS
Water Temperature	°C	24.7	DEP FT1400	0.1	0.1		06/20/12 10:10	SAS
Specific conductance	umhos/cm	241	DEP FT1200	0.1	0.1		06/20/12 10:10	SAS
Dissolved Oxygen	mg/L	0.1	DEP FT1500	0.1	0.1		06/20/12 10:10	SAS

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Sample Description		**TA2-PZ-16-M4**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-53**						
Date/Time Collected		**06/20/12 10:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Inorganics								
Ammonia as N	mg/L	0.021 I	EPA 350.1	0.040	0.009		06/21/12 16:07	MMF
Ammonium as NH4	mg/L	0.03	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	7.2	EPA 300.0	0.20	0.050		06/28/12 09:50	JAG
Nitrate+Nitrite (N)	mg/L	1.2	EPA 353.2	0.04	0.01		06/21/12 14:09	MMF
Total Kjeldahl Nitrogen	mg/L	0.42	EPA 351.2	0.20	0.05	07/02/12 10:47	07/05/12 13:03	MMF
Sample Description		**TA2-PZ-09-N7**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-54**						
Date/Time Collected		**06/19/12 14:16**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.3	DEP FT1100	0.1	0.1		06/19/12 14:16	SAS
Water Temperature	°C	26.6	DEP FT1400	0.1	0.1		06/19/12 14:16	SAS
Specific conductance	umhos/cm	403	DEP FT1200	0.1	0.1		06/19/12 14:16	SAS
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		06/19/12 14:16	SAS
Inorganics								
Ammonia as N	mg/L	0.075	EPA 350.1	0.040	0.009		06/21/12 11:35	MMF
Ammonium as NH4	mg/L	0.10	EPA 350.1	0.01	0.005	06/21/12 14:35	06/21/12 14:36	ARP
Chloride	mg/L	16	EPA 300.0	0.20	0.050		06/30/12 01:33	JAG
Nitrate+Nitrite (N)	mg/L	7.1	EPA 353.2	0.20	0.05		06/21/12 11:23	MMF
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	06/20/12 14:13	06/22/12 12:07	MMF
Sample Description		**TA2-PZ-16-N7**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-55**						
Date/Time Collected		**06/19/12 14:38**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.1	DEP FT1100	0.1	0.1		06/19/12 14:38	SAS
Water Temperature	°C	25.1	DEP FT1400	0.1	0.1		06/19/12 14:38	SAS
Specific conductance	umhos/cm	219	DEP FT1200	0.1	0.1		06/19/12 14:38	SAS
Dissolved Oxygen	mg/L	0.1	DEP FT1500	0.1	0.1		06/19/12 14:38	SAS
Inorganics								

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Sample Description		**TA2-PZ-16-N7**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-55**						
Date/Time Collected		**06/19/12 14:38**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Ammonia as N	mg/L	0.024 I	EPA 350.1	0.040	0.009		06/21/12 11:37	MMF
Ammonium as NH4	mg/L	0.03	EPA 350.1	0.01	0.005	06/21/12 14:35	06/21/12 14:36	ARP
Chloride	mg/L	6.0	EPA 300.0	0.20	0.050		06/30/12 01:33	JAG
Nitrate+Nitrite (N)	mg/L	1.2	EPA 353.2	0.04	0.01		06/21/12 10:25	MMF
Total Kjeldahl Nitrogen	mg/L	0.59	EPA 351.2	0.20	0.05	06/20/12 14:13	06/22/12 12:09	MMF
Sample Description		**TA2-PZ-09-I7**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-56**						
Date/Time Collected		**06/19/12 15:49**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	5.7	DEP FT1100	0.1	0.1		06/19/12 15:49	SDH
Water Temperature	°C	26.1	DEP FT1400	0.1	0.1		06/19/12 15:49	SDH
Specific conductance	umhos/cm	354	DEP FT1200	0.1	0.1		06/19/12 15:49	SDH
Dissolved Oxygen	mg/L	2.3	DEP FT1500	0.1	0.1		06/19/12 15:49	SDH
Inorganics								
Ammonia as N	mg/L	0.031 I	EPA 350.1	0.040	0.009		06/21/12 11:39	MMF
Ammonium as NH4	mg/L	0.04	EPA 350.1	0.01	0.005	06/21/12 14:35	06/21/12 14:36	ARP
Chloride	mg/L	26	EPA 300.0	0.20	0.050		06/30/12 01:33	JAG
Nitrate+Nitrite (N)	mg/L	9.1	EPA 353.2	1.0	0.25		06/21/12 11:52	MMF
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	06/20/12 14:13	06/22/12 12:11	MMF
Sample Description		**TA2-PZ-16-I7**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-57**						
Date/Time Collected		**06/20/12 07:56**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/20/12 16:30**						
Field Parameters								
pH	SU	5.4	DEP FT1100	0.1	0.1		06/20/12 07:56	SDH
Water Temperature	°C	24.6	DEP FT1400	0.1	0.1		06/20/12 07:56	SDH
Specific conductance	umhos/cm	210	DEP FT1200	0.1	0.1		06/20/12 07:56	SDH
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		06/20/12 07:56	SDH
Inorganics								
Ammonia as N	mg/L	0.021 I	EPA 350.1	0.040	0.009		06/21/12 16:09	MMF

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Sample Description		**TA2-PZ-16-I7**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-57**						
Date/Time Collected		**06/20/12 07:56**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/20/12 16:30**						
Ammonium as NH4	mg/L	0.03	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	7.3	EPA 300.0	0.20	0.050		06/30/12 01:33	JAG
Nitrate+Nitrite (N)	mg/L	1.4	EPA 353.2	0.04	0.01		06/21/12 14:11	MMF
Total Kjeldahl Nitrogen	mg/L	0.57	EPA 351.2	0.20	0.05	07/02/12 10:47	07/05/12 13:05	MMF
Sample Description		**TA2-PZ-09-L8**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-58**						
Date/Time Collected		**06/19/12 15:13**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.3	DEP FT1100	0.1	0.1		06/19/12 15:13	SAS
Water Temperature	°C	26.9	DEP FT1400	0.1	0.1		06/19/12 15:13	SAS
Specific conductance	umhos/cm	475	DEP FT1200	0.1	0.1		06/19/12 15:13	SAS
Dissolved Oxygen	mg/L	3.8	DEP FT1500	0.1	0.1		06/19/12 15:13	SAS
Inorganics								
Ammonia as N	mg/L	0.13	EPA 350.1	0.040	0.009		06/21/12 11:41	MMF
Ammonium as NH4	mg/L	0.16	EPA 350.1	0.01	0.005	06/21/12 14:35	06/21/12 14:36	ARP
Chloride	mg/L	23	EPA 300.0	0.20	0.050		06/30/12 01:33	JAG
Nitrate+Nitrite (N)	mg/L	5.8	EPA 353.2	0.20	0.05		06/21/12 11:27	MMF
Total Kjeldahl Nitrogen	mg/L	4.7	EPA 351.2	0.20	0.05	06/20/12 14:13	06/22/12 12:12	MMF
Sample Description		**TA2-PZ-16-L8**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-59**						
Date/Time Collected		**06/19/12 13:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	5.8	DEP FT1100	0.1	0.1		06/19/12 13:30	SAS
Water Temperature	°C	24.9	DEP FT1400	0.1	0.1		06/19/12 13:30	SAS
Specific conductance	umhos/cm	226	DEP FT1200	0.1	0.1		06/19/12 13:30	SAS
Dissolved Oxygen	mg/L	0.1	DEP FT1500	0.1	0.1		06/19/12 13:30	SAS
Inorganics								
Ammonia as N	mg/L	0.028 I	EPA 350.1	0.040	0.009		06/21/12 11:43	MMF
Ammonium as NH4	mg/L	0.04	EPA 350.1	0.01	0.005	06/21/12 14:35	06/21/12 14:36	ARP

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Sample Description		**TA2-PZ-16-L8**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-59**						
Date/Time Collected		**06/19/12 13:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Chloride	mg/L	6.6	EPA 300.0	0.20	0.050		06/30/12 01:33	JAG
Nitrate+Nitrite (N)	mg/L	1.1	EPA 353.2	0.04	0.01		06/21/12 10:36	MMF
Total Kjeldahl Nitrogen	mg/L	0.57	EPA 351.2	0.20	0.05	06/20/12 14:13	06/22/12 12:14	MMF
Sample Description		**TA2-PZ-09-TU19**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-60**						
Date/Time Collected		**06/19/12 14:09**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.6	DEP FT1100	0.1	0.1		06/19/12 14:09	SDH
Water Temperature	°C	26.5	DEP FT1400	0.1	0.1		06/19/12 14:09	SDH
Specific conductance	umhos/cm	173	DEP FT1200	0.1	0.1		06/19/12 14:09	SDH
Dissolved Oxygen	mg/L	1.2	DEP FT1500	0.1	0.1		06/19/12 14:09	SDH
Inorganics								
Ammonia as N	mg/L	0.068	EPA 350.1	0.040	0.009		06/21/12 11:45	MMF
Ammonium as NH4	mg/L	0.09	EPA 350.1	0.01	0.005	06/21/12 14:35	06/21/12 14:36	ARP
Chloride	mg/L	4.9	EPA 300.0	0.20	0.050		06/30/12 01:33	JAG
Nitrate+Nitrite (N)	mg/L	4.7	EPA 353.2	0.20	0.05		06/21/12 11:30	MMF
Total Kjeldahl Nitrogen	mg/L	2.1	EPA 351.2	0.20	0.05	06/20/12 14:13	06/22/12 12:16	MMF
Sample Description		**TA2-PZ-16-TU19**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-61**						
Date/Time Collected		**06/19/12 14:34**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	5.3	DEP FT1100	0.1	0.1	08/08/12 10:31	06/19/12 14:34	SDH
Water Elevation	ft., NGVD	25.30	DEP FS2211	0.01	0.01	08/08/12 10:31	06/19/12 14:34	SDH
Water Temperature	°C	25.3	DEP FT1400	0.1	0.1		06/19/12 14:34	RJS
Specific conductance	umhos/cm	189	DEP FT1200	0.1	0.1	08/08/12 10:31	06/19/12 14:34	SDH
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1	08/08/12 10:31	06/19/12 14:34	SDH
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 11:47	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 14:35	06/21/12 14:36	ARP

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Sample Description		**TA2-PZ-16-TU19**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-61**						
Date/Time Collected		**06/19/12 14:34**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Chloride	mg/L	5.8	EPA 300.0	0.20	0.050		06/30/12 01:33	JAG
Nitrate+Nitrite (N)	mg/L	1.4	EPA 353.2	0.04	0.01		06/21/12 10:40	MMF
Total Kjeldahl Nitrogen	mg/L	0.55	EPA 351.2	0.20	0.05	06/20/12 14:13	06/22/12 12:17	MMF
Sample Description		**TA2-PZ-09-TU21**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-62**						
Date/Time Collected		**06/19/12 14:54**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.6	DEP FT1100	0.1	0.1		06/19/12 14:54	SDH
Water Temperature	°C	26.3	DEP FT1400	0.1	0.1		06/19/12 14:54	SDH
Specific conductance	umhos/cm	168	DEP FT1200	0.1	0.1		06/19/12 14:54	SDH
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		06/19/12 14:54	SDH
Inorganics								
Ammonia as N	mg/L	0.028 I	EPA 350.1	0.040	0.009		06/21/12 11:49	MMF
Ammonium as NH4	mg/L	0.04	EPA 350.1	0.01	0.005	06/21/12 14:35	06/21/12 14:36	ARP
Chloride	mg/L	4.6	EPA 300.0	0.20	0.050		06/30/12 01:33	JAG
Nitrate+Nitrite (N)	mg/L	2.5	EPA 353.2	0.20	0.05		06/21/12 11:32	MMF
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	06/20/12 14:13	06/22/12 12:19	MMF
Sample Description		**TA2-PZ-16-TU21**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-63**						
Date/Time Collected		**06/19/12 15:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	5.2	DEP FT1100	0.1	0.1		06/19/12 15:20	SDH
Water Temperature	°C	25.2	DEP FT1400	0.1	0.1		06/19/12 15:20	SDH
Specific conductance	umhos/cm	185	DEP FT1200	0.1	0.1		06/19/12 15:20	SDH
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		06/19/12 15:20	SDH
Inorganics								
Ammonia as N	mg/L	0.018 I	EPA 350.1	0.040	0.009		06/21/12 11:55	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005	06/21/12 14:35	06/21/12 14:36	ARP
Chloride	mg/L	5.4	EPA 300.0	0.20	0.050		06/30/12 01:33	JAG

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Sample Description		**TA2-PZ-16-TU21**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-63**						
Date/Time Collected		**06/19/12 15:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Nitrate+Nitrite (N)	mg/L	0.97	EPA 353.2	0.04	0.01		06/21/12 10:44	MMF
Total Kjeldahl Nitrogen	mg/L	0.92	EPA 351.2	0.20	0.05	06/20/12 14:13	06/22/12 12:21	MMF
Sample Description		**TA3-LY-24-C**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-65**						
Date/Time Collected		**06/18/12 11:22**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.6	DEP FT1100	0.1	0.1		06/18/12 11:22	SDH
Water Temperature	°C	28.7	DEP FT1400	0.1	0.1		06/18/12 11:22	SDH
Specific conductance	umhos/cm	630	DEP FT1200	0.1	0.1		06/18/12 11:22	SDH
Dissolved Oxygen	mg/L	5.7	DEP FT1500	0.1	0.1		06/18/12 11:22	SDH
Inorganics								
Ammonia as N	mg/L	0.015 I	EPA 350.1	0.040	0.009		06/20/12 15:11	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005	07/05/12 13:20	07/05/12 13:21	ARP
Chloride	mg/L	49	EPA 300.0	0.20	0.050		06/19/12 15:09	JAG
Nitrate (as N)	mg/L	27	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Total Kjeldahl Nitrogen	mg/L	2.8	EPA 351.2	0.20	0.05	06/19/12 08:39	06/20/12 14:20	MMF
Sample Description		**TA3-LY-12-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-66**						
Date/Time Collected		**06/18/12 11:28**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	7.1	DEP FT1100	0.1	0.1		06/18/12 11:28	SDH
Water Temperature	°C	28.7	DEP FT1400	0.1	0.1		06/18/12 11:28	SDH
Specific conductance	umhos/cm	794	DEP FT1200	0.1	0.1		06/18/12 11:28	SDH
Dissolved Oxygen	mg/L	6.8	DEP FT1500	0.1	0.1		06/18/12 11:28	SDH
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 16:05	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/05/12 13:20	07/05/12 13:21	ARP
Chemical Oxygen Demand	mg/L	26	EPA 410.4	25	10	06/20/12 08:45	06/20/12 13:50	LAS

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Sample Description		**TA3-LY-12-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-66**						
Date/Time Collected		**06/18/12 11:28**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Chloride	mg/L	72	EPA 300.0	0.20	0.050		06/19/12 15:09	JAG
Nitrate (as N)	mg/L	24	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Phosphorous - Total as P	mg/L	0.058	SM 4500P-E	0.040	0.010	06/22/12 13:42	06/23/12 11:20	KTC
Total Alkalinity	mg/L	120	SM 2320B	8.0	2.0		06/19/12 13:28	MBC
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	06/19/12 08:39	06/20/12 14:21	MMF
Sample Description		**TA3-LY-12-S-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-67**						
Date/Time Collected		**06/18/12 11:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	7.1	DEP FT1100	0.1	0.1		06/18/12 11:30	SDH
Water Temperature	°C	28.7	DEP FT1400	0.1	0.1		06/18/12 11:30	SDH
Specific conductance	umhos/cm	794	DEP FT1200	0.1	0.1		06/18/12 11:30	SDH
Dissolved Oxygen	mg/L	6.8	DEP FT1500	0.1	0.1		06/18/12 11:30	SDH
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 16:07	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/05/12 13:20	07/05/12 13:21	ARP
Chemical Oxygen Demand	mg/L	26	EPA 410.4	25	10	06/20/12 08:45	06/20/12 13:50	LAS
Chloride	mg/L	75	EPA 300.0	0.20	0.050		06/19/12 15:09	JAG
Nitrate (as N)	mg/L	25	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Phosphorous - Total as P	mg/L	0.046	SM 4500P-E	0.040	0.010	06/22/12 13:42	06/23/12 11:21	KTC
Total Alkalinity	mg/L	120	SM 2320B	8.0	2.0		06/19/12 13:28	MBC
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	06/19/12 08:39	06/20/12 15:25	MMF
Sample Description		**TA3-LY-24-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-68**						
Date/Time Collected		**06/18/12 11:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.3	DEP FT1100	0.1	0.1		06/18/12 11:40	SDH

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Sample Description		**TA3-LY-24-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-68**						
Date/Time Collected		**06/18/12 11:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Water Temperature	°C	28.7	DEP FT1400	0.1	0.1		06/18/12 11:40	SDH
Specific conductance	umhos/cm	680	DEP FT1200	0.1	0.1		06/18/12 11:40	SDH
Dissolved Oxygen	mg/L	6.2	DEP FT1500	0.1	0.1		06/18/12 11:40	SDH
Inorganics								
Ammonia as N	mg/L	0.037 I	EPA 350.1	0.040	0.009		06/20/12 15:21	MMF
Ammonium as NH4	mg/L	0.05	EPA 350.1	0.01	0.005	07/05/12 13:20	07/05/12 13:21	ARP
Chemical Oxygen Demand	mg/L	38	EPA 410.4	25	10	06/20/12 08:45	06/20/12 13:50	LAS
Chloride	mg/L	63	EPA 300.0	0.20	0.050		06/19/12 15:09	JAG
Fluoride	mg/L	0.16	EPA 300.0	0.040	0.010		06/19/12 15:09	JAG
Nitrate (as N)	mg/L	28	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		06/19/12 15:09	JAG
Phosphorous - Total as P	mg/L	0.22	SM 4500P-E	0.040	0.010	06/22/12 13:42	06/23/12 11:22	KTC
Sulfate	mg/L	66	EPA 300.0	0.60	0.20		06/19/12 15:09	JAG
Total Alkalinity	mg/L	19	SM 2320B	8.0	2.0		06/19/12 13:28	MBC
Total Kjeldahl Nitrogen	mg/L	3.1	EPA 351.2	0.20	0.05	06/19/12 08:39	06/20/12 14:24	MMF
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	15	SM 5310B	1.0	0.50		06/22/12 12:10	ARP
Metals								
Boron	mg/L	0.10	EPA 200.7	0.10	0.050	06/21/12 08:59	06/21/12 15:56	VWC
Calcium	mg/L	29	EPA 200.7	0.50	0.042	06/21/12 08:59	06/21/12 15:56	VWC
Iron	mg/L	0.041 I	EPA 200.7	0.10	0.020	06/21/12 08:59	06/21/12 15:56	VWC
Magnesium	mg/L	15	EPA 200.7	0.50	0.020	06/21/12 08:59	06/21/12 15:56	VWC
Manganese	mg/L	0.0073 I	EPA 200.7	0.010	0.0010	06/21/12 08:59	06/21/12 15:56	VWC
Potassium	mg/L	0.70	EPA 200.7	0.050	0.010	06/21/12 08:59	06/21/12 15:56	VWC
Sodium	mg/L	69	EPA 200.7	0.50	0.13	06/21/12 08:59	06/21/12 15:56	VWC
Sample Description		**TA3-LY-42-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-69**						
Date/Time Collected		**06/18/12 11:52**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.9	DEP FT1100	0.1	0.1		06/18/12 11:52	SDH
Water Temperature	°C	30.9	DEP FT1400	0.1	0.1		06/18/12 11:52	SDH
Specific conductance	umhos/cm	502	DEP FT1200	0.1	0.1		06/18/12 11:52	SDH
Dissolved Oxygen	mg/L	6.1	DEP FT1500	0.1	0.1		06/18/12 11:52	SDH

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Sample Description		**TA3-LY-42-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-69**						
Date/Time Collected		**06/18/12 11:52**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 15:23	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/05/12 13:20	07/05/12 13:21	ARP
Chloride	mg/L	40	EPA 300.0	0.20	0.050		06/19/12 15:09	JAG
Nitrate (as N)	mg/L	23	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Total Kjeldahl Nitrogen	mg/L	7.1	EPA 351.2	0.20	0.05	06/19/12 08:39	06/20/12 15:27	MMF
Sample Description		**TA3-PZ-11-EF2**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-70**						
Date/Time Collected		**06/21/12 10:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	5.3	DEP FT1100	0.1	0.1		06/21/12 10:10	SAS
Water Temperature	°C	25.7	DEP FT1400	0.1	0.1		06/21/12 10:10	SAS
Specific conductance	umhos/cm	305	DEP FT1200	0.1	0.1		06/21/12 10:10	SAS
Dissolved Oxygen	mg/L	2.4	DEP FT1500	0.1	0.1		06/21/12 10:10	SAS
Inorganics								
Ammonia as N	mg/L	0.034 I	EPA 350.1	0.040	0.009		07/03/12 12:48	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/03/12 13:43	07/03/12 13:44	ARP
Chloride	mg/L	22	EPA 300.0	0.20	0.050		06/30/12 01:33	JAG
Nitrate+Nitrite (N)	mg/L	10	EPA 353.2	0.20	0.05		07/02/12 15:40	MMF
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	07/02/12 10:47	07/05/12 13:07	MMF
Sample Description		**TA3-PZ-11-EF2-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-71**						
Date/Time Collected		**06/21/12 10:15**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	5.3	DEP FT1100	0.1	0.1		06/21/12 10:15	SAS
Water Temperature	°C	25.7	DEP FT1400	0.1	0.1		06/21/12 10:15	SAS
Specific conductance	umhos/cm	305	DEP FT1200	0.1	0.1		06/21/12 10:15	SAS
Dissolved Oxygen	mg/L	2.4	DEP FT1500	0.1	0.1		06/21/12 10:15	SAS

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Sample Description		**TA3-PZ-11-EF2-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-71**						
Date/Time Collected		**06/21/12 10:15**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Inorganics								
Ammonia as N	mg/L	0.016 I	EPA 350.1	0.040	0.009		07/03/12 12:50	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/03/12 13:43	07/03/12 13:44	ARP
Chloride	mg/L	22	EPA 300.0	0.20	0.050		06/30/12 01:33	JAG
Nitrate+Nitrite (N)	mg/L	11	EPA 353.2	1.0	0.25		07/02/12 16:07	MMF
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	07/05/12 09:00	07/06/12 10:17	MMF
Sample Description		**TA3-PZ-11-I2**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-72**						
Date/Time Collected		**06/21/12 09:49**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	5.0	DEP FT1100	0.1	0.1		06/21/12 09:49	SAS
Water Temperature	°C	25.5	DEP FT1400	0.1	0.1		06/21/12 09:49	SAS
Specific conductance	umhos/cm	382	DEP FT1200	0.1	0.1		06/21/12 09:49	SAS
Dissolved Oxygen	mg/L	3.0	DEP FT1500	0.1	0.1		06/21/12 09:49	SAS
Inorganics								
Ammonia as N	mg/L	0.022 I	EPA 350.1	0.040	0.009		07/03/12 12:52	MMF
Ammonium as NH4	mg/L	0.03	EPA 350.1	0.01	0.005	07/05/12 13:20	07/05/12 13:21	ARP
Chloride	mg/L	31	EPA 300.0	0.20	0.050		06/30/12 01:33	JAG
Nitrate+Nitrite (N)	mg/L	15	EPA 353.2	1.0	0.25		07/02/12 16:09	MMF
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	07/05/12 09:00	07/06/12 10:19	MMF
Sample Description		**TA3-PZ-10-J5**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-73**						
Date/Time Collected		**06/20/12 13:43**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	5.1	DEP FT1100	0.1	0.1		06/20/12 13:43	SAS
Water Temperature	°C	26.0	DEP FT1400	0.1	0.1		06/20/12 13:43	SAS
Specific conductance	umhos/cm	336	DEP FT1200	0.1	0.1		06/20/12 13:43	SAS
Dissolved Oxygen	mg/L	2.3	DEP FT1500	0.1	0.1		06/20/12 13:43	SAS
Inorganics								

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Sample Description		**TA3-PZ-10-J5**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-73**						
Date/Time Collected		**06/20/12 13:43**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 16:11	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	18	EPA 300.0	0.20	0.050		06/30/12 01:33	JAG
Nitrate+Nitrite (N)	mg/L	9.5	EPA 353.2	0.79	0.20		06/21/12 16:14	MMF
Total Kjeldahl Nitrogen	mg/L	1.0	EPA 351.2	0.20	0.05	07/05/12 09:00	07/06/12 10:20	MMF
Sample Description		**TA3-PZ-10-K5**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-74**						
Date/Time Collected		**06/20/12 14:33**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	5.0	DEP FT1100	0.1	0.1		06/20/12 14:33	SAS
Water Temperature	°C	25.4	DEP FT1400	0.1	0.1		06/20/12 14:33	SAS
Specific conductance	umhos/cm	330	DEP FT1200	0.1	0.1		06/20/12 14:33	SAS
Dissolved Oxygen	mg/L	1.8	DEP FT1500	0.1	0.1		06/20/12 14:33	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 16:13	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	16	EPA 300.0	0.20	0.050		06/30/12 09:46	JAG
Nitrate+Nitrite (N)	mg/L	8.3	EPA 353.2	0.20	0.05		06/21/12 15:11	MMF
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	07/05/12 09:00	07/06/12 10:22	MMF
Sample Description		**TA3-PZ-11-L2**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-75**						
Date/Time Collected		**06/20/12 13:50**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.4	DEP FT1100	0.1	0.1		06/20/12 13:50	SDH
Water Temperature	°C	26.0	DEP FT1400	0.1	0.1		06/20/12 13:50	SDH
Specific conductance	umhos/cm	340	DEP FT1200	0.1	0.1		06/20/12 13:50	SDH
Dissolved Oxygen	mg/L	3.1	DEP FT1500	0.1	0.1		06/20/12 13:50	SDH
Inorganics								
Ammonia as N	mg/L	0.10	EPA 350.1	0.040	0.009		06/21/12 16:15	MMF

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Sample Description		**TA3-PZ-11-L2**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-75**						
Date/Time Collected		**06/20/12 13:50**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Ammonium as NH4	mg/L	0.13	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	30	EPA 300.0	0.20	0.050		06/30/12 09:46	JAG
Nitrate+Nitrite (N)	mg/L	9.9	EPA 353.2	0.20	0.05		06/21/12 15:13	MMF
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	07/05/12 09:00	07/06/12 10:24	MMF
Sample Description		**TA3-PZ-11-L3**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-76**						
Date/Time Collected		**06/20/12 14:36**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.3	DEP FT1100	0.1	0.1		06/20/12 14:36	SDH
Water Temperature	°C	25.3	DEP FT1400	0.1	0.1		06/20/12 14:36	SDH
Specific conductance	umhos/cm	279	DEP FT1200	0.1	0.1		06/20/12 14:36	SDH
Dissolved Oxygen	mg/L	2.6	DEP FT1500	0.1	0.1		06/20/12 14:36	SDH
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 16:17	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	19	EPA 300.0	0.20	0.050		06/30/12 09:46	JAG
Nitrate+Nitrite (N)	mg/L	4.9	EPA 353.2	0.20	0.05		06/21/12 15:15	MMF
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	07/05/12 09:00	07/06/12 10:25	MMF
Sample Description		**TA3-PZ-11-L4**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-77**						
Date/Time Collected		**06/21/12 10:38**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	5.1	DEP FT1100	0.1	0.1		06/21/12 10:38	SAS
Water Temperature	°C	25.9	DEP FT1400	0.1	0.1		06/21/12 10:38	SAS
Specific conductance	umhos/cm	283	DEP FT1200	0.1	0.1		06/21/12 10:38	SAS
Dissolved Oxygen	mg/L	2.3	DEP FT1500	0.1	0.1		06/21/12 10:38	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		07/03/12 12:54	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/05/12 13:20	07/05/12 13:21	ARP

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**TA3-PZ-11-L4**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-77**						
Date/Time Collected		**06/21/12 10:38**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Chloride	mg/L	19	EPA 300.0	0.20	0.050		06/30/12 09:46	JAG
Nitrate+Nitrite (N)	mg/L	6.3	EPA 353.2	0.20	0.05		07/02/12 15:46	MMF
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	06/28/12 11:13	07/02/12 12:24	MMF
Sample Description		**TA3-PZ-10-L5**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-78**						
Date/Time Collected		**06/20/12 14:55**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	5.0	DEP FT1100	0.1	0.1		06/20/12 14:55	SAS
Water Temperature	°C	25.6	DEP FT1400	0.1	0.1		06/20/12 14:55	SAS
Specific conductance	umhos/cm	324	DEP FT1200	0.1	0.1		06/20/12 14:55	SAS
Dissolved Oxygen	mg/L	1.7	DEP FT1500	0.1	0.1		06/20/12 14:55	SAS
Inorganics								
Ammonia as N	mg/L	0.013 I	EPA 350.1	0.040	0.009		06/21/12 16:19	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	19	EPA 300.0	0.20	0.050		06/30/12 09:46	JAG
Nitrate+Nitrite (N)	mg/L	7.4	EPA 353.2	0.20	0.05		06/21/12 15:18	MMF
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	06/28/12 11:13	07/02/12 12:26	MMF
Sample Description		**TA3-PZ-09-N3**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-79**						
Date/Time Collected		**06/20/12 12:27**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.5	DEP FT1100	0.1	0.1		06/20/12 12:27	SDH
Water Temperature	°C	25.9	DEP FT1400	0.1	0.1		06/20/12 12:27	SDH
Specific conductance	umhos/cm	940	DEP FT1200	0.1	0.1		06/20/12 12:27	SDH
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		06/20/12 12:27	SDH
Inorganics								
Ammonia as N	mg/L	0.086	EPA 350.1	0.040	0.009		06/21/12 16:25	MMF
Ammonium as NH4	mg/L	0.11	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	22	EPA 300.0	0.20	0.050		06/30/12 09:46	JAG

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Sample Description		**TA3-PZ-09-N3**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-79**						
Date/Time Collected		**06/20/12 12:27**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Nitrate+Nitrite (N)	mg/L	3.1	EPA 353.2	0.20	0.05		06/21/12 15:20	MMF
Total Kjeldahl Nitrogen	mg/L	4.2	EPA 351.2	0.20	0.05	06/28/12 11:13	07/02/12 12:28	MMF
Sample Description		**TA3-PZ-16-N3**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-80**						
Date/Time Collected		**06/20/12 13:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	5.5	DEP FT1100	0.1	0.1		06/20/12 13:10	SDH
Water Temperature	°C	24.9	DEP FT1400	0.1	0.1		06/20/12 13:10	SDH
Specific conductance	umhos/cm	305	DEP FT1200	0.1	0.1		06/20/12 13:10	SDH
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		06/20/12 13:10	SDH
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 16:27	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	16	EPA 300.0	0.20	0.050		06/30/12 09:46	JAG
Nitrate+Nitrite (N)	mg/L	8.2	EPA 353.2	0.20	0.05		06/21/12 15:22	MMF
Total Kjeldahl Nitrogen	mg/L	1.0	EPA 351.2	0.20	0.05	06/28/12 11:13	07/02/12 12:29	MMF
Sample Description		**TA3-PZ-09-O7**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-81**						
Date/Time Collected		**06/20/12 10:43**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.6	DEP FT1100	0.1	0.1		06/20/12 10:43	SAS
Water Temperature	°C	26.0	DEP FT1400	0.1	0.1		06/20/12 10:43	SAS
Specific conductance	umhos/cm	894	DEP FT1200	0.1	0.1		06/20/12 10:43	SAS
Dissolved Oxygen	mg/L	0.6	DEP FT1500	0.1	0.1		06/20/12 10:43	SAS
Inorganics								
Ammonia as N	mg/L	0.098	EPA 350.1	0.040	0.009		06/21/12 16:29	MMF
Ammonium as NH4	mg/L	0.13	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	22	EPA 300.0	0.20	0.050		06/30/12 09:46	JAG
Nitrate+Nitrite (N)	mg/L	3.8	EPA 353.2	0.20	0.05		06/21/12 15:24	MMF

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**TA3-PZ-09-O7**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-81**						
Date/Time Collected		**06/20/12 10:43**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Total Kjeldahl Nitrogen	mg/L	2.2	EPA 351.2	0.20	0.05	06/28/12 11:13	07/02/12 12:31	MMF
Sample Description		**TA3-PZ-16-O7**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-82**						
Date/Time Collected		**06/20/12 11:02**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	5.7	DEP FT1100	0.1	0.1		06/20/12 11:02	SAS
Water Temperature	°C	25.2	DEP FT1400	0.1	0.1		06/20/12 11:02	SAS
Specific conductance	umhos/cm	301	DEP FT1200	0.1	0.1		06/20/12 11:02	SAS
Dissolved Oxygen	mg/L	0.1	DEP FT1500	0.1	0.1		06/20/12 11:02	SAS
Inorganics								
Ammonia as N	mg/L	0.028 I	EPA 350.1	0.040	0.009		06/21/12 16:31	MMF
Ammonium as NH4	mg/L	0.04	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	10	EPA 300.0	0.20	0.050		06/30/12 09:46	JAG
Nitrate+Nitrite (N)	mg/L	4.3	EPA 353.2	0.20	0.05		06/21/12 15:27	MMF
Total Kjeldahl Nitrogen	mg/L	2.0	EPA 351.2	0.20	0.05	06/28/12 11:13	07/02/12 12:33	MMF
Sample Description		**TA3-PZ-09-I7**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-83**						
Date/Time Collected		**06/20/12 12:29**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	7.1	DEP FT1100	0.1	0.1		06/20/12 12:29	SAS
Water Temperature	°C	27.0	DEP FT1400	0.1	0.1		06/20/12 12:29	SAS
Specific conductance	umhos/cm	1,832	DEP FT1200	0.1	0.1		06/20/12 12:29	SAS
Dissolved Oxygen	mg/L	3.4	DEP FT1500	0.1	0.1		06/20/12 12:29	SAS
Inorganics								
Ammonia as N	mg/L	0.058	EPA 350.1	0.040	0.009		06/21/12 16:33	MMF
Ammonium as NH4	mg/L	0.07	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	30	EPA 300.0	0.20	0.050		06/30/12 09:46	JAG
Nitrate+Nitrite (N)	mg/L	3.7	EPA 353.2	0.20	0.05		06/21/12 15:29	MMF
Total Kjeldahl Nitrogen	mg/L	2.0	EPA 351.2	0.20	0.05	06/28/12 11:13	07/02/12 12:34	MMF

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**TA3-PZ-16-I7**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-84**						
Date/Time Collected		**06/20/12 12:56**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.1	DEP FT1100	0.1	0.1		06/20/12 12:56	SAS
Water Temperature	°C	25.1	DEP FT1400	0.1	0.1		06/20/12 12:56	SAS
Specific conductance	umhos/cm	281	DEP FT1200	0.1	0.1		06/20/12 12:56	SAS
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		06/20/12 12:56	SAS
Inorganics								
Ammonia as N	mg/L	0.050	EPA 350.1	0.040	0.009		06/21/12 16:35	MMF
Ammonium as NH4	mg/L	0.06	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	8.2	EPA 300.0	0.20	0.050		06/30/12 09:46	JAG
Nitrate+Nitrite (N)	mg/L	4.0	EPA 353.2	0.20	0.05		06/21/12 15:31	MMF
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	06/26/12 13:01	06/28/12 12:25	MMF
Sample Description		**TA3-PZ-09-M9**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-85**						
Date/Time Collected		**06/20/12 11:24**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.5	DEP FT1100	0.1	0.1		06/20/12 11:24	SAS
Water Temperature	°C	26.1	DEP FT1400	0.1	0.1		06/20/12 11:24	SAS
Specific conductance	umhos/cm	1,035	DEP FT1200	0.1	0.1		06/20/12 11:24	SAS
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		06/20/12 11:24	SAS
Inorganics								
Ammonia as N	mg/L	0.055	EPA 350.1	0.040	0.009		06/21/12 16:36	MMF
Ammonium as NH4	mg/L	0.07	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	23	EPA 300.0	0.20	0.050		06/30/12 09:46	JAG
Nitrate+Nitrite (N)	mg/L	5.4	EPA 353.2	0.20	0.05		06/21/12 15:34	MMF
Total Kjeldahl Nitrogen	mg/L	3.3	EPA 351.2	0.20	0.05	06/26/12 13:01	06/28/12 12:26	MMF
Sample Description		**TA3-PZ-16-M9**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-86**						
Date/Time Collected		**06/20/12 11:44**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**TA3-PZ-16-M9**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-86**						
Date/Time Collected		**06/20/12 11:44**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
pH	SU	5.8	DEP FT1100	0.1	0.1		06/20/12 11:44	SAS
Water Temperature	°C	25.1	DEP FT1400	0.1	0.1		06/20/12 11:44	SAS
Specific conductance	umhos/cm	284	DEP FT1200	0.1	0.1		06/20/12 11:44	SAS
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		06/20/12 11:44	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 16:38	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	9.9	EPA 300.0	0.20	0.050		06/30/12 09:46	JAG
Nitrate+Nitrite (N)	mg/L	5.4	EPA 353.2	0.20	0.05		06/21/12 15:36	MMF
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	06/26/12 13:01	06/28/12 12:28	MMF
Sample Description		**TA3-PZ-09-ST14**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-87**						
Date/Time Collected		**06/20/12 11:17**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.6	DEP FT1100	0.1	0.1		06/20/12 11:17	SDH
Water Temperature	°C	26.3	DEP FT1400	0.1	0.1		06/20/12 11:17	SDH
Specific conductance	umhos/cm	259	DEP FT1200	0.1	0.1		06/20/12 11:17	SDH
Dissolved Oxygen	mg/L	0.7	DEP FT1500	0.1	0.1		06/20/12 11:17	SDH
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 16:40	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	8.0	EPA 300.0	0.20	0.050		06/30/12 09:46	JAG
Nitrate+Nitrite (N)	mg/L	6.8	EPA 353.2	0.20	0.05		06/21/12 15:38	MMF
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	06/26/12 13:01	06/28/12 12:30	MMF
Sample Description		**TA3-PZ-16-ST14**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-88**						
Date/Time Collected		**06/20/12 11:42**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	5.3	DEP FT1100	0.1	0.1		06/20/12 11:42	SDH

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Sample Description		**TA3-PZ-16-ST14**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-88**						
Date/Time Collected		**06/20/12 11:42**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Water Temperature	°C	25.1	DEP FT1400	0.1	0.1		06/20/12 11:42	SDH
Specific conductance	umhos/cm	268	DEP FT1200	0.1	0.1		06/20/12 11:42	SDH
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		06/20/12 11:42	SDH
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 16:41	MMF
Ammonium as NH4	mg/L	0.01	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	8.2	EPA 300.0	0.20	0.050		06/30/12 09:46	JAG
Nitrate+Nitrite (N)	mg/L	3.6	EPA 353.2	0.08	0.02		06/21/12 16:17	MMF
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	06/26/12 13:01	06/28/12 12:31	MMF
Sample Description		**TA3-PZ-09-ST16**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-89**						
Date/Time Collected		**06/20/12 10:29**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	5.6	DEP FT1100	0.1	0.1		06/20/12 10:49	SDH
Water Temperature	°C	26.2	DEP FT1400	0.1	0.1		06/20/12 10:49	SDH
Specific conductance	umhos/cm	404	DEP FT1200	0.1	0.1		06/20/12 10:49	SDH
Dissolved Oxygen	mg/L	1.2	DEP FT1500	0.1	0.1		06/20/12 10:49	SDH
Inorganics								
Ammonia as N	mg/L	0.079	EPA 350.1	0.040	0.009		07/03/12 12:56	MMF
Ammonium as NH4	mg/L	0.10	EPA 350.1	0.01	0.005	07/03/12 13:43	07/03/12 13:44	ARP
Chloride	mg/L	9.6	EPA 300.0	0.20	0.050		06/30/12 09:46	JAG
Nitrate+Nitrite (N)	mg/L	3.4	EPA 353.2	0.20	0.05		06/21/12 15:41	MMF
Total Kjeldahl Nitrogen	mg/L	2.7	EPA 351.2	0.20	0.05	06/26/12 13:01	06/28/12 12:33	MMF
Sample Description		**TA3-PZ-16-ST16**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-90**						
Date/Time Collected		**06/20/12 10:45**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	5.4	DEP FT1100	0.1	0.1		06/20/12 10:45	SDH
Water Temperature	°C	25.1	DEP FT1400	0.1	0.1		06/20/12 10:45	SDH

