

Chemical Analysis Report

SE-DIST-2018-09-12-02

Florida Department of Environmental Protection
Central Laboratory
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DOH Accreditation E31780

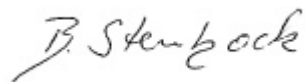
Event Description: **SMP- Dade**
Request ID: **RQ-2018-09-10-27**
Customer: **SE-DIST**
Project ID: **SMP**

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Date Certified: 28-SEP-2018 15:58



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: Metals, 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 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: MIAMI (C-6) @ S26

Collection Date/Time: 09/11/2018 13:10

Field ID: G4SE0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2024279	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P351634	
	SM 2320 B-97	Total Alkalinity	195		mg CaCO3/L	P351706	
	SM 2540 D-97	TSS	3	I	mg/L	P351982	
	SM 4500 F-C-97	Fluoride	0.24		mg F/L	P351709	
2024280	EPA 350.1 Rev. 2.0	Ammonia-N	0.69		mg N/L	P351764	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P351746	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P351695	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P351602	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P351878	
2024281	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P351519	
2024334	EPA 8321B	2,4-D	0.0020	U	ug/L	P351416	
		Bentazon	0.012		ug/L	P351416	
		MCP	0.0020	U	ug/L	P351416	MS
		Triclopyr**	0.0040	U	ug/L	P351416	MS
		Imidacloprid	0.0029	I	ug/L	P351416	
		Diuron	0.015		ug/L	P351416	
		Pyraclostrobin**	0.0020	U	ug/L	P351416	
		Primidone**	0.0040	U	ug/L	P351416	
		Linuron	0.0040	U	ug/L	P351416	
		Acetaminophen**	0.0080	U	ug/L	P351416	
		Fenuron	0.016	U	ug/L	P351416	
		Imazapyr**	0.090		ug/L	P351416	
		Carbamazepine**	8.0E-04	U	ug/L	P351416	
		Fluridone**	0.0040		ug/L	P351416	
		Hydrocodone**	8.0E-04	U	ug/L	P351416	
		Naproxen**	0.0080	U	ug/L	P351416	
		Ibuprofen**	0.020	U	ug/L	P351416	
		Sucralose**	0.040		ug/L	P351382	
		Acesulfame K**	0.10	U	ug/L	P351382	

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: WAGNER CREEK (WC-02)

Collection Date/Time: 09/11/2018 14:00

Field ID: G4SEWC02

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2024282	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P351635	
	SM 2320 B-97	Total Alkalinity	182		mg CaCO3/L	P351707	
	SM 2540 D-97	TSS	3	UA	mg/L	P351800	
	SM 4500 F-C-97	Fluoride	0.26		mg F/L	P351905	
2024283	EPA 350.1 Rev. 2.0	Ammonia-N	0.30		mg N/L	P351765	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P351748	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P351762	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P351605	
	SM 5310 B-00	Organic Carbon	8.5		mg C/L	P351877	
2024284	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P351522	
2024335	EPA 8321B	2,4-D	0.0032	I	ug/L	P351416	
		Bentazon	0.0075		ug/L	P351416	
		MCP	0.0020	U	ug/L	P351416	MS
		Triclopyr**	0.0040	U	ug/L	P351416	MS
		Imidacloprid	0.0031	I	ug/L	P351416	
		Diuron	0.011		ug/L	P351416	
		Pyraclostrobin**	0.0020	U	ug/L	P351416	
		Primidone**	0.0040	U	ug/L	P351416	
		Linuron	0.0040	U	ug/L	P351416	
		Acetaminophen**	0.0092	I	ug/L	P351416	
		Fenuron	0.016	U	ug/L	P351416	
		Imazapyr**	0.063		ug/L	P351416	
		Carbamazepine**	0.0026	I	ug/L	P351416	
		Fluridone**	0.0039		ug/L	P351416	
		Hydrocodone**	8.0E-04	U	ug/L	P351416	
		Naproxen**	0.0080	U	ug/L	P351416	
		Ibuprofen**	0.020	U	ug/L	P351416	
		Sucralose**	0.21		ug/L	P351382	
		Acesulfame K**	0.10	U	ug/L	P351382	

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: SNAKE CREEK (EAST) @ FLAMINGO

