

Chemical Analysis Report

NW-DIST-2023-07-19-01

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

Event Description: **Hogtown Bayou Run**
Request ID: **RQ-2023-07-17-46**
Customer: **NW-DIST**
Project ID: **SMP**

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Date Certified: 02-AUG-2023 18:10



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: CHURCHILL BAYOU CENTER

Collection Date/Time: 07/18/2023 11:40

Field ID: G3NW0235

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2424791	DEP SOP: NU-094-1	Color (true)	160		PCU	P432718	
	EPA 180.1 Rev. 2.0	Turbidity	7.3		NTU	P432715	
	EPA 300.0 Rev. 2.1	Chloride	2.1E+03		mg Cl/L	P432803	
		Sulfate	290		mg SO4/L	P432805	
	SM 2320 B-2011	Total Alkalinity	27		mg CaCO3/L	P432898	
	SM 2540 C-2015	TDS	3.86E+03		mg/L	P433231	
	SM 2540 D-2015	TSS	3	I	mg/L	P433084	
2424796	SM 4500-F- C-2011	Fluoride	0.18		mg F/L	P432902	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P432774	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.79		mg N/L	P432751	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.019		mg N/L	P432890	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P432735	
	SM 5310 B-2011	Organic Carbon	21		mg C/L	P432841	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: BUCK BAYOU CENTER

Collection Date/Time: 07/18/2023 10:40

Field ID: G3NW0233

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2424792	DEP SOP: NU-094-1	Color (true)	24	A	PCU	P432718	
	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P432715	
	EPA 300.0 Rev. 2.1	Chloride	4.7E+03		mg Cl/L	P432803	
		Sulfate	650		mg SO4/L	P432805	
	SM 2320 B-2011	Total Alkalinity	49	A	mg CaCO3/L	P433013	
	SM 2540 C-2015	TDS	8.38E+03		mg/L	P433231	
	SM 2540 D-2015	TSS	3	I	mg/L	P433084	
	SM 4500-F- C-2011	Fluoride	0.36		mg F/L	P433014	
2424797	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P432774	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40	I	mg N/L	P432751	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.022		mg N/L	P432890	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P432735	
	SM 5310 B-2011	Organic Carbon	5.2		mg C/L	P432841	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: HEWETT BAYOU CENTER

Collection Date/Time: 07/18/2023 11:05

Field ID: G3NW0218

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2424793	DEP SOP: NU-094-1	Color (true)	150		PCU	P432718	
	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P432715	
	EPA 300.0 Rev. 2.1	Chloride	3.6E+03		mg Cl/L	P432803	
		Sulfate	500		mg SO4/L	P432805	
	SM 2320 B-2011	Total Alkalinity	41		mg CaCO3/L	P433013	
	SM 2540 C-2015	TDS	6.27E+03		mg/L	P433231	
	SM 2540 D-2015	TSS	8	I	mg/L	P433086	
	SM 4500-F- C-2011	Fluoride	0.28		mg F/L	P433014	
2424798	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P432862	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P432751	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P432890	
	EPA 365.1 Rev. 2.0	Total-P	0.029		mg P/L	P432735	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P432911	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: MUSSETT BAYOU CENTER

Collection Date/Time: 07/18/2023 11:25

Field ID: G3NW0234

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2424794	DEP SOP: NU-094-1	Color (true)	180		PCU	P432718	
	EPA 180.1 Rev. 2.0	Turbidity	4.3		NTU	P432715	
	EPA 300.0 Rev. 2.1	Chloride	1.8E+03		mg Cl/L	P432803	
		Sulfate	250		mg SO4/L	P432805	
	SM 2320 B-2011	Total Alkalinity	26		mg CaCO3/L	P432897	
	SM 2540 C-2015	TDS	3.17E+03		mg/L	P433231	
	SM 2540 D-2015	TSS	4	I	mg/L	P433084	
	SM 4500-F- C-2011	Fluoride	0.16		mg F/L	P432902	
2424799	EPA 350.1 Rev. 2.0	Ammonia-N	0.038		mg N/L	P432862	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.61		mg N/L	P432751	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P432890	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P432735	
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P432841	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: HOGTOWN BAYOU AT CESSNA PARK

