Chemical Analysis Report

SO-DIST-2022-07-15-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Caloosa Creeks**
Request ID: **RQ-2022-07-11-06**
Customer: **SO-DIST**
Project ID: **BMAP**

Send Reports to:
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FLDEP South District Office
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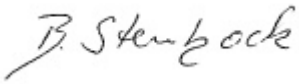
Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator Date Certified: 02-AUG-2022 13:50



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: Orange River @ Boat Ramp **Collection Date/Time: 07/14/2022 09:05**

Field ID: G3SD0128 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2341994	DEP SOP: NU-094-1	Color (true)	46		PCU	P416736	
	SM 2320 B-2011	Total Alkalinity	215		mg CaCO3/L	P417081	
	SM 2540 D-2011	TSS	2	I	mg/L	P417128	
	SM 4500-F- C-2011	Fluoride	0.15		mg F/L	P417087	
2341999	SM 5310 B-2011 dissolved	Organic Carbon	10		mg C/L	P417048	
2342004	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P417322	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.70		mg N/L	P416987	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.061		mg N/L	P416973	
	EPA 365.1 Rev. 2.0	Total-P	0.031		mg P/L	P416949	
	SM 5310 B-2011	Organic Carbon	10		mg C/L	P417049	
2342009	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.01	I	mg P/L	P416745	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Roberts Canal @ SR 80 **Collection Date/Time: 07/14/2022 09:50**

Field ID: G3SD0146 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2341995	DEP SOP: NU-094-1	Color (true)	250		PCU	P416737	
	SM 2320 B-2011	Total Alkalinity	112		mg CaCO3/L	P417081	
	SM 2540 D-2011	TSS	2	I	mg/L	P417128	
	SM 4500-F- C-2011	Fluoride	0.18		mg F/L	P417087	
2342000	SM 5310 B-2011 dissolved	Organic Carbon	25		mg C/L	P417048	
2342005	EPA 350.1 Rev. 2.0	Ammonia-N	0.055		mg N/L	P417265	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P416987	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.020		mg N/L	P416973	
	EPA 365.1 Rev. 2.0	Total-P	0.081		mg P/L	P416949	
	SM 5310 B-2011	Organic Carbon	25		mg C/L	P417049	
2342010	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.046		mg P/L	P416745	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Nine Mile Canal @ SR 80 **Collection Date/Time: 07/14/2022 10:45**

Field ID: G3SD0088 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2341996	DEP SOP: NU-094-1	Color (true)	80	A	PCU	P416737	
	SM 2320 B-2011	Total Alkalinity	196		mg CaCO3/L	P417081	
	SM 2540 D-2011	TSS	3	I	mg/L	P417128	
	SM 4500-F- C-2011	Fluoride	0.36		mg F/L	P417087	
2342001	SM 5310 B-2011 dissolved	Organic Carbon	17		mg C/L	P417048	
2342006	EPA 350.1 Rev. 2.0	Ammonia-N	0.12		mg N/L	P417265	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P416987	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.052		mg N/L	P416973	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P416949	
	SM 5310 B-2011	Organic Carbon	17		mg C/L	P417049	
2342011	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.091		mg P/L	P416745	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Bee Branch @LoblollyBay **Collection Date/Time: 07/14/2022 11:55**

Field ID: G3SD0085 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2341997	DEP SOP: NU-094-1	Color (true)	370		PCU	P416737	
	SM 2320 B-2011	Total Alkalinity	30		mg CaCO3/L	P417081	
	SM 2540 D-2011	TSS	2	I	mg/L	P417128	
	SM 4500-F- C-2011	Fluoride	0.11		mg F/L	P417087	
2342002	SM 5310 B-2011 dissolved	Organic Carbon	37		mg C/L	P417048	
2342007	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P417265	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P416988	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.068		mg N/L	P416973	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P416949	
	SM 5310 B-2011	Organic Carbon	37		mg C/L	P417049	
2342012	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P416745	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Telegraph Creek @ USGS **Collection Date/Time: 07/14/2022 12:45**

