Chemical Analysis Report

TLH-ROC-2022-06-30-02

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Run 18**
Request ID: **RQ-2022-02-21-77**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
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Tallahassee, FL 32399
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Certified by: Colin Wright, Program Administrator

Date Certified: 21-JUL-2022 10:53

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals and Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Apalachicola River @ Bristol Landing **Collection Date/Time: 06/30/2022 10:10**

Field ID: G2TLHR0043 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2338499	DEP SOP: NU-094-1	Color (true)	12		PCU	P416050	
	EPA 180.1 Rev. 2.0	Turbidity	6.0		NTU	P416064	
	EPA 300.0 Rev. 2.1	Chloride	5.1		mg Cl/L	P416558	
		Sulfate	6.9		mg SO4/L	P416563	
	SM 2320 B-2011	Total Alkalinity	49		mg CaCO3/L	P416322	
	SM 2540 C-2011	TDS	81		mg/L	P416409	
	SM 2540 D-2011	TSS	6	I	mg/L	P416411	
	SM 4500-F- C-2011	Fluoride	0.064	I	mg F/L	P416326	
2338502	EPA 350.1 Rev. 2.0	Ammonia-N	0.049		mg N/L	P416266	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40		mg N/L	P416067	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.44		mg N/L	P416432	
	EPA 365.1 Rev. 2.0	Total-P	0.042		mg P/L	P416185	
	SM 5310 B-2011	Organic Carbon	2.8		mg C/L	P416124	
2338516	EPA 200.7 Rev. 4.4	Calcium	16.7		mg/L	P416115	
		Iron	500		ug/L	P416115	
		Magnesium	2.16		mg/L	P416115	
		Potassium	1.7		mg/L	P416115	
		Sodium	6.8		mg/L	P416115	
		Strontium	38.6		ug/L	P416115	
		Tin	3.0	U	ug/L	P416115	
		Titanium	11.1		ug/L	P416115	
		Vanadium	2.0	U	ug/L	P416115	
		Zinc	5.0	I	ug/L	P416115	
	EPA 200.8 Rev. 5.4	Aluminum	307		ug/L	P416115	
		Antimony	0.078	I	ug/L	P416115	
		Arsenic	0.56		ug/L	P416115	
		Barium	25.0		ug/L	P416115	
		Beryllium	0.027	I	ug/L	P416115	
		Boron	16.2		ug/L	P416115	
		Cadmium	0.020	U	ug/L	P416115	
		Chromium	0.61	I	ug/L	P416115	
		Cobalt	0.229		ug/L	P416115	
		Copper	0.67	I	ug/L	P416115	
		Lead	0.29	I	ug/L	P416115	
		Manganese	130		ug/L	P416115	
		Molybdenum	0.40	I	ug/L	P416115	
		Nickel	0.50	U	ug/L	P416115	
		Selenium	0.20	U	ug/L	P416115	
		Silver	0.010	U	ug/L	P416115	
		Thallium	0.10	U	ug/L	P416115	
	SM 2340 B-2011	Hardness	50.5		mg/L	P416115	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Dead Lakes @ SR22 **Collection Date/Time: 06/30/2022 10:15**

Field ID: G2TLHR0047 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2338500	DEP SOP: NU-094-1	Color (true)	45		PCU	P416050	
	EPA 180.1 Rev. 2.0	Turbidity	6.9	A	NTU	P416064	
	EPA 300.0 Rev. 2.1	Chloride	4.3	A	mg Cl/L	P416558	
		Sulfate	1.4	A	mg SO4/L	P416563	
	SM 2320 B-2011	Total Alkalinity	76		mg CaCO3/L	P416322	
	SM 2540 C-2011	TDS	103		mg/L	P416409	
	SM 2540 D-2011	TSS	8	I	mg/L	P416411	
	SM 4500-F- C-2011	Fluoride	0.042	I	mg F/L	P416326	
2338503	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P416266	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P416384	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.65		mg N/L	P416432	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P416185	
	SM 5310 B-2011	Organic Carbon	5.0		mg C/L	P416124	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Apalachicola River 500m from Lola Landing Boat Ramp **Collection Date/Time: 06/30/2022 10:35**

