

Chemical Analysis Report

SO-DIST-2020-07-31-01

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

Event Description: **2020 SMP : Everglades**

Request ID: **RQ-2020-03-23-40**

Customer: **SO-DIST**

Project ID: **SMP**

Send Reports to:
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FLDEP South District Office
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Fort Myers, FL 33901-3381
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Certified by: Colin Wright, Program Administrator

Date Certified: 24-AUG-2020 09:46

A handwritten signature in black ink, appearing to read "Colin Wright", is shown on a light-colored rectangular 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: 8066 @ ENRE5

Collection Date/Time: 07/30/2020 10:45

Field ID: G5SD0039

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2187571	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P385469	
	EPA 300.0 Rev. 2.1	Bromide	62		mg Br/L	P386265	
	SM 2320 B-2011	Total Alkalinity	129	A	mg CaCO3/L	P385564	
	SM 2540 D-2011	TSS	3	U	mg/L	P385876	
	SM 4500 F-C-2011	Fluoride	1.3		mg F/L	P385567	
2187576	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P385484	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37	I	mg N/L	P385668	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P385578	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P385572	
	SM 5310 B-2011	Organic Carbon	4.6		mg C/L	P385842	
2187581	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P385498	

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: 8067 ENRE9 NearFirstBay

Collection Date/Time: 07/30/2020 11:25

Field ID: G5SD0107

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2187572	EPA 180.1 Rev. 2.0	Turbidity	4.9	A	NTU	P385469	
	EPA 300.0 Rev. 2.1	Bromide	57		mg Br/L	P386265	
	SM 2320 B-2011	Total Alkalinity	141		mg CaCO3/L	P385564	
	SM 2540 D-2011	TSS	4	I	mg/L	P385876	
	SM 4500 F-C-2011	Fluoride	1.1		mg F/L	P385567	
2187577	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P385484	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.47		mg N/L	P385668	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P385578	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P385572	
	SM 5310 B-2011	Organic Carbon	7.6		mg C/L	P385842	
2187582	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P385498	

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: ENRE14 Harney River

Collection Date/Time: 07/30/2020 12:10

Field ID: G5SD0077

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2187573	EPA 180.1 Rev. 2.0	Turbidity	5.3		NTU	P385469	
	EPA 300.0 Rev. 2.1	Bromide	40		mg Br/L	P386265	
	SM 2320 B-2011	Total Alkalinity	184		mg CaCO3/L	P385564	
	SM 2540 D-2011	TSS	6	I	mg/L	P385876	
	SM 4500 F-C-2011	Fluoride	0.89		mg F/L	P385567	
2187578	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P385484	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.69		mg N/L	P385668	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P385578	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P385572	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P385842	
2187583	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P385498	

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: 8069 - ENRE13

Collection Date/Time: 07/30/2020 12:30

Field ID: G5SD0076

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2187574	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P385469	
	EPA 300.0 Rev. 2.1	Bromide	58		mg Br/L	P386265	
	SM 2320 B-2011	Total Alkalinity	155		mg CaCO3/L	P385564	
	SM 2540 D-2011	TSS	4	I	mg/L	P385876	
	SM 4500 F-C-2011	Fluoride	1.2		mg F/L	P385567	
2187579	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P385487	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P385668	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P385578	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P385572	
	SM 5310 B-2011	Organic Carbon	7.0		mg C/L	P385842	
2187584	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P385498	

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: 8069 - ENRE5

Collection Date/Time: 07/30/2020 12:45

Field ID: G5SD0036

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2187575	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P385469	
	EPA 300.0 Rev. 2.1	Bromide	65		mg Br/L	P386265	
	SM 2320 B-2011	Total Alkalinity	137		mg CaCO3/L	P385564	
	SM 2540 D-2011	TSS	4	IA	mg/L	P385876	
	SM 4500 F-C-2011	Fluoride	1.3		mg F/L	P385567	
2187580	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P385487	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.30	I	mg N/L	P385121	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P385578	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P385572	
	SM 5310 B-2011	Organic Carbon	4.8		mg C/L	P385842	
2187585	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P385498	

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: P385469

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386265

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385484

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385487

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385121

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385668

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385578

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385572

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385498

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P385564

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

Reference Method: SM 2540 D-2011
Batch ID: P385876

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P385567

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P385842

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: P386265

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385484

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385487

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385121

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.5		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385668

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385578

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385572

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385498

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

Reference Method: SM 2320 B-2011
Batch ID: P385564

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P385567

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.9		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P385842

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	104		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386265

