

Chemical Analysis Report

CEN-DIST-2023-08-11-01

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

Event Description: **Run 13**
Request ID: **RQ-2023-08-07-49**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Matthew Bearden

For additional information please contact
Colin Wright, Ph.D.
Chris Bowen, B.S.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 06-SEP-2023 09:54

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line extending from the end of the name.

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 EMERALD AT CENTER

Collection Date/Time: 08/10/2023 08:56

Field ID: G4CE0204

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2430617	DEP SOP: NU-094-1	Color (true)	20		PCU	P433773	
	EPA 180.1 Rev. 2.0	Turbidity	6.5		NTU	P433780	
	EPA 300.0 Rev. 2.1	Chloride	27	A	mg Cl/L	P434538	
		Sulfate	13	A	mg SO4/L	P434539	
	SM 2320 B-2011	Total Alkalinity	45		mg CaCO3/L	P434014	
	SM 2540 C-2015	TDS	125		mg/L	P434221	
	SM 2540 D-2015	TSS	11	I	mg/L	P434222	
	SM 4500-F- C-2011	Fluoride	0.073	I	mg F/L	P434017	
2430619	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P434129	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P433818	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P434422	
	EPA 365.1 Rev. 2.0	Total-P	0.085		mg P/L	P433845	
	SM 5310 B-2011	Organic Carbon	8.6		mg C/L	P433847	
2430621	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P433765	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The PQL was elevated because of sample matrix interference.

Sample Location: LAKE DOWNEY AT CENTER

Collection Date/Time: 08/10/2023 11:08

Field ID: G2CE0227

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2430623	DEP SOP: NU-094-1	Color (true)	31		PCU	P433773	
	EPA 180.1 Rev. 2.0	Turbidity	0.95	I	NTU	P433780	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P434070	
		Sulfate	3.6		mg SO4/L	P434073	
	SM 2320 B-2011	Total Alkalinity	8.4		mg CaCO3/L	P434014	
	SM 2540 C-2015	TDS	72		mg/L	P434221	
	SM 2540 D-2015	TSS	2	I	mg/L	P434222	
2430625	SM 4500-F- C-2011	Fluoride	0.039	I	mg F/L	P434017	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P434129	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P433923	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P434422	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P433845	
	SM 5310 B-2011	Organic Carbon	9.5		mg C/L	P433847	

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: 08/10/2023 10:32

Field ID: G2CE0286

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2430633	EPA 200.7 Rev. 4.4	Calcium	13.7		mg/L	P433931	
		Iron	50	I	ug/L	P433931	
		Magnesium	2.39		mg/L	P433931	
		Potassium	1.7		mg/L	P433931	
		Sodium	10.3		mg/L	P433931	
		Strontium	43.5		ug/L	P433931	
		Tin	3.0	U	ug/L	P433931	
		Titanium	1.3	I	ug/L	P433931	
		Vanadium	2.0	U	ug/L	P433931	
	EPA 200.8 Rev. 5.4	Zinc	6.9	I	ug/L	P433931	
		Aluminum	87		ug/L	P434124	
		Antimony	0.90		ug/L	P434124	
		Arsenic	0.80		ug/L	P434124	
		Barium	12.8		ug/L	P434124	
		Beryllium	0.010	U	ug/L	P434124	
		Boron	34.1		ug/L	P434124	
		Cadmium	0.029	I	ug/L	P434124	
		Chromium	0.40	U	ug/L	P434124	
		Cobalt	0.054	I	ug/L	P434124	
		Copper	3.18		ug/L	P434124	
		Lead	2.18		ug/L	P434124	
		Manganese	8.25		ug/L	P434124	
		Molybdenum	1.11		ug/L	P434124	
		Nickel	0.50	U	ug/L	P434124	
		Selenium	0.20	U	ug/L	P434124	
		Silver	0.010	U	ug/L	P434124	
		Thallium	0.10	U	ug/L	P434124	
		Hardness	44.0		mg/L	P433931	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium and sodium are unavailable for one of two spiked samples 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 08/23/2023.

