Chemical Analysis Report

NW-DIST-2020-11-19-02

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

Event Description: **Twin Lakes Run**
Request ID: **RQ-2020-11-16-40**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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160 Government Center
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Certified by: Colin Wright, Program Administrator

Date Certified: 08-DEC-2020 09:05

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: Coleman Lake **Collection Date/Time: 11/18/2020 11:08**

Field ID: G3NW0216 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2208688	EPA 180.1 Rev. 2.0	Turbidity	5.7	A	NTU	P390289	
	EPA 300.0 Rev. 2.1	Bromide	0.054		mg Br/L	P390373	
		Chloride	25	A	mg Cl/L	P390446	
		Sulfate	9.7	A	mg SO4/L	P390449	
	SM 2120 B-2011	Color (true)	57		PCU	P390281	
	SM 2320 B-2011	Total Alkalinity	55		mg CaCO3/L	P390375	
	SM 2540 C-2011	TDS	134		mg/L	P390548	
	SM 2540 D-2011	TSS	6	I	mg/L	P390544	
	SM 4500 F-C-2011	Fluoride	0.088	I	mg F/L	P390377	
2208691	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P390359	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P390571	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.21		mg N/L	P390468	
	EPA 365.1 Rev. 2.0	Total-P	0.24		mg P/L	P390391	
	SM 5310 B-2011	Organic Carbon	7.3		mg C/L	P390369	
2208694	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.18		mg P/L	P390294	

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: Twin Lake **Collection Date/Time: 11/18/2020 10:37**

Field ID: G3NW0215 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2208689	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P390289	
	EPA 300.0 Rev. 2.1	Bromide	0.087		mg Br/L	P390373	
		Chloride	32		mg Cl/L	P390446	
		Sulfate	10		mg SO4/L	P390449	
	SM 2120 B-2011	Color (true)	61		PCU	P390281	
	SM 2320 B-2011	Total Alkalinity	59		mg CaCO3/L	P390375	
	SM 2540 C-2011	TDS	143		mg/L	P390548	
	SM 2540 D-2011	TSS	2	I	mg/L	P390544	
	SM 4500 F-C-2011	Fluoride	0.13		mg F/L	P390377	
2208692	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P390359	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P390571	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P390468	
	EPA 365.1 Rev. 2.0	Total-P	0.31		mg P/L	P390391	
	SM 5310 B-2011	Organic Carbon	9.4		mg C/L	P390369	
2208695	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.25		mg P/L	P390294	

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: Kell-air Lake **Collection Date/Time: 11/18/2020 11:20**

Field ID: G3NW0217 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2208690	EPA 180.1 Rev. 2.0	Turbidity	7.2		NTU	P390289	
	EPA 300.0 Rev. 2.1	Bromide	0.032	I	mg Br/L	P390373	
		Chloride	27		mg Cl/L	P390446	
		Sulfate	10		mg SO4/L	P390449	
	SM 2120 B-2011	Color (true)	54		PCU	P390281	
	SM 2320 B-2011	Total Alkalinity	54		mg CaCO3/L	P390375	
	SM 2540 C-2011	TDS	136	A	mg/L	P390548	
	SM 2540 D-2011	TSS	6	I A	mg/L	P390544	
	SM 4500 F-C-2011	Fluoride	0.10		mg F/L	P390377	
2208693	EPA 350.1 Rev. 2.0	Ammonia-N	0.029		mg N/L	P390359	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P390571	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P390468	
	EPA 365.1 Rev. 2.0	Total-P	0.22		mg P/L	P390394	
	SM 5310 B-2011	Organic Carbon	7.4		mg C/L	P390369	
2208696	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P390294	

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: EPA 180.1 Rev. 2.0
Batch ID: P390289

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390373

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390446

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390449

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P390359

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P390571

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P390468

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390391

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390394

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P390294

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

Reference Method: SM 2120 B-2011
Batch ID: P390281

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P390375

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

Reference Method: SM 2540 C-2011
Batch ID: P390548

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P390544

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P390377

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P390369

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390373

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390446

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390449

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P390359

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P390571

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P390468

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: P390391

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390394

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	108		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P390294

