

Chemical Analysis Report

SO-DIST-2024-01-26-01

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

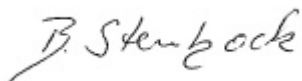
Event Description: **2024 SMP: Glades Sloughs**
Request ID: **RQ-2024-01-22-11**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
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FLDEP South District Office
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Fort Myers, FL 33901-3381
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 16-FEB-2024 13:03



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: CHAPARRALSLOUGHATSR29

Collection Date/Time: 01/25/2024 08:45

Field ID: G3SD0224

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2463596	DEP SOP: NU-094-1	Color (true)	500		PCU	P440539	
	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P440548	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P440894	
		Sulfate	0.29	I	mg SO4/L	P440897	
	SM 2320 B-2011	Total Alkalinity	5.3		mg CaCO3/L	P440915	
	SM 2540 C-2015	TDS	126		mg/L	P440998	RPD
	SM 2540 D-2015	TSS	11		mg/L	P440829	
	SM 4500-F- C-2011	Fluoride	0.052	I	mg F/L	P440920	
2463598	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P441066	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P440822	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P440706	
	EPA 365.1 Rev. 2.0	Total-P	0.064		mg P/L	P440685	
	SM 5310 B-2014	Organic Carbon	40		mg C/L	P440631	
2463614	EPA 200.7 Rev. 4.4	Calcium	7.47		mg/L	P440576	
		Iron	980		ug/L	P440931	
		Magnesium	2.08		mg/L	P440576	
		Potassium	1.2	I	mg/L	P440576	
		Sodium	9.5		mg/L	P440576	
		Strontium	32.0		ug/L	P440576	
		Tin	3.0	U	ug/L	P440576	
		Titanium	1.7	I	ug/L	P440576	
	EPA 200.8 Rev. 5.4	Vanadium	2.0	U	ug/L	P440576	
		Zinc	10	I	ug/L	P440576	
		Aluminum	299		ug/L	P440576	
		Antimony	0.059	I	ug/L	P440576	
		Arsenic	1.02		ug/L	P440576	
		Barium	6.82		ug/L	P440576	
		Beryllium	0.025	I	ug/L	P440576	
		Boron	18.9		ug/L	P440576	
		Cadmium	0.020	U	ug/L	P440576	
		Chromium	0.82	I	ug/L	P440576	
		Cobalt	0.184		ug/L	P440576	
		Copper	0.73	I	ug/L	P440576	
		Lead	0.73		ug/L	P440576	
		Manganese	10.3		ug/L	P440576	
		Molybdenum	0.15	U	ug/L	P440576	
		Nickel	0.50	U	ug/L	P440576	
		Selenium	0.20	U	ug/L	P440576	
		Silver	0.010	U	ug/L	P440576	
		Thallium	0.10	U	ug/L	P440576	
		Hardness	27.2		mg/L	P440576	
	SM 2340 B-2011						

Field ID: G3SD0224

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

SM 5310 B-2014: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 01/31/2024.

Sample Location: GOPHER GULLY AT US27

Collection Date/Time: 01/25/2024 09:15

Field ID: G4SD0216					Matrix: W-SURF-FRH		
Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2463588	DEP SOP: NU-094-1	Color (true)	650		PCU	P440539	
	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P440548	
	EPA 300.0 Rev. 2.1	Chloride	32		mg Cl/L	P440894	
		Sulfate	2.3		mg SO4/L	P440897	
	SM 2320 B-2011	Total Alkalinity	21		mg CaCO3/L	P440873	
	SM 2540 C-2015	TDS	212		mg/L	P440998	RPD
	SM 2540 D-2015	TSS	3	I	mg/L	P440829	
	SM 4500-F- C-2011	Fluoride	0.14		mg F/L	P440876	RPD
2463592	EPA 350.1 Rev. 2.0	Ammonia-N	0.24		mg N/L	P441066	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.0		mg N/L	P440822	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P440706	
	EPA 365.1 Rev. 2.0	Total-P	0.95		mg P/L	P440660	
	SM 5310 B-2014	Organic Carbon	54		mg C/L	P440713	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: GATOR SLOUGH AT US27

