

Chemical Analysis Report

CEN-DIST-2019-09-10-02

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

Event Description: **Toho + D&B / Whip / Runnymede**

Request ID: **RQ-2019-09-02-65**

Customer: **CEN-DIST**

Project ID: **SMP**

Send Reports to:

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Date Certified: 26-SEP-2019 14:45



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: LAKE WHIPPOORWILL @ CENTER

Collection Date/Time: 09/09/2019 10:41

Field ID: G4CE0161

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2117438	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P370437	
	EPA 300.0 Rev. 2.1	Chloride	26		mg Cl/L	P370810	
		Sulfate	16		mg SO4/L	P370813	
		Color (true)	70		PCU	P370441	
	SM 2320 B-97	Total Alkalinity	17		mg CaCO3/L	P370695	
	SM 2540 C-97	TDS	108		mg/L	P371060	
	SM 2540 D-97	TSS	2	I	mg/L	P370875	
	SM 4500 F-C-97	Fluoride	0.062	I	mg F/L	P370698	
2117439	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P370668	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P370505	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P370466	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P370563	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P370677	
2117440	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P370434	

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: BOGGY CREEK @ 1100M SOUTH OF BOGGY CREEK RD

Collection Date/Time: 09/09/2019 12:23

Field ID: G4CE0127

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2117435	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P370437	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P370810	
		Sulfate	7.3		mg SO4/L	P370813	
		Color (true)	92		PCU	P370441	
	SM 2320 B-97	Total Alkalinity	42		mg CaCO3/L	P370695	
	SM 2540 C-97	TDS	74		mg/L	P371060	
	SM 2540 D-97	TSS	2	I	mg/L	P370875	
	SM 4500 F-C-97	Fluoride	0.077	I	mg F/L	P370698	
2117436	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P370668	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P370505	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.018		mg N/L	P370466	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P370563	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P370677	
2117437	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.018		mg P/L	P370433	

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: BOGGY CREEK @ 1100M SOUTH OF BOGGY CREEK RD

Collection Date/Time: 09/09/2019 12:25

Field ID: G4CE0127_dup

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2117441	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P370437	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P370810	
		Sulfate	7.2		mg SO4/L	P370813	
		Color (true)	88		PCU	P370441	
	SM 2320 B-97	Total Alkalinity	42		mg CaCO3/L	P370695	
	SM 2540 C-97	TDS	80		mg/L	P371060	
	SM 2540 D-97	TSS	3	I	mg/L	P370875	
	SM 4500 F-C-97	Fluoride	0.078	I	mg F/L	P370698	
2117442	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P370668	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P370505	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.018		mg N/L	P370466	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P370563	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P370677	
2117443	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P370433	

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: FIELD BLANK

Collection Date/Time: 09/09/2019 12:35

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2117444	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P370438	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P370810	
		Sulfate	0.20	U	mg SO4/L	P370813	
	SM 2120 B	Color (true)	2.5	U	PCU	P370441	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P370695	
	SM 2540 C-97	TDS	15	U	mg/L	P371058	
	SM 2540 D-97	TSS	2	U	mg/L	P370873	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P370698	
2117445	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P370668	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P370505	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P370467	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P370563	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P370677	
2117446	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P370434	

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: P370437

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P370438

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370810

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370813

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370668

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370505

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370466

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370467

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370563

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: P370433

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370434

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

Reference Method: SM 2120 B
Batch ID: P370441

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P370695

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

Reference Method: SM 2540 C-97
Batch ID: P371058

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P371060

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P370873

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P370875

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P370698

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P370677

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: P370810

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370813

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370668

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370505

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: P370466

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370467

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370563

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	92.3		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370433

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: P370434

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.6		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P370441

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.3		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P370695

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P370698

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P370677

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	104		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370810

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2117327	Chloride	101	99.9	P/P	90 - 110
2117438	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370813

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2117327	Sulfate	101	100	P/P	90 - 110
2117438	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370668

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2117331	Ammonia-N	98.1	98.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370505

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2117501	Kjeldahl Nitrogen	102	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370466

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2117330	NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370467

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2117479	NO2NO3-N	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370563

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2117356	Total-P	99.4	99.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370433

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2117333	O-Phosphate-P	98.4	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370434

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2117440	O-Phosphate-P	96.2	97.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P370698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2117328	Fluoride	99.1	98.5	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P370677

