FLORIDA DEPARTMENT OF HEALTH

Florida Onsite Sewage Nitrogen Reduction Strategies Study

Task C.24

C-HS3 Monitoring Sample Event Report No. 3

Progress Report

May 2013

4423-001

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Environmental Engineers & Scientists

In association with

SCHOOL OF MINES 1874 COLORADO

AET
Applied Environmental Technology

OTIS ENVIRONMENTAL CONSULTANTS, LLC

Florida Onsite Sewage Nitrogen Reduction Strategies Study

TASK C.24
PROGRESS REPORT

C-HS3 Monitoring
Sample Event Report No. 3

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
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1.0 Background

Task C of the Florida Onsite Sewage Nitrogen Reduction Strategies Study includes monitoring at field sites in Florida to evaluate nitrogen reduction in soil and groundwater, to assess groundwater impacts from various onsite wastewater systems, and to provide data for parameter estimation, verification, and validation of models developed in Task D. The 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-HS3 OSTDS system and plume monitoring documents the test area design, number and location of monitoring points, and preliminary field parameters from monitoring points for this Polk County, Florida field site, and also includes preliminary sample collection and analyses.

2.0 Purpose

This sample event report documents data collected from the third C-HS3 monitoring and sampling event which was conducted February 25 through February 28, 2013. This 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 groundwater samples and their analyses by a NELAC certified laboratory.

3.0 Materials and Methods

3.1 Project Site

The C-HS3 field site is located in Polk County, FL adjacent to Big Gum Lake in a rural area surrounded by commercial orange groves. The onsite sewage treatment and disposal system (OSTDS) for the residence consists of an old 750 gallon single compartment septic tank with most likely no outlet filter, and it is unknown whether an outlet tee is present. The septic tank is located adjacent to the soil treatment unit, which is a gravity fed standard bed drainfield, 10 ft by 20 ft in area.

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3.2 Monitoring and Sample Locations and Identification

A sampling grid for groundwater screening was developed downgradient of the soil treatment unit as depicted in Figure 1. A 6-foot by 5-foot grid spacing was staked. Transect lines A through U run east-west, roughly perpendicular to the groundwater flow direction and increase (higher letter identification) moving northward from the drainfield. Transect lines 0 through 7 run north-south, roughly parallel to the groundwater flow direction and increase moving from the east to west. Based on initial screening data, 22 monitoring locations were chosen within the grid for standpipe piezometer installation. Groundwater monitoring points were installed in June 2012. One type of monitoring point was installed using either hand or drilling methods: standpipe piezometers. 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 drive point or well screen in feet). For example A03-15 is a standpipe piezometer sampler located on the grid at A03 at 15 feet below ground surface. A schematic of the C-HS3 monitoring network is shown in Figure 1. A complete list of all installed standpipe piezometers and sample identification is included in Appendix A. A total of 66 specific monitoring locations were sampled during this third C-HS3 sampling event.

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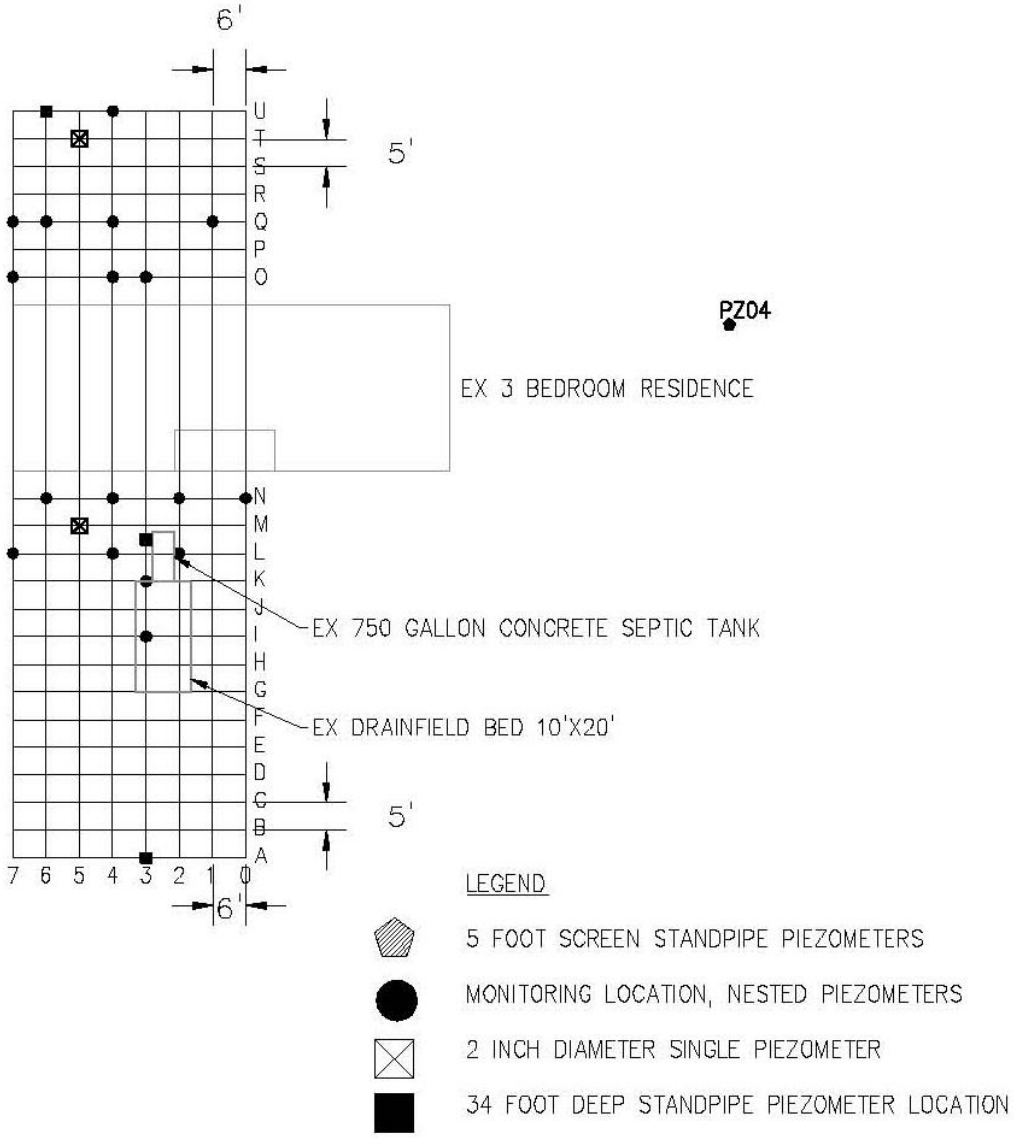

Figure 1
C-HS3 Monitoring Network

3.3 Operational Monitoring

A water meter for the house site was installed October 30, 2012. The water meter for the house site was read and recorded. A weather station (Ben Hill Griffin Elementary School in Frostproof, FL) is located approximately 17 miles from the site. Data from this weather station is available at the following website: http://fawn.ifas.ufl.edu/.

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3.4 Groundwater Elevation Measurements

Groundwater level measurements are used to determine hydraulic gradients and directions of flow. Groundwater levels were measured using a flat tape water level meter graduated in feet (measurement accuracy is 0.01 feet). 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 February 25 through February 28, 2013 for water quality analysis. A sample was collected from the septic tank to represent the effluent delivered to the drainfield. A peristaltic pump was used to collect STE directly into the analysis-specific containers. Groundwater samples were obtained using a peristaltic pump, which was attached directly to dedicated standpipe piezometer 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, provided in Appendix B, 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:

- C-HS3-STE
- C-HS3-PZ-03ML-15
- C-HS3-PZ-02N-21
- C-HS3-PZ-04O-17
- C-HS3-PZ-04U-14
- C-HS3-PZ-06U-14

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 alkalinity, total Kjeldahl nitrogen (TKN-N), ammonia nitrogen (NH_3-N), nitrate/nitrite nitrogen (NO_X-N), and chloride (CL). At some of the locations, chemical oxygen demand (COD), total phosphorus (TP), anions, cations, total organic carbon (TOC) and dissolved organic carbon (DOC) were included. Additionally,

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for the STE sample, carbonaceous biological oxygen demand ($CBOD_5$), total solids (TS), total suspended solids (TSS), and fecal coliform (fecal) 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.

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
Carbonaceous BOD ($CBOD_5$)	SM 5210B	2 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
Dissolved Organic Carbon (DOC)	SM 5310B	0.5 mg/L
Total Organic Carbon (TOC)	SM 5310B	0.5 mg/L
Total Solids (TS)	EPA 160.3	0.01% by wt
Total Suspended Solids (TSS)	SM 2540D	1 mg/L
Fecal Coliform (fecal)	SM9222D	1 ct/100mL
Anions		
Fluoride	EPA 300.0	0.01 mg/L
Chloride	EPA 300.0	0.05 mg/L
Nitrate-N	EPA 300.0	0.01 mg/L
Nitrite-N	EPA 300.0	0.01 mg/L
Orthophosphate-P	EPA 300.0	0.01 mg/L
Sulfate	EPA 300.0	0.20 mg/L
Cations		
Boron	EPA 200.7	0.05 mg/L
Calcium	EPA 200.7	0.01 mg/L
Iron	EPA 200.7	0.02 mg/L
Magnesium	EPA 200.7	0.01 mg/L
Manganese	EPA 200.7	0.001 mg/L
Potassium	EPA 200.7	0.01 mg/L
Sodium	EPA 200.7	0.01 mg/L

4.0 Results

Once analytical results are obtained from the laboratory, the C-HS3 Data Summary Report No. 3 (Task C.25) will be prepared describing the results from this sampling event.

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4.1 Operational Monitoring and Site Conditions

Table 2 summarizes the water meter readings and average daily water use for the residence at site C-HS3.

Table 2
Water Meter Readings and Water Usage for C-HS3

Residence	Date and Time Read	Meter Reading	Gallons/day
C-HS3 Residence	10/30/12 10:00	6,358.20	
	11/26/12 9:00	8,800.91	90.61
	2/25/13 9:00	15,980.66	78.90

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

Table 3
Meteorological Data Daily Averages Measured
February 21 through March 1, 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)
21-Feb-13	69.38	68.82	68.56	69.58	60.29	77	0	0	4.93	0.11
22-Feb-13	73.33	72.99	72.56	71.23	65.00	79	0	0	6.12	0.12
23-Feb-13	75.20	74.91	74.32	72.94	67.69	81	0	0	8.35	0.12
24-Feb-13	73.62	73.02	72.41	73.71	67.55	85	0	0	6.37	0.12
25-Feb-13	73.60	73.45	73.36	74.27	65.41	79	0	0	5.86	0.11
26-Feb-13	71.05	71.12	70.99	73.90	67.47	89	0.13	0.04	8.81	0.08
27-Feb-13	66.12	65.27	65.24	72.26	57.99	79	0	0	6.08	0.10
28-Feb-13	61.85	60.92	61.04	71.10	50.62	72	0	0	6.12	0.10
1-Mar-13	55.63	54.97	55.26	69.37	42.41	64	0	0	7.01	0.06

4.2 Groundwater Levels

Water levels were measured at all standpipe piezometers sampled February 25 through February 28 for this sampling event as summarized in Table 4. Figure 2 illustrates the surficial groundwater contours as measured within the standpipe piezometers during Sample Event 1 on August 28, 2012, Figure 3 illustrates Sample Event 2 on November 26, 2012, and Figure 4 illustrates Sample Event 3 on February 25, 2013.

