

Chemical Analysis Report

SO-DIST-2021-04-30-01

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

Event Description: **2021 SMP : Okee Canals**

Request ID: **RQ-2021-04-26-51**

Customer: **SO-DIST**

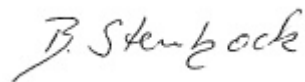
Project ID: **SMP**

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Date Certified: 24-MAY-2021 12:06



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 groups are included in this report: Nutrients and Pesticides.

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: Harney Pond Canal @ SR 70

Collection Date/Time: 04/29/2021 10:30

Field ID: G4SD0173

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2244181	EPA 180.1 Rev. 2.0	Turbidity	7.4		NTU	P397497	
	EPA 300.0 Rev. 2.1	Chloride	24	A	mg Cl/L	P398559	
		Sulfate	29	A	mg SO4/L	P398562	
	SM 2120 B-2011	Color (true)	94		PCU	P397501	
	SM 2320 B-2011	Total Alkalinity	24		mg CaCO3/L	P398016	
	SM 2540 C-2011	TDS	139	A	mg/L	P397915	
	SM 2540 D-2011	TSS	12	I	mg/L	P397793	
	SM 4500 F-C-2011	Fluoride	0.060	I	mg F/L	P397577	
2244183	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P398152	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P397851	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P397655	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P397968	
	SM 5310 B-2011	Organic Carbon	19		mg C/L	P397881	
2244185	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P397486	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The PQL was elevated because of sample matrix interference.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: indian prairie Canal @ SR 70

Collection Date/Time: 04/29/2021 11:05

Field ID: G4SD0174

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2244187	EPA 180.1 Rev. 2.0	Turbidity	8.9		NTU	P397497	
	EPA 300.0 Rev. 2.1	Chloride	26		mg Cl/L	P398559	
		Sulfate	31		mg SO4/L	P398562	
	SM 2120 B-2011	Color (true)	120		PCU	P397501	
	SM 2320 B-2011	Total Alkalinity	25	A	mg CaCO3/L	P398016	
	SM 2540 C-2011	TDS	145		mg/L	P397914	
	SM 2540 D-2011	TSS	15	I	mg/L	P397793	
	SM 4500 F-C-2011	Fluoride	0.070	I	mg F/L	P397577	
2244188	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P398153	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P397851	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P397655	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P397968	
	SM 5310 B-2011	Organic Carbon	21		mg C/L	P397881	
2244189	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P397486	
2244217	EPA 8276	Chlordane	6.1	I	ng/L	P397459	
		Toxaphene	33	U	ng/L	P397459	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The PQL was elevated because of sample matrix interference.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: C-41 A @ SR 70

Collection Date/Time: 04/29/2021 11:35

Field ID: G4SD0175

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2244182	EPA 180.1 Rev. 2.0	Turbidity	6.4		NTU	P397497	
	EPA 300.0 Rev. 2.1	Chloride	28		mg Cl/L	P398559	
		Sulfate	30		mg SO4/L	P398562	
	SM 2120 B-2011	Color (true)	72	A	PCU	P397501	
	SM 2320 B-2011	Total Alkalinity	24		mg CaCO3/L	P398016	
	SM 2540 C-2011	TDS	134		mg/L	P397914	
	SM 2540 D-2011	TSS	11	I	mg/L	P397794	
	SM 4500 F-C-2011	Fluoride	0.061	I	mg F/L	P397577	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P398152	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P398065	
2244184	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P397655	
	EPA 365.1 Rev. 2.0	Total-P	0.060		mg P/L	P397968	
	SM 5310 B-2011	Organic Carbon	17		mg C/L	P397881	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P397486	
	dissolved						

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The PQL was elevated because of sample matrix interference.

