

Chemical Analysis Report

CEN-DIST-2020-01-07-01

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

Event Description: **Hidden / Deaton / Ockahumpka**

Request ID: **RQ-2020-01-06-36**

Customer: **CEN-DIST**

Project ID: **SMP**

Send Reports to:

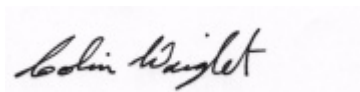
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Certified by: Colin Wright, Program Administrator

Date Certified: 24-JAN-2020 09:00



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 Okahumpka at center

Collection Date/Time: 01/06/2020 10:52

Field ID: G4CE0159

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2146792	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P376794	
	EPA 300.0 Rev. 2.1	Chloride	29		mg Cl/L	P377000	
		Sulfate	0.20	U	mg SO4/L	P377004	
	SM 2120 B-2011	Color (true)	26		PCU	P376829	
	SM 2320 B-2011	Total Alkalinity	78		mg CaCO3/L	P376919	
	SM 2540 C-2011	TDS	155		mg/L	P377088	
	SM 2540 D-2011	TSS	2	I	mg/L	P376955	
	SM 4500 F-C-2011	Fluoride	0.27		mg F/L	P376922	
2146796	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P376913	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.88		mg N/L	P376755	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P376891	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P376773	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P376887	
2146800	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P376723	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Lake Deaton @ Center

Collection Date/Time: 01/06/2020 11:24

Field ID: G4CE0160

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2146793	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P376794	
	EPA 300.0 Rev. 2.1	Chloride	29	A	mg Cl/L	P377000	
		Sulfate	1.9	A	mg SO4/L	P377004	
	SM 2120 B-2011	Color (true)	53		PCU	P376829	
	SM 2320 B-2011	Total Alkalinity	31		mg CaCO3/L	P376919	
	SM 2540 C-2011	TDS	107		mg/L	P377088	
	SM 2540 D-2011	TSS	3	I	mg/L	P376955	
	SM 4500 F-C-2011	Fluoride	0.12		mg F/L	P376922	
2146797	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P376913	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.90		mg N/L	P376755	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.015		mg N/L	P376891	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P376773	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P376887	
2146801	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P376723	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Hidden Lake @ Center

Collection Date/Time: 01/06/2020 12:05

Field ID: G4CE0158

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2146794	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P376794	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P377000	
		Sulfate	1.8		mg SO4/L	P377004	
	SM 2120 B-2011	Color (true)	140		PCU	P376829	
	SM 2320 B-2011	Total Alkalinity	121		mg CaCO3/L	P376919	
	SM 2540 C-2011	TDS	203		mg/L	P377088	
	SM 2540 D-2011	TSS	2	I	mg/L	P376955	
	SM 4500 F-C-2011	Fluoride	0.13		mg F/L	P376922	
2146798	EPA 350.1 Rev. 2.0	Ammonia-N	0.38		mg N/L	P376913	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P376755	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P376891	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P376773	
	SM 5310 B-2011	Organic Carbon	22		mg C/L	P376887	
2146802	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P376723	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Little Lake Weir @ Center

Collection Date/Time: 01/06/2020 13:33

Field ID: G1CE0014

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2146795	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P376794	
	EPA 300.0 Rev. 2.1	Chloride	35		mg Cl/L	P377000	
		Sulfate	5.9		mg SO4/L	P377004	
	SM 2120 B-2011	Color (true)	21		PCU	P376829	
	SM 2320 B-2011	Total Alkalinity	21		mg CaCO3/L	P376919	
	SM 2540 C-2011	TDS	116	A	mg/L	P377089	
	SM 2540 D-2011	TSS	7	IA	mg/L	P376956	
	SM 4500 F-C-2011	Fluoride	0.13		mg F/L	P376922	
2146799	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P376913	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P376755	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P376891	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P376773	
	SM 5310 B-2011	Organic Carbon	13		mg C/L	P376887	
2146803	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P376723	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P376794

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377000

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377004

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376913

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P376755

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376891

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P376773

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P376723

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

Reference Method: SM 2120 B-2011
Batch ID: P376829

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P376919

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

Reference Method: SM 2540 C-2011
Batch ID: P377088

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P377089

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P376955

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P376956

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P376922

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P376887

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: P377000

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377004

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376913

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P376755

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: P376891

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: P376773

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P376723

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

Reference Method: SM 2120 B-2011
Batch ID: P376829

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P376919

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P376922

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.0		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P376887

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377000

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2146705	Chloride	93.6		P	90 - 110
2146793	Chloride	94.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377004

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2146705	Sulfate	94.9		P	90 - 110
2146793	Sulfate	98.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376913

