

Huntington Lakes Stormwater Park Monitoring Program

Final Report

Prepared For:



City of Rockledge

Rockledge, Florida

Prepared by:



Applied Ecology Inc.

ECT **Environmental
Consulting &
Technology, Inc.**

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Background of the Project and Monitoring Program

The City of Rockledge constructed the Huntington Lakes Stormwater Park (HLSP) project to provide an additional twenty-eight (28) acres of wet detention to the existing forty (40) acre wet detention system known as Barton Lake. The addition of the HLSP will treat 140 acres of previously untreated stormwater (Figure 1).

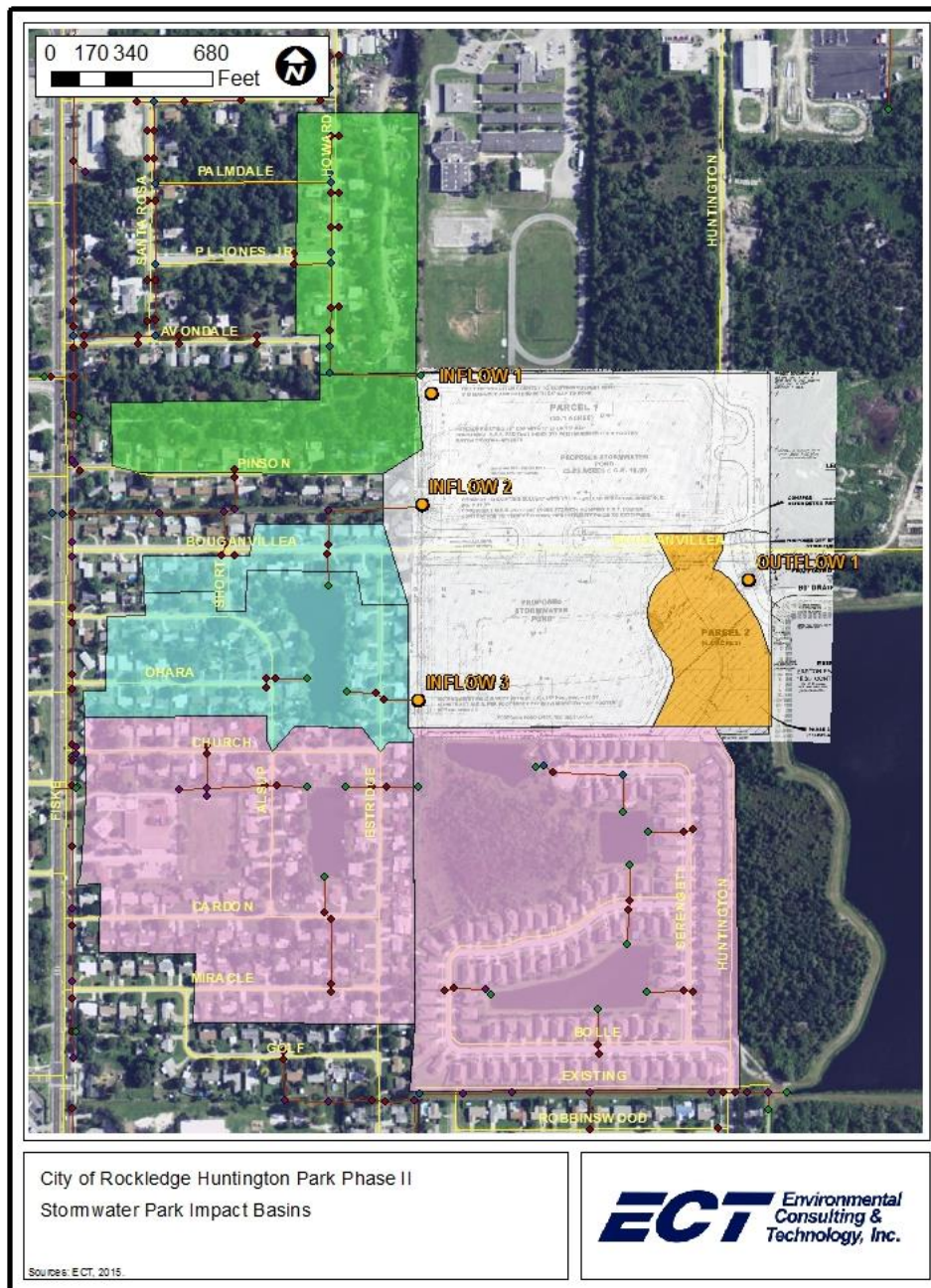


Figure 1. Aerial map of the Huntington Lake Stormwater Park.

The construction of this stormwater treatment system was intended to contribute to water quality improvements in the Indian River Lagoon (IRL), which is Non-Point Source Priority water body. More specifically, the primary purpose of the project was to positively contribute to achieving the Total Maximum Daily Load (TMDL) goals in the IRL through effective pollutant reduction via the HLSP treatment system. The project objectives are as follows:

- Provide water quality treatment for developed areas without current stormwater treatment within the 95-acre watershed;
- Reduce sediments by 60 percent (%), total phosphorus by 45%, and total nitrogen by 35%
- Implement a water quality monitoring program that will provide data to determine actual pollutant load reduction efficiencies.

Applied Ecology was retained by the City of Rockledge to implement the water quality monitoring associated with this project. The initial task, the Quality Assurance Project Plan, was completed in December 2016 (AEI and ECT 2016), the equipment installation completed in October 2016, and the sampling initiated in January 2017. The monitoring program is now complete, with the last sample being collected by September 30th, 2017.

Monitoring stations were placed at three inflow points to the HLSP and the system outfall as depicted in **Figure 1**. The monitoring program was designed to collect composite samples to demonstrate the efficiency of the treatment system for 7 to 10 qualifying storm events. Flow-weighted composite samples with at least 12 aliquots that represent the storm hydrograph were collected at each inflow site and outfall using the flow-volume pacing increment method. The sampling events are triggered based on rainfall, originally set at 0.50 inch of rain within a two-hour timeframe. The initial phase of sampling helped fine-tune the most appropriate trigger to ensure the most representative aliquots were collected across the hydrograph. Once pacing was established, ten sampling events were collected as part of this monitoring program. A description of the ten sampling events, triggers, pacing, and hydrograph representation is included under the “Storm Event” section of this report.

Laboratory analyses for all sampled parameters was conducted by Pace Analytical Services, Inc. (PASI)—NELAP certification # E83079. All laboratory analytical activities were conducted in accordance with NELAP laboratory protocols and SOPs. The standards criteria specified in the monitoring section of the 319 non-point source grant application are the proposed method detection limit (MDL) criteria for this project. However, lower MDLs were provided in some cases by the laboratory and, where possible, met the surface water standards promulgated in FAC Chapter 62-302. **Table 1** provides the specific proposed samples, matrices and analytical parameters implemented for this project.

Table 1. Proposed Samples, Matrices and Analytical Parameters for the Project.

Frequency	Sample Matrix	Sample Source	EB	Analytical Method	Analyte	Maximum Holding Time	Preservation	Precision (RPD)	MDL**	Accuracy (%)
7-10 Storm Events	Water	Stormwater	1	EPA 351.2	Total Kjeldahl Nitrogen	28 days	Cool ≤ 6 °C, H ₂ SO ₄ to pH <2	0-20%	0.3 mg L ⁻¹	90-110
7-10 Storm Events	Water	Stormwater	1	EPA 350.1	Ammonia	28 days	Cool ≤ 6 °C, H ₂ SO ₄ to pH <2	0-20%	0.05 mg L ⁻¹	90-110
7-10 Storm Events	Water	Stormwater	1	EPA 353.2	Nitrate/Nitrite, - Nitrogen	28 days	Cool ≤ 6 °C, H ₂ SO ₄ to pH <2	0-20%	0.1 mg L ⁻¹	90-110
7-10 Storm Events	Water	Stormwater	1	EPA 365.3	Total Phosphorus	28 days	Cool ≤ 6 °C, H ₂ SO ₄ to pH <2	0-20%	0.05 mg L ⁻¹	80-120
7-10 Storm Events	Water	Stormwater	1	EPA 3651.1	Ortho-phosphorus*	48 hours	Cool ≤ 6 °C	0-20%	0.05 mg L ⁻¹	90-110
7-10 Storm Events	Water	Stormwater	1	SM 2540D	Total suspended solids	7 days	Cool ≤ 6 °C	0-20%	5.0 mg L ⁻¹	90-110
7-10 Storm Events	Water	Stormwater	1	EPA 200.8	Copper	180 days	HNO ₃ to pH <2	0-20%	5 µg L ⁻¹	70-130
7-10 Storm Events	Water	Stormwater	1	EPA 200.7	Zinc	180 days	HNO ₃ to pH <2	0-20%	10 µg L ⁻¹	70-130
7-10 Storm Events	Water	Stormwater	1	EPA 200.8	Cadmium	180 days	HNO ₃ to pH <2	0-20%	1 µg L ⁻¹	70-130
7-10 Storm Events	Water	Stormwater	1	EPA 200.7	Chromium	180 days	HNO ₃ to pH <2	0-20%	5 µg L ⁻¹	70-130

EB - Equipment blank

*Orthophosphate will be collected as a composite and filtered when within 15 minutes of collecting the composite. The composite sample will be chilled to 4 °C until collected.

MDL - Method Detection Limit

RPD - Relative Percent Difference

**Lower MDLs may be reported.

Installation

Applied Ecology contracted ECT to install and maintain the sampling stations at the HLSP. Installation of the three (3) inflow locations and one (1) outfall location took place in October 2016. Each inflow station was equipped with a refrigerated autosampler, digital telemetry, 750 area/velocity sensor module, and a 674 rain gauge. The outfall station is equipped with a refrigerated autosampler, digital telemetry, 730 bubbler flow module, and a 674 rain gauge. All equipment was housed in individual lockable fiberglass stormboxes for protection from both the elements and potential tampering.

Digital telemetry was used to conduct remote data downloads, system functionality checks, and real-time program modifications. ECT monitored flow and aliquot pacing in real time during storm events to ensure thorough coverage of sample aliquot collection over the storm hydrograph. All autosamplers were programmed to run the sampling program when a total of 0.25" of rain was recorded within a time period of one (1) hour. Inflow and outflow autosamplers are programmed to take flow-paced sample aliquots during a storm event.

Maintenance and Storm Event Sampling

ECT conducted bi-weekly routine maintenance to ensure all equipment is calibrated, functioning properly, and sensors are free of obstructions and debris. Copies of maintenance logs are presented in **Appendix A**. Storm events were sampled by Applied Ecology following all appropriate SOPs and the previously approved project-specific QAPP. Lab results were compiled and quality assured by the project team. Summary data and analyses are included in the Results section of this report.

Results

Storm Event Narrative

A total of a minimum of 10 stormwater events were sampled as part of this monitoring program. The program concluded by September 30th with the collection of 10 events, 8 of these qualifying events. The initial four sampling events correspond to dry season events, and the last six wet season events (**Figure 2**). **Appendix B** provides the hydrographs for all the storm events, while **Appendix C** provides copies of the sampling event logs and chain of custody forms the same events. A description of each of the ten stormwater sampling events is presented below.

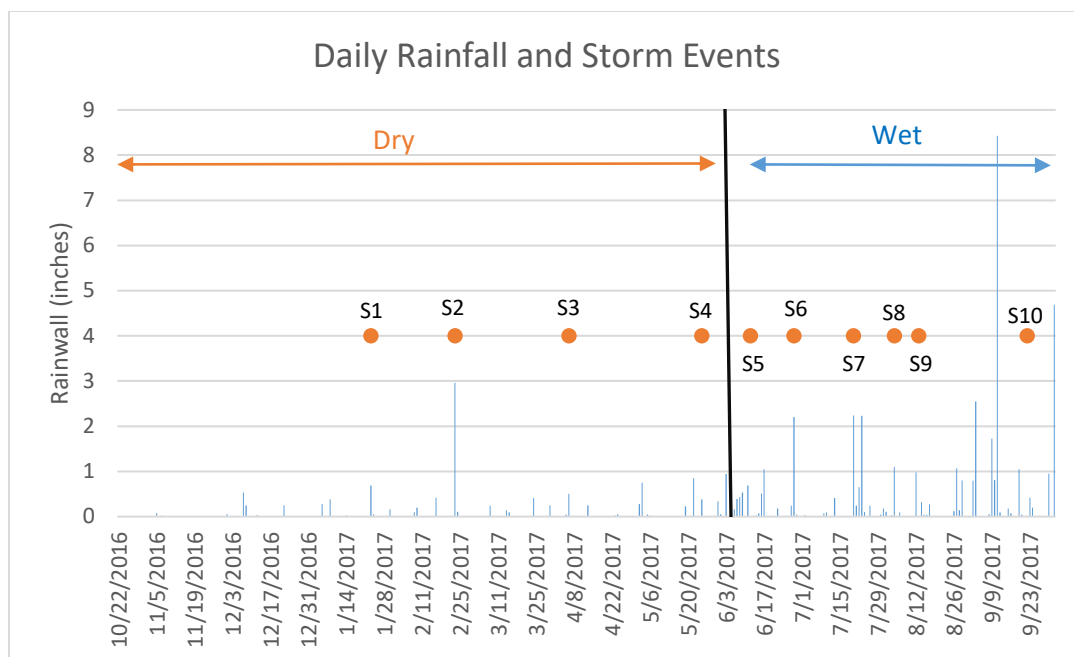


Figure 2. Daily rainfall from October 22nd, 2016 to October 2nd, 2017, including all ten sampled storm events. Storm events 1-4 are representative of the dry season, while storm events 5-10 are representative of the wet season.

Storm 1 was a sampling event that initiated on January 22, 2017 at 23:23. This dry season storm produced 0.77 inches of rain over approximately 2.5 hours. Hydrographs of storm event 1 for each inflow monitoring station are presented in Appendix B.

- Inflow #1 — A total of 13 aliquots were collected in one composite sample before flow returned to zero. Total flow volume recorded during the event was 2,766.98 cf.
- Inflow #2 — A total of 16 aliquots were collected in one composite sample before flow returned to zero. Total flow volume recorded during the event was 1,282.69 cf.
- Inflow #3 — A total of 13 aliquots were collected in one composite sample before flow returned to zero. Total flow volume recorded during the event was 1,027.67 cf.
- Outflow #4 — No discharge was recorded during this event. A grab sample was collected near the outfall to determine ambient pollutant concentrations.

Storm 2 was a sampling event that initiated on February 22, 2017 at 10:44. This dry season storm produced 3.07 inches of rain over approximately 18 hours. Hydrographs of storm event 2 for each inflow monitoring station are presented in Appendix B. Due to the intensity and duration of rainfall, the maximum number of aliquots were collected relatively early in the storm event. This

was due to the fact that the program is set to appropriately draw discrete aliquots over the course of storms ranging from one-quarter of an inch to one inch. Intense flows triggered numerous samples in a relatively narrow window.

- Inflow #1 — A total of 50 aliquots were collected in one composite sample. Total flow volume recorded during the event was 12,013.9 cf. Sampling completed when the composite container was full.
- Inflow #2 — A total of 48 aliquots were collected in one composite sample. Total flow volume recorded during the event was 4,079.82 cf. Sampling completed when the composite container was full.
- Inflow #3 — A total of 50 aliquots were collected in one composite sample. Total flow volume recorded during the event was 3,729.67 cf. Sampling completed when the composite container was full.
- Outflow #4 — No discharge was recorded during this event. A time-paced composite sample was collected near the outfall to determine ambient pollutant concentrations.

Storm 3 was a sampling event that initiated on April 5, 2017 at 19:35. This dry season storm produced 0.54 inches of rain over approximately 2 hours. Hydrographs of storm event 3 for each inflow monitoring station are presented in Appendix B.

- Inflow #1 — A total of 27 aliquots were collected in one composite sample before flow returned to zero. Total flow volume recorded during the event was 2,392.93 cf.
- Inflow #2 — A total of 30 aliquots were collected in one composite sample before flow returned to zero. Total flow volume recorded during the event was 1,070.97 cf.
- Inflow #3 — A total of 35 aliquots were collected in one composite sample before flow returned to zero. Total flow volume recorded during the event was 1,583.30 cf.
- Outflow #4 — No discharge was recorded during this event. A time-paced composite sample was collected near the outfall to determine ambient pollutant concentrations.

Storm 4 was a sampling event that initiated on May 24, 2017 at 17:41. This dry season storm produced 0.45 inches of rain over approximately 2 hours. Hydrographs of storm event 4 for each inflow monitoring station are presented in Appendix B. Due to low flow conditions, inadequate sample volume was collected at the inflows. All inflow samples were composited to represent overall inflow concentrations.

- Inflow #1 — A total of 3 aliquots were collected. Sampling completed when flow slowed below detection. Total flow volume recorded during the event was 349.367 cf.
- Inflow #2 — A total of 15 aliquots were collected. Sampling completed when flow slowed below detection. Total flow volume recorded during the event was 270.125 cf.
- Inflow #3 — A total of 22 aliquots were collected. Sampling completed when flow slowed to below detection. Total flow volume recorded during the event was 0.00 cf.
- Outflow #4 — No discharge was recorded during this event. A grab sample was collected near the outfall to determine ambient pollutant concentrations.

Storm 5 was a sampling event that initiated on June 10, 2017 at 14:47. This wet season storm produced 0.72 inches of rain over approximately 2 hours. Hydrographs of storm event 5 for each inflow monitoring station are presented in Appendix B. Due to low flow conditions, inadequate sample volume was collected at inflows 2 and 3. Inflow 1 was analyzed alone while inflows 2 and 3 were composited to represent inflow concentrations.

- Inflow #1 — A total of 49 aliquots were collected in one composite sample before the event was terminated. Total flow volume recorded during the event was 1,654.06 cf.
- Inflow #2 — A total of 5 aliquots were collected due to low flow conditions. Total flow volume recorded during the event was 122.61 cf.
- Inflow #3 — A total of 9 aliquots were collected due to low flow conditions. Total flow volume recorded during the event was 188.907 cf.
- Outflow #4 — No discharge was recorded during this event. A grab sample was collected near the outfall to determine ambient pollutant concentrations.

Storm 6 was a sampling event that initiated on June 27, 2017 at 17:28. This wet season storm produced 2.24 inches of rain over approximately 6 hours. Hydrographs of storm event 6 for each inflow monitoring station are presented in Appendix B. Due to the intensity and duration of rainfall, the maximum number of aliquots were collected relatively early in the storm event.

- Inflow #1 — A total of 49 aliquots were collected in one composite sample. Sampling completed when the composite container was full. Total flow volume recorded during the event was 8,376.16 cf.

- Inflow #2 — A total of 50 aliquots were collected in one composite sample. Sampling completed when the composite container was full. Total flow volume recorded during the event was 1,374.06 cf.
- Inflow #3 — A total of 50 aliquots were collected in one composite sample. Sampling completed when the composite container was full. Total flow volume recorded during the event was 2,436.45 cf.
- Outflow #4 — No discharge was recorded during this event. A grab sample was collected near the outfall to determine ambient pollutant concentrations.

Storm 7 was a sampling event that initiated on July 19, 2017 at 15:27. This wet season storm produced 2.24 inches of rain over approximately 2 hours. Hydrographs of storm event 7 for each inflow monitoring station are presented in **Appendix B**. Due to the intensity and duration of rainfall, the maximum number of aliquots were collected relatively early in the storm event.

- Inflow #1—A total of 50 aliquots were collected in one composite sample. Sampling completed when the composite container was full. Total flow volume recorded during the event was 12,083.0 cf.
- Inflow #2—A total of 50 aliquots were collected in one composite sample. Sampling completed when the composite container was full. Total flow volume recorded during the event was 2,616.55 cf.
- Inflow #3—A total of 50 aliquots were collected in one composite sample. Sampling completed when the composite container was full. Total flow volume recorded during the event was 7,280.81 cf.
- Outflow #4—No discharge was recorded during this event. A grab sample was collected near the outfall to determine ambient pollutant concentrations.

Storm 8 was a sampling event that initiated on August 3, 2017 at 18:33. This wet season storm produced 1.10 inches of rain over approximately 4 hours. Hydrographs of storm event 8 for each inflow monitoring station are presented in **Appendix B**.

- Inflow #1—A total of 32 aliquots were collected in one composite sample. Sampling completed when flow returned to zero. Total flow volume recorded during the event was 6,094.58 cf.
- Inflow #2—A total of 34 aliquots were collected in one composite sample. Sampling completed when flow returned to zero. Total flow volume recorded during the event was 1,482.14 cf.

- Inflow #3—A total of 46 aliquots were collected in one composite sample. Sampling completed when flow returned to zero. Total flow volume recorded during the event was 2,997.27 cf.
- Outflow #4— A total of 50 aliquots were collected in one composite sample. Sampling completed when the composite container was full. Total flow volume recorded during the event was 8,523.55 cf.

Storm 9 was a sampling event that initiated on August 11, 2017 at 12:44. This wet season storm produced 1.03 inches of rain over approximately 5 hours. Hydrographs of storm event 9 for each inflow monitoring station are presented in **Appendix B**.

- Inflow #1—A total of 50 aliquots were collected in one composite sample. Sampling completed when the composite container was full. Total flow volume recorded during the event was 3,898.29 cf.
- Inflow #2—A total of 20 aliquots were collected in one composite sample. Sampling completed when flow returned to zero. Total flow volume recorded during the event was 763.72 cf.
- Inflow #3—A total of 22 aliquots were collected in one composite sample. Sampling completed when flow returned to zero. Total flow volume recorded during the event was 640.07 cf.
- Outflow #4— A total of 50 aliquots were collected in one composite sample. Sampling completed when the composite container was full. Total flow volume recorded during the event was 14,793.3 cf.

Storm 10 was a sampling event that initiated on September 22, 2017 at 11:27. This wet season storm produced 0.49 inches of rain over approximately 1 hour. Hydrographs of storm event 10 for each inflow monitoring station are presented in **Appendix B**.

- Inflow #1—A total of 30 aliquots were collected in one composite sample. Sampling completed when flow returned to zero. Total flow volume recorded during the event was 1,760.39 cf.
- Inflow #2—A total of 19 aliquots were collected in one composite sample. Sampling completed when flow returned to zero. Total flow volume recorded during the event was 349.89 cf.
- Inflow #3—A total of 28 aliquots were collected in one composite sample. Sampling completed when flow returned to zero. Total flow volume recorded during the event was 4,026.52 cf.

- Outflow #4— A total of 39 aliquots were collected in one composite sample. Sampling completed when a representative sample had been obtained. Total flow volume recorded during the event was 13,589.6 cf.

Water Quality Results

Samples were collected and transported to the PASI lab following the appropriate FDEP SOPs within 24 hours of a stormwater event triggering the sampler. The samples were analyzed for various water quality parameters (**Table 1**) including heavy metals (cadmium, chromium, copper, and zinc), nitrogen (total kjeldahl nitrogen, ammonia, nitrate plus nitrite, and overall total nitrogen), phosphorus (orthophosphate and total phosphorus), and total suspended solids. Detailed analytical results by parameter for each monitoring station are provided Appendix D (Storm Event Analytical Results).

Table 2 displays the means, medians, minimums, and maximums for all inflow and outflow samples of each parameter based on all ten sampling events. **Table 3** and **Table 4** display the means, medians, minimums and maximums for all inflow and outflow samples for the dry and wet seasons, respectively. The data distribution for most parameters measured for this monitoring program were not normally distributed, particularly when examining the more variable outflow values. In order to avoid skewing the results with a small number of high concentration events, medians are used as a better measure of central tendency.

For these summary tables (Tables 2-4), data from all sampling events were used, including some which were later determined to be outliers. Outliers are observations that lie outside the overall pattern of distribution; statistically, and outlier is a point which falls more than 1.5 times the interquartile range above the interquartile range (25-75%) above the third quartile or below the first quartile. Outlier data points for this study occurred during outflow sampling with higher concentration values than the remainder of the distribution events.

Table 2. Summary statistics of inflow versus outflow water quality data for all ten sampling events. * Data include outliers

Parameter (unit)	Type	Inflow				Outflow				MDL
		Mean	Median	Min	Max	Mean	Median	Min	Max	
Cadmium (µg/L)	Metal	0.2213	0.1405	0.0613	0.6033	0.5003	0.3700	0.0500	1.3000	0.0500
Chromium (µg/L) *	Metal	2.5200	2.5000	2.5000	2.7000	2.5000	2.5000	2.5000	2.5000	2.5000
Copper (µg/L) *	Metal	4.2830	3.4333	0.9300	13.6667	1.7540	0.9300	0.9300	8.3000	0.9300
Nitrogen, Ammonia (mg/L) *	Natural	0.1481	0.1259	0.0200	0.5000	0.0551	0.0200	0.0200	0.2800	0.0200
Nitrogen, NO2 plus NO3 (mg/L) *	Natural	0.2995	0.2384	0.0250	0.6785	0.1035	0.0250	0.0120	0.4400	0.0250
Orthophosphate as P (mg/L) *	Natural	0.1378	0.1165	0.0038	0.2967	0.0213	0.0044	0.0038	0.1700	0.0038
Total Kjeldahl Nitrogen (mg/L)	Natural	0.9903	0.9083	0.5267	1.9667	1.0070	0.8450	0.7000	1.8000	0.0860
Total Nitrogen (mg/L) *	Natural	1.2273	1.2217	0.6800	2.5000	1.0960	0.8750	0.7100	2.2000	0.0860
Phosphorus, Total (as P) (mg/L) *	Natural	0.2077	0.1734	0.0170	0.3700	0.0576	0.0250	0.0094	0.2500	0.0028
Total Suspended Solids (mg/L) *	Water Quality	32.0267	29.4500	2.2000	70.4000	25.2100	8.8500	1.0000	153.0000	1.0000
Zinc (µg/L) *	Metal	40.5067	31.1834	10.0000	137.0000	14.7800	10.0000	10.0000	57.8000*	10.0000

Table 3. Summary statistics of inflow versus outflow water quality data for the dry season events (storms 1-4). * Data include outliers

Parameter (unit)	Type	Inflow				Outflow				MDL
		Mean	Median	Min	Max	Mean	Median	Min	Max	
Cadmium (µg/L)	Metal	0.2332	0.2039	0.0643	0.4607	0.3558	0.2550	0.0830	0.8300	0.0500
Chromium (µg/L) *	Metal	2.5500	2.5000	2.5000	2.7000	2.5000	2.5000	2.5000	2.5000	2.5000
Copper (µg/L) *	Metal	5.8075	4.3167	0.9300	13.6667	2.9725	1.3300	0.9300	8.3000	0.9300
Nitrogen, Ammonia (mg/L) *	Natural	0.2175	0.1750	0.0200	0.5000	0.1078	0.0655	0.0200	0.2800	0.0200
Nitrogen, NO2 plus NO3 (mg/L) *	Natural	0.2671	0.2384	0.0250	0.5667	0.1243	0.0225	0.0120	0.4400	0.0250
Orthophosphate as P (mg/L) *	Natural	0.1685	0.1967	0.0038	0.2767	0.0462	0.0053	0.0043	0.1700	0.0038
Total Kjeldahl Nitrogen (mg/L)	Natural	1.0700	0.8500	0.6133	1.9667	1.2225	1.1300	0.8300	1.8000	0.0860
Total Nitrogen (mg/L) *	Natural	1.3242	1.0584	0.6800	2.5000	1.3275	1.1350	0.8400	2.2000	0.0860
Phosphorus, Total (as P) (mg/L) *	Natural	0.2251	0.2567	0.0170	0.3700	0.1193	0.0830	0.0610	0.2500	0.0028
Total Suspended Solids (mg/L) *	Water Quality	32.7667	29.2334	2.2000	70.4000	20.7500	22.2500	11.2000	27.3000	1.0000
Zinc (µg/L) *	Metal	25.8083	26.6500	10.0000	39.9333	21.9500	10.0000	10.0000	57.8000	10.0000

Table 4. Wet season, storm five through ten, summary statistics for the Inflow and the Outflow. (*includes an outlier event)

Parameter (unit)	Type	Inflow				Outflow				MDL
		Mean	Median	Min	Max	Mean	Median	Min	Max	
Cadmium (µg/L)	Metal	0.2133	0.1405	0.0613	0.6033	0.5967	0.5000	0.0500	1.3000	0.0500
Chromium (µg/L)	Metal	2.5000	2.5000	2.5000	2.5000	2.5000	2.5000	2.5000	2.5000	2.5000
Copper (µg/L)	Metal	3.2667	3.0333	2.2000	5.4000	0.9417	0.9300	0.9300	1.0000	0.9300
Nitrogen, Ammonia (mg/L)	Natural	0.1018	0.1044	0.0567	0.1447	0.0200	0.0200	0.0200	0.0200	0.0200
Nitrogen, NO2 plus NO3 (mg/L)	Natural	0.3211	0.2333	0.1717	0.6785	0.0897	0.0250	0.0250	0.3800	0.0250
Orthophosphate as P (mg/L)	Natural	0.1173	0.0933	0.0330	0.2967	0.0048	0.0038	0.0038	0.0070	0.0038
Total Kjeldahl Nitrogen (mg/L)	Natural	0.9372	0.9083	0.5267	1.3933	0.8633	0.7500	0.7000	1.4000	0.0860
Total Nitrogen (mg/L)	Natural	1.1628	1.2217	0.7733	1.5667	0.9417	0.8350	0.7100	1.4000	0.0860
Phosphorus, Total (as P) (mg/L)	Natural	0.1961	0.1700	0.1533	0.3533	0.0165	0.0150	0.0094	0.0290	0.0028
Total Suspended Solids (mg/L) *	Water Quality	31.5334	29.6500	17.8667	56.4000	28.1833	3.5500	1.0000	153.0000	1.0000
Zinc (µg/L)	Metal	50.3056	34.3834	25.3667	137.0000	10.0000	10.0000	10.0000	10.0000	10.0000

It is important to note that for the first seven sampling events, the percentage removal efficiency based on either load or concentration is 100% for all parameters as no discharge was recorded between January 1st, 2017 and August 3, 2017. For these first seven samples, representative outflow water quality samples were collected using grab method near the outflow station, since no autosampler samples could be obtained without a discharge. Concentration changes between inflow and outflow samples are informational in nature for these first seven samples, since no actual discharge to Barton Lake was recorded in the first seven months of the monitoring program. Discharge to Barton Lake began on August 3rd, 2017 and continued through the duration of the monitoring program.

Outliers were graphed for every parameter based on the percent change between inflow and outflow samples and also for outflow concentrations. Outliers are clearly presented as stars in each of the boxplot graphs and identified by storm event (**Appendix E**). No outliers were verified for the inflow samples. Outlier data were removed from the percent change calculations for the adjusted values provided in Tables 5-7 below. The outliers included event 1 for chromium; event 4 for copper, ammonia, NO_x, orthophosphate, TN, TP, TSS, and zinc; and event 8 for TSS.

Table 5 includes the concentration change (“value”) and corresponding percent change (“percent”) between inflow and outflow samples for the entire HLSP monitoring program. This table includes two types of values: raw/unadjusted values and adjusted/modified values. The “raw” values correspond to the median of the concentration change calculated for each of the 10 sampling events. The “adjusted” change values, which should be used for assessment the BMP effectiveness, adjust the raw data twofold: they remove any of the outlier events identified using statistical methods (**Appendix E**) and assign 100% removal for storm events where no discharge took place. A positive number indicates a decrease in concentration from the inflow to the outflow, while a negative value indicates an increase in concentrations from the inflow to the outflow samples. Percent removals are indicated as positive percent values in Tables 5-7.

During the entirety of the HLSP implementation, there was at least a 60% reduction for all nitrogen constituents (and higher than 90% for both ammonia and NO_x), greater than 95% reduction for phosphorus and TSS, and greater than 65% for most metals. Only Cadmium has a reduction of less than 30% of all the monitored parameters.

When examining the dry season (events 1-4), the adjusted reduction efficiencies for all parameters are 100% (**Table 6**). This is explained by the lack of discharge for all dry season events. In contrast, the wet season events (events 5-10) did have slightly lower reduction efficiencies for most parameters than the ones previously reported for the annual averages or dry season events. For all nitrogen species, over 43% of the inflow concentration was reduced at the outflow of the HLSP, with the greatest reductions (>90%) verified for inorganic nitrogen, such as NO_x (**Table 7**).

Table 5. Monitoring period percent change (removal efficiency) with raw data and adjusted data. Positive values indicate a decrease in concentration and negative values an increase in concentration.

Parameter (unit)	Raw (Median)		Adjusted (Mean)		Outflow at MDL
	Value	Percent	Value	Percent	# of events
Cadmium (µg/L)	-0.207	-189.92	-0.0424	27.01	1
Chromium (µg/L)	0.000	0.00	-0.0000	66.67	10
Copper (µg/L)	2.118	68.71	0.6085	88.37	6
Ammonia (mg/L)	0.084	80.56	0.0303	92.66	7
NO2 plus NO3 (mg/L)	0.207	88.35	0.0585	95.79	5
Orthophosphate as P (mg/L)	0.113	96.74	0.0271	97.56	4
Total Kjeldahl Nitrogen (mg/L)	0.152	-16.34	0.0043	66.31	0
Total Nitrogen (mg/L)	0.273	-21.66	0.0696	69.80	0
Total Phosphorus (mg/L)	0.160	-83.84	0.0461	95.61	0
Total Suspended Solids (mg/L)	15.350	69.94	3.8375	93.39	1
Zinc (µg/L)	21.183	67.81	8.7333	90.27	9

Table 6. Dry Season percent change with raw data and adjusted data.

Parameter (unit)	Raw (Median)		Adjusted (Mean)		Outflow at MDL
	Value	Percent	Value	Percent	# of events
Cadmium (µg/L)	-0.0679	-136.24	0.0000	100.00	0
Chromium (µg/L)	-0.0000	0.00	0.0000	100.00	4
Copper (µg/L)	2.9867	66.01	0.0000	100.00	1
Ammonia (mg/L)	0.1150	60.99	0.0000	100.00	1
NO2 plus NO3 (mg/L)	0.2224	93.27	0.0000	100.00	1
Orthophosphate as P (mg/L)	0.1915	97.39	0.0000	100.00	0
Total Kjeldahl Nitrogen (mg/L)	-0.0284	-9.82	0.0000	100.00	0
Total Nitrogen (mg/L)	0.2034	16.25	0.0000	100.00	0
Total Phosphorus (mg/L)	0.1847	72.07	0.0000	100.00	0
Total Suspended Solids (mg/L)	9.9834	37.13	0.0000	100.00	0
Zinc (µg/L)	16.6500	60.17	0.0000	100.00	3

Total nitrogen reductions were above 55% during the wet season, mostly due to large component of organic nitrogen in total nitrogen encountered in this treatment. Wet detention systems, such as this one, are not designed to treat organic species of nitrogen, which might have skewed the total

nitrogen reductions to being below the 60% or greater range. Wet season reduction for phosphorus is well above 90% (both for raw and adjusted values) and TSS presented reductions of well above 80%.

From the sampled heavy metals, copper and zinc presented adjusted reductions of over 80% for the wet season, with chromium having reduction in only half the samples, due to lack of discharge in the beginning of the wet season. For most measured inflow samples throughout the monitoring program, chromium was below detection levels (MDL) and a reduction cannot be quantified by our current method. Only cadmium had adjusted increases in concentration of about 20% (**Table 7**), driven by storm event 9, where an increase of 500% in concentration was measured the outflow.

Table 7. Wet season percent change with raw and adjusted data.

Parameter (unit)	Raw (Median)		Adjusted (Mean)		Outflow at MDL
	Value	Percent	Value	Percent	# of events
Cadmium (µg/L)	-0.3439	-319.78	-0.0706	-21.65	1
Chromium (µg/L)	0.0000	0.00	0.0000	50.00	6
Copper (µg/L)	2.1033	68.71	0.9128	82.55	5
Ammonia (mg/L)	0.0844	80.56	0.0404	89.00	6
NO ₂ plus NO ₃ (mg/L)	0.1918	86.67	0.0878	93.69	4
Orthophosphate as P (mg/L)	0.0879	93.69	0.0407	96.34	4
Total Kjeldahl Nitrogen (mg/L)	0.1733	18.94	0.0072	43.85	0
Total Nitrogen (mg/L)	0.2767	22.90	0.1045	54.69	0
Total Phosphorus (mg/L)	0.1550	91.21	0.0691	93.41	0
Total Suspended Solids (mg/L)	25.1500	83.59	6.1400	89.42	1
Zinc (µg/L)	24.3834	70.27	13.1000	85.40	6

Heavy Metals: The trend in concentration change for heavy metals varied depending on the specific analytical parameter. Copper and zinc had concentrations reduced by 80% or more between inflow and outflow sampling. Chromium had an adjusted mean percent change of 66.67%, but for nine out of the ten storm events both inflow and outflow samples were below or at the MDL. Cadmium is the only heavy metal (and analytical parameter) with no mean decrease in concentration. Examining the individual sampling events (Appendices D and E), sampling events two, six, and seven are responsible for most of this increasing trend, with over 700% increase in concentration in the measured outflow concentrations. For the adjusted mean percent increase only event storm event 9 would have the greatest impact on the percent change at almost 550% increase in concentration.

Cadmium is a rare naturally occurring metal found in mineral deposits in low concentrations, but can also have source in the manufacture of batteries, pigments, plastic stabilizers, metal coatings, alloys and electronics (Fulkerson and Goeller 1973; Hutton 1983; Pickering and Gast 1972; Wilson 1988). Toxicity of cadmium is dependent on a variety of other water quality parameters, such as pH, salinity, alkalinity, and hardness, among others. Current EPA recommended water quality criteria for cadmium in freshwater includes an acute criterion maximum of 1.8 µg/l at a total hardness of 100 mg/l as CaCO₃ (EPA 822-F-16-003). The maximum values ever measured at the outfall include 1.1 and 1.3 µg/l, likely not all dissolved (unadjusted for hardness), so well below the criterion of concern.

Nitrogen: While NO_x and ammonia had extremely high reductions (over 90%), TKN reductions (which include organic nitrogen) were lower, but still significant at 66%. Since the system didn't discharge for the first seven sampling events, the adjusted percentage removal for the dry season was 100%. Discharge occurred for the last three sampling events bringing the mean adjusted percent reduction of TN to 69.81%, for the ten sampling events, which is well above the required 35% for TN.

Phosphorus: The percent reduction efficiency of the phosphorus parameters was very high for both TP and orthophosphate; the concentration of TP was reduced by 95.61% and the concentration of orthophosphate was reduced by 97.56%. Since the system didn't discharge for the first seven sampling events, the percentage removal of Total Phosphorus (TP) loads is 100%, well above the required 45% for TP. Discharge occurred for the last three sampling events bringing the mean adjusted percent reduction of TP to 95.61%, for the ten sampling events, which is well above the 45% for TP.

Total Suspended Solids: The reduction in concentration between inflow and near outflow samples for Total Suspended Solids (TSS) was moderately high, around 93.39%. Since the system didn't discharge for the first seven sampling events, the percentage removal of TSS is 100%, well above the required 60% for TSS. Discharge occurred for the last three sampling events bringing the mean adjusted percent reduction to 93.39%, for the ten sampling events, this is well above the 60% for TSS.

It is also important to note that for a majority of the ten sampling events there was some construction to the north and east of the outflow, which might have impacted some of the grab samples (particularly the TSS and heavy metals) used for comparison against inflow samples. In addition, during a couple weeks in June, including during the sampling event #5, some unidentified contaminant (surface bright green/aqua in color) was noted around Inflow #3, which eventually dissipated. The City attempted to trace this potential illicit discharge upstream, but no obvious source could be pinpointed. All analytical results for this potentially affected sample appear to be similar to the results for the other sampling events with exception of one parameter. Zinc was detected at 264.0 µg/L, the highest value noted throughout the monitoring period (well above the second highest value of 97.7 µg/L).

Quality Assurance

Both Applied Ecology and ECT conduct quality assurance (QA) reviews of all analytical data reported from the laboratory. The review consists of checking the accuracy of records including sample IDs, sample dates and times, reported on chain of custody (COC) forms, and verification of whether the project samples are used for laboratory QA/QC (i.e., matrix spikes and matrix spike duplicates (MS/MSD)). In addition, our team reviews laboratory reports and calculations for accuracy and verifies parameter subset concentrations agree with total concentrations. This also includes verifying laboratory QA/QC results are within specific acceptance tolerance criteria, and final determination on the acceptability of data for use in the project database. The QA/QC forms can be found in **Appendix G** and are summarized below.

Blank

The quality assurance for the first storm event. The blank was used for Matrix Spike/ Matrix Spike duplicates (MS/MSD) for chromium, zinc, cadmium, and copper. There were no hits in the method blanks. The zinc MS/MSD was not within the percent recovery limits. All the parameter results for blank were undetected, so the sample data was acceptable.

Storm 1

The project samples were used for MS/MSD for cadmium, chromium, copper, zinc, orthophosphate, and total phosphorus. There was no hit in the method blanks. There was a slight miss in the relative percent difference (RPD) for cadmium, copper, and TSS. The RPD misses do not require results to be qualified in the reports, but bears watching in future lab reports. The project sample data was accepted. Please note that outfall samples were grabs for this event since no discharge was recorded.

Storm 2

There were no hits in the method blanks. There were slight misses in the MS for cadmium and copper, but not for the project samples and are within the laboratory control samples (LCS) percent recovery. The lab should explain why the MDL and PQL were doubled for the Outflow-2 sample for TKN. The dilution factor was one, so no increase in MDL and PQL is warranted. A higher MDL and PQL precludes the ability to calculate treatment efficiency for this parameter. The TSS reduction is approximately 22% as opposed to the approximately 60% in the QAPP. The may be due to the lack of reduction in TN, primarily in organic nitrogen, in the system. Although phosphorus reduction efficiency is very good relative to the QAPP projections. Please note that outfall samples were grabs for this event since no discharge was recorded.

Storm 3

There were no hits in the method blanks. There was a slight miss in the duplicate RPD for both TSS and TKN. It is uncertain why the lab had L flagged some of the results, such as matrix MS# 1948552 for NO_x. The L flag expresses that the value is off-scale high, and the actual value is known to be greater than the value given, but the percent recovery is within acceptable criteria. There was a slight miss in the MS for orthophosphate, for the project sample, which bears watching

in future samples. The project sample data was considered acceptable, with no reason to question data validity. The treatment efficiency looks good. Please note that outfall samples were grabs for this event since no discharge was recorded.

Storm 4

There were no hits in the method blanks. There was a significant miss, over four times spike, in the MS percent recovery for NH₃, but not on the project sample. There was also a significant miss, essentially zero, in the MS percent recovery for NO_x, but also not of the project sample. It was recommended that the project sample be used for a spike, so that it can be assured that the matrix does not pose a problem. Even with the disparity between the inflows and the outflow concentrations, the results were considered acceptable. Please note that outfall samples were grabs for this event since no discharge was recorded.

Storm 5

The project samples were used for chromium and zinc MS/MSD. The matrix spike percent recovery was only 32% for NH₃, 146% for total phosphorus, and only 86% for orthophosphate, but all three were not project samples. The matrix spike and duplicate results for QC data on page 13 was not fully populated. The project sample was only used for NO_x duplicate. The project sample data was considered acceptable. Please note that outfall samples were grabs for this event since no discharge was recorded.

Storm 6

The project sample was only used for MS/MSD for cadmium, copper, and total phosphorus. There were not hits in the method blank. The sample duplicate RPD for TSS was high at 7, but it was not the project sample. The second duplicate for TSS the RPD was within the limits. The sample duplicate RPD for TP was high at 66, but the project sample however the LCS percent recovery and MS percent recovery were within the limits. All other control/spike samples were within the appropriate limits. The project sample was used for total phosphorus only. All other data, other than the ones with high RPD values, were deemed acceptable. Please note that outfall samples were grabs for this event since no discharge was recorded.

Storm 7

The project sample was used for orthophosphate only. There were not hits or misses. The project sample data was acceptable. Please note that outfall samples were grabs for this event since no discharge was recorded.

Storm 8

There were no hits on the method blanks. The project data was acceptable.

Storm 9

The project samples were used for chromium, zinc, cadmium, copper, and total phosphorus. There were no hits in the method blanks. There was a RPD miss for TKN sample duplicate, but not on

the project sample. There was a MS miss on NO_x, but not on the project duplicate. The project sample data was acceptable.

Storm 10

The project sample was used for MS/MSD for arsenic, chromium, sodium, zinc, cadmium, copper, and orthophosphate. There were no hits in the method blanks. The matrix spike percent recovery for NO_x was low at 69%, high for orthophosphate at 128% & 130%, and high for total phosphorus at 361%. The matrix spike percent recovery for total phosphorus was most likely a math error, contact Pace to double check results. The project sample was used to duplicate only orthophosphate. All other results, besides the low and high percentages above, were acceptable.

References

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Appendix A: Maintenance Logs



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 12/5/16

Time: 1:35p

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time: 1:35p	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
Hun-1	NA	NA	206	25	ANC	ANC	Clear	Blue	Y (N)	200	200

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Adjusted Level to:

☒ Cleared Debris from Sensor☐ Replaced Sample Container☐ Program Disabled☒ Waiting for Phone Command☒ Checked Cables/Antennas☒ Dried Moisture from Refrigerator☒ Checked Battery Voltage☐ Changed Battery☒ Cleared Rain Gauge

Maintenance Notes:

14.95v Replaced Missing Battery
Need Replacement + Battery Jumper (crack in lead)

SIGNATURES

Data Collected by:

Date:

12/5/16

Reviewed by:

Date:

12/21/16

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 2:45p

Time: 2:45p

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time: 2:45p	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-2	NA	NA	206	25	0.985	1.0	Clear	Blue	Y(N)	200	200
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro			☐ Adjusted Level to:		☒ Checked Cables/Antennas			
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☒ Cleared Debris from Sensor		☐ Dried Moisture from Refrigerator			
1.			9.			☐ Replaced Sample Container		☒ Checked Battery Voltage			
2.			10.			☐ Program Disabled		☐ Changed Battery			
3.			11.			☒ Waiting for Phone Command		☒ Cleared Rain Gauge			
4.			12.			Maintenance Notes: 14.27v					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:

Date: 12/15/16

Reviewed by:

Date: 12/21/16

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 12/5/16

Time: 3:30p

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time: 3:30p	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-3	NA	NA	206	27	0.48	0.50	Clear	Blue	Y (N)	200	200
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro			☐ Adjusted Level to:		☒ Checked Cables/Antennas			
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☒ Cleared Debris from Sensor		☐ Dried Moisture from Refrigerator			
1.			9.			☐ Replaced Sample Container		☒ Checked Battery Voltage			
2.			10.			☐ Program Disabled		☐ Changed Battery			
3.			11.			☒ Waiting for Phone Command		☒ Cleared Rain Gauge			
4.			12.			Maintenance Notes: Rain gauge clogged w/ Bird dung Need Rubber Washers & WD-40 for Rain gauge Thumb wheels					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:

Date:

12/5/16

Reviewed by:

Date:

12/21/16

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 mL = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 12/5/16

Time: 4:00P

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time: 4:00P	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-4	NA	NA	206	26	-0.084	5.08	clear	Blue	Y(N)	200	200
Velocity Verification Conducted: Y / N		Meter: OTT MF Pro		☐ Adjusted Level to:		☒ Checked Cables/Antennas					
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☒ Cleared Debris from Sensor		☐ Dried Moisture from Refrigerator			
1.			9.			☐ Replaced Sample Container		☒ Checked Battery Voltage			
2.			10.			☐ Program Disabled		☐ Changed Battery			
3.			11.			☒ Waiting for Phone Command		☒ Cleared Rain Gauge			
4.			12.			Maintenance Notes: 14.23V Rain gauge clogged w/ Bird dung					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:

Date:

12/5/16

Reviewed by:

Date:

12/21/16

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 12/21/16

Time: 11:40

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



Errors have occurred during Program
Stopped Program → Run extended "1"

EQUIPMENT CONDITION REPORT*

Time: 11:40	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue		Calibration (mL)	
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-1	NA	NA	206	24	0.271	N/A	Clear	Pink	Y ^N	200	196

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.

Depth

ft/s

Dist. / Time Int.

Depth

ft/s

1.

9.

2.

10.

3.

11.

4.

12.

5.

13.

6.

14.

7.

15.

8.

16.

Adjusted Level to:

Cleared Debris from Sensor

Replaced Sample Container

Program Disabled

Waiting for Phone Command

Checked Cables/Antennas

Dried Moisture from Refrigerator

Checked Battery Voltage

Changed Battery

Cleared Rain Gauge

Maintenance Notes: rain gauge clear
Cal. Pump to 200 mL BATT voltage 15.20V
Ordered Staff gauge for level verification
replaced desiccant clear sediment from sensor

SIGNATURES

Data Collected by:

Date:

12/21/16

Reviewed by:

Date:

3-13-17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 12/21/16

Time: 12:05

Organization: 1400

Trip: Maintenance Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time: 12:05p	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Alliquot Volume Calibration (mL)	
Acceptance Criteria:→	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-2	NA	NA	206	26	0.993	1.00	Clear	Pink	Y/N	200	200
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro			☐ Adjusted Level to:		☒ Checked Cables/Antennas			
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☒ Cleared Debris from Sensor		☐ Dried Moisture from Refrigerator			
1.			9.			☐ Replaced Sample Container		☒ Checked Battery Voltage			
2.			10.			☐ Program Disabled		☐ Changed Battery			
3.			11.			☒ Waiting for Phone Command		☐ Cleared Rain Gauge			
4.			12.			Maintenance Notes: Replaced Desiccant. Sensor partially buried in sediment. Remove sediment from sensor. Batt Voltage 15.85V Rain gauge clear					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:

Date: 12/21/14

Reviewed by:

Date: 8-13-17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 12/21/16

Time: 12:25P

Organization: 1400

Trip: Maintenance Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time: 12:25P	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-3	NA	NA	206	25	0.459	0.45	Clear	Pink	Y N	200	200

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.

Depth

ft/s

Dist. / Time Int.

Depth

ft/s

1.

9.

2.

10.

3.

11.

4.

12.

5.

13.

6.

14.

7.

15.

8.

16.

☐ Adjusted Level to:☒ Cleared Debris from Sensor☐ Replaced Sample Container☐ Program Disabled☒ Waiting for Phone Command☒ Checked Cables/Antennas☐ Dried Moisture from Refrigerator☒ Checked Battery Voltage☐ Changed Battery☐ Cleared Rain Gauge

Maintenance Notes:

Rain gauge clear. BATT voltage 15.90V
 Sprayed mass of aquatic veg ml around inlet
 culvert. removed sediment from sensor

SIGNATURES

Data Collected by:

Date:

12/21/16

Reviewed by:

Date:

3/13/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 12/21/16

Time: 12:45

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time: 12:450	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-4	NA	NA	206	27	-0.104	-0.104	Clear	Pink	Y N	200	182

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Adjusted Level to:

Cleared Debris from Sensor

Replaced Sample Container

Program Disabled

Waiting for Phone Command

Checked Cables/Antennas

Dried Moisture from Refrigerator

Checked Battery Voltage

Changed Battery

Cleared Rain Gauge

Maintenance Notes:

Rain gauge fully clogged w/ bird droppings - cleared
 Recalibrate pump to 200 mL
 Batt Voltage 14.40V NO debris @ sensor

SIGNATURES

Data Collected by:

Date:

12/21/16

Reviewed by:

Date:

8-13-17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 1/4/17

Time: 11:50

Organization: 1400

Trip: Maintenance

Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Alliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (mL)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-1	NA	NA	206	25	0.204	0.16	Clear	Blue	Y/N	200	200

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Adjusted Level to: 0.14

Cleared Debris from Sensor

Replaced Sample Container

Program Disabled

Waiting for Phone Command

Checked Cables/Antennas

Dried Moisture from Refrigerator

Checked Battery Voltage

Changed Battery

Cleared Rain Gauge

Maintenance Notes:

Battery Voltage 15.49V ~30' into Culvert Pipe

Installed Staff gauge in Standoff Pipe
Level Adj to 0.16 FT

SIGNATURES

Data Collected by:

Date: 1/4/17

Reviewed by:

Date: 3-13-17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 mL = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 1/4/17

Time: 12:40p

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (mL)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-2	NA	NA	206	26	0.908	0.88	Clear	Blue	Y/N	200	200

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.