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2117305	Organic Carbon	106	108	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P370437

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2117354	Turbidity	2.51	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P370438

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2117478	Turbidity	4.58	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370810

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2117327	Chloride	0.684	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370813

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2117327	Sulfate	0.909	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370668

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2117331	Ammonia-N	0.689	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2117501	Kjeldahl Nitrogen	2.09	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370466

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2117330	NO2NO3-N	0.487	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370467

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2117479	NO2NO3-N	0.908	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370563

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2117356	Total-P	0.252	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370433

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2117333	O-Phosphate-P	0.406	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370434

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2117440	O-Phosphate-P	0.931	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P370441

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2117355	Color (true)	2.22	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P370695

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2117328	Total Alkalinity	0.530	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P371058

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2117223	TDS	4.08	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P371060

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2117336	TDS	0.713	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P370698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2117328	Fluoride	0.482	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P370677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2117305	Organic Carbon	1.07	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: A94105

Included Lab Sample IDs: 2117437, 2117440, 2117443, 2117446

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	102	98.4	P/P	90 - 110
O-Phosphate-P	98.4	99.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A94106

Included Lab Sample IDs: 2117435, 2117438, 2117441, 2117444

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	102	P/P	95 - 105
Turbidity	102	99.5	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A94107

Included Lab Sample IDs: 2117435, 2117438, 2117441, 2117444

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	100	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A94120

Included Lab Sample IDs: 2117436, 2117439, 2117442, 2117445

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	101	P/P	90 - 110
NO2NO3-N	101	102	P/P	90 - 110
NO2NO3-N	101	104	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A94159

Included Lab Sample IDs: 2117435, 2117438, 2117441, 2117444

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	102	P/P	90 - 110
Sulfate	102	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A94203

Included Lab Sample IDs: 2117436, 2117439, 2117442, 2117445

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	107	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A94212

Included Lab Sample IDs: 2117436, 2117439, 2117442, 2117445

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.5	99.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A94219

Included Lab Sample IDs: 2117436, 2117439, 2117442, 2117445

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

Reference Method: SM 2320 B-97

Run ID: A94232

Included Lab Sample IDs: 2117435, 2117438, 2117441, 2117444

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	105	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A94232

Included Lab Sample IDs: 2117435, 2117438, 2117441, 2117444

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A94237

Included Lab Sample IDs: 2117436, 2117439, 2117442, 2117445

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	100	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						2.51	
	Turbidity						4.58	
EPA 300.0 Rev. 2.1	Chloride	100	101	99.9	100			0.684
	Sulfate	101	101	100	102			0.909
EPA 350.1 Rev. 2.0	Ammonia-N	99.0	98.1	98.9				0.689
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	102	105				2.09
EPA 353.2 Rev. 2.0	NO2NO3-N	100	103	102				0.487
	NO2NO3-N	100	103	104				0.908
EPA 365.1 Rev. 2.0	Total-P	92.3	99.4	99.7				0.252
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	98.4	98.8				0.406
	O-Phosphate-P	99.6	96.2	97.1				0.931
SM 2120 B	Color (true)	99.3					2.22	
SM 2320 B-97	Total Alkalinity	104					0.530	
SM 2540 C-97	TDS						4.08	
	TDS						0.713	
SM 4500 F-C-97	Fluoride	98.3	99.1	98.5				0.482
SM 5310 B-00	Organic Carbon	104	106	108				1.07

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2117435, 2117438, 2117441, 2117444
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2117435, 2117438, 2117441, 2117444
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2117435, 2117438, 2117441, 2117444
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2117436, 2117439, 2117442, 2117445
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2117436, 2117439, 2117442, 2117445
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2117436, 2117439, 2117442, 2117445
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2117436, 2117439, 2117442, 2117445
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2117437, 2117440, 2117443, 2117446
SM 2120 B / E31780	True Color measured at 450 nm	2117435, 2117438, 2117441, 2117444
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2117435, 2117438, 2117441, 2117444
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2117435, 2117438, 2117441, 2117444
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2117435, 2117438, 2117441, 2117444
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2117435, 2117438, 2117441, 2117444
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2117436, 2117439, 2117442, 2117445

