

Chemical Analysis Report

NW-DIST-2019-08-21-01

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

Event Description: **98 WHALER RUN**
Request ID: **RQ-2019-08-19-17**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
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Date Certified: 03-SEP-2019 10:52



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 Bayou Center

Collection Date/Time: 08/20/2019 10:15

Field ID: G3NW0181

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2113117	EPA 180.1 Rev. 2.0	Turbidity	6.5	A	NTU	P369449	
	EPA 300.0	Bromide	28		mg Br/L	P369760	
	SM 2320 B-97	Total Alkalinity	75		mg CaCO3/L	P369891	
	SM 2540 D-97	TSS	8	I	mg/L	P369933	
	SM 4500 F-C-97	Fluoride	0.52		mg F/L	P369892	
2113121	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P369878	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P369597	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P369578	
	EPA 365.1 Rev. 2.0	Total-P	0.053		mg P/L	P369518	
	SM 5310 B-00	Organic Carbon	6.1		mg C/L	P369625	
2113125	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P369448	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Mack Bayou

Collection Date/Time: 08/20/2019 10:35

Field ID: G3NW0128

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2113118	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P369449	
	EPA 300.0	Bromide	42		mg Br/L	P369760	
	SM 2320 B-97	Total Alkalinity	88		mg CaCO3/L	P369891	
	SM 2540 D-97	TSS	3	U	mg/L	P369933	
	SM 4500 F-C-97	Fluoride	0.71		mg F/L	P369892	
2113122	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P369878	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38	I	mg N/L	P369597	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P369578	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P369518	
	SM 5310 B-00	Organic Carbon	2.4		mg C/L	P369625	
2113126	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P369448	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Joes Bayou

Collection Date/Time: 08/20/2019 12:50

Field ID: G3NW0182

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2113119	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P369449	
	EPA 300.0	Bromide	51		mg Br/L	P369760	
	SM 2320 B-97	Total Alkalinity	99		mg CaCO3/L	P369891	
	SM 2540 D-97	TSS	3	U	mg/L	P369933	
	SM 4500 F-C-97	Fluoride	0.85		mg F/L	P369892	
2113123	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P369878	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36	I	mg N/L	P369597	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P369578	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P369518	
	SM 5310 B-00	Organic Carbon	2.6		mg C/L	P369625	
2113127	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P369448	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Destin Harbor across from AJ's Restaurant

Collection Date/Time: 08/20/2019 12:25

Field ID: G3NW0127

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2113120	EPA 180.1 Rev. 2.0	Turbidity	0.75		NTU	P369449	
	EPA 300.0	Bromide	56		mg Br/L	P369760	
	SM 2320 B-97	Total Alkalinity	103		mg CaCO3/L	P369891	
	SM 2540 D-97	TSS	3	IA	mg/L	P369933	
	SM 4500 F-C-97	Fluoride	0.94		mg F/L	P369892	
2113124	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P369878	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26	I	mg N/L	P369598	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P369579	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P369518	
	SM 5310 B-00	Organic Carbon	2.1		mg C/L	P369625	
2113128	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P369448	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Alaqua Bayou Center

Collection Date/Time: 08/20/2019 11:15

Field ID: G3NW0180

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2113129	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P369449	
	EPA 300.0	Bromide	13		mg Br/L	P369760	
	SM 2320 B-97	Total Alkalinity	38		mg CaCO3/L	P369891	
	SM 2540 D-97	TSS	4	I	mg/L	P369930	
	SM 4500 F-C-97	Fluoride	0.25		mg F/L	P369892	
2113130	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P369878	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P369598	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P369579	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P369518	
	SM 5310 B-00	Organic Carbon	4.4		mg C/L	P369623	
2113131	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P369448	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P369449

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0
Batch ID: P369760

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369878

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369597

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369598

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369578

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369579

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369518

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P369448

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P369891

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 D-97
Batch ID: P369930

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P369933

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P369892

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P369623

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

Reference Method: SM 5310 B-00
Batch ID: P369625

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0
Batch ID: P369760

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	98.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369878

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369597

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369598

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369578

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	100		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369579

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369518

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.1		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P369448

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

Reference Method: SM 2320 B-97
Batch ID: P369891

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P369892

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.7		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P369623

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.6		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P369625

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0
Batch ID: P369760

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113204	Bromide	94.1	96.3	P/P	90 - 110
2113615	Bromide	97.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369878

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113121	Ammonia-N	104	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369597

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113112	Kjeldahl Nitrogen	98.7	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369598

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113124	Kjeldahl Nitrogen	99.1	98.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369578

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2112972	NO2NO3-N	97.7	96.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369579