Sample Location: LAKE LUCERNE SW

Collection Date/Time: 08/10/2023 09:58

Field ID: G4CE0202

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2430618	DEP SOP: NU-094-1	Color (true)	7.6		PCU	P433773	
	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P433780	
	EPA 300.0 Rev. 2.1	Chloride	9.4		mg Cl/L	P434070	
		Sulfate	14		mg SO4/L	P434073	
	SM 2320 B-2011	Total Alkalinity	73		mg CaCO3/L	P434014	
	SM 2540 C-2015	TDS	113		mg/L	P434221	
	SM 2540 D-2015	TSS	5	I	mg/L	P434222	
	SM 4500-F- C-2011	Fluoride	0.10		mg F/L	P434017	
2430620	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P434129	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P433923	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P434422	
	EPA 365.1 Rev. 2.0	Total-P	0.040		mg P/L	P433845	
	SM 5310 B-2011	Organic Carbon	3.4		mg C/L	P433847	
2430622	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P433765	

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 OLIVE AT CENTER

Collection Date/Time: 08/10/2023 09:26

Field ID: G4CE0223

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2430624	DEP SOP: NU-094-1	Color (true)	25		PCU	P433773	
	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P433780	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P434070	
		Sulfate	5.1		mg SO4/L	P434073	
	SM 2320 B-2011	Total Alkalinity	57		mg CaCO3/L	P434014	
	SM 2540 C-2015	TDS	95		mg/L	P434221	
	SM 2540 D-2015	TSS	4	I	mg/L	P434222	
2430626	SM 4500-F- C-2011	Fluoride	0.081	I	mg F/L	P434017	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P434130	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P433923	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P434422	
	EPA 365.1 Rev. 2.0	Total-P	0.046		mg P/L	P433845	
	SM 5310 B-2011	Organic Carbon	6.4		mg C/L	P433847	

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 AT CENTER

Collection Date/Time: 08/10/2023 08:28

Field ID: G2CE0154

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2430634	EPA 200.7 Rev. 4.4	Calcium	24.9		mg/L	P433931	
		Iron	30	U	ug/L	P433931	
		Magnesium	1.59		mg/L	P433931	
		Potassium	1.7		mg/L	P433931	
		Sodium	9.1		mg/L	P433931	
		Strontium	57.3		ug/L	P433931	
		Tin	3.0	U	ug/L	P433931	
		Titanium	0.75	U	ug/L	P433931	
		Vanadium	2.0	U	ug/L	P433931	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P433931	
		Aluminum	30		ug/L	P434124	
		Antimony	0.48		ug/L	P434124	
		Arsenic	2.80		ug/L	P434124	
		Barium	7.91		ug/L	P434124	
		Beryllium	0.010	U	ug/L	P434124	
		Boron	24.6		ug/L	P434124	
		Cadmium	0.020	U	ug/L	P434124	
		Chromium	0.40	U	ug/L	P434124	
		Cobalt	0.020	U	ug/L	P434124	
		Copper	2.07		ug/L	P434124	
		Lead	0.20	U	ug/L	P434428	
		Manganese	3.06		ug/L	P434124	
		Molybdenum	0.76		ug/L	P434124	
		Nickel	0.50	U	ug/L	P434124	
		Selenium	0.20	U	ug/L	P434124	
		Silver	0.010	U	ug/L	P434124	
		Thallium	0.10	U	ug/L	P434124	
	SM 2340 B-2011	Hardness	68.8		mg/L	P433931	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P433773

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P433780

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P433931

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: P434124

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: P434428

Component	Result	Code	Units
Lead	0.20	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434070

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434073

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434538

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434539

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434129

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434130

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P433818

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P433923

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434422

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433845

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P433765

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

Reference Method: SM 2320 B-2011
Batch ID: P434014

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

Reference Method: SM 2540 C-2015
Batch ID: P434221

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P434222

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P434017

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P433847

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: P433773

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.8		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P433780

