

Chemical Analysis Report

NW-DIST-2023-03-02-01

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

Event Description: **Hogtown Bayou Run**
Request ID: **RQ-2023-02-27-56**
Customer: **NW-DIST**
Project ID: **SMP**

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

Date Certified: 28-MAR-2023 07:52

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

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical 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: Buck Bayou Center

Collection Date/Time: 03/01/2023 10:30

Field ID: G3NW0233

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2391097	DEP SOP: NU-094-1	Color (true)	6.6		PCU	P426619	
	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P426624	
	EPA 300.0 Rev. 2.1	Chloride	1.1E+04		mg Cl/L	P426999	
		Sulfate	1.6E+03		mg SO4/L	P427002	
	SM 2320 B-2011	Total Alkalinity	75	A	mg CaCO3/L	P426973	
	SM 2540 C-2015	TDS	1.99E+04		mg/L	P427177	
	SM 2540 D-2015	TSS	3	U	mg/L	P426967	
2391102	SM 4500-F- C-2011	Fluoride	0.76		mg F/L	P426974	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P426731	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35	I	mg N/L	P426846	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P426667	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P426993	
	SM 5310 B-2011	Organic Carbon	4.5		mg C/L	P426797	

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: Hewett Bayou Center

Collection Date/Time: 03/01/2023 10:50

Field ID: G3NW0218

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2391098	DEP SOP: NU-094-1	Color (true)	8.4		PCU	P426619	
	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P426624	
	EPA 300.0 Rev. 2.1	Chloride	1.1E+04		mg Cl/L	P426999	
		Sulfate	1.5E+03		mg SO4/L	P427002	
	SM 2320 B-2011	Total Alkalinity	72		mg CaCO3/L	P426973	
	SM 2540 C-2015	TDS	1.80E+04		mg/L	P427177	
	SM 2540 D-2015	TSS	3	U	mg/L	P426967	
2391103	SM 4500-F- C-2011	Fluoride	0.72		mg F/L	P426974	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P426731	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.48		mg N/L	P426846	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P426667	
	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P426993	
	SM 5310 B-2011	Organic Carbon	4.1		mg C/L	P426797	

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: Mussett Bayou Center

Collection Date/Time: 03/01/2023 11:10

Field ID: G3NW0234

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2391099	DEP SOP: NU-094-1	Color (true)	9.5		PCU	P426619	
	EPA 180.1 Rev. 2.0	Turbidity	7.6		NTU	P426624	
	EPA 300.0 Rev. 2.1	Chloride	9.6E+03		mg Cl/L	P426999	
		Sulfate	1.3E+03		mg SO4/L	P427002	
	SM 2320 B-2011	Total Alkalinity	66		mg CaCO3/L	P426973	
	SM 2540 C-2015	TDS	1.55E+04	J	mg/L	P427177	
	SM 2540 D-2015	TSS	14		mg/L	P426967	
	SM 4500-F- C-2011	Fluoride	0.66		mg F/L	P426974	
2391104	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P426793	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.39	I	mg N/L	P426850	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.01	I	mg N/L	P426668	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P426993	
	SM 5310 B-2011	Organic Carbon	3.7		mg C/L	P426797	

Ref. Method and Comment:

SM 2540 C-2015: Constant dry weight was not attained.

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

Sample Location: Churchill Bayou Center

Collection Date/Time: 03/01/2023 11:25

Field ID: G3NW0235

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2391100	DEP SOP: NU-094-1	Color (true)	11		PCU	P426620	
	EPA 180.1 Rev. 2.0	Turbidity	6.7		NTU	P426624	
	EPA 300.0 Rev. 2.1	Chloride	9.0E+03		mg Cl/L	P426999	
		Sulfate	1.3E+03		mg SO4/L	P427002	
	SM 2320 B-2011	Total Alkalinity	65		mg CaCO3/L	P426973	
	SM 2540 C-2015	TDS	1.55E+04		mg/L	P427177	
	SM 2540 D-2015	TSS	10		mg/L	P426967	
2391105	SM 4500-F- C-2011	Fluoride	0.64		mg F/L	P426974	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P426793	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P426850	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.01	I	mg N/L	P426668	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P426993	
	SM 5310 B-2011	Organic Carbon	3.9		mg C/L	P426797	

