

Chemical Analysis Report

NW-DIST-2019-05-07-01

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-2019-05-06-35**

Customer: **NW-DIST**

Project ID: **SMP**

Send Reports to:
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160 Government Center
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 23-MAY-2019 18:32



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: JOES BAYOU

Collection Date/Time: 05/06/2019 11:15

Field ID: G3NW0182

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083639	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P363539	
	EPA 300.0	Bromide	40		mg Br/L	P363817	
	SM 2320 B-97	Total Alkalinity	79		mg CaCO3/L	P364172	
	SM 2540 D-97	TSS	7	I	mg/L	P363895	
	SM 4500 F-C-97	Fluoride	0.70		mg F/L	P364176	
2083643	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P363635	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26	I	mg N/L	P363763	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P363769	
	EPA 365.1 Rev. 2.0	Total-P	0.045		mg P/L	P364102	
	SM 5310 B-00	Organic Carbon	2.9		mg C/L	P363922	
2083647	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.027		mg P/L	P363531	

Ref. Method and Comment:

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: DESTIN HARBOR ACROSS FROM AJ'S RESTAURANT

Collection Date/Time: 05/06/2019 11:45

Field ID: G3NW0127

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083640	EPA 180.1 Rev. 2.0	Turbidity	0.55		NTU	P363539	
	EPA 300.0	Bromide	47		mg Br/L	P363817	
	SM 2320 B-97	Total Alkalinity	85		mg CaCO3/L	P364172	
	SM 2540 D-97	TSS	6	I	mg/L	P363895	
	SM 4500 F-C-97	Fluoride	0.84		mg F/L	P364176	
2083644	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P363843	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29	I	mg N/L	P363763	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P363770	
	EPA 365.1 Rev. 2.0	Total-P	0.01	I	mg P/L	P363585	
	SM 5310 B-00	Organic Carbon	2.2		mg C/L	P363922	
2083648	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P363531	

Ref. Method and Comment:

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: HOGTOWN BAYOU CENTER

Collection Date/Time: 05/06/2019 13:15

Field ID: G3NW0181

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083641	EPA 180.1 Rev. 2.0	Turbidity	5.2		NTU	P363539	
	EPA 300.0	Bromide	40		mg Br/L	P363817	
	SM 2320 B-97	Total Alkalinity	77		mg CaCO3/L	P364172	
	SM 2540 D-97	TSS	6	I	mg/L	P363895	
	SM 4500 F-C-97	Fluoride	0.69		mg F/L	P364176	
2083645	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P363843	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37	I	mg N/L	P363763	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P363770	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P363585	
	SM 5310 B-00	Organic Carbon	3.1		mg C/L	P363922	
2083649	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P363531	

Ref. Method and Comment:

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: MACK BAYOU

Collection Date/Time: 05/06/2019 13:45

Field ID: G3NW0128

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083642	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P363539	
	EPA 300.0	Bromide	39		mg Br/L	P363817	
	SM 2320 B-97	Total Alkalinity	77		mg CaCO3/L	P364172	
	SM 2540 D-97	TSS	4	I	mg/L	P363895	
	SM 4500 F-C-97	Fluoride	0.69		mg F/L	P364176	
2083646	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P363843	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29	I	mg N/L	P363763	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P363770	
	EPA 365.1 Rev. 2.0	Total-P	0.009	I	mg P/L	P363585	
	SM 5310 B-00	Organic Carbon	2.2		mg C/L	P363922	
2083650	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P363531	

Ref. Method and Comment:

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: ALAQUA BAYOU CENTER

Collection Date/Time: 05/06/2019 14:15

Field ID: G3NW0180

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083651	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P363539	
	EPA 300.0	Bromide	17		mg Br/L	P363817	
	SM 2320 B-97	Total Alkalinity	40		mg CaCO3/L	P364172	
	SM 2540 D-97	TSS	5	IA	mg/L	P364378	
	SM 4500 F-C-97	Fluoride	0.30		mg F/L	P364176	
2083652	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P363843	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34	I	mg N/L	P363763	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P363770	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P363585	
	SM 5310 B-00	Organic Carbon	2.8		mg C/L	P363922	
2083653	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P363531	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P363539

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0
Batch ID: P363817

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363635

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363843

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363763

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363769

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363770

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363585

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364102

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: P363531

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

Reference Method: SM 2320 B-97
Batch ID: P364172

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

Reference Method: SM 2540 D-97
Batch ID: P363895

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P364378

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P364176

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P363922

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: P363817

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363635

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363843

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363763

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363769

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: P363770

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: P363585

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364102

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	95.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363531

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P364172

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

Reference Method: SM 4500 F-C-97
Batch ID: P364176

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

Reference Method: SM 5310 B-00
Batch ID: P363922

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	89.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0
Batch ID: P363817