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Sample Description		**TA3-PZ-16-ST16**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-90**						
Date/Time Collected		**06/20/12 10:45**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Specific conductance	umhos/cm	273	DEP FT1200	0.1	0.1		06/20/12 10:45	SDH
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		06/20/12 10:45	SDH
Inorganics								
Ammonia as N	mg/L	0.015 I	EPA 350.1	0.040	0.009		07/03/12 12:58	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/03/12 13:43	07/03/12 13:44	ARP
Chloride	mg/L	8.6	EPA 300.0	0.20	0.050		06/30/12 09:46	JAG
Nitrate+Nitrite (N)	mg/L	4.3	EPA 353.2	0.20	0.05		06/21/12 15:42	MMF
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	06/26/12 13:01	06/28/12 12:35	MMF
Sample Description		**TA4-LY-24-C**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-92**						
Date/Time Collected		**06/18/12 09:46**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	7.1	DEP FT1100	0.1	0.1		06/18/12 09:46	SDH
Water Temperature	°C	27.4	DEP FT1400	0.1	0.1		06/18/12 09:46	SDH
Specific conductance	umhos/cm	930	DEP FT1200	0.1	0.1		06/18/12 09:46	SDH
Dissolved Oxygen	mg/L	4.2	DEP FT1500	0.1	0.1		06/18/12 09:46	SDH
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 15:25	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/05/12 13:20	07/05/12 13:21	ARP
Chloride	mg/L	65	EPA 300.0	0.20	0.050		06/19/12 15:09	JAG
Nitrate (as N)	mg/L	34	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Total Kjeldahl Nitrogen	mg/L	4.8	EPA 351.2	0.20	0.05	06/19/12 08:39	06/20/12 14:26	MMF
Sample Description		**TA4-LY-12-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-93**						
Date/Time Collected		**06/18/12 09:57**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.8	DEP FT1100	0.1	0.1		06/18/12 09:57	SDH
Water Temperature	°C	27.9	DEP FT1400	0.1	0.1		06/18/12 09:57	SDH

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Sample Description		**TA4-LY-12-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-93**						
Date/Time Collected		**06/18/12 09:57**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Specific conductance	umhos/cm	781	DEP FT1200	0.1	0.1		06/18/12 09:57	SDH
Dissolved Oxygen	mg/L	7.2	DEP FT1500	0.1	0.1		06/18/12 09:57	SDH
Inorganics								
Ammonia as N	mg/L	0.051	EPA 350.1	0.040	0.009		06/20/12 15:27	MMF
Ammonium as NH4	mg/L	0.07	EPA 350.1	0.01	0.005	07/05/12 13:20	07/05/12 13:21	ARP
Chemical Oxygen Demand	mg/L	20 I	EPA 410.4	25	10	06/20/12 08:45	06/20/12 13:50	LAS
Chloride	mg/L	73	EPA 300.0	0.20	0.050		06/19/12 15:09	JAG
Nitrate (as N)	mg/L	37	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Phosphorous - Total as P	mg/L	3.0	SM 4500P-E	0.20	0.050	06/22/12 13:42	06/23/12 12:05	KTC
Total Alkalinity	mg/L	32	SM 2320B	8.0	2.0		06/19/12 13:28	MBC
Total Kjeldahl Nitrogen	mg/L	2.4	EPA 351.2	0.20	0.05	06/20/12 14:13	06/22/12 12:23	MMF
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	8.6	SM 5310B	1.0	0.50		06/22/12 12:10	ARP
Sample Description		**TA4-LY-12-S-Dup**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-94**						
Date/Time Collected		**06/18/12 10:00**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.8	DEP FT1100	0.1	0.1		06/18/12 10:00	SDH
Water Temperature	°C	27.9	DEP FT1400	0.1	0.1		06/18/12 10:00	SDH
Specific conductance	umhos/cm	781	DEP FT1200	0.1	0.1		06/18/12 10:00	SDH
Dissolved Oxygen	mg/L	7.2	DEP FT1500	0.1	0.1		06/18/12 10:00	SDH
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 16:09	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/05/12 13:20	07/05/12 13:21	ARP
Chemical Oxygen Demand	mg/L	20 I	EPA 410.4	25	10	06/20/12 08:45	06/20/12 13:50	LAS
Chloride	mg/L	75	EPA 300.0	0.20	0.050		06/19/12 15:09	JAG
Nitrate (as N)	mg/L	38	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Phosphorous - Total as P	mg/L	2.8	SM 4500P-E	0.20	0.050	06/22/12 13:42	06/23/12 12:06	KTC
Total Alkalinity	mg/L	32	SM 2320B	8.0	2.0		06/19/12 13:28	MBC
Total Kjeldahl Nitrogen	mg/L	3.2	EPA 351.2	0.20	0.05	06/20/12 14:16	06/22/12 12:34	MMF
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	8.4	SM 5310B	1.0	0.50		06/22/12 12:10	ARP

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Sample Description		**TA4-LY-24-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-95**						
Date/Time Collected		**06/18/12 10:09**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.8	DEP FT1100	0.1	0.1		06/18/12 10:09	SDH
Water Temperature	°C	29.8	DEP FT1400	0.1	0.1		06/18/12 10:09	SDH
Specific conductance	umhos/cm	747	DEP FT1200	0.1	0.1		06/18/12 10:09	SDH
Dissolved Oxygen	mg/L	6.9	DEP FT1500	0.1	0.1		06/18/12 10:09	SDH
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 16:28	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/05/12 13:20	07/05/12 13:21	ARP
Chemical Oxygen Demand	mg/L	110	EPA 410.4	25	10	06/20/12 08:45	06/20/12 13:50	LAS
Chloride	mg/L	60	EPA 300.0	0.20	0.050		06/19/12 15:09	JAG
Nitrate (as N)	mg/L	45	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Phosphorous - Total as P	mg/L	0.61	SM 4500P-E	0.040	0.010	06/22/12 13:42	06/23/12 11:26	KTC
Total Kjeldahl Nitrogen	mg/L	3.7	EPA 351.2	0.20	0.05	06/20/12 14:16	06/22/12 13:18	MMF

Sample Description		**TA4-LY-42-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-96**						
Date/Time Collected		**06/18/12 10:18**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	6.8	DEP FT1100	0.1	0.1		06/18/12 10:18	SDH
Water Temperature	°C	29.3	DEP FT1400	0.1	0.1		06/18/12 10:18	SDH
Specific conductance	umhos/cm	767	DEP FT1200	0.1	0.1		06/18/12 10:18	SDH
Dissolved Oxygen	mg/L	6.8	DEP FT1500	0.1	0.1		06/18/12 10:18	SDH
Inorganics								
Ammonia as N	mg/L	0.015 I	EPA 350.1	0.040	0.009		06/20/12 15:32	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005	07/05/12 13:20	07/05/12 13:21	ARP
Chloride	mg/L	47	EPA 300.0	0.20	0.050		06/19/12 15:09	JAG
Nitrate (as N)	mg/L	27	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		06/20/12 01:04	JAG
Total Kjeldahl Nitrogen	mg/L	4.9	EPA 351.2	0.20	0.05	06/20/12 14:16	06/22/12 13:19	MMF

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Sample Description		**TA4-PZ-11-EF2**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-97**						
Date/Time Collected		**06/19/12 12:06**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.2	DEP FT1100	0.1	0.1		06/19/12 12:06	SDH
Water Temperature	°C	26.0	DEP FT1400	0.1	0.1		06/19/12 12:06	SDH
Specific conductance	umhos/cm	332	DEP FT1200	0.1	0.1		06/19/12 12:06	SDH
Dissolved Oxygen	mg/L	1.6	DEP FT1500	0.1	0.1		06/19/12 12:06	SDH
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 11:57	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 14:35	06/21/12 14:36	ARP
Chloride	mg/L	27	EPA 300.0	0.20	0.050		06/30/12 09:46	JAG
Nitrate+Nitrite (N)	mg/L	12	EPA 353.2	1.0	0.25		06/21/12 11:53	MMF
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	06/20/12 14:16	06/22/12 12:39	MMF
Sample Description		**TA4-PZ-11-EF2-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-98**						
Date/Time Collected		**06/19/12 12:11**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								
pH	SU	4.2	DEP FT1100	0.1	0.1	08/08/12 10:31	06/19/12 12:11	SDH
Water Temperature	°C	26.0	DEP FT1400	0.1	0.1		06/19/12 12:11	RJS
Specific conductance	umhos/cm	332	DEP FT1200	0.1	0.1	08/08/12 10:31	06/19/12 12:11	SDH
Dissolved Oxygen	mg/L	1.6	DEP FT1500	0.1	0.1	08/08/12 10:31	06/19/12 12:11	SDH
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 11:59	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 14:35	06/21/12 14:36	ARP
Chloride	mg/L	26	EPA 300.0	0.20	0.050		07/02/12 15:46	JAG
Nitrate+Nitrite (N)	mg/L	12	EPA 353.2	1.0	0.25		06/21/12 11:54	MMF
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	06/20/12 14:16	06/22/12 12:41	MMF
Sample Description		**TA4-PZ-10-H5**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-99**						
Date/Time Collected		**06/19/12 13:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
Field Parameters								

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

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**TA4-PZ-10-H5**						
Matrix		**Groundwater**						
SAL Sample Number		**1206569-99**						
Date/Time Collected		**06/19/12 13:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/18/12 16:27**						
pH	SU	5.5	DEP FT1100	0.1	0.1		06/19/12 13:30	SAS
Water Temperature	°C	26.5	DEP FT1400	0.1	0.1		06/19/12 13:30	SAS
Specific conductance	umhos/cm	327	DEP FT1200	0.1	0.1		06/19/12 13:30	SAS
Dissolved Oxygen	mg/L	1.8	DEP FT1500	0.1	0.1		06/19/12 13:30	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 12:01	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 14:35	06/21/12 14:36	ARP
Chloride	mg/L	25	EPA 300.0	0.20	0.050		06/30/12 09:46	JAG
Nitrate+Nitrite (N)	mg/L	9.2	EPA 353.2	0.20	0.05		06/21/12 11:36	MMF
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	06/20/12 14:16	06/22/12 12:43	MMF

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BF21901 - Digestion for TKN by EPA 351.2										
Blank (BF21901-BLK1)					Prepared: 06/19/12 Analyzed: 06/20/12					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BF21901-BS1)					Prepared: 06/19/12 Analyzed: 06/20/12					
Total Kjeldahl Nitrogen	2.38	0.20	0.05	mg/L	2.5		94	90-110		
Matrix Spike (BF21901-MS1)		**Source: 1206544-02**			Prepared: 06/19/12 Analyzed: 06/20/12					
Total Kjeldahl Nitrogen	3.90	0.20	0.05	mg/L	2.5	0.927	117	80-120		
Matrix Spike Dup (BF21901-MSD1)		**Source: 1206544-02**			Prepared: 06/19/12 Analyzed: 06/20/12					
Total Kjeldahl Nitrogen	3.90	0.20	0.05	mg/L	2.5	0.927	118	80-120	0.03	20
Batch BF21904 - Ion Chromatography 300.0 Prep										
Blank (BF21904-BLK1)					Prepared & Analyzed: 06/19/12					
Chloride	0.050 U	0.20	0.050	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	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						
LCS (BF21904-BS1)					Prepared & Analyzed: 06/19/12					
Chloride	3.07	0.20	0.050	mg/L	3.0		102	85-115		
Nitrite (as N)	1.35	0.04	0.01	mg/L	1.4		96	85-115		
Orthophosphate as P	0.927	0.040	0.010	mg/L	0.90		103	85-115		
Sulfate	8.82	0.60	0.20	mg/L	9.0		98	85-115		
Nitrate (as N)	1.72	0.04	0.01	mg/L	1.7		101	85-115		
Fluoride	0.900	0.040	0.010	mg/L	0.90		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 BF21904 - Ion Chromatography 300.0 Prep										
LCS Dup (BF21904-BSD1)					Prepared & Analyzed: 06/19/12					
Fluoride	0.911	0.040	0.010	mg/L	0.90		101	85-115	1	200
Orthophosphate as P	0.892	0.040	0.010	mg/L	0.90		99	85-115	4	200
Nitrite (as N)	1.38	0.04	0.01	mg/L	1.4		99	85-115	2	200
Chloride	3.10	0.20	0.050	mg/L	3.0		103	85-115	1	200
Nitrate (as N)	1.72	0.04	0.01	mg/L	1.7		101	85-115	0	200
Sulfate	8.82	0.60	0.20	mg/L	9.0		98	85-115	0	200
Matrix Spike (BF21904-MS1)		**Source: 1206569-42**			Prepared & Analyzed: 06/19/12					
Chloride	42.3 +O	0.20	0.050	mg/L	3.0	41.9	13	80-120		
Fluoride	1.08	0.040	0.010	mg/L	0.90	0.163	102	85-115		
Sulfate	72.7	0.60	0.20	mg/L	9.0	63.1	107	85-115		
Orthophosphate as P	0.888	0.040	0.010	mg/L	0.90	ND	99	85-115		
Nitrite (as N)	1.59	0.04	0.01	mg/L	1.4	0.314	91	85-115		
Nitrate (as N)	25.8 +O	0.04	0.01	mg/L	1.7	25.8	0	85-115		
Matrix Spike (BF21904-MS2)		**Source: 1206569-94**			Prepared & Analyzed: 06/19/12					
Sulfate	78.0	0.60	0.20	mg/L	9.0	69.3	97	85-115		
Orthophosphate as P	1.21	0.040	0.010	mg/L	0.90	0.380	92	85-115		
Chloride	42.4 +O	0.20	0.050	mg/L	3.0	42.1	10	80-120		
Fluoride	1.18	0.040	0.010	mg/L	0.90	0.288	99	85-115		
Nitrate (as N)	25.1 +O	0.04	0.01	mg/L	1.7	24.9	12	85-115		
Nitrite (as N)	1.33	0.04	0.01	mg/L	1.4	ND	95	85-115		
Batch BF21905 - Ion Chromatography 300.0 Prep										
Blank (BF21905-BLK1)					Prepared & Analyzed: 06/20/12					
Nitrite (as 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 BF21905 - Ion Chromatography 300.0 Prep										
LCS (BF21905-BS1)					Prepared & Analyzed: 06/20/12					
Nitrite (as N)	1.39	0.04	0.01	mg/L	1.4		99	85-115		
LCS Dup (BF21905-BSD1)					Prepared & Analyzed: 06/20/12					
Nitrite (as N)	1.38	0.04	0.01	mg/L	1.4		99	85-115	0.7	200
Matrix Spike (BF21905-MS1)		**Source: 1206568-25**			Prepared & Analyzed: 06/20/12					
Nitrite (as N)	1.40	0.04	0.01	mg/L	1.4	ND	100	85-115		
Batch BF21916 - alkalinity										
Blank (BF21916-BLK1)					Prepared & Analyzed: 06/19/12					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BF21916-BS1)					Prepared & Analyzed: 06/19/12					
Total Alkalinity	130	8.0	2.0	mg/L	120		103	90-110		
Matrix Spike (BF21916-MS1)		**Source: 1206430-01**			Prepared & Analyzed: 06/19/12					
Total Alkalinity	240	8.0	2.0	mg/L	120	120	95	80-120		
Matrix Spike Dup (BF21916-MSD1)		**Source: 1206430-01**			Prepared & Analyzed: 06/19/12					
Total Alkalinity	230	8.0	2.0	mg/L	120	120	86	80-120	5	26
Batch BF22001 - Ammonia by SEAL										
Blank (BF22001-BLK1)					Prepared & Analyzed: 06/20/12					
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 BF22001 - Ammonia by SEAL										
LCS (BF22001-BS1)					Prepared & Analyzed: 06/20/12					
Ammonia as N	0.48	0.040	0.009	mg/L	0.50		96	90-110		
Matrix Spike (BF22001-MS1)		**Source: 1206522-07**			Prepared & Analyzed: 06/20/12					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	0.026	97	90-110		
Matrix Spike Dup (BF22001-MSD1)		**Source: 1206522-07**			Prepared & Analyzed: 06/20/12					
Ammonia as N	0.52	0.040	0.009	mg/L	0.50	0.026	98	90-110	1	10
Batch BF22005 - Ion Chromatography 300.0 Prep										
Blank (BF22005-BLK1)					Prepared & Analyzed: 06/20/12					
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 (BF22005-BS1)					Prepared & Analyzed: 06/20/12					
Nitrite (as N)	1.38	0.04	0.01	mg/L	1.4		99	85-115		
Nitrate (as N)	1.70	0.04	0.01	mg/L	1.7		100	85-115		
Chloride	3.08	0.20	0.050	mg/L	3.0		103	85-115		
LCS Dup (BF22005-BSD1)					Prepared & Analyzed: 06/20/12					
Nitrate (as N)	1.71	0.04	0.01	mg/L	1.7		101	85-115	0.6	200
Nitrite (as N)	1.39	0.04	0.01	mg/L	1.4		99	85-115	0.7	200
Chloride	3.10	0.20	0.050	mg/L	3.0		103	85-115	0.6	200
Matrix Spike (BF22005-MS1)		**Source: 1206569-67**			Prepared & Analyzed: 06/20/12					
Chloride	104	0.20	0.050	mg/L	30	74.8	97	80-120		
Nitrate (as N)	42.3	0.04	0.01	mg/L	17	24.9	102	85-115		
Nitrite (as N)	13.9	0.04	0.01	mg/L	14	ND	99	85-115		

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Batch BF22005 - Ion Chromatography 300.0 Prep										
Matrix Spike (BF22005-MS2)		**Source: 1206582-09**			Prepared & Analyzed: 06/20/12					
Nitrite (as N)	13.9	0.04	0.01	mg/L	14	ND	99	85-115		
Chloride	132	0.20	0.050	mg/L	30	102	100	80-120		
Nitrate (as N)	17.2	0.04	0.01	mg/L	17	0.293	99	85-115		
Batch BF22013 - Ammonia by SEAL										
Blank (BF22013-BLK1)					Prepared & Analyzed: 06/20/12					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BF22013-BS1)					Prepared & Analyzed: 06/20/12					
Ammonia as N	0.48	0.040	0.009	mg/L	0.50		96	90-110		
Matrix Spike (BF22013-MS1)		**Source: 1206574-02**			Prepared & Analyzed: 06/20/12					
Ammonia as N	0.49	0.040	0.009	mg/L	0.50	0.029	93	90-110		
Matrix Spike Dup (BF22013-MSD1)		**Source: 1206574-02**			Prepared & Analyzed: 06/20/12					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.029	93	90-110	0.7	10
Batch BF22022 - Digestion for TKN by EPA 351.2										
Blank (BF22022-BLK1)					Prepared: 06/20/12 Analyzed: 06/22/12					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BF22022-BS1)					Prepared: 06/20/12 Analyzed: 06/22/12					
Total Kjeldahl Nitrogen	2.42	0.20	0.05	mg/L	2.5		96	90-110		

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Batch BF22022 - Digestion for TKN by EPA 351.2										
Matrix Spike (BF22022-MS1)		**Source: 1206568-30**			Prepared: 06/20/12	Analyzed: 06/22/12				
Total Kjeldahl Nitrogen	4.53	0.20	0.05	mg/L	2.5	1.95	102	80-120		
Matrix Spike Dup (BF22022-MSD1)		**Source: 1206568-30**			Prepared: 06/20/12	Analyzed: 06/22/12				
Total Kjeldahl Nitrogen	4.61	0.20	0.05	mg/L	2.5	1.95	105	80-120	2	20
Batch BF22023 - Digestion for TKN by EPA 351.2										
Blank (BF22023-BLK1)					Prepared: 06/20/12	Analyzed: 06/22/12				
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BF22023-BS1)					Prepared: 06/20/12	Analyzed: 06/22/12				
Total Kjeldahl Nitrogen	2.30	0.20	0.05	mg/L	2.5		91	90-110		
LCS (BF22023-BS2)					Prepared: 06/20/12	Analyzed: 06/22/12				
Total Kjeldahl Nitrogen	2.47	0.20	0.05	mg/L	2.5		98	90-110		
LCS (BF22023-BS3)					Prepared: 06/20/12	Analyzed: 06/22/12				
Total Kjeldahl Nitrogen	2.39	0.20	0.05	mg/L	2.5		94	90-110		
LCS (BF22023-BS4)					Prepared: 06/20/12	Analyzed: 06/22/12				
Total Kjeldahl Nitrogen	2.41	0.20	0.05	mg/L	2.5		95	90-110		
LCS (BF22023-BS5)					Prepared: 06/20/12	Analyzed: 06/22/12				
Total Kjeldahl Nitrogen	2.38	0.20	0.05	mg/L	2.5		94	90-110		
Matrix Spike (BF22023-MS1)		**Source: 1206578-02**			Prepared: 06/20/12	Analyzed: 06/22/12				
Total Kjeldahl Nitrogen	4.02	0.20	0.05	mg/L	2.5	1.24	110	80-120		

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Batch BF22023 - Digestion for TKN by EPA 351.2										
Matrix Spike Dup (BF22023-MSD1)		**Source: 1206578-02**			Prepared: 06/20/12 Analyzed: 06/22/12					
Total Kjeldahl Nitrogen	3.83	0.20	0.05	mg/L	2.5	1.24	102	80-120	5	20
Batch BF22033 - COD prep										
Blank (BF22033-BLK1)					Prepared & Analyzed: 06/20/12					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BF22033-BS1)					Prepared & Analyzed: 06/20/12					
Chemical Oxygen Demand	46	25	10	mg/L	50		92	90-110		
Matrix Spike (BF22033-MS1)		**Source: 1206569-10**			Prepared & Analyzed: 06/20/12					
Chemical Oxygen Demand	75	25	10	mg/L	50	28	94	85-115		
Matrix Spike Dup (BF22033-MSD1)		**Source: 1206569-10**			Prepared & Analyzed: 06/20/12					
Chemical Oxygen Demand	77	25	10	mg/L	50	28	98	85-115	3	32
Batch BF22102 - Nitrate 353.2 by seal										
Blank (BF22102-BLK1)					Prepared & Analyzed: 06/21/12					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BF22102-BS1)					Prepared & Analyzed: 06/21/12					
Nitrate+Nitrite (N)	0.723	0.04	0.01	mg/L	0.80		90	90-110		
Matrix Spike (BF22102-MS1)		**Source: 1206569-59**			Prepared & Analyzed: 06/21/12					
Nitrate+Nitrite (N)	2.20	0.20	0.05	mg/L	1.0	1.06	114	77-119		

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Batch BF22102 - Nitrate 353.2 by seal										
Matrix Spike Dup (BF22102-MSD1)		**Source: 1206569-59**			Prepared & Analyzed: 06/21/12					
Nitrate+Nitrite (N)	2.17	0.20	0.05	mg/L	1.0	1.06	111	77-119	1	20
Batch BF22106 - Ammonia by SEAL										
Blank (BF22106-BLK1)					Prepared & Analyzed: 06/21/12					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BF22106-BS1)					Prepared & Analyzed: 06/21/12					
Ammonia as N	0.48	0.040	0.009	mg/L	0.50		96	90-110		
Matrix Spike (BF22106-MS1)		**Source: 1206597-01**			Prepared & Analyzed: 06/21/12					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	ND	100	90-110		
Matrix Spike Dup (BF22106-MSD1)		**Source: 1206597-01**			Prepared & Analyzed: 06/21/12					
Ammonia as N	0.48	0.040	0.009	mg/L	0.50	ND	97	90-110	3	10
Batch BF22121 - Ammonia by SEAL										
Blank (BF22121-BLK1)					Prepared & Analyzed: 06/21/12					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BF22121-BS1)					Prepared & Analyzed: 06/21/12					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50		100	90-110		
Matrix Spike (BF22121-MS1)		**Source: 1206568-20**			Prepared & Analyzed: 06/21/12					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	ND	101	90-110		

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Batch BF22121 - Ammonia by SEAL										
Matrix Spike Dup (BF22121-MSD1)		**Source: 1206568-20**			Prepared & Analyzed: 06/21/12					
Ammonia as N	0.54	0.040	0.009	mg/L	0.50	ND	107	90-110	6	10
Batch BF22122 - Ammonia by SEAL										
Blank (BF22122-BLK1)					Prepared & Analyzed: 06/21/12					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BF22122-BS1)					Prepared & Analyzed: 06/21/12					
Ammonia as N	0.49	0.040	0.009	mg/L	0.50		99	90-110		
Matrix Spike (BF22122-MS1)		**Source: 1206569-50**			Prepared & Analyzed: 06/21/12					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	ND	102	90-110		
Matrix Spike Dup (BF22122-MSD1)		**Source: 1206569-50**			Prepared & Analyzed: 06/21/12					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	ND	101	90-110	0.4	10
Batch BF22127 - Nitrate 353.2 by seal										
Blank (BF22127-BLK1)					Prepared & Analyzed: 06/21/12					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BF22127-BS1)					Prepared & Analyzed: 06/21/12					
Nitrate+Nitrite (N)	0.751	0.04	0.01	mg/L	0.80		94	90-110		
Matrix Spike (BF22127-MS1)		**Source: 1206569-73**			Prepared & Analyzed: 06/21/12					
Nitrate+Nitrite (N)	20.1	0.40	0.10	mg/L	10	9.46	106	77-119		

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Batch BF22127 - Nitrate 353.2 by seal										
Matrix Spike Dup (BF22127-MSD1)		**Source: 1206569-73**			Prepared & Analyzed: 06/22/12					
Nitrate+Nitrite (N)	19.8	0.40	0.10	mg/L	10	9.46	103	77-119	1	20
Batch BF22208 - Ion Chromatography 300.0 Prep										
Blank (BF22208-BLK1)					Prepared & Analyzed: 06/23/12					
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BF22208-BS1)					Prepared & Analyzed: 06/23/12					
Chloride	3.22	0.20	0.050	mg/L	3.0		107	85-115		
LCS Dup (BF22208-BSD1)					Prepared & Analyzed: 06/23/12					
Chloride	3.21	0.20	0.050	mg/L	3.0		107	85-115	0.3	200
Matrix Spike (BF22208-MS1)		**Source: 1206569-19**			Prepared & Analyzed: 06/23/12					
Chloride	22.4	0.20	0.050	mg/L	3.0	19.2	107	80-120		
Matrix Spike (BF22208-MS2)		**Source: 1206569-47**			Prepared & Analyzed: 06/23/12					
Chloride	33.9 +O	0.20	0.050	mg/L	3.0	32.5	47	80-120		
Batch BF22218 - Ion Chromatography 300.0 Prep										
Blank (BF22218-BLK1)					Prepared & Analyzed: 06/22/12					
Fluoride	0.010 U	0.040	0.010	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						
Chloride	0.050 U	0.20	0.050	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						

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Batch BF22218 - Ion Chromatography 300.0 Prep										
LCS (BF22218-BS1)					Prepared & Analyzed: 06/22/12					
Fluoride	0.940	0.040	0.010	mg/L	0.90		104	85-115		
Chloride	3.21	0.20	0.050	mg/L	3.0		107	85-115		
Orthophosphate as P	0.933	0.040	0.010	mg/L	0.90		104	85-115		
Sulfate	8.86	0.60	0.20	mg/L	9.0		98	85-115		
Nitrate (as N)	1.72	0.04	0.01	mg/L	1.7		101	85-115		
LCS Dup (BF22218-BSD1)					Prepared & Analyzed: 06/22/12					
Nitrate (as N)	1.71	0.04	0.01	mg/L	1.7		101	85-115	0.6	200
Chloride	3.21	0.20	0.050	mg/L	3.0		107	85-115	0	200
Sulfate	8.82	0.60	0.20	mg/L	9.0		98	85-115	0.5	200
Fluoride	0.940	0.040	0.010	mg/L	0.90		104	85-115	0	200
Orthophosphate as P	0.884	0.040	0.010	mg/L	0.90		98	85-115	5	200
Matrix Spike (BF22218-MS1)		**Source: 1206569-03**			Prepared & Analyzed: 06/22/12					
Orthophosphate as P	5.23	0.040	0.010	mg/L	0.90	4.31	102	85-115		
Fluoride	4.54	0.040	0.010	mg/L	0.90	3.69	94	85-115		
Nitrate (as N)	1.69	0.04	0.01	mg/L	1.7	0.0152	99	85-115		
Chloride	44.6 +O	0.20	0.050	mg/L	3.0	44.3	10	80-120		
Sulfate	30.6	0.60	0.20	mg/L	9.0	22.2	93	85-115		
Batch BF22221 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BF22221-BLK1)					Prepared: 06/22/12 Analyzed: 06/23/12					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
Blank (BF22221-BLK2)					Prepared: 06/22/12 Analyzed: 06/23/12					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						

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Batch BF22221 - Digestion for TP by EPA 365.2/SM4500PE										
LCS (BF22221-BS1)					Prepared: 06/22/12 Analyzed: 06/23/12					
Phosphorous - Total as P	0.819	0.040	0.010	mg/L	0.80		102	90-110		
LCS (BF22221-BS2)					Prepared: 06/22/12 Analyzed: 06/23/12					
Phosphorous - Total as P	0.763	0.040	0.010	mg/L	0.80		95	90-110		
Matrix Spike (BF22221-MS1)		**Source: 1206666-01**			Prepared: 06/22/12 Analyzed: 06/23/12					
Phosphorous - Total as P	0.943	0.040	0.010	mg/L	1.0	0.0133	93	75-125		
Matrix Spike (BF22221-MS2)		**Source: 1206662-02**			Prepared: 06/22/12 Analyzed: 06/23/12					
Phosphorous - Total as P	1.14	0.040	0.010	mg/L	1.0	0.0368	110	75-125		
Matrix Spike Dup (BF22221-MSD1)		**Source: 1206666-01**			Prepared: 06/22/12 Analyzed: 06/23/12					
Phosphorous - Total as P	0.870	0.040	0.010	mg/L	1.0	0.0133	86	75-125	8	25
Matrix Spike Dup (BF22221-MSD2)		**Source: 1206662-02**			Prepared: 06/22/12 Analyzed: 06/23/12					
Phosphorous - Total as P	0.948	0.040	0.010	mg/L	1.0	0.0368	91	75-125	18	25
Batch BF22225 - BOD										
Blank (BF22225-BLK1)					Prepared: 06/22/12 Analyzed: 06/27/12					
Carbonaceous BOD	2 U	2	2	mg/L						
LCS (BF22225-BS1)					Prepared: 06/22/12 Analyzed: 06/27/12					
Carbonaceous BOD	184	2	2	mg/L	200		92	85-115		
LCS Dup (BF22225-BSD1)					Prepared: 06/22/12 Analyzed: 06/27/12					
Carbonaceous BOD	178	2	2	mg/L	200		89	85-115	3	200

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Batch BF22225 - BOD										
Duplicate (BF22225-DUP1)		**Source: 1206700-01**			Prepared: 06/22/12 Analyzed: 06/27/12					
Carbonaceous BOD	320	2	2	mg/L		280			14	25
Batch BF22503 - TSS prep										
Blank (BF22503-BLK1)					Prepared & Analyzed: 06/25/12					
Total Suspended Solids	1 U	1	1	mg/L						
LCS (BF22503-BS1)					Prepared & Analyzed: 06/25/12					
Total Suspended Solids	47.0	1	1	mg/L	50		94	85-115		
Duplicate (BF22503-DUP1)		**Source: 1206703-01**			Prepared & Analyzed: 06/25/12					
Total Suspended Solids	400	1	1	mg/L		433			8	30
Duplicate (BF22503-DUP2)		**Source: 1206717-01**			Prepared & Analyzed: 06/25/12					
Total Suspended Solids	227	1	1	mg/L		214			6	30
Batch BF22518 - Ion Chromatography 300.0 Prep										
Blank (BF22518-BLK1)					Prepared & Analyzed: 06/25/12					
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BF22518-BS1)					Prepared & Analyzed: 06/25/12					
Chloride	3.11	0.20	0.050	mg/L	3.0		104	85-115		
LCS Dup (BF22518-BSD1)					Prepared & Analyzed: 06/25/12					
Chloride	3.11	0.20	0.050	mg/L	3.0		104	85-115	0	200

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Batch BF22518 - Ion Chromatography 300.0 Prep										
Matrix Spike (BF22518-MS1)		**Source: 1206767-03**			Prepared & Analyzed: 06/25/12					
Chloride	3.07	0.20	0.050	mg/L	3.0	ND	102	80-120		
Matrix Spike (BF22518-MS2)		**Source: 1206569-01**			Prepared & Analyzed: 06/25/12					
Chloride	44.6 +O	0.20	0.050	mg/L	3.0	44.5	3	80-120		
Batch BF22519 - Ion Chromatography 300.0 Prep										
Blank (BF22519-BLK1)					Prepared & Analyzed: 06/26/12					
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BF22519-BS1)					Prepared & Analyzed: 06/26/12					
Chloride	3.18	0.20	0.050	mg/L	3.0		106	85-115		
LCS (BF22519-BS2)					Prepared & Analyzed: 06/26/12					
Chloride	3.15	0.20	0.050	mg/L	3.0		105	85-115		
LCS (BF22519-BS3)					Prepared & Analyzed: 06/26/12					
Chloride	3.14	0.20	0.050	mg/L	3.0		105	85-115		
LCS (BF22519-BS4)					Prepared & Analyzed: 06/26/12					
Chloride	3.14	0.20	0.050	mg/L	3.0		105	85-115		
LCS (BF22519-BS5)					Prepared & Analyzed: 06/26/12					
Chloride	3.15	0.20	0.050	mg/L	3.0		105	85-115		
LCS Dup (BF22519-BSD1)					Prepared & Analyzed: 06/26/12					
Chloride	3.17	0.20	0.050	mg/L	3.0		106	85-115	0.3	200

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Batch BF22519 - Ion Chromatography 300.0 Prep										
Matrix Spike (BF22519-MS1)		**Source: 1206569-24**			Prepared & Analyzed: 06/26/12					
Chloride	21.0	0.20	0.050	mg/L	3.0	17.8	107	80-120		
Matrix Spike (BF22519-MS2)		**Source: 1206569-34**			Prepared & Analyzed: 06/26/12					
Chloride	17.8	0.20	0.050	mg/L	3.0	14.8	100	80-120		
Batch BF22527 - TS prep										
Blank (BF22527-BLK1)					Prepared: 06/25/12 Analyzed: 06/26/12					
Total Solids	10 U	10	10	mg/L						
Duplicate (BF22527-DUP1)		**Source: 1206569-05**			Prepared: 06/25/12 Analyzed: 06/26/12					
Total Solids	600	10	10	mg/L		500			18	20
Batch BF22618 - Digestion for TKN by EPA 351.2										
Blank (BF22618-BLK1)					Prepared: 06/26/12 Analyzed: 06/28/12					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BF22618-BS1)					Prepared: 06/26/12 Analyzed: 06/28/12					
Total Kjeldahl Nitrogen	2.38	0.20	0.05	mg/L	2.5		94	90-110		
Matrix Spike (BF22618-MS1)		**Source: 1206765-07**			Prepared: 06/26/12 Analyzed: 06/28/12					
Total Kjeldahl Nitrogen	3.41	0.20	0.05	mg/L	2.5	0.639	110	80-120		
Matrix Spike Dup (BF22618-MSD1)		**Source: 1206765-07**			Prepared: 06/26/12 Analyzed: 06/28/12					
Total Kjeldahl Nitrogen	3.12	0.20	0.05	mg/L	2.5	0.639	98	80-120	9	20

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BF22621 - alkalinity										
Blank (BF22621-BLK1)					Prepared & Analyzed: 06/26/12					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BF22621-BLK2)					Prepared & Analyzed: 06/26/12					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BF22621-BLK3)					Prepared & Analyzed: 06/26/12					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BF22621-BS1)					Prepared & Analyzed: 06/26/12					
Total Alkalinity	130	8.0	2.0	mg/L	120		103	90-110		
LCS (BF22621-BS2)					Prepared & Analyzed: 06/26/12					
Total Alkalinity	130	8.0	2.0	mg/L	120		103	90-110		
LCS (BF22621-BS3)					Prepared & Analyzed: 06/26/12					
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BF22621-MS1)		**Source: 1205880-07**			Prepared & Analyzed: 06/26/12					
Total Alkalinity	190	8.0	2.0	mg/L	120	75	95	80-120		
Matrix Spike Dup (BF22621-MSD1)		**Source: 1205880-07**			Prepared & Analyzed: 06/26/12					
Total Alkalinity	190	8.0	2.0	mg/L	120	75	95	80-120	0	26
Batch BF22706 - Ion Chromatography 300.0 Prep										
Blank (BF22706-BLK1)					Prepared & Analyzed: 06/28/12					
Chloride	0.050 U	0.20	0.050	mg/L						