Collection Date/Time: 01/25/2024 09:35

Field ID: G4SD0214

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2463589	DEP SOP: NU-094-1	Color (true)	440		PCU	P440539	
	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P440548	
	EPA 300.0 Rev. 2.1	Chloride	8.3		mg Cl/L	P440894	
		Sulfate	1.4		mg SO4/L	P440897	
	SM 2320 B-2011	Total Alkalinity	2.1	I	mg CaCO3/L	P440873	
	SM 2540 C-2015	TDS	103		mg/L	P440998	RPD
	SM 2540 D-2015	TSS	3	I	mg/L	P440829	
	SM 4500-F- C-2011	Fluoride	0.031	I	mg F/L	P440876	RPD
2463593	EPA 350.1 Rev. 2.0	Ammonia-N	0.045		mg N/L	P441066	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P440982	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.021		mg N/L	P440706	
	EPA 365.1 Rev. 2.0	Total-P	0.51		mg P/L	P440685	
	SM 5310 B-2014	Organic Carbon	35		mg C/L	P440713	

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: BOOTHEELCREEKEASTBRANCH

Collection Date/Time: 01/25/2024 10:05

Field ID: G4SD0105

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2463590	DEP SOP: NU-094-1	Color (true)	440		PCU	P440539	
	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P440548	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P440894	
		Sulfate	2.3		mg SO4/L	P440897	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P440873	
	SM 2540 C-2015	TDS	149		mg/L	P440998	RPD
	SM 2540 D-2015	TSS	3	I	mg/L	P440829	
	SM 4500-F- C-2011	Fluoride	0.052	I	mg F/L	P440876	RPD
2463594	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P441066	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P440982	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P440706	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P440685	
	SM 5310 B-2014	Organic Carbon	47		mg C/L	P440631	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 5310 B-2014: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: JOHNHENRYSLOUGH ATCR731

Collection Date/Time: 01/25/2024 10:35

Field ID: G4SD0215

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2463591	DEP SOP: NU-094-1	Color (true)	360		PCU	P440539	
	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P440548	
	EPA 300.0 Rev. 2.1	Chloride	110		mg Cl/L	P440894	
		Sulfate	31		mg SO4/L	P440897	
	SM 2320 B-2011	Total Alkalinity	27		mg CaCO3/L	P440873	
	SM 2540 C-2015	TDS	353		mg/L	P440998	RPD
	SM 2540 D-2015	TSS	3	I	mg/L	P440829	
	SM 4500-F- C-2011	Fluoride	0.11		mg F/L	P440876	RPD
2463595	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P441066	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.1		mg N/L	P440822	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.095		mg N/L	P440706	
	EPA 365.1 Rev. 2.0	Total-P	0.24		mg P/L	P440685	
	SM 5310 B-2014	Organic Carbon	43		mg C/L	P440631	

Ref. Method and Comment:
 SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
 EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.
 SM 5310 B-2014: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: RAINEY SLOUGH AT FARABEE RD

Collection Date/Time: 01/25/2024 10:55

Field ID: G4SD0111

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2463597	DEP SOP: NU-094-1	Color (true)	600		PCU	P440539	
	EPA 180.1 Rev. 2.0	Turbidity	4.5		NTU	P440548	
	EPA 300.0 Rev. 2.1	Chloride	21		mg Cl/L	P440894	
		Sulfate	0.74		mg SO4/L	P440897	
	SM 2320 B-2011	Total Alkalinity	4.4		mg CaCO3/L	P440915	
	SM 2540 C-2015	TDS	152		mg/L	P440998	RPD
	SM 2540 D-2015	TSS	34		mg/L	P440829	
2463599	SM 4500-F- C-2011	Fluoride	0.090	I	mg F/L	P440920	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.042		mg N/L	P440719	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P440822	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P440707	
	EPA 365.1 Rev. 2.0	Total-P	0.23		mg P/L	P440685	
2463615	SM 5310 B-2014	Organic Carbon	52		mg C/L	P440631	
	EPA 200.7 Rev. 4.4	Calcium	7.31		mg/L	P440576	
		Iron	1.70E+03		ug/L	P440576	
		Magnesium	3.13		mg/L	P440576	
		Potassium	1.2	I	mg/L	P440576	
		Sodium	13.0		mg/L	P440576	
		Strontium	57.8		ug/L	P440576	
		Tin	3.0	U	ug/L	P440576	
		Titanium	2.6	I	ug/L	P440576	
		Vanadium	2.0	U	ug/L	P440576	
		Zinc	19	I	ug/L	P440576	
	EPA 200.8 Rev. 5.4	Aluminum	656		ug/L	P440576	
		Antimony	0.066	I	ug/L	P440576	
		Arsenic	1.31		ug/L	P440576	
		Barium	16.9		ug/L	P440576	
		Beryllium	0.108		ug/L	P440576	
		Boron	22.3		ug/L	P440576	
		Cadmium	0.021	I	ug/L	P440576	
		Chromium	1.4	I	ug/L	P440576	
		Cobalt	0.763		ug/L	P440576	
		Copper	1.20		ug/L	P440576	
		Lead	1.14		ug/L	P440576	
		Manganese	44.9		ug/L	P440576	
		Molybdenum	0.15	U	ug/L	P440576	
		Nickel	1.1	I	ug/L	P440576	
		Selenium	0.20	U	ug/L	P440576	
		Silver	0.010	U	ug/L	P440576	
		Thallium	0.10	U	ug/L	P440576	
	SM 2340 B-2011	Hardness	31.1		mg/L	P440576	