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083172	Bromide	95.5	97.3	P/P	90 - 110
2084079	Bromide	96.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363635

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083586	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363843

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083644	Ammonia-N	103	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363763

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083231	Kjeldahl Nitrogen	104	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363769

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083173	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363770

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083644	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363585

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083644	Total-P	90.7	95.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364102

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083586	Total-P	97.6	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363531

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083647	O-Phosphate-P	94.2	96.2	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P363922

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083174	Organic Carbon	90.6	91.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P363539

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083611	Turbidity	2.47	Sample	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P363817

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083172	Bromide	1.16	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363635

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083586	Ammonia-N	0.0348	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363843

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083644	Ammonia-N	1.24	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363763

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083231	Kjeldahl Nitrogen	3.37	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083173	NO2NO3-N	0.491	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363770

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083644	NO2NO3-N	0.491	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363585

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083644	Total-P	4.61	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P364102

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083586	Total-P	1.76	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P363531

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083647	O-Phosphate-P	1.63	Spike	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P364172

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084080	Total Alkalinity	0.393	Sample	P	0 - 2.8

Reference Method: SM 2540 D-97
 Batch ID: P363895

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083166	TSS	7.14	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P364176

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084080	Fluoride	1.42	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P363922

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083174	Organic Carbon	0.900	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: A91257

Included Lab Sample IDs: 2083647, 2083648, 2083649, 2083650, 2083653

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.5	98.3	P/P	90 - 110
O-Phosphate-P	99.3	99.5	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A91261

Included Lab Sample IDs: 2083639, 2083640, 2083641, 2083642, 2083651

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A91302

Included Lab Sample IDs: 2083643

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

Reference Method: EPA 300.0

Run ID: A91304

Included Lab Sample IDs: 2083639, 2083640, 2083641, 2083642, 2083651

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	106	110	P/P	90 - 110
Bromide	110	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A91349

Included Lab Sample IDs: 2083643, 2083644, 2083645, 2083646, 2083652

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	98.0	P/P	90 - 110
NO2NO3-N	99.0	98.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A91385

Included Lab Sample IDs: 2083644, 2083645, 2083646, 2083652

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A91387

Included Lab Sample IDs: 2083643, 2083644, 2083645, 2083646, 2083652

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	105	P/P	90 - 110
Kjeldahl Nitrogen	105	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A91403

Included Lab Sample IDs: 2083644, 2083645, 2083646, 2083652

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	99.2	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A91414

Included Lab Sample IDs: 2083643, 2083644, 2083645, 2083646, 2083652

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	92.0	93.2	P/P	90 - 110
Organic Carbon	92.7	92.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A91513

Included Lab Sample IDs: 2083639, 2083640, 2083641, 2083642, 2083651

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	103	P/P	90 - 110
Total Alkalinity	103	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A91513

Included Lab Sample IDs: 2083639, 2083640, 2083641, 2083642, 2083651

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.1	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A91557

Included Lab Sample IDs: 2083643

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	99.8	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					2.47	
EPA 300.0	Bromide	99.8	95.5	97.3	96.1		1.16
EPA 350.1 Rev. 2.0	Ammonia-N	102	102	102			0.0348
	Ammonia-N	104	103	104			1.24
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	104	108			3.37
EPA 353.2 Rev. 2.0	NO2NO3-N	100	102	102			0.491
	NO2NO3-N	100	102	102			0.491
EPA 365.1 Rev. 2.0	Total-P	97.9	90.7	95.0			4.61
	Total-P	95.2	97.6	100			1.76
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	94.2	96.2			1.63
SM 2320 B-97	Total Alkalinity	103				0.393	
SM 2540 D-97	TSS					7.14	
SM 4500 F-C-97	Fluoride	96.7					1.42
SM 5310 B-00	Organic Carbon	89.2	90.6	91.5			0.900

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2083639, 2083640, 2083641, 2083642, 2083651
EPA 300.0 / E31780	Bromide in aqueous matrices	2083639, 2083640, 2083641, 2083642, 2083651
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2083643, 2083644, 2083645, 2083646, 2083652
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2083643, 2083644, 2083645, 2083646, 2083652
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2083643, 2083644, 2083645, 2083646, 2083652
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2083643, 2083644, 2083645, 2083646, 2083652
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2083647, 2083648, 2083649, 2083650, 2083653
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2083639, 2083640, 2083641, 2083642, 2083651
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2083639, 2083640, 2083641, 2083642, 2083651
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2083639, 2083640, 2083641, 2083642, 2083651
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2083643, 2083644, 2083645, 2083646, 2083652

