Florida Onsite Sewage Nitrogen Reduction Strategies Study

Task C.25

C-HS4 Monitoring Data Summary Report No. 4

Progress Report

December 2013

HAZEN AND SAWYER
Environmental Engineers & Scientists

In association with:

AET

Otis Environmental Consultants, LLC

Florida Onsite Sewage Nitrogen Reduction Strategies Study

TASK C.25
PROGRESS REPORT

C-HS4 Monitoring
Data Summary Report No. 4

Prepared for:

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

FDOH Contract CORCL

December 2013

Prepared by:

HAZEN AND SAWYER
Environmental Engineers & Scientists

In Association With:

SCHOOL OF MINES 1874 COLORADO

C-HS4 Monitoring
Data Summary Report No. 4

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 Task C.5 QAPP documents the objectives, monitoring framework, sample frequency and duration, and analytical methods to be used at the field sites. The Task C.23 instrumentation report for the C-HS4 OSTDS system and plume documents the test area design, number and location of monitoring points, and preliminary field parameters from monitoring points for this Hillsborough County, Florida field site, and also includes preliminary sample collection and analyses.

2.0 Purpose

This report documents data that was collected in the fourth C-HS4 monitoring and sampling event which was conducted October 23 through October 25, 2013. The corresponding sample event report was submitted as C-HS4 Sample Event Report No. 4, December 2013, as a deliverable under Task C.24. The monitoring event consisted of water use measurement from the household water meter, groundwater elevation measured within the standpipe piezometers, measurement of field parameters, and collection of effluent and groundwater samples and their analyses in a NELAC certified laboratory.

3.0 Materials and Methods

3.1 Project Site

The C-HS4 field site is also the B-HS2 passive nitrogen reduction system site located in Hillsborough County, FL adjacent to Eagle Lake and [redacted] Creek in a rural area. The Task B.6 installation report for the B-HS2 system documents the experimental system design which was installed in September 2012. The existing onsite sewage treatment and disposal system (OSTDS) consisted of a 1,050 gallon concrete septic tank located adjacent to the soil treatment unit which is a mounded drainfield (P.T.I.™ bundles). The new passive treatment system consists of a replacement 1,050 gallon two chamber con-

o:\44237-001R004\Wpdocs\Report\Final

crete primary tank; 300 gallon concrete recirculation tank; 900 gallon concrete Stage 1 unsaturated media filter; 300 gallon concrete pump tank; and 1,500 gallon two chamber concrete Stage 2 saturated media biofilter.

3.2 Monitoring and Sampling Locations and Identification

A sampling grid for groundwater screening was developed downgradient of the soil treatment unit as depicted in Figure 1. A 10-foot by 5-foot grid spacing was staked. Transect lines A through S run east-west, roughly parallel to the groundwater flow direction and increase (higher letter identification) moving southward from the drainfield. Transect lines 0 through 10 run north-south, roughly perpendicular to the groundwater flow direction and increase moving from the west to east. Based on initial screening data, 29 monitoring locations were chosen within the grid for standpipe piezometer installation. Groundwater monitoring points were installed in September and December 2012. Two types of monitoring point were installed using either hand or drilling methods: stainless steel drivepoints and standpipe piezometers. Stainless steel drivepoints consist of 1-foot screens with polypropylene tubing extending to the ground surface. Standpipe piezometers consist of either ¾-inch or 1-inch diameter PVC with a 1-foot or 5-foot screen (0.010-inch slots) and riser extending to the ground surface (refer to the Task C QAPP and Task C.23 C-HS3 Instrumentation Report for additional detail).

Each monitoring location was assigned a unique identification indicating grid location (self explanatory), and depth below ground surface (bottom of the well screen in feet). For example E03-8 is a standpipe piezometer sampler located on the grid at E03 at 8 feet below ground surface. A schematic of the C-HS4 monitoring network is shown in Figure 1. A complete list of all installed standpipe piezometers and sample identification is included in Appendix A.

o:\44237-001R004\Wpdocs\Report\Final

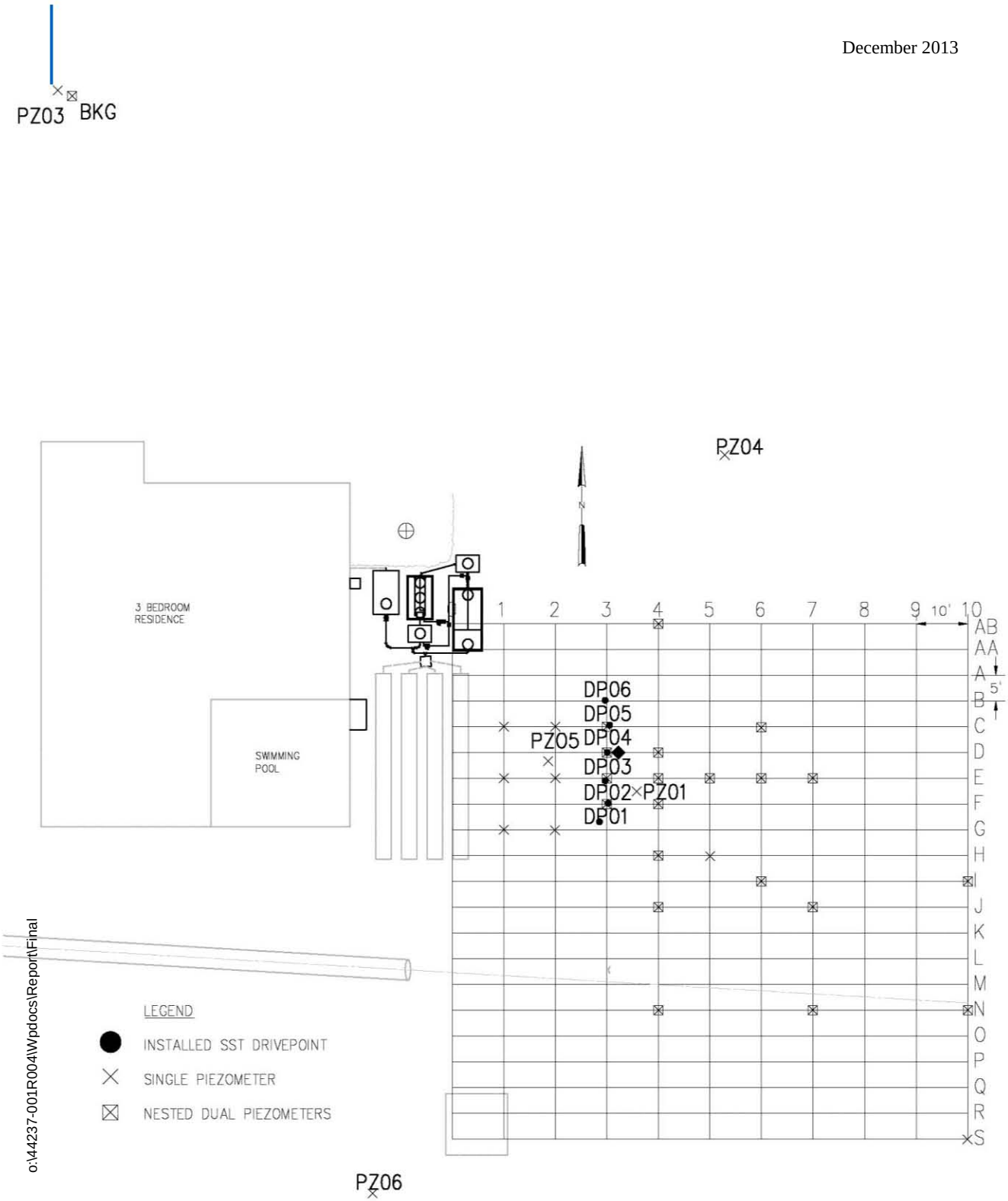

Figure 1
C-HS4 Monitoring Network

3.3 Operational Monitoring

A water meter for the home site was installed March 6, 2012. The water meter for the house site was read and recorded. A weather station (Balm in Wimauma, FL) is located approximately 10 miles from the site. Data from this weather station is available at the following website: http://fawn.ifas.ufl.edu/.

3.4 Groundwater Elevation Measurements

Groundwater level measurements are used to determine hydraulic gradients and directions of groundwater flow. Groundwater levels were measured by inserting into monitoring wells a hand-cranked steel tape graduated in feet, to the nearest 0.01 ft. These measurements are then converted to groundwater surface elevations by using the surveyed elevation of the top of the monitoring well casing. The groundwater level within all the sampled standpipe piezometers was measured for this sampling event.

3.5 Water Quality Sample Collection and Analyses

Groundwater and septic tank effluent (STE) were collected October 23 through October 25, 2013 for water quality analysis. As previously discussed, the experimental PNRS system was installed in September 2012. Therefore, in addition to evaluating the groundwater data relative to the septic tank effluent, the treated effluent from the PNRS system (B-HS2 ST2) should be considered. The B-HS2 PNRS system has been sampled bimonthly since start-up. For this groundwater monitoring event, a sample of the treated effluent (B-HS2-ST2) collected October 7, 2013 is considered. Prior to September 25, 2012, STE was discharged directly to the drainfield. Following the September 25, 2012 construction of the PNRS system, treated effluent (B-HS2-ST2) was discharged to the drainfield.

A peristaltic pump was used to collect STE and B-HS2-ST2 directly into the analysis-specific containers. Groundwater samples were obtained using a peristaltic pump, which was attached directly to dedicated standpipe piezometer or drivepoint tubing. Samples were collected after sufficient purging (the sample was clear and pH and conductivity readings had stabilized) had occurred. Field parameters were then recorded.

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 supplied by the laboratory. Chain of custody forms

o:\44237-001R004\Wpdocs\Report\Final

were used to document the transfer of samples from field personnel to the analytical laboratory.

In addition, field sample duplicates were collected immediately subsequent to the regular samples. The field duplicate samples taken include:

- STE
- PZ-E7-15
- PZ-F4-08
- PZ-I6-15
- PZ-J7-15
- PZ-N4-15
- PZ-N7-15
- PZ-S10-08

Field parameters (pH, specific conductance, temperature (Temp), and dissolved oxygen (DO)) were measured using portable electronic probes with probe tips placed in an overflowing plastic beaker as groundwater was being pumped. All samples were analyzed by the laboratory for: total Kjeldahl nitrogen (TKN-N), ammonia nitrogen (NH_3-N), and nitrate/nitrite nitrogen (NO_X-N). At some of the locations, total alkalinity, chloride (CL), chemical oxygen demand (COD), total phosphorus (TP), anions, and cations were included. All analyses were performed by an independent and fully certified analytical laboratory (Southern Analytical Laboratory). Table 1 lists the analytical parameters, analytical methods, and detection limits for these analyses.

o:\44237-001R004\Wpdocs\Report\Final

Table 1
Analytical Parameters, Method of Analysis, and Detection Limits

Analytical Parameter	Method of Analysis	Method 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
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

o:\44237-001R004\Wpdocs\Report\Final

3.6 Data Management

To allow for a better visualization of the data collected at the site the mapping program **Surfer** was utilized. **Surfer** is a grid-based mapping program that interpolates irregularly spaced XYZ data into a regularly spaced grid. Although there are several methods used in Surfer to fill in areas where data is missing, the "natural neighbor" gridding method was used as the output gave the most informative graphs.

4.0 Results

4.1 Operational Data and Site Conditions

Table 2 summarizes the water meter readings and average daily water use for the residence at site C-HS4.

Table 2
Water Meter Readings and Water Usage for C-HS4

Residence	Date Read	Meter Reading	Gallons/day since last reading	Gallons/day since installed
C-HS4 Residence	3/6/2012	7,790	Installed	Installed
	1/1/2013	43,240	117.8	117.8
	2/5/2013	47,741	128.6	118.9
	4/23/2013	54,680	90.1	113.5
	7/24/2013	62,422	84.2	108.2
	10/15/2013	69,740	88.2	105.4
	11/5/2013	71,600	88.6	104.8

Daily recorded meteorological data is provided in Appendix B. Table 3 provides the daily averages leading up to and during the sample event.

o:\44237-001R004\Wpdocs\Report\Final

Table 3
Meteorological Data Daily Averages Measured October 18 through October 25, 2013

Date	Temp Avg 60 cm (°F)	Temp Avg 2m (°F)	Temp Avg 10 m (°F)	Temp Soil Avg -10 cm (°F)	Dewpoint Avg 2m (°F)	Relative Humidity Avg 2m (%)	Rain Total 2m (in)	2m Rain max over 15min (in)	10m Wind avg (mph)	ET (in/d)
18-Oct-13	76.97	77.51	77.78	78.07	70.74	82	0	0	4.57	0.12
19-Oct-13	76.85	77.48	77.74	78.40	72.56	86	0	0	4.14	0.10
20-Oct-13	78.72	78.92	78.77	78.79	73.61	85	0	0	3.50	0.11
21-Oct-13	77.70	78.06	77.78	79.21	72.93	85	0	0	3.70	0.11
22-Oct-13	75.08	75.57	75.59	78.69	71.86	89	0.97	0.19	5.12	0.11
23-Oct-13	72.14	72.44	72.07	77.61	64.08	77	0	0	6.58	0.09
24-Oct-13	63.65	64.11	64.16	75.03	54.84	72	0	0	6.76	0.07
25-Oct-13	65.79	66.37	66.54	73.88	55.93	73	0	0	5.49	0.09

4.2 Groundwater Levels

Water levels were measured at all standpipe piezometers sampled October 23 through October 25, 2013 for this sampling event as summarized in Table 4. Figures 2, 3, 4 and 5 illustrate the surficial groundwater contours as measured within the standpipe piezometers during Sample Event 1 (January 16, 2013), Sample Event 2 (April 22, 2013), Sample Event 3 (July 24, 2013) and Sample Event 4 (October 23, 2013), respectively.

o:\44237-001R004\Wpdocs\Report\Final

Table 4
Standpipe Piezometer Groundwater Levels October 23, 2013

Identification	Water Table El[1] (ft)	Identification	Water Table El[1] (ft)
PZ-01	11.39	PZ-E7-15	11.08
PZ-02	DRY	PZ-F3-08	11.74
PZ-03	DRY	PZ-F3-15	11.72
BKG-10	17.62	PZ-F4-08	11.29
BKG-15	17.59	PZ-F4-15	11.33
PZ-04	DRY	PZ-G1	NR
PZ-05	NR	PZ-G2-12.5	12.19
PZ-06	11.29	PZ-H4-08	11.31
PZ-AB4-08	11.71	PZ-H4-15	11.25
PZ-AB4-15	11.60	PZ-H5-11.5	10.99
PZ-C1	13.82	PZ-I6-08	11.22
PZ-C2	13.21	PZ-I6-15	11.25
PZ-C3-08	12.19	PZ-I10-08	10.99
PZ-C3-15	12.16	PZ-I10-15	11.06
PZ-C6-08	11.13	PZ-J4-08	11.36
PZ-C6-15	11.11	PZ-J4-15	11.30
PZ-D3-08	12.23	PZ-J7-08	11.16
PZ-D3-15	12.17	PZ-J7-15	11.15
PZ-D4-08	11.29	PZ-N4-08	11.38
PZ-D4-15	11.30	PZ-N4-15	11.36
PZ-E1	13.60	PZ-N7-08	11.19
PZ-E2	12.68	PZ-N7-15	11.23
PZ-E3-08	12.14	PZ-N10-08	11.12
PZ-E3-15	12.06	PZ-N10-15	11.07
PZ-E4-08	11.35	PZ-S10-08	11.20
PZ-E4-15	11.37	DP-01	DRY
PZ-E5-08	11.15	DP-02	DRY
PZ-E5-15	11.16	DP-03	DRY
PZ-E6-08	11.13	DP-04	DRY
PZ-E6-15	11.04	DP-05	DRY
PZ-E7-08	11.05	DP-06	DRY

[1]Elevation above mean sea level based on NGVD 1929
NR = no reading

o:\44237-001R004\Wpdocs\Report\Final

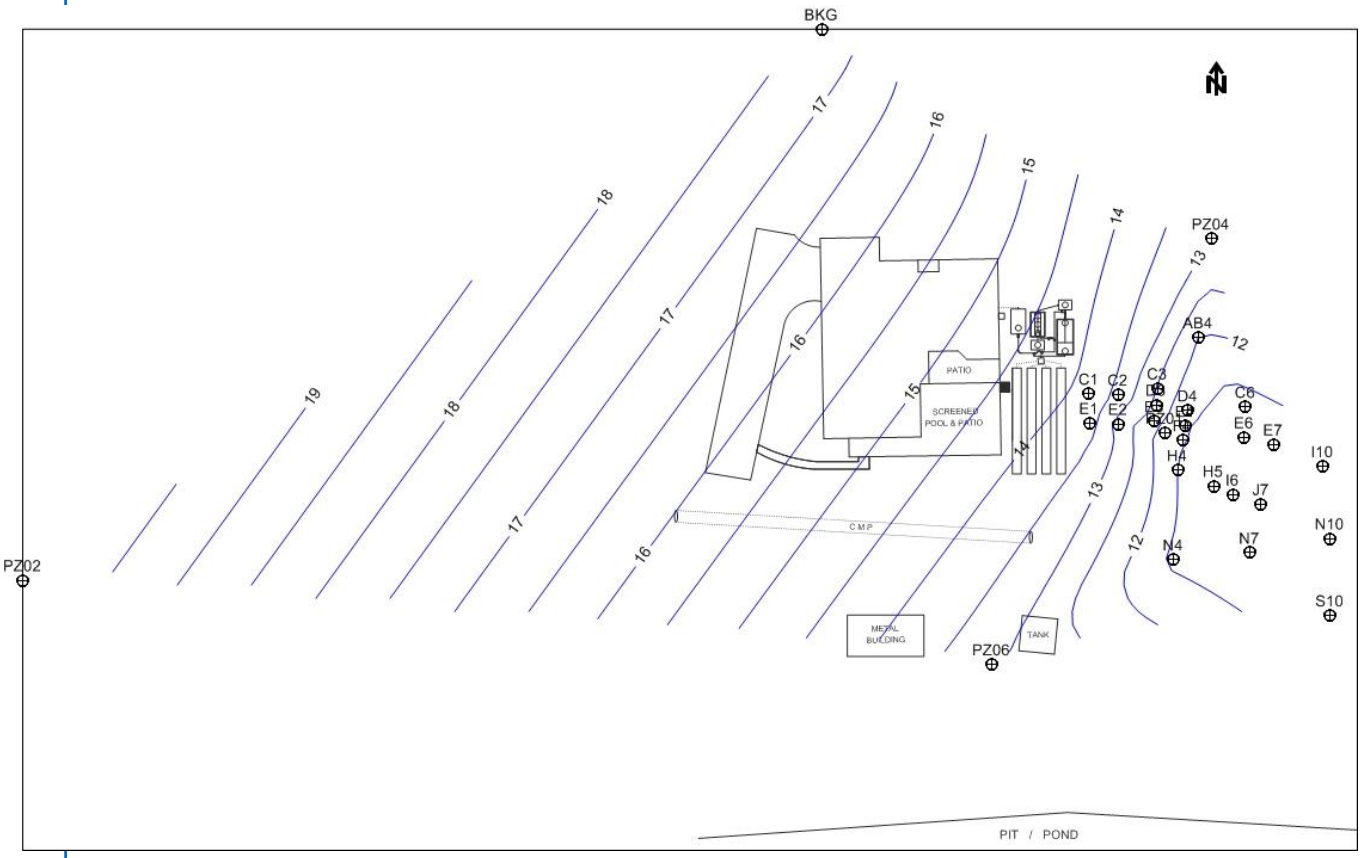

Figure 2
Surficial Groundwater Contours SE1, January 16, 2013

o:\44237-001R004\Wpdocs\Report\Final

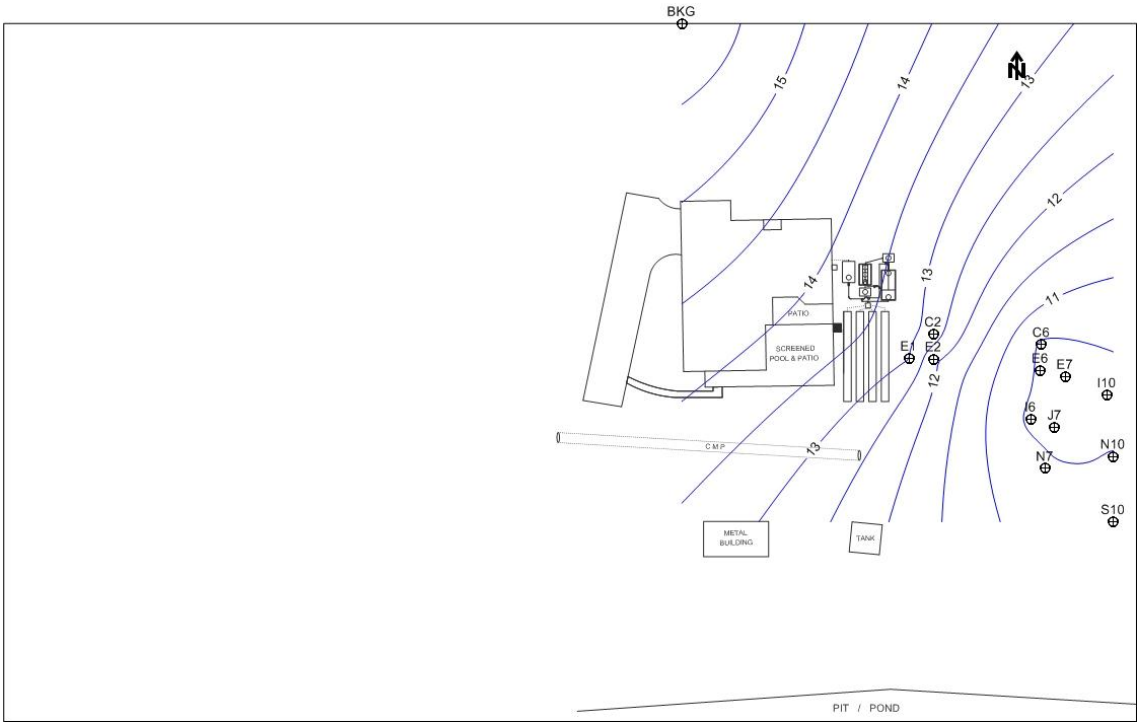

Figure 3
Surficial Groundwater Contours SE2, April 22, 2013

o:\44237-001R004\Wpdocs\Report\Final

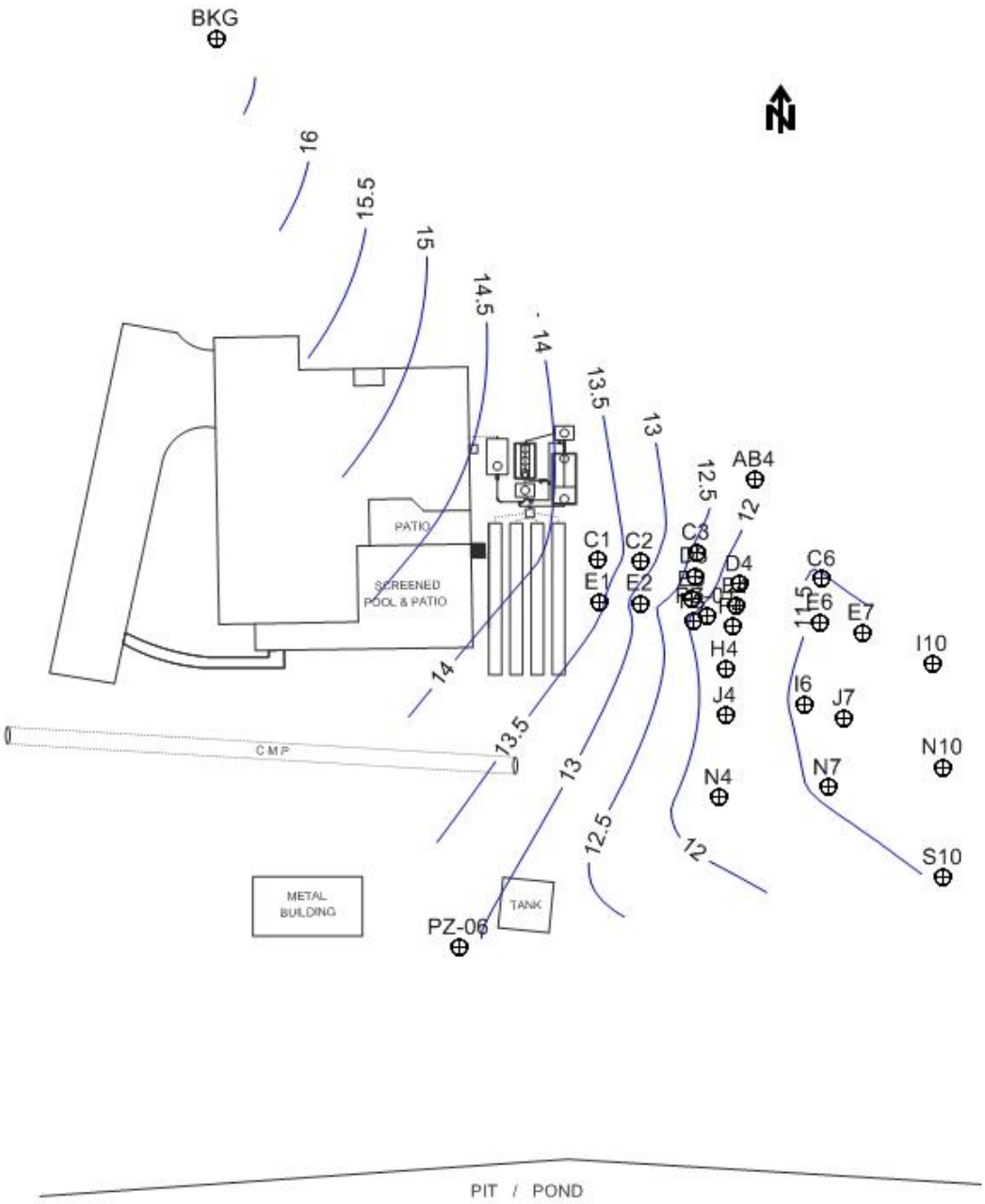

Figure 4
Surficial Groundwater Contours SE3, July 24, 2013

o:\44237-001R004\Wpdocs\Report\Final

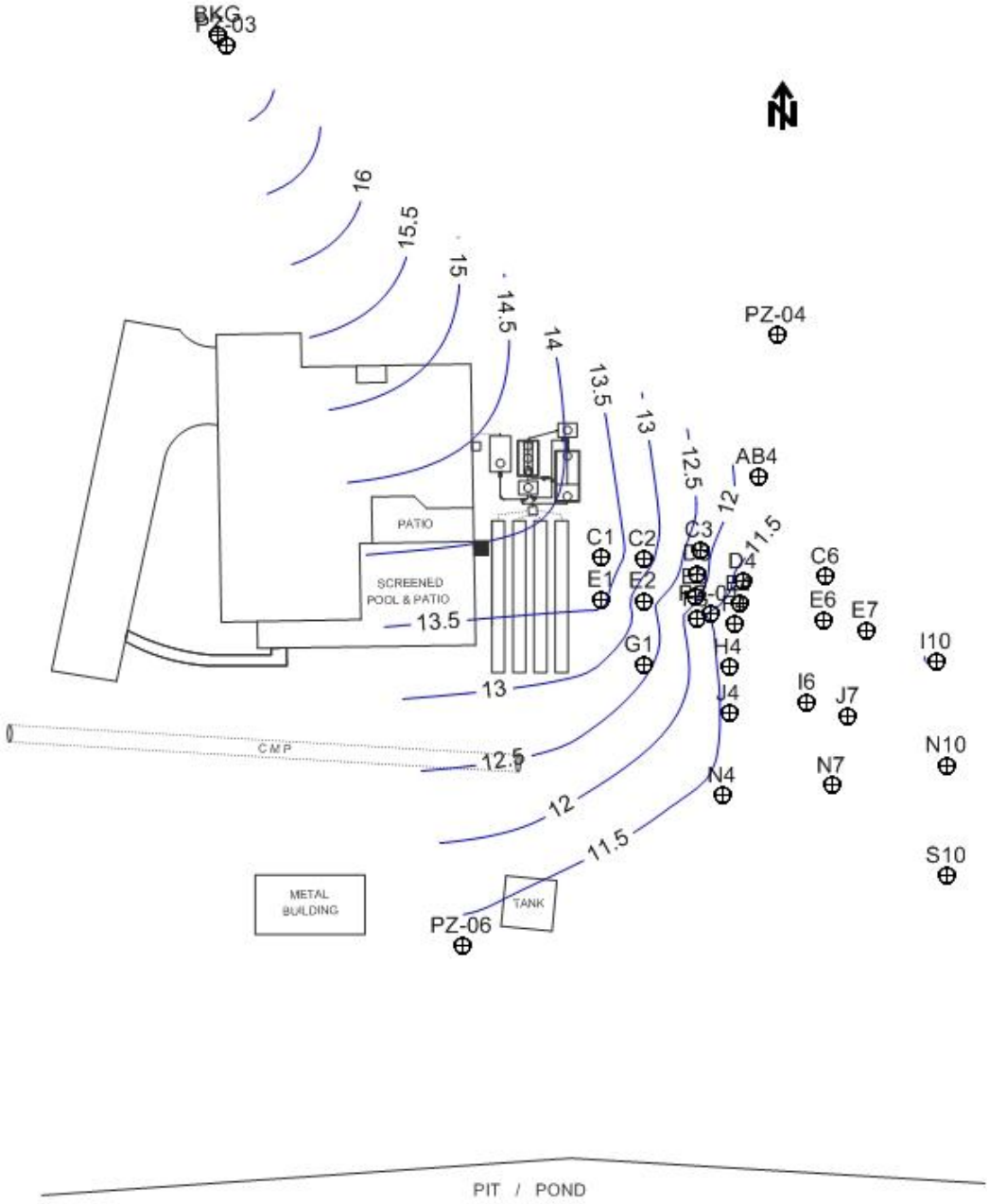

Figure 5
Surficial Groundwater Contours SE4, October 23, 2013

o:\44237-001R004\Wpdocs\Report\Final

4.3 Water Quality Analyses

The experimental PNRS system was installed in September 2012; so, in addition to evaluating the groundwater data relative to the septic tank effluent, the PNRS system treated effluent (B-HS2-ST2) should be considered. Prior to September 25, 2012, STE was discharged directly to the drainfield. Following the September 25, 2012 construction of the PNRS system, treated effluent (B-HS2-ST2) was discharged to the drainfield.

4.3.1 Field Parameters

Field parameters (temperature, pH, dissolved oxygen (DO), and specific conductivity) were measured at all the sampling locations prior to sample collection and are provided in Appendix C. Variations in measured values between monitoring points were expected as the chemical composition of the groundwater varied due to the discharge of STE and PNRS treated effluent (B-HS2-ST2).

4.3.2 Correlations

Correlations between nitrogen parameters and simple to measure field parameters were investigated. Figures 5 and 6 show scatter plots of nitrogen vs conductivity and chloride, respectively, for groundwater samples. A strong linear correlation is not observed for either conductivity or chloride. This is probably because the PNRS is still discharging conductivity and chloride, with a lower nitrogen concentration (1.52 mg/L). However, the downgradient groundwater samples could still be influenced by STE (53 mg/L) depending on the travel time.

o:\44237-001R004\Wpdocs\Report\Final

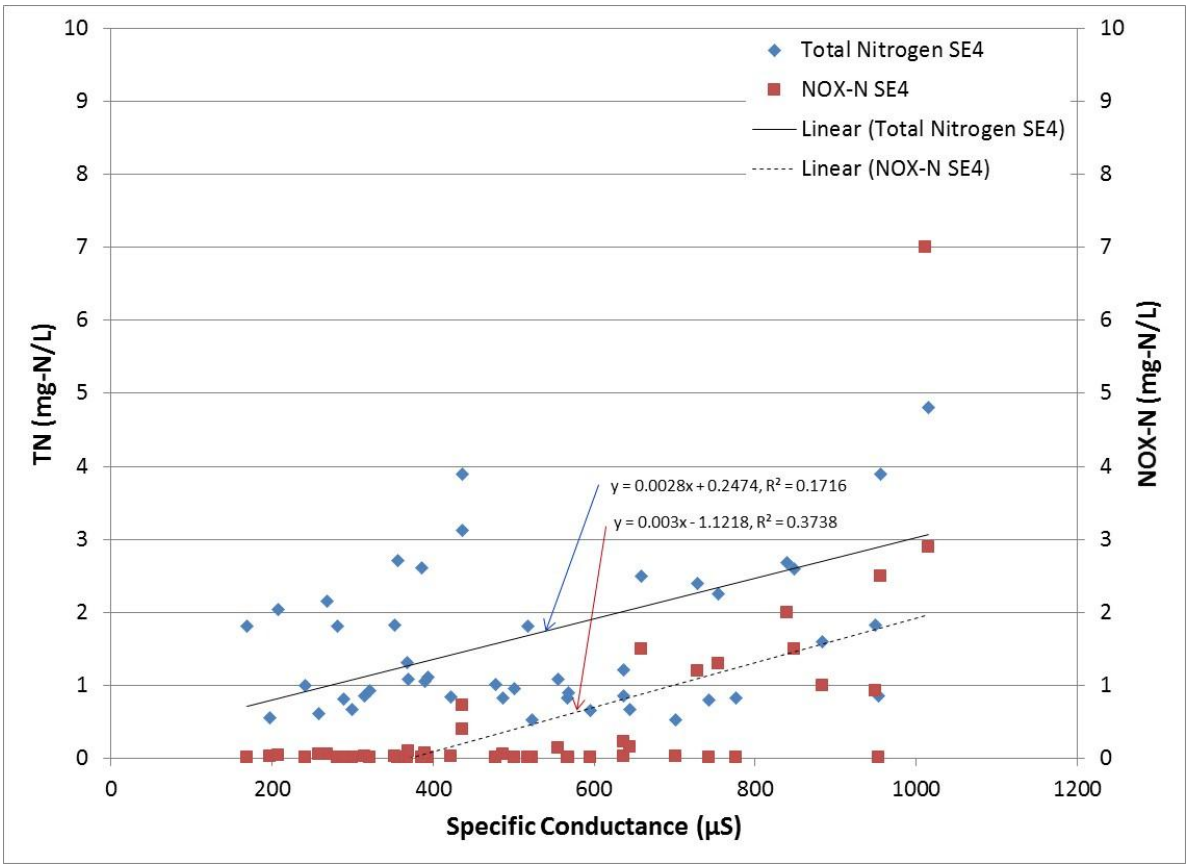

Figure 5
Correlation Between the Specific Conductance (uS) and the Concentrations of Total Nitrogen (mg-N/L) and NOX (mg-N/L)

o:\44237-001R004\Wpdocs\Report\Final

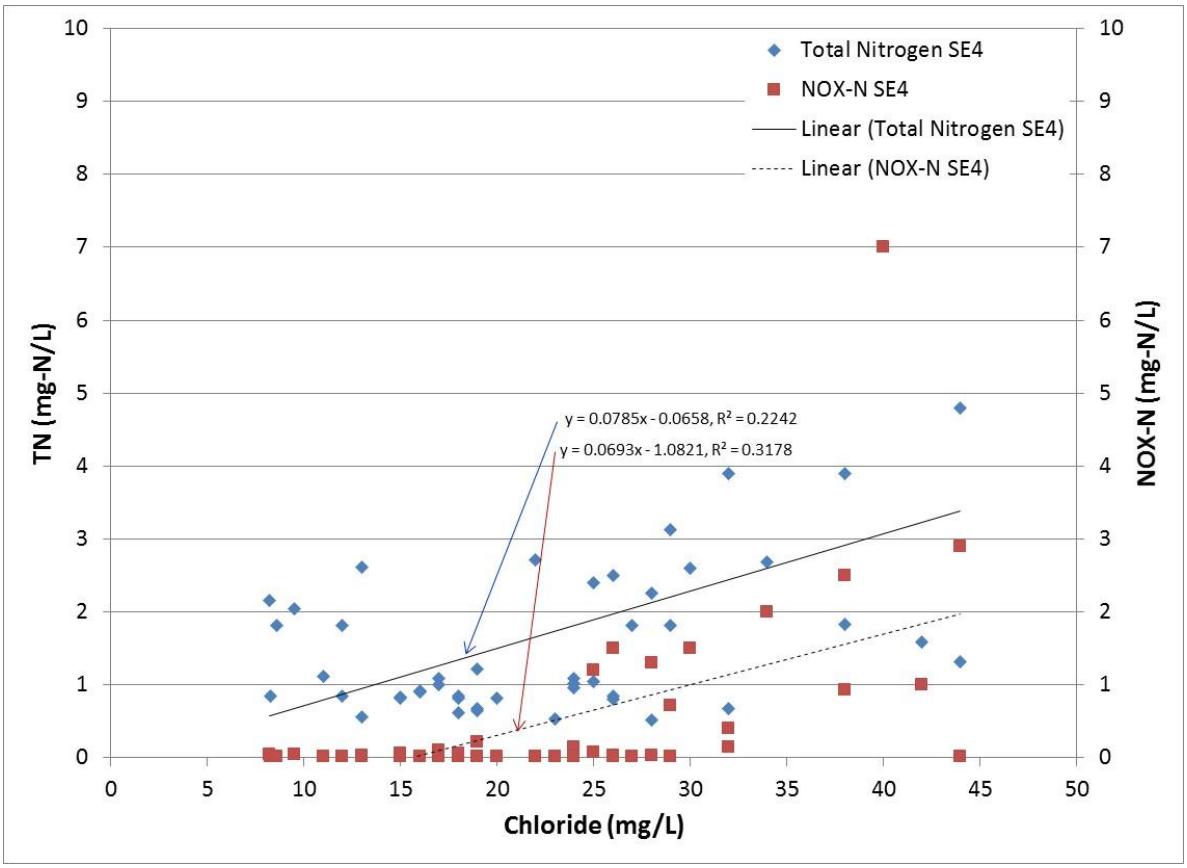

Figure 6
Correlation Between the Chloride (mg/L) and the Concentrations of Total Nitrogen (mg-N/L) and NOX (mg-N/L)

4.3.3 Analytical Parameters

In addition to measuring field parameters, all samples were analyzed for total Kjeldahl nitrogen (TKN-N), ammonia nitrogen (NH3-N), nitrate/nitrite nitrogen (NOX-N), chloride (CL) and sulfate (SO4). At some of the locations, total alkalinity (as $CaCO_3$), chemical oxygen demand (COD), total phosphorus (TP), anions, and cations were included. By analyzing for the different nitrogen species, a clearer picture is gained on the transformation of nitrogen within the plume. The complete water quality analytical results for Sample Event No. 4 are listed in Table C.1 of Appendix C. The summary of the water quality is presented in Table D.1 of Appendix D. The laboratory report containing the raw analytical data is included in Appendix E which includes the chain of custody forms.

o:\44237-001R004\Wpdocs\Report\Final

4.3.4 Nitrate/Nitrite Concentrations with Groundwater Depth

The general trend of the nitrogen plume at the site can be somewhat determined with the data collected to date. The piezometers installed at different locations and depths below the ground surface were mapped in **Surfer**. Although **Surfer** is an informative tool for mapping the information from the site, it cannot project a 3-dimensional view of concentrations with depth. Based on the distribution of points with depth, two "slices" were chosen for the groundwater data surrounding the system. A **Surfer** schematic illustrating the "slices" of NOX concentration with depth from October 2013 are presented in Figures 7 and 8. The two slices were separated by groundwater elevation above sea level (NGVD29 datum). Similar slices of TKN concentration with depth are presented in Figures 9 and 10. 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 and deep piezometer NOX results are very low concentrations (Figures 7 and 8). The plots continue to indicate that the NOX concentration downgradient of the drainfield has significantly decreased following the installation of the passive nitrogen reduction system. The shallow and deep piezometer TKN results (Figures 9 and 10) and NOX results appear to show the plume to be confined in a south-southeast direction from the drainfield. The deeper piezometers (Figure 8) indicate relatively low NOX concentrations at this point in time, similar to background levels. However, as evident in the comparison of the NOX and TKN plots of the deeper piezometers (Figures 8 and 10) there seems to be a background concentration of TKN. The specific conductance, chloride and sulfate plots (Figures 11 through 16) also appear to show the plume to be confined in a south-southeast direction from the drainfield.

