Chemical Analysis Report

SW-DIST-2023-05-11-01

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

Event Description: **Run 4**
Request ID: **RQ-2023-05-08-06**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
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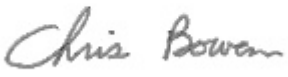
Certified by: Chris Bowen, Environmental Administrator

Date Certified: 26-MAY-2023 11:17



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: LAKE BEULAH SW **Collection Date/Time: 05/10/2023 09:30**

Field ID: G2SW0053 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2408930	DEP SOP: NU-094-1	Color (true)	8.5		PCU	P429778	
	EPA 180.1 Rev. 2.0	Turbidity	0.45	I	NTU	P429780	
	EPA 300.0 Rev. 2.1	Chloride	3.6		mg Cl/L	P430017	
		Sulfate	2.1		mg SO4/L	P430020	
	SM 2320 B-2011	Total Alkalinity	38		mg CaCO3/L	P430118	
	SM 2540 C-2015	TDS	57		mg/L	P430193	
	SM 2540 D-2015	TSS	2	I A	mg/L	P430219	
	SM 4500-F- C-2011	Fluoride	0.25		mg F/L	P430285	
2408933	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P430076	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P429850	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P430055	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P429859	
	SM 5310 B-2011	Organic Carbon	5.7		mg C/L	P429897	
2408936	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P429769	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: CRYSTAL LAKE AT CENTER **Collection Date/Time: 05/10/2023 10:10**

Field ID: G3SW0076 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2408931	DEP SOP: NU-094-1	Color (true)	21		PCU	P429778	
	EPA 180.1 Rev. 2.0	Turbidity	5.6		NTU	P429780	
	EPA 300.0 Rev. 2.1	Chloride	10	A	mg Cl/L	P430018	
		Sulfate	6.0	A	mg SO4/L	P430022	
	SM 2320 B-2011	Total Alkalinity	37		mg CaCO3/L	P430118	
	SM 2540 C-2015	TDS	86		mg/L	P430193	
	SM 2540 D-2015	TSS	8	I	mg/L	P429882	
	SM 4500-F- C-2011	Fluoride	0.20		mg F/L	P430285	
2408934	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P430076	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P429850	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P430055	
	EPA 365.1 Rev. 2.0	Total-P	0.039		mg P/L	P429859	
	SM 5310 B-2011	Organic Carbon	10		mg C/L	P429897	
2408937	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P429769	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: LITTLE BANANA LAKE AT CENTER **Collection Date/Time: 05/10/2023 11:20**

Field ID: G3SW0102 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2408932	DEP SOP: NU-094-1	Color (true)	22	A	PCU	P429778	
	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P429780	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P430018	
		Sulfate	2.9		mg SO4/L	P430022	
	SM 2320 B-2011	Total Alkalinity	71		mg CaCO3/L	P430118	
	SM 2540 C-2015	TDS	139		mg/L	P430193	
	SM 2540 D-2015	TSS	16		mg/L	P429882	
	SM 4500-F- C-2011	Fluoride	0.60		mg F/L	P430285	
2408935	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P430076	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P429850	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P430055	
	EPA 365.1 Rev. 2.0	Total-P	0.23		mg P/L	P429859	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P429897	
2408938	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.044		mg P/L	P429769	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P429778

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P429780

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430017

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430018

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430020

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430022

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430076

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429850

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430055

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429859

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P429769

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: SM 2320 B-2011
Batch ID: P430118

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

Reference Method: SM 2540 C-2015
Batch ID: P430193

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P429882

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P430219

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P430285

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P429897

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: P429778

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.0		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P429780

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	99.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430017

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430018

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430020

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430022

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430076

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429850

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430055

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429859

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P429769

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

Reference Method: SM 2320 B-2011
Batch ID: P430118

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.3		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P430193

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	97.1		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P429882

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	94.3		P	85 - 106

Reference Method: SM 2540 D-2015
Batch ID: P430219

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	98.4		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P430285