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P433931

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	100		P	85 - 115
Iron	101		P	85 - 115
Magnesium	101		P	85 - 115
Potassium	99.8		P	85 - 115
Sodium	107		P	85 - 115
Strontium	102		P	85 - 115
Tin	98.6		P	85 - 115
Titanium	99.7		P	85 - 115
Vanadium	100		P	85 - 115
Zinc	97.2		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P434124

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.3		P	85 - 115
Antimony	98.5		P	85 - 115
Arsenic	93.5		P	85 - 115
Barium	100		P	85 - 115
Beryllium	91.7		P	85 - 115
Boron	100		P	85 - 115
Cadmium	97.0		P	85 - 115
Chromium	92.5		P	85 - 115
Cobalt	90.0		P	85 - 115
Copper	93.8		P	85 - 115
Lead	95.4		P	85 - 115
Manganese	97.3		P	85 - 115
Molybdenum	94.2		P	85 - 115
Nickel	89.8		P	85 - 115
Selenium	96.2		P	85 - 115
Silver	108		P	85 - 115
Thallium	96.3		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P434428

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Lead	95.9		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434070

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434073

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434538

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434539

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434129

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434130

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P433818

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: P433923

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: P434422

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433845

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P433765

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

Reference Method: SM 2320 B-2011
Batch ID: P434014

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.1		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P434221

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	94.8		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P434222

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	92.3		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P434017

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

Reference Method: SM 5310 B-2011
Batch ID: P433847

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P433931

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430634	Calcium	99.6		P	80 - 120
2430634	Iron	101	103	P/P	80 - 120
2430634	Magnesium	99.3	102	P/P	80 - 120
2430634	Potassium	99.9	103	P/P	80 - 120
2430634	Sodium	105		P	80 - 120
2430634	Strontium	99.9	103	P/P	80 - 120
2430634	Tin	97.9	98.6	P/P	80 - 120
2430634	Titanium	99.0	99.9	P/P	80 - 120
2430634	Vanadium	100	101	P/P	80 - 120
2430634	Zinc	98.0	98.9	P/P	80 - 120
2430791	Iron	104		P	80 - 120
2430791	Magnesium	104		P	80 - 120
2430791	Potassium	99.8		P	80 - 120
2430791	Strontium	104		P	80 - 120
2430791	Tin	104		P	80 - 120
2430791	Titanium	103		P	80 - 120
2430791	Vanadium	105		P	80 - 120
2430791	Zinc	105		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P434124

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2432078	Aluminum	97.1	98.2	P/P	80 - 120
2432078	Antimony	98.6	97.5	P/P	80 - 120
2432078	Arsenic	94.0	93.6	P/P	80 - 120
2432078	Barium	99.1	99.0	P/P	80 - 120
2432078	Beryllium	92.2	91.6	P/P	80 - 120
2432078	Boron	101	101	P/P	80 - 120
2432078	Cadmium	97.1	95.9	P/P	80 - 120
2432078	Chromium	93.1	93.3	P/P	80 - 120
2432078	Cobalt	89.4	89.4	P/P	80 - 120
2432078	Copper	95.4	95.6	P/P	80 - 120
2432078	Lead	96.1	97.1	P/P	80 - 120
2432078	Manganese	96.5	95.8	P/P	80 - 120
2432078	Molybdenum	94.8	94.6	P/P	80 - 120
2432078	Nickel	89.7	89.2	P/P	80 - 120
2432078	Selenium	97.3	94.1	P/P	80 - 120
2432078	Silver	106	105	P/P	80 - 120
2432078	Thallium	98.3	99.2	P/P	80 - 120
2432154	Aluminum	98.2		P	80 - 120
2432154	Antimony	97.7		P	80 - 120
2432154	Arsenic	92.2		P	80 - 120
2432154	Barium	98.1		P	80 - 120
2432154	Beryllium	89.2		P	80 - 120
2432154	Boron	102		P	80 - 120
2432154	Cadmium	97.0		P	80 - 120
2432154	Chromium	91.9		P	80 - 120
2432154	Cobalt	91.1		P	80 - 120
2432154	Copper	92.1		P	80 - 120
2432154	Lead	95.0		P	80 - 120
2432154	Manganese	95.6		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P434124

