

Chemical Analysis Report

CEN-DIST-2023-02-17-01

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

Event Description: **Run 13**
Request ID: **RQ-2023-02-13-20**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 08-MAR-2023 17:54



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: LAKE OLIVE @ CENTER

Collection Date/Time: 02/16/2023 09:34

Field ID: G4CE0223

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2388417	DEP SOP: NU-094-1	Color (true)	28		PCU	P426019	
	EPA 180.1 Rev. 2.0	Turbidity	6.2		NTU	P426043	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P426648	
		Sulfate	8.1		mg SO4/L	P426652	
	SM 2320 B-2011	Total Alkalinity	82		mg CaCO3/L	P426294	
	SM 2540 C-2015	TDS	141		mg/L	P426486	
	SM 2540 D-2015	TSS	16		mg/L	P426377	
	SM 4500-F- C-2011	Fluoride	0.076	I	mg F/L	P426298	
2388419	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P426471	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P426401	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P426154	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P426133	
	SM 5310 B-2011	Organic Carbon	9.3		mg C/L	P426275	

Ref. Method and Comment:

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

Sample Location: Lake Downey @ Center

Collection Date/Time: 02/16/2023 13:22

Field ID: G2CE0227

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2388418	DEP SOP: NU-094-1	Color (true)	48	A	PCU	P426019	
	EPA 180.1 Rev. 2.0	Turbidity	0.85	I	NTU	P426043	
	EPA 300.0 Rev. 2.1	Chloride	21		mg Cl/L	P426648	
		Sulfate	3.1		mg SO4/L	P426652	
	SM 2320 B-2011	Total Alkalinity	8.8		mg CaCO3/L	P426294	
	SM 2540 C-2015	TDS	89		mg/L	P426486	
	SM 2540 D-2015	TSS	2	I	mg/L	P426377	
	SM 4500-F- C-2011	Fluoride	0.034	I	mg F/L	P426298	
2388420	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P426471	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P426401	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P426154	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P426133	
	SM 5310 B-2011	Organic Carbon	9.8		mg C/L	P426275	

Ref. Method and Comment:

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

Sample Location: LAKE GEAR @ CENTER

Collection Date/Time: 02/16/2023 12:34

Field ID: G2CE0154

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2388431	EPA 200.7 Rev. 4.4	Calcium	24.3		mg/L	P426158	
		Iron	47	I	ug/L	P426158	
		Magnesium	1.50		mg/L	P426158	
		Potassium	1.8		mg/L	P426158	
		Sodium	8.3		mg/L	P426158	
		Strontium	53.1		ug/L	P426158	
		Tin	3.0	U	ug/L	P426158	
		Titanium	0.75	U	ug/L	P426158	
		Vanadium	2.0	U	ug/L	P426158	
		Zinc	5.0	U	ug/L	P426158	
	EPA 200.8 Rev. 5.4	Aluminum	18	I	ug/L	P426158	
		Antimony	0.21		ug/L	P426158	
		Arsenic	3.51		ug/L	P426158	
		Barium	10.1		ug/L	P426158	
		Beryllium	0.010	U	ug/L	P426158	
		Boron	22.4		ug/L	P426158	
		Cadmium	0.020	U	ug/L	P426158	
		Chromium	0.40	U	ug/L	P426158	
		Cobalt	0.024	I	ug/L	P426158	
		Copper	2.67		ug/L	P426158	
		Lead	0.20	U	ug/L	P426158	
		Manganese	3.74		ug/L	P426158	
		Molybdenum	0.63		ug/L	P426158	
		Nickel	0.50	U	ug/L	P426158	
		Selenium	0.20	U	ug/L	P426158	
		Silver	0.010	U	ug/L	P426328	
		Thallium	0.10	U	ug/L	P426158	
	SM 2340 B-2011	Hardness	66.8		mg/L	P426158	