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187681	Bromide	97.9	94.0	P/P	90 - 110
2187682	Bromide	95.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385484

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187320	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385487

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187579	Ammonia-N	103	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385121

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187580	Kjeldahl Nitrogen	100	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385668

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187576	Kjeldahl Nitrogen	108	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385578

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187576	NO2NO3-N	98.5	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385572

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187355	Total-P	99.3	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385498

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187581	O-Phosphate-P	99.4	98.9	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P385567

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186908	Fluoride	103	103	P/P	94 - 107

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P385842

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187577	Organic Carbon	103	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P385469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187572	Turbidity	3.06	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386265

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187681	Bromide	2.42	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385484

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187320	Ammonia-N	1.18	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385487

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187579	Ammonia-N	0.553	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385121

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187580	Kjeldahl Nitrogen	3.74	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385668

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187576	Kjeldahl Nitrogen	0.351	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385578

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187576	NO2NO3-N	1.01	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385572

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187355	Total-P	1.58	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385498

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187581	O-Phosphate-P	0.473	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P385564

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187571	Total Alkalinity	4.98	Sample	P	0 - 8.1

Reference Method: SM 4500 F-C-2011
Batch ID: P385567

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186908	Fluoride	0.451	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P385842

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187577	Organic Carbon	1.15	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: A100210

Included Lab Sample IDs: 2187571, 2187572, 2187573, 2187574, 2187575

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A100213

Included Lab Sample IDs: 2187576, 2187577, 2187578, 2187579, 2187580

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.4	98.3	P/P	90 - 110
Ammonia-N	98.6	98.8	P/P	90 - 110
Ammonia-N	99.2	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A100219

Included Lab Sample IDs: 2187581, 2187582, 2187583, 2187584, 2187585

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.9	99.4	P/P	90 - 110
O-Phosphate-P	99.4	99.0	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A100241

Included Lab Sample IDs: 2187571, 2187572, 2187573, 2187574, 2187575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A100241

Included Lab Sample IDs: 2187571, 2187572, 2187573, 2187574, 2187575

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A100247

Included Lab Sample IDs: 2187576, 2187577, 2187578, 2187579, 2187580

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100324

Included Lab Sample IDs: 2187576, 2187577, 2187578, 2187579

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	97.4	P/P	90 - 110
Kjeldahl Nitrogen	98.4	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A100327

Included Lab Sample IDs: 2187576, 2187577, 2187578, 2187579, 2187580

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	93.8	93.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100344

Included Lab Sample IDs: 2187580

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.8	94.0	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A100374

Included Lab Sample IDs: 2187576, 2187577, 2187578, 2187579, 2187580

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	102	101	P/P	90 - 110
Organic Carbon	104	102	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100541

Included Lab Sample IDs: 2187571, 2187572, 2187573, 2187574, 2187575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	98.0	99.4	P/P	90 - 110
Bromide	99.4	101	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					3.06	
EPA 300.0 Rev. 2.1	Bromide	102	97.9	94.0	95.9		2.42
EPA 350.1 Rev. 2.0	Ammonia-N	99.6	101	102			1.18
	Ammonia-N	98.0	103	102			0.553
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.5	100	104			3.74
	Kjeldahl Nitrogen	105	108	108			0.351
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	98.5	99.5			1.01
EPA 365.1 Rev. 2.0	Total-P	102	99.3	101			1.58
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	99.4	98.9			0.473
SM 2320 B-2011	Total Alkalinity	101				4.98	
SM 4500 F-C-2011	Fluoride	99.9	103	103			0.451
SM 5310 B-2011	Organic Carbon	104	103	102			1.15

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2187571, 2187572, 2187573, 2187574, 2187575
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2187571, 2187572, 2187573, 2187574, 2187575
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2187576, 2187577, 2187578, 2187579, 2187580
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2187576, 2187577, 2187578, 2187579, 2187580
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2187576, 2187577, 2187578, 2187579, 2187580
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2187576, 2187577, 2187578, 2187579, 2187580
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2187581, 2187582, 2187583, 2187584, 2187585
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2187571, 2187572, 2187573, 2187574, 2187575
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2187571, 2187572, 2187573, 2187574, 2187575
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2187571, 2187572, 2187573, 2187574, 2187575
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2187576, 2187577, 2187578, 2187579, 2187580

