Chemical Analysis Report

CEN-DIST-2018-08-15-01

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

Event Description: **Drawdy LVI / Silver / Gear**
Request ID: **RQ-2018-08-06-29**
Customer: **CEN-DIST**
Project ID: **SMP**

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 31-AUG-2018 16:03

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 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: LAKE GEAR @ CENTER **Collection Date/Time: 08/14/2018 09:16**

Field ID: G2CE0154 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2017136	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P350168	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P350418	
		Sulfate	5.7		mg SO4/L	P350420	
	SM 2120 B	Color (true)	29		PCU	P350177	
	SM 2320 B-97	Total Alkalinity	66		mg CaCO3/L	P350415	
	SM 2540 C-97	TDS	114		mg/L	P350770	
	SM 2540 D-97	TSS	2	I	mg/L	P350758	
	SM 4500 F-C-97	Fluoride	0.083	I	mg F/L	P350416	
2017139	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P350520	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P350275	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P350522	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P350497	
	SM 5310 B-00	Organic Carbon	7.9		mg C/L	P350402	
2017142	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P350172	

Sample Location: SILVER LAKE @ CENTER **Collection Date/Time: 08/14/2018 10:34**

Field ID: G2CE0122 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2017137	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P350168	
	EPA 300.0 Rev. 2.1	Chloride	46		mg Cl/L	P350418	
		Sulfate	21		mg SO4/L	P350420	
	SM 2120 B	Color (true)	8.5		PCU	P350177	
	SM 2320 B-97	Total Alkalinity	9.7	A	mg CaCO3/L	P350415	
	SM 2540 C-97	TDS	130		mg/L	P350770	
	SM 2540 D-97	TSS	2	I	mg/L	P350758	
	SM 4500 F-C-97	Fluoride	0.042	I	mg F/L	P350416	
2017140	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P350520	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P350275	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P350522	
	EPA 365.1 Rev. 2.0	Total-P	0.01		mg P/L	P350497	
	SM 5310 B-00	Organic Carbon	4.9		mg C/L	P350402	
2017143	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P350172	

Sample Location: LAKE MINNIE @ CENTER **Collection Date/Time: 08/14/2018 11:19**

Field ID: G2CE0108 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2017138	EPA 180.1 Rev. 2.0	Turbidity	2.0	A	NTU	P350169	
	EPA 300.0 Rev. 2.1	Chloride	33		mg Cl/L	P350418	
		Sulfate	2.4		mg SO4/L	P350420	
	SM 2120 B	Color (true)	230		PCU	P350177	
	SM 2320 B-97	Total Alkalinity	36		mg CaCO3/L	P350415	
	SM 2540 C-97	TDS	152		mg/L	P350770	
	SM 2540 D-97	TSS	4	I	mg/L	P350758	
	SM 4500 F-C-97	Fluoride	0.055	I	mg F/L	P350416	
2017141	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P350520	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P350458	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P350522	
	EPA 365.1 Rev. 2.0	Total-P	0.054		mg P/L	P350497	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P350402	
2017144	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.009	I	mg P/L	P350172	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P350168

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P350169

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350418

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350420

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350520

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350275

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350458

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350522

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350497

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: P350172

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

Reference Method: SM 2120 B
Batch ID: P350177

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P350415

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

Reference Method: SM 2540 C-97
Batch ID: P350770

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P350758

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P350416

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P350402

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: P350418

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350420

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350520

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350275

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350458

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: P350522

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350497

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350172

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.4		P	90 - 110

Reference Method: SM 2120 B
Batch ID: P350177

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	96.6		P	85 - 115

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P350415

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P350416

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.7		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P350402

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350418

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2017063	Chloride	99.3		P	90 - 110
2017166	Chloride	91.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350420

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2017063	Sulfate	98.9		P	90 - 110
2017166	Sulfate	91.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350520

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2017139	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350275

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2017140	Kjeldahl Nitrogen	101	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350458

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2017697	Kjeldahl Nitrogen	104	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350522

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2017076	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350497

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2017140	Total-P	97.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350172

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2017143	O-Phosphate-P	95.7	96.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P350416

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2017137	Fluoride	97.5	96.4	P/P	91 - 105

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P350402

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2017058	Organic Carbon	96.7	97.9	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P350168

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2017055	Turbidity	3.02	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P350169

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2017138	Turbidity	1.00	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350418

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2017063	Chloride	1.77	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350420

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2017063	Sulfate	1.82	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350520

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2017139	Ammonia-N	0.671	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2017140	Kjeldahl Nitrogen	1.27	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350458

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2017697	Kjeldahl Nitrogen	0.780	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350522

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2017076	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350497

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2017140	Total-P	1.01	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350172

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2017143	O-Phosphate-P	0.521	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P350177

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2017078	Color (true)	0.936	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P350415

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2017137	Total Alkalinity	1.45	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P350770

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2017063	TDS	5.31	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P350758

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2017063	TSS	4.72	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P350416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2017137	Fluoride	0.969	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P350402

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2017058	Organic Carbon	0.964	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 300.0 Rev. 2.1
Run ID: A85845
Included Lab Sample IDs: 2017136, 2017137, 2017138

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	96.3	P/P	90 - 110
Sulfate	100	95.3	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A85898
Included Lab Sample IDs: 2017136, 2017137, 2017138

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	102	P/P	95 - 105
Turbidity	102	102	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A85899
Included Lab Sample IDs: 2017142, 2017143, 2017144

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.3	99.2	P/P	90 - 110
O-Phosphate-P	99.4	99.2	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A85900
Included Lab Sample IDs: 2017136, 2017137, 2017138

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.0	97.4	P/P	90 - 115
Color (true)	99.6	99.4	P/P	90 - 115

