

Chemical Analysis Report

CEN-DIST-2023-08-18-01

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

Event Description: **Run 18**
Request ID: **RQ-2023-08-14-18**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 14-SEP-2023 14:08



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 group are included in this report: 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: SECRET LAKE AT CENTER

Collection Date/Time: 08/17/2023 11:02

Field ID: G2CE0211

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2432095	DEP SOP: NU-094-1	Color (true)	18		PCU	P434060	
	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P434064	
	EPA 300.0 Rev. 2.1	Chloride	15	A	mg Cl/L	P434199	
		Sulfate	8.8	A	mg SO4/L	P434202	
	SM 2320 B-2011	Total Alkalinity	53		mg CaCO3/L	P434416	
	SM 2540 C-2015	TDS	100		mg/L	P434584	
	SM 2540 D-2015	TSS	2	I	mg/L	P434581	
	SM 4500-F- C-2011	Fluoride	0.050	I	mg F/L	P434144	
2432099	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P434482	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.70		mg N/L	P434462	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P434640	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P434113	
	SM 5310 B-2011	Organic Carbon	6.9		mg C/L	P434203	

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 KATHRYN AT CENTER

Collection Date/Time: 08/17/2023 11:44

Field ID: G2CE0217

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2432096	DEP SOP: NU-094-1	Color (true)	29		PCU	P434060	
	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P434064	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P434199	
		Sulfate	5.9		mg SO4/L	P434202	
	SM 2320 B-2011	Total Alkalinity	37		mg CaCO3/L	P434416	
	SM 2540 C-2015	TDS	93		mg/L	P434584	
	SM 2540 D-2015	TSS	5	I	mg/L	P434581	
	SM 4500-F- C-2011	Fluoride	0.060	I	mg F/L	P434144	
2432100	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P434482	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.88		mg N/L	P434462	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P434640	
	EPA 365.1 Rev. 2.0	Total-P	0.031		mg P/L	P434113	
	SM 5310 B-2011	Organic Carbon	8.7		mg C/L	P434203	

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 GRIFFIN AT CENTER

Collection Date/Time: 08/17/2023 12:22

Field ID: G2CE0207

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2432097	DEP SOP: NU-094-1	Color (true)	22		PCU	P434060	
	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P434064	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P434199	
		Sulfate	6.9		mg SO4/L	P434202	
	SM 2320 B-2011	Total Alkalinity	44		mg CaCO3/L	P434416	
	SM 2540 C-2015	TDS	92	A	mg/L	P434584	
	SM 2540 D-2015	TSS	2	IA	mg/L	P434581	
	SM 4500-F- C-2011	Fluoride	0.054	I	mg F/L	P434144	
2432101	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P434482	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P434462	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P434570	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P434113	
	SM 5310 B-2011	Organic Carbon	7.6		mg C/L	P434203	

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 MARION AT 105M SOUTHEAST OF
 CENTER OF LAKE**

Collection Date/Time: 08/17/2023 13:36

Field ID: G2CE0278

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2432098	DEP SOP: NU-094-1	Color (true)	21		PCU	P434060	
	EPA 180.1 Rev. 2.0	Turbidity	5.6		NTU	P434064	
	EPA 300.0 Rev. 2.1	Chloride	35		mg Cl/L	P434199	
		Sulfate	6.0		mg SO4/L	P434202	
	SM 2320 B-2011	Total Alkalinity	33		mg CaCO3/L	P434416	
	SM 2540 C-2015	TDS	111		mg/L	P434584	
	SM 2540 D-2015	TSS	6	I	mg/L	P434581	
	SM 4500-F- C-2011	Fluoride	0.12		mg F/L	P434144	
2432102	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P434318	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P434462	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P434570	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P434113	
	SM 5310 B-2011	Organic Carbon	10		mg C/L	P434339	