Field ID: G4SD0111

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.
SM 5310 B-2014: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.
EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 01/31/2024.

Quality Assurance Report

Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P440539

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P440548

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P440576

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 200.7 Rev. 4.4
Batch ID: P440931

Component	Result	Code	Units
Iron	30	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P440576

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P440894

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P440897

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P440719

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P441066

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P440822

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P440982

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P440706

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P440707

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P440660

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
Batch ID: P440685

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

Reference Method: SM 2320 B-2011
Batch ID: P440873

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

Reference Method: SM 2320 B-2011
Batch ID: P440915

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

Reference Method: SM 2540 C-2015
Batch ID: P440998

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P440829

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P440876

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P440920

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2014
Batch ID: P440631

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

Reference Method: SM 5310 B-2014
Batch ID: P440713

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: P440539

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.7		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P440548

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P440576

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	109		P	85 - 115
Iron	102		P	85 - 115
Magnesium	109		P	85 - 115
Potassium	104		P	85 - 115
Sodium	107		P	85 - 115
Strontium	104		P	85 - 115
Tin	98.5		P	85 - 115
Titanium	104		P	85 - 115
Vanadium	102		P	85 - 115
Zinc	99.6		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P440931

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P440576

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	100		P	85 - 115
Arsenic	98.8		P	85 - 115
Barium	98.8		P	85 - 115
Beryllium	94.0		P	85 - 115
Boron	105		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	101		P	85 - 115
Cobalt	97.5		P	85 - 115
Copper	96.3		P	85 - 115
Lead	91.6		P	85 - 115
Manganese	101		P	85 - 115
Molybdenum	97.9		P	85 - 115
Nickel	97.8		P	85 - 115
Selenium	99.7		P	85 - 115
Silver	90.6		P	85 - 115
Thallium	95.4		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P440894

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P440897

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P440719

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P441066

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P440822

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P440982

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P440706

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P440707

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: P440660

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P440685

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

Reference Method: SM 2320 B-2011
Batch ID: P440873

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	92 - 105

Reference Method: SM 2320 B-2011
Batch ID: P440915

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P440998

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	93.2		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P440829

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	94.4		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P440876

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	103		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P440920

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	94 - 106

Reference Method: SM 5310 B-2014
Batch ID: P440631

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

Reference Method: SM 5310 B-2014
Batch ID: P440713

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P440576

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2463528	Calcium	103		P	80 - 120
2463528	Iron	113	113	P/P	80 - 120
2463528	Magnesium	107		P	80 - 120
2463528	Potassium	104	104	P/P	80 - 120
2463528	Sodium	105	104	P/P	80 - 120
2463528	Strontium	101	101	P/P	80 - 120
2463528	Tin	94.5	94.7	P/P	80 - 120
2463528	Titanium	101	102	P/P	80 - 120
2463528	Vanadium	99.4	99.4	P/P	80 - 120
2463528	Zinc	95.4	95.0	P/P	80 - 120
2463555	Calcium	106		P	80 - 120
2463555	Iron	113		P	80 - 120
2463555	Magnesium	107		P	80 - 120
2463555	Potassium	103		P	80 - 120
2463555	Sodium	106		P	80 - 120
2463555	Strontium	102		P	80 - 120
2463555	Tin	95.1		P	80 - 120
2463555	Titanium	103		P	80 - 120
2463555	Vanadium	101		P	80 - 120
2463555	Zinc	95.6		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P440931

