

Chemical Analysis Report

SO-DIST-2021-11-10-01

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

Event Description: **2021 SMP: Punta Rassa Cove**
Request ID: **RQ-2021-11-08-44**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 02-DEC-2021 14:10

A handwritten signature in black ink, appearing to read "Liang Lin", 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: Punta Rassa Cove

Collection Date/Time: 11/09/2021 09:00

Field ID: G2SD0047

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2289140	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P406257	
	SM 2320 B-2011	Total Alkalinity	126		mg CaCO3/L	P406489	
	SM 2540 D-2011	TSS	10		mg/L	P406505	
	SM 4500 F-C-2011	Fluoride	0.93		mg F/L	P406491	
2289141	EPA 350.1 Rev. 2.0	Ammonia-N	0.051		mg N/L	P406803	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P406663	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.062		mg N/L	P406333	
	EPA 365.1 Rev. 2.0	Total-P	0.064		mg P/L	P406455	
	SM 5310 B-2011	Organic Carbon	7.7		mg C/L	P406873	
2289142	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.043		mg P/L	P406252	

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: FB

Collection Date/Time: 11/09/2021 09:30

Field ID: FB_11092021

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2289143	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P406257	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P406440	
	SM 2540 D-2011	TSS	2	U	mg/L	P406503	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P406443	
2289144	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P406594	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P406708	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P406303	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P406373	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P406624	
2289145	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P406251	

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: P406257

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406594

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406803

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406663

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406708

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P406303

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P406333

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P406373

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P406455

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: P406251

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406252

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

Reference Method: SM 2320 B-2011
Batch ID: P406440

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

Reference Method: SM 2320 B-2011
Batch ID: P406489

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

Reference Method: SM 2540 D-2011
Batch ID: P406503

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P406505

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P406443

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P406491

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P406624

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P406873

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406594

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406803

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406663

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406708

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: P406303

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P406333

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: P406373

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P406455

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406251

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406252

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

Reference Method: SM 2320 B-2011
Batch ID: P406440

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.4		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P406489

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

Reference Method: SM 4500 F-C-2011
Batch ID: P406443

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.4		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P406491

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P406624

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

Reference Method: SM 5310 B-2011
Batch ID: P406873

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406594

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289066	Ammonia-N	91.8	93.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406803

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289727	Ammonia-N	99.4	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406663

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289236	Kjeldahl Nitrogen	108	112	P/F	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406708

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289057	Kjeldahl Nitrogen	90.3	85.7	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P406303

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289163	NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P406333

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289141	NO2NO3-N	97.8	97.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P406373

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289065	Total-P	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P406455

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289118	Total-P	97.3	95.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406251

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289179	O-Phosphate-P	98.1	100	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406252

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289221	O-Phosphate-P	99.0	98.3	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P406443

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289326	Fluoride	98.1	98.7	P/P	92 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P406491

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289664	Fluoride	104	104	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P406624

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289187	Organic Carbon	94.1	92.8	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P406873

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289665	Organic Carbon	97.6	95.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P406257

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289113	Turbidity	4.62	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406594

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289066	Ammonia-N	1.43	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406803

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289727	Ammonia-N	0.731	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406663

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289236	Kjeldahl Nitrogen	2.86	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406708

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289057	Kjeldahl Nitrogen	4.03	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P406303

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289163	NO2NO3-N	0.976	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P406333

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289141	NO2NO3-N	0.389	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P406373

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289065	Total-P	0.884	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P406455

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289118	Total-P	1.71	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P406251

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289179	O-Phosphate-P	2.02	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P406252

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289221	O-Phosphate-P	0.639	Spike	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P406440

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289326	Total Alkalinity	0.388	Sample	P	0 - 5.2

Reference Method: SM 2320 B-2011

Batch ID: P406489

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289664	Total Alkalinity	0.543	Sample	P	0 - 5.2

Reference Method: SM 4500 F-C-2011

Batch ID: P406443

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289326	Fluoride	0.500	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011

Batch ID: P406491

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289664	Fluoride	0.477	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011

Batch ID: P406624

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289187	Organic Carbon	1.02	Spike	P	0 - 20

Quality Assurance Report

Precision

Reference Method: SM 5310 B-2011
Batch ID: P406873

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289665	Organic Carbon	1.79	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A108839

Included Lab Sample IDs: 2289142, 2289145

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	99.8	P/P	90 - 110
O-Phosphate-P	99.8	102	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A108846