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 FLORIDA AT CENTER OF LAKE

Collection Date/Time: 08/17/2023 14:18

Field ID: G2CE0150

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2432092	DEP SOP: NU-094-1	Color (true)	58		PCU	P434060	
	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P434064	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P434199	
		Sulfate	4.9		mg SO4/L	P434202	
	SM 2320 B-2011	Total Alkalinity	39		mg CaCO3/L	P434416	
	SM 2540 C-2015	TDS	104		mg/L	P434584	
	SM 2540 D-2015	TSS	3	I	mg/L	P434581	
2432093	SM 4500-F- C-2011	Fluoride	0.069	I	mg F/L	P434144	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P434482	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.82		mg N/L	P434646	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P434640	
	EPA 365.1 Rev. 2.0	Total-P	0.031		mg P/L	P434113	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P434203	
2432094	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P434057	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P434060

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P434064

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434199

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434202

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434318

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434482

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434462

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434646

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434570

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434640

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P434113

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P434057

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

Reference Method: SM 2320 B-2011
Batch ID: P434416

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

Reference Method: SM 2540 C-2015
Batch ID: P434584

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P434581

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P434144

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P434203

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

Reference Method: SM 5310 B-2011
Batch ID: P434339

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: P434060

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.4		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P434064

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434199

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434202

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434318

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434482

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434462

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	108		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434646

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	107		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434570

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	106		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434640

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	107		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P434113

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P434057

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

Reference Method: SM 2320 B-2011
Batch ID: P434416

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.2		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P434584

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	96.8		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P434581

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	93.9		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P434144

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.1		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P434203

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	92.8		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P434339

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434199

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2432095	Chloride	102		P	90 - 110
2432147	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434202

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2432095	Sulfate	99.8		P	90 - 110
2432147	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434318

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2432145	Ammonia-N	100	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434482

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2432101	Ammonia-N	98.0	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434462

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2432118	Kjeldahl Nitrogen	103	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434646

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2432027	Kjeldahl Nitrogen	97.2	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434570

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2432101	NO2NO3-N	105	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434640

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2431908	NO2NO3-N	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P434113

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2432099	Total-P	107	105	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P434057

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2432094	O-Phosphate-P	101	100	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P434144

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2432063	Fluoride	97.4	98.6	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P434203

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2431923	Organic Carbon	95.0	96.5	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P434339

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2432102	Organic Carbon	98.0	97.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P434060

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2432066	Color (true)	1.24	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P434064

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2432022	Turbidity	5.11	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434199

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2432095	Chloride	0.932	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2432095	Sulfate	0.879	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434318

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2432145	Ammonia-N	0.125	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434482

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2432101	Ammonia-N	0.355	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434462

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2432118	Kjeldahl Nitrogen	2.45	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434646

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2432027	Kjeldahl Nitrogen	5.05	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434570

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2432101	NO2NO3-N	0.948	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434640

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431908	NO2NO3-N	0.952	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P434113

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2432099	Total-P	1.69	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P434057

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2432094	O-Phosphate-P	0.498	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P434416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2432063	Total Alkalinity	0.737	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P434584

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2432097	TDS	5.41	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P434144

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2432063	Fluoride	1.01	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P434203

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431923	Organic Carbon	1.11	Spike	P	0 - 20

Quality Assurance Report

Precision

Reference Method: SM 5310 B-2011
Batch ID: P434339

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2432102	Organic Carbon	0.744	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A121127

Included Lab Sample IDs: 2432094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.3	97.8	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A121128

Included Lab Sample IDs: 2432092, 2432095, 2432096, 2432097, 2432098

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A121130

Included Lab Sample IDs: 2432092, 2432095, 2432096, 2432097, 2432098

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

Reference Method: SM 4500-F- C-2011

Run ID: A121155

Included Lab Sample IDs: 2432092, 2432095, 2432096, 2432097, 2432098

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: A121176

Included Lab Sample IDs: 2432093, 2432099, 2432100, 2432101, 2432102

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A121182

Included Lab Sample IDs: 2432092, 2432095, 2432096, 2432097, 2432098

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

Reference Method: SM 5310 B-2011

Run ID: A121186

Included Lab Sample IDs: 2432093, 2432099, 2432100, 2432101

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.4	95.4	P/P	90 - 110
Organic Carbon	95.5	95.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A121231

