

Chemical Analysis Report

NW-DIST-2022-11-16-01

Florida DEP Laboratory
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DOH Accreditation E31780

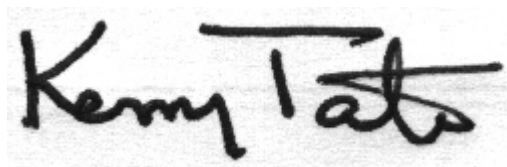
Event Description: **Hogtown Bayou Run**
Request ID: **RQ-2022-11-14-29**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 07-DEC-2022 10:36

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: 11/15/2022 12:13

Field ID: G3NW0233

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2369631	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P422433	
	SM 2320 B-2011	Total Alkalinity	97	A	mg CaCO3/L	P422781	
	SM 2540 D-2015	TSS	3	U	mg/L	P422708	
	SM 4500-F- C-2011	Fluoride	0.96		mg F/L	P422785	
2369633	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P422728	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29	I	mg N/L	P422628	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P422580	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P422536	
	SM 5310 B-2011	Organic Carbon	2.5	I	mg C/L	P422790	

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 Hewett Bayou

Collection Date/Time: 11/15/2022 11:20

Field ID: G3NW0238

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2369635	DEP SOP: NU-094-1	Color (true)	70		PCU	P422424	
	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P422433	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P422830	
		Sulfate	2.6		mg SO4/L	P422834	
	SM 2320 B-2011	Total Alkalinity	18		mg CaCO3/L	P422640	
	SM 2540 C-2015	TDS	66		mg/L	P422852	
	SM 2540 D-2015	TSS	5	I	mg/L	P422705	
	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P422644	
2369637	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P423042	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.32		mg N/L	P422454	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P422493	
	EPA 365.1 Rev. 2.0	Total-P	0.01		mg P/L	P422445	
	SM 5310 B-2011	Organic Carbon	6.9		mg C/L	P422753	

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: Mack Bayou Center

Collection Date/Time: 11/15/2022 12:40

Field ID: G3NW0185

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2369632	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P422433	
	SM 2320 B-2011	Total Alkalinity	98		mg CaCO3/L	P422640	
	SM 2540 D-2015	TSS	6	I	mg/L	P422708	
	SM 4500-F- C-2011	Fluoride	0.72		mg F/L	P422644	
2369634	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P422913	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.22		mg N/L	P422542	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P422864	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P422704	
	SM 5310 B-2011	Organic Carbon	2.0	U	mg C/L	P422790	

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 Musset Bayou upstream of Don Bishop Rd

Collection Date/Time: 11/15/2022 10:45

Field ID: G3NW0240

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2369636	DEP SOP: NU-094-1	Color (true)	42		PCU	P422424	
	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P422433	
	EPA 300.0 Rev. 2.1	Chloride	30	A	mg Cl/L	P422830	
		Sulfate	3.9	A	mg SO4/L	P422834	
	SM 2320 B-2011	Total Alkalinity	22		mg CaCO3/L	P422640	
	SM 2540 C-2015	TDS	91		mg/L	P422852	
	SM 2540 D-2015	TSS	4	I	mg/L	P422705	
	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P422644	
2369638	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P423042	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33		mg N/L	P422454	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P422493	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P422445	
	SM 5310 B-2011	Organic Carbon	6.5		mg C/L	P422753	

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: P422424

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P422433

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422830

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422834

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P422728

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P422913

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423042

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422454

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422542

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: P422628

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422493

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422580

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422864

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422445

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422536

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422704

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

Reference Method: SM 2320 B-2011
Batch ID: P422640

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

Reference Method: SM 2320 B-2011
Batch ID: P422781

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: P422852

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P422705

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P422708

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P422644

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P422785

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P422753

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

Reference Method: SM 5310 B-2011
Batch ID: P422790

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: P422424

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.6		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P422433

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422830

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422834

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P422728

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P422913

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423042

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422454

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422542

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.5		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422628

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422493

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422580

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422864

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422445

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422536

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422704

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

Reference Method: SM 2320 B-2011
Batch ID: P422640

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.8		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P422781

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.7		P	94 - 106

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P422852

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

Reference Method: SM 2540 D-2015
Batch ID: P422705

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	91.5		P	85 - 106

Reference Method: SM 2540 D-2015
Batch ID: P422708

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	91.1		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P422644

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.9		P	96 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P422785

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P422753

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.0		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P422790

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422830

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2369636	Chloride	100		P	90 - 110
2369748	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422834

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2369636	Sulfate	98.4		P	90 - 110
2369748	Sulfate	99.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P422728

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2369633	Ammonia-N	100	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P422913

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2367750	Ammonia-N	98.8	99.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423042

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370199	Ammonia-N	99.4	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422454

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2369553	Kjeldahl Nitrogen	97.9	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422542

