

Chemical Analysis Report

CEN-DIST-2019-04-25-03

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

Event Description: **Belle / Gordon / Van + D&B**
Request ID: **RQ-2019-04-22-39**
Customer: **CEN-DIST**
Project ID: **SMP**

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 14-MAY-2019 13:24



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: WEKIVA RIVER UPSTREAM OF LITTLE
WEKIVA CONFLUENCE**

Collection Date/Time: 04/24/2019 11:25

Field ID: G2CE0205

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2081020	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P362881	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P363221	
		Sulfate	22		mg SO4/L	P363222	
	SM 2120 B	Color (true)	13		PCU	P362891	
	SM 2320 B-97	Total Alkalinity	120		mg CaCO3/L	P363360	
	SM 2540 C-97	TDS	204		mg/L	P363234	
	SM 2540 D-97	TSS	4	I	mg/L	P363124	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P363364	
2081021	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P363379	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28		mg N/L	P363550	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.76		mg N/L	P363011	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P363061	
	SM 5310 B-00	Organic Carbon	1.9		mg C/L	P363084	
2081022	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.093		mg P/L	P362874	

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: WEKIVA RIVER UPSTREAM OF LITTLE
 WEKIVA CONFLUENCE**

Collection Date/Time: 04/24/2019 11:30

Field ID: G2CE0205_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2081023	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P362880	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P363221	
		Sulfate	23		mg SO4/L	P363222	
	SM 2120 B	Color (true)	13		PCU	P362891	
	SM 2320 B-97	Total Alkalinity	122		mg CaCO3/L	P363360	
	SM 2540 C-97	TDS	203		mg/L	P363236	
	SM 2540 D-97	TSS	4	I	mg/L	P363125	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P363364	
2081025	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P363379	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24		mg N/L	P363550	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.76		mg N/L	P363011	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P363061	
	SM 5310 B-00	Organic Carbon	1.8		mg C/L	P363084	
2081027	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.095		mg P/L	P362874	

Sample Location: FB_04242019

Collection Date/Time: 04/24/2019 12:45

Field ID: FB_04242019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2081024	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P362880	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P363221	
		Sulfate	0.20	U	mg SO4/L	P363222	
	SM 2120 B	Color (true)	2.5	U	PCU	P362891	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P363360	
	SM 2540 C-97	TDS	15	U	mg/L	P363236	
	SM 2540 D-97	TSS	2	U	mg/L	P363125	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P363364	
2081026	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P363264	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P363189	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P363011	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P363061	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P363084	
2081028	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P362872	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P362880

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P362881

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363221

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363222

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363264

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363379

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363189

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363550

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363011

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363061

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362872

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362874

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

Reference Method: SM 2120 B
Batch ID: P362891

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P363360

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

Reference Method: SM 2540 C-97
Batch ID: P363234

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P363236

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P363124

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P363125

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P363364

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P363084

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: P363221

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363222

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363264

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363379

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: P363189

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363550

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363011

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: P363061

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362872

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: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362874

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

Reference Method: SM 2120 B
Batch ID: P362891

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.4		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P363360

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P363364

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.6		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P363084

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363221

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081008	Chloride	97.0		P	90 - 110
2081148	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363222

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081008	Sulfate	98.6		P	90 - 110
2081148	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363264

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081132	Ammonia-N	101	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363379

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081834	Ammonia-N	102	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363189

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081017	Kjeldahl Nitrogen	96.2	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363550

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2082397	Kjeldahl Nitrogen	102	96.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363011

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081160	NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363061

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080997	Total-P	103	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362872

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081001	O-Phosphate-P	95.9	97.7	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362874

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081134	O-Phosphate-P	96.6	98.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P363364

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080993	Fluoride	97.9	100	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P363084

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081062	Organic Carbon	101	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P362880

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080995	Turbidity	1.19	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P362881

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081060	Turbidity	0.309	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363221

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081008	Chloride	0.0353	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363222

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081008	Sulfate	0.234	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363264

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081132	Ammonia-N	0.691	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363379

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081834	Ammonia-N	1.24	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363189

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081017	Kjeldahl Nitrogen	1.98	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363550

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2082397	Kjeldahl Nitrogen	4.30	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363011

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081160	NO2NO3-N	1.00	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363061

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080997	Total-P	3.37	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362872

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081001	O-Phosphate-P	1.86	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362874

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081134	O-Phosphate-P	1.44	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P362891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080995	Color (true)	0.162	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P363360

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080993	Total Alkalinity	2.57	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P363234

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080994	TDS	1.63	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P363236

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081129	TDS	1.53	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 2540 D-97
Batch ID: P363125

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081129	TSS	5.88	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P363364

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080993	Fluoride	1.95	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P363084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081062	Organic Carbon	0.0826	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: A91004

Included Lab Sample IDs: 2081022, 2081027, 2081028

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	95.1	94.7	P/P	90 - 110
O-Phosphate-P	95.7	95.1	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A91005

Included Lab Sample IDs: 2081020, 2081023, 2081024

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

Reference Method: SM 2120 B

Run ID: A91012

Included Lab Sample IDs: 2081020, 2081023, 2081024

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A91059

Included Lab Sample IDs: 2081021, 2081025, 2081026

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	97.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A91089

Included Lab Sample IDs: 2081021, 2081025, 2081026

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A91100

Included Lab Sample IDs: 2081021, 2081025

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	105	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A91103

Included Lab Sample IDs: 2081026

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A91105

Included Lab Sample IDs: 2081020, 2081023, 2081024

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A91105

Included Lab Sample IDs: 2081020, 2081023, 2081024

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A91165

Included Lab Sample IDs: 2081026

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	104	103	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A91204

