Chemical Analysis Report

NE-DIST-2021-06-24-02

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

Event Description: **Nassau North**
Request ID: **RQ-2021-06-21-26**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant Date Certified: 19-JUL-2021 09:59

Case Narrative

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

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

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

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

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

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: Pigeon Creek @ Andrews Rd. **Collection Date/Time: 06/23/2021 10:25**

Field ID: 19010098 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2256980	EPA 180.1 Rev. 2.0	Turbidity	4.4		NTU	P400181	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P400552	
		Sulfate	8.2		mg SO4/L	P400555	
	SM 2120 B-2011	Color (true)	210		PCU	P400183	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P400616	
	SM 2540 C-2011	TDS	77		mg/L	P400605	
	SM 2540 D-2011	TSS	3	I	mg/L	P400608	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P400620	
2256982	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P400572	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.70		mg N/L	P400474	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P400235	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P400337	
	SM 5310 B-2011	Organic Carbon	23		mg C/L	P400534	
2256984	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.012		mg P/L	P400188	
2257006	EPA 200.7 Rev. 4.4	Barium	23.9		ug/L	P400161	
		Calcium	2.53		mg/L	P400161	
		Iron	1.55E+03		ug/L	P400161	
		Magnesium	1.08		mg/L	P400161	
		Manganese	14.2		ug/L	P400161	
		Potassium	1.5		mg/L	P400161	
		Sodium	7.9		mg/L	P400161	
		Zinc	8.7	I	ug/L	P400161	
	EPA 200.8 Rev. 5.4	Aluminum	504		ug/L	P400161	
		Antimony	0.067	I	ug/L	P400161	
		Arsenic	0.46		ug/L	P400161	
		Beryllium	0.040		ug/L	P400161	
		Boron**	24.4		ug/L	P400161	
		Cadmium	0.020	U	ug/L	P400161	
		Chromium	0.51	I	ug/L	P400161	
		Copper	0.76	I	ug/L	P400161	
		Lead	0.64		ug/L	P400161	
		Nickel	0.60	I	ug/L	P400161	
		Selenium	0.20	U	ug/L	P400161	
		Silver	0.010	U	ug/L	P400161	
		Thallium	0.10	U	ug/L	P400161	
	SM 2340B	Hardness	10.7		mg/L	P400161	

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.
EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.
EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 07/07/2021.

Sample Location: Pigeon Creek at US 1 **Collection Date/Time: 06/23/2021 10:10**

Field ID: 19010099 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2257008	EPA 200.7 Rev. 4.4	Barium	27.1		ug/L	P400161	
		Calcium	4.85		mg/L	P400161	
		Iron	1.25E+03		ug/L	P400161	
		Magnesium	1.30		mg/L	P400161	
		Manganese	19.3		ug/L	P400161	
		Potassium	1.1	I	mg/L	P400161	
		Sodium	7.7		mg/L	P400161	
		Zinc	6.8	I	ug/L	P400161	
	EPA 200.8 Rev. 5.4	Aluminum	674		ug/L	P400161	
		Antimony	0.064	I	ug/L	P400161	
		Arsenic	0.55		ug/L	P400161	
		Beryllium	0.034	I	ug/L	P400161	
		Boron**	23.0		ug/L	P400161	
		Cadmium	0.020	U	ug/L	P400161	
		Chromium	0.72	I	ug/L	P400161	
		Copper	0.58	I	ug/L	P400161	
		Lead	0.68		ug/L	P400161	
		Nickel	0.50	U	ug/L	P400161	
		Selenium	0.20	U	ug/L	P400161	
		Silver	0.010	U	ug/L	P400161	
		Thallium	0.10	U	ug/L	P400161	
	SM 2340B	Hardness	17.5		mg/L	P400161	

Ref. Method and Comment:
EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 07/07/2021.