Sample Location: Lake Lucerne SW

Collection Date/Time: 02/16/2023 11:13

Field ID: G4CE0202

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2388411	DEP SOP: NU-094-1	Color (true)	6.5		PCU	P426019	
	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P426043	
	EPA 300.0 Rev. 2.1	Chloride	9.7	A	mg Cl/L	P426648	
		Sulfate	20	A	mg SO4/L	P426652	
	SM 2320 B-2011	Total Alkalinity	90		mg CaCO3/L	P426294	
	SM 2540 C-2015	TDS	137	A	mg/L	P426486	
	SM 2540 D-2015	TSS	4	IA	mg/L	P426377	
	SM 4500-F- C-2011	Fluoride	0.098	I	mg F/L	P426298	
2388413	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P426419	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P426331	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.063		mg N/L	P426153	
	EPA 365.1 Rev. 2.0	Total-P	0.036		mg P/L	P426133	
	SM 5310 B-2011	Organic Carbon	3.3		mg C/L	P426275	
2388415	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P426035	

Ref. Method and Comment:

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

Sample Location: Lake Emerald @ Center

Collection Date/Time: 02/16/2023 10:32

Field ID: G4CE0204

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2388412	DEP SOP: NU-094-1	Color (true)	23		PCU	P426019	
	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P426043	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P426648	
		Sulfate	15		mg SO4/L	P426652	
	SM 2320 B-2011	Total Alkalinity	72		mg CaCO3/L	P426294	
	SM 2540 C-2015	TDS	153		mg/L	P426486	
	SM 2540 D-2015	TSS	7	I	mg/L	P426377	
	SM 4500-F- C-2011	Fluoride	0.075	I	mg F/L	P426298	
2388414	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P426471	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.89		mg N/L	P426331	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P426153	
	EPA 365.1 Rev. 2.0	Total-P	0.057		mg P/L	P426133	
	SM 5310 B-2011	Organic Carbon	8.4		mg C/L	P426275	
2388416	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P426035	

Ref. Method and Comment:

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

Sample Location: FB

Collection Date/Time: 02/16/2023 10:44

Field ID: FB_02162023

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2388421	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P426019	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P426043	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P426648	
		Sulfate	0.20	U	mg SO4/L	P426652	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P426295	
	SM 2540 C-2015	TDS	15	U	mg/L	P426485	
	SM 2540 D-2015	TSS	2	U	mg/L	P426376	
2388422	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P426645	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P426471	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P426401	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P426154	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P426133	
2388423	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P426275	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P426035	

Ref. Method and Comment:

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

Sample Location: Lake Lawsona NW of Center

Collection Date/Time: 02/16/2023 10:08

Field ID: G2CE0286

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2388432	EPA 200.7 Rev. 4.4	Calcium	19.4		mg/L	P426158	
		Iron	30	U	ug/L	P426158	
		Magnesium	3.28		mg/L	P426158	
		Potassium	1.8		mg/L	P426158	
		Sodium	11.7		mg/L	P426158	
		Strontium	49.4		ug/L	P426158	
		Tin	3.0	U	ug/L	P426158	
		Titanium	0.89	I	ug/L	P426158	
		Vanadium	2.0	U	ug/L	P426158	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P426158	
		Aluminum	28		ug/L	P426158	
		Antimony	0.82		ug/L	P426158	
		Arsenic	0.65		ug/L	P426158	
		Barium	14.6		ug/L	P426158	
		Beryllium	0.010	U	ug/L	P426158	
		Boron	34.3		ug/L	P426158	
		Cadmium	0.020	U	ug/L	P426158	
		Chromium	0.40	U	ug/L	P426158	
		Cobalt	0.031	I	ug/L	P426158	
		Copper	1.26		ug/L	P426158	
		Lead	0.68		ug/L	P426158	
		Manganese	4.71		ug/L	P426158	
		Molybdenum	1.02		ug/L	P426158	
		Nickel	0.50	U	ug/L	P426158	
		Selenium	0.20	U	ug/L	P426158	
		Silver	0.010	U	ug/L	P426328	
		Thallium	0.10	U	ug/L	P426158	
	SM 2340 B-2011	Hardness	62.0		mg/L	P426158	