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P429897

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.6		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2408605	Chloride	102		P	90 - 110
2408888	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430018

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2408931	Chloride	104		P	90 - 110
2409193	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430020

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2408605	Sulfate	100		P	90 - 110
2408888	Sulfate	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430022

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2408931	Sulfate	103		P	90 - 110
2409193	Sulfate	97.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430076

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2408843	Ammonia-N	96.2	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429850

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2408934	Kjeldahl Nitrogen	103	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430055

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2408905	NO2NO3-N	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429859

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2408905	Total-P	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P429769

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P429769

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2408936	O-Phosphate-P	100	99.7	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P430285

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2408903	Fluoride	102	103	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P429897

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2408905	Organic Carbon	94.1	95.6	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P429778

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2408932	Color (true)	0.837	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P429780

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2408796	Turbidity	0.494	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2408605	Chloride	0.662	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430018

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2408931	Chloride	1.89	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430022

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2408931	Sulfate	2.12	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430076

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2408843	Ammonia-N	1.68	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2408934	Kjeldahl Nitrogen	0.926	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430055

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2408905	NO2NO3-N	0.484	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429859

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2408905	Total-P	0.915	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P429769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2408936	O-Phosphate-P	0.500	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P430118

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2408994	Total Alkalinity	2.41	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P430193

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409028	TDS	0.560	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P430285

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2408903	Fluoride	1.04	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P429897

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2408905	Organic Carbon	1.06	Spike	P	0 - 20

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A119111
Included Lab Sample IDs: 2408936, 2408937, 2408938

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.2	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1
Run ID: A119113
Included Lab Sample IDs: 2408930, 2408931, 2408932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.3	99.2	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A119114
Included Lab Sample IDs: 2408930, 2408931, 2408932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: SM 5310 B-2011
Run ID: A119185
Included Lab Sample IDs: 2408933, 2408934, 2408935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.6	97.2	P/P	90 - 110
Organic Carbon	96.6	96.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A119188
Included Lab Sample IDs: 2408935

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A119193
Included Lab Sample IDs: 2408933, 2408934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A119211
Included Lab Sample IDs: 2408930, 2408931, 2408932

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A119226
Included Lab Sample IDs: 2408933, 2408934, 2408935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.8	102	P/P	90 - 110
Kjeldahl Nitrogen	96.0	93.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A119252
Included Lab Sample IDs: 2408933, 2408934, 2408935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A119259
Included Lab Sample IDs: 2408933, 2408934, 2408935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.4	97.9	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A119276
Included Lab Sample IDs: 2408930, 2408931, 2408932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	93.7	99.0	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A119359
Included Lab Sample IDs: 2408930, 2408931, 2408932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	101	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)	98.0				0.837	
EPA 180.1 Rev. 2.0	Turbidity	99.7				0.494	
EPA 300.0 Rev. 2.1	Chloride	101	102	102		0.662	
	Chloride	103	104	103		1.89	
	Sulfate	100	100	101			
	Sulfate	103	103	97.8		2.12	
EPA 350.1 Rev. 2.0	Ammonia-N	96.2	96.2	98.4			1.68
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.0	103	102			0.926
EPA 353.2 Rev. 2.0	NO2NO3-N	102	104	103			0.484
EPA 365.1 Rev. 2.0	Total-P	102	102	103			0.915
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	100	99.7			0.500
SM 2320 B-2011	Total Alkalinity	99.3				2.41	
SM 2540 C-2015	TDS	97.1				0.560	
SM 2540 D-2015	TSS	94.3					
	TSS	98.4					
SM 4500-F- C-2011	Fluoride	102	102	103			1.04
SM 5310 B-2011	Organic Carbon	94.6	94.1	95.6			1.06

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2408930, 2408931, 2408932
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2408930, 2408931, 2408932
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2408930, 2408931, 2408932
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2408930, 2408931, 2408932
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2408933, 2408934, 2408935
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2408933, 2408934, 2408935
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2408933, 2408934, 2408935
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2408933, 2408934, 2408935
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2408936, 2408937, 2408938
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2408930, 2408931, 2408932
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2408930, 2408931, 2408932
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2408930, 2408931, 2408932
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2408930, 2408931, 2408932
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2408933, 2408934, 2408935

