

Chemical Analysis Report

SO-DIST-2021-10-28-01

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

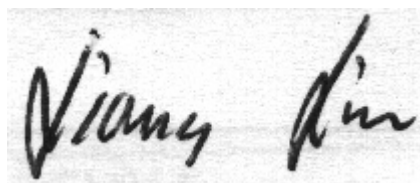
Event Description: **2021 SMP: DeSoto Cricks**
Request ID: **RQ-2021-10-25-57**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
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FLDEP South District Office
2295 Victoria Ave. Suite 364
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 19-NOV-2021 09:53

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored background.

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: Myrtle Slough @ Bermont

Collection Date/Time: 10/27/2021 08:00

Field ID: G3SD0181

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2286551	EPA 200.7 Rev. 4.4	Calcium	44.5		mg/L	P405786	
		Iron	1.63E+03		ug/L	P405786	
		Magnesium	2.24		mg/L	P405786	
		Potassium	0.67	I	mg/L	P405786	
		Sodium	11.4		mg/L	P405786	
		Strontium	286		ug/L	P405786	
		Tin	3.0	U	ug/L	P405786	
		Titanium	0.85	I	ug/L	P405786	
		Vanadium	2.5	I	ug/L	P405786	
	EPA 200.8 Rev. 5.4	Zinc	7.2	I	ug/L	P405786	
		Aluminum	70		ug/L	P405786	
		Antimony	0.087	I	ug/L	P405786	
		Arsenic	0.96		ug/L	P405786	
		Barium	13.4		ug/L	P405786	
		Beryllium	0.023	I	ug/L	P405786	
		Boron**	21.0		ug/L	P405786	
		Cadmium	0.020	U	ug/L	P405786	
		Chromium	0.76	I	ug/L	P405786	
		Cobalt	0.075	I	ug/L	P405786	
		Copper	0.40	U	ug/L	P405786	
		Lead	0.20	U	ug/L	P405786	
		Manganese	10.2		ug/L	P405786	
		Molybdenum	0.99		ug/L	P405786	
		Nickel	0.50	U	ug/L	P405786	
		Selenium	0.20	U	ug/L	P405786	
		Silver	0.010	U	ug/L	P405786	
		Thallium	0.10	U	ug/L	P405786	
	SM 2340B	Hardness	120		mg/L	P405786	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for sodium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: Myrtle Slough @ Washington Loop Rd.

Collection Date/Time: 10/27/2021 08:25

Field ID: G3SD0180

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2286552	EPA 200.7 Rev. 4.4	Calcium	53.9		mg/L	P405786	
		Iron	320		ug/L	P405786	
		Magnesium	13.8		mg/L	P405786	
		Potassium	7.7		mg/L	P405786	
		Sodium	59.1		mg/L	P405786	
		Strontium	2.34E+03		ug/L	P405786	
		Tin	3.0	U	ug/L	P405786	
		Titanium	0.85	I	ug/L	P405786	
		Vanadium	2.0	U	ug/L	P405786	
		Zinc	6.9	I	ug/L	P405786	
	EPA 200.8 Rev. 5.4	Aluminum	48		ug/L	P405786	
		Antimony	0.13	I	ug/L	P405786	
		Arsenic	0.96		ug/L	P405786	
		Barium	26.7		ug/L	P405786	
		Beryllium	0.010	U	ug/L	P405786	
		Boron**	62.5		ug/L	P405786	
		Cadmium	0.020	U	ug/L	P405786	
		Chromium	0.42	I	ug/L	P405786	
		Cobalt	0.087		ug/L	P405786	
		Copper	0.83		ug/L	P405786	
	SM 2340B	Lead	0.20	U	ug/L	P405786	
		Manganese	24.9		ug/L	P405786	
		Molybdenum	0.82		ug/L	P405786	
		Nickel	0.66	I	ug/L	P405786	
		Selenium	0.20	U	ug/L	P405786	
		Silver	0.010	U	ug/L	P405786	
		Thallium	0.10	U	ug/L	P405786	
		Hardness	192		mg/L	P405786	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for sodium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: Hawthorne Creek @ Reynolds St.