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: Hogtown Bayou at Cessna Park

Collection Date/Time: 03/01/2023 11:40

Field ID: G3NW0152

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2391101	DEP SOP: NU-094-1	Color (true)	12		PCU	P426620	
	EPA 180.1 Rev. 2.0	Turbidity	4.7		NTU	P426624	
	EPA 300.0 Rev. 2.1	Chloride	7.5E+03		mg Cl/L	P426999	
		Sulfate	1.0E+03		mg SO4/L	P427002	
	SM 2320 B-2011	Total Alkalinity	60		mg CaCO3/L	P426973	
	SM 2540 C-2015	TDS	1.26E+04		mg/L	P427177	
	SM 2540 D-2015	TSS	6	IA	mg/L	P426967	
2391106	SM 4500-F- C-2011	Fluoride	0.56		mg F/L	P426974	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P426793	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49		mg N/L	P426850	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P426668	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P426837	
	SM 5310 B-2011	Organic Carbon	4.6		mg C/L	P426797	

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: P426619

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P426620

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P426624

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426999

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427002

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426731

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426793

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426846

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426850

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426667

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426668

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P426837

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P426993

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

Reference Method: SM 2320 B-2011
Batch ID: P426973

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

Reference Method: SM 2540 C-2015
Batch ID: P427177

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P426967

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P426974

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P426797

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: P426619

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

Reference Method: DEP SOP: NU-094-1
Batch ID: P426620

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P426624

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426999

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427002

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426731

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426793

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426846

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: P426850

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426667

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426668

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P426837

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: P426993

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

Reference Method: SM 2320 B-2011
Batch ID: P426973

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.9		P	94 - 106

Reference Method: SM 2540 C-2015
Batch ID: P427177

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

Reference Method: SM 2540 D-2015
Batch ID: P426967

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	101		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P426974

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P426797

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	92.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426999

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2390782	Chloride	97.4		P	90 - 110
2390968	Chloride	98.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427002

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2390782	Sulfate	101		P	90 - 110
2390968	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426731

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2390730	Ammonia-N	98.4	99.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426793

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2391104	Ammonia-N	99.4	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426846

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2390871	Kjeldahl Nitrogen	91.4	94.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426850

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2391407	Kjeldahl Nitrogen	106	110	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426667

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2391102	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426668

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2391104	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P426837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389763	Total-P	94.7	92.8	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P426993

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2390030	Total-P	99.2	98.6	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P426974

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389690	Fluoride	98.7	98.7	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P426797

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2391105	Organic Carbon	85.5	88.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P426619

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2390968	Color (true)	6.73	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P426620

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2391130	Color (true)	0.705	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P426624

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2390968	Turbidity	6.32	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426999

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2390782	Chloride	0.956	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427002

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2390782	Sulfate	0.487	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426731

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2390730	Ammonia-N	0.915	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426793

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2391104	Ammonia-N	1.24	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426846

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2390871	Kjeldahl Nitrogen	2.99	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2391407	Kjeldahl Nitrogen	3.92	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426667

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2391102	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426668

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2391104	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P426837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389763	Total-P	1.80	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P426993

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2390030	Total-P	0.708	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P426973

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2391097	Total Alkalinity	0.191	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P427177

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2390783	TDS	8.07	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P426974

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389690	Fluoride	0.0	Spike	P	0 - 1.6

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P426797

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2391105	Organic Carbon	2.84	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: A117767

Included Lab Sample IDs: 2391097, 2391098, 2391099, 2391100, 2391101

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	99.2	P/P	90 - 110
Color (true)	99.2	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A117768

Included Lab Sample IDs: 2391097, 2391098, 2391099, 2391100, 2391101

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.5	P/P	95 - 105
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A117821

Included Lab Sample IDs: 2391102, 2391103

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.3	99.7	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A117833

Included Lab Sample IDs: 2391097, 2391098, 2391099, 2391100, 2391101

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.6	98.6	P/P	90 - 110
Sulfate	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A117843