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Table 4
Standpipe Piezometer Groundwater Levels February 25, 2013

Identification	Water Table El[1] (ft)	Identification	Water Table El[1] (ft)
PZ01	94.03	PZ-04N-17	93.81
PZ02	93.58	PZ-04N-21	93.84
PZ03	93.79	PZ-06N-15	93.88
PZ04	93.85	PZ-06N-17	93.86
PZ05	93.61	PZ-06N-21	94.00[2]
PZ-03A-15	93.99	PZ-03O-15	93.81
PZ-03A-17	93.87	PZ-03O-17	93.76
PZ-03A-21	93.98	PZ-03O-21	93.80
PZ-03A-34	93.62[2]	PZ-04O-15	93.82
PZ-03I-15	93.96	PZ-04O-17	93.81
PZ-03I-17	93.83[2]	PZ-04O-21	93.83
PZ-03I-21	93.92	PZ-07O-15	93.80
PZ-03K-15	93.84	PZ-07O-17	93.77
PZ-03K-17	93.86	PZ-07O-20	93.79
PZ-03K-21	93.88	PZ-01Q-13	93.79
PZ-02L-15	93.87	PZ-01Q-15	93.80
PZ-02L-17	93.92	PZ-01Q-19	93.81
PZ-02L-21	93.95	PZ-04Q-13	93.60[2]
PZ-04L-15	93.91	PZ-04Q-15	93.81
PZ-04L-17	94.03	PZ-04Q-19	93.80
PZ-04L-21	93.96	PZ-06Q-13	93.80
PZ-07L-15	93.92	PZ-06Q-15	93.81
PZ-07L-17	93.93	PZ-06Q-19	93.81
PZ-07L-21	93.98	PZ-07Q-13	93.81
PZ-03ML-15	93.95	PZ-07Q-15	93.81
PZ-03ML-17	93.93	PZ-07Q-19	93.79
PZ-03ML-21	93.93	PZ-04U-12	93.78
PZ-00N-15	93.84	PZ-04U-14	93.79
PZ-00N-17	93.72	PZ-04U-18	93.74
PZ-00N-21	93.74	PZ-06U-12	93.77
PZ-02N-15	94.00	PZ-06U-14	93.76
PZ-02N-17	93.95	PZ-06U-34	93.76
PZ-02N-21	93.98	Staff gauge	93.55
PZ-04N-15	93.85		

[1]Elevation above mean sea level based on NGVD 1929
[2]Most likely erroneous instrument reading

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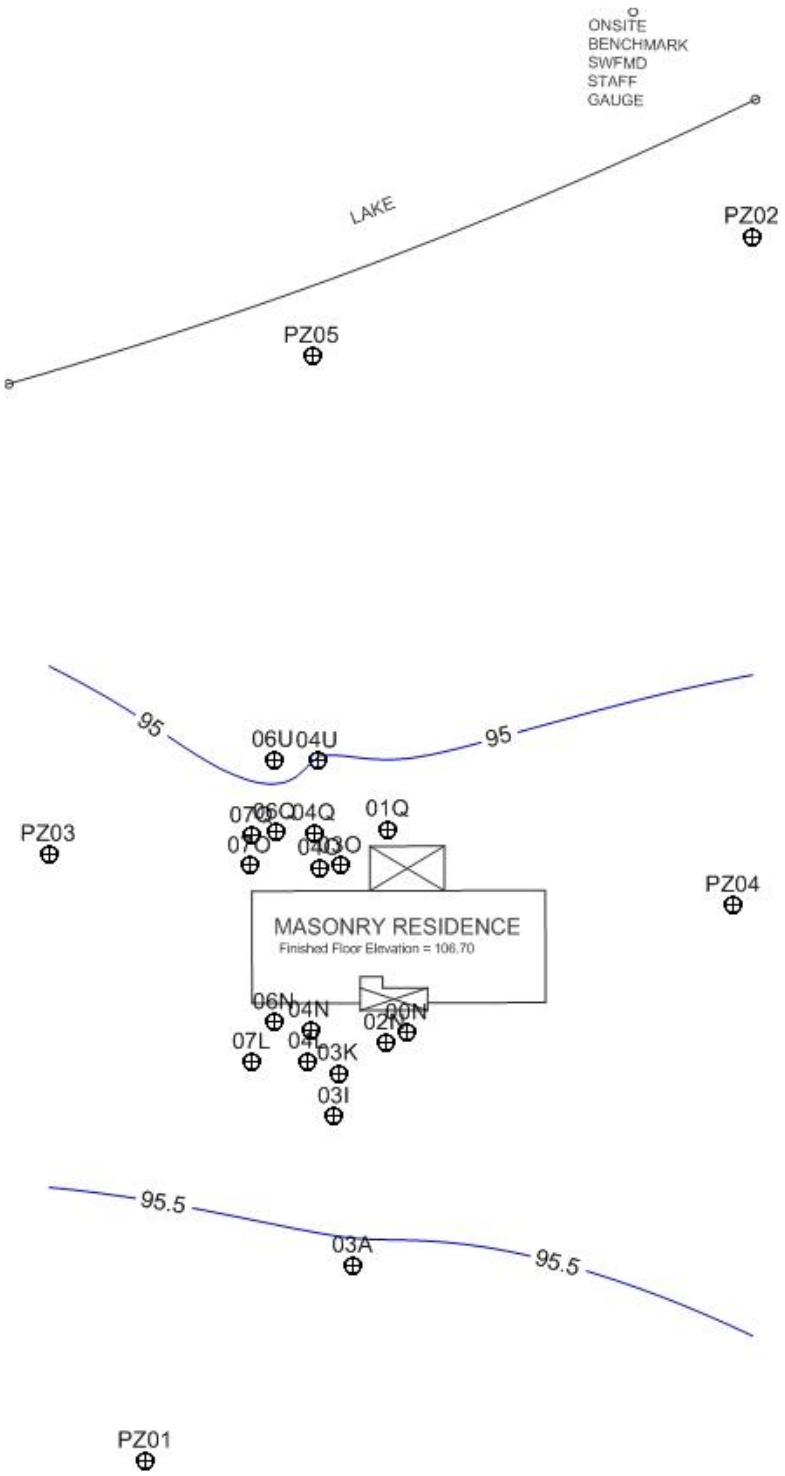

Figure 2
Surficial Groundwater Contours SE1, August 28, 2012

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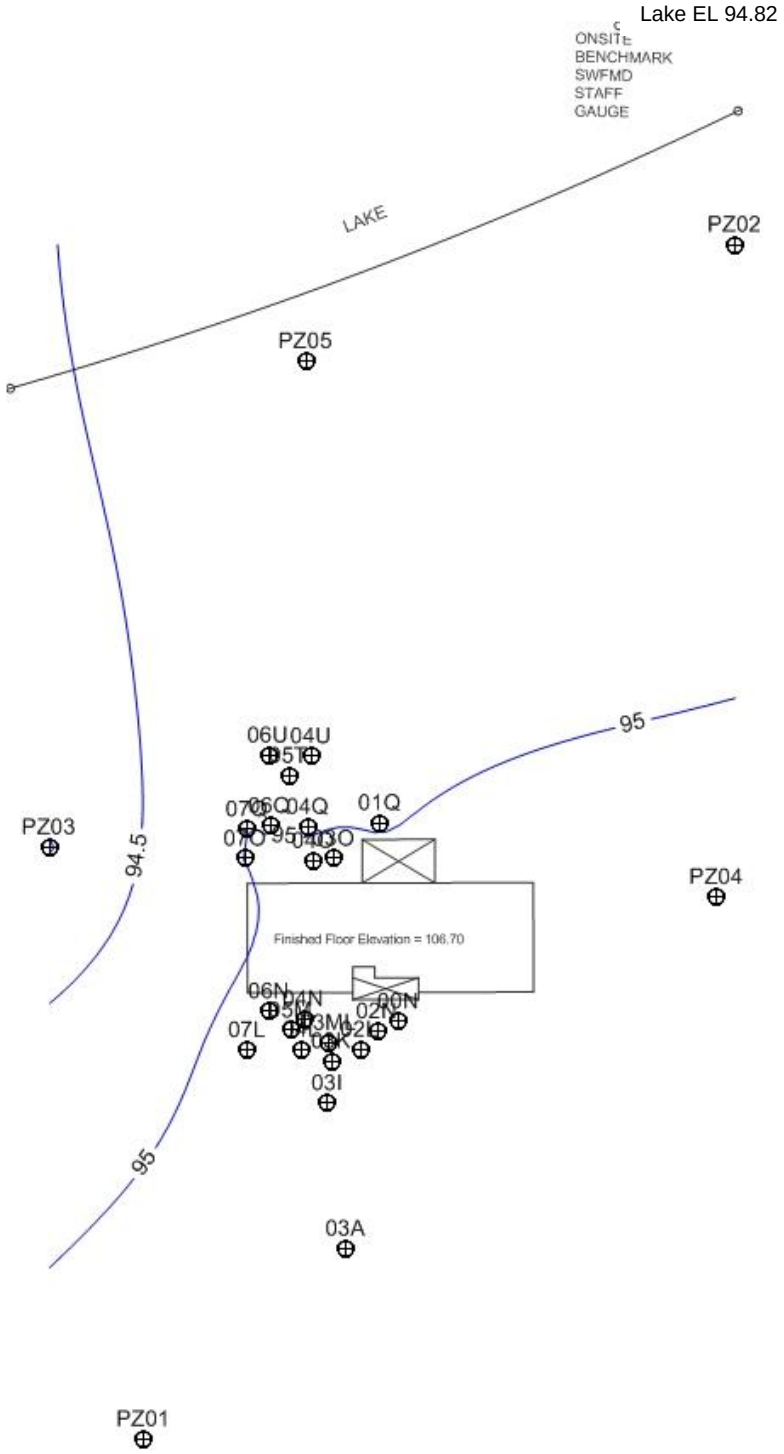

Figure 3
Surficial Groundwater Contours SE2, November 26, 2013

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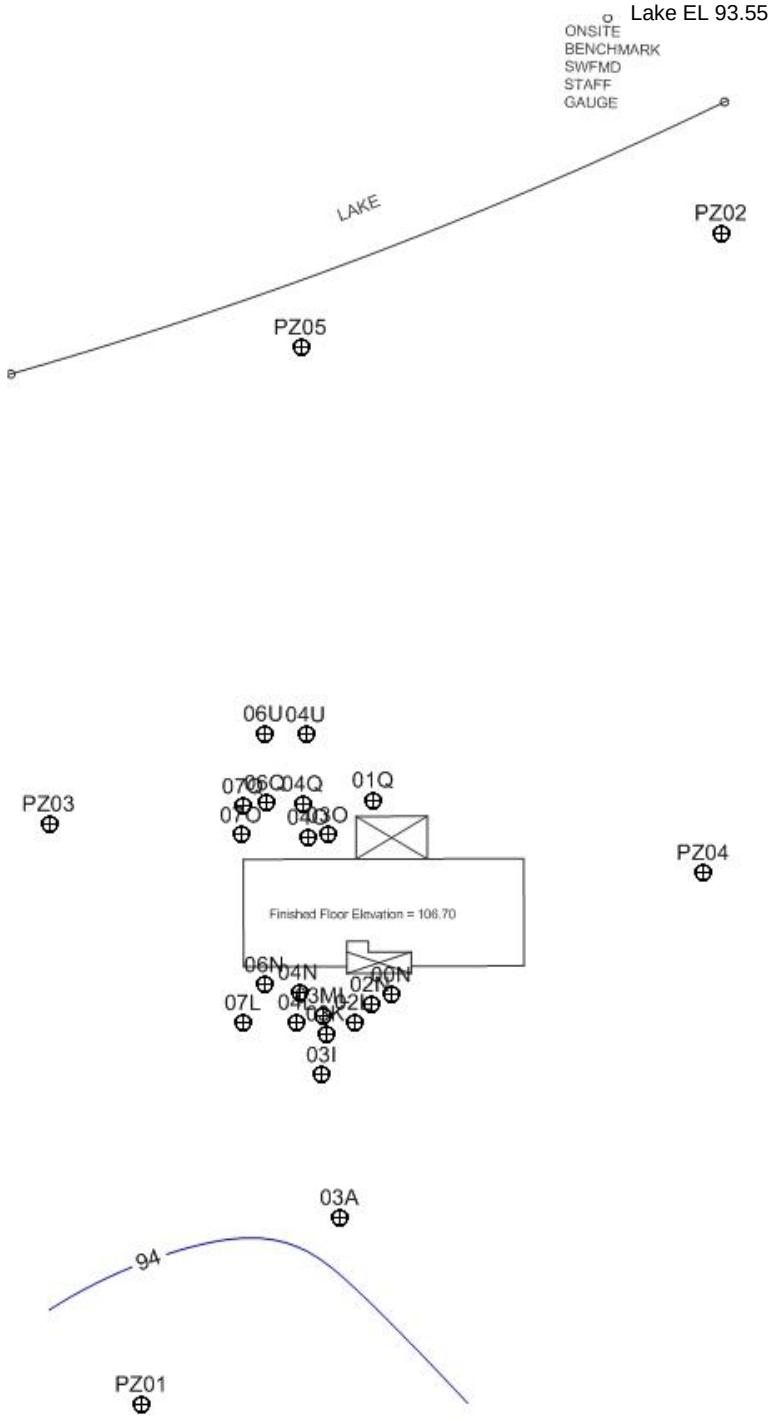

Figure 4
Surficial Groundwater Contours SE3, February 25, 2013

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4.3 Water Quality

Field parameters were measured prior to sample collection and are listed in Appendix D. Once analytical results are obtained from the laboratory, C-HS3 Data Summary Report No. 3 (Task C25) will be prepared describing the results from this sampling event.