o:\44237-001R004\Wpdocs\Report\Final

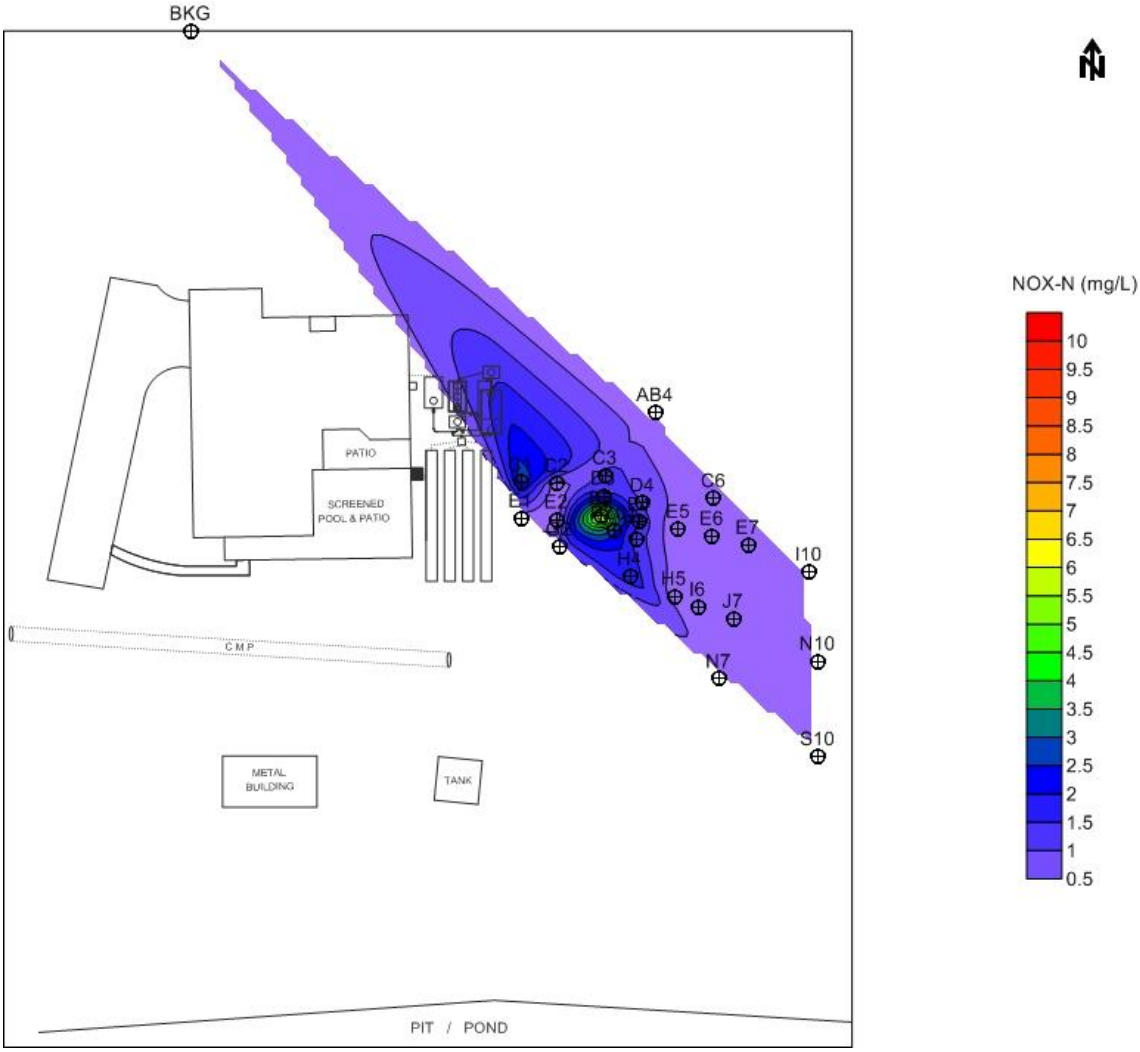

Figure 7
Shallow GW Elev 7.9-17.6 ft above MSL (October 2013 Sample Event 4)
Schematic (using Surfer) illustrating NOX concentrations in the subsurface

o:\44237-001R004\Wpdocs\Report\Final

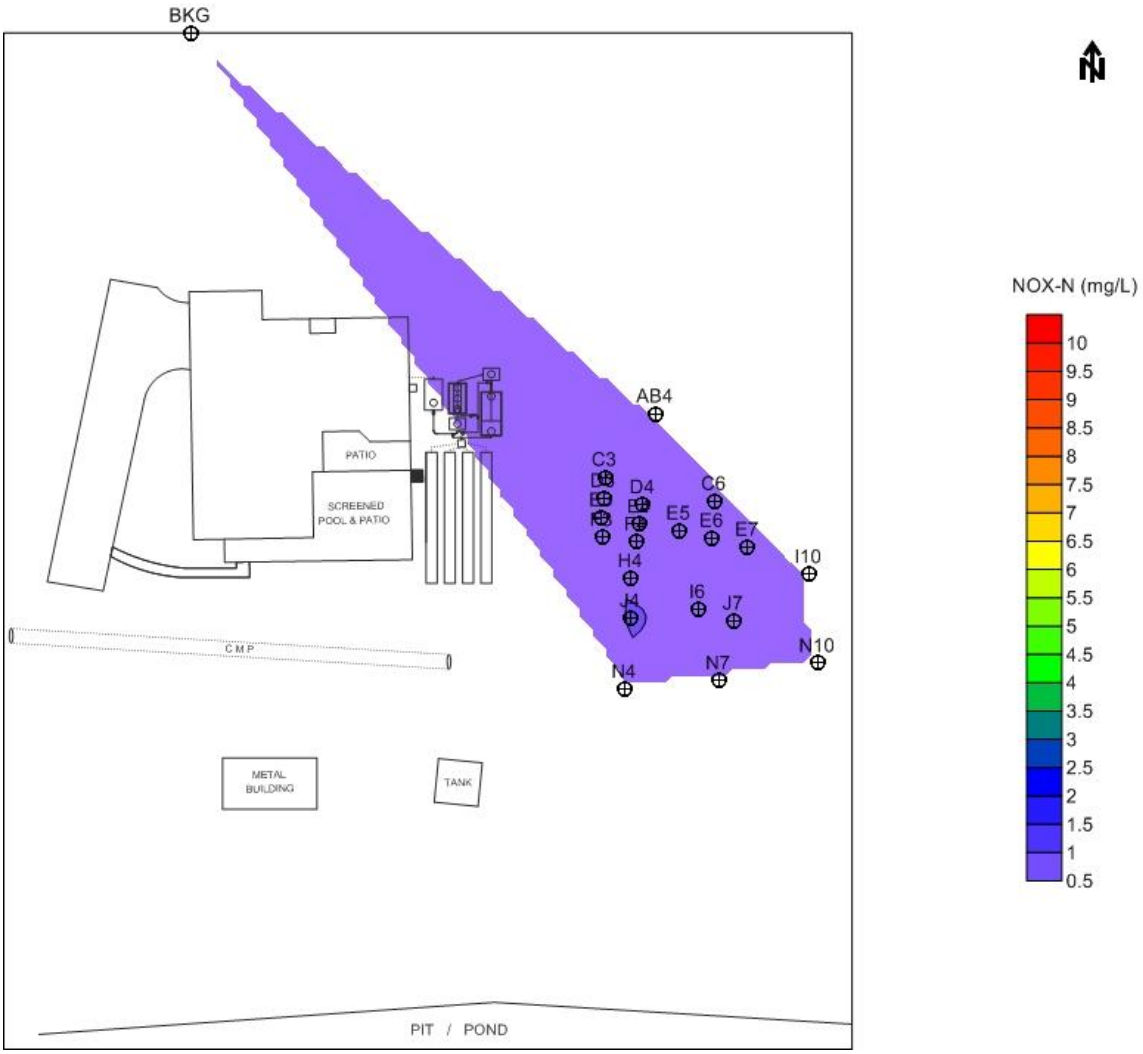

Figure 8
Deep GW Elev 2.6-6.1 ft above MSL (October 2013 Sample Event 4)
Schematic (using Surfer) illustrating NOX concentrations in the subsurface

o:\44237-001R004\Wpdocs\Report\Final

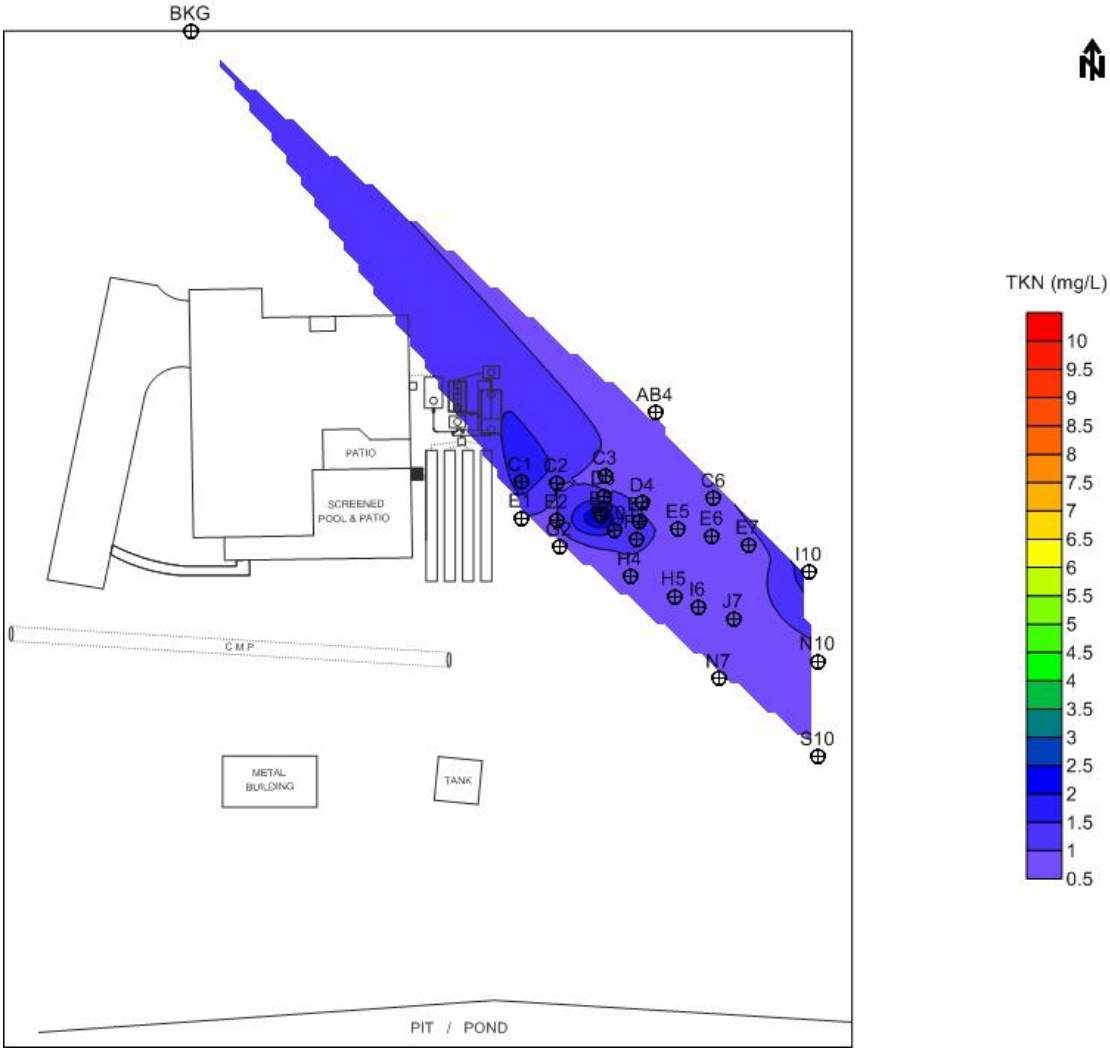

Figure 9
Shallow GW Elev 7.9-17.6 ft above MSL (October 2013 Sample Event 4)
Schematic (using Surfer) illustrating TKN concentrations in the subsurface

o:\44237-001R004\Wpdocs\Report\Final

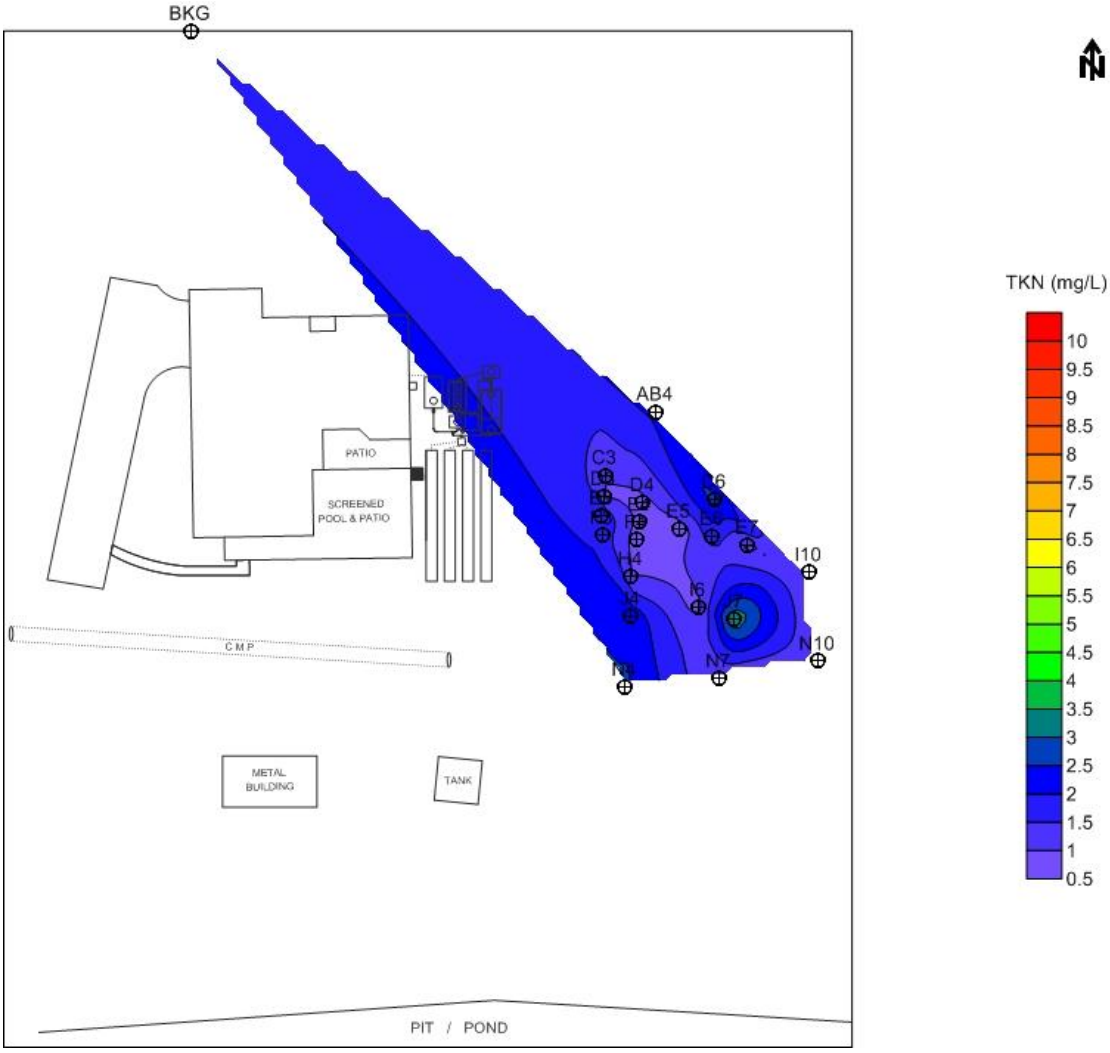

Figure 10
Deep GW Elev 2.6-6.1 ft above MSL (October 2013 Sample Event 4)
Schematic (using Surfer) illustrating TKN concentrations in the subsurface

o:\44237-001R004\Wpdocs\Report\Final

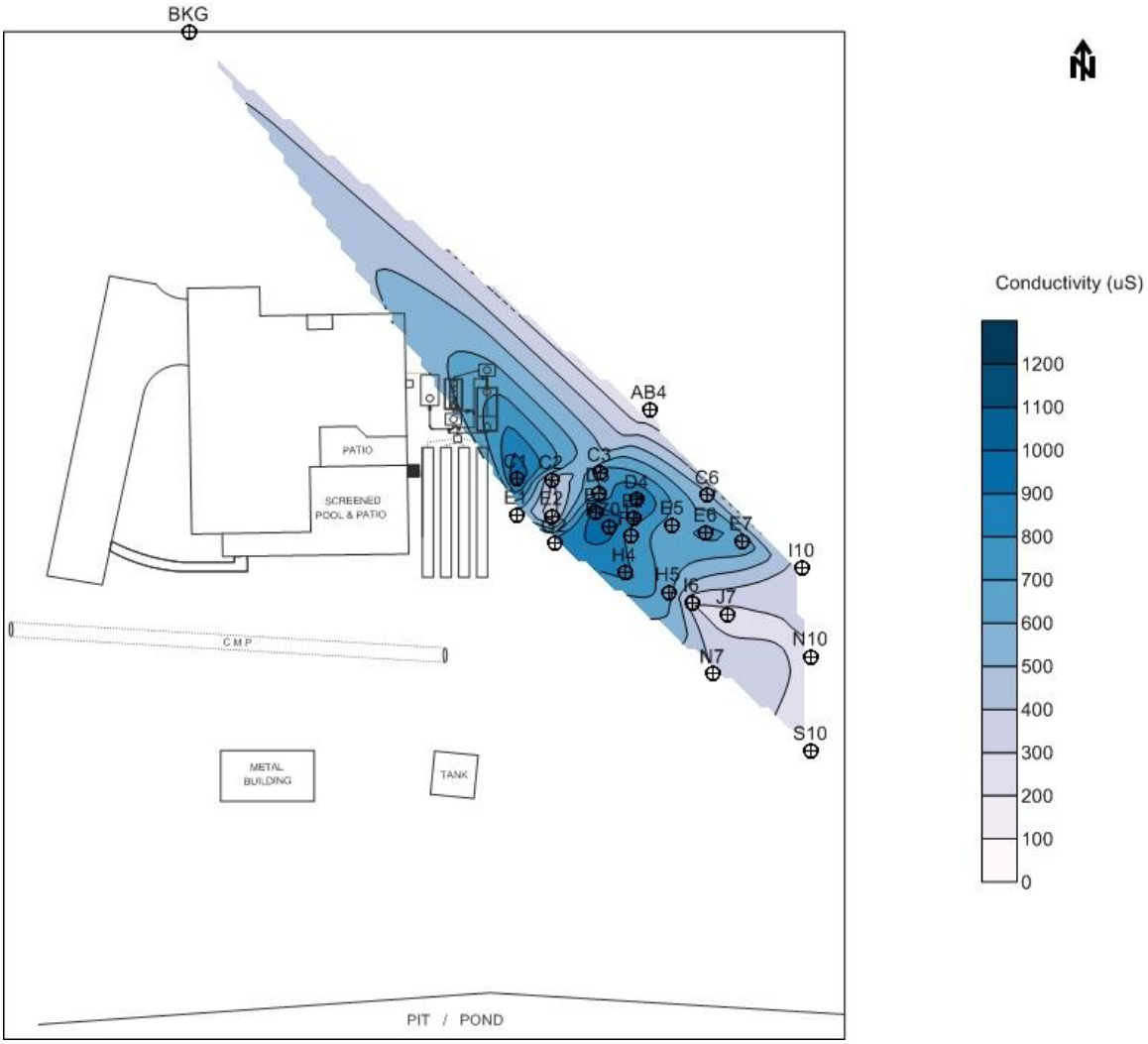

Figure 11
Shallow GW Elev 7.9-17.6 ft above MSL (October 2013 Sample Event 4)
Schematic (using Surfer) illustrating Specific Conductance concentrations in the subsurface

o:\44237-001R004\Wpdocs\Report\Final

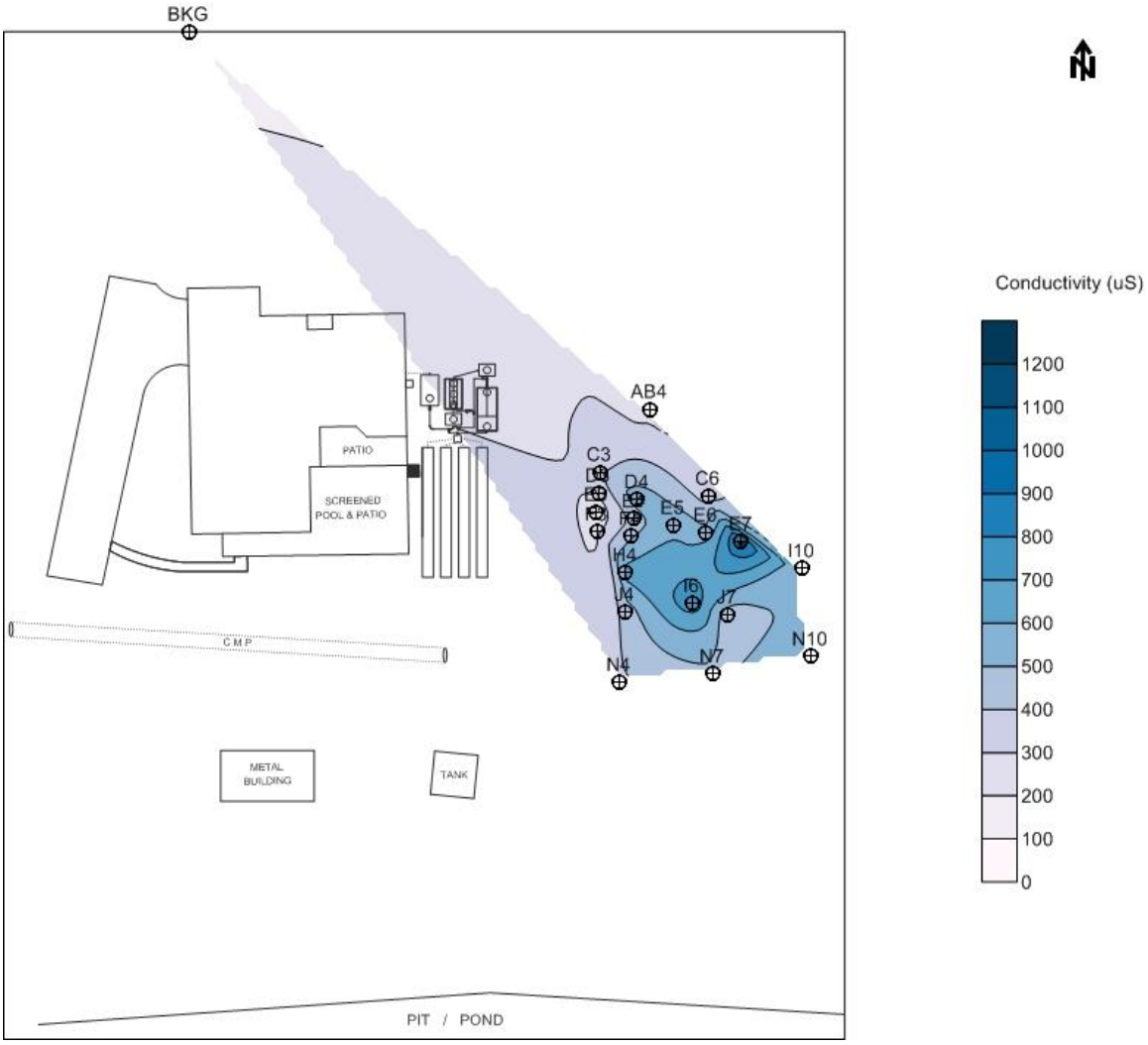

Figure 12
Deep GW Elev 2.6-6.1 ft above MSL (October 2013 Sample Event 4)
Schematic (using Surfer) illustrating Specific Conductance concentrations in the subsurface

o:\44237-001R004\Wpdocs\Report\Final

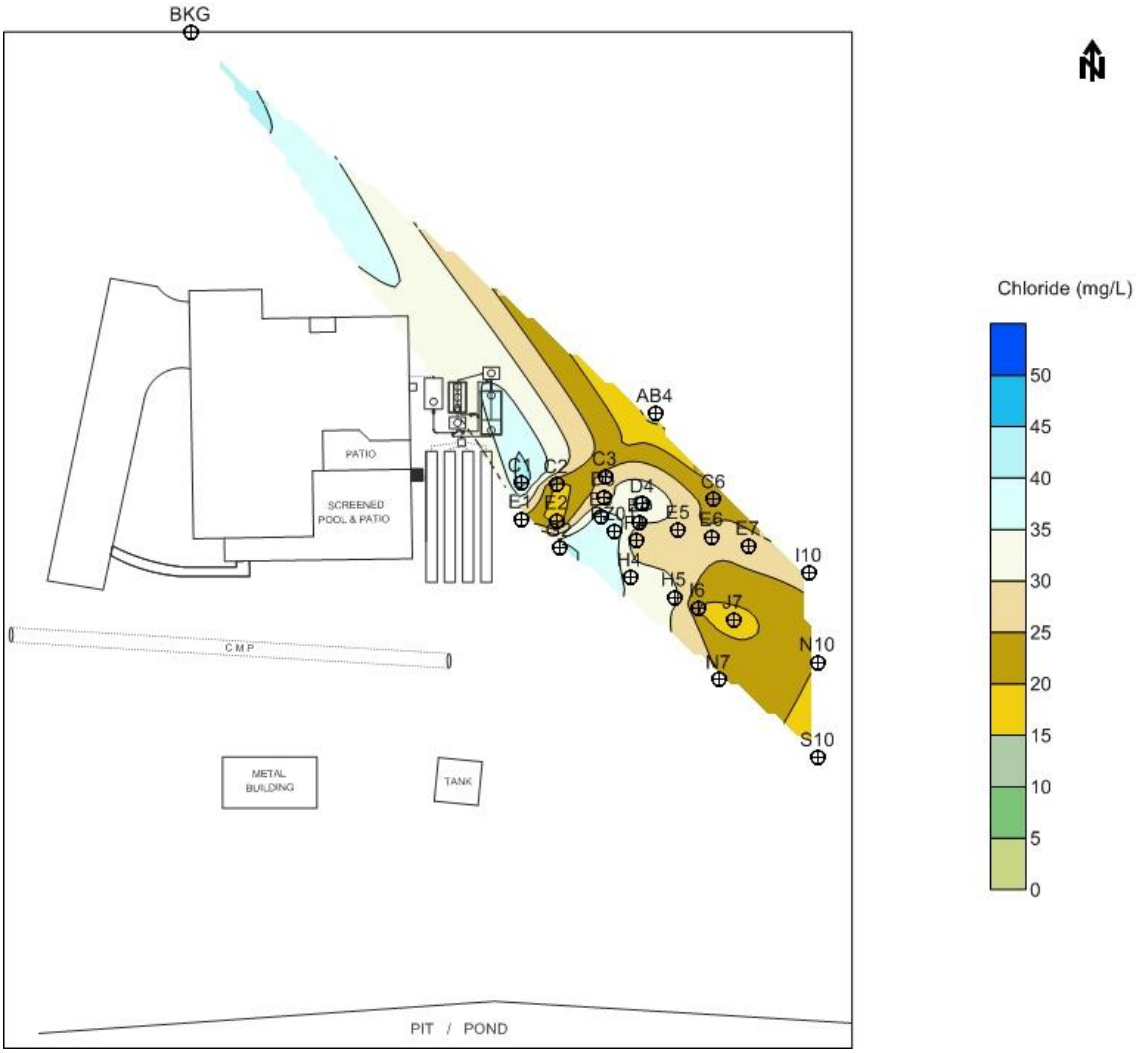

Figure 13
Shallow GW Elev 7.9-17.6 ft above MSL (October 2013 Sample Event 4)
Schematic (using Surfer) illustrating Chloride concentrations in the subsurface

o:\44237-001R004\Wpdocs\Report\Final

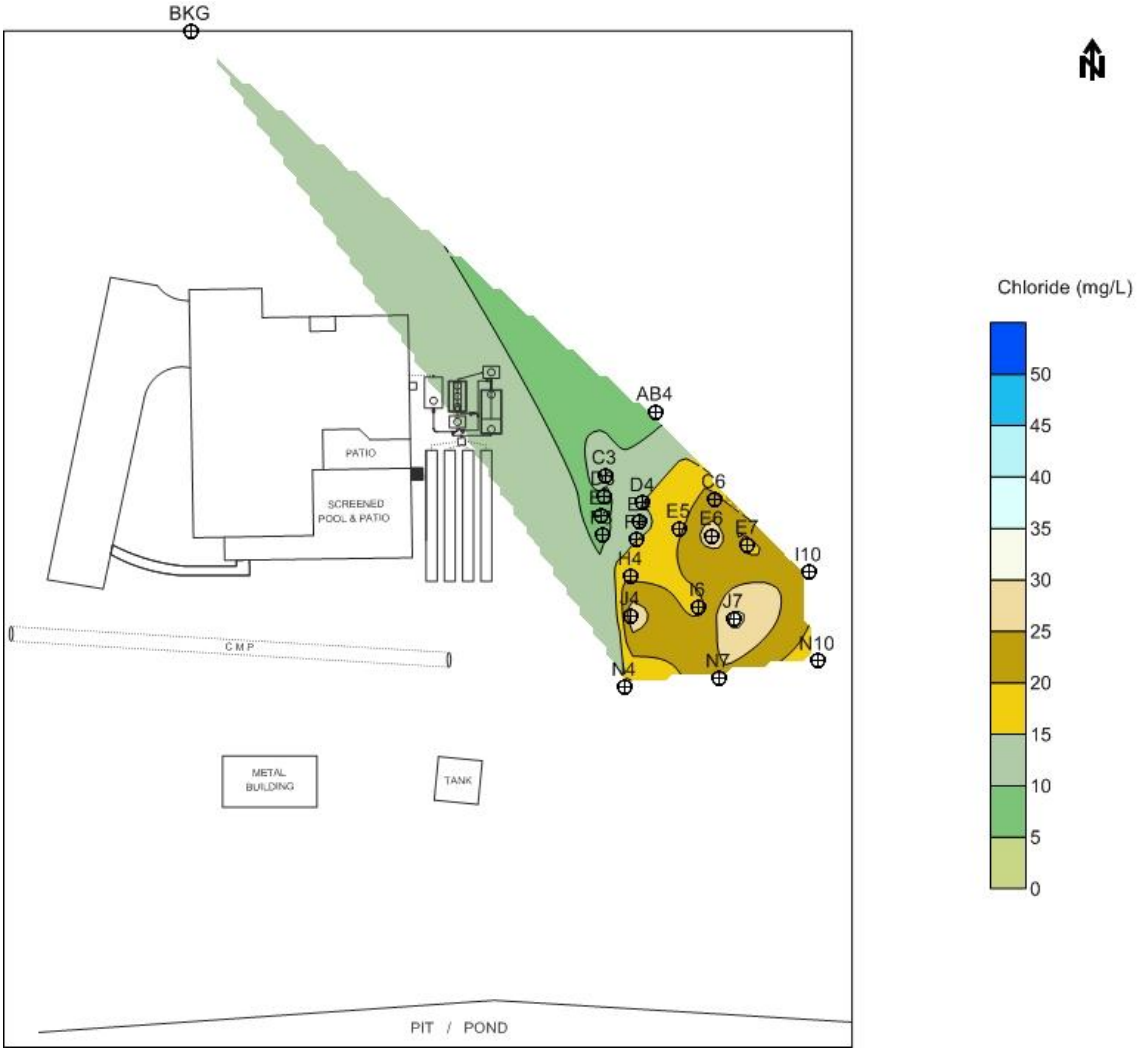

Figure 14
Deep GW Elev 2.6-6.1 ft above MSL (October 2013 Sample Event 4)
Schematic (using Surfer) illustrating Chloride concentrations in the subsurface

o:\44237-001R004\Wpdocs\Report\Final

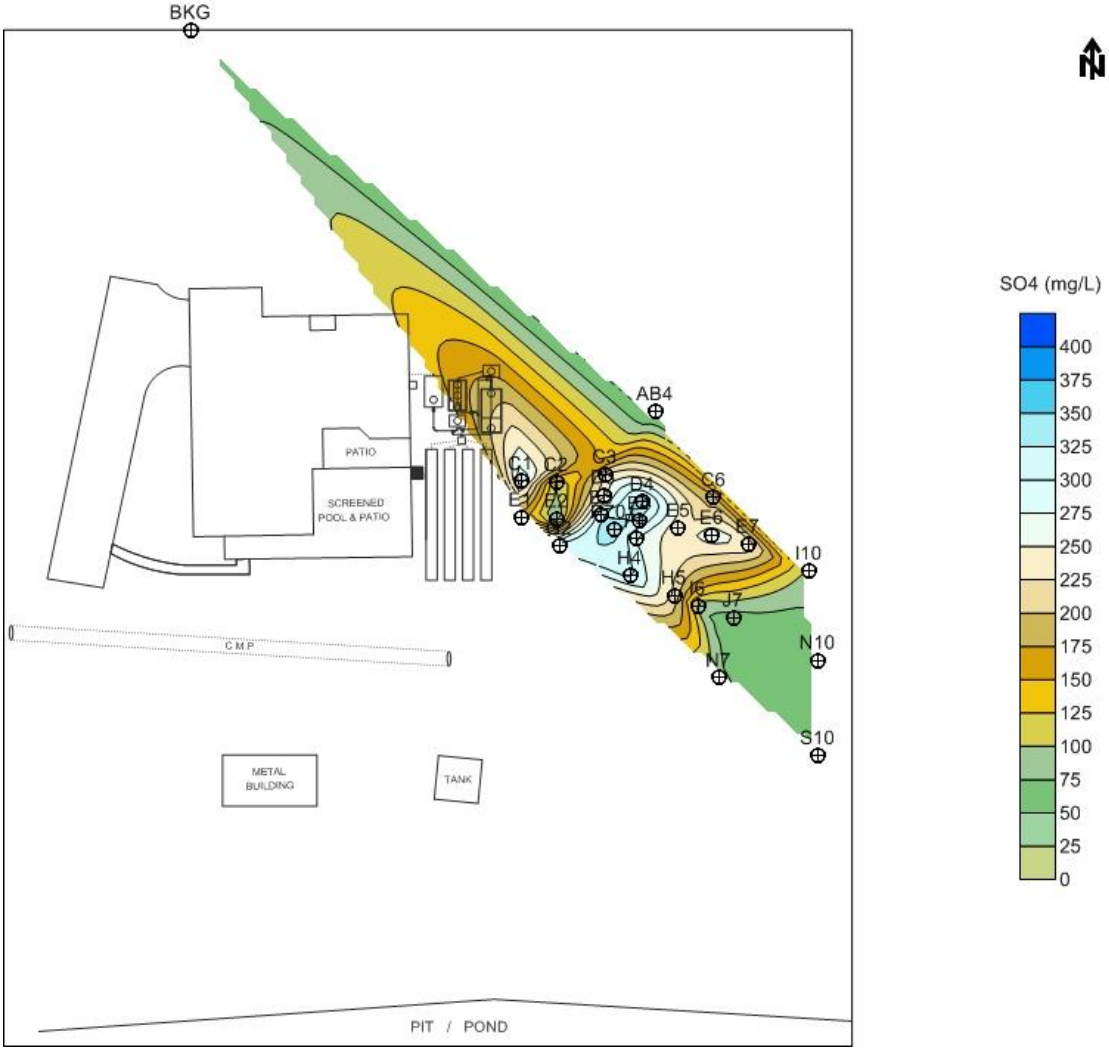

Figure 15
Shallow GW Elev 7.9-17.6 ft above MSL (October 2013 Sample Event 4)
Schematic (using Surfer) illustrating Sulfate concentrations in the subsurface

o:\44237-001R004\Wpdocs\Report\Final

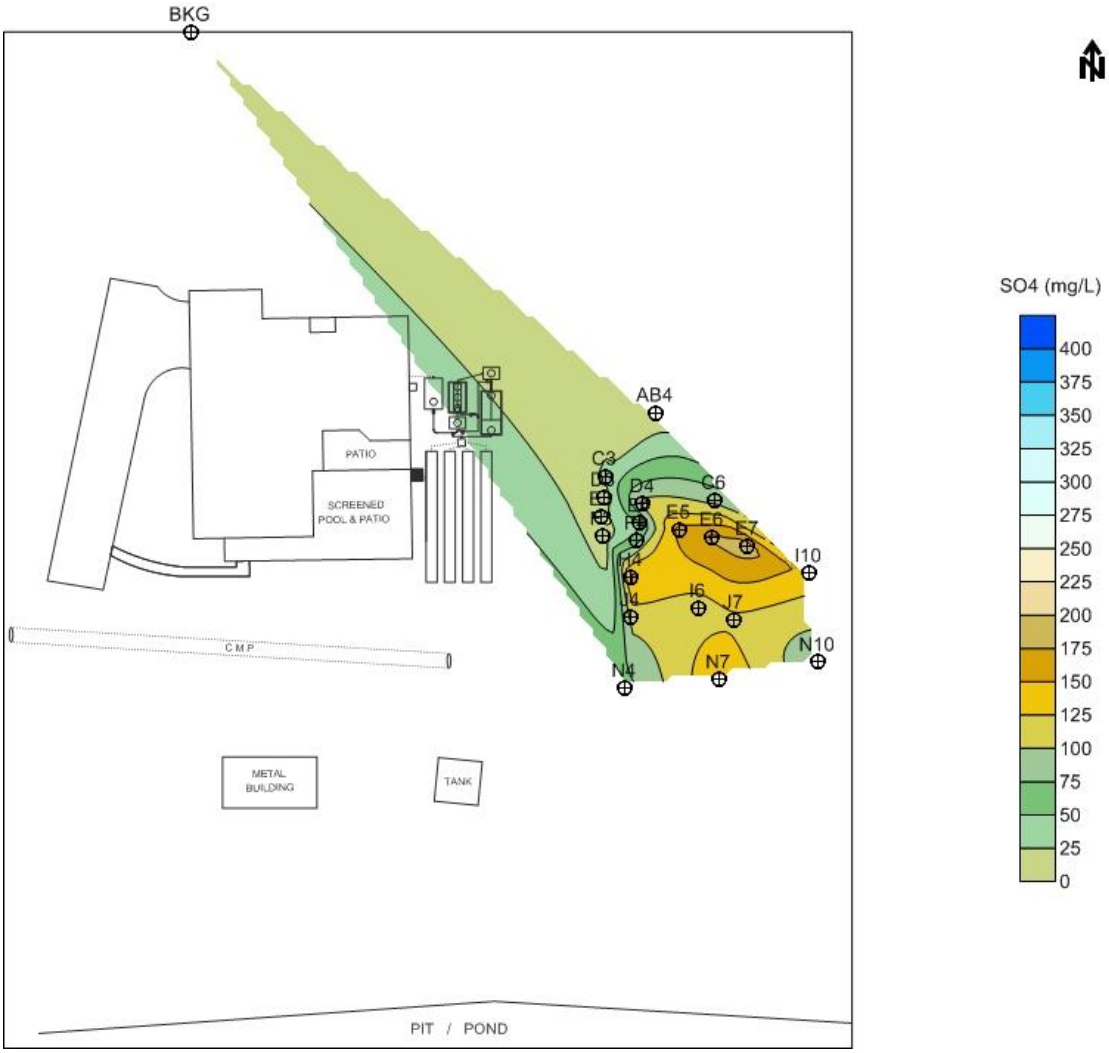

Figure 16
Deep GW Elev 2.6-6.1 ft above MSL (October 2013 Sample Event 4)
Schematic (using Surfer) illustrating Sulfate concentrations in the subsurface

o:\44237-001R004\Wpdocs\Report\Final

5.0 C-HS4 Data Summary Report No. 4: Summary and Recommendations

5.1 Summary

The results of the data collected to date have allowed for estimations of groundwater flow, gradient, and velocity, and provided additional insights into the general trend of the NOX plume. In addition, the results assist in determining any impacts of the passive nitrogen reduction system (PNRS) NOX in the groundwater. Results of Sample Event No. 4 indicate that:

- Although the groundwater levels fluctuate, the direction of flow remains relatively constant.
- The nitrogen plume appears to be flowing in a south-southeast direction and similar to the groundwater contours.
- As expected, the plots indicate that the NOX concentration in the area downgradient of the drainfield has decreased following the installation of the PNRS.

5.2 Conclusions

Sample Event 4 was the last funded sample event for the C-HS4 monitoring network. Further analysis of the results obtained at this site will occur as Task C results are compiled and summarized for use in Task D. The insight gained from monitoring the C-HS4 plume will provide information needed for the development of the groundwater model in Task D.

o:\44237-001R004\Wpdocs\Report\Final

Appendix A: C-HS4 Sample Identification

Table A.1

Site C-HS4 Sample Identification

	Identification	Type of Monitoring Point	Top Elev[1] (feet)	Bottom Elev[1] (feet)
1a	C-HS4-STE	Wastewater	N/A	N/A
1b	B-HS2-ST2	Treated effluent from PNRS	N/A	N/A
2	PZ01	1" Standpipe Piezometer, 5' screen	19.08	9.48
3	PZ02	1" Standpipe Piezometer, 5' screen	28.72	16.54
4	PZ03	1" Standpipe Piezometer, 5' screen	24.85	19.00
5	PZ04	1" Standpipe Piezometer, 5' screen	18.82	13.02
6	PZ05	1" Standpipe Piezometer, 5' screen	20.79	NR
7	PZ06	1" Standpipe Piezometer, 5' screen	22.17	11.02
8	BKG-10	1" Standpipe Piezometer, 5' screen	24.60	15.22
9	BKG-15	3/4" Standpipe Piezometer, 1' screen	24.60	10.17
10	PZ-AB4-08	1" Standpipe Piezometer, 5' screen	18.65	10.27
11	PZ-AB4-15	3/4" Standpipe Piezometer, 1' screen	18.59	4.09
12	PZ-C1	1" Standpipe Piezometer, 5' screen	22.85	12.70
13	PZ-C2	1" Standpipe Piezometer, 5' screen	21.23	9.73
14	PZ-C3-08	1" Standpipe Piezometer, 5' screen	19.63	11.83
15	PZ-C3-15	3/4" Standpipe Piezometer, 1' screen	19.64	5.09
16	PZ-C6-08	1" Standpipe Piezometer, 5' screen	17.53	9.03
17	PZ-C6-15	3/4" Standpipe Piezometer, 1' screen	17.53	3.13
18	PZ-D3-08	1" Standpipe Piezometer, 5' screen	19.62	11.63
19	PZ-D3-15	3/4" Standpipe Piezometer, 1' screen	19.64	5.08
20	PZ-D4-08	1" Standpipe Piezometer, 5' screen	18.77	10.89
21	PZ-D4-15	3/4" Standpipe Piezometer, 1' screen	18.76	4.21
22	PZ-E1	1" Standpipe Piezometer, 5' screen	22.92	11.42
23	PZ-E2	1" Standpipe Piezometer, 5' screen	21.03	9.33
24	PZ-E3-08	1" Standpipe Piezometer, 5' screen	19.66	11.41
25	PZ-E3-15	3/4" Standpipe Piezometer, 1' screen	19.64	4.98
26	PZ-E4-08	1" Standpipe Piezometer, 5' screen	18.70	10.80
27	PZ-E4-15	3/4" Standpipe Piezometer, 1' screen	18.69	4.31
28	PZ-E5-08	1" Standpipe Piezometer, 5' screen	18.15	10.25
29	PZ-E5-15	3/4" Standpipe Piezometer, 1' screen	18.13	3.56
30	PZ-E6-08	1" Standpipe Piezometer, 5' screen	17.83	9.95

o:\44237-001\Wpdocs\Report\Draft

Table A.1 (continued)
Site C-HS4 Sample Identification

	Identification	Type of Monitoring Point	Top Elev[1] (feet)	Bottom Elev[1] (feet)
31	PZ-E6-15	3/4" Standpipe Piezometer, 1' screen	17.85	3.45
32	PZ-E7-08	1" Standpipe Piezometer, 5' screen	17.55	8.87
33	PZ-E7-15	3/4" Standpipe Piezometer, 1' screen	17.55	3.05
34	PZ-F3-08	1" Standpipe Piezometer, 5' screen	19.54	11.59
35	PZ-F3-15	3/4" Standpipe Piezometer, 1' screen	19.55	5.05
36	PZ-F4-08	1" Standpipe Piezometer, 5' screen	18.83	11.13
37	PZ-F4-15	3/4" Standpipe Piezometer, 1' screen	18.88	4.48
38	PZ-G1	1" Standpipe Piezometer, 5' screen	20.72	12.82
39	PZ-G2-12.5	2" Standpipe Piezometer, 7.5' screen	21.03	8.88
40	PZ-H4-08	1" Standpipe Piezometer, 5' screen	19.19	10.91
41	PZ-H4-15	3/4" Standpipe Piezometer, 1' screen	19.22	4.45
42	PZ-H5-11.5	2" Standpipe Piezometer, 7.5' screen	18.58	7.86
43	PZ-I6-08	1" Standpipe Piezometer,5' screen	18.42	9.37
44	PZ-I6-15	3/4" Standpipe Piezometer, 1' screen	18.42	3.87
45	PZ-I10-08	1" Standpipe Piezometer, 5' screen	16.87	8.95
46	PZ-I10-15	3/4" Standpipe Piezometer, 1' screen	16.92	4.42
47	PZ-J4-08	1" Standpipe Piezometer, 5' screen	19.26	11.32
48	PZ-J4-15	3/4" Standpipe Piezometer, 1' screen	19.25	4.73
49	PZ-J7-08	1" Standpipe Piezometer, 5' screen	17.86	9.41
50	PZ-J7-15	3/4" Standpipe Piezometer, 1' screen	17.87	3.45
51	PZ-N4-08	1" Standpipe Piezometer, 5' screen	19.28	11.00
52	PZ-N4-15	3/4" Standpipe Piezometer, 1' screen	19.30	4.82
53	PZ-N7-08	1" Standpipe Piezometer, 5' screen	18.01	9.46
54	PZ-N7-15	3/4" Standpipe Piezometer, 1' screen	18.03	3.23
55	PZ-N10-08	1" Standpipe Piezometer, 5' screen	16.92	9.17
56	PZ-N10-15	3/4" Standpipe Piezometer, 1' screen	16.83	2.59
57	PZ-S10-08	1" Standpipe Piezometer, 5' screen	17.03	8.78
58	DP01	SST Drivepoint	19.25	
59	DP02	SST Drivepoint	19.24	
60	DP03	SST Drivepoint	19.49	
61	DP04	SST Drivepoint	19.22	
62	DP05	SST Drivepoint	19.25	
63	DP06	SST Drivepoint	19.38	

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

o:\44237-001\Wpdocs\Report\Draft

Appendix B: Weather Station Data

o:\44237-001\Wpdocs\Report\Draft

Table B.1
Daily Recorded Meteorological Data
Wimauma, FL

Period	60cm T avg (F)	60cm T min (F)	60cm T max (F)	2m T avg (F)	2m T min (F)	2m T max (F)	10m T avg (F)	10m T min (F)	10m 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)	SolRad avg 2m (w/m^2)	10m Wind avg (mph)	10m Wind min (mph)	10m Wind max (mph)	WDir avg 10m (deg)	ET (in)
26-Jul-13	80.09	72.73	89.06	80.53	73.83	87.60	80.24	74.70	86.90	81.75	80.46	82.99	76.11	87	0	0	187.38	4.19	0	19.97	296	0.14
27-Jul-13	81.99	71.24	92.16	82.39	72.77	91.35	82.08	74.91	90.09	82.36	80.67	84.38	75.10	80	0	0	253.09	4.45	0	15.17	301	0.18
28-Jul-13	76.48	70.54	90.46	77.06	71.74	88.05	77.11	73.38	87.39	81.52	80.60	82.69	74.12	91	0.46	0.27	137.94	3.64	0	19.93	162	0.12
29-Jul-13	80.04	68.52	94.60	80.14	69.69	92.84	80.19	71.65	92.43	81.46	79.14	84.09	73.19	82	0	0	288.14	3.61	0	75.40	113	0.20
30-Jul-13	80.21	70.86	93.18	80.55	71.92	92.62	80.45	72.93	91.42	82.24	80.42	84.29	74.77	84	0.12	0.06	242.32	4.28	0.07	44.80	89	0.18
31-Jul-13	80.52	71.80	93.76	80.75	72.81	92.28	80.44	74.19	91.42	82.81	80.98	84.92	74.56	83	0	0	245.54	4.85	0	25.13	86	0.18
1-Aug-13	80.34	70.90	92.62	80.56	72.34	91.24	80.27	73.11	90.41	83.07	81.18	84.96	73.98	82	0.04	0.02	237.19	6.60	0.1	46.37	131	0.18
2-Aug-13	79.60	71.10	92.82	79.77	71.96	91.42	79.48	72.75	89.78	82.76	81.12	84.29	74.03	84	0.02	0.01	228.38	4.79	0.13	65.10	135	0.17
3-Aug-13	78.25	71.80	92.79	78.64	73.27	91.87	78.46	74.16	90.45	82.24	81.07	83.26	75.27	90	0.01	0.01	154.96	4.39	0	22.00	161	0.13
4-Aug-13	79.04	71.83	90.21	79.65	73.47	88.72	79.43	74.28	87.53	81.71	80.60	82.62	76.16	90	0.06	0.05	139.66	4.59	0.13	37.00	223	0.12
5-Aug-13	82.15	72.32	91.71	82.58	73.80	91.17	82.48	75.40	89.82	82.11	80.24	84.11	76.87	84	0.01	0.01	230.82	4.45	0	31.70	258	0.17
6-Aug-13	79.88	72.23	93.94	80.29	73.26	92.32	80.13	74.10	91.27	83.14	81.27	86.07	75.64	87	0.78	0.45	195.04	3.90	0.1	22.93	92	0.15
7-Aug-13	80.83	72.59	94.37	81.08	73.51	93.49	80.76	74.05	92.37	83.56	80.91	86.83	75.69	85	0	0	243.34	4.89	0.13	21.60	92	0.18
8-Aug-13	79.70	72.77	91.87	80.11	73.72	91.06	79.68	74.12	89.69	84.17	82.18	86.85	75.66	87	0.47	0.2	227.58	6.70	0.2	24.43	106	0.17
9-Aug-13	78.50	71.65	92.10	78.86	72.57	91.40	78.54	72.90	89.94	83.72	81.48	86.63	74.37	88	0.1	0.05	215.58	5.75	0.33	37.30	106	0.16
10-Aug-13	80.44	69.82	91.67	81.08	70.66	91.72	81.10	71.29	90.77	83.80	81.09	86.79	74.48	82	0	0	269.03	6.31	0.9	18.13	111	0.19
11-Aug-13	81.72	71.24	93.16	82.41	72.63	92.43	82.38	73.67	91.42	84.70	81.99	87.64	75.51	81	0	0	263.60	5.27	0.17	36.07	112	0.19
12-Aug-13	81.25	71.04	92.50	82.08	72.23	92.37	82.39	73.81	91.40	85.03	82.71	87.42	74.52	80	0.02	0.02	257.80	4.92	0	16.53	87	0.19
13-Aug-13	82.75	70.61	94.98	83.02	71.87	94.01	82.85	73.35	93.29	85.22	82.81	87.66	74.73	78	0	0	249.31	3.91	0	14.20	136	0.18
14-Aug-13	80.62	72.28	92.28	81.05	73.35	90.90	80.68	75.02	89.65	85.32	83.71	86.68	75.83	85	0	0	196.36	4.75	0	16.63	194	0.15
15-Aug-13	78.97	70.14	90.57	79.45	71.47	89.51	79.00	72.18	87.91	84.41	82.69	86.05	74.69	86	0.01	0.01	177.25	5.24	0.07	18.63	166	0.14
16-Aug-13	81.94	74.12	92.66	82.31	75.13	91.92	81.87	75.61	91.02	84.74	82.92	86.74	75.65	82	0.01	0.01	199.82	4.12	0	17.40	171	0.16
17-Aug-13	78.86	71.44	93.02	79.37	72.12	92.16	79.10	73.24	90.55	84.34	83.07	85.69	75.08	88	0.04	0.03	151.78	5.45	0	30.70	107	0.13
18-Aug-13	78.48	72.81	91.35	78.85	73.51	90.48	78.39	73.29	88.95	83.38	81.28	85.84	75.47	90	2.08	0.58	201.77	6.41	0.2	25.87	96	0.15
19-Aug-13	78.95	71.82	92.80	79.23	72.61	91.65	78.73	73.08	90.43	82.47	80.17	85.33	74.95	88	0.03	0.01	237.37	5.25	0	24.20	100	0.17
20-Aug-13	79.00	71.01	93.24	79.36	71.80	92.57	78.88	72.45	91.40	83.15	81.16	85.57	74.56	87	0.19	0.09	222.24	5.95	0.5	32.50	84	0.17
21-Aug-13	79.28	73.36	91.51	79.67	74.08	91.26	79.11	74.08	89.85	83.39	81.59	85.57	75.27	87	0	0	220.81	7.43	1.63	33.53	81	0.17
22-Aug-13	76.98	72.30	88.79	77.32	73.15	87.89	76.98	73.36	85.98	82.56	81.90	84.54	75.25	94	0.01	0.01	136.86	5.10	0	16.77	88	N/A
23-Aug-13	79.56	70.75	92.62	79.63	71.35	91.35	79.27	71.38	90.55	82.85	81.05	85.41	74.64	87	0.45	0.25	216.97	5.06	0.1	30.07	82	0.16
24-Aug-13	78.80	71.20	93.87	78.85	71.73	92.43	78.78	72.77	91.38	82.16	80.40	85.64	74.50	88	2.2	1.04	228.05	4.99	0.03	31.73	102	0.17
25-Aug-13	77.52	72.34	88.95	77.81	73.09	88.11	77.41	73.35	86.36	81.14	79.92	82.80	74.68	91	0.01	0.01	150.86	5.43	0.07	24.77	52	N/A
26-Aug-13	78.17	71.80	89.92	78.34	72.34	88.72	77.83	71.98	87.40	81.90	80.33	83.64	74.12	88	0.23	0.1	177.53	5.55	0.43	24.07	42	N/A
27-Aug-13	78.64	70.81	89.55	79.08	71.62	89.01	78.90	72.32	87.75	81.91	80.08	83.93	73.03	84	0	0	226.21	6.88	0.1	21.00	75	0.16
28-Aug-13	77.75	68.07	91.09	78.09	69.30	90.23	78.09	70.21	89.10	82.35	80.10	84.74	71.61	82	0	0	239.88	4.76	0.07	20.57	74	0.17
29-Aug-13	79.54	69.40	92.61	79.77	70.54	91.18	79.64	71.76	89.85	82.98	80.83	85.46	72.70	81	0	0	238.27	3.48	0	16.03	16	0.17
30-Aug-13	78.05	70.56	89.51	78.63	72.05	88.83	78.63	73.17	88.18	82.83	81.45	83.86	74.68	88	0.19	0.08	156.05	3.27	0	18.40	228	0.12
31-Aug-13	78.26	71.98	88.97	78.62	72.66	87.98	78.47	72.95	86.77	82.57	80.92	84.13	74.34	88	0.02	0.01	182.78	4.16	0.03	21.47	200	0.14