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P426019

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P426043

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P426158

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: P426158

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
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P426328

Component	Result	Code	Units
Silver	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426648

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426652

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426419

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426471

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426331

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426401

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426153

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426154

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P426133

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: P426035

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

Reference Method: SM 2320 B-2011
Batch ID: P426294

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2320 B-2011
Batch ID: P426295

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-2015
Batch ID: P426485

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2015
Batch ID: P426486

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P426376

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P426377

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P426298

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P426645

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P426275

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P426019

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P426043

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P426158

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Iron	101		P	85 - 115
Magnesium	105		P	85 - 115
Potassium	96.7		P	85 - 115
Sodium	98.9		P	85 - 115
Strontium	98.7		P	85 - 115
Tin	102		P	85 - 115
Titanium	101		P	85 - 115
Vanadium	98.6		P	85 - 115
Zinc	106		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P426158

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	96.7		P	85 - 115
Antimony	99.6		P	85 - 115
Arsenic	96.7		P	85 - 115
Barium	100		P	85 - 115
Beryllium	93.0		P	85 - 115
Boron	93.9		P	85 - 115
Cadmium	98.0		P	85 - 115
Chromium	100		P	85 - 115
Cobalt	98.7		P	85 - 115
Copper	97.6		P	85 - 115
Lead	95.5		P	85 - 115
Manganese	99.3		P	85 - 115
Molybdenum	95.6		P	85 - 115
Nickel	99.9		P	85 - 115
Selenium	98.1		P	85 - 115
Thallium	97.9		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P426328

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Silver	103		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426648

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426652

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426419

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426471

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426331

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426401

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426153

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426154

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P426133

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.1		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P426035

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

Reference Method: SM 2320 B-2011
Batch ID: P426294

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.5		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P426295

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.9		P	94 - 106

Reference Method: SM 2540 C-2015
Batch ID: P426485

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

Reference Method: SM 2540 C-2015
Batch ID: P426486

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	93.7		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P426376

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	95.3		P	85 - 106

Reference Method: SM 2540 D-2015
Batch ID: P426377

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	91.2		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P426298

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.5		P	96 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P426645

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	96 - 104

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P426275

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P426158

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388015	Calcium	98.1		P	80 - 120
2388015	Iron	99.9	102	P/P	80 - 120
2388015	Magnesium	103	105	P/P	80 - 120
2388015	Potassium	94.9	98.7	P/P	80 - 120
2388015	Sodium	97.8		P	80 - 120
2388015	Strontium	97.4	98.8	P/P	80 - 120
2388015	Tin	102	102	P/P	80 - 120
2388015	Titanium	103	104	P/P	80 - 120
2388015	Vanadium	100	101	P/P	80 - 120
2388015	Zinc	104	105	P/P	80 - 120
2388431	Calcium	97.2		P	80 - 120
2388431	Iron	100		P	80 - 120
2388431	Magnesium	101		P	80 - 120
2388431	Potassium	94.7		P	80 - 120
2388431	Sodium	98.1		P	80 - 120
2388431	Strontium	96.4		P	80 - 120
2388431	Tin	99.4		P	80 - 120
2388431	Titanium	103		P	80 - 120
2388431	Vanadium	101		P	80 - 120
2388431	Zinc	105		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P426158