Field ID: G2TLHR0044 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2338501	DEP SOP: NU-094-1	Color (true)	17		PCU	P416050	
	EPA 180.1 Rev. 2.0	Turbidity	9.4		NTU	P416064	
	EPA 300.0 Rev. 2.1	Chloride	5.0		mg Cl/L	P416558	
		Sulfate	8.2		mg SO4/L	P416563	
	SM 2320 B-2011	Total Alkalinity	45		mg CaCO3/L	P416322	
	SM 2540 C-2011	TDS	76		mg/L	P416409	
	SM 2540 D-2011	TSS	8	I	mg/L	P416411	
	SM 4500-F- C-2011	Fluoride	0.066	I	mg F/L	P416326	
2338504	EPA 350.1 Rev. 2.0	Ammonia-N	0.034		mg N/L	P416266	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34		mg N/L	P416384	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.35		mg N/L	P416432	
	EPA 365.1 Rev. 2.0	Total-P	0.038		mg P/L	P416185	
	SM 5310 B-2011	Organic Carbon	2.5		mg C/L	P416317	
2338517	EPA 200.7 Rev. 4.4	Calcium	14.9		mg/L	P416115	
		Iron	430		ug/L	P416115	
		Magnesium	2.18		mg/L	P416115	
		Potassium	1.9		mg/L	P416115	
		Sodium	7.8		mg/L	P416115	
		Strontium	41.2		ug/L	P416115	
		Tin	3.0	U	ug/L	P416115	
		Titanium	7.0		ug/L	P416115	
		Vanadium	2.0	U	ug/L	P416115	
		Zinc	5.0	U	ug/L	P416115	
	EPA 200.8 Rev. 5.4	Aluminum	201		ug/L	P416115	
		Antimony	0.086	I	ug/L	P416115	
		Arsenic	0.51		ug/L	P416115	
		Barium	23.4		ug/L	P416115	
		Beryllium	0.026	I	ug/L	P416115	
		Boron	16.6		ug/L	P416115	
		Cadmium	0.020	U	ug/L	P416115	
		Chromium	0.41	I	ug/L	P416115	
		Cobalt	0.176		ug/L	P416115	
		Copper	1.46		ug/L	P416115	
		Lead	0.20	I	ug/L	P416115	
		Manganese	90.2		ug/L	P416115	
		Molybdenum	0.40	I	ug/L	P416115	
		Nickel	0.50	U	ug/L	P416115	
		Selenium	0.20	U	ug/L	P416115	
		Silver	0.010	U	ug/L	P416115	
		Thallium	0.10	U	ug/L	P416115	
	SM 2340 B-2011	Hardness	46.2		mg/L	P416115	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Sandy Branch @ SR22 **Collection Date/Time: 06/30/2022 11:10**

Field ID: G3TLHR0027 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2338505	DEP SOP: NU-094-1	Color (true)	120		PCU	P416050	
	EPA 180.1 Rev. 2.0	Turbidity	6.6		NTU	P416064	
	EPA 300.0 Rev. 2.1	Sulfate	1.7		mg SO4/L	P416563	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P416322	
	SM 2540 C-2011	TDS	64		mg/L	P416409	
	SM 2540 D-2011	TSS	2	I	mg/L	P416411	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P416326	
2338507	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P416346	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.82		mg N/L	P416384	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.48		mg N/L	P416432	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P416185	
	SM 5310 B-2011	Organic Carbon	23		mg C/L	P416317	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Stone Mill Creek Upstream S Dianna St **Collection Date/Time: 06/30/2022 11:30**