Table B.1 (continued)
Monthly Recorded Meteorological Data
Wimauma, FL

Period	60cm T avg (F)	60cm T min (F)	60cm T max (F)	2m T avg (F)	2m T min (F)	2m T max (F)	10m T avg (F)	10m T min (F)	10m 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)	SolRad avg 2m (w/m^2)	10m Wind avg (mph)	10m Wind min (mph)	10m Wind max (mph)	WDir avg 10m (deg)	ET (in)
1-Sep-13	78.17	69.71	91.38	78.57	71.10	90.59	78.34	71.62	89.20	82.61	80.44	84.94	73.22	85	0	0	215.83	4.65	0.07	17.67	173	N/A
2-Sep-13	77.31	68.94	88.02	77.91	69.76	88.05	77.83	71.40	87.08	82.25	80.78	83.66	73.71	88	0	0	152.25	4.38	0.17	17.57	180	N/A
3-Sep-13	77.96	70.34	88.66	78.56	71.64	87.30	78.63	72.68	86.23	81.86	80.49	83.10	75.07	90	0.01	0.01	152.52	3.65	0.07	13.83	175	0.12
4-Sep-13	77.99	71.31	91.80	78.39	72.54	90.81	78.23	72.25	89.67	82.20	80.44	84.47	74.13	88	0.21	0.09	185.67	4.44	0.53	26.70	83	0.14
5-Sep-13	79.78	71.33	92.57	80.15	72.00	91.85	79.81	72.09	90.34	82.59	80.60	84.78	74.63	85	0	0	205.87	4.77	0	14.47	70	0.15
6-Sep-13	78.92	70.74	94.95	78.95	71.28	93.67	78.59	71.40	93.18	83.15	81.32	85.62	73.24	85	0.22	0.07	216.83	4.55	0	36.93	76	N/A
7-Sep-13	77.42	69.19	89.85	77.61	69.71	89.26	77.24	69.67	88.54	82.42	80.56	84.25	72.28	85	0	0	210.02	5.13	0.13	47.77	51	N/A
8-Sep-13	78.91	69.53	91.47	79.21	70.41	90.55	78.91	70.75	89.37	82.39	80.53	84.29	72.11	81	0	0	223.99	5.29	0.27	17.67	44	0.16
9-Sep-13	79.78	70.54	91.49	80.27	71.69	91.02	80.08	72.50	89.47	82.64	80.83	84.60	72.68	80	0	0	240.30	6.39	0.4	17.90	72	0.17
10-Sep-13	79.65	70.90	90.43	80.18	71.78	90.34	79.84	72.66	88.43	82.72	81.18	84.34	72.07	79	0	0	243.06	8.50	1.17	23.20	68	0.17
11-Sep-13	79.46	71.35	89.22	80.04	72.25	89.06	79.56	72.86	87.64	82.70	81.23	84.34	72.63	80	0	0	232.64	8.37	1.03	23.17	81	0.16
12-Sep-13	76.85	70.23	90.39	77.39	71.56	89.40	77.00	72.07	88.25	82.36	81.18	83.52	73.78	90	0.47	0.17	159.19	4.25	0	37.37	84	0.12
13-Sep-13	77.88	67.24	90.10	78.50	68.65	88.84	78.48	70.07	87.67	81.58	79.72	83.21	73.18	85	0.01	0.01	204.26	2.99	0	13.00	12	0.14
14-Sep-13	79.88	69.96	93.24	80.44	71.80	91.76	80.55	72.72	90.93	81.84	80.17	83.44	73.41	81	0.01	0.01	187.15	3.45	0	22.37	40	0.14
15-Sep-13	76.13	69.49	92.59	76.70	70.18	92.01	76.36	70.02	90.03	81.36	80.22	83.32	73.12	90	0.85	0.22	156.90	7.13	0.2	37.80	82	0.13
16-Sep-13	76.38	69.78	90.99	76.86	70.88	90.43	76.42	71.29	88.30	80.65	79.14	82.49	73.48	90	0	0	182.14	6.64	0.87	31.03	75	0.14
17-Sep-13	76.62	69.49	88.25	77.04	70.52	87.73	76.59	71.26	85.84	80.79	79.41	82.24	73.42	89	0.03	0.03	190.97	7.19	1.37	29.33	72	0.14
18-Sep-13	76.54	71.56	87.33	77.02	72.50	87.22	76.56	72.77	85.62	80.87	79.75	81.95	74.06	91	0.05	0.03	158.65	6.97	0.67	24.03	66	0.12
19-Sep-13	77.15	71.13	87.40	77.70	71.78	86.79	77.37	71.67	85.39	80.70	79.54	81.90	74.13	89	0.17	0.09	135.71	6.18	0.07	19.27	82	0.11
20-Sep-13	77.12	69.46	87.04	77.71	70.29	86.88	77.64	70.92	85.77	80.78	79.29	82.31	71.18	82	0	0	214.46	6.05	0.4	17.57	80	0.14
21-Sep-13	76.78	66.13	88.83	77.27	67.35	87.69	77.60	69.17	86.81	80.60	78.78	82.33	70.00	80	0	0	216.21	4.32	0.3	17.00	147	0.14
22-Sep-13	77.95	70.16	88.56	78.74	71.60	87.66	78.87	72.48	86.86	80.84	79.61	82.08	74.23	87	0	0	158.39	5.43	0.13	21.47	182	0.12
23-Sep-13	75.38	71.98	80.33	76.00	72.90	80.74	75.80	73.92	79.92	80.05	79.54	80.98	75.16	97	1.11	0.35	54.21	5.96	0	18.87	135	0.06
24-Sep-13	74.09	72.61	75.96	74.60	73.38	76.23	74.31	73.31	75.61	78.81	78.30	79.50	73.97	98	0.72	0.06	34.33	6.08	0.43	14.67	194	0.04
25-Sep-13	73.47	69.44	79.00	74.31	70.43	79.63	73.99	69.98	78.87	77.48	76.48	78.58	72.69	95	1.6	0.34	52.02	6.64	0.07	23.73	242	0.06
26-Sep-13	79.21	72.18	87.73	79.87	73.08	87.66	79.47	73.18	86.49	78.39	77.09	80.11	74.52	85	0.01	0.01	173.33	6.46	1.07	21.57	286	0.13
27-Sep-13	74.60	68.22	84.81	74.94	68.85	84.52	74.52	68.74	83.01	78.55	77.49	79.68	70.68	87	0	0	165.02	6.37	0.93	20.73	25	0.12
28-Sep-13	76.50	68.67	87.82	76.71	69.39	86.99	76.07	69.42	85.03	79.15	77.77	80.71	71.65	86	0	0	222.65	7.32	0.73	21.63	43	0.14
29-Sep-13	76.35	67.57	88.50	76.82	68.18	87.55	76.62	68.31	86.41	79.56	78.17	80.96	69.22	80	0	0	215.22	5.54	0.4	13.90	53	0.14
30-Sep-13	76.88	65.93	89.80	77.41	68.07	88.65	77.30	68.54	87.37	79.63	78.04	81.30	70.74	82	0	0	201.41	4.94	0.2	20.00	83	0.13

Table B.1 (continued)
Monthly Recorded Meteorological Data
Wimauma, FL

Period	60cm T avg (F)	60cm T min (F)	60cm T max (F)	2m T avg (F)	2m T min (F)	2m T max (F)	10m T avg (F)	10m T min (F)	10m 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)	SolRad avg 2m (w/m^2)	10m Wind avg (mph)	10m Wind min (mph)	10m Wind max (mph)	WDir avg 10m (deg)	ET (in)
1-Oct-13	78.02	68.02	89.11	78.46	69.04	88.99	78.32	70.47	87.76	80.05	78.58	81.46	71.52	81	0	0	209.65	6.48	1.6	17.47	89	0.14
2-Oct-13	77.19	69.19	87.89	77.71	69.87	87.58	77.47	70.11	86.00	80.06	78.85	81.27	71.53	83	0	0	199.31	7.87	2.3	42.83	78	0.13
3-Oct-13	77.53	68.11	88.14	78.03	69.31	87.76	77.92	70.29	86.85	80.16	78.75	81.59	71.66	82	0	0	207.04	5.60	0.87	17.00	93	0.13
4-Oct-13	78.14	70.43	88.95	78.79	71.31	88.30	78.84	71.92	86.88	80.60	79.34	81.91	72.03	81	0	0	195.89	4.93	0	15.17	94	0.13
5-Oct-13	77.31	67.17	89.31	77.92	68.27	88.93	78.23	70.30	87.76	80.34	79.02	81.55	71.12	81	0	0	197.01	5.89	1.1	17.67	78	0.13
6-Oct-13	77.60	67.73	88.84	77.98	68.63	88.11	78.17	70.92	86.79	80.13	78.71	81.48	72.32	84	0	0	194.95	4.17	0	29.43	145	0.13
7-Oct-13	75.69	68.68	84.88	76.36	70.43	84.97	76.31	72.19	83.95	79.68	79.07	80.53	73.98	93	0.81	0.3	125.55	7.09	0.2	26.27	207	0.10
8-Oct-13	78.61	71.71	86.32	78.97	72.30	85.78	78.62	72.41	84.38	79.68	78.53	80.98	73.84	85	0	0	204.18	6.67	0.2	18.57	270	0.13
9-Oct-13	72.54	65.28	80.73	72.79	66.00	79.88	72.52	66.07	78.98	78.93	78.24	79.75	68.86	88	0	0	95.71	6.14	0.57	16.03	25	N/A
10-Oct-13	72.18	63.01	85.08	72.80	63.63	84.42	73.08	63.88	83.44	77.87	76.62	79.14	66.66	83	0	0	188.64	4.80	0.57	13.97	49	0.11
11-Oct-13	73.56	60.26	87.75	74.23	61.88	86.32	74.52	64.74	86.00	77.51	75.94	78.96	66.16	78	0	0	186.58	3.61	0.1	13.00	27	N/A
12-Oct-13	72.75	59.54	86.05	73.80	62.20	85.41	74.39	64.99	84.61	77.28	75.72	78.78	63.77	74	0	0	215.44	3.43	0	16.13	4	0.12
13-Oct-13	72.51	60.98	85.06	73.59	63.27	84.40	74.37	64.99	83.41	76.79	75.38	78.03	63.20	73	0	0	180.50	4.46	0.27	14.83	47	0.11
14-Oct-13	72.98	63.57	84.79	73.58	64.36	84.06	73.42	64.63	82.94	76.73	75.42	78.06	65.64	78	0	0	199.34	5.80	1.2	14.57	27	0.11
15-Oct-13	70.80	63.84	82.44	71.03	64.47	81.50	70.66	64.53	80.13	76.82	75.67	78.15	67.81	90	0	0	169.31	4.96	0.2	31.03	18	0.10
16-Oct-13	74.82	67.03	86.74	74.99	68.04	85.21	74.62	68.83	83.41	77.45	76.32	78.75	69.31	84	0	0	158.85	3.43	0.13	10.87	358	0.10
17-Oct-13	75.65	64.74	88.66	76.16	66.11	87.28	76.19	67.95	85.84	77.62	76.19	79.12	69.63	82	0	0	186.51	3.68	0.1	13.17	354	0.11
18-Oct-13	76.97	65.62	89.37	77.51	67.57	88.47	77.78	69.78	87.49	78.07	76.62	79.50	70.74	82	0	0	195.79	4.57	0.13	15.87	134	0.12
19-Oct-13	76.85	68.52	90.28	77.48	69.91	89.29	77.74	71.94	87.93	78.40	77.23	79.66	72.56	86	0	0	140.23	4.14	0	14.27	165	0.10
20-Oct-13	78.72	70.09	88.59	78.92	71.29	87.76	78.77	72.46	86.97	78.79	77.67	79.97	73.61	85	0	0	155.20	3.50	0	12.63	280	0.11
21-Oct-13	77.70	70.61	89.01	78.06	72.32	87.73	77.78	72.45	86.14	79.21	78.31	80.40	72.93	85	0	0	153.46	3.70	0.17	14.03	333	0.11
22-Oct-13	75.08	65.75	88.36	75.57	67.44	87.87	75.59	68.67	86.70	78.69	77.58	80.04	71.86	89	0.97	0.19	162.81	5.12	0	18.93	244	0.11
23-Oct-13	72.14	64.87	81.09	72.44	65.68	80.24	72.07	65.97	78.80	77.61	76.57	78.15	64.08	77	0	0	149.25	6.58	0.63	19.23	337	0.09
24-Oct-13	63.65	58.68	70.92	64.11	59.05	70.74	64.16	59.32	69.93	75.03	74.19	76.53	54.84	72	0	0	97.16	6.76	1.8	16.07	26	0.07
25-Oct-13	65.79	54.93	80.33	66.37	55.58	79.88	66.54	55.78	78.66	73.88	72.81	75.00	55.93	73	0	0	185.64	5.49	0.53	17.17	18	0.09

Appendix C: Sample Event 4 Water Quality Analytical Results

o:\44237-001\Wpdocs\Report

Table C.2
Water Quality Analytical Results
(October 23 through October 25, 2013)

Sample ID	Sample Date/Time	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	TOC (mg/L)	DOC (mg/L)	Anions						Cations							TSS (mg/L)	TS (mg/L)	Fecal Coliform	e-coli
																				F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na				
STE Sample																																					
STE	10/24/2013 1:40:00 PM	26.3	7.07	570	0.04	1345		12	120		53.02	53	14	39	0.02	39.02	8.9			1.1	48	0.01	0.01	2.6	2.3	0.9	120	0.09	41	0.02	16	61	12	780	82,000	24,000
STE-DUP	10/24/2013 1:45:00 PM	26.3	7.07	570	0.04	1345		14	120		56.02	56	15	41	0.02	41.02	9			1.1	47	0.01	0.01	2.1	2.9	0.86	110	0.092	40	0.019	16	59	14	780	72,000	17,000
Treated Effluent from PNRS																																					
BHS2-ST2	10/7/13 10:15	25.8	7.05	350	0.07	1134		1	110	130	1.52	1.5	0.94	0.56	0.02	0.58	6.5							2.1	190											
Groundwater Samples																																					
PZ-01	10/23/2013 11:44:00 AM	25.5	5.34	29	4.57	956				54	3.9	1.4	1.388	0.012	2.5	2.512	0.029	38	37	0.017	38	2.5	0.01	0.01	340	0.49	82	0.1	39	0.007	16	38				
BKG-10	10/25/13 10:35	23.1	3.57	2	6.38	368				74	1.32	1.3	1.282	0.018	0.02	0.038	0.15	70	69	0.67	44	0.01	0.01	0.085	53	0.073	7.1	0.26	0.58	0.001	0.12	27				
BKG-15	10/25/2013 10:55:00 AM	24.1	5.54	40	0.29	168.4					1.82	1.8	1.41	0.39	0.02	0.41	0.5				12	0.01	0.01		13											
PZ-AB4-08	10/25/2013 10:06:00 AM	23.6	4.54	6.1	1.6	198					0.56	0.53	0.487	0.043	0.03	0.073	0.35				13	0.01	0.03		39											
PZ-AB4-15	10/25/2013 10:20:00 AM	23.6	6.39	110	0.76	269					2.15	2.1	1.66	0.44	0.05	0.49					8.2	0.01	0.05		6											
PZ-C1	10/23/2013 8:54:00 AM	24.6	5.99	140	3.58	1015					4.8	1.9	1.76	0.14	2.9	3.04	1.3			0.011	44	2.9	0.01	0.01	300	0.63	100	0.4	40	0.012	23	40				
PZ-C2	10/23/2013 9:10:00 AM	24.9	5.23	17	0.56	369					1.08	0.98	0.62	0.36	0.1	0.46					17	0.1	0.01		92											
PZ-C3-08	10/23/2013 9:54:00 AM	24.7	5.27	22	0.81	754					2.25	0.95	0.912	0.038	1.3	1.338	0.24	33	32		28	1.3	0.01		230											
PZ-C3-15	10/23/2013 10:10:00 AM	24.6	6.48	150	0.56	394					1.12	1.1	0.85	0.25	0.02	0.27					11	0.01	0.01		29											
PZ-C6-08	10/24/2013 8:40:00 AM	23.6	3.97	2	0.19	523					0.54	0.52	0.474	0.046	0.02	0.066					23	0.01	0.01		180											
PZ-C6-15	10/24/2013 8:52:00 AM	23.6	5.4	24	0.32	356					2.72	2.7	1.2	1.5	0.02	1.52					22	0.01	0.01		92											
PZ-D3-08	10/23/2013 10:27:00 AM	24.8	5.48	12	2.4	659					2.5	1	0.985	0.015	1.5	1.515	0.15				26	1.5	0.01		240											
PZ-D3-15	10/23/2013 10:39:00 AM	24.9	6.37	120	1.02	315					0.93	0.83	0.6	0.23	0.1	0.33	0.8				8.3	0.02	0.08		7.4											
PZ-D4-08	10/23/2013 12:01:00 PM	25	4.55	2	2.24	949					1.83	0.9	0.887	0.013	0.93	0.943					38	0.93	0.01		350											
PZ-D4-15	10/23/2013 12:15:00 PM	24.7	6.47	130	0.24	567					0.84	0.82	0.6	0.22	0.02	0.24					15	0.01	0.01		110											
PZ-E1	10/23/2013 8:40:00 AM	25.4	5.01	31	1.39	555					1.08	0.94	0.7	0.24	0.14	0.38	0.13				24	0.14	0.01		160											
PZ-E2	10/23/2013 9:23:00 AM	24.9	5.69	37	3.91	321					0.93	0.91	0.63	0.28	0.02	0.3					16	0.01	0.01		68											
PZ-E3-08	10/23/2013 10:53:00 AM	25.2	5.74	57	0.97	1011				80	10.2	3.2	2.94	0.26	7	7.26	0.15	50	47	0.02	40	7	0.01	0.01	330	0.56	100	1.5	47	0.002	25	39				
PZ-E3-15	10/23/2013 11:11:00 AM	25.1	6.04	57	0.31	208				10	2.04	2	1.8	0.2	0.04	0.24	5.4				9.5	0.04	0.01		21											
PZ-E4-08	10/23/2013 12:30:00 PM	25.2	4.73	2	0.95	849				43	2.6	1.1	1.091	0.009	1.5	1.509	0.13				30	1.5	0.01		320											
PZ-E4-15	10/23/2013 12:43:00 PM	24.9	6.42	130	0.16	422					0.84	0.82	0.56	0.26	0.02	0.28					12	0.02	0.01		42											
PZ-E5-08	10/24/2013 8:14:00 AM	24	4.31	2	0.84	637					0.85	0.82	0.787	0.033	0.03	0.063					26	0.03	0.01		230											
PZ-E5-15	10/24/2013 8:27:00 AM	24.1	6.19	90	0.18	595					0.66	0.64	0.42	0.22	0.02	0.24					19	0.01	0.01		160											
PZ-E6-08	10/24/2013 8:59:00 AM	23.7	4.17	2	0.94	743					0.81	0.79	0.726	0.064	0.02	0.084					26	0.01	0.01		270											
PZ-E6-15	10/24/2013 9:13:00 AM	23.7	4.84	6.9	0.29	518					1.82	1.8	0.87	0.93	0.02	0.95					29	0.01	0.01		180											
PZ-E7-08	10/24/2013 9:53:00 AM	23.9	4.48	2	0.29	702				10	0.52	0.49	0.475	0.015	0.03	0.045	0.077	24	22	0.15	28	0.03	0.01	0.01	250	0.36	56	0.69	26	0.009	9.2	33				
PZ-E7-15	10/24/2013 10:07:00 AM	23.8	6.61	240	0.3	953				24	0.86	0.84	0.51	0.33	0.02	0.35	0.29				18	0.01	0.01		190											
PZ-E7-15-DUP	10/24/2013 10:12:00 AM	23.8	6.61	250	0.3	953				43	0.86	0.84	0.52	0.32	0.02	0.34	0.29				17	0.01	0.01		190											
PZ-F3-15	10/23/2013 11:39:00 AM	25.1	6.31	110	1.52	281				10	1.88	1.8	1.57	0.23	0.08	0.31	5.7				8.6	0.01	0.08		4.2											
PZ-F4-08	10/23/2013 12:57:00 PM	25.4	4.78	4.2	1.2	728				65	2.4	1.2	1.191	0.009	1.2	1.209	0.17	43	42	0.14	25	1.2	0.01	0.027	270	0.28	66	0.31	30	0.004	6.9	30				
PZ-F4-15	10/23/2013 1:14:00 PM	25	6.54	150	0.07	487				28	0.82	0.76	0.54	0.22	0.06	0.28	0.19				15	0.06	0.01		62											
PZ-G2-12.5	10/23/2013 9:40:00 AM	25.6	4.29	2	0.56	884				21	1.59	0.59	0.581	0.009	1	1.009					42	1	0.01		320											
PZ-H4-08	10/23/2013 1:29:00 PM	25.3	4.52	2	1.39	840				26	2.68	0.68	0.671	0.009	2	2.009	0.022	19	19	0.077	34	2	0.01	0.01	310	0.43	75	0.27	38	0.003	10	36				
PZ-H4-15	10/23/2013 1:48:00 PM	25	6.52	150	0.41	637				39	1.21	0.99	0.62	0.37	0.22	0.59	1.6				19	0.22	0.01		160											
PZ-H5-11.5	10/24/2013 1:23:00 PM	24.2	4.4	2	2.35	645				35	0.67	0.52	0.511	0.009	0.15	0.159	0.052				32	0.15	0.01		220											

o:\44237-001\Wpdocs\Report

Table C.2 (con't)
Water Quality Analytical Results
(October 23 through October 25, 2013)

Sample ID	Sample Date/Time	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	TOC (mg/L)	DOC (mg/L)	Anions						Cations							TSS (mg/L)	TS (mg/L)	Fecal Coliform	e-coli
																				F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na				
PZ-I6-08	10/24/2013 12:47:00 PM	23.7	4.36	2	2.31	300				37	0.68	0.66	0.59	0.07	0.02	0.09	0.56	31	31	0.42	19	0.01	0.01	0.24	80	0.12	28	1.8	12	0.008	1.4	13				
PZ-I6-15	10/24/2013 1:05:00 PM	23.9	6.62	160	0.1	776					0.83	0.81	0.51	0.3	0.02	0.32					18	0.01	0.01		110											
PZ-I6-15-DUP	10/24/2013 1:10:00 PM	23.9	6.62	180	0.1	776					0.92	0.9	0.61	0.29	0.02	0.31					18	0.01	0.01		110											
PZ-I10-08	10/24/2013 10:23:00 AM	23.8	4.87	6.4	0.46	353				21	1.82	1.8	1.63	0.17	0.02	0.19	0.048				27	0.02	0.01		95											
PZ-I10-15	10/24/2013 10:35:00 AM	23.8	5.87	50	0.13	501					0.97	0.95	0.55	0.4	0.02	0.42					24	0.01	0.01		140											
PZ-J4-15	10/25/2013 9:52:00 AM	24.1	6.12	51	0.69	437				19	3.12	2.4	1.6	0.8	0.72	1.52	0.33				29	0.72	0.01		110											
PZ-J7-08	10/24/2013 12:10:00 PM	23.3	4.61	2.7	3.25	258				28	0.61	0.55	0.521	0.029	0.06	0.089	0.05	28	27	0.098	18	0.06	0.01	0.01	62	0.096	22	0.54	8.8	0.002	0.84	9.3				
PZ-J7-15	10/24/2013 12:25:00 PM	23.9	5.03	9.1	0.16	437				63	3.9	3.5	3.24	0.26	0.4	0.66	0.27	34	33	0.018	32	0.4	0.01	0.01	120	0.15	46	0.34	13	0.003	1.5	11				
PZ-J7-15-DUP	10/24/2013 12:30:00 PM	23.9	5.03	8.3	0.16	437				10	3.9	3.5	3.25	0.25	0.4	0.65	0.26	34	33	0.014	33	0.4	0.01	0.01	120	0.16	46	0.26	13	0.003	1.6	11				
PZ-N4-15	10/25/2013 9:39:00 AM	22.3	6.31	110	0.53	386				91	2.62	2.6	2.1	0.5	0.02	0.52	7.3				13	0.01	0.01		64											
PZ-N4-15-DUP	10/25/2013 9:34:00 AM	22.3	6.31	100	0.53	386					2.82	2.8	2.28	0.52	0.02	0.54					13	0.01	0.01		62											
PZ-N7-08	10/24/2013 11:41:00 AM	23.4	5.63	37	1.98	390					1.05	0.98	0.67	0.31	0.07	0.38					25	0.07	0.01		78											
PZ-N7-15	10/24/2013 11:54:00 AM	23.8	5.42	18	0.9	478					1.02	1	0.66	0.34	0.02	0.36					24	0.01	0.01		150											
PZ-N7-15-DUP	10/24/2013 11:59:00 AM	23.8	5.42	18	0.9	478					1.02	1	0.66	0.34	0.02	0.36					24	0.01	0.01		150											
PZ-N10-08	10/24/2013 10:58:00 AM	23.7	5.52	26	1.03	289				48	0.82	0.8	0.723	0.077	0.02	0.097	0.14	40	40	0.13	20	0.01	0.01	0.026	48	0.05	25	0.33	6.5	0.01	0.59	11				
PZ-N10-15	10/24/2013 11:12:00 AM	23.6	6.55	150	0.11	568					0.91	0.89	0.55	0.34	0.02	0.36					16	0.01	0.01		76											
PZ-S10-08	10/24/2013 11:25:00 AM	23.9	4.96	3.3	0.16	242				21	1.01	0.99	0.58	0.41	0.02	0.43	0.023				17	0.01	0.01		59											
PZ-S10-08-DUP	10/24/2013 11:30:00 AM	23.9	4.96	3.1	0.16	242				19	1.02	1	0.6	0.4	0.02	0.42	0.025				17	0.01	0.01		60											
Blanks																																					
FB-DI	10/24/2013 1:35:00 PM	20.1	5.73	2	8.37	86.2				10	0.07	0.05	0.041	0.009	0.02	0.029	0.01	0.06	0.06	0.01	0.05	0.01	0.02	0.024	0.2	0.05	0.042	0.02	0.022	0.001	0.27	0.51				
EB	10/24/2013 1:25:00 PM	20.1	5.73	2	8.37	86.2				10	0.07	0.05	0.041	0.009	0.02	0.029	0.01	0.06	0.06	0.01	0.067	0.01	0.01	0.01	0.2	0.05	0.042	0.02	0.02	0.001	0.25	0.28				

[1]Total Nitrogen (TN) is a calculated value equal to the sum of TKN and NO_x
[2]Organic Nitrogen (ON) is a calculated value equal to the difference of TKN and NH_3
[3]Total Inorganic Nitrogen (TIN) is a calculated value equal to the sum of NH_3 and NO_x
D.O. - Dissolved oxygen
G - Grab sample
Gray-shaded data points indicate values below method detection level (mdl), mdl value used for statistical analyses.
Yellow-shaded data points indicate the reported value is between the laboratory method detection limit and the laboratory practical quantitation limit, value used for statistical analysis.
Orange - shaded data points indicate too many colonies were present. The numeric value represents the dilution factor times the maximum reportable number of colonies.

o:\44237-0001\Wpdocs\Report\Draft

Appendix D: Summary of Water Quality Data

o:\44237-001\Wpdocs\Report\Draft

Table D.1
Summary of Water Quality Data

Sample ID	Statistical Parameter	Temp	pH	Total Alkalinity	DO	Specific Conductance (µS)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	TOC (mg/L)	DOC (mg/L)	Anions						Cations							TS (mg/L)	Fecal Coliform	e-coli
																			F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na			
STE	n	5	5	2	5	5	3	4	1	5	4	5	4	5	5	2	0	0	2	2	4	4	2	2	2	2	2	2	2	2	2	2	1	2
	MEAN	24.58	7.12	515.00	0.20	1367.40	35.33	97.75	120.00	57.44	54.75	12.80	42.00	0.04	44.64	12.45			1.75	46.00	0.04	0.01	3.50	111.15	0.80	125.00	0.10	42.00	0.03	19.00	51.50	780.00	82,000	24,000
	STD. DEV.	1.90		77.78	0.19	54.80		39.84		6.27	2.36	3.27	3.46	0.01	6.54	5.02			0.92	2.83	0.02	0.00	1.27	153.94	0.15	7.07	0.01	1.41	0.01	4.24	13.44	0.00		
	MIN	22.40	6.96	460.00	0.04	1327.00	12.00	41.00	120.00	53.02	53.00	8.00	39.00	0.02	39.02	8.90			1.10	44.00	0.01	0.01	2.60	2.30	0.69	120.00	0.09	41.00	0.02	16.00	42.00	780.00	82,000	24,000
	MAX	26.80	7.38	570.00	0.40	1463.00	58.00	130.00	120.00	68.03	58.00	17.00	47.00	0.05	55.03	16.00			2.40	48.00	0.05	0.01	4.40	220.00	0.90	130.00	0.11	43.00	0.03	22.00	61.00	780.00	82,000	24,000
BHS2-ST2 (treated effluent)	n	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	0	0	0	0	0	0	6	6	0	0	0	0	0	0	0	0	4	1
	MEAN	23.05	6.86	336.67	0.13	1207.33	5.83	74.67	163.33	3.14	3.12	1.22	1.89	0.02	1.91	5.18							2.41	191.67									112.50	29.00
	STD. DEV.	3.54		68.90	0.06	68.75	5.19	33.70	92.45	2.30	2.30	0.25	2.09	0.00	2.09	3.21							1.14	24.83										
	MIN	16.50	6.51	220.00	0.07	1134.00	1.00	32.00	10.00	1.42	1.40	0.94	0.37	0.02	0.39	2.40							0.85	170.00									10.00	29.00
	MAX	26.10	7.05	410.00	0.24	1303.00	15.00	110.00	260.00	6.52	6.50	1.50	5.00	0.02	5.02	11.00							4.10	240.00									200.00	29.00
PZ-01	n	4	4	4	4	4	0	0	4	4	4	4	4	4	4	4	1	1	1	3	3	3	1	2	1	1	1	1	1	1	1	0	0	0
	MEAN	24.80	5.12	17.50	3.31	740.00			81.25	5.28	2.00	1.95	0.05	3.28	3.33	8.23	38.00	37.00	0.02	33.00	1.34	0.01	0.01	330.00	0.49	82.00	0.10	39.00	0.01	16.00	38.00			
	STD. DEV.	2.41		11.62	1.67	203.73			66.11	5.50	1.54	1.57	0.05	3.98	3.95	14.57				4.36	1.09	0.00		14.14										
	MIN	21.30	4.30	2.00	0.86	491.00			40.00	1.53	1.10	0.97	0.01	0.33	0.38	0.03	38.00	37.00	0.02	30.00	0.33	0.01	0.01	320.00	0.49	82.00	0.10	39.00	0.01	16.00	38.00			
	MAX	26.80	5.65	29.00	4.57	956.00			180.00	13.40	4.30	4.28	0.13	9.10	9.12	30.00	38.00	37.00	0.02	38.00	2.50	0.01	0.01	340.00	0.49	82.00	0.10	39.00	0.01	16.00	38.00			
PZ-02	n	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN																																	
	STD. DEV.																																	
	MIN																																	
	MAX																																	
PZ-03	n	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	26.60	3.50	2.00	1.20	210.00			56.00	1.22	1.20	1.15	0.05	0.02	0.07	11.00				11.00														
	STD. DEV.																																	
	MIN	26.60	3.50	2.00	1.20	210.00			56.00	1.22	1.20	1.15	0.05	0.02	0.07	11.00				11.00														
	MAX	26.60	3.50	2.00	1.20	210.00			56.00	1.22	1.20	1.15	0.05	0.02	0.07	11.00				11.00														
PZ-04	n	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	27.80	3.90	2.00	7.07	801.00			44.00	1.00	0.95	0.94	0.01	0.05	0.06	25.00				25.00														
	STD. DEV.																																	
	MIN	27.80	3.90	2.00	7.07	801.00			44.00	1.00	0.95	0.94	0.01	0.05	0.06	25.00				25.00														
	MAX	27.80	3.90	2.00	7.07	801.00			44.00	1.00	0.95	0.94	0.01	0.05	0.06	25.00				25.00														
PZ-06	n	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	26.10	4.80	8.40	4.00	380.00			67.00	2.11	2.00	1.84	0.16	0.11	0.27	14.00				14.00														
	STD. DEV.																																	
	MIN	26.10	4.80	8.40	4.00	380.00			67.00	2.11	2.00	1.84	0.16	0.11	0.27	14.00				14.00														
	MAX	26.10	4.80	8.40	4.00	380.00			67.00	2.11	2.00	1.84	0.16	0.11	0.27	14.00				14.00														

Table D.1 (continued)
Summary of Water Quality Data

Sample ID		Temp	pH	Total Alkalinity	DO	Specific Conductance (µS)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	TOC (mg/L)	DOC (mg/L)	Anions						Cations							TS (mg/L)	Fecal Coliform	e-coli
																			F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na			
BKG-10	n	3	3	3	3	3	1	1	3	3	3	3	3	3	3	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	0	0	0
	MEAN	23.60	4.05	2.60	5.92	278.00	99.00	2.00	64.67	1.30	1.26	1.19	0.08	0.04	0.11	0.42	46.00	48.00	0.30	29.67	0.03	0.01	0.06	40.33	0.06	5.97	1.16	1.14	0.002	0.39	17.57			
	STD. DEV.	2.29		1.04	1.03	127.58			17.04	0.63	0.66	0.61	0.07	0.03	0.07	0.51	33.94	29.70	0.34	16.26	0.03	0.01	0.04	21.08	0.01	2.14	1.18	0.84	0.00	0.26	9.16			
	MIN	21.60	3.57	2.00	4.74	132.00	99.00	2.00	45.00	0.66	0.59	0.54	0.02	0.02	0.04	0.10	22.00	27.00	0.01	12.00	0.01	0.01	0.01	16.00	0.05	3.50	0.26	0.58	0.001	0.12	8.70			
	MAX	26.10	4.76	3.80	6.63	368.00	99.00	2.00	75.00	1.92	1.90	1.74	0.16	0.07	0.18	1.00	70.00	69.00	0.67	44.00	0.06	0.02	0.09	53.00	0.07	7.30	2.50	2.10	0.003	0.64	27.00			
BKG-15	n	4	4	4	4	4	1	1	2	3	4	3	4	4	3	4	0	0	0	2	4	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.45	5.59	36.25	0.21	143.70	1.80	0.64	108.50	2.29	2.13	1.74	0.53	0.05	0.55	1.56				12.00	0.03	0.03		13.00										
	STD. DEV.	1.15		3.30	0.07	20.02			30.41	0.64	0.59	0.63	0.10	0.05	0.14	1.26				0.00	0.02	0.03		0.00										
	MIN	21.90	5.15	33.00	0.11	124.00	1.80	0.64	87.00	1.82	1.80	1.34	0.39	0.02	0.41	0.50				12.00	0.01	0.01		13.00										
	MAX	24.50	5.89	40.00	0.29	168.40	1.80	0.64	130.00	3.02	3.00	2.46	0.64	0.13	0.69	3.20				12.00	0.06	0.07		13.00										
PZ-AB4-08	n	3	3	3	3	3	0	0	2	3	3	3	3	3	3	3	0	0	0	2	3	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.83	4.84	4.10	1.92	312.00			22.00	0.58	0.52	0.33	0.20	0.06	0.26	0.27				14.50	0.05	0.02		84.50										
	STD. DEV.	0.87		2.05	0.40	105.79			16.97	0.40	0.44	0.27	0.25	0.05	0.23	0.21				2.12	0.06	0.01		64.35										
	MIN	23.10	4.09	2.00	1.60	198.00			10.00	0.20	0.08	0.02	0.04	0.03	0.07	0.03				13.00	0.01	0.01		39.00										
	MAX	24.80	6.09	6.10	2.37	407.00			34.00	0.99	0.96	0.49	0.48	0.12	0.51	0.43				16.00	0.12	0.03		130.00										
PZ-AB4-15	n	4	4	2	4	4	1	1	0	3	4	3	4	4	3	0	0	0	0	2	4	4	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.33	6.51	115.00	2.73	317.75	1.90	0.33		2.47	2.27	2.00	0.38	0.08	0.47					8.10	0.05	0.04		6.10										
	STD. DEV.	1.33		7.07	2.78	92.80				1.80	1.47	1.90	0.11	0.02	0.10					0.14	0.04	0.02		0.14										
	MIN	21.50	5.94	110.00	0.19	260.00	1.90	0.33		0.85	0.79	0.29	0.26	0.05	0.36					8.00	0.01	0.01		6.00										
	MAX	24.70	7.24	120.00	6.13	456.00	1.90	0.33		4.40	4.30	4.04	0.50	0.10	0.56					8.20	0.09	0.05		6.20										
PZ-C1	n	3	3	2	3	3	0	0	0	3	3	3	3	3	3	1	0	0	1	2	3	3	1	2	1	1	1	1	1	1	1	0	0	0
	MEAN	24.73	5.95	135.00	4.71	967.00				3.57	1.39	1.34	0.05	2.18	2.23	1.30			0.01	43.00	2.18	0.01	0.01	305.00	0.63	100.00	0.40	40.00	0.01	23.00	40.00			
	STD. DEV.	2.20		7.07	1.05	139.34				1.49	0.47	0.40	0.07	1.08	1.13					1.41	1.08	0.00		7.07										
	MIN	22.60	5.69	130.00	3.58	810.00				1.91	0.98	0.97	0.01	0.93	0.94	1.30			0.01	42.00	0.93	0.01	0.01	300.00	0.63	100.00	0.40	40.00	0.01	23.00	40.00			
	MAX	27.00	6.18	140.00	5.65	1076.00				4.80	1.90	1.76	0.14	2.90	3.04	1.30			0.01	44.00	2.90	0.01	0.01	310.00	0.63	100.00	0.40	40.00	0.01	23.00	40.00			
PZ-C2	n	4	4	2	4	4	1	1	0	3	4	3	4	4	3	0	0	0	0	2	4	4	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	19.56	7.63	19.50	0.53	282.08	1.00	0.44		0.90	0.88	0.45	0.40	0.05	0.45					18.50	0.05	0.01		96.00										
	STD. DEV.	9.40		3.54	0.17	108.62				0.27	0.23	0.25	0.04	0.04	0.02					2.12	0.04	0.00		5.66										
	MIN	5.52	5.07	17.00	0.30	157.30	1.00	0.44		0.59	0.53	0.16	0.36	0.02	0.43					17.00	0.01	0.01		92.00										
	MAX	24.90	21.70	22.00	0.71	377.00	1.00	0.44		1.08	1.00	0.62	0.44	0.10	0.46					20.00	0.10	0.01		100.00										
PZ-C3-08	n	3	3	2	3	3	0	0	0	3	3	3	3	3	3	1	1	1	0	2	3	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	24.30	5.03	13.55	2.45	708.00				1.77	0.74	0.63	0.11	1.03	1.14	0.24	33.00	32.00		33.00	1.03	0.01		280.00										
	STD. DEV.	1.15		11.95	2.64	250.19				0.72	0.28	0.27	0.11	0.84	0.74					7.07	0.84	0.00		70.71										
	MIN	23.00	4.69	5.10	0.81	438.00				0.94	0.42	0.37	0.04	0.08	0.32	0.24	33.00	32.00		28.00	0.08	0.01		230.00										
	MAX	25.20	5.27	22.00	5.49	932.00				2.25	0.95	0.91	0.24	1.70	1.75	0.24	33.00	32.00		38.00	1.70	0.01		330.00										