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388015	Aluminum	112	95.6	P/P	80 - 120
2388015	Antimony	99.9	99.6	P/P	80 - 120
2388015	Arsenic	96.7	96.1	P/P	80 - 120
2388015	Barium	100	100	P/P	80 - 120
2388015	Beryllium	94.6	94.7	P/P	80 - 120
2388015	Boron	97.3	94.2	P/P	80 - 120
2388015	Cadmium	99.8	96.9	P/P	80 - 120
2388015	Chromium	99.4	99.1	P/P	80 - 120
2388015	Cobalt	97.3	96.5	P/P	80 - 120
2388015	Copper	97.1	95.8	P/P	80 - 120
2388015	Lead	96.7	95.0	P/P	80 - 120
2388015	Manganese	101	98.2	P/P	80 - 120
2388015	Molybdenum	97.1	97.0	P/P	80 - 120
2388015	Nickel	99.2	98.2	P/P	80 - 120
2388015	Selenium	96.7	95.7	P/P	80 - 120
2388015	Thallium	98.7	98.8	P/P	80 - 120
2388431	Aluminum	95.8		P	80 - 120
2388431	Antimony	99.4		P	80 - 120
2388431	Arsenic	94.4		P	80 - 120
2388431	Barium	100		P	80 - 120
2388431	Beryllium	91.0		P	80 - 120
2388431	Boron	94.0		P	80 - 120
2388431	Cadmium	97.2		P	80 - 120
2388431	Chromium	97.4		P	80 - 120
2388431	Cobalt	94.8		P	80 - 120
2388431	Copper	92.6		P	80 - 120
2388431	Lead	96.0		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P426158

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388431	Manganese	97.1		P	80 - 120
2388431	Molybdenum	94.9		P	80 - 120
2388431	Nickel	97.8		P	80 - 120
2388431	Selenium	95.2		P	80 - 120
2388431	Thallium	97.7		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P426328

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388014	Silver	101	102	P/P	80 - 120
2388432	Silver	102		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426648

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388411	Chloride	96.4		P	90 - 110
2388412	Chloride	97.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426652

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388411	Sulfate	100		P	90 - 110
2388412	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426419

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388386	Ammonia-N	99.0	97.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426471

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388420	Ammonia-N	98.8	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426331

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388385	Kjeldahl Nitrogen	91.9	95.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426401

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388420	Kjeldahl Nitrogen	94.8	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426153

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388356	NO2NO3-N	97.1	98.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426154

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388419	NO2NO3-N	98.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P426133

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388413	Total-P	99.7	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P426035

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388365	O-Phosphate-P	98.6	99.3	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P426298

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388336	Fluoride	99.2	98.6	P/P	94 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P426645

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389356	Fluoride	98.2	98.8	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P426275

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388646	Organic Carbon	100	100	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P426019

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388418	Color (true)	0.327	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P426043

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388304	Turbidity	0.422	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P426158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388015	Calcium	0.501	Spike	P	0 - 20
2388015	Iron	1.72	Spike	P	0 - 20
2388015	Magnesium	1.20	Spike	P	0 - 20
2388015	Potassium	1.97	Spike	P	0 - 20
2388015	Sodium	0.850	Spike	P	0 - 20
2388015	Strontium	1.36	Spike	P	0 - 20
2388015	Tin	0.475	Spike	P	0 - 20
2388015	Titanium	0.653	Spike	P	0 - 20
2388015	Vanadium	0.561	Spike	P	0 - 20
2388015	Zinc	0.557	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P426158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388015	Aluminum	15.6	Spike	P	0 - 20
2388015	Antimony	0.378	Spike	P	0 - 20
2388015	Arsenic	0.653	Spike	P	0 - 20
2388015	Barium	0.0687	Spike	P	0 - 20
2388015	Beryllium	0.118	Spike	P	0 - 20
2388015	Boron	1.63	Spike	P	0 - 20
2388015	Cadmium	3.01	Spike	P	0 - 20
2388015	Chromium	0.334	Spike	P	0 - 20
2388015	Cobalt	0.811	Spike	P	0 - 20
2388015	Copper	1.30	Spike	P	0 - 20
2388015	Lead	1.82	Spike	P	0 - 20
2388015	Manganese	1.44	Spike	P	0 - 20
2388015	Molybdenum	0.127	Spike	P	0 - 20
2388015	Nickel	1.06	Spike	P	0 - 20
2388015	Selenium	0.982	Spike	P	0 - 20
2388015	Thallium	0.113	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P426328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388014	Silver	0.206	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426648