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2146779	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P376755

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2146796	Kjeldahl Nitrogen	106	97.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376891

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2146779	NO2NO3-N	99.0	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P376773

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2146779	Total-P	94.7	94.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P376723

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2146762	O-Phosphate-P	94.8	95.0	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P376922

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2146753	Fluoride	98.1	98.7	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P376887

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2146797	Organic Carbon	97.8	96.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P376794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146731	Turbidity	1.46	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377000

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146793	Chloride	0.298	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377004

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146793	Sulfate	0.291	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376913

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146779	Ammonia-N	0.154	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P376755

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146796	Kjeldahl Nitrogen	5.01	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146779	NO2NO3-N	0.280	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P376773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146779	Total-P	0.724	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P376723

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146762	O-Phosphate-P	0.188	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B-2011
 Batch ID: P376829

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146778	Color (true)	2.52	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
 Batch ID: P376919

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146753	Total Alkalinity	0.509	Sample	P	0 - 2.8

Reference Method: SM 2540 C-2011
 Batch ID: P377088

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146495	TDS	4.40	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
 Batch ID: P377089

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146795	TDS	4.29	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
 Batch ID: P376922

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146753	Fluoride	0.476	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
 Batch ID: P376887

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146797	Organic Carbon	0.477	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A96748

Included Lab Sample IDs: 2146800, 2146801, 2146802, 2146803

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.0	96.5	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A96764

Included Lab Sample IDs: 2146792, 2146793, 2146794, 2146795

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	100	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A96770

Included Lab Sample IDs: 2146792, 2146793, 2146794, 2146795

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.5	99.7	P/P	90 - 110
Chloride	99.7	100	P/P	90 - 110
Sulfate	99.2	100	P/P	90 - 110
Sulfate	99.9	99.2	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A96776

Included Lab Sample IDs: 2146792, 2146793, 2146794, 2146795

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	85 - 115
Color (true)	98.3	98.5	P/P	85 - 115

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A96789

Included Lab Sample IDs: 2146796, 2146797, 2146798, 2146799

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	104	P/P	90 - 110
Kjeldahl Nitrogen	104	99.0	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A96799

Included Lab Sample IDs: 2146796, 2146797, 2146798, 2146799

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	102	102	P/P	90 - 110
Organic Carbon	102	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A96800

Included Lab Sample IDs: 2146796, 2146797, 2146798, 2146799

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A96805

Included Lab Sample IDs: 2146796, 2146797, 2146798, 2146799

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

Reference Method: SM 2320 B-2011

Run ID: A96808

Included Lab Sample IDs: 2146792, 2146793, 2146794, 2146795

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A96808

Included Lab Sample IDs: 2146792, 2146793, 2146794, 2146795

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96849

Included Lab Sample IDs: 2146798

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96901

Included Lab Sample IDs: 2146796, 2146797, 2146799

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	97.8	P/P	90 - 110
Total-P	98.8	98.0	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
 Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
 Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 180.1 Rev. 2.0	Turbidity				1.46	
EPA 300.0 Rev. 2.1	Chloride	98.7	94.2	93.6	0.298	
	Sulfate	98.8	98.0	94.9	0.291	
EPA 350.1 Rev. 2.0	Ammonia-N	100	102	101		0.154
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	106	97.5		5.01
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	99.0	98.5		0.280
EPA 365.1 Rev. 2.0	Total-P	98.8	94.7	94.0		0.724
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.0	94.8	95.0		0.188
SM 2120 B-2011	Color (true)	100			2.52	
SM 2320 B-2011	Total Alkalinity	104			0.509	
SM 2540 C-2011	TDS				4.40	
	TDS				4.29	
SM 4500 F-C-2011	Fluoride	98.0	98.1	98.7		0.476
SM 5310 B-2011	Organic Carbon	97.2	97.8	96.9		0.477

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2146792, 2146793, 2146794, 2146795
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2146792, 2146793, 2146794, 2146795
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2146792, 2146793, 2146794, 2146795
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2146796, 2146797, 2146798, 2146799
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2146796, 2146797, 2146798, 2146799
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2146796, 2146797, 2146798, 2146799
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2146796, 2146797, 2146798, 2146799
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2146800, 2146801, 2146802, 2146803
SM 2120 B-2011 / E31780	True Color measured at 450 nm	2146792, 2146793, 2146794, 2146795
SM 2320 B-2011 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2146792, 2146793, 2146794, 2146795
SM 2540 C-2011 / E31780	Total Dissolved Solids in aqueous matrices	2146792, 2146793, 2146794, 2146795
SM 2540 D-2011 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2146792, 2146793, 2146794, 2146795
SM 4500 F-C-2011 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2146792, 2146793, 2146794, 2146795
SM 5310 B-2011 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2146796, 2146797, 2146798, 2146799

