

Chemical Analysis Report

CEN-DIST-2023-11-03-03

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

Event Description: **Run 18**
Request ID: **RQ-2023-10-09-24**
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
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Certified by: Chris Bowen, Environmental Administrator

Date Certified: 21-NOV-2023 09:11



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: LAKE KATHRYN AT CENTER

Collection Date/Time: 11/02/2023 10:06

Field ID: G2CE0217

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2448874	DEP SOP: NU-094-1	Color (true)	28	A	PCU	P437353	
	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P437362	
	EPA 300.0 Rev. 2.1	Chloride	18	A	mg Cl/L	P437935	
		Sulfate	6.3	A	mg SO4/L	P437939	
	SM 2320 B-2011	Total Alkalinity	40		mg CaCO3/L	P437915	
	SM 2540 C-2015	TDS	103		mg/L	P437814	
	SM 2540 D-2015	TSS	6	I	mg/L	P437781	
	SM 4500-F- C-2011	Fluoride	0.068	I	mg F/L	P437918	
2448878	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P437432	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P437514	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P437644	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P437792	
	SM 5310 B-2011	Organic Carbon	7.9		mg C/L	P437475	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: LFB is unavailable because of analytical difficulties.

Sample Location: LAKE GRIFFIN AT CENTER

Collection Date/Time: 11/02/2023 10:41

Field ID: G2CE0207

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2448875	DEP SOP: NU-094-1	Color (true)	22		PCU	P437353	
	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P437362	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P437935	
		Sulfate	6.4		mg SO4/L	P437939	
	SM 2320 B-2011	Total Alkalinity	49		mg CaCO3/L	P437666	
	SM 2540 C-2015	TDS	95		mg/L	P437814	
	SM 2540 D-2015	TSS	2	I	mg/L	P437781	
	SM 4500-F- C-2011	Fluoride	0.056	I	mg F/L	P437919	
2448879	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P437432	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P437514	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P437644	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P437659	
	SM 5310 B-2011	Organic Carbon	8.2		mg C/L	P437475	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: LFB is unavailable because of analytical difficulties.

Sample Location: SECRET LAKE AT CENTER

Collection Date/Time: 11/02/2023 12:07

Field ID: G2CE0211

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2448876	DEP SOP: NU-094-1	Color (true)	17		PCU	P437353	
	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P437362	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P437935	
		Sulfate	7.7		mg SO4/L	P437939	
	SM 2320 B-2011	Total Alkalinity	54		mg CaCO3/L	P437666	
	SM 2540 C-2015	TDS	110		mg/L	P437814	
	SM 2540 D-2015	TSS	4	I	mg/L	P437781	
	SM 4500-F- C-2011	Fluoride	0.053	I	mg F/L	P437920	
2448880	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P437432	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.72		mg N/L	P437514	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P437644	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P437659	
	SM 5310 B-2011	Organic Carbon	6.8		mg C/L	P437475	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: LFB is unavailable because of analytical difficulties.

**Sample Location: LAKE MARION AT 105M SOUTHEAST OF
 CENTER OF LAKE**

Collection Date/Time: 11/02/2023 13:00

Field ID: G2CE0278

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2448877	DEP SOP: NU-094-1	Color (true)	60		PCU	P437353	
	EPA 180.1 Rev. 2.0	Turbidity	6.2		NTU	P437362	
	EPA 300.0 Rev. 2.1	Chloride	36		mg Cl/L	P437935	
		Sulfate	6.3		mg SO4/L	P437939	
	SM 2320 B-2011	Total Alkalinity	33		mg CaCO3/L	P437666	
	SM 2540 C-2015	TDS	115		mg/L	P437814	
	SM 2540 D-2015	TSS	12	I	mg/L	P437781	
	SM 4500-F- C-2011	Fluoride	0.13		mg F/L	P437920	
2448881	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P437691	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P437514	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P437767	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P437659	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P437788	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: LFB is unavailable because of analytical difficulties.

SM 2540 D-2015: The PQL was elevated because of sample matrix interference.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P437353

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437362

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437935

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437939

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437432

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437691

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437514

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437644

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437767

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: P437659

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437792

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

Reference Method: SM 2320 B-2011
Batch ID: P437666

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

Reference Method: SM 2320 B-2011
Batch ID: P437915

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

Reference Method: SM 2540 C-2015
Batch ID: P437814

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P437781

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P437918

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P437919

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P437920

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P437475

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

Reference Method: SM 5310 B-2011
Batch ID: P437788

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: P437353

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437935

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437939

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437432

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437691

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437514

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	93.6		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437644

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437767

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: P437659

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437792

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	109		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P437666

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.2		P	92 - 105

Reference Method: SM 2320 B-2011
Batch ID: P437915

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

Reference Method: SM 2540 C-2015
Batch ID: P437814

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	97.2		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P437781

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	106		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P437918

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	104		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P437919