Depth

ft/s

Dist. / Time Int.

Depth

ft/s

1.

9.

2.

10.

3.

11.

4.

12.

5.

13.

6.

14.

7.

15.

8.

16.

Adjusted Level to:

☒ Cleared Debris from Sensor☐ Replaced Sample Container☐ Program Disabled☒ Waiting for Phone Command☒ Checked Cables/Antennas☐ Dried Moisture from Refrigerator☒ Checked Battery Voltage☐ Changed Battery☒ Cleared Rain Gauge

Maintenance Notes:

Battery 15.35V

Rain gauge clogged w/ bird droppings

SIGNATURES

Data Collected by:

Date:

1/4/17

Reviewed by:

Date:

3/13/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 mL = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 1/4/17

Time: 1:05p

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-3	NA	NA	206	29	0.376	0.42	clear	Blue	Y/N	200	196

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Adjusted Level to:

☒ Cleared Debris from Sensor☐ Replaced Sample Container☐ Program Disabled☒ Waiting for Phone Command☒ Checked Cables/Antennas☐ Dried Moisture from Refrigerator☒ Checked Battery Voltage☐ Changed Battery☒ Cleared Rain Gauge

Maintenance Notes:

Rain gauge clogged w/ bird droppings

BATT Voltage 15.28
Pulled lg amt of dead veg from @ sensor

SIGNATURES

Data Collected by:

Date:

1/4/17

Reviewed by:

Date:

3/13/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 1/4/17

Time: 1:25P

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Allotment Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (mL)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-4	NA	NA	206	27	-0.189	-0.18	Clear	Blue	Y (N)	200	200

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.

Depth

ft/s

Dist. / Time Int.

Depth

ft/s

1.

9.

2.

10.

3.

11.

4.

12.

5.

13.

6.

14.

7.

15.

8.

16.

☐ Adjusted Level to:☐ Cleared Debris from Sensor☐ Replaced Sample Container☐ Program Disabled☒ Waiting for Phone Command☒ Checked Cables/Antennas☐ Dried Moisture from Refrigerator☒ Checked Battery Voltage☐ Changed Battery☒ Cleared Rain Gauge

Maintenance Notes:

Rain gauge clogged w/ bird droppings

Batt Voltage 15.16V

SIGNATURES

Data Collected by:

Date:

1/4/17

Reviewed by:

Date:

3/13/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 mL = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 1/23/17

Time: 12:55

Organization: 1400

Trip: Maintenance Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time:		Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →		≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station		Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-1		NA	NA	206	26	0.05	0.08	Clear	Blue	Y/N	200	200
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro									
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐	Adjusted Level to:	☒	Checked Cables/Antennas			
						☒	Cleared Debris from Sensor	☐	Dried Moisture from Refrigerator			
1.			9.			☐	Replaced Sample Container	☒	Checked Battery Voltage			
2.			10.			☒	Program Disabled	☐	Changed Battery			
3.			11.			☐	Waiting for Phone Command	☒	Cleared Rain Gauge			
4.			12.			Maintenance Notes: Air in line when Calibrating Pump Volume Batt 13.95v						
5.			13.									
6.			14.									
7.			15.									
8.			16.									

SIGNATURES

Data Collected by:

Date: 1/23/17

Reviewed by:

Date: 8-13-17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 mL = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 1/23/17

Time: 13:45

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (mL)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-2	NA	NA	206	N/A	0.856	0.88	Clear	Blue	Y/N	200	194

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Adjusted Level to:

☒ Cleared Debris from Sensor☐ Replaced Sample Container☒ Program Disabled☐ Waiting for Phone Command☒ Checked Cables/Antennas☐ Dried Moisture from Refrigerator☒ Checked Battery Voltage☐ Changed Battery☒ Cleared Rain Gauge

Maintenance Notes:

Heavy sedimentation around sensor
 Rain gauge calibration broken
 Gauge clogged w/ bird droppings

SIGNATURES

Data Collected by:

Date: 1/23/17

Reviewed by:

Date: 3-13-17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 mL = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 1/23/17

Time: 14:10

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time:		Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →		≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station		Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-3		NA	NA	206	N/A	0.334	0.38	Clear	Blue	Y / N	200	200
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro			☐ Adjusted Level to:			☒ Checked Cables/Antennas			
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☒ Cleared Debris from Sensor			☐ Dried Moisture from Refrigerator			
1.			9.			☐ Replaced Sample Container			☒ Checked Battery Voltage			
2.			10.			☐ Program Disabled			☐ Changed Battery			
3.			11.			☒ Waiting for Phone Command			☒ Cleared Rain Gauge			
4.			12.			Maintenance Notes: 14.05V Rain gauge clear Vegetation Cleared from Prior spray Treatment. Culvert wide open						
5.			13.									
6.			14.									
7.			15.									
8.			16.									

SIGNATURES

Data Collected by:

Date:

1/23/17

Reviewed by:

Date:

3-13-17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 mL = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024 Date: 1/23/17 Time: 14:35 Organization: 1400 Trip: Maintenance Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-4	NA	NA	206	N/A	-254	-0.22	clear	Blue	Y (N)	200	194
Velocity Verification Conducted: Y / N		Meter: OTT MF Pro									
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s						
1.			9.								
2.			10.								
3.			11.								
4.			12.								
5.			13.								
6.			14.								
7.			15.								
8.			16.								

☐ Adjusted Level to:
☒ Cleared Debris from Sensor
☐ Replaced Sample Container
☐ Program Disabled
☒ Waiting for Phone Command

☒ Checked Cables/Antennas
☐ Dried Moisture from Refrigerator
☒ Checked Battery Voltage
☐ Changed Battery
☒ Cleared Rain Gauge

Maintenance Notes: 14:35 Rain gauge clogged w/ bird droppings

SIGNATURES

Data Collected by:

Date: 1/23/17

Reviewed by:

Date: 3/13/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 2/15/17

Time: 12:40

Organization: 1400

Trip: Maintenance Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HON-1	NA	NA	206	26	0.38	0.0	Clear	Pink	Y N	N/A	N/A

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Adjusted Level to:

☒ Cleared Debris from Sensor☐ Replaced Sample Container☐ Program Disabled☒ Waiting for Phone Command☒ Checked Cables/Antennas☐ Dried Moisture from Refrigerator☒ Checked Battery Voltage☐ Changed Battery☒ Cleared Rain Gauge

Maintenance Notes:

could not calibrate volume,
13.99v level = 0.00

SIGNATURES

Data Collected by:

Date: 2/15/17

Reviewed by:

Date: 2/15/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 2/15/17

Time: 13:10

Organization: 1400

Trip: Maintenance Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:		Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →		≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station		Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-2		NA	NA	206	N/A	.683	.68	Clear	Pink	Y N	200	190
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro			☐ Adjusted Level to:		☒ Checked Cables/Antennas				
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☒ Cleared Debris from Sensor		☐ Dried Moisture from Refrigerator				
1.			9.			☐ Replaced Sample Container		☒ Checked Battery Voltage				
2.			10.			☐ Program Disabled		☐ Changed Battery				
3.			11.			☒ Waiting for Phone Command		☒ Cleared Rain Gauge				
4.			12.			Maintenance Notes: 13.77v Redo RG. Cal. bottle blew off in High Wind. Trim Suction line to prevent						
5.			13.									
6.			14.									
7.			15.									
8.			16.									

SIGNATURES

Data Collected by:

Date: 2/15/17

Standing Water in Line

Reviewed by:

Date: 4/19/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 mL = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # : 16-0024	Date : 2/15/17	Time: 12:35	Organization: 1400	Trip: Maintenance / Sampling
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SAMPLING DATA

FIELD PARAMETERS

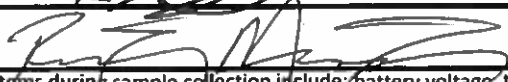
Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)
Warnings	Errors	
☐	☐	

EQUIPMENT CONDITION REPORT**

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-3	NA	NA	206	24	0.142	0.18	Clear	Pink	Y/N	200	190
Velocity Verification Conducted: Y / N		Meter: OTT MF Pro			Adjusted Level to: 0.18 ft		Checked Cables/Antennas				
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	Cleared Debris from Sensor		Dried Moisture from Refrigerator			
1.			9.			Replaced Sample Container		Checked Battery Voltage			
2.			10.			Program Disabled		Changed Battery			
3.			11.			Waiting for Phone Command		Cleared Rain Gauge			
4.			12.			Maintenance Notes: 12.76v Trimmed Suction line to prevent standing water in line					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by: 	Date: 2/15/17
Reviewed by: 	Date: 4/19/17

* Required maintenance items during sample collection include battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: <u>160024</u>	Date: <u>2/15/17</u>	Time: <u>13:55</u>	Organization: <u>1400</u>	Trip: <u>Maintenance / Sampling</u>
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50% Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
<u>HUN-4</u>	NA	NA	206	<u>28</u>	<u>-376</u>	<u>-38</u>	<u>Clear</u>	<u>Pink</u>	<u>(Y)N</u>	<u>200</u>	<u>N/A</u>
Velocity Verification Conducted: Y / N		Meter: OTT MF Pro			☐ Adjusted Level to: ☐ Cleared Debris from Sensor ☐ Replaced Sample Container ☐ Program Disabled ☒ Waiting for Phone Command		☒ Checked Cables/Antennas ☐ Dried Moisture from Refrigerator ☒ Checked Battery Voltage ☐ Changed Battery ☒ Cleared Rain Gauge				
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	Maintenance Notes: <u>Trained Suction line</u> <u>13.53v</u> <u>Rain gauge clogged w/ bird droppings</u> <u>Could not Cal. Pump Level negative</u>					
1.			9.								
2.			10.								
3.			11.								
4.			12.								
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by: <u>[Signature]</u>	Date: <u>2/15/17</u>
Reviewed by: <u>[Signature]</u>	Date: <u>4/19/17</u>

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 3-7-17

Time: 13:28

Organization: ECT

Trips: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time: 13:31	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue		Calibration (mL)	
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN - I	NA	NA	206	25	0.11	0.15	CLEAR	BLUE	Y / (N)	200	200

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.

Depth

ft/s

Dist. / Time Int.

Depth

ft/s

1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Adjusted Level to: 0.15

Cleared Debris from Sensor

Replaced Sample Container

Program Disabled

Waiting for Phone Command

Checked Cables/Antennas

Dried Moisture from Refrigerator

Checked Battery Voltage

Changed Battery

Cleared Rain Gauge

Maintenance Notes:

Voltage: 13.3v & 13.45
TRIM PUMP SUCTION LINE

SIGNATURES

Data Collected by:

Richard Morrissey

Date: 3-7-17

Reviewed by:

[Signature]

Date: 3/13/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 mL = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 3-7-17

Time: 13:48

Organization: ECT

Trip: Maintenance Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time: 13:50		Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)		
Acceptance Criteria →		≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50% Orange or Blue				
Station		Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.	
HUN-2		NA	NA	206	23	0.855	0.82	CLEAR	BLUE	Y/N	200	200	
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro						☒ Adjusted Level to: 0.82	☒ Checked Cables/Antennas			
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☒ Cleared Debris from Sensor	☐ Replaced Sample Container	☐ Program Disabled	☒ Waiting for Phone Command	☐ Dried Moisture from Refrigerator			
1.			9.							☒ Checked Battery Voltage			
2.			10.							☐ Changed Battery			
3.			11.							☒ Cleared Rain Gauge			
4.			12.										
5.			13.										
6.			14.										
7.			15.										
8.			16.										
												Maintenance Notes: Voltage: 13.78 & 13.78	

SIGNATURES

Data Collected by:

Richard Macdisney

Date:

3-7-17

Reviewed by:

[Signature]

Date:

3/13/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 mL = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 3-7-17

Time: 14:02

Organization: ECT

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time: 14:03	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50% Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HVN-3	NA	NA	206	26	0.451	0.44	CLEAR	BLUE	Y/N	200	200

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.

Depth

ft/s

Dist. / Time Int.

Depth

ft/s

1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Adjusted Level to:

☒ Cleared Debris from Sensor☐ Replaced Sample Container☐ Program Disabled☒ Waiting for Phone Command☒ Checked Cables/Antennas☐ Dried Moisture from Refrigerator☒ Checked Battery Voltage☐ Changed Battery☒ Cleared Rain Gauge

Maintenance Notes:

SPRAYED WEED KILLER
Voltage: 13.71 & 13.69

Re-Cal. Rain @ 2:35pm

SIGNATURES

Data Collected by:

Eithan Morassky

Date:

3-7-17

Reviewed by:

[Signature]

Date:

3/13/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 3-7-17

Time: 14:46

Organization: ECT

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time: 14:47	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN -4	NA	NA	206	25	200	200	CLEAR	BLUE	Y/N	200	200
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro			☐ Adjusted Level to:		☒ Checked Cables/Antennas			
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☒ Cleared Debris from Sensor		☐ Dried Moisture from Refrigerator			
1.			9.			☐ Replaced Sample Container		☒ Checked Battery Voltage			
2.			10.			☐ Program Disabled		☐ Changed Battery			
3.			11.			☒ Waiting for Phone Command		☒ Cleared Rain Gauge			
4.			12.			Maintenance Notes: Voltage: 13.74 & 13.78					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:

Richard Morrissey

Date:

3-7-17

Reviewed by:

R. Morrissey

Date:

3/13/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 mL = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024	Date: 3/29/17	Time: 2:50P	Organization: 1400	Trip: Maintenance / Sampling
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50% Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-1	NA	NA	206	24	0093	0.00	Clear	Blue	Y (N)	200	N/A
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro		☒ Adjusted Level to: 0.00		☒ Checked Cables/Antennas				
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐ Cleared Debris from Sensor	☒ Dried Moisture from Refrigerator				
1.			9.			☐ Replaced Sample Container	☒ Checked Battery Voltage				
2.			10.			☐ Program Disabled	☐ Changed Battery				
3.			11.			☒ Waiting for Phone Command	☒ Cleared Rain Gauge				
4.			12.			Maintenance Notes: 13.04V. Ant infestation in ISCO Avalanche. Bug bombed and returned after 2:34 Maint. Level 0, NO PUMP Cal					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:

Date:

Reviewed by:

Date:

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 3/29/17

Time: 3:05P

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50% Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-2	NA	NA	206	25	0.702	0.70	Clear	Blue	Y/N	200	200
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro			☐ Adjusted Level to:		☒ Checked Cables/Antennas			
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☒ Cleared Debris from Sensor		☒ Dried Moisture from Refrigerator			
1.			9.			☐ Replaced Sample Container		☒ Checked Battery Voltage			
2.			10.			☐ Program Disabled		☐ Changed Battery			
3.			11.			☒ Waiting for Phone Command		☒ Cleared Rain Gauge			
4.			12.			Maintenance Notes: 13.8 lots of sediment around sensor RG clogged w/ bird droppings					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:

Date:

3/29/17

Reviewed by:

Date:

4/19/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 3/29/17

Time: 3:25p

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:		Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →		≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	≤ 50 % Orange or Blue			
Station		Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-3		NA	NA	206	26	0.361	0.26	clear	Pink	Y ^N	200	194
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro			☒ Adjusted Level to: 0.26			☒ Checked Cables/Antennas			
Dist. / Time Int.		Depth	ft/s	Dist. / Time Int.		Depth	ft/s	☒ Cleared Debris from Sensor			☒ Dried Moisture from Refrigerator	
1.				9.				☐ Replaced Sample Container			☒ Checked Battery Voltage	
2.				10.				☐ Program Disabled			☐ Changed Battery	
3.				11.				☒ Waiting for Phone Command			☒ Cleared Rain Gauge	
4.				12.				Maintenance Notes: Rain gauge clogged w/ bird droppings Sand blew out ALV sensor 13.72V removed Sand, repositioned sensor				
5.				13.								
6.				14.								
7.				15.								
8.				16.								

SIGNATURES

Data Collected by:

Date:

3/29/17

Reviewed by:

Date:

4/19/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 3/29/17

Time: 4:05

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
HUN-4					NA	NA	NA	NA	NA
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-4	NA	NA	206	24	-0.379	-.375	Clear	Pink	Y/N	200	200
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro			☐ Adjusted Level to: ☐ Cleared Debris from Sensor ☐ Replaced Sample Container ☐ Program Disabled ☒ Waiting for Phone Command		☒ Checked Cables/Antennas ☐ Dried Moisture from Refrigerator ☒ Checked Battery Voltage ☐ Changed Battery ☒ Cleared Rain Gauge			
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s						
1.			9.								
2.			10.								
3.			11.								
4.			12.								
5.			13.								
6.			14.								
7.			15.								
8.			16.								
Maintenance Notes:						13.55V RG clogged w/ bird droppings					

SIGNATURES

Data Collected by:

Date:

3/29/17

Reviewed by:

Date:

4/19/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 mL = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024 Date: 4/12/17 Time: 15:30 Organization: 1400 Trip: Maintenance Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time: 15:30	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue		Calibration (mL)	
Station	Instrument	Avg. Meas.	Vol. (mL)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-1	NA	NA	206	25	0.005	0.00	Clear	Blue	Y (N)	200	N/A

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Adjusted Level to:

Cleared Debris from Sensor

Replaced Sample Container

Program Disabled

☒ Waiting for Phone Command☒ Checked Cables/Antennas☒ Dried Moisture from Refrigerator☒ Checked Battery Voltage☐ Changed Battery☒ Cleared Rain Gauge

Maintenance Notes:

13.41v

SIGNATURES

Data Collected by:

Date:

4/12/17

Reviewed by:

Date:

4/19/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # : 16-0024	Date : 4/12/17	Time: 15:50	Organization: 1400	Trip: Maintenance / Sampling
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (mL)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-2	NA	NA	206	25	0.475	0.48	Clear	Pink	Y N	200	200
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro		Adjusted Level to:		Checked Cables/Antennas				
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	Cleared Debris from Sensor		Dried Moisture from Refrigerator			
1.			9.			Replaced Sample Container		Checked Battery Voltage			
2.			10.			Program Disabled		Changed Battery			
3.			11.			Waiting for Phone Command		Cleared Rain Gauge			
4.			12.			Maintenance Notes: 13.65 ✓					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:

Date:

Reviewed by:

Date:

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 mL = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 4/12/17

Time: 16:10

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-3	NA	NA	206	27	0.156	0.08	Clear	Blue	Y/N	200	N/A

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Adjusted Level to: 0.08 ft

Cleared Debris from Sensor

Replaced Sample Container

Program Disabled

Waiting for Phone Command

Checked Cables/Antennas

Dried Moisture from Refrigerator

Checked Battery Voltage

Changed Battery

Cleared Rain Gauge

Maintenance Notes:

13.71v

RG Clogged

Unable to do Pump Cal.

excessive foam on Bank

SIGNATURES

Data Collected by:

Date:

4/12/17

Reviewed by:

Date:

4/19/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 4/12/17

Time: 16:30

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue		Calibration (mL)	
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-4	NA	NA	206	26	-0.563	-0.54	Clear	Blue	Y ☒ N	200	172

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Adjusted Level to:

Cleared Debris from Sensor

Replaced Sample Container

Program Disabled

Waiting for Phone Command

Checked Cables/Antennas

Dried Moisture from Refrigerator

Checked Battery Voltage

Changed Battery

Cleared Rain Gauge

Maintenance Notes:

13.60V RG Clogged

SIGNATURES

Data Collected by:

Date:

4/12/17

Reviewed by:

Date:

4/19/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16 0024

Date: 5/1/17

Time: 15:10

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time: 15:10

Velocity (ft/s)

Rain Gauge **

Level Check (ft)

Tubing

Desiccant

Aliquot Volume

Acceptance Criteria →

≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps

≤ 10%

± 0.05 ft

Clear

< 50 % Orange or Blue

Calibration (mL)

Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-1	NA	NA	206	27	0.067	0.0	Clear	Blue	Y(N)	200	1/4

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro



Adjusted Level to:

0.00



Checked Cables/Antennas

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		



Cleared Debris from Sensor



Replaced Sample Container



Program Disabled



Waiting for Phone Command



Checked Battery Voltage



Changed Battery



Cleared Rain Gauge

Maintenance Notes:

13:70 ✓

Level = 0, no pump cal

SIGNATURES

Data Collected by:

Date:

5/1/17

Reviewed by:

Date:

5-11-17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16 0024

Date: 5/1/17

Time: 15:30

Organization: 1400

Trip: Maintenance Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time: 15:30

Velocity (ft/s)

Rain Gauge **

Level Check (ft)

Tubing

Desiccant

Aliquot Volume

Acceptance Criteria →

≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps

≤ 10%

± 0.05 ft

Clear

< 50 % Orange or Blue

Calibration (mL)

Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-2	NA	NA	206	27	0.14	0.10	Clear	Blue	Y (N)	200	N/A

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Adjusted Level to:

☒ Cleared Debris from Sensor☐ Replaced Sample Container☒ Program Disabled☐ Waiting for Phone Command☒ Checked Cables/Antennas☐ Dried Moisture from Refrigerator☒ Checked Battery Voltage☐ Changed Battery☒ Cleared Rain Gauge

Maintenance Notes:

14:20V Sedimentation In/around
RG Clogged Sensor / Strainer

SIGNATURES

Data Collected by:

Date:

5/1/17

Reviewed by:

Date:

5-11-17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :

16 0024

Date :

5/1/17

Time:

15:50

Organization:

1400

Trip:

Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time: 15:50	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-3	NA	NA	206	27	0.085	0.00	Clear	Blue	Y/N	200	N/A
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro			☒ Adjusted Level to: 0.0		☒ Checked Cables/Antennas			
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐ Cleared Debris from Sensor		☐ Dried Moisture from Refrigerator			
1.			9.			☐ Replaced Sample Container		☒ Checked Battery Voltage			
2.			10.			☒ Program Disabled		☐ Changed Battery			
3.			11.			☐ Waiting for Phone Command		☒ Cleared Rain Gauge			
4.			12.			Maintenance Notes: RG Clogged Level = 0 NO pump cal. 14.93V					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:

Date:

5/1/17

Reviewed by:

Date:

5-1-17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 160024

Date: 5/1/17

Time: 16:10

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time: 16:10

Velocity (ft/s)

Rain Gauge **

Level Check (ft)

Tubing

Desiccant

Aliquot Volume

Acceptance Criteria →

≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps

≤ 10%

± 0.05 ft

Clear

< 50 % Orange or Blue

Calibration (mL)

Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
Hun-4	NA	NA	206	1.13*	-0.897	-1.20	Clear	Blue	Y(N)	200	N/A

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.

Depth

ft/s

Dist. / Time Int.

Depth

ft/s

1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Adjusted Level to:

Cleared Debris from Sensor

Replaced Sample Container

Program Disabled

Waiting for Phone Command

Checked Cables/Antennas

Dried Moisture from Refrigerator

Checked Battery Voltage

Changed Battery

Cleared Rain Gauge

Maintenance Notes:

RG Clogged

13.58V

Water level below bubbler Tube & Strainer

* All other Stations report accurately double check on next maint run

SIGNATURES

Data Collected by:

Date:

5/1/17

Reviewed by:

Date:

5-11-17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 5/18/17

Time: 10:35

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time: 10:35

Velocity (ft/s)

Rain Gauge **

Level Check (ft)

Tubing

Desiccant

Aliquot Volume

Acceptance Criteria →

≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps

≤ 10%

± 0.05 ft

Clear

< 50 % Orange or Blue

Calibration (mL)

Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
17UN-1	NA	NA	206	26	0.05	0.00	Clear	Pink	Y N	N/A	N/A

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Adjusted Level to: 0.00

Cleared Debris from Sensor

Replaced Sample Container

Program Disabled

Waiting for Phone Command

Checked Cables/Antennas

Dried Moisture from Refrigerator

Checked Battery Voltage

Changed Battery

Cleared Rain Gauge

Maintenance Notes:

Level 0 → NO pump Cal
14.12V

SIGNATURES

Data Collected by:

Date: 5/18/17

Reviewed by:

Date: 6/16/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024 Date: 5/18/17 Time: 10:55 Organization: 1400 Trip: Maintenance Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time: 10:55	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-2	NA	NA	206	23	0.12	0.00	Clear	Pink	Y N	N/A	N/A

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

☒ Adjusted Level to: 0.00☒ Cleared Debris from Sensor☐ Replaced Sample Container☐ Program Disabled☒ Waiting for Phone Command☒ Checked Cables/Antennas☐ Dried Moisture from Refrigerator☒ Checked Battery Voltage☐ Changed Battery☒ Cleared Rain Gauge

Maintenance Notes:

Level = 0 No Pump Cal
13.79V

SIGNATURES

Data Collected by:

Date:

5/18/17

Reviewed by:

Date:

6/6/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # : 16-0024	Date : 5/18/17	Time: 11:15	Organization: 1400	Trip: Maintenance	Sampling
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time: 11:15	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-3	NA	NA	206	25	-0.04	0.00	Clear	Pink	Y N	N/A	N/A
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro			☒ Adjusted Level to: 0.00		☒ Checked Cables/Antennas			
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☒ Cleared Debris from Sensor		☐ Dried Moisture from Refrigerator			
1.			9.			☐ Replaced Sample Container		☒ Checked Battery Voltage			
2.			10.			☐ Program Disabled		☐ Changed Battery			
3.			11.			☒ Waiting for Phone Command		☒ Cleared Rain Gauge			
4.			12.			Maintenance Notes: 14.29✓ Level = 0 no pump Cal RG fully clogged					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:

Date:

5/18/17

Reviewed by:

Date:

6/16/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 5/18/17

Time: 11:35

Organization: 1400

Trip: Maintenance Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-4	NA	NA	206	27	-0.903	—	Clear	Pink	Y ^N	n/a	n/a
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro			☐ Adjusted Level to:		☒ Checked Cables/Antennas			
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐ Cleared Debris from Sensor		☐ Dried Moisture from Refrigerator			
1.			9.			☐ Replaced Sample Container		☒ Checked Battery Voltage			
2.			10.			☐ Program Disabled		☐ Changed Battery			
3.			11.			☒ Waiting for Phone Command		☒ Cleared Rain Gauge			
4.			12.			Maintenance Notes: Level below weir - no pump Cal RG fully clogged 14.25V					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:

Date: 5/18/17

Reviewed by:

Date: 6/6/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 5/30/17

Time: 18:15

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time: 18:15	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-1	NA	NA	206	NA	0.003	0.00	Clear	Blue	Y (N)	NA	NA

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.

Depth

ft/s

Dist. / Time Int.

Depth

ft/s

1.

9.

2.

10.

3.

11.

4.

12.

5.

13.

6.

14.

7.

15.

8.

16.

☐ Adjusted Level to:

☐ Cleared Debris from Sensor

☐ Replaced Sample Container

☐ Program Disabled

☒ Waiting for Phone Command

☒ Checked Cables/Antennas

☐ Dried Moisture from Refrigerator

☒ Checked Battery Voltage

☐ Changed Battery

☒ Cleared Rain Gauge

Maintenance Notes:

RG fully Clogged

12.80V

SIGNATURES

Data Collected by:

Date:

5/30/17

Reviewed by:

Date:

6/16/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024 Date: 5/30/17 Time: 18:30 Organization: 1400 Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time: 18:30	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (mL)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-2	NA	NA	206	NA	NA	NA	Clear	Blue	Y10	NA	NA

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.

Depth

ft/s

Dist. / Time Int.

Depth

ft/s

1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Adjusted Level to:

☒ Cleared Debris from Sensor☐ Replaced Sample Container☐ Program Disabled☒ Waiting for Phone Command☒ Checked Cables/Antennas☐ Dried Moisture from Refrigerator☒ Checked Battery Voltage☐ Changed Battery☒ Cleared Rain Gauge

Maintenance Notes:

14.65 ✓ Dig out debris around end of culvert + placed sand grain bag to stage water for next event

SIGNATURES

Data Collected by:

Date:

5/30/17

Reviewed by:

Date:

6/16/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 mL = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024 Date: 5/30/17 Time: 19:00 Organization: 1400 Trip: Maintenance Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time: 19:00	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-3	NA	NA	206	NA	0.002	0.00	Clear	Blue	Y/N	NA	NA
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro		☐ Adjusted Level to:		☒ Checked Cables/Antennas				
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☒ Cleared Debris from Sensor		☐ Dried Moisture from Refrigerator			
1.			9.			☐ Replaced Sample Container		☒ Checked Battery Voltage			
2.			10.			☐ Program Disabled		☐ Changed Battery			
3.			11.			☒ Waiting for Phone Command		☒ Cleared Rain Gauge			
4.			12.			Maintenance Notes: Add Sandbag to end of ✓ 13.93v Culvert to stage water RG fully clogged for next rain event					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:

Date: 5/30/17

Reviewed by:

Date: 6/6/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024 Date: 5/30/17 Time: 19:15 Organization: 1400 Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time: 19:15	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-4	NA	NA	206	NA	-0.897	NA	Clear	Blue	Y/N	NA	NA

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.

Depth

ft/s

Dist. / Time Int.

Depth

ft/s

1.

9.

2.

10.

3.

11.

4.

12.

5.

13.

6.

14.

7.

15.

8.

16.

☐ Adjusted Level to:

☐ Cleared Debris from Sensor

☐ Replaced Sample Container

☐ Program Disabled

☒ Waiting for Phone Command

☒ Checked Cables/Antennas

☐ Dried Moisture from Refrigerator

☒ Checked Battery Voltage

☐ Changed Battery

☒ Cleared Rain Gauge

Maintenance Notes:

14.00 V

RG fully clogged

SIGNATURES

Data Collected by:

Date:

5/30/17

Reviewed by:

Date:

6/6/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024 Date: 7/25/17 Time: 11:35 Organization: 1400 Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Hun-1					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time:		Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume	
Acceptance Criteria →		≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue		Calibration (mL)	
Station		Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
		NA	NA	206	25	0.154	0.24	Clear	Pink	Y/N	200	200
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro					☒ Adjusted Level to: 0.24		☒ Checked Cables/Antennas		
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐ Cleared Debris from Sensor		☒ Dried Moisture from Refrigerator				
1.			9.			☐ Replaced Sample Container		☒ Checked Battery Voltage				
2.			10.			☐ Program Disabled		☐ Changed Battery				
3.			11.			☒ Waiting for Phone Command		☒ Cleared Rain Gauge				
4.			12.			Maintenance Notes: 14.88v						
5.			13.									
6.			14.									
7.			15.									
8.			16.									

SIGNATURES

Data Collected by:

Date:

Reviewed by:

Date:

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 7/25/17

Time: 12:00

Organization: 1900

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Hun-2					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
	NA	NA	206	24	0.469	1.00	Clear	Pink	Y/N	200	190

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

☒ Adjusted Level to: 1.00☐ Cleared Debris from Sensor☐ Replaced Sample Container☐ Program Disabled☒ Waiting for Phone Command☒ Checked Cables/Antennas☒ Dried Moisture from Refrigerator☒ Checked Battery Voltage☐ Changed Battery☒ Cleared Rain Gauge

Maintenance Notes:

13.85V
Ant infestation

SIGNATURES

Data Collected by:

Date:

7/25/17

Reviewed by:

Date:

8/3/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 7/25/17

Time: 12:30

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
HUN-3					NA	NA	NA	NA	NA
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue		Calibration (mL)	
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
	NA	NA	206	27	0.592	0.52	Clear	Pink	Y/N	200	198
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro			☒	Adjusted Level to: 0.52		☒	Checked Cables/Antennas	
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐	Cleared Debris from Sensor		☒	Dried Moisture from Refrigerator	
1.			9.			☐	Replaced Sample Container		☒	Checked Battery Voltage	
2.			10.			☐	Program Disabled		☐	Changed Battery	
3.			11.			☒	Waiting for Phone Command		☒	Cleared Rain Gauge	
4.			12.			Maintenance Notes: 13.62V Sprayed Roundup @ box					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:

Date:

Reviewed by:

Date:

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # : 16-0024	Date : 7/25/17	Time: 12:50	Organization: 1400	Trip: Maintenance / Sampling
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
HUN-4					NA	NA	NA	NA	NA
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue		Calibration (mL)	
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
	NA	NA	206	25	-0.09	-0.05	clear	Pink	Y/N	200	198
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro			☒ Adjusted Level to: -0.05		☒ Checked Cables/Antennas			
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐ Cleared Debris from Sensor		☒ Dried Moisture from Refrigerator			
1.			9.			☐ Replaced Sample Container		☒ Checked Battery Voltage			
2.			10.			☐ Program Disabled		☐ Changed Battery			
3.			11.			☒ Waiting for Phone Command		☒ Cleared Rain Gauge			
4.			12.			Maintenance Notes: Remove / Replace 730, Downloaded data RG fully clogged 13.80v					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:

Date:

7/25/17

Reviewed by:

Date:

8/3/17

* Required maintenance items during sample collection include battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 110-0024	Date: 8/16/17	Time: 18:20	Organization: 1400	Trip: Maintenance / Sampling
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:		Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing		Desiccant		Aliquot Volume			
Acceptance Criteria →		≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear		< 50 % Orange or Blue		Calibration (mL)			
Station		Instrument	Avg. Meas.	Vol. (mL)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.			
Hun-1		NA	NA	206	—	—	—	Clear	Blue	Y (N)	—	—			
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro					☐	Adjusted Level to:				☒	Checked Cables/Antennas	
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐	Cleared Debris from Sensor				☐	Dried Moisture from Refrigerator			
1.			9.			☐	Replaced Sample Container				☐	Checked Battery Voltage			
2.			10.			☐	Program Disabled				☐	Changed Battery			
3.			11.			☒	Waiting for Phone Command				☐	Cleared Rain Gauge			
4.			12.			Maintenance Notes: Cleaned out Carboy, Replaced Solar Controller w/ MPPT, reset to Done Command									
5.			13.												
6.			14.												
7.			15.												
8.			16.												



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 8/16/17

Time: 18:10

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-7	NA	NA	206	—	—	—	Clear	Blue	Y/N	—	—

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Adjusted Level to:

Cleared Debris from Sensor

Replaced Sample Container

Program Disabled

Waiting for Phone Command

Checked Cables/Antennas

Dried Moisture from Refrigerator

Checked Battery Voltage

Changed Battery

Cleared Rain Gauge

Maintenance Notes:

Cleaned out Carboy, we placed
Solar Controller w/MPPT, we set to
Phone Command

SIGNATURES

Data Collected by:

Date:

8/16/17

Reviewed by:

Date:

8/28/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 9/12/17

Time: 17:48

Organization: 1405

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-1	NA	NA	206	—	—	—	Clear	Pink	Y/N	—	—
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro			☐ Adjusted Level to:		☒ Checked Cables/Antennas			
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐ Cleared Debris from Sensor		☐ Dried Moisture from Refrigerator			
1.			9.			☐ Replaced Sample Container		☒ Checked Battery Voltage			
2.			10.			☐ Program Disabled		☐ Changed Battery			
3.			11.			☒ Waiting for Phone Command		☒ Cleared Rain Gauge			
4.			12.			Maintenance Notes: 14.65V Check equip after IRMA Equip OK @ functional. Large area of Standing Water around manhole					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:

Date: 9/12/17

Reviewed by:

Date: 10/30/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024	Date: 9/12/17	Time: 17:53	Organization: 1400	Trip: Maintenance	Sampling
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Allquot Volume	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue		Calibration (mL)	
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-2	NA	NA	206	—	—	—	Clear	Pink	Y/N	—	—
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro			☐ Adjusted Level to:		☒ Checked Cables/Antennas			
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐ Cleared Debris from Sensor		☐ Dried Moisture from Refrigerator			
1.			9.			☐ Replaced Sample Container		☒ Checked Battery Voltage			
2.			10.			☐ Program Disabled		☐ Changed Battery			
3.			11.			☒ Waiting for Phone Command		☒ Cleared Rain Gauge			
4.			12.			Maintenance Notes: 13.52V Check equip after IRMA. Equip OK @ functional. Erosion of bank behind box. Lg amt of sediment around sen.					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:

Date: 9/12/17

Reviewed by:

Date: 10/30/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.

Will return to remove next trip



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 9/12/17

Time: 17:58

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-3	NA	NA	206	—	—	—	Clear	Pink	Y/N	—	—

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Adjusted Level to:

Cleared Debris from Sensor

Replaced Sample Container

Program Disabled

Waiting for Phone Command

Checked Cables/Antennas

Dried Moisture from Refrigerator

Checked Battery Voltage

Changed Battery

Cleared Rain Gauge

Maintenance Notes:

13.38v Check equip after I.R.M.T.
 Equip OK @ functional. Box Tipped due to high water level. Some water intrusion in box. Reposition and fix PVC. Dry out Box

SIGNATURES

Data Collected by:

Date:

9/12/17

Reviewed by:

Date:

10/30/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 9/12/17

Time: 18:08

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-4	NA	NA	206	—	—	—	Clear	Pink	Y/N	—	—

Velocity Verification Conducted: Y / N			Meter: OTT MF Pro			Adjusted Level to:		Checked Cables/Antennas	
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐	Cleared Debris from Sensor	☐	Dried Moisture from Refrigerator
1.			9.			☐	Replaced Sample Container	☐	Checked Battery Voltage
2.			10.			☐	Program Disabled	☐	Changed Battery
3.			11.			☐	Waiting for Phone Command	☐	Cleared Rain Gauge
4.			12.			Maintenance Notes: 13.24 V Check Equip after IRMA. Equip OK @ functional. EXTREMELY high water level and sedimentation around sensors. Will remove sediment on next trip.			
5.			13.						
6.			14.						
7.			15.						
8.			16.						

SIGNATURES

Data Collected by:

Date: 9/12/17

Reviewed by:

Date: 10/30/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 9/18/17

Time: 11:43

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue		Calibration (mL)	
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-1	NA	NA	206	—	—	—	Clear	Blue	Y/N	200	200

Velocity Verification Conducted:			Y / N			Meter: OTT MF Pro			☐ Adjusted Level to:	☒ Checked Cables/Antennas
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐ Cleared Debris from Sensor	☐ Replaced Sample Container	☐ Program Disabled	☐ Waiting for Phone Command	☐ Dried Moisture from Refrigerator
1.			9.			☐	☐	☐	☒	☒ Checked Battery Voltage
2.			10.			☐	☐	☐	☐	☐ Changed Battery
3.			11.			☒	☐	☐	☒	☒ Cleared Rain Gauge
4.			12.			Maintenance Notes: Lg amount of standing water 14.75V around man hole. Cannot see staff gauge due to debris				
5.			13.							
6.			14.							
7.			15.							
8.			16.							

SIGNATURES

Data Collected by:

Date: 9/18/17

Reviewed by:

Date: 10/30/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 9/18/17

Time: 12:03

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue		Calibration (mL)	
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-2	NA	NA	206	—	—	—	Clear	Blue	Y (N)	200	200

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Adjusted Level to:

Cleared Debris from Sensor

Replaced Sample Container

Program Disabled

☒ Waiting for Phone Command☒ Checked Cables/Antennas☐ Dried Moisture from Refrigerator☒ Checked Battery Voltage☐ Changed Battery☒ Cleared Rain Gauge

Maintenance Notes:

remove sedimentation around 13.65v sensor. Sweep debris out of mitered end.

SIGNATURES

Data Collected by:

Date: 9/18/17

Reviewed by:

Date: 10/30/17

* Required maintenance items during sample collection include battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 9/18/17

Time: 12:23

Organization: 1400

Trip: Maintenance Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-3	NA	NA	206	—	—	—	Clear	Blue	Y (N)	200	200

Velocity Verification Conducted:

Y / N

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Adjusted Level to:

Cleared Debris from Sensor

Replaced Sample Container

Program Disabled

Waiting for Phone Command

Checked Cables/Antennas

Dried Moisture from Refrigerator

Checked Battery Voltage

Changed Battery

Cleared Rain Gauge

Maintenance Notes:

remove sedimentation from 13.49v around sensor. Sweep debris out of mitered end.

SIGNATURES

Data Collected by:

Date:

9/18/17

Reviewed by:

Date:

10/30/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 16-0024

Date: 9/18/17

Time: 12:43

Organization: 1400

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
					NA	NA	NA	NA	NA
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.05 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
HUN-4	NA	NA	206	—	—	—	Clear	Blue	Y/N	200	200
Velocity Verification Conducted:		Y / N	Meter: OTT MF Pro			☐ Adjusted Level to:		☒ Checked Cables/Antennas			
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐ Cleared Debris from Sensor		☐ Dried Moisture from Refrigerator			
1.			9.			☐ Replaced Sample Container		☒ Checked Battery Voltage			
2.			10.			☐ Program Disabled		☐ Changed Battery			
3.			11.			☒ Waiting for Phone Command		☒ Cleared Rain Gauge			
4.			12.			Maintenance Notes: 13.37v water level stabilized Check tubing and bubbler line.					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:

Date:

9/18/17

Reviewed by:

Date:

10/30/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

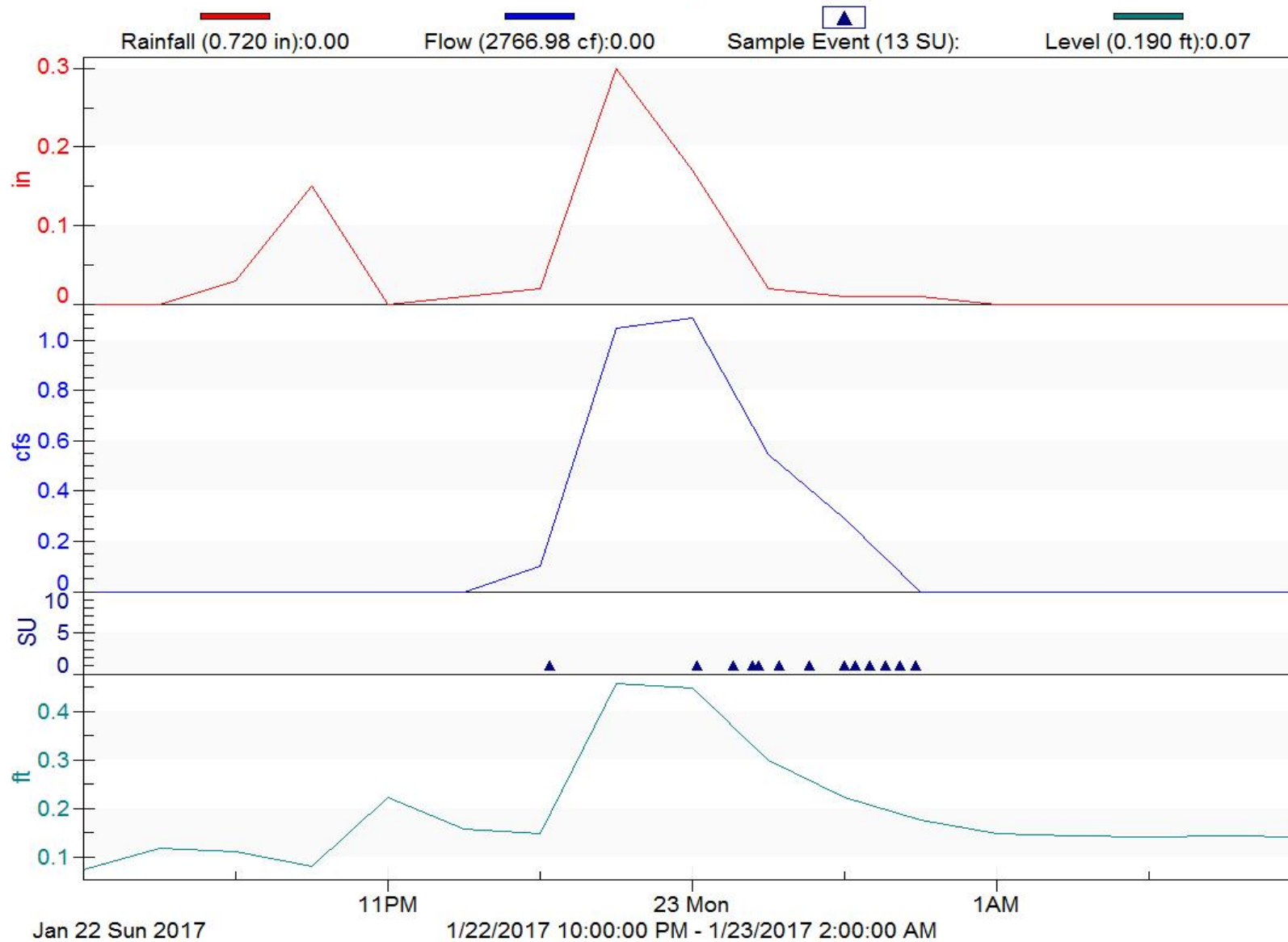
** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.