Collection Date/Time: 09/11/2018 15:00

Field ID: G4SE0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2024273	EPA 180.1 Rev. 2.0	Turbidity	0.85		NTU	P351634	
	EPA 300.0 Rev. 2.1	Chloride	55		mg Cl/L	P351985	
		Sulfate	4.5		mg SO4/L	P351989	
		Color (true)	37		PCU	P351515	
	SM 2320 B-97	Total Alkalinity	194		mg CaCO3/L	P351706	
	SM 2540 C-97	TDS	313		mg/L	P351934	
	SM 2540 D-97	TSS	2	I	mg/L	P351976	
	SM 4500 F-C-97	Fluoride	0.26		mg F/L	P351709	
2024275	EPA 350.1 Rev. 2.0	Ammonia-N	0.24		mg N/L	P351686	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P351746	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.023		mg N/L	P351695	
	EPA 365.1 Rev. 2.0	Total-P	0.005	I	mg P/L	P351602	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P351878	
2024277	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P351519	
2024337	EPA 200.7 Rev. 4.4	Calcium	64.5		mg/L	P351526	
		Iron	280		ug/L	P351526	
		Magnesium	8.85		mg/L	P351526	
		Potassium	2.4		mg/L	P351526	
		Sodium	36.8		mg/L	P351526	
		Zinc	5.0	U	ug/L	P351526	
	EPA 200.8 Rev. 5.4	Arsenic	1.12		ug/L	P351526	
		Cadmium	0.020	U	ug/L	P351526	
		Chromium	0.40	U	ug/L	P351526	
		Copper	0.36	I	ug/L	P351526	
		Lead	0.050	U	ug/L	P351526	
		Nickel	0.20	U	ug/L	P351526	
		Silver	0.010	U	ug/L	P351526	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: SNAKE CREEK (EAST) @ FLAMINGO DUP.

Collection Date/Time: 09/11/2018 15:05

Field ID: G4SE0023_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2024274	EPA 180.1 Rev. 2.0	Turbidity	0.95		NTU	P351634	
	EPA 300.0 Rev. 2.1	Chloride	56		mg Cl/L	P351985	
		Sulfate	4.6		mg SO4/L	P351989	
		Color (true)	37		PCU	P351515	
	SM 2320 B-97	Total Alkalinity	194		mg CaCO3/L	P351706	
	SM 2540 C-97	TDS	303		mg/L	P351934	
	SM 2540 D-97	TSS	2	I	mg/L	P351976	
	SM 4500 F-C-97	Fluoride	0.26		mg F/L	P351709	
2024276	EPA 350.1 Rev. 2.0	Ammonia-N	0.24		mg N/L	P351764	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P351746	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.022		mg N/L	P351695	
	EPA 365.1 Rev. 2.0	Total-P	0.005		mg P/L	P351602	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P351878	
2024278	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P351519	
2024338	EPA 200.7 Rev. 4.4	Calcium	66.1		mg/L	P351526	
		Iron	290		ug/L	P351526	
		Magnesium	9.17		mg/L	P351526	
		Potassium	2.4		mg/L	P351526	
		Sodium	37.9		mg/L	P351526	
		Zinc	5.0	U	ug/L	P351526	
	EPA 200.8 Rev. 5.4	Arsenic	1.17		ug/L	P351526	
		Cadmium	0.020	U	ug/L	P351526	
		Chromium	0.40	U	ug/L	P351526	
		Copper	0.35	I	ug/L	P351526	
		Lead	0.050	U	ug/L	P351526	
		Nickel	0.20	U	ug/L	P351526	
		Silver	0.010	U	ug/L	P351526	

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: SNAKE CREEK CANAL (NORTH FORK) @ STIRLING

Collection Date/Time: 09/11/2018 15:40

Field ID: G4SE0049

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2024285	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P351635	
	EPA 300.0 Rev. 2.1	Chloride	60		mg Cl/L	P351985	
		Sulfate	7.3		mg SO4/L	P351989	
	SM 2120 B	Color (true)	49		PCU	P351515	
	SM 2320 B-97	Total Alkalinity	262		mg CaCO3/L	P351706	
	SM 2540 C-97	TDS	390		mg/L	P351934	
	SM 2540 D-97	TSS	3	I	mg/L	P351976	
	SM 4500 F-C-97	Fluoride	0.22		mg F/L	P351709	
2024286	EPA 350.1 Rev. 2.0	Ammonia-N	0.074		mg N/L	P351764	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P351746	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P351695	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P351602	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P351878	
2024287	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P351519	