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2465641	Iron	102	101	P/P	80 - 120
2465754	Iron	101		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P440576

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2463528	Aluminum	103	101	P/P	80 - 120
2463528	Antimony	105	104	P/P	80 - 120
2463528	Arsenic	104	102	P/P	80 - 120
2463528	Barium	104	103	P/P	80 - 120
2463528	Beryllium	100	101	P/P	80 - 120
2463528	Boron	107	106	P/P	80 - 120
2463528	Cadmium	105	106	P/P	80 - 120
2463528	Chromium	109	108	P/P	80 - 120
2463528	Cobalt	103	101	P/P	80 - 120
2463528	Copper	98.8	97.2	P/P	80 - 120
2463528	Lead	95.9	95.3	P/P	80 - 120
2463528	Manganese	106	104	P/P	80 - 120
2463528	Molybdenum	105	105	P/P	80 - 120
2463528	Nickel	101	100	P/P	80 - 120
2463528	Selenium	103	103	P/P	80 - 120
2463528	Silver	92.7	92.6	P/P	80 - 120
2463528	Thallium	103	103	P/P	80 - 120
2463555	Aluminum	103		P	80 - 120
2463555	Antimony	106		P	80 - 120
2463555	Arsenic	105		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P440576

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2463555	Barium	104		P	80 - 120
2463555	Beryllium	100		P	80 - 120
2463555	Boron	111		P	80 - 120
2463555	Cadmium	108		P	80 - 120
2463555	Chromium	91.7		P	80 - 120
2463555	Cobalt	102		P	80 - 120
2463555	Copper	99.0		P	80 - 120
2463555	Lead	98.2		P	80 - 120
2463555	Manganese	106		P	80 - 120
2463555	Molybdenum	107		P	80 - 120
2463555	Nickel	98.3		P	80 - 120
2463555	Selenium	102		P	80 - 120
2463555	Silver	94.6		P	80 - 120
2463555	Thallium	105		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P440894

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2463628	Chloride	100		P	90 - 110
2463671	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P440897

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2463628	Sulfate	98.5		P	90 - 110
2463671	Sulfate	99.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P440719

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2463599	Ammonia-N	98.2	98.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P441066

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2463593	Ammonia-N	98.6	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P440982

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2465719	Kjeldahl Nitrogen	99.0	99.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P440706

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2463553	NO2NO3-N	98.5	99.5	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P440707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2463599	NO2NO3-N	93.4	94.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P440660

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2463553	Total-P	110	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P440685

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2463767	Total-P	105	104	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P440876

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2463552	Fluoride	98.1	103	P/P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P440920

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2463672	Fluoride	99.5	100	P/P	94 - 106

Reference Method: SM 5310 B-2014
Batch ID: P440713

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2463402	Organic Carbon	100	100	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P440539

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463726	Color (true)	2.61	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P440548

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463519	Turbidity	18.8	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P440576

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463528	Calcium	0.188	Spike	P	0 - 20
2463528	Iron	0.291	Spike	P	0 - 20
2463528	Magnesium	0.216	Spike	P	0 - 20
2463528	Potassium	0.569	Spike	P	0 - 20
2463528	Sodium	0.667	Spike	P	0 - 20
2463528	Strontium	0.152	Spike	P	0 - 20
2463528	Tin	0.216	Spike	P	0 - 20
2463528	Titanium	0.142	Spike	P	0 - 20
2463528	Vanadium	0.0458	Spike	P	0 - 20
2463528	Zinc	0.389	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P440931

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2465641	Iron	0.806	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P440576

