

Chemical Analysis Report

NW-DIST-2020-02-18-01

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-2020-02-17-26**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 308
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 10-MAR-2020 13:51

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored background.

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: 02/17/2020 10:55

Field ID: G3NW0181

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2158605	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P379139	
	EPA 300.0 Rev. 2.1	Bromide	31		mg Br/L	P379450	
	SM 2320 B-2011	Total Alkalinity	65		mg CaCO3/L	P379740	
	SM 2540 D-2011	TSS	4	I	mg/L	P379605	
	SM 4500 F-C-2011	Fluoride	0.54		mg F/L	P379746	
2158607	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P379458	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35	I	mg N/L	P379283	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.028		mg N/L	P379272	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P379736	
	SM 5310 B-2011	Organic Carbon	4.1		mg C/L	P379362	
2158609	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P379143	

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: Joes Bayou

Collection Date/Time: 02/17/2020 13:20

Field ID: G3NW0182

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2158606	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P379139	
	EPA 300.0 Rev. 2.1	Bromide	32		mg Br/L	P379450	
	SM 2320 B-2011	Total Alkalinity	69		mg CaCO3/L	P379740	
	SM 2540 D-2011	TSS	3	U	mg/L	P379605	
	SM 4500 F-C-2011	Fluoride	0.61		mg F/L	P380180	
2158608	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P379458	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24	I	mg N/L	P379283	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.031		mg N/L	P379272	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P379736	
	SM 5310 B-2011	Organic Carbon	3.4		mg C/L	P379362	
2158610	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P379143	

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: Boggy Bayou Mouth

Collection Date/Time: 02/17/2020 14:30

Field ID: G3NW0186

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2158611	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P379139	
	EPA 300.0 Rev. 2.1	Bromide	22		mg Br/L	P379450	
	SM 2320 B-2011	Total Alkalinity	54		mg CaCO3/L	P379417	
	SM 2540 D-2011	TSS	3	U	mg/L	P379605	
	SM 4500 F-C-2011	Fluoride	0.45	I	mg F/L	P379422	
2158612	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P379458	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25	I	mg N/L	P379283	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.044		mg N/L	P379273	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P379736	
	SM 5310 B-2011	Organic Carbon	4.2		mg C/L	P379362	
2158613	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P379143	

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: EPA 180.1 Rev. 2.0
Batch ID: P379139

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379450

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379458

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379283

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379272

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379273

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379736

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379143

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

Reference Method: SM 2320 B-2011
Batch ID: P379417

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P379740

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

Reference Method: SM 2540 D-2011
Batch ID: P379605

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P379422

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P379746

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P380180

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P379362

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379450

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379458

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	93.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379283

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379272

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	101		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379273

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379736

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379143

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

Reference Method: SM 2320 B-2011
Batch ID: P379417

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 2320 B-2011
Batch ID: P379740

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P379422

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.0		P	92 - 103

Reference Method: SM 4500 F-C-2011
Batch ID: P379746

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.1		P	92 - 103

Reference Method: SM 4500 F-C-2011
Batch ID: P380180

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P379362

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379450

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158277	Bromide	99.3	99.0	P/P	90 - 110
2159024	Bromide	97.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379458

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158474	Ammonia-N	97.7	96.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379283

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158607	Kjeldahl Nitrogen	98.8	97.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158333	NO2NO3-N	99.0	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379273

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158612	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379736

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158446	Total-P	99.4	99.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379143

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158334	O-Phosphate-P	96.8	92.6	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P379422

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158843	Fluoride	98.6	100	P/P	89 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P379746

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2157633	Fluoride	97.3	98.9	P/P	89 - 106

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P380180

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160182	Fluoride	100	100	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P379362

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2158474	Organic Carbon	98.2	98.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P379139

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158696	Turbidity	0.881	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379450

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158277	Bromide	0.270	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379458

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158474	Ammonia-N	1.13	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379283

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158607	Kjeldahl Nitrogen	1.26	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158333	NO2NO3-N	2.00	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379273

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158612	NO2NO3-N	0.809	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379736

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158446	Total-P	0.0246	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379143

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158334	O-Phosphate-P	2.17	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
 Batch ID: P379417

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158843	Total Alkalinity	0.563	Sample	P	0 - 2.8

Reference Method: SM 2320 B-2011
 Batch ID: P379740

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2159014	Total Alkalinity	0.516	Sample	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
 Batch ID: P379422

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158843	Fluoride	0.972	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-2011
 Batch ID: P379746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2157633	Fluoride	0.979	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-2011
 Batch ID: P380180

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160182	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
 Batch ID: P379362

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2158474	Organic Carbon	0.260	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: A97621

Included Lab Sample IDs: 2158605, 2158606, 2158611

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A97622

Included Lab Sample IDs: 2158609, 2158610, 2158613

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.3	95.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A97683

Included Lab Sample IDs: 2158607, 2158608, 2158612

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A97709

Included Lab Sample IDs: 2158607, 2158608, 2158612

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.9	98.8	P/P	90 - 110
Kjeldahl Nitrogen	98.8	99.9	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A97718

Included Lab Sample IDs: 2158607, 2158608, 2158612

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.9	98.8	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A97739