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Batch BF22706 - Ion Chromatography 300.0 Prep										
LCS (BF22706-BS1)					Prepared & Analyzed: 06/28/12					
Chloride	5.06 +O	0.20	0.050	mg/L	3.0		169	85-115		
LCS Dup (BF22706-BSD1)					Prepared & Analyzed: 06/28/12					
Chloride	4.50 +O	0.20	0.050	mg/L	3.0		150	85-115	12	200
Matrix Spike (BF22706-MS1)		**Source: 1206569-20**			Prepared & Analyzed: 06/28/12					
Chloride	92.8	0.20	0.050	mg/L	30	58.4	115	80-120		
Matrix Spike (BF22706-MS2)		**Source: 1206569-53**			Prepared & Analyzed: 06/28/12					
Chloride	10.4	0.20	0.050	mg/L	3.0	7.16	108	80-120		
Batch BF22812 - Digestion for TKN by EPA 351.2										
Blank (BF22812-BLK1)					Prepared: 06/28/12 Analyzed: 07/02/12					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BF22812-BS1)					Prepared: 06/28/12 Analyzed: 07/02/12					
Total Kjeldahl Nitrogen	2.47	0.20	0.05	mg/L	2.5		98	90-110		
Matrix Spike (BF22812-MS1)		**Source: 1206835-02**			Prepared: 06/28/12 Analyzed: 07/02/12					
Total Kjeldahl Nitrogen	3.62	0.20	0.05	mg/L	2.5	1.43	86	80-120		
Matrix Spike Dup (BF22812-MSD1)		**Source: 1206835-02**			Prepared: 06/28/12 Analyzed: 07/02/12					
Total Kjeldahl Nitrogen	3.55	0.20	0.05	mg/L	2.5	1.43	84	80-120	2	20
Batch BF22820 - Digestion for TKN by EPA 351.2										
Blank (BF22820-BLK1)					Prepared: 06/28/12 Analyzed: 07/02/12					
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 BF22820 - Digestion for TKN by EPA 351.2										
LCS (BF22820-BS1)					Prepared: 06/28/12 Analyzed: 07/02/12					
Total Kjeldahl Nitrogen	2.42	0.20	0.05	mg/L	2.5		95	90-110		
Matrix Spike (BF22820-MS1)		**Source: 1206569-19**			Prepared: 06/28/12 Analyzed: 07/02/12					
Total Kjeldahl Nitrogen	3.38	0.20	0.05	mg/L	2.5	1.16	87	80-120		
Matrix Spike Dup (BF22820-MSD1)		**Source: 1206569-19**			Prepared: 06/28/12 Analyzed: 07/02/12					
Total Kjeldahl Nitrogen	3.47	0.20	0.05	mg/L	2.5	1.16	91	80-120	3	20
Batch BF22917 - Ion Chromatography 300.0 Prep										
Blank (BF22917-BLK1)					Prepared & Analyzed: 06/30/12					
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BF22917-BS1)					Prepared & Analyzed: 06/30/12					
Chloride	3.20	0.20	0.050	mg/L	3.0		107	85-115		
LCS Dup (BF22917-BSD1)					Prepared & Analyzed: 06/30/12					
Chloride	3.17	0.20	0.050	mg/L	3.0		106	85-115	0.9	200
Matrix Spike (BF22917-MS1)		**Source: 1206569-57**			Prepared & Analyzed: 06/30/12					
Chloride	10.7	0.20	0.050	mg/L	3.0	7.34	112	80-120		
Matrix Spike (BF22917-MS2)		**Source: 1206569-73**			Prepared & Analyzed: 06/30/12					
Chloride	21.8	0.20	0.050	mg/L	3.0	18.3	117	80-120		
Batch BF22918 - Ion Chromatography 300.0 Prep										
Blank (BF22918-BLK1)					Prepared & Analyzed: 06/30/12					
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 BF22918 - Ion Chromatography 300.0 Prep										
LCS (BF22918-BS1)					Prepared & Analyzed: 06/30/12					
Chloride	3.20	0.20	0.050	mg/L	3.0		107	85-115		
LCS Dup (BF22918-BSD1)					Prepared & Analyzed: 06/30/12					
Chloride	3.21	0.20	0.050	mg/L	3.0		107	85-115	0.3	200
Matrix Spike (BF22918-MS1)		**Source: 1206569-83**			Prepared & Analyzed: 06/30/12					
Chloride	32.7	0.20	0.050	mg/L	3.0	30.2	83	80-120		
Matrix Spike (BF22918-MS2)		**Source: 1206569-99**			Prepared & Analyzed: 06/30/12					
Chloride	27.5	0.20	0.050	mg/L	3.0	24.6	97	80-120		
Batch BG20211 - Digestion for TKN by EPA 351.2										
Blank (BG20211-BLK1)					Prepared: 07/02/12 Analyzed: 07/05/12					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BG20211-BS1)					Prepared: 07/02/12 Analyzed: 07/05/12					
Total Kjeldahl Nitrogen	2.56	0.20	0.05	mg/L	2.5		101	90-110		
Matrix Spike (BG20211-MS1)		**Source: 1206942-01**			Prepared: 07/02/12 Analyzed: 07/05/12					
Total Kjeldahl Nitrogen	4.03	0.20	0.05	mg/L	2.5	1.11	115	80-120		
Matrix Spike Dup (BG20211-MSD1)		**Source: 1206942-01**			Prepared: 07/02/12 Analyzed: 07/05/12					
Total Kjeldahl Nitrogen	3.88	0.20	0.05	mg/L	2.5	1.11	109	80-120	4	20
Batch BG20214 - Digestion for TKN by EPA 351.2										
Blank (BG20214-BLK1)					Prepared: 07/02/12 Analyzed: 07/05/12					
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 BG20214 - Digestion for TKN by EPA 351.2										
LCS (BG20214-BS1)					Prepared: 07/02/12 Analyzed: 07/05/12					
Total Kjeldahl Nitrogen	2.63	0.20	0.05	mg/L	2.5		104	90-110		
Matrix Spike (BG20214-MS1)		**Source: 1206920-07**			Prepared: 07/02/12 Analyzed: 07/05/12					
Total Kjeldahl Nitrogen	3.02	0.20	0.05	mg/L	2.5	0.538	98	80-120		
Matrix Spike Dup (BG20214-MSD1)		**Source: 1206920-07**			Prepared: 07/02/12 Analyzed: 07/05/12					
Total Kjeldahl Nitrogen	2.97	0.20	0.05	mg/L	2.5	0.538	96	80-120	1	20
Batch BG20217 - Ion Chromatography 300.0 Prep										
Blank (BG20217-BLK1)					Prepared & Analyzed: 07/02/12					
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BG20217-BS1)					Prepared & Analyzed: 07/02/12					
Chloride	3.16	0.20	0.050	mg/L	3.0		105	85-115		
LCS Dup (BG20217-BSD1)					Prepared & Analyzed: 07/02/12					
Chloride	3.19	0.20	0.050	mg/L	3.0		106	85-115	0.9	200
Matrix Spike (BG20217-MS1)		**Source: 1206911-03**			Prepared & Analyzed: 07/02/12					
Chloride	1,460	0.20	0.050	mg/L	300	1220	80	80-120		
Matrix Spike (BG20217-MS2)		**Source: 1206927-04**			Prepared & Analyzed: 07/02/12					
Chloride	393	0.20	0.050	mg/L	60	330	105	80-120		
Batch BG20224 - Nitrate 353.2 by seal										
Blank (BG20224-BLK1)					Prepared & Analyzed: 07/02/12					
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 BG20224 - Nitrate 353.2 by seal										
LCS (BG20224-BS1)					Prepared & Analyzed: 07/02/12					
Nitrate+Nitrite (N)	0.862	0.04	0.01	mg/L	0.80		108	90-110		
Matrix Spike (BG20224-MS1)		**Source: 1206920-06**			Prepared & Analyzed: 07/02/12					
Nitrate+Nitrite (N)	1.16	0.04	0.01	mg/L	1.0	0.0253	114	77-119		
Matrix Spike Dup (BG20224-MSD1)		**Source: 1206920-06**			Prepared & Analyzed: 07/02/12					
Nitrate+Nitrite (N)	0.980	0.04	0.01	mg/L	1.0	0.0253	96	77-119	17	20
Batch BG20302 - Nitrate 353.2 by seal										
Blank (BG20302-BLK1)					Prepared & Analyzed: 07/03/12					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BG20302-BS1)					Prepared & Analyzed: 07/03/12					
Nitrate+Nitrite (N)	0.804	0.04	0.01	mg/L	0.80		101	90-110		
Matrix Spike (BG20302-MS1)		**Source: 1206569-02**			Prepared & Analyzed: 07/03/12					
Nitrate+Nitrite (N)	1.10	0.04	0.01	mg/L	1.0	0.0312	107	77-119		
Matrix Spike Dup (BG20302-MSD1)		**Source: 1206569-02**			Prepared & Analyzed: 07/03/12					
Nitrate+Nitrite (N)	0.912	0.04	0.01	mg/L	1.0	0.0312	88	77-119	19	20
Batch BG20316 - Ammonia by SEAL										
Blank (BG20316-BLK1)					Prepared & Analyzed: 07/03/12					
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 BG20316 - Ammonia by SEAL										
LCS (BG20316-BS1)					Prepared & Analyzed: 07/03/12					
Ammonia as N	0.52	0.040	0.009	mg/L	0.50		104	90-110		
Matrix Spike (BG20316-MS1)		**Source: 1206569-25**			Prepared & Analyzed: 07/03/12					
Ammonia as N	0.60	0.040	0.009	mg/L	0.50	0.069	106	90-110		
Matrix Spike Dup (BG20316-MSD1)		**Source: 1206569-25**			Prepared & Analyzed: 07/03/12					
Ammonia as N	0.56	0.040	0.009	mg/L	0.50	0.069	97	90-110	7	10
Batch BG20317 - Ammonia by SEAL										
Blank (BG20317-BLK1)					Prepared & Analyzed: 07/03/12					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BG20317-BS1)					Prepared & Analyzed: 07/03/12					
Ammonia as N	0.52	0.040	0.009	mg/L	0.50		105	90-110		
Matrix Spike (BG20317-MS1)		**Source: 1207027-02**			Prepared & Analyzed: 07/03/12					
Ammonia as N	0.77	0.040	0.009	mg/L	0.50	0.24	106	90-110		
Matrix Spike Dup (BG20317-MSD1)		**Source: 1207027-02**			Prepared & Analyzed: 07/03/12					
Ammonia as N	0.76	0.040	0.009	mg/L	0.50	0.24	106	90-110	0.4	10
Batch BG20502 - Digestion for TKN by EPA 351.2										
Blank (BG20502-BLK1)					Prepared: 07/05/12 Analyzed: 07/06/12					
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 BG20502 - Digestion for TKN by EPA 351.2										
LCS (BG20502-BS1)					Prepared: 07/05/12 Analyzed: 07/06/12					
Total Kjeldahl Nitrogen	2.51	0.20	0.05	mg/L	2.5		99	90-110		
Matrix Spike (BG20502-MS1)		**Source: 1207027-02**			Prepared: 07/05/12 Analyzed: 07/06/12					
Total Kjeldahl Nitrogen	3.09	0.20	0.05	mg/L	2.5	0.737	93	80-120		
Matrix Spike Dup (BG20502-MSD1)		**Source: 1207027-02**			Prepared: 07/05/12 Analyzed: 07/06/12					
Total Kjeldahl Nitrogen	3.31	0.20	0.05	mg/L	2.5	0.737	101	80-120	7	20
Batch BG20602 - Nitrate 353.2 by seal										
Blank (BG20602-BLK1)					Prepared & Analyzed: 07/06/12					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BG20602-BS1)					Prepared & Analyzed: 07/06/12					
Nitrate+Nitrite (N)	0.728	0.04	0.01	mg/L	0.80		91	90-110		
Matrix Spike (BG20602-MS1)		**Source: 1206983-07**			Prepared & Analyzed: 07/06/12					
Nitrate+Nitrite (N)	0.996	0.04	0.01	mg/L	1.0	0.0817	91	77-119		
Matrix Spike Dup (BG20602-MSD1)		**Source: 1206983-07**			Prepared & Analyzed: 07/06/12					
Nitrate+Nitrite (N)	0.999	0.04	0.01	mg/L	1.0	0.0817	92	77-119	0.3	20

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Inorganic, Dissolved - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BF22217 - TOC prep										
Blank (BF22217-BLK1)					Prepared & Analyzed: 06/22/12					
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BF22217-BS1)					Prepared & Analyzed: 06/22/12					
Dissolved Organic Carbon	10.3	1.0	0.50	mg/L	10		103	90-110		
Matrix Spike (BF22217-MS1)		**Source: 1206569-41**			Prepared & Analyzed: 06/22/12					
Dissolved Organic Carbon	20.2	1.0	0.50	mg/L	10	11.0	92	85-125		
Matrix Spike Dup (BF22217-MSD1)		**Source: 1206569-41**			Prepared & Analyzed: 06/22/12					
Dissolved Organic Carbon	20.5	1.0	0.50	mg/L	10	11.0	95	85-125	2	25

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Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BF22104 - Metals Preparation for EPA Method 200.7										
Blank (BF22104-BLK1)					Prepared: 06/21/12 Analyzed: 06/22/12					
Manganese	0.0010 U	0.010	0.0010	mg/L						
Potassium	0.067	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						
Sodium	0.13 U	0.50	0.13	mg/L						
Calcium	0.042 U	0.50	0.042	mg/L						
Magnesium	0.032 I	0.50	0.020	mg/L						
LCS (BF22104-BS1)					Prepared & Analyzed: 06/21/12					
Calcium	20	0.50	0.042	mg/L	20		99	85-115		
Iron	8.1	0.10	0.020	mg/L	8.0		101	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		93	85-115		
Magnesium	19	0.50	0.020	mg/L	20		97	85-115		
Sodium	20	0.50	0.13	mg/L	20		99	85-115		
Boron	0.39	0.10	0.050	mg/L	0.40		97	85-115		
Matrix Spike (BF22104-MS1)		**Source: 1206623-02**			Prepared & Analyzed: 06/21/12					
Potassium	81	0.050	0.010	mg/L	20	64	88	70-130		
Calcium	91	0.50	0.042	mg/L	20	73	90	70-130		
Sodium	200	0.50	0.13	mg/L	20	190	71	70-130		
Manganese	0.46	0.010	0.0010	mg/L	0.40	0.062	100	70-130		
Magnesium	29	0.50	0.020	mg/L	20	10	95	70-130		
Iron	9.0	0.10	0.020	mg/L	8.0	0.79	103	70-130		
Boron	0.43	0.10	0.050	mg/L	0.40	ND	108	70-130		
Matrix Spike (BF22104-MS2)		**Source: 1206647-02**			Prepared & Analyzed: 06/21/12					
Boron	0.40	0.10	0.050	mg/L	0.40	ND	100	70-130		
Magnesium	17	0.50	0.020	mg/L	20	0.49	81	70-130		
Manganese	0.43	0.010	0.0010	mg/L	0.40	0.035	98	70-130		
Potassium	18	0.050	0.010	mg/L	20	1.4	82	70-130		
Sodium	23	0.50	0.13	mg/L	20	8.8	72	70-130		
Iron	8.4	0.10	0.020	mg/L	8.0	0.034	104	70-130		
Calcium	28	0.50	0.042	mg/L	20	11	85	70-130		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BF22104 - Metals Preparation for EPA Method 200.7										
Matrix Spike Dup (BF22104-MSD1)		**Source: 1206623-02**			Prepared & Analyzed: 06/21/12					
Sodium	210	0.50	0.13	mg/L	20	190	99	70-130	3	30
Magnesium	30	0.50	0.020	mg/L	20	10	100	70-130	3	30
Manganese	0.47	0.010	0.0010	mg/L	0.40	0.062	102	70-130	1	30
Iron	9.2	0.10	0.020	mg/L	8.0	0.79	105	70-130	2	30
Calcium	95	0.50	0.042	mg/L	20	73	112	70-130	5	30
Boron	0.45	0.10	0.050	mg/L	0.40	ND	111	70-130	3	30
Potassium	82	0.050	0.010	mg/L	20	64	91	70-130	0.8	30
Matrix Spike Dup (BF22104-MSD2)		**Source: 1206647-02**			Prepared & Analyzed: 06/21/12					
Boron	0.39	0.10	0.050	mg/L	0.40	ND	98	70-130	2	30
Sodium	23	0.50	0.13	mg/L	20	8.8	71	70-130	0.7	30
Calcium	27	0.50	0.042	mg/L	20	11	77	70-130	5	30
Magnesium	16	0.50	0.020	mg/L	20	0.49	78	70-130	4	30
Potassium	17	0.050	0.010	mg/L	20	1.4	80	70-130	3	30
Iron	8.3	0.10	0.020	mg/L	8.0	0.034	103	70-130	1	30
Manganese	0.42	0.010	0.0010	mg/L	0.40	0.035	97	70-130	2	30
Batch BF22213 - Metals Preparation for EPA Method 200.7										
Blank (BF22213-BLK1)					Prepared: 06/22/12 Analyzed: 06/25/12					
Sodium	0.13 U	0.50	0.13	mg/L						
Iron	0.020 U	0.10	0.020	mg/L						
Calcium	0.042 U	0.50	0.042	mg/L						
Magnesium	0.020 U	0.50	0.020	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						

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Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BF22213 - Metals Preparation for EPA Method 200.7										
LCS (BF22213-BS1)					Prepared: 06/22/12 Analyzed: 06/25/12					
Magnesium	20	0.50	0.020	mg/L	20		102	85-115		
Manganese	0.41	0.010	0.0010	mg/L	0.40		103	85-115		
Iron	8.3	0.10	0.020	mg/L	8.0		104	85-115		
Boron	0.41	0.10	0.050	mg/L	0.40		103	85-115		
Calcium	20	0.50	0.042	mg/L	20		102	85-115		
Potassium	20	0.050	0.010	mg/L	20		98	85-115		
Sodium	20	0.50	0.13	mg/L	20		100	85-115		
Matrix Spike (BF22213-MS1)		**Source: 1206569-02**			Prepared: 06/22/12 Analyzed: 06/25/12					
Potassium	56	0.050	0.010	mg/L	20	34	112	70-130		
Sodium	84	0.50	0.13	mg/L	20	60	119	70-130		
Manganese	0.49	0.010	0.0010	mg/L	0.40	0.051	110	70-130		
Magnesium	40	0.50	0.020	mg/L	20	18	110	70-130		
Iron	9.2	0.10	0.020	mg/L	8.0	0.30	112	70-130		
Calcium	80	0.50	0.042	mg/L	20	56	119	70-130		
Boron	0.57	0.10	0.050	mg/L	0.40	0.12	112	70-130		
Matrix Spike (BF22213-MS2)		**Source: 1206711-10**			Prepared: 06/22/12 Analyzed: 06/25/12					
Iron	8.8	0.10	0.020	mg/L	8.0	0.078	109	70-130		
Potassium	21	0.050	0.010	mg/L	20	0.48	102	70-130		
Boron	0.47	0.10	0.050	mg/L	0.40	ND	117	70-130		
Sodium	26	0.50	0.13	mg/L	20	4.9	106	70-130		
Calcium	100	0.50	0.042	mg/L	20	83	109	70-130		
Manganese	0.44	0.010	0.0010	mg/L	0.40	0.0050	108	70-130		
Magnesium	24	0.50	0.020	mg/L	20	1.7	109	70-130		
Matrix Spike Dup (BF22213-MSD1)		**Source: 1206569-02**			Prepared: 06/22/12 Analyzed: 06/25/12					
Sodium	83	0.50	0.13	mg/L	20	60	115	70-130	1	30
Manganese	0.48	0.010	0.0010	mg/L	0.40	0.051	108	70-130	2	30
Potassium	57	0.050	0.010	mg/L	20	34	113	70-130	0.4	30
Calcium	83	0.50	0.042	mg/L	20	56	134	70-130	4	30
Boron	0.57	0.10	0.050	mg/L	0.40	0.12	114	70-130	1	30
Magnesium	41	0.50	0.020	mg/L	20	18	116	70-130	3	30
Iron	9.0	0.10	0.020	mg/L	8.0	0.30	109	70-130	2	30

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

August 9, 2012
Work Order: 1206569
Revised Report

Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BF22213 - Metals Preparation for EPA Method 200.7										
Matrix Spike Dup (BF22213-MSD2)		**Source: 1206711-10**			Prepared: 06/22/12 Analyzed: 06/25/12					
Manganese	0.43	0.010	0.0010	mg/L	0.40	0.0050	106	70-130	2	30
Calcium	100	0.50	0.042	mg/L	20	83	97	70-130	2	30
Sodium	26	0.50	0.13	mg/L	20	4.9	106	70-130	0.004	30
Magnesium	23	0.50	0.020	mg/L	20	1.7	104	70-130	4	30
Iron	8.6	0.10	0.020	mg/L	8.0	0.078	107	70-130	2	30
Boron	0.45	0.10	0.050	mg/L	0.40	ND	113	70-130	3	30
Potassium	21	0.050	0.010	mg/L	20	0.48	102	70-130	0.2	30

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

August 9, 2012
Work Order: 1206569
Revised Report

Microbiology - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BF22220 - FC-MF										
Blank (BF22220-BLK1)					Prepared: 06/21/12 Analyzed: 06/22/12					
Fecal Coliforms	1 U	1	1	CFU/100 ml						
Duplicate (BF22220-DUP1)		**Source: 1206569-01**			Prepared: 06/21/12 Analyzed: 06/22/12					
Fecal Coliforms	75,000	1	1	CFU/100 ml		42000			56	200

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

August 9, 2012
Work Order: 1206569
Revised Report

* 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 Client Services at 813-855-1844.

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

1206569

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 #1 (Set 1)

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

	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, Nox, NH_4, TP	1LP, Cool Cl, Alkalinity, CBOD, TS, TSS	125mL P, $Na_2S_2O_3$ FC-MF	1LP, Cool Cl, Alkalinity, CBOD, TS, TSS, F, NO_3, Ortho-P, SO_4	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NO_2, NO_3, Cl	250mL P, H_2SO_4 TKN, Nox, NH_4	1LP, Cool Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NO_2, NO_3, Cl, Alkalinity	250mLaG, Cool DOC	Field pH	Field Temperature	Field Conductivity	Field DO
01	PNRS II STE-Tank 1	06/21/12	1430	WW		X	1	1	2										6.9	27.0	1164	0.30
02	STE Pump Tank		1400	WW		X	1		2	1	1								7.1	28.7	1167	0.41
03	STE Pump Tank-DUP		1405	WW		X	1		2	1	1								7.1	28.7	1167	0.41
04	NO3 Pump Tank		1415	WW		X	1	1	2										7.4	27.8	1154	0.54
05	NO3 Pump Tank-DUP		1420	WW		X	1	1	2										7.4	27.8	1154	0.54
06	TA1-PAN-12-N			GW		X						1	1									
07	TA1-PZ-11-EF2	06/21/12	0955	GW		X								1	1				4.5	25.8	438	6.32
08	TA1-PZ-11-EF2-DUP		1000	GW		X								1	1				↓	↓	↓	↓
09	TA1-LY-24-C	06/18	1315	GW		X						1	1									
10	TA1-LY-12-S	06/18	1325	GW		X										1	1	1				
16	~~11~~ TA1-LY-24-S	06/18	1336	GW		X										1	1					
17	~~12~~ TA1-LY-42-S	06/18	1345	GW		X						1	1									

Containers Prepared/ Relinquished	Date/Time:	Received:	Date/Time:
J. Chambers	6-12-12 10:36		
Relinquished:	Date/Time:	Received:	Date/Time:
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

1206569

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

Client Name: Hazen and Sawyer

Contact / Phone: 813-630-4498

Project Name / Location: S&GW Test Facility SE #1 (Set 1)

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

	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, Nox, NH_4, TP	1LP, Cool Cl, Alkalinity, CBOD, TS, TSS	125mL P, $Na_2S_2O_3$ FC-MF	1LP, Cool Cl, Alkalinity, CBOD, TS, TSS, F, NO_3, Ortho-P, SO_4	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NO_2, NO_3, Cl	250mL P, H_2SO_4 TKN, NOx, NH_4	1LP, Cool Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NO_2, NO_3, Cl, Alkalinity	250mLaG, Cool DOC	Field pH	Field Temperature	Field Conductivity	Field DO
18	13 TA1-PZ-11-J4	6/20/12	11:35	GW		X								1	1				4.4	27.2	300	3.44
19	14 TA1-PZ-11-K4	6/20/12	1150	GW		X								1	1				4.4	26.4	289	3.21
20	15 TA1-PZ-11-L2	62012	1445	GW		X								1	1				4.4	25.6	1676	5.66
21	16 TA1-PZ-11-L3	62012	1425	GW		X								1	1				4.5	25.5	310	4.91
22	17 TA1-PZ-11-L4	062112	0905	GW		X								1	1				4.4	25.7	4.4	4.38
23	18 TA1-PZ-11-L4-DUP	↓	0915	GW		X								1	1				↓	↓	↓	↓
24	19 TA1-PZ-11-L5	62012	1345	GW		X								1	1				4.6	27.4	306	2.80
25	20 TA1-PZ-09-N3	06/20	1630	GW		X								1	1							
26	21 TA1-PZ-16-N3	062112	1152	GW		X								1	1				5.7	24.9	276.8	0.63
27	22 TA1-PZ-09-O7	0620	1540	GW		X								1	1							
28	23 TA1-PZ-16-O7	062112	1132	GW		X								1	1				5.8	25.0	264.4	0.22
29	24 TA1-PZ-09-M9	06/20	1520	GW		X								1	1							

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished: J. Chambers	6-12-12 10:38	[signature]	6/12/12 1038
Relinquished: [signature]	Date/Time: 1630 6/20/12	Received: H Harnette	Date/Time: 1630 06-20-12
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

1206569

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 #1 (Set 1)

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

		Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, Nox, NH_4, TP	1LP, Cool Cl, Alkalinity, CBOD, TS, TSS	125mL P, $Na_2S_2O_3$ FC-MF	1LP, Cool Cl, Alkalinity, CBOD, TS, TSS, F, NO_3, Ortho-P, SO_4	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NO_2, NO_3, Cl	250mL P, H_2SO_4 TKN, NOx, NH_4	1LP, Cool Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NO_2, NO_3, Cl, Alkalinity	250mLaG, Cool DOC	Field pH	Field Temperature	Field Conductivity	Field DO
30	~~25~~	TA1-PZ-16-M9	062112	1214	GW		X								1	1				5.9	25.3	274.8	0.17
31	~~26~~	TA1-PZ-09-I7	062012	1500	GW		X								1	1				5.6	25.7	415	1.95
32	~~27~~	TA1-PZ-16-I7	062112	1349	GW		X								1	1				6.2	25.3	318.7	0.32
33	~~28~~	TA1-PZ-09-RS16	062112	0854	GW		X								1	1				6.2	25.6	314.1	1.25
34	~~29~~	TA1-PZ-16-RS16	062112	0914	GW		X								1	1				6.2	24.8	435.6	0.01
35	~~30~~	TA1-PZ-09-RS18	062112	0914	GW		X								1	1				6.3	25.8	338.3	4.62
36	~~31~~	TA1-PZ-16-RS18	062112	0834	GW		X								1	1				6.3	24.8	342	4.62 0.01 ss
37	~~32~~	TA2-PAN-12-N			GW		X						1	1									
38	~~33~~	TA2-PZ-10-EF2	062012	0921	GW		X								1	1				4.4	25.6	524	3.57
39	~~34~~	TA2-PZ-10-EF2-DUP	062012	0926	GW		X								1	1				↓	↓	↓	↓
40	~~35~~	TA2-LY-24-C	06/18	1028	GW		X						1	1									
41	36	TA2-LY-12-S	06/18	1039	GW		X										1	1	1				

Relinquished:	Date/Time:	Received:	Date/Time:
J. Chambers	6-12-12 10:38		61212 1038
	1630 6/20/12	H Hamille	1630 06-20-12

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

1206569

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 #1 (Set 1)

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

	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, Nox, NH_4, TP	1LP, Cool Cl, Alkalinity, CBOD, TS, TSS	125mL P, $Na_2S_2O_3$ FC-MF	1LP, Cool Cl, Alkalinity, CBOD, TS, TSS, F, NO_3, Ortho-P, SO_4	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NO_2, NO_3, Cl	250mL P, H_2SO_4 TKN, NOx, NH_4	1LP, Cool Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NO_2, NO_3, Cl, Alkalinity	250mLaG, Cool DOC	Field pH	Field Temperature	Field Conductivity	Field DO
.42	~~37~~ TA2-LY-24-S	06/18	1047	GW		X										1	1		6.73	28.8	954	5.10
.43	~~38~~ TA2-LY-42-S	↓	1048	GW		X						1	1						6.40	28.2	693	5.48
.44	~~39~~ TA2-PZ-10-H5	062012	0817	GW		X								1	1				4.3	25.5	406.9	3.14
.45	~~40~~ TA2-PZ-10-J5	062012	0837	GW		X								1	1				4.4	25.7	411.9	3.71
.46	~~41~~ TA2-PZ-10-K5	062012	0858	GW		X								1	1				4.3	25.7	411.8	3.54
.47	~~42~~ TA2-PZ-10-L2	62012	0930	GW		X								1	1				4.6	25.6	424.8	2.60
.48	~~43~~ TA2-PZ-10-L3	62012	0910	GW		X								1	1				4.5	25.5	418.4	2.18
.49	~~44~~ TA2-PZ-10-L4	62012	0842	GW		X								1	1				4.4	25.9	700	2.72
.50	~~45~~ TA2-PZ-10-L5	62012	0826	GW		X								1	1				4.8	25.8	496	2.71
.51	~~46~~ TA2-PZ-10-L6	62012	0806	GW		X								1	1				4.6	25.4	374.6	3.35
.52	~~47~~ TA2-PZ-09-M4	62012	0952	GW		X								1	1				6.0	25.7	421.9	0.54
.53	~~48~~ TA2-PZ-16-M4	62012	1010	GW		X								1	1				5.7	24.7	240.7	0.14

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished: J. Chambers	6-12-12 11:22		6 12 12 1122
Relinquished:	620 12 1630	Received:	Date/Time: 1630 06-20-12
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

1206569

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 #1 (Set 1)

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

		Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, Nox, NH_4, TP	1LP, Cool Cl, Alkalinity, CBOD, TS, TSS	125mL P, $Na_2S_2O_3$ FC-MF	1LP, Cool Cl, Alkalinity, CBOD, TS, TSS, F, NO_3, Ortho-P, SO_4	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NO_2, NO_3, Cl	250mL P, H_2SO_4 TKN, NOx, NH_4	1LP, Cool Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NO_2, NO_3, Cl, Alkalinity	250mLaG, Cool DOC	Field pH	Field Temperature	Field Conductivity	Field DO
54	~~49~~	TA2-PZ-09-N7	061912	1416	GW		X								1	1				6.3	26.6	403.4	6.43
57	~~50~~	~~TA2-PZ-16-N7~~ TA2PZ1617	62012	0756	GW		X								1	1				5.4	24.6	210.1	0.34
56	~~51~~	TA2-PZ-09-I7	061912	1549	GW		X								1	1				5.7	26.1	354.1	2.26
55	~~52~~	~~TA2-PZ-16-I7~~ TA2PZ16N7	061912	1438	GW		X								1	1				6.1	25.1	214.2	0.14
58	~~53~~	TA2-PZ-09-L8	061912	1513	GW		X								1	1				6.3	26.9	475.0	3.78
59	~~54~~	TA2-PZ-16-L8	061912	1330	GW		X								1	1				5.8	24.9	225.8	0.14
60	~~55~~	TA2-PZ-09-TU19	061912	1409	GW		X								1	1				4.6	26.5	173.4	1.15
61	~~56~~	TA2-PZ-16-TU19	061912	1434	GW		X								1	1				5.3	25.3	189.1	0.22
62	~~57~~	TA2-PZ-09-TU21	061912	1454	GW		X								1	1				4.6	26.3	168.5	0.32
63	~~58~~	TA2-PZ-16-TU21	061912	1520	GW		X								1	1				5.2	25.2	184.6	0.15
64	~~59~~	TA3-PAN-12-N			GW		X						1	1									
65	~~60~~	TA3-LY-24-C	06/18	1122	GW		X						1	1									

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
J Chambers	6-12-12 11:23		1123 6 12 12
	800 6 19 12		1800 06/19/12
	1630 6 20 12		1630 06-20-12

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

1206569

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 #1 (Set 1)

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

	Lab #	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, Nox, NH_4, TP	1LP, Cool Cl, Alkalinity, CBOD, TS, TSS	125mL P, $Na_2S_2O_3$ FC-MF	1LP, Cool Cl, Alkalinity, F, NO_3, Ortho-P, SO_4, NO_2	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NO_2, NO_3, Cl	250mL P, H_2SO_4 TKN, NOx, NH_4	1LP, Cool Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NO_2, NO_3, Cl, Alkalinity	250mLaG, Cool DOC	Field pH	Field Temperature	Field Conductivity	Field DO
.66	61	TA3-LY-12-S	06/18	1128	GW		X										1	1		7.11	28.7	794	6.80
.67	62	TA3-LY-12-S-DUP	↓	1130	GW		X										1	1		7.11	28.7	794	6.80
.68	63	TA3-LY-24-S		1140	GW		X				1	1					1		1	6.31	28.7	680	6.21
.69	64	TA3-LY-42-S		1152	GW		X						1	1						6.84	30.9	502	6.09
.70	65	TA3-PZ-11-EF2 062112 1020 SH	6/20/12	0920	GW		X								1	1				15.3	25.7	305.2	2.37
.71	66	TA3-PZ-11-EF2-DUP 062112 1015 SH	6/20/12	0919	GW		X								1	1				↓	↓	↓	↓
.72	67	TA3-PZ-11-I2	06/21	949	GW		X								1	1							
.73	68	TA3-PZ-10-J5	62012	1343	GW		X								1	1				5.1	26.0	335.6	2.26
.74	69	TA3-PZ-10-K5	62012	1433	GW		X								1	1				5.0	25.4	330.3	1.79
.75	70	TA3-PZ-11-L2	62012	1350	GW		X								1	1				11.4	26.0	351.7	3.07
.76	71	TA3-PZ-11-L3	62012	1436	GW		X								1	1				4.3	25.3	279.0	2.60
.77	72	TA3-PZ-11-L4	06/19	1038	GW		X								1	1							

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
J. Chambers	6-12-12 11:23		6 12 12 1123
Relinquished:	Date/Time: 1630 6 20 12	Received: A Harwell	Date/Time: 1630 06-20-12
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

1206569

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 #1 (Set 1)

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

	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, Nox, NH_4, TP	1LP, Cool Cl, Alkalinity, CBOD, TS, TSS	125mL P, $Na_2S_2O_3$ FC-MF	1LP, Cool Cl, Alkalinity, F, NO_3, Ortho-P, SO_4	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NO_2, NO_3, Cl	250mL P, H_2SO_4 TKN, NOx, NH_4	1LP, Cool Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NO_2, NO_3, Cl, Alkalinity	250mL aG, Cool DOC	Field pH	Field Temperature	Field Conductivity	Field DO
78	73 TA3-PZ-10-L5	62012	1455	GW		X								1	1				5.0	25.6	324.3	1.68
79	74 TA3-PZ-09-N3	62012	1227	GW		X								1	1				6.5	25.9	940	0.37
80	75 TA3-PZ-16-N3	62012	1310	GW		X								1	1				5.5	24.9	3052	0.22
81	76 TA3-PZ-09-O7		1043	GW		X								1	1				6.6	26.0	894	0.61
82	77 TA3-PZ-16-O7		1102	GW		X								1	1				5.7	25.2	300.7	0.13
83	78 TA3-PZ-09-I7	62012	1229	GW		X								1	1				7.1	27.0	832	3.44
84	79 TA3-PZ-16-I7	62012	1256	GW		X								1	1				6.1	25.1	2809	0.10
85	80 TA3-PZ-09-M9		1124	GW		X								1	1				6.5	26.1	1035	0.32
86	81 TA3-PZ-16-M9		1144	GW		X								1	1				5.8	25.1	281.1	0.15
87	82 TA3-PZ-09-ST14	62012	1117	GW		X								1	1				4.6	26.3	258.9	0.69
88	83 TA3-PZ-16-ST14		1142	GW		X								1	1				5.3	25.1	268.3	0.27
89	84 TA3-PZ-09-ST16		1029	GW		X								1	1				5.6	26.2	404.2	1.15

Relinquished:	Date/Time:	Received:	Date/Time:
J. Chambers	6-12-12 11:23		6/12/12 1123
	1630 6/20/12	H Harvitt	1630 06-20-12

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

120569

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 #1 (Set 1)

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

	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, Nox, NH_4, TP	1LP, Cool Cl, Alkalinity, CBOD, TS, TSS	125mL P, $Na_2S_2O_3$ FC-MF	1LP, Cool Cl, Alkalinity, F, NO_3, Ortho-P, SO_4	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NO_2, NO_3, Cl	250mL P, H_2SO_4 TKN, NOx, NH_4	1LP, Cool Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NO_2, NO_3, Cl, Alkalinity	250mLaG, Cool DOC	Field pH	Field Temperature	Field Conductivity	Field DO
.90	~~85~~ TA3-PZ-16-ST16	6/20/12	1045	GW		X								1	1				5.4	25.1	273.4	0.21
.91	~~86~~ TA4-PAN-12-N			GW		X						1	1									
.92	~~87~~ TA4-LY-24-C	06/18	946	GW		X						1	1						7.13	27.4	930	4.18
.93	~~88~~ TA4-LY-12-S	06/18	957	GW		X										1	1	1	6.77	27.9	781	7.15
.94	~~89~~ TA4-LY-12-S-DUP	06/18	1000	GW		X										1	1	1	6.77	27.9	781	7.15
.95	~~90~~ TA4-LY-24-S	06/18	1009	GW		X										1	1		6.83	29.8	747	6.89
.96	~~91~~ TA4-LY-42-S	06/18	1018	GW		X						1	1						6.83	29.3	767	6.55
.97	~~92~~ TA4-PZ-11-EF2	6/19/12	1206	GW		X								1	1				4.2	26.0	532.4	1.65
.98	~~93~~ TA4-PZ-11-EF2-DUP	6/19/12	1211	GW		X								1	1				4.2	26.0	532.4	1.65
.99	~~94~~ TA4-PZ-10-H5	6/19/12	1330	GW		X								1	1				5.5	26.5	326.8	1.78
	~~95~~ TA4-PZ-10-J5	↓	1223	GW		X								1	1				5.6	26.2	333.6	2.42
	~~96~~ TA4-PZ-10-K5	↓	1158	GW		X								1	1				5.3	26.2	393.8	2.72

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
J. Chambers	6-19-12 1123		6/19/12 1123
	61912 1800		1800 06/19/12
	6/20/12 1630		1630 06-20-12
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

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	12065609	Project Name	S&GW Test Facility SE #1
Well Number	TA1-LY-24-C	Sample ID	09	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)											
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =											
ONE WELL VOLUME			1/4 WELL VOLUME			3 WELL VOLUMES			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)			PURGE TIME START		PURGE TIME END		TOTAL PURGED	
INST. ID					SAL-SAM-63-____	SAL-SAM - 65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0_____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:					
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)			
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS					
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?		Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?		Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED								
WEATHER CONDITIONS											
COMMENTS											

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By:		Date:	

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA1-LY-12-S	Sample ID	10	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)											
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =											
ONE WELL VOLUME			1/4 WELL VOLUME			3 WELL VOLUMES			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)			PURGE TIME START		PURGE TIME END		TOTAL PURGED	
INST. ID					SAL-SAM-63-____	SAL-SAM - 65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0_____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)					SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA1-LY-24-S	Sample ID	16	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK			Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)											
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =											
ONE WELL VOLUME			1/4 WELL VOLUME			3 WELL VOLUMES			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)			PURGE TIME START		PURGE TIME END		TOTAL PURGED	
INST. ID					SAL-SAM-63-____	SAL-SAM - 65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0_____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:					
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)			
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS					
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?		Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?		Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED								
WEATHER CONDITIONS											
COMMENTS											

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA1-LY-42-S	Sample ID	17	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK			Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)											
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =											
ONE WELL VOLUME			1/4 WELL VOLUME			3 WELL VOLUMES			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)			PURGE TIME START		PURGE TIME END		TOTAL PURGED	
INST. ID					SAL-SAM-63-____	SAL-SAM - 65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0_____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By:		Date:	

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA1-PZ-11-J4	Sample ID	18	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	9.81'	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	14.63'	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)											
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =											
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES	2,200 mL			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME				EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END			TOTAL PURGED	2,800
INST. ID					SAL-SAM-63-____	SAL-SAM - 65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0_____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		400mL			4.28	28.2	339				
		1100			4.33	27.2	305				
		1500			4.4	27.2	300	3.44			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)					SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06/20/12	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA1-PZ-11-K4	Sample ID	19	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	9.83'	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	19.63'	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME		1/4 WELL VOLUME		3 WELL VOLUMES	2,225 mL	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	2,700
INST. ID				SAL-SAM-63-____	SAL-SAM-65-____	SAL-SAM-63-____	SAL-SAM-55-__	SAL-SAM-0____	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		500 ml			4.32	27.2	271				
		1300			4.32	26.4	287				
		2000			4.38	26.4	289	3.21			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:	[illegible]		
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06/20/12	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA1-PZ-11-L2	Sample ID	20	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	9.85'	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	14.62'	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME		1/4 WELL VOLUME		3 WELL VOLUMES	2,200mL	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	3,000mL
INST. ID				SAL-SAM-63-____	SAL-SAM-65-____	SAL-SAM-63-____	SAL-SAM-55-__	SAL-SAM-0____	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		800mL			4.42	25.6	648				
		1200			4.42	25.6	659				
		1600			4.40	25.6	677				
		2000			4.42	25.6	676	5.86			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06/20/12	SAL Project #	120569	Project Name	S&GW Test Facility SE #1
Well Number	TA1-PZ-11-L3	Sample ID	21	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	9.87'	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	14.61'	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES	2,200mL		5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	2,800
INST. ID					SAL-SAM-63-____	SAL-SAM-65-____	SAL-SAM-63-____	SAL-SAM-55-__	SAL-SAM-0____	
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		900mL			4.41	25.6	314				
		1300			4.50	25.6	310				
		1800			4.52	25.5	310	4.91			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	12065669	Project Name	S&GW Test Facility SE #1
Well Number	TA1-PZ-11-L4	Sample ID	22	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	
INST. ID				SAL-SAM-63-____	SAL-SAM-65-____	SAL-SAM-63-____	SAL-SAM-55-__	SAL-SAM-0____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT			SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA1-PZ-11-L4-DUP	Sample ID	23	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)											
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =											
ONE WELL VOLUME			1/4 WELL VOLUME			3 WELL VOLUMES			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)			PURGE TIME START		PURGE TIME END		TOTAL PURGED	
INST. ID					SAL-SAM-63-____	SAL-SAM - 65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0_____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06/20/12	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA1-PZ-11-L5	Sample ID	24	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	9.84'	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	14.63'	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME		1/4 WELL VOLUME		3 WELL VOLUMES	2,200mL	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	2,800mL
INST. ID				SAL-SAM-63-____	SAL-SAM-65-____	SAL-SAM-63-____	SAL-SAM-55-__	SAL-SAM-0____	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		600mL			4.56	26.9	321				
		1300			4.52	27.0	311				
		1800			4.63	27.4	306	2.80			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT			SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06/20/12	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA1-PZ-09-N3	Sample ID	25	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	6.73'	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	9.68'	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME		1/4 WELL VOLUME		3 WELL VOLUMES	1,370 mL	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	4,300 mL
INST. ID				SAL-SAM-63-____	SAL-SAM-65-____	SAL-SAM-63-____	SAL-SAM-55-__	SAL-SAM-0____	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		700mL			6.26	26.7	834				
		1900			6.29	26.7	782				
		~~3~~ 3200			6.52	27.4	1,104				
		3600			6.58	27.2	1,104				
		3800			6.63	27.3	1,103	4.17			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 21 12	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA1-PZ-16-N3	Sample ID	26	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.76	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	~~14.~~ 17.10	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.620	1/4 WELL VOLUME		3 WELL VOLUMES	1.861	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1136	PURGE TIME END	1151	TOTAL PURGED	3.75

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1139	0.75	0.75	0.25	6.84	5.8	25.2	272.4	0.81	MAX	BROWN	NONE
1142	0.75	1.50			5.7	25.1	274.7	0.62	MAX		
1145	0.75	2.25			5.7	25.0	275.9	0.62	720		
1148	0.75	3.00			5.7	25.0	276.2	0.59	561		
1151	0.75	3.75			5.7	24.9	276.8	0.63	518		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1152	SAMPLING ENDED	1153	FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Cloudy, 82°						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA1-PZ-09-O7	Sample ID	27	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	6.41'	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	9.68'	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)											
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =											
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES	1515mL			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME				EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END			TOTAL PURGED	2,400
INST. ID					SAL-SAM-63-____	SAL-SAM-65-____	SAL-SAM-63-____	SAL-SAM-55-__	SAL-SAM-0____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		460			5.44	27.3	597				
		800			5.38	27.0	507				
		1,200			5.42	27.1	497	1.71			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	062112	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA1-PZ-16-O7	Sample ID	28	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	6.86	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.10 ~~14.95~~	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.614	1/4 WELL VOLUME		3 WELL VOLUMES	1.843	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1116	PURGE TIME END	1131	TOTAL PURGED	3.75

INST. ID					SAL-SAM-63-01	SAL-SAM-~~63~~-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1119	0.75	0.75	0.25	6.94	5.7	26.2	269.7	0.85	MAX	BROWN	NONE
1122	0.75	1.50			5.7	25.3	270.1	0.38	MAX		
1125	0.75	2.25			5.8	25.0	269.2	0.29	MAX		
1128	0.75	3.00			5.8	25.0	268.8	0.25	669		
1131	0.75	3.75			5.8	25.0	268.4	0.22	516		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1132	SAMPLING ENDED	1133	FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Cloudy, 82°						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA1-PZ-09-M9	Sample ID	29	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.88'	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	9.68'	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES	1,298 mL		5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	2,500
INST. ID				SAL-SAM-63-____	SAL-SAM - 65-____	SAL-SAM-63-____	SAL-SAM-55-__	SAL-SAM-0____		

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		860 mL			5.26	26.2	331				
		1300			5.27	26.2	315				
		1700			5.29	26.4	309	0.65			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	062112	SAL Project #	1206569	Project Name	S&GW Test Facility SE#1
Well Number	TA1-PZ-16-MW	Sample ID	30	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	7.0	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.10	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.606	1/4 WELL VOLUME		3 WELL VOLUMES	1.818	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1158	PURGE TIME END	1213	TOTAL PURGED	~~0.~~ 3.75