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463528	Aluminum	1.72	Spike	P	0 - 20
2463528	Antimony	0.769	Spike	P	0 - 20
2463528	Arsenic	1.97	Spike	P	0 - 20
2463528	Barium	1.00	Spike	P	0 - 20
2463528	Beryllium	0.861	Spike	P	0 - 20
2463528	Boron	0.983	Spike	P	0 - 20
2463528	Cadmium	1.49	Spike	P	0 - 20
2463528	Chromium	1.15	Spike	P	0 - 20
2463528	Cobalt	1.61	Spike	P	0 - 20
2463528	Copper	1.68	Spike	P	0 - 20
2463528	Lead	0.602	Spike	P	0 - 20
2463528	Manganese	1.54	Spike	P	0 - 20
2463528	Molybdenum	0.420	Spike	P	0 - 20
2463528	Nickel	1.07	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P440576

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463528	Selenium	0.369	Spike	P	0 - 20
2463528	Silver	0.118	Spike	P	0 - 20
2463528	Thallium	0.306	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P440894

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463628	Chloride	0.335	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P440897

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463628	Sulfate	0.472	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P440719

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463599	Ammonia-N	0.0	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P441066

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463593	Ammonia-N	0.317	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P440822

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463585	Kjeldahl Nitrogen	4.94	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P440982

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2465719	Kjeldahl Nitrogen	0.435	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P440706

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P440706

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463553	NO2NO3-N	0.543	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P440707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463599	NO2NO3-N	1.02	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P440660

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463553	Total-P	1.38	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P440685

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463767	Total-P	0.452	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P440873

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463552	Total Alkalinity	1.21	Sample	P	0 - 3.9

Reference Method: SM 2320 B-2011
Batch ID: P440915

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463672	Total Alkalinity	0.302	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P440998

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463397	TDS	10.2	Sample	F	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P440876

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463552	Fluoride	4.51	Spike	F	0 - 1.9

Quality Assurance Report
Precision

Reference Method: SM 4500-F- C-2011
Batch ID: P440920

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463672	Fluoride	0.473	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2014
Batch ID: P440631

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463594	Organic Carbon	1.02	Spike	P	0 - 15

Reference Method: SM 5310 B-2014
Batch ID: P440713

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463402	Organic Carbon	0.0999	Spike	P	0 - 15

* 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: A123860
Included Lab Sample IDs: 2463588, 2463589, 2463590, 2463591, 2463596, 2463597

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.5	99.2	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A123862
Included Lab Sample IDs: 2463588, 2463589, 2463590, 2463591, 2463596, 2463597

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.5	P/P	95 - 105
Turbidity	99.5	100	P/P	95 - 105

Reference Method: SM 5310 B-2014
Run ID: A123895
Included Lab Sample IDs: 2463594, 2463595, 2463598, 2463599

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	111	96.9	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A123908
Included Lab Sample IDs: 2463588, 2463589, 2463590, 2463591, 2463596, 2463597

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.3	99.3	P/P	90 - 110
Sulfate	98.4	98.4	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A123910
Included Lab Sample IDs: 2463614, 2463615

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	100	P/P	90 - 110
Antimony	99.7	99.3	P/P	90 - 110
Arsenic	97.4	97.6	P/P	90 - 110
Barium	98.6	98.1	P/P	90 - 110
Beryllium	99.2	98.9	P/P	90 - 110
Boron	106	105	P/P	90 - 110
Cadmium	100	99.4	P/P	90 - 110
Chromium	98.0	96.6	P/P	90 - 110
Cobalt	95.3	95.0	P/P	90 - 110
Lead	93.6	94.3	P/P	90 - 110
Manganese	96.8	96.3	P/P	90 - 110
Molybdenum	100	100	P/P	90 - 110
Nickel	95.1	94.4	P/P	90 - 110
Selenium	97.1	98.5	P/P	90 - 110
Silver	101	101	P/P	90 - 110
Thallium	101	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A123913

Included Lab Sample IDs: 2463592

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	94.7	99.8	P/P	90 - 110

Reference Method: SM 5310 B-2014

Run ID: A123916

Included Lab Sample IDs: 2463592, 2463593

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	121	97.6	P/P	70 - 130

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A123917

Included Lab Sample IDs: 2463592, 2463593, 2463594, 2463595, 2463598, 2463599

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110
NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A123919

Included Lab Sample IDs: 2463599

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.9	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A123934

Included Lab Sample IDs: 2463614, 2463615

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	96.3	92.7	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A123937

