Chemical Analysis Report

SO-DIST-2022-09-27-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **2022 SMP: Lake Placid**
Request ID: **RQ-2022-09-19-59**
Customer: **SO-DIST**
Project ID: **SMP**

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FLDEP South District Office
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Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant Date Certified: 19-OCT-2022 11:01

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 group are included in this report: 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: Gopher Gully At US27 **Collection Date/Time: 09/26/2022 09:25**

Field ID: G4SD0216 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2359543	DEP SOP: NU-094-1	Color (true)	790		PCU	P420177	
	EPA 180.1 Rev. 2.0	Turbidity	4.2		NTU	P420182	
	EPA 300.0 Rev. 2.1	Chloride	21		mg Cl/L	P420331	
		Sulfate	2.5		mg SO4/L	P420334	
	SM 2320 B-2011	Total Alkalinity	20		mg CaCO3/L	P420553	
	SM 2540 C-2011	TDS	180		mg/L	P420665	
	SM 2540 D-2011	TSS	6	I	mg/L	P420670	
	SM 4500-F- C-2011	Fluoride	0.10		mg F/L	P420557	
2359546	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P420588	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.1		mg N/L	P420204	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P420443	
	EPA 365.1 Rev. 2.0	Total-P	0.82		mg P/L	P420305	
	SM 5310 B-2011	Organic Carbon	56		mg C/L	P420537	

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: LakePlacidOutletAtSR70W **Collection Date/Time: 09/26/2022 09:55**

Field ID: G4SD0213 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2359544	DEP SOP: NU-094-1	Color (true)	530		PCU	P420177	
	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P420182	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P420331	
		Sulfate	16		mg SO4/L	P420334	
	SM 2320 B-2011	Total Alkalinity	3.5		mg CaCO3/L	P420553	
	SM 2540 C-2011	TDS	143		mg/L	P420665	
	SM 2540 D-2011	TSS	2	U	mg/L	P420670	
	SM 4500-F- C-2011	Fluoride	0.071	I	mg F/L	P420557	
2359547	EPA 350.1 Rev. 2.0	Ammonia-N	0.066		mg N/L	P420588	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P420205	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.39		mg N/L	P420443	
	EPA 365.1 Rev. 2.0	Total-P	1.1		mg P/L	P420305	
	SM 5310 B-2011	Organic Carbon	41		mg C/L	P420537	

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: Lake Placid @ Center **Collection Date/Time: 09/26/2022 10:15**

Field ID: G4SD0191 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2359549	DEP SOP: NU-094-1	Color (true)	14	A	PCU	P420180	
	EPA 180.1 Rev. 2.0	Turbidity	4.7		NTU	P420183	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P420331	
		Sulfate	18		mg SO4/L	P420334	
	SM 2320 B-2011	Total Alkalinity	21		mg CaCO3/L	P420553	
	SM 2540 C-2011	TDS	86		mg/L	P420665	
	SM 2540 D-2011	TSS	4	I	mg/L	P420670	
	SM 4500-F- C-2011	Fluoride	0.049	I	mg F/L	P420557	
2359551	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P420737	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P420205	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P420443	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P420305	
	SM 5310 B-2011	Organic Carbon	6.2		mg C/L	P420537	

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: PlacidJuneCnl@LkeGrvsRd **Collection Date/Time: 09/26/2022 10:45**

Field ID: G4SD0209 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2359545	DEP SOP: NU-094-1	Color (true)	150		PCU	P420177	
	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P420182	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P420331	
		Sulfate	14		mg SO4/L	P420334	
	SM 2320 B-2011	Total Alkalinity	11		mg CaCO3/L	P420553	
	SM 2540 C-2011	TDS	96		mg/L	P420665	
	SM 2540 D-2011	TSS	2	I	mg/L	P420670	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P420557	
2359548	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P420737	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P420205	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.78		mg N/L	P420443	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P420305	
	SM 5310 B-2011	Organic Carbon	20		mg C/L	P420537	

