

Chemical Analysis Report

NW-DIST-2022-10-26-03

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

Event Description: **Hogtown Car Run**
Request ID: **RQ-2022-10-17-30**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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Date Certified: 21-NOV-2022 11:58



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: Hogtown Drainage at Churchill Bayou Road

Collection Date/Time: 10/25/2022 11:30

Field ID: G3NW0038

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2365270	DEP SOP: NU-094-1	Color (true)	23		PCU	P421485	
	EPA 180.1 Rev. 2.0	Turbidity	6.5		NTU	P421471	
	EPA 300.0 Rev. 2.1	Chloride	6.9E+03		mg Cl/L	P422013	
		Sulfate	930		mg SO4/L	P422017	
	SM 2320 B-2011	Total Alkalinity	101		mg CaCO3/L	P421661	
	SM 2540 C-2015	TDS	1.07E+04		mg/L	P422070	
	SM 2540 D-2015	TSS	3	I	mg/L	P421785	
	SM 4500-F- C-2011	Fluoride	0.36		mg F/L	P421905	
2365273	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P421684	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37	I	mg N/L	P421694	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.018		mg N/L	P422024	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P421769	
	SM 5310 B-2011	Organic Carbon	7.5		mg C/L	P422187	

Ref. Method and Comment:

SM 2540 C-2015: The reported result is consistent with the conductivity measured in the laboratory, 18910 µmhos/cm.

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

Sample Location: Drain to Hewett Bayou south of Preston Path Collection Date/Time: 10/25/2022 12:31

Field ID: G3NW0245

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2365271	DEP SOP: NU-094-1	Color (true)	21	A	PCU	P421486	
	EPA 180.1 Rev. 2.0	Turbidity	28		NTU	P421471	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P422013	
		Sulfate	7.3		mg SO4/L	P422017	
	SM 2320 B-2011	Total Alkalinity	121		mg CaCO3/L	P421652	
	SM 2540 C-2015	TDS	162		mg/L	P422069	
	SM 2540 D-2015	TSS	15		mg/L	P421782	
	SM 4500-F- C-2011	Fluoride	0.037	I	mg F/L	P421662	
2365274	EPA 350.1 Rev. 2.0	Ammonia-N	0.19		mg N/L	P421957	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.79		mg N/L	P421695	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P421776	
	EPA 365.1 Rev. 2.0	Total-P	0.029		mg P/L	P421771	
	SM 5310 B-2011	Organic Carbon	9.1		mg C/L	P421647	

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 Drain above Chat Holly Rd

Collection Date/Time: 10/25/2022 11:15

Field ID: G3NW0241

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2365272	DEP SOP: NU-094-1	Color (true)	21	A	PCU	P421485	
	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P421471	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P422013	
		Sulfate	8.3		mg SO4/L	P422017	
	SM 2320 B-2011	Total Alkalinity	46		mg CaCO3/L	P421652	
	SM 2540 C-2015	TDS	97		mg/L	P422069	
	SM 2540 D-2015	TSS	2	I	mg/L	P421782	
	SM 4500-F- C-2011	Fluoride	0.038	I	mg F/L	P421662	
2365275	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P421957	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28		mg N/L	P421695	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P421776	
	EPA 365.1 Rev. 2.0	Total-P	0.004	I	mg P/L	P421601	
	SM 5310 B-2011	Organic Carbon	6.4		mg C/L	P421647	

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: Drain to Mack Bayou at Mack Bayou Rd

Collection Date/Time: 10/25/2022 12:52

Field ID: G3NW0237

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2365268	DEP SOP: NU-094-1	Color (true)	21	A	PCU	P421484	
	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P421471	
	EPA 300.0 Rev. 2.1	Chloride	1.1E+04		mg Cl/L	P422013	
		Sulfate	1.5E+03		mg SO4/L	P422017	
	SM 2320 B-2011	Total Alkalinity	75		mg CaCO3/L	P421661	
	SM 2540 C-2015	TDS	1.80E+04		mg/L	P422070	
	SM 2540 D-2015	TSS	3	I	mg/L	P421785	
	SM 4500-F- C-2011	Fluoride	0.54		mg F/L	P421665	
2365269	EPA 350.1 Rev. 2.0	Ammonia-N	0.057		mg N/L	P421684	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P421699	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.036		mg N/L	P422024	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P421769	
	SM 5310 B-2011	Organic Carbon	5.8		mg C/L	P422187	