Included Lab Sample IDs: 2289140, 2289143

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A108873

Included Lab Sample IDs: 2289144

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A108897

Included Lab Sample IDs: 2289141

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

Reference Method: SM 2320 B-2011

Run ID: A108946

Included Lab Sample IDs: 2289143

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.0	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A108946

Included Lab Sample IDs: 2289143

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.0	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A108970

Included Lab Sample IDs: 2289140

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.8	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A108970

Included Lab Sample IDs: 2289140

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A109006

Included Lab Sample IDs: 2289144

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.3	97.7	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A109023

Included Lab Sample IDs: 2289144

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.0	94.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A109042

Included Lab Sample IDs: 2289141, 2289144

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.2	97.5	P/P	90 - 110
Total-P	97.5	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A109054

Included Lab Sample IDs: 2289141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A109088

Included Lab Sample IDs: 2289144

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.4	97.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A109123

Included Lab Sample IDs: 2289141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.5	98.7	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A109141

Included Lab Sample IDs: 2289141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	98.2	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		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					4.62	
EPA 350.1 Rev. 2.0	Ammonia-N	97.6	91.8	93.2			1.43
	Ammonia-N	98.8	99.4	98.6			0.731
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	108	112			2.86
	Kjeldahl Nitrogen	102	90.3	85.7			4.03
EPA 353.2 Rev. 2.0	NO2NO3-N	102	103	102			0.976
	NO2NO3-N	97.5	97.8	97.4			0.389
EPA 365.1 Rev. 2.0	Total-P	104	104	103			0.884
	Total-P	101	97.3	95.7			1.71
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.1	98.1	100			2.02
	O-Phosphate-P	100	99.0	98.3			0.639
SM 2320 B-2011	Total Alkalinity	99.4				0.388	
	Total Alkalinity	101				0.543	
SM 4500 F-C-2011	Fluoride	97.4	98.1	98.7			0.500
	Fluoride	101	104	104			0.477
SM 5310 B-2011	Organic Carbon	93.4	94.1	92.8			1.02
	Organic Carbon	97.3	97.6	95.5			1.79

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2289140, 2289143
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2289141, 2289144
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2289141, 2289144
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2289141, 2289144
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2289141, 2289144
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2289142, 2289145
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2289140, 2289143
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2289140, 2289143
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2289140, 2289143
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2289141, 2289144

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	11/10/2021			11/10/2021 16:37	Khloe J Berg	2289140, 2289143
EPA 350.1 Rev. 2.0	11/10/2021			11/19/2021 11:52	Roberta Tatti	2289144
	11/10/2021			11/29/2021 14:36	Ping Hua	2289141
EPA 351.2 Rev. 2.0	11/10/2021	11/22/2021 13:28	Benjamin T. Nordmann	11/23/2021 11:46	Alexandra J Mattheus	2289141
	11/10/2021	11/23/2021 14:23	Benjamin T. Nordmann	11/24/2021 11:49	Alexandra J Mattheus	2289144
EPA 353.2 Rev. 2.0	11/10/2021			11/12/2021 11:21	Beverly Y. Sanders	2289144
	11/10/2021			11/15/2021 10:08	Beverly Y. Sanders	2289141
EPA 365.1 Rev. 2.0	11/10/2021	11/17/2021 16:55	Simonne.V. Calhoun	11/18/2021 15:27	Sarah A Nixon	2289144
	11/10/2021	11/17/2021 16:55	Simonne.V. Calhoun	11/18/2021 15:43	Sarah A Nixon	2289141
EPA 365.1 Rev. 2.0 dissolved	11/10/2021			11/10/2021 14:54	James L Waggeberby	2289145
	11/10/2021			11/10/2021 15:09	James L Waggeberby	2289142
SM 2320 B-2011	11/10/2021			11/17/2021 00:19	Dale L. Simmons	2289143
	11/10/2021			11/18/2021 01:12	Dale L. Simmons	2289140
SM 2540 D-2011	11/10/2021			11/12/2021 16:00	Simonne.V. Calhoun	2289140, 2289143
SM 4500 F-C-2011	11/10/2021			11/17/2021 00:19	Dale L. Simmons	2289143
	11/10/2021			11/17/2021 22:53	Dale L. Simmons	2289140
SM 5310 B-2011	11/10/2021			11/20/2021 02:05	Khloe J Berg	2289144
	11/10/2021			11/30/2021 12:49	Khloe J Berg	2289141