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1201	0.75	0.75	0.25	7.09	5.8	25.4	268.6	0.28	MAX	BROWN	NONE
1204	0.75	1.50			5.8	25.4	271.0	0.22	500		
1207	0.75	2.25			5.8	25.3	271.9	0.18	312		
1210	0.75	3.00			5.8	25.3	272.4	0.18	210	CLOUDY	
1213	0.75	3.75			5.9	25.3	274.8	0.17	132		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1214	SAMPLING ENDED	1215	FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	~~(Y)~~ (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Cloudy, 82°						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06/21/12	SAL Project #	1206569	Project Name	S&GW Test Facility SE#1
Well Number	TA1-PZ-16-I7	Sample ID	32	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.61	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.12	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.63	1/4 WELL VOLUME		3 WELL VOLUMES	1.89	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1333	PURGE TIME END	1348	TOTAL PURGED	3.75

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1336	0.75	0.75	0.25	6.72	6.0	25.6	279.6	0.89	MAX	BROWN	NONE
1339	0.75	1.50			6.0	25.6	279.1	0.45	MAX		
1342	0.75	2.25			6.1	25.4	285.9	0.37	501		
1345	0.75	3.00			6.1	25.3	292.8	0.33	448		
1348	0.75	3.75			6.2	25.3	318.7	0.32	400		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1349	SAMPLING ENDED		FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Cloudy, 85°						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 21 12	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA1-PZ-09-RS16	Sample ID	33	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	6.12	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.87	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.225	1/4 WELL VOLUME		3 WELL VOLUMES	0.675	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0838	PURGE TIME END	0853	TOTAL PURGED	3.00

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0841	0.60	0.60	0.20	6.34	6.3	25.7	331.6	1.57	MAX	BROWN	NONE
0844	0.60	1.20			6.2	25.6	286.0	1.48			
0847	0.60	1.80			6.2	25.6	298.6	1.29			
0850	0.60	2.40			6.2	25.6	306.2	1.30	673		
0853	0.60	3.00			6.2	25.6	314.1	1.25	350		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0854	SAMPLING ENDED	0855	FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Cloudy, 78°						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 2 12	SAL Project #	1206569	Project Name	S&GW Test Facility SE#1
Well Number	TA1-P2-16-RS16	Sample ID	34	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.15	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.28	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.667	1/4 WELL VOLUME		3 WELL VOLUMES	2.003	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0858	PURGE TIME END	0913	TOTAL PURGED	3.75

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0901	0.75	0.75	0.25	6.18	6.2	24.9	378.0	0.04	MAX	BROWN	NONE
0904	0.75	1.50	|	|	6.2	24.8	448.2	0.01	|	|	|
0907	0.75	2.25	|	|	6.2	24.8	449.4	0.02	|	|	|
0910	0.75	3.00	|	|	6.2	24.8	441.8	0.02	818	|	|
0913	0.75	3.75	|	|	6.2	24.8	433.6	0.01	521	|	|

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0914	SAMPLING ENDED		FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Cloudy, 78°						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen & Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 21 12	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA1-PZ-09-RS18	Sample ID	35	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	6.70	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.88	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.1908	1/4 WELL VOLUME		3 WELL VOLUMES	0.5724	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0758	PURGE TIME END	0813	TOTAL PURGED	3.00

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0801	0.60	0.60	0.20	6.82	6.4	25.7	411.6	3.79	MAX	BROWN	NONE
0804	0.60	1.20			6.3	25.8	390.5	4.27	112	CLOUDY	
SS 0807 ~~0806~~	0.60	1.80			6.3	25.8	363.5	4.37	49.6		
0810	0.60	2.40			6.3	25.8	353.4	4.41	35.5		
0813	0.60	3.00			6.3	25.8	338.3	4.62	20.0		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0814	SAMPLING ENDED	0815	FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Cloudy, 75°						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen & Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 21 12	SAL Project #	1206569	Project Name	SFGW Test Facility SE#1
Well Number	TA1-AZ-16-RS18	Sample ID	36	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	6.75	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.12	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.62	1/4 WELL VOLUME		3 WELL VOLUMES	1.866	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0818	PURGE TIME END	0833	TOTAL PURGED	3.75
INST. ID	X	X	X	X	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0821	0.75	0.75	0.25	6.84	6.3	25.2	298.4	0.53	MAX	BROWN	NONE
0824	0.75	1.50	|	|	6.1	24.9	292.8	0.04	MAX	|	|
0827	0.75	2.25	|	|	6.2	24.9	326.1	0.03	883	|	|
0830	0.75	3.00	|	|	6.2	24.9	350.8	0.01	731	|	|
0833	0.75	3.75	|	|	6.3	24.9	374.2	0.01	609	|	|

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0834	SAMPLING ENDED	0835	FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Cloudy, 75°						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	062012 SH	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	~~TA1 PZ 11 EF2~~ TA2 PZ11 EF2	Sample ID	38	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	10.42	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.75	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.2598	1/4 WELL VOLUME	0.7794	3 WELL VOLUMES		5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0908	PURGE TIME END	0920	TOTAL PURGED	2.40
INST. ID				SAL-SAM-63-1	SAL-SAM-65-1	SAL-SAM-63-1	SAL-SAM-55-1	SAL-SAM-02	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0911	0.60	0.60	0.20		4.4	25.6	524	4.74	62.3		
0914		1.20			4.4	25.6	524	4.01	19.5		
0917		1.80			4.4	25.6	524	3.85	8.92		
0920		2.40			4.4	25.6	524	3.57	5.31		
0923		3.00									

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0921 ~~0920~~ SH	SAMPLING ENDED		FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	(Y) N	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	windy - cloudy						
COMMENTS	Dupe ~~0929~~ 0926 SH						

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA2-LY-24-S	Sample ID	42	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)											
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =											
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES			5 WELL VOLUMES			
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME			
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END			TOTAL PURGED	
INST. ID					SAL-SAM-63-____	SAL-SAM - 65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0_____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT			SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA2-LY-42-S	Sample ID	43	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	
INST. ID				SAL-SAM-63-_____	SAL-SAM - 65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0_____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	062012	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA2-PZ-10-H5	Sample ID	44	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.75	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	10.41	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.70	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME	0.7574	1/4 WELL VOLUME		3 WELL VOLUMES	0.7722		5 WELL VOLUMES			
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME			
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0801	PURGE TIME END	8:06	TOTAL PURGED	3.00	
INST. ID				SAL-SAM-63-1	SAL-SAM-65-1	SAL-SAM-63-1	SAL-SAM-55-1	SAL-SAM-02		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0804	0.60	0.60	0.20		4.4	25.2	404.3	3.29	32.0	clear	NO
0807		1.20			4.4	25.4	406.4	3.18	24.0		
0810		1.80			4.3	25.4	406.7	3.15	230.0		
0813		2.40			4.3	25.4	406.8	2.88	56.7		
0816		3.00			4.3	25.5	406.9	3.14	34.7		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL				SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	0817	SAMPLING ENDED		FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Cloudy - Windy								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	062012	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA2-PZ-10-J5	Sample ID	45	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	10.42	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.75	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)									
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =									
ONE WELL VOLUME	0.2598	1/4 WELL VOLUME		3 WELL VOLUMES	0.7794		5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME									
PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0821	PURGE TIME END	0836	TOTAL PURGED	3.00
INST. ID				SAL-SAM-63-1	SAL-SAM-65-1	SAL-SAM-63-1	SAL-SAM-55-1	SAL-SAM-02	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0824	0.60	0.60	0.20		4.4	25.6	408.1	4.93	185	Brown	NO
0827		1.20			4.4	25.6	409.9	4.71	232		
0830		1.80			4.4	25.6	410.3	3.63	66.5		
0833		2.40			4.4	25.7	411.2	3.56	24.6		
0836		3.00			4.4	25.7	411.9	3.71	15.4		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL				SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	0837	SAMPLING ENDED	0837	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	cloudy - windy								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 2012	SAL Project #	120659	Project Name	S&GW Test Facility SE #1
Well Number	TA2-PZ-10-K5	Sample ID	46	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.75	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	10.44	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.73	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.2574	1/4 WELL VOLUME		3 WELL VOLUMES	0.7722	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0842	PURGE TIME END	0857	TOTAL PURGED	3.00
INST. ID				SAL-SAM-63-1	SAL-SAM-65-1	SAL-SAM-63-1	SAL-SAM-55-1	SAL-SAM-02	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0845	0.60	0.60	0.20		4.3	25.7	414.6	4.05	916	Brown	NO
0848		1.20			4.3	25.7	414.0	3.93	895		
0851		1.80			4.3	25.7	413.0	3.58	627		
0854		2.40			4.3	25.7	412.2	3.53	439		
0857		3.00			4.3	25.7	411.8	3.54	276		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT	SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	0858	SAMPLING ENDED	0858	FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	cloudy - windy						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	062012	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA2-P210-L2[redacted] 52	Sample ID	47	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	10.45	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.75	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.258	1/4 WELL VOLUME		3 WELL VOLUMES	0.774	5 WELL VOLUMES			

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0914	PURGE TIME END	0929	TOTAL PURGED	3.00

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0917	0.60	0.60	0.20	10.61	4.6	25.6	464.8	2.65	102.4	CLOUDY	NONE
0920	0.60	1.20			4.6	25.6	440.0	2.62	88.6		
0923	0.60	1.80			4.6	25.6	429.7	2.50	25.7		
0926	0.60	2.40			4.6	25.6	425.9	2.60	10.8		
0929	0.60	3.00			4.6	25.6	424.8	2.60	10.4		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL					SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	0930	SAMPLING ENDED	0931	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Cloudy, 75°								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06/20/12	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	SS [redacted] TAZ-P210-L3	Sample ID	48	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	10.45	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.73	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.256	1/4 WELL VOLUME		3 WELL VOLUMES	0.770	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0854	PURGE TIME END	0909	TOTAL PURGED	3.00	
INST. ID	X	X	X	X	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	X	X

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0851	0.60	0.60	0.20	10.00	4.5	25.5	414.1	2.25	70.6	CLOUDY	NONE
0900	0.60	1.20			4.5	25.5	414.1	2.20	21.0		
0903	0.60	1.80			4.5	25.5	415.4	2.15	8.89		
0906	0.60	~~2.40~~ 2.40 ss			4.5	25.5	418.0	2.17	4.17		
0909	0.60	~~2.40~~ 3.00 ss			4.5	25.5	418.4	2.18	2.90		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0910	SAMPLING ENDED	0911	FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (μm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Cloudy, 75°						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 2012	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	[redacted] TM2-PZ-10-L	Sample ID	49	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	10.22	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	11.10	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.0528	1/4 WELL VOLUME		3 WELL VOLUMES	0.1584	5 WELL VOLUMES		

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0832	PURGE TIME END	0847	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01			
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0835	0.30	0.30	0.10	10.41	4.4	25.8	694	2.96	17.4	CLEAR	NONE
0838	0.30	0.60			4.4	25.9	698	2.50	3.04		
0841	0.30	0.90			4.4	25.9	700	2.72	1.63		
~~0844~~	~~0.30~~	~~1.20~~ SS									
~~0847~~	~~0.30~~	~~1.50~~ SS									

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0842	SAMPLING ENDED	0843	FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Cloudy, 75°						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 2012	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	85 [redacted] PZ-P210-L5	Sample ID	50	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	10.42	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	14.75	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.2598	1/4 WELL VOLUME		3 WELL VOLUMES	0.7794	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0810	PURGE TIME END	0825	TOTAL PURGED	3.00
INST. ID	X	X	X	X	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	X	X

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0813	0.60	0.60	0.20	10.62	4.8	25.6	501	2.79	340	CLOUDY	NONE
0816	0.60	1.20			4.8	25.6	502	2.68	223		
0819	0.60	1.80			4.8	25.7	501	2.59	35.8		
0822	0.60	2.40			4.8	25.8	498	2.60	11.6	CLEAR	
0825	0.60	3.00			4.8	25.8	496	2.71	7.91		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0826	SAMPLING ENDED	0827	FIELD CLEANED	Y N	CLEANING STEPS	
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A						
PRESERVATION CHECKED IN FIELD?	Y N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Cloudy, 72°						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 20 12	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA2-PZ-10-L6	Sample ID	S1	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	10.45	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.75	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.258	1/4 WELL VOLUME		3 WELL VOLUMES	0.774	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0750	PURGE TIME END	0805	TOTAL PURGED	3.00
INST. ID				SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0753	0.60	0.60	0.20	10.52	4.4	25.8	379.6	3.44	148	Cloudy	None
0756	0.60	1.20			4.4	25.8	373.4	3.43	115		
0759	0.60	1.80			4.8	25.8	374.1	3.34	296		
0802	0.60	2.40			4.7	25.9	373.3	3.30	72.1		
0805	0.60	3.00			4.6	25.9	374.6	3.35	22.4		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0806	SAMPLING ENDED	0807	FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (μm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Clear, 72°						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 20 12	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA2-PZ-09-M4	Sample ID	52	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.25	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	9.80	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.213	1/4 WELL VOLUME		3 WELL VOLUMES	0.639	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0936	PURGE TIME END	0951	TOTAL PURGED	3.00

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0939	0.60	0.60	0.20	6.39	5.7	25.7	439.7	1.21	MAX	BROWN	NONE
0942	0.60	1.20			5.8	25.7	429.5	0.67	940		
0945	0.60	1.80			5.9	25.7	425.8	0.45	893		
0948	0.60	2.40			6.0	25.7	423.1	0.51	438		
0951	0.60	3.00			6.0	25.7	421.9	0.54	200		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL					SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	0952	SAMPLING ENDED	0953	FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?	Y N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Cloudy, 75°								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 20 12	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA2-PZ-16-M4	Sample ID	53	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	6.25	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.30	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.663	1/4 WELL VOLUME		3 WELL VOLUMES	1.989	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0954	PURGE TIME END	1009	TOTAL PURGED	3.75
INST. ID				SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0957	0.75	0.75	0.25	6.42	5.7	24.9	237.9	0.23	MAX	BROWN	NONE
1000	0.75	1.50			5.6	24.8	231.7	0.20	690		
1003	0.75	2.25			5.6	24.7	234.8	0.17	359		
1006	0.75	3.00			5.7	24.7	239.4	0.15	182	CLOUDY	
1009	0.75	3.75			5.7	24.7	240.7	0.14	135		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL					SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1010	SAMPLING ENDED	1011	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Cloudy - 75°								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:	1206569	Contact:	
				Phone:	
Date Sampled	061912	SAL Project #	~~1206568~~	Project Name	S&GW Test Facility SE #1
Well Number	TA2-PZ-09-N7	Sample ID	54	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.16	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	9.65	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.2094	1/4 WELL VOLUME		3 WELL VOLUMES	0.6282	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1400	PURGE TIME END	1415	TOTAL PURGED	3.00

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1403	0.60	0.60	0.20	6.40	6.1	27.4	417.0	1.12	MAX	BROWN	NONE
1406	0.60	~~0~~ SS 1.20	|	|	6.2	26.9	411.8	0.66	887	|	|
1409	0.60	1.80	|	|	6.2	26.7	409.8	0.54	112	CLOUDY	|
1412	0.60	2.40	|	|	6.2	26.6	410.4	0.48	24.9	|	|
1415	0.60	3.00	|	|	6.3	26.6	403.4	0.43	60.6	|	|

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL				SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1416	SAMPLING ENDED	1417	FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?	Y N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Clear, 90°								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 19 12	SAL Project #	~~1206568~~ 1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA2-PZ-16-N7	Sample ID	SS	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	SS ~~0~~ 1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	6.14	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.10	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.657	1/4 WELL VOLUME		3 WELL VOLUMES	1.972	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1422	PURGE TIME END	1437	TOTAL PURGED	3.75
INST. ID				SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1425	0.75	0.75	0.25	6.40	6.1	25.3	232.7	0.19	356	BROWN	NONE
1428	0.75	1.50			6.1	25.2	225.7	0.17	514		
1431	0.75	2.25			6.1	25.1	219.3	0.15	519		
1434	0.75	3.00			6.1	25.1	216.8	0.16	537		
1437	0.75	3.75			6.1	25.1	219.2	0.14	291		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL				SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1438	SAMPLING ENDED	1439	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 19 12	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA2-PZ-09-I7	Sample ID	56	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.75	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	5.76	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	9.70	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME	0.23	1/4 WELL VOLUME	0.70	3 WELL VOLUMES			5 WELL VOLUMES			
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME			
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1533	PURGE TIME END	1548	TOTAL PURGED	3.00	
INST. ID				SAL-SAM-63-1	SAL-SAM-65-1	SAL-SAM-63-1	SAL-SAM-55-1	SAL-SAM-02		

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1536	0.60	0.60	0.20		5.7	26.3	359.0	3.03	374	Brown	
1539		1.20			5.7	26.2	358.8	2.61	176		
1542		1.80			5.7	26.2	357.6	2.55	144		
1545		2.40			5.7	26.1	356.6	2.42	97.9		
1548		3.00			5.7	26.1	354.1	2.26	60.1		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL				SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1549	SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?	Y N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	cloudy - Dusty								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	062012	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA2-PZ-16-I7	Sample ID	57	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.20	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	17.10	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME	0.654	1/4 WELL VOLUME		3 WELL VOLUMES	1.962		5 WELL VOLUMES			
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME			
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0735	PURGE TIME END	0755	TOTAL PURGED	4.00	
INST. ID				SAL-SAM-63-1	SAL-SAM-65-1	SAL-SAM-63-1	SAL-SAM-55-1	SAL-SAM-02		

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0739	0.80	0.80	0.70		5.4	24.6	197.9	0.99	Max		
0743		1.60			5.4	24.6	197.0	0.68	288		
0747		2.40			5.4	24.6	197.6	0.43	277		
0751		3.20			5.4	24.6	199.8	0.38	255		
0755		4.00			5.4	24.6	210.1	0.34	211		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL				SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	0756	SAMPLING ENDED	0756	FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?	Y N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	windy cloudy								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	061912	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA2-PZ-09-L8	Sample ID	58	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.0	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.70	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.222	1/4 WELL VOLUME		3 WELL VOLUMES	0.6666	5 WELL VOLUMES			

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1457	PURGE TIME END	1512	TOTAL PURGED	3.00
INST. ID				SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-01	SAL-SAM-01	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1500	0.60	0.60	0.20	6.12	6.3	27.2	473	2.01	MAX	BROWN	NONE
1503	0.60	1.20			6.3	26.9	477	2.54	MAX		
1506	0.60	1.80			6.3	26.9	476	2.69	MAX		
1509	0.60	2.40			6.3	26.9	475	2.98	MAX		
1512	0.60	3.00			6.3	26.9	475	3.78	MAX		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL					SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1513	SAMPLING ENDED	1514	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Clear, 90°								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	061912	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA2-PZ-16-L8	Sample ID	59	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	6.0	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.10	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.6666	1/4 WELL VOLUME		3 WELL VOLUMES	1.998	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1314	PURGE TIME END	1329	TOTAL PURGED	3.75

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1311	0.75	0.75	0.25	6.10	5.9	25.2	209.8	0.27	507	BROWN	NONE
1320	0.75	1.50			5.9	25.1	208.3	0.19	157	CLOUDY	
~~0~~ SS 1323	0.75	2.25			5.8	25.0	222.4	0.14	146		
1326	0.75	3.00			5.8	25.0	224.6	0.14	138		
1329	0.75	3.75			5.8	24.9	225.8	0.14	132		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL		SAMPLER(S) SIGNATURES:		
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT	SAMPLE TUBING LEGNTH IN WELL (FEET)		SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	~~1330~~ SS	SAMPLING ENDED	~~1330~~ 1331	FIELD CLEANED	Y (N)
CLEANING STEPS					
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)
VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)		
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED			
WEATHER CONDITIONS	Clear, 90°				
COMMENTS					

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	061912	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA2-PZ-09-TU19	Sample ID	60	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	5.63	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	9.85	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME	0.25	1/4 WELL VOLUME	0.75	3 WELL VOLUMES			5 WELL VOLUMES			
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME			
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1353	PURGE TIME END	1408	TOTAL PURGED	3.00	
INST. ID				SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-01	SAL-SAM-02		

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1356	0.60	0.60	0.20		4.5	26.8	170.7	1.21	Max	Brown	No
1359		* 1.20			4.5	26.8	170.4	1.24	Max		
1402		* 1.80			4.6	26.6	170.6	1.20	Max		
1405		2.40			4.6	26.5	172.2	1.17	Max		
1408		3.00			4.6	26.5	173.4	1.15	Max		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL				SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1409	SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?	Y N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Windy Dusty								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	061912	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA2-PZ-16-TU19	Sample ID	~~63~~ 61	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	5.58	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.13	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME	0.69	1/4 WELL VOLUME	2.07	3 WELL VOLUMES			5 WELL VOLUMES			
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME			
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1413	PURGE TIME END	1433	TOTAL PURGED	4.00	
INST. ID				SAL-SAM-63-1	SAL-SAM-65-1	SAL-SAM-63-1	SAL-SAM-55-1	SAL-SAM-02		

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1417	0.80	0.80	0.20		5.3	25.3	187.4	0.24	Max	Brown	NO
1421		1.60			5.3	25.3	188.0	0.24	Max		
1425		2.40			5.3	25.3	188.3	0.22	595		
1429		3.20			5.3	25.3	188.9	0.22	215		
1433		4.00			5.3	25.3	189.1	0.22	136		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL				SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1434	SAMPLING ENDED	1434	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	clear-windy-Dusty								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 19 12	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA2-PZ-09-TU21	Sample ID	62	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	5.53	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME	0.75	1/4 WELL VOLUME	~~0.77~~	3 WELL VOLUMES	0.77		5 WELL VOLUMES			
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME			
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1436	PURGE TIME END	1453	TOTAL PURGED	3.00	
INST. ID				SAL-SAM-63-1	SAL-SAM-65-1	SAL-SAM-63-1	SAL-SAM-55-1	SAL-SAM-02		

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1439	0.60	0.60	0.20		4.5	26.4	171.9	1.20	max	Brown	No
1444		1.20			4.6	26.4	171.4	0.77	max		
1445		1.80			4.6	26.4	170.8	0.40	max		
1449		2.40			4.6	26.3	170.0	0.39	668		
1453		3.00			4.6	26.3	168.5	0.32	426		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL				SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1454	SAMPLING ENDED	1454	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Clear Dusty windy								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 19 12	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA2-PZ-16-TU21	Sample ID	63	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	5.96	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.53	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.69	1/4 WELL VOLUME	~~2.~~ 21	3 WELL VOLUMES	2.08	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1459	PURGE TIME END	1519	TOTAL PURGED	4.00

INST. ID					SAL-SAM-63-1	SAL-SAM-65-1	SAL-SAM-63-1	SAL-SAM-55-1	SAL-SAM-02		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1503	0.80	0.80	0.20		5.2	25.3	186.9	0.13	Max	Brown	NO
1507 ~~1507~~ 21	|	1.60	|		5.2	25.4	186.2	0.14	139		
1511	|	2.40	|		5.2	25.3	185.9	0.14	122		
1515	|	3.20	|		5.2	25.2	185.6	0.17	243		
1519		4.00			5.2	25.2	184.6	0.15	353		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1520	SAMPLING ENDED		FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Windy Dusty						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	12065569	Project Name	S&GW Test Facility SE #1
Well Number	TA3-LY-24-C	Sample ID	65	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)											
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =											
ONE WELL VOLUME			1/4 WELL VOLUME			3 WELL VOLUMES			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)			PURGE TIME START		PURGE TIME END		TOTAL PURGED	
INST. ID					SAL-SAM-63-____	SAL-SAM - 65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0_____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA3-LY-12-S	Sample ID	66	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	
INST. ID				SAL-SAM-63-____	SAL-SAM - 65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0_____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT			SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA3-LY-12-S-DUP	Sample ID	67	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME		1/4 WELL VOLUME		3 WELL VOLUMES		5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	
INST. ID				SAL-SAM-63-____	SAL-SAM - 65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0_____	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT			SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1201569	Project Name	S&GW Test Facility SE #1
Well Number	TA3-LY-24-S	Sample ID	68	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)									
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =									
ONE WELL VOLUME		1/4 WELL VOLUME			3 WELL VOLUMES		5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME									
PUMP VOLUME		TUBING LEGNTH			FLOW CELL VOLUME		EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)			PURGE TIME START		PURGE TIME END		TOTAL PURGED
INST. ID				SAL-SAM-63-____	SAL-SAM - 65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0____	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT			SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA3-LY-42-S	Sample ID	69	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	
INST. ID					SAL-SAM-63-____	SAL-SAM - 65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0_____	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	062112	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA3-PZ-11-EF2-[redacted]	Sample ID	70	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	10.22	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.61	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)									
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =									
ONE WELL VOLUME	0.263	1/4 WELL VOLUME		3 WELL VOLUMES	0.790		5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME									
PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0954	PURGE TIME END	1009	TOTAL PURGED	3.00
INST. ID				SAL-SAM-63-01	SAL-SAM-63-9	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0957	0.60	0.60	0.20	10.31	5.2	25.7	335.7	2.90	564	BROWN	NONE
~~0959~~ 1000	0.60	1.20			5.2	25.7	322.3	2.48	483		
1003	0.60	1.80			5.2	25.7	310.8	2.29	118	CLOUDY	
1006	0.60	2.40			5.3	25.7	307.8	2.34	83.3		
1009	0.60	3.00			5.3	25.7	305.2	2.37	74.6		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL				SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1010	SAMPLING ENDED	1011	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Cloudy, 78° Rain in past 24 hrs.								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 21 12	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA3-PZ-11-I2	Sample ID	72	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	10.00	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.60	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.276	1/4 WELL VOLUME		3 WELL VOLUMES	0.828	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0933	PURGE TIME END	0948	TOTAL PURGED	3.00
INST. ID				SAL-SAM-63-01	SAL-SAM-68-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0936	0.60	0.60	0.20	10.12	5.0	25.6	413.5	3.11	808	BROWN	NONE
0939	0.60	1.20			5.0	25.6	403.2	3.09	305	CLOUDY	
0942	0.60	1.80			5.0	25.6	389.0	3.10	51.3		
0945	0.60	2.40			5.0	25.5	384.7	3.03	17.9		
0948	0.60	3.00			5.0	25.5	381.6	2.98	9.40	CLEAR	

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL				SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)		SAMPLE PUMP FLOW RATE (mL/min)			
SAMPLING INITIATED	0949	SAMPLING ENDED	0950	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Cloudy, 78° Rain in past 24 hrs.								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	062012	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA3-PZ-10-J5	Sample ID	73	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	9.98	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.65	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.280	1/4 WELL VOLUME		3 WELL VOLUMES	0.840	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1327	PURGE TIME END	1342	TOTAL PURGED	3.00

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1330	0.60	0.60	0.20	10.09	5.1	26.7	345.0	2.79	395	BROWN	NONE
1333	0.60	1.20			5.1	26.4	340.2	2.59	102	CLOUDY	
1336	0.60	1.80			5.1	26.2	338.3	2.41	37.6	CLOUDY	
1339	0.60	2.40			5.1	26.0	336.5	2.32	21.7	CLEAR	
1342	0.60	3.00			5.1	26.0	335.6	2.26	14.7		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1343	SAMPLING ENDED	1344	FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Cloudy, 84°. Rain in past hour.						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	062012	SAL Project #	1206056d	Project Name	S&GW Test Facility SE #1
Well Number	TA3-PZ-10-K5	Sample ID	74	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	9.97	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.65	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.2808	1/4 WELL VOLUME		3 WELL VOLUMES	0.842	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1417	PURGE TIME END	1432	TOTAL PURGED	3.00
INST. ID				SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1420	0.60	0.60	0.20	10.08	5.2	25.7	350.0	2.47	596	BROWN	NONE
1423	0.60	1.20			5.2	25.6	341.3	2.26	111	Cloudy	
1426	0.60	1.80			5.1	25.5	335.3	1.99	43.3		
1429	0.60	2.40			5.1	25.5	332.4	1.89	22.0		
1432	0.60	3.00			5.0	25.4	330.3	1.79	13.2		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1433	SAMPLING ENDED	1434	FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (μm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Cloudy, 80° Rain in past hour.						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	062012	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA3-PZ-11-L2	Sample ID	75	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	10.00	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.60	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.276	1/4 WELL VOLUME		3 WELL VOLUMES	0.828	5 WELL VOLUMES			

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME			
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1334	PURGE TIME END	1349	TOTAL PURGED	3.00
INST. ID				SAL-SAM-63-1	SAL-SAM-65-1	SAL-SAM-63-1	SAL-SAM-55-1	SAL-SAM-02	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1337	0.60	0.60	0.20		4.5	26.3	338.6	4.46	110	Brown	NO
1340		1.20			4.4	26.2	338.8	4.00	79.9		
1343		1.80			4.4	26.1	339.1	3.65	56.3		
1346		2.40			4.4	26.0	339.3	3.22	26.7		
1349		3.00			4.4	26.0	339.7	3.07	79.1		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:	
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT	SAMPLE TUBING LEGNTH IN WELL (FEET)		SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1350	SAMPLING ENDED		FIELD CLEANED	Y (N)
CLEANING STEPS					
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)
VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)		
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED			
WEATHER CONDITIONS	Rain				
COMMENTS					

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 21 12	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA3-PZ-11-L4	Sample ID	77	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	10.00	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.61	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.276	1/4 WELL VOLUME		3 WELL VOLUMES	0.829	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1022	PURGE TIME END	1037	TOTAL PURGED	3.00

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1025	0.60	0.60	0.20	10.09	5.1	25.9	280.8	2.35	601	BROWN	NONE
1028	0.60	1.20			5.1	25.9	281.8	2.24	194	CLOUDY	
1031	0.60	1.80			5.1	25.8	282.5	2.24	44.1		
1034	0.60	2.40			5.1	25.9	282.7	2.32	27.5		
1037	0.60	3.00			5.1	25.9	282.7	2.33	17.8	CLEAR	

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1038	SAMPLING ENDED	1039	FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Cloudy, 78° Rain in past 24 hrs.						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 2012	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA3-PZ-10-L5	Sample ID	~~75~~ 78	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	10.00	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.65	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.279	1/4 WELL VOLUME		3 WELL VOLUMES	0.837	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1439	PURGE TIME END	1454	TOTAL PURGED	3.00
INST. ID				SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1442	0.60	0.60	0.20	10.12	5.1	25.6	329.8	2.08	MAX	BROWN	NONE
1445	0.60	~~0.~~ 1.20			5.0	25.6	327.1	1.90	MAX		
1448	0.60	1.80			5.0	25.6	326.5	1.83	521		
1451	0.60	2.40			5.0	25.6	325.2	1.73	233	CLOUDY	
1454	0.60	3.00			5.0	25.6	324.3	1.68	90.5		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1455	SAMPLING ENDED	1456	FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Cloudy, 80° Slight sprinkle of rain						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	062012	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA3-PZ-09-N3	Sample ID	79	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.28	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.55	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.1962	1/4 WELL VOLUME		3 WELL VOLUMES	0.5886	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1211	PURGE TIME END	1226	TOTAL PURGED	3.00
INST. ID	X	X	X	X	SAL-SAM-63-1	SAL-SAM-65-1	SAL-SAM-63-1	SAL-SAM-55-1	SAL-SAM-02

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1214	0.60	0.60	0.20		6.5	26.3	1439	1.44	Max	Brown	NO
1217	|	1.20	|		6.5	26.1	1327	0.65	Max	|	|
1220	|	1.80	|		6.5	26.1	1266	0.40	Max	|	|
1223	|	2.40	|		6.6	26.0	942	0.38	Max	|	|
1226	|	3.00			6.5	25.9	940	0.37	Max	|	|

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL					SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1227	SAMPLING ENDED	1227	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	cloudy - windy								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	062012	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA3-PZ-16-N3	Sample ID	86	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	6.33	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.30	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.6582	1/4 WELL VOLUME		3 WELL VOLUMES	1.97	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1249	PURGE TIME END	1309	TOTAL PURGED	4.00
INST. ID				SAL-SAM-63-1	SAL-SAM-65-1	SAL-SAM-63-1	SAL-SAM-55-1	SAL-SAM-02	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1253	0.80	0.80	0.20		5.6	25.1	308.1	2.52	970	Brown	No
1257	|	1.60	|		5.5	25.0	307.3	0.64	242	|	|
1301	|	2.40	|		5.5	25.0	305.7	0.15	51.9	|	|
1305	|	3.20			5.5	24.9	305.0	0.22	22.6		
1309		4.00			5.5	24.9	305.2	0.22	19.4		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1310	SAMPLING ENDED		FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Heavy Rain - Wind						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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SOUTHERN ANALYTICAL LABORATORIES, INC.

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 20 12	SAL Project #	B06564	Project Name	S&GW Test Facility SE #1
Well Number	TA3-PZ-09-O7	Sample ID	81	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	6.47	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)											
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =											
ONE WELL VOLUME	0.2028	1/4 WELL VOLUME			3 WELL VOLUMES	0.6084		5 WELL VOLUMES			
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME		TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMENT VOLUME			
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)			PURGE TIME START	1027	PURGE TIME END	1042	TOTAL PURGED	3.00
INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1030	0.60	0.60	0.20	6.59	6.3	26.2	577	1.24	MAX	BROWN	NONE
1033	0.60	1.20			6.4	26.1	687	0.53	MAX		
1036	0.60	1.80			6.5	26.1	831	0.40	MAX		
1039	0.60	2.40			6.6	26.0	897	0.58	MAX		
1042	0.60	3.00			6.6	26.0	894	0.61	MAX		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL				SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1043	SAMPLING ENDED	1044	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Cloudy, 78°								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	062012	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA3-PZ-16-O7	Sample ID	82	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.67	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.28	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME	0.636	1/4 WELL VOLUME			3 WELL VOLUMES	1.909		5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME		TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1046	PURGE TIME END	1101	TOTAL PURGED	3.75
INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1049	0.75	0.75	0.25	6.81	5.8	25.3	277.0	0.18	MAX	BROWN	NONE
1052	0.75	1.50			5.8	25.2	280.4	0.15	MAX		
1055	0.75	2.25			5.7	25.2	287.1	0.14	MAX		
1058	0.75	3.00			5.7	25.2	293.7	0.13	736		
1101	0.75	3.75			5.7	25.2	300.7	0.13	512		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL					SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1102	SAMPLING ENDED	1103	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Cloudy, 78°								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

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GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	062012	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA3-PZ-09-I7	Sample ID	83	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	6.28	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.82	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.212	1/4 WELL VOLUME		3 WELL VOLUMES	0.637	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1213	PURGE TIME END	1228	TOTAL PURGED	3.00

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1216	0.60	0.60	0.20	6.34	7.1	26.9	1806	3.48	916	BROWN	NONE
1219	0.60	1.20			7.1	27.0	1822	3.47	491		
1222	0.60	1.80			7.1	27.0	1826	3.47	490		
1225	0.60	2.40			7.1	27.0	1824	3.46	489		
1228	0.60	3.00			7.1	27.0	1822	3.44	491		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL					SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1229	SAMPLING ENDED	1230	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Cloudy, 80°								
COMMENTS	DO high because of air in tubings, Well almost dry								

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 20 12	SAL Project #	P06569	Project Name	S&GW Test Facility SE #1
Well Number	TA3-PZ-16-I7	Sample ID	84	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.25	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.25	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)									
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =									
ONE WELL VOLUME	0.66	1/4 WELL VOLUME		3 WELL VOLUMES	1.98		5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME									
PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1240	PURGE TIME END	1255	TOTAL PURGED	3.75
INST. ID				SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1243	0.75	0.75	0.25	6.36	6.5	25.3	302.3	0.25	MAX	BROWN	NONE
1246	0.75	1.50			6.2	25.1	293.0	0.17	MAX		
1249	0.75	2.25			6.1	25.1	286.2	0.10	MAX		
1252	0.75	3.00			6.1	25.1	283.5	0.11	749		
1255	0.75	3.75			6.1	25.1	280.9	0.10	503		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL				SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1256	SAMPLING ENDED	1257	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Cloudy, 80° Rain in past 1/2 hour.								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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SOUTHERN ANALYTICAL LABORATORIES, INC.