Appendix B: Hydrographs

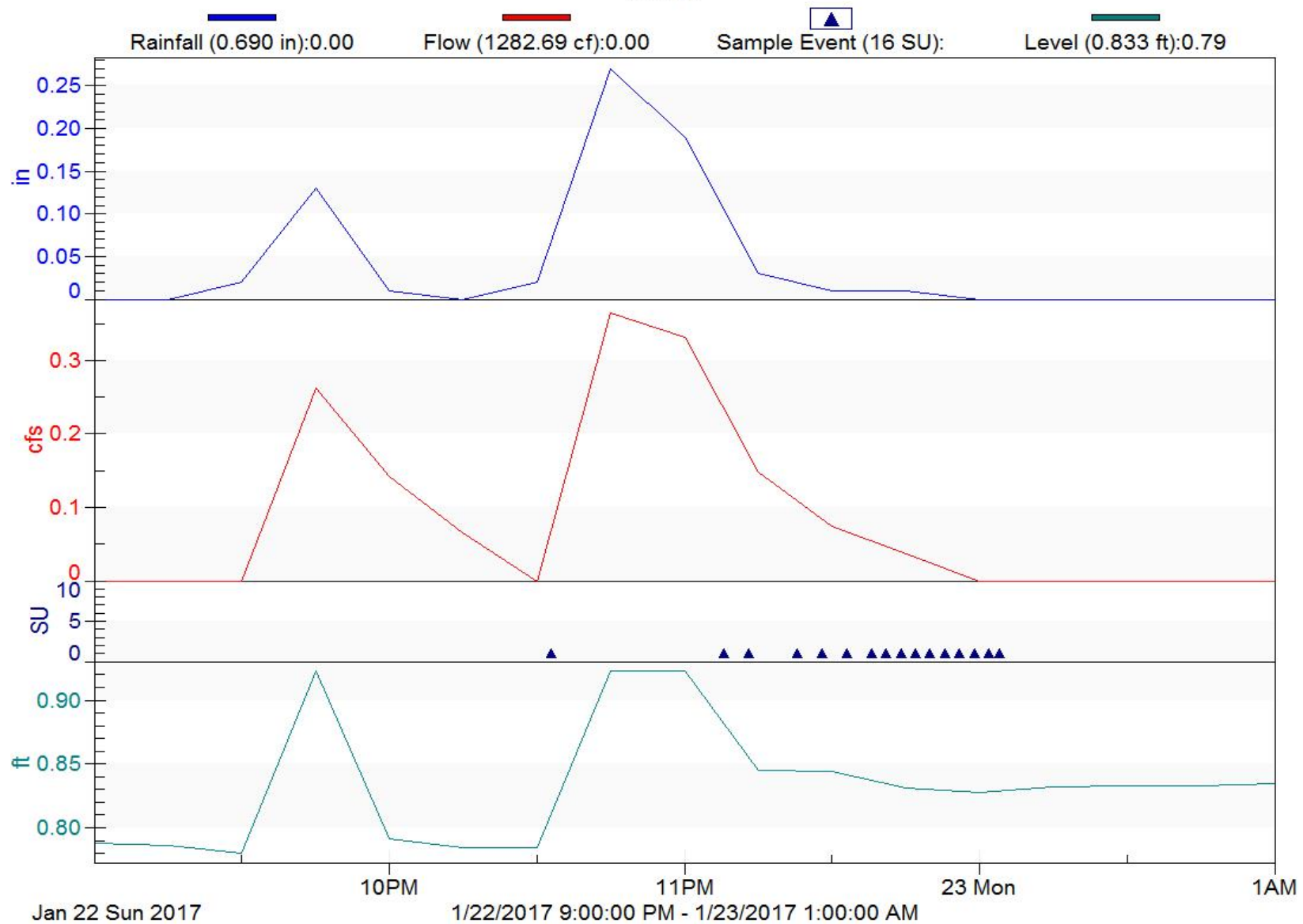
INFLOW 1

Storm 1



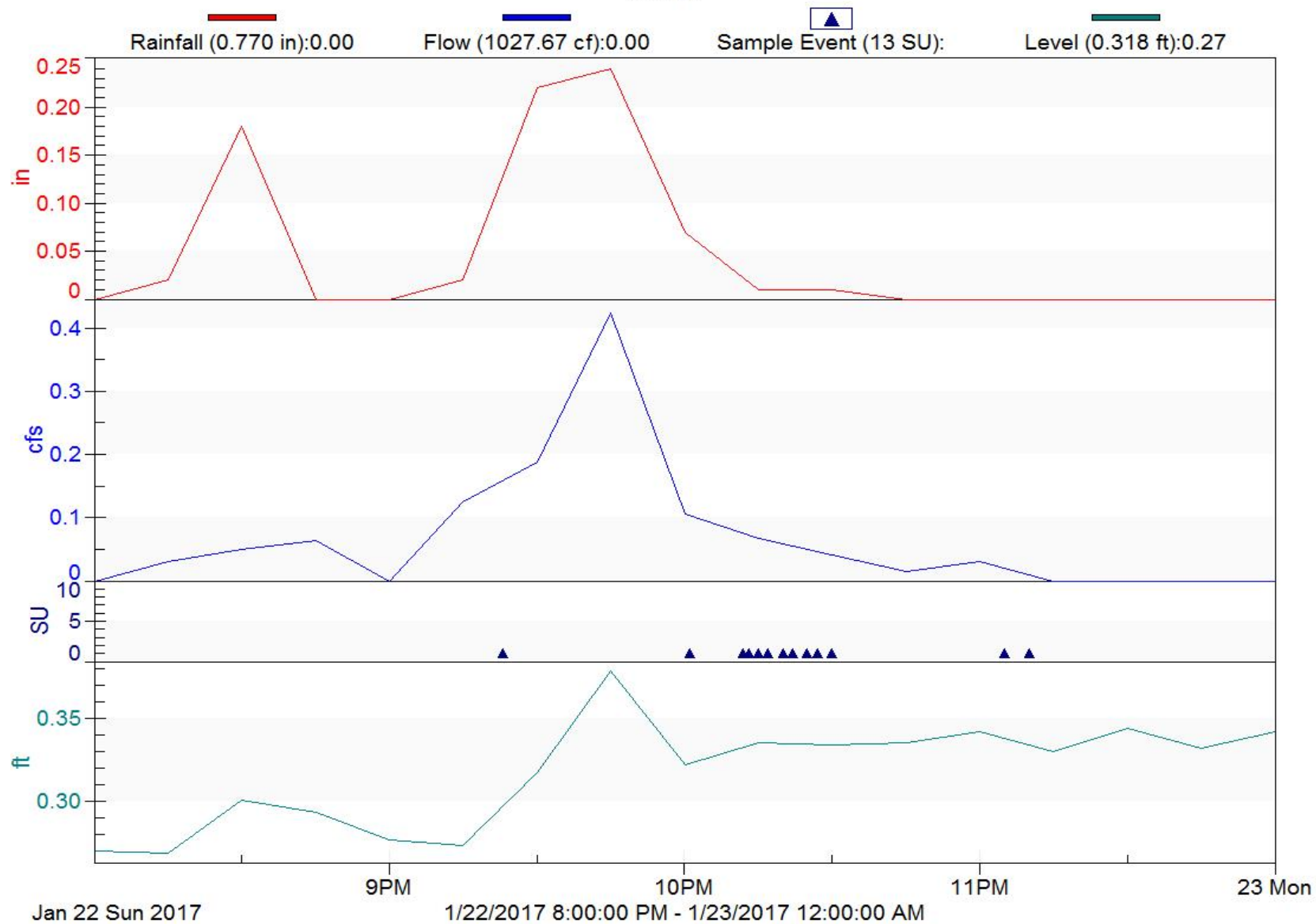
INFLOW 2

Storm 1



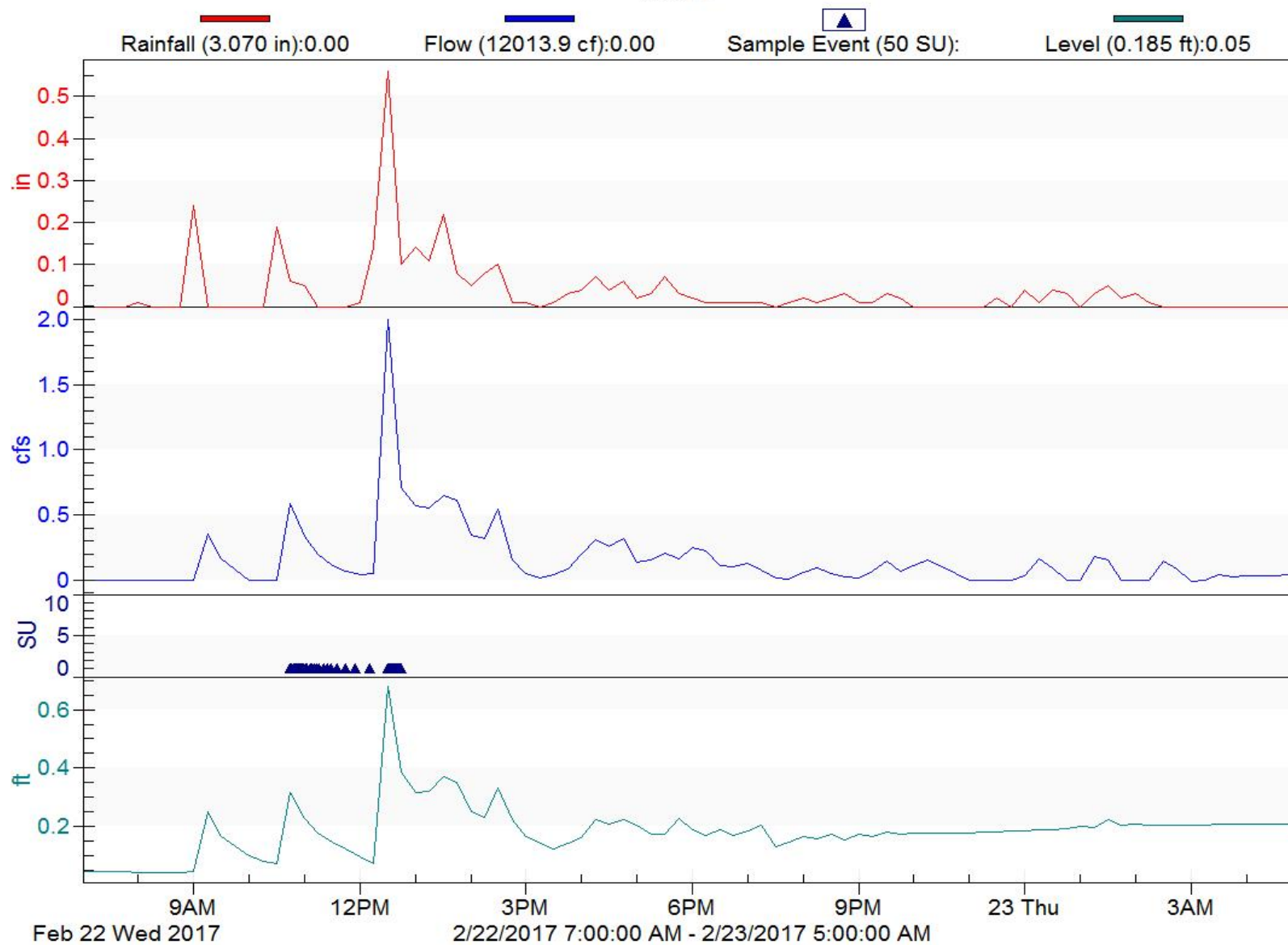
INFLOW 3

Storm 1



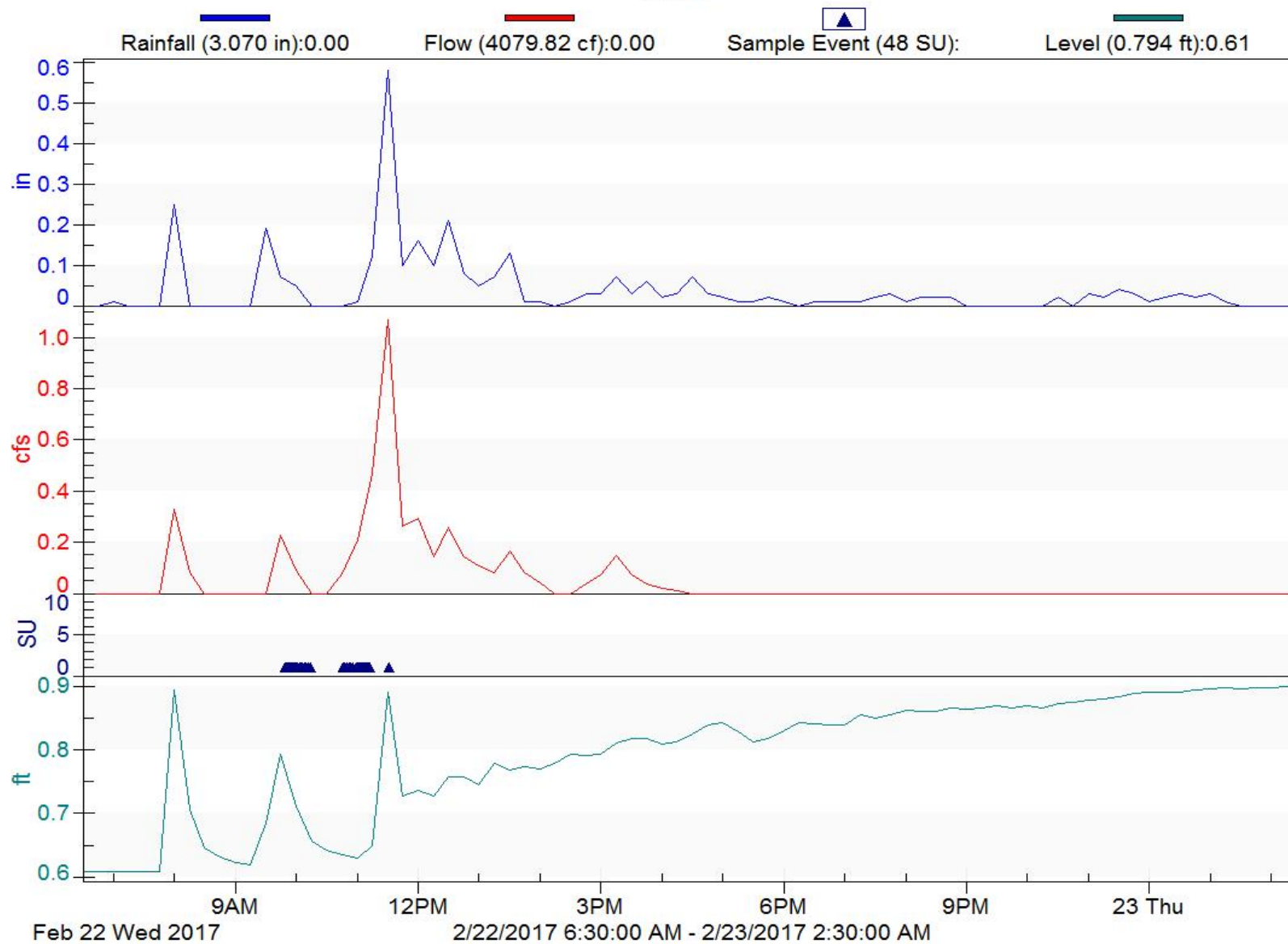
INFLOW 1

Storm 2



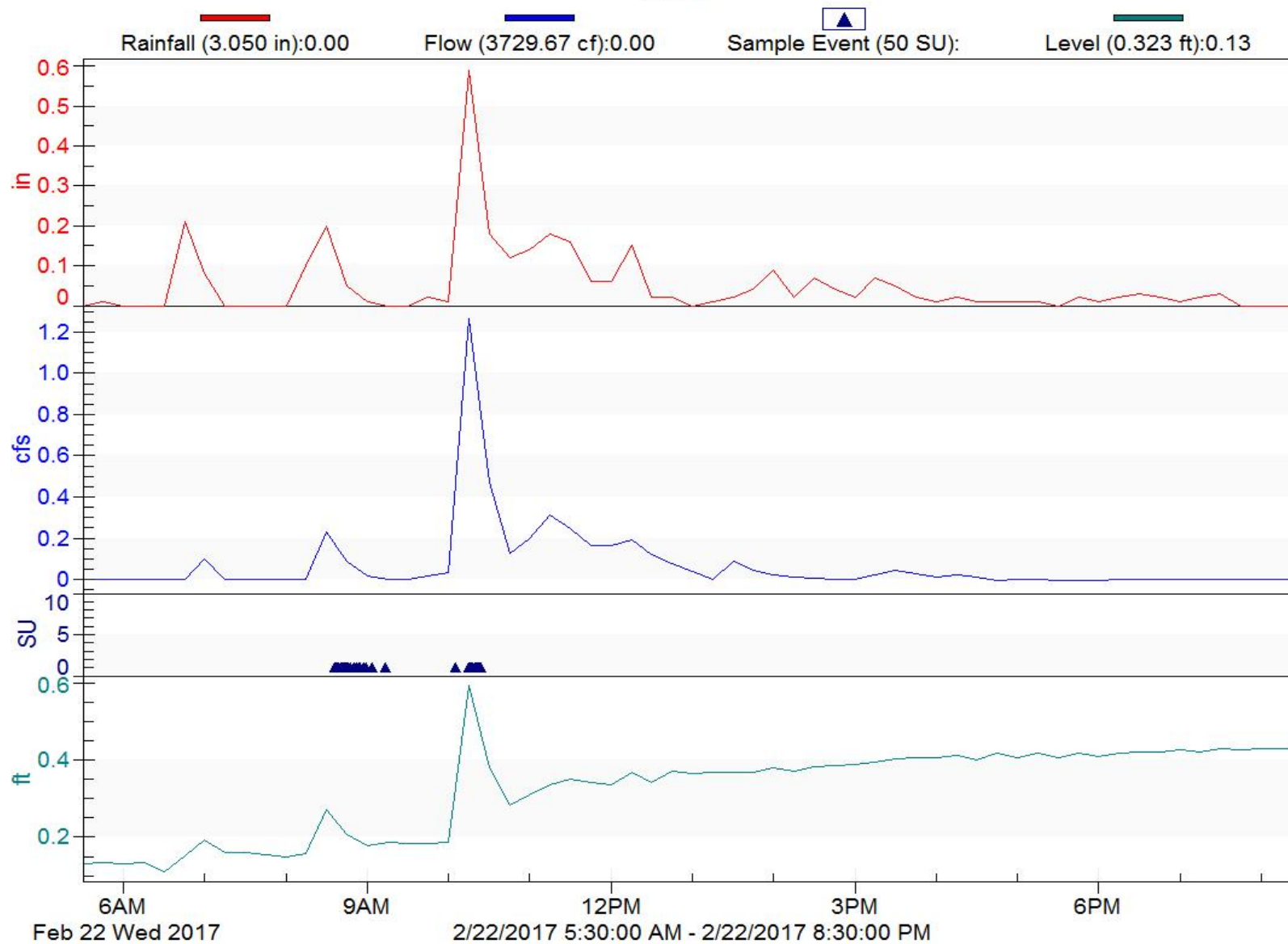
INFLOW 2

Storm 2



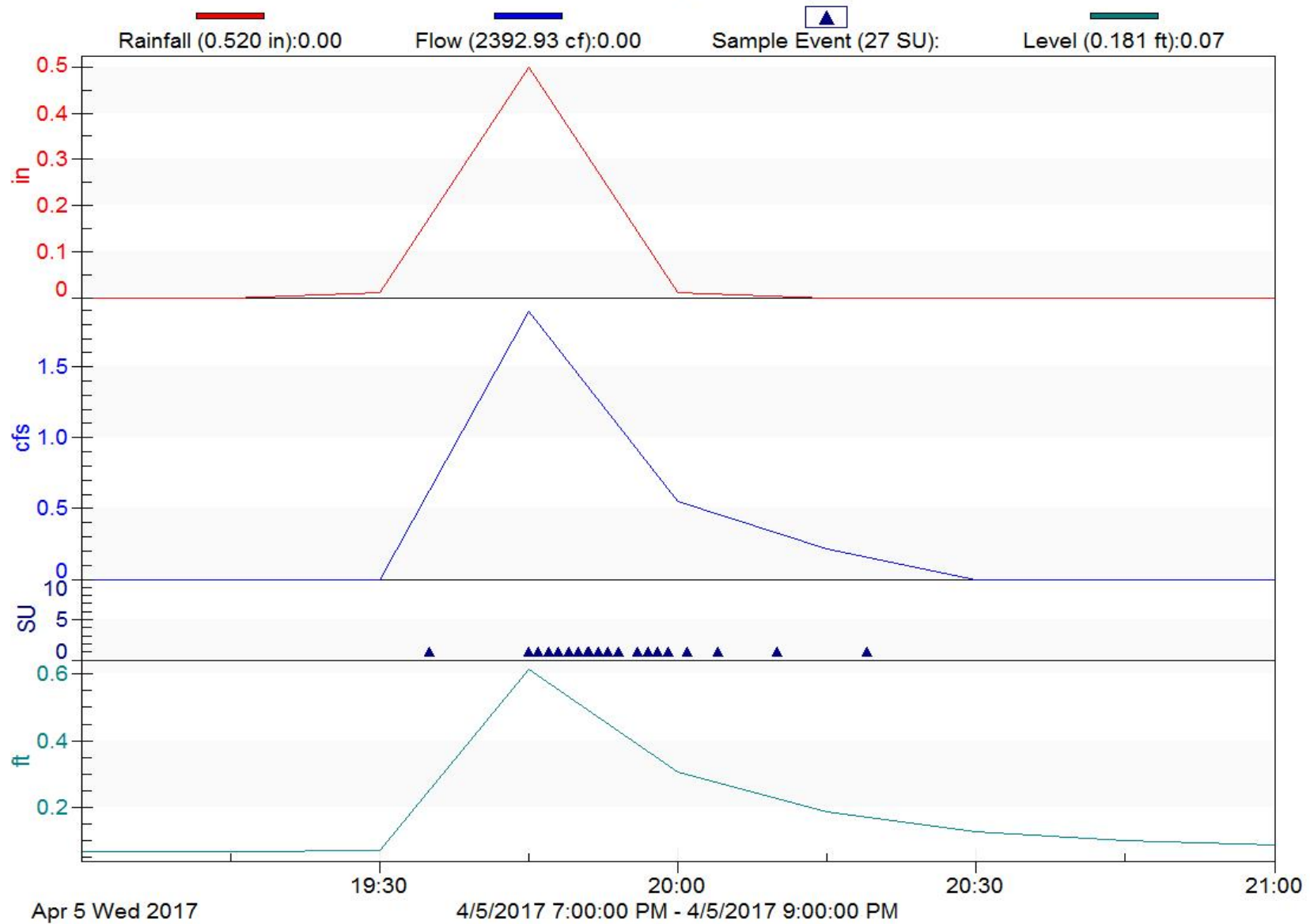
INFLOW 3

Storm 2



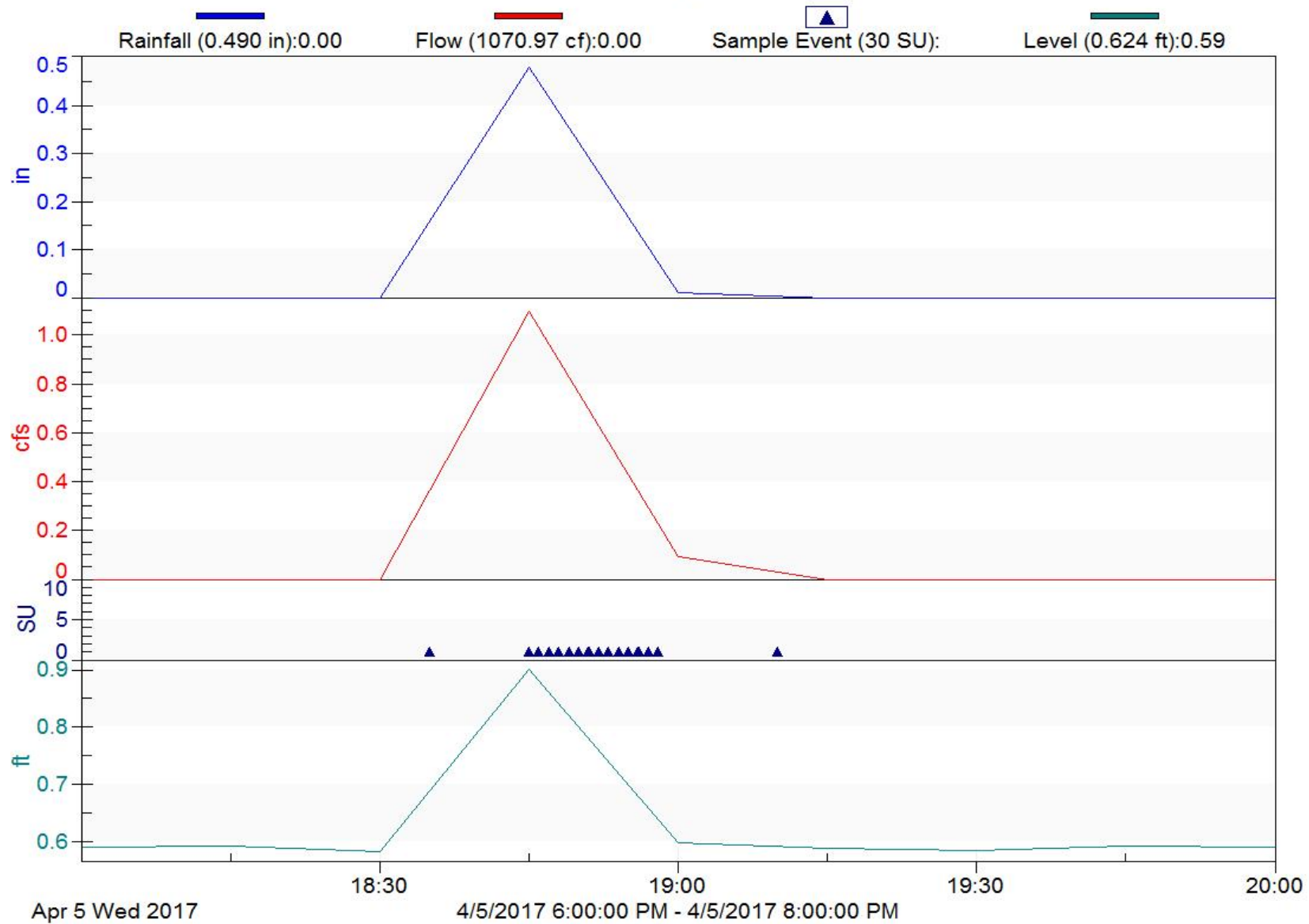
INFLOW 1

Storm 3



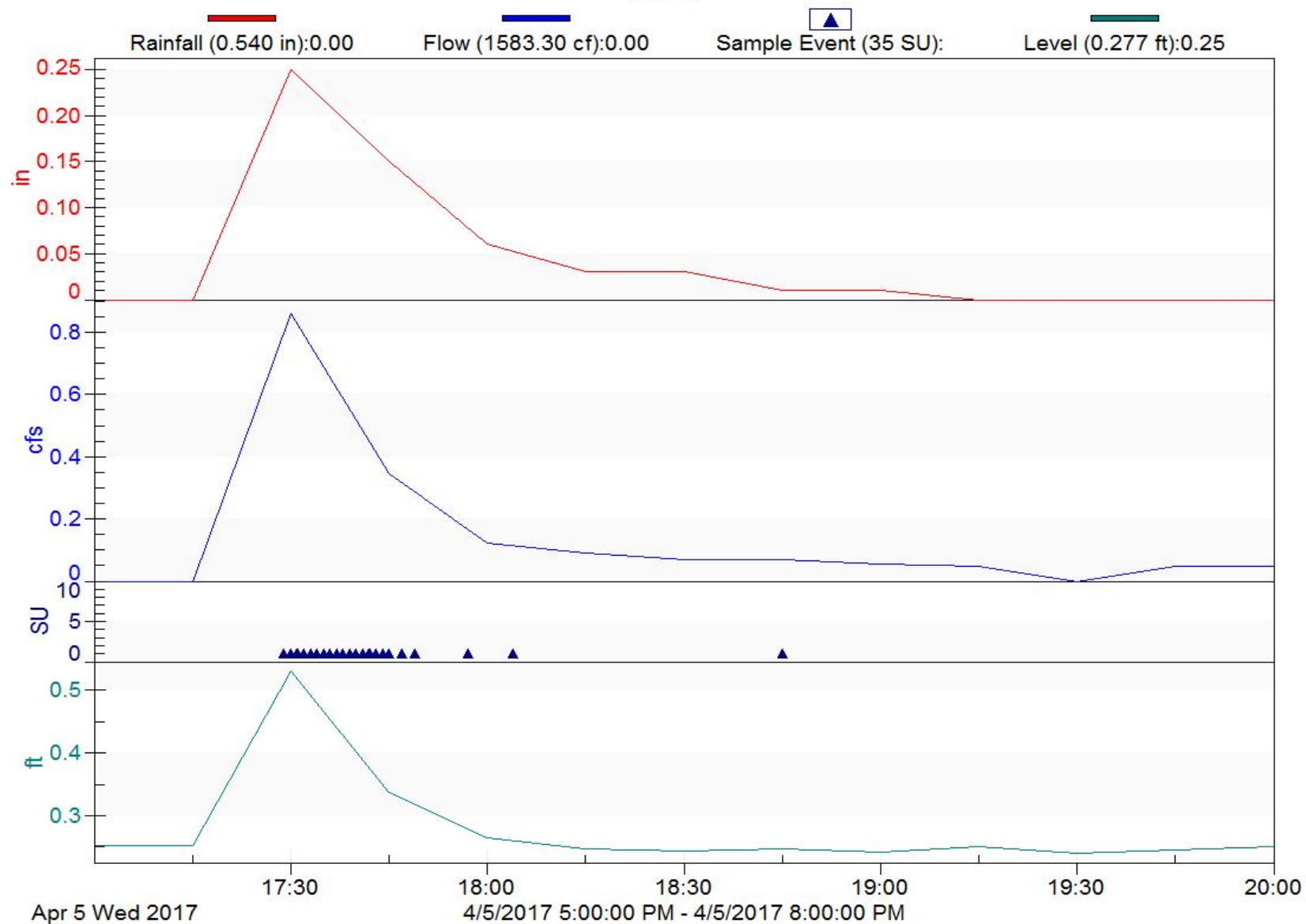
INFLOW 2

Storm 3



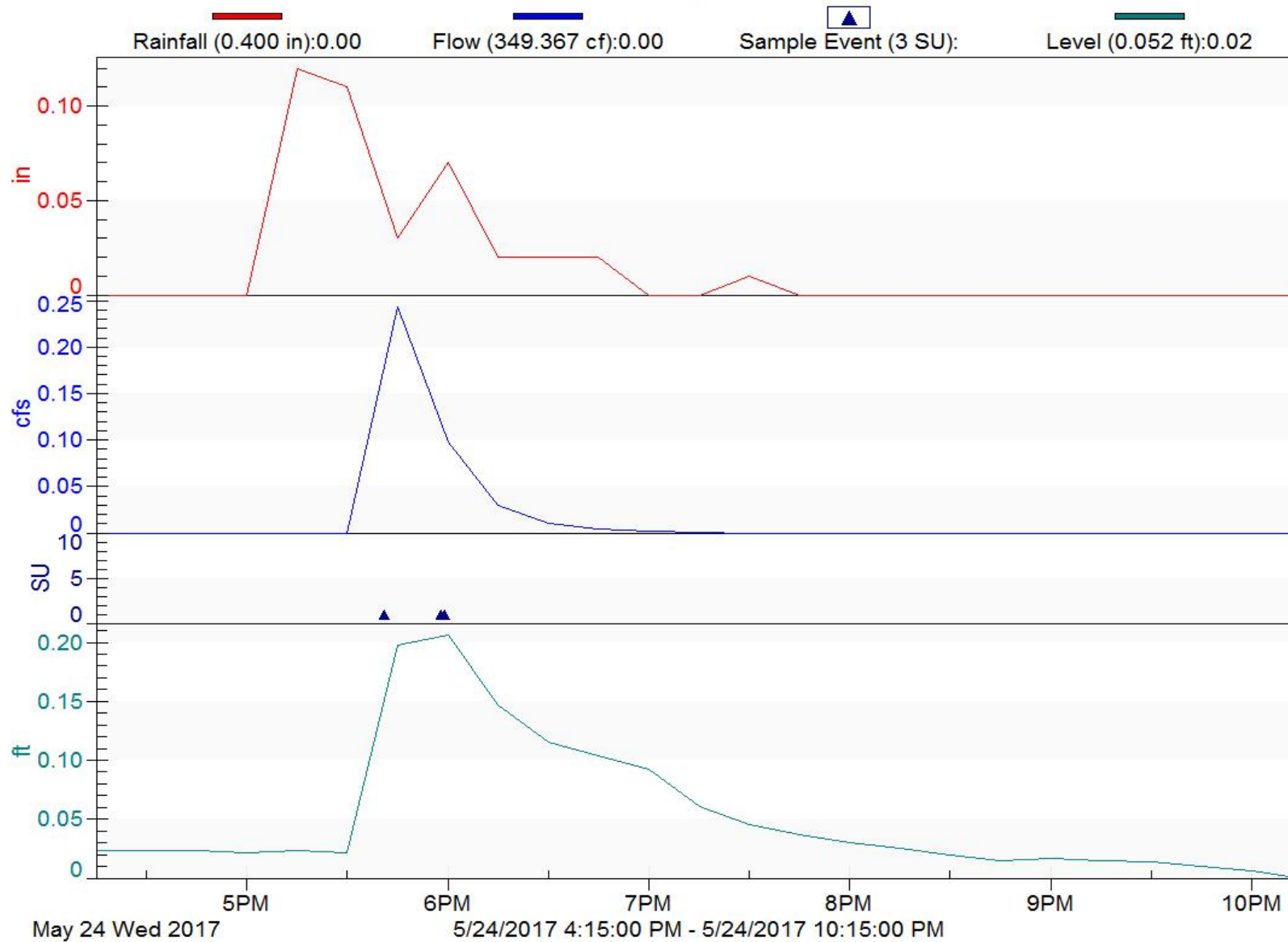
INFLOW 3

Storm 3



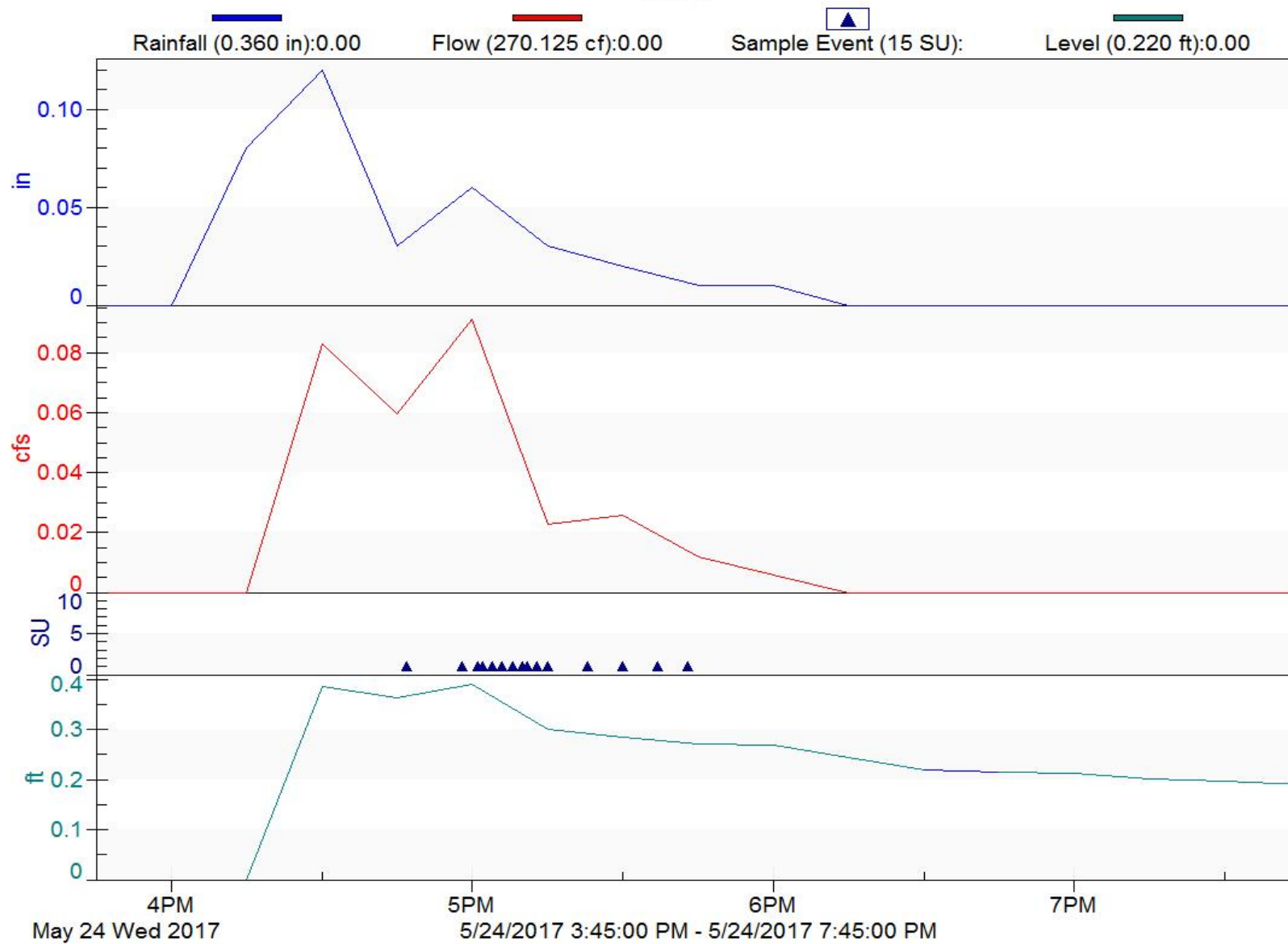
INFLOW 1

Storm 4



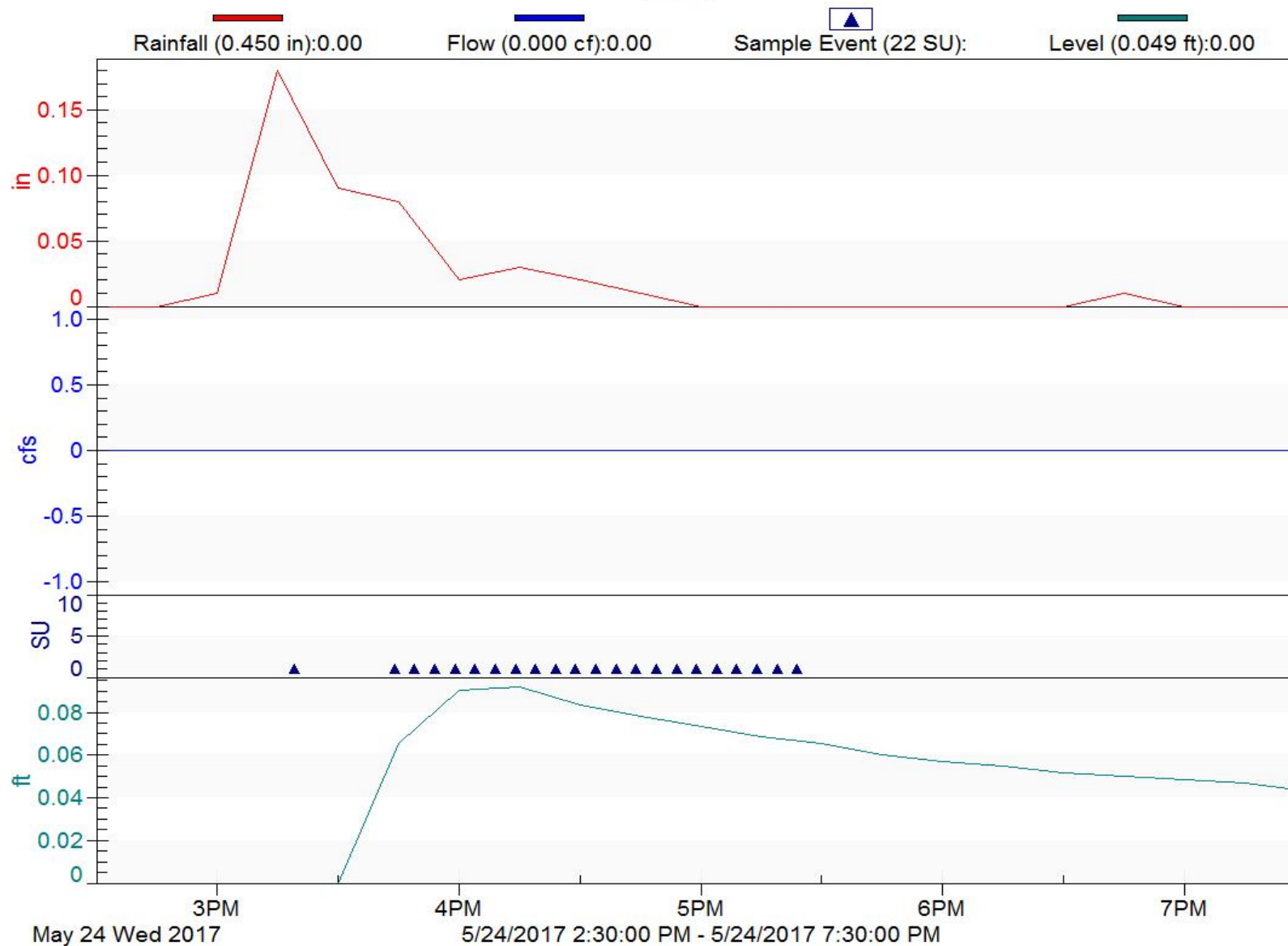
INFLOW 2

Storm 4



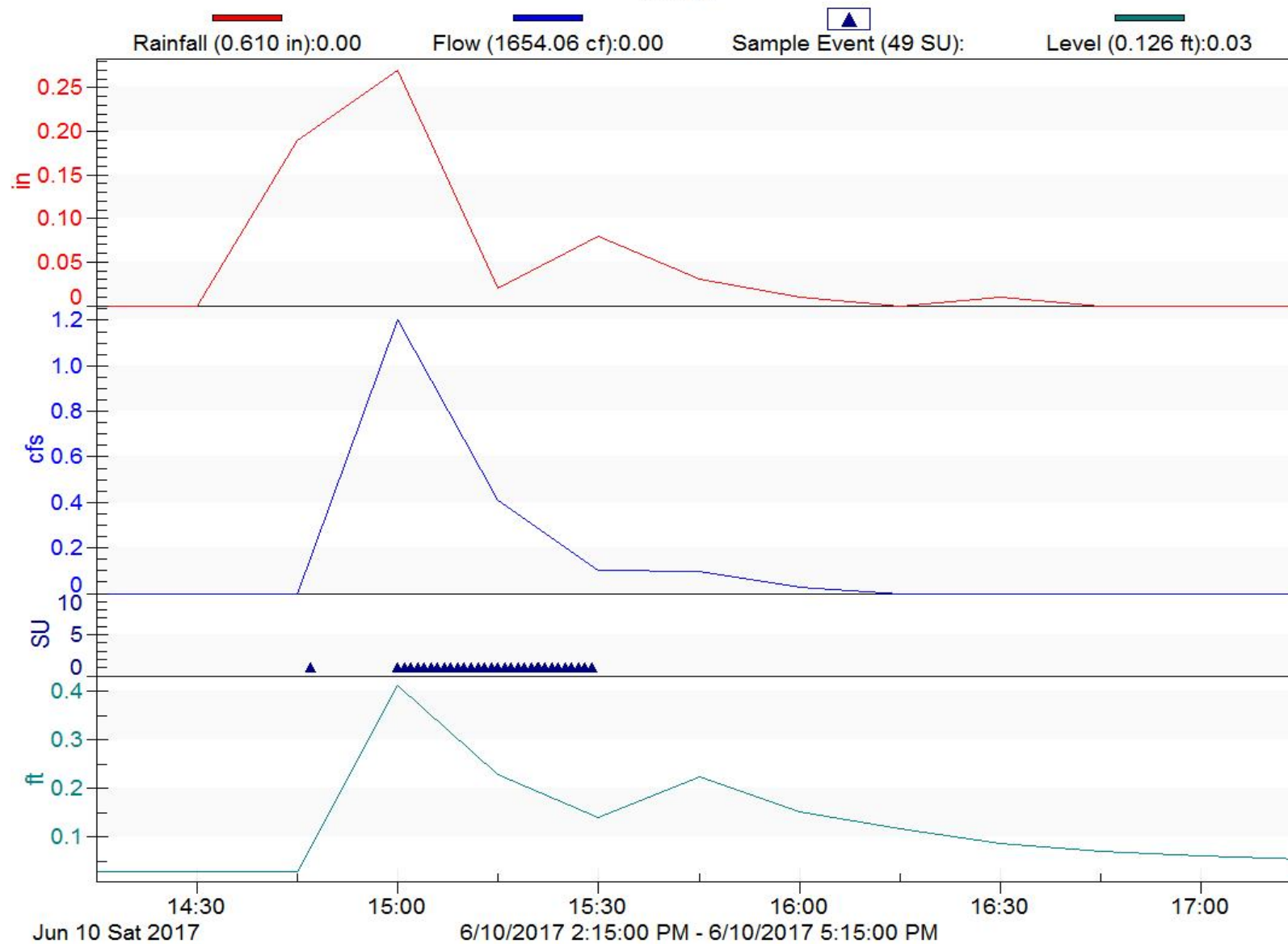
INFLOW 3

Storm 4



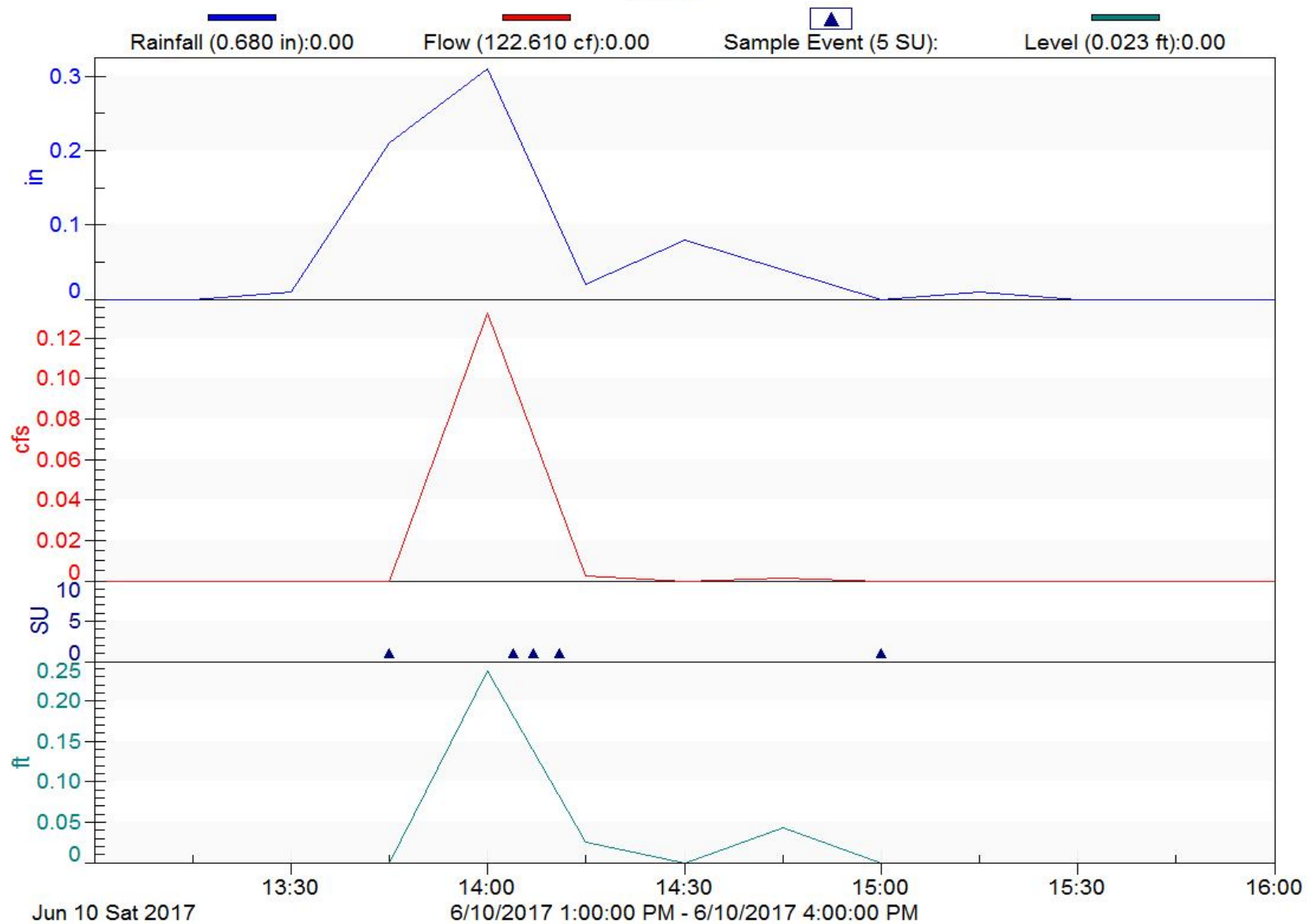
INFLOW 1

Storm 5



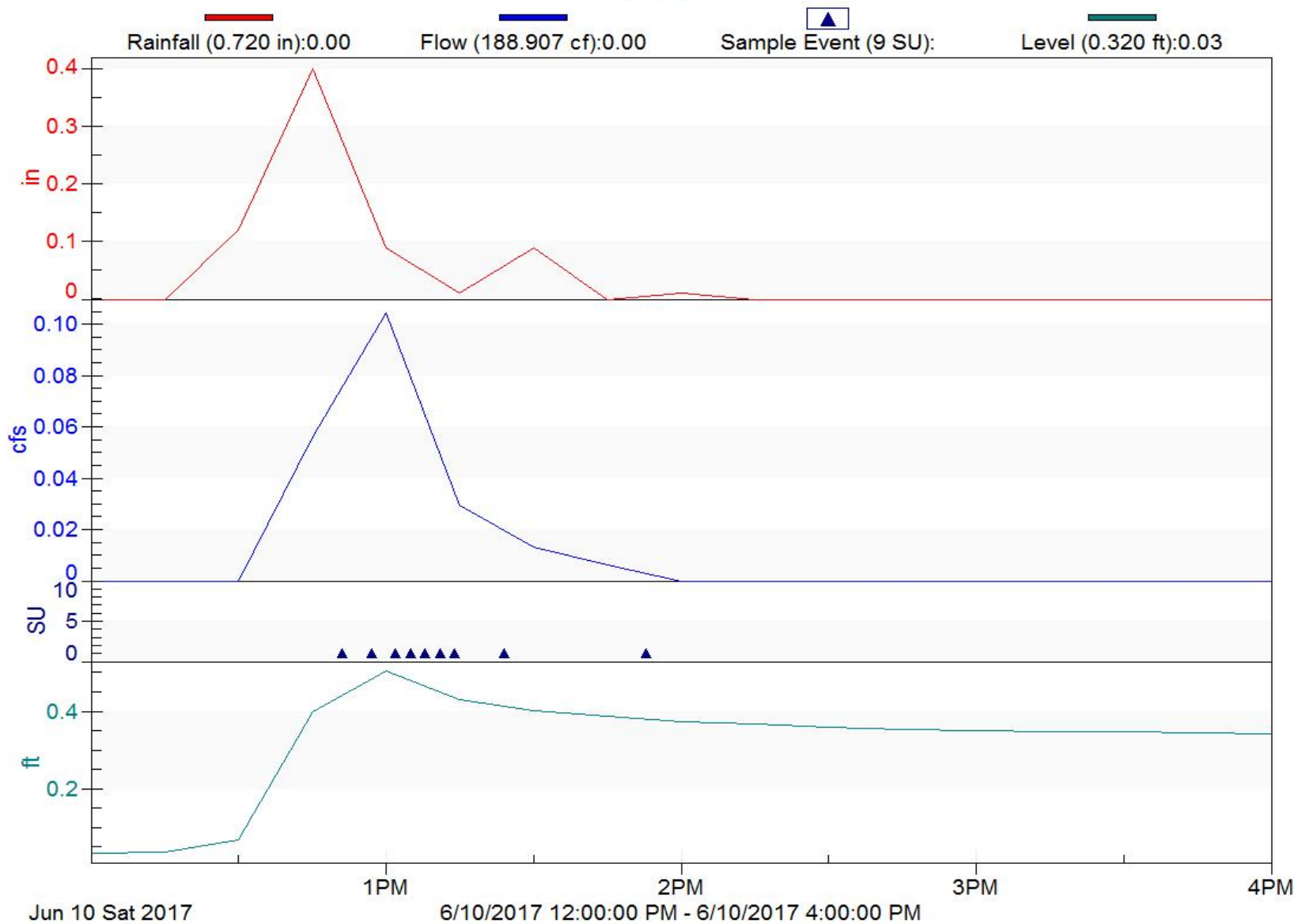
INFLOW 2

Storm 5



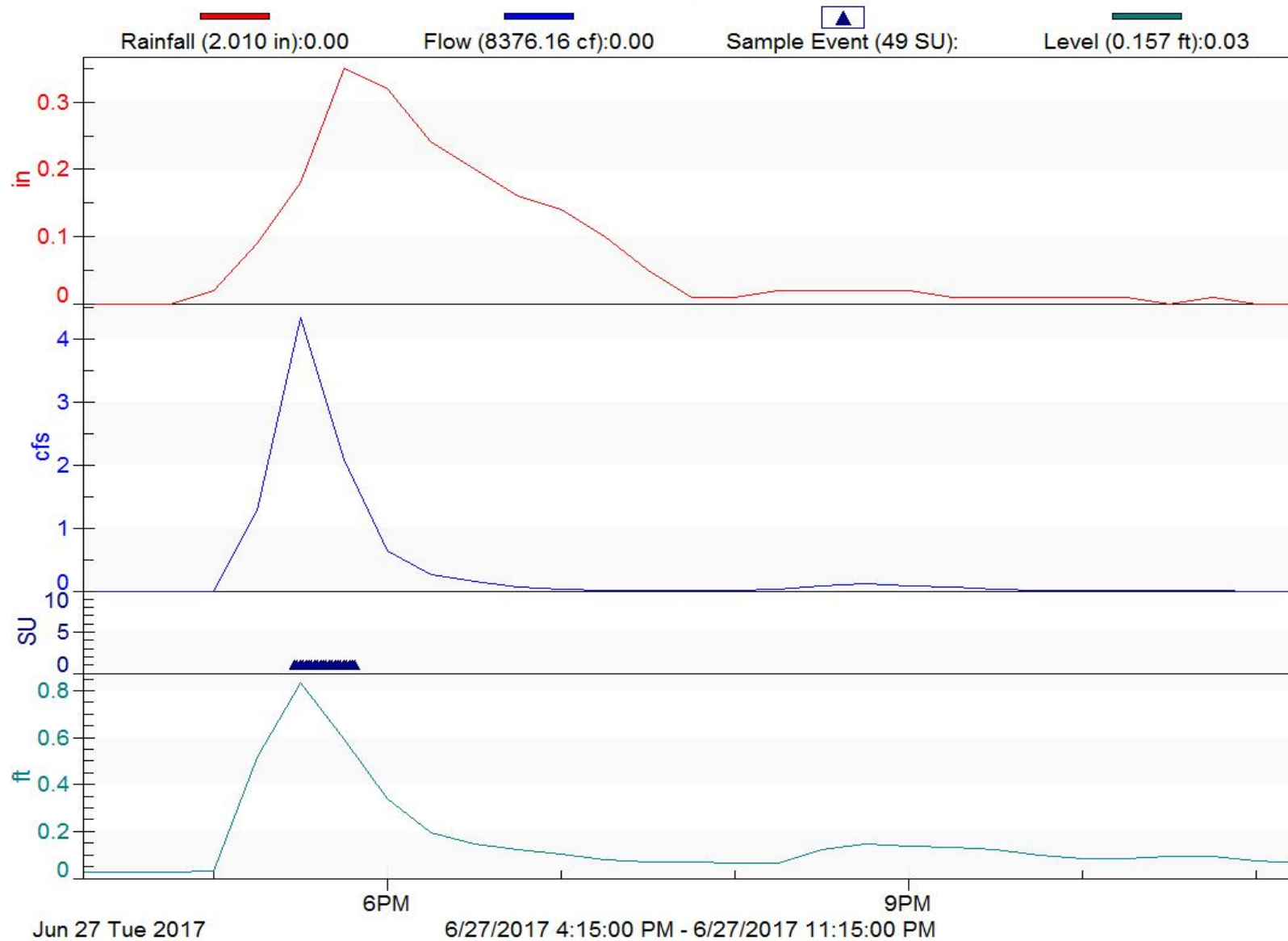
INFLOW 3

Storm 5



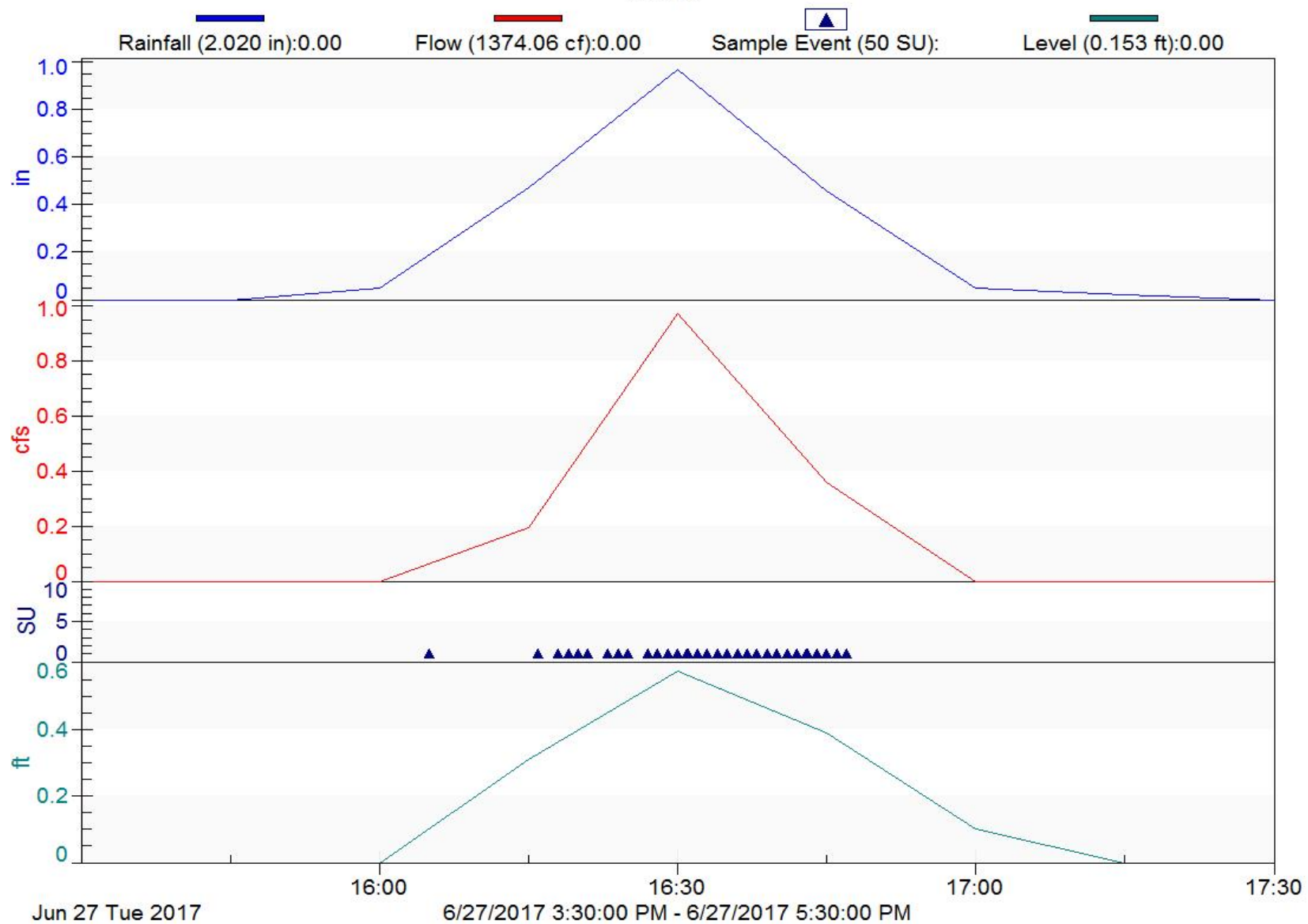
INFLOW 1

Storm 6



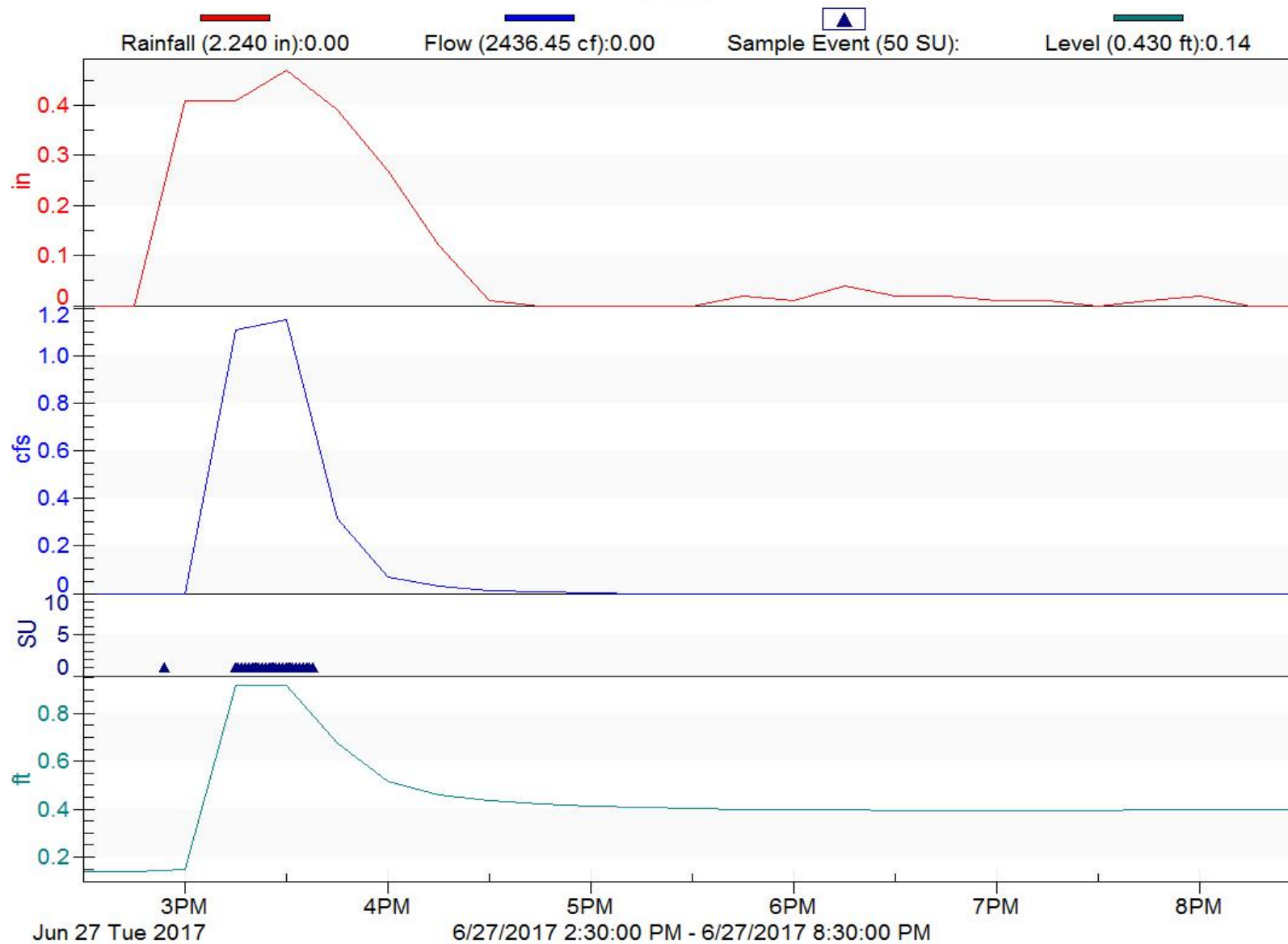
INFLOW 2

Storm 6



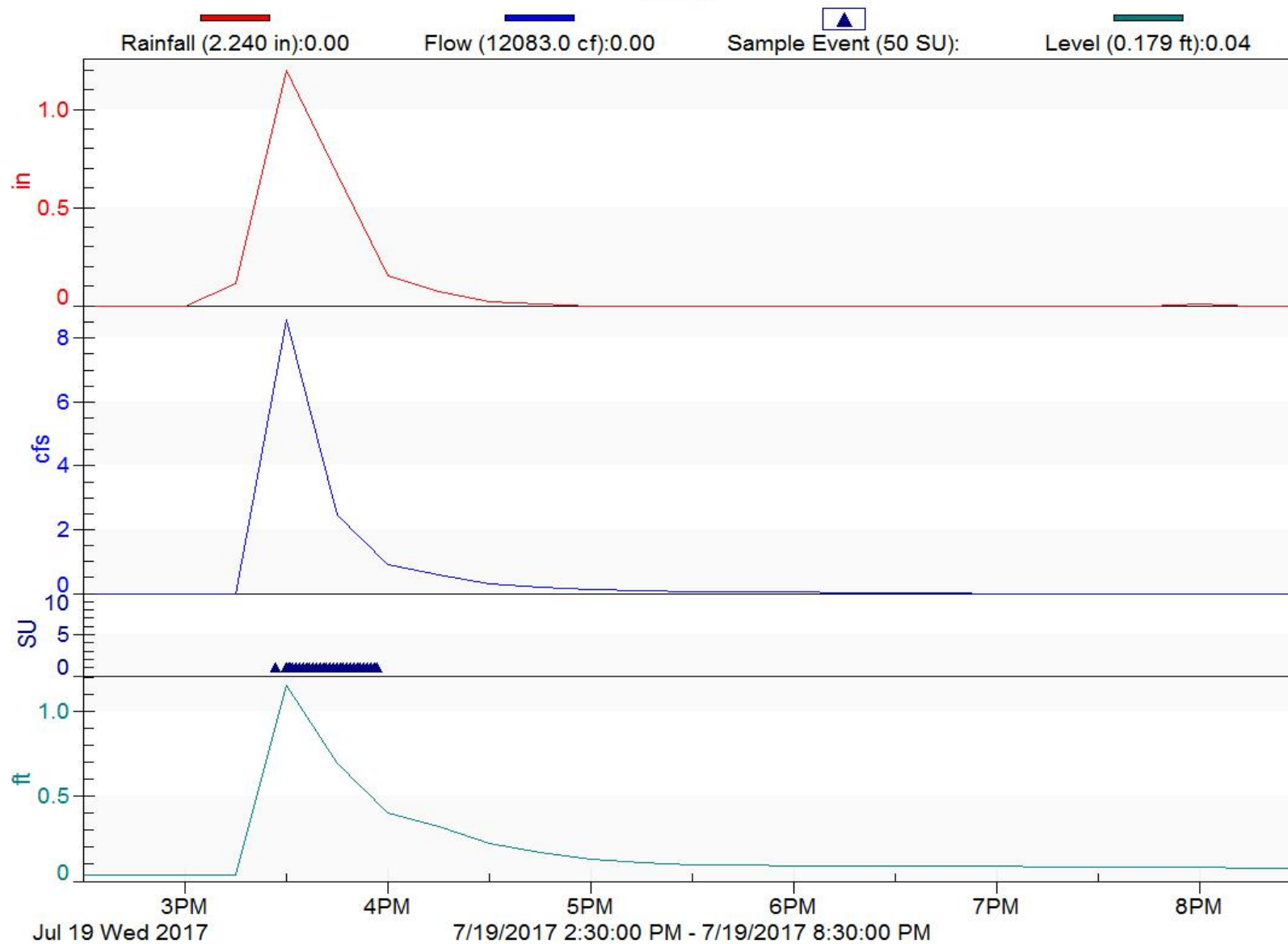
INFLOW 3

Storm 6



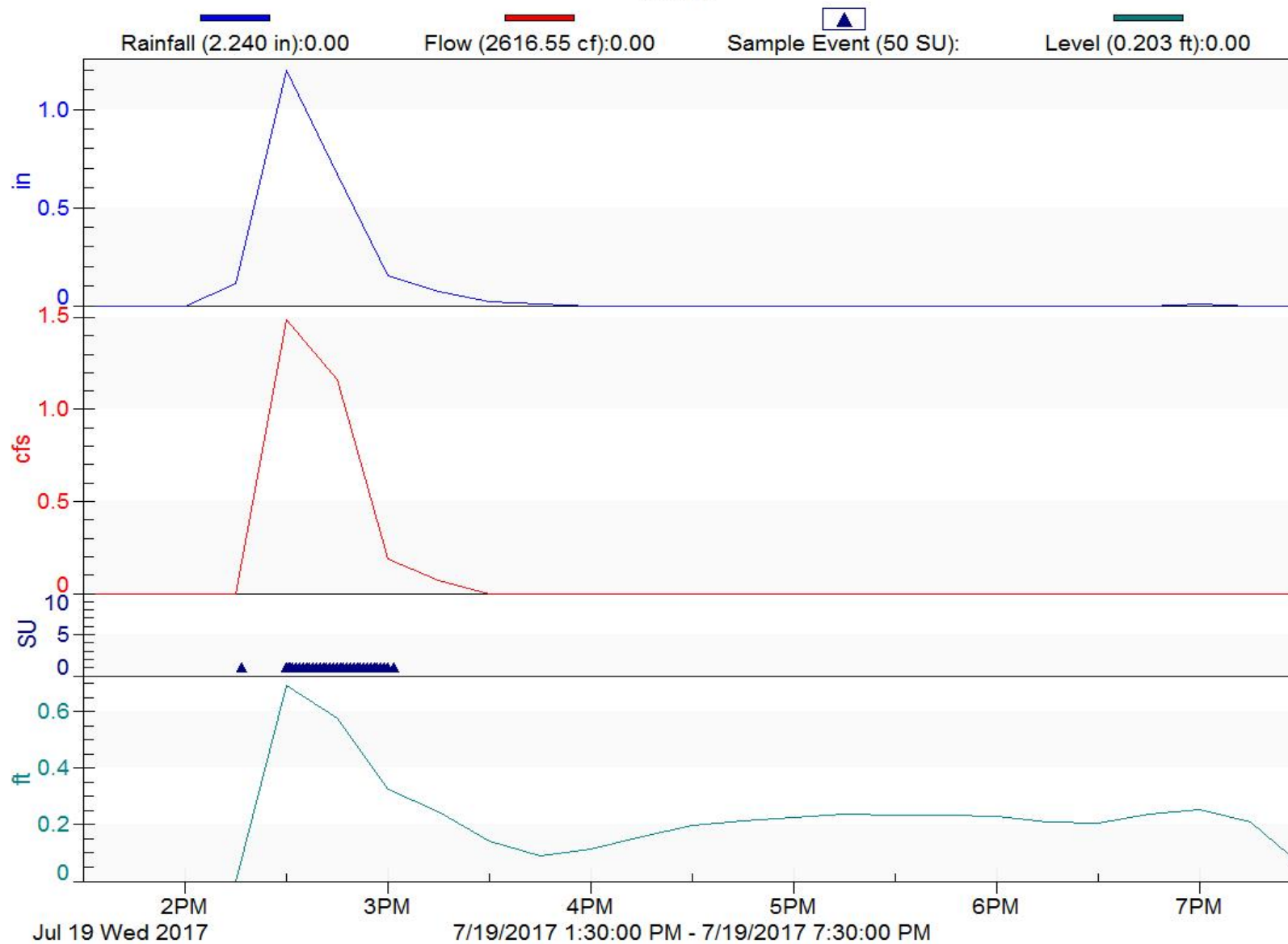
INFLOW 1

Storm 7



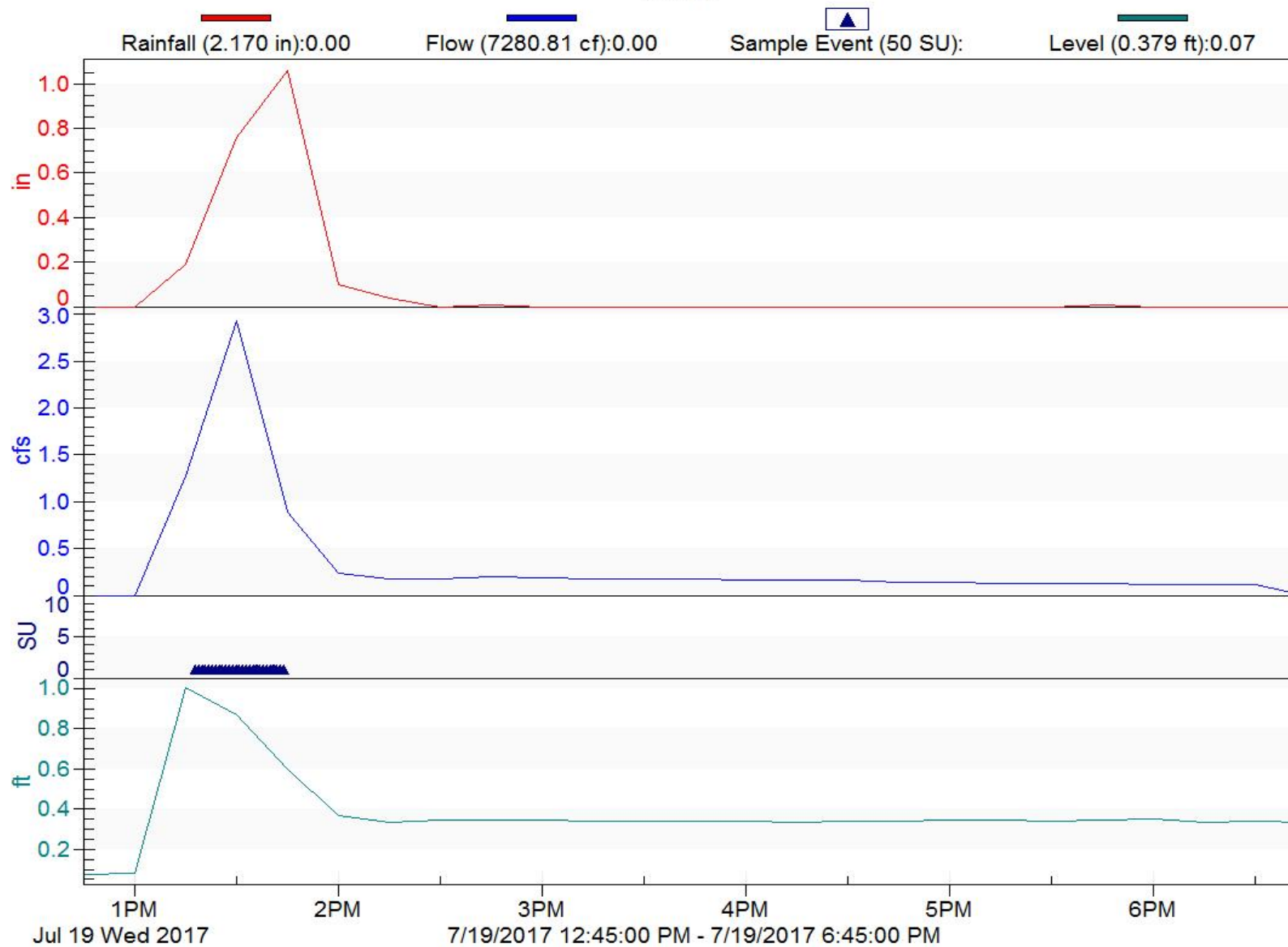
INFLOW 2

Storm 7



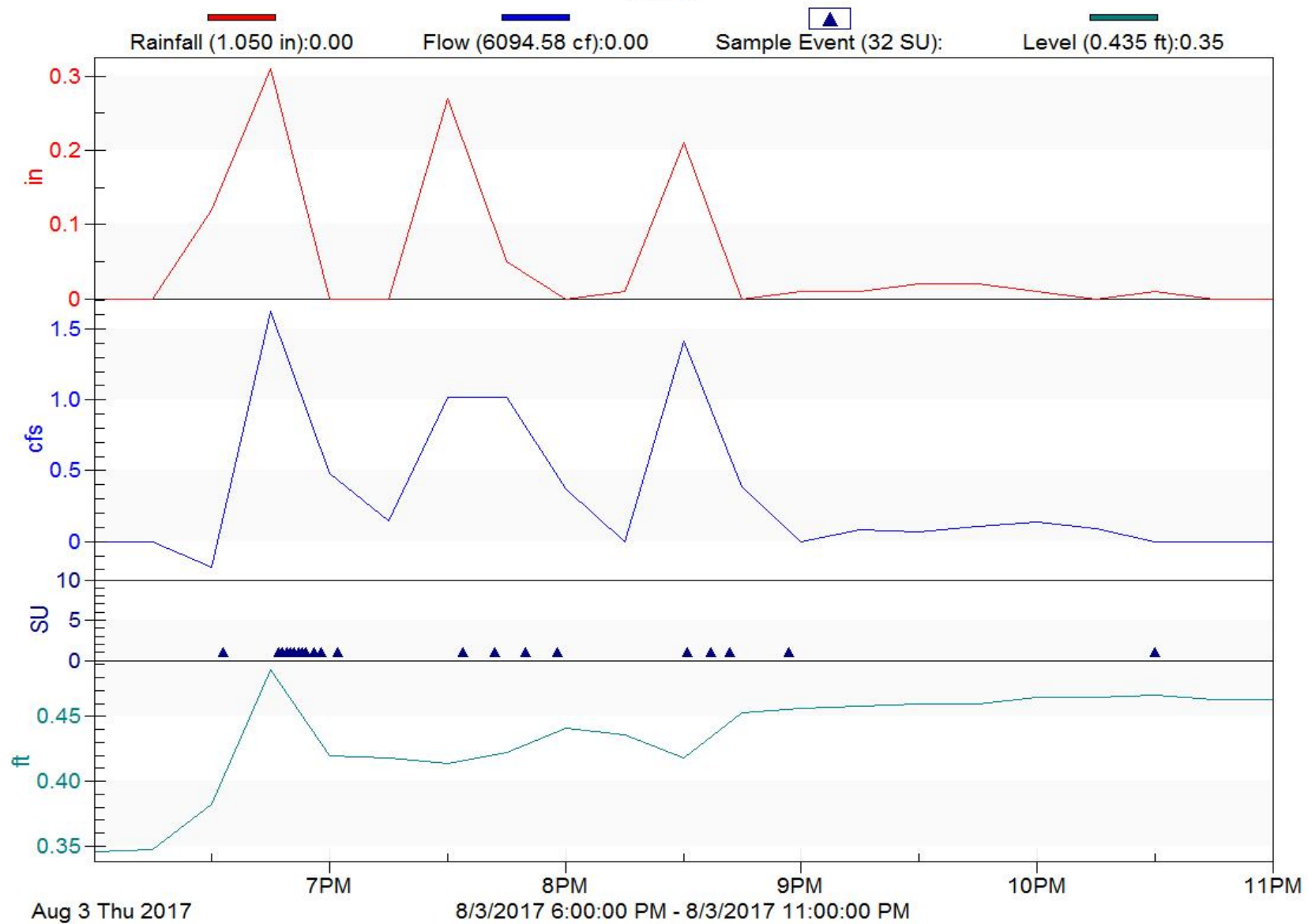
INFLOW 3

Storm 7



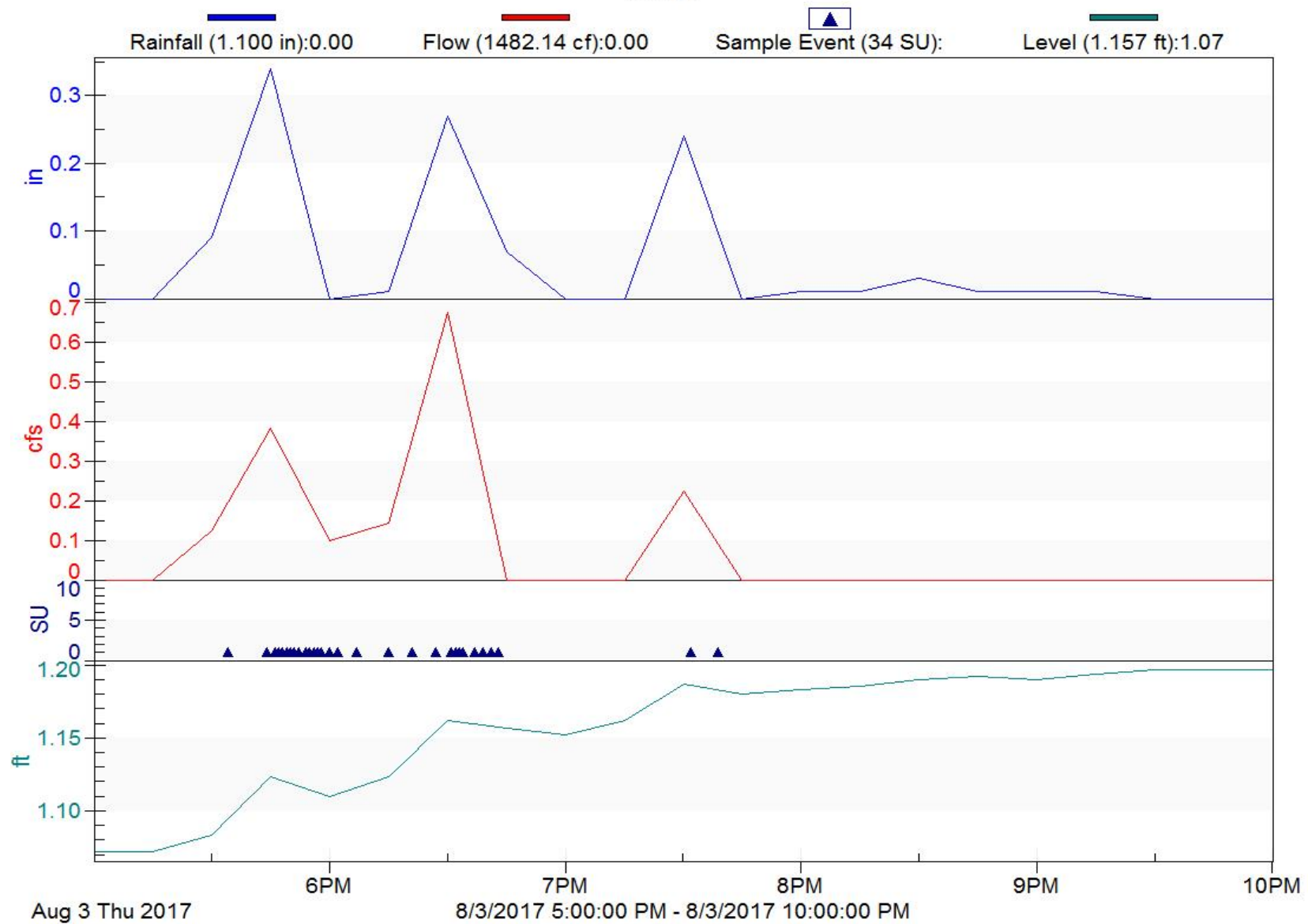
INFLOW 1

Storm 8



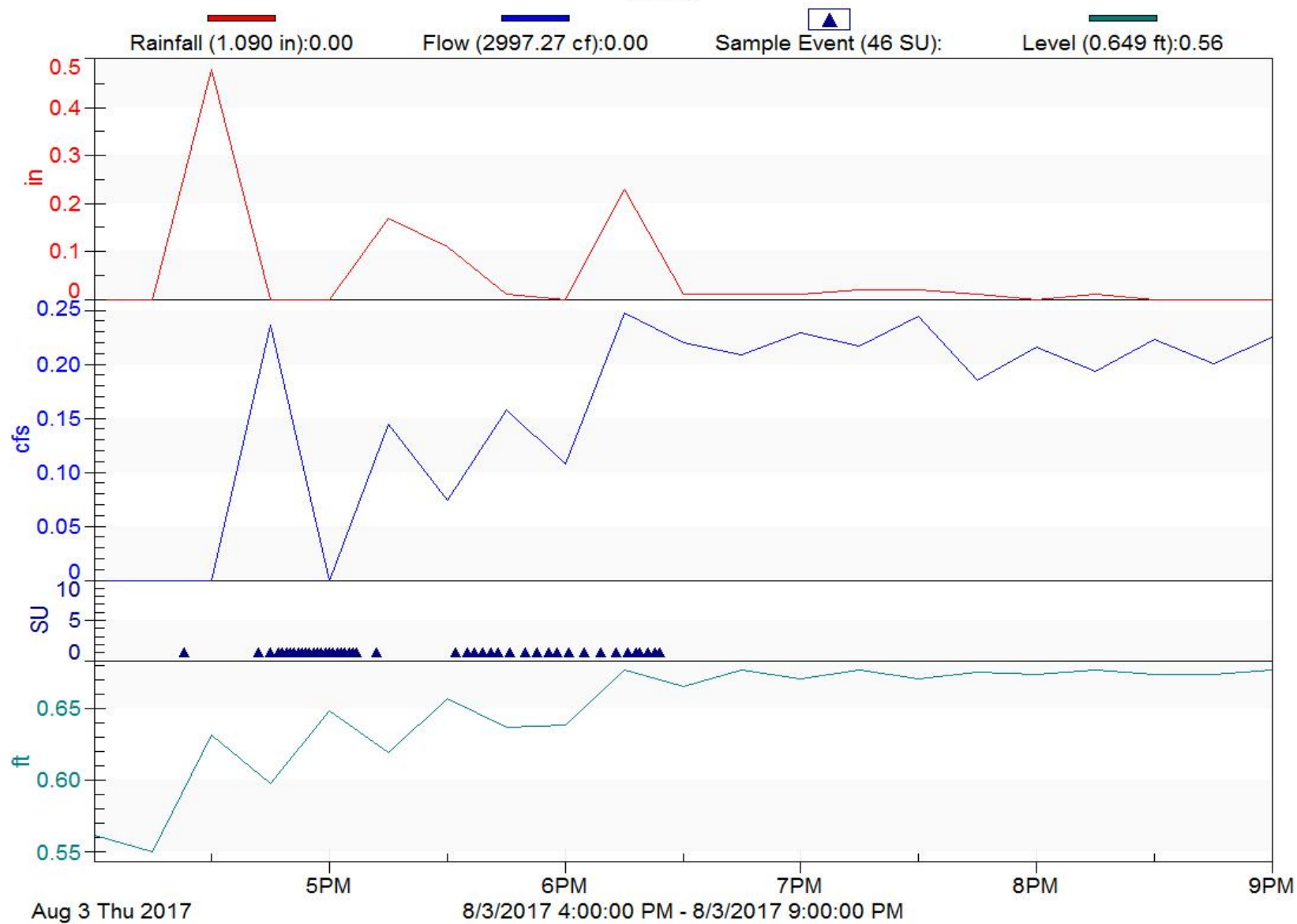
INFLOW 2

Storm 8



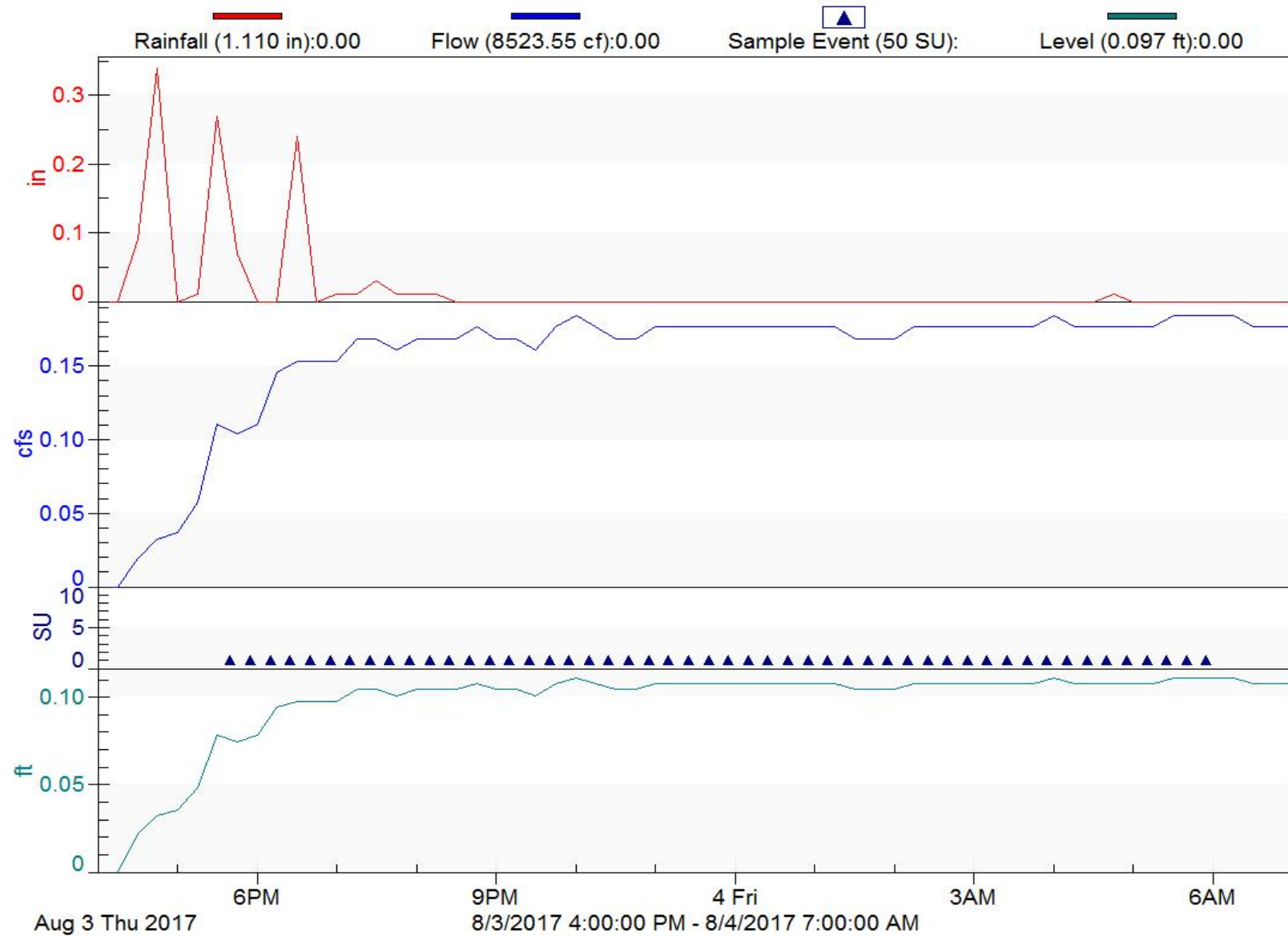
INFLOW 3

Storm 8



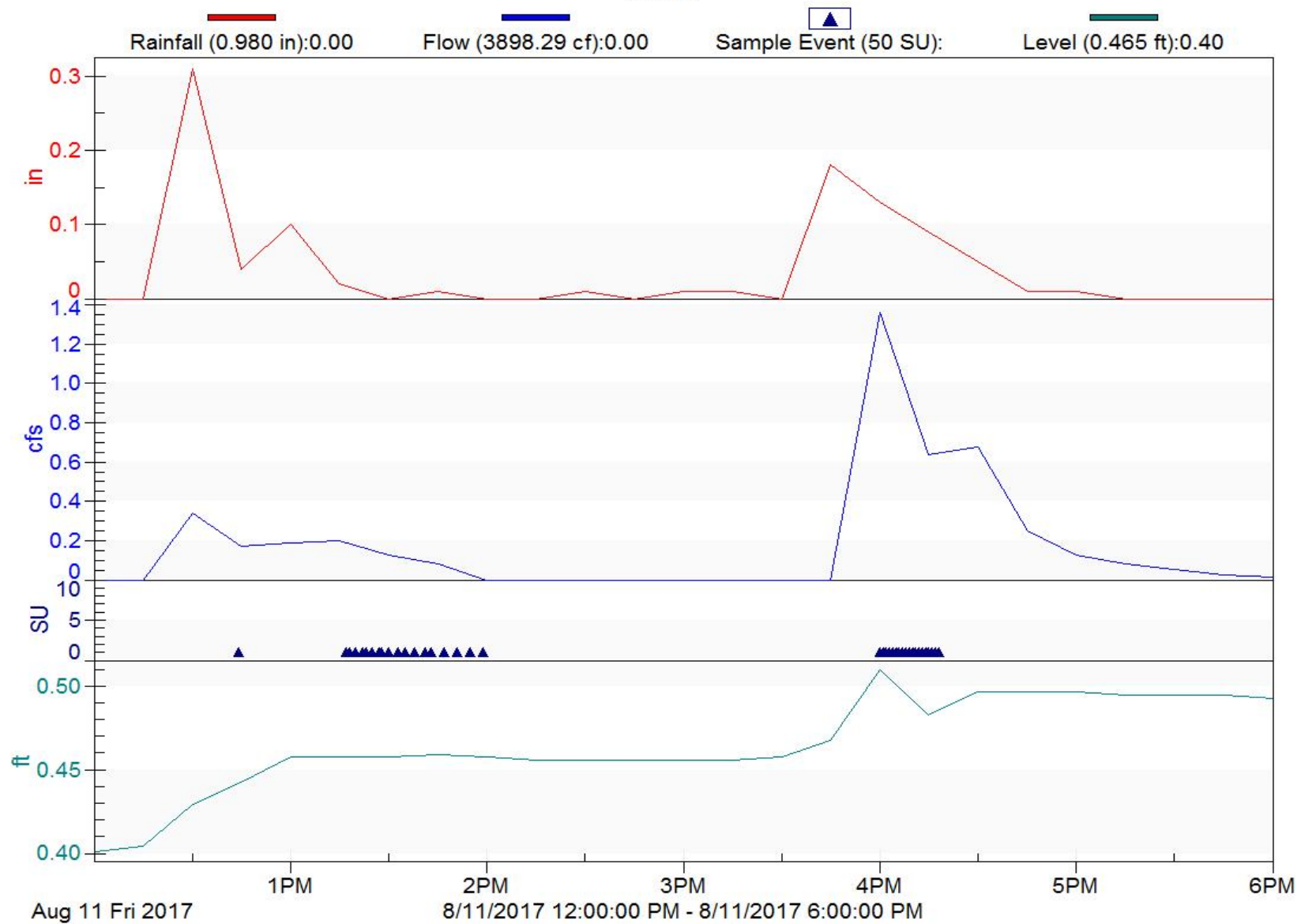
OUTFLOW

Storm 8



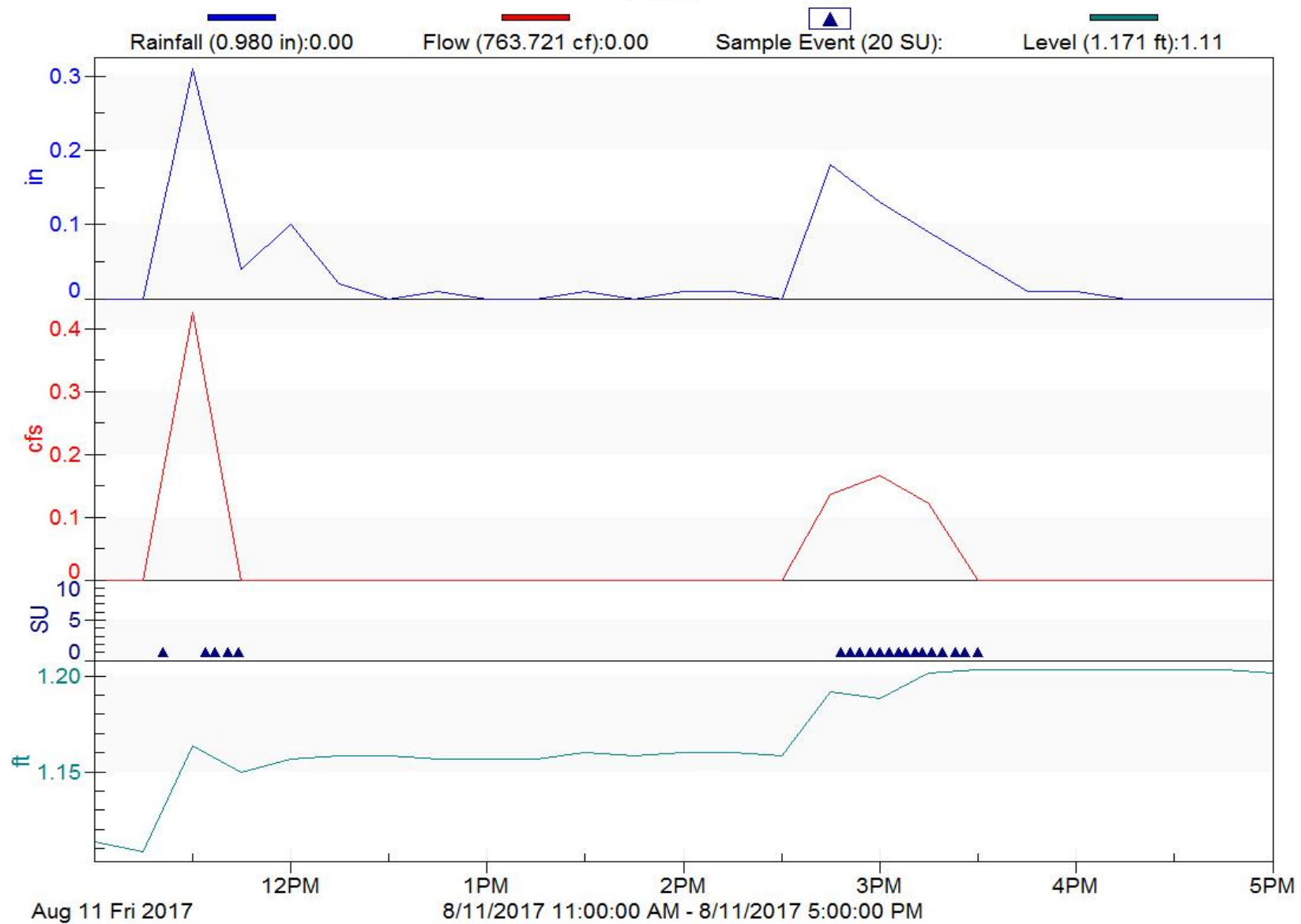
INFLOW 1

Storm 9



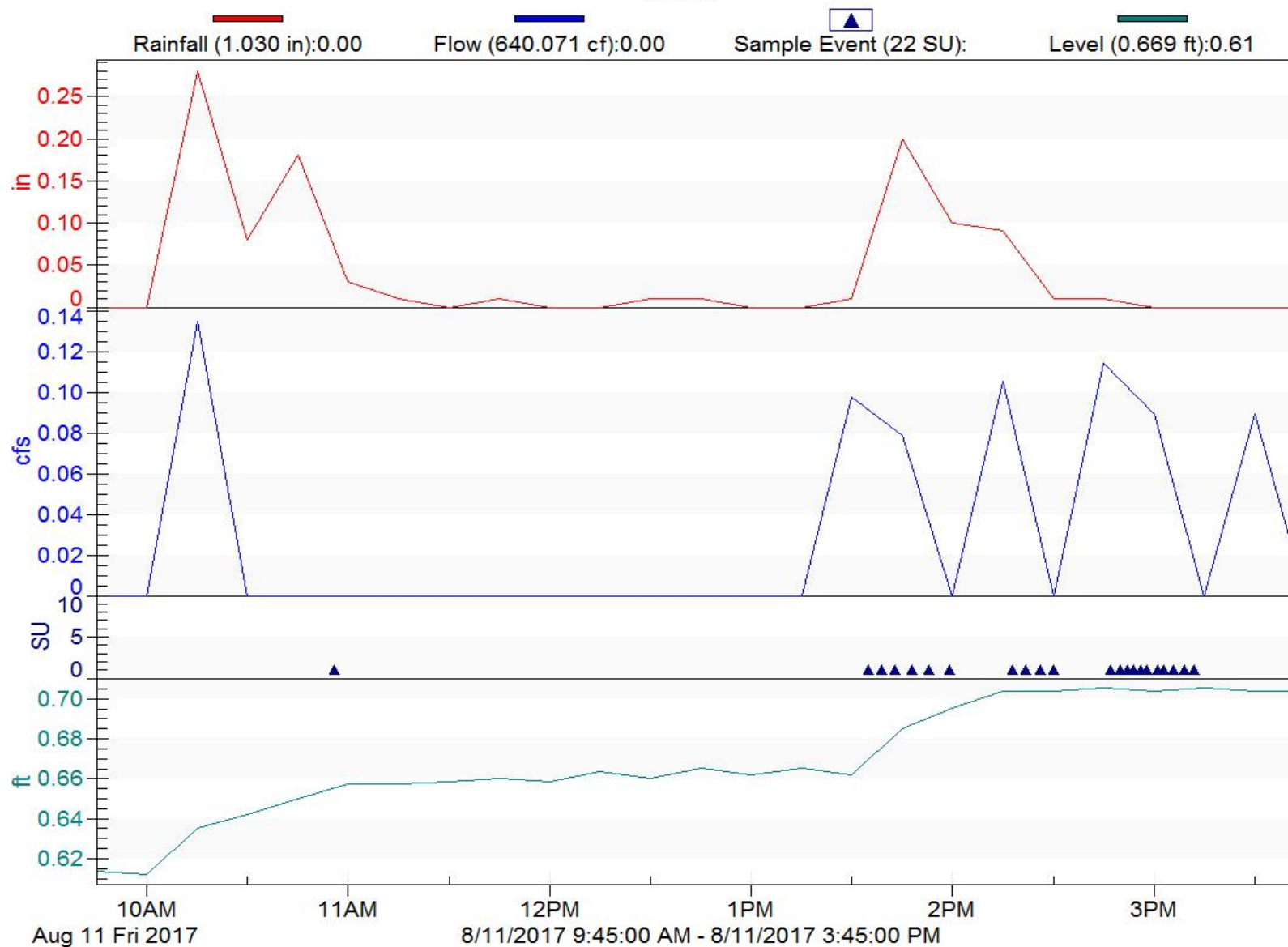
INFLOW 2

Storm 9



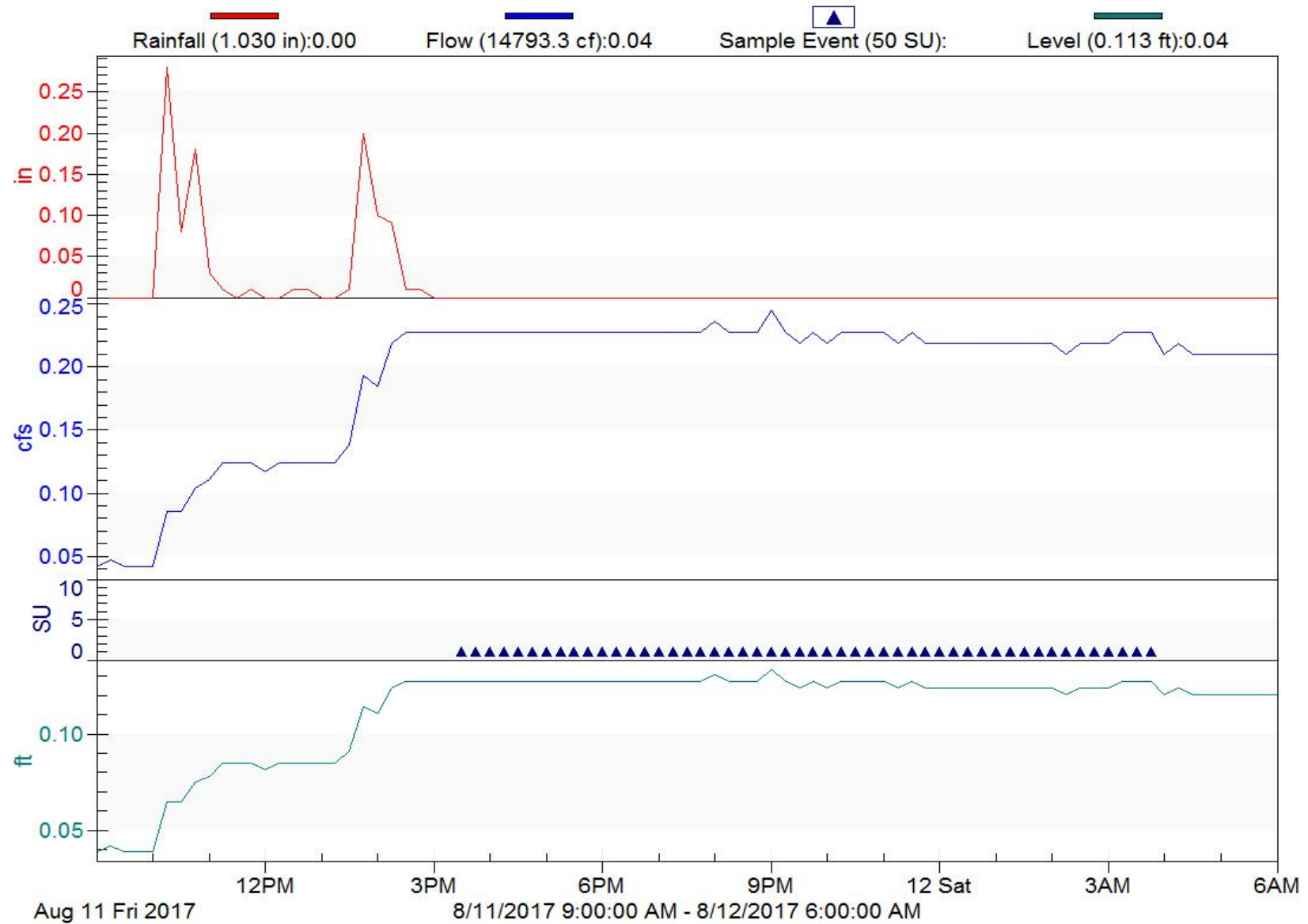
INFLOW 3

Storm 9



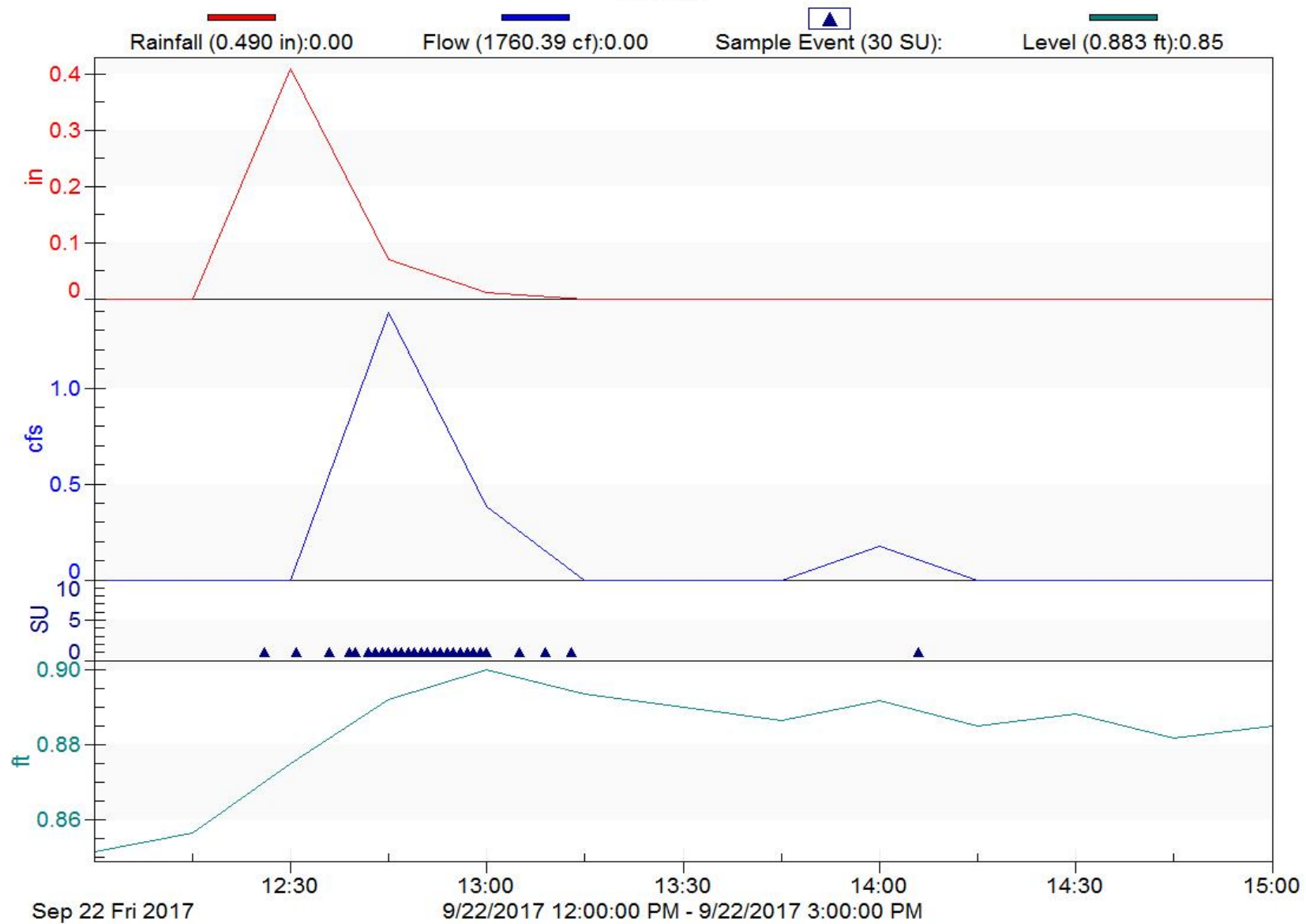
OUTFLOW

Storm 9



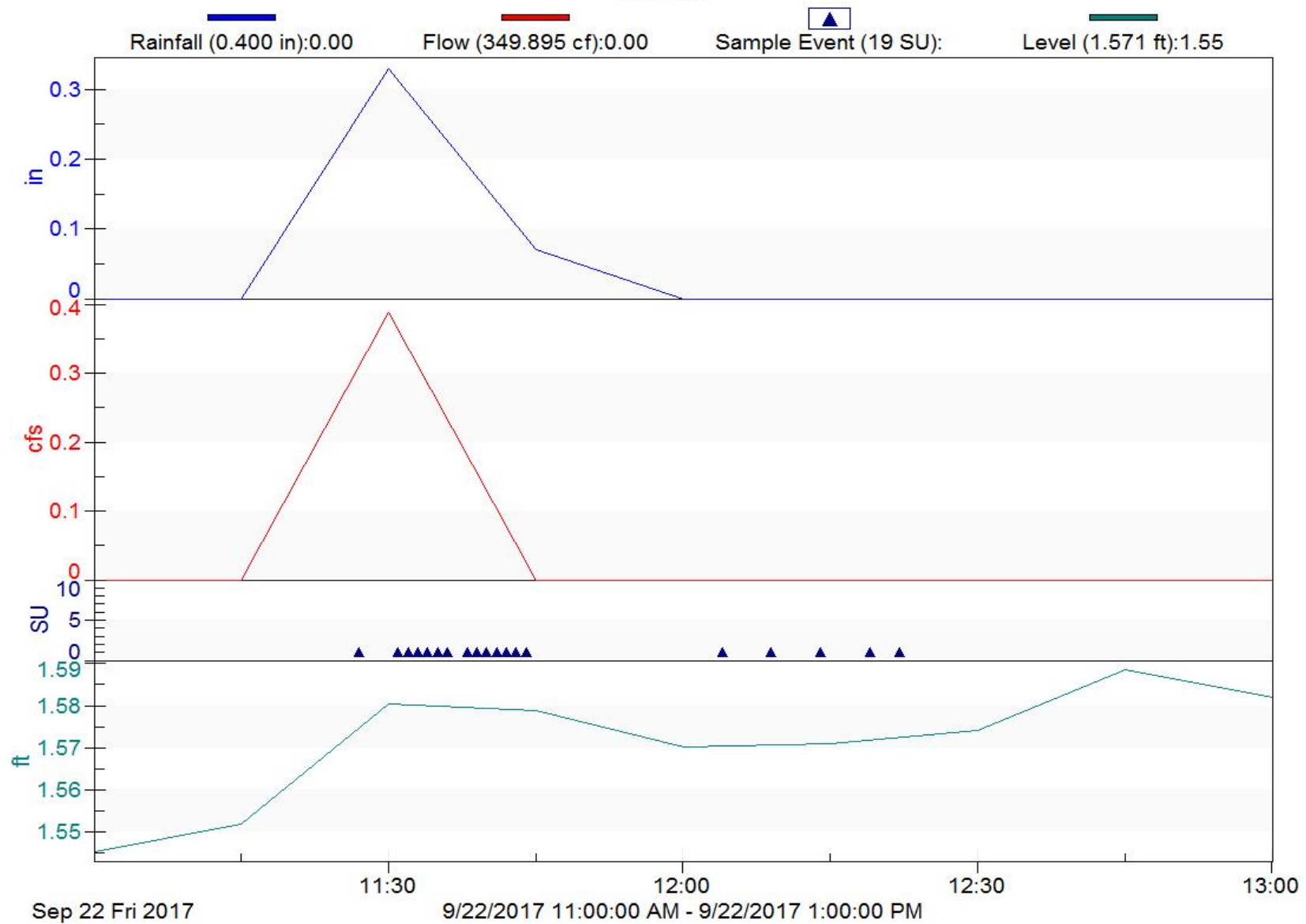
INFLOW 1

Storm 10



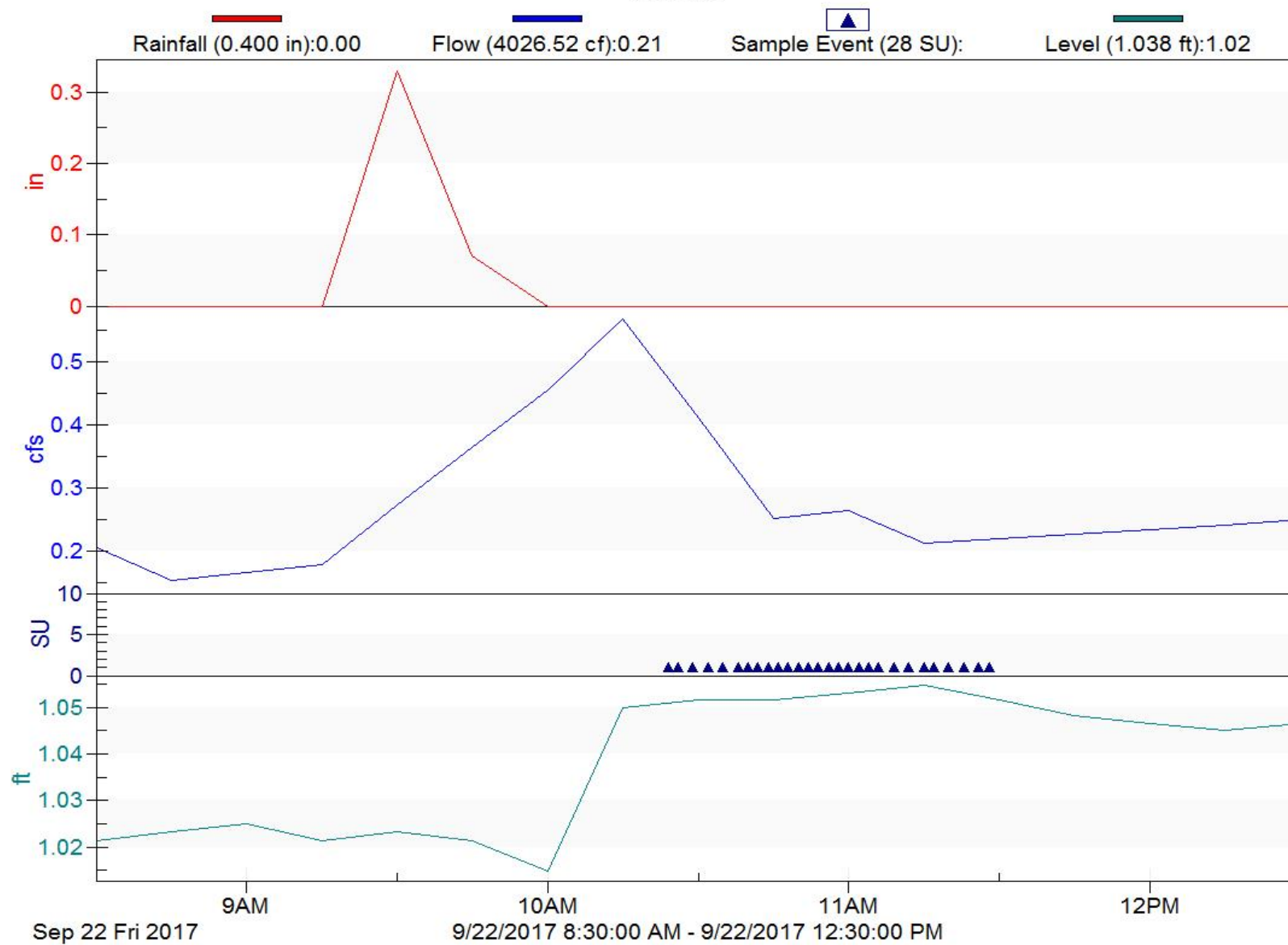
INFLOW 2

Storm 10



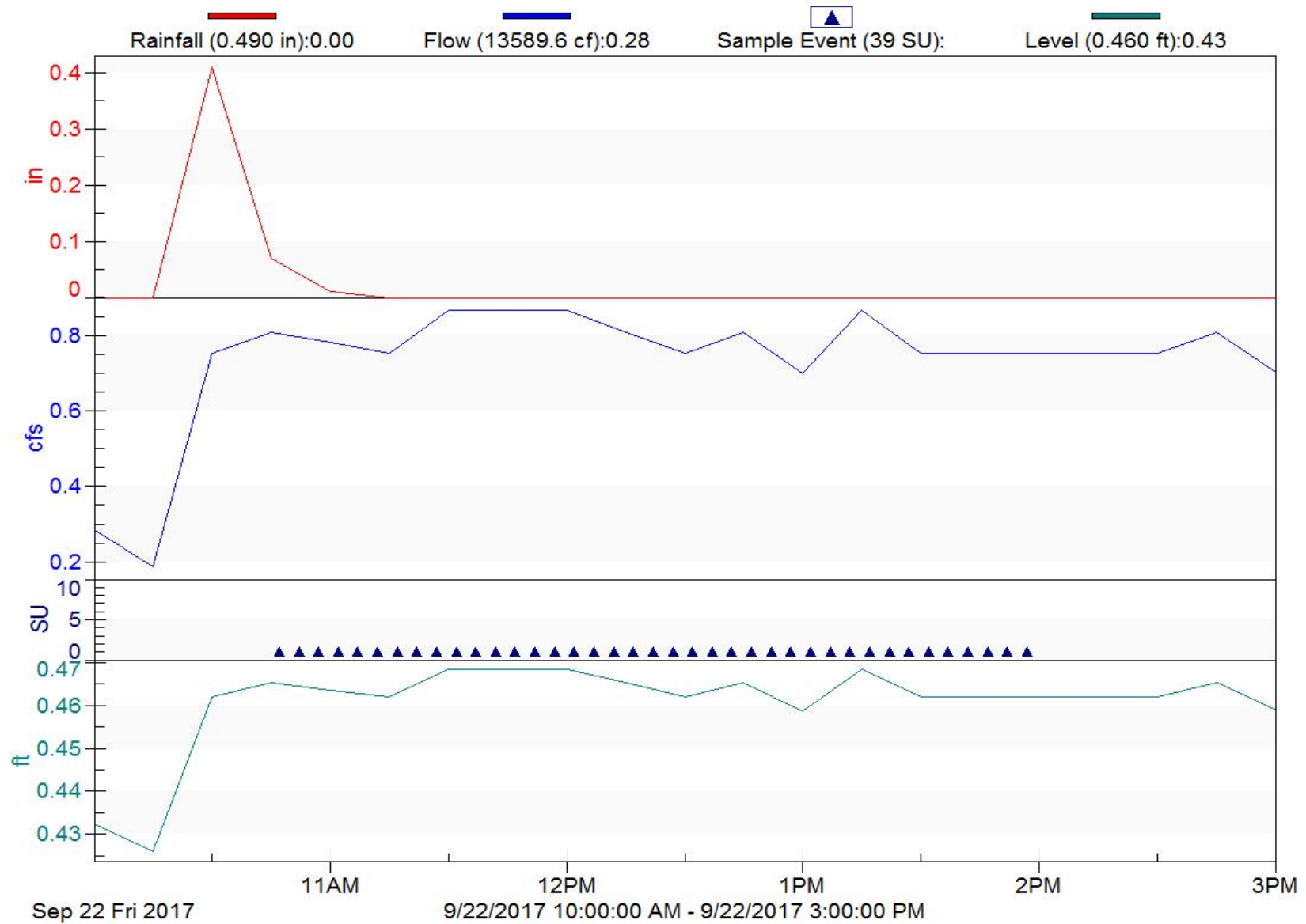
INFLOW 3

Storm 10

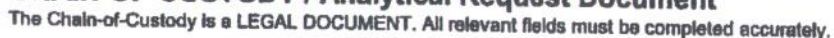


OUTFLOW

Storm 10



Appendix C: Storm Events Sampling Logs



Page : 1 Of 1

Invoice information:

Attention:

Company Name:

Address:

Page Quote:

Page Project Manager: Joe Vondra, jvondra@macmillan.com

Figure 4.

Pace Profile #: A338

Regulatory Agency

State/Location	Year	Rate
Alabama	1990	10.0
Alabama	1991	10.0
Alabama	1992	10.0
Alabama	1993	10.0
Alabama	1994	10.0
Alabama	1995	10.0
Alabama	1996	10.0
Alabama	1997	10.0
Alabama	1998	10.0
Alabama	1999	10.0
Alabama	2000	10.0
Alabama	2001	10.0
Alabama	2002	10.0
Alabama	2003	10.0
Alabama	2004	10.0
Alabama	2005	10.0
Alabama	2006	10.0
Alabama	2007	10.0
Alabama	2008	10.0
Alabama	2009	10.0
Alabama	2010	10.0
Alabama	2011	10.0
Alabama	2012	10.0
Alabama	2013	10.0
Alabama	2014	10.0
Alabama	2015	10.0
Alabama	2016	10.0
Alabama	2017	10.0
Alabama	2018	10.0
Alabama	2019	10.0
Alabama	2020	10.0
Alabama	2021	10.0
Alabama	2022	10.0
Alabama	2023	10.0
Alabama	2024	10.0
Alabama	2025	10.0
Alabama	2026	10.0
Alabama	2027	10.0
Alabama	2028	10.0
Alabama	2029	10.0
Alabama	2030	10.0
Alabama	2031	10.0
Alabama	2032	10.0
Alabama	2033	10.0
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Alabama	2037	10.0
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Alabama	2040	10.0
Alabama	2041	10.0
Alabama	2042	10.0
Alabama	2043	10.0
Alabama	2044	10.0
Alabama	2045	10.0
Alabama	2046	10.0
Alabama	2047	10.0
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Alabama	2074	10.0
Alabama	2075	10.0
Alabama	2076	10.0
Alabama	2077	10.0
Alabama	2078	10.0
Alabama	2079	10.0
Alabama	2080	10.0
Alabama	2081	10.0
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Alabama	2090	10.0
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Alabama	2092	10.0
Alabama	2093	10.0
Alabama	2094	10.0
Alabama	2095	10.0
Alabama	2096	10.0
Alabama	2097	10.0
Alabama	2098	10.0
Alabama	2099	10.0
Alabama	2100	10.0
Alabama	2101	10.0
Alabama	2102	10.0
Alabama	2103	10.0
Alabama	2104	10.0
Alabama	2105	10.0
Alabama	2106	10.0
Alabama	2107	10.0
Alabama	2108	10.0

F

[illegible]



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # : 140815

Date : 1/23/17

Time: 12:55 PM

Organization: AEI

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow-1	1	12:55p	18	22°C					

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors

☐☒

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		

Velocity Verification Readings

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

☐ Adjusted Level to:☐ Cleared Debris from Sensor☐ Replaced Sample Container☐ Program Disabled☐ Waiting for Phone Command☐ Checked Cables/Antennas☐ Dried Moisture from Refrigerator☐ Checked Battery Voltage☐ Changed Battery☐ Cleared Rain Gauge

Maintenance Notes:

SIGNATURES

Data Collected by:

Date: 1/23/17

Reviewed by:

Date:

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :	140815	Date :	1/23/17	Time:	1330	Organization:	AEI	Trip:	Maintenance / Sampling
--------------------	--------	--------	---------	-------	------	---------------	-----	-------	------------------------

SAMPLING DATA

FIELD PARAMETERS

Blank Label:	Blank Container ID:				METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow-2	1	13:50	38	1.2					
Auto Sampler ***	Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)								
Warnings									
☐									

EQUIPMENT CONDITION REPORT*

Time:		Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →		≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station		Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
										Y / N		
Velocity Verification Readings			Meter: OTT MF Pro			☐ Adjusted Level to:		☐ Checked Cables/Antennas				
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐ Cleared Debris from Sensor		☐ Dried Moisture from Refrigerator				
1.			9.			☐ Replaced Sample Container		☐ Checked Battery Voltage				
2.			10.			☐ Program Disabled		☐ Changed Battery				
3.			11.			☐ Waiting for Phone Command		☐ Cleared Rain Gauge				
4.			12.			Maintenance Notes:						
5.			13.									
6.			14.									
7.			15.									
8.			16.									

SIGNATURES

Data Collected by:	<i>[Signature]</i>	Date:	1/23/17
Reviewed by:	<i>[Signature]</i>	Date:	1/24/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :	140815	Date :	1/23/17	Time:	13:14:10	Organization:	AEI	Trip:	Maintenance / <u>Sampling</u>
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 3	1	14:10	50	2.6					
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)	Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps	≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol. Pump Vol.
									Y / N	
Velocity Verification Readings			Meter: OTT MF Pro			☐ Adjusted Level to: ☐ Cleared Debris from Sensor ☐ Replaced Sample Container ☐ Program Disabled ☐ Waiting for Phone Command			☐ Checked Cables/Antennas ☐ Dried Moisture from Refrigerator ☐ Checked Battery Voltage ☐ Changed Battery ☐ Cleared Rain Gauge	
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	Maintenance Notes:				
1.			9.							
2.			10.							
3.			11.							
4.			12.							
5.			13.							
6.			14.							
7.			15.							
8.			16.							

SIGNATURES

Data Collected by:	<i>Hyatt Dykes</i>	Date:	1/23/17
Reviewed by:	<i>[Signature]</i>	Date:	1/24/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :	140815	Date :	1/23/17	Time:	14:40	Organization:	ACI	Trip:	Maintenance / Sampling
--------------------	--------	--------	---------	-------	-------	---------------	-----	-------	------------------------

SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Output	1	14:40	1	4					
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)	Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps	≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol. Pump Vol.
									Y / N	

Velocity Verification Readings			Meter: OTT MF Pro			☐ Adjusted Level to: ☐ Cleared Debris from Sensor ☐ Replaced Sample Container ☐ Program Disabled ☐ Waiting for Phone Command		☐ Checked Cables/Antennas ☐ Dried Moisture from Refrigerator ☐ Checked Battery Voltage ☐ Changed Battery ☐ Cleared Rain Gauge	
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	Maintenance Notes:			
1.			9.						
2.			10.						
3.			11.						
4.			12.						
5.			13.						
6.			14.						
7.			15.						
8.			16.						

SIGNATURES

Data Collected by:	<i>Kylynne Pugh</i>	Date:	1/23/17
Reviewed by:	<i>Lee</i>	Date:	1/24/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A

Required Client Information:

Company: Applied Ecology, Inc.
Address: 981 E Eau Gallie Blvd
Suite E, #101, Indian Harbour Beach, FL 32937
Email:
Phone: Fax:
Requested Due Date:

Section B

Required Project Information:

Report To: Claudie Listopod, Ph.D.
Copy To:
Purchase Order #:
Project Name: Rockledge
Project #:

Section C

Invoice Information:

Attention:
Company Name:
Address:
Pace Quote:
Pace Project Manager: joe.vondrick@pacelabs.com
Pace Profile #: 8336

Page: 1 Of 1

Regulatory Agency

State / Location

FL

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample IDs must be unique	MATRIX Drinking Water Water Waste Water Product Solid/Solid Oil Wipe Air Other Tissue	CODE DW WT WW P SL OL WP AR OT TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Analyses Test Y/N	Requested Analysis Filtered (Y/N)										Residual Chlorine (Y/N)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
						START		END				Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other		Total Suspended Solids 1L	Phosphorus, Ortho	TKN LL-TP NH3 NOx TN	Metals by 200.8/200.7	Fecal Coliform MF	Oil and Grease by 1664																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					

ADDITIONAL COMMENTS		RELINQUISHED BY / AFFILIATION		DATE	TIME	ACCEPTED BY / AFFILIATION		DATE	TIME	SAMPLE CONDITIONS	
station IDs: Inflow 1 SAMPLING KIT-EMPTY		AD/Pace		8/18/16	1600	Claudia Listopod / AET		8/20/16	12:00		
		Kayleigh Douglass		2/23/17	9:32	Katie Murrell		2/23/17	12:35	5.4 Y	N Y

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples intact (Y/N)
PRINT Name of SAMPLER:					
SIGNATURE of SAMPLER:					
	DATE Signed:				



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # : 140815

Date : 2-23-17

Time: 9:24

Organization: AEI

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow-1	2	9:24	50	3.4°C					

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		
Velocity Verification Readings		Meter: OTT MF Pro			☐ Adjusted Level to:			☐ Checked Cables/Antennas			
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐ Cleared Debris from Sensor			☐ Dried Moisture from Refrigerator		
1.			9.			☐ Replaced Sample Container			☐ Checked Battery Voltage		
2.			10.			☐ Program Disabled			☐ Changed Battery		
3.			11.			☐ Waiting for Phone Command			☐ Cleared Rain Gauge		
4.			12.			Maintenance Notes:					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:

Date:

2/23/17

Reviewed by:

Date:

2/24/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 140815

Date: 2-23-17

Time: 9:51

Organization: AEC

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow-2	2	9:51	50	23					

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		

Velocity Verification Readings

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	Adjusted Level to:		Checked Cables/Antennas	
1.			9.			☐	Cleared Debris from Sensor	☐	Dried Moisture from Refrigerator
2.			10.			☐	Replaced Sample Container	☐	Checked Battery Voltage
3.			11.			☐	Program Disabled	☐	Changed Battery
4.			12.			☐	Waiting for Phone Command	☐	Cleared Rain Gauge
5.			13.			Maintenance Notes:			
6.			14.						
7.			15.						
8.			16.						

SIGNATURES

Data Collected by:

Date:

2/23/17

Reviewed by:

Date:

2/24/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 140815

Date: 2-23-17

Time: 10:12

Organization: AET

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 3	2	10:12	50	2.3					

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		

Velocity Verification Readings

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	Adjusted Level to:		Checked Cables/Antennas	
1.			9.			☐	Cleared Debris from Sensor	☐	Dried Moisture from Refrigerator
2.			10.			☐	Replaced Sample Container	☐	Checked Battery Voltage
3.			11.			☐	Program Disabled	☐	Changed Battery
4.			12.			☐	Waiting for Phone Command	☐	Cleared Rain Gauge
5.			13.			Maintenance Notes:			
6.			14.						
7.			15.						
8.			16.						

SIGNATURES

Data Collected by:

Date:

2/23/17

Reviewed by:

Date:

2/24/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :	140815	Date : 2-23-17	Time: 10:34	Organization: A&I	Trip: Maintenance	Sampling
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:				METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)	
Outflow	2	10:34	50	20						
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)								
Warnings	Errors									
☐	☐									

EQUIPMENT CONDITION REPORT*

Time:		Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →		≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station		Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
										Y / N		
Velocity Verification Readings			Meter: OTT MF Pro			☐	Adjusted Level to:		☐	Checked Cables/Antennas		
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐	Cleared Debris from Sensor		☐	Dried Moisture from Refrigerator		
1.			9.			☐	Replaced Sample Container		☐	Checked Battery Voltage		
2.			10.			☐	Program Disabled		☐	Changed Battery		
3.			11.			☐	Waiting for Phone Command		☐	Cleared Rain Gauge		
4.			12.			Maintenance Notes:						
5.			13.									
6.			14.									
7.			15.									
8.			16.									

SIGNATURES

Data Collected by: <i>Kyle Dwyer</i>	Date: 2/23/17
Reviewed by: <i>Lee</i>	Date: 2/24/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # : 140815

Date : 4/6/17

Time: 8:35

Organization: AEI

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 1	3	8:35	3	1.4					
Auto Sampler *** Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)									
Warnings	Errors								
☐	☒								

EQUIPMENT CONDITION REPORT*

Time:		Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →		≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station		Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
										Y / N		
Velocity Verification Readings			Meter: OTT MF Pro			☐	Adjusted Level to:		☐	Checked Cables/Antennas		
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐	Cleared Debris from Sensor		☐	Dried Moisture from Refrigerator		
1.			9.			☐	Replaced Sample Container		☐	Checked Battery Voltage		