Sample Location: Creek Draining Former Hampton Lake 100m Above Rd. **Collection Date/Time: 06/23/2021 09:55**

Field ID: G4NE0292 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2256986	EPA 180.1 Rev. 2.0	Turbidity	16		NTU	P400181	
	EPA 300.0 Rev. 2.1	Chloride	9.8		mg Cl/L	P400553	
		Sulfate	9.8		mg SO4/L	P400558	
	SM 2120 B-2011	Color (true)	210	J	PCU	P400184	
	SM 2320 B-2011	Total Alkalinity	2.3	I	mg CaCO3/L	P400616	
	SM 2540 C-2011	TDS	82		mg/L	P400605	
	SM 2540 D-2011	TSS	5	I	mg/L	P400608	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P400620	
2256987	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P400572	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P400685	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P400235	
	EPA 365.1 Rev. 2.0	Total-P	0.031		mg P/L	P400337	
	SM 5310 B-2011	Organic Carbon	19		mg C/L	P400534	
2256988	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P400190	
2257010	EPA 200.7 Rev. 4.4	Barium	28.0		ug/L	P400161	
		Calcium	5.05		mg/L	P400161	
		Iron	1.14E+03		ug/L	P400161	
		Magnesium	1.29		mg/L	P400161	
		Manganese	20.8		ug/L	P400161	
		Potassium	0.98	I	mg/L	P400161	
		Sodium	7.2		mg/L	P400161	
		Zinc	8.2	I	ug/L	P400161	
	EPA 200.8 Rev. 5.4	Aluminum	737		ug/L	P400161	
		Antimony	0.066	I	ug/L	P400161	
		Arsenic	0.67		ug/L	P400161	
		Beryllium	0.039	I	ug/L	P400161	
		Boron**	22.8		ug/L	P400161	
		Cadmium	0.020	U	ug/L	P400161	
		Chromium	0.81	I	ug/L	P400161	
		Copper	0.83		ug/L	P400161	
		Lead	0.89		ug/L	P400161	
		Nickel	0.54	I	ug/L	P400161	
		Selenium	0.20	U	ug/L	P400161	
		Silver	0.010	U	ug/L	P400161	
		Thallium	0.10	U	ug/L	P400161	
	SM 2340B	Hardness	17.9		mg/L	P400161	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.
SM 2120 B-2011: The result may be biased high because of matrix interference.
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.
EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.
EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 07/07/2021.

Sample Location: Little St. Marys at White Oak Rd. **Collection Date/Time: 06/23/2021 11:25**

Field ID: G4NE0289 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2257009	EPA 200.7 Rev. 4.4	Barium	36.1		ug/L	P400161	
		Calcium	27.2		mg/L	P400161	
		Iron	420		ug/L	P400161	
		Magnesium	59.4		mg/L	P400161	
		Manganese	20.6		ug/L	P400161	
		Potassium	17.8		mg/L	P400161	
		Sodium	597		mg/L	P400161	
		Zinc	6.4	I	ug/L	P400161	
	EPA 200.8 Rev. 5.4	Aluminum	217		ug/L	P400161	
		Antimony	0.063	I	ug/L	P400161	
		Arsenic	0.55		ug/L	P400161	
		Beryllium	0.048	I	ug/L	P400161	
		Boron**	213		ug/L	P400161	
		Cadmium	0.020	U	ug/L	P400161	
		Chromium	0.44	I	ug/L	P400161	
		Copper	1.17		ug/L	P400161	
		Lead	0.49		ug/L	P400161	
		Nickel	0.50	U	ug/L	P400161	
		Selenium	0.21	I	ug/L	P400161	
		Silver	0.010	U	ug/L	P400161	
		Thallium	0.10	U	ug/L	P400161	
	SM 2340B	Hardness	313		mg/L	P400161	

