Chemical Analysis Report

SE-DIST-2020-02-25-01

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

Event Description: **SMP- Kevin (Even Months)**
Request ID: **RQ-2020-02-17-16**
Customer: **SE-DIST**
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 18-MAR-2020 15:20

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: L-63N canal @ SR 70 **Collection Date/Time: 02/24/2020 12:00**

Field ID: G1SE0023 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2160339	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P379628	
	EPA 300.0 Rev. 2.1	Chloride	100		mg Cl/L	P380162	
		Sulfate	46		mg SO4/L	P380165	
	SM 2120 B-2011	Color (true)	170		PCU	P379672	
	SM 2320 B-2011	Total Alkalinity	95		mg CaCO3/L	P380175	
	SM 2540 C-2011	TDS	368		mg/L	P379978	
	SM 2540 D-2011	TSS	4	I	mg/L	P379973	
	SM 4500 F-C-2011	Fluoride	0.13		mg F/L	P380680	
2160342	EPA 350.1 Rev. 2.0	Ammonia-N	0.043		mg N/L	P379911	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P379756	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P380157	
	EPA 365.1 Rev. 2.0	Total-P	0.33		mg P/L	P380040	
	SM 5310 B-2011	Organic Carbon	25		mg C/L	P379711	
2160345	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.26		mg P/L	P379686	

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: L-63 canal @ SE 86th Blvd. **Collection Date/Time: 02/24/2020 13:00**

Field ID: G1SE0022 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2160340	EPA 180.1 Rev. 2.0	Turbidity	2.0	A	NTU	P379629	
	EPA 300.0 Rev. 2.1	Chloride	110		mg Cl/L	P380162	
		Sulfate	40		mg SO4/L	P380165	
	SM 2120 B-2011	Color (true)	260		PCU	P379672	
	SM 2320 B-2011	Total Alkalinity	81		mg CaCO3/L	P380175	
	SM 2540 C-2011	TDS	376		mg/L	P379978	
	SM 2540 D-2011	TSS	3	I	mg/L	P379973	
	SM 4500 F-C-2011	Fluoride	0.13		mg F/L	P380680	
2160343	EPA 350.1 Rev. 2.0	Ammonia-N	0.036		mg N/L	P379912	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P379756	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P380157	
	EPA 365.1 Rev. 2.0	Total-P	0.40		mg P/L	P380040	
	SM 5310 B-2011	Organic Carbon	30		mg C/L	P379711	
2160346	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.31		mg P/L	P379686	

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: L-65 upstream of S-153 **Collection Date/Time: 02/24/2020 13:30**

Field ID: G1SE0050 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2160341	EPA 180.1 Rev. 2.0	Turbidity	0.90		NTU	P379629	
	EPA 300.0 Rev. 2.1	Chloride	150		mg Cl/L	P380162	
		Sulfate	38		mg SO4/L	P380165	
	SM 2120 B-2011	Color (true)	130		PCU	P379672	
	SM 2320 B-2011	Total Alkalinity	173		mg CaCO3/L	P380175	
	SM 2540 C-2011	TDS	530		mg/L	P379978	
	SM 2540 D-2011	TSS	2	I	mg/L	P379973	
	SM 4500 F-C-2011	Fluoride	0.22		mg F/L	P380680	
2160344	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P379912	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P379756	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P380157	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P380040	
	SM 5310 B-2011	Organic Carbon	25		mg C/L	P379711	
2160347	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.16		mg P/L	P379686	

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: P379628

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P379629

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380162

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380165

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379911

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379912

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379756

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380157

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380040

Component	Result	Code	Units
Total-P	0.005	U	mg P/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379686

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

Reference Method: SM 2120 B-2011
Batch ID: P379672

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P380175

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

Reference Method: SM 2540 C-2011
Batch ID: P379978

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P379973

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P380680

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P379711

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: P380162

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: P380165

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379911

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379912

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379756

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380157

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380040

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: P379686

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	93.3		P	90 - 110

Reference Method: SM 2120 B-2011
Batch ID: P379672

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.8		P	85 - 115

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P380175

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	105		P	98 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P380680

