Chemical Analysis Report

SW-DIST-2022-07-15-01

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

Event Description: **Run 13**
Request ID: **RQ-2022-07-11-07**
Customer: **SW-DIST**
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 03-AUG-2022 09:13

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 Whistler @ Center **Collection Date/Time: 07/14/2022 10:45**

Field ID: G3SW0100 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2342086	DEP SOP: NU-094-1	Color (true)	12		PCU	P416737	
	EPA 180.1 Rev. 2.0	Turbidity	2.2	A	NTU	P416748	
	EPA 300.0 Rev. 2.1	Chloride	32		mg Cl/L	P417207	
		Sulfate	33		mg SO4/L	P417210	
	SM 2320 B-2011	Total Alkalinity	20	A	mg CaCO3/L	P417081	
	SM 2540 C-2011	TDS	128		mg/L	P417148	
	SM 2540 D-2011	TSS	3	I	mg/L	P417126	
	SM 4500-F- C-2011	Fluoride	0.18		mg F/L	P417087	
2342090	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P417188	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P416987	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P417224	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P416950	
	SM 5310 B-2011	Organic Carbon	6.5		mg C/L	P417049	

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.

Sample Location: Lake Van @ Center **Collection Date/Time: 07/14/2022 11:20**

Field ID: G4SW0106 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2342087	DEP SOP: NU-094-1	Color (true)	40	A	PCU	P416738	
	EPA 180.1 Rev. 2.0	Turbidity	4.4		NTU	P416748	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P417207	
		Sulfate	17		mg SO4/L	P417210	
	SM 2320 B-2011	Total Alkalinity	31		mg CaCO3/L	P417081	
	SM 2540 C-2011	TDS	107		mg/L	P417148	
	SM 2540 D-2011	TSS	4	I	mg/L	P417126	
	SM 4500-F- C-2011	Fluoride	0.30		mg F/L	P417087	
2342091	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P417192	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P416988	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P417224	
	EPA 365.1 Rev. 2.0	Total-P	0.045		mg P/L	P416950	
	SM 5310 B-2011	Organic Carbon	10		mg C/L	P417049	

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 Ida @ Center **Collection Date/Time: 07/14/2022 10:15**

Field ID: G3SW0043 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2342088	DEP SOP: NU-094-1	Color (true)	21		PCU	P416738	
	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P416748	
	EPA 300.0 Rev. 2.1	Chloride	33		mg Cl/L	P417207	
		Sulfate	18		mg SO4/L	P417210	
	SM 2320 B-2011	Total Alkalinity	69		mg CaCO3/L	P417081	
	SM 2540 C-2011	TDS	155		mg/L	P417148	
	SM 2540 D-2011	TSS	2	U	mg/L	P417126	
	SM 4500-F- C-2011	Fluoride	0.15		mg F/L	P417087	
2342092	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P417192	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P416987	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P417224	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P416950	
	SM 5310 B-2011	Organic Carbon	8.1		mg C/L	P417049	

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.

Sample Location: Lake Gordon - Center **Collection Date/Time: 07/14/2022 12:25**

Field ID: G3SW0095 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2342089	DEP SOP: NU-094-1	Color (true)	10		PCU	P416738	
	EPA 180.1 Rev. 2.0	Turbidity	0.65	I	NTU	P416748	
	EPA 300.0 Rev. 2.1	Chloride	11	A	mg Cl/L	P417207	
		Sulfate	7.3	A	mg SO4/L	P417210	
	SM 2320 B-2011	Total Alkalinity	42		mg CaCO3/L	P417081	
	SM 2540 C-2011	TDS	76		mg/L	P417149	
	SM 2540 D-2011	TSS	2	I	mg/L	P417127	
	SM 4500-F- C-2011	Fluoride	0.081	I	mg F/L	P417087	
2342093	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P417192	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37		mg N/L	P416988	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P417224	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P416950	
	SM 5310 B-2011	Organic Carbon	4.2		mg C/L	P417049	

Ref. Method and Comment:
SM 2540 D-2011: 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: P416737

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P416738

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416748

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417207

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417210

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417188

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417192

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416987

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416988

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417224

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416950

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

Reference Method: SM 2320 B-2011
Batch ID: P417081

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

Reference Method: SM 2540 C-2011
Batch ID: P417148

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P417149

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P417126

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P417127

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P417087

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P417049

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: P416737

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.5		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P416738

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.4		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416748

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	94.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417207

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417210

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417188

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417192

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416987

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: P416988

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417224

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416950

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.8		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P417081