Sample Location: Mills CR @ CR 115 **Collection Date/Time: 06/23/2021 09:15**

Field ID: 19010097 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2256981	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P400181	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P400553	
		Sulfate	14		mg SO4/L	P400558	
	SM 2120 B-2011	Color (true)	200		PCU	P400183	
	SM 2320 B-2011	Total Alkalinity	3.6		mg CaCO3/L	P400616	
	SM 2540 C-2011	TDS	87		mg/L	P400605	
	SM 2540 D-2011	TSS	2	I	mg/L	P400608	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P400620	
2256983	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P400572	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P400474	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.026		mg N/L	P400235	
	EPA 365.1 Rev. 2.0	Total-P	0.029		mg P/L	P400337	
	SM 5310 B-2011	Organic Carbon	22		mg C/L	P400534	
2256985	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.012		mg P/L	P400188	
2257007	EPA 200.7 Rev. 4.4	Barium	34.1		ug/L	P400161	
		Calcium	6.87		mg/L	P400161	
		Iron	1.28E+03		ug/L	P400161	
		Magnesium	2.00		mg/L	P400161	
		Manganese	14.9		ug/L	P400161	
		Potassium	2.4		mg/L	P400161	
		Sodium	8.4		mg/L	P400161	
		Zinc	6.1	I	ug/L	P400161	
	EPA 200.8 Rev. 5.4	Aluminum	470		ug/L	P400161	
		Antimony	0.050	U	ug/L	P400161	
		Arsenic	0.49		ug/L	P400161	
		Beryllium	0.045		ug/L	P400161	
		Boron**	24.6		ug/L	P400161	
		Cadmium	0.020	U	ug/L	P400161	
		Chromium	0.46	I	ug/L	P400161	
		Copper	0.40	U	ug/L	P400161	
		Lead	0.45		ug/L	P400161	
		Nickel	0.60	I	ug/L	P400161	
		Selenium	0.20	U	ug/L	P400161	
		Silver	0.010	U	ug/L	P400161	
		Thallium	0.10	U	ug/L	P400161	
	SM 2340B	Hardness	25.4		mg/L	P400161	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.
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.
EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P400181

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P400161

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P400161

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400552

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400553

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400555

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400558

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400572

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400474

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400685

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400235

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400337

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400188

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400190

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

Reference Method: SM 2120 B-2011
Batch ID: P400183

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report
Method Blank Results

Reference Method: SM 2120 B-2011
Batch ID: P400184

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P400616

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

Reference Method: SM 2540 C-2011
Batch ID: P400605

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P400608

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P400620

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P400534

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P400161

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	105		P	85 - 115
Calcium	110		P	85 - 115
Iron	109		P	85 - 115
Magnesium	112		P	85 - 115
Manganese	104		P	85 - 115
Potassium	107		P	85 - 115
Sodium	106		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P400161

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	80 - 120
Antimony	104		P	80 - 120
Arsenic	102		P	80 - 120
Beryllium	109		P	80 - 120
Boron	103		P	80 - 120
Cadmium	99.0		P	80 - 120
Chromium	97.1		P	80 - 120
Copper	98.9		P	80 - 120
Lead	100		P	80 - 120
Nickel	98.0		P	80 - 120
Selenium	114		P	80 - 120
Silver	106		P	80 - 120
Thallium	104		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400552

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400553

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400555

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400558

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400572

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: P400474

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400685

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400235

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400337

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: P400188

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400190

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.3		P	90 - 110

Reference Method: SM 2120 B-2011
Batch ID: P400183

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2120 B-2011
Batch ID: P400184

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P400616

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

Reference Method: SM 4500 F-C-2011
Batch ID: P400620

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.5		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P400534

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.3		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P400161

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2256658	Barium	104	103	P/P	80 - 120
2256658	Calcium	108	108	P/P	80 - 120
2256658	Iron	108	107	P/P	80 - 120
2256658	Magnesium	110	109	P/P	80 - 120
2256658	Manganese	102	101	P/P	80 - 120
2256658	Potassium	110	109	P/P	80 - 120
2256658	Sodium	102	101	P/P	80 - 120
2256658	Zinc	101	100	P/P	80 - 120
2256898	Barium	106		P	80 - 120
2256898	Calcium	92.7		P	80 - 120
2256898	Iron	111		P	80 - 120
2256898	Magnesium	91.4		P	80 - 120
2256898	Manganese	105		P	80 - 120
2256898	Potassium	90.7		P	80 - 120
2256898	Sodium	92.8		P	80 - 120
2256898	Zinc	104		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P400161