/pdocs\Report\Draft

Table D.1 (continued)
Summary of Water Quality Data

Sample ID		Temp	pH	Total Alkalinity	DO	Specific Conductance (µS)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	TOC (mg/L)	DOC (mg/L)	Anions						Cations							TS (mg/L)	Fecal Coliform	e-coli
																			F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na			
PZ-C3-15	n	4	4	2	4	4	1	1	0	3	4	3	4	4	3	0	0	0	0	2	4	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.70	6.62	150.00	1.25	460.50	1.10	0.43		0.84	0.85	0.47	0.33	0.06	0.36					11.00	0.04	0.03		38.50										
	STD. DEV.	1.17		0.00	0.67	53.61				0.26	0.29	0.33	0.08	0.07	0.10						0.03	0.04		13.44										
	MIN	22.00	6.48	150.00	0.56	394.00	1.10	0.43		0.60	0.57	0.24	0.25	0.02	0.27					11.00	0.01	0.01		29.00										
	MAX	24.60	6.82	150.00	2.12	516.00	1.10	0.43		1.12	1.10	0.85	0.43	0.17	0.46					11.00	0.09	0.08		48.00										
PZ-C6-08	n	4	4	2	4	4	1	1	0	3	4	3	4	4	3	0	0	0	0	2	4	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.05	4.08	2.00	1.29	516.00	0.77	0.12		0.63	0.62	0.47	0.10	0.06	0.16					21.50	0.05	0.01		180.00										
	STD. DEV.	1.12		0.00	1.23	102.61				0.29	0.29	0.29	0.05	0.06	0.08					2.12	0.06	0.00		0.00										
	MIN	21.80	3.75	2.00	0.19	401.00	0.77	0.12		0.40	0.26	0.19	0.05	0.02	0.07					20.00	0.01	0.01		180.00										
	MAX	24.30	4.40	2.00	2.36	649.00	0.77	0.12		0.95	0.93	0.76	0.17	0.14	0.21					23.00	0.14	0.01		180.00										
PZ-C6-15	n	4	4	2	4	4	1	1	0	3	4	3	4	4	3	0	0	0	0	2	4	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.05	5.46	24.00	1.71	366.75	0.71	0.32		2.40	1.95	1.20	0.95	0.04	1.20					29.50	0.03	0.01		83.00										
	STD. DEV.	0.72		0.00	2.01	17.86				1.46	1.44	0.60	0.82	0.02	0.88					10.61	0.03	0.00		12.73										
	MIN	22.00	5.13	24.00	0.08	351.00	0.71	0.32		0.80	0.71	0.60	0.18	0.02	0.20					22.00	0.01	0.01		74.00										
	MAX	23.60	5.77	24.00	4.45	391.00	0.71	0.32		3.67	3.60	1.80	1.80	0.07	1.87					37.00	0.07	0.01		92.00										
PZ-D3-08	n	3	3	3	3	3	0	0	2	3	3	3	3	3	3	3	0	0	0	2	3	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	24.27	5.15	8.87	2.35	648.67			37.00	1.58	0.68	0.64	0.04	0.90	0.94	0.24				31.00	0.90	0.01		285.00										
	STD. DEV.	1.10		4.59	1.54	258.65			7.07	0.85	0.45	0.44	0.05	0.53	0.50	0.19				7.07	0.53	0.00		63.64										
	MIN	23.00	4.69	3.60	0.78	385.00			32.00	0.84	0.16	0.15	0.01	0.51	0.61	0.11				26.00	0.51	0.01		240.00										
	MAX	25.00	5.48	12.00	3.86	902.00			42.00	2.50	1.00	0.99	0.10	1.50	1.52	0.46				36.00	1.50	0.01		330.00										
PZ-D3-15	n	4	4	4	4	4	1	1	3	3	4	3	4	4	3	4	0	0	0	2	4	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.88	6.59	140.00	3.25	476.25	1.00	0.41	64.00	1.16	1.07	0.62	0.46	0.07	0.55	2.35				9.15	0.03	0.05		12.20										
	STD. DEV.	1.35		23.09	2.40	227.98			11.36	0.67	0.59	0.37	0.31	0.04	0.33	2.14				1.20	0.02	0.04		6.79										
	MIN	22.00	6.37	120.00	1.02	315.00	1.00	0.41	56.00	0.64	0.54	0.26	0.23	0.02	0.33	0.80				8.30	0.01	0.01		7.40										
	MAX	24.90	6.74	160.00	6.31	811.00	1.00	0.41	77.00	1.92	1.90	0.99	0.91	0.10	0.93	5.50				10.00	0.05	0.08		17.00										
PZ-D4-08	n	3	3	2	3	3	0	0	0	3	3	3	3	3	3	0	0	0	0	2	3	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.97	4.67	2.00	1.68	726.67				1.11	0.67	0.61	0.06	0.44	0.50					33.50	0.44	0.01		310.00										
	STD. DEV.	1.79		0.00	0.85	219.55				0.62	0.24	0.25	0.07	0.46	0.40					6.36	0.46	0.00		56.57										
	MIN	21.90	4.27	2.00	0.70	510.00				0.72	0.43	0.40	0.01	0.03	0.17					29.00	0.03	0.01		270.00										
	MAX	25.00	5.25	2.00	2.24	949.00				1.83	0.90	0.89	0.14	0.93	0.94					38.00	0.93	0.01		350.00										
PZ-D4-15	n	3	3	2	3	3	0	0	0	3	3	3	3	3	3	0	0	0	0	2	3	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	24.30	6.67	155.00	2.38	692.00				0.84	0.75	0.47	0.27	0.09	0.37					13.00	0.06	0.04		91.50										
	STD. DEV.	1.15		35.36	3.03	223.47				0.09	0.21	0.19	0.07	0.13	0.13					2.83	0.07	0.05		26.16										
	MIN	23.00	6.47	130.00	0.24	559.00				0.75	0.51	0.26	0.22	0.02	0.24					11.00	0.01	0.01		73.00										
	MAX	25.20	6.87	180.00	5.84	950.00				0.93	0.91	0.60	0.35	0.24	0.49					15.00	0.14	0.10		110.00										

/pdocs\Report\Draft

Table D.1 (continued)
Summary of Water Quality Data

Sample ID		Temp	pH	Total Alkalinity	DO	Specific Conductance (µS)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	TOC (mg/L)	DOC (mg/L)	Anions						Cations							TS (mg/L)	Fecal Coliform	e-coli
																			F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na			
PZ-E1	n	4	4	4	4	4	1	1	3	3	4	3	4	4	3	4	0	0	0	2	4	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.73	5.32	22.00	3.59	405.65	0.85	0.36	32.67	0.97	0.87	0.57	0.32	0.09	0.40	0.51				26.00	0.08	0.01		165.00										
	STD. DEV.	2.26		6.38	1.58	175.33			9.02	0.15	0.14	0.13	0.11	0.06	0.06	0.79				2.83	0.06	0.00		7.07										
	MIN	21.10	5.01	17.00	1.39	176.60	0.85	0.36	24.00	0.80	0.67	0.45	0.22	0.02	0.35	0.07				24.00	0.01	0.01		160.00										
	MAX	25.80	5.70	31.00	5.05	555.00	0.85	0.36	42.00	1.08	1.00	0.70	0.45	0.14	0.47	1.70				28.00	0.14	0.01		170.00										
PZ-E2	n	4	4	2	4	4	1	1	0	3	4	3	4	4	3	0	0	0	0	2	4	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.58	5.89	37.00	5.32	215.90	1.10	0.37		0.88	0.91	0.51	0.35	0.04	0.37					14.50	0.03	0.01		55.00										
	STD. DEV.	2.62		0.00	1.61	72.25				0.15	0.19	0.14	0.07	0.02	0.08					2.12	0.02	0.00		18.38										
	MIN	21.10	5.69	37.00	3.91	156.00	1.10	0.37		0.72	0.66	0.36	0.28	0.02	0.30					13.00	0.01	0.01		42.00										
	MAX	26.60	6.11	37.00	7.63	321.00	1.10	0.37		1.00	1.10	0.63	0.43	0.06	0.45					16.00	0.06	0.01		68.00										
PZ-E3-08	n	3	3	3	3	3	0	0	3	3	3	3	3	3	3	3	2	2	2	2	3	3	2	2	2	2	2	2	2	2	2	0	0	0
	MEAN	24.33	5.56	35.00	1.27	875.00			70.00	4.47	1.69	1.54	0.15	2.78	2.92	0.39	43.00	41.50	0.02	35.00	2.78	0.01	0.01	330.00	0.47	93.00	1.30	42.50	0.00	19.50	36.00			
	STD. DEV.	1.42		19.97	0.74	141.82			10.54	4.98	1.31	1.21	0.11	3.67	3.78	0.42	9.90	7.78	0.01	7.07	3.67	0.00	0.00	0.00	0.13	9.90	0.28	6.36	0.00	7.78	4.24			
	MIN	22.70	5.33	18.00	0.73	728.00			59.00	1.25	0.92	0.81	0.04	0.33	0.37	0.14	36.00	36.00	0.01	30.00	0.33	0.01	0.01	330.00	0.37	86.00	1.10	38.00	0.002	14.00	33.00			
	MAX	25.20	5.74	57.00	2.11	1011.00			80.00	10.20	3.20	2.94	0.26	7.00	7.26	0.88	50.00	47.00	0.02	40.00	7.00	0.01	0.01	330.00	0.56	100.00	1.50	47.00	0.003	25.00	39.00			
PZ-E3-15	n	3	3	3	3	3	0	0	3	3	3	3	3	3	3	3	0	0	0	2	3	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	24.60	6.22	69.00	2.43	254.67			81.00	1.93	1.83	1.57	0.27	0.10	0.37	7.70				10.25	0.06	0.05		21.50										
	STD. DEV.	0.50		13.11	1.98	66.65			81.50	0.66	0.57	0.63	0.08	0.11	0.12	5.52				1.06	0.04	0.06		0.71										
	MIN	24.10	6.04	57.00	0.31	208.00			10.00	1.23	1.20	0.85	0.20	0.03	0.24	3.70				9.50	0.03	0.01		21.00										
	MAX	25.10	6.57	83.00	4.23	331.00			170.00	2.53	2.30	2.05	0.35	0.23	0.48	14.00				11.00	0.11	0.12		22.00										
PZ-E4-08	n	3	3	3	3	3	0	0	3	3	3	3	3	3	3	3	0	0	1	3	3	3	1	3	1	1	1	1	1	1	1	0	0	0
	MEAN	24.23	4.65	2.73	1.55	747.67			47.00	1.41	0.73	0.71	0.02	0.68	0.70	0.13			0.26	29.33	0.68	0.01	0.01	176.73	0.16	46.00	0.16	26.00	0.005	4.00	16.00			
	STD. DEV.	2.31		1.27	1.22	109.21			6.08	1.03	0.32	0.33	0.01	0.72	0.71	0.06				0.58	0.72	0.00		162.47										
	MIN	21.60	4.03	2.00	0.74	632.00			43.00	0.76	0.54	0.52	0.01	0.21	0.24	0.07			0.26	29.00	0.21	0.01	0.01	0.20	0.16	46.00	0.16	26.00	0.005	4.00	16.00			
	MAX	25.90	5.29	4.20	2.95	849.00			54.00	2.60	1.10	1.09	0.03	1.50	1.51	0.19			0.26	30.00	1.50	0.01	0.01	320.00	0.16	46.00	0.16	26.00	0.005	4.00	16.00			
PZ-E4-15	n	4	4	2	4	4	1	1	0	3	4	3	4	4	3	0	0	0	0	2	4	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.58	6.47	125.00	0.95	470.50	0.88	0.36		0.95	0.87	0.51	0.36	0.08	0.44					12.00	0.05	0.04		50.50										
	STD. DEV.	1.51		7.07	0.64	47.47				0.10	0.09	0.15	0.08	0.09	0.20					0.00	0.04	0.05		12.02										
	MIN	21.90	6.17	120.00	0.16	422.00	0.88	0.36		0.84	0.80	0.34	0.26	0.02	0.28					12.00	0.02	0.01		42.00										
	MAX	24.90	6.73	130.00	1.62	517.00	0.88	0.36		1.01	0.99	0.63	0.46	0.21	0.67					12.00	0.11	0.10		59.00										
PZ-E5-08	n	3	3	2	3	3	0	0	0	3	3	3	3	3	3	0	0	0	0	2	3	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.70	4.41	2.00	0.68	640.67				0.94	0.82	0.73	0.09	0.12	0.22					28.00	0.12	0.01		260.00										
	STD. DEV.	0.98		0.00	0.18	90.56				0.09	0.18	0.13	0.08	0.17	0.16					2.83	0.17	0.00		42.43										
	MIN	22.60	3.96	2.00	0.48	552.00				0.85	0.64	0.58	0.03	0.02	0.06					26.00	0.01	0.01		230.00										
	MAX	24.50	5.01	2.00	0.84	733.00				1.02	1.00	0.81	0.19	0.32	0.38					30.00	0.32	0.01		290.00										

/pdocs\Report\Draft

Table D.1 (continued)
Summary of Water Quality Data

Sample ID		Temp	pH	Total Alkalinity	DO	Specific Conductance (µS)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	TOC (mg/L)	DOC (mg/L)	Anions						Cations							TS (mg/L)	Fecal Coliform	e-coli
																			F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na			
PZ-E5-15	n	4	4	2	4	4	1	1	0	3	4	3	4	4	3	0	0	0	0	2	4	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.30	6.40	95.00	1.50	630.75	0.85	0.32		0.81	0.79	0.55	0.25	0.04	0.26					18.00	0.03	0.01		121.00										
	STD. DEV.	0.98		7.07	2.12	140.19				0.27	0.24	0.29	0.05	0.04	0.04					1.41	0.04	0.00		55.15										
	MIN	21.90	6.09	90.00	0.08	483.00	0.85	0.32		0.65	0.56	0.34	0.22	0.02	0.24					17.00	0.01	0.01		82.00										
	MAX	24.10	6.73	100.00	4.60	820.00	0.85	0.32		1.12	1.10	0.88	0.32	0.09	0.31					19.00	0.09	0.01		160.00										
PZ-E6-08	n	4	4	2	4	4	1	1	0	3	4	3	4	4	3	0	0	0	0	2	4	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.28	4.41	2.00	24.15	682.00	0.65	0.01		0.78	0.72	0.66	0.07	0.18	0.13					29.00	0.18	0.01		135.10										
	STD. DEV.	1.37		0.00	45.02	124.59				0.28	0.24	0.23	0.07	0.27	0.07					4.24	0.27	0.00		190.78										
	MIN	21.90	3.73	2.00	0.94	501.00	0.65	0.01		0.49	0.43	0.40	0.01	0.02	0.08					26.00	0.01	0.01		0.20										
	MAX	25.00	4.99	2.00	91.67	780.00	0.65	0.01		1.05	1.00	0.84	0.16	0.58	0.21					32.00	0.58	0.01		270.00										
PZ-E6-15	n	4	4	2	4	4	1	1	1	3	4	3	4	4	3	2	1	1	2	3	4	3	2	3	2	2	2	2	2	2	2	0	0	0
	MEAN	23.35	5.10	9.45	2.68	388.50	4.60	1.90	42.00	2.24	2.80	1.29	1.16	0.04	0.95	0.34	18.00	17.00	0.05	18.02	0.04	0.01	0.01	114.00	0.09	29.50	1.50	11.00	0.006	1.50	11.00			
	STD. DEV.	0.54		3.61	2.91	89.76				0.50	1.26	0.38	0.52	0.03	0.24	0.00			0.06	15.69	0.04	0.00	0.00	57.17	0.00	2.12	0.00	0.00	0.001	0.14	0.00			
	MIN	22.60	4.81	6.90	0.29	326.00	4.60	1.90	42.00	1.82	1.80	0.87	0.69	0.02	0.71	0.34	18.00	17.00	0.01	0.05	0.01	0.01	0.01	80.00	0.09	28.00	1.50	11.00	0.005	1.40	11.00			
	MAX	23.80	5.44	12.00	6.65	518.00	4.60	1.90	42.00	2.79	4.60	1.60	1.90	0.09	1.19	0.34	18.00	17.00	0.09	29.00	0.09	0.01	0.01	180.00	0.09	31.00	1.50	11.00	0.007	1.60	11.00			
PZ-E7-08	n	4	4	4	4	4	1	1	4	3	4	3	4	4	3	4	2	2	4	4	4	3	4	4	4	4	4	4	4	4	4	0	0	0
	MEAN	23.28	4.59	7.30	1.72	469.50	0.65	0.12	28.75	2.18	1.24	1.38	0.07	0.57	0.80	0.06	21.50	20.00	0.21	24.00	0.57	0.01	0.02	155.00	0.18	39.00	0.39	17.25	0.006	4.25	17.75			
	STD. DEV.	0.96		9.82	1.50	161.66			12.53	2.14	1.06	1.14	0.07	0.84	1.00	0.03	3.54	2.83	0.17	6.58	0.84	0.00	0.01	64.03	0.13	13.64	0.22	5.97	0.003	3.51	10.21			
	MIN	22.10	4.27	2.00	0.29	333.00	0.65	0.12	10.00	0.52	0.49	0.48	0.01	0.03	0.05	0.03	19.00	18.00	0.10	17.00	0.03	0.01	0.01	110.00	0.06	27.00	0.20	13.00	0.004	1.70	12.00			
	MAX	24.20	4.98	22.00	3.18	702.00	0.65	0.12	36.00	4.60	2.80	2.66	0.14	1.80	1.94	0.08	24.00	22.00	0.46	31.00	1.80	0.01	0.03	250.00	0.36	56.00	0.69	26.00	0.009	9.20	33.00			
PZ-E7-15	n	4	4	4	4	4	1	1	4	3	4	3	4	4	3	4	0	0	0	2	4	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.28	6.76	272.50	2.50	1305.75	1.00	0.40	60.50	1.04	1.01	0.61	0.40	0.03	0.43	0.24				19.00	0.03	0.01		230.00										
	STD. DEV.	0.67		33.04	2.71	339.18			29.10	0.24	0.21	0.20	0.05	0.02	0.07	0.06				1.41	0.02	0.00		56.57										
	MIN	22.30	6.49	240.00	0.16	953.00	1.00	0.40	24.00	0.86	0.84	0.48	0.33	0.02	0.35	0.16				18.00	0.01	0.01		190.00										
	MAX	23.80	7.14	310.00	5.62	1740.00	1.00	0.40	93.00	1.32	1.30	0.84	0.46	0.06	0.48	0.29				20.00	0.06	0.01		270.00										
PZ-F3-08	n	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN																																	
	STD. DEV.																																	
	MIN																																	
	MAX																																	
PZ-F3-15	n	4	4	4	4	4	1	1	4	3	4	3	4	4	3	4	0	0	0	2	4	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	24.33	6.67	113.25	3.83	300.00	0.69	0.33	33.50	1.12	0.97	0.81	0.27	0.05	0.31	2.20				8.45	0.03	0.03		2.47										
	STD. DEV.	2.83		15.78	2.68	36.47			19.05	0.67	0.56	0.66	0.06	0.03	0.04	2.36				0.21	0.02	0.04		2.45										
	MIN	22.10	6.31	93.00	1.52	272.00	0.69	0.33	10.00	0.63	0.57	0.36	0.21	0.02	0.27	0.59				8.30	0.01	0.01		0.73										
	MAX	28.00	6.93	130.00	7.49	353.00	0.69	0.33	49.00	1.88	1.80	1.57	0.33	0.08	0.34	5.70				8.60	0.05	0.08		4.20										

/pdocs\Report\Draft

Table D.1 (continued)
Summary of Water Quality Data

Sample ID		Temp	pH	Total Alkalinity	DO	Specific Conductance (µS)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	TOC (mg/L)	DOC (mg/L)	Anions						Cations							TS (mg/L)	Fecal Coliform	e-coli
																			F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na			
PZ-F4-08	n	3	3	3	3	3	0	0	3	3	3	3	3	3	3	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	0	0	0
	MEAN	23.87	4.76	4.87	2.71	809.67			57.33	3.35	1.35	1.34	0.01	2.00	2.01	0.10	34.50	34.00	0.50	32.00	1.97	0.03	0.02	286.67	0.37	67.00	0.29	30.00	0.01	6.70	36.33			
	STD. DEV.	3.01		3.25	2.41	80.05			6.66	2.60	0.59	0.59	0.00	2.02	2.02	0.07	12.02	11.31	0.69	6.08	1.97	0.04	0.01	20.82	0.11	1.73	0.16	3.00	0.01	0.53	10.97			
	MIN	20.40	4.06	2.00	1.20	728.00			53.00	1.36	0.86	0.84	0.01	0.50	0.52	0.05	26.00	26.00	0.06	25.00	0.50	0.01	0.01	270.00	0.28	66.00	0.12	27.00	0.00	6.10	30.00			
	MAX	25.80	5.55	8.40	5.49	888.00			65.00	6.30	2.00	1.99	0.02	4.30	4.31	0.17	43.00	42.00	1.30	36.00	4.20	0.08	0.03	310.00	0.49	69.00	0.43	33.00	0.01	7.10	49.00			
PZ-F4-15	n	3	3	3	3	3	0	0	3	3	3	3	3	3	3	3	0	0	0	2	3	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	24.20	6.70	176.67	1.98	787.33			40.33	1.02	0.94	0.62	0.32	0.08	0.40	0.27				14.50	0.08	0.01		70.00										
	STD. DEV.	1.74		25.17	2.71	435.66			18.01	0.27	0.31	0.21	0.11	0.07	0.10	0.09				0.71	0.07	0.00		11.31										
	MIN	22.20	6.44	150.00	0.07	487.00			28.00	0.82	0.75	0.46	0.22	0.03	0.28	0.19				14.00	0.03	0.01		62.00										
	MAX	25.40	7.14	200.00	5.08	1287.00			61.00	1.33	1.30	0.86	0.44	0.16	0.47	0.36				15.00	0.16	0.01		78.00										
PZ-G2-12.5	n	4	4	2	4	4	1	1	1	3	4	3	4	4	3	0	0	0	0	2	4	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.73	4.37	2.00	1.66	742.25	1.40	0.01	21.00	1.90	0.90	0.71	0.02	1.78	1.19					40.00	1.78	0.01		160.10										
	STD. DEV.	1.90		0.00	0.87	136.05				0.73	0.35	0.12	0.02	1.36	0.74					2.83	1.36	0.00		226.13										
	MIN	21.80	4.11	2.00	0.56	570.00	1.40	0.01	21.00	1.38	0.59	0.58	0.01	0.52	0.57					38.00	0.52	0.01		0.20										
	MAX	25.60	4.70	2.00	2.57	884.00	1.40	0.01	21.00	2.74	1.40	0.81	0.05	3.60	2.01					42.00	3.60	0.01		320.00										
PZ-H4-08	n	3	3	3	3	3	0	0	3	3	3	3	3	3	3	3	2	2	2	2	3	3	2	2	2	2	2	2	2	2	2	0	0	0
	MEAN	24.47	4.58	2.00	2.57	694.67			32.33	2.25	0.52	0.50	0.02	1.73	1.75	0.11	17.00	16.50	0.04	33.00	1.73	0.01	0.01	275.00	0.41	65.50	0.34	32.50	0.00	9.05	34.00			
	STD. DEV.	1.27		0.00	1.44	140.75			5.51	0.69	0.32	0.31	0.01	0.38	0.38	0.10	2.83	3.54	0.05	1.41	0.38	0.00	0.00	49.50	0.03	13.44	0.10	7.78	0.00	1.34	2.83			
	MIN	23.00	4.07	2.00	1.39	559.00			26.00	1.45	0.15	0.14	0.01	1.30	1.31	0.02	15.00	14.00	0.01	32.00	1.30	0.01	0.01	240.00	0.39	56.00	0.27	27.00	0.00	8.10	32.00			
	MAX	25.30	5.21	2.00	4.17	840.00			36.00	2.68	0.72	0.69	0.03	2.00	2.01	0.22	19.00	19.00	0.08	34.00	2.00	0.01	0.01	310.00	0.43	75.00	0.41	38.00	0.01	10.00	36.00			
PZ-H4-15	n	4	4	4	4	4	1	1	4	3	4	3	4	4	3	4	0	0	0	2	4	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.58	6.61	167.50	1.64	679.75	1.10	0.50	54.50	1.57	1.32	1.00	0.43	0.14	0.58	4.40				19.00	0.13	0.02		150.00										
	STD. DEV.	1.45		23.63	2.65	121.29			36.42	0.79	0.59	0.79	0.11	0.13	0.02	4.48				0.00	0.11	0.02		14.14										
	MIN	21.60	6.33	150.00	0.23	586.00	1.10	0.50	13.00	1.03	0.99	0.47	0.30	0.03	0.56	1.60				19.00	0.03	0.01		140.00										
	MAX	25.00	7.01	200.00	5.61	858.00	1.10	0.50	97.00	2.48	2.20	1.90	0.53	0.28	0.59	11.00				19.00	0.23	0.05		160.00										
PZ-H5-11.5	n	4	4	2	4	4	1	1	1	3	4	3	4	4	3	1	1	1	2	3	4	3	2	3	2	2	2	2	2	2	2	0	0	0
	MEAN	22.95	4.38	2.00	2.38	505.75	2.30	0.12	35.00	1.24	1.11	0.59	0.13	0.47	0.66	0.05	17.00	17.00	0.08	28.67	0.47	0.01	0.01	173.33	0.12	40.50	0.04	19.00	0.004	1.85	15.00			
	STD. DEV.	1.57		0.00	0.80	108.32				0.83	0.84	0.12	0.17	0.43	0.71				0.03	3.51	0.43	0.00	0.00	45.09	0.04	10.61	0.00	4.24	0.002	0.21	2.83			
	MIN	21.10	4.01	2.00	1.27	402.00	2.30	0.12	35.00	0.67	0.52	0.51	0.01	0.15	0.16	0.05	17.00	17.00	0.06	25.00	0.15	0.01	0.01	130.00	0.09	33.00	0.04	16.00	0.003	1.70	13.00			
	MAX	24.30	4.57	2.00	3.09	645.00	2.30	0.12	35.00	2.20	2.30	0.73	0.37	1.10	1.47	0.05	17.00	17.00	0.10	32.00	1.10	0.01	0.01	220.00	0.15	48.00	0.05	22.00	0.005	2.00	17.00			

/pdocs\Report\Draft

Table D.1 (continued)
Summary of Water Quality Data

Sample ID		Temp	pH	Total Alkalinity	DO	Specific Conductance (µS)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	TOC (mg/L)	DOC (mg/L)	Anions						Cations							TS (mg/L)	Fecal Coliform	e-coli
																			F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na			
PZ-I6-08	n	4	4	3	4	4	1	1	1	3	4	3	4	4	3	1	1	1	2	3	4	3	2	3	2	2	2	2	2	2	2	0	0	0
	MEAN	23.28	4.44	2.40	1.57	375.00	1.30	0.44		2.76	1.94	1.81	0.37	0.47	0.95	0.56	31.00	31.00	0.32	26.00	0.47	0.01	0.13	110.00	0.13	28.50	1.45	13.50	0.01	2.00	13.50			
	STD. DEV.	1.22		0.69	1.08	81.98				2.77	1.61	1.78	0.20	0.76	1.00				0.14	10.44	0.76	0.00	0.16	30.00	0.01	0.71	0.49	2.12	0.01	0.85	0.71			
	MIN	22.10	3.87	2.00	0.20	300.00	1.30	0.44		0.68	0.66	0.59	0.07	0.02	0.09	0.56	31.00	31.00	0.22	19.00	0.01	0.01	0.01	80.00	0.12	28.00	1.10	12.00	0.01	1.40	13.00			
	MAX	24.80	5.04	3.20	2.54	486.00	1.30	0.44		5.90	4.30	3.85	0.52	1.60	2.05	0.56	31.00	31.00	0.42	38.00	1.60	0.01	0.24	140.00	0.13	29.00	1.80	15.00	0.02	2.60	14.00			
PZ-I6-15	n	4	4	2	4	4	1	1	0	3	4	3	4	4	3	0	0	0	0	2	4	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.50	6.67	160.00	0.53	1149.75	1.40	0.51		1.02	1.08	0.66	0.36	0.04	0.36					19.00	0.04	0.01		120.00										
	STD. DEV.	0.45		0.00	0.45	500.52				0.16	0.25	0.13	0.11	0.04	0.04					1.41	0.04	0.00		14.14										
	MIN	22.90	6.45	160.00	0.10	776.00	1.40	0.51		0.83	0.81	0.51	0.25	0.02	0.32					18.00	0.01	0.01		110.00										
	MAX	23.90	6.90	160.00	0.95	1849.00	1.40	0.51		1.12	1.40	0.75	0.51	0.10	0.40					20.00	0.10	0.01		130.00										
PZ-I10-08	n	4	4	4	4	4	1	1	4	3	4	3	4	4	3	4	0	0	0	2	4	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.10	4.81	8.10	0.77	387.00	2.20	0.14	30.00	1.61	1.52	1.03	0.23	0.25	0.59	0.04				25.00	0.25	0.01		95.50										
	STD. DEV.	1.20		4.92	0.65	52.76			9.83	0.18	0.65	0.53	0.24	0.41	0.36	0.01				2.83	0.41	0.00		0.71										
	MIN	21.50	4.33	2.00	0.37	344.00	2.20	0.14	21.00	1.48	0.68	0.64	0.05	0.02	0.19	0.03				23.00	0.02	0.01		95.00										
	MAX	24.20	5.29	13.00	1.74	460.00	2.20	0.14	42.00	1.82	2.20	1.63	0.58	0.86	0.91	0.05				27.00	0.86	0.01		96.00										
PZ-I10-15	n	4	4	2	4	4	1	1	0	3	4	3	4	4	3	0	0	0	0	2	4	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.03	6.15	54.50	0.65	533.00	1.60	1.20		1.05	1.17	0.50	0.69	0.02	0.54					23.00	0.02	0.01		112.00										
	STD. DEV.	0.93		6.36	0.65	140.62				0.15	0.31	0.11	0.35	0.00	0.11					1.41	0.01	0.00		39.60										
	MIN	21.70	5.84	50.00	0.13	406.00	1.60	1.20		0.95	0.93	0.38	0.40	0.02	0.42					22.00	0.01	0.01		84.00										
	MAX	23.80	6.83	59.00	1.51	734.00	1.60	1.20		1.22	1.60	0.58	1.20	0.03	0.64					24.00	0.03	0.01		140.00										
PZ-J4-08	n	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN																																	
	STD. DEV.																																	
	MIN																																	
	MAX																																	
PZ-J4-15	n	4	4	4	4	4	1	1	4	3	4	3	4	4	3	4	0	0	0	2	4	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.53	6.19	70.25	1.14	477.50	5.90	1.90	42.50	2.37	3.03	1.12	1.19	0.43	1.25	0.33				28.50	0.43	0.01		100.50										
	STD. DEV.	1.30		22.75	1.44	73.23			23.36	0.75	1.96	0.42	0.58	0.39	0.42	0.29					0.39	0.00												
	MIN	22.00	5.98	51.00	0.24	426.00	5.90	1.90	19.00	1.63	1.50	0.86	0.64	0.06	0.77	0.10				28.00	0.06	0.01		91.00										
	MAX	25.00	6.47	100.00	3.28	585.00	5.90	1.90	65.00	3.12	5.90	1.60	1.90	0.81	1.52	0.74				29.00	0.81	0.01		110.00										
PZ-J7-08	n	4	4	4	4	4	1	1	4	3	4	3	4	4	3	4	2	2	4	4	4	3	4	4	4	4	4	4	4	4	4	0	0	0
	MEAN	22.95	4.61	5.78	1.36	303.25	2.90	0.53	34.00	1.73	1.56	1.03	0.20	0.56	0.70	0.07	22.00	21.50	0.17	25.75	0.56	0.01	0.01	76.50	0.11	25.25	0.34	11.20	0.003	1.44	10.18			
	STD. DEV.	1.37		4.23	1.33	47.09			15.30	1.55	1.03	0.65	0.23	0.77	0.91	0.03	8.49	7.78	0.16	9.00	0.77	0.00	0.00	15.09	0.01	3.95	0.16	2.14	0.001	0.55	0.95			
	MIN	21.20	4.32	2.00	0.17	258.00	2.90	0.53	17.00	0.61	0.55	0.52	0.03	0.06	0.09	0.05	16.00	16.00	0.06	18.00	0.06	0.01	0.01	62.00	0.10	22.00	0.15	8.80	0.002	0.84	9.30			
	MAX	24.50	5.07	11.00	3.25	369.00	2.90	0.53	53.00	3.50	2.90	1.76	0.53	1.70	1.74	0.12	28.00	27.00	0.41	37.00	1.70	0.01	0.02	94.00	0.12	30.00	0.54	14.00	0.004	2.00	11.00			
PZ-J7-15	n	4	4	2	4	4	1	1	1	3	4	3	4	4	3	3	2	2	3	3	4	3	3	3	3	3	3	3	3	3	3	0	0	0
	MEAN	23.13	5.04	7.00	0.98	403.25	4.50	0.67	63.00	3.31	3.48	2.62	0.55	0.25	0.69	0.27	27.50	26.50	0.03	32.33	0.25	0.01	0.01	116.67	0.11	40.00	0.75	14.33	0.003	1.33	11.00			
	STD. DEV.	1.16		2.97	0.95	49.03				1.97	1.75	1.82	0.26	0.22	0.17	0.04	9.19	9.19	0.03	13.50	0.22	0.00	0.00	5.77	0.05	7.21	0.65	3.21	0.000	0.21	0.00			
	MIN	21.40	4.80	4.90	0.16	331.00	4.50	0.67	63.00	1.11	1.00	0.57	0.26	0.02	0.54	0.23	21.00	20.00	0.01	19.00	0.01	0.01	0.01	110.00	0.06	32.00	0.34	12.00	0.003	1.10	11.00			
	MAX	23.90	5.30	9.10	2.29	437.00	4.50	0.67	63.00	4.92	4.90	4.05	0.85	0.46	0.87	0.31	34.00	33.00	0.06	46.00	0.46	0.01	0.01	120.00	0.15	46.00	1.50	18.00	0.004	1.50	11.00			

/pdocs\Report\Draft

Table D.1 (continued)
Summary of Water Quality Data

Sample ID		Temp	pH	Total Alkalinity	DO	Specific Conductance (µS)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	TOC (mg/L)	DOC (mg/L)	Anions						Cations							TS (mg/L)	Fecal Coliform	e-coli
																			F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na			
PZ-N4-08	n	2	2	2	2	2	0	0	2	2	2	2	2	2	2	1	0	0	0	1	2	2	0	1	0	0	0	0	0	0	0	0	0	0
	MEAN	23.95	5.04	9.50	4.85	390.00			28.50	0.50	0.48	0.35	0.13	0.02	0.15	0.10				22.00	0.02	0.01		200.00										
	STD. DEV.	1.48		10.61	0.82	155.56			7.78	0.01	0.01	0.07	0.09	0.00	0.09						0.01	0.00												
	MIN	22.90	4.48	2.00	4.27	280.00			23.00	0.49	0.47	0.30	0.07	0.02	0.09	0.10				22.00	0.01	0.01		200.00										
	MAX	25.00	5.67	17.00	5.43	500.00			34.00	0.51	0.49	0.40	0.19	0.02	0.21	0.10				22.00	0.02	0.01		200.00										
PZ-N4-15	n	4	4	2	4	4	1	1	1	3	4	3	4	4	3	1	0	0	0	2	4	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	22.68	6.29	125.00	0.74	465.75	3.00	0.45	91.00	3.00	2.98	2.51	0.46	0.04	0.49	7.30				12.50	0.03	0.01		65.00										
	STD. DEV.	0.77		21.21	0.76	173.97				1.70	1.37	1.74	0.05	0.02	0.04					0.71	0.02	0.00		1.41										
	MIN	21.80	5.96	110.00	0.19	361.00	3.00	0.45	91.00	1.52	1.50	1.01	0.39	0.02	0.45	7.30				12.00	0.01	0.01		64.00										
	MAX	23.50	6.69	140.00	1.86	726.00	3.00	0.45	91.00	4.86	4.80	4.41	0.50	0.06	0.52	7.30				13.00	0.06	0.01		66.00										
PZ-N7-08	n	4	4	2	4	4	1	1	0	3	4	3	4	4	3	0	1	1	2	3	4	3	2	3	2	2	2	2	2	2	2	0	0	0
	MEAN	23.53	5.61	20.20	2.51	442.25	3.00	2.80		2.11	2.27	0.77	1.64	0.20	1.34		18.00	16.00	0.35	37.00	0.20	0.01	0.02	101.33	0.12	51.00	3.15	16.00	0.05	1.38	11.50			
	STD. DEV.	0.98		23.76	1.97	44.98				1.49	1.35	0.09	1.46	0.23	1.46				0.30	18.25	0.23	0.00	0.01	33.72	0.06	9.90	1.06	2.83	0.01	0.60	0.71			
	MIN	22.20	4.75	3.40	1.04	390.00	3.00	2.80		1.05	0.98	0.67	0.31	0.02	0.38		18.00	16.00	0.13	25.00	0.01	0.01	0.01	78.00	0.08	44.00	2.40	14.00	0.05	0.95	11.00			
	MAX	24.40	6.23	37.00	5.41	497.00	3.00	2.80		3.82	3.80	0.85	3.00	0.53	3.02		18.00	16.00	0.56	58.00	0.53	0.01	0.03	140.00	0.17	58.00	3.90	18.00	0.06	1.80	12.00			
PZ-N7-15	n	4	4	2	4	4	1	1	0	3	4	3	4	4	3	0	0	0	0	2	4	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.30	5.49	17.50	0.84	320.75	1.50	0.67		1.25	1.23	0.78	0.44	0.09	0.47					18.50	0.09	0.01		104.00										
	STD. DEV.	0.83		0.71	0.68	109.08				0.53	0.38	0.28	0.19	0.11	0.25					7.78	0.12	0.00		65.05										
	MIN	22.10	5.26	17.00	0.31	237.00	1.50	0.67		0.88	0.83	0.59	0.24	0.02	0.29					13.00	0.01	0.01		58.00										
	MAX	23.90	5.73	18.00	1.78	478.00	1.50	0.67		1.86	1.60	1.10	0.67	0.26	0.76					24.00	0.26	0.01		150.00										
PZ-N10-08	n	4	4	4	4	4	1	1	4	3	4	3	4	4	3	4	1	1	1	2	4	3	1	2	1	1	1	1	1	1	1	0	0	0
	MEAN	23.23	5.74	38.50	0.58	360.50	2.00	0.96	39.25	1.34	1.48	0.83	0.59	0.03	0.51	0.18	40.00	40.00	0.13	20.50	0.02	0.01	0.03	67.50	0.05	25.00	0.33	6.50	0.01	0.59	11.00			
	STD. DEV.	1.04		18.36	0.33	98.48			6.40	1.02	0.92	0.42	0.57	0.02	0.62	0.11				0.71	0.03	0.00		27.58										
	MIN	21.70	5.40	22.00	0.33	289.00	2.00	0.96	34.00	0.68	0.62	0.48	0.08	0.02	0.10	0.06	40.00	40.00	0.13	20.00	0.01	0.01	0.03	48.00	0.05	25.00	0.33	6.50	0.01	0.59	11.00			
	MAX	24.00	6.40	62.00	1.03	502.00	2.00	0.96	48.00	2.52	2.50	1.30	1.20	0.06	1.22	0.33	40.00	40.00	0.13	21.00	0.06	0.01	0.03	87.00	0.05	25.00	0.33	6.50	0.01	0.59	11.00			
PZ-N10-15	n	4	4	3	4	4	1	1	0	3	4	3	4	4	3	0	0	0	0	2	3	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.38	6.71	97.00	0.61	880.25	0.55	0.20		0.93	0.89	0.54	0.37	0.04	0.39						0.03	0.01		84.00										
	STD. DEV.	0.87		75.15	0.62	473.68				0.18	0.16	0.09	0.09	0.02	0.09					0.71	0.02	0.00		11.31										
	MIN	22.20	6.41	11.00	0.11	568.00	0.55	0.20		0.77	0.72	0.45	0.27	0.02	0.32						0.01	0.01		76.00										
	MAX	24.30	7.11	150.00	1.40	1573.00	0.55	0.20		1.12	1.10	0.62	0.48	0.05	0.50						0.05	0.01		92.00										
PZ-S10-08	n	4	4	3	4	4	0	0	4	3	4	3	4	4	3	4	0	0	0	2	4	3	0	2	0	0	0	0	0	0	0	0	0	0
	MEAN	23.65	5.00	3.93	0.81	290.00			26.25	0.82	0.73	0.51	0.26	0.03	0.31	0.05				17.00	0.03	0.01		60.50										
	STD. DEV.	1.00		2.12	0.96	63.77			5.56	0.18	0.19	0.07	0.12	0.01	0.14	0.02				0.00	0.02	0.00		2.12										
	MIN	22.20	4.75	2.20	0.16	240.00			21.00	0.66	0.55	0.45	0.12	0.02	0.15	0.02				17.00	0.01	0.01		59.00										
	MAX	24.50	5.31	6.30	2.19	375.00			32.00	1.01	0.99	0.58	0.41	0.05	0.43	0.07				17.00	0.05	0.01		62.00										

/pdocs\Report\Draft

Table D.1 (continued)
Summary of Water Quality Data

Sample ID		Temp	pH	Total Alkalinity	DO	Specific Conductance (µS)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	TOC (mg/L)	DOC (mg/L)	Anions						Cations							TS (mg/L)	Fecal Coliform	e-coli
																			F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na			
FB-DI	n	4	4	4	4	4	1	1	4	3	4	3	4	4	3	4	2	2	4	4	4	3	4	4	4	4	4	4	4	4	4	0	0	0
	MEAN	21.80	6.99	2.00	8.04	23.02	0.05	0.01	10.00	0.07	0.05	0.04	0.01	0.02	0.03	0.01	0.06	0.06	0.01	0.05	0.01	0.01	0.01	0.20	0.05	0.04	0.02	0.02	0.00	0.08	0.23			
	STD. DEV.	2.45		0.00	0.59	42.13			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.19			
	MIN	19.30	5.73	2.00	7.25	1.20	0.05	0.01	10.00	0.07	0.05	0.04	0.01	0.02	0.03	0.01	0.06	0.06	0.01	0.05	0.01	0.01	0.01	0.20	0.05	0.04	0.02	0.02	0.00	0.01	0.13			
	MAX	24.00	7.65	2.00	8.60	86.20	0.05	0.01	10.00	0.07	0.05	0.04	0.01	0.02	0.03	0.01	0.06	0.06	0.01	0.05	0.01	0.02	0.02	0.20	0.05	0.04	0.02	0.02	0.00	0.27	0.51			
FB-TAP	n	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.60	7.54	160.00	4.41	846.00			14.00	0.32	0.16	0.13	0.03	0.16	0.19	0.04					0.16	0.01												
	STD. DEV.																																	
	MIN	21.60	7.54	160.00	4.41	846.00			14.00	0.32	0.16	0.13	0.03	0.16	0.19	0.04					0.16	0.01												
	MAX	21.60	7.54	160.00	4.41	846.00			14.00	0.32	0.16	0.13	0.03	0.16	0.19	0.04					0.16	0.01												
EB	n	4	4	4	4	4	0	0	4	3	4	3	4	4	3	4	2	2	4	4	4	3	4	4	4	4	4	4	4	4	4	0	0	0
	MEAN	21.80	6.99	2.00	8.12	23.02			10.00	0.07	0.05	0.04	0.01	0.02	0.03	0.01	0.06	0.06	0.01	0.05	0.01	0.01	0.01	0.20	0.05	0.04	0.02	0.02	0.00	0.08	0.17			
	STD. DEV.	2.45		0.00	0.46	42.13			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.08			
	MIN	19.30	5.73	2.00	7.58	1.20			10.00	0.07	0.05	0.04	0.01	0.02	0.03	0.01	0.06	0.06	0.01	0.05	0.01	0.01	0.01	0.20	0.05	0.04	0.02	0.02	0.00	0.01	0.13			
	MAX	24.00	7.65	2.00	8.60	86.20			10.00	0.07	0.05	0.04	0.01	0.02	0.03	0.01	0.06	0.06	0.01	0.07	0.01	0.01	0.01	0.20	0.05	0.04	0.02	0.02	0.00	0.25	0.28			

[1]Total Nitrogen (TN) is a calculated value equal to the sum of TKN and NO_x
[2]Organic Nitrogen (ON) is a calculated value equal to the difference of TKN and NH_3
[3]Total Inorganic Nitrogen (TIN) is a calculated value equal to the sum of NH_3 and NO_x
D.O. - Dissolved oxygen
G - Grab sample
Gray-shaded data points indicate values below method detection level (mdl), mdl value used for statistical analyses.
Yellow-shaded data points indicate the reported value is between the laboratory method detection limit and the laboratory practical quantitation limit, value used for statistical analysis.