Included Lab Sample IDs: 2391102, 2391103, 2391104, 2391105, 2391106

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A117845

Included Lab Sample IDs: 2391104, 2391105, 2391106

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.3	99.5	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A117846

Included Lab Sample IDs: 2391102, 2391103, 2391104, 2391105, 2391106

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.6	96.2	P/P	90 - 110
Organic Carbon	97.7	95.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A117917

Included Lab Sample IDs: 2391097, 2391098, 2391099, 2391100, 2391101

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	93.4	95.7	P/P	90 - 110
Total Alkalinity	95.7	91.0	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A117917

Included Lab Sample IDs: 2391097, 2391098, 2391099, 2391100, 2391101

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A117936

Included Lab Sample IDs: 2391106

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A117962

Included Lab Sample IDs: 2391102, 2391103

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A117968

Included Lab Sample IDs: 2391104, 2391105, 2391106

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	90.5	98.3	P/P	90 - 110
Kjeldahl Nitrogen	98.3	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A117983

Included Lab Sample IDs: 2391102, 2391103, 2391104, 2391105

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

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
DEP SOP: NU-094-1	Color (true)	99.4			6.73	
	Color (true)	100			0.705	
EPA 180.1 Rev. 2.0	Turbidity	99.8			6.32	
EPA 300.0 Rev. 2.1	Chloride	97.6	97.4	98.1	0.956	
	Sulfate	102	101	101	0.487	
EPA 350.1 Rev. 2.0	Ammonia-N	99.0	98.4	99.6		0.915
	Ammonia-N	96.0	99.4	101		1.24
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	91.4	94.7		2.99
	Kjeldahl Nitrogen	103	106	110		3.92
EPA 353.2 Rev. 2.0	NO2NO3-N	105	104	104		0.0
	NO2NO3-N	106	104	104		0.0
EPA 365.1 Rev. 2.0	Total-P	101	94.7	92.8		1.80
	Total-P	98.3	99.2	98.6		0.708
SM 2320 B-2011	Total Alkalinity	95.9			0.191	
SM 2540 C-2015	TDS	106			8.07	
SM 2540 D-2015	TSS	101				
SM 4500-F- C-2011	Fluoride	101	98.7	98.7		0.0
SM 5310 B-2011	Organic Carbon	92.4	85.5	88.3		2.84

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2391097, 2391098, 2391099, 2391100, 2391101
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2391097, 2391098, 2391099, 2391100, 2391101
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2391097, 2391098, 2391099, 2391100, 2391101
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2391097, 2391098, 2391099, 2391100, 2391101
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2391102, 2391103, 2391104, 2391105, 2391106
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2391102, 2391103, 2391104, 2391105, 2391106
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2391102, 2391103, 2391104, 2391105, 2391106
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2391102, 2391103, 2391104, 2391105, 2391106
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2391097, 2391098, 2391099, 2391100, 2391101
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2391097, 2391098, 2391099, 2391100, 2391101
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2391097, 2391098, 2391099, 2391100, 2391101
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2391097, 2391098, 2391099, 2391100, 2391101
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2391102, 2391103, 2391104, 2391105, 2391106