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.9		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P379711

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.0		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380162

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160357	Chloride	96.9		P	90 - 110
2160425	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380165

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160357	Sulfate	97.5		P	90 - 110
2160425	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379911

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160199	Ammonia-N	98.5	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379912

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160343	Ammonia-N	99.3	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379756

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160201	Kjeldahl Nitrogen	98.7	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380157

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160201	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380040

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160342	Total-P	98.6	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379686

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160310	O-Phosphate-P	93.5	93.7	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P380680

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160306	Fluoride	98.5	99.4	P/P	89 - 106

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P379711

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160266	Organic Carbon	100		P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P379628

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160248	Turbidity	0.863	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P379629

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160340	Turbidity	3.53	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380162

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160357	Chloride	0.524	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380165

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160357	Sulfate	0.344	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379911

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160199	Ammonia-N	2.23	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379912

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160343	Ammonia-N	1.79	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379756

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160201	Kjeldahl Nitrogen	2.81	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380157

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160201	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380040

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160342	Total-P	2.65	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379686

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160310	O-Phosphate-P	0.180	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P379672

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160357	Color (true)	0.273	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P380175

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160306	Total Alkalinity	0.192	Sample	P	0 - 2.8

Reference Method: SM 2540 C-2011
Batch ID: P379978

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160306	TDS	1.95	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P380680

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160306	Fluoride	0.467	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
Batch ID: P379711

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160266	Organic Carbon	0.399	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: A97813
Included Lab Sample IDs: 2160339, 2160340, 2160341

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	100	P/P	95 - 105
Turbidity	99.0	99.0	P/P	95 - 105

Reference Method: SM 2120 B-2011
Run ID: A97827
Included Lab Sample IDs: 2160339, 2160340, 2160341

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 115
Color (true)	101	102	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A97828
Included Lab Sample IDs: 2160345, 2160346, 2160347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.9	98.9	P/P	90 - 110
O-Phosphate-P	99.2	96.9	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A97841
Included Lab Sample IDs: 2160342, 2160343, 2160344

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A97905
Included Lab Sample IDs: 2160342, 2160343, 2160344

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.2	97.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A97928
Included Lab Sample IDs: 2160342, 2160343, 2160344

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	101	P/P	90 - 110
Ammonia-N	91.6	98.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A97979
Included Lab Sample IDs: 2160342, 2160343, 2160344

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A98001
Included Lab Sample IDs: 2160339, 2160340, 2160341

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	99.4	P/P	90 - 110
Chloride	99.4	100	P/P	90 - 110
Sulfate	101	99.6	P/P	90 - 110
Sulfate	99.6	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A98011
Included Lab Sample IDs: 2160342, 2160343, 2160344

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.0	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A98031
Included Lab Sample IDs: 2160339, 2160340, 2160341

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	105	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A98204
Included Lab Sample IDs: 2160339, 2160340, 2160341

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.5	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					0.863	
	Turbidity					3.53	
EPA 300.0 Rev. 2.1	Chloride	98.7	96.9	103		0.524	
	Sulfate	98.5	97.5	103		0.344	
EPA 350.1 Rev. 2.0	Ammonia-N	103	98.5	101			2.23
	Ammonia-N	102	99.3	102			1.79
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.9	98.7	103			2.81
EPA 353.2 Rev. 2.0	NO2NO3-N	102	100	100			0.0
EPA 365.1 Rev. 2.0	Total-P	102	98.6	103			2.65
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	93.3	93.5	93.7			0.180
SM 2120 B-2011	Color (true)	98.8				0.273	
SM 2320 B-2011	Total Alkalinity	105				0.192	
SM 2540 C-2011	TDS					1.95	
SM 4500 F-C-2011	Fluoride	96.9	98.5	99.4			0.467
SM 5310 B-2011	Organic Carbon	98.0	100				0.399