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	01/07/2020			01/07/2020 15:09	Yen Ta	2146792, 2146793, 2146794, 2146795
EPA 300.0 Rev. 2.1	01/07/2020			01/09/2020 17:15	Jhamieka S. Greenwood	2146793
	01/07/2020			01/09/2020 20:27	Jhamieka S. Greenwood	2146792
	01/07/2020			01/09/2020 20:39	Jhamieka S. Greenwood	2146794
	01/07/2020			01/09/2020 20:51	Jhamieka S. Greenwood	2146795
EPA 350.1 Rev. 2.0	01/07/2020			01/08/2020 13:32	Ping Hua	2146796
	01/07/2020			01/08/2020 13:34	Ping Hua	2146797
	01/07/2020			01/08/2020 13:58	Ping Hua	2146799
	01/07/2020			01/08/2020 14:07	Ping Hua	2146798
EPA 351.2 Rev. 2.0	01/07/2020	01/08/2020 13:22	Sima Feizi	01/09/2020 16:01	Virginia P. Brown	2146796
	01/07/2020	01/08/2020 13:22	Sima Feizi	01/09/2020 16:05	Virginia P. Brown	2146797
	01/07/2020	01/08/2020 13:22	Sima Feizi	01/09/2020 16:10	Virginia P. Brown	2146798
	01/07/2020	01/08/2020 13:22	Sima Feizi	01/09/2020 16:11	Virginia P. Brown	2146799
EPA 353.2 Rev. 2.0	01/07/2020			01/09/2020 11:33	Beverly Y. Sanders	2146796
	01/07/2020			01/09/2020 11:34	Beverly Y. Sanders	2146797
	01/07/2020			01/09/2020 11:36	Beverly Y. Sanders	2146798
	01/07/2020			01/09/2020 11:37	Beverly Y. Sanders	2146799
EPA 365.1 Rev. 2.0	01/07/2020	01/08/2020 12:30	Yen Ta	01/13/2020 18:23	Benjamin T. Nordmann	2146798
	01/07/2020	01/08/2020 12:30	Yen Ta	01/15/2020 11:57	Benjamin T. Nordmann	2146796
	01/07/2020	01/08/2020 12:30	Yen Ta	01/15/2020 12:05	Benjamin T. Nordmann	2146797
	01/07/2020	01/08/2020 12:30	Yen Ta	01/15/2020 12:06	Benjamin T. Nordmann	2146799
EPA 365.1 Rev. 2.0 dissolved	01/07/2020			01/07/2020 16:29	Carlos Miranda	2146800
	01/07/2020			01/07/2020 16:30	Carlos Miranda	2146801
	01/07/2020			01/07/2020 16:31	Carlos Miranda	2146802
	01/07/2020			01/07/2020 16:32	Carlos Miranda	2146803
SM 2120 B-2011	01/07/2020			01/07/2020 22:45	Samantha Davila	2146792
	01/07/2020			01/07/2020 22:46	Samantha Davila	2146793
	01/07/2020			01/07/2020 22:48	Samantha Davila	2146795
	01/07/2020			01/07/2020 23:22	Samantha Davila	2146794
SM 2320 B-2011	01/07/2020			01/08/2020 23:26	Dale L. Simmons	2146792
	01/07/2020			01/08/2020 23:39	Dale L. Simmons	2146793
	01/07/2020			01/08/2020 23:52	Dale L. Simmons	2146794
	01/07/2020			01/09/2020 00:03	Dale L. Simmons	2146795
SM 2540 C-2011	01/07/2020			01/08/2020 14:02	Yijie Li	2146792, 2146793, 2146794, 2146795
SM 2540 D-2011	01/07/2020			01/08/2020 14:02	Yijie Li	2146792, 2146793, 2146794, 2146795
SM 4500 F-C-2011	01/07/2020			01/08/2020 23:26	Dale L. Simmons	2146792
	01/07/2020			01/08/2020 23:39	Dale L. Simmons	2146793
	01/07/2020			01/08/2020 23:52	Dale L. Simmons	2146794
	01/07/2020			01/09/2020 00:03	Dale L. Simmons	2146795
SM 5310 B-2011	01/07/2020			01/09/2020 14:34	Madeline Funaro	2146797

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	01/07/2020			01/09/2020 19:43	Madeline Funaro	2146796
	01/07/2020			01/09/2020 19:56	Madeline Funaro	2146798
	01/07/2020			01/09/2020 20:09	Madeline Funaro	2146799