Field ID: G3SD0129 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2341998	DEP SOP: NU-094-1	Color (true)	720		PCU	P416737	
	SM 2320 B-2011	Total Alkalinity	60		mg CaCO3/L	P417081	
	SM 2540 D-2011	TSS	4	I A	mg/L	P417129	
	SM 4500-F- C-2011	Fluoride	0.078	I	mg F/L	P417087	
2342003	SM 5310 B-2011 dissolved	Organic Carbon	56		mg C/L	P417048	
2342008	EPA 350.1 Rev. 2.0	Ammonia-N	0.14		mg N/L	P417265	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.1		mg N/L	P416988	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.020		mg N/L	P416973	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P416949	
	SM 5310 B-2011	Organic Carbon	56		mg C/L	P417049	
2342013	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.085		mg P/L	P416745	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Telegraph Creek @ USGS **Collection Date/Time: 07/14/2022 12:50**

Field ID: FB_07142022 Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2342014	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P416737	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P417081	
	SM 2540 D-2011	TSS	2	U	mg/L	P417129	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P417087	
2342015	SM 5310 B-2011 dissolved	Organic Carbon	0.50	U	mg C/L	P417048	
2342016	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P417265	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P416988	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P416973	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P416950	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P417049	
2342017	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P416745	

Ref. Method and Comment:
SM 2540 D-2011: 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: P416736

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P416737

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417265

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417322

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416987

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416988

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416973

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416949

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416950

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P416745

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: SM 2320 B-2011
Batch ID: P417081

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

Reference Method: SM 2540 D-2011
Batch ID: P417128

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P417129

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P417087

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P417049

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

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P417048

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: P416736

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	95.2		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P416737

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417265

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417322

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416987

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416988

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416973

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416949

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416950

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P416745

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.6		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P417081

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

Reference Method: SM 4500-F- C-2011
Batch ID: P417087

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

Reference Method: SM 5310 B-2011
Batch ID: P417049

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.3		P	85 - 115

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P417048

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.7		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417265

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342007	Ammonia-N	99.2	97.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417322

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342449	Ammonia-N	97.6	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416988

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341979	Kjeldahl Nitrogen	103	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416973

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341979	NO2NO3-N	96.6	95.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416949

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341503	Total-P	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416950

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342091	Total-P	103	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P416745

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341954	O-Phosphate-P	98.9	98.7	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P417087

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342086	Fluoride	101	100	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P417049

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341979	Organic Carbon	94.8	96.4	P/P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P417048

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341785	Organic Carbon	90.1	88.4	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P416736

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341978	Color (true)	2.40	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P416737

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341996	Color (true)	0.266	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417265

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342007	Ammonia-N	1.23	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417322

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342449	Ammonia-N	1.10	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416987

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341918	Kjeldahl Nitrogen	4.90	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416988

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341979	Kjeldahl Nitrogen	1.99	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416973

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341979	NO2NO3-N	0.885	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416949

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341503	Total-P	0.510	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416950

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342091	Total-P	1.84	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P416745

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341954	O-Phosphate-P	0.202	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P417081

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342086	Total Alkalinity	1.82	Sample	P	0 - 3.8

Reference Method: SM 4500-F- C-2011
Batch ID: P417087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342086	Fluoride	0.476	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P417049

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341979	Organic Carbon	1.06	Spike	P	0 - 20

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P417048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341785	Organic Carbon	1.55	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: A113535
Included Lab Sample IDs: 2341994, 2341995, 2341996, 2341997, 2341998, 2342014

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.2	99.5	P/P	90 - 110
Color (true)	97.5	97.2	P/P	90 - 110
Color (true)	99.5	99.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A113537
Included Lab Sample IDs: 2342009, 2342010, 2342011, 2342012, 2342013, 2342017

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A113636
Included Lab Sample IDs: 2342004, 2342005, 2342006, 2342007, 2342008, 2342016

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	97.5	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A113669
Included Lab Sample IDs: 2342004, 2342005, 2342006, 2342007, 2342008, 2342016

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.2	97.0	P/P	90 - 110

Reference Method: SM 5310 B-2011 dissolved
Run ID: A113669
Included Lab Sample IDs: 2341999, 2342000, 2342001, 2342002, 2342003, 2342015

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.8	97.7	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A113683
Included Lab Sample IDs: 2341994, 2341995, 2341996, 2341997, 2341998, 2342014

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	99.3	P/P	90 - 110
Total Alkalinity	97.9	100	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A113683
Included Lab Sample IDs: 2341994, 2341995, 2341996, 2341997, 2341998, 2342014