Included Lab Sample IDs: 2432102

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A121231

Included Lab Sample IDs: 2432102

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

Reference Method: SM 5310 B-2011

Run ID: A121240

Included Lab Sample IDs: 2432102

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.2	95.2	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A121272

Included Lab Sample IDs: 2432092, 2432095, 2432096, 2432097, 2432098

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.3	96.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A121307

Included Lab Sample IDs: 2432093, 2432099, 2432100, 2432101

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A121364

Included Lab Sample IDs: 2432099, 2432100, 2432101, 2432102

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	108	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A121386

Included Lab Sample IDs: 2432093, 2432099, 2432100

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A121418

Included Lab Sample IDs: 2432093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	106	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
DEP SOP: NU-094-1	Color (true)	99.4			1.24	
EPA 180.1 Rev. 2.0	Turbidity	99.4			5.11	
EPA 300.0 Rev. 2.1	Chloride	102	102	104	0.932	
	Sulfate	100	99.8	101	0.879	
EPA 350.1 Rev. 2.0	Ammonia-N	99.6	100	100		0.125
	Ammonia-N	99.4	98.0	98.4		0.355
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	103	99.2		2.45
	Kjeldahl Nitrogen	107	97.2	103		5.05
EPA 353.2 Rev. 2.0	NO2NO3-N	106	105	106		0.948
	NO2NO3-N	107	102	103		0.952
EPA 365.1 Rev. 2.0	Total-P	104	107	105		1.69
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	101	100		0.498
SM 2320 B-2011	Total Alkalinity	98.2			0.737	
SM 2540 C-2015	TDS	96.8			5.41	
SM 2540 D-2015	TSS	93.9				
SM 4500-F- C-2011	Fluoride	97.1	97.4	98.6		1.01
SM 5310 B-2011	Organic Carbon	92.8	95.0	96.5		1.11
	Organic Carbon	93.0	98.0	97.0		0.744

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2432092, 2432095, 2432096, 2432097, 2432098
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2432092, 2432095, 2432096, 2432097, 2432098
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2432092, 2432095, 2432096, 2432097, 2432098
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2432092, 2432095, 2432096, 2432097, 2432098
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2432093, 2432099, 2432100, 2432101, 2432102
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2432093, 2432099, 2432100, 2432101, 2432102
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2432093, 2432099, 2432100, 2432101, 2432102
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2432093, 2432099, 2432100, 2432101, 2432102
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2432094
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2432092, 2432095, 2432096, 2432097, 2432098
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2432092, 2432095, 2432096, 2432097, 2432098
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2432092, 2432095, 2432096, 2432097, 2432098
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2432092, 2432095, 2432096, 2432097, 2432098
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2432093, 2432099, 2432100, 2432101, 2432102