/pdocs\Report\Draft

Appendix E: Laboratory Report

o:\44237-001\Wpdocs\Report\Draft

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**STE**
Matrix	**Wastewater**
SAL Sample Number	**1311076-01**
Date/Time Collected	**10/24/13 13:40**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		7.07						
Temperature		26.3 °C						
Conductivity		1345 umhos/cm						
Dissolved Oxygen		0.04 mg/L						
Inorganics								
Ammonia as N	mg/L	39	EPA 350.1	2.0	0.47		11/01/13 14:32	50
Carbonaceous BOD	mg/L	120	SM 5210B	2	2	10/25/13 11:46	10/30/13 15:18	1
Chloride	mg/L	48	EPA 300.0	2.0	0.50		10/29/13 14:42	10
Fluoride	mg/L	1.1	EPA 300.0	0.040	0.010		10/25/13 17:05	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 17:05	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		10/25/13 17:05	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 17:05	1
Orthophosphate as P	mg/L	2.6	EPA 300.0	0.040	0.010		10/25/13 17:05	1
Phosphorous - Total as P	mg/L	8.9	SM 4500P-E	0.20	0.050	10/31/13 11:42	11/07/13 10:37	5
Sulfate	mg/L	2.3	EPA 300.0	0.60	0.20		10/25/13 17:05	1
Total Alkalinity	mg/L	570	SM 2320B	8.0	2.0		10/29/13 14:38	1
Total Kjeldahl Nitrogen	mg/L	53	EPA 351.2	0.20	0.05	10/31/13 11:31	11/11/13 12:08	20.83
Total Solids	mg/L	780	SM 2540B	10	10	10/28/13 14:50	10/29/13 11:54	1
Total Suspended Solids	mg/L	12	SM 2540D	1	1	10/30/13 09:03	10/30/13 16:28	1
Metals								
Boron	mg/L	0.90	EPA 200.7	0.10	0.050	10/31/13 10:45	10/31/13 15:39	1
Calcium	mg/L	120	EPA 200.7	0.50	0.042	10/31/13 10:45	10/31/13 15:39	1
Iron	mg/L	0.090 I	EPA 200.7	0.10	0.020	10/31/13 10:45	10/31/13 15:39	1
Magnesium	mg/L	41	EPA 200.7	0.50	0.020	10/31/13 10:45	10/31/13 15:39	1
Manganese	mg/L	0.020	EPA 200.7	0.010	0.0010	10/31/13 10:45	10/31/13 15:39	1
Potassium	mg/L	16	EPA 200.7	0.050	0.010	10/31/13 10:45	10/31/13 15:39	1
Sodium	mg/L	61	EPA 200.7	0.50	0.13	10/31/13 10:45	10/31/13 15:39	1
Microbiology								
E. Coli	MPN/100 mL	24,000	SM 9223B	2.0	2.0	10/24/13 16:16	10/25/13 10:31	1
Fecal Coliforms	CFU/100 ml	82,000	SM 9222D	1	1	10/24/13 16:14	10/25/13 14:14	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**STE-DUP**
Matrix	**Wastewater**
SAL Sample Number	**1311076-02**
Date/Time Collected	**10/24/13 13:45**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *		Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data									
pH		7.07							
Temperature		26.3 °C							
Conductivity		1345 umhos/cm							
Dissolved Oxygen		0.04 mg/L							
Inorganics									
Ammonia as N	mg/L	41		EPA 350.1	2.0	0.47		11/01/13 14:34	50
Carbonaceous BOD	mg/L	120		SM 5210B	2	2	10/25/13 11:46	10/30/13 15:18	1
Chloride	mg/L	47		EPA 300.0	2.0	0.50		10/29/13 14:56	10
Fluoride	mg/L	1.1		EPA 300.0	0.040	0.010		10/25/13 17:15	1
Nitrate (as N)	mg/L	0.01	I	EPA 300.0	0.04	0.01		10/25/13 17:15	1
Nitrate+Nitrite (N)	mg/L	0.02	U	EPA 300.0	0.08	0.02		10/25/13 17:15	1
Nitrite (as N)	mg/L	0.01	U	EPA 300.0	0.04	0.01		10/25/13 17:15	1
Orthophosphate as P	mg/L	2.1		EPA 300.0	0.040	0.010		10/25/13 17:15	1
Phosphorous - Total as P	mg/L	9.0		SM 4500P-E	0.20	0.050	10/31/13 11:42	11/07/13 10:38	5
Sulfate	mg/L	2.9		EPA 300.0	0.60	0.20		10/25/13 17:15	1
Total Alkalinity	mg/L	570		SM 2320B	8.0	2.0		10/29/13 14:50	1
Total Kjeldahl Nitrogen	mg/L	56		EPA 351.2	0.20	0.05	10/31/13 11:31	11/11/13 12:09	20.83
Total Solids	mg/L	780		SM 2540B	10	10	10/28/13 14:50	10/29/13 11:54	1
Total Suspended Solids	mg/L	14		SM 2540D	1	1	10/31/13 08:44	10/31/13 14:30	1
Metals									
Boron	mg/L	0.86		EPA 200.7	0.10	0.050	10/31/13 10:45	10/31/13 15:44	1
Calcium	mg/L	110		EPA 200.7	0.50	0.042	10/31/13 10:45	10/31/13 15:44	1
Iron	mg/L	0.092	I	EPA 200.7	0.10	0.020	10/31/13 10:45	10/31/13 15:44	1
Magnesium	mg/L	40		EPA 200.7	0.50	0.020	10/31/13 10:45	10/31/13 15:44	1
Manganese	mg/L	0.019		EPA 200.7	0.010	0.0010	10/31/13 10:45	10/31/13 15:44	1
Potassium	mg/L	16		EPA 200.7	0.050	0.010	10/31/13 10:45	10/31/13 15:44	1
Sodium	mg/L	59		EPA 200.7	0.50	0.13	10/31/13 10:45	10/31/13 15:44	1
Microbiology									
E. Coli	MPN/100 mL	17,000		SM 9223B	2.0	2.0	10/24/13 16:16	10/25/13 10:31	1
Fecal Coliforms	CFU/100 ml	72,000		SM 9222D	1	1	10/24/13 16:14	10/25/13 14:14	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-01**
Matrix	**Groundwater**
SAL Sample Number	**1311076-03**
Date/Time Collected	**10/23/13 11:44**
Collected by	**Sean Schmidt**
Date/Time Received	**10/23/13 14:55**

Parameters	Units	Results *		Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data									
pH		5.34							
Temperature		25.5 °C							
Conductivity		956 umhos/cm							
Dissolved Oxygen		4.57 mg/L							
Inorganics									
Ammonia as N	mg/L	0.012	I	EPA 350.1	0.040	0.009		10/25/13 12:52	1
Chemical Oxygen Demand	mg/L	54		EPA 410.4	25	10	10/28/13 12:00	10/28/13 17:00	1
Chloride	mg/L	38		EPA 300.0	2.0	0.50		10/28/13 23:38	10
Fluoride	mg/L	0.017	I	EPA 300.0	0.040	0.010		10/24/13 12:43	1
Nitrate (as N)	mg/L	2.5		EPA 300.0	0.04	0.01		10/24/13 12:43	1
Nitrate+Nitrite (N)	mg/L	2.5		EPA 300.0	0.08	0.02		10/24/13 12:43	1
Nitrite (as N)	mg/L	0.01	U	EPA 300.0	0.04	0.01		10/24/13 12:43	1
Orthophosphate as P	mg/L	0.010	U	EPA 300.0	0.040	0.010		10/24/13 12:43	1
Phosphorous - Total as P	mg/L	0.029	I	SM 4500P-E	0.040	0.010	10/24/13 10:05	10/30/13 13:27	1
Sulfate	mg/L	340		EPA 300.0	6.0	2.0		10/28/13 23:38	10
Total Alkalinity	mg/L	29		SM 2320B	8.0	2.0		10/25/13 10:31	1
Total Kjeldahl Nitrogen	mg/L	1.4		EPA 351.2	0.20	0.05	10/31/13 11:31	11/11/13 10:34	1
Total Organic Carbon	mg/L	38		SM 5310B	1.0	0.060		10/24/13 10:38	1
Inorganic, Dissolved									
Dissolved Organic Carbon	mg/L	37		SM 5310B	1.0	0.060		10/24/13 10:38	1
Metals									
Boron	mg/L	0.49		EPA 200.7	0.10	0.050	10/30/13 10:50	10/30/13 15:38	1
Calcium	mg/L	82		EPA 200.7	0.50	0.042	10/30/13 10:50	10/30/13 15:38	1
Iron	mg/L	0.10		EPA 200.7	0.10	0.020	10/30/13 10:50	10/30/13 15:38	1
Magnesium	mg/L	39		EPA 200.7	0.50	0.020	10/30/13 10:50	10/30/13 15:38	1
Manganese	mg/L	0.0072	I	EPA 200.7	0.010	0.0010	10/30/13 10:50	10/30/13 15:38	1
Potassium	mg/L	16		EPA 200.7	0.050	0.010	10/30/13 10:50	10/30/13 15:38	1
Sodium	mg/L	38		EPA 200.7	0.50	0.13	10/30/13 10:50	10/30/13 15:38	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**BKG-10**
Matrix	**Groundwater**
SAL Sample Number	**1311076-06**
Date/Time Collected	**10/25/13 10:35**
Collected by	**Sean Schmidt**
Date/Time Received	**10/25/13 12:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		3.57						
Temperature		23.1 °C						
Conductivity		368 umhos/cm						
Dissolved Oxygen		6.38 mg/L						
Inorganics								
Ammonia as N	mg/L	0.018 I	EPA 350.1	0.040	0.009		11/05/13 15:03	1
Chemical Oxygen Demand	mg/L	74	EPA 410.4	25	10	11/07/13 10:54	11/07/13 16:46	1
Chloride	mg/L	44	EPA 300.0	2.0	0.50		10/29/13 21:00	10
Fluoride	mg/L	0.67	EPA 300.0	0.040	0.010		10/26/13 01:13	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/26/13 01:13	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		10/26/13 01:13	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/26/13 01:13	1
Orthophosphate as P	mg/L	0.085	EPA 300.0	0.040	0.010		10/26/13 01:13	1
Phosphorous - Total as P	mg/L	0.15	SM 4500P-E	0.040	0.010	10/31/13 11:42	11/07/13 09:30	1
Sulfate	mg/L	53	EPA 300.0	0.60	0.20		10/26/13 01:13	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		11/05/13 13:17	1
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	11/08/13 10:50	11/12/13 14:54	1
Total Organic Carbon	mg/L	70	SM 5310B	1.0	0.060		10/30/13 10:10	1
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	69	SM 5310B	1.0	0.060		10/30/13 10:10	1
Metals								
Boron	mg/L	0.073 I	EPA 200.7	0.10	0.050	10/31/13 10:45	10/31/13 15:57	1
Calcium	mg/L	7.1	EPA 200.7	0.50	0.042	10/31/13 10:45	10/31/13 15:57	1
Iron	mg/L	0.26	EPA 200.7	0.10	0.020	10/31/13 10:45	10/31/13 15:57	1
Magnesium	mg/L	0.58	EPA 200.7	0.50	0.020	10/31/13 10:45	10/31/13 15:57	1
Manganese	mg/L	0.0010 U	EPA 200.7	0.010	0.0010	10/31/13 10:45	10/31/13 15:57	1
Potassium	mg/L	0.12	EPA 200.7	0.050	0.010	10/31/13 10:45	11/01/13 10:46	1
Sodium	mg/L	27	EPA 200.7	0.50	0.13	10/31/13 10:45	10/31/13 15:57	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**BKG-15**
Matrix	**Groundwater**
SAL Sample Number	**1311076-07**
Date/Time Collected	**10/25/13 10:55**
Collected by	**Sean Schmidt**
Date/Time Received	**10/25/13 12:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		5.54						
Temperature		24.1 °C						
Conductivity		168.4 umhos/cm						
Dissolved Oxygen		0.59 mg/L						
Inorganics								
Ammonia as N	mg/L	0.39	EPA 350.1	0.040	0.009		11/05/13 15:05	1
Chloride	mg/L	12	EPA 300.0	0.20	0.050		10/26/13 01:41	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/26/13 01:41	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		10/26/13 01:41	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/26/13 01:41	1
Phosphorous - Total as P	mg/L	0.50	SM 4500P-E	0.040	0.010	11/06/13 13:13	11/07/13 15:31	1
Sulfate	mg/L	13	EPA 300.0	0.60	0.20		10/26/13 01:41	1
Total Alkalinity	mg/L	40	SM 2320B	8.0	2.0		11/05/13 13:22	1
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	11/08/13 10:50	11/12/13 14:56	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-AB4-08**
Matrix	**Groundwater**
SAL Sample Number	**1311076-11**
Date/Time Collected	**10/25/13 10:06**
Collected by	**Sean Schmidt**
Date/Time Received	**10/25/13 12:00**

Parameters	Units	Results *		Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data									
pH		4.54							
Temperature		23.6 °C							
Conductivity		198 umhos/cm							
Dissolved Oxygen		1.60 mg/L							
Inorganics									
Ammonia as N	mg/L	0.043		EPA 350.1	0.040	0.009		11/05/13 15:07	1
Chloride	mg/L	13		EPA 300.0	0.20	0.050		10/26/13 01:50	1
Nitrate (as N)	mg/L	0.01	U	EPA 300.0	0.04	0.01		10/26/13 01:50	1
Nitrate+Nitrite (N)	mg/L	0.03	I	EPA 300.0	0.08	0.02		10/26/13 01:50	1
Nitrite (as N)	mg/L	0.03	I	EPA 300.0	0.04	0.01		10/26/13 01:50	1
Phosphorous - Total as P	mg/L	0.35		SM 4500P-E	0.040	0.010	11/06/13 13:13	11/07/13 15:32	1
Sulfate	mg/L	39		EPA 300.0	0.60	0.20		10/26/13 01:50	1
Total Alkalinity	mg/L	6.1	I	SM 2320B	8.0	2.0		11/05/13 13:25	1
Total Kjeldahl Nitrogen	mg/L	0.53		EPA 351.2	0.20	0.05	11/08/13 10:50	11/12/13 14:57	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-AB4-15**
Matrix	**Groundwater**
SAL Sample Number	**1311076-12**
Date/Time Collected	**10/25/13 10:20**
Collected by	**Sean Schmidt**
Date/Time Received	**10/25/13 12:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		6.39						
Temperature		23.6 °C						
Conductivity		269 umhos/cm						
Dissolved Oxygen		0.26 mg/L						
Inorganics								
Ammonia as N	mg/L	0.44	EPA 350.1	0.040	0.009		11/05/13 15:09	1
Chloride	mg/L	8.2	EPA 300.0	0.20	0.050		10/26/13 02:00	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/26/13 02:00	1
Nitrate+Nitrite (N)	mg/L	0.05 I	EPA 300.0	0.08	0.02		10/26/13 02:00	1
Nitrite (as N)	mg/L	0.05	EPA 300.0	0.04	0.01		10/26/13 02:00	1
Sulfate	mg/L	6.0	EPA 300.0	0.60	0.20		10/26/13 02:00	1
Total Alkalinity	mg/L	110	SM 2320B	8.0	2.0		11/05/13 13:30	1
Total Kjeldahl Nitrogen	mg/L	2.1	EPA 351.2	0.20	0.05	11/08/13 10:50	11/12/13 14:59	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-C1**
Matrix	**Groundwater**
SAL Sample Number	**1311076-13**
Date/Time Collected	**10/23/13 08:54**
Collected by	**Sean Schmidt**
Date/Time Received	**10/23/13 14:55**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		5.99						
Temperature		24.6 °C						
Conductivity		1015 umhos/cm						
Dissolved Oxygen		3.58 mg/L						
Inorganics								
Ammonia as N	mg/L	0.14	EPA 350.1	0.040	0.009		10/25/13 12:54	1
Chloride	mg/L	44	EPA 300.0	2.0	0.50		10/29/13 00:16	10
Fluoride	mg/L	0.011 I	EPA 300.0	0.040	0.010		10/24/13 13:28	1
Nitrate (as N)	mg/L	2.9	EPA 300.0	0.04	0.01		10/24/13 13:28	1
Nitrate+Nitrite (N)	mg/L	2.9	EPA 300.0	0.08	0.02		10/24/13 13:28	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/24/13 13:28	1
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		10/24/13 13:28	1
Phosphorous - Total as P	mg/L	1.3	SM 4500P-E	0.040	0.010	10/24/13 10:05	10/30/13 13:28	1
Sulfate	mg/L	300	EPA 300.0	6.0	2.0		10/29/13 00:16	10
Total Alkalinity	mg/L	140	SM 2320B	8.0	2.0		10/25/13 10:27	1
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	10/31/13 11:31	11/11/13 10:35	1
Metals								
Boron	mg/L	0.63	EPA 200.7	0.10	0.050	10/30/13 10:50	10/30/13 15:47	1
Calcium	mg/L	100	EPA 200.7	0.50	0.042	10/30/13 10:50	10/30/13 15:47	1
Iron	mg/L	0.40	EPA 200.7	0.10	0.020	10/30/13 10:50	10/30/13 15:47	1
Magnesium	mg/L	40	EPA 200.7	0.50	0.020	10/30/13 10:50	10/30/13 15:47	1
Manganese	mg/L	0.012	EPA 200.7	0.010	0.0010	10/30/13 10:50	10/30/13 15:47	1
Potassium	mg/L	23	EPA 200.7	0.050	0.010	10/30/13 10:50	10/30/13 15:47	1
Sodium	mg/L	40	EPA 200.7	0.50	0.13	10/30/13 10:50	10/30/13 15:47	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-C2**
Matrix	**Groundwater**
SAL Sample Number	**1311076-14**
Date/Time Collected	**10/23/13 09:10**
Collected by	**Sean Schmidt**
Date/Time Received	**10/23/13 14:55**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		5.23						
Temperature		24.9 °C						
Conductivity		369 umhos/cm						
Dissolved Oxygen		0.56 mg/L						
Inorganics								
Ammonia as N	mg/L	0.36	EPA 350.1	0.040	0.009		10/25/13 12:56	1
Chloride	mg/L	17	EPA 300.0	0.20	0.050		10/24/13 13:38	1
Nitrate (as N)	mg/L	0.10	EPA 300.0	0.04	0.01		10/24/13 13:38	1
Nitrate+Nitrite (N)	mg/L	0.10	EPA 300.0	0.08	0.02		10/24/13 13:38	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/24/13 13:38	1
Sulfate	mg/L	92	EPA 300.0	0.60	0.20		10/24/13 13:38	1
Total Alkalinity	mg/L	17	SM 2320B	8.0	2.0		10/25/13 10:35	1
Total Kjeldahl Nitrogen	mg/L	0.98	EPA 351.2	0.20	0.05	10/31/13 11:31	11/11/13 10:37	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-C3-08**
Matrix	**Groundwater**
SAL Sample Number	**1311076-15**
Date/Time Collected	**10/23/13 09:54**
Collected by	**Sean Schmidt**
Date/Time Received	**10/23/13 14:55**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		5.27						
Temperature		24.7 °C						
Conductivity		754 umhos/cm						
Dissolved Oxygen		0.81 mg/L						
Inorganics								
Ammonia as N	mg/L	0.038 I	EPA 350.1	0.040	0.009		10/25/13 12:58	1
Chloride	mg/L	28	EPA 300.0	0.20	0.050		10/24/13 13:47	1
Nitrate (as N)	mg/L	1.3	EPA 300.0	0.04	0.01		10/24/13 13:47	1
Nitrate+Nitrite (N)	mg/L	1.3	EPA 300.0	0.08	0.02		10/24/13 13:47	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/24/13 13:47	1
Phosphorous - Total as P	mg/L	0.24	SM 4500P-E	0.040	0.010	10/24/13 10:05	10/30/13 13:30	1
Sulfate	mg/L	230	EPA 300.0	6.0	2.0		10/29/13 00:25	10
Total Alkalinity	mg/L	22	SM 2320B	8.0	2.0		10/25/13 10:39	1
Total Kjeldahl Nitrogen	mg/L	0.95	EPA 351.2	0.20	0.05	10/31/13 11:31	11/11/13 10:39	1
Total Organic Carbon	mg/L	33	SM 5310B	1.0	0.060		10/24/13 10:38	1
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	32	SM 5310B	1.0	0.060		10/24/13 10:38	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-C3-15**
Matrix	**Groundwater**
SAL Sample Number	**1311076-16**
Date/Time Collected	**10/23/13 10:10**
Collected by	**Sean Schmidt**
Date/Time Received	**10/23/13 14:55**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		6.48						
Temperature		24.6 °C						
Conductivity		394 umhos/cm						
Dissolved Oxygen		0.56 mg/L						
Inorganics								
Ammonia as N	mg/L	0.25	EPA 350.1	0.040	0.009		10/25/13 13:00	1
Chloride	mg/L	11	EPA 300.0	0.20	0.050		10/24/13 13:56	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/24/13 13:56	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		10/24/13 13:56	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/24/13 13:56	1
Sulfate	mg/L	29	EPA 300.0	6.0	2.0		10/29/13 00:35	10
Total Alkalinity	mg/L	150	SM 2320B	8.0	2.0		10/25/13 10:45	1
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	10/31/13 11:31	11/11/13 10:40	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-C6-08**
Matrix	**Groundwater**
SAL Sample Number	**1311076-17**
Date/Time Collected	**10/24/13 08:40**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		3.97						
Temperature		23.6 °C						
Conductivity		523 umhos/cm						
Dissolved Oxygen		0.19 mg/L						
Inorganics								
Ammonia as N	mg/L	0.046	EPA 350.1	0.040	0.009		11/01/13 10:36	1
Chloride	mg/L	23	EPA 300.0	0.20	0.050		10/25/13 17:24	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 17:24	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		10/25/13 17:24	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 17:24	1
Sulfate	mg/L	180	EPA 300.0	6.0	2.0		10/29/13 15:09	10
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		10/29/13 14:53	1
Total Kjeldahl Nitrogen	mg/L	0.52	EPA 351.2	0.20	0.05	11/07/13 13:41	11/11/13 16:04	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-C6-15**
Matrix	**Groundwater**
SAL Sample Number	**1311076-18**
Date/Time Collected	**10/24/13 08:52**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		5.40						
Temperature		23.6 °C						
Conductivity		356 umhos/cm						
Dissolved Oxygen		0.32 mg/L						
Inorganics								
Ammonia as N	mg/L	1.5	EPA 350.1	0.040	0.009		11/01/13 10:38	1
Chloride	mg/L	22	EPA 300.0	0.20	0.050		10/25/13 17:33	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 17:33	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		10/25/13 17:33	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 17:33	1
Sulfate	mg/L	92	EPA 300.0	0.60	0.20		10/25/13 17:33	1
Total Alkalinity	mg/L	24	SM 2320B	8.0	2.0		10/29/13 14:57	1
Total Kjeldahl Nitrogen	mg/L	2.7	EPA 351.2	0.20	0.05	11/07/13 13:41	11/11/13 16:06	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-D3-08**
Matrix	**Groundwater**
SAL Sample Number	**1311076-19**
Date/Time Collected	**10/23/13 10:27**
Collected by	**Sean Schmidt**
Date/Time Received	**10/23/13 14:55**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		5.48						
Temperature		24.8 °C						
Conductivity		659 umhos/cm						
Dissolved Oxygen		2.40 mg/L						
Inorganics								
Ammonia as N	mg/L	0.015 I	EPA 350.1	0.040	0.009		10/25/13 13:02	1
Chloride	mg/L	26	EPA 300.0	0.20	0.050		10/24/13 14:06	1
Nitrate (as N)	mg/L	1.5	EPA 300.0	0.04	0.01		10/24/13 14:06	1
Nitrate+Nitrite (N)	mg/L	1.5	EPA 300.0	0.08	0.02		10/24/13 14:06	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/24/13 14:06	1
Phosphorous - Total as P	mg/L	0.15	SM 4500P-E	0.040	0.010	10/24/13 10:05	10/30/13 13:31	1
Sulfate	mg/L	240	EPA 300.0	6.0	2.0		10/29/13 00:44	10
Total Alkalinity	mg/L	12	SM 2320B	8.0	2.0		10/25/13 10:49	1
Total Kjeldahl Nitrogen	mg/L	1.0	EPA 351.2	0.20	0.05	10/31/13 11:31	11/11/13 10:49	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-D3-15**
Matrix	**Groundwater**
SAL Sample Number	**1311076-20**
Date/Time Collected	**10/23/13 10:39**
Collected by	**Sean Schmidt**
Date/Time Received	**10/23/13 14:55**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		6.37						
Temperature		24.9 °C						
Conductivity		315 umhos/cm						
Dissolved Oxygen		1.02 mg/L						
Inorganics								
Ammonia as N	mg/L	0.23	EPA 350.1	0.040	0.009		10/25/13 13:04	1
Chloride	mg/L	8.3	EPA 300.0	0.20	0.050		10/24/13 14:23	1
Nitrate (as N)	mg/L	0.02 I	EPA 300.0	0.04	0.01		10/24/13 14:23	1
Nitrate+Nitrite (N)	mg/L	0.10	EPA 300.0	0.08	0.02		10/24/13 14:23	1
Nitrite (as N)	mg/L	0.08	EPA 300.0	0.04	0.01		10/24/13 14:23	1
Phosphorous - Total as P	mg/L	0.80	SM 4500P-E	0.040	0.010	10/24/13 10:05	10/30/13 13:32	1
Sulfate	mg/L	7.4	EPA 300.0	0.60	0.20		10/24/13 14:23	1
Total Alkalinity	mg/L	120	SM 2320B	8.0	2.0		10/25/13 10:55	1
Total Kjeldahl Nitrogen	mg/L	0.83	EPA 351.2	0.20	0.05	10/31/13 11:31	11/11/13 10:50	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-D4-08**
Matrix	**Groundwater**
SAL Sample Number	**1311076-21**
Date/Time Collected	**10/23/13 12:01**
Collected by	**Sean Schmidt**
Date/Time Received	**10/23/13 14:55**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		4.55						
Temperature		25.0 °C						
Conductivity		949 umhos/cm						
Dissolved Oxygen		2.24 mg/L						
Inorganics								
Ammonia as N	mg/L	0.013 I	EPA 350.1	0.040	0.009		10/25/13 13:06	1
Chloride	mg/L	38	EPA 300.0	2.0	0.50		10/29/13 00:53	10
Nitrate (as N)	mg/L	0.93	EPA 300.0	0.04	0.01		10/24/13 14:32	1
Nitrate+Nitrite (N)	mg/L	0.93	EPA 300.0	0.08	0.02		10/24/13 14:32	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/24/13 14:32	1
Sulfate	mg/L	350	EPA 300.0	6.0	2.0		10/29/13 00:53	10
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		10/25/13 10:57	1
Total Kjeldahl Nitrogen	mg/L	0.90	EPA 351.2	0.20	0.05	10/31/13 11:31	11/11/13 10:52	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-D4-15**
Matrix	**Groundwater**
SAL Sample Number	**1311076-22**
Date/Time Collected	**10/23/13 12:15**
Collected by	**Sean Schmidt**
Date/Time Received	**10/23/13 14:55**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		6.47						
Temperature		24.7 °C						
Conductivity		567 umhos/cm						
Dissolved Oxygen		0.24 mg/L						
Inorganics								
Ammonia as N	mg/L	0.22	EPA 350.1	0.040	0.009		10/25/13 13:12	1
Chloride	mg/L	15	EPA 300.0	2.0	0.50		10/29/13 01:03	10
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/24/13 14:42	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		10/24/13 14:42	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/24/13 14:42	1
Sulfate	mg/L	110	EPA 300.0	6.0	2.0		10/29/13 01:03	10
Total Alkalinity	mg/L	130	SM 2320B	8.0	2.0		10/25/13 11:02	1
Total Kjeldahl Nitrogen	mg/L	0.82	EPA 351.2	0.20	0.05	10/31/13 11:31	11/11/13 10:54	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-E1**
Matrix	**Groundwater**
SAL Sample Number	**1311076-23**
Date/Time Collected	**10/23/13 08:40**
Collected by	**Sean Schmidt**
Date/Time Received	**10/23/13 14:55**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		5.01						
Temperature		25.4 °C						
Conductivity		555 umhos/cm						
Dissolved Oxygen		1.39 mg/L						
Inorganics								
Ammonia as N	mg/L	0.24	EPA 350.1	0.040	0.009		10/25/13 13:14	1
Chloride	mg/L	24	EPA 300.0	0.20	0.050		10/24/13 14:51	1
Nitrate (as N)	mg/L	0.14	EPA 300.0	0.04	0.01		10/24/13 14:51	1
Nitrate+Nitrite (N)	mg/L	0.14	EPA 300.0	0.08	0.02		10/24/13 14:51	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/24/13 14:51	1
Phosphorous - Total as P	mg/L	0.13	SM 4500P-E	0.040	0.010	10/24/13 10:05	10/30/13 13:33	1
Sulfate	mg/L	160	EPA 300.0	6.0	2.0		10/29/13 01:12	10
Total Alkalinity	mg/L	31	SM 2320B	8.0	2.0		10/25/13 11:06	1
Total Kjeldahl Nitrogen	mg/L	0.94	EPA 351.2	0.20	0.05	10/31/13 11:31	11/11/13 10:55	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-E2**
Matrix	**Groundwater**
SAL Sample Number	**1311076-24**
Date/Time Collected	**10/23/13 09:23**
Collected by	**Sean Schmidt**
Date/Time Received	**10/23/13 14:55**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		5.69						
Temperature		24.9 °C						
Conductivity		321 umhos/cm						
Dissolved Oxygen		3.91 mg/L						
Inorganics								
Ammonia as N	mg/L	0.28	EPA 350.1	0.040	0.009		10/25/13 13:16	1
Chloride	mg/L	16	EPA 300.0	0.20	0.050		10/24/13 15:01	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/24/13 15:01	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		10/24/13 15:01	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/24/13 15:01	1
Sulfate	mg/L	68	EPA 300.0	0.60	0.20		10/24/13 15:01	1
Total Alkalinity	mg/L	37	SM 2320B	8.0	2.0		10/25/13 11:16	1
Total Kjeldahl Nitrogen	mg/L	0.91	EPA 351.2	0.20	0.05	10/31/13 11:31	11/11/13 10:57	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-E3-08**
Matrix	**Groundwater**
SAL Sample Number	**1311076-25**
Date/Time Collected	**10/23/13 10:53**
Collected by	**Sean Schmidt**
Date/Time Received	**10/23/13 14:55**