Collection Date/Time: 10/27/2021 09:30

Field ID: G3SD0011

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2286537	EPA 180.1 Rev. 2.0	Turbidity	2.2	A	NTU	P405732	
	EPA 300.0 Rev. 2.1	Chloride	170		mg Cl/L	P406038	
		Sulfate	120		mg SO4/L	P406041	
		Color (true)	71		PCU	P405727	
	SM 2320 B-2011	Total Alkalinity	153		mg CaCO3/L	P406012	
	SM 2540 C-2011	TDS	690	A	mg/L	P405930	
	SM 2540 D-2011	TSS	2	UA	mg/L	P405828	
2286538	SM 4500 F-C-2011	Fluoride	0.43		mg F/L	P406014	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.038		mg N/L	P406065	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.94		mg N/L	P406412	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.53		mg N/L	P405759	
	EPA 365.1 Rev. 2.0	Total-P	0.34		mg P/L	P405870	
2286539	SM 5310 B-2011	Organic Carbon	15		mg C/L	P405837	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.29		mg P/L	P405723	
2286550	EPA 200.7 Rev. 4.4	Calcium	106		mg/L	P405786	
		Iron	240		ug/L	P405786	
		Magnesium	25.2		mg/L	P405786	
		Potassium	10.7		mg/L	P405786	
		Sodium	72.1		mg/L	P405786	
		Strontium	6.96E+03		ug/L	P405786	
		Tin	3.0	U	ug/L	P405786	
	EPA 200.8 Rev. 5.4	Titanium	1.3	I	ug/L	P405786	
		Vanadium	2.4	I	ug/L	P405786	
		Zinc	11	I	ug/L	P405786	
		Aluminum	44		ug/L	P405786	
		Antimony	0.45		ug/L	P405786	
		Arsenic	1.93		ug/L	P405786	
		Barium	43.0		ug/L	P405786	
		Beryllium	0.010	U	ug/L	P405786	
		Boron**	70.5		ug/L	P405786	
		Cadmium	0.021	I	ug/L	P405786	
		Chromium	0.43	I	ug/L	P405786	
		Cobalt	0.145		ug/L	P405786	
		Copper	0.83		ug/L	P405786	
		Lead	0.20	U	ug/L	P405786	
		Manganese	33.0		ug/L	P405786	
		Molybdenum	2.10		ug/L	P405786	
		Nickel	2.1		ug/L	P405786	
		Selenium	0.26	I	ug/L	P405786	
		Silver	0.010	U	ug/L	P405786	
		Thallium	0.10	U	ug/L	P405786	
	SM 2340B	Hardness	370		mg/L	P405786	

Field ID: G3SD0011

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for sodium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.
EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: FB

Collection Date/Time: 10/27/2021 09:40

Field ID: FB_10272021

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2286540	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P405732	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P406038	
		Sulfate	0.20	U	mg SO4/L	P406041	
		Color (true)	2.5	U	PCU	P405727	
	SM 2120 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P406012	
	SM 2540 C-2011	TDS	15	U	mg/L	P405930	
	SM 2540 D-2011	TSS	2	U	mg/L	P405828	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P406014	
2286541	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P406065	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P406412	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P405759	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P405870	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P406058	
2286542	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P405723	
2286553	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P405786	
		Iron	30	U	ug/L	P405786	
		Magnesium	0.040	U	mg/L	P405786	
		Potassium	0.30	U	mg/L	P405786	
		Sodium	0.50	U	mg/L	P405786	
		Strontium	2.0	U	ug/L	P405786	
		Tin	3.0	U	ug/L	P405786	
		Titanium	0.75	U	ug/L	P405786	
	EPA 200.8 Rev. 5.4	Vanadium	2.0	U	ug/L	P405786	
		Zinc	5.0	U	ug/L	P405786	
		Aluminum	5.0	U	ug/L	P405786	
		Antimony	0.050	U	ug/L	P405786	
		Arsenic	0.050	U	ug/L	P405786	
		Barium	0.20	U	ug/L	P405786	
		Beryllium	0.010	U	ug/L	P405786	
		Boron**	2.9	I	ug/L	P405786	
		Cadmium	0.020	U	ug/L	P405786	
		Chromium	0.40	U	ug/L	P406365	
		Cobalt	0.020	U	ug/L	P405786	
		Copper	0.40	U	ug/L	P405786	
		Lead	0.20	U	ug/L	P405786	
		Manganese	0.10	U	ug/L	P405786	
		Molybdenum	0.15	U	ug/L	P405786	
		Nickel	0.50	U	ug/L	P405786	
		Selenium	0.20	U	ug/L	P405786	
		Silver	0.010	U	ug/L	P405786	
		Thallium	0.10	U	ug/L	P405786	