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: Lake June In Winter **Collection Date/Time: 09/26/2022 11:15**

Field ID: G4SD0186 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2359550	DEP SOP: NU-094-1	Color (true)	8.7		PCU	P420177	
	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P420183	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P420331	
		Sulfate	25		mg SO4/L	P420334	
	SM 2320 B-2011	Total Alkalinity	21		mg CaCO3/L	P420553	
	SM 2540 C-2011	TDS	100		mg/L	P420665	
	SM 2540 D-2011	TSS	4	I	mg/L	P420670	
	SM 4500-F- C-2011	Fluoride	0.063	I	mg F/L	P420557	
2359552	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P420737	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.60		mg N/L	P420270	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P420443	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P420305	
	SM 5310 B-2011	Organic Carbon	6.9		mg C/L	P420537	

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: P420177

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P420180

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P420182

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P420183

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420331

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420334

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420588

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420737

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420204

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420205

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420270

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420443

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P420305

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

Reference Method: SM 2320 B-2011
Batch ID: P420553

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

Reference Method: SM 2540 C-2011
Batch ID: P420665

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P420670

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P420557

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P420537

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: P420177

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.6		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P420180

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P420182

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P420183

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420331

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420334

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420588

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420737

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420204

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420205

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420270

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420443

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P420305

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

Reference Method: SM 2320 B-2011
Batch ID: P420553

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.3		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P420557

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P420537

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.9		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420331

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359164	Chloride	96.9		P	90 - 110
2359550	Chloride	96.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420334

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359164	Sulfate	94.9		P	90 - 110
2359550	Sulfate	94.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420588

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359381	Ammonia-N	98.6	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420737

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359551	Ammonia-N	98.2	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420204

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359002	Kjeldahl Nitrogen	108	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420205

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359459	Kjeldahl Nitrogen	98.7	94.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420443

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359381	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P420305

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359514	Total-P	106	107	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P420557

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359568	Fluoride	100	99.5	P/P	94 - 104

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P420537

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359346	Organic Carbon	101		P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P420177

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359567	Color (true)	2.34	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P420180

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359549	Color (true)	1.22	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P420182

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359339	Turbidity	4.05	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P420183

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359597	Turbidity	7.38	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420331

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359164	Chloride	0.235	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420334

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359164	Sulfate	0.333	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420588

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359381	Ammonia-N	2.32	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420737

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359551	Ammonia-N	1.43	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420204

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359002	Kjeldahl Nitrogen	2.43	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420205

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359459	Kjeldahl Nitrogen	2.62	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420270

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359582	Kjeldahl Nitrogen	2.35	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420443

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359381	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P420305

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359514	Total-P	0.819	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P420553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359568	Total Alkalinity	0.859	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P420665

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359347	TDS	4.23	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P420557

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359568	Fluoride	0.477	Spike	P	0 - 1.6

Quality Assurance Report
Precision

Reference Method: SM 5310 B-2011
Batch ID: P420537

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359346	Organic Carbon	0.212	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: A114965
Included Lab Sample IDs: 2359543, 2359544, 2359545, 2359549, 2359550

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	90 - 110
Color (true)	103	103	P/P	90 - 110
Color (true)	103	101	P/P	90 - 110
Color (true)	103	103	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A114967
Included Lab Sample IDs: 2359543, 2359544, 2359545, 2359549, 2359550

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A114999
Included Lab Sample IDs: 2359543, 2359544, 2359545, 2359549, 2359550

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110
Chloride	99.9	100	P/P	90 - 110
Sulfate	101	101	P/P	90 - 110
Sulfate	99.7	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A115043
Included Lab Sample IDs: 2359546, 2359548

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A115048
Included Lab Sample IDs: 2359551, 2359552

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A115050
Included Lab Sample IDs: 2359547

