

Chemical Analysis Report

NE-DIST-2017-03-02-01

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

Event Description: **Gville 3**
Request ID: **RQ-2017-02-27-09**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256-7577
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 29-MAR-2017 10:27



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: CALF POND-CENTER

Collection Date/Time: 03/01/2017 10:50

Field ID: G1NE0862 03012016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1877233	EPA 180.1 Rev. 2.0	Turbidity	0.75		NTU	P320869	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P321676	
		Sulfate	9.1		mg SO4/L	P321679	
	SM 2120 B	Color (true)	80		PCU	P320877	
	SM 2320 B-97	Total Alkalinity	79		mg CaCO3/L	P321422	
	SM 2540 C-97	TDS	151		mg/L	P321771	
	SM 2540 D-97	TSS	2	U	mg/L	P321557	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P321426	
1877237	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P321261	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P320984	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P321081	
	EPA 365.1 Rev. 2.0	Total-P	0.075		mg P/L	P321067	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P320953	
1877241	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.035		mg P/L	P320859	

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 KANAPAHA 300M N OF 56TH

Collection Date/Time: 03/01/2017 12:00

Field ID: G1NE0893 03012017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1877234	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P320869	
	EPA 300.0 Rev. 2.1	Chloride	55		mg Cl/L	P321676	
		Sulfate	0.72		mg SO4/L	P321679	
	SM 2120 B	Color (true)	160		PCU	P320877	
	SM 2320 B-97	Total Alkalinity	108		mg CaCO3/L	P321422	
	SM 2540 C-97	TDS	251		mg/L	P321771	
	SM 2540 D-97	TSS	4	I	mg/L	P321557	
	SM 4500 F-C-97	Fluoride	0.28		mg F/L	P321426	
1877238	EPA 350.1 Rev. 2.0	Ammonia-N	0.57		mg N/L	P321261	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.9		mg N/L	P320984	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P321081	
	EPA 365.1 Rev. 2.0	Total-P	0.70		mg P/L	P321067	
	SM 5310 B-00	Organic Carbon	36		mg C/L	P320953	
1877242	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.57		mg P/L	P320859	

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 ALICE-CENTER FROM BRIDGE

Collection Date/Time: 03/01/2017 12:40

Field ID: G1NE0038 03012017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1877235	EPA 180.1 Rev. 2.0	Turbidity	1.4	A	NTU	P320870	
	EPA 300.0 Rev. 2.1	Chloride	27		mg Cl/L	P321676	
		Sulfate	41		mg SO4/L	P321679	

Field ID: G1NE0038 03012017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1877235	SM 2120 B	Color (true)	27		PCU	P320877	
	SM 2320 B-97	Total Alkalinity	88		mg CaCO3/L	P321422	
	SM 2540 C-97	TDS	211		mg/L	P321771	
	SM 2540 D-97	TSS	2	I	mg/L	P321557	
	SM 4500 F-C-97	Fluoride	0.38		mg F/L	P321426	
1877239	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P321261	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.62		mg N/L	P320984	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P321081	
	EPA 365.1 Rev. 2.0	Total-P	0.51		mg P/L	P321067	
	SM 5310 B-00	Organic Carbon	8.3		mg C/L	P320953	
1877243	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.39		mg P/L	P320859	

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 ALICE-CENTER FROM BRIDGE DUP

Collection Date/Time: 03/01/2017 12:50

Field ID: G1NE0038 03012017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1877236	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P320870	
	EPA 300.0 Rev. 2.1	Chloride	27		mg Cl/L	P321676	
		Sulfate	41		mg SO4/L	P321679	
	SM 2120 B	Color (true)	28		PCU	P320877	
	SM 2320 B-97	Total Alkalinity	88		mg CaCO3/L	P321422	
	SM 2540 C-97	TDS	216		mg/L	P321771	
	SM 2540 D-97	TSS	2	I	mg/L	P321557	
	SM 4500 F-C-97	Fluoride	0.37		mg F/L	P321426	
1877240	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P321261	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.69		mg N/L	P320985	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P321081	
	EPA 365.1 Rev. 2.0	Total-P	0.51		mg P/L	P321068	
	SM 5310 B-00	Organic Carbon	8.1		mg C/L	P320953	
1877244	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.39		mg P/L	P320859	