Field ID: FB_10272021

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for sodium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.
EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable for one of two spiked samples because of high analyte concentration in the QC sample. The boron result was confirmed in the undigested sample on 11/15/2021.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P405732

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P405786

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P405786

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	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
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	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 200.8 Rev. 5.4
Batch ID: P406365

Component	Result	Code	Units
Chromium	0.40	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P406038

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P406041

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406065

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406412

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P405759

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P405870

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P405723

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

Reference Method: SM 2120 B-2011
Batch ID: P405727

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P406012

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

Reference Method: SM 2540 C-2011
Batch ID: P405930

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P405828

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P406014

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P405837

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

Reference Method: SM 5310 B-2011
Batch ID: P406058

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: P405786

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	111		P	85 - 115
Iron	108		P	85 - 115
Magnesium	111		P	85 - 115
Potassium	103		P	85 - 115
Sodium	102		P	85 - 115
Strontium	104		P	85 - 115
Tin	106		P	85 - 115
Titanium	105		P	85 - 115
Vanadium	107		P	85 - 115
Zinc	109		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P405786

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	105		P	85 - 115
Antimony	110		P	85 - 115
Arsenic	104		P	85 - 115
Barium	106		P	85 - 115
Beryllium	96.8		P	85 - 115
Boron	106		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	105		P	85 - 115
Cobalt	101		P	85 - 115
Copper	99.9		P	85 - 115
Lead	96.5		P	85 - 115
Manganese	100		P	85 - 115
Molybdenum	105		P	85 - 115
Nickel	102		P	85 - 115
Selenium	101		P	85 - 115
Silver	100		P	85 - 115
Thallium	108		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P406365

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chromium	100		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P406038

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P406041

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406065

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406412

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P405759

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P405870

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P405723

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.9		P	90 - 110

Reference Method: SM 2120 B-2011
Batch ID: P405727

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.9		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P406012

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

Reference Method: SM 4500 F-C-2011
Batch ID: P406014

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P405837

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.7		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P406058

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.4		P	85 - 115

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P405786

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2286611	Calcium	109	110	P/P	80 - 120
2286611	Iron	109	109	P/P	80 - 120
2286611	Magnesium	111	111	P/P	80 - 120
2286611	Potassium	109	108	P/P	80 - 120
2286611	Sodium	102		P	80 - 120
2286611	Strontium	103	104	P/P	80 - 120
2286611	Tin	112	114	P/P	80 - 120
2286611	Titanium	107	107	P/P	80 - 120
2286611	Vanadium	108	109	P/P	80 - 120
2286611	Zinc	113	115	P/P	80 - 120
2287005	Calcium	115		P	80 - 120
2287005	Iron	108		P	80 - 120
2287005	Magnesium	110		P	80 - 120
2287005	Potassium	101		P	80 - 120
2287005	Strontium	105		P	80 - 120
2287005	Tin	111		P	80 - 120
2287005	Titanium	109		P	80 - 120
2287005	Vanadium	110		P	80 - 120
2287005	Zinc	108		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P405786