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113124	NO2NO3-N	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369518

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2112973	Total-P	95.5	94.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P369448

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113125	O-Phosphate-P	99.0	99.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P369892

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2111922	Fluoride	98.7	101	P/P	89 - 106

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P369623

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113303	Organic Carbon	97.6	97.7	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P369625

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113123	Organic Carbon	91.7	89.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P369449

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113117	Turbidity	0.154	Sample	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P369760

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113204	Bromide	1.88	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369878

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113121	Ammonia-N	0.394	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369597

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113112	Kjeldahl Nitrogen	0.603	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369598

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113124	Kjeldahl Nitrogen	0.365	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369578

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2112972	NO2NO3-N	0.995	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369579

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113124	NO2NO3-N	0.487	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369518

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2112973	Total-P	0.898	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P369448

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113125	O-Phosphate-P	0.202	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P369891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113602	Total Alkalinity	0.622	Sample	P	0 - 2.8

Reference Method: SM 4500 F-C-97
Batch ID: P369892

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111922	Fluoride	1.91	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P369623

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113303	Organic Carbon	0.0864	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P369625

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113123	Organic Carbon	2.42	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A93695

Included Lab Sample IDs: 2113125, 2113126, 2113127, 2113128, 2113131

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	99.4	P/P	90 - 110
O-Phosphate-P	99.3	99.4	P/P	90 - 110
O-Phosphate-P	99.4	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A93696

Included Lab Sample IDs: 2113117, 2113118, 2113119, 2113120, 2113129

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	102	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A93747

Included Lab Sample IDs: 2113121, 2113122, 2113123, 2113124, 2113130

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	100	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A93766

Included Lab Sample IDs: 2113121, 2113122, 2113123, 2113124, 2113130

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	98.2	P/P	90 - 110
Organic Carbon	95.2	97.6	P/P	90 - 110
Organic Carbon	95.6	95.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A93776

Included Lab Sample IDs: 2113121, 2113122, 2113123, 2113124, 2113130

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A93778

Included Lab Sample IDs: 2113121, 2113122, 2113123, 2113124, 2113130

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	99.2	P/P	90 - 110
Kjeldahl Nitrogen	91.9	100	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A93817

Included Lab Sample IDs: 2113117, 2113118, 2113119, 2113120, 2113129

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	106	105	P/P	90 - 110
Bromide	107	106	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A93846

Included Lab Sample IDs: 2113121, 2113122, 2113123, 2113124, 2113130

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	108	107	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A93863

Included Lab Sample IDs: 2113117, 2113118, 2113119, 2113120, 2113129

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110
Total Alkalinity	104	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A93863

Included Lab Sample IDs: 2113117, 2113118, 2113119, 2113120, 2113129

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	99.5	P/P	90 - 110
Fluoride	99.5	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 SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					0.154	
EPA 300.0	Bromide	98.7	94.1	96.3	97.3		1.88
EPA 350.1 Rev. 2.0	Ammonia-N	106	104	104			0.394
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.5	98.7	99.4			0.603
	Kjeldahl Nitrogen	99.5	99.1	98.7			0.365
EPA 353.2 Rev. 2.0	NO2NO3-N	100	97.7	96.7			0.995
	NO2NO3-N	100	102	103			0.487
EPA 365.1 Rev. 2.0	Total-P	99.1	95.5	94.6			0.898
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	99.0	99.2			0.202
SM 2320 B-97	Total Alkalinity	103				0.622	
SM 4500 F-C-97	Fluoride	96.7	98.7	101			1.91
SM 5310 B-00	Organic Carbon	96.6	97.6	97.7			0.0864
	Organic Carbon	93.4	91.7	89.3			2.42

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2113117, 2113118, 2113119, 2113120, 2113129
EPA 300.0 / E31780	Bromide in aqueous matrices	2113117, 2113118, 2113119, 2113120, 2113129
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2113121, 2113122, 2113123, 2113124, 2113130
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2113121, 2113122, 2113123, 2113124, 2113130
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2113121, 2113122, 2113123, 2113124, 2113130
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2113121, 2113122, 2113123, 2113124, 2113130
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2113125, 2113126, 2113127, 2113128, 2113131
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2113117, 2113118, 2113119, 2113120, 2113129
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2113117, 2113118, 2113119, 2113120, 2113129
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2113117, 2113118, 2113119, 2113120, 2113129
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2113121, 2113122, 2113123, 2113124, 2113130