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388411	Chloride	0.325	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426652

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388411	Sulfate	0.532	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426419

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388386	Ammonia-N	0.983	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426471

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388420	Ammonia-N	1.20	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426331

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388385	Kjeldahl Nitrogen	2.31	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426401

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388420	Kjeldahl Nitrogen	4.45	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426153

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388356	NO2NO3-N	0.881	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P426154

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388419	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P426133

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388413	Total-P	0.439	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P426035

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388365	O-Phosphate-P	0.606	Spike	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P426294

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388336	Total Alkalinity	0.540	Sample	P	0 - 3.8

Reference Method: SM 2320 B-2011

Batch ID: P426295

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2387118	Total Alkalinity	1.32	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015

Batch ID: P426485

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2387726	TDS	4.89	Sample	P	0 - 10

Reference Method: SM 2540 C-2015

Batch ID: P426486

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388411	TDS	1.46	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011

Batch ID: P426298

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388336	Fluoride	0.479	Spike	P	0 - 1.6

Quality Assurance Report Precision

Reference Method: SM 4500-F- C-2011
Batch ID: P426645

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389356	Fluoride	0.519	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P426275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388646	Organic Carbon	0.0998	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A117519

Included Lab Sample IDs: 2388411, 2388412, 2388417, 2388418, 2388421

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A117521

Included Lab Sample IDs: 2388415, 2388416, 2388423

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.7	98.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A117527

Included Lab Sample IDs: 2388411, 2388412, 2388417, 2388418, 2388421

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	102	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A117565

Included Lab Sample IDs: 2388413, 2388414, 2388419, 2388420, 2388422

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	97.5	P/P	90 - 110
NO2NO3-N	98.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A117588

Included Lab Sample IDs: 2388414, 2388419

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A117610

Included Lab Sample IDs: 2388413, 2388422

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	101	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A117613

Included Lab Sample IDs: 2388431, 2388432

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	98.6	P/P	90 - 110
Calcium	98.6	102	P/P	90 - 110
Iron	100	98.5	P/P	90 - 110
Iron	98.5	102	P/P	90 - 110
Magnesium	100	98.7	P/P	90 - 110
Magnesium	98.7	102	P/P	90 - 110
Potassium	101	99.4	P/P	90 - 110
Potassium	99.4	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A117613

Included Lab Sample IDs: 2388431, 2388432

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sodium	98.7	102	P/P	90 - 110
Sodium	99.5	98.7	P/P	90 - 110
Strontium	101	100	P/P	90 - 110
Strontium	101	101	P/P	90 - 110
Tin	101	102	P/P	90 - 110
Tin	102	101	P/P	90 - 110
Titanium	101	102	P/P	90 - 110
Titanium	102	101	P/P	90 - 110
Vanadium	101	101	P/P	90 - 110
Vanadium	101	101	P/P	90 - 110
Zinc	104	104	P/P	90 - 110
Zinc	105	104	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A117614

Included Lab Sample IDs: 2388431, 2388432

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	96.0	95.3	P/P	90 - 110
Antimony	98.3	97.9	P/P	90 - 110
Arsenic	96.3	93.8	P/P	90 - 110
Barium	97.3	96.3	P/P	90 - 110
Beryllium	96.2	93.0	P/P	90 - 110
Boron	95.5	92.5	P/P	90 - 110
Cadmium	95.8	95.8	P/P	90 - 110
Chromium	97.3	95.1	P/P	90 - 110
Cobalt	95.3	93.1	P/P	90 - 110
Copper	92.9	92.0	P/P	90 - 110
Lead	93.4	93.5	P/P	90 - 110
Manganese	98.0	97.1	P/P	90 - 110
Molybdenum	94.5	93.9	P/P	90 - 110
Nickel	94.8	93.2	P/P	90 - 110
Selenium	96.9	96.4	P/P	90 - 110
Thallium	96.8	97.1	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A117617