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A115111
Included Lab Sample IDs: 2359546, 2359547, 2359548, 2359551, 2359552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	103	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A115115
Included Lab Sample IDs: 2359546, 2359547, 2359548, 2359551, 2359552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	102	P/P	90 - 110
Kjeldahl Nitrogen	102	102	P/P	90 - 110
Kjeldahl Nitrogen	103	104	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A115145
Included Lab Sample IDs: 2359546, 2359547, 2359548, 2359551, 2359552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.5	97.8	P/P	90 - 110
Organic Carbon	97.8	98.1	P/P	90 - 110
Organic Carbon	98.1	97.8	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A115150
Included Lab Sample IDs: 2359543, 2359544, 2359545, 2359549, 2359550

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	94.5	101	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A115150
Included Lab Sample IDs: 2359543, 2359544, 2359545, 2359549, 2359550

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A115158
Included Lab Sample IDs: 2359546, 2359547

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.2	98.2	P/P	90 - 110
Ammonia-N	98.4	99.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A115220
Included Lab Sample IDs: 2359548, 2359551, 2359552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.7	97.9	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)	99.6				2.34	
	Color (true)	101				1.22	
EPA 180.1 Rev. 2.0	Turbidity	101				4.05	
	Turbidity	101				7.38	
EPA 300.0 Rev. 2.1	Chloride	101	96.9	96.8		0.235	
	Sulfate	99.1	94.9	94.2		0.333	
EPA 350.1 Rev. 2.0	Ammonia-N	98.0	98.6	101			2.32
	Ammonia-N	97.2	98.2	99.8			1.43
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	108	105			2.43
	Kjeldahl Nitrogen	96.6	98.7	94.8			2.62
	Kjeldahl Nitrogen	110					2.35
EPA 353.2 Rev. 2.0	NO2NO3-N	103	104	104			0.0
EPA 365.1 Rev. 2.0	Total-P	103	106	107			0.819
SM 2320 B-2011	Total Alkalinity	99.3				0.859	
SM 2540 C-2011	TDS					4.23	
SM 4500-F- C-2011	Fluoride	100	100	99.5			0.477
SM 5310 B-2011	Organic Carbon	96.9	101				0.212

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2359543, 2359544, 2359545, 2359549, 2359550
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2359543, 2359544, 2359545, 2359549, 2359550
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2359543, 2359544, 2359545, 2359549, 2359550
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2359543, 2359544, 2359545, 2359549, 2359550
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2359546, 2359547, 2359548, 2359551, 2359552
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2359546, 2359547, 2359548, 2359551, 2359552
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2359546, 2359547, 2359548, 2359551, 2359552
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2359546, 2359547, 2359548, 2359551, 2359552
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2359543, 2359544, 2359545, 2359549, 2359550
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2359543, 2359544, 2359545, 2359549, 2359550
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2359543, 2359544, 2359545, 2359549, 2359550
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2359543, 2359544, 2359545, 2359549, 2359550
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2359546, 2359547, 2359548, 2359551, 2359552

