Chemical Analysis Report

SO-DIST-2019-05-03-02

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

Event Description: **Lee**
Request ID: **RQ-2019-04-29-26**
Customer: **SO-DIST**
Project ID: **SMP**

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FLDEP South District Office
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator Date Certified: 20-MAY-2019 17:34

B. Steinbock

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: C-139Annex@DeerFenceRd **Collection Date/Time: 05/02/2019 11:30**

Field ID: G1SD0076 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083244	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P363374	
	EPA 300.0 Rev. 2.1	Chloride	49		mg Cl/L	P363744	
		Sulfate	11		mg SO4/L	P363748	
	SM 2120 B	Color (true)	71		PCU	P363339	
	SM 2320 B-97	Total Alkalinity	225		mg CaCO3/L	P363807	
	SM 2540 C-97	TDS	360		mg/L	P363915	
	SM 2540 D-97	TSS	8	I	mg/L	P363892	
	SM 4500 F-C-97	Fluoride	0.29		mg F/L	P363969	
2083246	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P363777	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P363711	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P363675	
	EPA 365.1 Rev. 2.0	Total-P	0.070		mg P/L	P363524	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P363920	
2083248	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P363334	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.
EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Drainage Ditch@CR850 **Collection Date/Time: 05/02/2019 12:40**

Field ID: G1SD0061 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083245	EPA 180.1 Rev. 2.0	Turbidity	14		NTU	P363374	
	EPA 300.0 Rev. 2.1	Chloride	28		mg Cl/L	P363744	
		Sulfate	41		mg SO4/L	P363748	
	SM 2120 B	Color (true)	39		PCU	P363339	
	SM 2320 B-97	Total Alkalinity	231		mg CaCO3/L	P363807	
	SM 2540 C-97	TDS	354	A	mg/L	P363915	
	SM 2540 D-97	TSS	21	A	mg/L	P363892	
	SM 4500 F-C-97	Fluoride	0.079	I	mg F/L	P363969	
2083247	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P363777	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P363711	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.082		mg N/L	P363675	
	EPA 365.1 Rev. 2.0	Total-P	0.052		mg P/L	P363524	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P363920	
2083249	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P363334	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.
EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Drainage Ditch@CR850 **Collection Date/Time: 05/02/2019 12:45**

Field ID: fb_04242019 Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083250	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P363374	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P363744	
		Sulfate	0.20	U	mg SO4/L	P363748	
	SM 2120 B	Color (true)	2.5	U	PCU	P363339	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P363807	
	SM 2540 C-97	TDS	15	U	mg/L	P363913	
	SM 2540 D-97	TSS	2	U	mg/L	P363890	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P363969	
2083251	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P363777	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P363711	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P363675	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P363662	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P363920	
2083252	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P363334	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P363374

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363744

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363748

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363777

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363711

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363675

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363524

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363662

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363334

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

Quality Assurance Report
Method Blank Results

Reference Method: SM 2120 B
Batch ID: P363339

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P363807

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

Reference Method: SM 2540 C-97
Batch ID: P363913

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P363915

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P363890

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P363892

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P363969

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P363920

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: P363744

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363748

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363777

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363711

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363675

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: P363524

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363662

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: P363334

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.9		P	90 - 110

Reference Method: SM 2120 B
Batch ID: P363339

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P363807

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P363969

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.6		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P363920

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	90.8		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363744

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083109	Chloride	102		P	90 - 110
2083143	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083109	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363777

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083179	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363711

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083229	Kjeldahl Nitrogen	106	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363675

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083246	NO2NO3-N	100	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363662

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083390	Total-P	97.4	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363334

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083135	O-Phosphate-P	95.0	95.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P363969

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083317	Fluoride	99.1	97.4	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P363920

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083261	Organic Carbon	94.7	91.5	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P363374

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083226	Turbidity	5.77	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363744

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083109	Chloride	4.46	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083109	Sulfate	6.36	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363777

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083179	Ammonia-N	0.224	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363711

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083229	Kjeldahl Nitrogen	1.82	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363675

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083246	NO2NO3-N	1.50	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363524

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083147	Total-P	1.80	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083390	Total-P	3.86	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363334

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083135	O-Phosphate-P	0.228	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P363339

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083144	Color (true)	0.0971	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P363807

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083136	Total Alkalinity	0.0676	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P363913

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2082895	TDS	3.59	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P363915

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083245	TDS	1.98	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P363892

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083245	TSS	5.61	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P363969

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083317	Fluoride	1.46	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P363920

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083261	Organic Carbon	2.70	Spike	P	0 - 20

Quality Assurance Report
Precision

* 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: A91195
Included Lab Sample IDs: 2083248, 2083249, 2083252

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	95.8	95.8	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A91199
Included Lab Sample IDs: 2083244, 2083245, 2083250

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	102	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A91209
Included Lab Sample IDs: 2083244, 2083245, 2083250

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A91228
Included Lab Sample IDs: 2083244, 2083245, 2083250

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A91321
Included Lab Sample IDs: 2083246, 2083247, 2083251

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A91332
Included Lab Sample IDs: 2083246, 2083247

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A91350
Included Lab Sample IDs: 2083246, 2083247, 2083251

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

Reference Method: SM 2320 B-97
Run ID: A91372
Included Lab Sample IDs: 2083244, 2083245, 2083250