Field ID: G2TLHR0046 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2338506	DEP SOP: NU-094-1	Color (true)	100		PCU	P416050	
	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P416064	
	EPA 300.0 Rev. 2.1	Sulfate	1.5		mg SO4/L	P416563	
	SM 2320 B-2011	Total Alkalinity	1.4	I	mg CaCO3/L	P416322	
	SM 2540 C-2011	TDS	49		mg/L	P416409	
	SM 2540 D-2011	TSS	8	I	mg/L	P416411	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P416326	
2338508	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P416346	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P416704	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.28		mg N/L	P416432	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P416185	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P416317	
2338518	EPA 200.7 Rev. 4.4	Calcium	1.88		mg/L	P416115	
		Iron	390		ug/L	P416115	
		Magnesium	0.52		mg/L	P416115	
		Potassium	0.38	I	mg/L	P416115	
		Sodium	1.7	I	mg/L	P416115	
		Strontium	80.0		ug/L	P416115	
		Tin	3.0	U	ug/L	P416115	
		Titanium	13.7		ug/L	P416115	
		Vanadium	2.0	U	ug/L	P416115	
		Zinc	5.0	U	ug/L	P416115	
	EPA 200.8 Rev. 5.4	Aluminum	502		ug/L	P416115	
		Antimony	0.050	U	ug/L	P416115	
		Arsenic	0.20		ug/L	P416115	
		Barium	10.5		ug/L	P416115	
		Beryllium	0.028	I	ug/L	P416115	
		Boron	11.2		ug/L	P416115	
		Cadmium	0.020	U	ug/L	P416115	
		Chromium	0.43	I	ug/L	P416115	
		Cobalt	0.212		ug/L	P416115	
		Copper	0.40	U	ug/L	P416115	
		Lead	0.39	I	ug/L	P416115	
		Manganese	12.2		ug/L	P416115	
		Molybdenum	0.15	U	ug/L	P416115	
		Nickel	0.50	U	ug/L	P416115	
		Selenium	0.20	U	ug/L	P416115	
		Silver	0.010	U	ug/L	P416115	
		Thallium	0.10	U	ug/L	P416115	
	SM 2340 B-2011	Hardness	6.8		mg/L	P416115	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P416050

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416064

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P416115

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P416115

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416558

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416563

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416266

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416346

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416067

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416384

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416704

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416432

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416185

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: SM 2320 B-2011
Batch ID: P416322

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P416409

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P416411

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P416326

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P416124

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-2011
Batch ID: P416317

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P416050

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.0		P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416064

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	97.3		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P416115

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115
Iron	92.2		P	85 - 115
Magnesium	94.4		P	85 - 115
Potassium	105		P	85 - 115
Sodium	97.6		P	85 - 115
Strontium	103		P	85 - 115
Tin	106		P	85 - 115
Titanium	106		P	85 - 115
Vanadium	104		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P416115

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.6		P	85 - 115
Antimony	99.1		P	85 - 115
Arsenic	98.3		P	85 - 115
Barium	101		P	85 - 115
Beryllium	91.8		P	85 - 115
Boron	99.4		P	85 - 115
Cadmium	95.5		P	85 - 115
Chromium	93.8		P	85 - 115
Cobalt	94.8		P	85 - 115
Copper	94.4		P	85 - 115
Lead	94.8		P	85 - 115
Manganese	94.1		P	85 - 115
Molybdenum	97.9		P	85 - 115
Nickel	96.1		P	85 - 115
Selenium	94.1		P	85 - 115
Silver	97.2		P	85 - 115
Thallium	95.0		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416558

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.1		P	90 - 110

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416563

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416266

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416346

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416067

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416384

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	102		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416704

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	102		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416432

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416185

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	101		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P416322

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	94 - 106

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P416326

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P416124

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.0		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P416317

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.1		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P416115