Sample Location: L-49

Collection Date/Time: 04/29/2021 12:20

Field ID: G4SD0190

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2244178	EPA 180.1 Rev. 2.0	Turbidity	2.0	A	NTU	P397497	
	EPA 300.0 Rev. 2.1	Chloride	110		mg Cl/L	P398559	
		Sulfate	53		mg SO4/L	P398562	
	SM 2120 B-2011	Color (true)	69		PCU	P397501	
	SM 2320 B-2011	Total Alkalinity	220		mg CaCO3/L	P398016	
	SM 2540 C-2011	TDS	578	A	mg/L	P397914	
	SM 2540 D-2011	TSS	3	IA	mg/L	P397793	
	SM 4500 F-C-2011	Fluoride	0.22		mg F/L	P397577	
2244179	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P398152	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P397851	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P397655	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P397968	
	SM 5310 B-2011	Organic Carbon	22		mg C/L	P397881	
2244180	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P397486	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P397497

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398559

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398562

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398152

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398153

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P397851

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398065

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P397655

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P397968

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: P397486

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

Reference Method: EPA 8276
Batch ID: P397459

Component	Result	Code	Units
Chlordane	5.0	U	ng/L
Toxaphene	30	U	ng/L

Reference Method: SM 2120 B-2011
Batch ID: P397501

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P398016

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

Reference Method: SM 2540 C-2011
Batch ID: P397914

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P397915

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P397793

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P397794

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P397577

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P397881

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: P398559

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398562

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398152

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398153

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P397851

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: P398065

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: P397655

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: P397968

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P397486

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8276

Batch ID: P397459

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	96.4	94.9	P/P	56 - 117
Toxaphene	79.3	81.1	P/P	45 - 116

Reference Method: SM 2120 B-2011

Batch ID: P397501

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.7		P	85 - 115

Reference Method: SM 2320 B-2011

Batch ID: P398016

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.4		P	93 - 104

Reference Method: SM 4500 F-C-2011

Batch ID: P397577

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.7		P	90 - 106

Reference Method: SM 5310 B-2011

Batch ID: P397881

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: P398559

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2244181	Chloride	96.9		P	90 - 110
2244474	Chloride	97.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398562

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2244181	Sulfate	96.2		P	90 - 110
2244474	Sulfate	96.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398152

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2244077	Ammonia-N	97.8	96.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398153

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2244415	Ammonia-N	95.4	96.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2245461	Kjeldahl Nitrogen	106	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P397655

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2244095	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P397968

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2243688	Total-P	104	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P397486

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2244180	O-Phosphate-P	93.2	94.5	P/P	90 - 110

Reference Method: EPA 8276
Batch ID: P397459

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2243496	Chlordane	86.5	84.8	P/P	47 - 128
2243496	Toxaphene	77.2	72.9	P/P	11 - 163

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P397577

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2244187	Fluoride	102	103	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P397881

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2244011	Organic Carbon	100	104	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P397497

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244178	Turbidity	1.47	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398559

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244181	Chloride	0.616	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398562

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244181	Sulfate	0.897	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398152

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244077	Ammonia-N	0.797	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398153

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244415	Ammonia-N	0.915	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P397851

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244179	Kjeldahl Nitrogen	4.49	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2245461	Kjeldahl Nitrogen	4.41	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P397655

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244095	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P397968

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2243688	Total-P	1.58	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P397486

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244180	O-Phosphate-P	1.39	Spike	P	0 - 20

Reference Method: EPA 8276

Batch ID: P397459

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2243496	Chlordane	1.88	Spike	P	0 - 30
2243496	Toxaphene	5.67	Spike	P	0 - 30
LFB	Chlordane	1.57	LCS	P	0 - 30
LFB	Toxaphene	2.35	LCS	P	0 - 30

Reference Method: SM 2120 B-2011

Batch ID: P397501

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244182	Color (true)	0.190	Sample	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P398016

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244187	Total Alkalinity	1.31	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011

Batch ID: P397914

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244178	TDS	5.37	Sample	P	0 - 10

Reference Method: SM 2540 C-2011

Batch ID: P397915

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244181	TDS	2.88	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P397577

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244187	Fluoride	0.929	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P397881

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244011	Organic Carbon	2.93	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2244217
Field Sample ID: G4SD0174

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8276	Decachlorobiphenyl	74.5	P	29 - 92.0
EPA 8276	PCNB	91.5	P	43 - 134