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2432154	Molybdenum	94.5		P	80 - 120
2432154	Nickel	92.9		P	80 - 120
2432154	Selenium	93.7		P	80 - 120
2432154	Silver	105		P	80 - 120
2432154	Thallium	98.5		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P434428

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2433624	Lead	95.0	95.6	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434070

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430547	Chloride	96.0		P	90 - 110
2430706	Chloride	96.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434073

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430547	Sulfate	94.6		P	90 - 110
2430706	Sulfate	95.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434538

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430617	Chloride	99.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434539

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430617	Sulfate	98.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434129

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430511	Ammonia-N	101	99.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434130

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430626	Ammonia-N	98.2	99.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P433818

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430550	Kjeldahl Nitrogen	103	109	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P433923

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430626	Kjeldahl Nitrogen	103	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434422

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430552	NO2NO3-N	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433845

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430551	Total-P	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P433765

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430622	O-Phosphate-P	102	103	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P434017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430547	Fluoride	101	101	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P433847

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430625	Organic Carbon	93.8	96.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P433773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430641	Color (true)	1.08	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P433780

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430510	Turbidity	1.72	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P433931

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430634	Calcium	2.37	Spike	P	0 - 20
2430634	Iron	1.43	Spike	P	0 - 20
2430634	Magnesium	1.64	Spike	P	0 - 20
2430634	Potassium	1.89	Spike	P	0 - 20
2430634	Sodium	1.90	Spike	P	0 - 20
2430634	Strontium	2.78	Spike	P	0 - 20
2430634	Tin	0.688	Spike	P	0 - 20
2430634	Titanium	0.867	Spike	P	0 - 20
2430634	Vanadium	0.908	Spike	P	0 - 20
2430634	Zinc	0.940	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P434124

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2432078	Aluminum	1.01	Spike	P	0 - 20
2432078	Antimony	1.04	Spike	P	0 - 20
2432078	Arsenic	0.482	Spike	P	0 - 20
2432078	Barium	0.136	Spike	P	0 - 20
2432078	Beryllium	0.705	Spike	P	0 - 20
2432078	Boron	0.124	Spike	P	0 - 20
2432078	Cadmium	1.24	Spike	P	0 - 20
2432078	Chromium	0.266	Spike	P	0 - 20
2432078	Cobalt	0.0368	Spike	P	0 - 20
2432078	Copper	0.215	Spike	P	0 - 20
2432078	Lead	1.03	Spike	P	0 - 20
2432078	Manganese	0.683	Spike	P	0 - 20
2432078	Molybdenum	0.221	Spike	P	0 - 20
2432078	Nickel	0.636	Spike	P	0 - 20
2432078	Selenium	3.33	Spike	P	0 - 20
2432078	Silver	0.675	Spike	P	0 - 20
2432078	Thallium	0.894	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P434428

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2433624	Lead	0.553	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434070

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430547	Chloride	0.622	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430547	Sulfate	0.0756	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434538

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430617	Chloride	1.08	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434539

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430617	Sulfate	1.38	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434129

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430511	Ammonia-N	1.25	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434130

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430626	Ammonia-N	0.752	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P433818

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430550	Kjeldahl Nitrogen	4.49	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P433923

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430626	Kjeldahl Nitrogen	2.03	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434422

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430552	NO2NO3-N	0.976	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433845

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430551	Total-P	0.191	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P433765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430622	O-Phosphate-P	0.976	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P434014

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430547	Total Alkalinity	1.31	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P434221

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430405	TDS	7.73	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P434017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430547	Fluoride	0.0	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P433847

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430625	Organic Carbon	1.72	Spike	P	0 - 20

Quality Assurance Report Precision

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A120990

Included Lab Sample IDs: 2430621, 2430622

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

Reference Method: DEP SOP: NU-094-1

Run ID: A120994

Included Lab Sample IDs: 2430617, 2430618, 2430623, 2430624

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	98.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A120999

Included Lab Sample IDs: 2430617, 2430618, 2430623, 2430624

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	99.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A121032

Included Lab Sample IDs: 2430619

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.8	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A121033