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2338497	Calcium	101		P	80 - 120
2338497	Iron	99.8		P	80 - 120
2338497	Magnesium	101		P	80 - 120
2338497	Potassium	103		P	80 - 120
2338497	Sodium	104		P	80 - 120
2338497	Strontium	105		P	80 - 120
2338497	Tin	108		P	80 - 120
2338497	Titanium	96.3		P	80 - 120
2338497	Vanadium	107		P	80 - 120
2338497	Zinc	107		P	80 - 120
2338614	Calcium	100	101	P/P	80 - 120
2338614	Iron	102	102	P/P	80 - 120
2338614	Magnesium	102	101	P/P	80 - 120
2338614	Potassium	103	103	P/P	80 - 120
2338614	Sodium	98.7		P	80 - 120
2338614	Strontium	105	105	P/P	80 - 120
2338614	Tin	107	104	P/P	80 - 120
2338614	Titanium	107	107	P/P	80 - 120
2338614	Vanadium	106	106	P/P	80 - 120
2338614	Zinc	106	103	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P416115

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2338497	Aluminum	99.7		P	80 - 120
2338497	Antimony	99.9		P	80 - 120
2338497	Arsenic	99.6		P	80 - 120
2338497	Barium	104		P	80 - 120
2338497	Beryllium	87.9		P	80 - 120
2338497	Boron	106		P	80 - 120
2338497	Cadmium	99.6		P	80 - 120
2338497	Chromium	96.7		P	80 - 120
2338497	Cobalt	96.4		P	80 - 120
2338497	Copper	97.5		P	80 - 120
2338497	Lead	96.3		P	80 - 120
2338497	Manganese	97.2		P	80 - 120
2338497	Molybdenum	97.9		P	80 - 120
2338497	Nickel	97.2		P	80 - 120
2338497	Selenium	93.3		P	80 - 120
2338497	Silver	96.2		P	80 - 120
2338497	Thallium	98.7		P	80 - 120
2338614	Aluminum	99.3	99.2	P/P	80 - 120
2338614	Antimony	101	101	P/P	80 - 120
2338614	Arsenic	99.0	99.7	P/P	80 - 120
2338614	Barium	103	102	P/P	80 - 120
2338614	Beryllium	94.3	95.2	P/P	80 - 120
2338614	Boron	101	98.2	P/P	80 - 120
2338614	Cadmium	96.8	97.3	P/P	80 - 120
2338614	Chromium	96.9	96.1	P/P	80 - 120
2338614	Cobalt	96.4	96.1	P/P	80 - 120
2338614	Copper	96.6	96.1	P/P	80 - 120

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P416115

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2338614	Lead	95.9	96.3	P/P	80 - 120
2338614	Manganese	96.1	95.1	P/P	80 - 120
2338614	Molybdenum	98.5	99.1	P/P	80 - 120
2338614	Nickel	97.0	95.4	P/P	80 - 120
2338614	Selenium	95.8	95.5	P/P	80 - 120
2338614	Silver	95.8	95.6	P/P	80 - 120
2338614	Thallium	97.1	99.5	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416558

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2338500	Chloride	97.2		P	90 - 110
2338854	Chloride	97.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416563

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2338500	Sulfate	95.4		P	90 - 110
2338854	Sulfate	95.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416266

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2338418	Ammonia-N	100	98.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416346

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2338507	Ammonia-N	97.8	96.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416067

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2338272	Kjeldahl Nitrogen	101	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416384

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2338707	Kjeldahl Nitrogen	100	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416432

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2338420	NO2NO3-N	99.4	98.4	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416185

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2338416	Total-P	99.3	103	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P416326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2338595	Fluoride	102	102	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P416124

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2338420	Organic Carbon	98.5	99.4	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P416317

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2338564	Organic Carbon	97.6	98.4	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P416050

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2338415	Color (true)	0.905	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416064

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2338500	Turbidity	0.583	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P416115