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

Reference Method: SM 4500-F- C-2011
Batch ID: P437920

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

Reference Method: SM 5310 B-2011
Batch ID: P437475

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P437788

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437935

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448874	Chloride	104		P	90 - 110
2449059	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437939

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448874	Sulfate	104		P	90 - 110
2449059	Sulfate	105		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437432

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448805	Ammonia-N	98.2	98.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437691

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448507	Ammonia-N	97.0	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437514

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448878	Kjeldahl Nitrogen	102	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437644

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2447765	NO2NO3-N	99.5	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437767

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449076	NO2NO3-N	98.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437659

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448881	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437792

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448878	Total-P	108	108	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P437918

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449708	Fluoride	102	103	P/P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P437919

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449973	Fluoride	102	101	P/P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P437920

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449025	Fluoride	101	101	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P437475

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448704	Organic Carbon	97.1	96.9	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P437788

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448881	Organic Carbon	94.2	96.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P437353

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448874	Color (true)	0.889	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437362

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448825	Turbidity	4.84	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437935

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448874	Chloride	0.212	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437939

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448874	Sulfate	2.08	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437432

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448805	Ammonia-N	0.0	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437691

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448507	Ammonia-N	1.15	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437514

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448878	Kjeldahl Nitrogen	2.39	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437644

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447765	NO2NO3-N	1.38	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437767

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449076	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437659

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448881	Total-P	0.263	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437792

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448878	Total-P	0.0646	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P437666

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448305	Total Alkalinity	0.0855	Sample	P	0 - 3.9

Reference Method: SM 2320 B-2011
Batch ID: P437915

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449708	Total Alkalinity	0.371	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P437814

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448520	TDS	2.07	Sample	P	0 - 10

Reference Method: SM 2540 D-2015
Batch ID: P437781

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448520	TSS	8.22	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P437918

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449708	Fluoride	0.467	Spike	P	0 - 1.9

Quality Assurance Report Precision

Reference Method: SM 4500-F- C-2011
Batch ID: P437919

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449973	Fluoride	0.467	Spike	P	0 - 1.9

Reference Method: SM 4500-F- C-2011
Batch ID: P437920

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449025	Fluoride	0.479	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P437475

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448704	Organic Carbon	0.154	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P437788

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448881	Organic Carbon	1.45	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A122555

Included Lab Sample IDs: 2448874, 2448875, 2448876, 2448877

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A122557

Included Lab Sample IDs: 2448874, 2448875, 2448876, 2448877

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A122575

Included Lab Sample IDs: 2448878, 2448879, 2448880

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

Reference Method: SM 5310 B-2011

Run ID: A122600

Included Lab Sample IDs: 2448878, 2448879, 2448880

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122659

Included Lab Sample IDs: 2448878, 2448879, 2448880, 2448881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.0	97.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122667

Included Lab Sample IDs: 2448878, 2448879, 2448880

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

Reference Method: SM 2320 B-2011

Run ID: A122678

Included Lab Sample IDs: 2448875, 2448876, 2448877

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	94.5	98.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A122694

Included Lab Sample IDs: 2448881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.7	99.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122709

Included Lab Sample IDs: 2448881

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122712

Included Lab Sample IDs: 2448879, 2448880, 2448881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	98.8	P/P	90 - 110
Total-P	101	101	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A122725

Included Lab Sample IDs: 2448881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.2	95.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A122736

Included Lab Sample IDs: 2448874, 2448875, 2448876, 2448877

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	104	P/P	90 - 110
Chloride	101	101	P/P	90 - 110
Sulfate	101	104	P/P	90 - 110
Sulfate	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122770

Included Lab Sample IDs: 2448878

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	98.2	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A122774

Included Lab Sample IDs: 2448874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.8	102	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A122774

Included Lab Sample IDs: 2448874, 2448875, 2448876, 2448877

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

Quality Assurance Report

Calibration Verification

* 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)	101			0.889	
EPA 180.1 Rev. 2.0	Turbidity				4.84	
EPA 300.0 Rev. 2.1	Chloride	102	104	104	0.212	
	Sulfate	103	104	105	2.08	
EPA 350.1 Rev. 2.0	Ammonia-N	101	98.2	98.2		0.0
	Ammonia-N	101	97.0	98.4		1.15
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	93.6	102	105		2.39
EPA 353.2 Rev. 2.0	NO2NO3-N	101	99.5	102		1.38
	NO2NO3-N	101	98.0			0.0
EPA 365.1 Rev. 2.0	Total-P	102	104	104		0.263
	Total-P	109	108	108		0.0646
SM 2320 B-2011	Total Alkalinity	99.2			0.0855	
	Total Alkalinity	101			0.371	
SM 2540 C-2015	TDS	97.2			2.07	
SM 2540 D-2015	TSS	106			8.22	
SM 4500-F- C-2011	Fluoride	104	102	103		0.467
	Fluoride	103	102	101		0.467
	Fluoride	101	101	101		0.479
SM 5310 B-2011	Organic Carbon	96.2	97.1	96.9		0.154
	Organic Carbon	94.5	94.2	96.4		1.45