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: P320869

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P320870

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P320870

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321676

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321679

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P321261

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320984

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320985

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321081

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321067

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321068

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: P320859

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

Reference Method: SM 2120 B
Batch ID: P320877

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P321422

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

Reference Method: SM 2540 C-97
Batch ID: P321771

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P321557

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P321426

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P320953

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: P321676

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321679

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321679

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P321261

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: P320984

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320985

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321081

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321067

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321068

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320859

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

Reference Method: SM 2320 B-97
Batch ID: P321422

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P321426

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P320953

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	102		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321676

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1877152	Chloride	101		P	90 - 110
1877205	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321679

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1877152	Sulfate	98.7		P	90 - 110
1877205	Sulfate	99.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P321261

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1877239	Ammonia-N	101	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320984

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1877237	Kjeldahl Nitrogen	106	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320985

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1877240	Kjeldahl Nitrogen	105	99.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321081

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1877215	NO2NO3-N	98.2	97.7	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321067

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1877237	Total-P	99.6	97.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321068

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1877307	Total-P	96.9	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320859

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1877310	O-Phosphate-P	94.1	95.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P321426

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1878119	Fluoride	104	105	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P320953

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1877214	Organic Carbon	96.6	98.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P320869

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1877168	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P320870

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1877235	Turbidity	4.88	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321676

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1877205	Chloride	0.171	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321679

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1877205	Sulfate	0.430	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P321261

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1877239	Ammonia-N	0.642	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320984

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1877237	Kjeldahl Nitrogen	0.540	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1877240	Kjeldahl Nitrogen	3.60	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321081

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1877215	NO2NO3-N	0.406	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321067

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1877237	Total-P	1.96	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321068

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1877307	Total-P	3.54	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320859

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1877310	O-Phosphate-P	1.51	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P320877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1877306	Color (true)	0.973	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P321422

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1878119	Total Alkalinity	1.47	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P321771

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1877304	TDS	1.44	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P321426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1878119	Fluoride	0.476	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P320953

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1877214	Organic Carbon	0.985	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: A74855
Included Lab Sample IDs: 1877241, 1877242, 1877243, 1877244

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.4	98.4	P/P	90 - 110
O-Phosphate-P	99.3	98.4	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A74856
Included Lab Sample IDs: 1877233, 1877234, 1877235, 1877236

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A74856

Included Lab Sample IDs: 1877233, 1877234, 1877235, 1877236

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

Reference Method: SM 2120 B

Run ID: A74857

Included Lab Sample IDs: 1877233, 1877234, 1877235, 1877236

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	95.2	97.0	P/P	85 - 115
Color (true)	95.3	94.5	P/P	85 - 115

Reference Method: SM 5310 B-00

Run ID: A74891

Included Lab Sample IDs: 1877237, 1877238, 1877239, 1877240

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.5	99.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A74934

Included Lab Sample IDs: 1877237, 1877238, 1877239, 1877240

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	97.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74948

Included Lab Sample IDs: 1877237, 1877238, 1877239, 1877240

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.3	97.4	P/P	90 - 110
Kjeldahl Nitrogen	96.0	93.3	P/P	90 - 110
Kjeldahl Nitrogen	97.4	97.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74986

Included Lab Sample IDs: 1877237, 1877238, 1877239, 1877240

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74996

Included Lab Sample IDs: 1877237, 1877238, 1877239, 1877240

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.4	98.2	P/P	90 - 110
Total-P	98.2	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A75050