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2338614	Calcium	0.454	Spike	P	0 - 20
2338614	Iron	0.339	Spike	P	0 - 20
2338614	Magnesium	0.815	Spike	P	0 - 20
2338614	Potassium	0.0395	Spike	P	0 - 20
2338614	Sodium	1.88	Spike	P	0 - 20
2338614	Strontium	0.207	Spike	P	0 - 20
2338614	Tin	3.39	Spike	P	0 - 20
2338614	Titanium	0.261	Spike	P	0 - 20
2338614	Vanadium	0.225	Spike	P	0 - 20
2338614	Zinc	2.95	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P416115

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2338614	Aluminum	0.114	Spike	P	0 - 20
2338614	Antimony	0.366	Spike	P	0 - 20
2338614	Arsenic	0.718	Spike	P	0 - 20
2338614	Barium	0.658	Spike	P	0 - 20
2338614	Beryllium	0.870	Spike	P	0 - 20
2338614	Boron	1.63	Spike	P	0 - 20
2338614	Cadmium	0.483	Spike	P	0 - 20
2338614	Chromium	0.796	Spike	P	0 - 20
2338614	Cobalt	0.345	Spike	P	0 - 20
2338614	Copper	0.533	Spike	P	0 - 20
2338614	Lead	0.348	Spike	P	0 - 20
2338614	Manganese	0.919	Spike	P	0 - 20
2338614	Molybdenum	0.532	Spike	P	0 - 20
2338614	Nickel	1.61	Spike	P	0 - 20
2338614	Selenium	0.316	Spike	P	0 - 20
2338614	Silver	0.236	Spike	P	0 - 20
2338614	Thallium	2.45	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416558

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2338500	Chloride	0.309	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416563

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2338500	Sulfate	0.291	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2338418	Ammonia-N	1.35	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416346

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2338507	Ammonia-N	0.944	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416067

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2338272	Kjeldahl Nitrogen	3.00	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416384

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2338707	Kjeldahl Nitrogen	0.751	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416704

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339975	Kjeldahl Nitrogen	1.58	Sample	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416432

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2338420	NO2NO3-N	0.749	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416185

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2338416	Total-P	2.54	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P416322

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2338595	Total Alkalinity	1.22	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P416409

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2338415	TDS	8.62	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P416326

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2338595	Fluoride	0.500	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P416124

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2338420	Organic Carbon	0.568	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P416317

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2338564	Organic Carbon	0.518	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report
Calibration Verification

Reference Method: DEP SOP: NU-094-1
Run ID: A113213
Included Lab Sample IDs: 2338499, 2338500, 2338501, 2338505, 2338506

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	96.4	98.9	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A113222
Included Lab Sample IDs: 2338499, 2338500, 2338501, 2338505, 2338506

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105

Reference Method: SM 5310 B-2011
Run ID: A113260
Included Lab Sample IDs: 2338502, 2338503

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	99.5	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A113284
Included Lab Sample IDs: 2338516, 2338517, 2338518

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	96.9	98.0	P/P	90 - 110
Iron	93.9	96.4	P/P	90 - 110
Magnesium	94.3	96.8	P/P	90 - 110
Potassium	99.7	101	P/P	90 - 110
Sodium	95.4	96.7	P/P	90 - 110
Strontium	103	103	P/P	90 - 110
Tin	104	105	P/P	90 - 110
Titanium	101	104	P/P	90 - 110
Vanadium	103	104	P/P	90 - 110
Zinc	102	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A113312
Included Lab Sample IDs: 2338502

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.0	95.3	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A113322
Included Lab Sample IDs: 2338516, 2338517, 2338518

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.2	98.2	P/P	90 - 110
Antimony	102	101	P/P	90 - 110
Arsenic	100	101	P/P	90 - 110
Barium	101	101	P/P	90 - 110
Beryllium	92.7	94.1	P/P	90 - 110
Boron	100	99.2	P/P	90 - 110
Cadmium	102	100	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A113322
Included Lab Sample IDs: 2338516, 2338517, 2338518