2.			10.			☐	Program Disabled		☐	Changed Battery		
3.			11.			☐	Waiting for Phone Command		☐	Cleared Rain Gauge		
4.			12.			Maintenance Notes:						
5.			13.									
6.			14.									
7.			15.									
8.			16.									

SIGNATURES

Data Collected by:

Hyphyl Dykstra

Date: 4/6/17

Reviewed by:

Lee Ho

Date: 4/7/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # : 140815

Date : 4/6/17

Time: 8:58

Organization: AEI

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 2	3	8:58	39	1.1					

Auto Sampler ***

Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		

Velocity Verification Readings

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	Adjusted Level to:		Checked Cables/Antennas	
1.			9.			☐	Cleared Debris from Sensor	☐	Dried Moisture from Refrigerator
2.			10.			☐	Replaced Sample Container	☐	Checked Battery Voltage
3.			11.			☐	Program Disabled	☐	Changed Battery
4.			12.			☐	Waiting for Phone Command	☐	Cleared Rain Gauge
5.			13.			Maintenance Notes:			
6.			14.						
7.			15.						
8.			16.						

SIGNATURES

Data Collected by:

Date: 4/6/17

Reviewed by:

Date: 4/7/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # : 140815

Date : 4/6/17

Time: 9:20

Organization: AEI

Trip: Maintenance Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 3	3	9:20	44	0.7°C	0.7°C				

Auto Sampler ***

Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		

Velocity Verification Readings

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	Adjusted Level to:		Checked Cables/Antennas	
1.			9.			☐	Cleared Debris from Sensor	☐	Dried Moisture from Refrigerator
2.			10.			☐	Replaced Sample Container	☐	Checked Battery Voltage
3.			11.			☐	Program Disabled	☐	Changed Battery
4.			12.			☐	Waiting for Phone Command	☐	Cleared Rain Gauge
5.			13.			Maintenance Notes:			
6.			14.						
7.			15.						
8.			16.						

SIGNATURES

Data Collected by: *[Signature]*

Date: 4/6/17

Reviewed by: *[Signature]*

Date: 4/7/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # : 140815

Date : 4/6/17

Time: 9:54

Organization: AEI

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
OutFlow	3	9:54	29	0.8					

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		

Velocity Verification Readings

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

☐ Adjusted Level to:☐ Cleared Debris from Sensor☐ Replaced Sample Container☐ Program Disabled☐ Waiting for Phone Command☐ Checked Cables/Antennas☐ Dried Moisture from Refrigerator☐ Checked Battery Voltage☐ Changed Battery☐ Cleared Rain Gauge

Maintenance Notes:

SIGNATURES

Data Collected by:

Date: 4/6/17

Reviewed by:

Date: 4/2/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :	140815	Date :	5/25/17	Time:	10:20	Organization:	AEF	Trip:	Maintenance / Sampling
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 1	4	10:30	4	2.2					
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2) Inflow 1 and 2 were combined into Total Inflow							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:		Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →		≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station		Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
										Y / N		
Velocity Verification Readings			Meter: OTT MF Pro			☐	Adjusted Level to:		☐	Checked Cables/Antennas		
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐	Cleared Debris from Sensor		☐	Dried Moisture from Refrigerator		
1.			9.			☐	Replaced Sample Container		☐	Checked Battery Voltage		
2.			10.			☐	Program Disabled		☐	Changed Battery		
3.			11.			☐	Waiting for Phone Command		☐	Cleared Rain Gauge		
4.			12.			Maintenance Notes:						
5.			13.									
6.			14.									
7.			15.									
8.			16.									

SIGNATURES

Data Collected by:	<i>Myah D. Dwyer</i>	Date:	5/25/17
Reviewed by:	<i>Cecilia</i>	Date:	5/26/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :	140815	Date :	5/25/2017	Time:	10:30	Organization:	AEI	Trip:	Maintenance / <u>Sampling</u>
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 2	4	10:42	16	0.9°C					
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors	Inflow 1 + 2 were combined for Total Inflow.							
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		
Velocity Verification Readings			Meter: OTT MF Pro			☐ Adjusted Level to: ☐ Cleared Debris from Sensor ☐ Replaced Sample Container ☐ Program Disabled ☐ Waiting for Phone Command			☐ Checked Cables/Antennas ☐ Dried Moisture from Refrigerator ☐ Checked Battery Voltage ☐ Changed Battery ☐ Cleared Rain Gauge		
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	Maintenance Notes:					
1.			9.								
2.			10.								
3.			11.								
4.			12.								
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:	<i>[Signature]</i>	Date:	5/25/17
Reviewed by:	<i>[Signature]</i>	Date:	5/26/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # : 140815

Date : 5/25/17

Time: 10:30

Organization: AET

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 3	4	#11:00	2	2					

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors

Did not take sample, because there was too little water to grab sample

☐☐

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		

Velocity Verification Readings

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	Adjusted Level to:		Checked Cables/Antennas	
1.			9.			☐	Cleared Debris from Sensor	☐	Dried Moisture from Refrigerator
2.			10.			☐	Replaced Sample Container	☐	Checked Battery Voltage
3.			11.			☐	Program Disabled	☐	Changed Battery
4.			12.			☐	Waiting for Phone Command	☐	Cleared Rain Gauge
5.			13.			Maintenance Notes:			
6.			14.						
7.			15.						
8.			16.						

SIGNATURES

Data Collected by:

Date: 5/25/17

Reviewed by:

Date: 5/26/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # : 140815

Date : 5/25/17

Time: 10:30

Organization: AEE

Trip: Maintenance Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Outflow	4	11:00	Grab Sample	ambient					

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors

Used Dip Cup to grab samples. Samples grabbed from lake, not swale because swale was dried up.

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		

Velocity Verification Readings

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

☐ Adjusted Level to:

☐ Cleared Debris from Sensor

☐ Replaced Sample Container

☐ Program Disabled

☐ Waiting for Phone Command

☐ Checked Cables/Antennas

☐ Dried Moisture from Refrigerator

☐ Checked Battery Voltage

☐ Changed Battery

☐ Cleared Rain Gauge

Maintenance Notes:

SIGNATURES

Data Collected by:

Date:

5/25/17

Reviewed by:

Date:

5/26/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A

Required Client Information:

Company: Applied Ecology, Inc.
Address: 981 E Eau Gallie Blvd
Suite E, #101, Indian Harbour Beach, FL 32937
Email:
Phone: Fax:
Requested Due Date:

Section B

Required Project Information:

Report To: Claudia Listopad, Ph.D.
Copy To:
Purchase Order #:
Project Name: Rockledge
Project #:

Section C

Invoice Information:

Attention:
Company Name:
Address:
Pace Quote:
Pace Project Manager: joe.vondrick@pacelabs.com
Pace Profile #: 8336

Page: 1 Of 1

Regulatory Agency

State / Location

FL

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique	MATRIX Drinking Water Water Waste Water Product Soil/Solid Oil Wipe Air Other Tissue	CODE DW WT WW P SL OL WP AR OT TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Analyses Test Y/N	Requested Analysis Filtered (Y/N)												Residual Chlorine (Y/N)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
						START		END				Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2SO3	Methanol	Other	Total Suspended Solids 1L	Phosphorus, Ortho		TKN LL-TP NH3 NOx TN	Metals by 200.8/200.7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	

ADDITIONAL COMMENTS		RELINQUISHED BY / AFFILIATION		DATE	TIME	ACCEPTED BY / AFFILIATION		DATE	TIME	SAMPLE CONDITIONS		
station IDs: - Inflow 1		7 BO/PACE		6/12/17	14:32	Kayleigh Douglass/AEI		6/12/17	14:32	T2860		
		Kayleigh Douglass/AEI				[Signature]				40	Y	N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER:

Kayleigh Douglass

[Signature]

DATE Signed:

6/12/17

TEMP in C

Received on
ice (Y/N)

Custody
Sealed (Y/N)

Cooler
(Y/N)

Samples
Intact (Y/N)



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # : 140815

Date : 6/12/17

Time: 11:17

Organization: AEI

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 1	5	11:17	50	2.0					

Auto Sampler ***

Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors



EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		

Velocity Verification Readings

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

☐ Adjusted Level to:☐ Cleared Debris from Sensor☐ Replaced Sample Container☐ Program Disabled☐ Waiting for Phone Command☐ Checked Cables/Antennas☐ Dried Moisture from Refrigerator☐ Checked Battery Voltage☐ Changed Battery☐ Cleared Rain Gauge

Maintenance Notes:

SIGNATURES

Data Collected by: Hayleigh Douglass

Date: 6/12/17

Reviewed by: [Signature]

Date: 6/13/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :	140815	Date :	6/12/17	Time:	11:38	Organization:	AEI	Trip:	Maintenance / <u>Sampling</u>
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 2	5	11:38	5	1.1					
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2) Inflow 2 + Inflow 3 were combined to get a composite							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		
Velocity Verification Readings			Meter: OTT MF Pro			☐ Adjusted Level to: ☐ Cleared Debris from Sensor ☐ Replaced Sample Container ☐ Program Disabled ☐ Waiting for Phone Command			☐ Checked Cables/Antennas ☐ Dried Moisture from Refrigerator ☐ Checked Battery Voltage ☐ Changed Battery ☐ Cleared Rain Gauge		
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	Maintenance Notes:					
1.			9.								
2.			10.								
3.			11.								
4.			12.								
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by: Kayleigh DouglassDate: 6/12/17Reviewed by: [Signature]Date: 6/13/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :	140815	Date : 6/12/17	Time: 11:38	Organization: AEI	Trip: Maintenance / <u>Sampling</u>
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 3	5	11:38	10	1.1					
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors	Inflow 2 + 3 were combined to get a composite							
☐	☐								

EQUIPMENT CONDITION REPORT*

Equipment Condition Report											
Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		
Velocity Verification Readings			Meter: OTT MF Pro			☐ Adjusted Level to:		☐ Checked Cables/Antennas			
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐ Cleared Debris from Sensor		☐ Dried Moisture from Refrigerator			
1.			9.			☐ Replaced Sample Container		☐ Checked Battery Voltage			
2.			10.			☐ Program Disabled		☐ Changed Battery			
3.			11.			☐ Waiting for Phone Command		☐ Cleared Rain Gauge			
4.			12.			Maintenance Notes:					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by: Kayleigh Douglass

Date: 6/12/17

Reviewed by: *Lee Kr*

Date: 6/13/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :	140815	Date : 6/12/17	Time : 12:30	Organization: AET	Trip: Maintenance / Sampling
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
outflow	5	12:30	see Notes	Ambient					
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors	Used dip cup to grab samples.							
☐	☐								

EQUIPMENT CONDITION REPORT*

Equipment Condition Report											
Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		
Velocity Verification Readings			Meter: OTT MF Pro			☐ Adjusted Level to:		☐ Checked Cables/Antennas			
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐ Cleared Debris from Sensor		☐ Dried Moisture from Refrigerator			
1.			9.			☐ Replaced Sample Container		☐ Checked Battery Voltage			
2.			10.			☐ Program Disabled		☐ Changed Battery			
3.			11.			☐ Waiting for Phone Command		☐ Cleared Rain Gauge			
4.			12.			Maintenance Notes:					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by: Kayleigh Douglass

Date: 6/12/17

Reviewed by: [Signature]

Date: 6/13/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # : 140815

Date : 6/28/17

Time: 11:15

Organization: AEI

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow-1	6	11:15	50	0.6					

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors

☐☐

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (mL)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		

Velocity Verification Readings

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

☐ Adjusted Level to:☐ Cleared Debris from Sensor☐ Replaced Sample Container☐ Program Disabled☐ Waiting for Phone Command☐ Checked Cables/Antennas☐ Dried Moisture from Refrigerator☐ Checked Battery Voltage☐ Changed Battery☐ Cleared Rain Gauge

Maintenance Notes:

SIGNATURES

Data Collected by:

Date:

6/28/17

Reviewed by:

Date:

6/29/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 mL = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :	140815	Date :	6/28/17	Time:	11:32 A	Organization:	AEI	Trip:	Maintenance / Sampling
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 2	6	11:32	50	31					
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:		Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →		≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station		Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
										Y / N		
Velocity Verification Readings			Meter: OTT MF Pro			☐	Adjusted Level to:		☐	Checked Cables/Antennas		
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐	Cleared Debris from Sensor		☐	Dried Moisture from Refrigerator		
1.			9.			☐	Replaced Sample Container		☐	Checked Battery Voltage		
2.			10.			☐	Program Disabled		☐	Changed Battery		
3.			11.			☐	Waiting for Phone Command		☐	Cleared Rain Gauge		
4.			12.			Maintenance Notes:						
5.			13.									
6.			14.									
7.			15.									
8.			16.									

SIGNATURES

Data Collected by:	<i>[Signature]</i>	Date:	6/28/17
Reviewed by:	<i>[Signature]</i>	Date:	6/29/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :	140815	Date :	6/28/17	Time:	12:00	Organization:	AEI	Trip:	Maintenance / Sampling
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 3	6	12:00	50	34					
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		
Velocity Verification Readings		Meter: OTT MF Pro			☐	Adjusted Level to:		☐	Checked Cables/Antennas		