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: P351634

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P351635

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P351526

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P351526

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351985

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351989

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351686

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351764

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351765

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351746

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351748

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351695

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351762

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351602

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351605

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351519

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351522

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

Reference Method: EPA 8321B
Batch ID: P351382

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P351416

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B
Batch ID: P351515

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P351706

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

Reference Method: SM 2320 B-97
Batch ID: P351707

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P351934

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P351800

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P351976

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P351982

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P351709

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P351905

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P351877

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-00
Batch ID: P351878

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P351526

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	100		P	85 - 115
Magnesium	106		P	85 - 115
Potassium	99.4		P	85 - 115
Sodium	101		P	85 - 115
Zinc	98.2		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P351526

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	102		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	104		P	85 - 115
Copper	98.1		P	85 - 115
Lead	103		P	85 - 115
Nickel	97.1		P	85 - 115
Silver	101		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351985

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351989

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351686

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351764

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351765

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.6		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351746

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351748

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351695

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: P351762

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351602

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	109		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351605

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351519

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351522

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

Reference Method: EPA 8321B
Batch ID: P351382

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	78.3		P	40 - 150
Sucralose	100		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P351416

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	95.8		P	40 - 150
Acetaminophen	83.5		P	30 - 150
Bentazon	87.4		P	30 - 150
Carbamazepine	89.2		P	40 - 150
Diuron	79.5		P	40 - 150
Fenuron	95.9		P	40 - 150
Fluridone	79.3		P	40 - 150
Hydrocodone	105		P	40 - 150
Ibuprofen	109		P	40 - 150
Imazapyr	77.5		P	40 - 150
Imidacloprid	85.6		P	40 - 160
Linuron	69.1		P	40 - 150
MCPP	96.5		P	40 - 150
Naproxen	102		P	40 - 150
Primidone	69.6		P	40 - 150
Pyraclostrobin	80.5		P	40 - 150
Triclopyr	95.0		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P351515

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.6		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P351706

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 2320 B-97
Batch ID: P351707

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P351709

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P351905

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.2		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P351877

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

Reference Method: SM 5310 B-00
Batch ID: P351877

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.4		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P351878

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P351526

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023697	Calcium	103		P	80 - 120
2023697	Iron	101		P	80 - 120
2023697	Magnesium	105		P	80 - 120
2023697	Potassium	104		P	80 - 120
2023697	Sodium	101		P	80 - 120
2023697	Zinc	98.5		P	80 - 120
2024444	Calcium	104	104	P/P	80 - 120
2024444	Iron	103	102	P/P	80 - 120
2024444	Magnesium	107	107	P/P	80 - 120
2024444	Potassium	105	104	P/P	80 - 120
2024444	Sodium	104		P	80 - 120
2024444	Zinc	103	101	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P351526

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023697	Arsenic	103		P	80 - 120
2023697	Cadmium	102		P	80 - 120
2023697	Chromium	105		P	80 - 120
2023697	Copper	97.0		P	80 - 120
2023697	Lead	103		P	80 - 120
2023697	Nickel	96.9		P	80 - 120
2023697	Silver	103		P	80 - 120
2024444	Arsenic	104	104	P/P	80 - 120
2024444	Cadmium	104	104	P/P	80 - 120
2024444	Chromium	107	108	P/P	80 - 120
2024444	Copper	100	99.7	P/P	80 - 120
2024444	Lead	105	105	P/P	80 - 120
2024444	Nickel	96.1	96.6	P/P	80 - 120
2024444	Silver	104	104	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351985

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023823	Chloride	98.6		P	90 - 110
2024371	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351989

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023823	Sulfate	97.2		P	90 - 110
2024371	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351764

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2024372	Ammonia-N	97.8	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351765

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2024296	Ammonia-N	97.1	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351746

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2024210	Kjeldahl Nitrogen	98.9	95.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2024283	Kjeldahl Nitrogen	104	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351695

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2024209	NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351762

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2024176	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351602

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2024280	Total-P	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351605

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2024283	Total-P	107	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351519

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2024281	O-Phosphate-P	93.4	94.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351522

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2024305	O-Phosphate-P	95.6	97.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P351382

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023766	Acesulfame K	68.6	81.6	P/P	40 - 150
2023766	Sucralose	117	114	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P351416