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2369554	Kjeldahl Nitrogen	92.2	92.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422628

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370058	Kjeldahl Nitrogen	95.6	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422493

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2369618	NO2NO3-N	106	106	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422580

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2369224	NO2NO3-N	106	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422864

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370177	NO2NO3-N	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422445

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2369757	Total-P	106	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422536

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370176	Total-P	95.8	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422704

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2369634	Total-P	98.6	98.2	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P422644

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2369236	Fluoride	102	101	P/P	94 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P422785

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2369631	Fluoride	97.3	98.7	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P422753

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2369756	Organic Carbon	96.4	96.4	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P422790

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370843	Organic Carbon	96.2	97.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P422424

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2369548	Color (true)	2.81	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P422433

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2369548	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422830

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2369636	Chloride	0.438	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422834

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2369636	Sulfate	0.151	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P422728

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2369633	Ammonia-N	1.70	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P422913

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2367750	Ammonia-N	0.735	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370199	Ammonia-N	1.88	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422454

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2369553	Kjeldahl Nitrogen	5.95	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422542

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2369554	Kjeldahl Nitrogen	0.0455	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422628

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370058	Kjeldahl Nitrogen	6.23	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422493

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2369618	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422580

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2369224	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422864

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370177	NO2NO3-N	0.839	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422445

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2369757	Total-P	0.430	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370176	Total-P	2.70	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422704

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2369634	Total-P	0.445	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P422640

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2369236	Total Alkalinity	0.521	Sample	P	0 - 3.8

Reference Method: SM 2320 B-2011
Batch ID: P422781

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2369631	Total Alkalinity	0.819	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P422852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2369236	TDS	6.84	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P422644

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2369236	Fluoride	0.490	Spike	P	0 - 1.6

Reference Method: SM 4500-F- C-2011
Batch ID: P422785

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2369631	Fluoride	0.992	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P422753

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2369756	Organic Carbon	0.0448	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P422790

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370843	Organic Carbon	0.945	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: A115961

Included Lab Sample IDs: 2369635, 2369636

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.6	99.3	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A115965

Included Lab Sample IDs: 2369631, 2369632, 2369635, 2369636

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: EPA 353.2 Rev. 2.0

Run ID: A115990

Included Lab Sample IDs: 2369637, 2369638

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A116026

Included Lab Sample IDs: 2369637, 2369638

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A116028

Included Lab Sample IDs: 2369633

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A116040

Included Lab Sample IDs: 2369637, 2369638

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

Reference Method: SM 2320 B-2011

Run ID: A116057

Included Lab Sample IDs: 2369632, 2369635, 2369636

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	94.8	98.1	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A116057

Included Lab Sample IDs: 2369632, 2369635, 2369636

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A116076

Included Lab Sample IDs: 2369633

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A116085

Included Lab Sample IDs: 2369634

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.5	94.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A116102

Included Lab Sample IDs: 2369633

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A116108

Included Lab Sample IDs: 2369635, 2369636

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A116114

Included Lab Sample IDs: 2369634

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

Reference Method: SM 5310 B-2011

Run ID: A116127

Included Lab Sample IDs: 2369637, 2369638

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.6	98.7	P/P	90 - 110
Organic Carbon	98.6	98.6	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A116138

Included Lab Sample IDs: 2369631

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.1	96.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A116138

Included Lab Sample IDs: 2369631

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

Reference Method: SM 5310 B-2011

Run ID: A116142

Included Lab Sample IDs: 2369633, 2369634

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	102	95.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A116158

Included Lab Sample IDs: 2369633

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.8	91.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A116167

Included Lab Sample IDs: 2369634

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A116189

Included Lab Sample IDs: 2369634

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A116231

Included Lab Sample IDs: 2369637, 2369638

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.2	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	MS
DEP SOP: NU-094-1	Color (true)	98.6			2.81	
EPA 180.1 Rev. 2.0	Turbidity	101			0.0	
EPA 300.0 Rev. 2.1	Chloride	98.9	100	100	0.438	
	Sulfate	98.0	98.4	99.1	0.151	
EPA 350.1 Rev. 2.0	Ammonia-N	97.8	100	102		1.70
	Ammonia-N	99.8	98.8	99.8		0.735
	Ammonia-N	98.4	99.4	102		1.88
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	97.9	106		5.95
	Kjeldahl Nitrogen	95.5	92.2	92.2		0.0455
	Kjeldahl Nitrogen	95.5	95.6	103		6.23
EPA 353.2 Rev. 2.0	NO2NO3-N	104	106	106		0.0
	NO2NO3-N	104	106	106		0.0
	NO2NO3-N	103	103	104		0.839
EPA 365.1 Rev. 2.0	Total-P	104	106	107		0.430
	Total-P	104	95.8	98.4		2.70
	Total-P	107	98.6	98.2		0.445
SM 2320 B-2011	Total Alkalinity	96.8			0.521	
	Total Alkalinity	98.7			0.819	
SM 2540 C-2015	TDS	99.3			6.84	
SM 2540 D-2015	TSS	91.5				
	TSS	91.1				
SM 4500-F- C-2011	Fluoride	99.9	102	101		0.490
	Fluoride	100	97.3	98.7		0.992
SM 5310 B-2011	Organic Carbon	96.0	96.4	96.4		0.0448
	Organic Carbon	96.4	96.2	97.4		0.945