Included Lab Sample IDs: 2388413, 2388414, 2388419, 2388420, 2388422

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.6	97.4	P/P	90 - 110
Organic Carbon	97.2	96.6	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A117622

Included Lab Sample IDs: 2388411, 2388412, 2388417, 2388418, 2388421

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	96.5	P/P	90 - 110
Total Alkalinity	97.3	99.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A117622

Included Lab Sample IDs: 2388411, 2388412, 2388417, 2388418

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A117642

Included Lab Sample IDs: 2388420

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A117685

Included Lab Sample IDs: 2388413

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.3	96.4	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A117687

Included Lab Sample IDs: 2388411, 2388412, 2388417, 2388418, 2388421

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	95.9	96.2	P/P	90 - 110
Chloride	96.2	96.1	P/P	90 - 110
Sulfate	98.4	99.0	P/P	90 - 110
Sulfate	99.0	98.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A117701

Included Lab Sample IDs: 2388414, 2388419, 2388420, 2388422

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.8	98.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A117720

Included Lab Sample IDs: 2388431, 2388432

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	101	99.2	P/P	90 - 110
Silver	99.2	102	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A117776

Included Lab Sample IDs: 2388421

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	104	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A117796

Included Lab Sample IDs: 2388413, 2388414, 2388419, 2388420, 2388422

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	99.0	P/P	90 - 110
Kjeldahl Nitrogen	105	104	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 SMP	MS
			LCS				
DEP SOP: NU-094-1	Color (true)	100				0.327	
EPA 180.1 Rev. 2.0	Turbidity	101				0.422	
EPA 200.7 Rev. 4.4	Calcium	101	98.1	97.2			0.501
	Iron	101	99.9	102	100		1.72
	Magnesium	105	103	105	101		1.20
	Potassium	96.7	94.9	98.7	94.7		1.97
	Sodium	98.9	97.8	98.1			0.850
	Strontium	98.7	97.4	98.8	96.4		1.36
	Tin	102	102	102	99.4		0.475
	Titanium	101	103	104	103		0.653
	Vanadium	98.6	100	101	101		0.561
	Zinc	106	104	105	105		0.557
EPA 200.8 Rev. 5.4	Aluminum	96.7	112	95.6	95.8		15.6
	Antimony	99.6	99.9	99.6	99.4		0.378
	Arsenic	96.7	96.7	96.1	94.4		0.653
	Barium	100	100	100	100		0.0687
	Beryllium	93.0	94.6	94.7	91.0		0.118
	Boron	93.9	97.3	94.2	94.0		1.63
	Cadmium	98.0	99.8	96.9	97.2		3.01
	Chromium	100	99.4	99.1	97.4		0.334
	Cobalt	98.7	97.3	96.5	94.8		0.811
	Copper	97.6	97.1	95.8	92.6		1.30
	Lead	95.5	96.7	95.0	96.0		1.82
	Manganese	99.3	101	98.2	97.1		1.44
	Molybdenum	95.6	97.1	97.0	94.9		0.127
	Nickel	99.9	99.2	98.2	97.8		1.06
	Selenium	98.1	96.7	95.7	95.2		0.982
	Silver	103	102	101	102		0.206
	Thallium	97.9	98.7	98.8	97.7		0.113
EPA 300.0 Rev. 2.1	Chloride	97.0	96.4	97.2		0.325	
	Sulfate	101	100	101		0.532	
EPA 350.1 Rev. 2.0	Ammonia-N	99.4	99.0	97.4			0.983
	Ammonia-N	96.6	98.8	100			1.20
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.5	91.9	95.5			2.31
	Kjeldahl Nitrogen	98.1	94.8	101			4.45
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5	97.1	98.1			0.881
	NO2NO3-N	97.5	98.0	98.0			0.0
EPA 365.1 Rev. 2.0	Total-P	98.1	99.7	99.2			0.439
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	98.6	99.3			0.606
SM 2320 B-2011	Total Alkalinity	99.5				0.540	
	Total Alkalinity	98.9				1.32	
SM 2540 C-2015	TDS	104				4.89	
	TDS	93.7				1.46	
SM 2540 D-2015	TSS	95.3					
	TSS	91.2					
SM 4500-F- C-2011	Fluoride	98.5	99.2	98.6			0.479
	Fluoride	97.9	98.2	98.8			0.519
SM 5310 B-2011	Organic Carbon	95.2	100	100			0.0998