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A105108

Included Lab Sample IDs: 2244180, 2244185, 2244186, 2244189

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	99.3	P/P	90 - 110
O-Phosphate-P	102	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A105114

Included Lab Sample IDs: 2244178, 2244181, 2244182, 2244187

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	98.0	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A105115

Included Lab Sample IDs: 2244178, 2244181, 2244182, 2244187

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 115

Reference Method: SM 4500 F-C-2011

Run ID: A105140

Included Lab Sample IDs: 2244178, 2244181, 2244182, 2244187

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	99.5	P/P	90 - 110
Fluoride	99.5	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A105180

Included Lab Sample IDs: 2244179, 2244183, 2244184, 2244188

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

Reference Method: EPA 8276

Run ID: A105262

Included Lab Sample IDs: 2244217

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	99.0		P	80 - 120
Toxaphene	89.7		P	80 - 120

Reference Method: SM 5310 B-2011

Run ID: A105278

Included Lab Sample IDs: 2244179, 2244183, 2244184, 2244188

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	99.0	P/P	90 - 110
Organic Carbon	99.0	99.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A105301

Included Lab Sample IDs: 2244179, 2244183, 2244188

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.1	103	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A105344

Included Lab Sample IDs: 2244178, 2244181, 2244182, 2244187

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	97.8	P/P	90 - 110
Total Alkalinity	97.4	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A105367

Included Lab Sample IDs: 2244179

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A105378

Included Lab Sample IDs: 2244183, 2244184, 2244188

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A105413

Included Lab Sample IDs: 2244184

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.6	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A105414

Included Lab Sample IDs: 2244179, 2244183, 2244184, 2244188

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.1	97.9	P/P	90 - 110
Ammonia-N	98.3	97.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A105550

Included Lab Sample IDs: 2244178, 2244181, 2244182, 2244187

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.7	P/P	90 - 110
Sulfate	99.6	98.7	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						1.47	
EPA 300.0 Rev. 2.1	Chloride	100		96.9	97.8		0.616	
	Sulfate	98.9		96.2	96.8		0.897	
EPA 350.1 Rev. 2.0	Ammonia-N	97.4		97.8	96.6			0.797
	Ammonia-N	98.0		95.4	96.4			0.915
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100						4.49
	Kjeldahl Nitrogen	102		106	100			4.41
EPA 353.2 Rev. 2.0	NO2NO3-N	100		100	100			0.0
EPA 365.1 Rev. 2.0	Total-P	106		104	106			1.58
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.1		93.2	94.5			1.39
EPA 8276	Chlordane	96.4	94.9	86.5	84.8	1.57		1.88
	Toxaphene	79.3	81.1	77.2	72.9	2.35		5.67
SM 2120 B-2011	Color (true)	99.7					0.190	
SM 2320 B-2011	Total Alkalinity	98.4					1.31	
SM 2540 C-2011	TDS						5.37	
	TDS						2.88	
SM 4500 F-C-2011	Fluoride	98.7		102	103			0.929
SM 5310 B-2011	Organic Carbon	97.2		100	104			2.93

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2244178, 2244181, 2244182, 2244187
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2244178, 2244181, 2244182, 2244187
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2244178, 2244181, 2244182, 2244187
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2244179, 2244183, 2244184, 2244188
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2244179, 2244183, 2244184, 2244188
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2244179, 2244183, 2244184, 2244188
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2244179, 2244183, 2244184, 2244188
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2244180, 2244185, 2244186, 2244189
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2244217
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2244178, 2244181, 2244182, 2244187
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2244178, 2244181, 2244182, 2244187
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2244178, 2244181, 2244182, 2244187
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2244178, 2244181, 2244182, 2244187
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2244178, 2244181, 2244182, 2244187
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2244179, 2244183, 2244184, 2244188