Collection Date/Time: 07/18/2023 11:55

Field ID: G3NW0152

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2424795	DEP SOP: NU-094-1	Color (true)	140		PCU	P432719	
	EPA 180.1 Rev. 2.0	Turbidity	4.5		NTU	P432715	
	EPA 300.0 Rev. 2.1	Chloride	3.1E+03		mg Cl/L	P432803	
		Sulfate	430		mg SO4/L	P432805	
	SM 2320 B-2011	Total Alkalinity	34		mg CaCO3/L	P433013	
	SM 2540 C-2015	TDS	5.09E+03		mg/L	P433231	
	SM 2540 D-2015	TSS	4	I	mg/L	P433084	
	SM 4500-F- C-2011	Fluoride	0.25		mg F/L	P433014	
2424800	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P432862	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67		mg N/L	P432751	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.017		mg N/L	P432890	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P432821	
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P432841	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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: P432718

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P432719

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P432715

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432803

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432805

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P432774

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P432862

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P432751

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P432890

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: P432735

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P432821

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

Reference Method: SM 2320 B-2011
Batch ID: P432897

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

Reference Method: SM 2320 B-2011
Batch ID: P432898

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

Reference Method: SM 2320 B-2011
Batch ID: P433013

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

Reference Method: SM 2540 C-2015
Batch ID: P433231

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P433084

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P433086

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P432902

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500-F- C-2011
Batch ID: P433014

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P432841

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

Reference Method: SM 5310 B-2011
Batch ID: P432911

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: P432718

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.3		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P432719

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.6		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P432715

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	99.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432803

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432805

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P432774

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P432862

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P432751

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P432890

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P432735

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P432821

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

Reference Method: SM 2320 B-2011
Batch ID: P432897

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	94.0		P	92 - 105

Reference Method: SM 2320 B-2011
Batch ID: P432898

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	94.6		P	92 - 105

Reference Method: SM 2320 B-2011
Batch ID: P433013

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	93.8		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P433231

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

Reference Method: SM 2540 D-2015
Batch ID: P433084

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	89.7		P	85 - 106

Reference Method: SM 2540 D-2015
Batch ID: P433086

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	98.5		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P432902

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.2		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P433014

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.2		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P432841

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.6		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P432911

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432803

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424765	Chloride	98.2		P	90 - 110
2424821	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432805

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424821	Sulfate	98.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P432774

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424446	Ammonia-N	106	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P432862

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424799	Ammonia-N	97.8	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P432751

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424912	Kjeldahl Nitrogen	103	98.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P432890

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424796	NO2NO3-N	96.9	96.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P432735

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424446	Total-P	91.8	92.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P432821

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424911	Total-P	93.0	93.4	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P432902

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2425292	Fluoride	97.9	99.3	P/P	94 - 106

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P433014

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424792	Fluoride	98.4	99.1	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P432841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424703	Organic Carbon	95.3	96.7	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P432911

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2425432	Organic Carbon	94.6	94.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P432718

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424792	Color (true)	0.552	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P432719

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424859	Color (true)	0.981	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P432715

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424702	Turbidity	13.0	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432803

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424765	Chloride	0.249	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432805

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424765	Sulfate	0.881	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P432774

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424446	Ammonia-N	0.509	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P432862

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424799	Ammonia-N	0.345	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P432751

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424912	Kjeldahl Nitrogen	4.06	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P432890

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424796	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P432735

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424446	Total-P	0.762	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P432821

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424911	Total-P	0.456	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P432897

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424735	Total Alkalinity	0.165	Sample	P	0 - 3.9

Reference Method: SM 2320 B-2011
Batch ID: P432898

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2425292	Total Alkalinity	1.60	Sample	P	0 - 3.9

Reference Method: SM 2320 B-2011
Batch ID: P433013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424792	Total Alkalinity	0.0499	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P433231

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424591	TDS	6.28	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P432902

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2425292	Fluoride	1.02	Spike	P	0 - 1.9

Quality Assurance Report Precision

Reference Method: SM 4500-F- C-2011
Batch ID: P433014

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424792	Fluoride	0.477	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P432841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424703	Organic Carbon	0.973	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P432911

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2425432	Organic Carbon	0.0834	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A120479

Included Lab Sample IDs: 2424791, 2424792, 2424793, 2424794, 2424795

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110
Sulfate	100	99.5	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A120498

Included Lab Sample IDs: 2424791, 2424792, 2424793, 2424794, 2424795

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

Reference Method: DEP SOP: NU-094-1

Run ID: A120499

Included Lab Sample IDs: 2424791, 2424792, 2424793, 2424794, 2424795

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 110
Color (true)	99.3	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A120518