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐	Cleared Debris from Sensor	☐	Dried Moisture from Refrigerator		
1.			9.			☐	Replaced Sample Container	☐	Checked Battery Voltage		
2.			10.			☐	Program Disabled	☐	Changed Battery		
3.			11.			☐	Waiting for Phone Command	☐	Cleared Rain Gauge		
4.			12.			Maintenance Notes:					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:	<i>[Signature]</i>	Date:	6/28/17
Reviewed by:	<i>[Signature]</i>	Date:	6/29/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :	140815	Date :	6/28/17	Time:	12:37	Organization:	AEI	Trip:	Maintenance	Sampling
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:					
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)	
Outflow	6	12:37		ambient						
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2) Used dip cup to grab samples from lake								
Warnings	Errors									
☐	☐									

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		
Velocity Verification Readings			Meter: OTT MF Pro			☐ Adjusted Level to: ☐ Cleared Debris from Sensor ☐ Replaced Sample Container ☐ Program Disabled ☐ Waiting for Phone Command			☐ Checked Cables/Antennas ☐ Dried Moisture from Refrigerator ☐ Checked Battery Voltage ☐ Changed Battery ☐ Cleared Rain Gauge		
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	Maintenance Notes:					
1.			9.								
2.			10.								
3.			11.								
4.			12.								
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:	<i>Kyle Dylson</i>	Date:	6/28/17
Reviewed by:	<i>Lee</i>	Date:	6/29/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A

Required Client Information:

Company: Applied Ecology, Inc.
Address: 65 E Nasa Blvd
Deltona, FL 32901
Email: clistopad@appliedecologyinc.com
Phone: 321-848-1272 Fax:
Requested Due Date:

Section B

Required Project Information:

Report To: Claudia Listopad, Ph.D.
Copy To:
Purchase Order #:
Project Name: **Rockledge**
Project #:

Section C

Invoice Information:

Attention:
Company Name:
Address:
Pace Quote:
Pace Project Manager: todd.rea@pacelabs.com,
Pace Profile #: **8336 - 1**

Page : 1 Of 1

Regulatory Agency

State / Location

FL

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample IDs must be unique	MATRIX Drinking Water Water Waste Water Product Soil/Solid Oil Wipe Air Other Tissue	CODE DW WT WW P SL OL WP AR OT TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Analyses Test Y/N	Requested Analysis Filtered (Y/N)												Residual Chlorine (Y/N)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
						START		END				Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	TSS (2540D W/L)	Cd, Cu (200.8)		Cr, Zn (200.7)	Orthophosphate (365.1)	TKN (351.2)	NOX (353.2WN)	Ammonia (350.1)	TP (365.3)	Total Nitrogen Calc.	Total Organic Nitrogen Calc.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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1	Inflow 1-7	WT		7/19/17		7/20/17	11:00	3.6	4	2	1	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

Collected at ambient temp, then chilled

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS		
	GW - Pace	7/18/17	16:00	Kayleigh Douglass	7/19/17	12:00			
	Kayleigh Douglass	7/20/17	13:52	Maria Manella	7/20/17	13:52	11.0	Y	N
							12.99		

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER:

Kayleigh Douglass

Kayleigh Douglass

DATE Signed: 7/20/17

TEMP in C

Received on

ice

(Y/N)

Custody

Sealed

Cooler

(Y/N)

Samples

Intact

(Y/N)



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :	140815	Date : 7/20/17	Time: 11:06a	Organization: AEI	Trip: Maintenance / <u>Sampling</u>
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 1	7	11:06	50	3.6					
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:		Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →		≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station		Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
										Y / N		
Velocity Verification Readings			Meter: OTT MF Pro			☐ Adjusted Level to:		☐ Checked Cables/Antennas				
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐ Cleared Debris from Sensor		☐ Dried Moisture from Refrigerator				
1.			9.			☐ Replaced Sample Container		☐ Checked Battery Voltage				
2.			10.			☐ Program Disabled		☐ Changed Battery				
3.			11.			☐ Waiting for Phone Command		☐ Cleared Rain Gauge				
4.			12.			Maintenance Notes:						
5.			13.									
6.			14.									
7.			15.									
8.			16.									

SIGNATURES

Data Collected by: <u>Myah L. Dryness</u>	Date: 7/20/17
Reviewed by: <u>[Signature]</u>	Date: 7/21/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :	140815	Date :	7/20/17	Time:	11:25A	Organization:	AEI	Trip:	Maintenance / <u>Sampling</u>
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 2	7	11:25	50	3.1					
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:		Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)		
Acceptance Criteria →		≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue				
Station		Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.	
										Y / N			
Velocity Verification Readings			Meter: OTT MF Pro			☐ Adjusted Level to:			☐ Checked Cables/Antennas				
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐ Cleared Debris from Sensor			☐ Dried Moisture from Refrigerator				
1.			9.			☐ Replaced Sample Container			☐ Checked Battery Voltage				
2.			10.			☐ Program Disabled			☐ Changed Battery				
3.			11.			☐ Waiting for Phone Command			☐ Cleared Rain Gauge				
4.			12.			Maintenance Notes:							
5.			13.										
6.			14.										
7.			15.										
8.			16.										

SIGNATURES

Data Collected by:	<i>Kylynn Doyle</i>	Date:	7/20/17
Reviewed by:	<i>Chris</i>	Date:	7/21/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # : 140815

Date : 7/20/17

Time: 11:45A

Organization: AEI

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 3	7	11:45	50	2.1					
Auto Sampler ***	Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)								
Warnings									
☐									

EQUIPMENT CONDITION REPORT*

Time:		Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →		≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station		Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
										Y / N		
Velocity Verification Readings			Meter: OTT MF Pro			☐ Adjusted Level to:			☐	Checked Cables/Antennas		
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐ Cleared Debris from Sensor			☐	Dried Moisture from Refrigerator		
1.			9.			☐ Replaced Sample Container			☐	Checked Battery Voltage		
2.			10.			☐ Program Disabled			☐	Changed Battery		
3.			11.			☐ Waiting for Phone Command			☐	Cleared Rain Gauge		
4.			12.			Maintenance Notes:						
5.			13.									
6.			14.									
7.			15.									
8.			16.									

SIGNATURES

Data Collected by: *Kyle Dylus*

Date: 7/20/17

Reviewed by: *Lee*

Date: 7/21/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 140815

Date: 7/20/17

Time: 12:25

Organization: AEI

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Outflow	7	12:25	see Notes	ambient					
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2) Used dip cup to grab samples from lake.							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		
Velocity Verification Readings		Meter: OTT MF Pro				☐	Adjusted Level to:		☐	Checked Cables/Antennas	
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐	Cleared Debris from Sensor		☐	Dried Moisture from Refrigerator	
1.			9.			☐	Replaced Sample Container		☐	Checked Battery Voltage	
2.			10.			☐	Program Disabled		☐	Changed Battery	
3.			11.			☐	Waiting for Phone Command		☐	Cleared Rain Gauge	
4.			12.			Maintenance Notes:					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:

Date: 7/20/17

Reviewed by:

Date: 7/21/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A

Required Client Information:

Company: Applied Ecology, Inc.
Address: 65 E Nasa Blvd
Melbourne, FL 32901
Email: clistopad@appliedecologyinc.com
Phone: 321-848-1272 Fax:
Requested Due Date:

Section B

Required Project Information:

Report To: Claudia Listopad, Ph.D.
Copy To:
Purchase Order #:
Project Name: **Rockledge**
Project #:

Section C

Invoice Information:

Attention:
Company Name:
Address:
Pace Quote:
Pace Project Manager: todd.rea@pacelabs.com,
Pace Profile #: **8336 - 1**

Page : 1 Of 1

Regulatory Agency

State / Location

FL

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique	MATRIX Drinking Water Water Waste Water Product Soil/Solid Oil Wipe Air Other Tissue	CODE DW WT WW P SL OL WP AR OT TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Analyses Test	Y/N	Requested Analysis Filtered (Y/N)												Residual Chlorine (Y/N)	
						START		END				Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	TSS (2540D W/L)	Cd, Cu (200.8)			Cr, Zn (200.7)	Orthophosphate (365.1)	TKN (351.2)	NOX (353.2WW)	Ammonia (350.1)	TP (365.3)	Total Nitrogen Calc.	Total Organic Nitrogen Calc.						
						DATE	TIME	DATE	TIME																												
1	Inflow 1-8	WT				8/3/17		8/4/17	14:05	20	4	2	1	1												X	X	X	X	X	X	X	X	X			
2	Inflow 2-8	WT				8/3/17		8/4/17	14:20	08	4	2	1	1												X	X	X	X	X	X	X	X	X			
3	Inflow 3-8	WT				8/3/17		8/4/17	14:38	30	4	2	1	1												X	X	X	X	X	X	X	X	X			
4	Outflow - 8	WT				8/3/17		8/4/17	15:05	36	4	2	1	1												X	X	X	X	X	X	X	X	X			
5																																					
6																																					
7																																					
8																																					
9																																					
10																																					
11																																					
12																																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	GLW - Pace	7/8/17	16:00	Kayleigh Douglass / AET	7/9/17	12:00				
	Kayleigh Douglass / AET	8/5/17	11:16	GLW - Pace	9/5/17	11:16	39	y	N	y
							T246			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER:

Kayleigh Douglass

Kayleigh Douglass

DATE Signed: 8/4/17

TEMP in C

Received on

ice

(Y/N)

Custody

Sealed

Cooler

(Y/N)

Samples

Intact

(Y/N)



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 140815

Date: 8/4/17

Time: 14:05

Organization: AEI

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 1 - ¹⁰ KD	8	14:05	46	20°C					

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors

☐☐

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		

Velocity Verification Readings

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	Adjusted Level to:		Checked Cables/Antennas	
1.			9.			☐	Cleared Debris from Sensor	☐	Dried Moisture from Refrigerator
2.			10.			☐	Replaced Sample Container	☐	Checked Battery Voltage
3.			11.			☐	Program Disabled	☐	Changed Battery
4.			12.			☐	Waiting for Phone Command	☐	Cleared Rain Gauge
5.			13.			Maintenance Notes:			
6.			14.						
7.			15.						
8.			16.						

SIGNATURES

Data Collected by:

Hy/lyr Dylow

Date: 8/4/17

Reviewed by:

Chen

Date: 8/5/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :	140815	Date :	8/4/17	Time:	14:20	Organization:	AEI	Trip:	Maintenance / <u>Sampling</u>
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 2	8	14:20	37	0.8					
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		
Velocity Verification Readings			Meter: OTT MF Pro			☐ Adjusted Level to: ☐ Cleared Debris from Sensor ☐ Replaced Sample Container ☐ Program Disabled ☐ Waiting for Phone Command			☐ Checked Cables/Antennas ☐ Dried Moisture from Refrigerator ☐ Checked Battery Voltage ☐ Changed Battery ☐ Cleared Rain Gauge		
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	Maintenance Notes:					
1.			9.								
2.			10.								
3.			11.								
4.			12.								
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by: *[Signature]*

Date: 8/4/17

Reviewed by: *[Signature]*

Date: 8/5/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :	140815	Date : 8/4/17	Time: 14:38	Organization: AEI	Trip: Maintenance / Sampling
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 3	8	14:38	50	3.0					
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

EQUIPMENT CONDITION REPORT											
Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		
Velocity Verification Readings			Meter: OTT MF Pro			☐ Adjusted Level to:		☐ Checked Cables/Antennas			
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐ Cleared Debris from Sensor		☐ Dried Moisture from Refrigerator			
1.			9.			☐ Replaced Sample Container		☐ Checked Battery Voltage			
2.			10.			☐ Program Disabled		☐ Changed Battery			
3.			11.			☐ Waiting for Phone Command		☐ Cleared Rain Gauge			
4.			12.			Maintenance Notes:					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:	<i>Kyle D. Jones</i>	Date: 8/4/17
Reviewed by:	<i>Rebecca</i>	Date: 8/5/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :	140815	Date :	8/4/17	Time:	15:05	Organization:	AGEI	Trip:	Maintenance / <u>Sampling</u>
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Outflow	8	15:05	50	36					
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		
Velocity Verification Readings			Meter: OTT MF Pro			☐ Adjusted Level to: ☐ Cleared Debris from Sensor ☐ Replaced Sample Container ☐ Program Disabled ☐ Waiting for Phone Command			☐ Checked Cables/Antennas ☐ Dried Moisture from Refrigerator ☐ Checked Battery Voltage ☐ Changed Battery ☐ Cleared Rain Gauge		
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	Maintenance Notes:					
1.			9.								
2.			10.								
3.			11.								
4.			12.								
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:	<i>[Signature]</i>	Date:	8/4/17
Reviewed by:	<i>[Signature]</i>	Date:	8/5/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples intact (Y/N)
PRINT Name of SAMPLER: Kayleigh Douglass					
SIGNATURE of SAMPLER: <i>Ky B. Douglass</i>	DATE Signed: 8/13/17				



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :	140815	Date : 8/13/17	Time: 12:13	Organization: AEI	Trip: Maintenance / <u>Sampling</u>
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 1 - KD	9	12:13	50	4.8					
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		

Velocity Verification Readings			Meter: OTT MF Pro			☐	Adjusted Level to:	☐	Checked Cables/Antennas
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐	Cleared Debris from Sensor	☐	Dried Moisture from Refrigerator
1.			9.			☐	Replaced Sample Container	☐	Checked Battery Voltage
2.			10.			☐	Program Disabled	☐	Changed Battery
3.			11.			☐	Waiting for Phone Command	☐	Cleared Rain Gauge
4.			12.			Maintenance Notes:			
5.			13.						
6.			14.						
7.			15.						
8.			16.						