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023766	2,4-D	139	144	P/P	40 - 150
2023766	Acetaminophen	76.4	69.6	P/P	30 - 150
2023766	Bentazon	68.5	80.6	P/P	30 - 150
2023766	Carbamazepine	65.8	60.9	P/P	40 - 150
2023766	Diuron	57.8	51.6	P/P	40 - 150
2023766	Fenuron	53.6	52.1	P/P	40 - 150
2023766	Fluridone	83.4	77.5	P/P	40 - 150
2023766	Hydrocodone	77.8	73.3	P/P	40 - 150
2023766	Ibuprofen	102	103	P/P	40 - 150
2023766	Imazapyr	89.4	86.9	P/P	40 - 150
2023766	Imidacloprid	113	112	P/P	40 - 160
2023766	Linuron	59.2	58.8	P/P	40 - 150
2023766	MCP	148	176	P/F	40 - 150
2023766	Naproxen	137	142	P/P	40 - 150
2023766	Primidone	62.7	61.4	P/P	40 - 150
2023766	Pyraclostrobin	81.5	80.8	P/P	40 - 150
2023766	Triclopyr	167	178	F/F	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P351709

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2024195	Fluoride	97.9	97.3	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P351905

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025424	Fluoride	96.1	96.1	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P351877

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023138	Organic Carbon	99.3	100	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P351878

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2024208	Organic Carbon	95.2	94.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P351634

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2024193	Turbidity	6.29	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P351635

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2024420	Turbidity	2.83	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P351526

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2024444	Calcium	0.294	Spike	P	0 - 20
2024444	Iron	0.613	Spike	P	0 - 20
2024444	Magnesium	0.0656	Spike	P	0 - 20
2024444	Potassium	1.08	Spike	P	0 - 20
2024444	Sodium	0.406	Spike	P	0 - 20
2024444	Zinc	1.64	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P351526

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2024444	Arsenic	0.199	Spike	P	0 - 20
2024444	Cadmium	0.0846	Spike	P	0 - 20
2024444	Chromium	0.454	Spike	P	0 - 20
2024444	Copper	0.281	Spike	P	0 - 20
2024444	Lead	0.0488	Spike	P	0 - 20
2024444	Nickel	0.491	Spike	P	0 - 20
2024444	Silver	0.216	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023823	Chloride	0.658	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351989

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023823	Sulfate	0.702	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351686

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2024198	Ammonia-N	1.22	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351764

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2024372	Ammonia-N	2.56	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2024296	Ammonia-N	0.231	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2024210	Kjeldahl Nitrogen	2.75	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2024283	Kjeldahl Nitrogen	0.280	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351695

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2024209	NO2NO3-N	0.990	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351762

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2024176	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351602

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2024280	Total-P	0.820	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351605

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2024283	Total-P	4.65	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351519

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2024281	O-Phosphate-P	1.38	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351522

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2024305	O-Phosphate-P	1.40	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P351382

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023766	Acesulfame K	17.2	Spike	P	0 - 30
2023766	Sucralose	2.41	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P351416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023766	2,4-D	3.06	Spike	P	0 - 30
2023766	Acetaminophen	9.28	Spike	P	0 - 30
2023766	Bentazon	9.75	Spike	P	0 - 30
2023766	Carbamazepine	7.80	Spike	P	0 - 30
2023766	Diuron	11.3	Spike	P	0 - 30
2023766	Fenuron	2.94	Spike	P	0 - 30
2023766	Fluridone	7.11	Spike	P	0 - 30
2023766	Hydrocodone	5.84	Spike	P	0 - 30
2023766	Ibuprofen	1.39	Spike	P	0 - 30
2023766	Imazapyr	1.67	Spike	P	0 - 30
2023766	Imidacloprid	1.43	Spike	P	0 - 30
2023766	Linuron	0.627	Spike	P	0 - 30
2023766	MCPP	17.4	Spike	P	0 - 30
2023766	Naproxen	3.24	Spike	P	0 - 30
2023766	Primidone	2.18	Spike	P	0 - 30
2023766	Pyraclostrobin	0.821	Spike	P	0 - 30
2023766	Triclopyr	6.32	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P351515

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2024195	Color (true)	0.513	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P351706

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2024195	Total Alkalinity	1.10	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P351707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023220	Total Alkalinity	0.204	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P351934