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A91387
Included Lab Sample IDs: 2083246, 2083247, 2083251

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

Reference Method: SM 5310 B-00
Run ID: A91414
Included Lab Sample IDs: 2083246, 2083247, 2083251

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	92.2	92.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A91419
Included Lab Sample IDs: 2083251

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	99.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A91436
Included Lab Sample IDs: 2083244, 2083245, 2083250

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.1	97.6	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		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					5.77	
EPA 300.0 Rev. 2.1	Chloride	99.5	102	100		4.46	
	Sulfate	100	102			6.36	
EPA 350.1 Rev. 2.0	Ammonia-N	99.5	102	102			0.224
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	106	109			1.82
EPA 353.2 Rev. 2.0	NO2NO3-N	100	100	99.0			1.50
EPA 365.1 Rev. 2.0	Total-P	101					1.80
	Total-P	102	97.4	101			3.86
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.9	95.0	95.3			0.228
SM 2120 B	Color (true)	101				0.0971	
SM 2320 B-97	Total Alkalinity	102				0.0676	
SM 2540 C-97	TDS					3.59	
	TDS					1.98	
SM 2540 D-97	TSS					5.61	
SM 4500 F-C-97	Fluoride	96.6	99.1	97.4			1.46
SM 5310 B-00	Organic Carbon	90.8	94.7	91.5			2.70

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2083244, 2083245, 2083250
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2083244, 2083245, 2083250
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2083244, 2083245, 2083250
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2083246, 2083247, 2083251
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2083246, 2083247, 2083251
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2083246, 2083247, 2083251
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2083246, 2083247, 2083251
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2083248, 2083249, 2083252
SM 2120 B / E31780	True Color measured at 450 nm	2083244, 2083245, 2083250
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2083244, 2083245, 2083250
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2083244, 2083245, 2083250
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2083244, 2083245, 2083250
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2083244, 2083245, 2083250
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2083246, 2083247, 2083251

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	05/03/2019			05/03/2019 16:06	Sima Feizi	2083244, 2083245, 2083250
EPA 300.0 Rev. 2.1	05/03/2019			05/10/2019 01:22	Lipi Saha	2083244
	05/03/2019			05/10/2019 01:35	Lipi Saha	2083245
	05/03/2019			05/10/2019 01:47	Lipi Saha	2083250
EPA 350.1 Rev. 2.0	05/03/2019			05/09/2019 11:40	Ping Hua	2083246
	05/03/2019			05/09/2019 11:42	Ping Hua	2083247
	05/03/2019			05/09/2019 11:48	Ping Hua	2083251
EPA 351.2 Rev. 2.0	05/03/2019	05/09/2019 13:00	Adrian Shelby	05/13/2019 13:43	Joseph Suarez	2083246
	05/03/2019	05/09/2019 13:00	Adrian Shelby	05/13/2019 13:44	Joseph Suarez	2083247
	05/03/2019	05/09/2019 13:00	Adrian Shelby	05/13/2019 13:46	Joseph Suarez	2083251
EPA 353.2 Rev. 2.0	05/03/2019			05/09/2019 09:31	Beverly Y. Sanders	2083246
	05/03/2019			05/09/2019 09:37	Beverly Y. Sanders	2083247
	05/03/2019			05/09/2019 09:38	Beverly Y. Sanders	2083251
EPA 365.1 Rev. 2.0	05/03/2019	05/07/2019 14:35	Sima Feizi	05/09/2019 14:39	Rosalyn Ballman	2083246
	05/03/2019	05/07/2019 14:35	Sima Feizi	05/09/2019 14:40	Rosalyn Ballman	2083247
	05/03/2019	05/09/2019 13:20	Joseph Suarez	05/14/2019 11:46	Rosalyn Ballman	2083251
EPA 365.1 Rev. 2.0 dissolved	05/03/2019			05/03/2019 14:37	Lipi Saha	2083248, 2083249
	05/03/2019			05/03/2019 14:38	Lipi Saha	2083252
SM 2120 B	05/03/2019			05/03/2019 14:43	Blanca Fach	2083244
	05/03/2019			05/03/2019 14:44	Blanca Fach	2083245, 2083250
SM 2320 B-97	05/03/2019			05/11/2019 17:16	Dale L. Simmons	2083244
	05/03/2019			05/11/2019 17:30	Dale L. Simmons	2083245
	05/03/2019			05/11/2019 17:44	Dale L. Simmons	2083250
SM 2540 C-97	05/03/2019			05/08/2019 14:21	Yijie Li	2083244, 2083245, 2083250
SM 2540 D-97	05/03/2019			05/08/2019 14:21	Yijie Li	2083244, 2083245, 2083250
SM 4500 F-C-97	05/03/2019			05/15/2019 04:17	Dale L. Simmons	2083244
	05/03/2019			05/15/2019 04:22	Dale L. Simmons	2083245
	05/03/2019			05/15/2019 04:28	Dale L. Simmons	2083250
SM 5310 B-00	05/03/2019			05/13/2019 07:34	Julia Storbeck	2083246
	05/03/2019			05/13/2019 07:47	Julia Storbeck	2083247
	05/03/2019			05/13/2019 08:00	Julia Storbeck	2083251