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	07/31/2020			07/31/2020 15:33	Blanca Fach	2187571, 2187572, 2187573, 2187574, 2187575
EPA 300.0 Rev. 2.1	07/31/2020			08/15/2020 07:15	Julia Storbeck	2187571
	07/31/2020			08/15/2020 07:32	Julia Storbeck	2187572
	07/31/2020			08/15/2020 08:24	Julia Storbeck	2187573
	07/31/2020			08/15/2020 08:41	Julia Storbeck	2187574
	07/31/2020			08/15/2020 08:58	Julia Storbeck	2187575
EPA 350.1 Rev. 2.0	07/31/2020			08/02/2020 13:29	Ping Hua	2187576
	07/31/2020			08/02/2020 13:31	Ping Hua	2187577
	07/31/2020			08/02/2020 13:32	Ping Hua	2187578
	07/31/2020			08/02/2020 14:33	Ping Hua	2187579
	07/31/2020			08/02/2020 14:44	Ping Hua	2187580
EPA 351.2 Rev. 2.0	07/31/2020	08/05/2020 10:42	Sima Feizi	08/06/2020 16:24	Jhamieka S. Greenwood	2187576
	07/31/2020	08/05/2020 10:42	Sima Feizi	08/06/2020 16:42	Jhamieka S. Greenwood	2187577
	07/31/2020	08/05/2020 10:42	Sima Feizi	08/06/2020 16:43	Jhamieka S. Greenwood	2187578
	07/31/2020	08/05/2020 10:42	Sima Feizi	08/06/2020 16:45	Jhamieka S. Greenwood	2187579
	07/31/2020	08/06/2020 10:53	Sima Feizi	08/07/2020 11:31	Jhamieka S. Greenwood	2187580
EPA 353.2 Rev. 2.0	07/31/2020			08/04/2020 08:37	Beverly Y. Sanders	2187576
	07/31/2020			08/04/2020 08:45	Beverly Y. Sanders	2187577
	07/31/2020			08/04/2020 08:47	Beverly Y. Sanders	2187578
	07/31/2020			08/04/2020 08:48	Beverly Y. Sanders	2187579
	07/31/2020			08/04/2020 08:49	Beverly Y. Sanders	2187580
EPA 365.1 Rev. 2.0	07/31/2020	08/04/2020 10:15	Lipi Saha	08/07/2020 08:11	Lipi Saha	2187576
	07/31/2020	08/04/2020 10:15	Lipi Saha	08/07/2020 08:12	Lipi Saha	2187577
	07/31/2020	08/04/2020 10:15	Lipi Saha	08/07/2020 08:13	Lipi Saha	2187578
	07/31/2020	08/04/2020 10:15	Lipi Saha	08/07/2020 08:14	Lipi Saha	2187579
	07/31/2020	08/04/2020 10:15	Lipi Saha	08/07/2020 08:15	Lipi Saha	2187580
EPA 365.1 Rev. 2.0 dissolved	07/31/2020			07/31/2020 15:40	Virginia P. Brown	2187581
	07/31/2020			07/31/2020 15:42	Virginia P. Brown	2187582
	07/31/2020			07/31/2020 15:47	Virginia P. Brown	2187583
	07/31/2020			07/31/2020 15:48	Virginia P. Brown	2187584
	07/31/2020			07/31/2020 15:49	Virginia P. Brown	2187585
SM 2320 B-2011	07/31/2020			08/04/2020 00:41	Dale L. Simmons	2187571
	07/31/2020			08/04/2020 00:53	Dale L. Simmons	2187572
	07/31/2020			08/04/2020 01:07	Dale L. Simmons	2187573
	07/31/2020			08/04/2020 01:19	Dale L. Simmons	2187574
	07/31/2020			08/04/2020 01:31	Dale L. Simmons	2187575
SM 2540 D-2011	07/31/2020			08/05/2020 15:06	Yijie Li	2187571, 2187572, 2187573, 2187574, 2187575
SM 4500 F-C-2011	07/31/2020			08/03/2020 23:17	Dale L. Simmons	2187571

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-2011	07/31/2020			08/03/2020 23:22	Dale L. Simmons	2187572
	07/31/2020			08/03/2020 23:27	Dale L. Simmons	2187573
	07/31/2020			08/03/2020 23:33	Dale L. Simmons	2187574
	07/31/2020			08/03/2020 23:38	Dale L. Simmons	2187575
SM 5310 B-2011	07/31/2020			08/08/2020 03:53	David Boose	2187577
	07/31/2020			08/08/2020 04:30	David Boose	2187576
	07/31/2020			08/08/2020 04:42	David Boose	2187578
	07/31/2020			08/08/2020 05:31	David Boose	2187579
	07/31/2020			08/08/2020 05:45	David Boose	2187580