Included Lab Sample IDs: 2424796, 2424797

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.1	97.3	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A120551

Included Lab Sample IDs: 2424796, 2424797, 2424799, 2424800

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.1	94.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A120559

Included Lab Sample IDs: 2424798, 2424799, 2424800

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.8	98.4	P/P	90 - 110
Ammonia-N	98.3	98.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A120577

Included Lab Sample IDs: 2424796, 2424797, 2424798, 2424799, 2424800

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A120580

Included Lab Sample IDs: 2424791, 2424794

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	91.6	95.7	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A120580

Included Lab Sample IDs: 2424791, 2424794

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

Reference Method: SM 5310 B-2011

Run ID: A120583

Included Lab Sample IDs: 2424798

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.3	95.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A120585

Included Lab Sample IDs: 2424796, 2424797, 2424798, 2424799, 2424800

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.0	P/P	90 - 110
Total-P	101	97.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A120610

Included Lab Sample IDs: 2424796, 2424797, 2424798, 2424799, 2424800

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	103	P/P	90 - 110
Kjeldahl Nitrogen	108	102	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A120639

Included Lab Sample IDs: 2424792, 2424793, 2424795

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.6	92.7	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A120639

Included Lab Sample IDs: 2424792, 2424793, 2424795

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	100	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	SMP	MS
DEP SOP: NU-094-1	Color (true)	99.3			0.552	
	Color (true)	99.6			0.981	
EPA 180.1 Rev. 2.0	Turbidity	99.7			13.0	
EPA 300.0 Rev. 2.1	Chloride	101	98.2 102		0.249	
	Sulfate	99.3	98.0		0.881	
EPA 350.1 Rev. 2.0	Ammonia-N	93.6	106 106			0.509
	Ammonia-N	94.8	97.8 98.4			0.345
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	103 98.6			4.06
EPA 353.2 Rev. 2.0	NO2NO3-N	102	96.9 96.9			0.0
EPA 365.1 Rev. 2.0	Total-P	101	91.8 92.6			0.762
	Total-P	101	93.0 93.4			0.456
SM 2320 B-2011	Total Alkalinity	94.0			0.165	
	Total Alkalinity	94.6			1.60	
	Total Alkalinity	93.8			0.0499	
SM 2540 C-2015	TDS	98.0			6.28	
SM 2540 D-2015	TSS	89.7				
	TSS	98.5				
SM 4500-F- C-2011	Fluoride	96.2	97.9 99.3			1.02
	Fluoride	97.2	98.4 99.1			0.477
SM 5310 B-2011	Organic Carbon	95.6	95.3 96.7			0.973
	Organic Carbon	95.8	94.6 94.5			0.0834

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2424791, 2424792, 2424793, 2424794, 2424795
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2424791, 2424792, 2424793, 2424794, 2424795
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2424791, 2424792, 2424793, 2424794, 2424795
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2424791, 2424792, 2424793, 2424794, 2424795
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2424796, 2424797, 2424798, 2424799, 2424800
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2424796, 2424797, 2424798, 2424799, 2424800
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2424796, 2424797, 2424798, 2424799, 2424800
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2424796, 2424797, 2424798, 2424799, 2424800
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2424791, 2424792, 2424793, 2424794, 2424795
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2424791, 2424792, 2424793, 2424794, 2424795
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2424791, 2424792, 2424793, 2424794, 2424795
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2424791, 2424792, 2424793, 2424794, 2424795
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2424796, 2424797, 2424798, 2424799, 2424800