SIGNATURES

Data Collected by: <i>Hy/yl Dykoe</i>	Date: 8/13/17
Reviewed by: <i>ees</i>	Date: 8/14/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 140815

Date: 8/13/17

Time: 11:51

Organization: AEI

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 2	9	11:51	31	1.2					

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors

☐☒

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		

Velocity Verification Readings

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

☐ Adjusted Level to:☐ Cleared Debris from Sensor☐ Replaced Sample Container☐ Program Disabled☐ Waiting for Phone Command☐ Checked Cables/Antennas☐ Dried Moisture from Refrigerator☐ Checked Battery Voltage☐ Changed Battery☐ Cleared Rain Gauge

Maintenance Notes:

SIGNATURES

Data Collected by:

Date:

8/13/17

Reviewed by:

Date:

8/14/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :	140815	Date : 8/13/17	Time: 12:35	Organization: AEI	Trip: Maintenance / Sampling
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:	Blank Container ID:	METER:
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Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 3	9	12:35	50	3.6					

Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2) Machine said Program complete, which should be 50 aliquots, but the jar is only about 1/3 filled.
Warnings	Errors	
☐	☐	

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		

Velocity Verification Readings			Meter: OTT MF Pro								
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐	Adjusted Level to:	☐	Checked Cables/Antennas		
1.			9.			☐	Cleared Debris from Sensor	☐	Dried Moisture from Refrigerator		
2.			10.			☐	Replaced Sample Container	☐	Checked Battery Voltage		
3.			11.			☐	Program Disabled	☐	Changed Battery		
4.			12.			☐	Waiting for Phone Command	☐	Cleared Rain Gauge		
5.			13.			Maintenance Notes:					
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by: <i>[Signature]</i>	Date: 8/13/17
Reviewed by: <i>[Signature]</i>	Date: 8/14/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :	140815	Date : 8/13/17	Time: 12:55	Organization: AEI	Trip: Maintenance / <u>Sampling</u>
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Outflow	9	12:55	50	2.6					
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:		Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →		≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station		Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
										Y / N		
Velocity Verification Readings			Meter: OTT MF Pro			☐ Adjusted Level to:		☐ Checked Cables/Antennas				
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐ Cleared Debris from Sensor		☐ Dried Moisture from Refrigerator				
1.			9.			☐ Replaced Sample Container		☐ Checked Battery Voltage				
2.			10.			☐ Program Disabled		☐ Changed Battery				
3.			11.			☐ Waiting for Phone Command		☐ Cleared Rain Gauge				
4.			12.			Maintenance Notes:						
5.			13.									
6.			14.									
7.			15.									
8.			16.									

SIGNATURES

Data Collected by:	Date: 8/13/17
Reviewed by:	Date: 8/14/17

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task #: 140815

Date: 9/22/17

Time: 16:35

Organization: AEI

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 1 to 40	10	16:35	30	2.4					
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

EQUIPMENT CONDITION REPORT											
Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		
Velocity Verification Readings		Meter: OTT MF Pro			☐ Adjusted Level to:			☐ Checked Cables/Antennas			
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐ Cleared Debris from Sensor			☐ Dried Moisture from Refrigerator		
1.			9.			☐ Replaced Sample Container			☐ Checked Battery Voltage		
2.			10.			☐ Program Disabled			☐ Changed Battery		
3.			11.			☐ Waiting for Phone Command			☐ Cleared Rain Gauge		
4.			12.			Maintenance Notes:					
5.			13.								
6.			14.								
7.			15.								
8.			16.								

SIGNATURES

Data Collected by:

Date: 9/22/17

Reviewed by:

Date: 09/28/2017

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :	140815	Date : 9/22/17	Time: 16:15	Organization: AEI	Trip: Maintenance / Sampling
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 2	10	16:15	19	1.2					
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		

Velocity Verification Readings			Meter: OTT MF Pro						
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐	Adjusted Level to:	☐	Checked Cables/Antennas
1.			9.			☐	Cleared Debris from Sensor	☐	Dried Moisture from Refrigerator
2.			10.			☐	Replaced Sample Container	☐	Checked Battery Voltage
3.			11.			☐	Program Disabled	☐	Changed Battery
4.			12.			☐	Waiting for Phone Command	☐	Cleared Rain Gauge
5.			13.			Maintenance Notes:			
6.			14.						
7.			15.						
8.			16.						

SIGNATURES

Data Collected by: Ky/lyc Dykoss	Date: 9/22/17
Reviewed by: [Signature]	Date: 9/28/2017

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :	140815	Date : 9/22/17	Time: 15:50	Organization: AEI	Trip: Maintenance / <u>Sampling</u>
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SAMPLING DATA

FIELD PARAMETERS

Blank Label:		Blank Container ID:			METER:				
Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Inflow 3	10	15:50	31	1.8					
Auto Sampler ***		Sampling Notes: Samples collected in accordance with FDEP SOP 2110(2)							
Warnings	Errors								
☐	☐								

EQUIPMENT CONDITION REPORT*

Time:		Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)		
Acceptance Criteria →		≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue				
Station		Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.	
										Y / N			
Velocity Verification Readings			Meter: OTT MF Pro			☐ Adjusted Level to:			☐ Checked Cables/Antennas				
Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s	☐ Cleared Debris from Sensor			☐ Dried Moisture from Refrigerator				
1.			9.			☐ Replaced Sample Container			☐ Checked Battery Voltage				
2.			10.			☐ Program Disabled			☐ Changed Battery				
3.			11.			☐ Waiting for Phone Command			☐ Cleared Rain Gauge				
4.			12.			Maintenance Notes:							
5.			13.										
6.			14.										
7.			15.										
8.			16.										

SIGNATURES

Data Collected by: *Kyle L. Dwyer*

Date: 9/22/17

Reviewed by: *[Signature]*

Date: 09/28/2017

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.



Environmental Consulting & Technology, Inc.

WATER QUALITY/SAMPLING SITE MAINTENANCE LOG

PROJECT INFORMATION

Project & Task # :

140815

Date :

Time: 16:55

Organization: AEI

Trip: Maintenance / Sampling

SAMPLING DATA

FIELD PARAMETERS

Blank Label:

Blank Container ID:

METER:

Station	Sample ID	Time	No. of Aliquots	Composite Temp. (°C)	Sample Depth (ft)	Water Temp. (°C)	DO (mg/L)	pH (s.u.)	Sp. Conductivity (µmhos/cm)
Outflow	10	16:55	39	2.1					

Auto Sampler ***

Sampling Notes:

Samples collected in accordance with FDEP SOP 2110(2)

Warnings

Errors

☐☐

EQUIPMENT CONDITION REPORT*

Time:	Velocity (ft/s)		Rain Gauge **		Level Check (ft)		Tubing	Desiccant		Aliquot Volume Calibration (mL)	
Acceptance Criteria →	≤ 20% < 1.0 fps; ≤ 10% > 1.0 fps		≤ 10%		± 0.02 ft		Clear	< 50 % Orange or Blue			
Station	Instrument	Avg. Meas.	Vol. (ml)	Tips (#)	Instrument	Measured	Condition	Color	Changed	Prog. Vol.	Pump Vol.
									Y / N		

Velocity Verification Readings

Meter: OTT MF Pro

Dist. / Time Int.	Depth	ft/s	Dist. / Time Int.	Depth	ft/s
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

☐ Adjusted Level to:☐ Cleared Debris from Sensor☐ Replaced Sample Container☐ Program Disabled☐ Waiting for Phone Command☐ Checked Cables/Antennas☐ Dried Moisture from Refrigerator☐ Checked Battery Voltage☐ Changed Battery☐ Cleared Rain Gauge

Maintenance Notes:

SIGNATURES

Data Collected by:

Date: 9/22/17

Reviewed by:

Date:

09/28/2017

* Required maintenance items during sample collection include: battery voltage, tubing condition, sedimentation and debris around instream equipment, and desiccant coloration.

** Record the volume of water poured through the rain gauge. Pouring should be slow and constant with 206 ml = 25 tips. Data will be downloaded to verify number of tips.

*** Describe warnings/errors in the maintenance notes section.

Appendix D: Storm Event Analytical Results



Analytical Result Report

Friday, November 3, 2017

2:14:19 PM

Lab Sample ID:	Sampling Date:	Field Sample ID:	Parameter:	Result:	Units:	Qualifier:	PQL:	MDL:	Analytical Method:	QC Batch Number:
Sampling Event Number: 1										
35290375001	1/23/2017	Inflow 1-1	Cd	0.082	ug/L	I	0.1	0.05	EPA 200.8	348776
35290375002	1/23/2017	Inflow 2-1	Cd	0.1	ug/L		0.1	0.05	EPA 200.8	347948
35290375003	1/23/2017	Inflow 3-1	Cd	1.2	ug/L		0.1	0.05	EPA 200.8	348776
35290375004	1/23/2017	Ouflow-1	Cd	0.083	ug/L	I, J(M1), J(R1)	0.1	0.05	EPA 200.8	348776
35290375001	1/23/2017	Inflow 1-1	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	348774
35290375002	1/23/2017	Inflow 2-1	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	347897
35290375003	1/23/2017	Inflow 3-1	Cr	3.1	ug/L	I	5	2.5	EPA 200.7	348774
35290375004	1/23/2017	Ouflow-1	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	348774
35290375001	1/23/2017	Inflow 1-1	Cu	6.1	ug/L		1	0.93	EPA 200.8	348776
35290375002	1/23/2017	Inflow 2-1	Cu	29.4	ug/L		1	0.93	EPA 200.8	347948
35290375003	1/23/2017	Inflow 3-1	Cu	5.5	ug/L		1	0.93	EPA 200.8	348776
35290375004	1/23/2017	Ouflow-1	Cu	0.93	ug/L	U, J(M1), J(R1)	1	0.93	EPA 200.8	348776
35290375001	1/23/2017	Inflow 1-1	NH3	0.22	mg/L		0.05	0.02	EPA 350.1	347309
35290375002	1/23/2017	Inflow 2-1	NH3	0.22	mg/L		0.05	0.02	EPA 350.1	347309
35290375003	1/23/2017	Inflow 3-1	NH3	0.17	mg/L		0.05	0.02	EPA 350.1	347309
35290375004	1/23/2017	Ouflow-1	NH3	0.02	mg/L	U	0.05	0.02	EPA 350.1	347309
35290375001	1/23/2017	Inflow 1-1	NO2	0.02	mg/L	U	0.04	0.02	EPA 353.2	346173
35290375002	1/23/2017	Inflow 2-1	NO2	0.02	mg/L	U	0.04	0.02	EPA 353.2	346173
35290375003	1/23/2017	Inflow 3-1	NO2	0.02	mg/L	U	0.04	0.02	EPA 353.2	346173
35290375004	1/23/2017	Ouflow-1	NO2	0.02	mg/L	U	0.04	0.02	EPA 353.2	346173
35290375001	1/23/2017	Inflow 1-1	NO3	0.24	mg/L		0.04	0.02	EPA 353.2	346173
35290375002	1/23/2017	Inflow 2-1	NO3	0.28	mg/L		0.04	0.02	EPA 353.2	346173
35290375003	1/23/2017	Inflow 3-1	NO3	0.19	mg/L		0.04	0.02	EPA 353.2	346173
35290375004	1/23/2017	Ouflow-1	NO3	0.02	mg/L	U	0.04	0.02	EPA 353.2	346173
35290375001	1/23/2017	Inflow 1-1	NOX	0.24	mg/L		0.04	0.02	EPA 353.2	346173
35290375002	1/23/2017	Inflow 2-1	NOX	0.28	mg/L		0.04	0.02	EPA 353.2	346173
35290375003	1/23/2017	Inflow 3-1	NOX	0.19	mg/L		0.04	0.02	EPA 353.2	346173
35290375004	1/23/2017	Ouflow-1	NOX	0.02	mg/L	U	0.04	0.02	EPA 353.2	346173

Lab Sample ID:	Sampling Date:	Field Sample ID:	Parameter:	Result:	Units:	Qualifier:	PQL:	MDL:	Analytical Method:	QC Batch Number:
35290375001	1/23/2017	Inflow 1-1	PO43-	0.21	mg/L		0.004	0.0034	EPA 365.1	346111
35290375002	1/23/2017	Inflow 2-1	PO43-	0.17	mg/L		0.004	0.0034	EPA 365.1	346111
35290375003	1/23/2017	Inflow 3-1	PO43-	0.13	mg/L		0.004	0.0034	EPA 365.1	346111
35290375004	1/23/2017	Ouflow-1	PO43-	0.0043	mg/L		0.004	0.0034	EPA 365.1	346111
35290375001	1/23/2017	Inflow 1-1	TKN	0.96	mg/L		0.5	0.086	EPA 351.2	347654
35290375002	1/23/2017	Inflow 2-1	TKN	1.1	mg/L		0.5	0.086	EPA 351.2	347654
35290375003	1/23/2017	Inflow 3-1	TKN	1	mg/L		0.5	0.086	EPA 351.2	347654
35290375004	1/23/2017	Ouflow-1	TKN	0.86	mg/L		0.5	0.086	EPA 351.2	347654
35290375001	1/23/2017	Inflow 1-1	TN	1.2	mg/L		0.5	0.086	TKN+NOx Calculation	
35290375002	1/23/2017	Inflow 2-1	TN	1.4	mg/L		0.5	0.086	TKN+NOx Calculation	
35290375003	1/23/2017	Inflow 3-1	TN	1.2	mg/L		0.5	0.086	TKN+NOx Calculation	
35290375004	1/23/2017	Ouflow-1	TN	0.87	mg/L		0.5	0.086	TKN+NOx Calculation	
35290375001	1/23/2017	Inflow 1-1	TON	0.74	mg/L		0.5	0.25	TKN-NH3 Calculation	
35290375002	1/23/2017	Inflow 2-1	TON	0.87	mg/L		0.5	0.25	TKN-NH3 Calculation	
35290375003	1/23/2017	Inflow 3-1	TON	0.87	mg/L		0.5	0.25	TKN-NH3 Calculation	
35290375004	1/23/2017	Ouflow-1	TON	0.86	mg/L		0.5	0.25	TKN-NH3 Calculation	
35290375001	1/23/2017	Inflow 1-1	TP LL	0.29	mg/L		0.004	0.0028	EPA 365.3	348411
35290375002	1/23/2017	Inflow 2-1	TP LL	0.28	mg/L		0.004	0.0028	EPA 365.3	348411
35290375003	1/23/2017	Inflow 3-1	TP LL	0.17	mg/L		0.004	0.0028	EPA 365.3	348411
35290375004	1/23/2017	Ouflow-1	TP LL	0.061	mg/L		0.004	0.0028	EPA 365.3	348411
35290375001	1/23/2017	Inflow 1-1	TSS	6.5	mg/L		1	1	SM 2540D	346878
35290375002	1/23/2017	Inflow 2-1	TSS	60	mg/L		5	5	SM 2540D	347027
35290375003	1/23/2017	Inflow 3-1	TSS	4	mg/L		1	1	SM 2540D	347027
35290375004	1/23/2017	Ouflow-1	TSS	11.2	mg/L	J(D6)	2	2	SM 2540D	347027
35290375001	1/23/2017	Inflow 1-1	Zn	15.2	ug/L	I	20	10	EPA 200.7	348774
35290375002	1/23/2017	Inflow 2-1	Zn	94.6	ug/L		20	10	EPA 200.7	347897
35290375003	1/23/2017	Inflow 3-1	Zn	10	ug/L	U	20	10	EPA 200.7	348774
35290375004	1/23/2017	Ouflow-1	Zn	10	ug/L	U	20	10	EPA 200.7	348774
Sampling Event Number: 2										
35296774001	2/23/2017	Inflow 1-2	Cd	0.05	ug/L	U	0.1	0.05	EPA 200.8	354938
35296774002	2/23/2017	Inflow 2-2	Cd	0.073	ug/L	I	0.1	0.05	EPA 200.8	354662
35296774003	2/23/2017	Inflow 3-2	Cd	0.17	ug/L		0.1	0.05	EPA 200.8	354662
35296774004	2/23/2017	Ouflow-2	Cd	0.83	ug/L		0.1	0.05	EPA 200.8	354662

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35296774001	2/23/2017	Inflow 1-2	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	354936
35296774002	2/23/2017	Inflow 2-2	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	354774
35296774003	2/23/2017	Inflow 3-2	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	354774
35296774004	2/23/2017	Ouflow-2	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	354774
35296774001	2/23/2017	Inflow 1-2	Cu	2.6	ug/L		1	0.93	EPA 200.8	354938
35296774002	2/23/2017	Inflow 2-2	Cu	3.2	ug/L		1	0.93	EPA 200.8	354662
35296774003	2/23/2017	Inflow 3-2	Cu	4.5	ug/L		1	0.93	EPA 200.8	354662
35296774004	2/23/2017	Ouflow-2	Cu	1.7	ug/L		1	0.93	EPA 200.8	354662
35296774001	2/23/2017	Inflow 1-2	NH3	0.1	mg/L		0.25	0.1	EPA 350.1	354312
35296774002	2/23/2017	Inflow 2-2	NH3	0.23	mg/L	I	0.25	0.1	EPA 350.1	354312
35296774003	2/23/2017	Inflow 3-2	NH3	0.11	mg/L	I	0.25	0.1	EPA 350.1	354312
35296774004	2/23/2017	Ouflow-2	NH3	0.1	mg/L	U	0.25	0.1	EPA 350.1	354312
35296774001	2/23/2017	Inflow 1-2	NOX	0.24	mg/L		0.04	0.01	EPA 353.2	354235
35296774002	2/23/2017	Inflow 2-2	NOX	0.25	mg/L		0.04	0.01	EPA 353.2	354235
35296774003	2/23/2017	Inflow 3-2	NOX	0.23	mg/L		0.04	0.01	EPA 353.2	354235
35296774004	2/23/2017	Ouflow-2	NOX	0.012	mg/L	I	0.04	0.01	EPA 353.2	354235
35296774001	2/23/2017	Inflow 1-2	PO43-	0.19	mg/L		0.004	0.0034	EPA 365.1	352616
35296774002	2/23/2017	Inflow 2-2	PO43-	0.19	mg/L		0.004	0.0034	EPA 365.1	352616
35296774003	2/23/2017	Inflow 3-2	PO43-	0.29	mg/L		0.004	0.0034	EPA 365.1	352616
35296774004	2/23/2017	Ouflow-2	PO43-	0.006	mg/L		0.004	0.0034	EPA 365.1	352616
35296774001	2/23/2017	Inflow 1-2	TKN	0.57	mg/L		0.5	0.086	EPA 351.2	354138
35296774002	2/23/2017	Inflow 2-2	TKN	0.65	mg/L		0.5	0.086	EPA 351.2	354138
35296774003	2/23/2017	Inflow 3-2	TKN	0.62	mg/L		0.5	0.086	EPA 351.2	354138
35296774004	2/23/2017	Ouflow-2	TKN	0.83	mg/L	I	0.5	0.086	EPA 351.2	354138
35296774001	2/23/2017	Inflow 1-2	TN	0.81	mg/L		0.5	0.086	TKN+NOx Calculation	
35296774002	2/23/2017	Inflow 2-2	TN	0.9	mg/L		0.5	0.086	TKN+NOx Calculation	
35296774003	2/23/2017	Inflow 3-2	TN	0.84	mg/L		0.5	0.086	TKN+NOx Calculation	
35296774004	2/23/2017	Ouflow-2	TN	0.84	mg/L		0.5	0.086	TKN+NOx Calculation	
35296774001	2/23/2017	Inflow 1-2	TP LL	0.23	mg/L		0.004	0.0028	EPA 365.3	354856
35296774002	2/23/2017	Inflow 2-2	TP LL	0.24	mg/L		0.004	0.0028	EPA 365.3	354856
35296774003	2/23/2017	Inflow 3-2	TP LL	0.33	mg/L		0.004	0.0028	EPA 365.3	354856
35296774004	2/23/2017	Ouflow-2	TP LL	0.083	mg/L		0.004	0.0028	EPA 365.3	354856
35296774001	2/23/2017	Inflow 1-2	TSS	19.5	mg/L		1	1	SM 2540D	353920

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35296774002	2/23/2017	Inflow 2-2	TSS	43.8	mg/L		1.2	1.2	SM 2540D	353920
35296774003	2/23/2017	Inflow 3-2	TSS	41.6	mg/L		1	1	SM 2540D	353920
35296774004	2/23/2017	Ouflow-2	TSS	27.3	mg/L		1.7	1.7	SM 2540D	353920
35296774001	2/23/2017	Inflow 1-2	Zn	12	ug/L	I	20	10	EPA 200.7	354936
35296774002	2/23/2017	Inflow 2-2	Zn	36.4	ug/L		20	10	EPA 200.7	354774
35296774003	2/23/2017	Inflow 3-2	Zn	12.3	ug/L		20	10	EPA 200.7	354774
35296774004	2/23/2017	Ouflow-2	Zn	10	ug/L	U	20	10	EPA 200.7	354774

Sampling Event Number: 3

35304620001	4/6/2017	Inflow 1-3	Cd	0.05	ug/L	U	0.1	0.05	EPA 200.8	362365
35304620002	4/6/2017	Inflow 2-3	Cd	0.061	ug/L	I	0.1	0.05	EPA 200.8	362365
35304620003	4/6/2017	Inflow 3-3	Cd	0.082	ug/L	I	0.1	0.05	EPA 200.8	362365
35304620004	4/6/2017	Ouflow-3	Cd	0.25	ug/L		0.1	0.05	EPA 200.8	362365
35304620001	4/6/2017	Inflow 1-3	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	362364
35304620002	4/6/2017	Inflow 2-3	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	362364
35304620003	4/6/2017	Inflow 3-3	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	362364
35304620004	4/6/2017	Ouflow-3	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	362364
35304620001	4/6/2017	Inflow 1-3	Cu	3.3	ug/L		1	0.93	EPA 200.8	362365
35304620002	4/6/2017	Inflow 2-3	Cu	4.8	ug/L		1	0.93	EPA 200.8	362365
35304620003	4/6/2017	Inflow 3-3	Cu	7.5	ug/L		1	0.93	EPA 200.8	362365
35304620004	4/6/2017	Ouflow-3	Cu	0.96	ug/L		1	0.93	EPA 200.8	362365
35304620001	4/6/2017	Inflow 1-3	NH3	0.48	mg/L		0.05	0.02	EPA 350.1	362293
35304620002	4/6/2017	Inflow 2-3	NH3	0.56	mg/L		0.05	0.02	EPA 350.1	362293
35304620003	4/6/2017	Inflow 3-3	NH3	0.46	mg/L		0.05	0.02	EPA 350.1	362293
35304620004	4/6/2017	Ouflow-3	NH3	0.031	mg/L	I	0.05	0.02	EPA 350.1	362293
35304620001	4/6/2017	Inflow 1-3	NOX	0.46	mg/L		0.05	0.025	EPA 353.2	361596
35304620002	4/6/2017	Inflow 2-3	NOX	0.74	mg/L		0.05	0.025	EPA 353.2	361596
35304620003	4/6/2017	Inflow 3-3	NOX	0.5	mg/L		0.05	0.025	EPA 353.2	361596
35304620004	4/6/2017	Ouflow-3	NOX	0.025	mg/L	U	0.05	0.025	EPA 353.2	361596
35304620001	4/6/2017	Inflow 1-3	PO43-	0.19	mg/L	J(M1)	0.004	0.0034	EPA 365.1	361120
35304620002	4/6/2017	Inflow 2-3	PO43-	0.32	mg/L		0.004	0.0034	EPA 365.1	361120
35304620003	4/6/2017	Inflow 3-3	PO43-	0.32	mg/L		0.004	0.0034	EPA 365.1	361120
35304620004	4/6/2017	Ouflow-3	PO43-	0.0045	mg/L		0.004	0.0034	EPA 365.1	361120
35304620001	4/6/2017	Inflow 1-3	TKN	1.7	mg/L		0.5	0.086	EPA 351.2	361767

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35304620002	4/6/2017	Inflow 2-3	TKN	2.3	mg/L		0.5	0.086	EPA 351.2	361767
35304620003	4/6/2017	Inflow 3-3	TKN	1.9	mg/L		0.5	0.086	EPA 351.2	361767
35304620004	4/6/2017	Ouflow-3	TKN	1.4	mg/L		0.5	0.086	EPA 351.2	361767
35304620001	4/6/2017	Inflow 1-3	TN	2.1	mg/L		0.5	0.086	TKN+NOx Calculation	
35304620002	4/6/2017	Inflow 2-3	TN	3	mg/L		0.5	0.086	TKN+NOx Calculation	
35304620003	4/6/2017	Inflow 3-3	TN	2.4	mg/L		0.5	0.086	TKN+NOx Calculation	
35304620004	4/6/2017	Ouflow-3	TN	1.4	mg/L		0.5	0.086	TKN+NOx Calculation	
35304620001	4/6/2017	Inflow 1-3	TP LL	0.27	mg/L		0.004	0.0028	EPA 365.3	361283
35304620002	4/6/2017	Inflow 2-3	TP LL	0.44	mg/L		0.004	0.0028	EPA 365.3	361283
35304620003	4/6/2017	Inflow 3-3	TP LL	0.4	mg/L		0.004	0.0028	EPA 365.3	361283
35304620004	4/6/2017	Ouflow-3	TP LL	0.083	mg/L		0.004	0.0028	EPA 365.3	361283
35304620001	4/6/2017	Inflow 1-3	TSS	47	mg/L		2.5	2.5	SM 2540D	361464
35304620002	4/6/2017	Inflow 2-3	TSS	77	mg/L		2.5	2.5	SM 2540D	361464
35304620003	4/6/2017	Inflow 3-3	TSS	87.2	mg/L		1.7	1.7	SM 2540D	361464
35304620004	4/6/2017	Ouflow-3	TSS	23.2	mg/L		2.5	2.5	SM 2540D	361464
35304620001	4/6/2017	Inflow 1-3	Zn	14.4	ug/L	I	20	10	EPA 200.7	362364
35304620002	4/6/2017	Inflow 2-3	Zn	64.6	ug/L		20	10	EPA 200.7	362364
35304620003	4/6/2017	Inflow 3-3	Zn	20.2	ug/L		20	10	EPA 200.7	362364
35304620004	4/6/2017	Ouflow-3	Zn	10	ug/L	U	20	10	EPA 200.7	362364

Sampling Event Number: 4

35314321002	5/25/2017	Outflow - 4	Cd	0.26	ug/L		0.1	0.05	EPA 200.8	372127
35314321001	5/25/2017	Total Inflow - 4	Cd	0.31	ug/L		0.1	0.05	EPA 200.8	372127
35314321002	5/25/2017	Outflow - 4	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	372253
35314321001	5/25/2017	Total Inflow - 4	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	372253
35314321002	5/25/2017	Outflow - 4	Cu	8.3	ug/L		1	0.93	EPA 200.8	372127
35314321001	5/25/2017	Total Inflow - 4	Cu	0.93	ug/L	U	1	0.93	EPA 200.8	372127
35314321002	5/25/2017	Outflow - 4	NH3	0.28	mg/L		0.05	0.02	EPA 350.1	372675
35314321001	5/25/2017	Total Inflow - 4	NH3	0.02	mg/L	U	0.05	0.002	EPA 350.1	372675
35314321002	5/25/2017	Outflow - 4	NOX	0.44	mg/L		0.05	0.025	EPA 353.2	371893
35314321001	5/25/2017	Total Inflow - 4	NOX	0.025	mg/L	U	0.05	0.025	EPA 353.2	371893
35314321002	5/25/2017	Outflow - 4	PO43-	0.17	mg/L		0.004	0.0038	EPA 365.1	371199
35314321001	5/25/2017	Total Inflow - 4	PO43-	0.0038	mg/L	U	0.004	0.0038	EPA 365.1	371199
35314321002	5/25/2017	Outflow - 4	TKN	1.8	mg/L		0.5	0.086	EPA 351.2	372721

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35314321001	5/25/2017	Total Inflow - 4	TKN	0.68	mg/L		0.5	0.086	EPA 351.2	372721
35314321002	5/25/2017	Outflow - 4	TN	2.2	mg/L		0.5	0.086	TKN+NOx Calculation	
35314321001	5/25/2017	Total Inflow - 4	TN	0.68	mg/L		0.5	0.086	TKN+NOx Calculation	
35314321002	5/25/2017	Outflow - 4	TON	1.5	mg/L		0.5	0.25	TKN-NH3 Calculation	
35314321001	5/25/2017	Total Inflow - 4	TON	0.67	mg/L		0.5	0.25	TKN-NH3 Calculation	
35314321002	5/25/2017	Outflow - 4	TP LL	0.25	mg/L		0.004	0.0038	EPA 365.3	372475
35314321001	5/25/2017	Total Inflow - 4	TP LL	0.017	mg/L		0.004	0.0028	EPA 365.3	372475
35314321002	5/25/2017	Outflow - 4	TSS	21.3	mg/L		1	1	SM 2540D	371833
35314321001	5/25/2017	Total Inflow - 4	TSS	2.2	mg/L		1	1	SM 2540D	371833
35314321002	5/25/2017	Outflow - 4	Zn	57.8	ug/L		20	10	EPA 200.7	372253
35314321001	5/25/2017	Total Inflow - 4	Zn	10	ug/L	U	20	10	EPA 200.7	372253

Sampling Event Number: 5

35317484001	6/12/2017	Inflow 1 -5	Cd	0.092	ug/L		0.1	0.05	EPA 200.8	375777
35317484002	6/12/2017	Inflow 2-5 and 3-5	Cd	0.41	ug/L		0.1	0.05	EPA 200.8	375777
35317484003	6/12/2017	Outflow -5	Cd	0.48	ug/L		0.1	0.05	EPA 200.8	375777
35317484001	6/12/2017	Inflow 1 -5	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	375767
35317484002	6/12/2017	Inflow 2-5 and 3-5	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	375767
35317484003	6/12/2017	Outflow -5	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	375767
35317484001	6/12/2017	Inflow 1 -5	Cu	1.1	ug/L		1	0.93	EPA 200.8	375777
35317484002	6/12/2017	Inflow 2-5 and 3-5	Cu	9.7	ug/L		1	0.93	EPA 200.8	375777
35317484003	6/12/2017	Outflow -5	Cu	0.93	ug/L	U	1	0.93	EPA 200.8	375777
35317484001	6/12/2017	Inflow 1 -5	NH3	0.02	mg/L	U	0.05	0.02	EPA 350.1	375217
35317484002	6/12/2017	Inflow 2-5 and 3-5	NH3	0.25	mg/L		0.05	0.02	EPA 350.1	375217
35317484003	6/12/2017	Outflow -5	NH3	0.02	mg/L	U	0.05	0.02	EPA 350.1	375217
35317484001	6/12/2017	Inflow 1 -5	NOX	0.057	mg/L		0.05	0.025	EPA 353.2	35317484
35317484002	6/12/2017	Inflow 2-5 and 3-5	NOX	1.3	mg/L		0.05	0.025	EPA 353.2	35317484
35317484003	6/12/2017	Outflow -5	NOX	0.38	mg/L		0.05	0.025	EPA 353.2	35317484
35317484001	6/12/2017	Inflow 1 -5	PO43-	0.024	mg/L		0.004	0.0038	EPA 365.1	374457
35317484002	6/12/2017	Inflow 2-5 and 3-5	PO43-	0.042	mg/L		0.004	0.0038	EPA 365.1	374457
35317484003	6/12/2017	Outflow -5	PO43-	0.0038	mg/L	U	0.004	0.0038	EPA 365.1	374457
35317484001	6/12/2017	Inflow 1 -5	TKN	0.14	mg/L	I	0.5	0.086	EPA 351.2	374732
35317484002	6/12/2017	Inflow 2-5 and 3-5	TKN	2.2	mg/L		0.5	0.086	EPA 351.2	374732
35317484003	6/12/2017	Outflow -5	TKN	0.73	mg/L		0.5	0.086	EPA 351.2	374732

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35317484001	6/12/2017	Inflow 1 -5	TN	0.2	mg/L	I	0.5	0.086	TKN+NOx Calculation	
35317484002	6/12/2017	Inflow 2-5 and 3-5	TN	2.3	mg/L		0.5	0.086	TKN+NOx Calculation	
35317484003	6/12/2017	Outflow -5	TN	1.1	mg/L		0.5	0.086	TKN+NOx Calculation	
35317484001	6/12/2017	Inflow 1 -5	TON	0.25	mg/L	U	0.5	0.25	TKN-NH3 Calculation	
35317484002	6/12/2017	Inflow 2-5 and 3-5	TON	1.9	mg/L		0.5	0.25	TKN-NH3 Calculation	
35317484003	6/12/2017	Outflow -5	TON	0.73	mg/L		0.5	0.25	TKN-NH3 Calculation	
35317484001	6/12/2017	Inflow 1 -5	TP LL	0.037	mg/L		0.004	0.0028	EPA 365.3	374792
35317484002	6/12/2017	Inflow 2-5 and 3-5	TP LL	0.31	mg/L		0.004	0.0028	EPA 365.3	374792
35317484003	6/12/2017	Outflow -5	TP LL	0.0094	mg/L		0.004	0.0028	EPA 365.3	374792
35317484001	6/12/2017	Inflow 1 -5	TSS	9.8	mg/L		1	1	SM 2540D	375649
35317484002	6/12/2017	Inflow 2-5 and 3-5	TSS	103	mg/L		1	1	SM 2540D	375649
35317484003	6/12/2017	Outflow -5	TSS	1	mg/L		1	1	SM 2540D	375649
35317484001	6/12/2017	Inflow 1 -5	Zn	10	ug/L	U	20	10	EPA 200.7	375767
35317484002	6/12/2017	Inflow 2-5 and 3-5	Zn	264	ug/L		20	10	EPA 200.7	375767
35317484003	6/12/2017	Outflow -5	Zn	10	ug/L	U	20	10	EPA 200.7	375767

Sampling Event Number: 6

35320796001	6/28/2017	Inflow 1-6	Cd	0.05	ug/L	U	10	0.05	EPA 200.8	379757
35320796002	6/28/2017	Inflow 2-6	Cd	0.069	ug/L	I	0.1	0.05	EPA 200.8	379757
35320796003	6/28/2017	Inflow 3-6	Cd	0.065	ug/L	I	0.1	0.05	EPA 200.8	379757
35320796004	6/28/2017	Outflow -6	Cd	0.52	ug/L		0.1	0.05	EPA 200.8	379757
35320796001	6/28/2017	Inflow 1-6	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	379756
35320796002	6/28/2017	Inflow 2-6	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	379756
35320796003	6/28/2017	Inflow 3-6	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	379756
35320796004	6/28/2017	Outflow -6	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	379756
35320796001	6/28/2017	Inflow 1-6	Cu	1.8	ug/L	J(M1)	1	0.93	EPA 200.8	379757
35320796002	6/28/2017	Inflow 2-6	Cu	2.1	ug/L		1	0.93	EPA 200.8	379757
35320796003	6/28/2017	Inflow 3-6	Cu	2.9	ug/L		1	0.93	EPA 200.8	379757
35320796004	6/28/2017	Outflow -6	Cu	0.93	ug/L	U	1	0.93	EPA 200.8	379757
35320796001	6/28/2017	Inflow 1-6	NH3	0.034	mg/L	I	0.05	0.02	EPA 350.1	379246
35320796002	6/28/2017	Inflow 2-6	NH3	0.062	mg/L		0.05	0.02	EPA 350.1	379246
35320796003	6/28/2017	Inflow 3-6	NH3	0.074	mg/L		0.05	0.02	EPA 350.1	379246
35320796004	6/28/2017	Outflow -6	NH3	0.02	mg/L	U	0.05	0.02	EPA 350.1	379246
35320796001	6/28/2017	Inflow 1-6	NOX	0.14	mg/L		0.05	0.025	EPA 353.2	378976

Lab Sample ID:	Sampling Date:	Field Sample ID:	Parameter:	Result:	Units:	Qualifier:	PQL:	MDL:	Analytical Method:	QC Batch Number:
35320796002	6/28/2017	Inflow 2-6	NOX	0.27	mg/L		0.05	0.025	EPA 353.2	378976
35320796003	6/28/2017	Inflow 3-6	NOX	0.32	mg/L		0.05	0.025	EPA 353.2	378976
35320796004	6/28/2017	Outflow -6	NOX	0.058	mg/L		0.05	0.025	EPA 353.2	378976
35320796001	6/28/2017	Inflow 1-6	PO43-	0.06	mg/L		0.004	0.0038	EPA 365.1	377987
35320796002	6/28/2017	Inflow 2-6	PO43-	0.12	mg/L		0.004	0.0038	EPA 365.1	377987
35320796003	6/28/2017	Inflow 3-6	PO43-	0.16	mg/L		0.004	0.0038	EPA 365.1	377987
35320796004	6/28/2017	Outflow -6	PO43-	0.0038	mg/L	U	0.004	0.0038	EPA 365.1	377987
35320796001	6/28/2017	Inflow 1-6	TKN	0.33	mg/L	I	0.5	0.086	EPA 351.2	378809
35320796002	6/28/2017	Inflow 2-6	TKN	0.62	mg/L		0.5	0.086	EPA 351.2	378666
35320796003	6/28/2017	Inflow 3-6	TKN	0.63	mg/L		0.5	0.086	EPA 351.2	378666
35320796004	6/28/2017	Outflow -6	TKN	0.71	mg/L		5	0.086	EPA 351.2	378666
35320796001	6/28/2017	Inflow 1-6	TN	0.47	mg/L	I	0.5	0.086	TKN+NOx Calculation	
35320796002	6/28/2017	Inflow 2-6	TN	0.9	mg/L		0.5	0.086	TKN+NOx Calculation	
35320796003	6/28/2017	Inflow 3-6	TN	0.95	mg/L		0.5	0.086	TKN+NOx Calculation	
35320796004	6/28/2017	Outflow -6	TN	0.77	mg/L		0.5	0.086	TKN+NOx Calculation	
35320796001	6/28/2017	Inflow 1-6	TP LL	0.12	mg/L		0.004	0.0028	EPA 365.3	378987
35320796002	6/28/2017	Inflow 2-6	TP LL	0.18	mg/L		0.004	0.0028	EPA 365.3	378987
35320796003	6/28/2017	Inflow 3-6	TP LL	0.22	mg/L		0.004	0.0028	EPA 365.3	378987
35320796004	6/28/2017	Outflow -6	TP LL	0.018	mg/L	J(D6)	0.004	0.0028	EPA 365.3	379071
35320796001	6/28/2017	Inflow 1-6	TSS	30.6	mg/L		1.4	1.4	SM 2540D	378683
35320796002	6/28/2017	Inflow 2-6	TSS	38.9	mg/L		1.2	1.2	SM 2540D	378683
35320796003	6/28/2017	Inflow 3-6	TSS	36.6	mg/L		1	1	SM 2540D	378683
35320796004	6/28/2017	Outflow -6	TSS	2.5	mg/L		1	1	SM 2540D	378683
35320796001	6/28/2017	Inflow 1-6	Zn	15.5	ug/L	I	20	10	EPA 200.7	379756
35320796002	6/28/2017	Inflow 2-6	Zn	55.1	ug/L		20	10	EPA 200.7	379756
35320796003	6/28/2017	Inflow 3-6	Zn	10.2	ug/L	I	20	10	EPA 200.7	379756
35320796004	6/28/2017	Outflow -6	Zn	10	ug/L	U	20	10	EPA 200.7	379756
Sampling Event Number: 7										
35325105001	7/20/2017	Inflow 1-7	Cd	0.099	ug/L	I	0.1	0.05	EPA 200.8	384162
35325105002	7/20/2017	Inflow 2-7	Cd	0.16	ug/L		0.1	0.05	EPA 200.8	384162
35325105003	7/20/2017	Inflow 3-7	Cd	0.075	ug/L	I	0.1	0.05	EPA 200.8	384162
35325105004	7/20/2017	Outflow - 7	Cd	1.3	ug/L		0.1	0.05	EPA 200.8	384162
35325105001	7/20/2017	Inflow 1-7	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	384161

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35325105002	7/20/2017	Inflow 2-7	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	384161
35325105003	7/20/2017	Inflow 3-7	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	384161
35325105004	7/20/2017	Outflow - 7	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	384161
35325105001	7/20/2017	Inflow 1-7	Cu	1.5	ug/L		1	0.93	EPA 200.8	384162
35325105002	7/20/2017	Inflow 2-7	Cu	6.1	ug/L		1	0.93	EPA 200.8	384162
35325105003	7/20/2017	Inflow 3-7	Cu	3.4	ug/L		1	0.93	EPA 200.8	384162
35325105004	7/20/2017	Outflow - 7	Cu	1	ug/L		1	0.93	EPA 200.8	384162
35325105001	7/20/2017	Inflow 1-7	NH3	0.06	mg/L		0.05	0.02	EPA 350.1	383363
35325105002	7/20/2017	Inflow 2-7	NH3	0.15	mg/L		0.05	0.02	EPA 350.1	383363
35325105003	7/20/2017	Inflow 3-7	NH3	0.14	mg/L		0.05	0.02	EPA 350.1	383363
35325105004	7/20/2017	Outflow - 7	NH3	0.02	mg/L	I	0.05	0.02	EPA 350.1	383363
35325105001	7/20/2017	Inflow 1-7	NOX	0.33	mg/L		0.05	0.025	EPA 353.2	382980
35325105002	7/20/2017	Inflow 2-7	NOX	0.46	mg/L		0.05	0.025	EPA 353.2	382980
35325105003	7/20/2017	Inflow 3-7	NOX	0.42	mg/L		0.05	0.025	EPA 353.2	382980
35325105004	7/20/2017	Outflow - 7	NOX	0.025	mg/L	U	0.05	0.025	EPA 353.2	382980
35325105001	7/20/2017	Inflow 1-7	PO43-	0.14	mg/L		0.004	0.0038	EPA 365.1	382385
35325105002	7/20/2017	Inflow 2-7	PO43-	0.32	mg/L		0.004	0.0038	EPA 365.1	382385
35325105003	7/20/2017	Inflow 3-7	PO43-	0.43	mg/L		0.004	0.0038	EPA 365.1	382385
35325105004	7/20/2017	Outflow - 7	PO43-	0.0038	mg/L	U	0.004	0.0038	EPA 365.1	382385
35325105001	7/20/2017	Inflow 1-7	TKN	0.44	mg/L	I	0.5	0.086	EPA 351.2	383214
35325105002	7/20/2017	Inflow 2-7	TKN	1.1	mg/L		0.5	0.086	EPA 351.2	383214
35325105003	7/20/2017	Inflow 3-7	TKN	0.99	mg/L		0.5	0.086	EPA 351.2	383214
35325105004	7/20/2017	Outflow - 7	TKN	0.7	mg/L		0.5	0.086	EPA 351.2	383214
35325105001	7/20/2017	Inflow 1-7	TN	0.77	mg/L		0.5	0.086	TKN+NOx Calculation	
35325105002	7/20/2017	Inflow 2-7	TN	1.6	mg/L		0.5	0.086	TKN+NOx Calculation	
35325105003	7/20/2017	Inflow 3-7	TN	1.4	mg/L		0.5	0.086	TKN+NOx Calculation	
35325105004	7/20/2017	Outflow - 7	TN	0.71	mg/L		0.5	0.086	TKN+NOx Calculation	
35325105001	7/20/2017	Inflow 1-7	TON	0.38	mg/L	I	0.5	0.25	TKN-NH3 Calculation	
35325105002	7/20/2017	Inflow 2-7	TON	0.96	mg/L		0.5	0.25	TKN-NH3 Calculation	
35325105003	7/20/2017	Inflow 3-7	TON	0.85	mg/L		0.5	0.25	TKN-NH3 Calculation	
35325105004	7/20/2017	Outflow - 7	TON	0.68	mg/L		0.5	0.25	TKN-NH3 Calculation	
35325105001	7/20/2017	Inflow 1-7	TP LL	0.18	mg/L		0.004	0.0028	EPA 365.3	382670
35325105002	7/20/2017	Inflow 2-7	TP LL	0.4	mg/L		0.004	0.0028	EPA 365.3	382670

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35325105003	7/20/2017	Inflow 3-7	TP LL	0.48	mg/L		0.004	0.0028	EPA 365.3	382670
35325105004	7/20/2017	Outflow - 7	TP LL	0.0095	mg/L		0.004	0.0028	EPA 365.3	382670
35325105001	7/20/2017	Inflow 1-7	TSS	26.8	mg/L		1	1	SM 2540D	382990
35325105002	7/20/2017	Inflow 2-7	TSS	50.1	mg/L		1	1	SM 2540D	382990
35325105003	7/20/2017	Inflow 3-7	TSS	35.5	mg/L		1	1	SM 2540D	382990
35325105004	7/20/2017	Outflow - 7	TSS	1.5	mg/L		1	1	SM 2540D	382990
35325105001	7/20/2017	Inflow 1-7	Zn	10	ug/L	U	20	10	EPA 200.7	384161
35325105002	7/20/2017	Inflow 2-7	Zn	67.9	ug/L		20	10	EPA 200.7	384161
35325105003	7/20/2017	Inflow 3-7	Zn	10	ug/L	U	20	10	EPA 200.7	384161
35325105004	7/20/2017	Outflow - 7	Zn	10	ug/L	U	20	10	EPA 200.7	384161
Sampling Event Number: 8										
35328309001	8/4/2017	Inflow 1-8	Cd	0.05	ug/L	U	0.1	0.05	EPA 200.8	387557
35328309002	8/4/2017	Inflow 2-8	Cd	0.05	ug/L	U	0.1	0.05	EPA 200.8	387557
35328309003	8/4/2017	Inflow 3-8	Cd	0.15	ug/L		0.1	0.05	EPA 200.8	387557
35328309004	8/4/2017	Outflow -8	Cd	0.05	ug/L	U	0.1	0.05	EPA 200.8	387557
35328309001	8/4/2017	Inflow 1-8	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	387554
35328309002	8/4/2017	Inflow 2-8	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	387554
35328309003	8/4/2017	Inflow 3-8	Cr	2.5	ug/L	U	5	5	EPA 200.7	387554
35328309004	8/4/2017	Outflow -8	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	387554
35328309001	8/4/2017	Inflow 1-8	Cu	1.2	ug/L		1	0.93	EPA 200.8	387557
35328309002	8/4/2017	Inflow 2-8	Cu	2.1	ug/L		1	0.93	EPA 200.8	387557
35328309003	8/4/2017	Inflow 3-8	Cu	3.3	ug/L		1	0.93	EPA 200.8	387557
35328309004	8/4/2017	Outflow -8	Cu	0.93	ug/L	U	1	0.93	EPA 200.8	387557
35328309001	8/4/2017	Inflow 1-8	NH3	0.02	mg/L	U	0.05	0.02	EPA 350.1	386568
35328309002	8/4/2017	Inflow 2-8	NH3	0.099	mg/L		0.05	0.02	EPA 350.1	386568
35328309003	8/4/2017	Inflow 3-8	NH3	0.078	mg/L		0.05	0.02	EPA 350.1	386568
35328309004	8/4/2017	Outflow -8	NH3	0.02	mg/L	U	0.05	0.02	EPA 350.1	386568
35328309001	8/4/2017	Inflow 1-8	NOX	0.13	mg/L		0.05	0.025	EPA 353.2	385986
35328309002	8/4/2017	Inflow 2-8	NOX	0.33	mg/L		0.05	0.025	EPA 353.2	385986
35328309003	8/4/2017	Inflow 3-8	NOX	0.21	mg/L		0.05	0.025	EPA 353.2	385986
35328309004	8/4/2017	Outflow -8	NOX	0.025	mg/L	U	0.05	0.025	EPA 353.2	385986
35328309001	8/4/2017	Inflow 1-8	PO43-	0.037	mg/L		0.004	0.0038	EPA 365.1	385554
35328309002	8/4/2017	Inflow 2-8	PO43-	0.13	mg/L		0.004	0.0038	EPA 365.1	385554

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35328309003	8/4/2017	Inflow 3-8	PO43-	0.053	mg/L		0.004	0.0038	EPA 365.1	385554
35328309004	8/4/2017	Outflow -8	PO43-	0.007	mg/L		0.004	0.0038	EPA 365.1	385554
35328309001	8/4/2017	Inflow 1-8	TKN	0.39	mg/L	I	0.5	0.086	EPA 351.2	385942
35328309002	8/4/2017	Inflow 2-8	TKN	0.66	mg/L		0.5	0.086	EPA 351.2	385942
35328309003	8/4/2017	Inflow 3-8	TKN	1.1	mg/L		0.5	0.086	EPA 351.2	385942
35328309004	8/4/2017	Outflow -8	TKN	1.4	mg/L		0.5	0.086	EPA 351.2	385973
35328309001	8/4/2017	Inflow 1-8	TN	0.52	mg/L		0.5	0.086	TKN+NOx Calculation	
35328309002	8/4/2017	Inflow 2-8	TN	0.99	mg/L		0.5	0.086	TKN+NOx Calculation	
35328309003	8/4/2017	Inflow 3-8	TN	1.3	mg/L		0.5	0.086	TKN+NOx Calculation	
35328309004	8/4/2017	Outflow -8	TN	1.4	mg/L		0.5	0.086	TKN+NOx Calculation	
35328309001	8/4/2017	Inflow 1-8	TON	0.38	mg/L	I	0.5	0.25	TKN-NH3 Calculation	
35328309002	8/4/2017	Inflow 2-8	TON	0.56	mg/L		0.5	0.25	TKN-NH3 Calculation	
35328309003	8/4/2017	Inflow 3-8	TON	1	mg/L		0.5	0.25	TKN-NH3 Calculation	
35328309004	8/4/2017	Outflow -8	TON	1.4	mg/L		0.5	0.25	TKN-NH3 Calculation	
35328309001	8/4/2017	Inflow 1-8	TP LL	0.16	mg/L		0.004	0.0028	EPA 365.3	385700
35328309002	8/4/2017	Inflow 2-8	TP LL	0.16	mg/L		0.004	0.0028	EPA 365.3	385700
35328309003	8/4/2017	Inflow 3-8	TP LL	0.14	mg/L		0.004	0.0028	EPA 365.3	385700
35328309004	8/4/2017	Outflow -8	TP LL	0.029	mg/L		0.004	0.0028	EPA 365.3	385700
35328309001	8/4/2017	Inflow 1-8	TSS	15.8	mg/L		1	1	SM 2540D	386249
35328309002	8/4/2017	Inflow 2-8	TSS	5.8	mg/L		1	1	SM 2540D	386249
35328309003	8/4/2017	Inflow 3-8	TSS	32.9	mg/L		2.2	2.2	SM 2540D	386249
35328309004	8/4/2017	Outflow -8	TSS	153	mg/L		33.3	33.3	SM 2540D	386249
35328309001	8/4/2017	Inflow 1-8	Zn	10	ug/L	U	20	10	EPA 200.7	387554
35328309002	8/4/2017	Inflow 2-8	Zn	27.6	ug/L		20	10	EPA 200.7	387554
35328309003	8/4/2017	Inflow 3-8	Zn	38.5	ug/L		20	10	EPA 200.7	387554
35328309004	8/4/2017	Outflow -8	Zn	10	ug/L	U	20	10	EPA 200.7	387554
Sampling Event Number: 9										
35330081001	8/13/2017	Inflow 1 -9	Cd	0.3	ug/L		0.01	0.05	EPA 200.8	388570
35330081002	8/13/2017	Inflow 2 -9	Cd	0.069	ug/L	I	0.1	0.05	EPA 200.8	388570
35330081003	8/13/2017	Inflow 3 -9	Cd	0.14	ug/L		0.1	0.05	EPA 200.8	388570
35330081004	8/13/2017	Outflow -9	Cd	1.1	ug/L		0.1	0.05	EPA 200.8	388570
35330081001	8/13/2017	Inflow 1 -9	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	388569
35330081002	8/13/2017	Inflow 2 -9	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	388569