Parameters	Units	Results *		Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data									
pH		5.74							
Temperature		25.2 °C							
Conductivity		1011 umhos/cm							
Dissolved Oxygen		0.97 mg/L							
Inorganics									
Ammonia as N	mg/L	0.26		EPA 350.1	0.040	0.009		10/25/13 13:18	1
Chemical Oxygen Demand	mg/L	80		EPA 410.4	25	10	10/28/13 12:00	10/28/13 17:00	1
Chloride	mg/L	40		EPA 300.0	2.0	0.50		10/29/13 01:22	10
Fluoride	mg/L	0.020	I	EPA 300.0	0.040	0.010		10/24/13 16:22	1
Nitrate (as N)	mg/L	7.0		EPA 300.0	0.04	0.01		10/24/13 16:22	1
Nitrate+Nitrite (N)	mg/L	7.0		EPA 300.0	0.08	0.02		10/24/13 16:22	1
Nitrite (as N)	mg/L	0.01	U	EPA 300.0	0.04	0.01		10/24/13 16:22	1
Orthophosphate as P	mg/L	0.010	U	EPA 300.0	0.040	0.010		10/24/13 16:22	1
Phosphorous - Total as P	mg/L	0.15		SM 4500P-E	0.040	0.010	10/24/13 10:05	10/30/13 13:34	1
Sulfate	mg/L	330		EPA 300.0	6.0	2.0		10/29/13 01:22	10
Total Alkalinity	mg/L	57		SM 2320B	8.0	2.0		10/25/13 11:21	1
Total Kjeldahl Nitrogen	mg/L	3.2		EPA 351.2	0.20	0.05	10/31/13 11:31	11/11/13 10:59	1
Total Organic Carbon	mg/L	50		SM 5310B	1.0	0.060		10/24/13 10:38	1
Inorganic, Dissolved									
Dissolved Organic Carbon	mg/L	47		SM 5310B	1.0	0.060		10/24/13 10:38	1
Metals									
Boron	mg/L	0.56		EPA 200.7	0.10	0.050	10/30/13 10:50	10/30/13 15:53	1
Calcium	mg/L	100		EPA 200.7	0.50	0.042	10/30/13 10:50	10/30/13 15:53	1
Iron	mg/L	1.5		EPA 200.7	0.10	0.020	10/30/13 10:50	10/30/13 15:53	1
Magnesium	mg/L	47		EPA 200.7	0.50	0.020	10/30/13 10:50	10/30/13 15:53	1
Manganese	mg/L	0.0024	I	EPA 200.7	0.010	0.0010	10/30/13 10:50	10/30/13 15:53	1
Potassium	mg/L	25		EPA 200.7	0.050	0.010	10/30/13 10:50	10/30/13 15:53	1
Sodium	mg/L	39		EPA 200.7	0.50	0.13	10/30/13 10:50	10/30/13 15:53	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-E3-15**
Matrix	**Groundwater**
SAL Sample Number	**1311076-26**
Date/Time Collected	**10/23/13 11:11**
Collected by	**Sean Schmidt**
Date/Time Received	**10/23/13 14:55**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		6.04						
Temperature		25.1 °C						
Conductivity		208 umhos/cm						
Dissolved Oxygen		0.31 mg/L						
Inorganics								
Ammonia as N	mg/L	0.20	EPA 350.1	0.040	0.009		10/25/13 13:19	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	10/28/13 12:00	10/28/13 17:00	1
Chloride	mg/L	9.5	EPA 300.0	0.20	0.050		10/24/13 16:32	1
Nitrate (as N)	mg/L	0.04	EPA 300.0	0.04	0.01		10/24/13 16:32	1
Nitrate+Nitrite (N)	mg/L	0.04 I	EPA 300.0	0.08	0.02		10/24/13 16:32	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/24/13 16:32	1
Phosphorous - Total as P	mg/L	5.4	SM 4500P-E	0.20	0.050	10/24/13 10:05	10/30/13 14:34	5
Sulfate	mg/L	21	EPA 300.0	0.60	0.20		10/24/13 16:32	1
Total Alkalinity	mg/L	57	SM 2320B	8.0	2.0		10/25/13 11:25	1
Total Kjeldahl Nitrogen	mg/L	2.0	EPA 351.2	0.20	0.05	10/31/13 11:31	11/11/13 11:00	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-E4-08**
Matrix	**Groundwater**
SAL Sample Number	**1311076-27**
Date/Time Collected	**10/23/13 12:30**
Collected by	**Sean Schmidt**
Date/Time Received	**10/23/13 14:55**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		4.73						
Temperature		25.2 °C						
Conductivity		849 umhos/cm						
Dissolved Oxygen		0.95 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		10/25/13 13:21	1
Chemical Oxygen Demand	mg/L	43	EPA 410.4	25	10	10/28/13 12:00	10/28/13 17:00	1
Chloride	mg/L	30	EPA 300.0	0.20	0.050		10/24/13 16:41	1
Nitrate (as N)	mg/L	1.5	EPA 300.0	0.04	0.01		10/24/13 16:41	1
Nitrate+Nitrite (N)	mg/L	1.5	EPA 300.0	0.08	0.02		10/24/13 16:41	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/24/13 16:41	1
Phosphorous - Total as P	mg/L	0.13	SM 4500P-E	0.040	0.010	10/24/13 10:05	10/30/13 13:37	1
Sulfate	mg/L	320	EPA 300.0	6.0	2.0		10/29/13 01:31	10
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		10/25/13 11:28	1
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	10/31/13 11:31	11/11/13 11:04	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-E4-15**
Matrix	**Groundwater**
SAL Sample Number	**1311076-28**
Date/Time Collected	**10/23/13 12:43**
Collected by	**Sean Schmidt**
Date/Time Received	**10/23/13 14:55**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		6.42						
Temperature		24.9 °C						
Conductivity		422 umhos/cm						
Dissolved Oxygen		0.16 mg/L						
Inorganics								
Ammonia as N	mg/L	0.26	EPA 350.1	0.040	0.009		10/25/13 13:23	1
Chloride	mg/L	12	EPA 300.0	0.20	0.050		10/24/13 16:51	1
Nitrate (as N)	mg/L	0.02 I	EPA 300.0	0.04	0.01		10/24/13 16:51	1
Nitrate+Nitrite (N)	mg/L	0.02 I	EPA 300.0	0.08	0.02		10/24/13 16:51	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/24/13 16:51	1
Sulfate	mg/L	42	EPA 300.0	0.60	0.20		10/24/13 16:51	1
Total Alkalinity	mg/L	130	SM 2320B	8.0	2.0		10/25/13 11:33	1
Total Kjeldahl Nitrogen	mg/L	0.82	EPA 351.2	0.20	0.05	10/31/13 11:31	11/11/13 11:05	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-E5-08**
Matrix	**Groundwater**
SAL Sample Number	**1311076-29**
Date/Time Collected	**10/24/13 08:14**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		4.31						
Temperature		24.0 °C						
Conductivity		637 umhos/cm						
Dissolved Oxygen		0.84 mg/L						
Inorganics								
Ammonia as N	mg/L	0.033 I	EPA 350.1	0.040	0.009		11/01/13 10:40	1
Chloride	mg/L	26	EPA 300.0	0.20	0.050		10/25/13 17:43	1
Nitrate (as N)	mg/L	0.03 I	EPA 300.0	0.04	0.01		10/25/13 17:43	1
Nitrate+Nitrite (N)	mg/L	0.03 I	EPA 300.0	0.08	0.02		10/25/13 17:43	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 17:43	1
Sulfate	mg/L	230	EPA 300.0	6.0	2.0		10/29/13 15:23	10
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		10/29/13 14:59	1
Total Kjeldahl Nitrogen	mg/L	0.82	EPA 351.2	0.20	0.05	11/07/13 13:41	11/11/13 16:07	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-E5-15**
Matrix	**Groundwater**
SAL Sample Number	**1311076-30**
Date/Time Collected	**10/24/13 08:27**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		6.19						
Temperature		24.1 °C						
Conductivity		545 umhos/cm						
Dissolved Oxygen		0.18 mg/L						
Inorganics								
Ammonia as N	mg/L	0.22	EPA 350.1	0.040	0.009		11/01/13 10:42	1
Chloride	mg/L	19	EPA 300.0	0.20	0.050		10/25/13 17:52	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 17:52	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		10/25/13 17:52	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 17:52	1
Sulfate	mg/L	160	EPA 300.0	6.0	2.0		10/29/13 15:36	10
Total Alkalinity	mg/L	90	SM 2320B	8.0	2.0		10/29/13 15:04	1
Total Kjeldahl Nitrogen	mg/L	0.64	EPA 351.2	0.20	0.05	11/07/13 13:41	11/11/13 16:09	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-E6-08**
Matrix	**Groundwater**
SAL Sample Number	**1311076-31**
Date/Time Collected	**10/24/13 08:59**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		4.17						
Temperature		23.7 °C						
Conductivity		743 umhos/cm						
Dissolved Oxygen		0.94 mg/L						
Inorganics								
Ammonia as N	mg/L	0.064	EPA 350.1	0.040	0.009		11/01/13 10:44	1
Chloride	mg/L	26	EPA 300.0	0.20	0.050		10/25/13 18:01	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 18:01	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		10/25/13 18:01	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 18:01	1
Sulfate	mg/L	270	EPA 300.0	6.0	2.0		10/29/13 15:50	10
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		10/29/13 15:15	1
Total Kjeldahl Nitrogen	mg/L	0.79	EPA 351.2	0.20	0.05	11/07/13 13:41	11/11/13 16:10	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-E6-15**
Matrix	**Groundwater**
SAL Sample Number	**1311076-32**
Date/Time Collected	**10/24/13 09:13**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		4.84						
Temperature		23.7 °C						
Conductivity		518 umhos/cm						
Dissolved Oxygen		0.28 mg/L						
Inorganics								
Ammonia as N	mg/L	0.93	EPA 350.1	0.040	0.009		11/01/13 10:46	1
Chloride	mg/L	29	EPA 300.0	0.20	0.050		10/25/13 19:07	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 19:07	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		10/25/13 19:07	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 19:07	1
Sulfate	mg/L	180	EPA 300.0	6.0	2.0		10/29/13 16:27	10
Total Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0		10/29/13 15:19	1
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	11/07/13 13:41	11/11/13 16:12	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-E7-08**
Matrix	**Groundwater**
SAL Sample Number	**1311076-33**
Date/Time Collected	**10/24/13 09:53**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *		Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data									
pH		4.48							
Temperature		23.9 °C							
Conductivity		702 umhos/cm							
Dissolved Oxygen		0.29 mg/L							
Inorganics									
Ammonia as N	mg/L	0.015	I	EPA 350.1	0.040	0.009		11/01/13 10:56	1
Chemical Oxygen Demand	mg/L	10	U	EPA 410.4	25	10	11/04/13 13:47	11/04/13 13:49	1
Chloride	mg/L	28		EPA 300.0	0.20	0.050		10/25/13 19:16	1
Fluoride	mg/L	0.15		EPA 300.0	0.040	0.010		10/25/13 19:16	1
Nitrate (as N)	mg/L	0.03	I	EPA 300.0	0.04	0.01		10/25/13 19:16	1
Nitrate+Nitrite (N)	mg/L	0.03	I	EPA 300.0	0.08	0.02		10/25/13 19:16	1
Nitrite (as N)	mg/L	0.01	U	EPA 300.0	0.04	0.01		10/25/13 19:16	1
Orthophosphate as P	mg/L	0.010	U	EPA 300.0	0.040	0.010		10/25/13 19:16	1
Phosphorous - Total as P	mg/L	0.077		SM 4500P-E	0.040	0.010	10/31/13 11:42	11/07/13 09:31	1
Sulfate	mg/L	250		EPA 300.0	6.0	2.0		10/29/13 16:37	10
Total Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0		10/29/13 15:26	1
Total Kjeldahl Nitrogen	mg/L	0.49		EPA 351.2	0.20	0.05	11/07/13 13:41	11/11/13 16:14	1
Total Organic Carbon	mg/L	24		SM 5310B	1.0	0.060		10/30/13 10:10	1
Inorganic, Dissolved									
Dissolved Organic Carbon	mg/L	22		SM 5310B	1.0	0.060		10/30/13 10:10	1
Metals									
Boron	mg/L	0.36		EPA 200.7	0.10	0.050	10/31/13 10:45	10/31/13 16:07	1
Calcium	mg/L	56		EPA 200.7	0.50	0.042	10/31/13 10:45	10/31/13 16:07	1
Iron	mg/L	0.69		EPA 200.7	0.10	0.020	10/31/13 10:45	10/31/13 16:07	1
Magnesium	mg/L	26		EPA 200.7	0.50	0.020	10/31/13 10:45	10/31/13 16:07	1
Manganese	mg/L	0.0094	I	EPA 200.7	0.010	0.0010	10/31/13 10:45	10/31/13 16:07	1
Potassium	mg/L	9.2		EPA 200.7	0.050	0.010	10/31/13 10:45	10/31/13 16:07	1
Sodium	mg/L	33		EPA 200.7	0.50	0.13	10/31/13 10:45	10/31/13 16:07	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-E7-15**
Matrix	**Groundwater**
SAL Sample Number	**1311076-34**
Date/Time Collected	**10/24/13 10:07**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		6.61						
Temperature		23.8 °C						
Conductivity		953 umhos/cm						
Dissolved Oxygen		0.30 mg/L						
Inorganics								
Ammonia as N	mg/L	0.33	EPA 350.1	0.040	0.009		11/01/13 10:58	1
Chemical Oxygen Demand	mg/L	24 I	EPA 410.4	25	10	11/04/13 13:47	11/04/13 13:49	1
Chloride	mg/L	18	EPA 300.0	0.20	0.050		10/25/13 19:26	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 19:26	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		10/25/13 19:26	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 19:26	1
Phosphorous - Total as P	mg/L	0.29	SM 4500P-E	0.040	0.010	10/31/13 11:42	11/07/13 09:33	1
Sulfate	mg/L	190	EPA 300.0	6.0	2.0		10/29/13 16:50	10
Total Alkalinity	mg/L	240	SM 2320B	8.0	2.0		10/29/13 15:33	1
Total Kjeldahl Nitrogen	mg/L	0.84	EPA 351.2	0.20	0.05	11/07/13 13:41	11/11/13 16:15	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-E7-15-DUP**
Matrix	**Groundwater**
SAL Sample Number	**1311076-35**
Date/Time Collected	**10/24/13 10:12**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		6.61						
Temperature		23.8 °C						
Conductivity		953 umhos/cm						
Dissolved Oxygen		0.30 mg/L						
Inorganics								
Ammonia as N	mg/L	0.32	EPA 350.1	0.040	0.009		11/01/13 11:00	1
Chemical Oxygen Demand	mg/L	43	EPA 410.4	25	10		11/05/13 09:30	1
Chloride	mg/L	17	EPA 300.0	0.20	0.050		10/25/13 19:35	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 19:35	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		10/25/13 19:35	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 19:35	1
Phosphorous - Total as P	mg/L	0.29	SM 4500P-E	0.040	0.010	10/31/13 11:42	11/07/13 09:34	1
Sulfate	mg/L	190	EPA 300.0	6.0	2.0		10/29/13 17:04	10
Total Alkalinity	mg/L	250	SM 2320B	8.0	2.0		10/29/13 15:40	1
Total Kjeldahl Nitrogen	mg/L	0.84	EPA 351.2	0.20	0.05	11/07/13 13:41	11/11/13 16:24	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name	**C-HS4 SE#4**
Sample Description	**PZ-F3-15**
Matrix	**Groundwater**
SAL Sample Number	**1311076-37**
Date/Time Collected	**10/23/13 11:39**
Collected by	**Sean Schmidt**
Date/Time Received	**10/23/13 14:55**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		6.31						
Temperature		25.1 °C						
Conductivity		281 umhos/cm						
Dissolved Oxygen		1.52 mg/L						
Inorganics								
Ammonia as N	mg/L	0.23	EPA 350.1	0.040	0.009		10/25/13 13:24	1
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	10/28/13 12:00	10/28/13 17:00	1
Chloride	mg/L	8.6	EPA 300.0	0.20	0.050		10/24/13 17:08	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/24/13 17:08	1
Nitrate+Nitrite (N)	mg/L	0.08	EPA 300.0	0.08	0.02		10/24/13 17:08	1
Nitrite (as N)	mg/L	0.08	EPA 300.0	0.04	0.01		10/24/13 17:08	1
Phosphorous - Total as P	mg/L	5.7	SM 4500P-E	0.20	0.050	10/24/13 10:05	10/30/13 14:35	5
Sulfate	mg/L	4.2	EPA 300.0	0.60	0.20		10/24/13 17:08	1
Total Alkalinity	mg/L	110	SM 2320B	8.0	2.0		10/29/13 15:46	1
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	10/31/13 11:31	11/11/13 11:06	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-F4-08**
Matrix	**Groundwater**
SAL Sample Number	**1311076-38**
Date/Time Collected	**10/23/13 12:57**
Collected by	**Sean Schmidt**
Date/Time Received	**10/23/13 14:55**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		4.78						
Temperature		25.4 °C						
Conductivity		728 umhos/cm						
Dissolved Oxygen		1.2 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		11/01/13 10:00	1
Chemical Oxygen Demand	mg/L	65	EPA 410.4	25	10		11/05/13 09:30	1
Chloride	mg/L	25	EPA 300.0	0.20	0.050		10/24/13 17:17	1
Fluoride	mg/L	0.14	EPA 300.0	0.040	0.010		10/24/13 17:17	1
Nitrate (as N)	mg/L	1.2	EPA 300.0	0.04	0.01		10/24/13 17:17	1
Nitrate+Nitrite (N)	mg/L	1.2	EPA 300.0	0.08	0.02		10/24/13 17:17	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/24/13 17:17	1
Orthophosphate as P	mg/L	0.027 I	EPA 300.0	0.040	0.010		10/24/13 17:17	1
Phosphorous - Total as P	mg/L	0.17	SM 4500P-E	0.040	0.010	10/24/13 14:24	10/30/13 14:04	1
Sulfate	mg/L	270	EPA 300.0	6.0	2.0		10/29/13 01:40	10
Total Alkalinity	mg/L	4.2 I	SM 2320B	8.0	2.0		10/29/13 15:49	1
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	10/29/13 08:41	10/31/13 13:33	1
Total Organic Carbon	mg/L	43	SM 5310B	1.0	0.060		10/24/13 10:38	1
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	42	SM 5310B	1.0	0.060		10/24/13 10:38	1
Metals								
Boron	mg/L	0.28	EPA 200.7	0.10	0.050	10/30/13 10:50	10/30/13 15:56	1
Calcium	mg/L	66	EPA 200.7	0.50	0.042	10/30/13 10:50	10/30/13 15:56	1
Iron	mg/L	0.31	EPA 200.7	0.10	0.020	10/30/13 10:50	10/30/13 15:56	1
Magnesium	mg/L	30	EPA 200.7	0.50	0.020	10/30/13 10:50	10/30/13 15:56	1
Manganese	mg/L	0.0039 I	EPA 200.7	0.010	0.0010	10/30/13 10:50	10/30/13 15:56	1
Potassium	mg/L	6.9	EPA 200.7	0.050	0.010	10/30/13 10:50	10/30/13 15:56	1
Sodium	mg/L	30	EPA 200.7	0.50	0.13	10/30/13 10:50	10/30/13 15:56	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-F4-15**
Matrix	**Groundwater**
SAL Sample Number	**1311076-39**
Date/Time Collected	**10/23/13 13:14**
Collected by	**Sean Schmidt**
Date/Time Received	**10/23/13 14:55**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		6.54						
Temperature		25.0 °C						
Conductivity		487 umhos/cm						
Dissolved Oxygen		0.07 mg/L						
Inorganics								
Ammonia as N	mg/L	0.22	EPA 350.1	0.040	0.009		11/01/13 10:02	1
Chemical Oxygen Demand	mg/L	28	EPA 410.4	25	10		11/05/13 09:30	1
Chloride	mg/L	15	EPA 300.0	0.20	0.050		10/24/13 17:27	1
Nitrate (as N)	mg/L	0.06	EPA 300.0	0.04	0.01		10/24/13 17:27	1
Nitrate+Nitrite (N)	mg/L	0.06 I	EPA 300.0	0.08	0.02		10/24/13 17:27	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/24/13 17:27	1
Phosphorous - Total as P	mg/L	0.19	SM 4500P-E	0.040	0.010	10/24/13 14:24	10/30/13 14:05	1
Sulfate	mg/L	62	EPA 300.0	0.60	0.20		10/24/13 17:27	1
Total Alkalinity	mg/L	150	SM 2320B	8.0	2.0		10/29/13 15:55	1
Total Kjeldahl Nitrogen	mg/L	0.76	EPA 351.2	0.20	0.05	10/29/13 08:41	10/31/13 13:35	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-G2-12.5**
Matrix	**Groundwater**
SAL Sample Number	**1311076-41**
Date/Time Collected	**10/23/13 09:40**
Collected by	**Sean Schmidt**
Date/Time Received	**10/23/13 14:55**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		4.29						
Temperature		25.6 °C						
Conductivity		884 umhos/cm						
Dissolved Oxygen		0.56 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		11/01/13 11:29	1
Chemical Oxygen Demand	mg/L	21 I	EPA 410.4	25	10		11/05/13 09:30	1
Chloride	mg/L	42	EPA 300.0	2.0	0.50		10/29/13 14:02	10
Nitrate (as N)	mg/L	1.0	EPA 300.0	0.04	0.01		10/24/13 17:36	1
Nitrate+Nitrite (N)	mg/L	1.0	EPA 300.0	0.08	0.02		10/24/13 17:36	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/24/13 17:36	1
Sulfate	mg/L	320	EPA 300.0	6.0	2.0		10/29/13 14:02	10
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		10/29/13 15:57	1
Total Kjeldahl Nitrogen	mg/L	0.59	EPA 351.2	0.20	0.05	10/29/13 08:41	10/31/13 13:36	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-H4-08**
Matrix	**Groundwater**
SAL Sample Number	**1311076-42**
Date/Time Collected	**10/23/13 13:29**
Collected by	**Sean Schmidt**
Date/Time Received	**10/23/13 14:55**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		4.52						
Temperature		25.3 °C						
Conductivity		840 umhos/cm						
Dissolved Oxygen		1.39 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		11/01/13 10:06	1
Chemical Oxygen Demand	mg/L	26	EPA 410.4	25	10		11/05/13 09:30	1
Chloride	mg/L	34	EPA 300.0	0.20	0.050		10/24/13 17:46	1
Fluoride	mg/L	0.077	EPA 300.0	0.040	0.010		10/24/13 17:46	1
Nitrate (as N)	mg/L	2.0	EPA 300.0	0.04	0.01		10/24/13 17:46	1
Nitrate+Nitrite (N)	mg/L	2.0	EPA 300.0	0.08	0.02		10/24/13 17:46	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/24/13 17:46	1
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		10/24/13 17:46	1
Phosphorous - Total as P	mg/L	0.022 I	SM 4500P-E	0.040	0.010	10/24/13 14:24	10/30/13 14:06	1
Sulfate	mg/L	310	EPA 300.0	6.0	2.0		10/29/13 14:15	10
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		10/29/13 15:59	1
Total Kjeldahl Nitrogen	mg/L	0.68	EPA 351.2	0.20	0.05	10/29/13 08:41	10/31/13 13:38	1
Total Organic Carbon	mg/L	19	SM 5310B	1.0	0.060		10/24/13 10:38	1
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	19	SM 5310B	1.0	0.060		10/24/13 10:38	1
Metals								
Boron	mg/L	0.43	EPA 200.7	0.10	0.050	10/30/13 10:50	10/30/13 16:06	1
Calcium	mg/L	75	EPA 200.7	0.50	0.042	10/30/13 10:50	10/30/13 16:06	1
Iron	mg/L	0.27	EPA 200.7	0.10	0.020	10/30/13 10:50	10/30/13 16:06	1
Magnesium	mg/L	38	EPA 200.7	0.50	0.020	10/30/13 10:50	10/30/13 16:06	1
Manganese	mg/L	0.0029 I	EPA 200.7	0.010	0.0010	10/30/13 10:50	10/30/13 16:06	1
Potassium	mg/L	10	EPA 200.7	0.050	0.010	10/30/13 10:50	10/30/13 16:06	1
Sodium	mg/L	36	EPA 200.7	0.50	0.13	10/30/13 10:50	10/30/13 16:06	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-H4-15**
Matrix	**Groundwater**
SAL Sample Number	**1311076-43**
Date/Time Collected	**10/23/13 13:48**
Collected by	**Sean Schmidt**
Date/Time Received	**10/23/13 14:55**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		6.52						
Temperature		25.0 °C						
Conductivity		637 umhos/cm						
Dissolved Oxygen		0.41 mg/L						
Inorganics								
Ammonia as N	mg/L	0.37	EPA 350.1	0.040	0.009		11/01/13 10:08	1
Chemical Oxygen Demand	mg/L	39	EPA 410.4	25	10		11/05/13 09:30	1
Chloride	mg/L	19	EPA 300.0	0.20	0.050		10/24/13 18:03	1
Nitrate (as N)	mg/L	0.22	EPA 300.0	0.04	0.01		10/24/13 18:03	1
Nitrate+Nitrite (N)	mg/L	0.22	EPA 300.0	0.08	0.02		10/24/13 18:03	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/24/13 18:03	1
Phosphorous - Total as P	mg/L	1.6	SM 4500P-E	0.040	0.010	10/24/13 14:24	10/30/13 14:07	1
Sulfate	mg/L	160	EPA 300.0	6.0	2.0		10/30/13 11:30	10
Total Alkalinity	mg/L	150	SM 2320B	8.0	2.0		10/29/13 16:05	1
Total Kjeldahl Nitrogen	mg/L	0.99	EPA 351.2	0.20	0.05	10/29/13 08:41	10/31/13 13:40	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-H5-11.5**
Matrix	**Groundwater**
SAL Sample Number	**1311076-44**
Date/Time Collected	**10/24/13 13:23**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		4.40						
Temperature		24.2 °C						
Conductivity		645 umhos/cm						
Dissolved Oxygen		2.35 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		11/01/13 11:02	1
Chemical Oxygen Demand	mg/L	35	EPA 410.4	25	10		11/05/13 09:30	1
Chloride	mg/L	32	EPA 300.0	0.20	0.050		10/25/13 19:45	1
Nitrate (as N)	mg/L	0.15	EPA 300.0	0.04	0.01		10/25/13 19:45	1
Nitrate+Nitrite (N)	mg/L	0.15	EPA 300.0	0.08	0.02		10/25/13 19:45	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 19:45	1
Phosphorous - Total as P	mg/L	0.052	SM 4500P-E	0.040	0.010	10/31/13 11:42	11/07/13 09:35	1
Sulfate	mg/L	220	EPA 300.0	6.0	2.0		10/29/13 17:17	10
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		11/05/13 13:33	1
Total Kjeldahl Nitrogen	mg/L	0.52	EPA 351.2	0.20	0.05	11/07/13 13:41	11/11/13 16:26	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-I6-08**
Matrix	**Groundwater**
SAL Sample Number	**1311076-45**
Date/Time Collected	**10/24/13 12:47**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		4.36						
Temperature		23.7 °C						
Conductivity		300 umhos/cm						
Dissolved Oxygen		2.31 mg/L						
Inorganics								
Ammonia as N	mg/L	0.070	EPA 350.1	0.040	0.009		11/01/13 13:34	1
Chemical Oxygen Demand	mg/L	37	EPA 410.4	25	10		11/05/13 09:30	1
Chloride	mg/L	19	EPA 300.0	0.20	0.050		10/25/13 19:54	1
Fluoride	mg/L	0.42	EPA 300.0	0.040	0.010		10/25/13 19:54	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 19:54	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		10/25/13 19:54	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 19:54	1
Orthophosphate as P	mg/L	0.24	EPA 300.0	0.040	0.010		10/25/13 19:54	1
Phosphorous - Total as P	mg/L	0.56	SM 4500P-E	0.040	0.010	10/26/13 08:44	10/31/13 10:35	1
Sulfate	mg/L	80	EPA 300.0	0.60	0.20		10/25/13 19:54	1
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		11/05/13 13:35	1
Total Kjeldahl Nitrogen	mg/L	0.66	EPA 351.2	0.20	0.05	11/07/13 13:41	11/11/13 16:27	1
Total Organic Carbon	mg/L	31	SM 5310B	1.0	0.060		10/30/13 10:10	1
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	31	SM 5310B	1.0	0.060		10/30/13 10:10	1
Metals								
Boron	mg/L	0.12	EPA 200.7	0.10	0.050	10/31/13 10:45	10/31/13 16:17	1
Calcium	mg/L	28	EPA 200.7	0.50	0.042	10/31/13 10:45	10/31/13 16:17	1
Iron	mg/L	1.8	EPA 200.7	0.10	0.020	10/31/13 10:45	10/31/13 16:17	1
Magnesium	mg/L	12	EPA 200.7	0.50	0.020	10/31/13 10:45	10/31/13 16:17	1
Manganese	mg/L	0.0077 I	EPA 200.7	0.010	0.0010	10/31/13 10:45	10/31/13 16:17	1
Potassium	mg/L	1.4	EPA 200.7	0.050	0.010	10/31/13 10:45	10/31/13 16:17	1
Sodium	mg/L	13	EPA 200.7	0.50	0.13	10/31/13 10:45	10/31/13 16:17	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-I6-15**
Matrix	**Groundwater**
SAL Sample Number	**1311076-46**
Date/Time Collected	**10/24/13 13:05**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		6.62						
Temperature		23.9 °C						
Conductivity		776 umhos/cm						
Dissolved Oxygen		0.10 mg/L						
Inorganics								
Ammonia as N	mg/L	0.30	EPA 350.1	0.040	0.009		11/01/13 11:06	1
Chloride	mg/L	18	EPA 300.0	0.20	0.050		10/25/13 20:03	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 20:03	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		10/25/13 20:03	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 20:03	1
Sulfate	mg/L	110	EPA 300.0	6.0	2.0		10/29/13 17:31	10
Total Alkalinity	mg/L	160	SM 2320B	8.0	2.0		11/05/13 13:41	1
Total Kjeldahl Nitrogen	mg/L	0.81	EPA 351.2	0.20	0.05	11/07/13 13:41	11/11/13 16:29	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-I6-15-DUP**
Matrix	**Groundwater**
SAL Sample Number	**1311076-47**
Date/Time Collected	**10/24/13 13:10**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		6.62						
Temperature		23.9 °C						
Conductivity		776 umhos/cm						
Dissolved Oxygen		0.10 mg/L						
Inorganics								
Ammonia as N	mg/L	0.29	EPA 350.1	0.040	0.009		11/01/13 11:08	1
Chloride	mg/L	18	EPA 300.0	0.20	0.050		10/25/13 20:13	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 20:13	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		10/25/13 20:13	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 20:13	1
Sulfate	mg/L	110	EPA 300.0	6.0	2.0		10/29/13 17:44	10
Total Alkalinity	mg/L	180	SM 2320B	8.0	2.0		11/01/13 09:43	1
Total Kjeldahl Nitrogen	mg/L	0.90	EPA 351.2	0.20	0.05	11/07/13 13:41	11/11/13 16:31	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-I10-08**
Matrix	**Groundwater**
SAL Sample Number	**1311076-48**
Date/Time Collected	**10/24/13 10:23**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		4.87						
Temperature		23.8 °C						
Conductivity		353 umhos/cm						
Dissolved Oxygen		0.46 mg/L						
Inorganics								
Ammonia as N	mg/L	0.17	EPA 350.1	0.040	0.009		11/01/13 11:10	1
Chemical Oxygen Demand	mg/L	21 I	EPA 410.4	25	10		11/05/13 09:30	1
Chloride	mg/L	27	EPA 300.0	0.20	0.050		10/25/13 20:22	1
Nitrate (as N)	mg/L	0.02 I	EPA 300.0	0.04	0.01		10/25/13 20:22	1
Nitrate+Nitrite (N)	mg/L	0.02 I	EPA 300.0	0.08	0.02		10/25/13 20:22	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 20:22	1
Phosphorous - Total as P	mg/L	0.048	SM 4500P-E	0.040	0.010	10/26/13 08:44	10/31/13 10:36	1
Sulfate	mg/L	95	EPA 300.0	0.60	0.20		10/25/13 20:22	1
Total Alkalinity	mg/L	6.4 I	SM 2320B	8.0	2.0		11/01/13 09:46	1
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	11/07/13 13:41	11/11/13 16:32	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-I10-15**
Matrix	**Groundwater**
SAL Sample Number	**1311076-49**
Date/Time Collected	**10/24/13 10:35**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		5.87						
Temperature		23.8 °C						
Conductivity		501 umhos/cm						
Dissolved Oxygen		0.13 mg/L						
Inorganics								
Ammonia as N	mg/L	0.40	EPA 350.1	0.040	0.009		11/01/13 11:16	1
Chloride	mg/L	24	EPA 300.0	0.20	0.050		10/25/13 20:32	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 20:32	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		10/25/13 20:32	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 20:32	1
Sulfate	mg/L	140	EPA 300.0	6.0	2.0		10/29/13 17:58	10
Total Alkalinity	mg/L	50	SM 2320B	8.0	2.0		11/01/13 09:51	1
Total Kjeldahl Nitrogen	mg/L	0.95	EPA 351.2	0.20	0.05	11/07/13 13:41	11/11/13 16:34	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-J4-15**
Matrix	**Groundwater**
SAL Sample Number	**1311076-51**
Date/Time Collected	**10/25/13 09:52**
Collected by	**Sean Schmidt**
Date/Time Received	**10/25/13 12:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		6.12						
Temperature		24.1 °C						
Conductivity		437 umhos/cm						
Dissolved Oxygen		0.69 mg/L						
Inorganics								
Ammonia as N	mg/L	0.80	EPA 350.1	0.040	0.009		11/05/13 15:11	1
Chemical Oxygen Demand	mg/L	19 I	EPA 410.4	25	10	11/07/13 10:54	11/07/13 16:46	1
Chloride	mg/L	29	EPA 300.0	0.20	0.050		10/26/13 02:09	1
Nitrate (as N)	mg/L	0.72	EPA 300.0	0.04	0.01		10/26/13 02:09	1
Nitrate+Nitrite (N)	mg/L	0.72	EPA 300.0	0.08	0.02		10/26/13 02:09	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/26/13 02:09	1
Phosphorous - Total as P	mg/L	0.33	SM 4500P-E	0.040	0.010	11/06/13 13:13	11/07/13 15:33	1
Sulfate	mg/L	110	EPA 300.0	6.0	2.0		10/29/13 21:10	10
Total Alkalinity	mg/L	51	SM 2320B	8.0	2.0		11/05/13 13:45	1
Total Kjeldahl Nitrogen	mg/L	2.4	EPA 351.2	0.20	0.05	11/08/13 10:50	11/12/13 15:01	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-J7-08**
Matrix	**Groundwater**
SAL Sample Number	**1311076-52**
Date/Time Collected	**10/24/13 12:10**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *		Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data									
Inorganics									
Ammonia as N	mg/L	0.029	I	EPA 350.1	0.040	0.009		11/01/13 13:36	1
Chemical Oxygen Demand	mg/L	28		EPA 410.4	25	10		11/05/13 09:30	1
Chloride	mg/L	18		EPA 300.0	0.20	0.050		10/25/13 21:09	1
Fluoride	mg/L	0.098		EPA 300.0	0.040	0.010		10/25/13 21:09	1
Nitrate (as N)	mg/L	0.06		EPA 300.0	0.04	0.01		10/25/13 21:09	1
Nitrate+Nitrite (N)	mg/L	0.06	I	EPA 300.0	0.08	0.02		10/25/13 21:09	1
Nitrite (as N)	mg/L	0.01	U	EPA 300.0	0.04	0.01		10/25/13 21:09	1
Orthophosphate as P	mg/L	0.010	U	EPA 300.0	0.040	0.010		10/25/13 21:09	1
Phosphorous - Total as P	mg/L	0.050		SM 4500P-E	0.040	0.010	10/26/13 08:44	10/31/13 10:37	1
Sulfate	mg/L	62		EPA 300.0	0.60	0.20		10/25/13 21:09	1
Total Alkalinity	mg/L	2.7	I	SM 2320B	8.0	2.0		11/01/13 09:54	1
Total Kjeldahl Nitrogen	mg/L	0.55		EPA 351.2	0.20	0.05	11/07/13 13:41	11/11/13 16:35	1
Total Organic Carbon	mg/L	28		SM 5310B	1.0	0.060		10/30/13 10:10	1
Inorganic, Dissolved									
Dissolved Organic Carbon	mg/L	27		SM 5310B	1.0	0.060		10/30/13 10:10	1
Metals									
Boron	mg/L	0.096	I	EPA 200.7	0.10	0.050	10/31/13 10:45	10/31/13 16:21	1
Calcium	mg/L	22		EPA 200.7	0.50	0.042	10/31/13 10:45	10/31/13 16:21	1
Iron	mg/L	0.54		EPA 200.7	0.10	0.020	10/31/13 10:45	10/31/13 16:21	1
Magnesium	mg/L	8.8		EPA 200.7	0.50	0.020	10/31/13 10:45	10/31/13 16:21	1
Manganese	mg/L	0.0019	I	EPA 200.7	0.010	0.0010	10/31/13 10:45	10/31/13 16:21	1
Potassium	mg/L	0.84		EPA 200.7	0.050	0.010	10/31/13 10:45	11/01/13 10:49	1
Sodium	mg/L	9.3		EPA 200.7	0.50	0.13	10/31/13 10:45	10/31/13 16:21	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-J7-15**
Matrix	**Groundwater**
SAL Sample Number	**1311076-53**
Date/Time Collected	**10/24/13 12:25**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *		Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data									
pH		5.03							
Temperature		23.9 °C							
Conductivity		437 umhos/cm							
Dissolved Oxygen		0.16 mg/L							
Inorganics									
Ammonia as N	mg/L	0.26		EPA 350.1	0.040	0.009		11/05/13 15:13	1
Chemical Oxygen Demand	mg/L	63		EPA 410.4	25	10		11/05/13 09:30	1
Chloride	mg/L	32		EPA 300.0	0.20	0.050		10/25/13 21:18	1
Fluoride	mg/L	0.018	I	EPA 300.0	0.040	0.010		10/25/13 21:18	1
Nitrate (as N)	mg/L	0.40		EPA 300.0	0.04	0.01		10/25/13 21:18	1
Nitrate+Nitrite (N)	mg/L	0.40		EPA 300.0	0.08	0.02		10/25/13 21:18	1
Nitrite (as N)	mg/L	0.01	U	EPA 300.0	0.04	0.01		10/25/13 21:18	1
Orthophosphate as P	mg/L	0.010	U	EPA 300.0	0.040	0.010		10/25/13 21:18	1
Phosphorous - Total as P	mg/L	0.27		SM 4500P-E	0.040	0.010	10/26/13 08:44	10/31/13 11:31	1
Sulfate	mg/L	120		EPA 300.0	6.0	2.0		10/29/13 18:11	10
Total Alkalinity	mg/L	9.1		SM 2320B	8.0	2.0		11/01/13 09:58	1
Total Kjeldahl Nitrogen	mg/L	3.5		EPA 351.2	0.20	0.05	11/07/13 13:37	11/12/13 10:48	1
Total Organic Carbon	mg/L	34		SM 5310B	1.0	0.060		10/30/13 10:10	1
Inorganic, Dissolved									
Dissolved Organic Carbon	mg/L	33		SM 5310B	1.0	0.060		10/30/13 10:10	1
Metals									
Boron	mg/L	0.15		EPA 200.7	0.10	0.050	10/31/13 10:45	10/31/13 16:24	1
Calcium	mg/L	46		EPA 200.7	0.50	0.042	10/31/13 10:45	10/31/13 16:24	1
Iron	mg/L	0.34		EPA 200.7	0.10	0.020	10/31/13 10:45	10/31/13 16:24	1
Magnesium	mg/L	13		EPA 200.7	0.50	0.020	10/31/13 10:45	10/31/13 16:24	1
Manganese	mg/L	0.0029	I	EPA 200.7	0.010	0.0010	10/31/13 10:45	10/31/13 16:24	1
Potassium	mg/L	1.5		EPA 200.7	0.050	0.010	10/31/13 10:45	10/31/13 16:24	1
Sodium	mg/L	11		EPA 200.7	0.50	0.13	10/31/13 10:45	10/31/13 16:24	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-J7-15-DUP**
Matrix	**Groundwater**
SAL Sample Number	**1311076-54**
Date/Time Collected	**10/24/13 12:30**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *		Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data									
pH		5.03							
Temperature		23.9 °C							
Conductivity		437 umhos/cm							
Dissolved Oxygen		0.16 mg/L							
Inorganics									
Ammonia as N	mg/L	0.25		EPA 350.1	0.040	0.009		11/05/13 15:15	1
Chemical Oxygen Demand	mg/L	10	U	EPA 410.4	25	10	11/04/13 13:47	11/04/13 13:49	1
Chloride	mg/L	33		EPA 300.0	0.20	0.050		10/25/13 21:28	1
Fluoride	mg/L	0.014	I	EPA 300.0	0.040	0.010		10/25/13 21:28	1
Nitrate (as N)	mg/L	0.40		EPA 300.0	0.04	0.01		10/25/13 21:28	1
Nitrate+Nitrite (N)	mg/L	0.40		EPA 300.0	0.08	0.02		10/25/13 21:28	1
Nitrite (as N)	mg/L	0.01	U	EPA 300.0	0.04	0.01		10/25/13 21:28	1
Orthophosphate as P	mg/L	0.010	U	EPA 300.0	0.040	0.010		10/25/13 21:28	1
Phosphorous - Total as P	mg/L	0.26		SM 4500P-E	0.040	0.010	10/26/13 08:44	10/31/13 10:40	1
Sulfate	mg/L	120		EPA 300.0	6.0	2.0		10/30/13 11:44	10
Total Alkalinity	mg/L	8.3		SM 2320B	8.0	2.0		11/01/13 10:01	1
Total Kjeldahl Nitrogen	mg/L	3.5		EPA 351.2	0.20	0.05	11/07/13 13:37	11/12/13 10:49	1
Total Organic Carbon	mg/L	34		SM 5310B	1.0	0.060		10/30/13 10:10	1
Inorganic, Dissolved									
Dissolved Organic Carbon	mg/L	33		SM 5310B	1.0	0.060		10/30/13 10:10	1
Metals									
Boron	mg/L	0.16		EPA 200.7	0.10	0.050	10/31/13 10:45	10/31/13 16:28	1
Calcium	mg/L	46		EPA 200.7	0.50	0.042	10/31/13 10:45	10/31/13 16:28	1
Iron	mg/L	0.26		EPA 200.7	0.10	0.020	10/31/13 10:45	10/31/13 16:28	1
Magnesium	mg/L	13		EPA 200.7	0.50	0.020	10/31/13 10:45	10/31/13 16:28	1
Manganese	mg/L	0.0032	I	EPA 200.7	0.010	0.0010	10/31/13 10:45	10/31/13 16:28	1
Potassium	mg/L	1.6		EPA 200.7	0.050	0.010	10/31/13 10:45	10/31/13 16:28	1
Sodium	mg/L	11		EPA 200.7	0.50	0.13	10/31/13 10:45	10/31/13 16:28	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-N4-08-DUP**
Matrix	**Groundwater**
SAL Sample Number	**1311076-56**
Date/Time Collected	**10/25/13 09:39**
Collected by	**Sean Schmidt**
Date/Time Received	**10/25/13 12:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
Inorganics								
Ammonia as N	mg/L	0.50	EPA 350.1	0.040	0.009		11/05/13 15:17	1
Chemical Oxygen Demand	mg/L	91	EPA 410.4	25	10	11/07/13 10:54	11/07/13 16:46	1
Chloride	mg/L	13	EPA 300.0	0.20	0.050		10/26/13 02:19	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/26/13 02:19	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		10/26/13 02:19	1
Nitrite (as N)	mg/L	0.01 I	EPA 300.0	0.04	0.01		10/26/13 02:19	1
Phosphorous - Total as P	mg/L	7.3	SM 4500P-E	0.20	0.050	11/06/13 13:13	11/07/13 17:08	5
Sulfate	mg/L	64	EPA 300.0	0.60	0.20		10/26/13 02:19	1
Total Alkalinity	mg/L	110	SM 2320B	8.0	2.0		11/05/13 13:50	1
Total Kjeldahl Nitrogen	mg/L	2.6	EPA 351.2	0.20	0.05	11/08/13 10:50	11/12/13 15:02	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-N4-15**
Matrix	**Groundwater**
SAL Sample Number	**1311076-57**
Date/Time Collected	**10/25/13 09:34**
Collected by	**Sean Schmidt**
Date/Time Received	**10/25/13 12:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		6.31						
Temperature		22.3 °C						
Conductivity		386 umhos/cm						
Dissolved Oxygen		0.53 mg/L						
Inorganics								
Ammonia as N	mg/L	0.52	EPA 350.1	0.040	0.009		11/05/13 15:27	1
Chloride	mg/L	13	EPA 300.0	0.20	0.050		10/25/13 10:37	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 10:37	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		10/25/13 10:37	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 10:37	1
Sulfate	mg/L	62	EPA 300.0	0.60	0.20		10/25/13 10:37	1
Total Alkalinity	mg/L	100	SM 2320B	8.0	2.0		11/05/13 13:56	1
Total Kjeldahl Nitrogen	mg/L	2.8	EPA 351.2	0.20	0.05	11/07/13 13:43	11/12/13 13:44	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-N7-08**
Matrix	**Groundwater**
SAL Sample Number	**1311076-58**
Date/Time Collected	**10/24/13 11:41**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		5.63						
Temperature		23.4 °C						
Conductivity		390 umhos/cm						
Dissolved Oxygen		1.98 mg/L						
Inorganics								
Ammonia as N	mg/L	0.31	EPA 350.1	0.040	0.009		11/05/13 15:29	1
Chloride	mg/L	25	EPA 300.0	0.20	0.050		10/25/13 21:37	1
Nitrate (as N)	mg/L	0.07	EPA 300.0	0.04	0.01		10/25/13 21:37	1
Nitrate+Nitrite (N)	mg/L	0.07 I	EPA 300.0	0.08	0.02		10/25/13 21:37	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 21:37	1
Sulfate	mg/L	78	EPA 300.0	0.60	0.20		10/25/13 21:37	1
Total Alkalinity	mg/L	37	SM 2320B	8.0	2.0		11/01/13 10:06	1
Total Kjeldahl Nitrogen	mg/L	0.98	EPA 351.2	0.20	0.05	11/07/13 13:37	11/12/13 10:51	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-N7-15**
Matrix	**Groundwater**
SAL Sample Number	**1311076-59**
Date/Time Collected	**10/24/13 11:54**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		5.42						
Temperature		23.8 °C						
Conductivity		478 umhos/cm						
Dissolved Oxygen		0.90 mg/L						
Inorganics								
Ammonia as N	mg/L	0.34	EPA 350.1	0.040	0.009		11/05/13 15:31	1
Chloride	mg/L	24	EPA 300.0	0.20	0.050		10/25/13 21:47	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 21:47	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		10/25/13 21:47	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 21:47	1
Sulfate	mg/L	150	EPA 300.0	6.0	2.0		10/29/13 20:00	10
Total Alkalinity	mg/L	18	SM 2320B	8.0	2.0		11/01/13 10:10	1
Total Kjeldahl Nitrogen	mg/L	1.0	EPA 351.2	0.20	0.05	11/07/13 13:37	11/12/13 10:53	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-N7-15-DUP**
Matrix	**Groundwater**
SAL Sample Number	**1311076-60**
Date/Time Collected	**10/24/13 11:59**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		5.42						
Temperature		23.8 °C						
Conductivity		478 umhos/cm						
Dissolved Oxygen		0.90 mg/L						
Inorganics								
Ammonia as N	mg/L	0.34	EPA 350.1	0.040	0.009		11/05/13 15:33	1
Chloride	mg/L	24	EPA 300.0	0.20	0.050		10/25/13 21:56	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 21:56	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		10/25/13 21:56	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 21:56	1
Sulfate	mg/L	150	EPA 300.0	6.0	2.0		10/29/13 20:13	10
Total Alkalinity	mg/L	18	SM 2320B	8.0	2.0		11/01/13 10:14	1
Total Kjeldahl Nitrogen	mg/L	1.0	EPA 351.2	0.20	0.05	11/07/13 13:37	11/12/13 10:54	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-N10-08**
Matrix	**Groundwater**
SAL Sample Number	**1311076-61**
Date/Time Collected	**10/24/13 10:58**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *		Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data									
pH		5.52							
Temperature		23.7 °C							
Conductivity		289 umhos/cm							
Dissolved Oxygen		1.03 mg/L							
Inorganics									
Ammonia as N	mg/L	0.077		EPA 350.1	0.040	0.009		11/05/13 15:35	1
Chemical Oxygen Demand	mg/L	48		EPA 410.4	25	10		11/05/13 09:30	1
Chloride	mg/L	20		EPA 300.0	0.20	0.050		10/25/13 22:05	1
Fluoride	mg/L	0.13		EPA 300.0	0.040	0.010		10/25/13 22:05	1
Nitrate (as N)	mg/L	0.01	U	EPA 300.0	0.04	0.01		10/25/13 22:05	1
Nitrate+Nitrite (N)	mg/L	0.02	U	EPA 300.0	0.08	0.02		10/25/13 22:05	1
Nitrite (as N)	mg/L	0.01	U	EPA 300.0	0.04	0.01		10/25/13 22:05	1
Orthophosphate as P	mg/L	0.026	I	EPA 300.0	0.040	0.010		10/25/13 22:05	1
Phosphorous - Total as P	mg/L	0.14		SM 4500P-E	0.040	0.010	10/26/13 08:44	10/31/13 10:41	1
Sulfate	mg/L	48		EPA 300.0	0.60	0.20		10/25/13 22:05	1
Total Alkalinity	mg/L	26		SM 2320B	8.0	2.0		11/01/13 10:18	1
Total Kjeldahl Nitrogen	mg/L	0.80		EPA 351.2	0.20	0.05	11/07/13 13:37	11/12/13 10:56	1
Total Organic Carbon	mg/L	40		SM 5310B	1.0	0.060		10/30/13 10:10	1
Inorganic, Dissolved									
Dissolved Organic Carbon	mg/L	40		SM 5310B	1.0	0.060		10/30/13 10:10	1
Metals									
Boron	mg/L	0.050	I	EPA 200.7	0.10	0.050	10/31/13 10:45	10/31/13 16:32	1
Calcium	mg/L	25		EPA 200.7	0.50	0.042	10/31/13 10:45	10/31/13 16:32	1
Iron	mg/L	0.33		EPA 200.7	0.10	0.020	10/31/13 10:45	10/31/13 16:32	1
Magnesium	mg/L	6.5		EPA 200.7	0.50	0.020	10/31/13 10:45	10/31/13 16:32	1
Manganese	mg/L	0.0098	I	EPA 200.7	0.010	0.0010	10/31/13 10:45	10/31/13 16:32	1
Potassium	mg/L	0.59		EPA 200.7	0.050	0.010	10/31/13 10:45	11/01/13 10:53	1
Sodium	mg/L	11		EPA 200.7	0.50	0.13	10/31/13 10:45	10/31/13 16:32	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-N10-15**
Matrix	**Groundwater**
SAL Sample Number	**1311076-62**
Date/Time Collected	**10/24/13 11:12**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data								
pH		6.55						
Temperature		23.6 °C						
Conductivity		568 umhos/cm						
Dissolved Oxygen		0.11 mg/L						
Inorganics								
Ammonia as N	mg/L	0.34	EPA 350.1	0.040	0.009		11/05/13 15:37	1
Chloride	mg/L	16	EPA 300.0	0.20	0.050		10/25/13 22:15	1
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 22:15	1
Nitrate+Nitrite (N)	mg/L	0.02 U	EPA 300.0	0.08	0.02		10/25/13 22:15	1
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		10/25/13 22:15	1
Sulfate	mg/L	76	EPA 300.0	0.60	0.20		10/25/13 22:15	1
Total Alkalinity	mg/L	150	SM 2320B	8.0	2.0		11/01/13 10:29	1
Total Kjeldahl Nitrogen	mg/L	0.89	EPA 351.2	0.20	0.05	11/07/13 13:37	11/12/13 10:58	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-S10-08**
Matrix	**Groundwater**
SAL Sample Number	**1311076-63**
Date/Time Collected	**10/24/13 11:25**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *		Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data									
pH		4.96							
Temperature		23.9 °C							
Conductivity		242 umhos/cm							
Dissolved Oxygen		0.16 mg/L							
Inorganics									
Ammonia as N	mg/L	0.41		EPA 350.1	0.040	0.009		11/05/13 15:39	1
Chemical Oxygen Demand	mg/L	21	I	EPA 410.4	25	10		11/05/13 09:30	1
Chloride	mg/L	17		EPA 300.0	0.20	0.050		10/25/13 22:24	1
Nitrate (as N)	mg/L	0.01	U	EPA 300.0	0.04	0.01		10/25/13 22:24	1
Nitrate+Nitrite (N)	mg/L	0.02	U	EPA 300.0	0.08	0.02		10/25/13 22:24	1
Nitrite (as N)	mg/L	0.01	U	EPA 300.0	0.04	0.01		10/25/13 22:24	1
Phosphorous - Total as P	mg/L	0.023	I	SM 4500P-E	0.040	0.010	10/26/13 08:44	10/31/13 12:26	1
Sulfate	mg/L	59		EPA 300.0	0.60	0.20		10/25/13 22:24	1
Total Alkalinity	mg/L	3.3	I	SM 2320B	8.0	2.0		11/01/13 10:32	1
Total Kjeldahl Nitrogen	mg/L	0.99		EPA 351.2	0.20	0.05	11/07/13 13:37	11/12/13 11:06	1

Florida Certification Number: E84129
NELAP Accredited

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**PZ-S10-08-DUP**
Matrix	**Groundwater**
SAL Sample Number	**1311076-64**
Date/Time Collected	**10/24/13 11:30**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *		Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data									
pH		4.96							
Temperature		23.9 °C							
Conductivity		242 umhos/cm							
Dissolved Oxygen		0.16 mg/L							
Inorganics									
Ammonia as N	mg/L	0.40		EPA 350.1	0.040	0.009		11/05/13 15:41	1
Chemical Oxygen Demand	mg/L	19	I	EPA 410.4	25	10		11/05/13 09:30	1
Chloride	mg/L	17		EPA 300.0	0.20	0.050		10/25/13 22:34	1
Nitrate (as N)	mg/L	0.01	U	EPA 300.0	0.04	0.01		10/25/13 22:34	1
Nitrate+Nitrite (N)	mg/L	0.02	U	EPA 300.0	0.08	0.02		10/25/13 22:34	1
Nitrite (as N)	mg/L	0.01	U	EPA 300.0	0.04	0.01		10/25/13 22:34	1
Phosphorous - Total as P	mg/L	0.025	I	SM 4500P-E	0.040	0.010	10/26/13 08:44	10/31/13 12:27	1
Sulfate	mg/L	60		EPA 300.0	0.60	0.20		10/25/13 22:34	1
Total Alkalinity	mg/L	3.1	I	SM 2320B	8.0	2.0		11/01/13 10:36	1
Total Kjeldahl Nitrogen	mg/L	1.0		EPA 351.2	0.20	0.05	11/07/13 13:37	11/12/13 11:08	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**FB-DI**
Matrix	**Reagent Water**
SAL Sample Number	**1311076-72**
Date/Time Collected	**10/24/13 13:35**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *		Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data									
pH		5.73							
Temperature		20.1 °C							
Conductivity		1.25 umhos/cm							
Dissolved Oxygen		8.37 mg/L							
Inorganics									
Ammonia as N	mg/L	0.009	U	EPA 350.1	0.040	0.009		11/05/13 15:47	1
Chemical Oxygen Demand	mg/L	10	U	EPA 410.4	25	10		11/05/13 09:30	1
Chloride	mg/L	0.050	U	EPA 300.0	0.20	0.050		10/25/13 23:39	1
Fluoride	mg/L	0.010	U	EPA 300.0	0.040	0.010		10/25/13 23:39	1
Nitrate (as N)	mg/L	0.01	U	EPA 300.0	0.04	0.01		10/25/13 23:39	1
Nitrate+Nitrite (N)	mg/L	0.02	I	EPA 300.0	0.08	0.02		10/25/13 23:39	1
Nitrite (as N)	mg/L	0.02	I	EPA 300.0	0.04	0.01		10/25/13 23:39	1
Orthophosphate as P	mg/L	0.024	I	EPA 300.0	0.040	0.010		10/25/13 23:39	1
Phosphorous - Total as P	mg/L	0.010	U	SM 4500P-E	0.040	0.010	10/26/13 08:44	10/31/13 13:27	1
Sulfate	mg/L	0.20	U	EPA 300.0	0.60	0.20		10/25/13 23:39	1
Total Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0		11/01/13 10:39	1
Total Kjeldahl Nitrogen	mg/L	0.05	U	EPA 351.2	0.20	0.05	11/07/13 13:37	11/12/13 11:56	1
Total Organic Carbon	mg/L	0.060	U	SM 5310B	1.0	0.060		10/30/13 10:10	1
Inorganic, Dissolved									
Dissolved Organic Carbon	mg/L	0.060	U	SM 5310B	1.0	0.060		10/30/13 10:10	1
Metals									
Boron	mg/L	0.050	U	EPA 200.7	0.10	0.050	10/28/13 13:56	10/29/13 12:11	1
Calcium	mg/L	0.042	U	EPA 200.7	0.50	0.042	10/28/13 13:56	10/29/13 12:11	1
Iron	mg/L	0.020	U	EPA 200.7	0.10	0.020	10/28/13 13:56	10/29/13 12:11	1
Magnesium	mg/L	0.022	I	EPA 200.7	0.50	0.020	10/28/13 13:56	10/29/13 12:11	1
Manganese	mg/L	0.0010	U	EPA 200.7	0.010	0.0010	10/28/13 13:56	10/29/13 12:11	1
Potassium	mg/L	0.27	I	EPA 200.7	0.50	0.10	10/28/13 13:56	10/29/13 12:11	1
Sodium	mg/L	0.51		EPA 200.7	0.50	0.13	10/28/13 13:56	10/29/13 12:11	1

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

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

November 13, 2013
Work Order: 1311076

Laboratory Report

Project Name **C-HS4 SE#4**

Sample Description	**EB**
Matrix	**Reagent Water**
SAL Sample Number	**1311076-73**
Date/Time Collected	**10/24/13 13:25**
Collected by	**Sean Schmidt**
Date/Time Received	**10/24/13 15:00**

Parameters	Units	Results *		Method	PQL	MDL	Prepared	Analyzed	Dilution
Client Provided Field Data									
pH		5.78							
Temperature		20.1 °C							
Conductivity		1.25 umhos/cm							
Dissolved Oxygen		8037 mg/L							
Inorganics									
Ammonia as N	mg/L	0.009	U	EPA 350.1	0.040	0.009		11/05/13 15:48	1
Chemical Oxygen Demand	mg/L	10	U	EPA 410.4	25	10		11/05/13 09:30	1
Chloride	mg/L	0.067	I	EPA 300.0	0.20	0.050		10/25/13 23:49	1
Fluoride	mg/L	0.010	U	EPA 300.0	0.040	0.010		10/25/13 23:49	1
Nitrate (as N)	mg/L	0.01	U	EPA 300.0	0.04	0.01		10/25/13 23:49	1
Nitrate+Nitrite (N)	mg/L	0.02	U	EPA 300.0	0.08	0.02		10/25/13 23:49	1
Nitrite (as N)	mg/L	0.01	I	EPA 300.0	0.04	0.01		10/25/13 23:49	1
Orthophosphate as P	mg/L	0.010	U	EPA 300.0	0.040	0.010		10/25/13 23:49	1
Phosphorous - Total as P	mg/L	0.010	U	SM 4500P-E	0.040	0.010	10/26/13 08:44	10/31/13 13:28	1
Sulfate	mg/L	0.20	U	EPA 300.0	0.60	0.20		10/25/13 23:49	1
Total Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0		11/01/13 10:42	1
Total Kjeldahl Nitrogen	mg/L	0.05	U	EPA 351.2	0.20	0.05	11/07/13 13:37	11/12/13 11:57	1
Total Organic Carbon	mg/L	0.060	U	SM 5310B	1.0	0.060		10/30/13 10:10	1
Inorganic, Dissolved									
Dissolved Organic Carbon	mg/L	0.060	U	SM 5310B	1.0	0.060		10/30/13 10:10	1
Metals									
Boron	mg/L	0.050	U	EPA 200.7	0.10	0.050	10/28/13 13:56	10/29/13 12:14	1
Calcium	mg/L	0.042	U	EPA 200.7	0.50	0.042	10/28/13 13:56	10/29/13 12:14	1
Iron	mg/L	0.020	U	EPA 200.7	0.10	0.020	10/28/13 13:56	10/29/13 12:14	1
Magnesium	mg/L	0.020	U	EPA 200.7	0.50	0.020	10/28/13 13:56	10/29/13 12:14	1
Manganese	mg/L	0.0010	U	EPA 200.7	0.010	0.0010	10/28/13 13:56	10/29/13 12:14	1
Potassium	mg/L	0.25	I	EPA 200.7	0.50	0.10	10/28/13 13:56	10/29/13 12:14	1
Sodium	mg/L	0.28	I	EPA 200.7	0.50	0.13	10/28/13 13:56	10/29/13 12:14	1

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32331 - Ion Chromatography 300.0 Prep										
Blank (BJ32331-BLK1)					Prepared & Analyzed: 10/24/13					
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
Fluoride	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						
Surrogate: Dichloroacetate	*Result:*	*0.997*		*mg/L*	*1.0*		*100*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*0.997*		*mg/L*	*1.0*		*100*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*0.997*		*mg/L*	*1.0*		*100*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*0.997*		*mg/L*	*1.0*		*100*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*0.997*		*mg/L*	*1.0*		*100*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*0.997*		*mg/L*	*1.0*		*100*	*90-115*		
LCS (BJ32331-BS1)					Prepared & Analyzed: 10/24/13					
Nitrate (as N)	1.82	0.04	0.01	mg/L	1.7		107	85-115		
Chloride	3.19	0.20	0.050	mg/L	3.0		106	85-115		
Orthophosphate as P	0.935	0.040	0.010	mg/L	0.90		104	85-115		
Nitrite (as N)	1.54	0.04	0.01	mg/L	1.4		110	85-115		
Sulfate	9.71	0.60	0.20	mg/L	9.0		108	85-115		
Fluoride	0.966	0.040	0.010	mg/L	0.90		107	85-115		
Surrogate: Dichloroacetate	*Result:*	*1.14*		*mg/L*	*1.0*		*114*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.14*		*mg/L*	*1.0*		*114*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.14*		*mg/L*	*1.0*		*114*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.14*		*mg/L*	*1.0*		*114*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.14*		*mg/L*	*1.0*		*114*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.14*		*mg/L*	*1.0*		*114*	*90-115*		
LCS Dup (BJ32331-BSD1)					Prepared & Analyzed: 10/24/13					
Nitrate (as N)	1.78	0.04	0.01	mg/L	1.7		105	85-115	2	200
Orthophosphate as P	0.915	0.040	0.010	mg/L	0.90		102	85-115	2	200
Sulfate	9.48	0.60	0.20	mg/L	9.0		105	85-115	2	200
Nitrite (as N)	1.49	0.04	0.01	mg/L	1.4		107	85-115	3	200
Chloride	3.12	0.20	0.050	mg/L	3.0		104	85-115	2	200
Fluoride	0.921	0.040	0.010	mg/L	0.90		102	85-115	5	200
Surrogate: Dichloroacetate	*Result:*	*1.09*		*mg/L*	*1.0*		*109*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.09*		*mg/L*	*1.0*		*109*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.09*		*mg/L*	*1.0*		*109*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.09*		*mg/L*	*1.0*		*109*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.09*		*mg/L*	*1.0*		*109*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.09*		*mg/L*	*1.0*		*109*	*90-115*		

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32331 - Ion Chromatography 300.0 Prep										
Matrix Spike (BJ32331-MS1)		**Source: 1311076-03**			Prepared & Analyzed: 10/24/13					
Nitrite (as N)	1.54	0.04	0.01	mg/L	1.4	ND	110	85-115		
Orthophosphate as P	0.851	0.040	0.010	mg/L	0.90	ND	95	85-115		
Nitrate (as N)	4.09	0.04	0.01	mg/L	1.7	2.49	94	85-115		
Sulfate	90.0 L	0.60	0.20	mg/L	9.0	344	NR	85-115		
Fluoride	0.952	0.040	0.010	mg/L	0.90	0.0170	104	85-115		
Chloride	30.0 L	0.20	0.050	mg/L	3.0	37.5	NR	80-120		
Surrogate: Dichloroacetate		*Result: 1.10*		*mg/L*	*1.0*		*110*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.10*		*mg/L*	*1.0*		*110*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.10*		*mg/L*	*1.0*		*110*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.10*		*mg/L*	*1.0*		*110*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.10*		*mg/L*	*1.0*		*110*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.10*		*mg/L*	*1.0*		*110*	*90-115*		
Matrix Spike (BJ32331-MS2)		**Source: 1311076-24**			Prepared & Analyzed: 10/24/13					
Nitrite (as N)	1.55	0.04	0.01	mg/L	1.4	ND	110	85-115		
Orthophosphate as P	0.815	0.040	0.010	mg/L	0.90	ND	91	85-115		
Fluoride	0.959	0.040	0.010	mg/L	0.90	0.0400	102	85-115		
Chloride	19.1	0.20	0.050	mg/L	3.0	16.3	91	80-120		
Nitrate (as N)	1.76	0.04	0.01	mg/L	1.7	ND	104	85-115		
Sulfate	72.9 J5	0.60	0.20	mg/L	9.0	68.3	51	85-115		
Surrogate: Dichloroacetate		*Result: 1.03*		*mg/L*	*1.0*		*103*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.03*		*mg/L*	*1.0*		*103*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.03*		*mg/L*	*1.0*		*103*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.03*		*mg/L*	*1.0*		*103*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.03*		*mg/L*	*1.0*		*103*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.03*		*mg/L*	*1.0*		*103*	*90-115*		