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2256658	Aluminum	101	99.8	P/P	80 - 120
2256658	Antimony	103	103	P/P	80 - 120
2256658	Arsenic	101	100	P/P	80 - 120
2256658	Beryllium	106	107	P/P	80 - 120
2256658	Boron	101	99.8	P/P	80 - 120
2256658	Cadmium	99.6	100	P/P	80 - 120
2256658	Chromium	98.5	99.1	P/P	80 - 120
2256658	Copper	102	102	P/P	80 - 120
2256658	Lead	101	101	P/P	80 - 120
2256658	Nickel	97.9	99.4	P/P	80 - 120
2256658	Selenium	112	112	P/P	80 - 120
2256658	Silver	105	105	P/P	80 - 120
2256658	Thallium	105	104	P/P	80 - 120
2256898	Aluminum	99.0		P	80 - 120
2256898	Antimony	104		P	80 - 120
2256898	Arsenic	103		P	80 - 120
2256898	Beryllium	111		P	80 - 120
2256898	Boron	99.3		P	80 - 120
2256898	Cadmium	99.9		P	80 - 120
2256898	Chromium	99.7		P	80 - 120
2256898	Copper	101		P	80 - 120
2256898	Lead	101		P	80 - 120
2256898	Nickel	100		P	80 - 120
2256898	Selenium	112		P	80 - 120
2256898	Silver	103		P	80 - 120
2256898	Thallium	106		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400552

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400552

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2256665	Chloride	99.6		P	90 - 110
2256775	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2256981	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400555

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2256665	Sulfate	99.6		P	90 - 110
2256775	Sulfate	98.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400558

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2256981	Sulfate	100		P	90 - 110
2257258	Sulfate	94.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400572

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2256913	Ammonia-N	96.6	97.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400235

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2256893	NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400188

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2256840	O-Phosphate-P	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400190

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257027	O-Phosphate-P	94.2	95.3	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P400620

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2256854	Fluoride	101	101	P/P	92 - 107

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P400534

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257170	Organic Carbon	96.2	98.6	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P400181

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2256930	Turbidity	2.07	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P400161

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2256658	Barium	1.42	Spike	P	0 - 20
2256658	Calcium	0.438	Spike	P	0 - 20
2256658	Iron	1.04	Spike	P	0 - 20
2256658	Magnesium	0.878	Spike	P	0 - 20
2256658	Manganese	1.39	Spike	P	0 - 20
2256658	Potassium	0.237	Spike	P	0 - 20
2256658	Sodium	0.809	Spike	P	0 - 20
2256658	Zinc	1.16	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P400161

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2256658	Aluminum	1.42	Spike	P	0 - 20
2256658	Antimony	0.352	Spike	P	0 - 20
2256658	Arsenic	0.637	Spike	P	0 - 20
2256658	Beryllium	0.810	Spike	P	0 - 20
2256658	Boron	1.33	Spike	P	0 - 20
2256658	Cadmium	0.599	Spike	P	0 - 20
2256658	Chromium	0.617	Spike	P	0 - 20
2256658	Copper	0.348	Spike	P	0 - 20
2256658	Lead	0.412	Spike	P	0 - 20
2256658	Nickel	1.53	Spike	P	0 - 20
2256658	Selenium	0.320	Spike	P	0 - 20
2256658	Silver	0.280	Spike	P	0 - 20
2256658	Thallium	0.531	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400552

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2256665	Chloride	0.827	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257258	Chloride	0.503	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400555

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2256665	Sulfate	1.15	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400558

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257258	Sulfate	1.23	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400572

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2256913	Ammonia-N	0.998	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400474

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2256913	Kjeldahl Nitrogen	2.60	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400685

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257125	Kjeldahl Nitrogen	0.515	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400235

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2256893	NO2NO3-N	0.501	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400337

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2256932	Total-P	0.800	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400188

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2256840	O-Phosphate-P	0.486	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400190

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257027	O-Phosphate-P	1.16	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P400183

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2256846	Color (true)	1.48	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P400184

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257020	Color (true)	1.72	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P400616

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2256854	Total Alkalinity	3.03	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P400605

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257022	TDS	3.95	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P400620

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2256854	Fluoride	0.0	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P400534

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257170	Organic Carbon	1.46	Spike	P	0 - 20

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A106265
Included Lab Sample IDs: 2256980, 2256981, 2256986