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Appendix A: C-HS3 Sample Identification

Table 3

Site C-HS3 Sample Identification

	Identification	Type of Monitoring Point	Top Elevation[1] (feet)	Bottom Elevation[1] (feet)
1	C-HS3-STE	Wastewater	N/A	N/A
2	PZ01	1" Standpipe Piezometer, 5' screen	108.53	92.73
3	PZ02	1" Standpipe Piezometer, 5' screen	98.08	91.80
4	PZ03	1" Standpipe Piezometer, 5' screen	102.84	92.04
5	PZ04	1" Standpipe Piezometer, 5' screen	104.35	92.45
6	PZ05	1" Standpipe Piezometer, 5' screen	98.68	91.08
7	PZ-03A-15	1" Standpipe Piezometer, 5' screen	106.84	91.84
8	PZ-03A-17	3/4" Standpipe Piezometer, 1' screen	106.75	89.75
9	PZ-03A-21	3/4" Standpipe Piezometer, 1' screen	106.84	85.84
10	PZ-03A-34	2" Standpipe Piezometer, 5' screen	107.12	73.12
11	PZ-03I-15	1" Standpipe Piezometer, 5' screen	106.46	91.46
12	PZ-03I-17	3/4" Standpipe Piezometer, 1' screen	106.35	89.35
13	PZ-03I-21	3/4" Standpipe Piezometer, 1' screen	106.44	85.44
14	PZ-03K-15	1" Standpipe Piezometer, 5' screen	106.12	91.12
15	PZ-03K-17	3/4" Standpipe Piezometer, 1' screen	106.11	89.11
16	PZ-03K-21	3/4" Standpipe Piezometer, 1' screen	106.13	85.13
17	PZ-02L-15	1" Standpipe Piezometer, 5' screen	106.02	91.02
18	PZ-02L-17	3/4" Standpipe Piezometer, 1' screen	105.90	88.90
19	PZ-02L-21	3/4" Standpipe Piezometer, 1' screen	105.95	84.95
20	PZ-04L-15	1" Standpipe Piezometer, 5' screen	105.86	90.86
21	PZ-04L-17	3/4" Standpipe Piezometer, 1' screen	105.84	88.84
22	PZ-04L-21	3/4" Standpipe Piezometer, 1' screen	105.78	84.78
23	PZ-07L-15	1" Standpipe Piezometer, 5' screen	105.97	90.97
24	PZ-07L-17	3/4" Standpipe Piezometer, 1' screen	105.93	88.93
25	PZ-07L-21	3/4" Standpipe Piezometer, 1' screen	105.98	84.98
26	PZ-03ML-15	1" Standpipe Piezometer, 5' screen	106.00	91.00
27	PZ-03ML-17	3/4" Standpipe Piezometer, 1' screen	106.03	89.03
28	PZ-03ML-21	3/4" Standpipe Piezometer, 1' screen	105.93	84.93
29	PZ-05M-25	2" Standpipe Piezometer, 5' screen	106.01	81.01
30	PZ-00N-15	1" Standpipe Piezometer, 5' screen	105.78	90.78
31	PZ-00N-17	3/4" Standpipe Piezometer, 1' screen	105.74	88.74

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Table 3
Site C-HS3 Sample Identification

	Identification	Type of Monitoring Point	Top Elevation[1] (feet)	Bottom Elevation[1] (feet)
32	PZ-00N-21	3/4" Standpipe Piezometer, 1' screen	105.72	84.72
33	PZ-02N-15	1" Standpipe Piezometer, 5' screen	105.90	90.90
34	PZ-02N-17	3/4" Standpipe Piezometer, 1' screen	105.87	88.87
35	PZ-02N-21	3/4" Standpipe Piezometer, 1' screen	105.86	84.86
36	PZ-04N-15	1" Standpipe Piezometer, 5' screen	105.60	90.60
37	PZ-04N-17	3/4" Standpipe Piezometer, 1' screen	105.61	88.61
38	PZ-04N-21	3/4" Standpipe Piezometer, 1' screen	105.64	84.64
39	PZ-06N-15	1" Standpipe Piezometer, 5' screen	105.73	90.73
40	PZ-06N-17	3/4" Standpipe Piezometer, 1' screen	105.70	88.70
41	PZ-06N-21	3/4" Standpipe Piezometer, 1' screen	105.80	84.80
42	PZ-03O-15	1" Standpipe Piezometer, 5' screen	104.59	89.59
43	PZ-03O-17	3/4" Standpipe Piezometer, 1' screen	104.54	87.54
44	PZ-03O-21	3/4" Standpipe Piezometer, 1' screen	104.58	83.58
45	PZ-04O-15	1" Standpipe Piezometer, 5' screen	104.10	89.10
46	PZ-04O-17	3/4" Standpipe Piezometer, 1' screen	104.09	87.09
47	PZ-04O-21	3/4" Standpipe Piezometer, 1' screen	104.11	83.11
48	PZ-07O-15	1" Standpipe Piezometer, 5' screen	103.83	88.83
49	PZ-07O-17	3/4" Standpipe Piezometer, 1' screen	103.75	86.75
50	PZ-07O-20	3/4" Standpipe Piezometer, 1' screen	103.91	83.91
51	PZ-01Q-13	1" Standpipe Piezometer, 5' screen	104.19	91.19
52	PZ-01Q-15	3/4" Standpipe Piezometer, 1' screen	104.18	89.18
53	PZ-01Q-19	3/4" Standpipe Piezometer, 1' screen	104.24	85.24
54	PZ-04Q-13	1" Standpipe Piezometer, 5' screen	103.58	90.58
55	PZ-04Q-15	3/4" Standpipe Piezometer, 1' screen	103.54	88.54
56	PZ-04Q-19	3/4" Standpipe Piezometer, 1' screen	103.60	84.60
57	PZ-06Q-13	1" Standpipe Piezometer, 5' screen	103.66	90.66
58	PZ-06Q-15	3/4" Standpipe Piezometer, 1' screen	103.66	88.66
59	PZ-06Q-19	3/4" Standpipe Piezometer, 1' screen	103.71	84.71
60	PZ-07Q-13	1" Standpipe Piezometer, 5' screen	103.56	90.56
61	PZ-07Q-15	3/4" Standpipe Piezometer, 1' screen	103.64	88.64
62	PZ-07Q-19	3/4" Standpipe Piezometer, 1' screen	103.62	84.62
63	PZ-05T-25	2" Standpipe Piezometer, 5' screen	102.73	77.73
64	PZ-04U-12	1" Standpipe Piezometer, 5' screen	102.61	90.61
65	PZ-04U-14	3/4" Standpipe Piezometer, 1' screen	102.64	88.64

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Table 3
Site C-HS3 Sample Identification

	Identification	Type of Monitoring Point	Top Elevation[1] (feet)	Bottom Elevation[1] (feet)
66	PZ-04U-18	3/4" Standpipe Piezometer, 1' screen	102.61	84.61
67	PZ-06U-12	1" Standpipe Piezometer, 5' screen	102.07	90.07
68	PZ-06U-14	3/4" Standpipe Piezometer, 1' screen	101.96	87.96
69	PZ-06U-34	3/4" Standpipe Piezometer, 1' screen	101.94	67.94

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

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Appendix B: Chain of Custody Forms

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SOUTHERN ANALYTICAL LABORATORIES, INC.

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

SAL Project No. 1301945

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS3 SE#3

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	500mLP, Cool Total Alkalinity, TSS, TS, CBOD, NOx, Cl, F, OP, SO_4	125mL P, H_2SO_4 TKN, NH_3, TP	125mL P, $Na_2S_2O_3$ FC-MF	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, Cl	125mL P, H_2SO_4 COD, TKN, NH_3, TP	500mLP, Cool Total Alkalinity, NOx, Cl, F, OP, SO_4	40mLaV, HCl TOC	250mLaG, Cool DOC	125mL P, H_2SO_4 TKN, NH_3	DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
01	STE	2/25/13	1310	WW		X	1	1	2	1							1.80	7.20	593	28.3	
02	STE-DUP		1315	WW		X	1	1	2	1							1.80	7.20	593	28.3	
03	PZ-03A-15			GW		X					1	1									
04	PZ-03A-17			GW		X					1	1									
05	PZ-03A-21			GW		X					1	1									
06	PZ-03A-34			GW		X				1		1	1	2	1						
07	PZ-03I-15			GW		X					1	1									
08	PZ-03I-17			GW		X					1					1					
09	PZ-03I-21			GW		X					1					1					
10	PZ-03K-15			GW		X				1		1	1	2	1						
11	PZ-03K-17			GW		X					1					1					
12	PZ-03K-21			GW		X					1					1					

Relinquished	Date/Time	Received	Date/Time
Containers Prepared/ Relinquished: J. Chambers	2-20-13 14:50		1450 2/20/13
Relinquished:	16:15 2/25/13	K Nordmark	1615 2/25/13
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

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. 1301945

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS3 SE#3

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	500mLP, Cool Total Alkalinity, TSS, TS, CBOD, NOx, Cl, F, OP, SO4	250mL P, H2SO4 TKN, NH3, TP	250mL P, Na2S2O3 FC-MF	250mL P, HNO3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, Cl	250mL P, H2SO4 COD, TKN, NH3, TP	500mLP, Cool Total Alkalinity, NOx, Cl, F, OP, SO4	40mLaV, HCl TOC	250mLaG, Cool DOC	250mL P, H2SO4 TKN, NH3	DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
01	STE			WW		X	1	1	2	1											
02	STE-DUP			WW		X	1	1	2	1											
03	PZ-03A-15			GW		X					1	1									
04	PZ-03A-17			GW		X					1	1									
05	PZ-03A-21			GW		X					1	1									
06	PZ-03A-34			GW		X				1		1	1	2	1						
07	PZ-03I-15	2/26/13	1207	GW		X					1	1					4.40	5.78	46.6	25.4	
08	PZ-03I-17			GW		X					1					1					
09	PZ-03I-21			GW		X					1					1					
10	PZ-03K-15	2/26/13	1114	GW		X				1		1	1	2	1		5.49	6.72	475	25.5	
11	PZ-03K-17		1138	GW		X					1					1	6.35	6.35	50.6	25.2	
12	PZ-03K-21		1153	GW		X					1					1	2.17	6.01	156.8	25.7	

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished: J. Chambers	2-20-13 14:50		1450 2/20/13
Relinquished:	1450 2/26/13	K Mulmant	1450 2/26/13
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

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. 1301945

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS3 SE#3

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	500mLP, Cool Total Alkalinity, TSS, TS, CBOD, NOx, Cl, F, OP, SO4	125mL P, H2SO4 TKN, NH3, TP	125mL P, Na2S2O3 FC-MF	250mL P, HNO3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, Cl	125mL P, H2SO4 COD, TKN, NH3, TP	500mLP, Cool Total Alkalinity, NOx, Cl, F, OP, SO4	40mLaV, HCl TOC	250mLaG, Cool DOC	125mLP, H2SO4 TKN, NH3	DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
01	STE			WW		X	1	1	2	1											
02	STE-DUP			WW		X	1	1	2	1											
03	PZ-03A-15	2/27/13	1007	GW		X					1	1					7.27	6.26	356	24.8	
04	PZ-03A-17		1020	GW		X					1	1					6.48	6.21	796	25.5	
05	PZ-03A-21		1033	GW		X					1	1					2.68	5.66	272	25.6	
06	PZ-03A-34		1046	GW		X				1		1	1	2	1		4.94	5.92	857	26.3	
07	PZ-03I-15			GW		X					1	1									
08	PZ-03I-17	2/27/13	0943	GW		X					1					1	2.91	6.08	481	24.7	
09	PZ-03I-21		0955	GW		X					1					1	2.97	4.87	1943	24.9	
10	PZ-03K-15			GW		X				1		1	1	2	1						
11	PZ-03K-17			GW		X					1					1					
12	PZ-03K-21			GW		X					1					1					