Included Lab Sample IDs: 2430619, 2430620, 2430625, 2430626

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.3	95.4	P/P	90 - 110
Organic Carbon	95.4	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A121040

Included Lab Sample IDs: 2430620, 2430625, 2430626

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A121052

Included Lab Sample IDs: 2430619

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.0	105	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A121057

Included Lab Sample IDs: 2430618, 2430623, 2430624

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	95.9	97.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A121057

Included Lab Sample IDs: 2430618, 2430623, 2430624

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.0	98.7	P/P	90 - 110
Sulfate	95.9	97.7	P/P	90 - 110
Sulfate	96.0	95.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A121097

Included Lab Sample IDs: 2430620, 2430625, 2430626

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	103	P/P	90 - 110
Kjeldahl Nitrogen	103	105	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A121108

Included Lab Sample IDs: 2430633, 2430634

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	99.3	101	P/P	90 - 110
Iron	99.7	101	P/P	90 - 110
Magnesium	99.7	101	P/P	90 - 110
Potassium	100	99.6	P/P	90 - 110
Sodium	106	104	P/P	90 - 110
Strontium	103	100	P/P	90 - 110
Tin	101	97.2	P/P	90 - 110
Titanium	100	96.1	P/P	90 - 110
Vanadium	100	96.9	P/P	90 - 110
Zinc	99.3	98.0	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A121111

Included Lab Sample IDs: 2430617, 2430618, 2430623, 2430624

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.1	96.0	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A121111

Included Lab Sample IDs: 2430617, 2430618, 2430623, 2430624

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A121154

Included Lab Sample IDs: 2430619, 2430620, 2430625, 2430626

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	98.7	P/P	90 - 110
Ammonia-N	98.7	99.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A121188

Included Lab Sample IDs: 2430633, 2430634

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.1	96.8	P/P	90 - 110
Antimony	95.7	95.5	P/P	90 - 110
Arsenic	94.3	93.3	P/P	90 - 110
Barium	97.0	97.4	P/P	90 - 110
Beryllium	92.4	92.3	P/P	90 - 110
Boron	99.9	99.7	P/P	90 - 110
Cadmium	96.8	96.3	P/P	90 - 110
Chromium	94.5	94.8	P/P	90 - 110
Copper	93.0	92.0	P/P	90 - 110
Manganese	97.3	97.1	P/P	90 - 110
Molybdenum	93.7	92.7	P/P	90 - 110
Selenium	97.7	96.1	P/P	90 - 110
Silver	92.3	92.1	P/P	90 - 110
Thallium	93.7	93.3	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A121217

Included Lab Sample IDs: 2430633, 2430634

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cobalt	92.5	91.3	P/P	90 - 110
Lead	93.7	92.9	P/P	90 - 110
Nickel	93.6	92.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A121282

Included Lab Sample IDs: 2430619, 2430620, 2430625, 2430626

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A121320

Included Lab Sample IDs: 2430634

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	94.9	94.9	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A121339