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: P421484

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P421485

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P421486

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P421471

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422013

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422017

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P421684

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P421957

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421694

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421695

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421699

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P421776

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422024

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P421601

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P421769

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P421771

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

Reference Method: SM 2320 B-2011
Batch ID: P421652

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

Reference Method: SM 2320 B-2011
Batch ID: P421661

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2015
Batch ID: P422069

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2015
Batch ID: P422070

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P421782

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P421785

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P421662

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P421665

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P421905

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P421647

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

Reference Method: SM 5310 B-2011
Batch ID: P422187

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: P421484

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	91.5		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P421485

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	92.7		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P421486

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	93.1		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P421471

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422013

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422017

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P421684

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: P421957

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421694

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421695

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421699

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.4		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P421776

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422024

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P421601

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P421769

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P421771

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

Reference Method: SM 2320 B-2011
Batch ID: P421652

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P421661

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	94 - 106

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P422069

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	98.4		P	90 - 110

Reference Method: SM 2540 C-2015
Batch ID: P422070

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	97.2		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P421782

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	97.7		P	85 - 106

Reference Method: SM 2540 D-2015
Batch ID: P421785

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	98.1		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P421662

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	96 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P421665

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.8		P	96 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P421905

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.1		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P421647

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

Reference Method: SM 5310 B-2011
Batch ID: P422187

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422013

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2364857	Chloride	105		P	90 - 110
2365272	Chloride	107		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2364857	Sulfate	107		P	90 - 110
2365272	Sulfate	109		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P421684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2365154	Ammonia-N	105	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P421957

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2365275	Ammonia-N	99.4	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421694

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2365212	Kjeldahl Nitrogen	102	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421695

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2365274	Kjeldahl Nitrogen	109	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421699

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2365303	Kjeldahl Nitrogen	98.1	98.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P421776

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2365274	NO2NO3-N	98.9	98.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422024

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2365209	NO2NO3-N	104	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P421601

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2365309	Total-P	105	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P421769

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2365212	Total-P	98.8	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P421771

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2365545	Total-P	104	106	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P421662

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2364864	Fluoride	97.7	97.2	P/P	94 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P421665

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2365150	Fluoride	97.5	98.2	P/P	94 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P421905

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2365270	Fluoride	97.9	98.6	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P421647

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2364879	Organic Carbon	101	98.3	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P422187

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2366264	Organic Carbon	90.0	91.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P421484

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365268	Color (true)	4.75	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P421485

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365272	Color (true)	3.31	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P421486

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365271	Color (true)	10.1	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P421471

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365200	Turbidity	7.72	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2364857	Chloride	3.78	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2364857	Sulfate	3.95	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P421684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365154	Ammonia-N	0.570	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P421957

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365275	Ammonia-N	0.570	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421694

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365212	Kjeldahl Nitrogen	1.68	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421695

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365274	Kjeldahl Nitrogen	0.534	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421699

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365303	Kjeldahl Nitrogen	0.00519	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P421776

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365274	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422024

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365209	NO2NO3-N	0.471	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P421601

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365309	Total-P	1.26	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P421769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365212	Total-P	0.899	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P421771

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365545	Total-P	1.97	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P421652

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2364864	Total Alkalinity	0.233	Sample	P	0 - 3.8

Reference Method: SM 2320 B-2011
Batch ID: P421661

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365150	Total Alkalinity	0.794	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P422069

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2364864	TDS	5.28	Sample	P	0 - 10

Reference Method: SM 2540 C-2015
Batch ID: P422070

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365627	TDS	2.83	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P421662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2364864	Fluoride	0.482	Spike	P	0 - 1.6

Reference Method: SM 4500-F- C-2011
Batch ID: P421665

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365150	Fluoride	0.483	Spike	P	0 - 1.6

Reference Method: SM 4500-F- C-2011
Batch ID: P421905

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365270	Fluoride	0.509	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P421647

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2364879	Organic Carbon	1.66	Spike	P	0 - 20

Quality Assurance Report

Precision

Reference Method: SM 5310 B-2011
Batch ID: P422187

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2366264	Organic Carbon	1.38	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A115543