Relinquished:	Date/Time:	Received:	Date/Time:
J. Chambers	2-20-13 14:50		1450 2/20/13
	1540 2/27/13	K Mudmach	1540 2/27/13

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

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. 1301945

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS3 SE#3

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	500mLP, Cool Total Alkalinity, TSS, TS, CBOD, NOx, Cl, F, OP, SO_4	250mL P, H_2SO_4 TKN, NH_3, TP	125mL P, $Na_2S_2O_3$ FC-MF	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, Cl	250mL P, H_2SO_4 COD, TKN, NH_3, TP	500mLP, Cool Total Alkalinity, NOx, Cl, F, OP, SO_4	40mLaV, HCl TOC	40mLaG, Cool DOC	250mL P, H_2SO_4 TKN, NH_3	DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
13	PZ-02L-15	2/25/13	0818	GW		X					1	1					6.03	6.90	78.8	24.6	
14	PZ-02L-17		0843	GW		X					1					1	5.31	6.48	67.9	25.1	
15	PZ-02L-21		0854	GW		X					1					1	2.82	5.05	182.1	25.6	
16	PZ-04L-15		1030	GW		X					1	1					4.56	6.48	315	26.7	
17	PZ-04L-17		1050	GW		X					1					1	4.31	6.23	63.9	27.1	
18	PZ-04L-21		1100	GW		X					1					1	2.27	5.16	173.4	27.1	
19	PZ-07L-15		1023	GW		X					1	1					5.71	6.12	53.9	26.7	
20	PZ-07L-17		1140	GW		X					1					1	5.64	6.23	63.4	26.6	
21	PZ-07L-21		1153	GW		X					1					1	2.52	5.25	148.9	26.2	
22	PZ-03ML-15		0915	GW		X				1		1	1	2	1		5.21	6.21	513	25.8	
23	PZ-03ML-15-DUP		0920	GW		X				1		1	1	2	1		5.21	6.21	513	25.8	
24	PZ-03ML-17		0943	GW		X				1		1	1	2	1		6.60	6.29	55.6	26.1	

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished: J. Chambers	2-26-13 14:50		1450 2/20/13
Relinquished:	1615 2/25/13	K Mudmenk	1615 2/25/13
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

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. 1301945

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS# SE#3

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	500mLP, Cool Total Alkalinity, TSS, TS, CBOD, NOx, Cl, F, OP, SO_4	250mL P, H_2SO_4 TKN, NH_3, TP	125mL P, $Na_2S_2O_3$ FC-MF	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, Cl	250mL P, H_2SO_4 COD, TKN, NH_3, TP	500mLP, Cool Total Alkalinity, NOx, Cl, F, OP, SO_4	40mLaV, HCl TOC	40mLaG, Cool DOC	250mL P, H_2SO_4 TKN, NH_3	DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
25	PZ-03ML-21	2/25/13	1008	GW		X				1		1	1	2	1		1.12	5.96	1.88	26.1	
26	PZ-00N-15		1222	GW		X					1	1					5.74	5.93	59.4	26.4	
27	PZ-00N-17		1240	GW		X					1					1	5.70	6.26	59.4	26.6	
28	PZ-00N-21		1255	GW		X					1					1	2.91	4.82	266.9	26.0	
29	PZ-02N-15			GW		X					1	1									
30	PZ-02N-17			GW		X					1					1					
31	PZ-02N-21			GW		X					1					1					
32	PZ-02N-21-DUP			GW		X					1					1					
33	PZ-04N-15			GW		X					1	1									
34	PZ-04N-17			GW		X					1	1									
35	PZ-04N-21			GW		X					1					1					
36	PZ-06N-15			GW		X				1			1	2	1	1					

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished: J. Chambers	2-20-13 14:50		1450 2/20/13
Relinquished:	1615 2/25/13	K Mudmack	1615 2/25/13
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

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. 1301945

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS# SE#3

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	500mLP, Cool Total Alkalinity, TSS, TS, CBOD, NOx, Cl, F, OP, SO_4	250mL P, H_2SO_4 TKN, NH_3, TP	125mL P, $Na_2S_2O_3$ FC-MF	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, Cl	250mL P, H_2SO_4 COD, TKN, NH_3, TP	500mLP, Cool Total Alkalinity, NOx, Cl, F, OP, SO_4	40mLaV, HCl TOC	250mLaG, Cool DOC	250mL P, H_2SO_4 TKN, NH_3	DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
25	PZ-03ML-21			GW		X				1		1	1	2	1						
26	PZ-00N-15			GW		X					1	1									
27	PZ-00N-17			GW		X					1					1					
28	PZ-00N-21			GW		X					1					1					
29	PZ-02N-15	2/26	2/26/13 0849	GW		X					1	1									
30	PZ-02N-17		0905	GW		X					1					1					
31	PZ-02N-21		0918	GW		X					1					1					
32	PZ-02N-21-DUP		0923	GW		X					1					1					
33	PZ-04N-15		2/26/13 0957	GW		X					1	1					5.19	6.22	290	25.6	
34	PZ-04N-17		0955	GW		X					1	1					2.56	6.44	83.4	25.7	
35	PZ-04N-21		1007	GW		X					1					1	2.19	5.67	1905	25.0	
36	PZ-06N-15		1021	GW		X				1			1	2	1	1	4.89	6.02	370	25.3	

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished: J. Chambers	2-20-13 14:50		1450 2/20/13
Relinquished:	1450 2/26/13	K Mudmark	1450 2/26/13
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

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. 1301945

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS3 SE#3

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	500mLP, Cool Total Alkalinity, TSS, TS, CBOD, NOx, Cl, F, OP, SO_4	250mL P, H_2SO_4 TKN, NH_3, TP	125mL P, $Na_2S_2O_3$ FC-MF	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, Cl	250mL P, H_2SO_4 COD, TKN, NH_3, TP	500mLP, Cool Total Alklainity, NOx, Cl, F, OP, SO_4	40mLaV, HCl TOC	500mLaG, Cool DOC	250mLP, H_2SO_4 TKN, NH_3	DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
37	PZ-06N-17	2/26/13	1037	GW		X					1					1	4.49	6.32	59.2	25.4	
38	PZ-06N-21		1056	GW		X					1					1	3.16	5.02	109.9	25.5	
39	PZ-03O-15			GW		X					1					1					
40	PZ-03O-17			GW		X				1			1	2	1	1					
41	PZ-03O-21			GW		X				1			1	2	1	1					
42	PZ-04O-15			GW		X					1	1									
43	PZ-04O-17			GW		X					1	1									
44	PZ-04O-17-DUP			GW		X					1	1									
45	PZ-04O-21			GW		X					1	1									
46	PZ-07O-15			GW		X					1	1									
47	PZ-07O-17			GW		X					1					1					
48	PZ-07O-20			GW		X					1					1					

Relinquished	Date/Time	Received	Date/Time
Containers Prepared/ Relinquished: J. Chambers	2-2013 15:30		1530 2/20/13
Relinquished:	1450 2/26/13	K Mudmad	1450 2/26/13
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

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. 1301945

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS3 SE#3

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	500mLP, Cool Total Alkalinity, TSS, TS, CBOD, NOx, Cl, F, OP, SO_4	250mL P, H_2SO_4 TKN, NH_3, TP	125mL P, $Na_2S_2O_3$ FC-MF	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, Cl	250mL P, H_2SO_4 COD, TKN, NH_3, TP	500mLP, Cool Total Alkalinity, NOx, Cl, F, OP, SO_4	40mLaV, HCl TOC	500mLaG, Cool DOC	250mL P, H_2SO_4 TKN, NH_3	DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
37	PZ-06N-17			GW		X					1					1					
38	PZ-06N-21			GW		X					1					1					
39	PZ-03O-15			GW		X					1					1					
40	PZ-03O-17			GW		X				1			1	2	1	1					
41	PZ-03O-21			GW		X				1			1	2	1	1					
42	PZ-04O-15	2/27/13	1334	GW		X					1	1					5.05	6.34	208.6	23.9	
43	PZ-04O-17		1345	GW		X					1	1					5.06	6.25	208.6	23.9	
44	PZ-04O-17-DUP		1350	GW		X					1	1					5.06	6.25	208.6	23.9	
45	PZ-04O-21		1355	GW		X					1	1					1.85	5.33	254	24.6	
46	PZ-07O-15		1057	GW		X					1	1					4.05	5.98	377	23.7	
47	PZ-07O-17		1110	GW		X					1					1	3.20	6.33	142.2	23.8	
48	PZ-07O-20		1121	GW		X					1					1	3.19	5.28	109.3	24.2	

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
J. Chambers	2-20-13 15:30		1530 2/20/13
Relinquished:	Date/Time: 1540 2/27/13	Received: K Mudmach	Date/Time: 2/27/13 1540
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

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. 1301945

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS3 SE#3

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	500mLP, Cool Total Alkalinity, TSS, TS, CBOD, NOx, Cl, F, OP, SO_4 250 mL	125mL P, H_2SO_4 TKN, NH_3, TP	125mL P, $Na_2S_2O_3$ FC-MF	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, Cl	125mL P, H_2SO_4 COD, TKN, NH_3, TP 250 mL	500mLP, Cool Total Alkalinity, NOx, Cl, F, OP, SO_4	40mLaV, HCl TOC	40mLaG, Cool DOC	125mLP, H_2SO_4 TKN, NH_3	DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
37	PZ-06N-17			GW		X					1					1					
38	PZ-06N-21			GW		X					1					1					
39	PZ-03O-15	2/28/13	1050	GW		X					1					1	6.55	6.73	1425	22.7	
40	PZ-03O-17	2/28/13	1104	GW		X				1			1	2	1	1	6.92	6.55	585	22.8	
41	PZ-03O-21	/	1128	GW		X				1			1	2	1	1	1.73	4.56	223	24.3	
42	PZ-04O-15			GW		X					1	1									
43	PZ-04O-17			GW		X					1	1									
44	PZ-04O-17-DUP			GW		X					1	1									
45	PZ-04O-21			GW		X					1	1									
46	PZ-07O-15			GW		X					1	1									
47	PZ-07O-17			GW		X					1					1					
48	PZ-07O-20			GW		X					1					1					

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
J. Champey	2-20-13 15:30		1530 2/20/13
Relinquished:	Date/Time: 1530 2/24/13	Received: K Mudmand	Date/Time: 1530 2/28/13
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

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. 1301945

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS3 SE#3

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	500mLP, Cool Total Alkalinity, TSS, TS, CBOD, NOx, Cl, F, OP, SO_4	250mL P, H_2SO_4 TKN, NH_3, TP	125mL P, $Na_2S_2O_3$ FC-MF	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, Cl	250mL P, H_2SO_4 COD, TKN, NH_3, TP	500mLP, Cool Total Alklainity, NOx, Cl, F, OP, SO_4	40mLaV, HCl TOC	150mLaG, Cool DOC	125mLP, H_2SO_4 TKN, NH_3	DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
49	PZ-01Q-13			GW		X					1	1									
50	PZ-01Q-15			GW		X					1	1									
51	PZ-01Q-19			GW		X					1					1					
52	PZ-04Q-13	2/27/13	1256	GW		X				1		1	1	2	1		5.83	6.39	144.1	24.9	
53	PZ-04Q-15		1307	GW		X					1	1					3.55	5.60	83.4	24.9	
54	PZ-04Q-19		1323	GW		X					1			2	1	1	2.74	6.12	75.9	25.3	
55	PZ-06Q-13		1212	GW		X					1	1					6.12	6.45	164.5	24.5	
56	PZ-06Q-15		1226	GW		X				1		1	1	2	1		3.04	6.60	186.5	24.4	
57	PZ-06Q-19		1241	GW		X					1	1					2.66	6.57	86.1	25.8	
58	PZ-07Q-13		1139	GW		X					1	1					4.03	6.12	380	23.6	
59	PZ-07Q-15		1153	GW		X					1					1	2.71	6.41	113.9	23.9	
60	PZ-07Q-19		1202	GW		X					1					1	2.92	5.35	119.1	24.6	