Included Lab Sample IDs: 1877233, 1877234, 1877235, 1877236

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A75050

Included Lab Sample IDs: 1877233, 1877234, 1877235, 1877236

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A75123

Included Lab Sample IDs: 1877233, 1877234, 1877235, 1877236

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	104	P/P	90 - 110
Sulfate	101	102	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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					0.0	
	Turbidity					4.88	
EPA 300.0 Rev. 2.1	Chloride	103	101	101		0.171	
	Sulfate	100	99.9	98.7		0.430	
EPA 350.1 Rev. 2.0	Ammonia-N	102	101	100			0.642
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	106	107			0.540
	Kjeldahl Nitrogen	102	105	99.1			3.60
EPA 353.2 Rev. 2.0	NO2NO3-N	103	98.2	97.7			0.406
EPA 365.1 Rev. 2.0	Total-P	98.9	99.6	97.4			1.96
	Total-P	97.0	96.9	101			3.54
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.9	94.1	95.8			1.51
SM 2120 B	Color (true)					0.973	
SM 2320 B-97	Total Alkalinity	103				1.47	
SM 2540 C-97	TDS					1.44	
SM 4500 F-C-97	Fluoride	101	104	105			0.476
SM 5310 B-00	Organic Carbon	102	96.6	98.3			0.985

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1877233, 1877234, 1877235, 1877236
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1877233, 1877234, 1877235, 1877236

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1877233, 1877234, 1877235, 1877236
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1877237, 1877238, 1877239, 1877240
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1877237, 1877238, 1877239, 1877240
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1877237, 1877238, 1877239, 1877240
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1877237, 1877238, 1877239, 1877240
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1877241, 1877242, 1877243, 1877244
SM 2120 B / E31780	True Color measured at 450 nm	1877233, 1877234, 1877235, 1877236
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1877233, 1877234, 1877235, 1877236
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1877233, 1877234, 1877235, 1877236
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1877233, 1877234, 1877235, 1877236
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1877233, 1877234, 1877235, 1877236
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1877237, 1877238, 1877239, 1877240

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	03/02/2017			03/02/2017 15:50	Sima Feizi	1877233, 1877234, 1877235, 1877236
EPA 300.0 Rev. 2.1	03/02/2017			03/16/2017	Elisa J Lutz	1877233, 1877234, 1877235, 1877236
EPA 350.1 Rev. 2.0	03/02/2017			03/08/2017	Sofia Elnemr	1877237, 1877238, 1877239, 1877240
EPA 351.2 Rev. 2.0	03/02/2017	03/06/2017	Adrian Shelby	03/07/2017	Joseph Suarez	1877237, 1877238, 1877239, 1877240
EPA 353.2 Rev. 2.0	03/02/2017			03/07/2017	Beverly Y. Sanders	1877237, 1877238, 1877239, 1877240
EPA 365.1 Rev. 2.0	03/02/2017	03/07/2017	Adrian Shelby	03/08/2017	Lipi Saha	1877237, 1877238, 1877239, 1877240
EPA 365.1 Rev. 2.0 dissolved	03/02/2017			03/02/2017 15:08	Julia Storbeck	1877243
	03/02/2017			03/02/2017 15:09	Julia Storbeck	1877244
	03/02/2017			03/02/2017 15:10	Julia Storbeck	1877242
	03/02/2017			03/02/2017 15:23	Julia Storbeck	1877241
	03/02/2017			03/02/2017 17:32	Julie Michelle Frank	1877233
SM 2120 B	03/02/2017			03/02/2017 17:33	Julie Michelle Frank	1877235
	03/02/2017			03/02/2017 17:34	Julie Michelle Frank	1877236
	03/02/2017			03/02/2017 17:54	Julie Michelle Frank	1877234
SM 2320 B-97	03/02/2017			03/11/2017	Dale L. Simmons	1877233, 1877234, 1877235, 1877236
SM 2540 C-97	03/02/2017			03/07/2017	Sima Feizi	1877233, 1877234, 1877235, 1877236
SM 2540 D-97	03/02/2017			03/07/2017	Sima Feizi	1877233, 1877234, 1877235, 1877236
SM 4500 F-C-97	03/02/2017			03/11/2017	Dale L. Simmons	1877233, 1877234, 1877235, 1877236
SM 5310 B-00	03/02/2017			03/03/2017	Julie Michelle Frank	1877237, 1877238, 1877239, 1877240