Included Lab Sample IDs: 2081020, 2081023, 2081024

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

Reference Method: SM 4500 F-C-97

Run ID: A91204

Included Lab Sample IDs: 2081020, 2081023, 2081024

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	99.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A91210

Included Lab Sample IDs: 2081021, 2081025

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A91214

Included Lab Sample IDs: 2081026

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.1	95.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A91333

Included Lab Sample IDs: 2081021, 2081025

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.4	97.3	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					1.19	
	Turbidity					0.309	
EPA 300.0 Rev. 2.1	Chloride	99.3	97.0	100		0.0353	
	Sulfate	98.7	98.6	100		0.234	
EPA 350.1 Rev. 2.0	Ammonia-N	100	101	100			0.691
	Ammonia-N	101	102	104			1.24
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	96.2	99.8			1.98
	Kjeldahl Nitrogen	97.4	102	96.6			4.30
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	99.5	100			1.00
EPA 365.1 Rev. 2.0	Total-P	104	103	107			3.37
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.9	95.9	97.7			1.86
	O-Phosphate-P	97.9	96.6	98.5			1.44
SM 2120 B	Color (true)	99.4				0.162	
SM 2320 B-97	Total Alkalinity	101				2.57	
SM 2540 C-97	TDS					1.63	
	TDS					1.53	
SM 2540 D-97	TSS					5.88	
SM 4500 F-C-97	Fluoride	97.6	97.9	100			1.95
SM 5310 B-00	Organic Carbon	99.2	101	101			0.0826

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2081020, 2081023, 2081024
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2081020, 2081023, 2081024
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2081020, 2081023, 2081024
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2081021, 2081025, 2081026
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2081021, 2081025, 2081026
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2081021, 2081025, 2081026
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2081021, 2081025, 2081026
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2081022, 2081027, 2081028
SM 2120 B / E31780	True Color measured at 450 nm	2081020, 2081023, 2081024
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2081020, 2081023, 2081024
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2081020, 2081023, 2081024
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2081020, 2081023, 2081024
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2081020, 2081023, 2081024
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2081021, 2081025, 2081026

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	04/25/2019			04/25/2019 18:32	Julia Storbeck	2081020, 2081023, 2081024
EPA 300.0 Rev. 2.1	04/25/2019			05/01/2019 17:56	Lipi Saha	2081020
	04/25/2019			05/01/2019 18:32	Lipi Saha	2081023
	04/25/2019			05/01/2019 18:44	Lipi Saha	2081024
EPA 350.1 Rev. 2.0	04/25/2019			05/02/2019 11:25	Ping Hua	2081026
	04/25/2019			05/03/2019 11:48	Ping Hua	2081021
	04/25/2019			05/03/2019 11:50	Ping Hua	2081025
EPA 351.2 Rev. 2.0	04/25/2019	05/01/2019 11:45	Adrian Shelby	05/06/2019 11:21	Joseph Suarez	2081026
	04/25/2019	05/07/2019 12:00	Adrian Shelby	05/09/2019 09:55	Joseph Suarez	2081021
	04/25/2019	05/07/2019 12:00	Adrian Shelby	05/09/2019 09:58	Joseph Suarez	2081025
EPA 353.2 Rev. 2.0	04/25/2019			04/29/2019 11:33	Beverly Y. Sanders	2081021
	04/25/2019			04/29/2019 11:39	Beverly Y. Sanders	2081025
	04/25/2019			04/29/2019 11:40	Beverly Y. Sanders	2081026
EPA 365.1 Rev. 2.0	04/25/2019	04/29/2019 13:45	Sima Feizi	04/30/2019 15:09	Rosalyn Ballman	2081021
	04/25/2019	04/29/2019 13:45	Sima Feizi	04/30/2019 15:10	Rosalyn Ballman	2081025
	04/25/2019	04/29/2019 13:45	Sima Feizi	04/30/2019 16:41	Rosalyn Ballman	2081026
EPA 365.1 Rev. 2.0 dissolved	04/25/2019			04/25/2019 16:17	Jhamieka S. Greenwood	2081028
	04/25/2019			04/25/2019 16:35	Jhamieka S. Greenwood	2081022
	04/25/2019			04/25/2019 16:36	Jhamieka S. Greenwood	2081027
SM 2120 B	04/25/2019			04/25/2019 15:18	Blanca Fach	2081020
	04/25/2019			04/25/2019 15:19	Blanca Fach	2081023
	04/25/2019			04/25/2019 15:20	Blanca Fach	2081024
SM 2320 B-97	04/25/2019			05/04/2019 11:31	Samantha Davila	2081020
	04/25/2019			05/04/2019 11:44	Samantha Davila	2081023
	04/25/2019			05/04/2019 11:59	Samantha Davila	2081024
SM 2540 C-97	04/25/2019			04/29/2019 17:35	Mariam Hanna	2081020, 2081023, 2081024
SM 2540 D-97	04/25/2019			04/29/2019 20:05	Mariam Hanna	2081020, 2081023, 2081024
SM 4500 F-C-97	04/25/2019			05/04/2019 11:31	Samantha Davila	2081020
	04/25/2019			05/04/2019 11:44	Samantha Davila	2081023
	04/25/2019			05/04/2019 11:59	Samantha Davila	2081024
SM 5310 B-00	04/25/2019			04/30/2019 01:56	Julia Storbeck	2081021
	04/25/2019			04/30/2019 02:08	Julia Storbeck	2081025
	04/25/2019			04/30/2019 02:20	Julia Storbeck	2081026