Reference Method Descriptions

Method	Description	Associated Samples
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Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2388411, 2388412, 2388417, 2388418, 2388421
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2388411, 2388412, 2388417, 2388418, 2388421
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2388431, 2388432
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2388431, 2388432
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2388411, 2388412, 2388417, 2388418, 2388421
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2388411, 2388412, 2388417, 2388418, 2388421
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2388413, 2388414, 2388419, 2388420, 2388422
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2388413, 2388414, 2388419, 2388420, 2388422
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2388413, 2388414, 2388419, 2388420, 2388422
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2388413, 2388414, 2388419, 2388420, 2388422
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2388415, 2388416, 2388423
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2388411, 2388412, 2388417, 2388418, 2388421
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2388431, 2388432
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2388411, 2388412, 2388417, 2388418, 2388421
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2388411, 2388412, 2388417, 2388418, 2388421
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2388411, 2388412, 2388417, 2388418, 2388421
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2388413, 2388414, 2388419, 2388420, 2388422

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	02/17/2023			02/17/2023 14:13	Alexis Price	2388411
	02/17/2023			02/17/2023 14:14	Alexis Price	2388412, 2388417
	02/17/2023			02/17/2023 14:15	Alexis Price	2388418
	02/17/2023			02/17/2023 14:16	Alexis Price	2388421
	02/17/2023			02/17/2023 13:47	Khloe J Berg	2388411
EPA 180.1 Rev. 2.0	02/17/2023			02/17/2023 13:48	Khloe J Berg	2388412
	02/17/2023			02/17/2023 13:49	Khloe J Berg	2388417
	02/17/2023			02/17/2023 13:52	Khloe J Berg	2388418, 2388421
	02/17/2023	02/21/2023 12:40	George D Taylor	02/22/2023 19:51	McKinley C Carter	2388431
	02/17/2023	02/21/2023 12:40	George D Taylor	02/22/2023 20:38	McKinley C Carter	2388432
EPA 200.8 Rev. 5.4	02/17/2023	02/21/2023 12:40	George D Taylor	02/22/2023 16:26	Conrad Hartmann	2388432
	02/17/2023	02/21/2023 12:40	George D Taylor	02/22/2023 16:35	Conrad Hartmann	2388431
	02/17/2023	02/24/2023 10:50	George D Taylor	02/28/2023 12:57	Conrad Hartmann	2388432
	02/17/2023	02/24/2023 10:50	George D Taylor	02/28/2023 13:56	Conrad Hartmann	2388431
	02/17/2023			03/01/2023 19:28	Judith K. Clark	2388411
EPA 300.0 Rev. 2.1	02/17/2023			03/01/2023 19:58	Judith K. Clark	2388412
	02/17/2023			03/01/2023 23:13	Judith K. Clark	2388417
	02/17/2023			03/01/2023 23:28	Judith K. Clark	2388418
	02/17/2023			03/01/2023 23:43	Judith K. Clark	2388421
	02/17/2023			02/27/2023 12:53	Ping Hua	2388413
EPA 350.1 Rev. 2.0	02/17/2023			02/28/2023 10:56	Ping Hua	2388420
	02/17/2023			02/28/2023 11:00	Ping Hua	2388414
	02/17/2023			02/28/2023 11:01	Ping Hua	2388419
	02/17/2023			02/28/2023 11:02	Ping Hua	2388422
	02/17/2023	02/24/2023 12:50	Simonne.V. Calhoun	03/03/2023 15:09	Judith K. Clark	2388413
EPA 351.2 Rev. 2.0	02/17/2023	02/24/2023 12:50	Simonne.V. Calhoun	03/03/2023 15:10	Judith K. Clark	2388414
	02/17/2023	02/27/2023 12:30	Simonne.V. Calhoun	03/03/2023 15:42	Judith K. Clark	2388419
	02/17/2023	02/27/2023 12:30	Simonne.V. Calhoun	03/03/2023 15:43	Judith K. Clark	2388420
	02/17/2023	02/27/2023 12:30	Simonne.V. Calhoun	03/03/2023 15:47	Judith K. Clark	2388422
	02/17/2023			02/21/2023 10:13	Beverly Y. Sanders	2388413
EPA 353.2 Rev. 2.0	02/17/2023			02/21/2023 10:14	Beverly Y. Sanders	2388414
	02/17/2023			02/21/2023 10:21	Beverly Y. Sanders	2388419
	02/17/2023			02/21/2023 10:32	Beverly Y. Sanders	2388420
	02/17/2023			02/21/2023 10:33	Beverly Y. Sanders	2388422
	02/17/2023	02/21/2023 12:56	Adam P Silver	02/22/2023 10:08	James L Waggeberby	2388414
EPA 365.1 Rev. 2.0	02/17/2023	02/21/2023 12:56	Adam P Silver	02/22/2023 10:09	James L Waggeberby	2388419
	02/17/2023	02/21/2023 12:56	Adam P Silver	02/22/2023 16:27	James L Waggeberby	2388422
	02/17/2023	02/21/2023 12:56	Adam P Silver	02/22/2023 16:28	James L Waggeberby	2388413
	02/17/2023	02/21/2023 12:56	Adam P Silver	02/24/2023 09:22	James L Waggeberby	2388420
	02/17/2023			02/17/2023 15:38	Elise M. Gillis	2388415, 2388416