Reference Method: SM 2320 B-97
Run ID: A85991
Included Lab Sample IDs: 2017136, 2017137, 2017138

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A85991
Included Lab Sample IDs: 2017136, 2017137, 2017138

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

Reference Method: SM 5310 B-00
Run ID: A85992
Included Lab Sample IDs: 2017139, 2017140, 2017141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.6	96.3	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A86017
Included Lab Sample IDs: 2017139, 2017140

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A86029
Included Lab Sample IDs: 2017141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.1	94.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A86031
Included Lab Sample IDs: 2017139, 2017140, 2017141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	102	P/P	90 - 110
Ammonia-N	103	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A86032
Included Lab Sample IDs: 2017139, 2017140, 2017141

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A86058
Included Lab Sample IDs: 2017139, 2017140, 2017141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	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		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					3.02	
	Turbidity					1.00	
EPA 300.0 Rev. 2.1	Chloride	98.7	99.3	91.7		1.77	
	Sulfate	97.5	98.9	91.6		1.82	
EPA 350.1 Rev. 2.0	Ammonia-N	100	100	101			0.671
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	109	101	99.6			1.27
	Kjeldahl Nitrogen	103	104	105			0.780
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	101	101			0.0
EPA 365.1 Rev. 2.0	Total-P	97.5	97.0	98.0			1.01
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.4	95.7	96.2			0.521
SM 2120 B	Color (true)	96.6				0.936	
SM 2320 B-97	Total Alkalinity	102				1.45	
SM 2540 C-97	TDS					5.31	
SM 2540 D-97	TSS					4.72	
SM 4500 F-C-97	Fluoride	97.7	97.5	96.4			0.969
SM 5310 B-00	Organic Carbon	96.6	96.7	97.9			0.964

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2017136, 2017137, 2017138
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2017136, 2017137, 2017138
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2017136, 2017137, 2017138
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2017139, 2017140, 2017141
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2017139, 2017140, 2017141
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2017139, 2017140, 2017141
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2017139, 2017140, 2017141
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2017142, 2017143, 2017144
SM 2120 B / E31780	True Color measured at 450 nm	2017136, 2017137, 2017138
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2017136, 2017137, 2017138
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2017136, 2017137, 2017138
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2017136, 2017137, 2017138
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2017136, 2017137, 2017138
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2017139, 2017140, 2017141

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	08/15/2018			08/15/2018 16:37	William L. Brown IV	2017136, 2017137, 2017138
EPA 300.0 Rev. 2.1	08/15/2018			08/16/2018 23:55	Lipi Saha	2017136
	08/15/2018			08/17/2018 00:07	Lipi Saha	2017137
	08/15/2018			08/17/2018 00:19	Lipi Saha	2017138
EPA 350.1 Rev. 2.0	08/15/2018			08/20/2018 11:48	Ping Hua	2017139
	08/15/2018			08/20/2018 11:52	Ping Hua	2017140
	08/15/2018			08/20/2018 12:00	Ping Hua	2017141
EPA 351.2 Rev. 2.0	08/15/2018	08/17/2018 11:00	Adrian Shelby	08/20/2018 13:31	Joseph Suarez	2017139
	08/15/2018	08/17/2018 11:00	Adrian Shelby	08/20/2018 13:32	Joseph Suarez	2017140
	08/15/2018	08/20/2018 11:00	Adrian Shelby	08/21/2018 11:35	Joseph Suarez	2017141
EPA 353.2 Rev. 2.0	08/15/2018			08/21/2018 11:37	Lauren Bottorf	2017139
	08/15/2018			08/21/2018 11:38	Lauren Bottorf	2017140
	08/15/2018			08/21/2018 11:39	Lauren Bottorf	2017141
EPA 365.1 Rev. 2.0	08/15/2018	08/21/2018 13:00	Sima Feizi	08/22/2018 10:41	Beverly Y. Sanders	2017139
	08/15/2018	08/21/2018 13:00	Sima Feizi	08/22/2018 10:42	Beverly Y. Sanders	2017140
	08/15/2018	08/21/2018 13:00	Sima Feizi	08/22/2018 10:43	Beverly Y. Sanders	2017141
EPA 365.1 Rev. 2.0 dissolved	08/15/2018			08/15/2018 16:29	Julia Storbeck	2017143
	08/15/2018			08/15/2018 17:12	Julia Storbeck	2017142
	08/15/2018			08/15/2018 17:13	Julia Storbeck	2017144
SM 2120 B	08/15/2018			08/15/2018 16:50	Tanya Welborn	2017136
	08/15/2018			08/15/2018 16:51	Tanya Welborn	2017137
	08/15/2018			08/15/2018 17:28	Tanya Welborn	2017138
SM 2320 B-97	08/15/2018			08/16/2018 23:43	Dale L. Simmons	2017137
	08/15/2018			08/17/2018 00:13	Dale L. Simmons	2017136
	08/15/2018			08/17/2018 00:24	Dale L. Simmons	2017138
SM 2540 C-97	08/15/2018			08/17/2018 15:46	Yijie Li	2017136, 2017137, 2017138
SM 2540 D-97	08/15/2018			08/17/2018 15:46	Yijie Li	2017136, 2017137, 2017138
SM 4500 F-C-97	08/15/2018			08/16/2018 23:35	Dale L. Simmons	2017137
	08/15/2018			08/17/2018 00:13	Dale L. Simmons	2017136
	08/15/2018			08/17/2018 00:24	Dale L. Simmons	2017138
SM 5310 B-00	08/15/2018			08/18/2018 05:08	Megan Treadwell	2017139
	08/15/2018			08/18/2018 05:21	Megan Treadwell	2017140
	08/15/2018			08/18/2018 05:36	Megan Treadwell	2017141