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32332 - Ion Chromatography 300.0 Prep										
Blank (BJ32332-BLK1)					Prepared & Analyzed: 10/24/13					
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						
Fluoride	0.010 U	0.040	0.010	mg/L						
Surrogate: Dichloroacetate	*Result:*	*1.10*		*mg/L*	*1.0*		*110*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.10*		*mg/L*	*1.0*		*110*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.10*		*mg/L*	*1.0*		*110*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.10*		*mg/L*	*1.0*		*110*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.10*		*mg/L*	*1.0*		*110*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.10*		*mg/L*	*1.0*		*110*	*90-115*		
LCS (BJ32332-BS1)					Prepared & Analyzed: 10/24/13					
Orthophosphate as P	0.894	0.040	0.010	mg/L	0.90		99	85-115		
Sulfate	9.74	0.60	0.20	mg/L	9.0		108	85-115		
Fluoride	0.948	0.040	0.010	mg/L	0.90		105	85-115		
Chloride	3.20	0.20	0.050	mg/L	3.0		107	85-115		
Nitrate (as N)	1.83	0.04	0.01	mg/L	1.7		107	85-115		
Nitrite (as N)	1.53	0.04	0.01	mg/L	1.4		109	85-115		
Surrogate: Dichloroacetate	*Result:*	*1.05*		*mg/L*	*1.0*		*105*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.05*		*mg/L*	*1.0*		*105*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.05*		*mg/L*	*1.0*		*105*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.05*		*mg/L*	*1.0*		*105*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.05*		*mg/L*	*1.0*		*105*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.05*		*mg/L*	*1.0*		*105*	*90-115*		
LCS Dup (BJ32332-BSD1)					Prepared & Analyzed: 10/24/13					
Orthophosphate as P	0.901	0.040	0.010	mg/L	0.90		100	85-115	0.8	200
Fluoride	0.944	0.040	0.010	mg/L	0.90		105	85-115	0.4	200
Chloride	3.19	0.20	0.050	mg/L	3.0		106	85-115	0.09	200
Nitrate (as N)	1.83	0.04	0.01	mg/L	1.7		108	85-115	0.4	200
Nitrite (as N)	1.54	0.04	0.01	mg/L	1.4		110	85-115	0.5	200
Sulfate	9.78	0.60	0.20	mg/L	9.0		109	85-115	0.4	200
Surrogate: Dichloroacetate	*Result:*	*1.03*		*mg/L*	*1.0*		*103*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.03*		*mg/L*	*1.0*		*103*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.03*		*mg/L*	*1.0*		*103*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.03*		*mg/L*	*1.0*		*103*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.03*		*mg/L*	*1.0*		*103*	*90-115*		
Surrogate: Dichloroacetate	*Result:*	*1.03*		*mg/L*	*1.0*		*103*	*90-115*		

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32332 - Ion Chromatography 300.0 Prep										
Matrix Spike (BJ32332-MS1)		**Source: 1311076-43**			Prepared & Analyzed: 10/24/13					
Sulfate	90.0 L	0.60	0.20	mg/L	9.0	156	NR	85-115		
Fluoride	1.09	0.040	0.010	mg/L	0.90	0.116	108	85-115		
Nitrate (as N)	1.83	0.04	0.01	mg/L	1.7	0.218	95	85-115		
Nitrite (as N)	1.50	0.04	0.01	mg/L	1.4	ND	107	85-115		
Orthophosphate as P	0.843	0.040	0.010	mg/L	0.90	ND	94	85-115		
Chloride	26.1 J5	0.20	0.050	mg/L	3.0	19.1	235	80-120		
Surrogate: Dichloroacetate		*Result: 1.05*		*mg/L*	*1.0*		*105*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.05*		*mg/L*	*1.0*		*105*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.05*		*mg/L*	*1.0*		*105*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.05*		*mg/L*	*1.0*		*105*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.05*		*mg/L*	*1.0*		*105*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.05*		*mg/L*	*1.0*		*105*	*90-115*		
Matrix Spike (BJ32332-MS2)		**Source: 1311394-01**			Prepared & Analyzed: 10/24/13					
Orthophosphate as P	0.928	0.040	0.010	mg/L	0.90	ND	103	85-115		
Nitrite (as N)	1.43	0.04	0.01	mg/L	1.4	ND	102	85-115		
Nitrate (as N)	2.21	0.04	0.01	mg/L	1.7	0.362	109	85-115		
Fluoride	1.61	0.040	0.010	mg/L	0.90	0.633	108	85-115		
Sulfate	87.1	0.60	0.20	mg/L	9.0	78.7	94	85-115		
Chloride	17.9	0.20	0.050	mg/L	3.0	14.7	107	80-120		
Surrogate: Dichloroacetate		*Result: 1.09*		*mg/L*	*1.0*		*109*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.09*		*mg/L*	*1.0*		*109*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.09*		*mg/L*	*1.0*		*109*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.09*		*mg/L*	*1.0*		*109*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.09*		*mg/L*	*1.0*		*109*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.09*		*mg/L*	*1.0*		*109*	*90-115*		

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32417 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BJ32417-BLK1)					Prepared: 10/24/13 Analyzed: 10/30/13					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BJ32417-BS1)					Prepared: 10/24/13 Analyzed: 10/30/13					
Phosphorous - Total as P	0.774	0.040	0.010	mg/L	0.80		97	90-110		
Matrix Spike (BJ32417-MS1)		**Source: 1311395-07**			Prepared: 10/24/13 Analyzed: 10/30/13					
Phosphorous - Total as P	1.01	0.040	0.010	mg/L	1.0	0.0563	95	90-110		
Matrix Spike (BJ32417-MS2)		**Source: 1311413-02**			Prepared: 10/24/13 Analyzed: 10/30/13					
Phosphorous - Total as P	0.983	0.040	0.010	mg/L	1.0	0.0276	96	90-110		
Matrix Spike Dup (BJ32417-MSD1)		**Source: 1311395-07**			Prepared: 10/24/13 Analyzed: 10/30/13					
Phosphorous - Total as P	0.988	0.040	0.010	mg/L	1.0	0.0563	93	90-110	2	25
Matrix Spike Dup (BJ32417-MSD2)		**Source: 1311413-02**			Prepared: 10/24/13 Analyzed: 10/30/13					
Phosphorous - Total as P	1.04	0.040	0.010	mg/L	1.0	0.0276	101	90-110	5	25
Batch BJ32424 - TOC prep										
Blank (BJ32424-BLK1)					Prepared & Analyzed: 10/24/13					
Total Organic Carbon	0.060 U	1.0	0.060	mg/L						
LCS (BJ32424-BS1)					Prepared & Analyzed: 10/24/13					
Total Organic Carbon	10.3	1.0	0.060	mg/L	10		103	90-110		
Matrix Spike (BJ32424-MS1)		**Source: 1311302-03**			Prepared & Analyzed: 10/24/13					
Total Organic Carbon	10.1	1.0	0.060	mg/L	10	ND	101	85-115		

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32424 - TOC prep										
Matrix Spike Dup (BJ32424-MSD1)		**Source: 1311302-03**			Prepared & Analyzed: 10/24/13					
Total Organic Carbon	10.3	1.0	0.060	mg/L	10	ND	103	85-115	2	10
Batch BJ32441 - alkalinity										
Blank (BJ32441-BLK1)					Prepared & Analyzed: 10/25/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BJ32441-BS1)					Prepared & Analyzed: 10/25/13					
Total Alkalinity	130	8.0	2.0	mg/L	120		102	90-110		
Matrix Spike (BJ32441-MS1)		**Source: 1311387-03**			Prepared & Analyzed: 10/28/13					
Total Alkalinity	200	8.0	2.0	mg/L	120	74	105	80-120		
Matrix Spike Dup (BJ32441-MSD1)		**Source: 1311387-03**			Prepared & Analyzed: 10/28/13					
Total Alkalinity	200	8.0	2.0	mg/L	120	74	100	80-120	3	26
Batch BJ32444 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BJ32444-BLK1)					Prepared: 10/24/13 Analyzed: 10/30/13					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BJ32444-BS1)					Prepared: 10/24/13 Analyzed: 10/30/13					
Phosphorous - Total as P	0.785	0.040	0.010	mg/L	0.80		98	90-110		
Matrix Spike (BJ32444-MS1)		**Source: 1311452-07**			Prepared: 10/24/13 Analyzed: 10/30/13					
Phosphorous - Total as P	1.00	0.040	0.010	mg/L	1.0	0.0642	94	90-110		

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32444 - Digestion for TP by EPA 365.2/SM4500PE										
Matrix Spike Dup (BJ32444-MSD1)		**Source: 1311452-07**			Prepared: 10/24/13 Analyzed: 10/30/13					
Phosphorous - Total as P	1.04	0.040	0.010	mg/L	1.0	0.0642	97	90-110	3	25
Batch BJ32448 - Ammonia by SEAL										
Blank (BJ32448-BLK1)					Prepared & Analyzed: 10/25/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BJ32448-BS1)					Prepared & Analyzed: 10/25/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50		100	90-110		
Matrix Spike (BJ32448-MS1)		**Source: 1311076-03**			Prepared & Analyzed: 10/25/13					
Ammonia as N	0.52	0.040	0.009	mg/L	0.50	0.012	101	90-110		
Matrix Spike (BJ32448-MS2)		**Source: 1311452-07**			Prepared & Analyzed: 10/25/13					
Ammonia as N	0.49	0.040	0.009	mg/L	0.50	0.039	91	90-110		
Matrix Spike Dup (BJ32448-MSD1)		**Source: 1311076-03**			Prepared & Analyzed: 10/25/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.012	98	90-110	2	10
Matrix Spike Dup (BJ32448-MSD2)		**Source: 1311452-07**			Prepared & Analyzed: 10/25/13					
Ammonia as N	0.52	0.040	0.009	mg/L	0.50	0.039	96	90-110	5	10
Batch BJ32501 - Ion Chromatography 300.0 Prep										
Blank (BJ32501-BLK1)					Prepared & Analyzed: 10/26/13					
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Surrogate: Dichloroacetate		*Result: 1.00*		*mg/L*	*1.0*		*100*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.00*		*mg/L*	*1.0*		*100*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.00*		*mg/L*	*1.0*		*100*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.00*		*mg/L*	*1.0*		*100*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.00*		*mg/L*	*1.0*		*100*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.00*		*mg/L*	*1.0*		*100*	*90-115*		

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32501 - Ion Chromatography 300.0 Prep										
LCS (BJ32501-BS1)					Prepared & Analyzed: 10/25/13					
Nitrite (as N)	1.53	0.04	0.01	mg/L	1.4		109	85-115		
Nitrate (as N)	1.83	0.04	0.01	mg/L	1.7		108	85-115		
Orthophosphate as P	0.939	0.040	0.010	mg/L	0.90		104	85-115		
Fluoride	0.964	0.040	0.010	mg/L	0.90		107	85-115		
Chloride	3.21	0.20	0.050	mg/L	3.0		107	85-115		
Sulfate	9.84	0.60	0.20	mg/L	9.0		109	85-115		
Surrogate: Dichloroacetate		*Result: 1.14*		*mg/L*	*1.0*		*114*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.14*		*mg/L*	*1.0*		*114*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.14*		*mg/L*	*1.0*		*114*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.14*		*mg/L*	*1.0*		*114*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.14*		*mg/L*	*1.0*		*114*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.14*		*mg/L*	*1.0*		*114*	*90-115*		
LCS Dup (BJ32501-BSD1)					Prepared & Analyzed: 10/25/13					
Fluoride	0.943	0.040	0.010	mg/L	0.90		105	85-115	2	200
Nitrite (as N)	1.41	0.04	0.01	mg/L	1.4		101	85-115	8	200
Chloride	3.09	0.20	0.050	mg/L	3.0		103	85-115	4	200
Nitrate (as N)	1.80	0.04	0.01	mg/L	1.7		106	85-115	2	200
Orthophosphate as P	0.922	0.040	0.010	mg/L	0.90		102	85-115	2	200
Sulfate	9.29	0.60	0.20	mg/L	9.0		103	85-115	6	200
Surrogate: Dichloroacetate		*Result: 1.10*		*mg/L*	*1.0*		*110*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.10*		*mg/L*	*1.0*		*110*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.10*		*mg/L*	*1.0*		*110*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.10*		*mg/L*	*1.0*		*110*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.10*		*mg/L*	*1.0*		*110*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.10*		*mg/L*	*1.0*		*110*	*90-115*		
Matrix Spike (BJ32501-MS1)		**Source: 1311442-01**			Prepared & Analyzed: 10/25/13					
Nitrite (as N)	1.47	0.04	0.01	mg/L	1.4	0.0510	101	85-115		
Fluoride	0.961	0.040	0.010	mg/L	0.90	0.0760	98	85-115		
Chloride	8.47	0.20	0.050	mg/L	3.0	5.24	108	80-120		
Nitrate (as N)	1.92	0.04	0.01	mg/L	1.7	0.0700	109	85-115		
Orthophosphate as P	0.796	0.040	0.010	mg/L	0.90	0.0260	86	85-115		
Sulfate	10.9	0.60	0.20	mg/L	9.0	1.55	104	85-115		
Surrogate: Dichloroacetate		*Result: 1.05*		*mg/L*	*1.0*		*105*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.05*		*mg/L*	*1.0*		*105*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.05*		*mg/L*	*1.0*		*105*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.05*		*mg/L*	*1.0*		*105*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.05*		*mg/L*	*1.0*		*105*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.05*		*mg/L*	*1.0*		*105*	*90-115*		

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32501 - Ion Chromatography 300.0 Prep										
Matrix Spike (BJ32501-MS2)		**Source: 1311076-31**			Prepared & Analyzed: 10/25/13					
Chloride	29.1	0.20	0.050	mg/L	3.0	26.0	103	80-120		
Nitrate (as N)	1.78	0.04	0.01	mg/L	1.7	ND	105	85-115		
Sulfate	90.0 L	0.60	0.20	mg/L	9.0	266	NR	85-115		
Nitrite (as N)	1.27	0.04	0.01	mg/L	1.4	ND	91	85-115		
Fluoride	0.901	0.040	0.010	mg/L	0.90	0.123	86	85-115		
Orthophosphate as P	0.431 J5	0.040	0.010	mg/L	0.90	ND	48	85-115		
Surrogate: Dichloroacetate		*Result: 0.922*		*mg/L*	*1.0*		*92*	*90-115*		
Surrogate: Dichloroacetate		*Result: 0.922*		*mg/L*	*1.0*		*92*	*90-115*		
Surrogate: Dichloroacetate		*Result: 0.922*		*mg/L*	*1.0*		*92*	*90-115*		
Surrogate: Dichloroacetate		*Result: 0.922*		*mg/L*	*1.0*		*92*	*90-115*		
Surrogate: Dichloroacetate		*Result: 0.922*		*mg/L*	*1.0*		*92*	*90-115*		
Surrogate: Dichloroacetate		*Result: 0.922*		*mg/L*	*1.0*		*92*	*90-115*		
Batch BJ32502 - Ion Chromatography 300.0 Prep										
Blank (BJ32502-BLK1)					Prepared & Analyzed: 10/25/13					
Chloride	0.050 U	0.20	0.050	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Surrogate: Dichloroacetate		*Result: 1.03*		*mg/L*	*1.0*		*103*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.03*		*mg/L*	*1.0*		*103*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.03*		*mg/L*	*1.0*		*103*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.03*		*mg/L*	*1.0*		*103*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.03*		*mg/L*	*1.0*		*103*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.03*		*mg/L*	*1.0*		*103*	*90-115*		

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32502 - Ion Chromatography 300.0 Prep										
LCS (BJ32502-BS1)					Prepared & Analyzed: 10/25/13					
Chloride	3.12	0.20	0.050	mg/L	3.0		104	85-115		
Nitrate (as N)	1.78	0.04	0.01	mg/L	1.7		104	85-115		
Sulfate	9.54	0.60	0.20	mg/L	9.0		106	85-115		
Orthophosphate as P	0.873	0.040	0.010	mg/L	0.90		97	85-115		
Nitrite (as N)	1.48	0.04	0.01	mg/L	1.4		105	85-115		
Fluoride	0.915	0.040	0.010	mg/L	0.90		102	85-115		
Surrogate: Dichloroacetate		*Result: 1.06*		*mg/L*	*1.0*		*106*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.06*		*mg/L*	*1.0*		*106*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.06*		*mg/L*	*1.0*		*106*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.06*		*mg/L*	*1.0*		*106*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.06*		*mg/L*	*1.0*		*106*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.06*		*mg/L*	*1.0*		*106*	*90-115*		
LCS Dup (BJ32502-BSD1)					Prepared & Analyzed: 10/25/13					
Sulfate	8.81	0.60	0.20	mg/L	9.0		98	85-115	8	200
Chloride	2.88	0.20	0.050	mg/L	3.0		96	85-115	8	200
Fluoride	0.849	0.040	0.010	mg/L	0.90		94	85-115	7	200
Nitrite (as N)	1.38	0.04	0.01	mg/L	1.4		99	85-115	7	200
Orthophosphate as P	0.918	0.040	0.010	mg/L	0.90		102	85-115	5	200
Nitrate (as N)	1.74	0.04	0.01	mg/L	1.7		102	85-115	2	200
Surrogate: Dichloroacetate		*Result: 1.04*		*mg/L*	*1.0*		*104*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.04*		*mg/L*	*1.0*		*104*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.04*		*mg/L*	*1.0*		*104*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.04*		*mg/L*	*1.0*		*104*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.04*		*mg/L*	*1.0*		*104*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.04*		*mg/L*	*1.0*		*104*	*90-115*		
Matrix Spike (BJ32502-MS1)		**Source: 1311076-49**			Prepared & Analyzed: 10/25/13					
Nitrite (as N)	1.37	0.04	0.01	mg/L	1.4	ND	98	85-115		
Sulfate	90.0 L	0.60	0.20	mg/L	9.0	141	NR	85-115		
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7	ND	99	85-115		
Chloride	26.9	0.20	0.050	mg/L	3.0	24.0	97	80-120		
Fluoride	0.882	0.040	0.010	mg/L	0.90	0.0690	90	85-115		
Orthophosphate as P	0.677 J5	0.040	0.010	mg/L	0.90	0.0460	70	85-115		
Surrogate: Dichloroacetate		*Result: 1.02*		*mg/L*	*1.0*		*102*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.02*		*mg/L*	*1.0*		*102*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.02*		*mg/L*	*1.0*		*102*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.02*		*mg/L*	*1.0*		*102*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.02*		*mg/L*	*1.0*		*102*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.02*		*mg/L*	*1.0*		*102*	*90-115*		

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32502 - Ion Chromatography 300.0 Prep										
Matrix Spike (BJ32502-MS2)		**Source: 1311076-64**			Prepared & Analyzed: 10/25/13					
Nitrate (as N)	1.78	0.04	0.01	mg/L	1.7	ND	104	85-115		
Fluoride	0.993	0.040	0.010	mg/L	0.90	0.0620	103	85-115		
Chloride	20.4	0.20	0.050	mg/L	3.0	17.4	101	80-120		
Nitrite (as N)	1.33	0.04	0.01	mg/L	1.4	ND	95	85-115		
Sulfate	68.8	0.60	0.20	mg/L	9.0	60.1	97	85-115		
Orthophosphate as P	0.825	0.040	0.010	mg/L	0.90	ND	92	85-115		
Surrogate: Dichloroacetate		*Result: 1.00*		*mg/L*	*1.0*		*100*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.00*		*mg/L*	*1.0*		*100*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.00*		*mg/L*	*1.0*		*100*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.00*		*mg/L*	*1.0*		*100*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.00*		*mg/L*	*1.0*		*100*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.00*		*mg/L*	*1.0*		*100*	*90-115*		
Batch BJ32503 - Ion Chromatography 300.0 Prep										
Blank (BJ32503-BLK1)					Prepared & Analyzed: 10/25/13					
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Surrogate: Dichloroacetate		*Result: 1.12*		*mg/L*	*1.0*		*112*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.12*		*mg/L*	*1.0*		*112*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.12*		*mg/L*	*1.0*		*112*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.12*		*mg/L*	*1.0*		*112*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.12*		*mg/L*	*1.0*		*112*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.12*		*mg/L*	*1.0*		*112*	*90-115*		

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32503 - Ion Chromatography 300.0 Prep										
LCS (BJ32503-BS1)					Prepared & Analyzed: 10/25/13					
Sulfate	8.92	0.60	0.20	mg/L	9.0		99	85-115		
Fluoride	0.852	0.040	0.010	mg/L	0.90		95	85-115		
Nitrate (as N)	1.70	0.04	0.01	mg/L	1.7		100	85-115		
Chloride	2.90	0.20	0.050	mg/L	3.0		97	85-115		
Nitrite (as N)	1.40	0.04	0.01	mg/L	1.4		100	85-115		
Orthophosphate as P	0.812	0.040	0.010	mg/L	0.90		90	85-115		
Surrogate: Dichloroacetate		*Result: 0.904*		*mg/L*	*1.0*		*90*	*90-115*		
Surrogate: Dichloroacetate		*Result: 0.904*		*mg/L*	*1.0*		*90*	*90-115*		
Surrogate: Dichloroacetate		*Result: 0.904*		*mg/L*	*1.0*		*90*	*90-115*		
Surrogate: Dichloroacetate		*Result: 0.904*		*mg/L*	*1.0*		*90*	*90-115*		
Surrogate: Dichloroacetate		*Result: 0.904*		*mg/L*	*1.0*		*90*	*90-115*		
Surrogate: Dichloroacetate		*Result: 0.904*		*mg/L*	*1.0*		*90*	*90-115*		
LCS Dup (BJ32503-BSD1)					Prepared & Analyzed: 10/25/13					
Fluoride	0.897	0.040	0.010	mg/L	0.90		100	85-115	5	200
Nitrite (as N)	1.40	0.04	0.01	mg/L	1.4		100	85-115	0.2	200
Chloride	2.95	0.20	0.050	mg/L	3.0		98	85-115	2	200
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115	1	200
Orthophosphate as P	0.811	0.040	0.010	mg/L	0.90		90	85-115	0.1	200
Sulfate	9.02	0.60	0.20	mg/L	9.0		100	85-115	1	200
Surrogate: Dichloroacetate		*Result: 1.02*		*mg/L*	*1.0*		*102*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.02*		*mg/L*	*1.0*		*102*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.02*		*mg/L*	*1.0*		*102*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.02*		*mg/L*	*1.0*		*102*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.02*		*mg/L*	*1.0*		*102*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.02*		*mg/L*	*1.0*		*102*	*90-115*		
Matrix Spike (BJ32503-MS1)		**Source: 1311478-03**			Prepared & Analyzed: 10/28/13					
Nitrate (as N)	1.74	0.04	0.01	mg/L	1.7	ND	102	85-115		
Chloride	18.0	0.20	0.050	mg/L	3.0	15.0	99	80-120		
Nitrite (as N)	1.37	0.04	0.01	mg/L	1.4	ND	98	85-115		
Orthophosphate as P	0.616 J5	0.040	0.010	mg/L	0.90	ND	68	85-115		
Fluoride	1.28	0.040	0.010	mg/L	0.90	0.299	108	85-115		
Sulfate	11.6	0.60	0.20	mg/L	9.0	2.93	96	85-115		
Surrogate: Dichloroacetate		*Result: 1.03*		*mg/L*	*1.0*		*103*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.03*		*mg/L*	*1.0*		*103*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.03*		*mg/L*	*1.0*		*103*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.03*		*mg/L*	*1.0*		*103*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.03*		*mg/L*	*1.0*		*103*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.03*		*mg/L*	*1.0*		*103*	*90-115*		

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32503 - Ion Chromatography 300.0 Prep										
Matrix Spike (BJ32503-MS2)		**Source: 1311076-57**			Prepared & Analyzed: 10/28/13					
Nitrate (as N)	1.70	0.04	0.01	mg/L	1.7	ND	100	85-115		
Orthophosphate as P	0.615 J5	0.040	0.010	mg/L	0.90	0.0260	65	85-115		
Chloride	15.6	0.20	0.050	mg/L	3.0	12.9	89	80-120		
Sulfate	70.7	0.60	0.20	mg/L	9.0	62.3	94	85-115		
Fluoride	0.861	0.040	0.010	mg/L	0.90	0.0390	91	85-115		
Nitrite (as N)	1.52	0.04	0.01	mg/L	1.4	ND	108	85-115		
Surrogate: Dichloroacetate		*Result: 1.04*		*mg/L*	*1.0*		*104*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.04*		*mg/L*	*1.0*		*104*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.04*		*mg/L*	*1.0*		*104*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.04*		*mg/L*	*1.0*		*104*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.04*		*mg/L*	*1.0*		*104*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.04*		*mg/L*	*1.0*		*104*	*90-115*		
Batch BJ32523 - BOD										
Blank (BJ32523-BLK1)					Prepared: 10/25/13 Analyzed: 10/30/13					
Carbonaceous BOD	2 U	2	2	mg/L						
LCS (BJ32523-BS1)					Prepared: 10/25/13 Analyzed: 10/30/13					
Carbonaceous BOD	175	2	2	mg/L	200		87	85-115		
LCS Dup (BJ32523-BSD1)					Prepared: 10/25/13 Analyzed: 10/30/13					
Carbonaceous BOD	176	2	2	mg/L	200		88	85-115	0.9	200
Duplicate (BJ32523-DUP1)		**Source: 1311076-02**			Prepared: 10/25/13 Analyzed: 10/30/13					
Carbonaceous BOD	120	2	2	mg/L		120			0.3	25

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32525 - alkalinity										
Blank (BJ32525-BLK1)					Prepared & Analyzed: 10/30/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BJ32525-BS1)					Prepared & Analyzed: 10/29/13					
Total Alkalinity	130	8.0	2.0	mg/L	120		105	90-110		
Matrix Spike (BJ32525-MS1)		**Source: 1311076-30**			Prepared & Analyzed: 10/29/13					
Total Alkalinity	200	8.0	2.0	mg/L	120	90	90	80-120		
Matrix Spike Dup (BJ32525-MSD1)		**Source: 1311076-30**			Prepared & Analyzed: 10/29/13					
Total Alkalinity	200	8.0	2.0	mg/L	120	90	91	80-120	0.9	26
Batch BJ32601 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BJ32601-BLK1)					Prepared: 10/26/13 Analyzed: 10/31/13					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BJ32601-BS1)					Prepared: 10/26/13 Analyzed: 10/31/13					
Phosphorous - Total as P	0.872	0.040	0.010	mg/L	0.80		109	90-110		
Matrix Spike (BJ32601-MS1)		**Source: 1311076-72**			Prepared: 10/26/13 Analyzed: 10/31/13					
Phosphorous - Total as P	0.921	0.040	0.010	mg/L	1.0	ND	92	90-110		
Matrix Spike (BJ32601-MS2)		**Source: 1311076-73**			Prepared: 10/26/13 Analyzed: 10/31/13					
Phosphorous - Total as P	0.996	0.040	0.010	mg/L	1.0	ND	100	90-110		
Matrix Spike Dup (BJ32601-MSD1)		**Source: 1311076-72**			Prepared: 10/26/13 Analyzed: 10/31/13					
Phosphorous - Total as P	1.10	0.040	0.010	mg/L	1.0	ND	110	90-110	18	25

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32601 - Digestion for TP by EPA 365.2/SM4500PE										
Matrix Spike Dup (BJ32601-MSD2)		**Source: 1311076-73**			Prepared: 10/26/13 Analyzed: 10/31/13					
Phosphorous - Total as P	1.09	0.040	0.010	mg/L	1.0	ND	109	90-110	9	25
Batch BJ32806 - COD prep										
Blank (BJ32806-BLK1)					Prepared & Analyzed: 10/28/13					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BJ32806-BS1)					Prepared & Analyzed: 10/28/13					
Chemical Oxygen Demand	50	25	10	mg/L	50		100	90-110		
Matrix Spike (BJ32806-MS1)		**Source: 1311302-01**			Prepared & Analyzed: 10/28/13					
Chemical Oxygen Demand	56	25	10	mg/L	50	ND	112	85-115		
Matrix Spike Dup (BJ32806-MSD1)		**Source: 1311302-01**			Prepared & Analyzed: 10/28/13					
Chemical Oxygen Demand	45	25	10	mg/L	50	ND	90	85-115	22	32
Batch BJ32808 - Ion Chromatography 300.0 Prep										
Blank (BJ32808-BLK1)					Prepared & Analyzed: 10/28/13					
Chloride	0.050 U	0.20	0.050	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Surrogate: Dichloroacetate		*Result: 1.10*		*mg/L*	*1.0*		*110*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.10*		*mg/L*	*1.0*		*110*	*90-115*		
LCS (BJ32808-BS1)					Prepared & Analyzed: 10/28/13					
Sulfate	9.41	0.60	0.20	mg/L	9.0		105	85-115		
Chloride	3.09	0.20	0.050	mg/L	3.0		103	85-115		
Surrogate: Dichloroacetate		*Result: 1.08*		*mg/L*	*1.0*		*108*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.08*		*mg/L*	*1.0*		*108*	*90-115*		

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32808 - Ion Chromatography 300.0 Prep										
LCS Dup (BJ32808-BSD1)					Prepared & Analyzed: 10/28/13					
Chloride	3.11	0.20	0.050	mg/L	3.0		104	85-115	0.7	200
Sulfate	9.52	0.60	0.20	mg/L	9.0		106	85-115	1	200
Surrogate: Dichloroacetate		*Result: 1.06*		*mg/L*	*1.0*		*106*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.06*		*mg/L*	*1.0*		*106*	*90-115*		
Matrix Spike (BJ32808-MS1)		**Source: 1311076-03**			Prepared & Analyzed: 10/28/13					
Chloride	68.4	2.0	0.50	mg/L	30	37.5	103	80-120		
Nitrite (as N)	13.1	0.40	0.10	mg/L	14	0.201	92	85-115		
Nitrate (as N)	19.9	0.40	0.10	mg/L	17	2.03	105	85-115		
Sulfate	429	6.0	2.0	mg/L	90	344	94	85-115		
Surrogate: Dichloroacetate		*Result: 1.07*		*mg/L*	*1.0*		*107*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.07*		*mg/L*	*1.0*		*107*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.07*		*mg/L*	*1.0*		*107*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.07*		*mg/L*	*1.0*		*107*	*90-115*		
Matrix Spike (BJ32808-MS2)		**Source: 1311076-38**			Prepared & Analyzed: 10/29/13					
Nitrite (as N)	13.7	0.40	0.10	mg/L	14	0.298	96	85-115		
Nitrate (as N)	18.9	0.40	0.10	mg/L	17	1.10	105	85-115		
Chloride	56.2	2.0	0.50	mg/L	30	24.7	105	80-120		
Sulfate	363	6.0	2.0	mg/L	90	271	102	85-115		
Surrogate: Dichloroacetate		*Result: 1.07*		*mg/L*	*1.0*		*107*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.07*		*mg/L*	*1.0*		*107*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.07*		*mg/L*	*1.0*		*107*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.07*		*mg/L*	*1.0*		*107*	*90-115*		
Batch BJ32821 - TS prep										
Blank (BJ32821-BLK1)					Prepared: 10/28/13 Analyzed: 10/29/13					
Total Solids	10 U	10	10	mg/L						

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32821 - TS prep										
Duplicate (BJ32821-DUP1)		**Source: 1311076-01**			Prepared: 10/28/13 Analyzed: 10/29/13					
Total Solids	775	10	10	mg/L		777			0.2	20
Batch BJ32901 - Ion Chromatography 300.0 Prep										
Blank (BJ32901-BLK1)					Prepared & Analyzed: 10/29/13					
Chloride	0.050 U	0.20	0.050	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Surrogate: Dichloroacetate		*Result: 1.06*		*mg/L*	*1.0*		*106*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.06*		*mg/L*	*1.0*		*106*	*90-115*		
LCS (BJ32901-BS1)					Prepared & Analyzed: 10/29/13					
Sulfate	9.27	0.60	0.20	mg/L	9.0		103	85-115		
Chloride	3.03	0.20	0.050	mg/L	3.0		101	85-115		
Surrogate: Dichloroacetate		*Result: 1.02*		*mg/L*	*1.0*		*102*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.02*		*mg/L*	*1.0*		*102*	*90-115*		
LCS Dup (BJ32901-BSD1)					Prepared & Analyzed: 10/29/13					
Chloride	3.05	0.20	0.050	mg/L	3.0		102	85-115	0.5	200
Sulfate	9.35	0.60	0.20	mg/L	9.0		104	85-115	0.9	200
Surrogate: Dichloroacetate		*Result: 1.04*		*mg/L*	*1.0*		*104*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.04*		*mg/L*	*1.0*		*104*	*90-115*		
Matrix Spike (BJ32901-MS1)		**Source: 1311076-31**			Prepared & Analyzed: 10/29/13					
Sulfate	360	6.0	2.0	mg/L	90	266	104	85-115		
Chloride	63.6	2.0	0.50	mg/L	30	30.2	111	80-120		
Surrogate: Dichloroacetate		*Result: 1.10*		*mg/L*	*1.0*		*110*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.10*		*mg/L*	*1.0*		*110*	*90-115*		

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32901 - Ion Chromatography 300.0 Prep										
Matrix Spike (BJ32901-MS2)		**Source: 1311076-54**			Prepared & Analyzed: 10/30/13					
Sulfate	215	6.0	2.0	mg/L	90	117	109	85-115		
Nitrate (as N)	17.9	0.40	0.10	mg/L	17	0.270	104	85-115		
Chloride	68.2	2.0	0.50	mg/L	30	35.2	110	80-120		
Surrogate: Dichloroacetate		*Result: 1.08*		*mg/L*	*1.0*		*108*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.08*		*mg/L*	*1.0*		*108*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.08*		*mg/L*	*1.0*		*108*	*90-115*		
Batch BJ32902 - Ion Chromatography 300.0 Prep										
Blank (BJ32902-BLK1)					Prepared & Analyzed: 10/29/13					
Chloride	0.050 U	0.20	0.050	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Surrogate: Dichloroacetate		*Result: 1.07*		*mg/L*	*1.0*		*107*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.07*		*mg/L*	*1.0*		*107*	*90-115*		
LCS (BJ32902-BS1)					Prepared & Analyzed: 10/29/13					
Sulfate	9.37	0.60	0.20	mg/L	9.0		104	85-115		
Chloride	3.05	0.20	0.050	mg/L	3.0		102	85-115		
Surrogate: Dichloroacetate		*Result: 1.00*		*mg/L*	*1.0*		*100*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.00*		*mg/L*	*1.0*		*100*	*90-115*		
LCS Dup (BJ32902-BSD1)					Prepared & Analyzed: 10/29/13					
Chloride	3.06	0.20	0.050	mg/L	3.0		102	85-115	0.4	200
Sulfate	9.42	0.60	0.20	mg/L	9.0		105	85-115	0.5	200
Surrogate: Dichloroacetate		*Result: 1.07*		*mg/L*	*1.0*		*107*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.07*		*mg/L*	*1.0*		*107*	*90-115*		

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32902 - Ion Chromatography 300.0 Prep										
Matrix Spike (BJ32902-MS1)		**Source: 1311578-01**			Prepared & Analyzed: 10/29/13					
Chloride	27.5	0.20	0.050	mg/L	3.0	24.4	103	80-120		
Sulfate	61.4	0.60	0.20	mg/L	9.0	52.4	100	85-115		
Surrogate: Dichloroacetate		*Result: 1.07*		*mg/L*	*1.0*		*107*	*90-115*		
Surrogate: Dichloroacetate		*Result: 1.07*		*mg/L*	*1.0*		*107*	*90-115*		
Batch BJ32906 - Digestion for TKN by EPA 351.2										
Blank (BJ32906-BLK1)					Prepared: 10/29/13 Analyzed: 10/31/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BJ32906-BS1)					Prepared: 10/29/13 Analyzed: 10/31/13					
Total Kjeldahl Nitrogen	2.38	0.20	0.05	mg/L	2.5		94	90-110		
Matrix Spike (BJ32906-MS1)		**Source: 1311294-02**			Prepared: 10/29/13 Analyzed: 10/31/13					
Total Kjeldahl Nitrogen	3.06	0.20	0.05	mg/L	2.5	0.373	106	90-110		
Matrix Spike Dup (BJ32906-MSD1)		**Source: 1311294-02**			Prepared: 10/29/13 Analyzed: 10/31/13					
Total Kjeldahl Nitrogen	2.99	0.20	0.05	mg/L	2.5	0.373	103	90-110	2	20
Batch BJ32925 - TOC prep										
Blank (BJ32925-BLK1)					Prepared & Analyzed: 10/30/13					
Total Organic Carbon	0.060 U	1.0	0.060	mg/L						
LCS (BJ32925-BS1)					Prepared & Analyzed: 10/30/13					
Total Organic Carbon	9.36	1.0	0.060	mg/L	10		94	90-110		

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32925 - TOC prep										
Matrix Spike (BJ32925-MS1)		**Source: 1311542-01**			Prepared & Analyzed: 10/30/13					
Total Organic Carbon	10.7	1.0	0.060	mg/L	10	ND	107	85-115		
Matrix Spike Dup (BJ32925-MSD1)		**Source: 1311542-01**			Prepared & Analyzed: 10/30/13					
Total Organic Carbon	11.0	1.0	0.060	mg/L	10	ND	110	85-115	3	10
Batch BJ32927 - Ammonia by SEAL										
Blank (BJ32927-BLK1)					Prepared & Analyzed: 11/01/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BJ32927-BS1)					Prepared & Analyzed: 11/01/13					
Ammonia as N	0.49	0.040	0.009	mg/L	0.50		97	90-110		
Matrix Spike (BJ32927-MS1)		**Source: 1311529-01**			Prepared & Analyzed: 11/01/13					
Ammonia as N	0.81	0.040	0.009	mg/L	0.50	0.33	97	90-110		
Matrix Spike (BJ32927-MS2)		**Source: 1311539-07**			Prepared & Analyzed: 11/01/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.010	98	90-110		
Matrix Spike Dup (BJ32927-MSD1)		**Source: 1311529-01**			Prepared & Analyzed: 11/01/13					
Ammonia as N	0.79	0.040	0.009	mg/L	0.50	0.33	92	90-110	3	10
Matrix Spike Dup (BJ32927-MSD2)		**Source: 1311539-07**			Prepared & Analyzed: 11/01/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.010	99	90-110	0.2	10
Batch BJ33004 - TSS prep										
Blank (BJ33004-BLK1)					Prepared & Analyzed: 10/30/13					
Total Suspended Solids	1 U	1	1	mg/L						

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ33004 - TSS prep										
LCS (BJ33004-BS1)					Prepared & Analyzed: 10/30/13					
Total Suspended Solids	50.5	1	1	mg/L	50		101	85-115		
Duplicate (BJ33004-DUP1)		**Source: 1310835-02**			Prepared & Analyzed: 10/30/13					
Total Suspended Solids	13.0	1	1	mg/L		12.0			8	30
Batch BJ33024 - Ammonia by SEAL										
Blank (BJ33024-BLK1)					Prepared & Analyzed: 11/01/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BJ33024-BS1)					Prepared & Analyzed: 11/01/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50		103	90-110		
Matrix Spike (BJ33024-MS1)		**Source: 1311076-29**			Prepared & Analyzed: 11/01/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	0.033	96	90-110		
Matrix Spike (BJ33024-MS2)		**Source: 1311620-07**			Prepared & Analyzed: 11/01/13					
Ammonia as N	0.53	0.040	0.009	mg/L	0.50	0.021	101	90-110		
Matrix Spike Dup (BJ33024-MSD1)		**Source: 1311076-29**			Prepared & Analyzed: 11/01/13					
Ammonia as N	0.53	0.040	0.009	mg/L	0.50	0.033	100	90-110	4	10
Matrix Spike Dup (BJ33024-MSD2)		**Source: 1311620-07**			Prepared & Analyzed: 11/01/13					
Ammonia as N	0.55	0.040	0.009	mg/L	0.50	0.021	106	90-110	4	10
Batch BJ33026 - Ammonia by SEAL										
Blank (BJ33026-BLK1)					Prepared & Analyzed: 11/05/13					
Ammonia as N	0.009 U	0.040	0.009	mg/L						

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ33026 - Ammonia by SEAL										
LCS (BJ33026-BS1)					Prepared & Analyzed: 11/05/13					
Ammonia as N	0.54	0.040	0.009	mg/L	0.50		108	90-110		
Matrix Spike (BJ33026-MS1)		**Source: 1311076-72**			Prepared & Analyzed: 11/05/13					
Ammonia as N	0.49	0.040	0.009	mg/L	0.50	ND	98	90-110		
Matrix Spike (BJ33026-MS2)		**Source: 1311076-73**			Prepared & Analyzed: 11/05/13					
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	ND	102	90-110		
Matrix Spike Dup (BJ33026-MSD1)		**Source: 1311076-72**			Prepared & Analyzed: 11/05/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	ND	100	90-110	2	10
Matrix Spike Dup (BJ33026-MSD2)		**Source: 1311076-73**			Prepared & Analyzed: 11/05/13					
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	ND	100	90-110	2	10
Batch BJ33046 - COD prep										
Blank (BJ33046-BLK1)					Prepared & Analyzed: 11/05/13					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BJ33046-BS1)					Prepared & Analyzed: 11/05/13					
Chemical Oxygen Demand	54	25	10	mg/L	50		108	90-110		
Matrix Spike (BJ33046-MS1)		**Source: 1311076-39**			Prepared & Analyzed: 11/05/13					
Chemical Oxygen Demand	76	25	10	mg/L	50	28	96	85-115		
Matrix Spike Dup (BJ33046-MSD1)		**Source: 1311076-39**			Prepared & Analyzed: 11/05/13					
Chemical Oxygen Demand	74	25	10	mg/L	50	28	92	85-115	3	32

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ33102 - TSS prep										
Blank (BJ33102-BLK1)					Prepared & Analyzed: 10/31/13					
Total Suspended Solids	1 U	1	1	mg/L						
LCS (BJ33102-BS1)					Prepared & Analyzed: 10/31/13					
Total Suspended Solids	50.8	1	1	mg/L	50		102	85-115		
Duplicate (BJ33102-DUP1)		**Source: 1311076-02**			Prepared & Analyzed: 10/31/13					
Total Suspended Solids	14.0	1	1	mg/L		14.0			0	30
Batch BJ33108 - alkalinity										
Blank (BJ33108-BLK1)					Prepared & Analyzed: 11/01/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BJ33108-BS1)					Prepared & Analyzed: 11/01/13					
Total Alkalinity	130	8.0	2.0	mg/L	120		103	90-110		
Matrix Spike (BJ33108-MS1)		**Source: 1311630-04**			Prepared & Analyzed: 11/01/13					
Total Alkalinity	260	8.0	2.0	mg/L	120	140	97	80-120		
Matrix Spike Dup (BJ33108-MSD1)		**Source: 1311630-04**			Prepared & Analyzed: 11/01/13					
Total Alkalinity	260	8.0	2.0	mg/L	120	140	98	80-120	0.3	26
Batch BJ33119 - Digestion for TKN by EPA 351.2										
Blank (BJ33119-BLK1)					Prepared: 10/31/13 Analyzed: 11/11/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ33119 - Digestion for TKN by EPA 351.2										
LCS (BJ33119-BS1)					Prepared: 10/31/13 Analyzed: 11/11/13					
Total Kjeldahl Nitrogen	2.29	0.20	0.05	mg/L	2.5		90	90-110		
Matrix Spike (BJ33119-MS1)		**Source: 1311076-14**			Prepared: 10/31/13 Analyzed: 11/11/13					
Total Kjeldahl Nitrogen	3.57	0.20	0.05	mg/L	2.5	0.980	102	90-110		
Matrix Spike (BJ33119-MS2)		**Source: 1311065-01**			Prepared: 10/31/13 Analyzed: 11/11/13					
Total Kjeldahl Nitrogen	4.22	0.20	0.05	mg/L	2.5	1.75	97	90-110		
Matrix Spike Dup (BJ33119-MSD1)		**Source: 1311076-14**			Prepared: 10/31/13 Analyzed: 11/11/13					
Total Kjeldahl Nitrogen	3.52	0.20	0.05	mg/L	2.5	0.980	100	90-110	1	20
Matrix Spike Dup (BJ33119-MSD2)		**Source: 1311065-01**			Prepared: 10/31/13 Analyzed: 11/11/13					
Total Kjeldahl Nitrogen	3.95	0.20	0.05	mg/L	2.5	1.75	87	90-110	6	20
Batch BJ33123 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BJ33123-BLK1)					Prepared: 10/31/13 Analyzed: 11/07/13					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BJ33123-BS1)					Prepared: 10/31/13 Analyzed: 11/07/13					
Phosphorous - Total as P	0.778	0.040	0.010	mg/L	0.80		97	90-110		
Matrix Spike (BJ33123-MS1)		**Source: 1311713-02**			Prepared: 10/31/13 Analyzed: 11/07/13					
Phosphorous - Total as P	1.73	0.040	0.010	mg/L	1.0	0.781	94	90-110		
Matrix Spike Dup (BJ33123-MSD1)		**Source: 1311713-02**			Prepared: 10/31/13 Analyzed: 11/07/13					
Phosphorous - Total as P	1.72	0.040	0.010	mg/L	1.0	0.781	94	90-110	0.5	25