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	96.9	99.5	P/P	90 - 110
Cobalt	98.0	99.7	P/P	90 - 110
Copper	98.1	101	P/P	90 - 110
Lead	96.0	95.5	P/P	90 - 110
Manganese	98.1	101	P/P	90 - 110
Molybdenum	98.5	98.0	P/P	90 - 110
Nickel	98.2	100	P/P	90 - 110
Selenium	98.6	99.7	P/P	90 - 110
Silver	99.0	98.0	P/P	90 - 110
Thallium	96.4	93.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A113332
Included Lab Sample IDs: 2338502, 2338503, 2338504

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.8	98.7	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A113363
Included Lab Sample IDs: 2338504, 2338507, 2338508

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.7	98.6	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A113365
Included Lab Sample IDs: 2338499, 2338500, 2338501, 2338505, 2338506

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	98.7	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A113365
Included Lab Sample IDs: 2338499, 2338500, 2338501, 2338505, 2338506

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A113377
Included Lab Sample IDs: 2338507, 2338508

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.2	99.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A113381
Included Lab Sample IDs: 2338502, 2338503, 2338504, 2338507, 2338508

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A113381
Included Lab Sample IDs: 2338502, 2338503, 2338504, 2338507, 2338508

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	104	P/P	90 - 110
Total-P	104	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A113420
Included Lab Sample IDs: 2338502, 2338503, 2338504, 2338507, 2338508

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	102	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A113462
Included Lab Sample IDs: 2338499, 2338500, 2338501

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.5	97.3	P/P	90 - 110
Sulfate	96.9	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A113493
Included Lab Sample IDs: 2338503, 2338504, 2338507

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A113582
Included Lab Sample IDs: 2338508

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.6	98.4	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision		
						LCS	SMP	MS
DEP SOP: NU-094-1	Color (true)	97.0					0.905	
EPA 180.1 Rev. 2.0	Turbidity	97.3					0.583	
EPA 200.7 Rev. 4.4	Calcium	102	101	100	101			0.454
	Iron	92.2	99.8	102	102			0.339
	Magnesium	94.4	101	102	101			0.815
	Potassium	105	103	103	103			0.0395
	Sodium	97.6	104	98.7				1.88
	Strontium	103	105	105	105			0.207
	Tin	106	108	107	104			3.39
	Titanium	106	96.3	107	107			0.261
	Vanadium	104	107	106	106			0.225
	Zinc	103	107	106	103			2.95
EPA 200.8 Rev. 5.4	Aluminum	97.6	99.3	99.2	99.7			0.114
	Antimony	99.1	101	101	99.9			0.366
	Arsenic	98.3	99.0	99.7	99.6			0.718
	Barium	101	103	102	104			0.658
	Beryllium	91.8	94.3	87.9	95.2			0.870
	Boron	99.4	101	98.2	106			1.63
	Cadmium	95.5	96.8	97.3	99.6			0.483
	Chromium	93.8	96.9	96.1	96.7			0.796
	Cobalt	94.8	96.4	96.1	96.4			0.345
	Copper	94.4	96.6	96.1	97.5			0.533
	Lead	94.8	95.9	96.3	96.3			0.348
	Manganese	94.1	96.1	95.1	97.2			0.919
	Molybdenum	97.9	98.5	99.1	97.9			0.532
	Nickel	96.1	97.0	95.4	97.2			1.61
	Selenium	94.1	95.8	95.5	93.3			0.316
	Silver	97.2	95.8	95.6	96.2			0.236
	Thallium	95.0	97.1	99.5	98.7			2.45
EPA 300.0 Rev. 2.1	Chloride	98.1	97.2	97.6			0.309	
	Sulfate	97.3	95.4	95.7			0.291	
EPA 350.1 Rev. 2.0	Ammonia-N	95.0	100	98.6				1.35
	Ammonia-N	94.6	97.8	96.4				0.944
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.6	101	105				3.00
	Kjeldahl Nitrogen	102	100	102				0.751
	Kjeldahl Nitrogen	102					1.58	
EPA 353.2 Rev. 2.0	NO2NO3-N	102	99.4	98.4				0.749
EPA 365.1 Rev. 2.0	Total-P	101	99.3	103				2.54
SM 2320 B-2011	Total Alkalinity	101					1.22	
SM 2540 C-2011	TDS						8.62	
SM 4500-F- C-2011	Fluoride	101	102	102				0.500
SM 5310 B-2011	Organic Carbon	99.0	98.5	99.4				0.568
	Organic Carbon	95.1	97.6	98.4				0.518