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	98.0	P/P	95 - 105

Reference Method: SM 2120 B-2011
Run ID: A106266
Included Lab Sample IDs: 2256980, 2256981, 2256986

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	102	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A106267
Included Lab Sample IDs: 2256984, 2256985, 2256988

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.4	99.0	P/P	90 - 110
O-Phosphate-P	99.8	98.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A106296
Included Lab Sample IDs: 2256982, 2256983, 2256987

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A106375
Included Lab Sample IDs: 2256982, 2256983, 2256987

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.5	98.8	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A106380
Included Lab Sample IDs: 2257006, 2257007, 2257008, 2257009, 2257010

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	100	101	P/P	90 - 110
Calcium	102	101	P/P	90 - 110
Iron	101	100	P/P	90 - 110
Magnesium	101	99.8	P/P	90 - 110
Manganese	101	100	P/P	90 - 110
Potassium	102	103	P/P	90 - 110
Sodium	98.8	99.9	P/P	90 - 110
Zinc	99.5	97.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A106417
Included Lab Sample IDs: 2257006, 2257007, 2257008, 2257009, 2257010

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	96.6	95.6	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A106417
Included Lab Sample IDs: 2257006, 2257007, 2257008, 2257009, 2257010

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.4	96.6	P/P	90 - 110
Antimony	102	103	P/P	90 - 110
Antimony	104	102	P/P	90 - 110
Arsenic	101	98.8	P/P	90 - 110
Arsenic	98.8	97.9	P/P	90 - 110
Boron	95.6	93.6	P/P	90 - 110
Boron	98.4	95.6	P/P	90 - 110
Cadmium	100	98.3	P/P	90 - 110
Cadmium	98.3	99.0	P/P	90 - 110
Chromium	96.2	95.8	P/P	90 - 110
Chromium	98.9	96.2	P/P	90 - 110
Copper	97.4	96.8	P/P	90 - 110
Copper	99.1	97.4	P/P	90 - 110
Lead	96.7	96.2	P/P	90 - 110
Lead	98.7	96.7	P/P	90 - 110
Nickel	97.0	95.9	P/P	90 - 110
Nickel	99.4	97.0	P/P	90 - 110
Selenium	96.9	96.2	P/P	90 - 110
Selenium	99.0	96.9	P/P	90 - 110
Silver	103	103	P/P	90 - 110
Silver	104	103	P/P	90 - 110
Thallium	100	96.8	P/P	90 - 110
Thallium	96.8	95.1	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A106418
Included Lab Sample IDs: 2257009

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A106423
Included Lab Sample IDs: 2256980, 2256981, 2256986

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

Reference Method: SM 5310 B-2011
Run ID: A106432
Included Lab Sample IDs: 2256982, 2256983, 2256987

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	97.2	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A106456
Included Lab Sample IDs: 2256982, 2256983, 2256987

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A106462
Included Lab Sample IDs: 2257006, 2257007, 2257008, 2257010

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Beryllium	96.7	97.4	P/P	90 - 110
Beryllium	97.4	96.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A106468
Included Lab Sample IDs: 2256982, 2256983

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.4	96.4	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A106477
Included Lab Sample IDs: 2256980, 2256981, 2256986

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.3	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A106477
Included Lab Sample IDs: 2256980, 2256981, 2256986

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A106493
Included Lab Sample IDs: 2257009

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Beryllium	96.5	95.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A106539
Included Lab Sample IDs: 2256987