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2286611	Aluminum	105	106	P/P	80 - 120
2286611	Antimony	112	114	P/P	80 - 120
2286611	Arsenic	105	105	P/P	80 - 120
2286611	Barium	106	109	P/P	80 - 120
2286611	Beryllium	97.9	94.3	P/P	80 - 120
2286611	Boron	109	109	P/P	80 - 120
2286611	Cadmium	105	104	P/P	80 - 120
2286611	Chromium	105	105	P/P	80 - 120
2286611	Cobalt	101	103	P/P	80 - 120
2286611	Copper	102	102	P/P	80 - 120
2286611	Lead	97.5	98.7	P/P	80 - 120
2286611	Manganese	102	101	P/P	80 - 120
2286611	Molybdenum	108	108	P/P	80 - 120
2286611	Nickel	104	104	P/P	80 - 120
2286611	Selenium	100	101	P/P	80 - 120
2286611	Silver	102	102	P/P	80 - 120
2286611	Thallium	109	111	P/P	80 - 120
2287005	Aluminum	104		P	80 - 120
2287005	Antimony	116		P	80 - 120
2287005	Arsenic	108		P	80 - 120
2287005	Barium	115		P	80 - 120
2287005	Beryllium	92.7		P	80 - 120
2287005	Cadmium	106		P	80 - 120
2287005	Chromium	102		P	80 - 120
2287005	Cobalt	97.4		P	80 - 120
2287005	Copper	101		P	80 - 120
2287005	Lead	100		P	80 - 120
2287005	Manganese	101		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P405786

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287005	Molybdenum	114		P	80 - 120
2287005	Nickel	103		P	80 - 120
2287005	Selenium	92.7		P	80 - 120
2287005	Silver	98.0		P	80 - 120
2287005	Thallium	112		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P406365

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289122	Chromium	102	107	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P406038

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2286577	Chloride	99.9		P	90 - 110
2286670	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P406041

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2286577	Sulfate	101		P	90 - 110
2286670	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P406065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2286581	Ammonia-N	95.6	96.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P406412

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2286483	Kjeldahl Nitrogen	95.5	97.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P405759

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2286496	NO2NO3-N	97.5	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P405870

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2286538	Total-P	102	99.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P405723

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2286485	O-Phosphate-P	98.8	99.0	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P406014

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2286492	Fluoride	99.9	101	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P405837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2286384	Organic Carbon	97.8	98.4	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P406058

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287036	Organic Carbon	96.2	96.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P405732

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286537	Turbidity	11.2	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P405786

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286611	Calcium	0.352	Spike	P	0 - 20
2286611	Iron	0.294	Spike	P	0 - 20
2286611	Magnesium	0.312	Spike	P	0 - 20
2286611	Potassium	1.20	Spike	P	0 - 20
2286611	Sodium	1.41	Spike	P	0 - 20
2286611	Strontium	0.768	Spike	P	0 - 20
2286611	Tin	1.48	Spike	P	0 - 20
2286611	Titanium	0.513	Spike	P	0 - 20
2286611	Vanadium	0.677	Spike	P	0 - 20
2286611	Zinc	2.17	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P405786

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286611	Aluminum	1.01	Spike	P	0 - 20
2286611	Antimony	1.20	Spike	P	0 - 20
2286611	Arsenic	0.145	Spike	P	0 - 20
2286611	Barium	2.55	Spike	P	0 - 20
2286611	Beryllium	3.38	Spike	P	0 - 20
2286611	Boron	0.216	Spike	P	0 - 20
2286611	Cadmium	1.09	Spike	P	0 - 20
2286611	Chromium	0.246	Spike	P	0 - 20
2286611	Cobalt	1.21	Spike	P	0 - 20
2286611	Copper	0.195	Spike	P	0 - 20
2286611	Lead	1.27	Spike	P	0 - 20
2286611	Manganese	1.05	Spike	P	0 - 20
2286611	Molybdenum	0.0110	Spike	P	0 - 20
2286611	Nickel	0.0596	Spike	P	0 - 20
2286611	Selenium	0.811	Spike	P	0 - 20
2286611	Silver	0.378	Spike	P	0 - 20
2286611	Thallium	1.38	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P406365

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289122	Chromium	4.79	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P406038

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286577	Chloride	3.30	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286581	Ammonia-N	0.758	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286483	Kjeldahl Nitrogen	1.63	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P405759

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286496	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P405870

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286538	Total-P	0.979	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P405723

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286485	O-Phosphate-P	0.202	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P405727