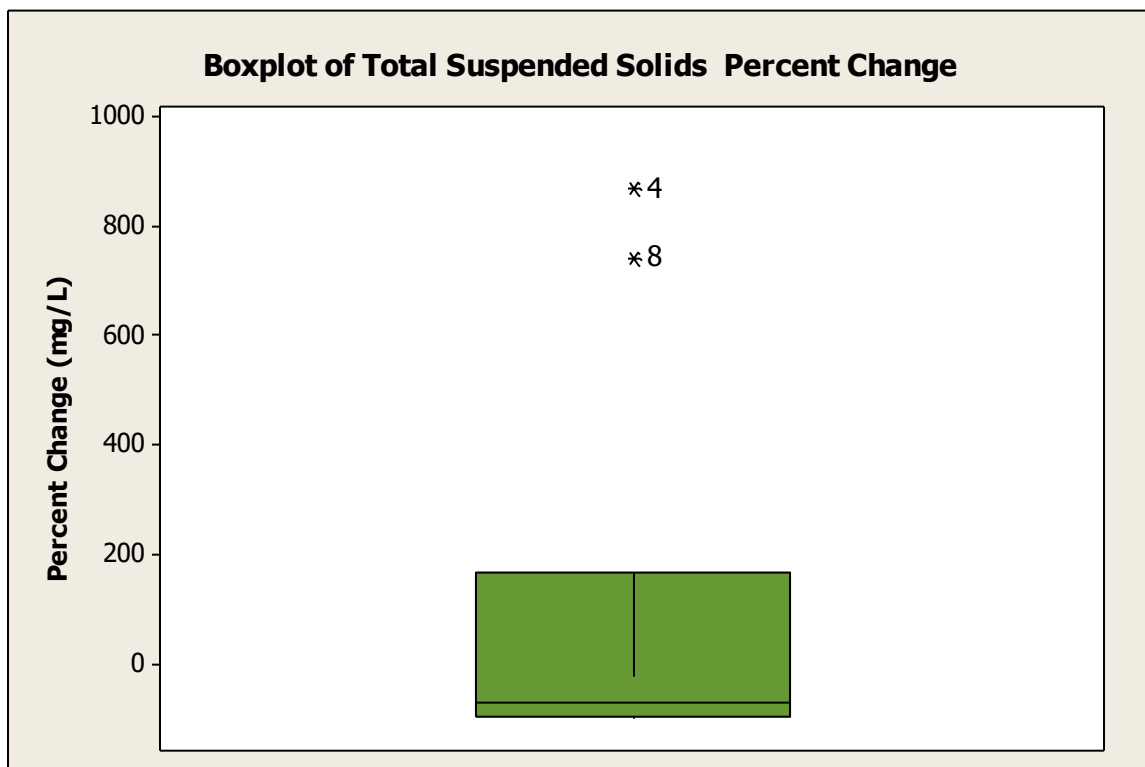
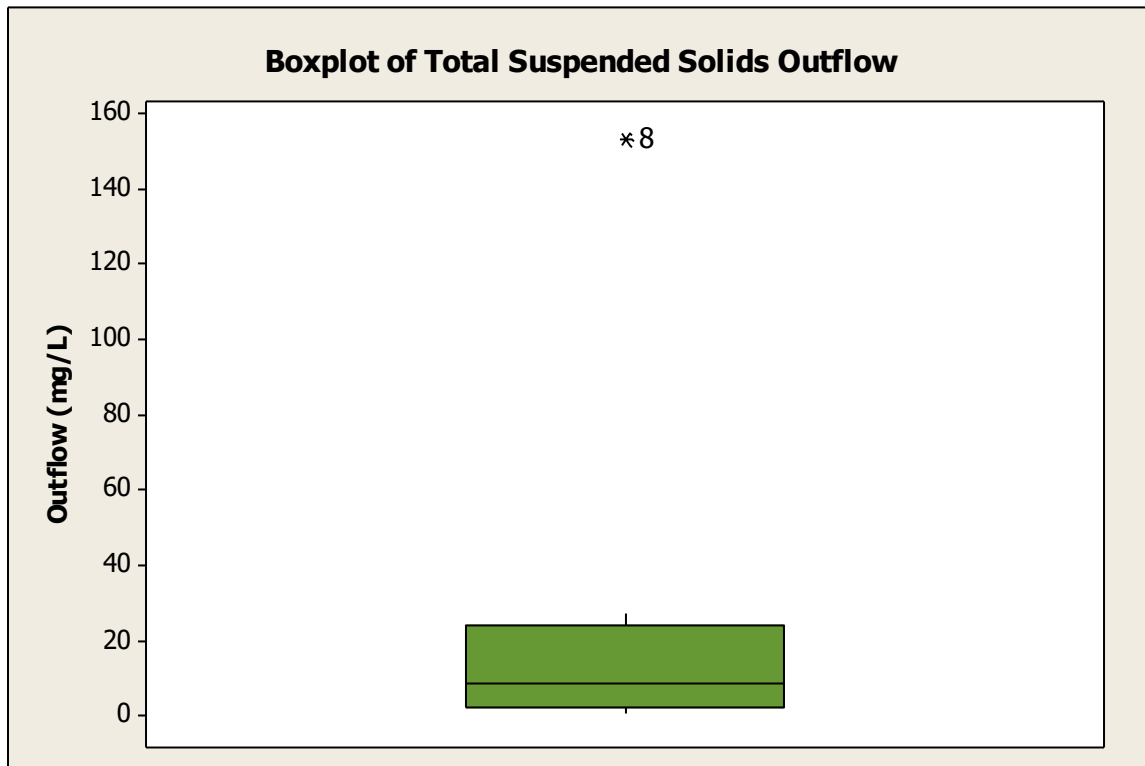
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35330081003	8/13/2017	Inflow 3 -9	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	388569
35330081004	8/13/2017	Outflow -9	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	388569
35330081001	8/13/2017	Inflow 1 -9	Cu	2.8	ug/L		1	0.93	EPA 200.8	388570
35330081002	8/13/2017	Inflow 2 -9	Cu	2.9	ug/L		1	0.93	EPA 200.8	388570
35330081003	8/13/2017	Inflow 3 -9	Cu	2.2	ug/L		0	0.93	EPA 200.8	388570
35330081004	8/13/2017	Outflow -9	Cu	0.93	ug/L	U	1	0.93	EPA 200.8	388570
35330081001	8/13/2017	Inflow 1 -9	NH3	0.031	mg/L	I	0.05	0.02	EPA 350.1	387635
35330081002	8/13/2017	Inflow 2 -9	NH3	0.093	mg/L		0.05	0.02	EPA 350.1	387635
35330081003	8/13/2017	Inflow 3 -9	NH3	0.31	mg/L		0.05	0.02	EPA 350.1	387635
35330081004	8/13/2017	Outflow -9	NH3	0.02	mg/L	U	0.05	0.02	EPA 350.1	387635
35330081001	8/13/2017	Inflow 1 -9	NOX	0.27	mg/L		0.05	0.025	EPA 353.2	387725
35330081002	8/13/2017	Inflow 2 -9	NOX	0.19	mg/L		0.05	0.025	EPA 353.2	387725
35330081003	8/13/2017	Inflow 3 -9	NOX	0.16	mg/L		0.05	0.025	EPA 353.2	387725
35330081004	8/13/2017	Outflow -9	NOX	0.025	mg/L		0.05	0.025	EPA 353.2	387725
35330081001	8/13/2017	Inflow 1 -9	PO43-	0.14	mg/L	Q	0.004	0.0038	EPA 365.1	387470
35330081002	8/13/2017	Inflow 2 -9	PO43-	0.099	mg/L	Q	0.004	0.0038	EPA 365.1	387470
35330081003	8/13/2017	Inflow 3 -9	PO43-	0.12	mg/L		0.004	0.0038	EPA 365.1	387470
35330081004	8/13/2017	Outflow -9	PO43-	0.0038	mg/L	U	0.004	0.0038	EPA 365.1	387470
35330081001	8/13/2017	Inflow 1 -9	TKN	0.72	mg/L		0.5	0.086	EPA 351.2	387700
35330081002	8/13/2017	Inflow 2 -9	TKN	0.9	mg/L		0.5	0.086	EPA 351.2	387700
35330081003	8/13/2017	Inflow 3 -9	TKN	1.3	mg/L		0.5	0.086	EPA 351.2	387700
35330081004	8/13/2017	Outflow -9	TKN	0.77	mg/L		0.5	0.086	EPA 351.2	387700
35330081001	8/13/2017	Inflow 1 -9	TN	0.98	mg/L		0.5	0.086	TKN+NOx Calculation	
35330081002	8/13/2017	Inflow 2 -9	TN	1.1	mg/L		0.5	0.086	TKN+NOx Calculation	
35330081003	8/13/2017	Inflow 3 -9	TN	1.5	mg/L		0.5	0.086	TKN+NOx Calculation	
35330081004	8/13/2017	Outflow -9	TN	0.79	mg/L		0.5	0.086	TKN+NOx Calculation	
35330081001	8/13/2017	Inflow 1 -9	TON	0.68	mg/L		0.5	0.25	TKN-NH3 Calculation	
35330081002	8/13/2017	Inflow 2 -9	TON	0.8	mg/L		0.5	0.25	TKN-NH3 Calculation	
35330081003	8/13/2017	Inflow 3 -9	TON	1	mg/L		0.5	0.25	TKN-NH3 Calculation	
35330081004	8/13/2017	Outflow -9	TON	0.77	mg/L		0.5	0.25	TKN-NH3 Calculation	
35330081001	8/13/2017	Inflow 1 -9	TP LL	0.16	mg/L		0.004	0.0028	EPA 365.3	387974
35330081002	8/13/2017	Inflow 2 -9	TP LL	0.14	mg/L		0.004	0.0028	EPA 365.3	387974
35330081003	8/13/2017	Inflow 3 -9	TP LL	0.2	mg/L		0.004	0.0028	EPA 365.3	387974

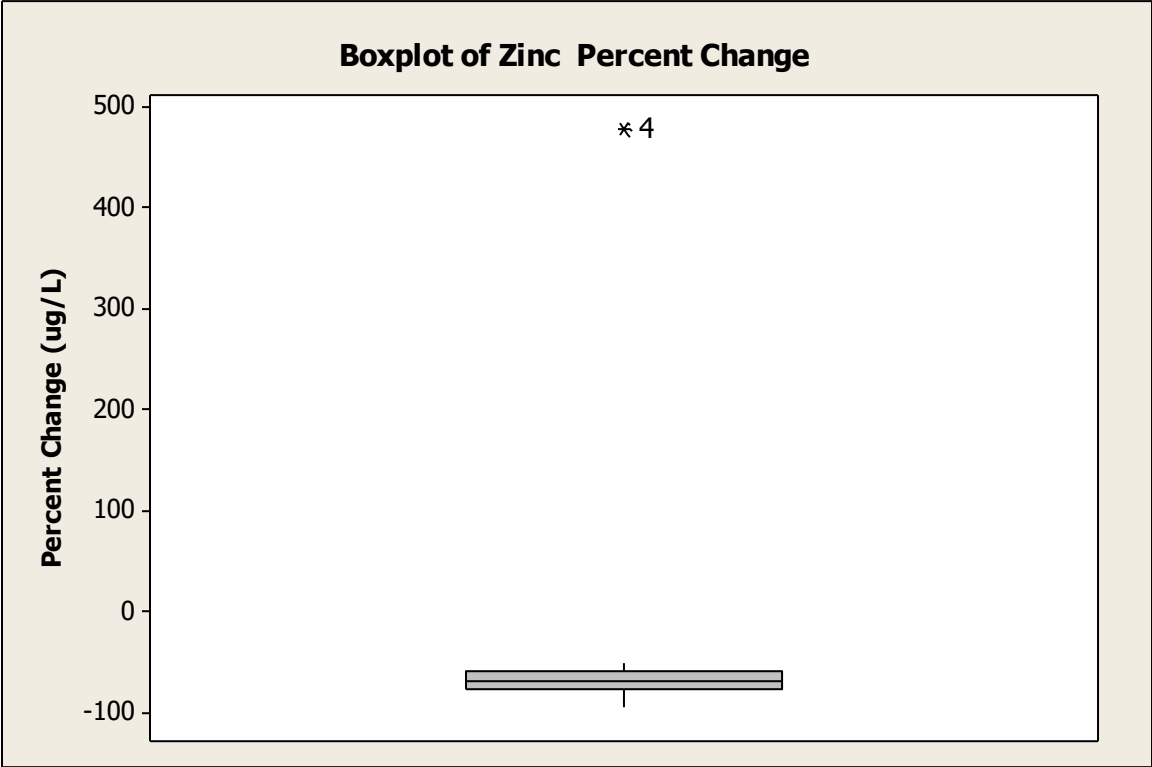
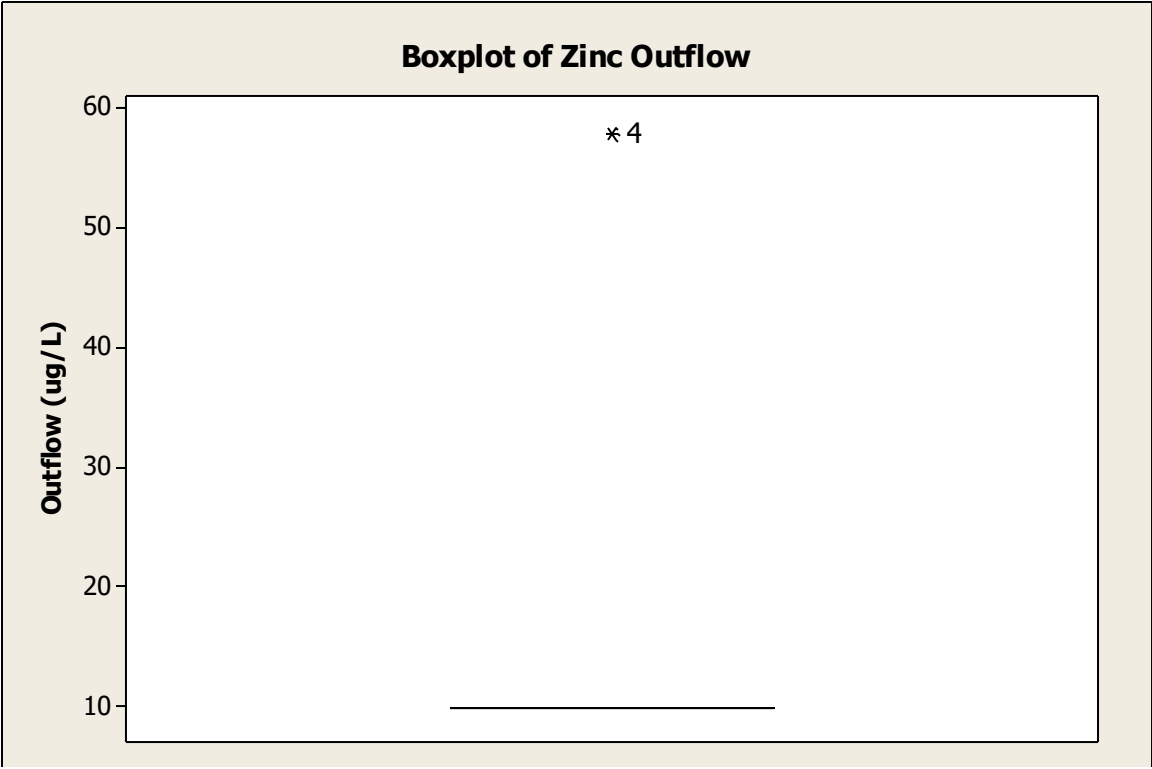
Lab Sample ID:	Sampling Date:	Field Sample ID:	Parameter:	Result:	Units:	Qualifier:	PQL:	MDL:	Analytical Method:	QC Batch Number:
35330081004	8/13/2017	Outflow -9	TP LL	0.012	mg/L		0.004	0.0028	EPA 365.3	387974
35330081001	8/13/2017	Inflow 1 -9	TSS	3.7	mg/L		1	1	SM 2540D	387963
35330081002	8/13/2017	Inflow 2 -9	TSS	61.8	mg/L		1	1	SM 2540D	387963
35330081003	8/13/2017	Inflow 3 -9	TSS	6.3	mg/L		1	1	SM 2540D	387963
35330081004	8/13/2017	Outflow -9	TSS	6.5	mg/L		1	1	SM 2540D	387963
35330081001	8/13/2017	Inflow 1 -9	Zn	10.7	ug/L	I	20	10	EPA 200.7	388569
35330081002	8/13/2017	Inflow 2 -9	Zn	97.7	ug/L		20	10	EPA 200.7	388569
35330081003	8/13/2017	Inflow 3 -9	Zn	10	ug/L	U	20	10	EPA 200.7	388569
35330081004	8/13/2017	Outflow -9	Zn	10	ug/L	U	20	10	EPA 200.7	388569
Sampling Event Number: 10										
35337247001	9/22/2017	Inflow 1- 10	Ar	5	ug/L	U, 1p	10	5	EPA 200.7	395562
35337247001	9/22/2017	Inflow 1- 10	Cd	0.15	ug/L		0.1	0.05	EPA 200.8	395564
35337247002	9/22/2017	Inflow 2- 10	Cd	0.46	ug/L		0.1	0.05	EPA 200.8	395564
35337247003	9/22/2017	Inflow 3 - 10	Cd	1.2	ug/L		0.1	0.05	EPA 200.8	395564
35337247004	9/22/2017	Outflow - 10	Cd	0.13	ug/L		0.1	0.05	EPA 200.8	395564
35337247001	9/22/2017	Inflow 1- 10	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	395562
35337247002	9/22/2017	Inflow 2- 10	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	395562
35337247003	9/22/2017	Inflow 3 - 10	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	395562
35337247004	9/22/2017	Outflow - 10	Cr	2.5	ug/L	U	5	2.5	EPA 200.7	395562
35337247001	9/22/2017	Inflow 1- 10	Cu	3	ug/L		1	0.93	EPA 200.8	395564
35337247002	9/22/2017	Inflow 2- 10	Cu	3.7	ug/L		1	0.93	EPA 200.8	395564
35337247003	9/22/2017	Inflow 3 - 10	Cu	3.6	ug/L		1	0.93	EPA 200.8	395564
35337247004	9/22/2017	Outflow - 10	Cu	0.93	ug/L	U	1	0.93	EPA 200.8	395564
35337247001	9/22/2017	Inflow 1- 10	Na	21800	ug/L	1p	1000	500	EPA 200.7	395562
35337247001	9/22/2017	Inflow 1- 10	NH3	0.02	mg/L	U	0.05	0.02	EPA 350.1	395422
35337247002	9/22/2017	Inflow 2- 10	NH3	0.17	mg/L		0.05	0.02	EPA 350.1	395422
35337247003	9/22/2017	Inflow 3 - 10	NH3	0.086	mg/L		0.05	0.02	EPA 350.1	396604
35337247004	9/22/2017	Outflow - 10	NH3	0.02	mg/L	U	0.05	0.02	EPA 350.1	395422
35337247001	9/22/2017	Inflow 1- 10	NOX	0.32	mg/L		0.05	0.025	EPA 353.2	396276
35337247002	9/22/2017	Inflow 2- 10	NOX	0.17	mg/L		0.05	0.025	EPA 353.2	396276
35337247003	9/22/2017	Inflow 3 - 10	NOX	0.025	mg/L	U	0.05	0.25	EPA 353.2	396276
35337247004	9/22/2017	Outflow - 10	NOX	0.025	mg/L	U	0.05	0.025	EPA 353.2	396276
35337247001	9/22/2017	Inflow 1- 10	PO43-	0.07	mg/L	J(M1)	0.004	0.0038	EPA 365.1	394466

Lab Sample ID:	Sampling Date:	Field Sample ID:	Parameter:	Result:	Units:	Qualifier:	PQL:	MDL:	Analytical Method:	QC Batch Number:
35337247002	9/22/2017	Inflow 2- 10	PO43-	0.077	mg/L		0.004	0.0038	EPA 365.1	394466
35337247003	9/22/2017	Inflow 3 - 10	PO43-	0.057	mg/L		0.004	0.0038	EPA 365.1	394466
35337247004	9/22/2017	Outflow - 10	PO43-	0.0063	mg/L		0.004	0.0038	EPA 365.1	394466
35337247001	9/22/2017	Inflow 1- 10	TKN	0.88	mg/L		0.5	0.086	EPA 351.2	396073
35337247002	9/22/2017	Inflow 2- 10	TKN	1.6	mg/L		0.5	0.086	EPA 351.2	396073
35337247003	9/22/2017	Inflow 3 - 10	TKN	1.7	mg/L		0.5	0.086	EPA 351.2	396073
35337247004	9/22/2017	Outflow - 10	TKN	0.87	mg/L		0.5	0.086	EPA 351.2	396073
35337247001	9/22/2017	Inflow 1- 10	TN	1.2	mg/L		0.5	0.086	TKN+NOx Calculation	
35337247002	9/22/2017	Inflow 2- 10	TN	1.8	mg/L		0.5	0.086	TKN+NOx Calculation	
35337247003	9/22/2017	Inflow 3 - 10	TN	1.7	mg/L		0.5	0.086	TKN+NOx Calculation	
35337247004	9/22/2017	Outflow - 10	TN	0.88	mg/L		0.5	0.086	TKN+NOx Calculation	
35337247001	9/22/2017	Inflow 1- 10	TON	0.88	mg/L		0.5	0.25	TKN-NH3 Calculation	
35337247002	9/22/2017	Inflow 2- 10	TON	1.4	mg/L		0.5	0.25	TKN-NH3 Calculation	
35337247003	9/22/2017	Inflow 3 - 10	TON	1.6	mg/L		0.5	0.25	TKN-NH3 Calculation	
35337247004	9/22/2017	Outflow - 10	TON	0.86	mg/L		0.5	0.25	TKN-NH3 Calculation	
35337247001	9/22/2017	Inflow 1- 10	TP LL	0.11	mg/L		0.004	0.0028	EPA 365.3	396538
35337247002	9/22/2017	Inflow 2- 10	TP LL	0.23	mg/L		0.004	0.0028	EPA 365.3	396538
35337247003	9/22/2017	Inflow 3 - 10	TP LL	0.13	mg/L		0.004	0.0028	EPA 365.3	396538
35337247004	9/22/2017	Outflow - 10	TP LL	0.021	mg/L		0.004	0.0028	EPA 365.3	396538
35337247001	9/22/2017	Inflow 1- 10	TSS	13	mg/L		2	2	SM 2540D	395287
35337247002	9/22/2017	Inflow 2- 10	TSS	37	mg/L		2	2	SM 2540D	395287
35337247003	9/22/2017	Inflow 3 - 10	TSS	3.6	mg/L		1	1	SM 2540D	395287
35337247004	9/22/2017	Outflow - 10	TSS	4.6	mg/L		1.2	1.2	SM 2540D	395287
35337247001	9/22/2017	Inflow 1- 10	Zn	24.9	ug/L		20	10	EPA 200.7	395562
35337247002	9/22/2017	Inflow 2- 10	Zn	80.5	ug/L		20	10	EPA 200.7	395562
35337247003	9/22/2017	Inflow 3 - 10	Zn	25.9	ug/L		20	10	EPA 200.7	395562
35337247004	9/22/2017	Outflow - 10	Zn	10	ug/L	U	20	10	EPA 200.7	395562

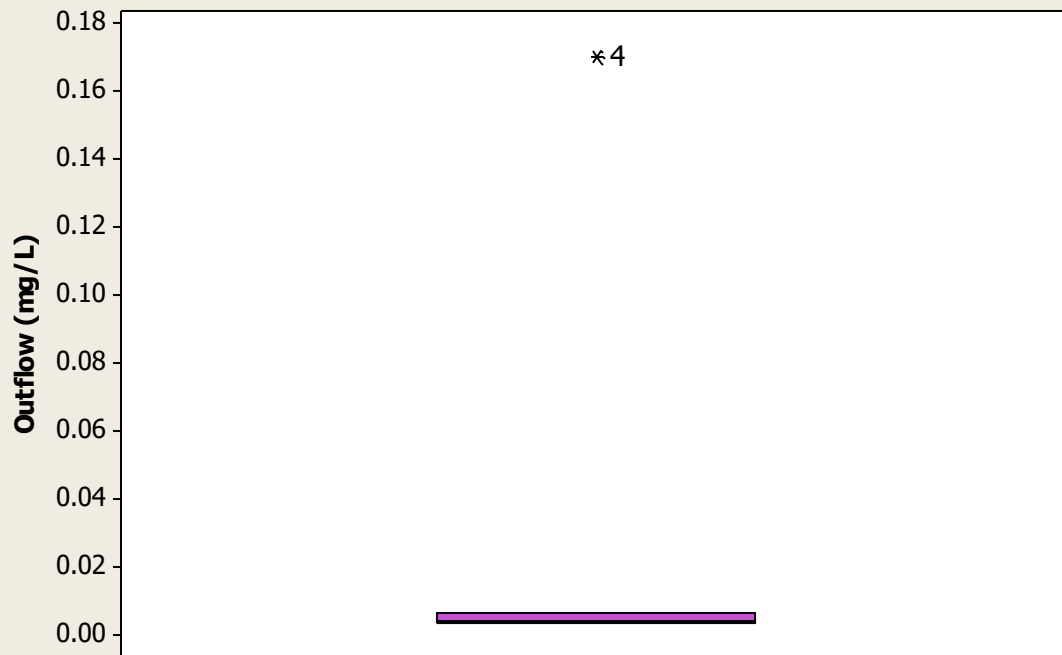
Appendix E: Boxplots of Outliers by Parameter for Outflow Samples and Percent Change

Boxplots of Outliers for Outflow Concentration Data and Percent Change (Outflow – Inflow) by Parameter for the Huntington Monitoring Program

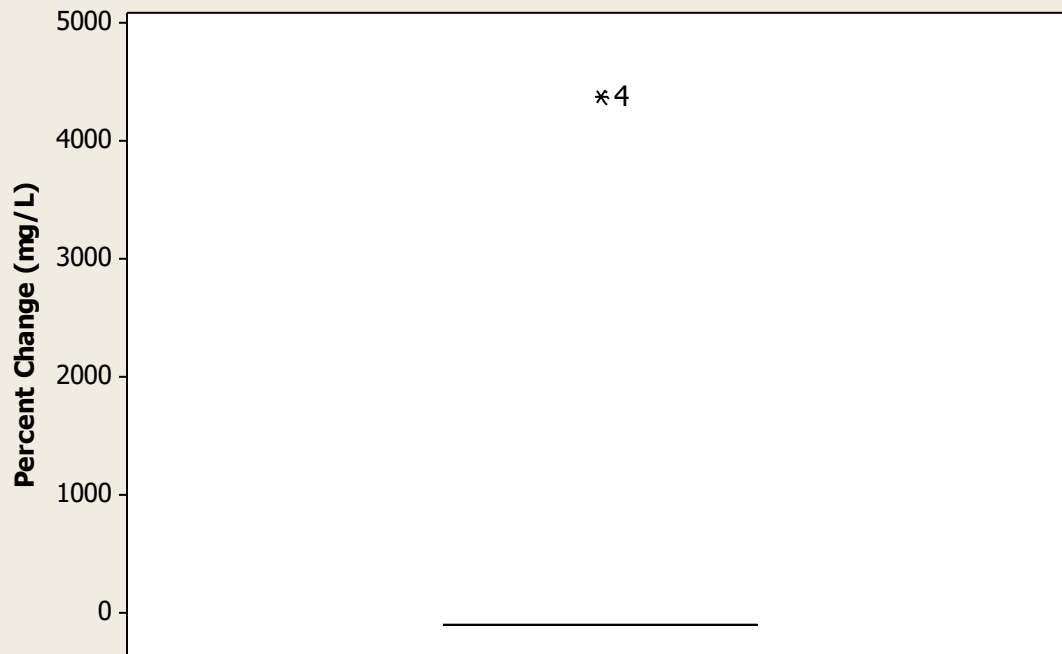




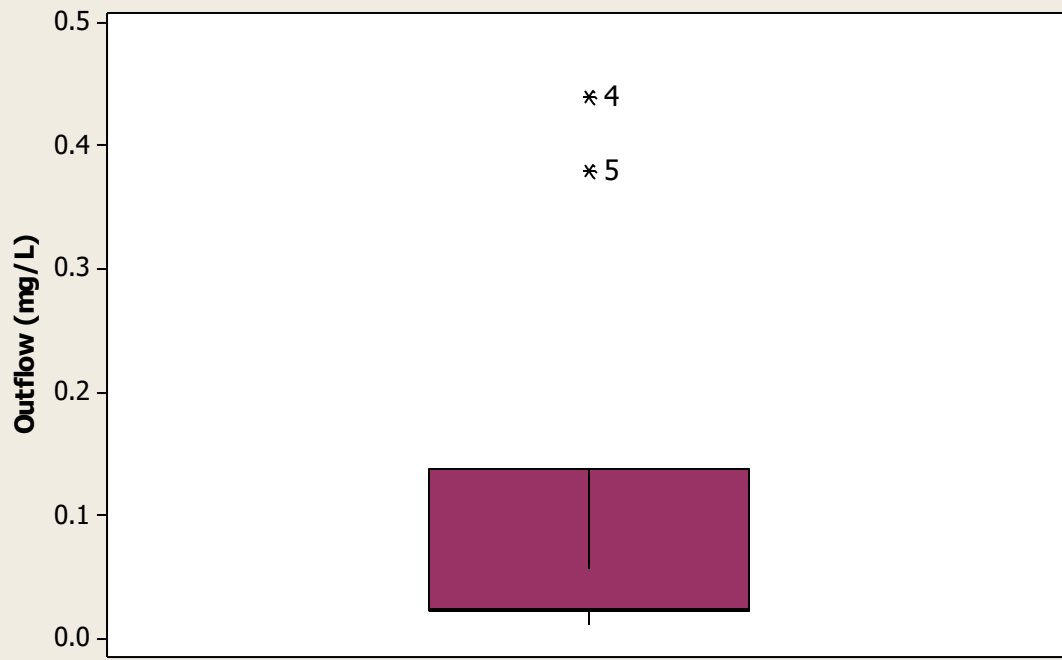
Boxplot of Orthophosphate (as P) Outflow



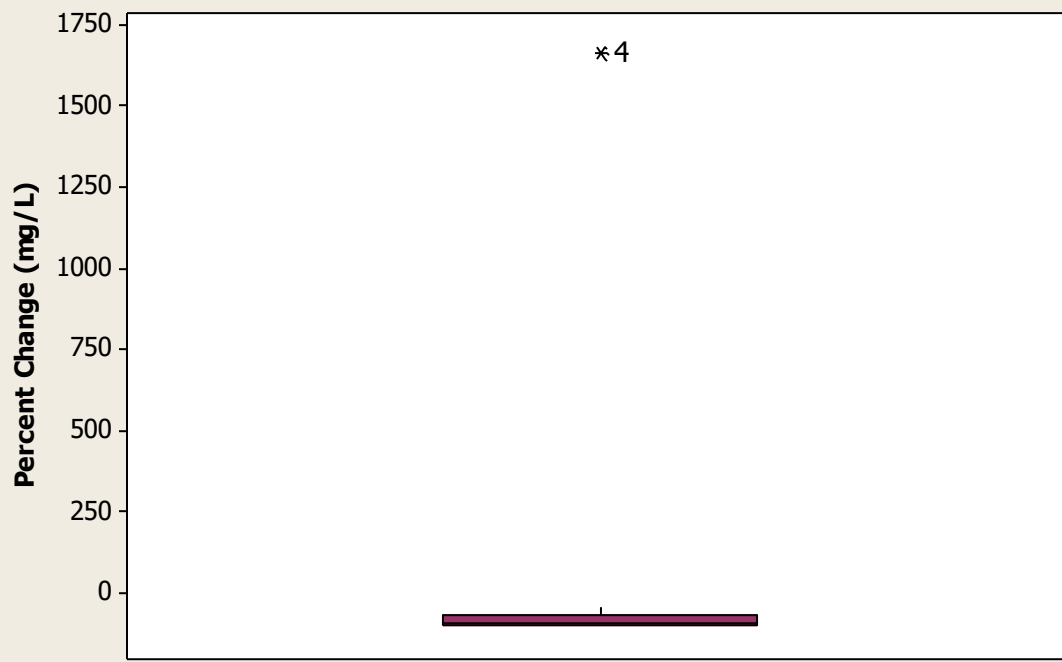
Boxplot of Orthophosphate (as P) Percent Change

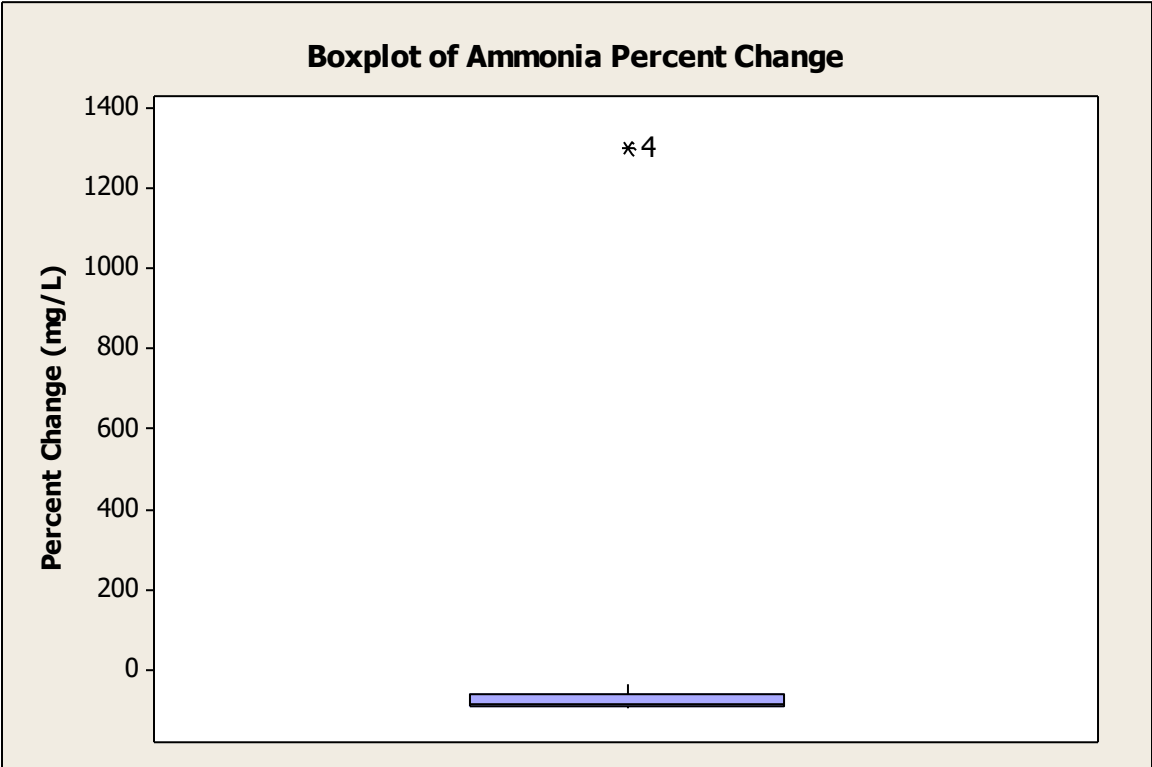
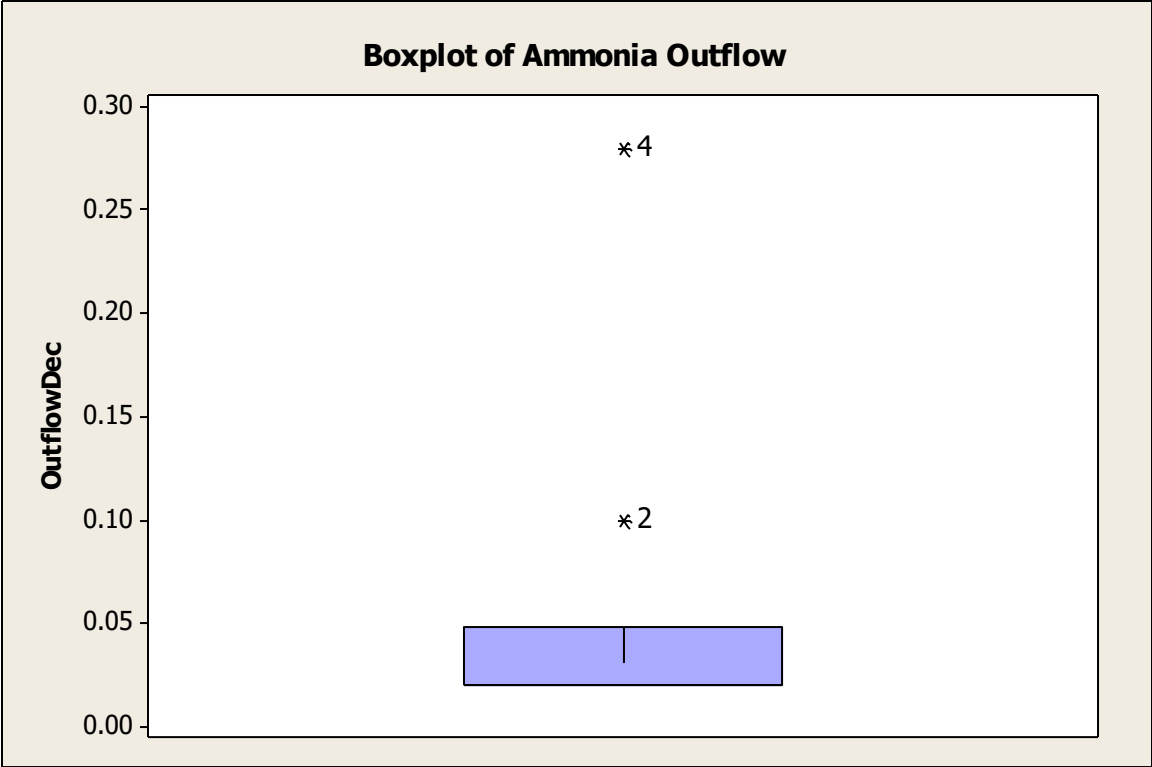


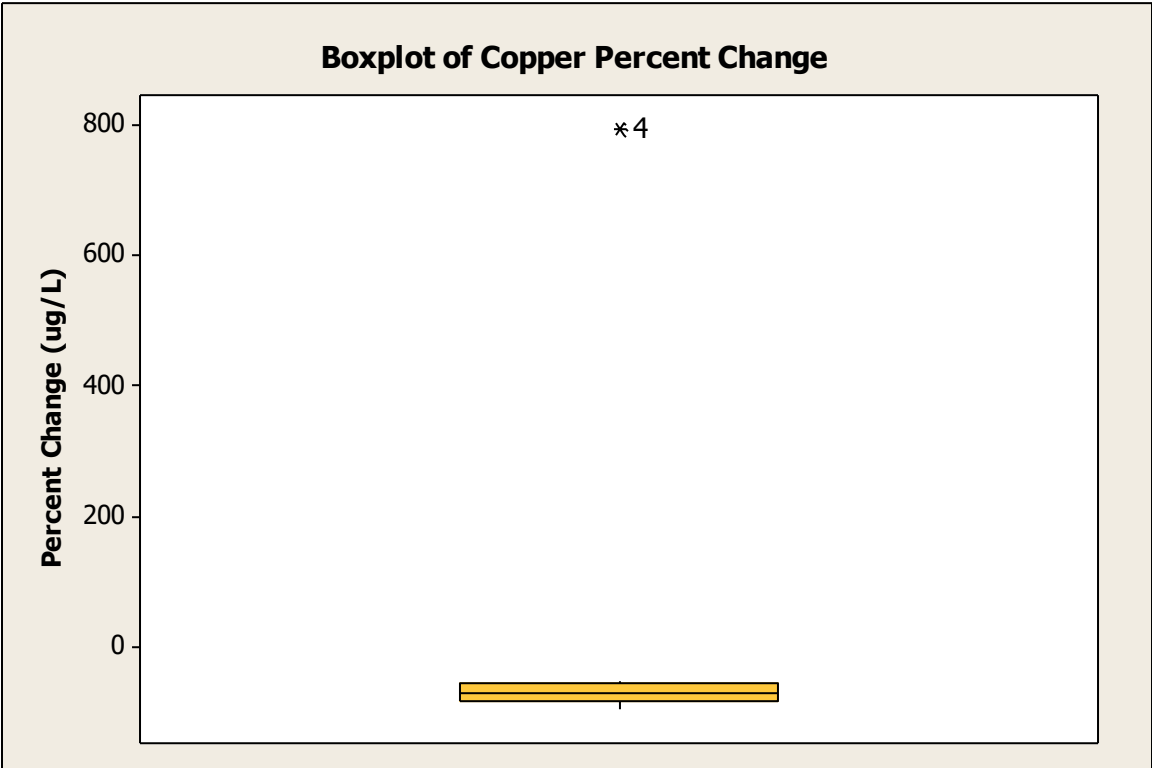
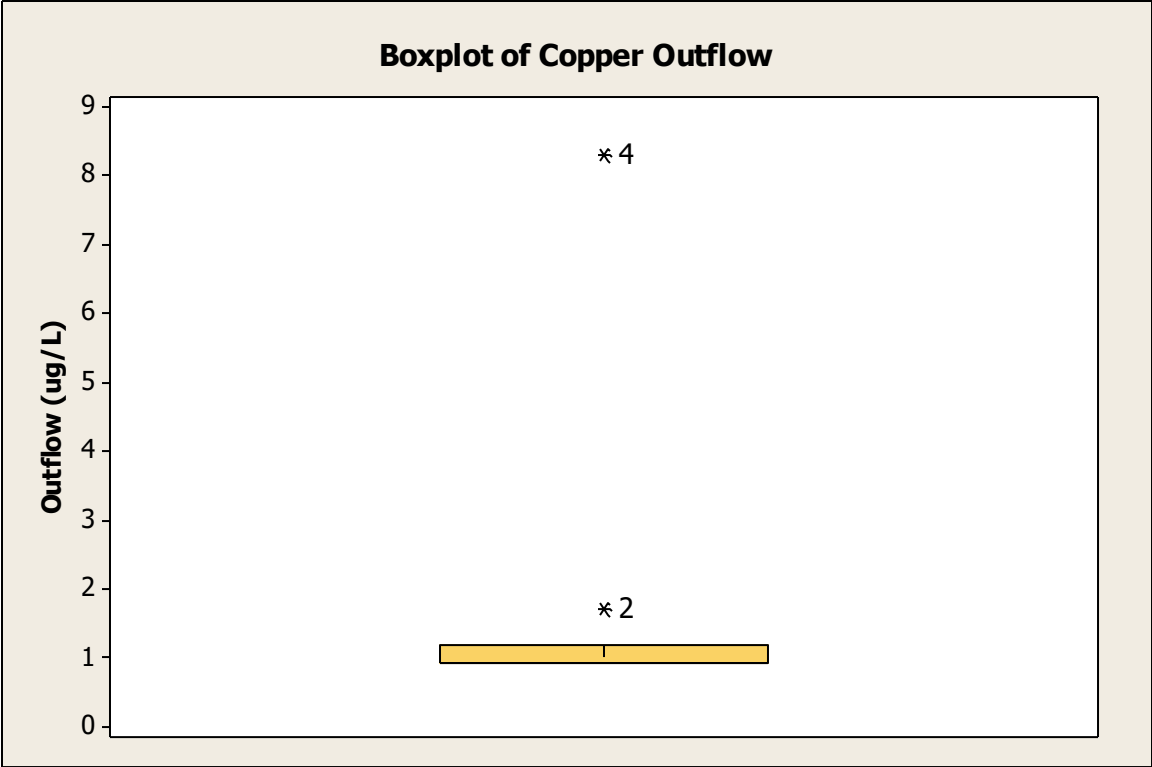
Boxplot of NOX (NO2 + NO3) Outflow



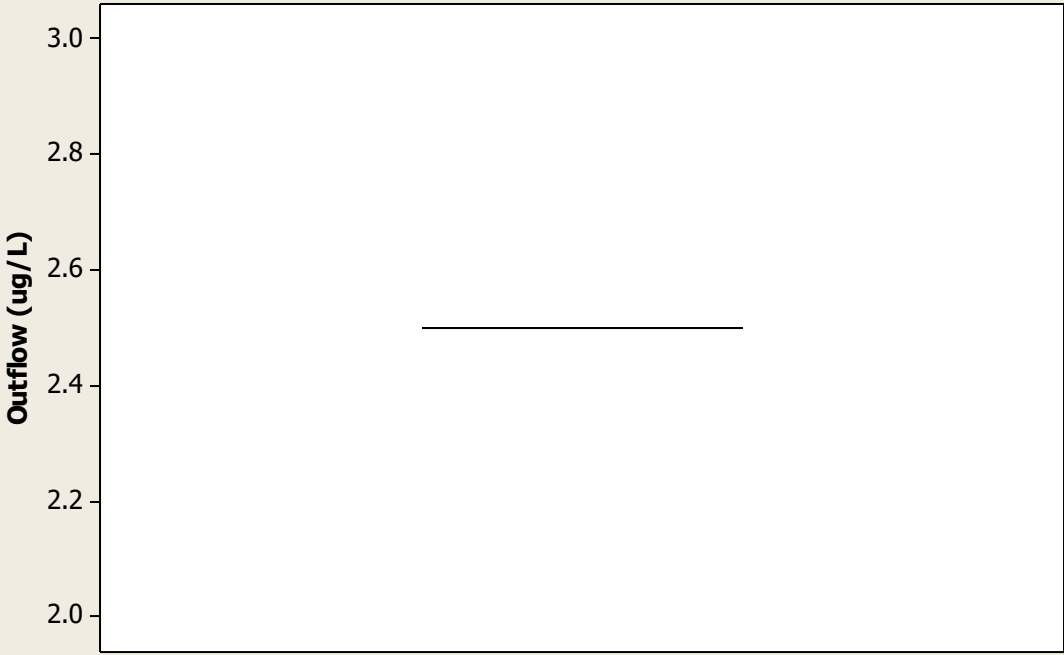
Boxplot of NOX (NO2 + NO3) Percent Change

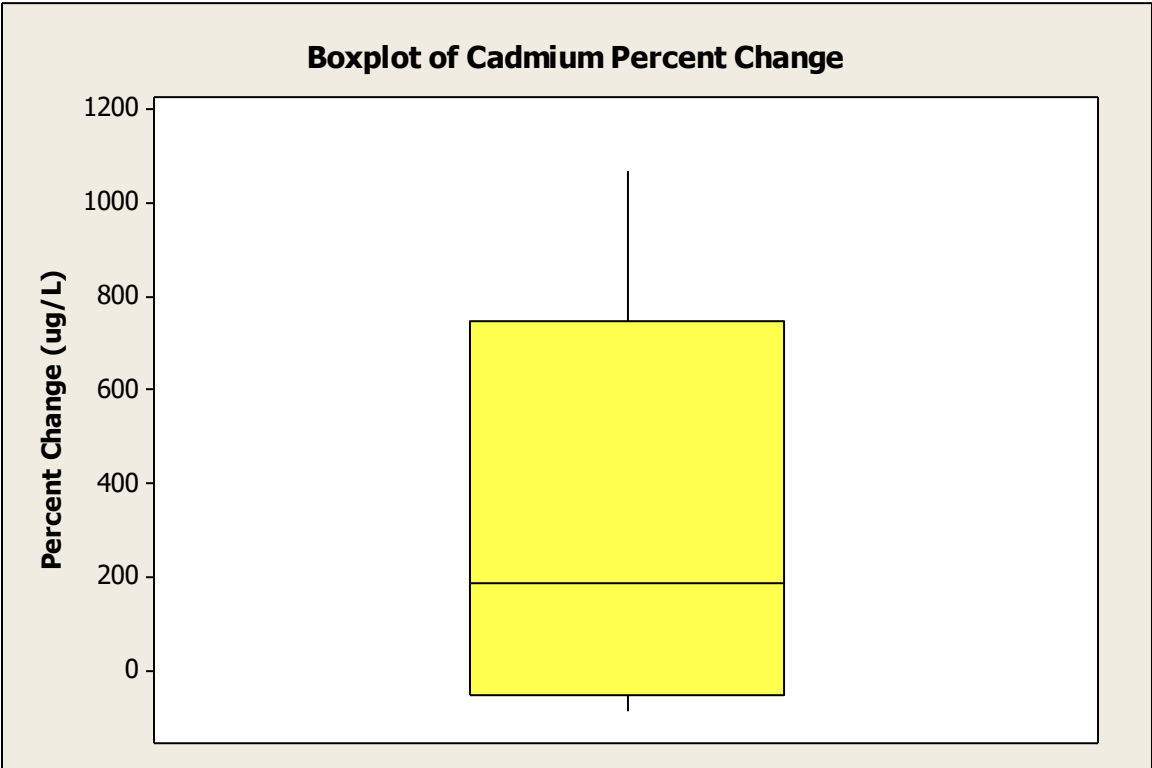
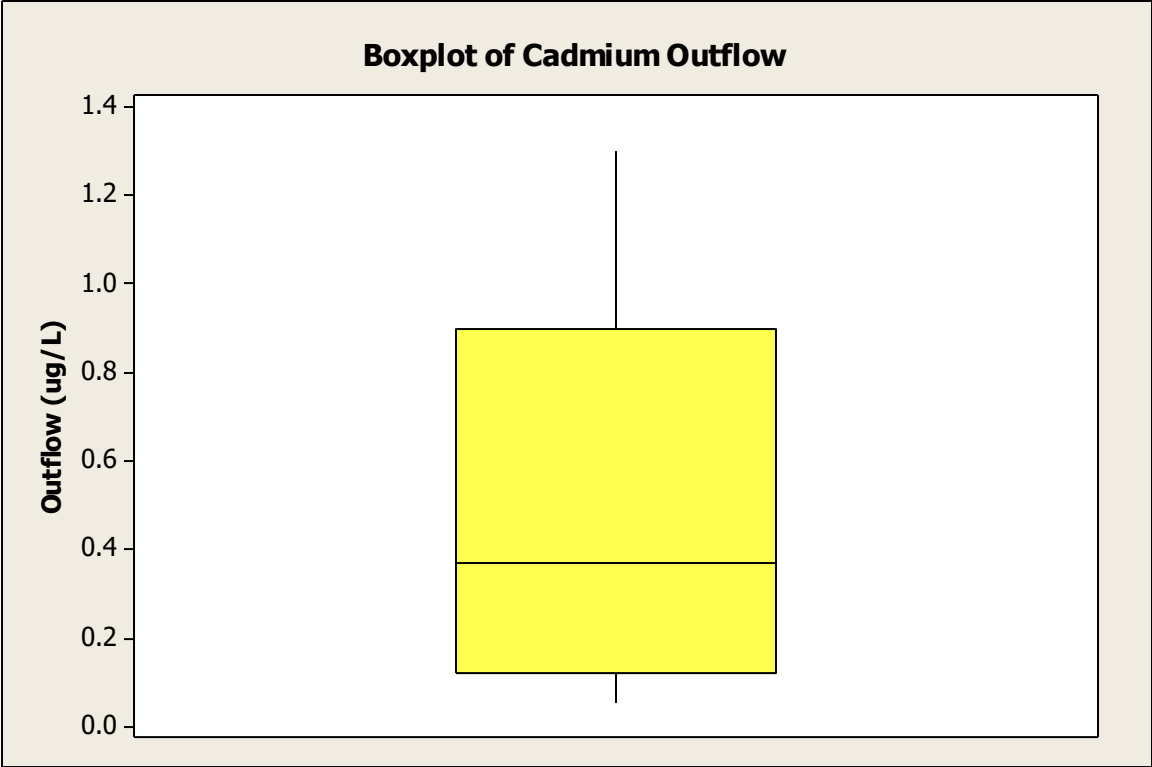