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 20 12	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA3-PZ-09-M9	Sample ID	85	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	6.61	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.1944	1/4 WELL VOLUME		3 WELL VOLUMES	0.5832	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1108	PURGE TIME END	1123	TOTAL PURGED	3.00
INST. ID				SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1111	0.60	0.60	0.20	6.81	6.3	26.2	755	1.56	MAX	BROWN	NONE
1114	0.60	1.20			6.3	26.2	871	0.80	MAX		
1117	0.60	1.80			6.4	26.1	1054	0.45	MAX		
1120	0.60	2.40			6.5	26.1	1090	0.33	MAX		
1123	0.60	3.00			6.5	26.1	1035	0.32	MAX		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1124	SAMPLING ENDED	1125	FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Cloudy, 78°						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	062012	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA3-PZ-16-M9	Sample ID	86	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	6.56	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	17.27	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.6426	1/4 WELL VOLUME		3 WELL VOLUMES	1.927	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1128	PURGE TIME END	1143	TOTAL PURGED	3.75

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1131	~~0.75~~ 0.75	~~0.00~~ 0.75	~~0.25~~ 0.25	6.70	6.00	25.4	283.3	0.29	MAX	BROWN	NONE
1134	0.75	1.50			5.9	25.3	281.8	0.25	MAX		
1137	0.75	2.25			5.8	25.2	283.5	0.15	MAX		
1140	0.75	3.00			5.8	25.1	284.1	0.15	764		
1143	0.75	3.75			5.8	25.1	284.1	0.15	534		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)		SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1144	SAMPLING ENDED	1145	FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Cloudy, 82°						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	062012	SAL Project #	1206569 -	Project Name	S&GW Test Facility SE #1
Well Number	TA3-PZ-09-ST14	Sample ID	87	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	6.35	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	9.85 ~~17.14~~	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)									
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =									
ONE WELL VOLUME	0.21	1/4 WELL VOLUME		3 WELL VOLUMES	0.63	5 WELL VOLUMES			
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME									
PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME			
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1101	PURGE TIME END	1116	TOTAL PURGED	3.0
INST. ID				SAL-SAM-63-1	SAL-SAM-65-1	SAL-SAM-63-1	SAL-SAM-55-1	SAL-SAM-02	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1104	0.60	0.60	0.20		4.6	26.4	259.9	0.88	504	Brown	NO
1107		1.20			4.6	26.4	260.3	080	243		
1110		1.80			4.6	26.3	260.1	0.79	93.8		
1113		2.40			4.6	26.3	259.5	0.72	55.4		
1116		3.00			4.6	26.3	258.9	0.69	38.7		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL				SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1117	SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?	Y N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	cloudy Dusty Windy								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	062012	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA3-PZ-16-ST14	Sample ID	88	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.35 ~~6.50~~ SH	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.14 ~~9.85~~ SH	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.6474	1/4 WELL VOLUME		3 WELL VOLUMES	1.9422	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1121	PURGE TIME END	1141	TOTAL PURGED	4.00
INST. ID				SAL-SAM-63-1	SAL-SAM-65-1	SAL-SAM-63-1	SAL-SAM-55-1	SAL-SAM-02	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1125	0.80	0.80	0.20		5.2	25.2	265.6	0.46	488	Brown	No
1129		1.60			5.3	25.2	265.9	0.27	407		
1133		2.40			5.3	25.2	266.8	0.31	351		
1137		3.20			5.3	25.2	267.0	0.29	233		
1141		4.00			5.3	25.1	268.3	0.27	106		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1142	SAMPLING ENDED		FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Rain- Wind						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	062012	SAL Project #	12065569	Project Name	S&GW Test Facility SE #1
Well Number	TA3-PZ-09-ST16	Sample ID	89	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	0.75	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	6.10	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.90	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.228	1/4 WELL VOLUME		3 WELL VOLUMES	0.684	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1013	PURGE TIME END	1028	TOTAL PURGED	3.00	
INST. ID				SAL-SAM-63-1	SAL-SAM-65-1	SAL-SAM-63-1	SAL-SAM-55-1	SAL-SAM-02		

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1016	0.60	0.60	0.20		5.8	26.6	389.1	2.88	Max	Brown	No
1019		1.20			5.7	26.4	384.9	2.86	Max		
1022		1.80			5.7	26.4	397.9	1.51	Max		
1025		2.40			5.7	26.2	411.2	1.00	Max		
1028		3.00			5.6	26.2	404.2	1.15	Max		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL				SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1029	SAMPLING ENDED	1029	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	cloudy - windy								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	062012	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA3-PZ-16-ST16	Sample ID	90	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.61	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	17.26	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME	0.639	1/4 WELL VOLUME		3 WELL VOLUMES	1.917		5 WELL VOLUMES			
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME			
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1033	PURGE TIME END	1053	TOTAL PURGED	4.00	
INST. ID				SAL-SAM-63-1	SAL-SAM-65-1	SAL-SAM-63-1	SAL-SAM-55-1	SAL-SAM-02		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1037	0.80	0.80	0.20		5.4	25.2	269.4	0.46	max	Brown	No
1041		1.60			5.4	25.2	268.4	0.22	399		
1045		2.40			5.4	25.1	269.2	0.21	171		
1049		3.20			5.4	25.1	270.9	0.21	81.3		
1053		4.00			5.4	25.1	273.4	0.21	49.7		
Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88										
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016										

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL				SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1045	SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?	Y N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Cloudy-windy								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA4-LY-24-C	Sample ID	92	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK			Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)											
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =											
ONE WELL VOLUME			1/4 WELL VOLUME			3 WELL VOLUMES			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)			PURGE TIME START		PURGE TIME END		TOTAL PURGED	
INST. ID					SAL-SAM-63-____	SAL-SAM - 65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0_____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)					SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA4-LY-12-S	Sample ID	93	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK			Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)											
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =											
ONE WELL VOLUME			1/4 WELL VOLUME			3 WELL VOLUMES			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)			PURGE TIME START		PURGE TIME END		TOTAL PURGED	
INST. ID					SAL-SAM-63-____	SAL-SAM - 65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0_____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA4-LY-12-S-DUP	Sample ID	94	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)									
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =									
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES		5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME									
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END	TOTAL PURGED	
INST. ID				SAL-SAM-63-____	SAL-SAM - 65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0_____	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA4-LY-24-S	Sample ID	95	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK			Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)											
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =											
ONE WELL VOLUME			1/4 WELL VOLUME			3 WELL VOLUMES			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)			PURGE TIME START		PURGE TIME END		TOTAL PURGED	
INST. ID					SAL-SAM-63-____	SAL-SAM - 65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0_____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:	1206569	Contact:	
				Phone:	
Date Sampled		SAL Project #	~~1206568~~	Project Name	S&GW Test Facility SE #1
Well Number	TA4-LY-42-S		96	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)											
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =											
ONE WELL VOLUME			1/4 WELL VOLUME			3 WELL VOLUMES			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)			PURGE TIME START		PURGE TIME END		TOTAL PURGED	
INST. ID					SAL-SAM-63-____	SAL-SAM-65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:					
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)			
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS					
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?		Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?		Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED								
WEATHER CONDITIONS											
COMMENTS											

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	061912	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA4-PZ-11-EF2		97	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	9.74	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.80	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.30	1/4 WELL VOLUME		3 WELL VOLUMES	0.91	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1150	PURGE TIME END	1205	TOTAL PURGED	3.00
INST. ID				SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-01	SAL-SAM-02	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1153	0.60	0.60	0.20		4.2	76.0	327.6	2.11	51.5	Grey cloudy	NO
1156		1.20			4.2	76.0	327.3	1.77	34.8		
1159		1.80			4.2	75.9	328.7	1.72	36.2		
1202		2.40			4.2	76.0	330.9	1.67	14.3		
1205		3.00			4.2	76.0	332.4	1.65	10.8		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL		SAMPLER(S) SIGNATURES:		
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT	SAMPLE TUBING LEGNTH IN WELL (FEET)		SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1206	SAMPLING ENDED		FIELD CLEANED	Y (N)
CLEANING STEPS					
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	(Y) N
VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)		
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED			
WEATHER CONDITIONS	Clear - windy				
COMMENTS	Dupe - 1211				

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	061912	SAL Project #	1206569	Project Name	S&GW Test Facility SE #1
Well Number	TA4-PZ-10-H5		99	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	9.70	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.80	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME	0.306	1/4 WELL VOLUME		3 WELL VOLUMES	0.918		5 WELL VOLUMES			
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME			
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1314	PURGE TIME END	1329	TOTAL PURGED	3.00	
INST. ID				SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1317	0.60	0.60	0.20	9.98	5.3	26.8	351.0	2.10	184	CLOUDY	NONE
1320	0.60	1.20			5.4	26.6	343.8	1.94	54.4		
1323	0.60	1.80			5.5	26.6	340.5	1.83	33.9		
1326	0.60	2.40			5.6	26.5	329.0	1.85	51.2		
1329	0.60	3.00			5.5	26.5	326.8	1.78	16.6		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL					SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1330	SAMPLING ENDED	1331	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Clear, 90°								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

August 9, 2012
Work Order: 1206568
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Laboratory Report

Project Name **S&GW Test Facility SE #1 Set 2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**TA4-PZ-11-L5**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-01**						
Date/Time Collected		**06/19/12 11:24**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	5.2	DEP FT1100	0.1	0.1		06/19/12 11:24	SAS
Water Temperature	°C	25.9	DEP FT1400	0.1	0.1		06/19/12 11:24	SAS
Specific conductance	umhos/cm	419	DEP FT1200	0.1	0.1		06/19/12 11:24	SAS
Dissolved Oxygen	mg/L	1.9	DEP FT1500	0.1	0.1		06/19/12 11:24	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 13:57	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	30	EPA 300.0	0.20	0.050		06/21/12 00:52	JAG
Nitrate+Nitrite (N)	mg/L	16	EPA 353.2	1.0	0.25		06/29/12 12:49	MMF
Total Kjeldahl Nitrogen	mg/L	3.1	EPA 351.2	0.20	0.05	06/20/12 14:11	06/22/12 10:20	MMF
Sample Description		**TA4-PZ-11-L6**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-02**						
Date/Time Collected		**06/19/12 10:58**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	5.2	DEP FT1100	0.1	0.1		06/19/12 10:58	SAS
Water Temperature	°C	26.0	DEP FT1400	0.1	0.1		06/19/12 10:58	SAS
Specific conductance	umhos/cm	346	DEP FT1200	0.1	0.1		06/19/12 10:58	SAS
Dissolved Oxygen	mg/L	1.7	DEP FT1500	0.1	0.1		06/19/12 10:58	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 13:59	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	24	EPA 300.0	0.20	0.050		06/21/12 00:52	JAG
Nitrate+Nitrite (N)	mg/L	14	EPA 353.2	1.0	0.25		06/29/12 12:50	MMF
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	06/20/12 14:11	06/22/12 10:22	MMF
Sample Description		**TA4-PZ-09-M4**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-03**						
Date/Time Collected		**06/19/12 09:56**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**TA4-PZ-09-M4**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-03**						
Date/Time Collected		**06/19/12 09:56**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
pH	SU	6.7	DEP FT1100	0.1	0.1		06/19/12 09:56	SDH
Water Temperature	°C	25.6	DEP FT1400	0.1	0.1		06/19/12 09:56	SDH
Specific conductance	umhos/cm	636	DEP FT1200	0.1	0.1		06/19/12 09:56	SDH
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		06/19/12 09:56	SDH
Inorganics								
Ammonia as N	mg/L	0.084	EPA 350.1	0.040	0.009		06/20/12 14:01	MMF
Ammonium as NH4	mg/L	0.11	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	15	EPA 300.0	0.20	0.050		06/21/12 00:52	JAG
Nitrate+Nitrite (N)	mg/L	4.5	EPA 353.2	0.20	0.05		06/29/12 12:15	MMF
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	06/20/12 14:11	06/22/12 10:23	MMF
Sample Description		**TA4-PZ-16-M4**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-04**						
Date/Time Collected		**06/19/12 10:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	5.3	DEP FT1100	0.1	0.1		06/19/12 10:20	SDH
Water Temperature	°C	24.8	DEP FT1400	0.1	0.1		06/19/12 10:20	SDH
Specific conductance	umhos/cm	225	DEP FT1200	0.1	0.1		06/19/12 10:20	SDH
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		06/19/12 10:20	SDH
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 14:03	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	8.2	EPA 300.0	0.20	0.050		06/21/12 00:52	JAG
Nitrate+Nitrite (N)	mg/L	6.5	EPA 353.2	0.20	0.05		06/29/12 12:17	MMF
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	06/20/12 14:11	06/22/12 10:25	MMF
Sample Description		**TA4-PZ-09-N7**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-05**						
Date/Time Collected		**06/19/12 08:54**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	5.6	DEP FT1100	0.1	0.1		06/19/12 08:54	SDH

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**TA4-PZ-09-N7**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-05**						
Date/Time Collected		**06/19/12 08:54**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Water Temperature	°C	25.7	DEP FT1400	0.1	0.1		06/19/12 08:54	SDH
Specific conductance	umhos/cm	364	DEP FT1200	0.1	0.1		06/19/12 08:54	SDH
Dissolved Oxygen	mg/L	1.0	DEP FT1500	0.1	0.1		06/19/12 08:54	SDH
Inorganics								
Ammonia as N	mg/L	0.060	EPA 350.1	0.040	0.009		06/21/12 11:31	MMF
Ammonium as NH4	mg/L	0.08	EPA 350.1	0.01	0.005	06/21/12 14:35	06/21/12 14:36	ARP
Chloride	mg/L	13	EPA 300.0	0.20	0.050		06/23/12 01:43	JAG
Nitrate+Nitrite (N)	mg/L	4.8	EPA 353.2	0.20	0.05		06/29/12 12:19	MMF
Total Kjeldahl Nitrogen	mg/L	2.2	EPA 351.2	0.20	0.05	06/26/12 12:59	06/28/12 10:10	MMF
Sample Description		**TA4-PZ-16-N7**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-06**						
Date/Time Collected		**06/19/12 09:21**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	5.2	DEP FT1100	0.1	0.1		06/19/12 09:21	SDH
Water Temperature	°C	25.1	DEP FT1400	0.1	0.1		06/19/12 09:21	SDH
Specific conductance	umhos/cm	237	DEP FT1200	0.1	0.1		06/19/12 09:21	SDH
Dissolved Oxygen	mg/L	0.1	DEP FT1500	0.1	0.1		06/19/12 09:21	SDH
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 14:05	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	9.3	EPA 300.0	0.20	0.050		06/21/12 00:52	JAG
Nitrate+Nitrite (N)	mg/L	8.5	EPA 353.2	0.20	0.05		06/29/12 12:21	MMF
Total Kjeldahl Nitrogen	mg/L	0.70	EPA 351.2	0.20	0.05	06/20/12 14:11	06/22/12 10:27	MMF
Sample Description		**TA4-PZ-09-I7**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-07**						
Date/Time Collected		**06/19/12 10:12**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	5.9	DEP FT1100	0.1	0.1		06/19/12 10:12	SAS
Water Temperature	°C	25.8	DEP FT1400	0.1	0.1		06/19/12 10:12	SAS

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**TA4-PZ-09-I7**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-07**						
Date/Time Collected		**06/19/12 10:12**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Specific conductance	umhos/cm	326	DEP FT1200	0.1	0.1		06/19/12 10:12	SAS
Dissolved Oxygen	mg/L	1.1	DEP FT1500	0.1	0.1		06/19/12 10:12	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 14:07	MMF
Ammonium as NH4	mg/L	0.01	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	10	EPA 300.0	0.20	0.050		06/21/12 00:52	JAG
Nitrate+Nitrite (N)	mg/L	2.7	EPA 353.2	0.20	0.05		06/29/12 12:24	MMF
Total Kjeldahl Nitrogen	mg/L	0.59	EPA 351.2	0.20	0.05	06/20/12 14:11	06/22/12 10:28	MMF
Sample Description		**TA4-PZ-16-I7**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-08**						
Date/Time Collected		**06/19/12 10:32**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	5.5	DEP FT1100	0.1	0.1		06/19/12 10:32	SAS
Water Temperature	°C	25.0	DEP FT1400	0.1	0.1		06/19/12 10:32	SAS
Specific conductance	umhos/cm	261	DEP FT1200	0.1	0.1		06/19/12 10:32	SAS
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		06/19/12 10:32	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 14:09	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	8.9	EPA 300.0	0.20	0.050		06/21/12 00:52	JAG
Nitrate+Nitrite (N)	mg/L	6.7	EPA 353.2	0.20	0.05		06/29/12 12:26	MMF
Total Kjeldahl Nitrogen	mg/L	0.96	EPA 351.2	0.20	0.05	06/20/12 14:11	06/22/12 10:30	MMF
Sample Description		**TA4-PZ-09-L8**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-09**						
Date/Time Collected		**06/19/12 09:06**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	6.4	DEP FT1100	0.1	0.1		06/19/12 09:06	SAS
Water Temperature	°C	25.7	DEP FT1400	0.1	0.1		06/19/12 09:06	SAS
Specific conductance	umhos/cm	596	DEP FT1200	0.1	0.1		06/19/12 09:06	SAS

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Sample Description		**TA4-PZ-09-L8**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-09**						
Date/Time Collected		**06/19/12 09:06**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Dissolved Oxygen	mg/L	0.7	DEP FT1500	0.1	0.1		06/19/12 09:06	SAS
Inorganics								
Ammonia as N	mg/L	0.14	EPA 350.1	0.040	0.009		06/20/12 14:11	MMF
Ammonium as NH4	mg/L	0.18	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	10	EPA 300.0	0.20	0.050		06/21/12 00:52	JAG
Nitrate+Nitrite (N)	mg/L	3.2	EPA 353.2	0.20	0.05		06/29/12 12:28	MMF
Total Kjeldahl Nitrogen	mg/L	2.6	EPA 351.2	0.20	0.05	06/20/12 14:11	06/22/12 10:32	MMF
Sample Description		**TA4-PZ-16-L8**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-10**						
Date/Time Collected		**06/19/12 09:44**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	5.5	DEP FT1100	0.1	0.1		06/19/12 09:44	SAS
Water Temperature	°C	25.1	DEP FT1400	0.1	0.1		06/19/12 09:44	SAS
Specific conductance	umhos/cm	264	DEP FT1200	0.1	0.1		06/19/12 09:44	SAS
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		06/19/12 09:44	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 14:13	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	9.1	EPA 300.0	0.20	0.050		06/21/12 00:52	JAG
Nitrate+Nitrite (N)	mg/L	7.6	EPA 353.2	0.20	0.05		06/29/12 12:31	MMF
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	06/20/12 14:11	06/22/12 10:37	MMF
Sample Description		**TA4-PZ-09-TU14**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-11**						
Date/Time Collected		**06/19/12 07:38**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	5.4	DEP FT1100	0.1	0.1		06/19/12 07:38	SAS
Water Temperature	°C	25.5	DEP FT1400	0.1	0.1		06/19/12 07:38	SAS
Specific conductance	umhos/cm	196	DEP FT1200	0.1	0.1		06/19/12 07:38	SAS
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		06/19/12 07:38	SAS

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Sample Description		**TA4-PZ-09-TU14**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-11**						
Date/Time Collected		**06/19/12 07:38**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Inorganics								
Ammonia as N	mg/L	0.026 I	EPA 350.1	0.040	0.009		06/20/12 14:15	MMF
Ammonium as NH4	mg/L	0.03	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	5.1	EPA 300.0	0.20	0.050		06/21/12 00:52	JAG
Nitrate+Nitrite (N)	mg/L	3.9	EPA 353.2	0.20	0.05		06/29/12 12:33	MMF
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	06/20/12 14:11	06/22/12 10:38	MMF
Sample Description		**TA4-PZ-16-TU14**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-12**						
Date/Time Collected		**06/19/12 08:32**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	6.0	DEP FT1100	0.1	0.1		06/19/12 08:32	SAS
Water Temperature	°C	24.9	DEP FT1400	0.1	0.1		06/19/12 08:32	SAS
Specific conductance	umhos/cm	297	DEP FT1200	0.1	0.1		06/19/12 08:32	SAS
Dissolved Oxygen	mg/L	0.1	DEP FT1500	0.1	0.1		06/19/12 08:32	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 14:22	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	6.2	EPA 300.0	0.20	0.050		06/21/12 00:52	JAG
Nitrate+Nitrite (N)	mg/L	3.1	EPA 353.2	0.20	0.05		06/29/12 12:35	MMF
Total Kjeldahl Nitrogen	mg/L	0.94	EPA 351.2	0.20	0.05	06/20/12 14:11	06/22/12 10:40	MMF
Sample Description		**TA4-PZ-09-TU16**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-13**						
Date/Time Collected		**06/19/12 07:52**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	5.4	DEP FT1100	0.1	0.1		06/19/12 07:52	SAS
Water Temperature	°C	25.5	DEP FT1400	0.1	0.1		06/19/12 07:52	SAS
Specific conductance	umhos/cm	200	DEP FT1200	0.1	0.1		06/19/12 07:52	SAS
Dissolved Oxygen	mg/L	0.8	DEP FT1500	0.1	0.1		06/19/12 07:52	SAS
Inorganics								

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Project Name **S&GW Test Facility SE #1 Set 2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**TA4-PZ-09-TU16**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-13**						
Date/Time Collected		**06/19/12 07:52**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 14:24	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	5.8	EPA 300.0	0.20	0.050		06/21/12 00:52	JAG
Nitrate+Nitrite (N)	mg/L	5.7	EPA 353.2	0.20	0.05		06/29/12 12:37	MMF
Total Kjeldahl Nitrogen	mg/L	2.0	EPA 351.2	0.20	0.05	06/20/12 14:11	06/22/12 10:41	MMF
Sample Description		**TA4-PZ-16-TU16**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-14**						
Date/Time Collected		**06/19/12 08:12**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	5.3	DEP FT1100	0.1	0.1		06/19/12 08:12	SAS
Specific conductance	umhos/cm	257	DEP FT1200	0.1	0.1		06/19/12 08:12	SAS
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		06/19/12 08:12	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 14:26	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	5.7	EPA 300.0	0.20	0.050		06/21/12 00:52	JAG
Nitrate+Nitrite (N)	mg/L	4.2	EPA 353.2	0.20	0.05		06/29/12 12:40	MMF
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	06/20/12 14:11	06/22/12 10:43	MMF
Sample Description		**TA5-PZ-1**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-15**						
Date/Time Collected		**06/21/12 11:34**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/20/12 16:30**						
Field Parameters								
pH	SU	4.2	DEP FT1100	0.1	0.1		06/21/12 11:34	SAS
Water Temperature	°C	26.4	DEP FT1400	0.1	0.1		06/21/12 11:34	SAS
Specific conductance	umhos/cm	349	DEP FT1200	0.1	0.1		06/21/12 11:34	SAS
Dissolved Oxygen	mg/L	1.3	DEP FT1500	0.1	0.1		06/21/12 11:34	SAS
Inorganics								
Ammonia as N	mg/L	0.041	EPA 350.1	0.040	0.009		06/26/12 14:47	MMF
Ammonium as NH4	mg/L	0.05	EPA 350.1	0.01	0.005	07/03/12 16:40	07/03/12 16:42	MMF

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Sample Description		**TA5-PZ-1**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-15**						
Date/Time Collected		**06/21/12 11:34**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/20/12 16:30**						
Chloride	mg/L	15	EPA 300.0	0.20	0.050		06/25/12 16:31	JAG
Nitrate+Nitrite (N)	mg/L	16	EPA 353.2	1.0	0.25		06/29/12 12:51	MMF
Sulfate	mg/L	74	EPA 300.0	0.60	0.20		06/25/12 16:31	JAG
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	06/26/12 12:59	06/28/12 10:12	MMF
Sample Description		**TA5-LY-C**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-16**						
Date/Time Collected		**06/18/12 11:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	6.6	DEP FT1100	0.1	0.1		06/18/12 11:10	SAS
Water Temperature	°C	28.6	DEP FT1400	0.1	0.1		06/18/12 11:10	SAS
Specific conductance	umhos/cm	880	DEP FT1200	0.1	0.1		06/18/12 11:10	SAS
Dissolved Oxygen	mg/L	6.4	DEP FT1500	0.1	0.1		06/18/12 11:10	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 11:05	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	62	EPA 300.0	0.20	0.050		06/19/12 15:09	JAG
Nitrate (as N)	mg/L	35	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Total Kjeldahl Nitrogen	mg/L	2.1	EPA 351.2	0.20	0.05	06/20/12 14:11	06/22/12 10:44	MMF
Sample Description		**TA5-LINER-SP**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-17**						
Date/Time Collected		**06/21/12 10:50**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/20/12 16:30**						
Field Parameters								
pH	SU	6.4	DEP FT1100	0.1	0.1		06/21/12 10:52	SAS
Water Temperature	°C	30.9	DEP FT1400	0.1	0.1		06/21/12 10:52	SAS
Specific conductance	umhos/cm	926	DEP FT1200	0.1	0.1		06/21/12 10:52	SAS
Dissolved Oxygen	mg/L	4.6	DEP FT1500	0.1	0.1		06/21/12 10:52	SAS
Inorganics								
Ammonia as N	mg/L	0.030 I	EPA 350.1	0.040	0.009		06/26/12 14:49	MMF

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**TA5-LINER-SP**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-17**						
Date/Time Collected		**06/21/12 10:50**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/20/12 16:30**						
Ammonium as NH4	mg/L	0.04	EPA 350.1	0.01	0.005	07/03/12 16:40	07/03/12 16:42	MMF
Chloride	mg/L	56	EPA 300.0	0.20	0.050		06/25/12 16:31	JAG
Nitrate (as N)	mg/L	0.15	EPA 300.0	0.04	0.01		06/22/12 16:57	JAG
Nitrite (as N)	mg/L	0.15	EPA 300.0	0.04	0.01		06/22/12 16:57	JAG
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	06/26/12 12:59	06/28/12 10:13	MMF
Sample Description		**TA5-Denite Tank**						
Matrix		**Wastewater**						
SAL Sample Number		**1206568-18**						
Date/Time Collected		**06/21/12 13:15**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/20/12 16:30**						
Field Parameters								
pH	SU	6.5	DEP FT1100	0.1	0.1		06/21/12 13:15	SAS
Specific conductance	umhos/cm	980	DEP FT1200	0.1	0.1		06/21/12 13:15	SAS
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		06/21/12 13:15	SAS
Inorganics								
Ammonia as N	mg/L	0.51	EPA 350.1	0.040	0.009		06/26/12 14:51	MMF
Ammonium as NH4	mg/L	0.66	EPA 350.1	0.01	0.005	07/03/12 16:40	07/03/12 16:42	MMF
Chloride	mg/L	48	EPA 300.0	0.20	0.050		06/28/12 09:50	JAG
Nitrate+Nitrite (N)	mg/L	0.03 I	EPA 353.2	0.04	0.01		06/29/12 14:17	MMF
Sulfate	mg/L	140	EPA 300.0	0.60	0.20		06/28/12 09:50	JAG
Total Kjeldahl Nitrogen	mg/L	2.0	EPA 351.2	0.20	0.05	06/26/12 12:59	06/28/12 10:15	MMF
Sample Description		**TA5-Denite Tank-DUP**						
Matrix		**Wastewater**						
SAL Sample Number		**1206568-19**						
Date/Time Collected		**06/21/12 13:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/20/12 16:30**						
Field Parameters								
pH	SU	6.5	DEP FT1100	0.1	0.1		06/21/12 13:20	SAS
Water Temperature	°C	0.1 U	DEP FT1400	0.1	0.1		06/21/12 13:20	SAS
Specific conductance	umhos/cm	980	DEP FT1200	0.1	0.1		06/21/12 13:20	SAS
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		06/21/12 13:20	SAS
Inorganics								
Ammonia as N	mg/L	0.56	EPA 350.1	0.040	0.009		06/26/12 14:53	MMF

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**TA5-Denite Tank-DUP**						
Matrix		**Wastewater**						
SAL Sample Number		**1206568-19**						
Date/Time Collected		**06/21/12 13:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/20/12 16:30**						
Ammonium as NH4	mg/L	0.72	EPA 350.1	0.01	0.005	07/03/12 16:40	07/03/12 16:42	MMF
Chloride	mg/L	47	EPA 300.0	0.20	0.050		06/28/12 09:50	JAG
Nitrate+Nitrite (N)	mg/L	0.03 I	EPA 353.2	0.04	0.01		06/29/12 14:18	MMF
Sulfate	mg/L	160	EPA 300.0	0.60	0.20		06/28/12 09:50	JAG
Total Kjeldahl Nitrogen	mg/L	2.0	EPA 351.2	0.20	0.05	06/26/12 12:59	06/28/12 10:17	MMF
Sample Description		**TA6-PZ-1**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-20**						
Date/Time Collected		**06/20/12 10:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/20/12 16:30**						
Field Parameters								
pH	SU	4.8	DEP FT1100	0.1	0.1		06/20/12 10:30	RJS
Water Temperature	°C	26.4	DEP FT1400	0.1	0.1		06/20/12 10:30	RJS
Specific conductance	umhos/cm	317	DEP FT1200	0.1	0.1		06/20/12 10:30	RJS
Dissolved Oxygen	mg/L	4.0	DEP FT1500	0.1	0.1		06/20/12 10:30	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 15:03	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	12	EPA 300.0	0.20	0.050		06/23/12 01:43	JAG
Nitrate+Nitrite (N)	mg/L	14	EPA 353.2	0.40	0.10		06/27/12 12:56	MMF
Sulfate	mg/L	76	EPA 300.0	0.60	0.20		06/23/12 01:43	JAG
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	06/26/12 12:59	06/28/12 10:18	MMF
Sample Description		**TA6-LY-C**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-21**						
Date/Time Collected		**06/18/12 09:24**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	6.6	DEP FT1100	0.1	0.1		06/18/12 09:24	RJS
Water Temperature	°C	27.8	DEP FT1400	0.1	0.1		06/18/12 09:24	RJS
Specific conductance	umhos/cm	788	DEP FT1200	0.1	0.1		06/18/12 09:24	RJS
Dissolved Oxygen	mg/L	6.4	DEP FT1500	0.1	0.1		06/18/12 09:24	RJS
Inorganics								

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**TA6-LY-C**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-21**						
Date/Time Collected		**06/18/12 09:24**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 11:07	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chemical Oxygen Demand	mg/L	46	EPA 410.4	25	10	06/20/12 08:45	06/20/12 13:50	LAS
Chloride	mg/L	74	EPA 300.0	0.20	0.050		06/19/12 15:09	JAG
Nitrate (as N)	mg/L	19	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		06/19/12 15:09	JAG
Phosphorous - Total as P	mg/L	0.066	SM 4500P-E	0.040	0.010	06/22/12 13:42	06/23/12 11:01	KTC
Total Alkalinity	mg/L	140	SM 2320B	8.0	2.0		06/19/12 13:28	MBC
Total Kjeldahl Nitrogen	mg/L	2.3	EPA 351.2	0.20	0.05	06/19/12 08:39	06/20/12 14:01	MMF
Sample Description		**TA6-LINER-SP**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-22**						
Date/Time Collected		**06/20/12 13:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/20/12 16:30**						
Field Parameters								
pH	SU	6.6	DEP FT1100	0.1	0.1		06/20/12 13:10	RJS
Water Temperature	°C	27.8	DEP FT1400	0.1	0.1		06/20/12 13:10	RJS
Specific conductance	umhos/cm	1,061	DEP FT1200	0.1	0.1		06/20/12 13:10	RJS
Dissolved Oxygen	mg/L	6.1	DEP FT1500	0.1	0.1		06/20/12 13:10	RJS
Inorganics								
Ammonia as N	mg/L	0.14	EPA 350.1	0.040	0.009		06/21/12 15:05	MMF
Ammonium as NH4	mg/L	0.18	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	66	EPA 300.0	0.20	0.050		06/23/12 01:43	JAG
Nitrate (as N)	mg/L	0.09	EPA 300.0	0.04	0.01		06/21/12 15:13	JAG
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		06/21/12 15:13	JAG
Total Kjeldahl Nitrogen	mg/L	2.5	EPA 351.2	0.20	0.05	06/26/12 12:59	06/28/12 10:20	MMF
Sample Description		**TA6-Denite Tank**						
Matrix		**Wastewater**						
SAL Sample Number		**1206568-23**						
Date/Time Collected		**06/20/12 10:45**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/20/12 16:30**						
Field Parameters								
pH	SU	6.6	DEP FT1100	0.1	0.1		06/20/12 10:45	RJS

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**TA6-Denite Tank**						
Matrix		**Wastewater**						
SAL Sample Number		**1206568-23**						
Date/Time Collected		**06/20/12 10:45**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/20/12 16:30**						
Water Temperature	°C	26.9	DEP FT1400	0.1	0.1		06/20/12 10:45	RJS
Specific conductance	umhos/cm	1,082	DEP FT1200	0.1	0.1		06/20/12 10:45	RJS
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		06/20/12 10:45	RJS
Inorganics								
Ammonia as N	mg/L	0.60	EPA 350.1	0.040	0.009		06/21/12 15:07	MMF
Ammonium as NH4	mg/L	0.77	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	73	EPA 300.0	0.20	0.050		06/23/12 01:43	JAG
Nitrate+Nitrite (N)	mg/L	0.05	EPA 353.2	0.04	0.01		06/27/12 10:54	MMF
Sulfate	mg/L	110	EPA 300.0	0.60	0.20		06/23/12 01:43	JAG
Total Kjeldahl Nitrogen	mg/L	2.6	EPA 351.2	0.20	0.05	06/26/12 12:59	06/28/12 10:22	MMF
Sample Description		**PZ01-BKG-09**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-24**						
Date/Time Collected		**06/19/12 14:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	4.3	DEP FT1100	0.1	0.1		06/19/12 14:40	RJS
Water Temperature	°C	28.7	DEP FT1400	0.1	0.1		06/19/12 14:40	RJS
Specific conductance	umhos/cm	111	DEP FT1200	0.1	0.1		06/19/12 14:40	RJS
Dissolved Oxygen	mg/L	0.8	DEP FT1500	0.1	0.1		06/19/12 14:40	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 11:33	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 14:35	06/21/12 14:36	ARP
Chloride	mg/L	4.9	EPA 300.0	0.20	0.050		06/21/12 00:52	JAG
Nitrate+Nitrite (N)	mg/L	0.01 U	EPA 353.2	0.04	0.01		06/27/12 10:57	MMF
Total Kjeldahl Nitrogen	mg/L	0.09 I	EPA 351.2	0.20	0.05	06/20/12 14:11	06/22/12 10:45	MMF
Sample Description		**LY01-BKG-24**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-25**						
Date/Time Collected		**06/18/12 14:00**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	7.2	DEP FT1100	0.1	0.1		06/18/12 14:00	RJS

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Sample Description		**LY01-BKG-24**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-25**						
Date/Time Collected		**06/18/12 14:00**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Water Temperature	°C	30.2	DEP FT1400	0.1	0.1		06/18/12 14:00	RJS
Specific conductance	umhos/cm	272	DEP FT1200	0.1	0.1		06/18/12 14:00	RJS
Dissolved Oxygen	mg/L	6.5	DEP FT1500	0.1	0.1		06/18/12 14:00	RJS
Inorganics								
Ammonia as N	mg/L	0.033 I	EPA 350.1	0.040	0.009		06/20/12 11:09	MMF
Ammonium as NH4	mg/L	0.04	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	8.4	EPA 300.0	0.20	0.050		06/20/12 01:04	JAG
Nitrate+Nitrite (N)	mg/L	0.01 I	EPA 353.2	0.04	0.01		06/27/12 10:59	MMF
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	06/19/12 08:39	06/20/12 14:02	MMF
Sample Description		**PZ04-BKG-09**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-27**						
Date/Time Collected		**06/19/12 08:24**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	5.1	DEP FT1100	0.1	0.1		06/19/12 08:24	RJS
Water Temperature	°C	26.2	DEP FT1400	0.1	0.1		06/19/12 08:24	RJS
Specific conductance	umhos/cm	100	DEP FT1200	0.1	0.1		06/19/12 08:24	RJS
Dissolved Oxygen	mg/L	4.4	DEP FT1500	0.1	0.1		06/19/12 08:24	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 14:28	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	2.2	EPA 300.0	0.20	0.050		06/23/12 01:43	JAG
Nitrate+Nitrite (N)	mg/L	5.9	EPA 353.2	0.40	0.10		06/27/12 12:58	MMF
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	06/20/12 14:11	06/22/12 10:46	MMF
Sample Description		**PZ24-BKG-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-28**						
Date/Time Collected		**06/19/12 09:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	5.0	DEP FT1100	0.1	0.1		06/19/12 09:30	RJS
Water Temperature	°C	25.3	DEP FT1400	0.1	0.1		06/19/12 09:30	RJS

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Sample Description		**PZ24-BKG-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-28**						
Date/Time Collected		**06/19/12 09:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Specific conductance	umhos/cm	286	DEP FT1200	0.1	0.1		06/19/12 09:30	RJS
Dissolved Oxygen	mg/L	2.4	DEP FT1500	0.1	0.1		06/19/12 09:30	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 14:30	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	17	EPA 300.0	0.20	0.050		06/23/12 01:43	JAG
Nitrate+Nitrite (N)	mg/L	12	EPA 353.2	0.40	0.10		06/27/12 13:00	MMF
Total Kjeldahl Nitrogen	mg/L	2.0	EPA 351.2	0.20	0.05	06/20/12 14:11	06/22/12 10:48	MMF
Sample Description		**PZ24-BKG-26-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-29**						
Date/Time Collected		**06/19/12 09:35**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	5.0	DEP FT1100	0.1	0.1		06/19/12 09:35	RJS
Water Temperature	°C	25.3	DEP FT1400	0.1	0.1		06/19/12 09:35	RJS
Specific conductance	umhos/cm	286	DEP FT1200	0.1	0.1		06/19/12 09:35	RJS
Dissolved Oxygen	mg/L	2.4	DEP FT1500	0.1	0.1		06/19/12 09:35	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 14:32	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	18	EPA 300.0	0.20	0.050		06/23/12 01:43	JAG
Nitrate+Nitrite (N)	mg/L	12	EPA 353.2	0.40	0.10		06/27/12 13:03	MMF
Total Kjeldahl Nitrogen	mg/L	2.0	EPA 351.2	0.20	0.05	06/20/12 14:11	06/22/12 10:49	MMF
Sample Description		**PZ29-BKG09**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-30**						
Date/Time Collected		**06/19/12 10:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	4.9	DEP FT1100	0.1	0.1		06/19/12 10:10	RJS
Water Temperature	°C	26.5	DEP FT1400	0.1	0.1		06/19/12 10:10	RJS
Specific conductance	umhos/cm	214	DEP FT1200	0.1	0.1		06/19/12 10:10	RJS

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Sample Description		**PZ29-BKG09**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-30**						
Date/Time Collected		**06/19/12 10:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Dissolved Oxygen	mg/L	1.7	DEP FT1500	0.1	0.1		06/19/12 10:10	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 14:34	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	6.4	EPA 300.0	0.20	0.050		06/23/12 01:43	JAG
Nitrate+Nitrite (N)	mg/L	4.2	EPA 353.2	0.40	0.10		06/27/12 13:05	MMF
Total Alkalinity	mg/L	2.1 I	SM 2320B	8.0	2.0		06/26/12 15:52	MBC
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	06/20/12 14:13	06/22/12 11:47	MMF
Sample Description		**PZ30-BKG-16**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-31**						
Date/Time Collected		**06/19/12 10:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	5.6	DEP FT1100	0.1	0.1		06/19/12 10:40	RJS
Water Temperature	°C	26.3	DEP FT1400	0.1	0.1		06/19/12 10:40	RJS
Specific conductance	umhos/cm	332	DEP FT1200	0.1	0.1		06/19/12 10:40	RJS
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		06/19/12 10:40	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 14:36	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	16	EPA 300.0	0.20	0.050		06/23/12 01:43	JAG
Nitrate+Nitrite (N)	mg/L	12	EPA 353.2	0.40	0.10		06/27/12 13:07	MMF
Total Alkalinity	mg/L	22	SM 2320B	8.0	2.0		06/26/12 15:52	MBC
Total Kjeldahl Nitrogen	mg/L	1.0	EPA 351.2	0.20	0.05	06/20/12 14:13	06/22/12 11:49	MMF
Sample Description		**PZ31-BKG-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-32**						
Date/Time Collected		**06/19/12 11:35**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	5.1	DEP FT1100	0.1	0.1		06/19/12 11:35	RJS
Water Temperature	°C	26.6	DEP FT1400	0.1	0.1		06/19/12 11:35	RJS

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Sample Description		**PZ31-BKG-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-32**						
Date/Time Collected		**06/19/12 11:35**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Specific conductance	umhos/cm	321	DEP FT1200	0.1	0.1		06/19/12 11:35	RJS
Dissolved Oxygen	mg/L	1.2	DEP FT1500	0.1	0.1		06/19/12 11:35	RJS
Inorganics								
Ammonia as N	mg/L	0.035 I	EPA 350.1	0.040	0.009		06/20/12 14:38	MMF
Ammonium as NH4	mg/L	0.04	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	19	EPA 300.0	0.20	0.050		06/23/12 01:43	JAG
Nitrate+Nitrite (N)	mg/L	14	EPA 353.2	1.0	0.25		06/21/12 11:43	MMF
Total Alkalinity	mg/L	5.2 I	SM 2320B	8.0	2.0		06/26/12 15:52	MBC
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	06/20/12 14:13	06/22/12 11:51	MMF
Sample Description		**PZ31-BKG-26-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-33**						
Date/Time Collected		**06/19/12 11:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	5.1	DEP FT1100	0.1	0.1		06/19/12 11:40	RJS
Water Temperature	°C	26.6	DEP FT1400	0.1	0.1		06/19/12 11:40	RJS
Specific conductance	umhos/cm	321	DEP FT1200	0.1	0.1		06/19/12 11:40	RJS
Dissolved Oxygen	mg/L	1.2	DEP FT1500	0.1	0.1		06/19/12 11:40	RJS
Inorganics								
Ammonia as N	mg/L	0.030 I	EPA 350.1	0.040	0.009		06/20/12 14:40	MMF
Ammonium as NH4	mg/L	0.04	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	19	EPA 300.0	0.20	0.050		06/23/12 01:43	JAG
Nitrate+Nitrite (N)	mg/L	14	EPA 353.2	1.0	0.25		06/21/12 11:45	MMF
Total Alkalinity	mg/L	4.2 I	SM 2320B	8.0	2.0		06/26/12 15:52	MBC
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	06/20/12 14:13	06/22/12 11:52	MMF
Sample Description		**PZ32-BKG09**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-34**						
Date/Time Collected		**06/19/12 12:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	4.4	DEP FT1100	0.1	0.1		06/19/12 12:10	RJS

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Sample Description		**PZ32-BKG09**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-34**						
Date/Time Collected		**06/19/12 12:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Water Temperature	°C	29.2	DEP FT1400	0.1	0.1		06/19/12 12:10	RJS
Specific conductance	umhos/cm	181	DEP FT1200	0.1	0.1		06/19/12 12:10	RJS
Dissolved Oxygen	mg/L	4.9	DEP FT1500	0.1	0.1		06/19/12 12:10	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 14:54	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	6.9	EPA 300.0	0.20	0.050		06/23/12 01:43	JAG
Nitrate+Nitrite (N)	mg/L	3.1	EPA 353.2	0.20	0.05		06/21/12 11:09	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		06/26/12 15:52	MBC
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	06/20/12 14:13	06/22/12 11:54	MMF
Sample Description		**PZ33-BKG-16**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-35**						
Date/Time Collected		**06/19/12 13:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	5.2	DEP FT1100	0.1	0.1		06/19/12 13:40	RJS
Water Temperature	°C	27.0	DEP FT1400	0.1	0.1		06/19/12 13:40	RJS
Specific conductance	umhos/cm	270	DEP FT1200	0.1	0.1		06/19/12 13:40	RJS
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		06/19/12 13:40	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 14:56	MMF
Ammonium as NH4	mg/L	0.01	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	14	EPA 300.0	0.20	0.050		06/23/12 01:43	JAG
Nitrate+Nitrite (N)	mg/L	11	EPA 353.2	1.0	0.25		06/21/12 11:47	MMF
Total Alkalinity	mg/L	5.2 I	SM 2320B	8.0	2.0		06/26/12 15:52	MBC
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	06/20/12 14:13	06/22/12 11:56	MMF
Sample Description		**PZ34-BKG-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-36**						
Date/Time Collected		**06/19/12 14:15**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								

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Sample Description		**PZ34-BKG-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-36**						
Date/Time Collected		**06/19/12 14:15**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
pH	SU	5.9	DEP FT1100	0.1	0.1		06/19/12 14:15	RJS
Water Temperature	°C	26.5	DEP FT1400	0.1	0.1		06/19/12 14:15	RJS
Specific conductance	umhos/cm	331	DEP FT1200	0.1	0.1		06/19/12 14:15	RJS
Dissolved Oxygen	mg/L	1.2	DEP FT1500	0.1	0.1		06/19/12 14:15	RJS
Inorganics								
Ammonia as N	mg/L	0.084	EPA 350.1	0.040	0.009		06/20/12 14:59	MMF
Ammonium as NH4	mg/L	0.11	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	22	EPA 300.0	0.20	0.050		06/23/12 01:43	JAG
Nitrate+Nitrite (N)	mg/L	6.6	EPA 353.2	0.20	0.05		06/21/12 11:14	MMF
Total Alkalinity	mg/L	18	SM 2320B	8.0	2.0		06/26/12 15:52	MBC
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	06/20/12 14:13	06/22/12 11:57	MMF
Sample Description		**PZ35-BKG09**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-37**						
Date/Time Collected		**06/19/12 15:15**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	6.0	DEP FT1100	0.1	0.1		06/19/12 15:15	RJS
Water Temperature	°C	26.9	DEP FT1400	0.1	0.1		06/19/12 15:15	RJS
Specific conductance	umhos/cm	863	DEP FT1200	0.1	0.1		06/19/12 15:15	RJS
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		06/19/12 15:15	RJS
Inorganics								
Ammonia as N	mg/L	0.012 I	EPA 350.1	0.040	0.009		06/20/12 15:01	MMF
Ammonium as NH4	mg/L	0.01	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	17	EPA 300.0	0.20	0.050		06/23/12 01:43	JAG
Nitrate+Nitrite (N)	mg/L	3.9	EPA 353.2	0.20	0.05		06/21/12 11:16	MMF
Total Alkalinity	mg/L	120	SM 2320B	8.0	2.0		06/26/12 15:52	MBC
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	06/20/12 14:13	06/22/12 11:59	MMF
Sample Description		**PZ36-BKG-16**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-38**						
Date/Time Collected		**06/19/12 15:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						