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286495	Color (true)	1.56	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P406012

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286492	Total Alkalinity	2.24	Sample	P	0 - 5.2

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P405930

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286537	TDS	2.32	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P406014

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286492	Fluoride	0.483	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P405837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286384	Organic Carbon	0.398	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P406058

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287036	Organic Carbon	0.0659	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A108592

Included Lab Sample IDs: 2286539, 2286542

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.2	97.9	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A108596

Included Lab Sample IDs: 2286537, 2286540

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.8	101	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A108602

Included Lab Sample IDs: 2286537, 2286540

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	101	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A108614

Included Lab Sample IDs: 2286538, 2286541

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

Reference Method: SM 5310 B-2011

Run ID: A108656

Included Lab Sample IDs: 2286538

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.3	99.8	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A108702

Included Lab Sample IDs: 2286550, 2286551, 2286552, 2286553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	105	105	P/P	95 - 105
Calcium	105	105	P/P	90 - 110
Iron	104	104	P/P	95 - 105
Iron	104	103	P/P	90 - 110
Magnesium	104	104	P/P	95 - 105
Magnesium	104	105	P/P	90 - 110
Potassium	99.3	99.5	P/P	95 - 105
Potassium	99.5	96.7	P/P	90 - 110
Sodium	102	103	P/P	95 - 105
Sodium	103	100	P/P	90 - 110
Strontium	102	103	P/P	95 - 105
Strontium	103	103	P/P	90 - 110
Tin	102	103	P/P	95 - 105
Tin	103	104	P/P	90 - 110
Titanium	101	99.3	P/P	90 - 110
Titanium	99.1	101	P/P	95 - 105

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A108702

Included Lab Sample IDs: 2286550, 2286551, 2286552, 2286553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Vanadium	102	104	P/P	95 - 105
Vanadium	104	103	P/P	90 - 110
Zinc	102	105	P/P	95 - 105
Zinc	105	105	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A108714

Included Lab Sample IDs: 2286537, 2286540

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	97.8	P/P	90 - 110
Total Alkalinity	98.2	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A108714

Included Lab Sample IDs: 2286537, 2286540

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A108720

Included Lab Sample IDs: 2286538

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.9	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A108721

Included Lab Sample IDs: 2286541

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.5	97.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A108729

Included Lab Sample IDs: 2286550

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Tin	99.4	101	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A108733

Included Lab Sample IDs: 2286537, 2286540

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

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A108741

Included Lab Sample IDs: 2286541

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.8	98.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A108743

Included Lab Sample IDs: 2286538, 2286541

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.7	97.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A108884

Included Lab Sample IDs: 2286550, 2286551, 2286552, 2286553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	104	P/P	90 - 110
Aluminum	104	103	P/P	90 - 110
Arsenic	102	100	P/P	90 - 110
Arsenic	104	102	P/P	90 - 110
Barium	100	100	P/P	90 - 110
Barium	100	103	P/P	90 - 110
Beryllium	92.1	91.9	P/P	90 - 110
Beryllium	94.5	92.1	P/P	90 - 110
Cadmium	101	102	P/P	90 - 110
Cadmium	101	101	P/P	90 - 110
Chromium	100	100	P/P	90 - 110
Chromium	100	102	P/P	90 - 110
Copper	95.5	95.4	P/P	90 - 110
Copper	99.5	95.5	P/P	90 - 110
Lead	92.2	93.6	P/P	90 - 110
Lead	93.6	92.8	P/P	90 - 110
Manganese	97.6	97.7	P/P	90 - 110
Manganese	99.6	97.6	P/P	90 - 110
Molybdenum	102	103	P/P	90 - 110
Molybdenum	105	102	P/P	90 - 110
Nickel	101	97.3	P/P	90 - 110
Nickel	97.3	97.3	P/P	90 - 110
Selenium	101	104	P/P	90 - 110
Selenium	104	101	P/P	90 - 110
Silver	91.9	91.9	P/P	90 - 110
Silver	92.8	91.9	P/P	90 - 110
Thallium	102	101	P/P	90 - 110
Thallium	100	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A108912