Included Lab Sample IDs: 2365268, 2365270, 2365271, 2365272

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

Reference Method: DEP SOP: NU-094-1

Run ID: A115546

Included Lab Sample IDs: 2365268, 2365270, 2365271, 2365272

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	93.1	94.4	P/P	90 - 110
Color (true)	93.2	94.6	P/P	90 - 110
Color (true)	94.4	93.2	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A115623

Included Lab Sample IDs: 2365274, 2365275

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	99.0	P/P	90 - 110
Organic Carbon	98.4	98.2	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A115624

Included Lab Sample IDs: 2365268, 2365270, 2365271, 2365272

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.5	104	P/P	90 - 110
Total Alkalinity	99.0	98.8	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A115624

Included Lab Sample IDs: 2365268, 2365271, 2365272

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A115636

Included Lab Sample IDs: 2365275

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A115637

Included Lab Sample IDs: 2365269, 2365273

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.7	99.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A115675

Included Lab Sample IDs: 2365268, 2365270, 2365271, 2365272

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	105	P/P	90 - 110
Chloride	105	101	P/P	90 - 110
Sulfate	102	108	P/P	90 - 110
Sulfate	108	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A115682

Included Lab Sample IDs: 2365274, 2365275

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	97.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A115712

Included Lab Sample IDs: 2365273, 2365274, 2365275

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	108	P/P	90 - 110
Kjeldahl Nitrogen	105	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A115721

Included Lab Sample IDs: 2365269, 2365273, 2365274

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.5	P/P	90 - 110
Total-P	99.5	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A115722

Included Lab Sample IDs: 2365269

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.5	99.6	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A115743

Included Lab Sample IDs: 2365270

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A115748

Included Lab Sample IDs: 2365274, 2365275

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A115782

Included Lab Sample IDs: 2365269, 2365273

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

Reference Method: SM 5310 B-2011

Run ID: A115847

Included Lab Sample IDs: 2365269, 2365273

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.6	97.0	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)	91.5			4.75	
	Color (true)	92.7			3.31	
	Color (true)	93.1			10.1	
EPA 180.1 Rev. 2.0	Turbidity	102			7.72	
EPA 300.0 Rev. 2.1	Chloride	105	105	107	3.78	
	Sulfate	108	107	109	3.95	
EPA 350.1 Rev. 2.0	Ammonia-N	99.0	105	106		0.570
	Ammonia-N	99.8	99.4	100		0.570
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	102	99.6		1.68
	Kjeldahl Nitrogen	105	109	108		0.534
	Kjeldahl Nitrogen	97.4	98.1	98.1		0.0051
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	98.9	98.9		0.0
	NO2NO3-N	104	104	104		0.471
EPA 365.1 Rev. 2.0	Total-P	107	105	108		1.26
	Total-P	105	98.8	97.8		0.899
	Total-P	105	104	106		1.97
SM 2320 B-2011	Total Alkalinity	102			0.233	
	Total Alkalinity	102			0.794	
SM 2540 C-2015	TDS	98.4			5.28	
	TDS	97.2			2.83	
SM 2540 D-2015	TSS	97.7				
	TSS	98.1				
SM 4500-F- C-2011	Fluoride	98.3	97.7	97.2		0.482
	Fluoride	99.8	97.5	98.2		0.483
	Fluoride	99.1	97.9	98.6		0.509
SM 5310 B-2011	Organic Carbon	97.2	101	98.3		1.66
	Organic Carbon	98.3	90.0	91.7		1.38

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2365268, 2365270, 2365271, 2365272
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2365268, 2365270, 2365271, 2365272
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2365268, 2365270, 2365271, 2365272
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2365268, 2365270, 2365271, 2365272
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2365269, 2365273, 2365274, 2365275
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2365269, 2365273, 2365274, 2365275
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2365269, 2365273, 2365274, 2365275
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2365269, 2365273, 2365274, 2365275
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2365268, 2365270, 2365271, 2365272
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2365268, 2365270, 2365271, 2365272
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2365268, 2365270, 2365271, 2365272
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2365268, 2365270, 2365271, 2365272
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2365269, 2365273, 2365274, 2365275