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Sample Description		**PZ36-BKG-16**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-38**						
Date/Time Collected		**06/19/12 15:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	5.4	DEP FT1100	0.1	0.1		06/19/12 15:40	RJS
Water Temperature	°C	25.7	DEP FT1400	0.1	0.1		06/19/12 15:40	RJS
Specific conductance	umhos/cm	254	DEP FT1200	0.1	0.1		06/19/12 15:40	RJS
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		06/19/12 15:40	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 15:03	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	7.8	EPA 300.0	0.20	0.050		06/23/12 01:43	JAG
Nitrate+Nitrite (N)	mg/L	5.3	EPA 353.2	0.20	0.05		06/21/12 11:18	MMF
Total Alkalinity	mg/L	13	SM 2320B	8.0	2.0		06/26/12 15:52	MBC
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	06/20/12 14:13	06/22/12 12:01	MMF
Sample Description		**PZ37-BKG-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-39**						
Date/Time Collected		**06/19/12 16:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Field Parameters								
pH	SU	5.2	DEP FT1100	0.1	0.1		06/19/12 16:10	RJS
Specific conductance	umhos/cm	333	DEP FT1200	0.1	0.1		06/19/12 16:10	RJS
Dissolved Oxygen	mg/L	1.7	DEP FT1500	0.1	0.1		06/19/12 16:10	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/20/12 15:05	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/21/12 10:51	06/21/12 10:52	ARP
Chloride	mg/L	20	EPA 300.0	0.20	0.050		06/23/12 01:43	JAG
Nitrate+Nitrite (N)	mg/L	15	EPA 353.2	1.0	0.25		06/21/12 11:50	MMF
Total Alkalinity	mg/L	6.3 I	SM 2320B	8.0	2.0		06/26/12 15:52	MBC
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	06/20/12 14:13	06/22/12 12:02	MMF
Sample Description		**PZ38-BKG09**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-40**						
Date/Time Collected		**06/20/12 08:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/20/12 16:30**						

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Sample Description		**PZ38-BKG09**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-40**						
Date/Time Collected		**06/20/12 08:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/20/12 16:30**						
Field Parameters								
pH	SU	6.2	DEP FT1100	0.1	0.1		06/20/12 08:30	RJS
Water Temperature	°C	25.2	DEP FT1400	0.1	0.1		06/20/12 08:30	RJS
Specific conductance	umhos/cm	552	DEP FT1200	0.1	0.1		06/20/12 08:30	RJS
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		06/20/12 08:30	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 15:09	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	10	EPA 300.0	0.20	0.050		06/23/12 09:56	JAG
Nitrate+Nitrite (N)	mg/L	0.77	EPA 353.2	0.04	0.01		06/27/12 11:12	MMF
Total Alkalinity	mg/L	75	SM 2320B	8.0	2.0		06/26/12 15:52	MBC
Total Kjeldahl Nitrogen	mg/L	0.40	EPA 351.2	0.20	0.05	06/26/12 12:59	06/28/12 10:23	MMF
Sample Description		**PZ39-BKG-16**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-41**						
Date/Time Collected		**06/20/12 09:05**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/20/12 16:30**						
Field Parameters								
pH	SU	6.2	DEP FT1100	0.1	0.1		06/20/12 09:05	RJS
Water Temperature	°C	24.6	DEP FT1400	0.1	0.1		06/20/12 09:05	RJS
Specific conductance	umhos/cm	340	DEP FT1200	0.1	0.1		06/20/12 09:05	RJS
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		06/20/12 09:05	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 15:11	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	7.0	EPA 300.0	0.20	0.050		06/23/12 09:56	JAG
Nitrate+Nitrite (N)	mg/L	3.1	EPA 353.2	0.40	0.10		06/27/12 13:11	MMF
Total Alkalinity	mg/L	54	SM 2320B	8.0	2.0		06/26/12 15:52	MBC
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	06/26/12 12:59	06/28/12 10:25	MMF

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**PZ40-BKG-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1206568-42**						
Date/Time Collected		**06/20/12 09:55**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/20/12 16:30**						
Field Parameters								
pH	SU	5.0	DEP FT1100	0.1	0.1		06/20/12 09:55	RJS
Water Temperature	°C	24.9	DEP FT1400	0.1	0.1		06/20/12 09:55	RJS
Specific conductance	umhos/cm	279	DEP FT1200	0.1	0.1		06/20/12 09:55	RJS
Dissolved Oxygen	mg/L	1.9	DEP FT1500	0.1	0.1		06/20/12 09:55	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/21/12 15:13	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	06/22/12 10:12	06/22/12 10:13	ARP
Chloride	mg/L	15	EPA 300.0	0.20	0.050		06/23/12 09:56	JAG
Nitrate+Nitrite (N)	mg/L	7.2	EPA 353.2	0.20	0.05		06/25/12 12:40	MMF
Total Alkalinity	mg/L	5.2 I	SM 2320B	8.0	2.0		06/26/12 15:52	MBC
Total Kjeldahl Nitrogen	mg/L	0.78	EPA 351.2	0.20	0.05	06/26/12 12:59	06/28/12 10:30	MMF
Sample Description		**FB-Tap**						
Matrix		**Drinking Water**						
SAL Sample Number		**1206568-43**						
Date/Time Collected		**06/21/12 15:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/20/12 16:30**						
Field Parameters								
pH	SU	7.2	DEP FT1100	0.1	0.1		06/21/12 15:10	RJS
Water Temperature	°C	30.5	DEP FT1400	0.1	0.1		06/21/12 15:10	RJS
Specific conductance	umhos/cm	431	DEP FT1200	0.1	0.1		06/21/12 15:10	RJS
Dissolved Oxygen	mg/L	3.5	DEP FT1500	0.1	0.1		06/21/12 15:10	RJS
Inorganics								
Ammonia as N	mg/L	0.15	EPA 350.1	0.040	0.009		06/26/12 14:55	MMF
Ammonium as NH4	mg/L	0.20	EPA 350.1	0.01	0.005	07/03/12 16:40	07/03/12 16:42	MMF
Chloride	mg/L	21	EPA 300.0	0.20	0.050		06/25/12 16:31	JAG
Nitrate+Nitrite (N)	mg/L	0.03 I	EPA 353.2	0.04	0.01		06/25/12 11:48	MMF
Total Alkalinity	mg/L	150	SM 2320B	8.0	2.0		06/26/12 15:52	MBC
Total Kjeldahl Nitrogen	mg/L	0.29	EPA 351.2	0.20	0.05	06/26/12 12:59	07/06/12 13:00	MMF

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**FB-DI**						
Matrix		**Reagent Water**						
SAL Sample Number		**1206568-44**						
Date/Time Collected		**06/21/12 15:00**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/20/12 16:30**						
Field Parameters								
pH	SU	7.6	DEP FT1100	0.1	0.1		06/21/12 15:00	RJS
Water Temperature	°C	30.5	DEP FT1400	0.1	0.1		06/21/12 15:00	RJS
Specific conductance	umhos/cm	8	DEP FT1200	0.1	0.1		06/21/12 15:00	RJS
Dissolved Oxygen	mg/L	4.8	DEP FT1500	0.1	0.1		06/21/12 15:00	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/26/12 15:57	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/03/12 16:40	07/03/12 16:42	MMF
Chloride	mg/L	0.23	EPA 300.0	0.20	0.050		06/25/12 16:31	JAG
Nitrate+Nitrite (N)	mg/L	0.01 U	EPA 353.2	0.04	0.01		06/27/12 13:14	MMF
Total Alkalinity	mg/L	2.1 I	SM 2320B	8.0	2.0		06/26/12 15:52	MBC
Total Kjeldahl Nitrogen	mg/L	0.05 U	EPA 351.2	0.20	0.05	06/26/12 12:59	06/28/12 11:57	MMF
Sample Description		**EB**						
Matrix		**Reagent Water**						
SAL Sample Number		**1206568-45**						
Date/Time Collected		**06/21/12 07:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/20/12 16:30**						
Field Parameters								
pH	SU	8.0	DEP FT1100	0.1	0.1		06/21/12 07:20	RJS
Water Temperature	°C	23.5	DEP FT1400	0.1	0.1		06/21/12 07:20	RJS
Specific conductance	umhos/cm	7	DEP FT1200	0.1	0.1		06/21/12 07:20	RJS
Dissolved Oxygen	mg/L	3.4	DEP FT1500	0.1	0.1		06/21/12 07:20	RJS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		06/26/12 14:59	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	07/03/12 16:40	07/03/12 16:42	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	06/25/12 10:45	06/25/12 15:50	LAS
Chloride	mg/L	0.050 U	EPA 300.0	0.20	0.050		06/22/12 16:57	JAG
Fluoride	mg/L	0.061	EPA 300.0	0.040	0.010		06/22/12 16:57	JAG
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		06/22/12 16:57	JAG
Nitrate+Nitrite (N)	mg/L	0.01 I	EPA 353.2	0.04	0.01		06/25/12 11:50	MMF
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		06/22/12 16:57	JAG
Sulfate	mg/L	0.20 U	EPA 300.0	0.60	0.20		06/22/12 16:57	JAG
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		06/26/12 15:52	MBC
Total Kjeldahl Nitrogen	mg/L	0.05 U	EPA 351.2	0.20	0.05	06/26/12 12:59	06/28/12 10:35	MMF
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	1.2	SM 5310B	1.0	0.50		06/22/12 12:10	ARP

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

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Sample Description		**EB**						
Matrix		**Reagent Water**						
SAL Sample Number		**1206568-45**						
Date/Time Collected		**06/21/12 07:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/20/12 16:30**						
Metals								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	06/26/12 10:36	06/26/12 12:49	VWC
Calcium	mg/L	0.042 U	EPA 200.7	0.50	0.042	06/26/12 10:36	06/26/12 12:49	VWC
Iron	mg/L	0.020 U	EPA 200.7	0.10	0.020	06/26/12 10:36	06/26/12 12:49	VWC
Magnesium	mg/L	0.020 U	EPA 200.7	0.50	0.020	06/26/12 10:36	06/26/12 12:49	VWC
Manganese	mg/L	0.0010 U	EPA 200.7	0.010	0.0010	06/26/12 10:36	06/26/12 12:49	VWC
Potassium	mg/L	0.010 U	EPA 200.7	0.050	0.010	06/26/12 10:36	06/26/12 15:34	VWC
Sodium	mg/L	0.13 U	EPA 200.7	0.50	0.13	06/26/12 10:36	06/26/12 15:34	VWC

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BF21901 - Digestion for TKN by EPA 351.2										
Blank (BF21901-BLK1)					Prepared: 06/19/12 Analyzed: 06/20/12					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BF21901-BS1)					Prepared: 06/19/12 Analyzed: 06/20/12					
Total Kjeldahl Nitrogen	2.38	0.20	0.05	mg/L	2.5		94	90-110		
Matrix Spike (BF21901-MS1)		**Source: 1206544-02**			Prepared: 06/19/12 Analyzed: 06/20/12					
Total Kjeldahl Nitrogen	3.90	0.20	0.05	mg/L	2.5	0.927	117	80-120		
Matrix Spike Dup (BF21901-MSD1)		**Source: 1206544-02**			Prepared: 06/19/12 Analyzed: 06/20/12					
Total Kjeldahl Nitrogen	3.90	0.20	0.05	mg/L	2.5	0.927	118	80-120	0.03	20
Batch BF21904 - Ion Chromatography 300.0 Prep										
Blank (BF21904-BLK1)					Prepared & Analyzed: 06/19/12					
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 (BF21904-BS1)					Prepared & Analyzed: 06/19/12					
Nitrate (as N)	1.72	0.04	0.01	mg/L	1.7		101	85-115		
Nitrite (as N)	1.35	0.04	0.01	mg/L	1.4		96	85-115		
LCS Dup (BF21904-BSD1)					Prepared & Analyzed: 06/19/12					
Nitrate (as N)	1.72	0.04	0.01	mg/L	1.7		101	85-115	0	200
Nitrite (as N)	1.38	0.04	0.01	mg/L	1.4		99	85-115	2	200
Matrix Spike (BF21904-MS1)		**Source: 1206569-42**			Prepared & Analyzed: 06/19/12					
Nitrate (as N)	25.8 +O	0.04	0.01	mg/L	1.7	53.3	NR	85-115		
Nitrite (as N)	1.59	0.04	0.01	mg/L	1.4	0.314	91	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 BF21904 - Ion Chromatography 300.0 Prep										
Matrix Spike (BF21904-MS2)		**Source: 1206569-94**			Prepared & Analyzed: 06/19/12					
Nitrite (as N)	1.33	0.04	0.01	mg/L	1.4	ND	95	85-115		
Nitrate (as N)	25.1 +O	0.04	0.01	mg/L	1.7	38.1	NR	85-115		
Batch BF21905 - Ion Chromatography 300.0 Prep										
Blank (BF21905-BLK1)					Prepared & Analyzed: 06/20/12					
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BF21905-BS1)					Prepared & Analyzed: 06/20/12					
Chloride	3.09	0.20	0.050	mg/L	3.0		103	85-115		
LCS Dup (BF21905-BSD1)					Prepared & Analyzed: 06/20/12					
Chloride	3.09	0.20	0.050	mg/L	3.0		103	85-115	0	200
Matrix Spike (BF21905-MS1)		**Source: 1206568-25**			Prepared & Analyzed: 06/20/12					
Chloride	11.6	0.20	0.050	mg/L	3.0	8.44	105	80-120		
Batch BF21916 - alkalinity										
Blank (BF21916-BLK1)					Prepared & Analyzed: 06/19/12					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BF21916-BS1)					Prepared & Analyzed: 06/19/12					
Total Alkalinity	130	8.0	2.0	mg/L	120		103	90-110		
Matrix Spike (BF21916-MS1)		**Source: 1206430-01**			Prepared & Analyzed: 06/19/12					
Total Alkalinity	240	8.0	2.0	mg/L	120	120	95	80-120		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BF21916 - alkalinity										
Matrix Spike Dup (BF21916-MSD1)		**Source: 1206430-01**			Prepared & Analyzed: 06/19/12					
Total Alkalinity	230	8.0	2.0	mg/L	120	120	86	80-120	5	26
Batch BF22001 - Ammonia by SEAL										
Blank (BF22001-BLK1)					Prepared & Analyzed: 06/20/12					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BF22001-BS1)					Prepared & Analyzed: 06/20/12					
Ammonia as N	0.48	0.040	0.009	mg/L	0.50		96	90-110		
Matrix Spike (BF22001-MS1)		**Source: 1206522-07**			Prepared & Analyzed: 06/20/12					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	0.026	97	90-110		
Matrix Spike Dup (BF22001-MSD1)		**Source: 1206522-07**			Prepared & Analyzed: 06/20/12					
Ammonia as N	0.52	0.040	0.009	mg/L	0.50	0.026	98	90-110	1	10
Batch BF22005 - Ion Chromatography 300.0 Prep										
Blank (BF22005-BLK1)					Prepared & Analyzed: 06/20/12					
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BF22005-BS1)					Prepared & Analyzed: 06/20/12					
Chloride	3.08	0.20	0.050	mg/L	3.0		103	85-115		
Nitrate (as N)	1.70	0.04	0.01	mg/L	1.7		100	85-115		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BF22005 - Ion Chromatography 300.0 Prep										
LCS Dup (BF22005-BSD1)					Prepared & Analyzed: 06/20/12					
Nitrate (as N)	1.71	0.04	0.01	mg/L	1.7		101	85-115	0.6	200
Chloride	3.10	0.20	0.050	mg/L	3.0		103	85-115	0.6	200
Matrix Spike (BF22005-MS1)		**Source: 1206569-67**			Prepared & Analyzed: 06/20/12					
Nitrate (as N)	42.3	0.04	0.01	mg/L	17	24.9	102	85-115		
Chloride	104	0.20	0.050	mg/L	30	74.8	97	80-120		
Matrix Spike (BF22005-MS2)		**Source: 1206582-09**			Prepared & Analyzed: 06/20/12					
Chloride	132	0.20	0.050	mg/L	30	102	100	80-120		
Nitrate (as N)	17.2	0.04	0.01	mg/L	17	0.293	99	85-115		
Batch BF22006 - Ion Chromatography 300.0 Prep										
Blank (BF22006-BLK1)					Prepared & Analyzed: 06/21/12					
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BF22006-BS1)					Prepared & Analyzed: 06/21/12					
Chloride	3.16	0.20	0.050	mg/L	3.0		105	85-115		
LCS Dup (BF22006-BSD1)					Prepared & Analyzed: 06/21/12					
Chloride	3.16	0.20	0.050	mg/L	3.0		105	85-115	0	200
Matrix Spike (BF22006-MS1)		**Source: 1206593-06**			Prepared & Analyzed: 06/21/12					
Chloride	674	0.20	0.050	mg/L	300	357	106	80-120		
Matrix Spike (BF22006-MS2)		**Source: 1206568-24**			Prepared & Analyzed: 06/21/12					
Chloride	8.21	0.20	0.050	mg/L	3.0	4.87	111	80-120		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BF22012 - Ammonia by SEAL										
Blank (BF22012-BLK1)					Prepared & Analyzed: 06/20/12					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BF22012-BS1)					Prepared & Analyzed: 06/20/12					
Ammonia as N	0.49	0.040	0.009	mg/L	0.50		97	90-110		
Matrix Spike (BF22012-MS1)		**Source: 1206568-01**			Prepared & Analyzed: 06/20/12					
Ammonia as N	0.48	0.040	0.009	mg/L	0.50	ND	95	90-110		
Matrix Spike Dup (BF22012-MSD1)		**Source: 1206568-01**			Prepared & Analyzed: 06/20/12					
Ammonia as N	0.46	0.040	0.009	mg/L	0.50	ND	91	90-110	4	10
Batch BF22013 - Ammonia by SEAL										
Blank (BF22013-BLK1)					Prepared & Analyzed: 06/20/12					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BF22013-BS1)					Prepared & Analyzed: 06/20/12					
Ammonia as N	0.48	0.040	0.009	mg/L	0.50		96	90-110		
Matrix Spike (BF22013-MS1)		**Source: 1206574-02**			Prepared & Analyzed: 06/20/12					
Ammonia as N	0.49	0.040	0.009	mg/L	0.50	0.029	93	90-110		
Matrix Spike Dup (BF22013-MSD1)		**Source: 1206574-02**			Prepared & Analyzed: 06/20/12					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.029	93	90-110	0.7	10
Batch BF22021 - Digestion for TKN by EPA 351.2										
Blank (BF22021-BLK1)					Prepared: 06/20/12 Analyzed: 06/22/12					
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 BF22021 - Digestion for TKN by EPA 351.2										
LCS (BF22021-BS1)					Prepared: 06/20/12 Analyzed: 06/22/12					
Total Kjeldahl Nitrogen	2.73	0.20	0.05	mg/L	2.5		108	90-110		
Matrix Spike (BF22021-MS1)		**Source: 1206565-02**			Prepared: 06/20/12 Analyzed: 06/22/12					
Total Kjeldahl Nitrogen	3.35	0.20	0.05	mg/L	2.5	0.484	113	80-120		
Matrix Spike Dup (BF22021-MSD1)		**Source: 1206565-02**			Prepared: 06/20/12 Analyzed: 06/22/12					
Total Kjeldahl Nitrogen	3.26	0.20	0.05	mg/L	2.5	0.484	109	80-120	3	20
Batch BF22022 - Digestion for TKN by EPA 351.2										
Blank (BF22022-BLK1)					Prepared: 06/20/12 Analyzed: 06/22/12					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BF22022-BS1)					Prepared: 06/20/12 Analyzed: 06/22/12					
Total Kjeldahl Nitrogen	2.42	0.20	0.05	mg/L	2.5		96	90-110		
Matrix Spike (BF22022-MS1)		**Source: 1206568-30**			Prepared: 06/20/12 Analyzed: 06/22/12					
Total Kjeldahl Nitrogen	4.53	0.20	0.05	mg/L	2.5	1.95	102	80-120		
Matrix Spike Dup (BF22022-MSD1)		**Source: 1206568-30**			Prepared: 06/20/12 Analyzed: 06/22/12					
Total Kjeldahl Nitrogen	4.61	0.20	0.05	mg/L	2.5	1.95	105	80-120	2	20
Batch BF22033 - COD prep										
Blank (BF22033-BLK1)					Prepared & Analyzed: 06/20/12					
Chemical Oxygen Demand	10 U	25	10	mg/L						

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Tampa, FL 33619

August 9, 2012
Work Order: 1206568
Revised Report

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BF22033 - COD prep										
LCS (BF22033-BS1)					Prepared & Analyzed: 06/20/12					
Chemical Oxygen Demand	46	25	10	mg/L	50		92	90-110		
Matrix Spike (BF22033-MS1)		**Source: 1206569-10**			Prepared & Analyzed: 06/20/12					
Chemical Oxygen Demand	75	25	10	mg/L	50	28	94	85-115		
Matrix Spike Dup (BF22033-MSD1)		**Source: 1206569-10**			Prepared & Analyzed: 06/20/12					
Chemical Oxygen Demand	77	25	10	mg/L	50	28	98	85-115	3	32
Batch BF22102 - Nitrate 353.2 by seal										
Blank (BF22102-BLK1)					Prepared & Analyzed: 06/21/12					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BF22102-BS1)					Prepared & Analyzed: 06/21/12					
Nitrate+Nitrite (N)	0.723	0.04	0.01	mg/L	0.80		90	90-110		
Matrix Spike (BF22102-MS1)		**Source: 1206569-59**			Prepared & Analyzed: 06/21/12					
Nitrate+Nitrite (N)	2.20	0.20	0.05	mg/L	1.0	1.06	114	77-119		
Matrix Spike Dup (BF22102-MSD1)		**Source: 1206569-59**			Prepared & Analyzed: 06/21/12					
Nitrate+Nitrite (N)	2.17	0.20	0.05	mg/L	1.0	1.06	111	77-119	1	20
Batch BF22106 - Ammonia by SEAL										
Blank (BF22106-BLK1)					Prepared & Analyzed: 06/21/12					
Ammonia as N	0.009 U	0.040	0.009	mg/L						

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Batch BF22106 - Ammonia by SEAL										
LCS (BF22106-BS1)					Prepared & Analyzed: 06/21/12					
Ammonia as N	0.48	0.040	0.009	mg/L	0.50		96	90-110		
Matrix Spike (BF22106-MS1)		**Source: 1206597-01**			Prepared & Analyzed: 06/21/12					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	ND	100	90-110		
Matrix Spike Dup (BF22106-MSD1)		**Source: 1206597-01**			Prepared & Analyzed: 06/21/12					
Ammonia as N	0.48	0.040	0.009	mg/L	0.50	ND	97	90-110	3	10
Batch BF22109 - Ion Chromatography 300.0 Prep										
Blank (BF22109-BLK1)					Prepared & Analyzed: 06/21/12					
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 (BF22109-BS1)					Prepared & Analyzed: 06/21/12					
Nitrite (as N)	1.37	0.04	0.01	mg/L	1.4		98	85-115		
Nitrate (as N)	1.71	0.04	0.01	mg/L	1.7		101	85-115		
LCS Dup (BF22109-BSD1)					Prepared & Analyzed: 06/21/12					
Nitrate (as N)	1.71	0.04	0.01	mg/L	1.7		101	85-115	0	200
Nitrite (as N)	1.41	0.04	0.01	mg/L	1.4		101	85-115	3	200
Matrix Spike (BF22109-MS1)		**Source: 1206653-03**			Prepared & Analyzed: 06/21/12					
Nitrite (as N)	1.39	0.04	0.01	mg/L	1.4	ND	99	85-115		
Nitrate (as N)	1.70	0.04	0.01	mg/L	1.7	0.0139	99	85-115		
Matrix Spike (BF22109-MS2)		**Source: 1206665-01**			Prepared & Analyzed: 06/21/12					
Nitrate (as N)	12.9	0.04	0.01	mg/L	1.7	11.1	106	85-115		
Nitrite (as N)	1.44	0.04	0.01	mg/L	1.4	ND	103	85-115		

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Batch BF22121 - Ammonia by SEAL										
Blank (BF22121-BLK1)					Prepared & Analyzed: 06/21/12					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BF22121-BS1)					Prepared & Analyzed: 06/21/12					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50		100	90-110		
Matrix Spike (BF22121-MS1)		**Source: 1206568-20**			Prepared & Analyzed: 06/21/12					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	ND	101	90-110		
Matrix Spike Dup (BF22121-MSD1)		**Source: 1206568-20**			Prepared & Analyzed: 06/21/12					
Ammonia as N	0.54	0.040	0.009	mg/L	0.50	ND	107	90-110	6	10
Batch BF22207 - Ion Chromatography 300.0 Prep										
Blank (BF22207-BLK1)					Prepared & Analyzed: 06/23/12					
Sulfate	0.20 U	0.60	0.20	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BF22207-BS1)					Prepared & Analyzed: 06/23/12					
Sulfate	8.74	0.60	0.20	mg/L	9.0		97	85-115		
Chloride	3.23	0.20	0.050	mg/L	3.0		108	85-115		
LCS Dup (BF22207-BSD1)					Prepared & Analyzed: 06/23/12					
Sulfate	8.83	0.60	0.20	mg/L	9.0		98	85-115	1	200
Chloride	3.24	0.20	0.050	mg/L	3.0		108	85-115	0.3	200
Matrix Spike (BF22207-MS1)		**Source: 1206568-29**			Prepared & Analyzed: 06/23/12					
Chloride	20.4	0.20	0.050	mg/L	3.0	17.7	90	80-120		
Sulfate	57.3	0.60	0.20	mg/L	9.0	49.0	92	85-115		

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Batch BF22207 - Ion Chromatography 300.0 Prep										
Matrix Spike (BF22207-MS2)		**Source: 1206568-39**			Prepared & Analyzed: 06/23/12					
Chloride	22.3	0.20	0.050	mg/L	3.0	19.5	93	80-120		
Sulfate	53.3	0.60	0.20	mg/L	9.0	44.5	98	85-115		
Batch BF22208 - Ion Chromatography 300.0 Prep										
Blank (BF22208-BLK1)					Prepared & Analyzed: 06/23/12					
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BF22208-BS1)					Prepared & Analyzed: 06/23/12					
Chloride	3.22	0.20	0.050	mg/L	3.0		107	85-115		
LCS Dup (BF22208-BSD1)					Prepared & Analyzed: 06/23/12					
Chloride	3.21	0.20	0.050	mg/L	3.0		107	85-115	0.3	200
Matrix Spike (BF22208-MS1)		**Source: 1206569-19**			Prepared & Analyzed: 06/23/12					
Chloride	22.4	0.20	0.050	mg/L	3.0	19.2	107	80-120		
Matrix Spike (BF22208-MS2)		**Source: 1206569-47**			Prepared & Analyzed: 06/23/12					
Chloride	33.9 +O	0.20	0.050	mg/L	3.0	32.5	47	80-120		
Batch BF22218 - Ion Chromatography 300.0 Prep										
Blank (BF22218-BLK1)					Prepared & Analyzed: 06/22/12					
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						
Sulfate	0.20 U	0.60	0.20	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						

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Batch BF22218 - Ion Chromatography 300.0 Prep										
LCS (BF22218-BS1)					Prepared & Analyzed: 06/22/12					
Fluoride	0.940	0.040	0.010	mg/L	0.90		104	85-115		
Nitrate (as N)	1.72	0.04	0.01	mg/L	1.7		101	85-115		
Nitrite (as N)	1.43	0.04	0.01	mg/L	1.4		102	85-115		
Sulfate	8.86	0.60	0.20	mg/L	9.0		98	85-115		
Chloride	3.21	0.20	0.050	mg/L	3.0		107	85-115		
Orthophosphate as P	0.933	0.040	0.010	mg/L	0.90		104	85-115		
LCS Dup (BF22218-BSD1)					Prepared & Analyzed: 06/22/12					
Chloride	3.21	0.20	0.050	mg/L	3.0		107	85-115	0	200
Nitrate (as N)	1.71	0.04	0.01	mg/L	1.7		101	85-115	0.6	200
Orthophosphate as P	0.884	0.040	0.010	mg/L	0.90		98	85-115	5	200
Nitrite (as N)	1.45	0.04	0.01	mg/L	1.4		104	85-115	1	200
Sulfate	8.82	0.60	0.20	mg/L	9.0		98	85-115	0.5	200
Fluoride	0.940	0.040	0.010	mg/L	0.90		104	85-115	0	200
Matrix Spike (BF22218-MS1)		**Source: 1206569-03**			Prepared & Analyzed: 06/22/12					
Fluoride	4.54	0.040	0.010	mg/L	0.90	3.69	94	85-115		
Nitrate (as N)	1.69	0.04	0.01	mg/L	1.7	0.0152	99	85-115		
Orthophosphate as P	5.23	0.040	0.010	mg/L	0.90	4.31	102	85-115		
Chloride	44.6 +O	0.20	0.050	mg/L	3.0	96.0	NR	80-120		
Sulfate	30.6	0.60	0.20	mg/L	9.0	22.2	93	85-115		
Nitrite (as N)	1.36	0.04	0.01	mg/L	1.4	ND	97	85-115		
Batch BF22221 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BF22221-BLK1)					Prepared: 06/22/12 Analyzed: 06/23/12					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						

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Batch BF22221 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BF22221-BLK2)					Prepared: 06/22/12 Analyzed: 06/23/12					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BF22221-BS1)					Prepared: 06/22/12 Analyzed: 06/23/12					
Phosphorous - Total as P	0.819	0.040	0.010	mg/L	0.80		102	90-110		
LCS (BF22221-BS2)					Prepared: 06/22/12 Analyzed: 06/23/12					
Phosphorous - Total as P	0.763	0.040	0.010	mg/L	0.80		95	90-110		
Matrix Spike (BF22221-MS1)		**Source: 1206666-01**			Prepared: 06/22/12 Analyzed: 06/23/12					
Phosphorous - Total as P	0.943	0.040	0.010	mg/L	1.0	0.0133	93	75-125		
Matrix Spike (BF22221-MS2)		**Source: 1206662-02**			Prepared: 06/22/12 Analyzed: 06/23/12					
Phosphorous - Total as P	1.14	0.040	0.010	mg/L	1.0	0.0368	110	75-125		
Matrix Spike Dup (BF22221-MSD1)		**Source: 1206666-01**			Prepared: 06/22/12 Analyzed: 06/23/12					
Phosphorous - Total as P	0.870	0.040	0.010	mg/L	1.0	0.0133	86	75-125	8	25
Matrix Spike Dup (BF22221-MSD2)		**Source: 1206662-02**			Prepared: 06/22/12 Analyzed: 06/23/12					
Phosphorous - Total as P	0.948	0.040	0.010	mg/L	1.0	0.0368	91	75-125	18	25
Batch BF22507 - Nitrate 353.2 by seal										
Blank (BF22507-BLK1)					Prepared & Analyzed: 06/25/12					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BF22507-BS1)					Prepared & Analyzed: 06/25/12					
Nitrate+Nitrite (N)	0.781	0.04	0.01	mg/L	0.80		98	90-110		

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Batch BF22507 - Nitrate 353.2 by seal										
Matrix Spike (BF22507-MS1)		**Source: 1206568-43**			Prepared & Analyzed: 06/25/12					
Nitrate+Nitrite (N)	0.951	0.04	0.01	mg/L	1.0	0.0326	92	77-119		
Matrix Spike Dup (BF22507-MSD1)		**Source: 1206568-43**			Prepared & Analyzed: 06/25/12					
Nitrate+Nitrite (N)	0.934	0.04	0.01	mg/L	1.0	0.0326	90	77-119	2	20
Batch BF22518 - Ion Chromatography 300.0 Prep										
Blank (BF22518-BLK1)					Prepared & Analyzed: 06/25/12					
Sulfate	0.20 U	0.60	0.20	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BF22518-BS1)					Prepared & Analyzed: 06/25/12					
Sulfate	8.89	0.60	0.20	mg/L	9.0		99	85-115		
Chloride	3.11	0.20	0.050	mg/L	3.0		104	85-115		
LCS Dup (BF22518-BSD1)					Prepared & Analyzed: 06/25/12					
Sulfate	8.89	0.60	0.20	mg/L	9.0		99	85-115	0	200
Chloride	3.11	0.20	0.050	mg/L	3.0		104	85-115	0	200
Matrix Spike (BF22518-MS1)		**Source: 1206767-03**			Prepared & Analyzed: 06/25/12					
Sulfate	8.82	0.60	0.20	mg/L	9.0	ND	98	85-115		
Chloride	3.07	0.20	0.050	mg/L	3.0	ND	102	80-120		
Matrix Spike (BF22518-MS2)		**Source: 1206569-01**			Prepared & Analyzed: 06/25/12					
Chloride	44.6 +O	0.20	0.050	mg/L	3.0	105	NR	80-120		
Sulfate	15.1	0.60	0.20	mg/L	9.0	6.91	91	85-115		

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Batch BF22536 - COD prep										
Blank (BF22536-BLK1)					Prepared & Analyzed: 06/25/12					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BF22536-BS1)					Prepared & Analyzed: 06/25/12					
Chemical Oxygen Demand	48	25	10	mg/L	50		96	90-110		
Matrix Spike (BF22536-MS1)		**Source: 1206720-01**			Prepared & Analyzed: 06/25/12					
Chemical Oxygen Demand	73	25	10	mg/L	50	26	94	85-115		
Matrix Spike Dup (BF22536-MSD1)		**Source: 1206720-01**			Prepared & Analyzed: 06/25/12					
Chemical Oxygen Demand	71	25	10	mg/L	50	26	90	85-115	3	32
Batch BF22617 - Digestion for TKN by EPA 351.2										
Blank (BF22617-BLK1)					Prepared: 06/26/12 Analyzed: 06/28/12					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BF22617-BS1)					Prepared: 06/26/12 Analyzed: 06/28/12					
Total Kjeldahl Nitrogen	2.52	0.20	0.05	mg/L	2.5		100	90-110		
Matrix Spike (BF22617-MS1)		**Source: 1206756-02**			Prepared: 06/26/12 Analyzed: 06/28/12					
Total Kjeldahl Nitrogen	3.67	0.20	0.05	mg/L	2.5	1.28	94	80-120		
Matrix Spike Dup (BF22617-MSD1)		**Source: 1206756-02**			Prepared: 06/26/12 Analyzed: 06/28/12					
Total Kjeldahl Nitrogen	3.63	0.20	0.05	mg/L	2.5	1.28	93	80-120	1	20
Batch BF22620 - Ammonia by SEAL										
Blank (BF22620-BLK1)					Prepared & Analyzed: 06/26/12					
Ammonia as N	0.009 U	0.040	0.009	mg/L						

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Batch BF22620 - Ammonia by SEAL										
LCS (BF22620-BS1)					Prepared & Analyzed: 06/26/12					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50		101	90-110		
Matrix Spike (BF22620-MS1)		**Source: 1206739-07**			Prepared & Analyzed: 06/26/12					
Ammonia as N	0.57	0.040	0.009	mg/L	0.50	0.047	105	90-110		
Matrix Spike Dup (BF22620-MSD1)		**Source: 1206739-07**			Prepared & Analyzed: 06/26/12					
Ammonia as N	0.54	0.040	0.009	mg/L	0.50	0.047	99	90-110	6	10
Batch BF22621 - alkalinity										
Blank (BF22621-BLK1)					Prepared & Analyzed: 06/26/12					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BF22621-BLK2)					Prepared & Analyzed: 06/26/12					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BF22621-BLK3)					Prepared & Analyzed: 06/26/12					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BF22621-BS1)					Prepared & Analyzed: 06/26/12					
Total Alkalinity	130	8.0	2.0	mg/L	120		103	90-110		
LCS (BF22621-BS2)					Prepared & Analyzed: 06/26/12					
Total Alkalinity	130	8.0	2.0	mg/L	120		103	90-110		
LCS (BF22621-BS3)					Prepared & Analyzed: 06/26/12					
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		

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Batch BF22621 - alkalinity										
Matrix Spike (BF22621-MS1)		**Source: 1205880-07**			Prepared & Analyzed: 06/26/12					
Total Alkalinity	190	8.0	2.0	mg/L	120	75	95	80-120		
Matrix Spike Dup (BF22621-MSD1)		**Source: 1205880-07**			Prepared & Analyzed: 06/26/12					
Total Alkalinity	190	8.0	2.0	mg/L	120	75	95	80-120	0	26
Batch BF22702 - Nitrate 353.2 by seal										
Blank (BF22702-BLK1)					Prepared & Analyzed: 06/27/12					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BF22702-BS1)					Prepared & Analyzed: 06/27/12					
Nitrate+Nitrite (N)	0.810	0.04	0.01	mg/L	0.80		101	90-110		
Matrix Spike (BF22702-MS1)		**Source: 1206779-02**			Prepared & Analyzed: 06/27/12					
Nitrate+Nitrite (N)	1.00	0.04	0.01	mg/L	1.0	0.0807	92	77-119		
Matrix Spike Dup (BF22702-MSD1)		**Source: 1206779-02**			Prepared & Analyzed: 06/27/12					
Nitrate+Nitrite (N)	1.01	0.04	0.01	mg/L	1.0	0.0807	93	77-119	0.8	20
Batch BF22706 - Ion Chromatography 300.0 Prep										
Blank (BF22706-BLK1)					Prepared & Analyzed: 06/28/12					
Chloride	0.050 U	0.20	0.050	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
LCS (BF22706-BS1)					Prepared & Analyzed: 06/28/12					
Chloride	5.06 +O	0.20	0.050	mg/L	3.0		169	85-115		
Sulfate	8.74	0.60	0.20	mg/L	9.0		97	85-115		

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Batch BF22706 - Ion Chromatography 300.0 Prep										
LCS Dup (BF22706-BSD1)					Prepared & Analyzed: 06/28/12					
Sulfate	8.74	0.60	0.20	mg/L	9.0		97	85-115	0	200
Chloride	4.50 +O	0.20	0.050	mg/L	3.0		150	85-115	12	200
Matrix Spike (BF22706-MS1)		**Source: 1206569-20**			Prepared & Analyzed: 06/28/12					
Chloride	92.8	0.20	0.050	mg/L	30	58.4	115	80-120		
Sulfate	131	0.60	0.20	mg/L	90	36.3	105	85-115		
Matrix Spike (BF22706-MS2)		**Source: 1206569-53**			Prepared & Analyzed: 06/28/12					
Sulfate	85.0	0.60	0.20	mg/L	9.0	76.8	91	85-115		
Chloride	10.4	0.20	0.050	mg/L	3.0	7.16	108	80-120		
Batch BF22903 - Nitrate 353.2 by seal										
Blank (BF22903-BLK1)					Prepared & Analyzed: 06/29/12					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BF22903-BS1)					Prepared & Analyzed: 06/29/12					
Nitrate+Nitrite (N)	0.876	0.04	0.01	mg/L	0.80		110	90-110		
Matrix Spike (BF22903-MS1)		**Source: 1206808-07**			Prepared & Analyzed: 06/29/12					
Nitrate+Nitrite (N)	1.64	0.04	0.01	mg/L	1.0	0.518	113	77-119		
Matrix Spike Dup (BF22903-MSD1)		**Source: 1206808-07**			Prepared & Analyzed: 06/29/12					
Nitrate+Nitrite (N)	1.69	0.04	0.01	mg/L	1.0	0.518	117	77-119	3	20

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

August 9, 2012
Work Order: 1206568
Revised Report

Inorganic, Dissolved - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BF22217 - TOC prep										
Blank (BF22217-BLK1)					Prepared & Analyzed: 06/22/12					
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BF22217-BS1)					Prepared & Analyzed: 06/22/12					
Dissolved Organic Carbon	10.3	1.0	0.50	mg/L	10		103	90-110		
Matrix Spike (BF22217-MS1)		**Source: 1206569-41**			Prepared & Analyzed: 06/22/12					
Dissolved Organic Carbon	20.2	1.0	0.50	mg/L	10	11.0	92	85-125		
Matrix Spike Dup (BF22217-MSD1)		**Source: 1206569-41**			Prepared & Analyzed: 06/22/12					
Dissolved Organic Carbon	20.5	1.0	0.50	mg/L	10	11.0	95	85-125	2	25

Hazen and Sawyer
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August 9, 2012
Work Order: 1206568
Revised Report

Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BF22607 - Metals Preparation for EPA Method 200.7										
Blank (BF22607-BLK1)					Prepared & Analyzed: 06/26/12					
Sodium	0.13 U	0.50	0.13	mg/L						
Boron	0.050 U	0.10	0.050	mg/L						
Manganese	0.0010 U	0.010	0.0010	mg/L						
Magnesium	0.029 I	0.50	0.020	mg/L						
Iron	0.020 U	0.10	0.020	mg/L						
Calcium	0.042 U	0.50	0.042	mg/L						
Potassium	0.010 U	0.050	0.010	mg/L						
LCS (BF22607-BS1)					Prepared & Analyzed: 06/26/12					
Potassium	18	0.050	0.010	mg/L	20		88	85-115		
Sodium	18	0.50	0.13	mg/L	20		92	85-115		
Boron	0.36	0.10	0.050	mg/L	0.40		90	85-115		
Calcium	17	0.50	0.042	mg/L	20		87	85-115		
Manganese	0.36	0.010	0.0010	mg/L	0.40		90	85-115		
Magnesium	18	0.50	0.020	mg/L	20		88	85-115		
Iron	7.3	0.10	0.020	mg/L	8.0		91	85-115		
Matrix Spike (BF22607-MS1)		**Source: 1206622-01**			Prepared & Analyzed: 06/26/12					
Sodium	22	0.50	0.13	mg/L	20	4.1	89	70-130		
Manganese	0.39	0.010	0.0010	mg/L	0.40	ND	97	70-130		
Magnesium	29	0.50	0.020	mg/L	20	11	89	70-130		
Potassium	21	0.050	0.010	mg/L	20	1.7	95	70-130		
Iron	7.9	0.10	0.020	mg/L	8.0	0.025	99	70-130		
Calcium	44	0.50	0.042	mg/L	20	29	79	70-130		
Boron	0.40	0.10	0.050	mg/L	0.40	ND	99	70-130		
Matrix Spike Dup (BF22607-MSD1)		**Source: 1206622-01**			Prepared & Analyzed: 06/26/12					
Boron	0.40	0.10	0.050	mg/L	0.40	ND	101	70-130	2	30
Magnesium	28	0.50	0.020	mg/L	20	11	84	70-130	3	30
Iron	7.9	0.10	0.020	mg/L	8.0	0.025	98	70-130	0.9	30
Manganese	0.39	0.010	0.0010	mg/L	0.40	ND	97	70-130	0.5	30
Calcium	44	0.50	0.042	mg/L	20	29	75	70-130	2	30
Sodium	22	0.50	0.13	mg/L	20	4.1	91	70-130	2	30
Potassium	20	0.050	0.010	mg/L	20	1.7	93	70-130	2	30

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
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August 9, 2012
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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 Client Services at 813-855-1844.