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	05/11/2023			05/11/2023 14:25	Samantha L Bates	2408930
	05/11/2023			05/11/2023 14:26	Samantha L Bates	2408931
	05/11/2023			05/11/2023 14:27	Samantha L Bates	2408932
EPA 180.1 Rev. 2.0	05/11/2023			05/11/2023 14:11	Anna M. Plaviak	2408930
	05/11/2023			05/11/2023 14:13	Anna M. Plaviak	2408931
	05/11/2023			05/11/2023 14:15	Anna M. Plaviak	2408932
EPA 300.0 Rev. 2.1	05/11/2023			05/17/2023 17:59	James L Waggerby	2408930
	05/11/2023			05/17/2023 19:29	James L Waggerby	2408931
	05/11/2023			05/17/2023 20:29	James L Waggerby	2408932
EPA 350.1 Rev. 2.0	05/11/2023			05/18/2023 15:01	Ping Hua	2408933
	05/11/2023			05/18/2023 15:02	Ping Hua	2408934
	05/11/2023			05/18/2023 15:03	Ping Hua	2408935
EPA 351.2 Rev. 2.0	05/11/2023	05/15/2023 12:40	Simonne.V. Calhoun	05/17/2023 12:28	Samantha L Bates	2408933
	05/11/2023	05/15/2023 12:40	Simonne.V. Calhoun	05/17/2023 12:29	Samantha L Bates	2408934
	05/11/2023	05/15/2023 12:40	Simonne.V. Calhoun	05/17/2023 12:37	Samantha L Bates	2408935
EPA 353.2 Rev. 2.0	05/11/2023			05/18/2023 11:06	Anna M. Plaviak	2408933
	05/11/2023			05/18/2023 11:07	Anna M. Plaviak	2408934
	05/11/2023			05/18/2023 11:08	Anna M. Plaviak	2408935
EPA 365.1 Rev. 2.0	05/11/2023	05/15/2023 14:57	Adam P Silver	05/16/2023 10:05	James L Waggerby	2408935
	05/11/2023	05/15/2023 14:57	Adam P Silver	05/16/2023 13:21	James L Waggerby	2408933
	05/11/2023	05/15/2023 14:57	Adam P Silver	05/16/2023 13:22	James L Waggerby	2408934
EPA 365.1 Rev. 2.0 dissolved	05/11/2023			05/11/2023 14:28	Elise M. Gillis	2408936
	05/11/2023			05/11/2023 14:32	Elise M. Gillis	2408937
	05/11/2023			05/11/2023 14:33	Elise M. Gillis	2408938
SM 2320 B-2011	05/11/2023			05/19/2023 05:48	Dale L. Simmons	2408930
	05/11/2023			05/19/2023 05:59	Dale L. Simmons	2408931
	05/11/2023			05/19/2023 06:11	Dale L. Simmons	2408932
SM 2540 C-2015	05/11/2023			05/12/2023 13:06	Dana G. Hughes	2408930, 2408931, 2408932
SM 2540 D-2015	05/11/2023			05/12/2023 13:06	Dana G. Hughes	2408931, 2408932
	05/11/2023			05/16/2023 14:24	Yijie Li	2408930
SM 4500-F- C-2011	05/11/2023			05/24/2023 02:50	Dale L. Simmons	2408930
	05/11/2023			05/24/2023 02:56	Dale L. Simmons	2408931
	05/11/2023			05/24/2023 03:01	Dale L. Simmons	2408932
SM 5310 B-2011	05/11/2023			05/16/2023 01:07	Elise M. Gillis	2408933
	05/11/2023			05/16/2023 01:20	Elise M. Gillis	2408934
	05/11/2023			05/16/2023 02:07	Elise M. Gillis	2408935