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2160339, 2160340, 2160341
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2160339, 2160340, 2160341
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2160339, 2160340, 2160341
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2160342, 2160343, 2160344
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2160342, 2160343, 2160344
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2160342, 2160343, 2160344
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2160342, 2160343, 2160344
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2160345, 2160346, 2160347
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2160339, 2160340, 2160341
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2160339, 2160340, 2160341
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2160339, 2160340, 2160341
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2160339, 2160340, 2160341
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2160339, 2160340, 2160341
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2160342, 2160343, 2160344

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	02/25/2020			02/25/2020 16:14	Blanca Fach	2160339, 2160340, 2160341
EPA 300.0 Rev. 2.1	02/25/2020			03/05/2020 15:05	Lipi Saha	2160339
	02/25/2020			03/05/2020 15:42	Lipi Saha	2160340
	02/25/2020			03/05/2020 15:54	Lipi Saha	2160341
EPA 350.1 Rev. 2.0	02/25/2020			03/02/2020 12:37	Ping Hua	2160344
	02/25/2020			03/02/2020 14:06	Ping Hua	2160342
	02/25/2020			03/02/2020 14:07	Ping Hua	2160343
EPA 351.2 Rev. 2.0	02/25/2020	02/27/2020 11:50	Sima Feizi	02/28/2020 11:40	Jhamieka S. Greenwood	2160342
	02/25/2020	02/27/2020 11:50	Sima Feizi	02/28/2020 11:42	Jhamieka S. Greenwood	2160343
	02/25/2020	02/27/2020 11:50	Sima Feizi	02/28/2020 11:43	Jhamieka S. Greenwood	2160344
EPA 353.2 Rev. 2.0	02/25/2020			03/04/2020 11:04	Beverly Y. Sanders	2160342
	02/25/2020			03/04/2020 11:05	Beverly Y. Sanders	2160343
	02/25/2020			03/04/2020 11:06	Beverly Y. Sanders	2160344
EPA 365.1 Rev. 2.0	02/25/2020	03/04/2020 13:06	Yen Ta	03/05/2020 11:58	Benjamin T. Nordmann	2160342
	02/25/2020	03/04/2020 13:06	Yen Ta	03/05/2020 12:01	Benjamin T. Nordmann	2160343
	02/25/2020	03/04/2020 13:06	Yen Ta	03/05/2020 12:02	Benjamin T. Nordmann	2160344
EPA 365.1 Rev. 2.0 dissolved	02/25/2020			02/25/2020 16:35	Carlos Miranda	2160345
	02/25/2020			02/25/2020 16:40	Carlos Miranda	2160346
	02/25/2020			02/25/2020 16:41	Carlos Miranda	2160347
SM 2120 B-2011	02/25/2020			02/25/2020 16:05	Madeline Funaro	2160341
	02/25/2020			02/25/2020 16:43	Madeline Funaro	2160339, 2160340
SM 2320 B-2011	02/25/2020			03/05/2020 09:07	Dale L. Simmons	2160339
	02/25/2020			03/05/2020 09:19	Dale L. Simmons	2160340
	02/25/2020			03/05/2020 09:31	Dale L. Simmons	2160341
SM 2540 C-2011	02/25/2020			02/26/2020 14:06	Yijie Li	2160339, 2160340, 2160341
SM 2540 D-2011	02/25/2020			02/26/2020 14:06	Yijie Li	2160339, 2160340, 2160341
SM 4500 F-C-2011	02/25/2020			03/14/2020 00:47	Dale L. Simmons	2160339
	02/25/2020			03/14/2020 00:52	Dale L. Simmons	2160340
	02/25/2020			03/14/2020 00:57	Dale L. Simmons	2160341
SM 5310 B-2011	02/25/2020			02/26/2020 17:51	Lauren Lees	2160342
	02/25/2020			02/26/2020 18:05	Lauren Lees	2160343
	02/25/2020			02/26/2020 18:18	Lauren Lees	2160344