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	10/26/2022			10/26/2022 14:49	Chandler E Cox	2365268
	10/26/2022			10/26/2022 14:54	Chandler E Cox	2365270, 2365272
	10/26/2022			10/26/2022 15:05	Chandler E Cox	2365271
EPA 180.1 Rev. 2.0	10/26/2022			10/26/2022 13:52	Anna M. Plaviak	2365270
	10/26/2022			10/26/2022 13:53	Anna M. Plaviak	2365268
	10/26/2022			10/26/2022 13:54	Anna M. Plaviak	2365271
EPA 300.0 Rev. 2.1	10/26/2022			10/26/2022 13:59	Anna M. Plaviak	2365272
	10/26/2022			11/05/2022 10:46	Anna M. Plaviak	2365272
	10/26/2022			11/05/2022 15:02	Anna M. Plaviak	2365268
EPA 350.1 Rev. 2.0	10/26/2022			11/05/2022 15:17	Anna M. Plaviak	2365270
	10/26/2022			11/05/2022 15:32	Anna M. Plaviak	2365271
	10/26/2022			10/31/2022 13:37	Ping Hua	2365269
EPA 351.2 Rev. 2.0	10/26/2022			10/31/2022 13:38	Ping Hua	2365273
	10/26/2022			11/04/2022 14:52	Ping Hua	2365275
	10/26/2022			11/04/2022 14:56	Ping Hua	2365274
EPA 353.2 Rev. 2.0	10/26/2022	11/01/2022 11:59	Alexandra J Mattheus	11/02/2022 15:34	Samantha L Bates	2365273
	10/26/2022	11/01/2022 11:59	Alexandra J Mattheus	11/02/2022 15:54	Samantha L Bates	2365274
	10/26/2022	11/01/2022 11:59	Alexandra J Mattheus	11/02/2022 15:59	Samantha L Bates	2365275
EPA 365.1 Rev. 2.0	10/26/2022	11/01/2022 12:07	Alexandra J Mattheus	11/03/2022 12:32	Samantha L Bates	2365269
	10/26/2022			11/02/2022 10:17	Beverly Y. Sanders	2365274
	10/26/2022			11/02/2022 10:27	Beverly Y. Sanders	2365275
SM 2320 B-2011	10/26/2022			11/07/2022 10:14	Beverly Y. Sanders	2365269
	10/26/2022			11/07/2022 10:15	Beverly Y. Sanders	2365273
	10/26/2022	10/28/2022 12:34	Adam P Silver	10/31/2022 13:14	Simonne.V. Calhoun	2365275
SM 2540 C-2015	10/26/2022	11/02/2022 17:10	Adam P Silver	11/03/2022 12:12	Simonne.V. Calhoun	2365269
	10/26/2022	11/02/2022 17:10	Adam P Silver	11/03/2022 12:13	Simonne.V. Calhoun	2365273
	10/26/2022	11/02/2022 17:10	Adam P Silver	11/03/2022 12:44	Simonne.V. Calhoun	2365274
SM 2540 D-2015	10/26/2022			11/03/2022 12:44	Simonne.V. Calhoun	2365274
	10/26/2022			10/27/2022 21:49	Dale L. Simmons	2365271
	10/26/2022			10/27/2022 22:00	Dale L. Simmons	2365272
SM 4500-F- C-2011	10/26/2022			10/28/2022 05:34	Dale L. Simmons	2365268
	10/26/2022			10/28/2022 05:46	Dale L. Simmons	2365270
	10/26/2022			10/28/2022 15:58	Yijie Li	2365268, 2365270, 2365271, 2365272
SM 5310 B-2011	10/26/2022			10/28/2022 15:58	Yijie Li	2365268, 2365270, 2365271, 2365272
	10/26/2022			10/27/2022 21:49	Dale L. Simmons	2365271
	10/26/2022			10/27/2022 22:00	Dale L. Simmons	2365272
	10/26/2022			10/28/2022 01:15	Dale L. Simmons	2365268
	10/26/2022			11/04/2022 00:34	Dale L. Simmons	2365270
	10/26/2022			10/28/2022 20:06	Khloe J Berg	2365275
	10/26/2022			10/28/2022 22:41	Khloe J Berg	2365274
	10/26/2022			11/10/2022 04:55	Khloe J Berg	2365269

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	10/26/2022			11/10/2022 05:11	Khloe J Berg	2365273