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	09/10/2019			09/10/2019 16:59	Samantha Davila	2117435, 2117438, 2117441, 2117444
EPA 300.0 Rev. 2.1	09/10/2019			09/13/2019 18:38	Jhamieka S. Greenwood	2117438
	09/10/2019			09/13/2019 21:04	Jhamieka S. Greenwood	2117435
	09/10/2019			09/13/2019 21:16	Jhamieka S. Greenwood	2117441
	09/10/2019			09/13/2019 21:28	Jhamieka S. Greenwood	2117444
EPA 350.1 Rev. 2.0	09/10/2019			09/13/2019 13:37	Ping Hua	2117436
	09/10/2019			09/13/2019 13:39	Ping Hua	2117442
	09/10/2019			09/13/2019 13:40	Ping Hua	2117439
	09/10/2019			09/13/2019 13:42	Ping Hua	2117445
EPA 351.2 Rev. 2.0	09/10/2019	09/11/2019 14:10	Sima Feizi	09/12/2019 16:53	Julia Storbeck	2117436
	09/10/2019	09/11/2019 14:10	Sima Feizi	09/12/2019 16:54	Julia Storbeck	2117439
	09/10/2019	09/11/2019 14:10	Sima Feizi	09/12/2019 16:56	Julia Storbeck	2117442
	09/10/2019	09/11/2019 14:10	Sima Feizi	09/12/2019 16:57	Julia Storbeck	2117445
EPA 353.2 Rev. 2.0	09/10/2019			09/11/2019 09:43	Beverly Y. Sanders	2117442
	09/10/2019			09/11/2019 09:45	Beverly Y. Sanders	2117439
	09/10/2019			09/11/2019 09:59	Beverly Y. Sanders	2117445
	09/10/2019			09/11/2019 10:17	Beverly Y. Sanders	2117436
EPA 365.1 Rev. 2.0	09/10/2019	09/12/2019 13:45	Lipi Saha	09/13/2019 17:36	Rosalyn Ballman	2117436
	09/10/2019	09/12/2019 13:45	Lipi Saha	09/13/2019 17:37	Rosalyn Ballman	2117439
	09/10/2019	09/12/2019 13:45	Lipi Saha	09/13/2019 17:38	Rosalyn Ballman	2117442
	09/10/2019	09/12/2019 13:45	Lipi Saha	09/13/2019 17:39	Rosalyn Ballman	2117445
EPA 365.1 Rev. 2.0 dissolved	09/10/2019			09/10/2019 15:59	Jhamieka S. Greenwood	2117440
	09/10/2019			09/10/2019 16:03	Jhamieka S. Greenwood	2117437
	09/10/2019			09/10/2019 16:04	Jhamieka S. Greenwood	2117443
	09/10/2019			09/10/2019 16:10	Jhamieka S. Greenwood	2117446
SM 2120 B	09/10/2019			09/10/2019 16:48	Madeline Funaro	2117435
	09/10/2019			09/10/2019 16:49	Madeline Funaro	2117438, 2117441
	09/10/2019			09/10/2019 16:50	Madeline Funaro	2117444
SM 2320 B-97	09/10/2019			09/14/2019 03:29	Dale L. Simmons	2117435
	09/10/2019			09/14/2019 03:41	Dale L. Simmons	2117438
	09/10/2019			09/14/2019 03:53	Dale L. Simmons	2117441
	09/10/2019			09/14/2019 04:07	Dale L. Simmons	2117444
SM 2540 C-97	09/10/2019			09/13/2019 15:21	Yijie Li	2117435, 2117438, 2117441, 2117444
SM 2540 D-97	09/10/2019			09/13/2019 15:21	Yijie Li	2117435, 2117438, 2117441, 2117444
SM 4500 F-C-97	09/10/2019			09/14/2019 03:29	Dale L. Simmons	2117435
	09/10/2019			09/14/2019 03:41	Dale L. Simmons	2117438
	09/10/2019			09/14/2019 03:53	Dale L. Simmons	2117441
	09/10/2019			09/14/2019 04:07	Dale L. Simmons	2117444
SM 5310 B-00	09/10/2019			09/13/2019 22:23	Madeline Funaro	2117436
	09/10/2019			09/13/2019 22:35	Madeline Funaro	2117439

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	09/10/2019			09/13/2019 22:47	Madeline Funaro	2117442
	09/10/2019			09/13/2019 22:59	Madeline Funaro	2117445