Included Lab Sample IDs: 2463614, 2463615

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	106	106	P/P	90 - 110
Calcium	106	106	P/P	90 - 110
Iron	106	107	P/P	90 - 110
Magnesium	106	106	P/P	90 - 110
Magnesium	107	106	P/P	90 - 110
Potassium	103	104	P/P	90 - 110
Potassium	104	103	P/P	90 - 110
Sodium	101	101	P/P	90 - 110
Sodium	101	101	P/P	90 - 110
Strontium	103	104	P/P	90 - 110
Strontium	104	103	P/P	90 - 110
Tin	101	101	P/P	90 - 110
Tin	102	101	P/P	90 - 110
Titanium	104	104	P/P	90 - 110
Titanium	104	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A123937

Included Lab Sample IDs: 2463614, 2463615

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A123950

Included Lab Sample IDs: 2463593, 2463594, 2463595, 2463598, 2463599

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

Reference Method: SM 2320 B-2011

Run ID: A123977

Included Lab Sample IDs: 2463588, 2463589, 2463590, 2463591

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.8	95.8	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A123977

Included Lab Sample IDs: 2463588, 2463589, 2463590, 2463591

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	104	105	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A123988

Included Lab Sample IDs: 2463596, 2463597

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.5	94.9	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A123988

Included Lab Sample IDs: 2463596, 2463597

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A124004

Included Lab Sample IDs: 2463592, 2463595, 2463598, 2463599

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.0	93.9	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A124045
Included Lab Sample IDs: 2463592, 2463593, 2463594, 2463595, 2463598

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.6	97.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A124059
Included Lab Sample IDs: 2463593, 2463594

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	92.2	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A124152
Included Lab Sample IDs: 2463614

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	98.4	97.8	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)	99.7				2.61	
EPA 180.1 Rev. 2.0	Turbidity	104				18.8	
EPA 200.7 Rev. 4.4	Calcium	109	103	106			0.188
	Iron	102	113	113	113		0.291
	Iron	102	102	101	101		0.806
	Magnesium	109	107	107			0.216
	Potassium	104	104	104	103		0.569
	Sodium	107	105	104	106		0.667
	Strontium	104	101	101	102		0.152
	Tin	98.5	94.5	94.7	95.1		0.216
	Titanium	104	101	102	103		0.142
	Vanadium	102	99.4	99.4	101		0.0458
	Zinc	99.6	95.4	95.0	95.6		0.389
EPA 200.8 Rev. 5.4	Aluminum	100	103	101	103		1.72
	Antimony	100	105	104	106		0.769
	Arsenic	98.8	104	102	105		1.97
	Barium	98.8	104	103	104		1.00
	Beryllium	94.0	100	100	101		0.861
	Boron	105	107	106	111		0.983
	Cadmium	101	105	106	108		1.49
	Chromium	101	109	108	91.7		1.15
	Cobalt	97.5	103	101	102		1.61
	Copper	96.3	98.8	97.2	99.0		1.68
	Lead	91.6	95.9	95.3	98.2		0.602
	Manganese	101	106	104	106		1.54
	Molybdenum	97.9	105	105	107		0.420
	Nickel	97.8	101	100	98.3		1.07
	Selenium	99.7	103	103	102		0.369
	Silver	90.6	92.7	92.6	94.6		0.118
	Thallium	95.4	103	103	105		0.306
EPA 300.0 Rev. 2.1	Chloride	101	100	101		0.335	
	Sulfate	100	98.5	99.4		0.472	
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	98.2	98.2			0.0
	Ammonia-N	97.0	98.6	98.0			0.317
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105					4.94
	Kjeldahl Nitrogen	106	99.0	99.6			0.435
EPA 353.2 Rev. 2.0	NO2NO3-N	102	98.5	99.5			0.543
	NO2NO3-N	101	93.4	94.4			1.02
EPA 365.1 Rev. 2.0	Total-P	106	110	108			1.38
	Total-P	104	105	104			0.452
SM 2320 B-2011	Total Alkalinity	101				1.21	
	Total Alkalinity	100				0.302	
SM 2540 C-2015	TDS	93.2				10.2	
SM 2540 D-2015	TSS	94.4					
SM 4500-F- C-2011	Fluoride	103	98.1	103			4.51
	Fluoride	97.9	99.5	100			0.473
SM 5310 B-2014	Organic Carbon	97.8					1.02
	Organic Carbon	100	100	100			0.0999

