

Chemical Analysis Report

SE-DIST-2019-05-09-01

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

Event Description: **SMP-Horses**
Request ID: **RQ-2019-05-06-44**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
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Certified by: Colin Wright, Program Administrator

Date Certified: 28-MAY-2019 12:28

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray 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: C-51 WEST @ LITTLE RANCHES TRAIL

Collection Date/Time: 05/08/2019 12:40

Field ID: G3SE0041

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2085184	EPA 180.1 Rev. 2.0	Turbidity	5.6		NTU	P363737	
	EPA 300.0 Rev. 2.1	Chloride	84		mg Cl/L	P363953	
		Sulfate	28		mg SO4/L	P363954	
	SM 2120 B	Color (true)	24		PCU	P363728	
	SM 2320 B-97	Total Alkalinity	153		mg CaCO3/L	P364259	
	SM 2540 C-97	TDS	364	A	mg/L	P364269	
	SM 2540 D-97	TSS	9	IA	mg/L	P364255	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P364263	
2085185	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P364046	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.88		mg N/L	P364078	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P364121	
	EPA 365.1 Rev. 2.0	Total-P	0.046		mg P/L	P364080	
	SM 5310 B-00	Organic Carbon	9.6		mg C/L	P364050	
2085186	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P363701	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: LAKE WELLINGTON

Collection Date/Time: 05/08/2019 13:05

Field ID: G3SE0039

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2085187	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P363737	
	EPA 300.0 Rev. 2.1	Chloride	74		mg Cl/L	P363953	
		Sulfate	27		mg SO4/L	P363954	
	SM 2120 B	Color (true)	26		PCU	P363728	
	SM 2320 B-97	Total Alkalinity	158		mg CaCO3/L	P364259	
	SM 2540 C-97	TDS	319		mg/L	P364269	
	SM 2540 D-97	TSS	6	I	mg/L	P364255	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P364263	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P364046	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.97		mg N/L	P364078	
2085188	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P364121	
	EPA 365.1 Rev. 2.0	Total-P	0.044		mg P/L	P364080	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P364053	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P363702	
	dissolved						

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: C-16N @ BELLAGGIO

Collection Date/Time: 05/08/2019 14:00

Field ID: G3SE0031

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2085181	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P363737	
	EPA 300.0 Rev. 2.1	Chloride	43		mg Cl/L	P363953	
		Sulfate	15		mg SO4/L	P363954	
	SM 2120 B	Color (true)	48		PCU	P363728	
	SM 2320 B-97	Total Alkalinity	160		mg CaCO3/L	P364259	
	SM 2540 C-97	TDS	278		mg/L	P364268	
	SM 2540 D-97	TSS	3	I	mg/L	P364254	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P364263	
2085182	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P364045	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P364078	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.046		mg N/L	P364121	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P364080	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P364050	
2085183	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.044		mg P/L	P363701	

Ref. Method and Comment:

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: P363737

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363953

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363954

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P364045

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P364046

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P364078

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P364121

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364080

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363701

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363702

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

Reference Method: SM 2120 B
Batch ID: P363728

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P364259

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

Reference Method: SM 2540 C-97
Batch ID: P364268

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P364269

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P364254

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P364255

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P364263

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P364050

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P364053

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: P363953

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363954

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: P364045

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P364046

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P364078

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P364121

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	98.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364080

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363701

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363702

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.9		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P363728

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P364259

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

Reference Method: SM 4500 F-C-97
Batch ID: P364263

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.5		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P364050

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.1		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P364053

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363953

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085101	Chloride	97.2		P	90 - 110
2085181	Chloride	99.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363954

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085101	Sulfate	96.8		P	90 - 110
2085181	Sulfate	98.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P364045

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085176	Ammonia-N	101	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P364046

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085185	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P364078

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085160	Kjeldahl Nitrogen	106	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P364121

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085128	NO2NO3-N	100	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364080

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085128	Total-P	93.9	94.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363701

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085037	O-Phosphate-P	90.3	91.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363702

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085189	O-Phosphate-P	94.2	95.9	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P364263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085112	Fluoride	100	98.1	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P364050

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085035	Organic Carbon	98.2	97.3	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P364053

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085391	Organic Carbon	92.8	93.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P363737

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085131	Turbidity	0.391	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363953

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085101	Chloride	0.711	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363954

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085101	Sulfate	0.00855	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P364045

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085176	Ammonia-N	1.37	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P364046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085185	Ammonia-N	0.329	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P364078

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085160	Kjeldahl Nitrogen	1.92	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P364121

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085128	NO2NO3-N	0.633	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364080

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085128	Total-P	0.644	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363701

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085037	O-Phosphate-P	1.54	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363702

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085189	O-Phosphate-P	1.79	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P363728

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085159	Color (true)	3.01	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P364259

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085112	Total Alkalinity	0.366	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P364268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085127	TDS	2.25	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P364269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085184	TDS	1.10	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P364263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085112	Fluoride	1.45	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P364050

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085035	Organic Carbon	0.641	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P364053

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085391	Organic Carbon	0.646	Spike	P	0 - 20

* 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: A91331

Included Lab Sample IDs: 2085183, 2085186, 2085189

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.1	97.5	P/P	90 - 110
O-Phosphate-P	99.9	98.1	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A91338

Included Lab Sample IDs: 2085181, 2085184, 2085187

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A91343

Included Lab Sample IDs: 2085181, 2085184, 2085187

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A91404

Included Lab Sample IDs: 2085181, 2085184, 2085187

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A91468

Included Lab Sample IDs: 2085182, 2085185, 2085188

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	104	105	P/P	90 - 110
Ammonia-N	105	105	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A91470