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2369635, 2369636
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2369631, 2369632, 2369635, 2369636
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2369635, 2369636
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2369635, 2369636
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2369633, 2369634, 2369637, 2369638
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2369633, 2369634, 2369637, 2369638
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2369633, 2369634, 2369637, 2369638
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2369633, 2369634, 2369637, 2369638
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2369631, 2369632, 2369635, 2369636
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2369635, 2369636
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2369631, 2369632, 2369635, 2369636
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2369631, 2369632, 2369635, 2369636
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2369633, 2369634, 2369637, 2369638

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	11/16/2022			11/16/2022 14:09	Chandler E Cox	2369635
	11/16/2022			11/16/2022 14:10	Chandler E Cox	2369636
EPA 180.1 Rev. 2.0	11/16/2022			11/16/2022 13:34	Khloe J Berg	2369631
	11/16/2022			11/16/2022 13:35	Khloe J Berg	2369632
	11/16/2022			11/16/2022 13:38	Khloe J Berg	2369635
	11/16/2022			11/16/2022 13:39	Khloe J Berg	2369636
	11/16/2022			11/23/2022 04:59	James L Waggeberby	2369636
EPA 300.0 Rev. 2.1	11/16/2022			11/23/2022 08:30	James L Waggeberby	2369635
	11/16/2022			11/22/2022 12:40	Ping Hua	2369633
EPA 350.1 Rev. 2.0	11/16/2022			11/29/2022 13:03	Ping Hua	2369634
	11/16/2022			12/02/2022 11:40	Ping Hua	2369637
	11/16/2022			12/02/2022 11:41	Ping Hua	2369638
	11/16/2022			11/18/2022 09:45	Samantha L Bates	2369637
EPA 351.2 Rev. 2.0	11/16/2022	11/17/2022 10:30	Samantha L Bates	11/18/2022 09:47	Samantha L Bates	2369638
	11/16/2022	11/18/2022 10:00	Alexandra J Mattheus	11/21/2022 18:17	Judith K. Clark	2369634
	11/16/2022	11/21/2022 13:28	Alexandra J Mattheus	11/28/2022 15:33	Judith K. Clark	2369633
	11/16/2022			11/17/2022 09:54	Beverly Y. Sanders	2369637
EPA 353.2 Rev. 2.0	11/16/2022			11/17/2022 09:55	Beverly Y. Sanders	2369638
	11/16/2022			11/18/2022 11:36	Beverly Y. Sanders	2369633
	11/16/2022			11/29/2022 09:45	Beverly Y. Sanders	2369634
	11/16/2022			11/18/2022 15:33	Simonne.V. Calhoun	2369637
EPA 365.1 Rev. 2.0	11/16/2022	11/17/2022 13:57	Adam P Silver	11/18/2022 15:34	Simonne.V. Calhoun	2369638
	11/16/2022	11/18/2022 07:29	Adam P Silver	11/21/2022 14:27	James L Waggeberby	2369633
	11/16/2022	11/22/2022 12:22	Adam P Silver	11/22/2022 18:05	James L Waggeberby	2369634
	11/16/2022			11/19/2022 18:13	Dale L. Simmons	2369635
SM 2320 B-2011	11/16/2022			11/19/2022 18:26	Dale L. Simmons	2369636
	11/16/2022			11/19/2022 18:54	Dale L. Simmons	2369632
	11/16/2022			11/23/2022 10:46	Dale L. Simmons	2369631
	11/16/2022			11/18/2022 16:39	Yijie Li	2369635, 2369636
SM 2540 C-2015	11/16/2022			11/18/2022 16:39	Yijie Li	2369631, 2369632, 2369635, 2369636
SM 4500-F- C-2011	11/16/2022			11/19/2022 18:13	Dale L. Simmons	2369635
	11/16/2022			11/19/2022 18:26	Dale L. Simmons	2369636
	11/16/2022			11/19/2022 18:54	Dale L. Simmons	2369632
	11/16/2022			11/23/2022 09:57	Dale L. Simmons	2369631
	11/16/2022			11/22/2022 06:41	Khloe J Berg	2369637
SM 5310 B-2011	11/16/2022			11/22/2022 07:27	Khloe J Berg	2369638
	11/16/2022			11/23/2022 03:37	Touraj Touran	2369633
	11/16/2022			11/23/2022 03:50	Touraj Touran	2369634