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished: J. Chambers	2-20-13 16:00		1600 2/20/13
Relinquished:	1540 2/27/13	C Mdmark	1540 2/27/13
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

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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. 1301945

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS3-SE#3

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	500mLP, Cool Total Alkalinity, TSS, TS, CBOD, NOx, Cl, F, OP, SO_4	250mL P, H_2SO_4 TKN, NH_3, TP	125mL P, $Na_2S_2O_3$ FC-MF	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, Cl	250mL P, H_2SO_4 COD, TKN, NH_3, TP	500mLP, Cool Total Alkalinity, NOx, Cl, F, OP, SO_4	40mLaV, HCl TOC	250mLaG, Cool DOC	125mLP, H_2SO_4 TKN, NH_3	DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
49	PZ-01Q-13	2/28/13	1007	GW		X					1	1					5.83	6.28	71.2	22.3	
50	PZ-01Q-15		1021	GW		X					1	1					5.77	6.01	42.9	23.1	
51	PZ-01Q-19		1037	GW		X					1					1	2.79	5.09	65.[illegible]	23.7	
52	PZ-04Q-13			GW		X				1		1	1	2	1						
53	PZ-04Q-15			GW		X					1	1									
54	PZ-04Q-19			GW		X					1			2	1	1					
55	PZ-06Q-13			GW		X					1	1									
56	PZ-06Q-15			GW		X				1		1	1	2	1						
57	PZ-06Q-19			GW		X					1	1									
58	PZ-07Q-13			GW		X					1	1									
59	PZ-07Q-15			GW		X					1					1					
60	PZ-07Q-19			GW		X					1					1					

Containers Prepared/ Relinquished:	Date/Time: 2-20-13 16:00	Received:	Date/Time: 1600 2/20/13
Relinquished:	Date/Time: 1530 2/28/13	Received: K Nordmark	Date/Time: 1530 2/28/13
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

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SOUTHERN ANALYTICAL LABORATORIES, INC.

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

SAL Project No. 1301945

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS3 SE#3

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	500mLP, Cool Total Alkalinity, TSS, TS, CBOD, NOx, Cl, F, OP, SO_4	250mL P, H_2SO_4 TKN, NH_3, TP	125mL P, $Na_2S_2O_3$ FC-MF	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, Cl	250mL P, H_2SO_4 COD, TKN, NH_3, TP	500mLP, Cool Total Alkalinity, NOx, Cl, F, OP, SO_4	40mLaV, HCl TOC	40mLaG, Cool DOC	250mL P, H_2SO_4 TKN, NH_3	DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
61	PZ-04U-12	2/28/13	0928	GW		X					1	1					4.66	6.52	208.5	23.4	
62	PZ-04U-14		0944	GW		X					1					1	6.14	6.47	241	23.7	
63	PZ-04U-14-DUP		0946	GW		X					1					1	6.14	6.49	241	23.7	
64	PZ-04U-18		0955	GW		X					1					1	4.33	5.79	64.2	24.4	
65	PZ-06U-12		0835	GW		X					1			2	1	1	5.33	6.69	117.1	22.6	
66	PZ-06U-14		0850	GW		X				1			1	2	1	1	3.12	5.88	390	23.0	
67	PZ-06U-14-DUP		0855	GW		X				1			1	2	1	1	3.12	5.88	390	23.0	
68	PZ-06U-34		0916	GW		X					1					1	0.56	5.27	280	24.2	
69	PZ-01BKG		1225	GW		X					1	1					7.70	6.33	42.4	25.8	
70	PZ-02BKG		1149	GW		X					1	1					0.24	5.17	42.7	24.0	
71	PZ-03BKG		1213	GW		X					1	1					9.47	5.68	42.9	23.2	
72	PZ-04BKG		1138	GW		X					1	1					0.59	5.24	125.1	22.1	

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished: J. Chambers	2-20-13 16:05		16:05 2/20/13
Relinquished:	1539 2/28/13	K. Medment	1530 2/28/13
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

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Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

SAL Project No. 1301945

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: C-HS3-SE#3

Samplers: (Signature)

PARAMETER / CONTAINER DESCRIPTION

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

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	500mLP, Cool Total Alkalinity, TSS, TS, CBOD, NOx, Cl, F, OP, SO_4	250mL P, H_2SO_4 TKN, NH_3, TP	125mL P, $Na_2S_2O_3$ FC-MF	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	500mLP, Cool Total Alkalinity, NOx, Cl	250mL P, H_2SO_4 COD, TKN, NH_3, TP	500mLP, Cool Total Alkalinity, NOx, Cl, F, OP, SO_4	40mLaV, HCl TOC	40mLaG, Cool DOC	250mL P, H_2SO_4 TKN, NH_3	DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
73	PZ-05BKG	2/28/13	1200	GW		X					1	1					0.45	5.60	523	23.4	
74	FB-DI		1245	R		X	1		2	1		1		2	1		8.30	7.95	1.77	19.4	
75	FB-TAP		1240	DW		X	1		2	1		1		2	1		5.22	7.26	325	23.3	
76	EB		1250	R		X	1		2	1		1		2	1		8.30	7.90	1.77	20.0	

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
J. Champlin	2-20-13 16:15		16:15 2/20/13
Relinquished:	Date/Time: 1530 2/28/13	Received: K Mudmark	Date/Time: 2/28/13 1530
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

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

Chain of Custody

Appendix C: Weather Station Data

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Table C.1
Daily Recorded Meteorological Data
Frostproof, FL

Period	60cm Temp avg (F)	60cm Temp min (F)	60cm Temp max (F)	2m Temp avg (F)	2m Temp min (F)	2m Temp max (F)	10m Temp avg (F)	10m Temp min (F)	10m Temp max (F)	Tsoil avg - 10cm (F)	Tsoil min (avg) - 10cm (F)	Tsoil max (avg) - 10cm (F)	2m DewPt avg (F)	Rel Hum avg 2m (%)	2m Rain tot (in)	2m Rain max over 15min (in)	10m Wind avg (mph)	10m Wind min (mph)	10m Wind max (mph)	WDir avg 10m (deg)
1-Sep-12	81.62	71.92	92.30	81.83	74.43	91.09	80.64	74.61	88.36	84.33	82.83	86.11	73.89	79	0	0	6.25	1.07	18.63	56
2-Sep-12	79.00	66.94	90.97	79.51	69.26	89.33	78.96	71.98	86.79	83.67	81.77	85.51	69.02	74	0	0	5.40	1.20	19.57	60
3-Sep-12	79.57	66.74	91.54	79.74	68.23	89.31	79.31	70.97	87.46	83.60	81.48	85.96	70.19	75	0	0	4.46	0.20	14.37	105
4-Sep-12	81.20	70.81	96.37	80.83	72.50	93.25	79.74	72.72	91.00	84.31	82.29	86.61	72.06	77	0	0	4.98	0.33	23.07	177
5-Sep-12	78.26	70.00	93.33	78.23	71.73	91.33	77.08	71.74	88.75	84.02	82.83	85.95	72.54	84	0.54	0.36	6.55	0.20	21.10	194
6-Sep-12	77.57	70.21	92.84	77.52	71.02	90.68	76.44	70.75	88.29	83.23	81.77	84.94	72.34	85	0	0	5.76	0.00	30.07	200
7-Sep-12	79.62	69.42	93.88	79.37	70.81	92.10	78.31	70.99	89.42	83.59	81.63	85.91	73.14	83	0	0	4.75	0.47	15.87	194
8-Sep-12	81.43	71.80	92.80	81.59	73.27	91.67	80.45	73.26	89.10	84.28	82.56	86.18	73.06	78	0	0	6.46	1.20	18.83	210
9-Sep-12	77.68	74.30	84.09	78.07	75.09	83.62	77.09	74.59	81.86	83.71	83.17	84.61	75.65	92	0.13	0.06	7.18	0.70	21.47	233
10-Sep-12	77.60	71.47	91.42	77.40	71.55	88.95	76.41	71.33	85.78	83.35	82.45	84.70	74.89	93	0.24	0.14	4.14	0.00	19.60	282
11-Sep-12	78.98	73.63	89.17	79.28	74.50	87.62	78.06	74.01	84.96	83.08	81.93	84.56	73.25	83	0	0	8.50	2.37	23.07	50
12-Sep-12	78.02	71.29	86.92	78.26	72.14	85.80	77.12	71.78	82.87	82.74	81.43	84.04	72.24	82	0	0	8.95	2.30	25.03	54
13-Sep-12	78.93	72.12	90.23	79.25	72.97	88.90	78.15	72.66	86.34	82.89	81.63	84.42	72.74	82	0	0	7.92	1.93	26.87	54
14-Sep-12	77.14	72.72	89.53	77.29	73.65	87.62	76.13	73.22	84.36	82.81	81.81	84.00	74.39	91	0.23	0.10	6.86	1.03	23.30	43
15-Sep-12	76.72	72.12	86.97	76.98	73.17	85.32	76.09	72.81	83.23	82.50	81.66	83.28	73.62	90	0.43	0.25	5.44	0.83	22.50	69
16-Sep-12	78.52	72.55	90.66	78.65	73.58	88.14	77.61	73.20	85.14	82.63	81.25	84.31	73.62	85	0	0	6.12	1.60	19.80	95
17-Sep-12	78.80	70.99	92.35	78.88	72.25	89.89	77.78	72.12	87.30	83.01	81.46	84.90	73.12	84	0	0	6.15	0.00	21.70	131
18-Sep-12	75.86	71.47	90.16	76.20	72.09	89.02	75.38	71.82	86.45	82.33	81.37	83.39	74.02	93	1.02	0.55	7.14	0.77	25.00	200
19-Sep-12	77.60	72.00	91.18	77.50	72.70	89.51	76.49	71.94	86.86	82.31	80.83	84.27	73.86	90	0.01	0.01	5.36	0.33	16.23	197
20-Sep-12	78.52	71.01	92.71	78.10	71.80	88.79	77.21	71.82	87.58	82.57	81.36	83.98	73.23	86	0.07	0.04	4.09	0.07	18.47	53
21-Sep-12	76.36	70.56	90.93	76.20	70.95	88.18	75.60	70.56	86.11	82.03	81.07	83.68	72.80	90	0.59	0.14	4.31	0.00	23.03	43
22-Sep-12	76.53	70.52	87.35	76.72	71.53	85.42	75.98	71.62	83.19	81.55	80.53	82.76	73.35	90	0.01	0.01	4.08	0.20	12.17	61
23-Sep-12	79.29	69.93	92.16	79.42	71.53	89.71	78.97	71.47	88.25	81.80	80.46	83.35	71.06	79	0	0	4.52	0.07	16.20	13
24-Sep-12	74.91	68.58	84.97	75.67	70.43	83.82	75.49	70.79	82.00	80.88	80.15	81.90	66.39	75	0	0	5.56	0.20	24.33	24
25-Sep-12	74.87	67.08	88.79	75.21	68.54	85.21	75.12	69.21	83.50	80.26	79.02	81.72	66.92	76	0	0	4.74	0.13	10.13	33
26-Sep-12	75.07	65.19	90.18	75.27	67.71	88.05	75.17	69.67	85.82	80.29	78.82	81.79	71.94	90	0.03	0.01	3.91	0.07	23.23	57
27-Sep-12	79.57	70.65	93.43	79.48	71.85	90.41	78.62	71.83	88.45	81.03	79.77	82.56	72.57	82	0	0	5.07	0.20	16.60	27
28-Sep-12	79.40	70.77	93.83	79.40	72.45	91.00	78.35	72.12	88.84	81.64	80.37	83.17	72.66	82	0	0	5.04	0.33	21.13	44
29-Sep-12	79.73	70.86	94.32	79.43	72.39	90.70	78.50	72.34	88.93	82.26	80.60	84.25	73.50	84	0	0	4.35	0.00	15.43	85
30-Sep-12	79.71	68.88	95.54	79.59	70.75	91.81	78.90	71.83	89.60	82.67	81.01	84.42	73.44	83	0	0	4.25	0.00	154.50	148