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.5	90.4	P/P	90 - 110

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

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision		
						LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						2.07	
EPA 200.7 Rev. 4.4	Barium	105	104	103	106			1.42
	Calcium	110	108	108	92.7			0.438
	Iron	109	108	107	111			1.04
	Magnesium	112	110	109	91.4			0.878
	Manganese	104	102	101	105			1.39
	Potassium	107	110	109	90.7			0.237
	Sodium	106	102	101	92.8			0.809
	Zinc	101	101	100	104			1.16
EPA 200.8 Rev. 5.4	Aluminum	101	101	99.8	99.0			1.42
	Antimony	104	103	103	104			0.352
	Arsenic	102	101	100	103			0.637
	Beryllium	109	106	107	111			0.810
	Boron	103	101	99.8	99.3			1.33
	Cadmium	99.0	99.6	100	99.9			0.599
	Chromium	97.1	98.5	99.1	99.7			0.617
	Copper	98.9	102	102	101			0.348
	Lead	100	101	101	101			0.412
	Nickel	98.0	97.9	99.4	100			1.53
	Selenium	114	112	112	112			0.320
	Silver	106	105	105	103			0.280
	Thallium	104	105	104	106			0.531
EPA 300.0 Rev. 2.1	Chloride	102	99.6	100			0.827	
	Chloride	103	101				0.503	
	Sulfate	100	99.6	98.0			1.15	
	Sulfate	102	94.2	100			1.23	
EPA 350.1 Rev. 2.0	Ammonia-N	99.2	96.6	97.8				0.998
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106						2.60
	Kjeldahl Nitrogen	104						0.515
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	99.5	100				0.501
EPA 365.1 Rev. 2.0	Total-P	102						0.800
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	103	103				0.486
	O-Phosphate-P	99.3	94.2	95.3				1.16
SM 2120 B-2011	Color (true)	101					1.48	
	Color (true)	101					1.72	
SM 2320 B-2011	Total Alkalinity	102					3.03	
SM 2540 C-2011	TDS						3.95	
SM 4500 F-C-2011	Fluoride	98.5	101	101				0.0
SM 5310 B-2011	Organic Carbon	95.3	96.2	98.6				1.46

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2256980, 2256981, 2256986
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2257006, 2257007, 2257008, 2257009, 2257010
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2257006, 2257007, 2257008, 2257009, 2257010
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2256980, 2256981, 2256986
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2256980, 2256981, 2256986
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2256982, 2256983, 2256987
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2256982, 2256983, 2256987
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2256982, 2256983, 2256987

Reference Method Descriptions

Method	Description	Associated Samples
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2256982, 2256983, 2256987
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2256984, 2256985, 2256988
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2256980, 2256981, 2256986
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2256980, 2256981, 2256986
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2257006, 2257007, 2257008, 2257009, 2257010
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2256980, 2256981, 2256986
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2256980, 2256981, 2256986
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2256980, 2256981, 2256986
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2256982, 2256983, 2256987