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

Reference Method: SM 4500-F- C-2011
Batch ID: P417087

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

Reference Method: SM 5310 B-2011
Batch ID: P417049

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.3		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417207

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342089	Chloride	95.5		P	90 - 110
2342115	Chloride	93.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417210

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342089	Sulfate	94.1		P	90 - 110
2342115	Sulfate	93.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417188

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341426	Ammonia-N	97.8	97.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417192

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342103	Ammonia-N	97.4	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416988

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341979	Kjeldahl Nitrogen	103	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417224

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342090	NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416950

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342091	Total-P	103	101	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P417087

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342086	Fluoride	101	100	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P417049

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341979	Organic Carbon	94.8	96.4	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P416737

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341996	Color (true)	0.266	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P416738

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342087	Color (true)	0.318	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342086	Turbidity	2.79	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417207

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342089	Chloride	0.136	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417210

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342089	Sulfate	0.173	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417188

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341426	Ammonia-N	0.184	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417192

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342103	Ammonia-N	0.205	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416987

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341918	Kjeldahl Nitrogen	4.90	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416988

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341979	Kjeldahl Nitrogen	1.99	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417224

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342090	NO2NO3-N	0.990	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416950

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342091	Total-P	1.84	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P417081

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342086	Total Alkalinity	1.82	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P417148

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341591	TDS	3.84	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P417149

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341554	TDS	1.30	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P417087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342086	Fluoride	0.476	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P417049

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341979	Organic Carbon	1.06	Spike	P	0 - 20

Quality Assurance Report
Precision

* 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: A113535
Included Lab Sample IDs: 2342086, 2342087, 2342088, 2342089

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.2	99.5	P/P	90 - 110
Color (true)	99.5	99.9	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A113539
Included Lab Sample IDs: 2342086, 2342087, 2342088, 2342089

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	98.0	P/P	95 - 105

Reference Method: SM 5310 B-2011
Run ID: A113669
Included Lab Sample IDs: 2342090, 2342091, 2342092, 2342093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	97.3	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A113683
Included Lab Sample IDs: 2342086, 2342087, 2342088, 2342089

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	99.3	P/P	90 - 110
Total Alkalinity	97.9	100	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A113683
Included Lab Sample IDs: 2342086, 2342087, 2342088, 2342089

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A113693
Included Lab Sample IDs: 2342090, 2342091, 2342092, 2342093

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A113704
Included Lab Sample IDs: 2342090, 2342091, 2342092, 2342093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.9	95.6	P/P	90 - 110
Kjeldahl Nitrogen	96.9	96.7	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A113713
Included Lab Sample IDs: 2342090

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A113714
Included Lab Sample IDs: 2342091, 2342092, 2342093

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A113721
Included Lab Sample IDs: 2342086, 2342087, 2342088, 2342089

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.8	99.9	P/P	90 - 110
Sulfate	97.8	98.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A113726
Included Lab Sample IDs: 2342090, 2342091, 2342092, 2342093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	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)	99.5				0.266	
	Color (true)	97.4				0.318	
EPA 180.1 Rev. 2.0	Turbidity	94.5				2.79	
EPA 300.0 Rev. 2.1	Chloride	98.0	95.5	93.7		0.136	
	Sulfate	97.4	94.1	93.6		0.173	
EPA 350.1 Rev. 2.0	Ammonia-N	99.0	97.8	97.6			0.184
	Ammonia-N	95.4	97.4	97.6			0.205
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102					4.90
	Kjeldahl Nitrogen	104	103	106			1.99
EPA 353.2 Rev. 2.0	NO2NO3-N	100	100	102			0.990
EPA 365.1 Rev. 2.0	Total-P	99.8	103	101			1.84
SM 2320 B-2011	Total Alkalinity	101				1.82	
SM 2540 C-2011	TDS					3.84	
	TDS					1.30	
SM 4500-F- C-2011	Fluoride	101	101	100			0.476
SM 5310 B-2011	Organic Carbon	97.3	94.8	96.4			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)	2342086, 2342087, 2342088, 2342089
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2342086, 2342087, 2342088, 2342089
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2342086, 2342087, 2342088, 2342089
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2342086, 2342087, 2342088, 2342089
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2342090, 2342091, 2342092, 2342093
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2342090, 2342091, 2342092, 2342093
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2342090, 2342091, 2342092, 2342093
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2342090, 2342091, 2342092, 2342093
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2342086, 2342087, 2342088, 2342089
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2342086, 2342087, 2342088, 2342089
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2342086, 2342087, 2342088, 2342089
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2342086, 2342087, 2342088, 2342089
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2342090, 2342091, 2342092, 2342093