Reference Method Descriptions

Method

Description

Associated Samples

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2463588, 2463589, 2463590, 2463591, 2463596, 2463597
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2463588, 2463589, 2463590, 2463591, 2463596, 2463597
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2463614, 2463615
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2463614, 2463615
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2463588, 2463589, 2463590, 2463591, 2463596, 2463597
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2463588, 2463589, 2463590, 2463591, 2463596, 2463597
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2463592, 2463593, 2463594, 2463595, 2463598, 2463599
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2463592, 2463593, 2463594, 2463595, 2463598, 2463599
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2463592, 2463593, 2463594, 2463595, 2463598, 2463599
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2463592, 2463593, 2463594, 2463595, 2463598, 2463599
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2463588, 2463589, 2463590, 2463591, 2463596, 2463597
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2463614, 2463615
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2463588, 2463589, 2463590, 2463591, 2463596, 2463597
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2463588, 2463589, 2463590, 2463591, 2463596, 2463597
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2463588, 2463589, 2463590, 2463591, 2463596, 2463597
SM 5310 B-2014	Nonpurgeable Organic Carbon in aqueous matrices	2463592, 2463593, 2463594, 2463595, 2463598, 2463599

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	01/26/2024			01/26/2024 15:06	Anna M. Plaviak	2463588, 2463589
	01/26/2024			01/26/2024 15:07	Anna M. Plaviak	2463590
	01/26/2024			01/26/2024 15:08	Anna M. Plaviak	2463591
	01/26/2024			01/26/2024 15:09	Anna M. Plaviak	2463596, 2463597
	01/26/2024			01/26/2024 12:05	Dipa Joshi	2463588
EPA 180.1 Rev. 2.0	01/26/2024			01/26/2024 12:08	Dipa Joshi	2463589
	01/26/2024			01/26/2024 12:09	Dipa Joshi	2463590
	01/26/2024			01/26/2024 12:10	Dipa Joshi	2463591
	01/26/2024			01/26/2024 12:12	Dipa Joshi	2463596
	01/26/2024			01/26/2024 12:18	Dipa Joshi	2463597
EPA 200.7 Rev. 4.4	01/26/2024	01/29/2024 12:10	George D Taylor	01/31/2024 17:28	Chase Roberts	2463614
	01/26/2024	01/29/2024 12:10	George D Taylor	01/31/2024 18:01	Chase Roberts	2463615
	01/26/2024	02/05/2024 13:45	George D Taylor	02/13/2024 17:25	McKinley C Carter	2463614
EPA 200.8 Rev. 5.4	01/26/2024	01/29/2024 12:10	George D Taylor	01/30/2024 20:31	Emily M Philpot	2463614
	01/26/2024	01/29/2024 12:10	George D Taylor	01/30/2024 20:40	Emily M Philpot	2463615
	01/26/2024	01/29/2024 12:10	George D Taylor	01/31/2024 13:47	Conrad Hartmann	2463614
	01/26/2024	01/29/2024 12:10	George D Taylor	01/31/2024 13:52	Conrad Hartmann	2463615
EPA 300.0 Rev. 2.1	01/26/2024			01/31/2024 23:35	James L Waggeberby	2463588
	01/26/2024			01/31/2024 23:50	James L Waggeberby	2463589
	01/26/2024			02/01/2024 00:06	James L Waggeberby	2463590
	01/26/2024			02/01/2024 00:21	James L Waggeberby	2463591
	01/26/2024			02/01/2024 00:36	James L Waggeberby	2463596
	01/26/2024			02/01/2024 00:51	James L Waggeberby	2463597
EPA 350.1 Rev. 2.0	01/26/2024			01/31/2024 11:54	Ping Hua	2463599
	01/26/2024			02/07/2024 11:33	Khloe J Berg	2463593
	01/26/2024			02/07/2024 11:40	Khloe J Berg	2463592
	01/26/2024			02/07/2024 11:41	Khloe J Berg	2463594
	01/26/2024			02/07/2024 11:43	Khloe J Berg	2463595
	01/26/2024			02/07/2024 11:44	Khloe J Berg	2463598
EPA 351.2 Rev. 2.0	01/26/2024	02/02/2024 12:31	Ping Hua	02/05/2024 17:27	Samantha L Bates	2463595
	01/26/2024	02/02/2024 12:31	Ping Hua	02/05/2024 17:28	Samantha L Bates	2463598
	01/26/2024	02/02/2024 12:31	Ping Hua	02/05/2024 17:30	Samantha L Bates	2463599
	01/26/2024	02/02/2024 12:31	Ping Hua	02/05/2024 17:35	Samantha L Bates	2463592
	01/26/2024	02/07/2024 11:12	Ping Hua	02/08/2024 10:52	Ping Hua	2463593
	01/26/2024	02/07/2024 11:12	Ping Hua	02/08/2024 10:54	Ping Hua	2463594
EPA 353.2 Rev. 2.0	01/26/2024			01/30/2024 12:32	Anna M. Plaviak	2463592
	01/26/2024			01/30/2024 12:33	Anna M. Plaviak	2463593
	01/26/2024			01/30/2024 12:34	Anna M. Plaviak	2463594
	01/26/2024			01/30/2024 12:35	Anna M. Plaviak	2463595
	01/26/2024			01/30/2024 12:36	Anna M. Plaviak	2463598