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	06/24/2021			06/24/2021 15:19	Sarah A Nixon	2256980, 2256981, 2256986
EPA 200.7 Rev. 4.4	06/24/2021	06/24/2021 13:35	Elliott D. Healy	06/30/2021 18:01	Josef B Mick	2257006
	06/24/2021	06/24/2021 13:35	Elliott D. Healy	06/30/2021 18:09	Josef B Mick	2257007
	06/24/2021	06/24/2021 13:35	Elliott D. Healy	06/30/2021 18:17	Josef B Mick	2257008
	06/24/2021	06/24/2021 13:35	Elliott D. Healy	06/30/2021 18:24	Josef B Mick	2257009
	06/24/2021	06/24/2021 13:35	Elliott D. Healy	06/30/2021 18:32	Josef B Mick	2257010
	06/24/2021	06/24/2021 13:35	Elliott D. Healy	07/01/2021 23:30	Josef B Mick	2257009
EPA 200.8 Rev. 5.4	06/24/2021	06/24/2021 13:35	Elliott D. Healy	07/01/2021 19:45	McKinley C Carter	2257006
	06/24/2021	06/24/2021 13:35	Elliott D. Healy	07/01/2021 19:54	McKinley C Carter	2257007
	06/24/2021	06/24/2021 13:35	Elliott D. Healy	07/01/2021 20:03	McKinley C Carter	2257008
	06/24/2021	06/24/2021 13:35	Elliott D. Healy	07/01/2021 20:56	McKinley C Carter	2257009
	06/24/2021	06/24/2021 13:35	Elliott D. Healy	07/01/2021 21:05	McKinley C Carter	2257010
	06/24/2021	06/24/2021 13:35	Elliott D. Healy	07/06/2021 17:01	Alexander Thompson	2257006
	06/24/2021	06/24/2021 13:35	Elliott D. Healy	07/06/2021 17:07	Alexander Thompson	2257007
	06/24/2021	06/24/2021 13:35	Elliott D. Healy	07/06/2021 17:14	Alexander Thompson	2257008
	06/24/2021	06/24/2021 13:35	Elliott D. Healy	07/06/2021 18:26	Alexander Thompson	2257010
	06/24/2021	06/24/2021 13:35	Elliott D. Healy	07/07/2021 12:46	Alexander Thompson	2257009
EPA 300.0 Rev. 2.1	06/24/2021			07/03/2021 01:02	Lipi Saha	2256980
	06/24/2021			07/03/2021 02:51	Lipi Saha	2256981
	06/24/2021			07/03/2021 03:16	Lipi Saha	2256986
EPA 350.1 Rev. 2.0	06/24/2021			07/06/2021 12:14	Roberta Tatti	2256982
	06/24/2021			07/06/2021 12:15	Roberta Tatti	2256983
	06/24/2021			07/06/2021 12:17	Roberta Tatti	2256987
EPA 351.2 Rev. 2.0	06/24/2021	07/01/2021 14:00	Benjamin T. Nordmann	07/06/2021 19:26	Letuzia M De Oliveira	2256982
	06/24/2021	07/01/2021 14:00	Benjamin T. Nordmann	07/06/2021 19:27	Letuzia M De Oliveira	2256983
	06/24/2021	07/08/2021 15:33	Madeline Gruver	07/09/2021 15:08	Letuzia M De Oliveira	2256987
EPA 353.2 Rev. 2.0	06/24/2021			06/25/2021 09:36	Beverly Y. Sanders	2256982
	06/24/2021			06/25/2021 09:38	Beverly Y. Sanders	2256983
	06/24/2021			06/25/2021 09:39	Beverly Y. Sanders	2256987
EPA 365.1 Rev. 2.0	06/24/2021	06/29/2021 13:16	Madeline Gruver	06/30/2021 15:41	Shengyu Ding	2256982
	06/24/2021	06/29/2021 13:16	Madeline Gruver	06/30/2021 15:42	Shengyu Ding	2256983
	06/24/2021	06/29/2021 13:16	Madeline Gruver	06/30/2021 15:43	Shengyu Ding	2256987
EPA 365.1 Rev. 2.0 dissolved	06/24/2021			06/24/2021 15:48	Ping Hua	2256984
	06/24/2021			06/24/2021 15:49	Ping Hua	2256985
	06/24/2021			06/24/2021 16:12	Ping Hua	2256988
SM 2120 B-2011	06/24/2021			06/24/2021 16:07	Benjamin T. Nordmann	2256980, 2256981
	06/24/2021			06/24/2021 16:08	Benjamin T. Nordmann	2256986
SM 2320 B-2011	06/24/2021			07/07/2021 01:43	Patrick M. Roche	2256980
	06/24/2021			07/07/2021 01:52	Patrick M. Roche	2256981
	06/24/2021			07/07/2021 02:02	Patrick M. Roche	2256986

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2340B	06/24/2021			06/30/2021 18:01	Josef B Mick	2257006
	06/24/2021			06/30/2021 18:09	Josef B Mick	2257007
	06/24/2021			06/30/2021 18:17	Josef B Mick	2257008
	06/24/2021			06/30/2021 18:24	Josef B Mick	2257009
	06/24/2021			06/30/2021 18:32	Josef B Mick	2257010
SM 2540 C-2011	06/24/2021			06/28/2021 14:25	Yijie Li	2256980, 2256981, 2256986
SM 2540 D-2011	06/24/2021			06/28/2021 14:25	Yijie Li	2256980, 2256981, 2256986
SM 4500 F-C-2011	06/24/2021			07/07/2021 01:43	Patrick M. Roche	2256980
	06/24/2021			07/07/2021 01:52	Patrick M. Roche	2256981
	06/24/2021			07/07/2021 02:02	Patrick M. Roche	2256986
SM 5310 B-2011	06/24/2021			07/01/2021 12:14	Madeline Gruver	2256982
	06/24/2021			07/01/2021 12:27	Madeline Gruver	2256983
	06/24/2021			07/01/2021 12:40	Madeline Gruver	2256987