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 365.1 Rev. 2.0 dissolved SM 2320 B-2011	02/17/2023			02/17/2023 15:39	Elise M. Gillis	2388423
	02/17/2023			02/22/2023 23:39	Chandler E Cox	2388411
	02/17/2023			02/22/2023 23:53	Chandler E Cox	2388412
	02/17/2023			02/23/2023 00:07	Chandler E Cox	2388417
	02/17/2023			02/23/2023 00:20	Chandler E Cox	2388418
	02/17/2023			02/23/2023 09:57	Chandler E Cox	2388421
SM 2340 B-2011	02/17/2023			02/22/2023 19:51	McKinley C Carter	2388431
	02/17/2023			02/22/2023 20:38	McKinley C Carter	2388432
SM 2540 C-2015	02/17/2023			02/20/2023 15:46	Yijie Li	2388411, 2388412, 2388417, 2388418, 2388421
SM 2540 D-2015	02/17/2023			02/20/2023 15:46	Yijie Li	2388411, 2388412, 2388417, 2388418, 2388421
SM 4500-F- C-2011	02/17/2023			02/22/2023 23:39	Chandler E Cox	2388411
	02/17/2023			02/22/2023 23:53	Chandler E Cox	2388412
	02/17/2023			02/23/2023 00:07	Chandler E Cox	2388417
	02/17/2023			02/23/2023 00:20	Chandler E Cox	2388418
	02/17/2023			03/02/2023 23:06	Chandler E Cox	2388421
SM 5310 B-2011	02/17/2023			02/22/2023 23:29	Elise M. Gillis	2388413
	02/17/2023			02/22/2023 23:43	Elise M. Gillis	2388414
	02/17/2023			02/23/2023 00:24	Elise M. Gillis	2388419
	02/17/2023			02/23/2023 00:38	Elise M. Gillis	2388420
	02/17/2023			02/23/2023 00:51	Elise M. Gillis	2388422