Table C.1 (cont'd)
Daily Recorded Meteorological Data
Frostproof, FL

Period	60cm Temp avg (F)	60cm Temp min (F)	60cm Temp max (F)	2m Temp avg (F)	2m Temp min (F)	2m Temp max (F)	10m Temp avg (F)	10m Temp min (F)	10m Temp max (F)	Tsoil avg - 10cm (F)	Tsoil min (avg) - 10cm (F)	Tsoil max (avg) - 10cm (F)	2m DewPt avg (F)	Rel Hum avg 2m (%)	2m Rain tot (in)	2m Rain max over 15min (in)	10m Wind avg (mph)	10m Wind min (mph)	10m Wind max (mph)	WDir avg 10m (deg)
1-Oct-12	80.30	72.23	91.98	80.63	73.67	90.03	79.52	73.78	87.17	82.96	81.73	84.27	74.61	83	0	0	6.52	0.27	21.60	172
2-Oct-12	76.10	70.99	88.63	76.32	71.80	85.84	75.34	71.47	83.77	82.20	81.07	83.23	74.02	93	1.18	0.44	7.54	0.30	29.70	182
3-Oct-12	77.47	71.02	93.54	77.46	71.76	90.82	76.47	71.47	88.92	81.35	80.65	83.34	74.51	92	1.27	0.56	5.56	0.00	21.07	153
4-Oct-12	77.08	71.71	94.14	76.79	72.21	90.99	75.95	71.60	88.16	81.31	80.10	83.10	74.28	93	0.07	0.02	5.12	0.33	24.37	38
5-Oct-12	78.75	71.96	94.68	78.05	72.36	91.18	77.00	71.76	88.72	81.71	80.35	83.80	74.55	90	0.50	0.12	5.05	0.00	22.63	37
6-Oct-12	78.62	70.83	91.35	78.21	71.71	88.56	77.28	71.47	86.99	82.04	80.87	83.46	74.15	89	0	0	4.10	0.00	27.17	50
7-Oct-12	76.24	68.99	89.67	76.32	70.32	87.57	75.60	71.04	85.17	81.43	80.31	82.63	72.46	89	0	0	4.90	0.20	24.07	72
8-Oct-12	77.06	70.88	90.86	76.96	71.87	86.90	76.37	71.82	85.30	81.48	80.46	83.07	73.95	91	0.18	0.09	4.09	0.00	15.80	59
9-Oct-12	77.30	69.33	91.63	76.98	70.54	87.84	76.27	71.10	85.50	81.08	79.74	82.53	73.08	89	0.01	0.01	4.91	0.00	17.70	12
10-Oct-12	76.09	68.18	89.08	75.99	69.37	86.90	75.17	69.73	84.38	80.82	79.66	82.09	69.54	82	0	0	6.45	0.73	14.40	28
11-Oct-12	74.43	65.48	86.41	74.51	66.45	85.06	73.69	66.78	82.72	79.82	78.64	80.98	67.51	80	0	0	7.28	2.13	18.77	40
12-Oct-12	73.91	65.70	86.50	74.11	66.34	84.83	73.32	66.43	82.29	79.24	78.10	80.42	65.19	76	0	0	7.52	1.80	20.60	27
13-Oct-12	74.98	65.86	85.53	75.16	67.08	84.40	74.21	67.50	81.84	79.02	77.79	80.24	67.41	79	0	0	8.78	2.17	28.47	45
14-Oct-12	77.16	68.88	87.98	77.46	69.66	86.74	76.50	69.71	84.07	79.63	78.49	80.82	70.27	80	0	0	7.85	2.43	20.17	55
15-Oct-12	77.38	69.37	90.18	77.49	70.99	87.58	76.73	71.46	85.62	80.37	79.50	81.61	72.57	86	0.01	0.01	4.71	0.30	15.27	44
16-Oct-12	75.99	67.62	90.27	75.88	68.70	86.61	75.21	68.79	84.24	80.05	78.89	81.21	69.07	81	0	0	4.88	0.13	12.03	21
17-Oct-12	73.59	65.97	84.58	73.78	67.60	81.77	73.30	68.16	80.37	79.79	78.69	80.89	69.77	88	0	0	4.34	0.23	46.63	131
18-Oct-12	77.00	67.21	90.77	76.45	67.91	87.57	75.79	68.23	85.87	80.23	78.85	81.97	71.61	86	0.21	0.12	4.04	0.00	17.23	190
19-Oct-12	76.86	65.77	91.31	76.74	67.35	88.43	76.59	68.07	86.18	79.91	78.49	81.19	68.90	80	0.01	0.01	4.16	0.00	12.70	276
20-Oct-12	73.47	58.62	87.53	73.91	61.68	84.16	73.45	63.48	82.02	79.09	78.19	79.99	61.13	68	0	0	5.35	0.00	17.87	345
21-Oct-12	70.03	56.43	84.60	70.38	59.13	82.53	69.84	60.40	79.90	77.25	75.81	78.58	56.95	65	0	0	7.19	0.90	17.20	35
22-Oct-12	73.77	64.08	86.40	73.88	64.89	84.97	72.75	64.94	82.09	77.62	76.33	79.05	64.03	73	0	0	9.25	1.70	25.07	42
23-Oct-12	72.64	65.41	82.09	73.16	66.45	81.14	72.41	66.72	78.73	77.72	76.93	78.35	66.10	79	0.06	0.06	8.31	3.00	21.73	47
24-Oct-12	76.04	67.15	87.84	76.20	68.04	86.88	74.94	67.80	83.82	78.19	77.05	79.68	68.70	80	0	0	9.22	2.43	22.80	44
25-Oct-12	74.43	70.11	82.17	74.80	70.90	82.02	73.82	70.54	79.61	78.52	78.10	79.18	71.38	90	0.40	0.38	8.70	2.80	25.00	34
26-Oct-12	74.47	68.59	84.22	74.99	69.19	84.31	74.08	68.74	81.81	77.78	77.27	78.33	68.30	81	0.07	0.04	12.69	2.87	31.93	3
27-Oct-12	69.69	65.55	75.49	70.16	66.11	75.24	69.41	65.73	73.58	76.24	75.70	77.23	63.03	78	0	0	11.53	2.27	27.70	314
28-Oct-12	68.20	60.33	78.44	68.21	61.12	77.04	67.19	61.09	74.01	75.60	74.91	76.46	60.66	78	0	0	9.82	1.87	25.67	299
29-Oct-12	58.76	49.68	71.82	58.61	51.01	70.23	57.75	50.70	67.46	73.59	72.45	75.09	44.26	62	0	0	10.47	2.47	25.13	301
30-Oct-12	57.38	44.87	70.21	57.35	46.40	68.88	56.73	47.12	66.25	71.84	70.56	72.88	42.08	59	0	0	8.41	1.30	26.77	286

Table C.1 (cont'd)
Daily Recorded Meteorological Data
Frostproof, FL

Period	60cm Temp avg (F)	60cm Temp min (F)	60cm Temp max (F)	2m Temp avg (F)	2m Temp min (F)	2m Temp max (F)	10m Temp avg (F)	10m Temp min (F)	10m Temp max (F)	Tsoil avg - 10cm (F)	Tsoil min (avg) - 10cm (F)	Tsoil max (avg) - 10cm (F)	2m DewPt avg (F)	Rel Hum avg 2m (%)	2m Rain tot (in)	2m Rain max over 15min (in)	10m Wind avg (mph)	10m Wind min (mph)	10m Wind max (mph)	WDir avg 10m (deg)
1-Nov-12	65.74	53.46	79.39	65.93	55.47	77.68	65.56	56.84	75.61	71.86	70.50	73.51	59.62	82	0	0	5.71	1.30	17.27	256
2-Nov-12	65.22	51.57	82.11	65.10	53.38	78.96	65.08	54.81	77.27	72.27	70.92	73.72	53.69	71	0	0	5.05	0.33	12.63	314
3-Nov-12	67.28	52.21	85.62	67.33	54.12	81.86	68.16	56.08	80.40	72.49	70.77	74.59	59.20	78	0	0	4.38	0.13	12.00	274
4-Nov-12	68.59	54.72	85.17	68.97	56.70	82.58	70.14	59.77	80.60	73.17	71.38	75.13	59.91	76	0	0	3.88	0.03	13.10	241
5-Nov-12	68.14	59.76	81.18	68.16	61.20	78.96	67.87	61.50	77.04	73.72	72.82	74.89	63.13	85	0	0	4.04	0.43	13.43	274
6-Nov-12	64.77	57.18	76.42	65.17	58.32	75.07	65.23	59.18	73.02	73.41	72.70	74.19	62.29	91	0.03	0.01	4.59	0.10	20.60	278
7-Nov-12	57.63	44.85	69.44	57.99	47.73	67.98	58.18	53.04	65.62	71.66	70.56	73.08	50.40	78	0.01	0.01	7.76	1.83	21.63	309
8-Nov-12	56.54	45.30	69.93	56.89	48.34	67.53	56.75	48.40	66.06	69.86	68.88	70.90	44.31	66	0	0	6.88	0.43	20.20	358
9-Nov-12	59.99	45.63	75.60	60.33	47.91	73.54	60.09	50.67	71.29	69.50	68.04	71.11	47.99	67	0	0	6.67	1.37	14.93	26
10-Nov-12	64.04	53.92	77.97	64.20	54.77	76.15	63.58	55.00	73.17	70.28	68.99	71.73	54.44	72	0	0	7.46	2.20	22.00	39
11-Nov-12	66.28	56.79	77.63	66.71	58.23	77.47	66.40	59.14	75.85	71.17	70.11	72.30	60.77	82	0	0	6.84	0.80	20.10	50
12-Nov-12	69.23	58.73	83.75	69.75	60.67	82.04	69.38	61.52	79.34	71.90	70.57	73.44	64.53	85	0	0	5.53	0.57	20.27	58
13-Nov-12	69.39	61.56	80.67	69.65	62.29	79.11	69.26	62.64	77.20	72.68	71.62	73.92	64.70	86	0	0	5.09	0.93	11.63	25
14-Nov-12	68.38	62.98	81.86	68.65	63.93	79.18	68.04	63.34	76.80	73.02	72.19	74.03	65.28	90	0	0	6.16	2.10	14.03	21
15-Nov-12	65.80	60.85	78.35	65.75	61.20	74.82	64.88	60.80	71.92	73.15	72.59	73.92	63.80	94	0	0	6.03	1.20	13.47	7
16-Nov-12	62.05	58.60	70.21	62.12	58.75	69.12	61.42	58.01	67.78	72.46	71.92	73.26	58.67	89	0	0	7.32	2.13	17.00	12
17-Nov-12	67.96	59.49	80.44	67.74	59.92	78.62	66.70	59.58	76.30	72.64	71.60	74.10	61.44	82	0	0	7.79	1.00	30.43	35
18-Nov-12	64.88	53.40	76.39	64.97	55.13	74.80	64.15	55.92	72.41	72.87	72.18	73.72	60.19	85	0	0	8.63	2.40	20.63	21
19-Nov-12	56.44	51.62	60.64	56.62	52.86	59.92	56.23	53.35	58.89	71.14	70.63	72.66	54.35	92	0	0	6.61	1.83	14.93	2
20-Nov-12	63.39	54.27	76.32	63.14	55.58	74.48	62.31	55.98	72.30	71.02	70.11	72.32	57.25	82	0	0	7.30	1.73	19.33	359
21-Nov-12	61.09	50.16	73.96	61.26	51.78	72.45	60.79	52.81	70.50	70.64	69.73	71.49	51.15	73	0	0	7.22	1.10	33.60	352
22-Nov-12	57.90	46.29	73.74	58.62	48.70	72.46	58.41	49.42	70.03	69.43	68.41	70.39	43.90	63	0	0	8.15	0.50	22.83	354
23-Nov-12	58.07	46.20	75.25	58.79	49.17	73.13	59.92	50.47	70.93	68.33	67.12	69.71	40.06	54	0	0	6.33	0.77	18.57	350
24-Nov-12	59.27	44.31	79.84	59.70	47.57	77.18	60.05	49.53	74.48	67.89	66.22	69.78	51.68	77	0	0	6.21	0.30	17.53	300
25-Nov-12	56.18	42.82	75.38	56.84	44.87	71.76	57.94	46.99	70.45	67.44	65.95	68.88	43.19	65	0	0	5.22	0.13	10.47	10
26-Nov-12	63.01	46.72	81.09	63.26	49.89	78.19	63.38	51.71	76.26	67.73	65.97	69.76	55.74	79	0	0	4.67	0.33	11.60	72
27-Nov-12	67.31	56.08	80.91	67.85	59.40	79.20	68.37	61.00	77.85	69.63	68.16	71.42	62.09	84	0.02	0.02	4.54	0.70	15.37	178
28-Nov-12	62.91	55.22	75.43	63.30	55.56	73.60	63.39	55.44	70.99	69.62	68.79	70.43	59.38	88	0.01	0.01	6.71	0.00	16.07	11
29-Nov-12	62.96	52.11	78.48	63.00	52.57	76.87	62.30	52.61	74.21	69.24	68.02	70.50	56.71	82	0	0	8.51	2.63	22.57	33
30-Nov-12	65.33	53.44	80.60	65.69	56.68	78.75	65.30	57.36	75.96	69.77	68.59	71.20	56.82	76	0	0	7.87	2.57	17.97	45