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

1206568

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 #1 (Set 2)

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

	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, Nox, NH_4, TP	1LP, Cool Cl, Alkalinity, CBOD, TS, TSS	125mL P, $Na_2S_2O_3$ FC-MF	1LP, Cool Cl, Alkalinity, F, NO_3, Ortho-P, SO_4	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NO_2, NO_3, Cl	250mL P, H_2SO_4 TKN, NOx, NH_4	1LP, Cool Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NO_2, NO_3, Cl, Alkalinity	250mLaG, Cool DOC	Field pH	Field Temperature	Field Conductivity	Field DO
01	TA4-PZ-11-L5	6/19/12	1124	GW		X								1	1				5.2	25.9	478.4	1.92
02	TA4-PZ-11-L6	6/19/12	1058	GW		X								1	1				5.2	26.0	546.6	1.60
03	TA4-PZ-09-M4	6/19/12	0956	GW		X								1	1				6.7	25.6	636	0.31
04	TA4-PZ-16-M4	6/19/12	1020	GW										1	1				5.3	24.8	224.8	0.19
05	TA4-PZ-09-N7	6/19/12	0854	GW										1	1				5.6	25.7	364.0	1.03
06	TA4-PZ-16-N7	6/19/12	0921	GW										1	1				5.2	25.1	337.3	0.14
07	TA-PZ-09-I7	6/19/12	1012	GW										1	1				5.9	25.8	326.3	1.14
08	TA4-PZ-16-I7	6/19/12	1032	GW										1	1				5.5	25.0	261.4	0.16
09	TA4-PZ-09-L8		0906	GW										1	1				6.4	25.7	596	0.68
10	TA4-PZ-16-L8	↓	0944	GW										1	1				5.5	25.1	264.5	0.17
11	TA4-PZ-09-TU14	6/19/12	0738	GW										1	1				~~6.0~~	~~24.9~~	~~297.4~~	~~0.12~~
12	TA4-PZ-16-TU14	↓	0832	GW										1	1				6.0	24.9	297.4	0.12
																			5.4	25.5	196.4	0.42

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished: J. Chambers	6-14-12 13:10		1310 6 14 12
Relinquished:	1800 6/19/12	Received:	1800 06/19/12
Relinquished:		Received:	
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

1206568

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 #1 (Set 2)

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

	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, Nox, NH_4, TP	1LP, Cool Cl, Alkalinity, CBOD, TS, TSS	125mL P, $Na_2S_2O_3$ FC-MF	1LP, Cool Cl, NO_2, NO_3, Alkalinity	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NO_2, NO_3, Cl	250mL P, H_2SO_4 TKN, NOx, NH_4	1LP, Cool Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool Cl, SO_4	250mLaG, Cool DOC	Field pH	Field Temperature	Field Conductivity	Field DO
13	TA4-PZ-09-TU16	6/19/12	0752	GW		X								1	1				5.4	25.5	200.3	0.85
14	TA4-PZ-16-TU16	6/19/12	0812	GW		X								1	1				5.3	24.6	251.2	0.18
15	TA4-PZ-I	06/21	1134	GW		X								1			1					
16	TA5-LY-C	06/18	1110	GW		X						1	1						6.63	28.6	880	6.38
17	TA5-LINER-SP	06/21	1050	GW		X						1	1									
18	TA5-Denite Tank	06/21	1315	WW		X								1			1					
19	TA5-Denite Tank-DUP	06/21	1320	WW		X								1			1					
20	TA6-PZ-I	6/18	~~0924~~ 1030	GW		X								1			1		4.82	26.4	317	4.04
21	TA6-LY-C	6/18	0924	GW		X				1						1			6.63	27.8	788	6.45
22	TA6-LINER-SP	6/20/12	1310	GW		X						1	1						6.59	27.6	1061	6.12
23	TA6-Denite Tank	6/20/12	1045	WW		X								1			1		6.61	26.9	1082	0.10
24	PZ01-BKG-09	06/19	1440	GW		X								1	1				4.32	8.7	111	0.83

Relinquished:	Date/Time:	Received:	Date/Time:
J. Chambers	6-14-12 13:09		1309 6/14/12
	1800 6/19/12		1800 06/19/12
	1630 6/20/12		

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

D065568

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

Client Name: Hazen and Sawyer

Contact / Phone: 813-630-4498

Project Name / Location: S&GW Test Facility SE #1 (Set 2)

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

	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, Nox, NH_4, TP	1LP, Cool Cl, Alkalinity, CBOD, TS, TSS	125mL P, $Na_2S_2O_3$ FC-MF	1LP, Cool Cl, NO_2, NO_3, Alkalinity	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NO_2, NO_3, Cl	250mL P, H_2SO_4 TKN, NOx, NH_4	1LP, Cool Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool Cl, Alkalinity	250mLaG, Cool DOC	Field pH	Field Temperature	Field Conductivity	Field DO
25	LY01-BKG-24	6/18/12	14:00	GW		X								1	1				7.17	30.2	272	6.54
26	LY02-BKG-42 6/18/12 dry			GW		X								1	1							
27	PZ04-BKG-09	6/19/12	8:24	GW		X								1	1				5.09	26.2	99.7	4.39
28	PZ-24-BKG-26	6/19/12	9:30	GW		X								1	1				4.95	25.3	286	2.44
29	PZ24-BKG-26-DUP	6/19/12	9:35	GW		X								1	1				4.95	25.3	286	2.44
30	PZ-29-BKG09	6/19/12	10:10	GW		X								1			1		4.86	26.5	214	1.72
31	PZ30-BKG-16	6/19/12	10:40	GW		X								1			1		5.59	26.3	332	0.35
32	PZ31-BKG-26	6/19/12	11:35	GW		X								1			1		5.07	26.6	321	1.22
33	PZ31-BKG-26-DUP	6/19/12	11:40	GW		X								1			1		5.07	26.6	321	1.22
34	PZ32-BKG09	6/19/12	12:10	GW		X								1			1		4.36	29.2	181	4.91
35	PZ33-BKG-16	6/19/12	13:40	GW		X								1			1		5.23	27.0	270	.36
36	PZ34-BKG-26	6/19/12	14:15	GW		X								1			1		5.89	26.5	331	1.22

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
J. Chambers	6-14-12 13:28		1320 6/14/12
Relinquished:	Date/Time: 1800 6/19/12	Received:	Date/Time: 1800 06/19/12
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

1206568

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

Client Name: Hazen and Sawyer

Contact / Phone: 813-630-4498

Project Name / Location: S&GW Test Facility SE #1 (Set 2)

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

[redacted]	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, Nox, NH_4, TP	1LP, Cool Cl, Alkalinity, CBOD, TS, TSS	125mL P, $Na_2S_2O_3$ FC-MF	1LP, Cool Cl, NO_3, Alkalinity, SO_4, F, OP, Alkalinity	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NO_2, NO_3, Cl	250mL P, H_2SO_4 TKN, NOx, NH_4	1LP, Cool Cl	250mL P, H_2SO_4 TKN, NH_4, COD, NOx	1LP, Cool Cl, Alkalinity	250mLaG, Cool DOC	Field pH	Field Temperature	Field Conductivity	Field DO
37	PZ35-BKG09	6/19/12	15:15	GW		X								1			1		5.95	26.9	863	0.24
38	PZ36-BKG-16	6/19/12	15:40	GW		X								1			1		5.45	25.7	254	0.38
39	PZ37-BKG-26	6/19/12	16:10	GW		X								1			1		5.20	25.5	333	1.66
40	PZ38-BKG09	6/20/12	830	GW		X								1			1		6.23	25.2	522	0.17
41	PZ39-BKG-16	6/20/12	905	GW		X								1			1		6.15	24.6	340	0.17
42	PZ40-BKG-26	6/20/12	955	GW		X								1			1		4.96	24.9	279	1.88
43	FB-Tap	06/21	1510	DW		X								1			1					
44	FB-DI	↓	1500	R		X								1			1					
45	EB	↓	0720	R		X				1	1					1		1				

Relinquished	Date/Time	Received	Date/Time
Containers Prepared/ Relinquished: J. Chambers	6-11-12 13:20		1320 6/4/12
Relinquished:	1800 6/19/12	Received:	1800 06/19/12
Relinquished:	1630 6/20/12	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

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	061912	SAL Project #	1206568	Project Name	S&GW Test Facility SE #1
Well Number	TA4-PZ-11-L5		01	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	9.70	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.30	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.276	1/4 WELL VOLUME		3 WELL VOLUMES	0.819	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1108	PURGE TIME END		TOTAL PURGED	
INST. ID				SAL-SAM-63-01	SAL-SAM-6701	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
~~1111~~ Hot 55	0.60	0.60	0.20	9.95	5.2	25.9	421.3	1.95	84.7	BROWN	NONE
1114	0.60	1.20	|	|	5.2	25.9	418.5	2.02	24.6	|	|
1117	0.60	1.80	|	|	5.2	25.9	420.8	1.95	47.1	CLOUDY	|
1120	0.60	2.40	|	|	5.2	25.9	420.5	1.86	26.8	|	|
1123	0.60	3.00	|	|	5.2	25.9	419.4	1.92	20.4	|	|

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL					SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1124	SAMPLING ENDED	1125	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (μm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Clear, 82°								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	Oct 9/12	SAL Project #	1206568	Project Name	S&GW Test Facility SE #1
Well Number	TA4-PZ-11-L6		02	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	9.36	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	14.48	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.307	1/4 WELL VOLUME		3 WELL VOLUMES	0.921	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1042	PURGE TIME END	1057	TOTAL PURGED	3.00

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1045	0.60	0.60	0.20	9.70	5.0	26.4	340.1	1.75	MAX	BROWN	NONE
1048	0.60	1.20			5.1	26.3	336.0	1.79	MAX		
1051	0.60	1.80			5.1	26.2	357.9	1.92	MAX		
1054	0.60	2.40			5.2	26.1	348.9	1.98	588		
1057	0.60	3.00			5.2	26.0	345.6	1.60	190		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1058	SAMPLING ENDED	1059	FIELD CLEANED	Y N	CLEANING STEPS	
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A						
PRESERVATION CHECKED IN FIELD?	Y N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Clear, 82°						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 19 12	SAL Project #	1206568	Project Name	S&GW Test Facility SE #1
Well Number	TA4-PZ-09-M4		03	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	5.71	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)									
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =									
ONE WELL VOLUME	0.24	1/4 WELL VOLUME	0.74	3 WELL VOLUMES			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME									
PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0940	PURGE TIME END	0955	TOTAL PURGED	3.00
INST. ID				SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-01	SAL-SAM-02	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0943	0.60	0.60	0.20		6.8	25.7	1079	0.57	MAX	BROWN	NO
0946	0.60	1.20			6.8	25.7	1076	0.57	357		
0949	0.60	1.80			6.7	25.6	796	0.48	276		
0952	0.60	2.40			6.7	25.6	701	0.34	207		
0955	0.60	3.00			6.7	25.6	636	0.31	113	cloudy	

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL				SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	0956	SAMPLING ENDED		FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	windy								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 19 12	SAL Project #	1206568	Project Name	S&GW Test Facility SE #1
Well Number	TA4-PZ-16-M4		04	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	6.35	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.30	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.65	1/4 WELL VOLUME	1.97	3 WELL VOLUMES		5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1003	PURGE TIME END	1019	TOTAL PURGED	3.20

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-01	SAL-SAM-02		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1007 ~~1006~~ SH	0.80	0.80	0.20		5.4	24.8	233.2	0.26	101	cloudy	NO
1011 ~~1009~~ SH	0.80	1.60	|		5.3	24.8	230.7	0.23	79.7	|	|
1015 ~~1012~~ SH	0.80	2.40	|		5.3	24.8	227.4	0.22	34.4	|	|
1019	0.80	3.20			5.3	24.8	224.8	0.19	13.2	|	|

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL [signature]			SAMPLER(S) SIGNATURES:	[signature]
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)		SAMPLE PUMP FLOW RATE (mL/min)
SAMPLING INITIATED	1020	SAMPLING ENDED		FIELD CLEANED	Y N
CLEANING STEPS					
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y N
VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A		
PRESERVATION CHECKED IN FIELD?	Y N N/A	LIST PRESERVATIVES ADDED			
WEATHER CONDITIONS					
COMMENTS					

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	061912	SAL Project #	1206568	Project Name	S&GW Test Facility SE #1
Well Number	TA4-PZ-09-N7		05	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.75	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	5.86	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.86	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.75	1/4 WELL VOLUME		3 WELL VOLUMES	0.77	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0838	PURGE TIME END	0853	TOTAL PURGED	3.00
INST. ID				SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-01	SAL-SAM-02		

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0841	0.60	0.60	0.20		5.6	25.7	399.9	2.10	Max	Brown	Brown
0844		1.20			5.6	25.7	398.3	1.80	Max	↓	↓
0847		1.80			5.6	25.7	389.6	1.65	Max		
0850		2.40			5.6	25.7	373.5	1.23	851		
0853		3.00			5.6	25.7	364.0	1.03	443		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0854	SAMPLING ENDED		FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	clear						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	061912	SAL Project #	1206568	Project Name	S&GW Test Facility SE #1
Well Number	TA4-PZ-16-N7		06	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	5.69	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.25	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.69	1/4 WELL VOLUME		3 WELL VOLUMES	2.08	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0900	PURGE TIME END	0920	TOTAL PURGED	3.60

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-01	SAL-SAM-00-02		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0904	0.80	0.80	0.20		5.2	25.4	236.4	0.23	Max	Brown	NO
0908		1.60			5.2	25.4	236.6	0.17	Max		
0912		2.40			5.2	25.3	236.6	0.15	55.2		
0916		2.80			5.2	25.2	237.3	0.19	30.6	cloudy	
0920		3.60			5.2	25.1	237.3	0.14	28.7		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0921	SAMPLING ENDED		FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Clear						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	Oct 9/12	SAL Project #	12065568	Project Name	S&GW Test Facility SE #1
Well Number	TA4-PZ-09-I7		~~08~~ 07	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	5.38	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.82	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.266	1/4 WELL VOLUME		3 WELL VOLUMES	0.7992	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0956	PURGE TIME END	1011	TOTAL PURGED	3.00
INST. ID				SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0959	0.60	0.60	0.20	5.72	5.8	26.1	317.7	1.85	MAX	BROWN	NONE
1002	0.60	1.20			5.8	26.1	315.4	1.97	MAX		
1005	0.60	1.80			5.8	26.0	313.9	1.48	MAX		
1008	0.60	2.40			5.8	25.9	317.8	1.30	488		
1011	0.60	3.00			5.9	25.8	326.3	1.14	192		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL					SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1012	SAMPLING ENDED	1013	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Clear, 78°								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 19 12	SAL Project #	12065568	Project Name	S&GW Test Facility SE #1
Well Number	TA4-PZ-16-I7		08	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.13	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.30	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.670z	1/4 WELL VOLUME		3 WELL VOLUMES	2.01	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1016	PURGE TIME END	1031	TOTAL PURGED	3.75

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1019	0.75	0.75	0.25	6.42	5.7	25.0	268.0	0.91	MAX	BROWN	NONE
1022	0.75	1.50			5.6	25.0	266.0	0.32	674		
1025	0.75	2.25			5.6	25.0	263.1	0.26	464		
1028	0.75	3.00			5.6	24.9	261.7	0.16	280		
1031	0.75	3.75			5.5	25.0	261.4	0.16	152		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL				SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1032	SAMPLING ENDED	1033	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Clear, 80°								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	061912	SAL Project #	1206568	Project Name	S&GW Test Facility SE #1
Well Number	TA4-PZ-09-L8		09	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	5.53	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.78	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)									
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =									
ONE WELL VOLUME	0.255	1/4 WELL VOLUME		3 WELL VOLUMES	0.765		5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME									
PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0850	PURGE TIME END	0905	TOTAL PURGED	3.00
INST. ID				SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0853	0.60	0.60	0.20	5.79	6.4	26.1	631	2.10	591	BROWN	NONE
0856	0.60	1.20			6.4	25.8	621	2.08	MAX		
0859	0.60	1.80			6.4	25.8	621	2.05	MAX		
0902	0.60	2.40			6.4	25.8	603	0.73	MAX		
0905	0.60	3.00			6.4	25.7	596	0.68	MAX		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL					SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	0906	SAMPLING ENDED	0907	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Clear, 78°								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06/8/12	SAL Project #	1266568	Project Name	S&GW Test Facility SE #1
Well Number	TA4-PZ-16-L8		10	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	5.80	PURGE PUMP CODE: (PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.30	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)									
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =									
ONE WELL VOLUME	0.69	1/4 WELL VOLUME		3 WELL VOLUMES	2.07		5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME									
PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0928	PURGE TIME END	0943	TOTAL PURGED	3.75
INST. ID				SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0931	0.75	0.75	0.25	5.97	5.5	25.5	273.1	0.36	751	BROWN	NONE
0934	0.75	1.50			5.5	25.2	271.3	0.25	780		
0937	0.75	2.25			5.5	25.2	267.5	0.19	613		
0940	0.75	3.00			5.5	25.1	266.8	0.18	480		
0943	0.75	3.75			5.5	25.1	264.5	0.17	210		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL					SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	0944	SAMPLING ENDED	0945	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Clear, 78°								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06/19/12	SAL Project #	120656	Project Name	S&GW Test Facility SE #1
Well Number	TA4-PZ-09-TU14		11	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25 ~~1.0~~	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	5.31	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	9.82	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.27	1/4 WELL VOLUME		3 WELL VOLUMES	0.8118	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0722	PURGE TIME END	0737	TOTAL PURGED	2.70
INST. ID				SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0725	0.60	0.60	0.20	6.04	5.7	25.3	197.2	0.62	MAX	BROWN	NONE
0728	0.60	1.20			5.5	25.4	197.2	0.96	MAX		
0731	0.60	1.50			5.4	25.5	196.0	0.54	MAX		
0734	0.60	2.10			5.4	25.5	195.9	0.54	589		
0737	0.60	2.70			5.4	25.5	196.4	0.42	504.0		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL				SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	0735	SAMPLING ENDED	0739	FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?	Y N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Clear, 75°								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06 19 12	SAL Project #	1206568	Project Name	S&GW Test Facility SE #1
Well Number	TA4-PZ-16-TU14		12	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.06	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.06	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.66	1/4 WELL VOLUME		3 WELL VOLUMES	1.98	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0816	PURGE TIME END	0831	TOTAL PURGED	3.75

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0819	0.75	0.75	0.25	6.41	5.7	24.8	259.8	0.86	MAX	BROWN	NONE
0822	0.75	1.50			5.9	24.8	263.7	0.69	987		
0825	0.75	2.25			5.9	24.9	269.8	0.39	486		
0828	0.75	3.00			6.0	24.9	282.4	0.20	412		
0831	0.75	3.75			6.0	24.9	297.4	0.12	299		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL					SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	0832	SAMPLING ENDED	0833	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Clear, 78°								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	061912	SAL Project #	1206568	Project Name	S&GW Test Facility SE #1
Well Number	TA4-PZ-09-TU16		13	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	5.57	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.25	1/4 WELL VOLUME		3 WELL VOLUMES	0.77	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0736	PURGE TIME END	0751	TOTAL PURGED	2.70
INST. ID				SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-0 01	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0739	0.60	0.60	0.20	5.89	5.4	25.8	198.2	1.14	616	BROWN	NONE
0742	0.60	1.20			5.4	25.7	197.9	1.13	410		
0745	0.60	1.80			5.4	25.7	198.3	1.08	171		
0748	0.60	2.10			5.4	25.6	199.6	0.97	103	CLOUDY	
0751	0.60	2.70			5.4	25.5	200.3	0.85	74.1		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0752	SAMPLING ENDED	0753	FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Clear, 75°						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06/9/12	SAL Project #	1206568	Project Name	S&GW Test Facility SE #1
Well Number	TA4-PZ-16-TU16		14	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	5.78	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.26	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)									
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =									
ONE WELL VOLUME	0.688	1/4 WELL VOLUME		3 WELL VOLUMES	2.06		5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME									
PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0756	PURGE TIME END	0811	TOTAL PURGED	3.75
INST. ID				SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0759	0.75 ~~0.60~~ SS	0.75	0.25	5.99	5.3	25.2	256.4	0.51	MAX	BROWN	NONE
0802	0.75 ~~0.60~~ SS	1.50			5.3	24.9	257.7	0.39	MAX		
0805	0.75	2.25			5.3	24.9	257.6	0.28 ~~704~~ SS	704		
0808	0.75	3.00			5.4	24.7	257.5	0.22	379		
0811	0.75	3.75			5.3	24.6	257.2	0.18	171		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0812	SAMPLING ENDED	0813	FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Clear, 77°						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206568	Project Name	S&GW Test Facility SE #1
Well Number	~~TA4-PZ~~-I TAS-PZ-I		15	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)									
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =									
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES		5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME									
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED
INST. ID				SAL-SAM-63-____	SAL-SAM - 65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0_____	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)					SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	12065168	Project Name	S&GW Test Facility SE #1
Well Number	TA5-LY-C		16	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	
INST. ID					SAL-SAM-63-____	SAL-SAM-65-____	SAL-SAM-63-____	SAL-SAM-55-__	SAL-SAM-0____	
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT			SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206568	Project Name	S&GW Test Facility SE #1
Well Number	TA6-PZ-I		20	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	10.57'	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	14.59'	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES	1,860mL		5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	3,200mL

INST. ID					SAL-SAM-63-____	SAL-SAM-65-____	SAL-SAM-63-____	SAL-SAM-55-__	SAL-SAM-0____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		400mL			4.77	26.5	277				
		800mL			4.72	26.2	259				
		1200			4.80	26.4	309				
		1500			4.81	26.1	311				
		1900			4.82	26.4	317	4.04			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	12065768	Project Name	S&GW Test Facility SE #1
Well Number	TA6-LY-C		21	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)											
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =											
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES			5 WELL VOLUMES			
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME			
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END			TOTAL PURGED	
INST. ID					SAL-SAM-63-____	SAL-SAM - 65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0_____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	12065608	Project Name	S&GW Test Facility SE #1
Well Number	PZ01-BKG-09		24	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.75	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	9.05	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES	1,600		5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	2,900 mL
INST. ID					SAL-SAM-63-____	SAL-SAM-65-____	SAL-SAM-63-____	SAL-SAM-55-__	SAL-SAM-0____	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		600mL			4.4	29.9	107				
		1200mL			4.3	28.6	108				
		1600mL			4.32	28.7	111	0.83			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	12065568	Project Name	S&GW Test Facility SE #1
Well Number	LY01-BKG-24		Ø 25	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)											
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =											
ONE WELL VOLUME			1/4 WELL VOLUME			3 WELL VOLUMES			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)			PURGE TIME START		PURGE TIME END		TOTAL PURGED	
INST. ID					SAL-SAM-63-____	SAL-SAM - 65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0_____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS				
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?		Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS										
COMMENTS										

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	12065568	Project Name	S&GW Test Facility SE #1
Well Number	PZ-24-BKG-26		28	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	9.26'	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	30.10'	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	
INST. ID					SAL-SAM-63-____	SAL-SAM-65-____	SAL-SAM-63-____	SAL-SAM-55-__	SAL-SAM-0____	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		0.5 gal			4.95		287				
		1 gal			4.89		286				
		2 gal			4.95	25.3	286	2.44			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	12065768	Project Name	S&GW Test Facility SE #1
Well Number	PZ-24-BKG-26-DUP		29	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	9.26'	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	30.10'	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME		1/4 WELL VOLUME		3 WELL VOLUMES		5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	3 gal
INST. ID				SAL-SAM-63-____	SAL-SAM-65-____	SAL-SAM-63-____	SAL-SAM-55-__	SAL-SAM-0____	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		0.5gal			4.95		287				
		1 gal			4.89		286				
		2gal			4.95	25.3	286	2.44			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	12Q0568	Project Name	S&GW Test Facility SE #1
Well Number	PZ-29-BKG09		30	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	7.24'	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	12.91'	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)											
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =											
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES			5 WELL VOLUMES			
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME			
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END			TOTAL PURGED	2800 mL
INST. ID					SAL-SAM-63-____	SAL-SAM - 65-____	SAL-SAM-63-____	SAL-SAM-55-__	SAL-SAM-0____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		800mL			5.11	26.5	216				
		1200mL			4.75	26.6	214				
		1700			4.86	26.5	214	1.72			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206568	Project Name	S&GW Test Facility SE #1
Well Number	PZ30-BKG-16		31	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	8.63'	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	19.65'	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME		1/4 WELL VOLUME		3 WELL VOLUMES		5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	6,000mL
INST. ID				SAL-SAM-63-____	SAL-SAM-65-____	SAL-SAM-63-____	SAL-SAM-55-__	SAL-SAM-0____	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		1600mL			6.45	26.3	330				
		3200			5.72	26.2	333				
		4500			5.59	26.3	332	0.35			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)				SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS	
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A						
PRESERVATION CHECKED IN FIELD?	Y N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS							
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	12065568	Project Name	S&GW Test Facility SE #1
Well Number	PZ31-BKG-26		32	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1"	WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	5.30'	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)											
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =											
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES			5 WELL VOLUMES			
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME			
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END			TOTAL PURGED	3gal
INST. ID					SAL-SAM-63-____	SAL-SAM-65-____	SAL-SAM-63-____	SAL-SAM-55-__	SAL-SAM-0____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		1gal			5.66	26.5	319				
		2gal			5.06	26.7	322				
		2.5gal			5.07	26.6	321	1.22			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	12065568	Project Name	S&GW Test Facility SE #1
Well Number	PZ31-BKG-26-DUP		33	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1"	WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	5.36'	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)											
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =											
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES			5 WELL VOLUMES			
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME			
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END			TOTAL PURGED	3gal
INST. ID				SAL-SAM-63-____	SAL-SAM-65-____	SAL-SAM-63-____	SAL-SAM-55-__	SAL-SAM-0____			
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		1 gal			5.66	26.5	317				
		2gal			5.06	26.7	322				
		2.5 gal			5.07	26.6	321	1.22			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)					SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1266568	Project Name	S&GW Test Facility SE #1
Well Number	PZ32-BKG09		34	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	7.50'	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	14.60'	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES	2,362mL		5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	2,600
INST. ID				SAL-SAM-63-____	SAL-SAM - 65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0_____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		900mL			4.27	28.7	176				
		1300mL			4.29	28.8	181				
		1800mL			4.36	29.2	181	4.91			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206568	Project Name	S&GW Test Facility SE #1
Well Number	PZ33-BKG-16		35	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	8.83'	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	19.64'	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME		1/4 WELL VOLUME		3 WELL VOLUMES	5,000mL	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	5,400

INST. ID					SAL-SAM-63-____	SAL-SAM-65-____	SAL-SAM-63-____	SAL-SAM-55-__	SAL-SAM-0____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		700			5.98	27.7	267				
		2000			5.24	27.4	269				
		2600			5.35	27.3	270				
		4000			5.23	27.0	270	0.36			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	12065168	Project Name	S&GW Test Facility SE #1
Well Number	PZ34-BKG-26		36	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.45	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	29.27	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES	2.8 gal		5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	3.0 gal
INST. ID					SAL-SAM-63-____	SAL-SAM - 65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0_____	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		1 gal			5.99	26.5	328				
		2 gal			5.82	26.5	332				
		2.5 gal			5.87	26.5	331	1.22			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206568	Project Name	S&GW Test Facility SE #1
Well Number	PZ35-BKG09		37	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	5.9'	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	9.68'	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME		1/4 WELL VOLUME		3 WELL VOLUMES	1751 mL	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	5,600 mL

INST. ID					SAL-SAM-63-____	SAL-SAM-65-____	SAL-SAM-63-____	SAL-SAM-55-__	SAL-SAM-0____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		4,300 mL			5.7	27.1	880				
		4,700 mL			6.22	26.9	867				
		4,900 mL			5.95	26.9	863	0.24			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	12065 68	Project Name	S&GW Test Facility SE #1
Well Number	PZ36-BKG-16		38	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	8.66'	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	19.61'	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)											
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =											
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES	5,073mL			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME				EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END			TOTAL PURGED	5,200mL
INST. ID					SAL-SAM-63-____	SAL-SAM-65-____	SAL-SAM-63-____	SAL-SAM-55-__	SAL-SAM-0____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		1000 mL			5.44	26.4	254				
		1800 mL			5.38	26.1	252				
		2900 mL			5.46	25.7	255				
		5200 mL			5.45	25.7	254	0.38			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)					SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206568	Project Name	S&GW Test Facility SE #1
Well Number	PZ37-BKG-26		~~42~~ 39	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	5.1'	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	24.65'	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES	2.5 gal.		5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	2.5 gal
INST. ID				SAL-SAM-63-____	SAL-SAM - 65-____	SAL-SAM-63-____	SAL-SAM-55-__	SAL-SAM-0____		

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		1 gal			5.7	26.1	329				
		1.5 gal			5.23	25.6	333				
		2 gal			5.2	25.5	333	1.66			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206568	Project Name	S&GW Test Facility SE #1
Well Number	PZ38-BKG09		40	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1"	WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	4.76'	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	9.7'	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)											
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =											
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES	2290 mL			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME				EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)			PURGE TIME START		PURGE TIME END		TOTAL PURGED	
INST. ID					SAL-SAM-63-____	SAL-SAM - 65-_____	SAL-SAM-63-_____	SAL-SAM-55-__	SAL-SAM-0_____		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		600 mL			6.48	25.1	899				
		1,200 mL			6.29	25.1	580				
		1,600 mL			6.27	25.2	550				
		2,000 mL			6.27	25.2	539				
		2,400 mL			6.23	25.2	522	0.17			
Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88											
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016											

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)					SAMPLER(S) SIGNATURES:	[illegible]			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206568	Project Name	S&GW Test Facility SE #1
Well Number	PZ39-BKG-16		41	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1"	WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	7.75'	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	19.62'	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)	3/16"	TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME		1/4 WELL VOLUME		3 WELL VOLUMES	5,499 mL	5 WELL VOLUMES			

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME			
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	5900
INST. ID				SAL-SAM-63-____	SAL-SAM-65-____	SAL-SAM-63-____	SAL-SAM-55-__	SAL-SAM-0____	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
		1900mL			6.05	24.6	357				
		2800mL			6.20	24.6	348				
		3600mL			6.16	24.6	342				
		4400mL			6.15	24.6	340	0.17			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS									
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled		SAL Project #	1206568 42	Project Name	S&GW Test Facility SE #1
Well Number	PZ40-BKG-26			GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1"	WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	4.23'	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	24.62'	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)	3/16" ID	TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)											
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =											
ONE WELL VOLUME			1/4 WELL VOLUME		3 WELL VOLUMES	2.5 gallons			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME			TUBING LEGNTH		FLOW CELL VOLUME				EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	9:21		PURGE TIME END	9:55	TOTAL PURGED	3.0gal
INST. ID					SAL-SAM-63-___	SAL-SAM - 65-___	SAL-SAM-63-___	SAL-SAM-55-___	SAL-SAM-0___		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
	1 gal	1 gal			4.88	24.7	278				
	1 gal	2 gal			4.96	24.7	279				
	0.5 gal	2.5 gal			4.96	24.9	279	1.88			

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	Joseffin Hirst				SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT			SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED		SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?		Y N N/A	LIST PRESERVATIVES ADDED						
WEATHER CONDITIONS	clear, sunny								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

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

July 16, 2012
Work Order: 1206631

Laboratory Report

Project Name **S&GW Test Facility SE #1 Set 1**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**TA4-PZ-10-J5**						
Matrix		**Groundwater**						
SAL Sample Number		**1206631-01**						
Date/Time Collected		**06/19/12 12:23**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Client Provided Field Data								
pH		5.6						
Temperature		26.2 °C						
Conductivity		333.6 umhos						
Dissolved Oxygen		2.42 mg/L						
Field Parameters								
pH	SU	5.6	DEP FT1100	0.1	0.1		06/19/12 12:23	SAS
Water Temperature	°C	26.2	DEP FT1400	0.1	0.1		06/19/12 12:23	SAS
Specific conductance	umhos/cm	334	DEP FT1200	0.1	0.1		06/19/12 12:23	SAS
Dissolved Oxygen	mg/L	2.4	DEP FT1500	0.1	0.1		06/19/12 12:23	SAS
Inorganics								
Ammonia as N	mg/L	0.064	EPA 350.1	0.040	0.009		06/29/12 10:51	MMF
Ammonium as NH4	mg/L	0.08	EPA 350.1	0.01	0.005	07/03/12 16:40	07/03/12 16:42	MMF
Chloride	mg/L	23	EPA 300.0	0.20	0.050		06/23/12 09:56	JAG
Nitrate+Nitrite (N)	mg/L	12	EPA 353.2	1.0	0.25		07/02/12 16:11	MMF
Total Kjeldahl Nitrogen	mg/L	2.8	EPA 351.2	0.20	0.05	06/26/12 13:01	06/28/12 12:37	MMF
Sample Description		**TA4-PZ-10-K5**						
Matrix		**Groundwater**						
SAL Sample Number		**1206631-02**						
Date/Time Collected		**06/19/12 11:58**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Client Provided Field Data								
pH		5.3						
Temperature		26.2 °C						
Conductivity		393.8 umhos						
Dissolved Oxygen		2.72 mg/L						
Field Parameters								
pH	SU	5.3	DEP FT1100	0.1	0.1		06/19/12 11:58	SAS
Water Temperature	°C	26.2	DEP FT1400	0.1	0.1		06/19/12 11:58	SAS
Specific conductance	umhos/cm	394	DEP FT1200	0.1	0.1		06/19/12 11:58	SAS
Dissolved Oxygen	mg/L	2.7	DEP FT1500	0.1	0.1		06/19/12 11:58	SAS
Inorganics								
Ammonia as N	mg/L	0.14	EPA 350.1	0.040	0.009		06/27/12 11:05	MMF
Ammonium as NH4	mg/L	0.18	EPA 350.1	0.01	0.005	06/27/12 14:02	06/27/12 14:03	ARP
Chloride	mg/L	28	EPA 300.0	0.20	0.050		06/23/12 09:56	JAG
Nitrate+Nitrite (N)	mg/L	17	EPA 353.2	1.0	0.25		07/02/12 16:12	MMF

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

July 16, 2012
Work Order: 1206631

Laboratory Report

Project Name **S&GW Test Facility SE #1 Set 1**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**TA4-PZ-10-K5**						
Matrix		**Groundwater**						
SAL Sample Number		**1206631-02**						
Date/Time Collected		**06/19/12 11:58**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Client Provided Field Data								
pH		5.3						
Temperature		26.2 °C						
Conductivity		393.8 umhos						
Dissolved Oxygen		2.72 mg/L						
Total Kjeldahl Nitrogen	mg/L	1.0	EPA 351.2	0.20	0.05	06/26/12 13:01	06/28/12 12:38	MMF
Sample Description		**TA4-PZ-11-L2**						
Matrix		**Groundwater**						
SAL Sample Number		**1206631-03**						
Date/Time Collected		**06/19/12 10:45**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Client Provided Field Data								
pH		4.5						
Temperature		26.1 °C						
Conductivity		414.8 umhos						
Dissolved Oxygen		1.71 mg/L						
Field Parameters								
pH	SU	4.5	DEP FT1100	0.1	0.1		06/19/12 10:45	SDH
Water Temperature	°C	26.1	DEP FT1400	0.1	0.1		06/19/12 10:45	SDH
Specific conductance	umhos/cm	415	DEP FT1200	0.1	0.1		06/19/12 10:45	SDH
Dissolved Oxygen	mg/L	1.7	DEP FT1500	0.1	0.1		06/19/12 10:45	SDH
Inorganics								
Ammonia as N	mg/L	0.041	EPA 350.1	0.040	0.009		06/27/12 11:11	MMF
Ammonium as NH4	mg/L	0.05	EPA 350.1	0.01	0.005	06/27/12 14:02	06/27/12 14:03	ARP
Chloride	mg/L	32	EPA 300.0	0.20	0.050		06/23/12 09:56	JAG
Nitrate+Nitrite (N)	mg/L	23	EPA 353.2	1.0	0.25		07/02/12 16:13	MMF
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	06/26/12 13:01	06/28/12 12:40	MMF
Sample Description		**TA4-PZ-11-L3**						
Matrix		**Groundwater**						
SAL Sample Number		**1206631-04**						
Date/Time Collected		**06/19/12 11:21**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						

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

July 16, 2012
Work Order: 1206631

Laboratory Report

Project Name **S&GW Test Facility SE #1 Set 1**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**TA4-PZ-11-L3**						
Matrix		**Groundwater**						
SAL Sample Number		**1206631-04**						
Date/Time Collected		**06/19/12 11:21**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Client Provided Field Data								
pH		4.3						
Temperature		25.8 °C						
Conductivity		341.8 umhos						
Dissolved Oxygen		1.36 mg/L						
Field Parameters								
pH	SU	4.3	DEP FT1100	0.1	0.1		06/19/12 11:21	SDH
Water Temperature	°C	25.8	DEP FT1400	0.1	0.1		06/19/12 11:21	SDH
Specific conductance	umhos/cm	342	DEP FT1200	0.1	0.1		06/19/12 11:21	SDH
Dissolved Oxygen	mg/L	1.4	DEP FT1500	0.1	0.1		06/19/12 11:21	SDH
Inorganics								
Ammonia as N	mg/L	0.073	EPA 350.1	0.040	0.009		06/27/12 11:13	MMF
Ammonium as NH4	mg/L	0.09	EPA 350.1	0.01	0.005	06/27/12 14:02	06/27/12 14:03	ARP
Chloride	mg/L	24	EPA 300.0	0.20	0.050		06/23/12 09:56	JAG
Nitrate+Nitrite (N)	mg/L	14	EPA 353.2	1.0	0.25		07/02/12 12:11	MMF
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	06/26/12 13:01	06/28/12 12:45	MMF
Sample Description		**TA4-PZ-11-L4**						
Matrix		**Groundwater**						
SAL Sample Number		**1206631-05**						
Date/Time Collected		**06/19/12 11:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Client Provided Field Data								
pH		4.3						
Temperature		26.0 °C						
Conductivity		420.3 umhos						
Dissolved Oxygen		2.05 mg/L						
Field Parameters								
pH	SU	4.3	DEP FT1100	0.1	0.1		06/19/12 11:40	SDH
Water Temperature	°C	26.0	DEP FT1400	0.1	0.1		06/19/12 11:40	SDH
Specific conductance	umhos/cm	420	DEP FT1200	0.1	0.1		06/19/12 11:40	SDH
Dissolved Oxygen	mg/L	2.0	DEP FT1500	0.1	0.1		06/19/12 11:40	SDH
Inorganics								
Ammonia as N	mg/L	0.065	EPA 350.1	0.040	0.009		06/27/12 11:15	MMF
Ammonium as NH4	mg/L	0.08	EPA 350.1	0.01	0.005	06/27/12 14:02	06/27/12 14:03	ARP
Chloride	mg/L	32	EPA 300.0	0.20	0.050		06/23/12 09:56	JAG
Nitrate+Nitrite (N)	mg/L	19	EPA 353.2	1.0	0.25		07/02/12 12:12	MMF

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

July 16, 2012
Work Order: 1206631

Laboratory Report

Project Name		**S&GW Test Facility SE #1 Set 1**						
Parameters	**Units**	**Results ***	**Method**	**PQL**	**MDL**	**Prepared**	**Analyzed**	**By**
Sample Description		**TA4-PZ-11-L4**						
Matrix		**Groundwater**						
SAL Sample Number		**1206631-05**						
Date/Time Collected		**06/19/12 11:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**06/19/12 18:00**						
Client Provided Field Data								
pH		4.3						
Temperature		26.0 °C						
Conductivity		420.3 umhos						
Dissolved Oxygen		2.05 mg/L						
Total Kjeldahl Nitrogen	mg/L	2.2	EPA 351.2	0.20	0.05	06/26/12 13:01	06/28/12 12:47	MMF

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

July 16, 2012
Work Order: 1206631

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BF22208 - Ion Chromatography 300.0 Prep										
Blank (BF22208-BLK1)					Prepared & Analyzed: 06/23/12					
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BF22208-BS1)					Prepared & Analyzed: 06/23/12					
Chloride	3.22	0.20	0.050	mg/L	3.0		107	85-115		
LCS Dup (BF22208-BSD1)					Prepared & Analyzed: 06/23/12					
Chloride	3.21	0.20	0.050	mg/L	3.0		107	85-115	0.3	200
Matrix Spike (BF22208-MS1)		**Source: 1206569-19**			Prepared & Analyzed: 06/23/12					
Chloride	22.4	0.20	0.050	mg/L	3.0	19.2	107	80-120		
Matrix Spike (BF22208-MS2)		**Source: 1206569-47**			Prepared & Analyzed: 06/23/12					
Chloride	33.9 +O	0.20	0.050	mg/L	3.0	32.5	47	80-120		
Batch BF22618 - Digestion for TKN by EPA 351.2										
Blank (BF22618-BLK1)					Prepared: 06/26/12 Analyzed: 06/28/12					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BF22618-BS1)					Prepared: 06/26/12 Analyzed: 06/28/12					
Total Kjeldahl Nitrogen	2.38	0.20	0.05	mg/L	2.5		94	90-110		
Matrix Spike (BF22618-MS1)		**Source: 1206765-07**			Prepared: 06/26/12 Analyzed: 06/28/12					
Total Kjeldahl Nitrogen	3.41	0.20	0.05	mg/L	2.5	0.639	110	80-120		
Matrix Spike Dup (BF22618-MSD1)		**Source: 1206765-07**			Prepared: 06/26/12 Analyzed: 06/28/12					
Total Kjeldahl Nitrogen	3.12	0.20	0.05	mg/L	2.5	0.639	98	80-120	9	20

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

July 16, 2012
Work Order: 1206631

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BF22701 - Ammonia by SEAL										
Blank (BF22701-BLK1)					Prepared & Analyzed: 06/27/12					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BF22701-BS1)					Prepared & Analyzed: 06/27/12					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50		100	90-110		
Matrix Spike (BF22701-MS1)		**Source: 1206808-07**			Prepared & Analyzed: 06/27/12					
Ammonia as N	0.53	0.040	0.009	mg/L	0.50	0.030	99	90-110		
Matrix Spike Dup (BF22701-MSD1)		**Source: 1206808-07**			Prepared & Analyzed: 06/27/12					
Ammonia as N	0.56	0.040	0.009	mg/L	0.50	0.030	105	90-110	6	10
Batch BF22910 - Ammonia by SEAL										
Blank (BF22910-BLK1)					Prepared & Analyzed: 06/29/12					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BF22910-BS1)					Prepared & Analyzed: 06/29/12					
Ammonia as N	0.52	0.040	0.009	mg/L	0.50		105	90-110		
Matrix Spike (BF22910-MS1)		**Source: 1206836-01**			Prepared & Analyzed: 06/29/12					
Ammonia as N	0.96	0.040	0.009	mg/L	0.50	0.44	104	90-110		
Matrix Spike Dup (BF22910-MSD1)		**Source: 1206836-01**			Prepared & Analyzed: 06/29/12					
Ammonia as N	0.93	0.040	0.009	mg/L	0.50	0.44	98	90-110	3	10
Batch BG20204 - Nitrate 353.2 by seal										
Blank (BG20204-BLK1)					Prepared & Analyzed: 07/02/12					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						

Hazen and Sawyer
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July 16, 2012
Work Order: 1206631

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BG20204 - Nitrate 353.2 by seal										
LCS (BG20204-BS1)					Prepared & Analyzed: 07/02/12					
Nitrate+Nitrite (N)	0.736	0.04	0.01	mg/L	0.80		92	90-110		
Matrix Spike (BG20204-MS1)		**Source: 1206836-01**			Prepared & Analyzed: 07/02/12					
Nitrate+Nitrite (N)	0.892	0.04	0.01	mg/L	1.0	ND	89	77-119		
Matrix Spike Dup (BG20204-MSD1)		**Source: 1206836-01**			Prepared & Analyzed: 07/02/12					
Nitrate+Nitrite (N)	0.783	0.04	0.01	mg/L	1.0	ND	78	77-119	13	20
Batch BG20224 - Nitrate 353.2 by seal										
Blank (BG20224-BLK1)					Prepared & Analyzed: 07/02/12					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BG20224-BS1)					Prepared & Analyzed: 07/02/12					
Nitrate+Nitrite (N)	0.862	0.04	0.01	mg/L	0.80		108	90-110		
Matrix Spike (BG20224-MS1)		**Source: 1206920-06**			Prepared & Analyzed: 07/02/12					
Nitrate+Nitrite (N)	1.16	0.04	0.01	mg/L	1.0	0.0253	114	77-119		
Matrix Spike Dup (BG20224-MSD1)		**Source: 1206920-06**			Prepared & Analyzed: 07/02/12					
Nitrate+Nitrite (N)	0.980	0.04	0.01	mg/L	1.0	0.0253	96	77-119	17	20

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

July 16, 2012
Work Order: 1206631

* 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 Client Services at 813-855-1844.