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	09/27/2022			09/27/2022 15:30	Anna M. Plaviak	2359550
	09/27/2022			09/27/2022 15:50	Anna M. Plaviak	2359549
	09/27/2022			09/27/2022 15:56	Anna M. Plaviak	2359544
	09/27/2022			09/27/2022 16:03	Anna M. Plaviak	2359543
	09/27/2022			09/27/2022 16:04	Anna M. Plaviak	2359545
EPA 180.1 Rev. 2.0	09/27/2022			09/27/2022 15:07	Chandler E Cox	2359543, 2359544
	09/27/2022			09/27/2022 15:09	Chandler E Cox	2359545
	09/27/2022			09/27/2022 15:21	Chandler E Cox	2359549
	09/27/2022			09/27/2022 15:22	Chandler E Cox	2359550
EPA 300.0 Rev. 2.1	09/27/2022			09/29/2022 21:01	Anna M. Plaviak	2359550
	09/27/2022			09/30/2022 01:17	Anna M. Plaviak	2359543
	09/27/2022			09/30/2022 01:32	Anna M. Plaviak	2359544
	09/27/2022			09/30/2022 01:47	Anna M. Plaviak	2359545
	09/27/2022			09/30/2022 02:03	Anna M. Plaviak	2359549
EPA 350.1 Rev. 2.0	09/27/2022			10/06/2022 12:19	Ping Hua	2359547
	09/27/2022			10/06/2022 13:28	Ping Hua	2359546
	09/27/2022			10/11/2022 14:53	Judith K. Clark	2359551
	09/27/2022			10/11/2022 14:57	Judith K. Clark	2359548
	09/27/2022			10/11/2022 14:58	Judith K. Clark	2359552
EPA 351.2 Rev. 2.0	09/27/2022	09/28/2022 12:10	Alexandra J Mattheus	10/04/2022 10:21	Samantha L Bates	2359546
	09/27/2022	09/28/2022 12:10	Alexandra J Mattheus	10/04/2022 10:37	Samantha L Bates	2359547
	09/27/2022	09/28/2022 12:10	Alexandra J Mattheus	10/04/2022 10:39	Samantha L Bates	2359548
	09/27/2022	09/28/2022 12:10	Alexandra J Mattheus	10/04/2022 10:40	Samantha L Bates	2359551
	09/27/2022	09/29/2022 11:15	Simonne.V. Calhoun	10/04/2022 12:22	Samantha L Bates	2359552
EPA 353.2 Rev. 2.0	09/27/2022			10/04/2022 11:06	Beverly Y. Sanders	2359546
	09/27/2022			10/04/2022 11:07	Beverly Y. Sanders	2359547
	09/27/2022			10/04/2022 11:08	Beverly Y. Sanders	2359548
	09/27/2022			10/04/2022 11:09	Beverly Y. Sanders	2359551
	09/27/2022			10/04/2022 11:10	Beverly Y. Sanders	2359552
EPA 365.1 Rev. 2.0	09/27/2022	09/29/2022 14:45	Adam P Silver	09/30/2022 10:33	Simonne.V. Calhoun	2359546
	09/27/2022	09/29/2022 14:45	Adam P Silver	09/30/2022 10:35	Simonne.V. Calhoun	2359548
	09/27/2022	09/29/2022 14:45	Adam P Silver	09/30/2022 12:20	James L Waggerby	2359551
	09/27/2022	09/29/2022 14:45	Adam P Silver	09/30/2022 12:21	James L Waggerby	2359552
	09/27/2022	09/29/2022 14:45	Adam P Silver	09/30/2022 12:58	Simonne.V. Calhoun	2359547
SM 2320 B-2011	09/27/2022			10/05/2022 22:21	Dale L. Simmons	2359543
	09/27/2022			10/05/2022 22:32	Dale L. Simmons	2359544
	09/27/2022			10/05/2022 22:44	Dale L. Simmons	2359545
	09/27/2022			10/05/2022 22:56	Dale L. Simmons	2359549
	09/27/2022			10/05/2022 23:08	Dale L. Simmons	2359550

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2540 C-2011	09/27/2022			09/30/2022 16:11	Yijie Li	2359543, 2359544, 2359545, 2359549, 2359550
SM 2540 D-2011	09/27/2022			09/30/2022 16:11	Yijie Li	2359543, 2359544, 2359545, 2359549, 2359550
SM 4500-F- C-2011	09/27/2022			10/05/2022 22:21	Dale L. Simmons	2359543
	09/27/2022			10/05/2022 22:32	Dale L. Simmons	2359544
	09/27/2022			10/05/2022 22:44	Dale L. Simmons	2359545
	09/27/2022			10/05/2022 22:56	Dale L. Simmons	2359549
	09/27/2022			10/05/2022 23:08	Dale L. Simmons	2359550
SM 5310 B-2011	09/27/2022			10/04/2022 22:13	Touraj Touran	2359548
	09/27/2022			10/05/2022 01:20	Touraj Touran	2359546
	09/27/2022			10/05/2022 01:34	Touraj Touran	2359547
	09/27/2022			10/05/2022 01:48	Touraj Touran	2359551
	09/27/2022			10/05/2022 02:32	Touraj Touran	2359552