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2448874, 2448875, 2448876, 2448877
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2448874, 2448875, 2448876, 2448877
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2448874, 2448875, 2448876, 2448877
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2448874, 2448875, 2448876, 2448877
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2448878, 2448879, 2448880, 2448881
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2448878, 2448879, 2448880, 2448881
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2448878, 2448879, 2448880, 2448881
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2448878, 2448879, 2448880, 2448881
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2448874, 2448875, 2448876, 2448877
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2448874, 2448875, 2448876, 2448877
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2448874, 2448875, 2448876, 2448877
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2448874, 2448875, 2448876, 2448877
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2448878, 2448879, 2448880, 2448881

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	11/03/2023			11/03/2023 15:56	Chandler E Cox	2448874
	11/03/2023			11/03/2023 15:57	Chandler E Cox	2448875
	11/03/2023			11/03/2023 15:58	Chandler E Cox	2448876, 2448877
EPA 180.1 Rev. 2.0	11/03/2023			11/03/2023 15:17	Anna M. Plaviak	2448874
	11/03/2023			11/03/2023 15:18	Anna M. Plaviak	2448875
	11/03/2023			11/03/2023 15:19	Anna M. Plaviak	2448876
EPA 300.0 Rev. 2.1	11/03/2023			11/03/2023 15:20	Anna M. Plaviak	2448877
	11/03/2023			11/15/2023 15:42	James L Waggeberby	2448874
	11/03/2023			11/15/2023 18:28	James L Waggeberby	2448875
EPA 350.1 Rev. 2.0	11/03/2023			11/15/2023 19:13	James L Waggeberby	2448876
	11/03/2023			11/15/2023 19:29	James L Waggeberby	2448877
	11/03/2023			11/06/2023 13:15	Khloe J Berg	2448878
EPA 351.2 Rev. 2.0	11/03/2023			11/06/2023 13:16	Khloe J Berg	2448879
	11/03/2023			11/06/2023 13:18	Khloe J Berg	2448880
	11/03/2023			11/13/2023 12:00	Ping Hua	2448881
EPA 353.2 Rev. 2.0	11/03/2023	11/08/2023 11:50	Ping Hua	11/09/2023 12:11	Ping Hua	2448878
	11/03/2023	11/08/2023 11:50	Ping Hua	11/09/2023 12:16	Ping Hua	2448879
	11/03/2023	11/08/2023 11:50	Ping Hua	11/09/2023 12:17	Ping Hua	2448880
EPA 365.1 Rev. 2.0	11/03/2023	11/08/2023 11:50	Ping Hua	11/09/2023 12:19	Ping Hua	2448881
	11/03/2023			11/09/2023 12:58	Fadila Guebre	2448878
	11/03/2023			11/09/2023 12:59	Fadila Guebre	2448879
SM 2320 B-2011	11/03/2023			11/09/2023 13:00	Fadila Guebre	2448880
	11/03/2023			11/14/2023 13:56	Fadila Guebre	2448881
	11/03/2023	11/13/2023 13:18	Adam P Silver	11/14/2023 16:33	James L Waggeberby	2448879, 2448881
SM 2540 C-2015	11/03/2023	11/13/2023 13:18	Adam P Silver	11/14/2023 16:41	James L Waggeberby	2448880
	11/03/2023	11/15/2023 11:07	Adam P Silver	11/16/2023 12:14	James L Waggeberby	2448878
	11/03/2023			11/09/2023 23:10	Chandler E Cox	2448875
SM 2540 D-2015	11/03/2023			11/09/2023 23:19	Chandler E Cox	2448876
	11/03/2023			11/09/2023 23:27	Chandler E Cox	2448877
	11/03/2023			11/15/2023 21:50	Dale L. Simmons	2448874
SM 4500-F- C-2011	11/03/2023			11/07/2023 15:38	Yijie Li	2448874, 2448875, 2448876, 2448877
	11/03/2023			11/07/2023 15:38	Yijie Li	2448874, 2448875, 2448876, 2448877
	11/03/2023			11/15/2023 21:50	Dale L. Simmons	2448874
SM 5310 B-2011	11/03/2023			11/16/2023 02:04	Dale L. Simmons	2448875
	11/03/2023			11/16/2023 04:35	Dale L. Simmons	2448876
	11/03/2023			11/16/2023 04:40	Dale L. Simmons	2448877
	11/03/2023			11/07/2023 01:42	Khloe J Berg	2448878
	11/03/2023			11/07/2023 01:55	Khloe J Berg	2448879
	11/03/2023			11/07/2023 02:08	Khloe J Berg	2448880
	11/03/2023			11/13/2023 16:22	Khloe J Berg	2448881