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 353.2 Rev. 2.0	01/26/2024			01/30/2024 12:43	Anna M. Plaviak	2463599
EPA 365.1 Rev. 2.0	01/26/2024	01/30/2024 14:24	Adam P Silver	01/31/2024 11:29	Elise M. Gillis	2463592
	01/26/2024	01/31/2024 14:45	Adam P Silver	02/01/2024 12:49	Simonne.V. Calhoun	2463593
	01/26/2024	01/31/2024 14:45	Adam P Silver	02/01/2024 12:52	Simonne.V. Calhoun	2463594
	01/26/2024	01/31/2024 14:45	Adam P Silver	02/01/2024 12:53	Simonne.V. Calhoun	2463595
	01/26/2024	01/31/2024 14:45	Adam P Silver	02/01/2024 12:54	Simonne.V. Calhoun	2463598, 2463599
SM 2320 B-2011	01/26/2024			02/01/2024 10:45	Dale L. Simmons	2463588
	01/26/2024			02/01/2024 10:55	Dale L. Simmons	2463589
	01/26/2024			02/01/2024 11:05	Dale L. Simmons	2463590
	01/26/2024			02/01/2024 11:18	Dale L. Simmons	2463591
	01/26/2024			02/01/2024 20:30	Dale L. Simmons	2463596
	01/26/2024			02/01/2024 20:42	Dale L. Simmons	2463597
SM 2340 B-2011	01/26/2024			01/31/2024 17:28	Chase Roberts	2463614
	01/26/2024			01/31/2024 18:01	Chase Roberts	2463615
SM 2540 C-2015	01/26/2024			01/30/2024 15:39	Yijie Li	2463588, 2463589, 2463590, 2463591, 2463596, 2463597
SM 2540 D-2015	01/26/2024			01/30/2024 15:39	Yijie Li	2463588, 2463589, 2463590, 2463591, 2463596, 2463597
SM 4500-F- C-2011	01/26/2024			02/01/2024 10:45	Dale L. Simmons	2463588
	01/26/2024			02/01/2024 10:55	Dale L. Simmons	2463589
	01/26/2024			02/01/2024 11:05	Dale L. Simmons	2463590
	01/26/2024			02/01/2024 11:18	Dale L. Simmons	2463591
	01/26/2024			02/01/2024 20:30	Dale L. Simmons	2463596
	01/26/2024			02/01/2024 20:42	Dale L. Simmons	2463597
SM 5310 B-2014	01/26/2024			01/29/2024 21:00	Khloe J Berg	2463594
	01/26/2024			01/29/2024 21:48	Khloe J Berg	2463595
	01/26/2024			01/29/2024 22:04	Khloe J Berg	2463598
	01/26/2024			01/29/2024 22:20	Khloe J Berg	2463599
	01/26/2024			01/30/2024 14:38	Khloe J Berg	2463592
	01/26/2024			01/30/2024 14:53	Khloe J Berg	2463593