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A113685
Included Lab Sample IDs: 2342005, 2342006, 2342007, 2342008

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A113693
Included Lab Sample IDs: 2342004, 2342016

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A113704
Included Lab Sample IDs: 2342004, 2342005, 2342006, 2342007, 2342008, 2342016

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.7	96.9	P/P	90 - 110
Kjeldahl Nitrogen	96.9	96.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A113739
Included Lab Sample IDs: 2342005, 2342006, 2342007, 2342008, 2342016

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: A113765
Included Lab Sample IDs: 2342004

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.8	98.5	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
DEP SOP: NU-094-1	Color (true)	95.2				2.40	
	Color (true)	99.5				0.266	
EPA 350.1 Rev. 2.0	Ammonia-N	98.0	99.2	97.0			1.23
	Ammonia-N	98.2	97.6	99.6			1.10
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102					4.90
	Kjeldahl Nitrogen	104	103	106			1.99
EPA 353.2 Rev. 2.0	NO2NO3-N	97.5	96.6	95.6			0.885
EPA 365.1 Rev. 2.0	Total-P	103	102	103			0.510
	Total-P	99.8	103	101			1.84
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.6	98.9	98.7			0.202
SM 2320 B-2011	Total Alkalinity	101				1.82	
SM 4500-F- C-2011	Fluoride	101	101	100			0.476
SM 5310 B-2011	Organic Carbon	97.3	94.8	96.4			1.06
SM 5310 B-2011 dissolved	Organic Carbon	97.7	90.1	88.4			1.55

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2341994, 2341995, 2341996, 2341997, 2341998, 2342014
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2342004, 2342005, 2342006, 2342007, 2342008, 2342016
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2342004, 2342005, 2342006, 2342007, 2342008, 2342016
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2342004, 2342005, 2342006, 2342007, 2342008, 2342016
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2342004, 2342005, 2342006, 2342007, 2342008, 2342016
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2342009, 2342010, 2342011, 2342012, 2342013, 2342017
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2341994, 2341995, 2341996, 2341997, 2341998, 2342014
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2341994, 2341995, 2341996, 2341997, 2341998, 2342014
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2341994, 2341995, 2341996, 2341997, 2341998, 2342014
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2342004, 2342005, 2342006, 2342007, 2342008, 2342016
SM 5310 B-2011 dissolved	Dissolved Nonpurgeable Organic Carbon in filtered, aqueous matrices	2341999, 2342000, 2342001, 2342002, 2342003, 2342015