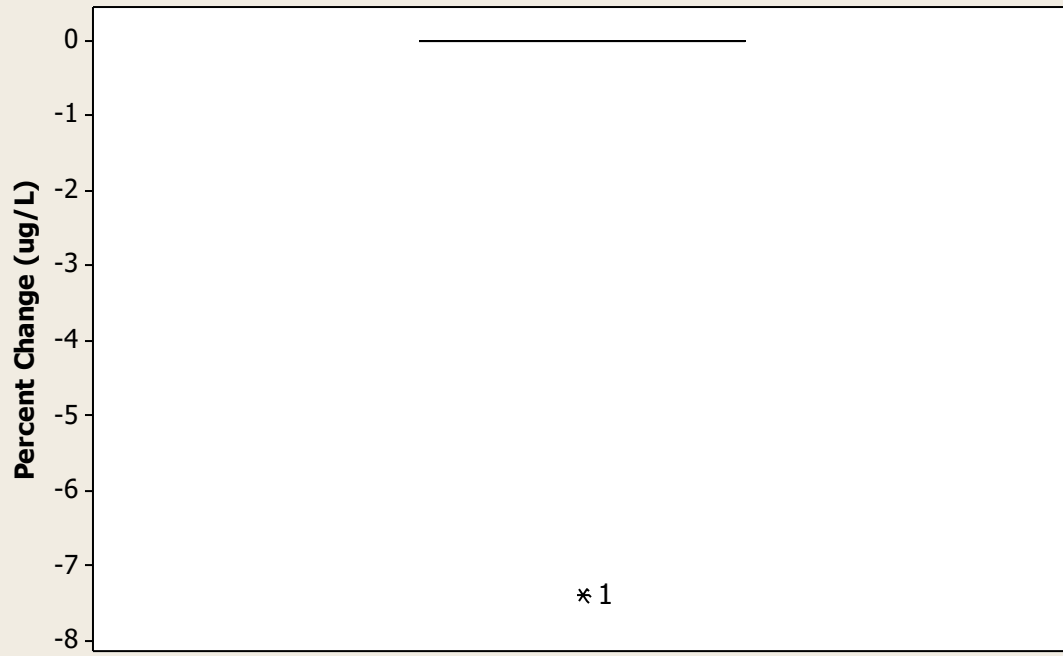


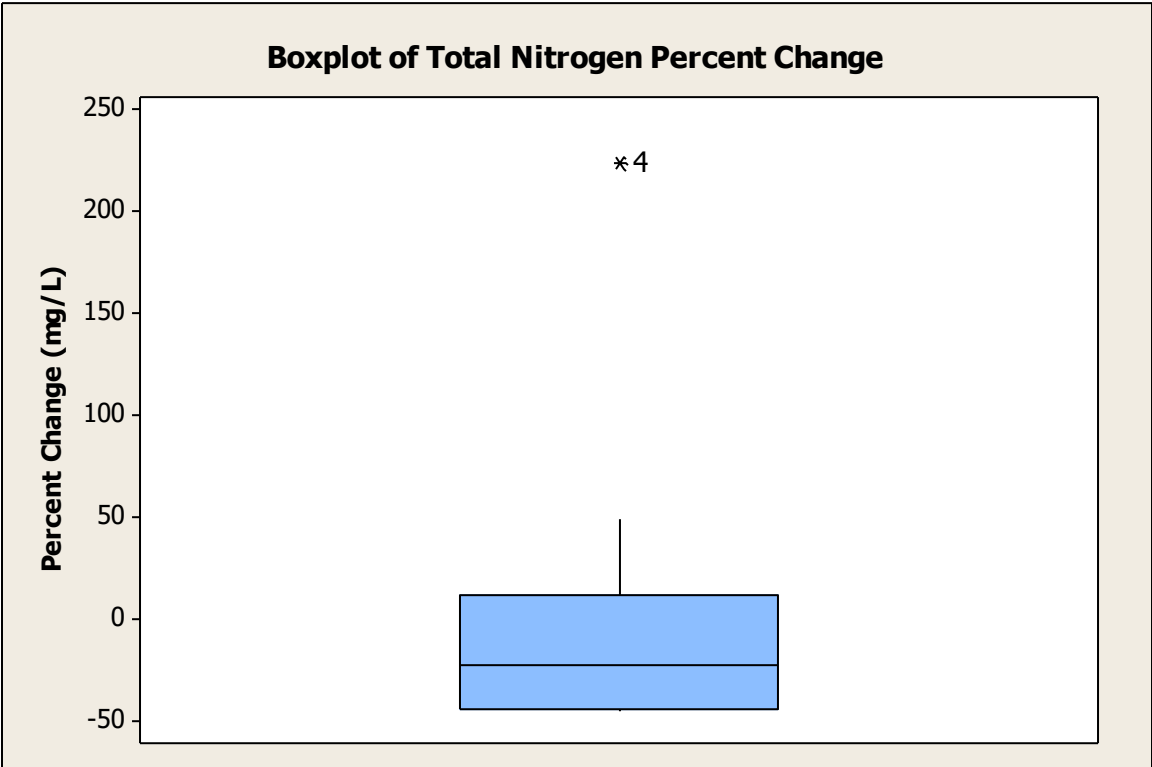
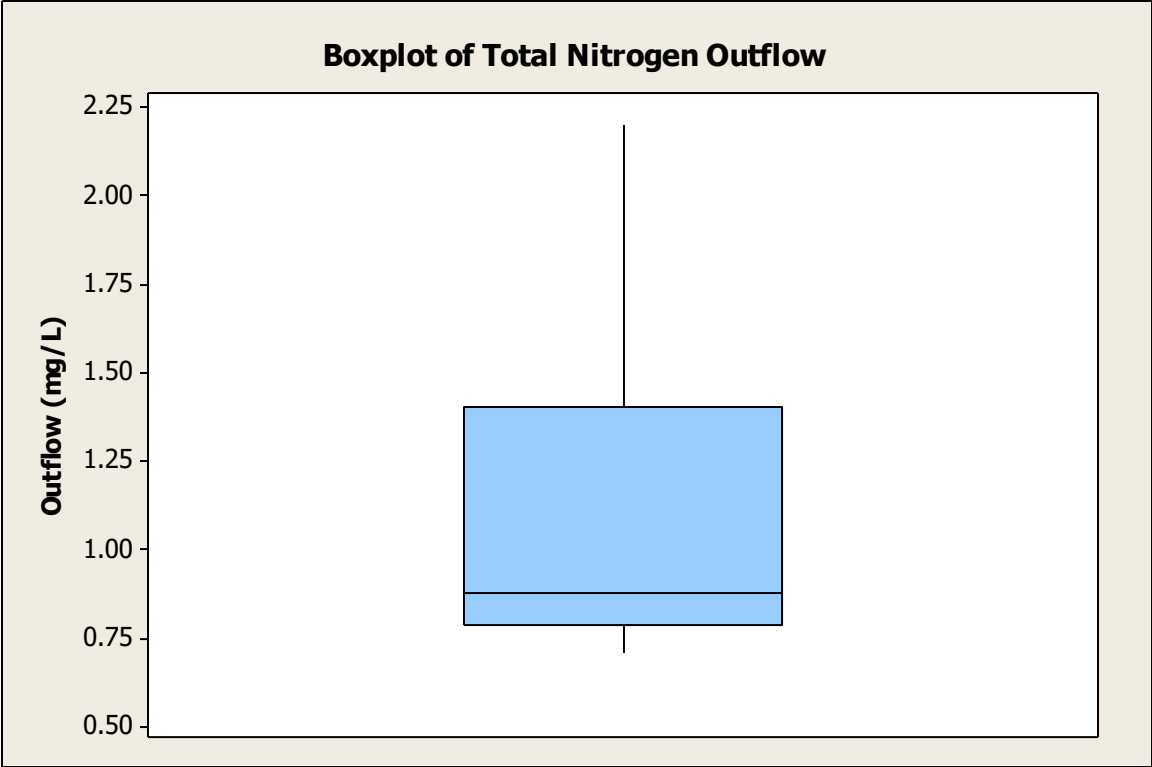
Boxplot of Chromium Outflow



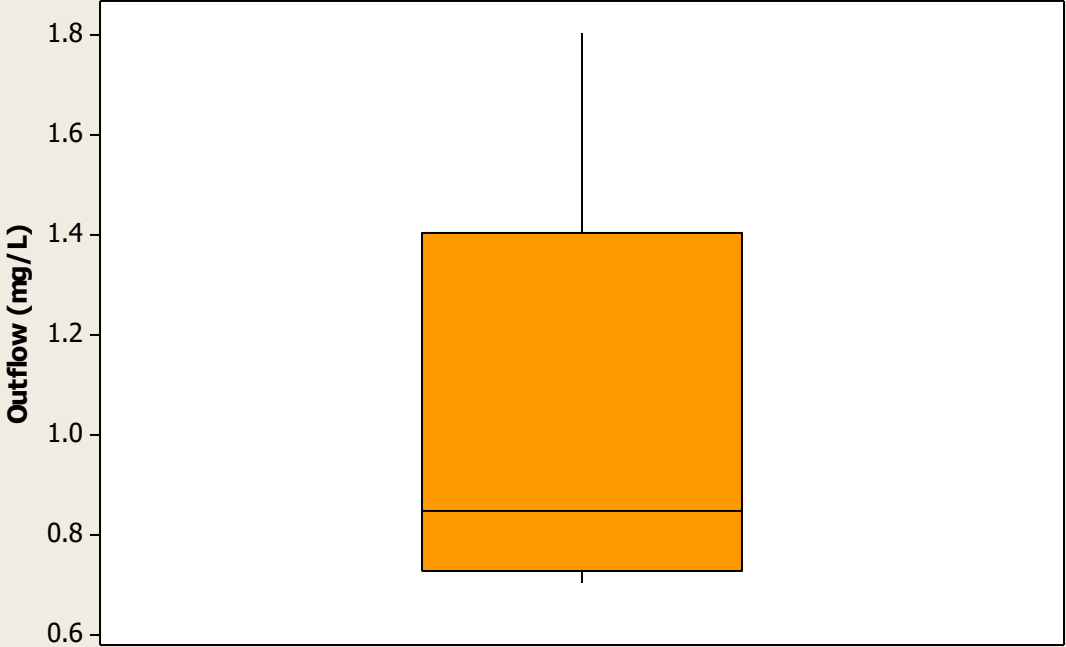


Boxplot of Chromium Percent Change

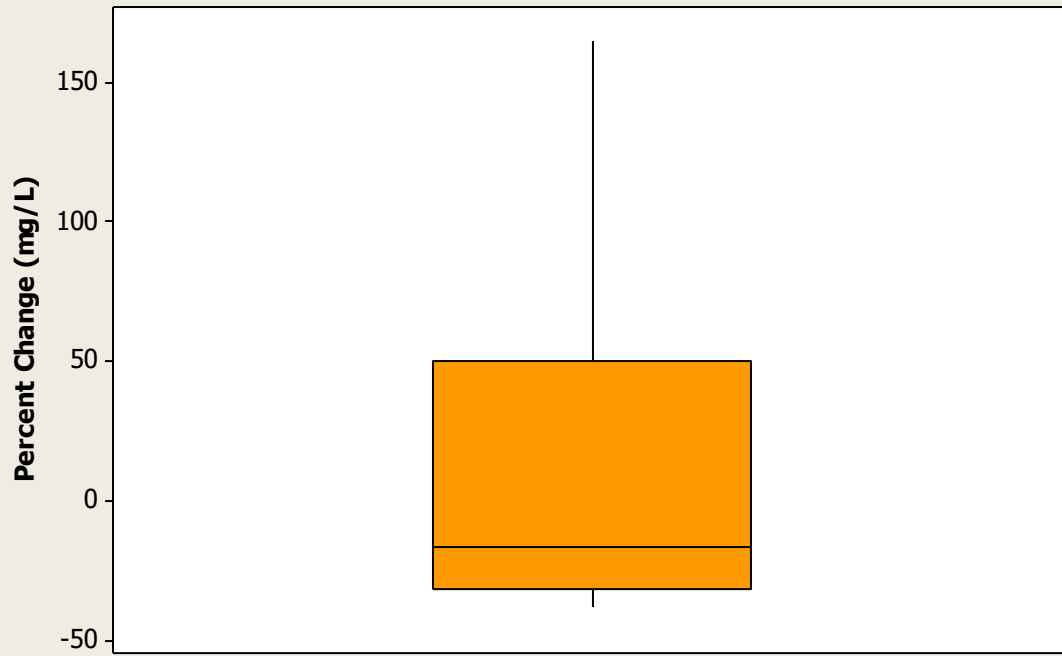




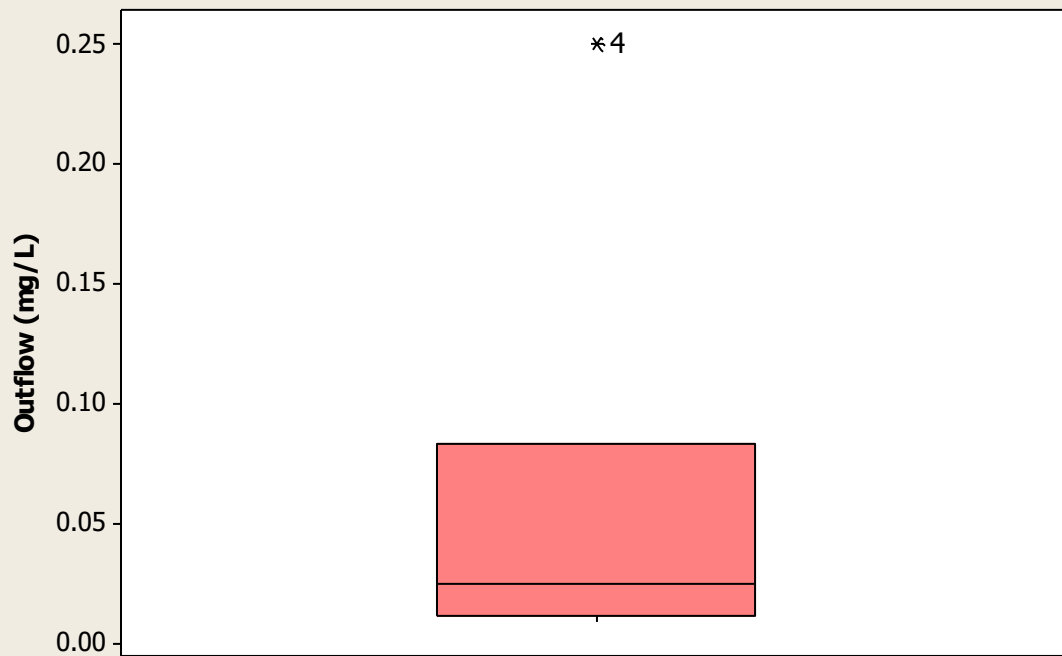
Boxplot of Total Kjeldahl Nitrogen Outflow

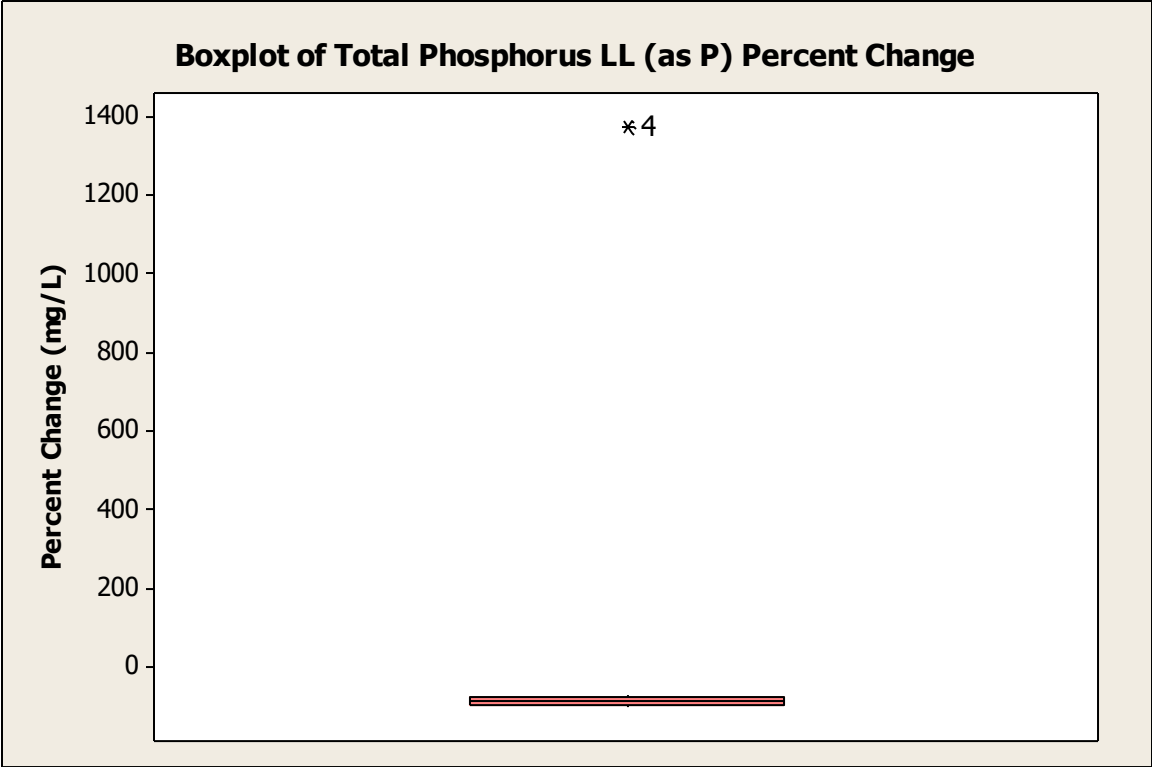


Boxplot of Total Kjeldahl Nitrogen Percent Change



Boxplot of Total Phosphorus LL (as P) Outflow





Appendix F: Reduction Efficiency by Event



Reduction Efficiency Report

Friday, November 3, 2017

2:13:41 PM

Sampling Event:	Parameter:	Units:	Inflow:	Outflow:	Removal (Inflow-)	Reduction Efficiency (%):
1	Cadmium	ug/L	0.4607	0.083	0.3777	81.9826
1	Chromium	ug/L	2.7	2.5	0.2	7.4074
1	Copper	ug/L	13.6667	0.93	12.7367	93.1951
1	Nitrogen, Ammonia	mg/L	0.2033	0.02	0.1833	90.1639
1	Nitrogen, Nitrite	mg/L	0.02	0.02	0	0
1	Nitrogen, Nitrate	mg/L	0.2367	0.02	0.2167	91.5493
1	Nitrogen, NO2 plus NO3	mg/L	0.2367	0.02	0.2167	91.5493
1	Orthophosphate as P	mg/L	0.17	0.0043	0.1657	97.4706
1	Total Kjeldahl Nitrogen	mg/L	1.02	0.86	0.16	15.6863
1	Total Nitrogen	mg/L	1.2667	0.87	0.3967	31.3158
1	Total Organic Nitrogen	mg/L	0.8267	0.86	-0.0333	-4.0323
1	Phosphorus, Total (as P) LL	mg/L	0.2467	0.061	0.1857	75.2703
1	Total Suspended Solids	mg/L	23.5	11.2	12.3	52.3404
1	Zinc	ug/L	39.9333	10	29.9333	74.9583
2	Cadmium	ug/L	0.0977	0.83	-0.7323	-749.8294
2	Chromium	ug/L	2.5	2.5	0	0
2	Copper	ug/L	3.4333	1.7	1.7333	50.4854
2	Nitrogen, Ammonia	mg/L	0.1467	0.1	0.0467	31.8182
2	Nitrogen, NO2 plus NO3	mg/L	0.24	0.012	0.228	95
2	Orthophosphate as P	mg/L	0.2233	0.006	0.2173	97.3134
2	Total Kjeldahl Nitrogen	mg/L	0.6133	0.83	-0.2167	-35.3261
2	Total Nitrogen	mg/L	0.85	0.84	0.01	1.1765
2	Phosphorus, Total (as P) LL	mg/L	0.2667	0.083	0.1837	68.875
2	Total Suspended Solids	mg/L	34.9667	27.3	7.6667	21.9256
2	Zinc	ug/L	20.2333	10	10.2333	50.5766
3	Cadmium	ug/L	0.0643	0.25	-0.1857	-288.601
3	Chromium	ug/L	2.5	2.5	0	0
3	Copper	ug/L	5.2	0.96	4.24	81.5385
3	Nitrogen, Ammonia	mg/L	0.5	0.031	0.469	93.8
3	Nitrogen, NO2 plus NO3	mg/L	0.5667	0.025	0.5417	95.5882
3	Orthophosphate as P	mg/L	0.2767	0.0045	0.2722	98.3735

Sampling Event:	Parameter:	Units:	Inflow:	Outflow:	Removal (Inflow-	Reduction Efficiency (%):
3	Total Kjeldahl Nitrogen	mg/L	1.9667	1.4	0.5667	28.8136
3	Total Nitrogen	mg/L	2.5	1.4	1.1	44
3	Phosphorus, Total (as P) LL	mg/L	0.37	0.083	0.287	77.5676
3	Total Suspended Solids	mg/L	70.4	23.2	47.2	67.0455
3	Zinc	ug/L	33.0667	10	23.0667	69.7581
4	Cadmium	ug/L	0.31	0.26	0.05	16.129
4	Chromium	ug/L	2.5	2.5	0	0
4	Copper	ug/L	0.93	8.3	-7.37	-792.4731
4	Nitrogen, Ammonia	mg/L	0.02	0.28	-0.26	-1300
4	Nitrogen, NO2 plus NO3	mg/L	0.025	0.44	-0.415	-1660
4	Orthophosphate as P	mg/L	0.0038	0.17	-0.1662	-4373.6842
4	Total Kjeldahl Nitrogen	mg/L	0.68	1.8	-1.12	-164.7059
4	Total Nitrogen	mg/L	0.68	2.2	-1.52	-223.5294
4	Total Organic Nitrogen	mg/L	0.67	1.5	-0.83	-123.8806
4	Phosphorus, Total (as P) LL	mg/L	0.017	0.25	-0.233	-1370.5882
4	Total Suspended Solids	mg/L	2.2	21.3	-19.1	-868.1818
4	Zinc	ug/L	10	57.8	-47.8	-478
5	Cadmium	ug/L	0.251	0.48	-0.229	-91.2351
5	Chromium	ug/L	2.5	2.5	0	0
5	Copper	ug/L	5.4	0.93	4.47	82.7778
5	Nitrogen, Ammonia	mg/L	0.135	0.02	0.115	85.1852
5	Nitrogen, NO2 plus NO3	mg/L	0.6785	0.38	0.2985	43.9941
5	Orthophosphate as P	mg/L	0.033	0.0038	0.0292	88.4848
5	Total Kjeldahl Nitrogen	mg/L	1.17	0.73	0.44	37.6068
5	Total Nitrogen	mg/L	1.25	1.1	0.15	12
5	Total Organic Nitrogen	mg/L	1.075	0.73	0.345	32.093
5	Phosphorus, Total (as P) LL	mg/L	0.1735	0.0094	0.1641	94.5821
5	Total Suspended Solids	mg/L	56.4	1	55.4	98.227
5	Zinc	ug/L	137	10	127	92.7007
6	Cadmium	ug/L	0.0613	0.52	-0.4587	-747.8261
6	Chromium	ug/L	2.5	2.5	0	0
6	Copper	ug/L	2.2667	0.93	1.3367	58.9706
6	Nitrogen, Ammonia	mg/L	0.0567	0.02	0.0367	64.7059

Sampling Event:	Parameter:	Units:	Inflow:	Outflow:	Removal (Inflow-	Reduction Efficiency (%):
6	Nitrogen, NO2 plus NO3	mg/L	0.2433	0.058	0.1853	76.1644
6	Orthophosphate as P	mg/L	0.1133	0.0038	0.1095	96.6471
6	Total Kjeldahl Nitrogen	mg/L	0.5267	0.71	-0.1833	-34.8101
6	Total Nitrogen	mg/L	0.7733	0.77	0.0033	0.431
6	Phosphorus, Total (as P) LL	mg/L	0.1733	0.018	0.1553	89.6154
6	Total Suspended Solids	mg/L	35.3667	2.5	32.8667	92.9312
6	Zinc	ug/L	26.9333	10	16.9333	62.8713
7	Cadmium	ug/L	0.1113	1.3	-1.1887	-1067.6647
7	Chromium	ug/L	2.5	2.5	0	0
7	Copper	ug/L	3.6667	1	2.6667	72.7273
7	Nitrogen, Ammonia	mg/L	0.1167	0.02	0.0967	82.8571
7	Nitrogen, NO2 plus NO3	mg/L	0.4033	0.025	0.3783	93.8017
7	Orthophosphate as P	mg/L	0.2967	0.0038	0.2929	98.7191
7	Total Kjeldahl Nitrogen	mg/L	0.8433	0.7	0.1433	16.996
7	Total Nitrogen	mg/L	1.2567	0.71	0.5467	43.5013
7	Total Organic Nitrogen	mg/L	0.73	0.68	0.05	6.8493
7	Phosphorus, Total (as P) LL	mg/L	0.3533	0.0095	0.3438	97.3113
7	Total Suspended Solids	mg/L	37.4667	1.5	35.9667	95.9964
7	Zinc	ug/L	29.3	10	19.3	65.8703
8	Cadmium	ug/L	0.0833	0.05	0.0333	40
8	Chromium	ug/L	2.5	2.5	0	0
8	Copper	ug/L	2.2	0.93	1.27	57.7273
8	Nitrogen, Ammonia	mg/L	0.0657	0.02	0.0457	69.5431
8	Nitrogen, NO2 plus NO3	mg/L	0.2233	0.025	0.1983	88.806
8	Orthophosphate as P	mg/L	0.0733	0.007	0.0663	90.4545
8	Total Kjeldahl Nitrogen	mg/L	0.7167	1.4	-0.6833	-95.3488
8	Total Nitrogen	mg/L	0.9367	1.4	-0.4633	-49.4662
8	Total Organic Nitrogen	mg/L	0.6467	1.4	-0.7533	-116.4948
8	Phosphorus, Total (as P) LL	mg/L	0.1533	0.029	0.1243	81.087
8	Total Suspended Solids	mg/L	18.1667	153	-134.8333	-742.2018
8	Zinc	ug/L	25.3667	10	15.3667	60.5782
9	Cadmium	ug/L	0.1697	1.1	-0.9303	-548.3301
9	Chromium	ug/L	2.5	2.5	0	0

Sampling Event:	Parameter:	Units:	Inflow:	Outflow:	Removal (Inflow-)	Reduction Efficiency (%):
9	Copper	ug/L	2.6333	0.93	1.7033	64.6835
9	Nitrogen, Ammonia	mg/L	0.1447	0.02	0.1247	86.1751
9	Nitrogen, NO2 plus NO3	mg/L	0.2067	0.025	0.1817	87.9032
9	Orthophosphate as P	mg/L	0.1197	0.0038	0.1159	96.8245
9	Total Kjeldahl Nitrogen	mg/L	0.9733	0.77	0.2033	20.8904
9	Total Nitrogen	mg/L	1.1933	0.79	0.4033	33.7989
9	Total Organic Nitrogen	mg/L	0.8267	0.77	0.0567	6.8548
9	Phosphorus, Total (as P) LL	mg/L	0.1667	0.012	0.1547	92.8
9	Total Suspended Solids	mg/L	23.9333	6.5	17.4333	72.8412
9	Zinc	ug/L	39.4667	10	29.4667	74.6622
10	Arsenic	ug/L	5			
10	Cadmium	ug/L	0.6033	0.13	0.4733	78.453
10	Chromium	ug/L	2.5	2.5	0	0
10	Copper	ug/L	3.4333	0.93	2.5033	72.9126
10	Sodium	ug/L	21800			
10	Nitrogen, Ammonia	mg/L	0.092	0.02	0.072	78.2609
10	Nitrogen, NO2 plus NO3	mg/L	0.1717	0.025	0.1467	85.4369
10	Orthophosphate as P	mg/L	0.068	0.0063	0.0617	90.7353
10	Total Kjeldahl Nitrogen	mg/L	1.3933	0.87	0.5233	37.5598
10	Total Nitrogen	mg/L	1.5667	0.88	0.6867	43.8298
10	Total Organic Nitrogen	mg/L	1.2933	0.86	0.4333	33.5052
10	Phosphorus, Total (as P) LL	mg/L	0.1567	0.021	0.1357	86.5957
10	Total Suspended Solids	mg/L	17.8667	4.6	13.2667	74.2537
10	Zinc	ug/L	43.7667	10	33.7667	77.1516

Appendix G: QA/QC Forms

**STORMWATER PROJECT
LABORATORY REPORT
REVIEW CHECK LIST**Project Number/Name: Huntington Lakes (16-0024)Laboratory Work Order No.: 35333047-001

Sample Nos.:	Blank	Yes	No	Comment #
1. Correct sample IDs reported?		☒	☐	
2. All samples reported per COC?		☒	☐	
3. Sample dates and times correct?		☒	☐	
4. Total nitrogen calculation correct?		☒	☐	
5. Parameter subset concentration agreement (e.g. PO ₄ < TP) acceptable?				
a. PO ₄ < TP or within 20%?		☒	☐	
b. NH ₃ < TKN or within 20%?		☒	☐	
c. DISS < totals or within 20%?		☒	☐	N/A
d. NO _x < Total N or within 20%?		☒	☐	
6. Project sample used for matrix spike for all parameters?		☐	☒	#1
7. If hits in method blank, are they >10% of sample concentration?		☐	☒	#2
8. %RPD results within acceptance criteria?		☒	☐	
9. Laboratory control and matrix spike results within acceptance criteria?		☐	☒	#3
10. Project sample used for duplicate?		☐	☒	
11. Project sample data acceptable?		☒	☐	#4

Comments:

#1. Our sample only used for MS/MSD for Cr/Zn/Cd/Cu.

#2. No hits in method blanks

#3. Zinc MS/MSD not within %Rec limits

#4. All parameter results for Blank were Undetect. Project sample data acceptable.

Signature: Robert SierzegaDigitally signed by Robert Sierzega
Date: 2017.11.02 13:31:30 -04'00'Date: 11/02/17

**STORMWATER PROJECT
LABORATORY REPORT
REVIEW CHECK LIST**Project Number/Name: Huntington Lakes (16-0024)

Laboratory Work Order No.: _____

Sample Nos.:	Sample 1	Yes	No	Comment #
1.	Correct sample IDs reported?	☒	☐	_____
2.	All samples reported per COC?	☒	☐	_____
3.	Sample dates and times correct?	☒	☐	_____
4.	Total nitrogen calculation correct?	☒	☐	_____
5.	Parameter subset concentration agreement (e.g. PO ₄ < TP) acceptable?			
	a. PO ₄ < TP or within 20%?	☒	☐	_____
	b. NH ₃ < TKN or within 20%?	☒	☐	_____
	c. DISS < totals or within 20%?	☐	☐	N/A
	d. NO _x < Total N or within 20%?	☒	☐	_____
6.	Project sample used for matrix spike for all parameters?	☐	☒	#1
7.	If hits in method blank, are they >10% of sample concentration?	☒	☐	#2
8.	%RPD results within acceptance criteria?	☒	☐	#3
9.	Laboratory control and matrix spike results within acceptance criteria?	☒	☐	#3
10.	Project sample used for duplicate?	☒	☐	#1
11.	Project sample data acceptable?	☒	☐	#4

Comments:

#1. Project Sample used for MS/MSD for: Cd/Cr/Cu/Zn, Nitrogen, Ortho-P, Total-P.

#2. No hits in method blanks.

#3. Slight RPD miss on Cd/Cu and TSS.

#4. RPD misses do not require results to be qualified in reports, but bears watching in future lab reports. Project sample data is acceptable.

Signature: Robert SierzegaDigitally signed by Robert Sierzega
Date: 2017.11.02 13:31:51 -04'00'Date: 11/02/17

STORMWATER PROJECT LABORATORY REPORT REVIEW CHECK LIST

Project Number/Name: Huntington Lakes (16-0024)

Laboratory Work Order No.: _____

Sample Nos.:	Sample #2	Yes	No	Comment #
1. Correct sample IDs reported?	☒	☐		
2. All samples reported per COC?	☒	☐		
3. Sample dates and times correct?	☒	☐		
4. Total nitrogen calculation correct?	☒	☐		
5. Parameter subset concentration agreement (e.g. PO ₄ < TP) acceptable?				
a. PO ₄ < TP or within 20%?	☒	☐		
b. NH ₃ < TKN or within 20%?	☒	☐		
c. DISS < totals or within 20%?	☒	☐		N/A
d. NO _x < Total N or within 20%?	☒	☐		
6. Project sample used for matrix spike for all parameters?	☐	☒		
7. If hits in method blank, are they >10% of sample concentration?	☒	☐		#1
8. %RPD results within acceptance criteria?	☒	☐		#2
9. Laboratory control and matrix spike results within acceptance criteria?	☒	☐		#2
10. Project sample used for duplicate?	☐	☒		
11. Project sample data acceptable?	☒	☐		#3

Comments:

#1. No hits in the Method blanks.

#2. MS slight misses on Cd/Cu (not our sample, LCS within %Rec. criteria).

#3. Lab needs to explain why MDL & PQL were doubled for Outflow 2 sample TKN. Dilution factor was 1 so no increase in MDL & PQL is warranted. Higher MDL & PQL precludes ability to calculate treatment efficiency for this parameter. TSS reduction is only ~22% as opposed to ~60% in QAPP. This may be due to lack of reduction in TN (primarily ON) in the system. Phosphorus reduction efficiency is very good relative to QAPP projections.

Signature: Robert Sierzega

Digitally signed by Robert Sierzega
Date: 2017.11.02 13:32:14 -04'00'

Date: 11/02/17

**STORMWATER PROJECT
LABORATORY REPORT
REVIEW CHECK LIST**Project Number/Name: Huntington Lakes (16-0024)Laboratory Work Order No.: 35304620

Sample Nos.:	Sample #3	Yes	No	Comment #
1.	Correct sample IDs reported?	☒	☐	
2.	All samples reported per COC?	☒	☐	
3.	Sample dates and times correct?	☒	☐	
4.	Total nitrogen calculation correct?	☒	☐	
5.	Parameter subset concentration agreement (e.g. PO ₄ < TP) acceptable?			
	a. PO ₄ < TP or within 20%?	☒	☐	
	b. NH ₃ < TKN or within 20%?	☒	☐	
	c. DISS < totals or within 20%?	☐	☐	N/A
	d. NO _x < Total N or within 20%?	☒	☐	
6.	Project sample used for matrix spike for all parameters?	☐	☒	
7.	If hits in method blank, are they >10% of sample concentration?	☒	☐	#1
8.	%RPD results within acceptance criteria?	☒	☐	#2
9.	Laboratory control and matrix spike results within acceptance criteria?	☒	☐	#2
10.	Project sample used for duplicate?	☐	☒	
11.	Project sample data acceptable?	☒	☐	#3

Comments:

#1. No hits in Method Blanks

#2. Slight miss TSS Dup RPD

~~Slight miss TKN Dup RPD~~Unsure as to why Lab is L flagging some results, such as matrix spike MS# 1948552) for NO_x.

L flag means value is off scale high, but %Rec is within acceptance criteria.

~~Slight miss Ortho-P MS (our sample) bears watching in future samples.~~

#3. No reason to question data validity. Treatment efficiency looks good.

Signature: Robert SierzegaDigitally signed by Robert Sierzega
Date: 2017.11.02 13:32:39 -04'00'Date: 11/02/17

STORMWATER PROJECT LABORATORY REPORT REVIEW CHECK LIST

Project Number/Name: Huntington Lakes (16-0024)

Laboratory Work Order No.: _____

Sample Nos.:	Sample #4	Yes	No	Comment #
1.	Correct sample IDs reported?	☒	☐	
2.	All samples reported per COC?	☒	☐	
3.	Sample dates and times correct?	☒	☐	
4.	Total nitrogen calculation correct?	☒	☐	
5.	Parameter subset concentration agreement (e.g. PO ₄ < TP) acceptable?			
	a. PO ₄ < TP or within 20%?	☒	☐	
	b. NH ₃ < TKN or within 20%?	☒	☐	
	c. DISS < totals or within 20%?	☐	☐	N/A
	d. NO _x < Total N or within 20%?	☒	☐	
6.	Project sample used for matrix spike for all parameters?	☐	☒	
7.	If hits in method blank, are they >10% of sample concentration?	☒	☐	#1
8.	%RPD results within acceptance criteria?	☒	☐	#2
9.	Laboratory control and matrix spike results within acceptance criteria?	☒	☐	#2
10.	Project sample used for duplicate?	☐	☒	
11.	Project sample data acceptable?	☒	☐	#3

Comments:

#1. No hits in Method Blanks.

#2. Significant miss (over 4x spike) on MS %Rec for NH₃ (not our sample)

~~Significant miss (essentially zero) MS %Rec for NO_x (not our sample).~~

#3. I recommend we request our sample be used for a spike soon so we can be assured our matrix does not pose a problem. Bottom line, even with disparity of in vs. out concentrations, I consider the results acceptable.

Signature: Robert Sierzega

Digitally signed by Robert Sierzega
Date: 2017.11.02 13:33:13 -04'00'

Date: 11/02/17

**STORMWATER PROJECT
LABORATORY REPORT
REVIEW CHECK LIST**Project Number/Name: Huntington Lakes (16-0024)Laboratory Work Order No.: 35317484Sample Nos.: Inflow1-2, Inflow2-2&Inflow3-2 combined, Outflow-2 Yes No Comment #

- | | | | | |
|-----|--|-------------------------------------|--------------------------|-----|
| 1. | Correct sample IDs reported? | ☒ | ☐ | |
| 2. | All samples reported per COC? | ☒ | ☐ | |
| 3. | Sample dates and times correct? | ☒ | ☐ | |
| 4. | Total nitrogen calculation correct? | ☒ | ☐ | |
| 5. | Parameter subset concentration agreement (e.g. PO ₄ < TP) acceptable? | | | |
| | a. PO ₄ < TP or within 20%? | ☒ | ☐ | |
| | b. NH ₃ < TKN or within 20%? | ☒ | ☐ | |
| | c. DISS < totals or within 20%? | ☐ | ☐ | N/A |
| | d. NO _x < Total N or within 20%? | ☒ | ☐ | |
| 6. | Project sample used for matrix spike for all parameters? | ☐ | ☐ | #1 |
| 7. | If hits in method blank, are they >10% of sample concentration? | ☐ | ☐ | |
| 8. | %RPD results within acceptance criteria? | ☒ | ☐ | |
| 9. | Laboratory control and matrix spike results within acceptance criteria? | ☒ | ☐ | #2 |
| 10. | Project sample used for duplicate? | ☐ | ☐ | #3 |
| 11. | Project sample data acceptable? | ☒ | ☐ | #4 |

Comments:

#1. Project sample only used for Cr/Zn MS/MSD

#2. MS %Rec for NH3 only 32%, but not is project sample.

~~MS %Rec for Total P is high at 146%, but is not project sample.~~~~MS %Rec for Ortho-P only 86%, but is not project sample.~~~~MS and Dup results for QC data on Pg13 not fully populated.~~

#3. Project sample only used for NOx Duplicate

#4. Project sample data considered acceptable

Signature: Robert SierzegaDigitally signed by Robert Sierzega
Date: 2017.11.02 13:33:42 -04'00'Date: 11/02/17

**STORMWATER PROJECT
LABORATORY REPORT
REVIEW CHECK LIST**Project Number/Name: Huntington Lakes (16-0024)Laboratory Work Order No.: 35320796Sample Nos.: Inflow1-3, Inflow2-3, Inflow3-3, Outflow-3

	Yes	No	Comment #
1. Correct sample IDs reported?	☒	☐	
2. All samples reported per COC?	☒	☐	
3. Sample dates and times correct?	☒	☐	
4. Total nitrogen calculation correct?	☒	☐	
5. Parameter subset concentration agreement (e.g. PO ₄ < TP) acceptable?			
a. PO ₄ < TP or within 20%?	☒	☐	
b. NH ₃ < TKN or within 20%?	☒	☐	
c. DISS < totals or within 20%?	☐	☐	N/A
d. NO _x < Total N or within 20%?	☒	☐	
6. Project sample used for matrix spike for all parameters?	☐	☒	#1
7. If hits in method blank, are they >10% of sample concentration?	☐	☐	#2
8. %RPD results within acceptance criteria?	☒	☐	#3
9. Laboratory control and matrix spike results within acceptance criteria?	☒	☐	
10. Project sample used for duplicate?	☒	☐	#4
11. Project sample data acceptable?	☒	☐	#5

Comments:

#1. Project sample used only for MS/MSD for Cd/Cu and TP.

#2. No hits in Method Blanks.

#3. Sample Dup RPD for TSS high at 7, but not our sample (2nd duplicate sample within limits).

Sample Dup RPD for TP high at 66, our sample however LCS %Rec & MS %Rec within limits).

I suggest contacting Pace to verify this result. All other control/spike samples were within appropriate limits.

#4. Project sample used for Duplicate for TP only.

#5. All other data aside from those specified above deemed acceptable.

Signature: Robert SierzegaDigitally signed by Robert Sierzega
Date: 2017.11.02 13:41:28 -04'00'Date: 11/02/17

**STORMWATER PROJECT
LABORATORY REPORT
REVIEW CHECK LIST**Project Number/Name: Huntington Lakes (16-0024)Laboratory Work Order No.: 35325105Sample Nos.: INFLOW1-7, INFLOW2-7, INFLOW3-7, OUTFLOW-7 Yes No Comment #

- | | | | |
|---|-------------------------------------|-------------------------------------|----|
| 1. Correct sample IDs reported? | ☒ | ☐ | |
| 2. All samples reported per COC? | ☒ | ☐ | |
| 3. Sample dates and times correct? | ☒ | ☐ | |
| 4. Total nitrogen calculation correct? | ☒ | ☐ | |
| 5. Parameter subset concentration agreement (e.g. PO ₄ < TP) acceptable? | | | |
| a. PO ₄ < TP or within 20%? | ☒ | ☐ | |
| b. NH ₃ < TKN or within 20%? | ☒ | ☐ | |
| c. DISS < totals or within 20%? | ☒ | ☐ | |
| d. NO _x < Total N or within 20%? | ☒ | ☐ | |
| 6. Project sample used for matrix spike for all parameters? | ☐ | ☒ | #1 |
| 7. If hits in method blank, are they >10% of sample concentration? | ☐ | ☒ | #2 |
| 8. %RPD results within acceptance criteria? | ☒ | ☐ | |
| 9. Laboratory control and matrix spike results within acceptance criteria? | ☒ | ☐ | |
| 10. Project sample used for duplicate? | ☐ | ☒ | |
| 11. Project sample data acceptable? | ☒ | ☐ | #3 |

Comments:

#1. Project sample used for Ortho-P only.

#2. No hits or misses.

#3. Project sample data acceptable.

Signature: Robert SierzegaDigitally signed by Robert Sierzega
DN: cn=Robert Sierzega, email=rsierzega@ectinc.com
Date: 2017.09.14 14:03:10 -0400Date: 11/02/17

STORMWATER PROJECT LABORATORY REPORT REVIEW CHECK LIST

Project Number/Name: Huntington Lakes (16-0024)

Laboratory Work Order No.: 35328309

Sample Nos.: Inflow1-8, Inflow2-8, Inflow3-8, Outflow-8, Yes No Comment #

- | | | | | |
|-----|--|-------------------------------------|-------------------------------------|-----|
| 1. | Correct sample IDs reported? | ☒ | ☐ | |
| 2. | All samples reported per COC? | ☒ | ☐ | |
| 3. | Sample dates and times correct? | ☒ | ☐ | |
| 4. | Total nitrogen calculation correct? | ☒ | ☐ | |
| 5. | Parameter subset concentration agreement (e.g. PO ₄ < TP) acceptable? | | | |
| | a. PO ₄ < TP or within 20%? | ☒ | ☐ | |
| | b. NH ₃ < TKN or within 20%? | ☒ | ☐ | |
| | c. DISS < totals or within 20%? | ☐ | ☒ | N/A |
| | d. NO _x < Total N or within 20%? | ☒ | ☐ | |
| 6. | Project sample used for matrix spike for all parameters? | ☐ | ☒ | |
| 7. | If hits in method blank, are they >10% of sample concentration? | ☐ | ☒ | #1 |
| 8. | %RPD results within acceptance criteria? | ☒ | ☐ | |
| 9. | Laboratory control and matrix spike results within acceptance criteria? | ☒ | ☐ | |
| 10. | Project sample used for duplicate? | ☐ | ☒ | |
| 11. | Project sample data acceptable? | ☒ | ☐ | #2 |

Comments:

#1. No hits on method blanks.

#2. Project sample data acceptable.

Signature: Robert Sierzega

Digitally signed by Robert Sierzega
DN: cn=Robert Sierzega, email=sierzega@ectinc.com
Date: 2017.09.14 14:55:03 -0400

Date: 11/02/17

**STORMWATER PROJECT
LABORATORY REPORT
REVIEW CHECK LIST**Project Number/Name: Huntington Lakes (16-0024)Laboratory Work Order No.: 35330081

Sample Nos.:	Inflow1-9, Inflow2-9, Inflow3-9, Outflow9	Yes	No	Comment #
1.	Correct sample IDs reported?	☒	☐	
2.	All samples reported per COC?	☒	☐	
3.	Sample dates and times correct?	☒	☐	
4.	Total nitrogen calculation correct?	☒	☐	
5.	Parameter subset concentration agreement (e.g. PO ₄ < TP) acceptable?			
	a. PO ₄ < TP or within 20%?	☒	☐	
	b. NH ₃ < TKN or within 20%?	☒	☐	
	c. DISS < totals or within 20%?	☐	☐	N/A
	d. NO _x < Total N or within 20%?	☒	☐	
6.	Project sample used for matrix spike for all parameters?	☐	☒	#1
7.	If hits in method blank, are they >10% of sample concentration?	☐	☒	#2
8.	%RPD results within acceptance criteria?	☐	☒	#3
9.	Laboratory control and matrix spike results within acceptance criteria?	☐	☒	#4
10.	Project sample used for duplicate?	☐	☒	
11.	Project sample data acceptable?	☒	☐	

Comments:

#1. Project sample used for Chromium, Zinc, Cadmium, Copper & TP.

#2. No hits in method blanks.

#3. RPD miss on TKN sample duplicate, not our sample.

#4. MS miss on NO_x, not our sample.Signature: Robert SierzegaDigitally signed by Robert Sierzega
DN: cn=Robert Sierzega, email=rsierzega@ectinc.com
Date: 2017.09.14 15:35:40 -0400Date: 11/02/17

**STORMWATER PROJECT
LABORATORY REPORT
REVIEW CHECK LIST**Project Number/Name: Huntington Lakes (16-0024)Laboratory Work Order No.: 35337247Sample Nos.: Inflow1-10, Inflow2-10, Inflow3-10, Outflow-10 Yes No Comment #

- | | | | | |
|-----|--|-------------------------------------|--------------------------|-------------------|
| 1. | Correct sample IDs reported? | ☒ | ☐ | <u> </u> |
| 2. | All samples reported per COC? | ☒ | ☐ | <u> </u> |
| 3. | Sample dates and times correct? | ☒ | ☐ | <u> </u> |
| 4. | Total nitrogen calculation correct? | ☒ | ☐ | <u> </u> |
| 5. | Parameter subset concentration agreement (e.g. PO ₄ < TP) acceptable? | | | |
| | a. PO ₄ < TP or within 20%? | ☒ | ☐ | <u> </u> |
| | b. NH ₃ < TKN or within 20%? | ☒ | ☐ | <u> </u> |
| | c. DISS < totals or within 20%? | ☐ | ☐ | <u>N/A</u> |
| | d. NO _x < Total N or within 20%? | ☒ | ☐ | <u> </u> |
| 6. | Project sample used for matrix spike for all parameters? | ☐ | ☐ | <u>#1</u> |
| 7. | If hits in method blank, are they >10% of sample concentration? | ☐ | ☐ | <u>#2</u> |
| 8. | %RPD results within acceptance criteria? | ☒ | ☐ | <u> </u> |
| 9. | Laboratory control and matrix spike results within acceptance criteria? | ☒ | ☐ | <u>#3</u> |
| 10. | Project sample used for duplicate? | ☒ | ☐ | <u>#4</u> |
| 11. | Project sample data acceptable? | ☒ | ☐ | <u> </u> |

Comments:

#1. Project sample used for MS/MSD on As/Cr/Na/Zn/Cd/Cn, and Ortho-P Only.

#2. No hits in method blanks.

#3. ~~NO_x MS %Rec low at 69 (not our sample) no cause for concern.~~

Ortho-P MS %Rec high at 128 & 130 (not our samples) no cause for concern.

Total-P MS %Rec high at 361 (MS# 2163314, not our sample). Probable math error. I suggest
~~contacting Pace to double check the results.~~

#4. Project sample used for duplicate for Ortho-P only.

#5. All other results aside from those specified above deemed acceptable.

Signature: Robert SierzegaDigitally signed by Robert Sierzega
Date: 2017.11.02 13:36:14 -04'00'Date: 11/02/17