Table C.1 (cont'd)
Daily Recorded Meteorological Data
Frostproof, 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 (%)	2m Rain tot (in)	2m Rain max over 15min (in)	10m Wind avg (mph)	10m Wind min (mph)	10m Wind max (mph)	WDir avg 10m (deg)
1-Dec-12	65.71	54.75	80.37	65.97	56.48	78.76	65.44	57.61	76.12	69.94	68.77	71.35	60.19	83	0	0	7.54	2.77	23.83	31
2-Dec-12	69.08	56.25	82.89	69.01	58.03	80.83	68.15	59.76	78.3	70.89	69.58	72.37	62.29	81	0	0	6.52	0	19.43	58
3-Dec-12	69.28	59.86	81.81	69.39	61.16	79.9	68.67	61.59	77.34	72.03	71.17	73.18	61.25	78	0	0	6.12	0.73	17.47	52
4-Dec-12	64.76	54.45	78.35	65.59	57.45	76.93	65.89	59.54	74.52	70.96	69.66	71.96	58.47	80	0	0	5.45	1.57	17.07	49
5-Dec-12	68.81	57.33	82.62	68.45	58.93	79.52	67.97	59.7	77.32	71.19	69.84	72.86	60.98	79	0	0	5.1	0.23	12.83	56
6-Dec-12	68.85	60.03	81.68	68.93	61.38	79.32	68.19	61.36	77.14	72.11	71.02	73.4	63.33	84	0	0	5.52	0.6	14.93	46
7-Dec-12	67.39	60.12	81.99	67.34	60.37	78.42	66.82	59.95	77.52	72.21	71.26	73.47	64.36	91	0	0	4.72	0.27	12.9	40
8-Dec-12	70.41	63.32	84.29	70.18	63.59	80.94	69.31	62.89	79.16	72.93	72.03	74.26	66.86	90	0.36	0.17	4.5	0.23	13.07	75
9-Dec-12	72.24	65.01	85.8	72.03	66.27	83.34	71.49	65.57	81.05	73.88	73.13	75.02	68	89	0.01	0.01	3.37	0	18.83	310
10-Dec-12	72.57	63.99	83.23	72.97	65.57	82.76	72.31	65.5	81.23	73.96	73.15	74.91	69.93	91	0.14	0.07	5.9	0	17.73	196
11-Dec-12	72.81	66.97	82.51	73	67.64	80.73	72.22	67.3	79.05	74.56	73.8	75.45	71.13	94	1.24	0.66	4.76	0.27	11.83	230
12-Dec-12	72.37	67.8	83.03	72.61	68.2	82.09	71.97	67.71	80.53	74.32	73.56	75.38	71.04	95	0.46	0.27	4.89	0.03	18.1	187
13-Dec-12	63.8	55.92	70.81	63.93	56.23	71.26	63.32	55.92	70.7	73.54	71.92	74.68	62.03	94	0	0	8.14	0.73	18.97	358
14-Dec-12	62.52	56.46	74.41	62.44	56.62	72.93	61.68	56.26	71.15	71.25	70.59	71.92	59.15	90	0	0	9.22	2.03	18.07	18
15-Dec-12	65.02	57.04	81.43	65.11	57.49	78.04	64.55	57.16	76.46	71.21	70.21	72.57	61.14	88	0	0	5.1	0.4	12.13	54
16-Dec-12	67.71	56.37	81.27	68.28	58.59	79.09	68.77	60.98	77.49	71.26	69.8	72.86	64.2	88	0	0	3.8	0.37	32.8	109
17-Dec-12	69.97	61.2	83.07	70.45	62.53	81.84	70.26	62.62	79.77	71.98	70.95	73.18	65.48	86	0	0	5.22	0.43	17.53	207
18-Dec-12	69.61	55	84.61	69.98	56.44	82.36	69.5	57.04	79.7	72.45	71.87	73.49	64.76	85	0.03	0.03	7.03	1.33	21.5	270
19-Dec-12	61.47	47.17	81.1	62.41	50.34	78.64	63.96	53.64	77.76	70.27	68.92	71.85	52.72	75	0	0	4.68	0.13	14.07	52
20-Dec-12	69.75	55.45	82.65	70.19	58.62	81.7	69.68	60.71	79.88	70.21	68.79	71.85	63.14	80	0	0	7.78	1.5	19.93	174
21-Dec-12	56.92	43.49	70.59	56.84	44.54	71.17	56.16	45.09	70.63	69.43	67.19	71.58	44.35	66	0.3	0.21	11.25	2.9	28.23	309
22-Dec-12	48.23	36.39	65.17	48.95	40.34	63.25	49.71	40.77	62.01	65.26	64.11	67.14	28.16	49	0	0	8.36	1.7	24.07	329
23-Dec-12	51.84	32.15	72.03	52.52	37.09	69.64	54.31	41.46	68.45	63.72	62.1	65.41	42.72	72	0	0	3.87	0.03	8.67	21
24-Dec-12	58.08	46.18	71.58	58.96	48.07	69.76	60.91	52.3	68.49	65.24	63.91	66.49	54.5	86	0	0	3.43	0	15.27	176
25-Dec-12	63.97	50.54	76.71	64.8	52.99	75.24	65.38	57.29	73.49	66.06	64.58	67.55	58.72	82	0	0	5.45	0.2	35.87	148
26-Dec-12	65.14	50.88	80.1	65.74	51.87	79.72	65.23	52.3	77.65	67.54	66.56	68.76	61.85	88	0.1	0.08	9.47	1.83	36.57	224
27-Dec-12	51.35	39.05	67.87	51.42	40.24	64.96	52.06	40.85	63.34	65.19	64.17	67.3	43.87	78	0	0	5.12	0.07	12.83	337
28-Dec-12	58.23	38.86	75.06	58.32	40.9	73.24	58.36	44.8	71.74	64.22	62.44	66.34	52.88	84	0.03	0.01	5.46	0.6	13.67	91
29-Dec-12	67.59	51.21	79.03	67.93	51.91	77.25	67.34	52.11	75.18	67.73	66.36	69.19	64.89	90	0.25	0.15	9.66	0.87	22.43	249
30-Dec-12	49.32	38.98	58.33	49.07	39.6	56.93	48.43	39.46	55.35	64.65	63.39	67.28	42.44	79	0	0	8.99	2.1	22.23	10
31-Dec-12	59.09	45.75	75.51	59.22	46.53	74.17	58.94	46.74	72.57	64.29	62.67	66.38	52.5	80	0	0	6.26	0.73	16.17	77

Table C.1 (cont'd)
Daily Recorded Meteorological Data
Frostproof, 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 (%)	2m Rain tot (in)	2m Rain max over 15min (in)	10m Wind avg (mph)	10m Wind min (mph)	10m Wind max (mph)	WDir avg 10m (deg)
1-Jan-13	63.21	48.27	80.35	64.03	50.09	77.79	65.58	55.94	76.86	65.4	63.57	67.37	57.83	82	0	0	3.56	0.1	13.93	155
2-Jan-13	66.9	52.74	82.94	67.4	55.62	80.96	68.12	58.93	79.27	66.75	64.87	68.77	61.59	84	0	0	4.45	0.7	13.2	217
3-Jan-13	66.8	59.56	82.83	66.42	59.68	79.88	65.88	59.41	78.19	68.53	67.37	70.03	63.69	92	0.02	0.01	3.93	0	15.47	9
4-Jan-13	59.73	57.2	63.88	59.72	57.31	63.3	59.22	56.95	62.42	68.14	67.66	69.26	58.67	96	0.01	0.01	7.13	1.6	15.37	22
5-Jan-13	65.98	56.44	80.28	65.55	56.61	77.63	64.65	56.32	76.15	68.06	66.79	69.64	60.34	84	0	0	6.93	0.3	16.83	44
6-Jan-13	69.34	63.64	82.18	69.26	63.95	81.1	68.61	63.36	79.41	70.12	68.97	71.87	66.48	92	0	0	4.18	0	19.43	68
7-Jan-13	64.83	60.26	71.15	64.85	60.42	70.61	64.26	59.76	69.13	70.07	69.49	70.83	61.59	90	0	0	7.64	0.13	19.1	36
8-Jan-13	70.85	62.08	83.37	70.74	62.73	80.29	70.05	62.74	78.76	70.35	69.03	72	66.31	87	0	0	5.24	1.1	13	63
9-Jan-13	73.82	66.65	85.8	73.94	67.42	84.24	73.09	67.3	82.02	71.73	70.56	73.29	68.93	86	0	0	6.62	1.03	17.5	104
10-Jan-13	71.69	64.26	83.98	71.8	64.76	82.35	71.02	64.72	80.37	72.31	71.26	73.62	65.98	84	0	0	6.77	1.13	18.23	103
11-Jan-13	69.19	61.18	80.15	69.63	63.84	78.55	69.35	65.08	76.69	71.89	70.86	73.17	66.55	90	0.01	0.01	5.18	0.53	42.67	101
12-Jan-13	70.44	60.71	82.29	70.68	62.17	81.12	70.18	62.76	79.41	71.52	70.03	72.97	64.91	84	0	0	5.41	1.07	15.8	107
13-Jan-13	70.88	60.24	83.03	71.06	61.74	80.87	70.44	62.22	78.94	71.84	70.45	73.24	64.56	82	0	0	5.69	1.1	16.1	127
14-Jan-13	69.09	58.89	82.54	69.68	60.37	80.37	69.41	60.53	78.58	71.71	70.43	73	63.85	84	0	0	5.2	0.83	68.23	120
15-Jan-13	70.73	58.98	83.98	70.93	62.2	81.61	70.45	63.97	79.72	71.95	70.74	73.47	65.02	83	0	0	4.53	0.27	10.7	115
16-Jan-13	69.21	57.94	86.05	69.87	60.24	82.31	70.88	62.71	80.73	71.97	70.59	73.38	62.82	81	0	0	3.75	0	14.6	182
17-Jan-13	63.33	54.82	80.38	63.94	55.18	79.29	64.43	54.93	77.45	71.14	70.34	72.01	59.5	86	0	0	8.35	0.3	26	252
18-Jan-13	55.55	39.95	69.35	55.17	40.41	67.6	54.35	40.19	65.34	68.99	67.57	70.29	49	80	0.04	0.02	9.55	1.8	22.63	6
19-Jan-13	63.49	55.47	75.04	63.56	55.56	73.94	62.9	55.36	71.6	69.28	68.36	70.16	60.04	89	0.04	0.02	7.3	0.67	19.47	36
20-Jan-13	64.62	59.13	74.79	64.7	59.52	72.63	64.08	59.23	71.19	69.81	68.97	70.81	61.59	90	0	0	6.22	1.53	23.2	28
21-Jan-13	65.61	60.17	74.44	65.63	60.71	72.54	65.13	60.64	71.33	69.95	69.12	70.92	61.75	87	0	0	4.41	0	12.47	1
22-Jan-13	59	46.36	68.56	59.42	49.5	67.06	58.95	51.42	64.78	68.98	67.95	70.21	48.13	68	0	0	7.55	0.8	20.73	12
23-Jan-13	56.32	44	73.44	56.86	47.48	70.77	57.02	47.7	69.55	66.97	65.59	68.32	41.31	60	0	0	6.22	0.37	15	24
24-Jan-13	56.79	39.1	75.72	57.72	41.69	73.04	59.3	47.61	71.42	66.11	64.38	67.77	46.92	72	0	0	4.63	0.2	14.43	355
25-Jan-13	59.63	44.28	79.41	60.38	46.76	75.52	61.98	49.14	74.21	66.4	64.63	68.45	51.13	76	0	0	4.29	0.13	13.47	331
26-Jan-13	59.44	43.04	80.1	60.43	45.61	76.62	63	52.5	74.3	66.46	64.69	68.23	50.8	75	0	0	3.67	0	23	20
27-Jan-13	64.27	51.78	79.48	64.92	55.58	78.1	64.89	57.2	75.6	67.13	65.61	69.1	56.98	78	0	0	6.29	0.7	16.37	44
28-Jan-13	67.84	56.5	83.07	68.08	58.78	80.06	67.47	59.81	77.67	68.55	66.97	70.66	63.91	88	0	0	5.78	1.3	24.9	67
29-Jan-13	69.85	61.43	83.12	70.11	62.11	81.19	69.29	61.97	78.87	70.01	68.74	71.55	66.28	89	0	0	6.42	1.23	15.5	104
30-Jan-13	71.77	62.83	84.78	72.09	63.68	83.73	71.1	63.46	81.5	70.83	69.53	72.37	65.19	81	0	0	9.45	1.67	43.87	177
31-Jan-13	59.96	45.72	69.62	59.74	46.78	69.44	58.96	47.1	69.01	70.16	68.32	71.58	49.11	72	0.07	0.01	7.82	0.6	28.3	321