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.9		P	90 - 110

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2120 B-2011
Batch ID: P390281

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	103		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P390375

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P390377

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.4		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P390369

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	104		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390373

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2208661	Bromide	99.9	99.4	P/P	90 - 110
2208690	Bromide	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390446

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2208688	Chloride	102		P	90 - 110
2208807	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390449

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2208688	Sulfate	101		P	90 - 110
2208807	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P390359

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2208691	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P390571

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2208730	Kjeldahl Nitrogen	97.5	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P390468

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2208662	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390391

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2208644	Total-P	105	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390394

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2208693	Total-P	108	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P390294

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2208663	O-Phosphate-P	99.0	98.7	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P390377

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2208588	Fluoride	97.1	95.2	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P390369

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2208646	Organic Carbon	106	106	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P390289

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2208688	Turbidity	1.92	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390373

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2208661	Bromide	0.482	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390446

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2208688	Chloride	1.05	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390449

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2208688	Sulfate	1.68	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P390359

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2208691	Ammonia-N	0.318	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P390571

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2208730	Kjeldahl Nitrogen	5.37	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P390468

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2208662	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390391

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2208644	Total-P	0.158	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390394

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2208693	Total-P	2.80	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P390294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2208663	O-Phosphate-P	0.303	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P390281

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2208643	Color (true)	0.671	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P390375

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2208588	Total Alkalinity	0.763	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P390548

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2208690	TDS	3.69	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P390377

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2208588	Fluoride	1.45	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P390369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2208646	Organic Carbon	0.127	Spike	P	0 - 20

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A102164
Included Lab Sample IDs: 2208688, 2208689, 2208690

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	97.2	98.4	P/P	90 - 110
Bromide	97.6	97.2	P/P	90 - 110

Reference Method: SM 2120 B-2011
Run ID: A102215
Included Lab Sample IDs: 2208688, 2208689, 2208690

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	103	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A102216
Included Lab Sample IDs: 2208688, 2208689, 2208690

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	98.5	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A102245
Included Lab Sample IDs: 2208691, 2208692, 2208693

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.5	98.4	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A102251
Included Lab Sample IDs: 2208691, 2208692, 2208693

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

Reference Method: SM 2320 B-2011
Run ID: A102258
Included Lab Sample IDs: 2208688, 2208689, 2208690

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.2	P/P	90 - 110
Total Alkalinity	99.2	102	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A102258
Included Lab Sample IDs: 2208688, 2208689, 2208690

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	96.6	96.7	P/P	90 - 110
Fluoride	96.7	99.0	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A102285
Included Lab Sample IDs: 2208693

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	102	P/P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A102298
Included Lab Sample IDs: 2208688, 2208689, 2208690

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A102306
Included Lab Sample IDs: 2208691, 2208692, 2208693

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A102308
Included Lab Sample IDs: 2208694, 2208695, 2208696

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.9	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A102366
Included Lab Sample IDs: 2208691, 2208692, 2208693

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.1	93.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A102373
Included Lab Sample IDs: 2208691, 2208692

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.2	95.3	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
EPA 180.1 Rev. 2.0	Turbidity						1.92	
EPA 300.0 Rev. 2.1	Bromide	100	99.9	99.4	100			0.482
	Chloride	102	102	104			1.05	
	Sulfate	102	101	103			1.68	
EPA 350.1 Rev. 2.0	Ammonia-N	99.2	101	101				0.318
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.3	97.5	105				5.37
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102	102				0.0
EPA 365.1 Rev. 2.0	Total-P	107	105	104				0.158
	Total-P	108	108	103				2.80
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.9	99.0	98.7				0.303
SM 2120 B-2011	Color (true)	103					0.671	
SM 2320 B-2011	Total Alkalinity	101					0.763	
SM 2540 C-2011	TDS						3.69	
SM 4500 F-C-2011	Fluoride	96.4	97.1	95.2				1.45
SM 5310 B-2011	Organic Carbon	104	106	106				0.127