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	07/15/2022			07/15/2022 13:53	Samantha L Bates	2341994
	07/15/2022			07/15/2022 14:03	Samantha L Bates	2341996
	07/15/2022			07/15/2022 14:05	Samantha L Bates	2342014
	07/15/2022			07/15/2022 14:15	Samantha L Bates	2341995
	07/15/2022			07/15/2022 14:16	Samantha L Bates	2341997
	07/15/2022			07/15/2022 14:17	Samantha L Bates	2341998
EPA 350.1 Rev. 2.0	07/15/2022			07/27/2022 15:30	Judith K. Clark	2342007
	07/15/2022			07/27/2022 15:34	Judith K. Clark	2342005
	07/15/2022			07/27/2022 15:35	Judith K. Clark	2342006
	07/15/2022			07/27/2022 15:36	Judith K. Clark	2342008
	07/15/2022			07/27/2022 15:46	Judith K. Clark	2342016
	07/15/2022			07/28/2022 12:12	Judith K. Clark	2342004
EPA 351.2 Rev. 2.0	07/15/2022	07/25/2022 12:53	Simonne.V. Calhoun	07/26/2022 11:16	Samantha L Bates	2342004
	07/15/2022	07/25/2022 12:53	Simonne.V. Calhoun	07/26/2022 11:18	Samantha L Bates	2342005
	07/15/2022	07/25/2022 12:53	Simonne.V. Calhoun	07/26/2022 11:19	Samantha L Bates	2342006
	07/15/2022	07/25/2022 12:53	Simonne.V. Calhoun	07/26/2022 11:41	Samantha L Bates	2342007
	07/15/2022	07/25/2022 12:53	Simonne.V. Calhoun	07/26/2022 11:42	Samantha L Bates	2342008
	07/15/2022	07/25/2022 12:53	Simonne.V. Calhoun	07/26/2022 11:44	Samantha L Bates	2342016
EPA 353.2 Rev. 2.0	07/15/2022			07/21/2022 10:49	Beverly Y. Sanders	2342004
	07/15/2022			07/21/2022 10:50	Beverly Y. Sanders	2342005
	07/15/2022			07/21/2022 10:51	Beverly Y. Sanders	2342006
	07/15/2022			07/21/2022 10:53	Beverly Y. Sanders	2342007
	07/15/2022			07/21/2022 10:54	Beverly Y. Sanders	2342008
	07/15/2022			07/21/2022 10:55	Beverly Y. Sanders	2342016
EPA 365.1 Rev. 2.0	07/15/2022	07/22/2022 16:03	Adam P Silver	07/25/2022 10:06	James L Waggerby	2342005
	07/15/2022	07/22/2022 16:03	Adam P Silver	07/25/2022 10:07	James L Waggerby	2342006
	07/15/2022	07/22/2022 16:03	Adam P Silver	07/25/2022 10:08	James L Waggerby	2342007
	07/15/2022	07/22/2022 16:03	Adam P Silver	07/25/2022 10:09	James L Waggerby	2342008
	07/15/2022	07/22/2022 16:03	Adam P Silver	07/25/2022 15:07	James L Waggerby	2342004
	07/15/2022	07/22/2022 16:03	Adam P Silver	07/25/2022 15:09	James L Waggerby	2342016
EPA 365.1 Rev. 2.0 dissolved	07/15/2022			07/15/2022 14:28	Chandler E Cox	2342009
	07/15/2022			07/15/2022 14:29	Chandler E Cox	2342010
	07/15/2022			07/15/2022 14:30	Chandler E Cox	2342011
	07/15/2022			07/15/2022 14:31	Chandler E Cox	2342012
	07/15/2022			07/15/2022 14:36	Chandler E Cox	2342013
	07/15/2022			07/15/2022 14:38	Chandler E Cox	2342017
SM 2320 B-2011	07/15/2022			07/23/2022 07:13	Dale L. Simmons	2341994
	07/15/2022			07/23/2022 08:02	Dale L. Simmons	2341995
	07/15/2022			07/23/2022 08:17	Dale L. Simmons	2341996
	07/15/2022			07/23/2022 08:31	Dale L. Simmons	2341997

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-2011	07/15/2022			07/23/2022 08:45	Dale L. Simmons	2341998
	07/15/2022			07/23/2022 08:54	Dale L. Simmons	2342014
SM 2540 D-2011	07/15/2022			07/19/2022 15:12	Yijie Li	2341994, 2341995, 2341996, 2341997, 2341998, 2342014
SM 4500-F- C-2011	07/15/2022			07/23/2022 07:13	Dale L. Simmons	2341994
	07/15/2022			07/23/2022 08:02	Dale L. Simmons	2341995
	07/15/2022			07/23/2022 08:17	Dale L. Simmons	2341996
	07/15/2022			07/23/2022 08:31	Dale L. Simmons	2341997
	07/15/2022			07/23/2022 08:45	Dale L. Simmons	2341998
	07/15/2022			07/23/2022 08:54	Dale L. Simmons	2342014
SM 5310 B-2011	07/15/2022			07/22/2022 07:27	Touraj Touran	2342004
	07/15/2022			07/22/2022 07:42	Touraj Touran	2342005
	07/15/2022			07/22/2022 07:56	Touraj Touran	2342006
	07/15/2022			07/22/2022 08:10	Touraj Touran	2342007
	07/15/2022			07/22/2022 08:24	Touraj Touran	2342008
	07/15/2022			07/22/2022 08:38	Touraj Touran	2342016
SM 5310 B-2011 dissolved	07/15/2022			07/21/2022 23:01	Touraj Touran	2341999
	07/15/2022			07/21/2022 23:15	Touraj Touran	2342000
	07/15/2022			07/21/2022 23:29	Touraj Touran	2342001
	07/15/2022			07/21/2022 23:43	Touraj Touran	2342002
	07/15/2022			07/21/2022 23:57	Touraj Touran	2342003
	07/15/2022			07/22/2022 00:10	Touraj Touran	2342015