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2338499, 2338500, 2338501, 2338505, 2338506
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2338499, 2338500, 2338501, 2338505, 2338506
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2338516, 2338517, 2338518

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2338516, 2338517, 2338518
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2338499, 2338500, 2338501
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2338499, 2338500, 2338501, 2338505, 2338506
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2338502, 2338503, 2338504, 2338507, 2338508
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2338502, 2338503, 2338504, 2338507, 2338508
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2338502, 2338503, 2338504, 2338507, 2338508
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2338502, 2338503, 2338504, 2338507, 2338508
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2338499, 2338500, 2338501, 2338505, 2338506
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2338516, 2338517, 2338518
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2338499, 2338500, 2338501, 2338505, 2338506
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2338499, 2338500, 2338501, 2338505, 2338506
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2338499, 2338500, 2338501, 2338505, 2338506
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2338502, 2338503, 2338504, 2338507, 2338508

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	06/30/2022			06/30/2022 14:58	Anna M. Plaviak	2338499
	06/30/2022			06/30/2022 14:59	Anna M. Plaviak	2338500, 2338501
	06/30/2022			06/30/2022 15:00	Anna M. Plaviak	2338505
	06/30/2022			06/30/2022 15:01	Anna M. Plaviak	2338506
EPA 180.1 Rev. 2.0	06/30/2022			06/30/2022 14:48	Khloe J Berg	2338500
	06/30/2022			06/30/2022 14:49	Khloe J Berg	2338499
	06/30/2022			06/30/2022 14:50	Khloe J Berg	2338501
	06/30/2022			06/30/2022 14:51	Khloe J Berg	2338505
	06/30/2022			06/30/2022 14:52	Khloe J Berg	2338506
EPA 200.7 Rev. 4.4	06/30/2022	07/05/2022 09:16	Mackenzie Hunt	07/05/2022 18:52	McKinley C Carter	2338516
	06/30/2022	07/05/2022 09:16	Mackenzie Hunt	07/05/2022 18:59	McKinley C Carter	2338517
	06/30/2022	07/05/2022 09:16	Mackenzie Hunt	07/05/2022 19:07	McKinley C Carter	2338518
EPA 200.8 Rev. 5.4	06/30/2022	07/05/2022 09:16	Mackenzie Hunt	07/06/2022 21:01	Emily M Philpot	2338516
	06/30/2022	07/05/2022 09:16	Mackenzie Hunt	07/06/2022 21:10	Emily M Philpot	2338517
	06/30/2022	07/05/2022 09:16	Mackenzie Hunt	07/06/2022 21:19	Emily M Philpot	2338518
EPA 300.0 Rev. 2.1	06/30/2022			07/12/2022 01:09	Anna M. Plaviak	2338500
	06/30/2022			07/12/2022 02:09	Anna M. Plaviak	2338499
	06/30/2022			07/12/2022 02:22	Anna M. Plaviak	2338501
	06/30/2022			07/12/2022 02:34	Anna M. Plaviak	2338505
	06/30/2022			07/12/2022 02:46	Anna M. Plaviak	2338506
EPA 350.1 Rev. 2.0	06/30/2022			07/07/2022 12:20	Ping Hua	2338502
	06/30/2022			07/07/2022 12:33	Ping Hua	2338503
	06/30/2022			07/07/2022 12:34	Ping Hua	2338504
	06/30/2022			07/08/2022 10:41	Ping Hua	2338507
	06/30/2022			07/08/2022 10:45	Ping Hua	2338508
EPA 351.2 Rev. 2.0	06/30/2022	07/05/2022 13:58	Samantha L Bates	07/06/2022 12:46	Alexandra J Mattheus	2338502
	06/30/2022	07/12/2022 14:00	Simonne.V. Calhoun	07/13/2022 15:35	Alexandra J Mattheus	2338503
	06/30/2022	07/12/2022 14:00	Simonne.V. Calhoun	07/13/2022 15:37	Alexandra J Mattheus	2338504
	06/30/2022	07/12/2022 14:00	Simonne.V. Calhoun	07/13/2022 15:39	Alexandra J Mattheus	2338507
	06/30/2022	07/18/2022 16:27	Samantha L Bates	07/19/2022 11:07	Alexandra J Mattheus	2338508
EPA 353.2 Rev. 2.0	06/30/2022			07/11/2022 14:17	Judith K. Clark	2338502
	06/30/2022			07/11/2022 14:18	Judith K. Clark	2338503
	06/30/2022			07/11/2022 14:19	Judith K. Clark	2338504
	06/30/2022			07/11/2022 14:20	Judith K. Clark	2338507
	06/30/2022			07/11/2022 14:22	Judith K. Clark	2338508
EPA 365.1 Rev. 2.0	06/30/2022	07/07/2022 16:00	Simonne.V. Calhoun	07/08/2022 13:20	Simonne.V. Calhoun	2338502
	06/30/2022	07/07/2022 16:00	Simonne.V. Calhoun	07/08/2022 13:28	Simonne.V. Calhoun	2338503
	06/30/2022	07/07/2022 16:00	Simonne.V. Calhoun	07/08/2022 13:29	Simonne.V. Calhoun	2338504
	06/30/2022	07/07/2022 16:00	Simonne.V. Calhoun	07/08/2022 13:30	Simonne.V. Calhoun	2338507
	06/30/2022	07/07/2022 16:00	Simonne.V. Calhoun	07/08/2022 13:31	Simonne.V. Calhoun	2338508