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2208688, 2208689, 2208690
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2208688, 2208689, 2208690
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2208688, 2208689, 2208690
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2208688, 2208689, 2208690
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2208691, 2208692, 2208693
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2208691, 2208692, 2208693
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2208691, 2208692, 2208693
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2208691, 2208692, 2208693
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2208694, 2208695, 2208696
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2208688, 2208689, 2208690
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2208688, 2208689, 2208690
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2208688, 2208689, 2208690
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2208688, 2208689, 2208690
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2208688, 2208689, 2208690
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2208691, 2208692, 2208693

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	11/19/2020			11/19/2020 16:31	Yen Ta	2208688, 2208689, 2208690
EPA 300.0 Rev. 2.1	11/19/2020			11/20/2020 13:33	Lipi Saha	2208690
	11/19/2020			11/20/2020 17:46	Lipi Saha	2208688
	11/19/2020			11/20/2020 18:04	Lipi Saha	2208689
	11/19/2020			11/24/2020 13:49	Lipi Saha	2208688
	11/19/2020			11/24/2020 14:55	Lipi Saha	2208689
	11/19/2020			11/24/2020 15:08	Lipi Saha	2208690
EPA 350.1 Rev. 2.0	11/19/2020			11/22/2020 11:21	Ping Hua	2208691
	11/19/2020			11/22/2020 11:28	Ping Hua	2208692
	11/19/2020			11/22/2020 11:30	Ping Hua	2208693
EPA 351.2 Rev. 2.0	11/19/2020	12/01/2020 12:10	David Boose	12/02/2020 11:44	Elliott Rodriguez	2208691
	11/19/2020	12/01/2020 12:10	David Boose	12/02/2020 11:45	Elliott Rodriguez	2208692
	11/19/2020	12/01/2020 12:10	David Boose	12/02/2020 11:47	Elliott Rodriguez	2208693
EPA 353.2 Rev. 2.0	11/19/2020			11/25/2020 10:03	Beverly Y. Sanders	2208691
	11/19/2020			11/25/2020 10:04	Beverly Y. Sanders	2208692
	11/19/2020			11/25/2020 10:05	Beverly Y. Sanders	2208693
EPA 365.1 Rev. 2.0	11/19/2020	11/23/2020 20:44	Yen Ta	11/24/2020 14:22	Benjamin T. Nordmann	2208693
	11/19/2020	11/23/2020 20:44	Yen Ta	11/30/2020 10:03	Benjamin T. Nordmann	2208691
	11/19/2020	11/23/2020 20:44	Yen Ta	11/30/2020 10:04	Benjamin T. Nordmann	2208692
EPA 365.1 Rev. 2.0 dissolved	11/19/2020			11/19/2020 19:53	Ping Hua	2208696
	11/19/2020			11/19/2020 19:55	Ping Hua	2208694
	11/19/2020			11/19/2020 19:56	Ping Hua	2208695
SM 2120 B-2011	11/19/2020			11/19/2020 15:45	Benjamin T. Nordmann	2208688
	11/19/2020			11/19/2020 15:46	Benjamin T. Nordmann	2208689
	11/19/2020			11/19/2020 15:47	Benjamin T. Nordmann	2208690
SM 2320 B-2011	11/19/2020			11/20/2020 19:33	Dale L. Simmons	2208688
	11/19/2020			11/20/2020 20:11	Dale L. Simmons	2208689
	11/19/2020			11/20/2020 20:24	Dale L. Simmons	2208690
SM 2540 C-2011	11/19/2020			11/24/2020 11:02	Yijie Li	2208688, 2208689, 2208690
SM 2540 D-2011	11/19/2020			11/24/2020 11:02	Yijie Li	2208688, 2208689, 2208690
SM 4500 F-C-2011	11/19/2020			11/20/2020 19:33	Dale L. Simmons	2208688
	11/19/2020			11/20/2020 20:11	Dale L. Simmons	2208689
	11/19/2020			11/20/2020 20:24	Dale L. Simmons	2208690
SM 5310 B-2011	11/19/2020			11/21/2020 04:37	Touraj Touran	2208691
	11/19/2020			11/21/2020 04:50	Touraj Touran	2208692
	11/19/2020			11/21/2020 05:02	Touraj Touran	2208693