Included Lab Sample IDs: 2085182, 2085185

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.2	99.5	P/P	90 - 110
Organic Carbon	99.5	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A91471

Included Lab Sample IDs: 2085188

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.4	94.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A91494

Included Lab Sample IDs: 2085182, 2085185, 2085188

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A91516

Included Lab Sample IDs: 2085182, 2085185, 2085188

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	98.2	P/P	90 - 110
Kjeldahl Nitrogen	98.2	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A91536

Included Lab Sample IDs: 2085182

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A91541

Included Lab Sample IDs: 2085185, 2085188

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	99.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A91544

Included Lab Sample IDs: 2085181, 2085184, 2085187

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A91544

Included Lab Sample IDs: 2085181, 2085184, 2085187

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	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		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					0.391	
EPA 300.0 Rev. 2.1	Chloride	98.6	97.2	99.1		0.711	
	Sulfate	98.5	96.8	98.7		0.0085	
EPA 350.1 Rev. 2.0	Ammonia-N	101	101	103			1.37
	Ammonia-N	101	102	102			0.329
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	106	109			1.92
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	98.0	100	99.0			0.633
EPA 365.1 Rev. 2.0	Total-P	98.0	93.9	94.6			0.644
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	90.3	91.7			1.54
	O-Phosphate-P	97.9	94.2	95.9			1.79
SM 2120 B	Color (true)	100				3.01	
SM 2320 B-97	Total Alkalinity	102				0.366	
SM 2540 C-97	TDS					2.25	
	TDS					1.10	
SM 4500 F-C-97	Fluoride	98.5	100	98.1			1.45
SM 5310 B-00	Organic Carbon	98.1	98.2	97.3			0.641
	Organic Carbon	92.8	92.8	93.5			0.646

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2085181, 2085184, 2085187
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2085181, 2085184, 2085187
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2085181, 2085184, 2085187
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2085182, 2085185, 2085188
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2085182, 2085185, 2085188
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2085182, 2085185, 2085188
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2085182, 2085185, 2085188
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2085183, 2085186, 2085189
SM 2120 B / E31780	True Color measured at 450 nm	2085181, 2085184, 2085187
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2085181, 2085184, 2085187
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2085181, 2085184, 2085187
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2085181, 2085184, 2085187
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2085181, 2085184, 2085187
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2085182, 2085185, 2085188

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	05/09/2019			05/09/2019 16:45	Sima Feizi	2085181, 2085184, 2085187
EPA 300.0 Rev. 2.1	05/09/2019			05/14/2019 16:03	Lipi Saha	2085181
	05/09/2019			05/14/2019 18:41	Lipi Saha	2085184
	05/09/2019			05/14/2019 18:53	Lipi Saha	2085187
EPA 350.1 Rev. 2.0	05/09/2019			05/15/2019 12:42	Ping Hua	2085182
	05/09/2019			05/15/2019 12:54	Ping Hua	2085185
	05/09/2019			05/15/2019 12:58	Ping Hua	2085188
EPA 351.2 Rev. 2.0	05/09/2019	05/16/2019 12:45	Adrian Shelby	05/17/2019 17:15	Joseph Suarez	2085182
	05/09/2019	05/16/2019 12:45	Adrian Shelby	05/17/2019 17:17	Joseph Suarez	2085185
	05/09/2019	05/16/2019 12:45	Adrian Shelby	05/17/2019 17:21	Joseph Suarez	2085188
EPA 353.2 Rev. 2.0	05/09/2019			05/17/2019 10:11	Beverly Y. Sanders	2085182
	05/09/2019			05/17/2019 10:13	Beverly Y. Sanders	2085185
	05/09/2019			05/17/2019 10:14	Beverly Y. Sanders	2085188
EPA 365.1 Rev. 2.0	05/09/2019	05/16/2019 14:45	Adrian Shelby	05/17/2019 18:37	Rosalyn Ballman	2085182
	05/09/2019	05/16/2019 14:45	Adrian Shelby	05/20/2019 12:42	Rosalyn Ballman	2085185
	05/09/2019	05/16/2019 14:45	Adrian Shelby	05/20/2019 12:43	Rosalyn Ballman	2085188
EPA 365.1 Rev. 2.0 dissolved	05/09/2019			05/09/2019 14:45	Jhamieka S. Greenwood	2085183
	05/09/2019			05/09/2019 14:46	Jhamieka S. Greenwood	2085186
	05/09/2019			05/09/2019 14:54	Jhamieka S. Greenwood	2085189
SM 2120 B	05/09/2019			05/09/2019 15:04	Blanca Fach	2085181, 2085184
	05/09/2019			05/09/2019 15:05	Blanca Fach	2085187
SM 2320 B-97	05/09/2019			05/18/2019 08:12	Dale L. Simmons	2085181
	05/09/2019			05/18/2019 08:26	Dale L. Simmons	2085184
	05/09/2019			05/18/2019 08:39	Dale L. Simmons	2085187
SM 2540 C-97	05/09/2019			05/14/2019 14:06	Yijie Li	2085181, 2085184, 2085187
SM 2540 D-97	05/09/2019			05/14/2019 14:06	Yijie Li	2085181, 2085184, 2085187
SM 4500 F-C-97	05/09/2019			05/18/2019 08:12	Dale L. Simmons	2085181
	05/09/2019			05/18/2019 08:26	Dale L. Simmons	2085184
	05/09/2019			05/18/2019 08:39	Dale L. Simmons	2085187
SM 5310 B-00	05/09/2019			05/15/2019 07:24	Julia Storbeck	2085188
	05/09/2019			05/16/2019 04:14	Julia Storbeck	2085182
	05/09/2019			05/16/2019 04:52	Julia Storbeck	2085185