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	03/02/2023			03/02/2023 15:12	Alexis Price	2391097, 2391098
	03/02/2023			03/02/2023 15:13	Alexis Price	2391099
	03/02/2023			03/02/2023 15:15	Alexis Price	2391100
	03/02/2023			03/02/2023 15:16	Alexis Price	2391101
EPA 180.1 Rev. 2.0	03/02/2023			03/02/2023 14:00	Chandler E Cox	2391097, 2391098
	03/02/2023			03/02/2023 14:01	Chandler E Cox	2391099
	03/02/2023			03/02/2023 14:04	Chandler E Cox	2391100
	03/02/2023			03/02/2023 14:06	Chandler E Cox	2391101
EPA 300.0 Rev. 2.1	03/02/2023			03/09/2023 23:07	Judith K. Clark	2391097
	03/02/2023			03/09/2023 23:22	Judith K. Clark	2391098
	03/02/2023			03/09/2023 23:37	Judith K. Clark	2391099
	03/02/2023			03/09/2023 23:52	Judith K. Clark	2391100
EPA 350.1 Rev. 2.0	03/02/2023			03/10/2023 00:07	Judith K. Clark	2391101
	03/02/2023			03/06/2023 11:57	Khloe J Berg	2391102
	03/02/2023			03/06/2023 11:58	Khloe J Berg	2391103
	03/02/2023			03/07/2023 10:26	Khloe J Berg	2391104
	03/02/2023			03/07/2023 10:30	Khloe J Berg	2391105
EPA 351.2 Rev. 2.0	03/02/2023			03/07/2023 10:31	Khloe J Berg	2391106
	03/02/2023	03/08/2023 14:00	Simonne.V. Calhoun	03/13/2023 12:21	Samantha L Bates	2391102
	03/02/2023	03/08/2023 14:00	Simonne.V. Calhoun	03/13/2023 12:22	Samantha L Bates	2391103
	03/02/2023	03/08/2023 17:54	Simonne.V. Calhoun	03/13/2023 18:58	Samantha L Bates	2391104
	03/02/2023	03/08/2023 17:54	Simonne.V. Calhoun	03/13/2023 19:03	Samantha L Bates	2391105
EPA 353.2 Rev. 2.0	03/02/2023	03/08/2023 17:54	Simonne.V. Calhoun	03/13/2023 19:04	Samantha L Bates	2391106
	03/02/2023			03/03/2023 10:28	Beverly Y. Sanders	2391102
	03/02/2023			03/03/2023 10:43	Beverly Y. Sanders	2391103
	03/02/2023			03/03/2023 10:51	Beverly Y. Sanders	2391104
	03/02/2023			03/03/2023 10:56	Beverly Y. Sanders	2391105
EPA 365.1 Rev. 2.0	03/02/2023			03/03/2023 10:58	Beverly Y. Sanders	2391106
	03/02/2023	03/08/2023 02:00	Alexis Price	03/10/2023 12:46	James L Waggeberby	2391106
	03/02/2023	03/10/2023 13:50	Adam P Silver	03/14/2023 13:54	James L Waggeberby	2391102
	03/02/2023	03/10/2023 13:50	Adam P Silver	03/14/2023 13:55	James L Waggeberby	2391103
	03/02/2023	03/10/2023 13:50	Adam P Silver	03/14/2023 13:56	James L Waggeberby	2391104
SM 2320 B-2011	03/02/2023	03/10/2023 13:50	Adam P Silver	03/14/2023 13:57	James L Waggeberby	2391105
	03/02/2023			03/09/2023 22:19	Dale L. Simmons	2391097
	03/02/2023			03/09/2023 22:33	Dale L. Simmons	2391098
	03/02/2023			03/09/2023 23:31	Dale L. Simmons	2391099
	03/02/2023			03/09/2023 23:45	Dale L. Simmons	2391100
SM 2540 C-2015	03/02/2023			03/09/2023 23:58	Dale L. Simmons	2391101
	03/02/2023			03/03/2023 15:41	Yijie Li	2391097, 2391098, 2391099, 2391100, 2391101

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2540 D-2015	03/02/2023			03/03/2023 15:41	Yijie Li	2391097, 2391098, 2391099, 2391100, 2391101
SM 4500-F- C-2011	03/02/2023			03/09/2023 19:49	Dale L. Simmons	2391097
	03/02/2023			03/09/2023 19:54	Dale L. Simmons	2391098
	03/02/2023			03/09/2023 19:59	Dale L. Simmons	2391099
	03/02/2023			03/09/2023 20:05	Dale L. Simmons	2391100
SM 5310 B-2011	03/02/2023			03/09/2023 20:47	Dale L. Simmons	2391101
	03/02/2023			03/07/2023 01:12	Elise M. Gillis	2391105
	03/02/2023			03/07/2023 04:15	Elise M. Gillis	2391102
	03/02/2023			03/07/2023 04:29	Elise M. Gillis	2391103
	03/02/2023			03/07/2023 04:58	Elise M. Gillis	2391104
	03/02/2023			03/07/2023 05:12	Elise M. Gillis	2391106