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	05/07/2019			05/07/2019 16:30	Adrian Shelby	2083639, 2083640, 2083641, 2083642, 2083651
EPA 300.0	05/07/2019			05/10/2019 19:52	Lipi Saha	2083639
	05/07/2019			05/10/2019 20:09	Lipi Saha	2083640
	05/07/2019			05/10/2019 21:00	Lipi Saha	2083641
	05/07/2019			05/10/2019 21:18	Lipi Saha	2083642
	05/07/2019			05/10/2019 21:35	Lipi Saha	2083651
EPA 350.1 Rev. 2.0	05/07/2019			05/08/2019 14:02	Ping Hua	2083643
	05/07/2019			05/10/2019 13:06	Ping Hua	2083644
	05/07/2019			05/10/2019 13:18	Ping Hua	2083645
	05/07/2019			05/10/2019 13:19	Ping Hua	2083646
	05/07/2019			05/10/2019 13:21	Ping Hua	2083652
EPA 351.2 Rev. 2.0	05/07/2019	05/10/2019 12:20	Adrian Shelby	05/13/2019 14:23	Joseph Suarez	2083643
	05/07/2019	05/10/2019 12:20	Adrian Shelby	05/13/2019 14:28	Joseph Suarez	2083644
	05/07/2019	05/10/2019 12:20	Adrian Shelby	05/13/2019 14:29	Joseph Suarez	2083645
	05/07/2019	05/10/2019 12:20	Adrian Shelby	05/13/2019 14:31	Joseph Suarez	2083646
	05/07/2019	05/10/2019 12:20	Adrian Shelby	05/13/2019 14:33	Joseph Suarez	2083652
EPA 353.2 Rev. 2.0	05/07/2019			05/10/2019 09:50	Beverly Y. Sanders	2083643
	05/07/2019			05/10/2019 09:57	Beverly Y. Sanders	2083644
	05/07/2019			05/10/2019 10:03	Beverly Y. Sanders	2083645
	05/07/2019			05/10/2019 10:04	Beverly Y. Sanders	2083646
	05/07/2019			05/10/2019 10:05	Beverly Y. Sanders	2083652
EPA 365.1 Rev. 2.0	05/07/2019	05/08/2019 12:44	Joseph Suarez	05/10/2019 16:15	Rosalyn Ballman	2083644
	05/07/2019	05/08/2019 12:44	Joseph Suarez	05/10/2019 16:16	Rosalyn Ballman	2083645
	05/07/2019	05/08/2019 12:44	Joseph Suarez	05/10/2019 16:17	Rosalyn Ballman	2083646
	05/07/2019	05/08/2019 12:44	Joseph Suarez	05/10/2019 16:18	Rosalyn Ballman	2083652
	05/07/2019	05/17/2019 09:23	Adrian Shelby	05/20/2019 18:07	Rosalyn Ballman	2083643
EPA 365.1 Rev. 2.0 dissolved	05/07/2019			05/07/2019 14:54	Jhamieka S. Greenwood	2083647
	05/07/2019			05/07/2019 15:28	Jhamieka S. Greenwood	2083648
	05/07/2019			05/07/2019 15:29	Jhamieka S. Greenwood	2083649
	05/07/2019			05/07/2019 15:30	Jhamieka S. Greenwood	2083650
	05/07/2019			05/07/2019 15:31	Jhamieka S. Greenwood	2083653
SM 2320 B-97	05/07/2019			05/17/2019 08:52	Dale L. Simmons	2083651
	05/07/2019			05/17/2019 09:04	Dale L. Simmons	2083639
	05/07/2019			05/17/2019 09:16	Dale L. Simmons	2083640
	05/07/2019			05/17/2019 10:25	Dale L. Simmons	2083641
	05/07/2019			05/17/2019 10:37	Dale L. Simmons	2083642
SM 2540 D-97	05/07/2019			05/08/2019 14:21	Yijie Li	2083639, 2083640, 2083641, 2083642, 2083651
SM 4500 F-C-97	05/07/2019			05/17/2019 07:12	Dale L. Simmons	2083651

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	05/07/2019			05/17/2019 07:21	Dale L. Simmons	2083639
	05/07/2019			05/17/2019 07:25	Dale L. Simmons	2083640
	05/07/2019			05/17/2019 07:30	Dale L. Simmons	2083641
	05/07/2019			05/17/2019 07:34	Dale L. Simmons	2083642
SM 5310 B-00	05/07/2019			05/14/2019 09:37	Julia Storbeck	2083643
	05/07/2019			05/14/2019 09:50	Julia Storbeck	2083644
	05/07/2019			05/14/2019 10:04	Julia Storbeck	2083645
	05/07/2019			05/14/2019 11:20	Julia Storbeck	2083646
	05/07/2019			05/14/2019 11:35	Julia Storbeck	2083652