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	08/21/2019			08/21/2019 13:32	Rosalyn Ballman	2113117, 2113118, 2113119, 2113120, 2113129
EPA 300.0	08/21/2019			08/27/2019 02:50	Jhamieka S. Greenwood	2113117
	08/21/2019			08/27/2019 03:07	Jhamieka S. Greenwood	2113118
	08/21/2019			08/27/2019 03:58	Jhamieka S. Greenwood	2113119
	08/21/2019			08/27/2019 04:16	Jhamieka S. Greenwood	2113120
EPA 350.1 Rev. 2.0	08/21/2019			08/27/2019 04:33	Jhamieka S. Greenwood	2113129
	08/21/2019			08/28/2019 13:33	Ping Hua	2113121
	08/21/2019			08/28/2019 13:37	Ping Hua	2113122
	08/21/2019			08/28/2019 13:39	Ping Hua	2113123
	08/21/2019			08/28/2019 13:40	Ping Hua	2113124
EPA 351.2 Rev. 2.0	08/21/2019			08/28/2019 13:42	Ping Hua	2113130
	08/21/2019	08/23/2019 11:05	Sima Feizi	08/26/2019 10:55	Joseph Suarez	2113121
	08/21/2019	08/23/2019 11:05	Sima Feizi	08/26/2019 10:57	Joseph Suarez	2113122
	08/21/2019	08/23/2019 11:05	Sima Feizi	08/26/2019 11:02	Joseph Suarez	2113123
	08/21/2019	08/23/2019 11:05	Sima Feizi	08/26/2019 11:06	Joseph Suarez	2113124
EPA 353.2 Rev. 2.0	08/21/2019	08/23/2019 11:05	Sima Feizi	08/26/2019 11:11	Joseph Suarez	2113130
	08/21/2019			08/23/2019 11:10	Beverly Y. Sanders	2113121
	08/21/2019			08/23/2019 11:11	Beverly Y. Sanders	2113122
	08/21/2019			08/23/2019 11:13	Beverly Y. Sanders	2113123
	08/21/2019			08/23/2019 11:20	Beverly Y. Sanders	2113124
EPA 365.1 Rev. 2.0	08/21/2019			08/23/2019 11:26	Beverly Y. Sanders	2113130
	08/21/2019	08/22/2019 12:30	Lipi Saha	08/26/2019 12:39	Lipi Saha	2113121
	08/21/2019	08/22/2019 12:30	Lipi Saha	08/26/2019 12:40	Lipi Saha	2113122
	08/21/2019	08/22/2019 12:30	Lipi Saha	08/26/2019 12:41	Lipi Saha	2113123
	08/21/2019	08/22/2019 12:30	Lipi Saha	08/26/2019 12:42	Lipi Saha	2113124
EPA 365.1 Rev. 2.0 dissolved	08/21/2019	08/22/2019 12:30	Lipi Saha	08/26/2019 12:43	Lipi Saha	2113130
	08/21/2019			08/21/2019 15:07	Jhamieka S. Greenwood	2113125
	08/21/2019			08/21/2019 15:20	Jhamieka S. Greenwood	2113126
	08/21/2019			08/21/2019 15:21	Jhamieka S. Greenwood	2113127
	08/21/2019			08/21/2019 15:26	Jhamieka S. Greenwood	2113128
SM 2320 B-97	08/21/2019			08/21/2019 15:27	Jhamieka S. Greenwood	2113131
	08/21/2019			08/28/2019 23:54	Dale L. Simmons	2113129
	08/21/2019			08/29/2019 02:09	Dale L. Simmons	2113117
	08/21/2019			08/29/2019 02:21	Dale L. Simmons	2113118
	08/21/2019			08/29/2019 02:34	Dale L. Simmons	2113119
SM 2540 D-97	08/21/2019			08/29/2019 02:46	Dale L. Simmons	2113120
	08/21/2019			08/23/2019 14:56	Yijie Li	2113117, 2113118, 2113119, 2113120, 2113129
SM 4500 F-C-97	08/21/2019			08/28/2019 21:37	Dale L. Simmons	2113129

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-97	08/21/2019			08/28/2019 22:02	Dale L. Simmons	2113117
	08/21/2019			08/28/2019 22:06	Dale L. Simmons	2113118
	08/21/2019			08/28/2019 22:53	Dale L. Simmons	2113119
	08/21/2019			08/28/2019 22:57	Dale L. Simmons	2113120
SM 5310 B-00	08/21/2019			08/23/2019 16:47	Madeline Funaro	2113130
	08/21/2019			08/24/2019 04:26	Madeline Funaro	2113123
	08/21/2019			08/24/2019 05:17	Madeline Funaro	2113121
	08/21/2019			08/24/2019 05:41	Madeline Funaro	2113122
	08/21/2019			08/24/2019 06:18	Madeline Funaro	2113124