Table C.1 (cont'd)
Daily Recorded Meteorological Data
Frostproof, 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 (%)	2m Rain tot (in)	2m Rain max over 15min (in)	10m Wind avg (mph)	10m Wind min (mph)	10m Wind max (mph)	WDir avg 10m (deg)
1-Feb-13	52.85	40.89	70.93	53.35	42.27	68.27	54.3	42.83	66.79	66.72	65.26	68.23	34.85	55	0	0	6.15	0.23	40.87	16
2-Feb-13	56.63	42.23	75.87	57.5	46.31	72.23	58.36	47.28	72.37	65.81	64.06	67.87	44.6	65	0	0	5.05	0	12.43	32
3-Feb-13	56.22	42.09	75.97	56.95	44.74	73.29	56.98	45.19	70.41	65.67	64.11	67.24	44.65	67	0	0	6.08	0.13	19.33	324
4-Feb-13	54.9	39.27	74.41	55.84	42.38	71.46	56.81	44.4	70.07	65.17	63.21	67.39	41.98	67	0	0	4.93	0.13	25.7	306
5-Feb-13	59.85	38.46	81.18	60.49	41.42	78.24	61.97	46.4	76.87	65.47	63.18	68.02	48.36	69	0	0	3.91	0.07	31.67	248
6-Feb-13	66.05	50.65	82.22	66.41	52.7	79.02	66.62	55.67	77.61	67.21	65.3	69.39	57.86	76	0	0	3.92	0.07	13.67	90
7-Feb-13	70.64	60.44	83.3	70.81	62.31	82.4	69.98	62.65	80.49	69.13	67.75	70.95	62.45	77	0	0	7.96	0.93	22.07	166
8-Feb-13	69.93	56.98	84.88	69.78	57.47	82.98	68.83	57.42	80.29	70.17	68.97	71.65	60.29	76	0	0	6.85	1.2	15.5	302
9-Feb-13	63.88	53.89	78.13	63.71	54.68	76.28	62.93	54.75	73.94	69.65	68.14	71.24	56.24	79	0	0	7.32	1.47	16.7	32
10-Feb-13	66.83	58.01	79.32	67.04	58.75	77.95	66.3	58.98	75.56	69.93	68.47	71.55	59.32	78	0	0	8.33	1.97	23.87	100
11-Feb-13	69.82	57.83	83.34	70.02	59.29	81.43	69.46	59.61	79.88	70.46	68.68	72.46	60.95	75	0.02	0.02	5.93	0.13	18.17	155
12-Feb-13	72.07	59.07	85.78	72.36	61.79	84.15	71.87	63.05	81.91	71.34	69.67	73.02	63.94	77	0	0	6.37	0.67	37.77	200
13-Feb-13	73.33	62.37	86.41	73.36	62.46	85.33	72.54	62.64	83.07	72.56	71.37	74.08	66.04	80	0	0	9.72	1.07	24.97	223
14-Feb-13	62.53	58.1	72.5	62.45	59.45	70.43	62.26	59.5	69.53	71.4	70.02	73.26	58.86	89	0.67	0.07	4.51	0.03	18.8	28
15-Feb-13	60.27	53.51	72.25	60.1	55.29	68.94	60.62	56.17	68.22	69.71	69.13	70.47	57.44	91	0.04	0.01	4.12	0.07	12.07	343
16-Feb-13	57.94	46.2	70.65	57.61	47.43	69.13	57.16	48.61	67.19	68.57	67.6	69.28	48.35	74	0	0	8.24	0.57	29.13	317
17-Feb-13	45.72	33.85	57.7	45.68	37.11	54.68	45.89	37.49	53.87	65.45	64.18	67.53	21.53	40	0	0	8.31	0.87	24.3	6
18-Feb-13	51.5	32.32	71.04	52.11	36.81	68.13	52.57	40.11	66.6	64.15	62.17	66.34	38.32	62	0.04	0.03	7.12	1.17	20.37	70
19-Feb-13	62.5	46.24	79.81	63.17	48.72	78.3	64.03	51.46	76.59	65.85	63.91	68.16	52.12	71	0	0	5.99	0.93	21.67	216
20-Feb-13	66.57	55.27	82.31	66.25	56.62	77.94	66.22	58.26	77.14	67.72	65.95	69.96	59.67	81	0	0	4.57	0	14.03	353
21-Feb-13	69.38	57.2	85.23	68.82	57.94	82.11	68.56	58.06	81.05	69.58	67.71	71.89	60.29	77	0	0	4.93	0.63	11.87	106
22-Feb-13	73.33	59.27	88.65	72.99	61.23	85.42	72.56	61.2	83.73	71.23	69.37	73.49	65	79	0	0	6.12	0.23	20.03	150
23-Feb-13	75.2	68.72	88.32	74.91	69.1	86.31	74.32	68.85	84.6	72.94	71.73	74.53	67.69	81	0	0	8.35	1.7	21.53	208
24-Feb-13	73.62	66.4	89.38	73.02	66.34	86.23	72.41	66.27	84.42	73.71	72.41	75.25	67.55	85	0	0	6.37	0.27	18.67	240
25-Feb-13	73.6	64.33	86.14	73.45	65.68	84.76	73.36	65.91	83.53	74.27	73.08	75.72	65.41	79	0	0	5.86	0.27	20.3	168
26-Feb-13	71.05	62.02	81.19	71.12	62.51	80.89	70.99	62.96	80.06	73.9	73.26	74.39	67.47	89	0.13	0.04	8.81	2.17	30.13	208
27-Feb-13	66.12	55.74	78.26	65.27	56.12	75.29	65.24	56.64	74.43	72.26	71.02	73.36	57.99	79	0	0	6.08	0.4	15.63	294
28-Feb-13	61.85	49.32	77.97	60.92	50.02	74.84	61.04	51.73	73.15	71.1	69.66	72.5	50.62	72	0	0	6.12	0.2	21.3	295

Appendix D: Field Parameter Analyses

Table D.1
Field Parameter Results
February 25 through February 28, 2013

Sample Identification	Temperature (°C)	pH	Specific Conductance (µS)	Dissolved Oxygen (mg/L)
STE	28.3	7.20	593	1.80
STE DUP	28.3	7.20	593	1.80
PZ-01BKG	25.0	6.33	92.8	7.26
PZ-02BKG	24.0	5.17	42.7	0.24
PZ-03BKG	23.2	5.68	42.9	4.47
PZ-04BKG	22.1	5.24	125.1	0.59
PZ-05BKG	23.4	5.60	52.3	0.45
PZ-03A-15	24.8	6.26	35.6	7.27
PZ-03A-17	25.5	6.21	74.6	6.48
PZ-03A-21	25.6	5.66	272	2.68
PZ-03A-34	26.3	5.92	85.7	4.94
PZ-03I-15	25.4	5.78	46.6	4.90
PZ-03I-17	24.7	6.08	48.1	2.91
PZ-03I-21	24.9	4.87	194.3	2.97
PZ-03K-15	25.5	6.72	435	5.49
PZ-03K-17	25.2	6.33	50.6	6.35
PZ-03K-21	25.7	6.01	156.8	2.17
PZ-02L-15	24.6	6.40	78.8	6.03
PZ-02L-17	25.1	6.43	67.9	5.31
PZ-02L-21	25.6	5.05	188.1	2.82
PZ-04L-15	26.7	6.48	315	4.56
PZ-04L-17	27.1	6.23	63.9	4.34
PZ-04L-21	27.1	5.16	173.4	2.27
PZ-07L-15	26.7	6.12	53.9	5.71
PZ-07L-17	26.6	6.23	63.4	5.64
PZ-07L-21	26.2	5.23	148.9	2.52

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Sample Identification	Temperature (°C)	pH	Specific Conductance (µS)	Dissolved Oxygen (mg/L)
PZ-03ML-15	25.8	6.21	513	5.21
PZ-03ML-15 DUP	25.8	6.21	513	5.21
PZ-03ML-17	26.1	6.29	55.6	6.00
PZ-00N-17	26.6	6.26	59.4	5.70
PZ-00N-21	26.0	4.82	216.9	2.91
PZ-02N-15	25.4	6.56	88	6.52
PZ-02N-17	25.7	6.11	50.5	5.49
PZ-02N-21	25.8	4.64	226	2.38
PZ-02N-21 DUP	25.8	4.64	226	2.38
PZ-04N-15	25.6	6.22	290	5.19
PZ-04N-17	25.7	6.44	83.4	2.56
PZ-04N-21	25.8	5.67	190.5	2.19
PZ-06N-15	25.3	6.02	370	4.89
PZ-06N-17	25.4	6.32	59.2	4.49
PZ-06N-21	25.5	5.02	108.9	3.16
PZ-03O-15	22.7	6.73	143.5	6.58
PZ-03O-17	22.8	6.58	58.5	6.92
PZ-03O-21	24.3	4.86	223	1.73
PZ-04O-15	23.9	6.31	208.6	5.05
PZ-04O-17	23.9	6.25	208.6	5.06
PZ-04O-17-DUP	23.9	6.25	208.6	5.06
PZ-04O-21	24.6	5.33	254	1.85
PZ-07O-15	23.7	5.98	377	4.05
PZ-07O-17	23.8	6.33	142.3	3.20
PZ-07O-20	24.2	5.28	109.3	3.19
PZ-01Q-13	22.3	6.29	71.2	5.93
PZ-01Q-15	23.1	6.01	42.9	5.77
PZ-01Q-19	23.7	5.09	65	3.79
PZ-04Q-13	24.9	6.39	144.1	5.83
PZ-04Q-15	24.9	5.60	83.4	3.55
PZ-04Q-19	25.3	6.12	75.9	2.74
PZ-06Q-13	24.5	6.45	164.5	6.12
PZ-06Q-15	24.4	6.60	186.5	3.04

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Sample Identification	Temperature (°C)	pH	Specific Conductance (µS)	Dissolved Oxygen (mg/L)
PZ-06Q-19	25.8	6.51	86.1	0.66
PZ-07Q-13	23.6	6.12	380	4.03
PZ-07Q-15	23.9	6.41	113.9	2.71
PZ-07Q-19	24.6	5.35	118.1	2.92
PZ-04U-12	23.4	6.52	204.5	4.66
PZ-04U-14	23.7	6.47	241	6.14
PZ-04U-14 DUP	23.7	6.47	241	6.14
PZ-04U-18	24.4	5.79	64.2	4.33
PZ-06U-12	22.6	6.69	117.1	5.33
PZ-06U-14	23.0	5.88	390	3.12
PZ-06U-14-DUP	23.0	5.88	390	3.12
PZ-06U-34	24.2	5.27	280	0.56
FB-DI	19.8	7.95	1.77	8.30
FB-TAP	23.3	7.26	325	5.22
EB	20.0	7.90	1.77	8.30

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