Included Lab Sample IDs: 2286550, 2286551, 2286552, 2286553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	102	103	P/P	90 - 110
Antimony	103	103	P/P	90 - 110
Boron	101	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A108912

Included Lab Sample IDs: 2286550, 2286551, 2286552, 2286553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	103	104	P/P	90 - 110
Cobalt	94.9	93.4	P/P	90 - 110
Cobalt	95.1	94.9	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A108928

Included Lab Sample IDs: 2286553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	99.3	95.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A108965

Included Lab Sample IDs: 2286538, 2286541

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.5	96.6	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			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						11.2	
EPA 200.7 Rev. 4.4	Calcium	111	109	110	115			0.352
	Iron	108	109	109	108			0.294
	Magnesium	111	111	111	110			0.312
	Potassium	103	109	108	101			1.20
	Sodium	102	102					1.41
	Strontium	104	103	104	105			0.768
	Tin	106	112	114	111			1.48
	Titanium	105	107	107	109			0.513
	Vanadium	107	108	109	110			0.677
	Zinc	109	108	113	115			2.17
EPA 200.8 Rev. 5.4	Aluminum	105	105	106	104			1.01
	Antimony	110	112	114	116			1.20
	Arsenic	104	105	105	108			0.145
	Barium	106	106	109	115			2.55
	Beryllium	96.8	97.9	94.3	92.7			3.38
	Boron	106	109	109				0.216
	Cadmium	102	105	104	106			1.09
	Chromium	105	105	105	102			0.246
	Chromium	100	102	107				4.79
	Cobalt	101	101	103	97.4			1.21
	Copper	99.9	102	102	101			0.195
	Lead	96.5	97.5	98.7	100			1.27
	Manganese	100	102	101	101			1.05
	Molybdenum	105	108	108	114			0.0110
	Nickel	102	104	104	103			0.0596
	Selenium	101	100	101	92.7			0.811
	Silver	100	102	102	98.0			0.378
	Thallium	108	109	111	112			1.38
EPA 300.0 Rev. 2.1	Chloride	99.4	99.9	100			3.30	
	Sulfate	101	101	102				
EPA 350.1 Rev. 2.0	Ammonia-N	97.6	95.6	96.4				0.758
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.4	95.5	97.0				1.63
EPA 353.2 Rev. 2.0	NO2NO3-N	101	97.5	97.5				0.0
EPA 365.1 Rev. 2.0	Total-P	104	102	99.8				0.979
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.9	98.8	99.0				0.202
SM 2120 B-2011	Color (true)	97.9					1.56	
SM 2320 B-2011	Total Alkalinity	101					2.24	
SM 2540 C-2011	TDS						2.32	
SM 4500 F-C-2011	Fluoride	100	99.9	101				0.483
SM 5310 B-2011	Organic Carbon	96.7	97.8	98.4				0.398
	Organic Carbon	99.4	96.2	96.3				0.0659

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2286537, 2286540
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2286550, 2286551, 2286552, 2286553
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2286550, 2286551, 2286552, 2286553
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2286537, 2286540
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2286537, 2286540

Reference Method Descriptions

Method	Description	Associated Samples
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2286538, 2286541
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2286538, 2286541
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2286538, 2286541
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2286538, 2286541
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2286539, 2286542
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2286537, 2286540
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2286537, 2286540
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2286550, 2286551, 2286552
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2286537, 2286540
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2286537, 2286540
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2286537, 2286540
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2286538, 2286541