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	04/30/2021			04/30/2021 16:21	Sarah A Nixon	2244178, 2244181, 2244182, 2244187
EPA 300.0 Rev. 2.1	04/30/2021			05/20/2021 15:01	Lipi Saha	2244181
	04/30/2021			05/20/2021 16:13	Lipi Saha	2244178
	04/30/2021			05/20/2021 16:25	Lipi Saha	2244182
	04/30/2021			05/20/2021 16:37	Lipi Saha	2244187
EPA 350.1 Rev. 2.0	04/30/2021			05/13/2021 12:51	Ping Hua	2244179
	04/30/2021			05/13/2021 12:53	Ping Hua	2244183
	04/30/2021			05/13/2021 12:54	Ping Hua	2244184
	04/30/2021			05/13/2021 13:26	Ping Hua	2244188
EPA 351.2 Rev. 2.0	04/30/2021	05/07/2021 18:29	Benjamin T. Nordmann	05/10/2021 13:20	Virginia P. Brown	2244179
	04/30/2021	05/07/2021 18:29	Benjamin T. Nordmann	05/10/2021 13:25	Virginia P. Brown	2244183
	04/30/2021	05/07/2021 18:29	Benjamin T. Nordmann	05/10/2021 13:28	Virginia P. Brown	2244188
	04/30/2021	05/12/2021 13:45	Benjamin T. Nordmann	05/13/2021 11:57	Virginia P. Brown	2244184
EPA 353.2 Rev. 2.0	04/30/2021			05/05/2021 10:02	Beverly Y. Sanders	2244179
	04/30/2021			05/05/2021 10:03	Beverly Y. Sanders	2244183
	04/30/2021			05/05/2021 10:05	Beverly Y. Sanders	2244184
	04/30/2021			05/05/2021 10:06	Beverly Y. Sanders	2244188
EPA 365.1 Rev. 2.0	04/30/2021	05/11/2021 14:29	Yen Ta	05/12/2021 10:03	Shengyu Ding	2244183
	04/30/2021	05/11/2021 14:29	Yen Ta	05/12/2021 10:04	Shengyu Ding	2244184
	04/30/2021	05/11/2021 14:29	Yen Ta	05/12/2021 10:05	Shengyu Ding	2244188
	04/30/2021	05/11/2021 14:29	Yen Ta	05/12/2021 12:12	Shengyu Ding	2244179
EPA 365.1 Rev. 2.0 dissolved	04/30/2021			04/30/2021 14:20	Lipi Saha	2244180
	04/30/2021			04/30/2021 14:28	Lipi Saha	2244185
	04/30/2021			04/30/2021 14:29	Lipi Saha	2244186
	04/30/2021			04/30/2021 14:30	Lipi Saha	2244189
EPA 8276	04/30/2021	05/03/2021 08:00	Fe-Val Siddell	05/08/2021 08:27	Arthur Maknenko	2244217
SM 2120 B-2011	04/30/2021			04/30/2021 15:28	Madeline Gruver	2244178
	04/30/2021			04/30/2021 15:29	Madeline Gruver	2244181
	04/30/2021			04/30/2021 15:31	Madeline Gruver	2244182, 2244187
SM 2320 B-2011	04/30/2021			05/11/2021 20:31	Dale L. Simmons	2244187
	04/30/2021			05/11/2021 22:40	Dale L. Simmons	2244178
	04/30/2021			05/11/2021 22:51	Dale L. Simmons	2244181
	04/30/2021			05/11/2021 23:02	Dale L. Simmons	2244182
SM 2540 C-2011	04/30/2021			05/04/2021 15:06	Yijie Li	2244178, 2244181, 2244182, 2244187
SM 2540 D-2011	04/30/2021			05/04/2021 15:06	Yijie Li	2244178, 2244181, 2244182, 2244187
SM 4500 F-C-2011	04/30/2021			05/03/2021 21:30	Dale L. Simmons	2244187
	04/30/2021			05/04/2021 00:46	Dale L. Simmons	2244178
	04/30/2021			05/04/2021 00:59	Dale L. Simmons	2244181
	04/30/2021			05/04/2021 01:13	Dale L. Simmons	2244182
SM 5310 B-2011	04/30/2021			05/07/2021 19:49	Madeline Gruver	2244183

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	04/30/2021			05/07/2021 22:38	Madeline Gruver	2244179
	04/30/2021			05/07/2021 22:51	Madeline Gruver	2244184
	04/30/2021			05/07/2021 23:05	Madeline Gruver	2244188