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	08/18/2023			08/18/2023 14:53	Anna M. Plaviak	2432092
	08/18/2023			08/18/2023 14:54	Anna M. Plaviak	2432095
	08/18/2023			08/18/2023 14:55	Anna M. Plaviak	2432096, 2432097
	08/18/2023			08/18/2023 14:56	Anna M. Plaviak	2432098
EPA 180.1 Rev. 2.0	08/18/2023			08/18/2023 14:09	Alexis Price	2432092
	08/18/2023			08/18/2023 14:13	Alexis Price	2432095
	08/18/2023			08/18/2023 14:16	Alexis Price	2432096
	08/18/2023			08/18/2023 14:18	Alexis Price	2432097
EPA 300.0 Rev. 2.1	08/18/2023			08/18/2023 14:21	Alexis Price	2432098
	08/18/2023			08/22/2023 09:15	James L Waggeberby	2432095
	08/18/2023			08/22/2023 10:31	James L Waggeberby	2432092
	08/18/2023			08/22/2023 10:46	James L Waggeberby	2432096
EPA 350.1 Rev. 2.0	08/18/2023			08/22/2023 11:01	James L Waggeberby	2432097
	08/18/2023			08/22/2023 11:16	James L Waggeberby	2432098
	08/18/2023			08/24/2023 13:56	Ping Hua	2432102
	08/18/2023			08/29/2023 11:11	Ping Hua	2432101
EPA 351.2 Rev. 2.0	08/18/2023			08/29/2023 11:15	Ping Hua	2432093
	08/18/2023			08/29/2023 11:16	Ping Hua	2432099
	08/18/2023			08/29/2023 11:17	Ping Hua	2432100
	08/18/2023	09/01/2023 14:11	Simonne.V. Calhoun	09/05/2023 14:43	Samantha L Bates	2432099
EPA 353.2 Rev. 2.0	08/18/2023	09/01/2023 14:11	Simonne.V. Calhoun	09/05/2023 14:45	Samantha L Bates	2432100
	08/18/2023	09/01/2023 14:11	Simonne.V. Calhoun	09/05/2023 14:46	Samantha L Bates	2432101
	08/18/2023	09/01/2023 14:11	Simonne.V. Calhoun	09/05/2023 14:48	Samantha L Bates	2432102
	08/18/2023	09/07/2023 13:14	Simonne.V. Calhoun	09/08/2023 11:27	Samantha L Bates	2432093
EPA 365.1 Rev. 2.0	08/18/2023			09/01/2023 13:32	Anna M. Plaviak	2432102
	08/18/2023			09/01/2023 14:17	Anna M. Plaviak	2432101
	08/18/2023			09/06/2023 16:07	Anna M. Plaviak	2432093
	08/18/2023			09/06/2023 16:09	Anna M. Plaviak	2432099
EPA 365.1 Rev. 2.0 dissolved	08/18/2023			09/06/2023 16:10	Anna M. Plaviak	2432100
	08/18/2023	08/21/2023 16:54	Adam P Silver	08/22/2023 13:49	James L Waggeberby	2432099
	08/18/2023	08/21/2023 16:54	Adam P Silver	08/22/2023 13:50	James L Waggeberby	2432093
	08/18/2023	08/21/2023 16:54	Adam P Silver	08/22/2023 13:51	James L Waggeberby	2432100
SM 2320 B-2011	08/18/2023			08/22/2023 13:52	James L Waggeberby	2432101
	08/18/2023	08/21/2023 16:54	Adam P Silver	08/22/2023 13:53	James L Waggeberby	2432102
	08/18/2023			08/18/2023 15:07	Elise M. Gillis	2432094
	08/18/2023			08/28/2023 02:07	Dale L. Simmons	2432092
	08/18/2023			08/28/2023 02:17	Dale L. Simmons	2432095
	08/18/2023			08/28/2023 02:26	Dale L. Simmons	2432096
	08/18/2023			08/28/2023 02:36	Dale L. Simmons	2432097
	08/18/2023			08/28/2023 02:45	Dale L. Simmons	2432098

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2540 C-2015	08/18/2023			08/23/2023 16:38	Yijie Li	2432092, 2432095, 2432096, 2432097, 2432098
SM 2540 D-2015	08/18/2023			08/23/2023 16:38	Yijie Li	2432092, 2432095, 2432096, 2432097, 2432098
SM 4500-F- C-2011	08/18/2023			08/22/2023 01:26	Dale L. Simmons	2432092
	08/18/2023			08/22/2023 01:38	Dale L. Simmons	2432095
	08/18/2023			08/22/2023 01:49	Dale L. Simmons	2432096
	08/18/2023			08/22/2023 02:00	Dale L. Simmons	2432097
	08/18/2023			08/22/2023 02:13	Dale L. Simmons	2432098
SM 5310 B-2011	08/18/2023			08/22/2023 13:42	Elise M. Gillis	2432093
	08/18/2023			08/22/2023 18:25	Elise M. Gillis	2432099
	08/18/2023			08/22/2023 18:38	Elise M. Gillis	2432100
	08/18/2023			08/22/2023 18:52	Elise M. Gillis	2432101
	08/18/2023			08/24/2023 14:24	Elise M. Gillis	2432102