Included Lab Sample IDs: 2430617

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.7	98.0	P/P	90 - 110
Sulfate	98.0	98.2	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	MS
							SMP	
DEP SOP: NU-094-1	Color (true)	99.8					1.08	
EPA 180.1 Rev. 2.0	Turbidity	99.5					1.72	
EPA 200.7 Rev. 4.4	Calcium	100	99.6					2.37
	Iron	101	101	103	104			1.43
	Magnesium	101	99.3	102	104			1.64
	Potassium	99.8	99.9	103	99.8			1.89
	Sodium	107	105					1.90
	Strontium	102	99.9	103	104			2.78
	Tin	98.6	97.9	98.6	104			0.688
	Titanium	99.7	99.0	99.9	103			0.867
	Vanadium	100	100	101	105			0.908
	Zinc	97.2	98.0	98.9	105			0.940
EPA 200.8 Rev. 5.4	Aluminum	97.3	97.1	98.2	98.2			1.01
	Antimony	98.5	98.6	97.5	97.7			1.04
	Arsenic	93.5	94.0	93.6	92.2			0.482
	Barium	100	99.1	99.0	98.1			0.136
	Beryllium	91.7	92.2	91.6	89.2			0.705
	Boron	100	101	101	102			0.124
	Cadmium	97.0	97.1	95.9	97.0			1.24
	Chromium	92.5	93.1	93.3	91.9			0.266
	Cobalt	90.0	89.4	89.4	91.1			0.0368
	Copper	93.8	95.4	95.6	92.1			0.215
	Lead	95.4	96.1	97.1	95.0			1.03
	Lead	95.9	95.0	95.6				0.553
	Manganese	97.3	96.5	95.8	95.6			0.683
	Molybdenum	94.2	94.8	94.6	94.5			0.221
	Nickel	89.8	89.7	89.2	92.9			0.636
	Selenium	96.2	97.3	94.1	93.7			3.33
	Silver	108	106	105	105			0.675
	Thallium	96.3	98.3	99.2	98.5			0.894
EPA 300.0 Rev. 2.1	Chloride	98.2	96.0	96.9			0.622	
	Chloride	98.5	99.6				1.08	
	Sulfate	96.2	94.6	95.6			0.0756	
	Sulfate	97.7	98.0				1.38	
EPA 350.1 Rev. 2.0	Ammonia-N	97.4	101	99.4				1.25
	Ammonia-N	97.2	98.2	99.0				0.752
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	103	109				4.49
	Kjeldahl Nitrogen	104	103	100				2.03
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102	103				0.976
EPA 365.1 Rev. 2.0	Total-P	103	102	102				0.191
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104	102	103				0.976
SM 2320 B-2011	Total Alkalinity	98.1					1.31	
SM 2540 C-2015	TDS	94.8					7.73	
SM 2540 D-2015	TSS	92.3						
SM 4500-F- C-2011	Fluoride	102	101	101				0.0
SM 5310 B-2011	Organic Carbon	93.6	93.8	96.2				1.72

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2430617, 2430618, 2430623, 2430624
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2430617, 2430618, 2430623, 2430624

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2430633, 2430634
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2430633, 2430634
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2430617, 2430618, 2430623, 2430624
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2430617, 2430618, 2430623, 2430624
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2430619, 2430620, 2430625, 2430626
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2430619, 2430620, 2430625, 2430626
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2430619, 2430620, 2430625, 2430626
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2430619, 2430620, 2430625, 2430626
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2430621, 2430622
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2430617, 2430618, 2430623, 2430624
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2430633, 2430634
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2430617, 2430618, 2430623, 2430624
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2430617, 2430618, 2430623, 2430624
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2430617, 2430618, 2430623, 2430624
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2430619, 2430620, 2430625, 2430626