Included Lab Sample IDs: 2158611

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

Reference Method: SM 4500 F-C-2011

Run ID: A97739

Included Lab Sample IDs: 2158611

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	93.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A97750

Included Lab Sample IDs: 2158605, 2158606, 2158611

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A97750

Included Lab Sample IDs: 2158605, 2158606, 2158611

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A97754

Included Lab Sample IDs: 2158607, 2158608, 2158612

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.0	P/P	90 - 110
Ammonia-N	98.4	101	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A97845

Included Lab Sample IDs: 2158605, 2158606

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	106	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A97845

Included Lab Sample IDs: 2158605

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97881

Included Lab Sample IDs: 2158607, 2158608, 2158612

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

Reference Method: SM 4500 F-C-2011

Run ID: A98031

Included Lab Sample IDs: 2158606

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	97.2	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					0.881	
EPA 300.0 Rev. 2.1	Bromide	102	99.3	99.0	97.4		0.270
EPA 350.1 Rev. 2.0	Ammonia-N	93.7	97.7	96.5			1.13
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.9	98.8	97.4			1.26
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	99.0	101			2.00
	NO ₂ NO ₃ -N	102	101	102			0.809
EPA 365.1 Rev. 2.0	Total-P	106	99.4	99.4			0.0246
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	96.8	92.6			2.17
SM 2320 B-2011	Total Alkalinity	104				0.563	
	Total Alkalinity	106				0.516	
SM 4500 F-C-2011	Fluoride	99.0	98.6	100			0.972
	Fluoride	97.1	97.3	98.9			0.979
	Fluoride	99.3	100	100			0.0
SM 5310 B-2011	Organic Carbon	96.6	98.2	98.5			0.260

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2158605, 2158606, 2158611
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2158605, 2158606, 2158611
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2158607, 2158608, 2158612
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2158607, 2158608, 2158612
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2158607, 2158608, 2158612
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2158607, 2158608, 2158612
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2158609, 2158610, 2158613
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2158605, 2158606, 2158611
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2158605, 2158606, 2158611
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2158605, 2158606, 2158611
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2158607, 2158608, 2158612

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	02/18/2020			02/18/2020 16:35	Yen Ta	2158605, 2158606, 2158611
EPA 300.0 Rev. 2.1	02/18/2020			02/22/2020 17:10	Lipi Saha	2158605
	02/18/2020			02/22/2020 17:28	Lipi Saha	2158606
	02/18/2020			02/22/2020 17:45	Lipi Saha	2158611
EPA 350.1 Rev. 2.0	02/18/2020			02/21/2020 10:41	Ping Hua	2158607
	02/18/2020			02/21/2020 10:43	Ping Hua	2158608
	02/18/2020			02/21/2020 10:50	Ping Hua	2158612
EPA 351.2 Rev. 2.0	02/18/2020	02/20/2020 13:30	Sima Feizi	02/21/2020 08:40	Jhamieka S. Greenwood	2158607
	02/18/2020	02/20/2020 13:30	Sima Feizi	02/21/2020 08:59	Jhamieka S. Greenwood	2158608
	02/18/2020	02/20/2020 13:30	Sima Feizi	02/21/2020 09:00	Jhamieka S. Greenwood	2158612
EPA 353.2 Rev. 2.0	02/18/2020			02/20/2020 13:27	Lauren Lees	2158607
	02/18/2020			02/20/2020 13:28	Lauren Lees	2158608
	02/18/2020			02/20/2020 13:35	Lauren Lees	2158612
EPA 365.1 Rev. 2.0	02/18/2020	02/27/2020 13:38	Yen Ta	02/28/2020 10:34	Lipi Saha	2158607
	02/18/2020	02/27/2020 13:38	Yen Ta	02/28/2020 10:35	Lipi Saha	2158608
	02/18/2020	02/27/2020 13:38	Yen Ta	02/28/2020 10:36	Lipi Saha	2158612
EPA 365.1 Rev. 2.0 dissolved	02/18/2020			02/18/2020 16:26	Carlos Miranda	2158609
	02/18/2020			02/18/2020 16:27	Carlos Miranda	2158610
	02/18/2020			02/18/2020 16:28	Carlos Miranda	2158613
SM 2320 B-2011	02/18/2020			02/23/2020 02:17	Dale L. Simmons	2158611
	02/18/2020			02/26/2020 00:34	Dale L. Simmons	2158605
	02/18/2020			02/26/2020 00:45	Dale L. Simmons	2158606
SM 2540 D-2011	02/18/2020			02/21/2020 15:21	Yijie Li	2158605, 2158606, 2158611
SM 4500 F-C-2011	02/18/2020			02/23/2020 00:44	Dale L. Simmons	2158611
	02/18/2020			02/25/2020 22:01	Dale L. Simmons	2158605
	02/18/2020			03/05/2020 15:02	Dale L. Simmons	2158606
SM 5310 B-2011	02/18/2020			02/20/2020 09:50	Madeline Funaro	2158607
	02/18/2020			02/20/2020 10:04	Madeline Funaro	2158608
	02/18/2020			02/20/2020 10:16	Madeline Funaro	2158612