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-2011	06/30/2022			07/07/2022 03:31	Dale L. Simmons	2338499
	06/30/2022			07/07/2022 03:45	Dale L. Simmons	2338500
	06/30/2022			07/07/2022 03:59	Dale L. Simmons	2338501
	06/30/2022			07/07/2022 04:06	Dale L. Simmons	2338505
	06/30/2022			07/07/2022 04:16	Dale L. Simmons	2338506
SM 2340 B-2011	06/30/2022			07/05/2022 18:52	McKinley C Carter	2338516
	06/30/2022			07/05/2022 18:59	McKinley C Carter	2338517
	06/30/2022			07/05/2022 19:07	McKinley C Carter	2338518
SM 2540 C-2011	06/30/2022			07/05/2022 16:02	Yijie Li	2338499, 2338500, 2338501, 2338505, 2338506
SM 2540 D-2011	06/30/2022			07/05/2022 16:02	Yijie Li	2338499, 2338500, 2338501, 2338505, 2338506
SM 4500-F- C-2011	06/30/2022			07/07/2022 03:31	Dale L. Simmons	2338499
	06/30/2022			07/07/2022 03:45	Dale L. Simmons	2338500
	06/30/2022			07/07/2022 03:59	Dale L. Simmons	2338501
	06/30/2022			07/07/2022 04:06	Dale L. Simmons	2338505
	06/30/2022			07/07/2022 04:16	Dale L. Simmons	2338506
SM 5310 B-2011	06/30/2022			07/01/2022 21:48	Khloe J Berg	2338502
	06/30/2022			07/01/2022 22:06	Khloe J Berg	2338503
	06/30/2022			07/07/2022 16:50	Khloe J Berg	2338504
	06/30/2022			07/07/2022 17:03	Khloe J Berg	2338507
	06/30/2022			07/07/2022 17:18	Khloe J Berg	2338508