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

1206631
~~1206569~~

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 #1 (Set 1)

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

	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, Nox, NH_4, TP	1LP, Cool Cl, Alkalinity, CBOD, TS, TSS	125mL P, $Na_2S_2O_3$ FC-MF	1LP, Cool Cl, Alkalinity, F, NO_3, Ortho-P, SO_4	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	250mL P, H_2SO_4 TKN, NH_4	1LP, Cool NO_2, NO_3, Cl	250mL P, H_2SO_4 TKN, NOx, NH_4	1LP, Cool Cl	250mL P, H_2SO_4 TKN, NH_4, COD, TP	1LP, Cool NO_2, NO_3, Cl, Alkalinity	250mLaG, Cool DOC	Field pH	Field Temperature	Field Conductivity	Field DO
03	~~97~~ TA4-PZ-11-L2	06/19/12	1045	GW		X								1	1				4.5	26.1	414.8	1.71
04	~~98~~ TA4-PZ-11-L3	|	1121	GW		X								1	1				4.3	25.8	341.8	1.36
05	~~99~~ TA4-PZ-11-L4	|	1140	GW		X								1	1				4.3	26.0	420.3	2.05
	~~TA4-PZ-16-T016~~	~~06/19/12~~	~~0812~~	~~GW~~		~~X~~								~~1~~	~~1~~				~~5.3~~	~~24.6~~	~~257.2~~	~~0.18~~
	~~TA4-PZ-04-T016~~	~~06/19/12~~	~~0752~~	↓		~~X~~								~~1~~	~~1~~				~~5.4~~	~~25.5~~	~~200.3~~	~~0.85~~
01	T4A-PZ-10-J5	06/19	1223			X								1	1				5.6	26.2	337.6	2.42
02	T4A-PZ-10-K5	06/19	1158			X								1	1				5.3	26.2	393.8	2.72

Containers Prepared/ Relinquished	Date/Time	Received	Date/Time
J. Chambers	6-12-12 11:22		6/12/12 1122
Relinquished:	Date/Time: 1800 6/19/12	Received:	Date/Time: 1800 06/19/12
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

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	061912	SAL Project #	1206631	Project Name	S&GW Test Facility SE #1
Well Number	TA4-PZ-10-J5		01	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	9.72	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.80	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.3048	1/4 WELL VOLUME		3 WELL VOLUMES	0.914	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1207	PURGE TIME END		TOTAL PURGED	
INST. ID				SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1210	0.60	0.60	0.20	10.02	5.6	26.4	366.5	2.96	85.4	CLOUDY	NONE
1213	0.60	1.20			5.6	26.3	350.2	2.81	25.8		
1216	0.60	1.80			5.6	26.2	341.9	2.59	152		
1219	0.60	2.40			5.6	26.2	337.8	2.53	235		
1222					5.6	26.1	333.6	2.42	142		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL					SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1223	SAMPLING ENDED	1224	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Clear, 85°								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	06/9/12	SAL Project #	1206631	Project Name	S&GW Test Facility SE #1
Well Number	TA4-PZ-10-K5		02	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.60	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	9.73	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.80	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)									
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =									
ONE WELL VOLUME	0.3042	1/4 WELL VOLUME		3 WELL VOLUMES	0.912		5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME									
PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1142	PURGE TIME END	1157	TOTAL PURGED	3.00
INST. ID				SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1145	0.60	0.60	0.20	10.02	5.1	26.2	405.2	2.83	591	BROWN	NONE
1148	0.60	1.20			5.2	26.2	404.3	2.77	435		
1151	0.60	1.80			5.2	26.1	400.7	2.73	182		
1154	0.60	2.40			5.2	26.1	397.6	2.73	90.5	CLOUDY	NONE
1157	0.60	3.00			5.3	26.2	393.8	2.72	42.8		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL					SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1158	SAMPLING ENDED	1159	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Clear, 84°								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	061912	SAL Project #	~~120665~~ 1206631	Project Name	S&GW Test Facility SE #1
Well Number	TA4-PZ-11-L2		03	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	9.32	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	14.80	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.32	1/4 WELL VOLUME		3 WELL VOLUMES	0.98	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1029	PURGE TIME END	1044	TOTAL PURGED	3.00
INST. ID				SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-01	SAL-SAM-002	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1032	0.60	0.60	0.20		4.7	26.1	372.6	3.20	81.9	Brown	No
1035	0.60	1.20	0.20		4.7	26.1	364.4	2.58	46.3		
1038	0.60	1.80	0.20		4.5	26.1	410.5	1.90	15.4	clear	
1041	0.60	2.40	0.20		4.5	26.1	414.2	1.75	9.11		
1044	0.60	3.00	0.20		4.5	26.1	414.8	1.71	6.06		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1045	SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS	
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A						
PRESERVATION CHECKED IN FIELD?	Y N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	clear						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	061912	SAL Project #	1206631	Project Name	S&GW Test Facility SE #1
Well Number	TA4-PZ-11-L3		04	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	9.72	PURGE PUMP CODE: (PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.80	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.27	1/4 WELL VOLUME		3 WELL VOLUMES	0.89	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1108	PURGE TIME END	1120	TOTAL PURGED	2.40

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-01	SAL-SAM-02		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1111	0.60	0.60	0.20		4.3	26.0	568.3	1.94	18.1	clear	No
1114		1.20			4.3	25.8	346.5	2.40	15.6		
1117		1.80			4.3	25.8	345.9	2.06	26.2		
1120		2.40			4.3	25.8	344.2	1.82	56.8		
					4.3	25.8	341.8	1.36	35.3		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL					SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1121	SAMPLING ENDED		FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	windy								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	061912	SAL Project #	1206631	Project Name	S&GW Test Facility SE #1
Well Number	TA4-PZ-11-L4		05	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	9.71	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	14.80	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME	0.27	1/4 WELL VOLUME		3 WELL VOLUMES	0.89			5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME				EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1130	PURGE TIME END	1139	TOTAL PURGED	1.80	
INST. ID				SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-01	SAL-SAM-02		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1133	0.60	0.60	0.20		4.30	26.0	438.2	2.69	52.9	Clear	No
1136	|	1.20	|		4.30	26.0	423.9	2.40	51.6	|	|
1139	|	1.80	|		4.3	26.0	420.3	2.05	50.2	|	|

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1140	SAMPLING ENDED		FIELD CLEANED	Y N	CLEANING STEPS	
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A						
PRESERVATION CHECKED IN FIELD?	Y N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	windy - dusty						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

Appendix G: Soil Analytical Results

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Table G.1
Soil Analytical Results

ID#	Sample ID	Depth	BufpH	CEC	TN[1]	TKN	ON[2]	NH3-N	NOx-N	TIN[3]	OrgMt	Est. TOC	P	K	Ca	Mg	Na
				calc	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	%,calc	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1	TT	2-3'	7.86	2.09	61.95	61.10	59.16	1.94	0.85	2.78	0.69	0.46	74.85	6.10	54.01	8.78	10.76
2	TT	3.5-5.5'	7.93	1.60	8.94	8.11	6.59	1.52	0.83	2.35	0.31	0.21	59.39	8.61	43.99	5.50	12.68
3	TT	7.5-9.5'	7.68	4.23	80.17	79.42	78.09	1.33	0.75	2.09	1.84	1.23	181.45	8.05	135.37	7.37	16.75
4	TT	10.5-12'	7.77	3.06	2.01	1.33	0.17	1.16	0.68	1.84	1.05	0.70	261.16	6.24	50.00	2.70	18.10
5	TT	12-14'	7.69	3.91	78.62	77.49	75.68	1.81	1.13	2.94	1.86	1.25	207.84	8.20	58.81	4.24	20.38
6	TT	14-15.5'	7.66	4.18	68.90	67.68	66.10	1.58	1.22	2.80	2.01	1.35	206.70	8.73	62.49	4.83	20.39
7	TT	15.5-16'	7.55	5.12	126.45	125.05	123.16	1.89	1.40	3.29	3.79	2.54	261.66	9.07	104.25	8.44	16.07
8	MM	2-2.5'	7.80	2.66	89.34	88.42	85.56	2.86	0.92	3.77	0.97	0.65	62.98	8.69	61.43	3.83	11.40
9	MM	2.5-4'	7.93	1.41	9.76	8.48	7.04	1.44	1.28	2.72	0.38	0.25	27.71	6.82	33.13	3.84	11.08
10	MM	4-5'	7.89	2.52	-6.65	-7.51	-9.48	1.97	0.86	2.82	0.50	0.34	50.58	31.25	54.51	4.25	12.27
11	MM	6-7'	7.31	6.74	365.91	363.95	361.83	2.12	1.96	4.08	4.56	3.06	174.57	7.21	44.71	2.86	18.18
12	MM	7-8'	7.31	6.62	208.93	207.84	206.10	1.74	1.09	2.83	5.45	3.65	55.95	7.74	45.33	2.00	15.13
13	MM	8-9'	7.18	7.83	224.01	223.22	221.63	1.59	0.79	2.38	6.90	4.62	40.88	8.15	56.32	3.25	17.39
14	MM	9-10'	7.38	6.18	159.26	158.21	156.68	1.53	1.05	2.58	6.44	4.31	83.84	6.75	46.47	2.64	18.24
15	MM	12.5-14'	7.52	5.18	96.14	95.42	94.30	1.12	0.72	1.84	3.38	2.26	196.54	6.77	55.24	3.54	19.75
16	MM	14.5-16'	7.48	5.72	99.63	98.84	97.95	0.89	0.79	1.68	5.51	3.69	480.47	11.52	74.31	4.25	19.83
17	MM	17-18'	7.48	5.95	153.33	151.73	150.44	1.29	1.60	2.89	4.36	2.92	291.80	16.78	98.28	7.52	18.47
18	MM	19-20'	7.55	4.88	94.36	93.08	91.84	1.24	1.28	2.51	2.97	1.99	549.39	9.22	69.52	4.18	15.13
19	MM	23-24'	7.61	4.56	68.43	66.30	64.85	1.45	2.13	3.58	1.97	1.32	627.02	9.81	76.67	5.25	17.46
20	MM	25-26'	7.82	3.13	75.47	73.10	71.98	1.12	2.37	3.50	2.03	1.36	727.00	10.05	82.41	6.88	22.18
21	MM	26-27'	7.65	4.45	58.69	57.13	56.44	0.69	1.56	2.26	1.56	1.05	520.46	8.62	73.16	6.09	23.34
22	Test Pit A horizon	0-6" bg	7.70	5.88	610.96	610.10	607.15	2.95	0.86	3.81	2.99	2.00	334.98	17.64	433.67	33.00	13.41
23	Test Pit A/E horizon	1' bg	7.74	3.10	186.16	185.58	184.02	1.56	0.58	2.14	1.52	1.02	92.08	7.96	51.80	4.06	12.12
24	Test Pit E horizon	3' bg	7.96	1.20	20.64	20.11	19.06	1.05	0.53	1.58	0.37	0.25	19.13	3.50	33.85	3.93	13.48
25	Test Pit Spodic	6' bg	7.30	6.56	380.60	379.37	378.14	1.23	1.23	2.46	5.58	3.74	155.35	3.34	39.36	2.57	15.16

T: for Value < MDL Non-detect

I: for Value >= MDL but < PQL

[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.

[4]TOC calculated value typical range 0.58-0.70 of organic matter, using 0.68

Appendix H: Water Quality Analytical Results

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Table H.1
Water Quality Analytical Results
(June 18 through June 21, 2012)

Sample ID	Sample Date and Time	Temp	pH	Total Alkalinity	DO	Specific Conductance	COD	TN	TKN	Organic N	NH_3-N	NOx	TIN	TP	TOC	DOC	Anions						Cations							TSS	TS	Fecal Coliform
		(°C)		(mg/L)	(mg/L)	(µS/cm)	(mg/L)	(mg/L N)[1]	(mg/L N)	(mg/L N)2	(mg/L N)	(mg/L N)	(mg/L N)3	(mg/L)	(mg/L)	(mg/L)	F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na	(mg/L)	(mg/L)	(CFU/100 mL)
Effluent samples																																
PNRS II STE-Tank 1	6/21/12 14:30	27.0	6.9	300	0.3	1,164		71.05	71	17	54	0.05	54.05	15				100												34	700	42,000
STE Pump Tank	6/21/12 14:00	28.7	7.1	370	0.4	1,167		65.03	65	10	55	0.03	55.03	14			3.7	94	0.01		4.1	12	0.12	56	0.3	18	0.051	34	60	24	600	184,000
STE Pump Tank-DUP	6/21/12 14:05	28.7	7.1	360	0.4	1,167		63.04	63	5	58	0.04	58.04	15			3.7	96	0.02		4.3	22	0.12	62	0.3	20	0.051	35	64	22	700	227,000
NO3 Pump Tank	6/21/12 14:15	27.8	7.4	330	0.5	1,154		60.28	60	7	53	0.28	53.28	14				92												3	500	7,500
NO3 Pump Tank-DUP	6/21/12 14:20	27.8	7.4	330	0.5	1,154		65.27	65	11	54	0.27	54.27	13				94												5	500	11,000
Soil moisture samples																																
TA1-LY-12-S	6/18/12 13:25	29.4	6.7	54	6.8	546	28	49.01	3	2.988	0.012	46.01	46.022	0.14		12		61	46	0.01												
TA1-LY-24-C	6/18/12 13:15	32.7	6.6		6.2	576		30.01	12	11.93	0.07	18.01	18.08					23	18	0.01												
TA1-LY-24-S	6/18/12 13:36	30.4	6.7	65	6.7	718	81	59.61	6.6	6.549	0.051	53.01	53.061	0.65				66	53	0.01												
TA1-LY-42-S	6/18/12 13:45	33.1	6.7		5.8	447		46.01	10	9.991	0.009	36.01	36.019					54	36	0.01												
TA2-LY-12-S	6/18/12 10:39	27.7	6.9	75	6.8	952	28	53.21	3.2	3.176	0.024	50.01	50.034	0.79		11		73	50	0.01												
TA2-LY-24-C	6/18/12 10:28	27.9	6.4		6.3	820		53.01	6	5.988	0.012	47.01	47.022					66	47	0.01												
TA2-LY-24-S	6/18/12 10:47	28.8	6.7	37	5.1	954	55	56.41	3.1	3.091	0.009	53.31	53.319	0.3				69	53	0.31												
TA2-LY-42-S	6/18/12 10:48	28.2	6.4		5.5	693		37.12	3	2.991	0.009	34.12	34.129					58	34	0.12												
TA3-LY-12-S	6/18/12 11:28	28.7	7.1	120	6.8	794	26	25.71	1.7	1.691	0.009	24.01	24.019	0.058				72	24	0.01												
TA3-LY-12-S-DUP	6/18/12 11:30	28.7	7.1	120	6.8	794	26	26.61	1.6	1.591	0.009	25.01	25.019	0.046				75	25	0.01												
TA3-LY-24-C	6/18/12 11:22	28.7	6.6		5.7	630		29.81	2.8	2.785	0.015	27.01	27.025					49	27	0.01												
TA3-LY-24-S	6/18/12 11:40	28.7	6.3	19	6.2	680	38	31.11	3.1	3.063	0.037	28.01	28.047	0.22		15	0.16	63	28	0.01	0.01	66	0.1	29	0.041	15	0.0073	0.7	69			
TA3-LY-42-S	6/18/12 11:52	30.9	6.9		6.1	502		30.11	7.1	7.091	0.009	23.01	23.019					40	23	0.01												
TA4-LY-12-S	6/18/12 9:57	27.9	6.8	32	7.2	781	20	39.41	2.4	2.349	0.051	37.01	37.061	3		8.6		73	37	0.01												
TA4-LY-12-S-Dup	6/18/12 10:00	27.9	6.8	32	7.2	781	20	41.21	3.2	3.191	0.009	38.01	38.019	2.8		8.4		75	38	0.01												
TA4-LY-24-C	6/18/12 9:46	27.4	7.1		4.2	930		38.81	4.8	4.791	0.009	34.01	34.019					65	34	0.01												
TA4-LY-24-S	6/18/12 10:09	29.8	6.8		6.9	747	110	48.71	3.7	3.691	0.009	45.01	45.019	0.61				60	45	0.01												
TA4-LY-42-S	6/18/12 10:18	29.3	6.8		6.8	767		31.91	4.9	4.885	0.015	27.01	27.025					47	27	0.01												
LY01-BKG-24	6/18/12 14:00	30.2	7.2		6.5	272		1.51	1.5	1.467	0.033	0.01	0.043					8.4														
Groundwater samples																																
TA1-PZ-09-I7	6/20/12 15:00	25.7	5.6		2.0	415		7	1.1	1.091	0.009	5.9	5.909					18														
TA1-PZ-09-M9	6/20/12 15:20	26.4	5.3		0.6	309		8.53	0.83	0.789	0.041	7.7	7.741					20														
TA1-PZ-09-N3	6/20/12 16:30	27.3	6.6		4.2	1,103		6.3	1.7	1.631	0.069	4.6	4.669					33														
TA1-PZ-09-O7	6/20/12 15:40	27.1	5.4		1.7	497		10.08	0.88	0.866	0.014	9.2	9.214					28														
TA1-PZ-09-RS16	6/21/12 8:54	25.6	6.2		1.2	314		6.2	1.5	1.473	0.027	4.7	4.727					9.6														
TA1-PZ-09-RS18	6/21/12 8:14	25.8	6.3		4.6	338		6	1.4	1.367	0.033	4.6	4.633					9.8														
TA1-PZ-11-EF2	6/21/12 9:55	25.8	4.5		6.3	438		19.4	1.4	1.391	0.009	18	18.009					43														
TA1-PZ-11-EF2-DUP	6/21/12 10:00	25.8	4.5		6.3	438		20.8	1.8	1.791	0.009	19	19.009					44														
TA1-PZ-11-J4	6/20/12 11:35	27.2	4.4		3.4	300		11.2	1.2	1.191	0.009	10	10.009					22														
TA1-PZ-11-K4	6/20/12 11:50	26.4	4.4		3.2	289		10.5	1.2	1.191	0.009	9.3	9.309					19														
TA1-PZ-11-L2	6/20/12 14:45	25.6	4.4		5.9	676		39.5	1.5	1.491	0.009	38	38.009					58														
TA1-PZ-11-L3	6/20/12 14:25	25.5	4.5		4.9	310		9.48	0.98	0.971	0.009	8.5	8.509					28														
TA1-PZ-11-L4	6/21/12 9:05	25.7	4.4		4.4	414		19.1	1.1	1.091	0.009	18	18.009					25														
TA1-PZ-11-L4-DUP	6/21/12 9:15	25.7	4.4		4.4	414		18	1	0.991	0.009	17	17.009					24														
TA1-PZ-11-L5	6/20/12 13:45	27.4	4.6		2.8	306		10.66	0.96	0.951	0.009	9.7	9.709					18														
TA1-PZ-16-I7	6/21/12 13:49	25.3	6.2		0.3	319		8	1.4	1.355	0.045	6.6	6.645					13														
TA1-PZ-16-M9	6/21/12 12:14	25.3	5.9		0.2	275		7.9	0.9	0.872	0.028	7	7.028					13														
TA1-PZ-16-N3	6/21/12 11:52	24.9	5.7		0.6	277		8.6	1.7	1.675	0.025	6.9	6.925					15														
TA1-PZ-16-O7	6/21/12 11:32	25.0	5.8		0.2	268		6.9	1.4	1.375	0.025	5.5	5.525					11														
TA1-PZ-16-RS16	6/21/12 9:14	24.8	6.2		0.1	434		7.4	1.8	1.758	0.042	5.6	5.642					15														
TA1-PZ-16-RS18	6/21/12 8:34	24.8	6.3		0.1	314		7.5	1.9	1.827	0.073	5.6	5.673					12														
TA2-PZ-09-I7	6/19/12 15:49	26.1	5.7		2.3	354		11	1.9	1.869	0.031	9.1	9.131					26														
TA2-PZ-09-L8	6/19/12 15:13	26.9	6.3		3.8	475		10.5	4.7	4.57	0.13	5.8	5.93					23														
TA2-PZ-09-M4	6/20/12 9:52	25.7	6.0		0.5	422		9.9	1.3	1.291	0.009	8.6	8.609					28														
TA2-PZ-09-N7	6/19/12 14:16	26.6	6.3		0.4	403		8.9	1.8	1.725	0.075	7.1	7.175					16														
TA2-PZ-09-TU19	6/19/12 14:09	26.5	4.6		1.2	173		6.8	2.1	2.032	0.068	4.7	4.768					4.9														
TA2-PZ-09-TU21	6/19/12 14:54	26.3	4.6		0.3	168		3.8	1.3	1.272	0.028	2.5	2.528					4.6														
TA2-PZ-10-EF2	6/20/12 9:21	25.6	4.4		3.6	524		21.3	2.3	2.291	0.009	19	19.009					58														
TA2-PZ-10-EF2-DUP	6/20/12 9:26	25.6	4.4		3.6	524		20.4	2.4	2.391	0.009	18	18.009					58														
TA2-PZ-10-H5	6/20/12 8:17	25.5	4.3		3.1	407		16.2	2.2	2.189	0.011	14	14.011					33														
TA2-PZ-10-J5	6/20/12 8:37	25.7	4.4		3.7	412		17.8	1.8	1.791	0.009	16	16.009					30														
TA2-PZ-10-K5	6/20/12 8:58	25.7	4.3		3.5	412		16.4	1.4	1.374	0.026	15	15.026					31														

Table H.1 (continued)
Water Quality Analytical Results
(June 18 through June 21, 2012)

Sample ID	Sample Date and Time	Temp	pH	Total Alkalinity	DO	Specific Conductance	COD	TN	TKN	Organic N	NH_3-N	NOx	TIN	TP	TOC	DOC	Anions						Cations							TSS	TS	Fecal Coliform
		(°C)		(mg/L)	(mg/L)	(µS/cm)	(mg/L)	(mg/L N)[1]	(mg/L N)	(mg/L N)2	(mg/L N)	(mg/L N)	(mg/L N)3	(mg/L)	(mg/L)	(mg/L)	F^-	Cl^-	NO_3-N$^-$	NO_2-N$^-$	PO_4-P$^-$	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na	(mg/L)	(mg/L)	(CFU/100 mL)
TA2-PZ-10-L2	6/20/12 9:30	25.6	4.6		2.6	425		15.3	2.3	2.291	0.009	13	13.009					32														
TA2-PZ-10-L3	6/20/12 9:10	25.5	4.5		2.2	418		12.1	1.1	1.091	0.009	11	11.009					30														
TA2-PZ-10-L4	6/20/12 8:42	25.9	4.4		2.7	700		41.3	2.3	2.291	0.009	39	39.009					67														
TA2-PZ-10-L5	6/20/12 8:26	25.8	4.8		2.7	496		10.9	1.3	1.291	0.009	9.6	9.609					38														
TA2-PZ-10-L6	6/20/12 8:06	25.9	4.6		3.4	375		18.2	1.2	1.191	0.009	17	17.009					25														
TA2-PZ-16-I7	6/20/12 7:56	24.6	5.4		0.3	210		1.97	0.57	0.549	0.021	1.4	1.421					7.3														
TA2-PZ-16-L8	6/19/12 13:30	24.9	5.8		0.1	226		1.67	0.57	0.542	0.028	1.1	1.128					6.6														
TA2-PZ-16-M4	6/20/12 10:10	24.7	5.7		0.1	241		1.62	0.42	0.399	0.021	1.2	1.221					7.2														
TA2-PZ-16-N7	6/19/12 14:38	25.1	6.1		0.1	219		1.79	0.59	0.566	0.024	1.2	1.224					6														
TA2-PZ-16-TU19	6/19/12 14:34	25.3	5.3		0.2	189		1.95	0.55	0.541	0.009	1.4	1.409					5.8														
TA2-PZ-16-TU21	6/19/12 15:20	25.2	5.2		0.2	185		1.89	0.92	0.902	0.018	0.97	0.988					5.4														
TA3-PZ-09-I7	6/20/12 12:29	27.0	7.1		3.4	1,832		5.7	2	1.942	0.058	3.7	3.758					30														
TA3-PZ-09-M9	6/20/12 11:24	26.1	6.5		0.3	1,035		8.7	3.3	3.245	0.055	5.4	5.455					23														
TA3-PZ-09-N3	6/20/12 12:27	25.9	6.5		0.4	940		7.3	4.2	4.114	0.086	3.1	3.186					22														
TA3-PZ-09-O7	6/20/12 10:43	26.0	6.6		0.6	894		6	2.2	2.102	0.098	3.8	3.898					22														
TA3-PZ-09-ST14	6/20/12 11:17	26.3	4.6		0.7	259		8.1	1.3	1.291	0.009	6.8	6.809					8														
TA3-PZ-09-ST16	6/20/12 10:29	26.2	5.6		1.2	404		6.1	2.7	2.621	0.079	3.4	3.479					9.6														
TA3-PZ-10-J5	6/20/12 13:43	26.0	5.1		2.3	336		10.5	1	0.991	0.009	9.5	9.509					18														
TA3-PZ-10-K5	6/20/12 14:33	25.4	5.0		1.8	330		9.6	1.3	1.291	0.009	8.3	8.309					16														
TA3-PZ-10-L5	6/20/12 14:55	25.6	5.0		1.7	324		8.7	1.3	1.287	0.013	7.4	7.413					19														
TA3-PZ-11-EF2	6/21/12 10:10	25.7	5.3		2.4	305		11.4	1.4	1.366	0.034	10	10.034					22														
TA3-PZ-11-EF2-DUP	6/21/12 10:15	25.7	5.3		2.4	305		12.6	1.6	1.584	0.016	11	11.016					22														
TA3-PZ-11-I2	6/21/12 9:49	25.5	5.0		3.0	382		16.2	1.2	1.178	0.022	15	15.022					31														
TA3-PZ-11-L2	6/20/12 13:50	26.0	4.4		3.1	340		11.8	1.9	1.8	0.1	9.9	10					30														
TA3-PZ-11-L3	6/20/12 14:36	25.3	4.3		2.6	279		6	1.1	1.091	0.009	4.9	4.909					19														
TA3-PZ-11-L4	6/21/12 10:38	25.9	5.1		2.3	283		7.7	1.4	1.391	0.009	6.3	6.309					19														
TA3-PZ-16-I7	6/20/12 12:56	25.1	6.1		0.1	281		5.2	1.2	1.15	0.05	4	4.05					8.2														
TA3-PZ-16-M9	6/20/12 11:44	25.1	5.8		0.2	284		7	1.6	1.591	0.009	5.4	5.409					9.9														
TA3-PZ-16-N3	6/20/12 13:10	24.9	5.5		0.2	305		9.2	1	0.991	0.009	8.2	8.209					16														
TA3-PZ-16-O7	6/20/12 11:02	25.2	5.7		0.1	301		6.3	2	1.972	0.028	4.3	4.328					10														
TA3-PZ-16-ST14	6/20/12 11:42	25.1	5.3		0.3	268		4.8	1.2	1.191	0.009	3.6	3.609					8.2														
TA3-PZ-16-ST16	6/20/12 10:45	25.1	5.4		0.2	273		5.4	1.1	1.085	0.015	4.3	4.315					8.6														
TA4-PZ-09-I7	6/19/12 10:12	25.8	5.9		1.1	326		3.29	0.59	0.581	0.009	2.7	2.709					10														
TA4-PZ-09-L8	6/19/12 9:06	25.7	6.4		0.7	596		5.8	2.6	2.46	0.14	3.2	3.34					10														
TA4-PZ-09-M4	6/19/12 9:56	25.6	6.7		0.3	636		6.1	1.6	1.516	0.084	4.5	4.584					15														
TA4-PZ-09-N7	6/19/12 8:54	25.7	5.6		1.0	364		7	2.2	2.14	0.06	4.8	4.86					13														
TA4-PZ-09-TU14	6/19/12 7:38	25.5	5.4		0.4	196		5	1.1	1.074	0.026	3.9	3.926					5.1														
TA4-PZ-09-TU16	6/19/12 7:52	25.5	5.4		0.8	200		7.7	2	1.991	0.009	5.7	5.709					5.8														
TA4-PZ-10-H5	6/19/12 13:30	26.5	5.5		1.8	327		10.5	1.3	1.291	0.009	9.2	9.209					25														
TA4-PZ-10-J5	6/19/12 12:23	26.2	5.6		2.4	334		14.8	2.8	2.736	0.064	12	12.064					23														
TA4-PZ-10-K5	6/19/12 11:58	26.2	5.3		2.7	394		18	1	0.86	0.14	17	17.14					28														
TA4-PZ-11-EF2	6/19/12 12:06	26.0	4.2		1.6	332		13.6	1.6	1.591	0.009	12	12.009					27														
TA4-PZ-11-EF2-DUP	6/19/12 12:11	26.0	4.2		1.6	332		13.7	1.7	1.691	0.009	12	12.009					26														
TA4-PZ-11-L2	6/19/12 10:45	26.1	4.5		1.7	415		24.9	1.9	1.859	0.041	23	23.041					32														
TA4-PZ-11-L3	6/19/12 11:21	25.8	4.3		1.4	342		15.6	1.6	1.527	0.073	14	14.073					24														
TA4-PZ-11-L4	6/19/12 11:40	26.0	4.3		2.0	420		21.2	2.2	2.135	0.065	19	19.065					32														
TA4-PZ-11-L5	6/19/12 11:24	25.9	5.2		1.9	419		19.1	3.1	3.091	0.009	16	16.009					30														
TA4-PZ-11-L6	6/19/12 10:58	26.0	5.2		1.7	547		15.1	1.1	1.091	0.009	14	14.009					24														
TA4-PZ-16-I7	6/19/12 10:32	25.0	5.5		0.2	261		7.66	0.96	0.951	0.009	6.7	6.709					8.9														
TA4-PZ-16-L8	6/19/12 9:44	25.1	5.5		0.2	264		8.7	1.1	1.091	0.009	7.6	7.609					9.1														
TA4-PZ-16-M4	6/19/12 10:20	24.8	5.3		0.2	225		8.1	1.6	1.591	0.009	6.5	6.509					8.2														
TA4-PZ-16-N7	6/19/12 9:21	25.1	5.2		0.1	237		9.2	0.7	0.691	0.009	8.5	8.509					9.3														
TA4-PZ-16-TU14	6/19/12 8:32	24.9	6.0		0.1	297		4.04	0.94	0.931	0.009	3.1	3.109					6.2														
TA4-PZ-16-TU16	6/19/12 8:12	24.6	5.3		0.2	257		5.4	1.2	1.191	0.009	4.2	4.209					5.7														
PZ01-BKG-09	6/19/12 14:40	28.7	4.3		0.8	111		0.1	0.09	0.081	0.009	0.01	0.019					4.9														
PZ04-BKG-09	6/19/12 8:24	26.2	5.1		4.4	100		7.2	1.3	1.291	0.009	5.9	5.909					2.2														
PZ24-BKG-26	6/19/12 9:30	25.3	5.0		2.4	286		14	2	1.991	0.009	12	12.009					17														
PZ24-BKG-26-DUP	6/19/12 9:35	25.3	5.0		2.4	286		14	2	1.991	0.009	12	12.009					18														
PZ29-BKG09	6/19/12 10:10	26.5	4.9	2.1	1.7	214		6.1	1.9	1.891	0.009	4.2	4.209					6.4														

Table H.1 (continued)
Water Quality Analytical Results
(June 18 through June 21, 2012)

Sample ID	Sample Date and Time	Temp	pH	Total Alkalinity	DO	Specific Conductance	COD	TN	TKN	Organic N	NH_3-N	NOx	TIN	TP	TOC	DOC	Anions						Cations							TSS	TS	Fecal Coliform
		(°C)		(mg/L)	(mg/L)	(µS/cm)	(mg/L)	(mg/L N)[1]	(mg/L N)	(mg/L N)2	(mg/L N)	(mg/L N)	(mg/L N)3	(mg/L)	(mg/L)	(mg/L)	F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na	(mg/L)	(mg/L)	(CFU/100 mL)
PZ30-BKG-16	6/19/12 10:40	26.3	5.6	22	0.4	332		13	1	0.991	0.009	12	12.009					16														
PZ31-BKG-26	6/19/12 11:35	26.6	5.1	5.2	1.2	321		15.4	1.4	1.365	0.035	14	14.035					19														
PZ31-BKG-26-DUP	6/19/12 11:40	26.6	5.1	4.2	1.2	321		15.4	1.4	1.37	0.03	14	14.03					19														
PZ32-BKG-09	6/19/12 12:10	29.2	4.4	2	4.9	181		4.2	1.1	1.091	0.009	3.1	3.109					6.9														
PZ33-BKG-16	6/19/12 13:40	27.0	5.2	5.2	0.4	270		12.4	1.4	1.391	0.009	11	11.009					14														
PZ34-BKG-26	6/19/12 14:15	26.5	5.9	18	1.2	331		8.4	1.8	1.716	0.084	6.6	6.684					22														
PZ35-BKG09	6/19/12 15:15	26.9	6.0	120	0.3	863		5.5	1.6	1.588	0.012	3.9	3.912					17														
PZ36-BKG-16	6/19/12 15:40	25.7	5.4	13	0.4	254		6.8	1.5	1.491	0.009	5.3	5.309					7.8														
PZ37-BKG-26	6/19/12 16:10	25.5	5.2	6.3	1.7	333		16.4	1.4	1.391	0.009	15	15.009					20														
PZ38-BKG-09	6/20/12 8:30	25.2	6.2	75	0.2	552		1.17	0.4	0.391	0.009	0.77	0.779					10														
PZ39-BKG-16	6/20/12 9:05	24.6	6.2	54	0.2	340		4.3	1.2	1.191	0.009	3.1	3.109					7														
PZ40-BKG-26	6/20/12 9:55	24.9	5.0	5.2	1.9	279		7.98	0.78	0.771	0.009	7.2	7.209					15														
PNRS II samples																																
TA5-Denite Tank	6/21/12 13:15	NR	6.5		0.1	980		2.03	2	1.49	0.51	0.03	0.54					48				140										
TA5-Denite Tank-DUP	6/21/12 13:20	NR	6.5		0.1	980		2.03	2	1.44	0.56	0.03	0.59					47				160										
TA5-LINER-SP	6/21/12 10:50	30.9	6.4		4.6	926		1.4	1.1	1.07	0.03	0.3	0.33					56	0.15	0.15												
TA5-LY-C	6/18/12 11:10	28.6	6.6		6.4	880		37.11	2.1	2.091	0.009	35.01	35.019					62	35	0.01												
TA5-PZ-1	6/21/12 11:34	26.4	4.2		1.3	349		17.7	1.7	1.659	0.041	16	16.041					15				74										
TA6-Denite Tank	6/20/12 10:45	26.9	6.6		0.1	1,082		2.65	2.6	2	0.6	0.05	0.65					73				110										
TA6-LINER-SP	6/20/12 13:10	27.8	6.6		6.1	1,061		2.6	2.5	2.36	0.14	0.1	0.24					66	0.09	0.01												
TA6-LY-C	6/18/12 9:24	27.8	6.6	140	6.4	788	46	21.31	2.3	2.291	0.009	19.01	19.019	0.066				74	19	0.01												
TA6-PZ-1	6/20/12 10:30	26.4	4.8		4.0	317		15.6	1.6	1.591	0.009	14	14.009					12				76										
Blanks																																
EB	6/21/12 7:20	23.5	8.0	2	3.4	7	10	0.06	0.05	0.041	0.009	0.01	0.019			1.2	0.061	0.05	0.01		0.01	0.2	0.05	0.042	0.02	0.02	0.001	0.01	0.13			
FB-DI	6/21/12 15:00	30.5	7.6	2.1	4.8	8		0.06	0.05	0.041	0.009	0.01	0.019					0.23														
FB-Tap	6/21/12 15:10	30.5	7.2	150	3.5	431		0.32	0.29	0.14	0.15	0.03	0.18					21														

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.