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	08/11/2023			08/11/2023 14:32	Chandler E Cox	2430617
	08/11/2023			08/11/2023 14:33	Chandler E Cox	2430618, 2430623
	08/11/2023			08/11/2023 14:34	Chandler E Cox	2430624
EPA 180.1 Rev. 2.0	08/11/2023			08/11/2023 13:36	Khloe J Berg	2430617
	08/11/2023			08/11/2023 13:37	Khloe J Berg	2430618
	08/11/2023			08/11/2023 13:40	Khloe J Berg	2430623
	08/11/2023			08/11/2023 13:41	Khloe J Berg	2430624
EPA 200.7 Rev. 4.4	08/11/2023	08/16/2023 12:35	George D Taylor	08/17/2023 16:29	Samatha Luckman	2430633
	08/11/2023	08/16/2023 12:35	George D Taylor	08/17/2023 16:36	Samatha Luckman	2430634
EPA 200.8 Rev. 5.4	08/11/2023	08/21/2023 12:45	George D Taylor	08/22/2023 19:11	Conrad Hartmann	2430633
	08/11/2023	08/21/2023 12:45	George D Taylor	08/22/2023 19:20	Conrad Hartmann	2430634
	08/11/2023	08/21/2023 12:45	George D Taylor	08/23/2023 14:27	Conrad Hartmann	2430633
	08/11/2023	08/21/2023 12:45	George D Taylor	08/23/2023 14:34	Conrad Hartmann	2430634
EPA 300.0 Rev. 2.1	08/11/2023	08/28/2023 13:25	George D Taylor	08/29/2023 15:26	Emily M Philpot	2430634
	08/11/2023			08/17/2023 15:30	James L Waggeberby	2430618
	08/11/2023			08/17/2023 16:15	James L Waggeberby	2430623
	08/11/2023			08/17/2023 16:31	James L Waggeberby	2430624
EPA 350.1 Rev. 2.0	08/11/2023			08/29/2023 16:56	James L Waggeberby	2430617
	08/11/2023			08/21/2023 14:13	Khloe J Berg	2430619
	08/11/2023			08/21/2023 14:14	Khloe J Berg	2430620
	08/11/2023			08/21/2023 14:15	Khloe J Berg	2430625
EPA 351.2 Rev. 2.0	08/11/2023			08/21/2023 14:27	Khloe J Berg	2430626
	08/11/2023	08/14/2023 13:41	Ping Hua	08/15/2023 17:26	Ping Hua	2430619
	08/11/2023	08/16/2023 11:46	Dana G. Hughes	08/17/2023 14:05	Samantha L Bates	2430620
	08/11/2023	08/16/2023 11:46	Dana G. Hughes	08/17/2023 14:09	Samantha L Bates	2430625
EPA 353.2 Rev. 2.0	08/11/2023	08/16/2023 11:46	Dana G. Hughes	08/17/2023 14:11	Samantha L Bates	2430626
	08/11/2023			08/28/2023 10:30	Beverly Y. Sanders	2430619
	08/11/2023			08/28/2023 10:31	Beverly Y. Sanders	2430620
	08/11/2023			08/28/2023 10:32	Beverly Y. Sanders	2430625
EPA 365.1 Rev. 2.0	08/11/2023			08/28/2023 10:33	Beverly Y. Sanders	2430626
	08/11/2023	08/14/2023 15:42	Adam P Silver	08/15/2023 09:51	James L Waggeberby	2430619
	08/11/2023	08/14/2023 15:42	Adam P Silver	08/15/2023 11:46	James L Waggeberby	2430620
	08/11/2023	08/14/2023 15:42	Adam P Silver	08/15/2023 11:47	James L Waggeberby	2430625
EPA 365.1 Rev. 2.0 dissolved	08/11/2023	08/14/2023 15:42	Adam P Silver	08/15/2023 11:48	James L Waggeberby	2430626
	08/11/2023			08/11/2023 13:48	Adam P Silver	2430622
	08/11/2023			08/11/2023 13:54	Adam P Silver	2430621
	08/11/2023			08/17/2023 07:18	Dale L. Simmons	2430617
SM 2320 B-2011	08/11/2023			08/17/2023 07:30	Dale L. Simmons	2430618
	08/11/2023			08/17/2023 07:43	Dale L. Simmons	2430623
	08/11/2023			08/17/2023 07:55	Dale L. Simmons	2430624

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2340 B-2011	08/11/2023			08/17/2023 16:29	Samatha Luckman	2430633
	08/11/2023			08/17/2023 16:36	Samatha Luckman	2430634
SM 2540 C-2015	08/11/2023			08/15/2023 14:46	Yijie Li	2430617, 2430618, 2430623, 2430624
SM 2540 D-2015	08/11/2023			08/15/2023 14:46	Yijie Li	2430617, 2430618, 2430623, 2430624
SM 4500-F- C-2011	08/11/2023			08/17/2023 07:18	Dale L. Simmons	2430617
	08/11/2023			08/17/2023 07:30	Dale L. Simmons	2430618
	08/11/2023			08/17/2023 07:43	Dale L. Simmons	2430623
	08/11/2023			08/17/2023 07:55	Dale L. Simmons	2430624
SM 5310 B-2011	08/11/2023			08/15/2023 00:07	Elise M. Gillis	2430625
	08/11/2023			08/15/2023 05:30	Elise M. Gillis	2430619
	08/11/2023			08/15/2023 05:44	Elise M. Gillis	2430620
	08/11/2023			08/15/2023 05:57	Elise M. Gillis	2430626