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	07/15/2022			07/15/2022 14:09	Samantha L Bates	2342086
	07/15/2022			07/15/2022 14:13	Samantha L Bates	2342087
	07/15/2022			07/15/2022 14:14	Samantha L Bates	2342088
	07/15/2022			07/15/2022 14:15	Samantha L Bates	2342089
EPA 180.1 Rev. 2.0	07/15/2022			07/15/2022 13:50	Anna M. Plaviak	2342086
	07/15/2022			07/15/2022 13:52	Anna M. Plaviak	2342087
	07/15/2022			07/15/2022 13:53	Anna M. Plaviak	2342088
	07/15/2022			07/15/2022 13:54	Anna M. Plaviak	2342089
EPA 300.0 Rev. 2.1	07/15/2022			07/26/2022 12:03	Anna M. Plaviak	2342089
	07/15/2022			07/26/2022 12:52	Anna M. Plaviak	2342086
	07/15/2022			07/26/2022 13:04	Anna M. Plaviak	2342087
	07/15/2022			07/26/2022 13:16	Anna M. Plaviak	2342088
EPA 350.1 Rev. 2.0	07/15/2022			07/26/2022 15:40	Judith K. Clark	2342091
	07/15/2022			07/26/2022 15:41	Judith K. Clark	2342092
	07/15/2022			07/26/2022 15:43	Judith K. Clark	2342093
	07/15/2022			07/26/2022 16:04	Ping Hua	2342090
EPA 351.2 Rev. 2.0	07/15/2022	07/25/2022 12:53	Simonne.V. Calhoun	07/26/2022 11:23	Samantha L Bates	2342090
	07/15/2022	07/25/2022 12:53	Simonne.V. Calhoun	07/26/2022 11:24	Samantha L Bates	2342092
	07/15/2022	07/25/2022 12:53	Simonne.V. Calhoun	07/26/2022 11:52	Samantha L Bates	2342091
	07/15/2022	07/25/2022 12:53	Simonne.V. Calhoun	07/26/2022 11:54	Samantha L Bates	2342093
EPA 353.2 Rev. 2.0	07/15/2022			07/27/2022 09:29	Beverly Y. Sanders	2342090
	07/15/2022			07/27/2022 09:37	Beverly Y. Sanders	2342091
	07/15/2022			07/27/2022 09:39	Beverly Y. Sanders	2342092
	07/15/2022			07/27/2022 09:40	Beverly Y. Sanders	2342093
EPA 365.1 Rev. 2.0	07/15/2022	07/22/2022 16:03	Adam P Silver	07/25/2022 15:10	James L Waggerby	2342091
	07/15/2022	07/22/2022 16:03	Adam P Silver	07/25/2022 15:11	James L Waggerby	2342090
	07/15/2022	07/22/2022 16:03	Adam P Silver	07/25/2022 15:12	James L Waggerby	2342092
	07/15/2022	07/22/2022 16:03	Adam P Silver	07/25/2022 15:13	James L Waggerby	2342093
SM 2320 B-2011	07/15/2022			07/23/2022 06:05	Dale L. Simmons	2342086
	07/15/2022			07/23/2022 09:07	Dale L. Simmons	2342087
	07/15/2022			07/23/2022 09:21	Dale L. Simmons	2342088
	07/15/2022			07/23/2022 09:34	Dale L. Simmons	2342089
SM 2540 C-2011	07/15/2022			07/19/2022 15:12	Yijie Li	2342086, 2342087, 2342088, 2342089
SM 2540 D-2011	07/15/2022			07/19/2022 15:12	Yijie Li	2342086, 2342087, 2342088, 2342089
SM 4500-F- C-2011	07/15/2022			07/23/2022 05:55	Dale L. Simmons	2342086
	07/15/2022			07/23/2022 09:07	Dale L. Simmons	2342087
	07/15/2022			07/23/2022 09:21	Dale L. Simmons	2342088
	07/15/2022			07/23/2022 09:34	Dale L. Simmons	2342089
SM 5310 B-2011	07/15/2022			07/22/2022 10:08	Touraj Touran	2342090
	07/15/2022			07/22/2022 10:22	Touraj Touran	2342091

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	07/15/2022			07/22/2022 10:35	Touraj Touran	2342092
	07/15/2022			07/22/2022 10:51	Touraj Touran	2342093