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	10/28/2021			10/28/2021 16:09	Khloe J Berg	2286537, 2286540
EPA 200.7 Rev. 4.4	10/28/2021	11/01/2021 11:00	Emily M Philpot	11/03/2021 14:14	Josef B Mick	2286553
	10/28/2021	11/01/2021 11:00	Emily M Philpot	11/03/2021 14:56	Josef B Mick	2286550
	10/28/2021	11/01/2021 11:00	Emily M Philpot	11/03/2021 15:35	Josef B Mick	2286551
	10/28/2021	11/01/2021 11:00	Emily M Philpot	11/03/2021 15:43	Josef B Mick	2286552
	10/28/2021	11/01/2021 11:00	Emily M Philpot	11/04/2021 13:29	Josef B Mick	2286550
EPA 200.8 Rev. 5.4	10/28/2021	11/01/2021 11:00	Emily M Philpot	11/12/2021 16:10	Alexander Thompson	2286553
	10/28/2021	11/01/2021 11:00	Emily M Philpot	11/12/2021 16:58	Alexander Thompson	2286550
	10/28/2021	11/01/2021 11:00	Emily M Philpot	11/12/2021 18:05	Alexander Thompson	2286551
	10/28/2021	11/01/2021 11:00	Emily M Philpot	11/12/2021 18:15	Alexander Thompson	2286552
	10/28/2021	11/01/2021 11:00	Emily M Philpot	11/15/2021 14:27	Alexander Thompson	2286553
	10/28/2021	11/01/2021 11:00	Emily M Philpot	11/15/2021 15:26	Alexander Thompson	2286550
	10/28/2021	11/01/2021 11:00	Emily M Philpot	11/15/2021 15:33	Alexander Thompson	2286551
	10/28/2021	11/01/2021 11:00	Emily M Philpot	11/15/2021 15:39	Alexander Thompson	2286552
	10/28/2021	11/16/2021 11:30	Emily M Philpot	11/16/2021 17:18	Alexander Thompson	2286553
EPA 300.0 Rev. 2.1	10/28/2021			11/04/2021 00:01	Roberta Tatti	2286537
	10/28/2021			11/04/2021 00:13	Roberta Tatti	2286540
EPA 350.1 Rev. 2.0	10/28/2021			11/04/2021 12:37	Ping Hua	2286538
	10/28/2021			11/04/2021 12:40	Ping Hua	2286541
EPA 351.2 Rev. 2.0	10/28/2021	11/17/2021 12:10	Benjamin T. Nordmann	11/18/2021 10:18	Alexandra J Mattheus	2286538
	10/28/2021	11/17/2021 12:10	Benjamin T. Nordmann	11/18/2021 10:20	Alexandra J Mattheus	2286541
EPA 353.2 Rev. 2.0	10/28/2021			10/29/2021 11:11	Beverly Y. Sanders	2286538
	10/28/2021			10/29/2021 11:12	Beverly Y. Sanders	2286541
EPA 365.1 Rev. 2.0	10/28/2021	11/02/2021 16:18	Simonne.V. Calhoun	11/03/2021 17:54	Sarah A Nixon	2286538
	10/28/2021	11/02/2021 16:18	Simonne.V. Calhoun	11/04/2021 14:42	Lipi Saha	2286541
EPA 365.1 Rev. 2.0 dissolved	10/28/2021			10/28/2021 14:12	James L Waggeberby	2286539
	10/28/2021			10/28/2021 14:13	James L Waggeberby	2286542
SM 2120 B-2011	10/28/2021			10/28/2021 15:41	Benjamin T. Nordmann	2286537
	10/28/2021			10/28/2021 15:42	Benjamin T. Nordmann	2286540
SM 2320 B-2011	10/28/2021			11/02/2021 19:12	Dale L. Simmons	2286540
	10/28/2021			11/02/2021 21:00	Dale L. Simmons	2286537
SM 2340B	10/28/2021			11/03/2021 14:56	Josef B Mick	2286550
	10/28/2021			11/03/2021 15:35	Josef B Mick	2286551
	10/28/2021			11/03/2021 15:43	Josef B Mick	2286552
SM 2540 C-2011	10/28/2021			10/29/2021 12:45	Simonne.V. Calhoun	2286537, 2286540
SM 2540 D-2011	10/28/2021			10/29/2021 12:45	Simonne.V. Calhoun	2286537, 2286540
SM 4500 F-C-2011	10/28/2021			11/02/2021 19:12	Dale L. Simmons	2286540
	10/28/2021			11/02/2021 21:00	Dale L. Simmons	2286537
SM 5310 B-2011	10/28/2021			11/01/2021 19:10	Khloe J Berg	2286538
	10/28/2021			11/03/2021 20:01	Khloe J Berg	2286541