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BK30431 - COD prep										
Blank (BK30431-BLK1)					Prepared & Analyzed: 11/04/13					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BK30431-BS1)					Prepared & Analyzed: 11/04/13					
Chemical Oxygen Demand	50	25	10	mg/L	50		100	90-110		
Matrix Spike (BK30431-MS1)		**Source: 1311076-33**			Prepared & Analyzed: 11/04/13					
Chemical Oxygen Demand	50	25	10	mg/L	50	ND	100	85-115		
Matrix Spike Dup (BK30431-MSD1)		**Source: 1311076-33**			Prepared & Analyzed: 11/04/13					
Chemical Oxygen Demand	54	25	10	mg/L	50	ND	108	85-115	8	32
Batch BK30433 - alkalinity										
Blank (BK30433-BLK1)					Prepared & Analyzed: 11/05/13					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BK30433-BS1)					Prepared & Analyzed: 11/05/13					
Total Alkalinity	140	8.0	2.0	mg/L	120		110	90-110		
Matrix Spike (BK30433-MS1)		**Source: 1311754-01**			Prepared & Analyzed: 11/05/13					
Total Alkalinity	250	8.0	2.0	mg/L	120	130	101	80-120		
Matrix Spike Dup (BK30433-MSD1)		**Source: 1311754-01**			Prepared & Analyzed: 11/05/13					
Total Alkalinity	250	8.0	2.0	mg/L	120	130	100	80-120	0.1	26
Batch BK30624 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BK30624-BLK1)					Prepared: 11/06/13 Analyzed: 11/07/13					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BK30624 - Digestion for TP by EPA 365.2/SM4500PE										
LCS (BK30624-BS1)					Prepared: 11/06/13 Analyzed: 11/08/13					
Phosphorous - Total as P	0.748	0.040	0.010	mg/L	0.80		94	90-110		
Matrix Spike (BK30624-MS1)		**Source: 1311802-02**			Prepared: 11/06/13 Analyzed: 11/07/13					
Phosphorous - Total as P	1.08	0.040	0.010	mg/L	1.0	0.0428	103	90-110		
Matrix Spike (BK30624-MS2)		**Source: 1311842-02**			Prepared: 11/06/13 Analyzed: 11/07/13					
Phosphorous - Total as P	0.933	0.040	0.010	mg/L	1.0	0.0268	91	90-110		
Matrix Spike Dup (BK30624-MSD1)		**Source: 1311802-02**			Prepared: 11/06/13 Analyzed: 11/07/13					
Phosphorous - Total as P	0.944	0.040	0.010	mg/L	1.0	0.0428	90	90-110	13	25
Matrix Spike Dup (BK30624-MSD2)		**Source: 1311842-02**			Prepared: 11/06/13 Analyzed: 11/07/13					
Phosphorous - Total as P	0.953	0.040	0.010	mg/L	1.0	0.0268	93	90-110	2	25
Batch BK30715 - COD prep										
Blank (BK30715-BLK1)					Prepared & Analyzed: 11/07/13					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BK30715-BS1)					Prepared & Analyzed: 11/07/13					
Chemical Oxygen Demand	50	25	10	mg/L	50		100	90-110		
Matrix Spike (BK30715-MS1)		**Source: 1311076-06**			Prepared & Analyzed: 11/07/13					
Chemical Oxygen Demand	120	25	10	mg/L	50	74	94	85-115		
Matrix Spike Dup (BK30715-MSD1)		**Source: 1311076-06**			Prepared & Analyzed: 11/07/13					
Chemical Oxygen Demand	120	25	10	mg/L	50	74	100	85-115	2	32

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BK30741 - Digestion for TKN by EPA 351.2										
Blank (BK30741-BLK1)					Prepared: 11/07/13 Analyzed: 11/12/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BK30741-BS1)					Prepared: 11/07/13 Analyzed: 11/12/13					
Total Kjeldahl Nitrogen	2.59	0.20	0.05	mg/L	2.5		102	90-110		
Matrix Spike (BK30741-MS1)		**Source: 1311711-02**			Prepared: 11/07/13 Analyzed: 11/12/13					
Total Kjeldahl Nitrogen	3.12	0.20	0.05	mg/L	2.5	0.469	105	90-110		
Matrix Spike (BK30741-MS2)		**Source: 1311047-01**			Prepared: 11/07/13 Analyzed: 11/12/13					
Total Kjeldahl Nitrogen	3.91	0.20	0.05	mg/L	2.5	1.31	103	90-110		
Matrix Spike Dup (BK30741-MSD1)		**Source: 1311711-02**			Prepared: 11/07/13 Analyzed: 11/12/13					
Total Kjeldahl Nitrogen	3.10	0.20	0.05	mg/L	2.5	0.469	104	90-110	0.7	20
Matrix Spike Dup (BK30741-MSD2)		**Source: 1311047-01**			Prepared: 11/07/13 Analyzed: 11/12/13					
Total Kjeldahl Nitrogen	4.04	0.20	0.05	mg/L	2.5	1.31	108	90-110	3	20
Batch BK30742 - Digestion for TKN by EPA 351.2										
Blank (BK30742-BLK1)					Prepared: 11/07/13 Analyzed: 11/11/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BK30742-BS1)					Prepared: 11/07/13 Analyzed: 11/11/13					
Total Kjeldahl Nitrogen	2.36	0.20	0.05	mg/L	2.5		93	90-110		
Matrix Spike (BK30742-MS1)		**Source: 1311076-29**			Prepared: 11/07/13 Analyzed: 11/11/13					
Total Kjeldahl Nitrogen	3.40	0.20	0.05	mg/L	2.5	0.824	102	90-110		

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BK30742 - Digestion for TKN by EPA 351.2										
Matrix Spike (BK30742-MS2)		**Source: 1311076-17**			Prepared: 11/07/13 Analyzed: 11/11/13					
Total Kjeldahl Nitrogen	3.06	0.20	0.05	mg/L	2.5	0.521	100	90-110		
Matrix Spike Dup (BK30742-MSD1)		**Source: 1311076-29**			Prepared: 11/07/13 Analyzed: 11/11/13					
Total Kjeldahl Nitrogen	3.34	0.20	0.05	mg/L	2.5	0.824	99	90-110	2	20
Matrix Spike Dup (BK30742-MSD2)		**Source: 1311076-17**			Prepared: 11/07/13 Analyzed: 11/11/13					
Total Kjeldahl Nitrogen	3.12	0.20	0.05	mg/L	2.5	0.521	103	90-110	2	20
Batch BK30743 - Digestion for TKN by EPA 351.2										
Blank (BK30743-BLK1)					Prepared: 11/07/13 Analyzed: 11/12/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BK30743-BS1)					Prepared: 11/07/13 Analyzed: 11/12/13					
Total Kjeldahl Nitrogen	2.37	0.20	0.05	mg/L	2.5		94	90-110		
Matrix Spike (BK30743-MS1)		**Source: 1311758-02**			Prepared: 11/07/13 Analyzed: 11/12/13					
Total Kjeldahl Nitrogen	2.93	0.20	0.05	mg/L	2.5	0.639	90	90-110		
Matrix Spike Dup (BK30743-MSD1)		**Source: 1311758-02**			Prepared: 11/07/13 Analyzed: 11/12/13					
Total Kjeldahl Nitrogen	3.02	0.20	0.05	mg/L	2.5	0.639	94	90-110	3	20
Batch BK30811 - Digestion for TKN by EPA 351.2										
Blank (BK30811-BLK1)					Prepared: 11/08/13 Analyzed: 11/12/13					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						

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

November 13, 2013
Work Order: 1311076

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BK30811 - Digestion for TKN by EPA 351.2										
LCS (BK30811-BS1)					Prepared: 11/08/13 Analyzed: 11/12/13					
Total Kjeldahl Nitrogen	2.60	0.20	0.05	mg/L	2.5		103	90-110		
Matrix Spike (BK30811-MS1)		**Source: 1311821-07**			Prepared: 11/08/13 Analyzed: 11/12/13					
Total Kjeldahl Nitrogen	3.32	0.20	0.05	mg/L	2.5	0.640	106	90-110		
Matrix Spike (BK30811-MS2)		**Source: 1311076-06**			Prepared: 11/08/13 Analyzed: 11/12/13					
Total Kjeldahl Nitrogen	3.36	0.20	0.05	mg/L	2.5	1.32	80	90-110		
Matrix Spike Dup (BK30811-MSD1)		**Source: 1311821-07**			Prepared: 11/08/13 Analyzed: 11/12/13					
Total Kjeldahl Nitrogen	3.29	0.20	0.05	mg/L	2.5	0.640	104	90-110	1	20
Matrix Spike Dup (BK30811-MSD2)		**Source: 1311076-06**			Prepared: 11/08/13 Analyzed: 11/12/13					
Total Kjeldahl Nitrogen	3.65	0.20	0.05	mg/L	2.5	1.32	92	90-110	8	20

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

November 13, 2013
Work Order: 1311076

Inorganic, Dissolved - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32425 - DOC prep										
Blank (BJ32425-BLK1)					Prepared & Analyzed: 10/24/13					
Dissolved Organic Carbon	0.060 U	1.0	0.060	mg/L						
LCS (BJ32425-BS1)					Prepared & Analyzed: 10/24/13					
Dissolved Organic Carbon	10.1	1.0	0.060	mg/L	10		101	90-110		
Matrix Spike (BJ32425-MS1)		**Source: 1311076-42**			Prepared & Analyzed: 10/24/13					
Dissolved Organic Carbon	27.9	1.0	0.060	mg/L	10	18.6	93	85-125		
Matrix Spike Dup (BJ32425-MSD1)		**Source: 1311076-42**			Prepared & Analyzed: 10/24/13					
Dissolved Organic Carbon	27.0	1.0	0.060	mg/L	10	18.6	85	85-125	3	25
Batch BJ32926 - DOC prep										
Blank (BJ32926-BLK1)					Prepared & Analyzed: 10/30/13					
Dissolved Organic Carbon	0.060 U	1.0	0.060	mg/L						
LCS (BJ32926-BS1)					Prepared & Analyzed: 10/30/13					
Dissolved Organic Carbon	9.41	1.0	0.060	mg/L	10		94	90-110		
Matrix Spike (BJ32926-MS1)		**Source: 1311076-73**			Prepared & Analyzed: 10/30/13					
Dissolved Organic Carbon	9.85	1.0	0.060	mg/L	10	ND	99	85-125		
Matrix Spike Dup (BJ32926-MSD1)		**Source: 1311076-73**			Prepared & Analyzed: 10/30/13					
Dissolved Organic Carbon	10.8	1.0	0.060	mg/L	10	ND	108	85-125	9	25

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

November 13, 2013
Work Order: 1311076

Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32817 - Metals Preparation for EPA Method 200.7										
Blank (BJ32817-BLK1)					Prepared & Analyzed: 10/29/13					
Potassium	0.12 I	0.50	0.10	mg/L						
Sodium	0.13 U	0.50	0.13	mg/L						
Magnesium	0.020 U	0.50	0.020	mg/L						
Manganese	0.0010 U	0.010	0.0010	mg/L						
Calcium	0.042 U	0.50	0.042	mg/L						
Iron	0.020 U	0.10	0.020	mg/L						
Boron	0.050 U	0.10	0.050	mg/L						
LCS (BJ32817-BS1)					Prepared & Analyzed: 10/29/13					
Potassium	19	0.50	0.10	mg/L	20		93	85-115		
Magnesium	19	0.50	0.020	mg/L	20		94	85-115		
Iron	8.0	0.10	0.020	mg/L	8.0		100	85-115		
Manganese	0.39	0.010	0.0010	mg/L	0.40		98	85-115		
Calcium	19	0.50	0.042	mg/L	20		95	85-115		
Sodium	19	0.50	0.13	mg/L	20		96	85-115		
Boron	0.37	0.10	0.050	mg/L	0.40		93	85-115		
Matrix Spike (BJ32817-MS1)		**Source: 1311380-01**			Prepared & Analyzed: 10/29/13					
Boron	0.39	0.10	0.050	mg/L	0.40	ND	98	70-130		
Manganese	0.39	0.010	0.0010	mg/L	0.40	0.011	95	70-130		
Sodium	43	0.50	0.13	mg/L	20	27	78	70-130		
Iron	8.1	0.10	0.020	mg/L	8.0	0.23	98	70-130		
Calcium	71	0.50	0.042	mg/L	20	52	91	70-130		
Magnesium	23	0.50	0.020	mg/L	20	4.9	92	70-130		
Potassium	20	0.50	0.10	mg/L	20	1.4	91	70-130		
Matrix Spike (BJ32817-MS2)		**Source: 1311394-01**			Prepared & Analyzed: 10/29/13					
Potassium	24	0.50	0.10	mg/L	20	3.3	104	70-130		
Calcium	51	0.50	0.042	mg/L	20	30	102	70-130		
Manganese	0.49	0.010	0.0010	mg/L	0.40	0.022	117	70-130		
Iron	9.6	0.10	0.020	mg/L	8.0	ND	120	70-130		
Magnesium	29	0.50	0.020	mg/L	20	8.0	107	70-130		
Boron	0.47	0.10	0.050	mg/L	0.40	ND	117	70-130		
Sodium	35	0.50	0.13	mg/L	20	13	110	70-130		

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

November 13, 2013
Work Order: 1311076

Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32817 - Metals Preparation for EPA Method 200.7										
Matrix Spike Dup (BJ32817-MSD1)		**Source: 1311380-01**			Prepared & Analyzed: 10/29/13					
Calcium	71	0.50	0.042	mg/L	20	52	92	70-130	0.3	20
Iron	8.0	0.10	0.020	mg/L	8.0	0.23	97	70-130	1	20
Sodium	45	0.50	0.13	mg/L	20	27	88	70-130	4	20
Manganese	0.39	0.010	0.0010	mg/L	0.40	0.011	94	70-130	1	20
Boron	0.40	0.10	0.050	mg/L	0.40	ND	99	70-130	1	20
Potassium	20	0.50	0.10	mg/L	20	1.4	92	70-130	0.8	20
Magnesium	23	0.50	0.020	mg/L	20	4.9	89	70-130	3	20
Matrix Spike Dup (BJ32817-MSD2)		**Source: 1311394-01**			Prepared & Analyzed: 10/29/13					
Boron	0.46	0.10	0.050	mg/L	0.40	ND	116	70-130	1	20
Magnesium	28	0.50	0.020	mg/L	20	8.0	102	70-130	3	20
Manganese	0.49	0.010	0.0010	mg/L	0.40	0.022	117	70-130	0.08	20
Iron	9.7	0.10	0.020	mg/L	8.0	ND	122	70-130	1	20
Potassium	23	0.50	0.10	mg/L	20	3.3	100	70-130	4	20
Sodium	32	0.50	0.13	mg/L	20	13	97	70-130	7	20
Calcium	47	0.50	0.042	mg/L	20	30	85	70-130	7	20
Batch BJ33010 - Metals Preparation for EPA Method 200.7										
Blank (BJ33010-BLK1)					Prepared & Analyzed: 10/30/13					
Calcium	0.042 U	0.50	0.042	mg/L						
Potassium	0.16	0.050	0.010	mg/L						
Magnesium	0.020 U	0.50	0.020	mg/L						
Boron	0.050 U	0.10	0.050	mg/L						
Sodium	0.13 U	0.50	0.13	mg/L						
Manganese	0.0010 U	0.010	0.0010	mg/L						
Iron	0.020 U	0.10	0.020	mg/L						

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

November 13, 2013
Work Order: 1311076

Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ33010 - Metals Preparation for EPA Method 200.7										
LCS (BJ33010-BS1)					Prepared & Analyzed: 10/30/13					
Magnesium	20	0.50	0.020	mg/L	20		100	85-115		
Boron	0.41	0.10	0.050	mg/L	0.40		103	85-115		
Manganese	0.42	0.010	0.0010	mg/L	0.40		105	85-115		
Calcium	20	0.50	0.042	mg/L	20		98	85-115		
Iron	8.4	0.10	0.020	mg/L	8.0		105	85-115		
Potassium	19	0.050	0.010	mg/L	20		95	85-115		
Sodium	20	0.50	0.13	mg/L	20		99	85-115		
Matrix Spike (BJ33010-MS1)		**Source: 1311076-03**			Prepared & Analyzed: 10/30/13					
Magnesium	57	0.50	0.020	mg/L	20	39	90	70-130		
Sodium	57	0.50	0.13	mg/L	20	38	93	70-130		
Potassium	34	0.050	0.010	mg/L	20	16	92	70-130		
Calcium	99	0.50	0.042	mg/L	20	82	83	70-130		
Manganese	0.41	0.010	0.0010	mg/L	0.40	0.0072	100	70-130		
Boron	0.89	0.10	0.050	mg/L	0.40	0.49	99	70-130		
Iron	8.3	0.10	0.020	mg/L	8.0	0.10	102	70-130		
Matrix Spike (BJ33010-MS2)		**Source: 1311528-01**			Prepared & Analyzed: 10/30/13					
Manganese	0.43	0.010	0.0010	mg/L	0.40	0.014	104	70-130		
Calcium	87	0.50	0.042	mg/L	20	66	107	70-130		
Boron	0.55	0.10	0.050	mg/L	0.40	0.14	102	70-130		
Iron	8.6	0.10	0.020	mg/L	8.0	0.17	106	70-130		
Potassium	28	0.050	0.010	mg/L	20	9.1	97	70-130		
Magnesium	30	0.50	0.020	mg/L	20	10	99	70-130		
Sodium	97	0.50	0.13	mg/L	20	78	94	70-130		
Matrix Spike Dup (BJ33010-MSD1)		**Source: 1311076-03**			Prepared & Analyzed: 10/30/13					
Boron	0.92	0.10	0.050	mg/L	0.40	0.49	107	70-130	3	20
Calcium	100	0.50	0.042	mg/L	20	82	94	70-130	2	20
Iron	8.2	0.10	0.020	mg/L	8.0	0.10	101	70-130	0.9	20
Potassium	34	0.050	0.010	mg/L	20	16	90	70-130	1	20
Magnesium	58	0.50	0.020	mg/L	20	39	96	70-130	2	20
Sodium	58	0.50	0.13	mg/L	20	38	97	70-130	1	20
Manganese	0.41	0.010	0.0010	mg/L	0.40	0.0072	100	70-130	0.2	20

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

November 13, 2013
Work Order: 1311076

Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ33010 - Metals Preparation for EPA Method 200.7										
Matrix Spike Dup (BJ33010-MSD2)		**Source: 1311528-01**			Prepared & Analyzed: 10/30/13					
Manganese	0.42	0.010	0.0010	mg/L	0.40	0.014	103	70-130	2	20
Iron	8.4	0.10	0.020	mg/L	8.0	0.17	103	70-130	2	20
Potassium	27	0.050	0.010	mg/L	20	9.1	92	70-130	3	20
Boron	0.55	0.10	0.050	mg/L	0.40	0.14	101	70-130	0.8	20
Sodium	98	0.50	0.13	mg/L	20	78	99	70-130	1	20
Calcium	85	0.50	0.042	mg/L	20	66	98	70-130	2	20
Magnesium	29	0.50	0.020	mg/L	20	10	95	70-130	2	20
Batch BJ33110 - Metals Preparation for EPA Method 200.7										
Blank (BJ33110-BLK1)					Prepared & Analyzed: 10/31/13					
Boron	0.050 U	0.10	0.050	mg/L						
Potassium	0.010 U	0.050	0.010	mg/L						
Iron	0.020 U	0.10	0.020	mg/L						
Calcium	0.042 U	0.50	0.042	mg/L						
Sodium	0.13 U	0.50	0.13	mg/L						
Magnesium	0.020 U	0.50	0.020	mg/L						
Manganese	0.0010 U	0.010	0.0010	mg/L						
LCS (BJ33110-BS1)					Prepared & Analyzed: 10/31/13					
Calcium	19	0.50	0.042	mg/L	20		94	85-115		
Magnesium	19	0.50	0.020	mg/L	20		95	85-115		
Sodium	21	0.50	0.13	mg/L	20		103	85-115		
Boron	0.41	0.10	0.050	mg/L	0.40		103	85-115		
Manganese	0.41	0.010	0.0010	mg/L	0.40		103	85-115		
Potassium	18	0.050	0.010	mg/L	20		90	85-115		
Iron	8.3	0.10	0.020	mg/L	8.0		104	85-115		

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

November 13, 2013
Work Order: 1311076

Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ33110 - Metals Preparation for EPA Method 200.7										
Matrix Spike (BJ33110-MS1)		**Source: 1311076-06**			Prepared & Analyzed: 10/31/13					
Magnesium	21	0.50	0.020	mg/L	20	0.58	101	70-130		
Potassium	19	0.050	0.010	mg/L	20	0.12	94	70-130		
Sodium	47	0.50	0.13	mg/L	20	27	103	70-130		
Calcium	26	0.50	0.042	mg/L	20	7.1	95	70-130		
Boron	0.49	0.10	0.050	mg/L	0.40	0.073	105	70-130		
Iron	8.7	0.10	0.020	mg/L	8.0	0.26	105	70-130		
Manganese	0.42	0.010	0.0010	mg/L	0.40	ND	105	70-130		
Matrix Spike (BJ33110-MS2)		**Source: 1311662-01**			Prepared & Analyzed: 10/31/13					
Manganese	0.47	0.010	0.0010	mg/L	0.40	0.025	111	70-130		
Sodium	170	0.50	0.13	mg/L	20	130	205	70-130		
Boron	0.75	0.10	0.050	mg/L	0.40	0.28	117	70-130		
Iron	9.2	0.10	0.020	mg/L	8.0	0.23	113	70-130		
Magnesium	32	0.50	0.020	mg/L	20	8.0	118	70-130		
Potassium	38	0.050	0.010	mg/L	20	14	120	70-130		
Calcium	110	0.50	0.042	mg/L	20	73	167	70-130		
Matrix Spike Dup (BJ33110-MSD1)		**Source: 1311076-06**			Prepared & Analyzed: 10/31/13					
Sodium	47	0.50	0.13	mg/L	20	27	99	70-130	2	20
Magnesium	21	0.50	0.020	mg/L	20	0.58	101	70-130	0.3	20
Calcium	27	0.50	0.042	mg/L	20	7.1	100	70-130	4	20
Manganese	0.40	0.010	0.0010	mg/L	0.40	ND	99	70-130	6	20
Boron	0.46	0.10	0.050	mg/L	0.40	0.073	96	70-130	8	20
Iron	8.3	0.10	0.020	mg/L	8.0	0.26	100	70-130	5	20
Potassium	19	0.050	0.010	mg/L	20	0.12	93	70-130	1	20
Matrix Spike Dup (BJ33110-MSD2)		**Source: 1311662-01**			Prepared & Analyzed: 10/31/13					
Sodium	150	0.50	0.13	mg/L	20	130	109	70-130	12	20
Boron	0.71	0.10	0.050	mg/L	0.40	0.28	106	70-130	6	20
Potassium	35	0.050	0.010	mg/L	20	14	104	70-130	9	20
Magnesium	29	0.50	0.020	mg/L	20	8.0	107	70-130	7	20
Calcium	96	0.50	0.042	mg/L	20	73	114	70-130	11	20
Iron	8.9	0.10	0.020	mg/L	8.0	0.23	108	70-130	4	20
Manganese	0.45	0.010	0.0010	mg/L	0.40	0.025	106	70-130	5	20

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

November 13, 2013
Work Order: 1311076

Microbiology - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ32451 - FC-MF										
Blank (BJ32451-BLK1)					Prepared: 10/24/13 Analyzed: 10/25/13					
Fecal Coliforms	1 U	1	1	CFU/100 ml						
Duplicate (BJ32451-DUP1)		**Source: 1311480-02**			Prepared: 10/24/13 Analyzed: 10/25/13					
Fecal Coliforms	1 U	1	1	CFU/100 ml		ND				200

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

November 13, 2013
Work Order: 1311076

* 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.

L	Off-scale high. Result exceeded highest calibration standard.
J5	Matrix spike of this sample was outside typical range. All other QC criteria were acceptable.

Questions regarding this report should be directed to :

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

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

SAL Project No. 1311076

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS4 SE#4

Samplers: (Signature)

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

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	125mLP, $Na_2S_2O_3$ FC-MF, FC-QT	500mLP, Cool TS, TSS, Total Alkalinity, CBOD, NOx, F, Cl OP, SO_4	125mLP, H_2SO_4 TKN, NH_3, TP	250mLP, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, F, Cl, OP, SO_4	125mLP, H_2SO_4 COD, TKN, NH_3, TP	40mLaV, HCl TOC	250mLaG, Cool DOC	500mLP, Cool Total Alkalinity, NOx, Cl, SO_4	125mLP, H_2SO_4 TKN, NH_3	pH	Temperature	Conductivity	DO	No. of Containers (Total per each location)
01	STE			WW		X	4	1	1	1											
02	STE-DUP			WW		X	4	1	1	1											
03	PZ-01	10/23/13	1144	GW		X				1	1	1	2	1			5.34	25.5	956	4.57	
04	PZ-02			GW		X									1	1					
05	PZ-03			GW		X									1	1					
06	BKG-10			GW		X				1	1	1	2	1							
07	BKG-15			GW		X			1						1						
08	PZ-04			GW		X									1	1					
09	PZ-05			GW		X									1	1					
10	PZ-06			GW		X									1	1					
11	PZ-AB4-08			GW		X			1						1						
12	PZ-AB4-15			GW		X									1	1					

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished: S Lynn	10:15AM 10/17		
Relinquished:	10-23-13 1455	Received:	10-23-13 1455
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

1311076

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

SAL Project No. 1311076

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS4 SE#4

Samplers: (Signature)

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

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	125mLP, $Na_2S_2O_3$ FC-MF, FC-QT	500mLP, Cool TS, TSS, Total Alkalinity, CBOD, NOx, F, Cl OP, SO_4	125mLP, H_2SO_4 TKN, NH_3, TP	250mLP, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, F, Cl, OP, SO_4	125mLP, H_2SO_4 COD, TKN, NH_3, TP	40mLaV, HCl TOC	250mLaG, Cool DOC	500mLP, Cool Total Alkalinity, NOx, Cl, SO_4	125mLP, H_2SO_4 TKN, NH_3	pH	Temperature	Conductivity	DO	No. of Containers (Total per each location)
13	PZ-C1	10/23/13	0854	GW		X			1	1	1						5.99	24.6	1015	3.58	
14	PZ-C2		0910	GW		X									1	1	5.23	24.9	369	0.56	
15	PZ-C3-08		0954	GW		X			1				2	1	1		5.27	24.7	754	0.81	
16	PZ-C3-15		1010	GW		X									1	1	6.48	24.6	394	0.56	
17	PZ-C6-08			GW		X									1	1					
18	PZ-C6-15			GW		X									1	1					
19	PZ-D3-08	10/23/13	1027	GW		X			1						1		5.48	24.8	659	2.40	
20	PZ-D3-15		1039	GW		X			1						1		6.37	24.9	315	1.02	
21	PZ-D4-08		1201	GW		X									1	1	7.55	25.0	949	2.24	
22	PZ-D4-15		1215	GW		X									1	1	6.97	24.7	567	0.24	
23	PZ-E1	10/23/13	0840	GW		X			1						1		5.01	25.4	535	1.39	
24	PZ-E2	10/23/13	8:23	GW		X									1	1	5.69	24.9	325	3.99	

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
S Lynn	10:35AM 10/17		
Relinquished:	Date/Time: 10-23-13 1455	Received:	Date/Time: 10-23-13 1455
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

1311076

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

SAL Project No. 1311076

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS4 SE#4

Samplers: (Signature)

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

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	125mLP, $Na_2S_2O_3$ FC-MF, FC-QT	500mLP, Cool TS, TSS, Total Alkalinity, CBOD, NOx, F, Cl OP, SO_4	125mLP, H_2SO_4 TKN, NH_3, TP	250mLP, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, F, Cl, OP, SO_4	125mLP, H_2SO_4 COD, TKN, NH_3, TP	40mLaV, HCl TOC	250mLaG, Cool DOC	500mLP, Cool Total Alkalinity, NOx, Cl, SO_4	125mLP, H_2SO_4 TKN, NH_3	pH	Temperature	Conductivity	DO	No. of Containers (Total per each location)
25	PZ-E3-08	10/23/13	1053	GW		X				1	1	1	2	1			5.74	25.2	1011	0.97	
26	PZ-E3-15		1111	GW		X						1			1		6.04	25.1	208	0.31	
27	PZ-E4-08		1230	GW		X						1			1		4.73	25.2	849	0.95	
28	PZ-E4-15		1243	GW		X									1	1	6.42	24.9	422	0.16	
29	PZ-E5-08			GW		X									1	1					
30	PZ-E5-15			GW		X									1	1					
31	PZ-E6-08			GW		X									1	1					
32	PZ-E6-15			GW		X									1	1					
33	PZ-E7-08			GW		X				1	1	1	2	1							
34	PZ-E7-15			GW		X						1			1						
35	PZ-E7-15-DUP			GW		X						1			1						
36	PZ-F3-08			GW		X						1			1						

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished:	11:00AM 10/17		
Relinquished:	10-23-13 1455		10-23-13 1455
Relinquished:			
Relinquished:			
Relinquished:			

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

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

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

Proper containers used? Y N N/A

1311076

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

SAL Project No. 1311076

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS4 SE#4

Samplers: (Signature)

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

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	125mLP, H_2SO_4 COD, TKN, NH_3	500mLP, Cool TS, TSS, Total Alkalinity, CBOD, NOx, F, Cl OP, SO_4	125mLP, H_2SO_4 TKN, NH_3, TP	250mLP, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, F, Cl, OP, SO_4	125mLP, H_2SO_4 COD, TKN, NH_3, TP	40mLaV, HCl TOC	250mLaG, Cool DOC	500mLP, Cool Total Alkalinity, NOx, Cl, SO_4	125mLP, H_2SO_4 TKN, NH_3	pH	Temperature	Conductivity	DO	No. of Containers (Total per each location)
37	PZ-F3-15	10/23/15	1129	GW		X						1			1		6.31	25.1	281	1.52	
38	PZ-F4-08		1257	GW		X				1	1	1	2	1			4.78	25.4	728	1.80	
39	PZ-F4-15		1314	GW		X						1			1		6.54	25.0	787	0.07	
40	PZ-G1			GW		X									1	1					
41	PZ-G2-12.5		0940	GW		X	1								1		4.29	25.6	884	0.56	
42	PZ-H4-08		1329	GW		X				1	1	1	2	1			4.52	25.3	840	1.39	
43	PZ-H4-15		1348	GW		X						1			1		6.52	25.0	657	0.41	
44	PZ-H5-11.5			GW		X						1			1						
45	PZ-I6-08			GW		X				1	1	1	2	1							
46	PZ-I6-15			GW		X									1	1					
47	PZ-I6-15-DUP			GW		X									1	1					
48	PZ-I10-08			GW		X						1			1						

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished:	11:20AM 10/17		
Relinquished:	10-23-15 1455		10-23-15 1455
Relinquished:			
Relinquished:			
Relinquished:			

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

1311076

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

Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

SAL Project No. 1311076

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS4 SE#4

Samplers: (Signature)

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

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	125mLP, $Na_2S_2O_3$ FC-MF, FC-QT	500mLP, Cool TS, TSS, Total Alkalinity, CBOD, NOx, F, Cl OP, SO_4	125mLP, H_2SO_4 TKN, NH_3, TP	250mLP, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, F, Cl, OP, SO_4	125mLP, H_2SO_4 COD, TKN, NH_3, TP	40mLaV, HCl TOC	250mLaG, Cool DOC	500mLP, Cool Total Alkalinity, NOx, Cl, SO_4	125mLP, H_2SO_4 TKN, NH_3	pH	Temperature	Conductivity	DO	No. of Containers (Total per each location)
01	STE	10/24/13	1340	WW		X	4	1	1	1							7.07	24.3	1345	0.04	
02	STE-DUP		1345	WW		X	4	1	1	1											
03	PZ-01			GW		X				1	1	1	2	1							
04	PZ-02			GW		X									1	1					
05	PZ-03			GW		X									1	1					
06	BKG-10			GW		X				1	1	1	2	1							
07	BKG-15			GW		X			1						1						
08	PZ-04			GW		X									1	1					
09	PZ-05			GW		X									1	1					
10	PZ-06			GW		X									1	1					
11	PZ-AB4-08			GW		X			1						1						
12	PZ-AB4-15			GW		X									1	1					

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished: S Lynn	10:15AM 10/17		
Relinquished:	1500 10/24/13	K Tindmarsh	1500 10/24/13
Relinquished:			
Relinquished:			
Relinquished:			

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

1311076

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

Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

SAL Project No. 1311076

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS4 SE#4

Samplers: (Signature)

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

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	125mLP, $Na_2S_2O_3$ FC-MF, FC-QT	500mLP, Cool TS, TSS, Total Alkalinity, CBOD, NOx, F, Cl OP, SO_4	125mLP, H_2SO_4 TKN, NH_3, TP	250mLP, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, F, Cl, OP, SO_4	125mLP, H_2SO_4 COD, TKN, NH_3, TP	40mLaV, HCl TOC	250mLaG, Cool DOC	500mLP, Cool Total Alkalinity, NOx, Cl, SO_4	125mLP, H_2SO_4 TKN, NH_3	pH	Temperature	Conductivity	DO	No. of Containers (Total per each location)
13	PZ-C1			GW		X			1	1	1										
14	PZ-C2			GW		X									1	1					
15	PZ-C3-08			GW		X			1				2	1	1						
16	PZ-C3-15			GW		X									1	1					
17	PZ-C6-08	10/24/13	0840	GW		X									1	1	3.97	23.6	523	0.19	
18	PZ-C6-15		0852	GW		X									1	1	5.40	23.6	356	0.22	
19	PZ-D3-08			GW		X			1						1						
20	PZ-D3-15			GW		X			1						1						
21	PZ-D4-08			GW		X									1	1					
22	PZ-D4-15			GW		X									1	1					
23	PZ-E1			GW		X			1						1						
24	PZ-E2			GW		X									1	1					

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished: S Lynn	10:35AM 10/17		
	1500 10/24/13	K Mudmond	1500 10/24/13

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

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

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

Proper containers used? Y N N/A

1311076

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

SAL Project No. 1311076

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS4 SE#4

Samplers: (Signature)

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

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	125mLP, $Na_2S_2O_3$ FC-MF, FC-QT	500mLP, Cool TS, TSS, Total Alkalinity, CBOD, NOx, F, Cl OP, SO_4	125mLP, H_2SO_4 TKN, NH_3, TP	250mLP, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, F, Cl, OP, SO_4	125mLP, H_2SO_4 COD, TKN, NH_3, TP	40mLaV, HCl TOC	250mLaG, Cool DOC	500mLP, Cool Total Alkalinity, NOx, Cl, SO_4	125mLP, H_2SO_4 TKN, NH_3	pH	Temperature	Conductivity	DO	No. of Containers (Total per each location)
25	PZ-E3-08			GW		X				1	1	1	2	1							
26	PZ-E3-15			GW		X						1			1						
27	PZ-E4-08			GW		X						1			1						
28	PZ-E4-15			GW		X									1	1					
29	PZ-E5-08	10/24/13	0814	GW		X									1	1	4.31	24.0	637	0.54	
30	PZ-E5-15		0827	GW		X									1	1	6.19	24.1	555	0.18	
31	PZ-E6-08		0859	GW		X									1	1	4.17	23.7	743	0.94	
32	PZ-E6-15		0913	GW		X									1	1	4.54	23.7	518	0.28	
33	PZ-E7-08		0953	GW		X				1	1	1	2	1			4.48	22.8	702	0.29	
34	PZ-E7-15		1007	GW		X						1			1		6.41	23.3	953	0.30	
35	PZ-E7-15-DUP		1012	GW		X						1			1						
36	PZ-F3-08			GW		X						1			1						

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished:	11:00AM 10/17		
	1500 10/24/13	K Nudmark	1500 10/24/13

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

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

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

Proper containers used? Y N N/A

1311076

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

SAL Project No. 1311076

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS4 SE#4

Samplers: (Signature)

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

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	125mLP, H_2SO_4 COD, TKN, NH_3	500mLP, Cool TS, TSS, Total Alkalinity, CBOD, NOx, F, Cl OP, SO_4	125mLP, H_2SO_4 TKN, NH_3, TP	250mLP, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, F, Cl, OP, SO_4	125mLP, H_2SO_4 COD, TKN, NH_3, TP	40mLaV, HCl TOC	250mLaG, Cool DOC	500mLP, Cool Total Alkalinity, NOx, Cl, SO_4	125mLP, H_2SO_4 TKN, NH_3	pH	Temperature	Conductivity	DO	No. of Containers (Total per each location)
37	PZ-F3-15			GW		X						1			1						
38	PZ-F4-08			GW		X				1	1	1	2	1							
39	PZ-F4-15			GW		X						1			1						
40	PZ-G1			GW		X									1	1					
41	PZ-G2-12.5			GW		X	1								1						
42	PZ-H4-08			GW		X				1	1	1	2	1							
43	PZ-H4-15			GW		X						1			1						
44	PZ-H5-11.5	10/24/13	1323	GW		X						1			1		4.40	24.2	645	2.35	
45	PZ-I6-08		1247	GW		X				1	1	1	2	1			4.36	23.7	300	2.81	
46	PZ-I6-15		1305	GW		X									1	1	6.62	23.9	776	0.10	
47	PZ-I6-15-DUP		1310	GW		X									1	1	/	/	/	/	
48	PZ-I10-08		1023	GW		X						1			1		4.87	23.8	353	0.46	

	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished:	11:20AM 10/17		
Relinquished:	1500 10/24/13	K Mudmerch	1500 10/24/13
Relinquished:			
Relinquished:			
Relinquished:			

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

1311076

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

SAL Project No. 1311076

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS4 SE#4

Samplers: (Signature)

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

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	125mLP, H_2SO_4 COD, TKN, NH_3	500mLP, Cool TS, TSS, Total Alkalinity, CBOD, NOx, F, Cl OP, SO_4	125mLP, H_2SO_4 TKN, NH_3, TP	250mLP, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, F, Cl, OP, SO_4	125mLP, H_2SO_4 COD, TKN, NH_3, TP	40mLaV, HCl TOC	250mLaG, Cool DOC	500mLP, Cool Total Alkalinity, NOx, Cl, SO_4	125mLP, H_2SO_4 TKN, NH_3	pH	Temperature	Conductivity	DO	No. of Containers (Total per each location)
49	PZ-I10-15	10/24/13	1035	GW		X									1	1	5.87	23.8	521	0.13	
50	PZ-J4-08			GW		X				1	1	1	2	1							
51	PZ-J4-15			GW		X						1			1						
52	PZ-J7-08		1210	GW		X				1	1	1	2	1			4.61	23.3	258	3.25	
53	PZ-J7-15		1225	GW		X				1	1	1	2	1			5.03	23.9	437	0.16	
54	PZ-J7-15-DUP		1230	GW		X				1	1	1	2	1							
55	PZ-N4-08			GW		X						1			1						
56	PZ-N4-08-DUP			GW		X						1			1						
57	PZ-N4-15			GW		X									1	1					
58	PZ-N7-08		1145	GW		X									1	1	5.63	23.4	390	1.98	
59	PZ-N7-15		1154	GW		X									1	1	5.42	23.8	479	0.90	
60	PZ-N7-15-DUP		1159	GW		X									1	1					

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished: S Lynn	12:15 PM 10/17		
Relinquished:	1500 10/24/13	Received: K Rudmach	Date/Time: 10/24/13 1500
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

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

1311076

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

Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

SAL Project No. 1311076

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS4 SE#4

Samplers: (Signature)

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

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No	Sample Description	Date	Time	Matrix	Composite	Grab	125mLP, H_2SO_4 COD, TKN, NH_3	500mLP, Cool TS, TSS, Total Alkalinity, CBOD, NOx, F, Cl OP, SO_4	125mLP, H_2SO_4 TKN, NH_3, TP	250mLP, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, F, Cl, OP, SO_4	125mLP, H_2SO_4 COD, TKN, NH_3, TP	40mLaV, HCl TOC	250mLaG, Cool DOC	500mLP, Cool Total Alkalinity, NOx, Cl, SO_4	125mLP, H_2SO_4 TKN, NH_3	pH	Temperature	Conductivity	DO	No. of Containers (Total per each location)
61	PZ-N10-08	10/24/13	1058	GW		X				1	1	1	2	1			5.52	23.7	289	1.03	
62	PZ-N10-15		1112	GW		X									1	1	6.55	23.6	568	0.11	
63	PZ-S10-08		1125	GW		X						1			1		4.66	23.9	242	0.16	
64	PZ-S10-08-DUP		1170	GW		X						1			1						
65	DP-01			GW		X						1			1						
66	DP-02			GW		X						1			1						
67	DP-03			GW		X						1			1						
68	DP-04-shallow			GW		X						1			1						
69	DP-04-deep			GW		X						1			1						
70	DP-05			GW		X						1			1						
71	DP-06			GW		X						1			1						
72	FB-DI	10/24/13	1335	GW		X				1	1	1	2	1			5.73	20.1	1.25	8.39	

Containers Prepared/ Relinquished: S Lynn	Date/Time: 12:35 PM 10/17	Received:	Date/Time:
Relinquished:	Date/Time: 1500 10/24/13	Received: K Mudrnak	Date/Time: 1500 10/24/13
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

1311076

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

SAL Project No. 1311076

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS4 SE#4

Samplers: (Signature)

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

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No	Sample Description	Date	Time	Matrix	Composite	Grab	125mLP, H_2SO_4 COD, TKN, NH_3	500mLP, Cool TS, TSS, Total Alkalinity, CBOD, NOx, F, Cl OP, SO_4	125mLP, H_2SO_4 TKN, NH_3, TP	250mLP, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, F, Cl, OP, SO_4	125mLP, H_2SO_4 COD, TKN, NH_3, TP	40mLaV, HCl TOC	250mLaG, Cool DOC	500mLP, Cool Total Alkalinity, NOx, Cl, SO_4	125mLP, H_2SO_4 TKN, NH_3	pH	Temperature	Conductivity	DO	No. of Containers (Total per each location)
73	EB	10/24/13	1325	R		X				1	1	1	2	1			5.79	20.1	1.25	8.31	

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
S Lynn	12:40 pm 10/17		
Relinquished:	Date/Time: 1500 10/24/13	Received: K Mudmard	Date/Time: 1500 10/24/13
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

1311076

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

Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

SAL Project No. 1311076

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS4 SE#4

Samplers: (Signature)

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

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	125mLP, $Na_2S_2O_3$ FC-MF, FC-QT	500mLP, Cool TS, TSS, Total Alkalinity, CBOD, NOx, F, Cl OP, SO_4	125mLP, H_2SO_4 TKN, NH_3, TP	250mLP, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, F, Cl, OP, SO_4	125mLP, H_2SO_4 COD, TKN, NH_3, TP	40mLaV, HCl TOC	250mLaG, Cool DOC	500mLP, Cool Total Alkalinity, NOx, Cl, SO_4	125mLP, H_2SO_4 TKN, NH_3	pH	Temperature	Conductivity	DO	No. of Containers (Total per each location)
01	STE			WW		X	4	1	1	1											
02	STE-DUP			WW		X	4	1	1	1											
03	PZ-01			GW		X				1	1	1	2	1							
04	PZ-02			GW		X									1	1					
05	PZ-03			GW		X									1	1					
06	BKG-10	10/25/13	1035	GW		X				1	1	1	2	1			3.57	27.1	3668	6.38	
07	BKG-15		1055	GW		X			1						1		5.54	24.1	1684	0.29	
08	PZ-04			GW		X									1	1					
09	PZ-05			GW		X									1	1					
10	PZ-06			GW		X									1	1					
11	PZ-AB4-08	10/25/13	1006	GW		X			1						1		4.54	23.6	198	1.60	
12	PZ-AB4-15		1020	GW		X									1	1	6.39	23.6	269	0.26	

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
S. Lynn	10:15AM 10/17		
Relinquished:	Date/Time:	Received:	Date/Time:
	10-25-13 1200		10-25-13 1200
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

1311076

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

SAL Project No. 1311076

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS4 SE#4

Samplers: (Signature)

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

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	125mLP, H_2SO_4 COD, TKN, NH_3	500mLP, Cool TS, TSS, Total Alkalinity, CBOD, NOx, F, Cl OP, SO_4	125mLP, H_2SO_4 TKN, NH_3, TP	250mLP, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, F, Cl, OP, SO_4	125mLP, H_2SO_4 COD, TKN, NH_3, TP	40mLaV, HCl TOC	250mLaG, Cool DOC	500mLP, Cool Total Alkalinity, NOx, Cl, SO_4	125mLP, H_2SO_4 TKN, NH_3	pH	Temperature	Conductivity	DO	No. of Containers (Total per each location)
49	PZ-I10-15			GW		X									1	1					
50	PZ-J4-08	—	—	GW		X				1	1	1	2	1							
51	PZ-J4-15	10/25/13	0952	GW		X						1			1		6.12	24.1	437	0.69	
52	PZ-J7-08			GW		X				1	1	1	2	1							
53	PZ-J7-15			GW		X				1	1	1	2	1							
54	PZ-J7-15-DUP			GW		X				1	1	1	2	1							
55	PZ-N4-08	—	—	GW		X						1			1						
56	PZ-N4-08-DUP 0939 10/25/13	—	—	GW		X						1			1						
57	PZ-N4-15	10/25/13	0934	GW		X									1	1	6.31	22.3	386	0.53	
58	PZ-N7-08			GW		X									1	1					
59	PZ-N7-15			GW		X									1	1					
60	PZ-N7-15-DUP			GW		X									1	1					

	Date/Time		Date/Time
Containers Prepared/ Relinquished: D Lynn	12:15 PM 10/17	Received:	
Relinquished:	10-25-13 1200	Received:	10-25-13 1200
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

1311076

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

Chain of Custody