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	07/19/2023			07/19/2023 14:47	Samantha L Bates	2424791
	07/19/2023			07/19/2023 14:49	Samantha L Bates	2424792
	07/19/2023			07/19/2023 14:50	Samantha L Bates	2424793, 2424794
	07/19/2023			07/19/2023 14:54	Samantha L Bates	2424795
EPA 180.1 Rev. 2.0	07/19/2023			07/19/2023 13:47	Alexis Price	2424791
	07/19/2023			07/19/2023 13:48	Alexis Price	2424792, 2424793
	07/19/2023			07/19/2023 13:49	Alexis Price	2424794, 2424795
EPA 300.0 Rev. 2.1	07/19/2023			07/20/2023 19:15	James L Waggeberby	2424791
	07/19/2023			07/20/2023 19:30	James L Waggeberby	2424792
	07/19/2023			07/20/2023 19:45	James L Waggeberby	2424793
	07/19/2023			07/20/2023 20:00	James L Waggeberby	2424794
EPA 350.1 Rev. 2.0	07/19/2023			07/20/2023 20:15	James L Waggeberby	2424795
	07/19/2023			07/20/2023 12:55	Ping Hua	2424796
	07/19/2023			07/20/2023 12:56	Ping Hua	2424797
	07/19/2023			07/21/2023 12:27	Khloe J Berg	2424799
	07/19/2023			07/21/2023 12:28	Khloe J Berg	2424800
EPA 351.2 Rev. 2.0	07/19/2023			07/21/2023 14:35	Khloe J Berg	2424798
	07/19/2023	07/20/2023 15:28	Simonne.V. Calhoun	07/25/2023 10:41	Samantha L Bates	2424796
	07/19/2023	07/20/2023 15:28	Simonne.V. Calhoun	07/25/2023 10:43	Samantha L Bates	2424797
	07/19/2023	07/20/2023 15:28	Simonne.V. Calhoun	07/25/2023 10:44	Samantha L Bates	2424798
	07/19/2023	07/20/2023 15:28	Simonne.V. Calhoun	07/25/2023 10:46	Samantha L Bates	2424799
EPA 353.2 Rev. 2.0	07/19/2023	07/20/2023 15:28	Simonne.V. Calhoun	07/25/2023 10:51	Samantha L Bates	2424800
	07/19/2023			07/24/2023 09:38	Beverly Y. Sanders	2424796
	07/19/2023			07/24/2023 09:44	Beverly Y. Sanders	2424797
	07/19/2023			07/24/2023 09:45	Beverly Y. Sanders	2424798
	07/19/2023			07/24/2023 09:47	Beverly Y. Sanders	2424799
EPA 365.1 Rev. 2.0	07/19/2023			07/24/2023 09:48	Beverly Y. Sanders	2424800
	07/19/2023	07/20/2023 14:21	Adam P Silver	07/24/2023 11:50	Simonne.V. Calhoun	2424796
	07/19/2023	07/20/2023 14:21	Adam P Silver	07/24/2023 11:51	Simonne.V. Calhoun	2424797
	07/19/2023	07/20/2023 14:21	Adam P Silver	07/24/2023 11:52	Simonne.V. Calhoun	2424798
	07/19/2023	07/20/2023 14:21	Adam P Silver	07/24/2023 11:53	Simonne.V. Calhoun	2424799
SM 2320 B-2011	07/19/2023	07/21/2023 16:45	Adam P Silver	07/24/2023 12:43	Simonne.V. Calhoun	2424800
	07/19/2023			07/22/2023 07:40	Dale L. Simmons	2424794
	07/19/2023			07/22/2023 08:11	Dale L. Simmons	2424791
	07/19/2023			07/25/2023 20:00	Dale L. Simmons	2424792
	07/19/2023			07/25/2023 20:13	Dale L. Simmons	2424793
SM 2540 C-2015	07/19/2023			07/25/2023 20:26	Dale L. Simmons	2424795
	07/19/2023			07/21/2023 17:02	Yijie Li	2424791, 2424792, 2424793, 2424794, 2424795

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2540 D-2015	07/19/2023			07/21/2023 17:02	Yijie Li	2424791, 2424792, 2424793, 2424794, 2424795
SM 4500-F- C-2011	07/19/2023			07/22/2023 07:40	Dale L. Simmons	2424794
	07/19/2023			07/22/2023 08:11	Dale L. Simmons	2424791
	07/19/2023			07/25/2023 17:51	Dale L. Simmons	2424792
	07/19/2023			07/25/2023 18:05	Dale L. Simmons	2424793
SM 5310 B-2011	07/19/2023			07/25/2023 18:10	Dale L. Simmons	2424795
	07/19/2023			07/21/2023 02:11	Khloe J Berg	2424796
	07/19/2023			07/21/2023 02:25	Khloe J Berg	2424797
	07/19/2023			07/21/2023 02:41	Khloe J Berg	2424799
	07/19/2023			07/21/2023 02:57	Khloe J Berg	2424800
	07/19/2023			07/22/2023 02:21	Elise M. Gillis	2424798