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2024196	TDS	8.45	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P351709

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2024195	Fluoride	0.480	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P351905

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025424	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P351877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023138	Organic Carbon	1.03	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P351878

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2024208	Organic Carbon	0.575	Spike	P	0 - 20

Quality Assurance Report

Precision

* 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 Surrogates

Lab Sample ID: 2024334
Field Sample ID: G4SE0024

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	115	P	30 - 160
EPA 8321B	Acetaminophen-d4	83.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	65.1	P	30 - 160
EPA 8321B	Diuron-d6	58.8	P	30 - 160
EPA 8321B	Endothall-d6	142	P	40 - 160
EPA 8321B	Ibuprofen-d3	110	P	30 - 160
EPA 8321B	Primidone-d5	67.0	P	30 - 160
EPA 8321B	Sucralose-d6	127	P	40 - 160

Lab Sample ID: 2024335
Field Sample ID: G4SEWC02

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	144	P	30 - 160
EPA 8321B	Acetaminophen-d4	101	P	30 - 160
EPA 8321B	Carbamazepine-d10	73.9	P	30 - 160
EPA 8321B	Diuron-d6	72.0	P	30 - 160
EPA 8321B	Endothall-d6	142	P	40 - 160
EPA 8321B	Ibuprofen-d3	103	P	30 - 160
EPA 8321B	Primidone-d5	88.3	P	30 - 160
EPA 8321B	Sucralose-d6	125	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A86442

Included Lab Sample IDs: 2024273, 2024274, 2024285

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	96.5	99.4	P/P	90 - 115
Color (true)	97.7	99.5	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A86443

Included Lab Sample IDs: 2024277, 2024278, 2024281, 2024284, 2024287

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.9	P/P	90 - 110
O-Phosphate-P	98.9	98.9	P/P	90 - 110
O-Phosphate-P	99.2	98.9	P/P	90 - 110
O-Phosphate-P	99.6	99.9	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A86466

Included Lab Sample IDs: 2024337, 2024338

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	98.0	97.8	P/P	90 - 110
Iron	98.4	99.3	P/P	90 - 110
Magnesium	98.3	99.1	P/P	90 - 110
Potassium	99.3	99.6	P/P	90 - 110
Sodium	102	102	P/P	90 - 110
Zinc	99.6	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A86474

Included Lab Sample IDs: 2024273, 2024274, 2024279, 2024282, 2024285

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	103	P/P	95 - 105
Turbidity	103	102	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A86482

Included Lab Sample IDs: 2024334, 2024335

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	105	94.8	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A86500

Included Lab Sample IDs: 2024275

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A86506

Included Lab Sample IDs: 2024275, 2024276, 2024280, 2024286

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

Reference Method: SM 2320 B-97

Run ID: A86511

Included Lab Sample IDs: 2024273, 2024274, 2024279, 2024282, 2024285

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	100	P/P	90 - 110
Total Alkalinity	104	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A86511

Included Lab Sample IDs: 2024273, 2024274, 2024279, 2024285

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.1	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86516

Included Lab Sample IDs: 2024275, 2024276, 2024280, 2024283, 2024286

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.2	96.8	P/P	90 - 110
Total-P	97.2	96.8	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A86520

Included Lab Sample IDs: 2024334, 2024335

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	101	91.5	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A86528

Included Lab Sample IDs: 2024334, 2024335

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	97.7	91.2	P/P	50 - 150
Bentazon	66.2	92.0	P/P	50 - 160
Ibuprofen	122	125	P/P	50 - 160
MCP	92.0	83.0	P/P	50 - 150
Naproxen	96.6	73.2	P/P	50 - 160
Triclopyr	87.7	90.5	P/P	50 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A86530

Included Lab Sample IDs: 2024283

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A86531

Included Lab Sample IDs: 2024276, 2024280, 2024283, 2024286

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	97.4	P/P	90 - 110
Ammonia-N	97.4	97.1	P/P	90 - 110
Ammonia-N	97.5	96.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A86551

Included Lab Sample IDs: 2024275, 2024276, 2024280, 2024283, 2024286

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	102	P/P	90 - 110
Kjeldahl Nitrogen	98.4	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A86563

Included Lab Sample IDs: 2024337, 2024338

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	97.3	97.3	P/P	90 - 110
Cadmium	95.9	97.1	P/P	90 - 110
Chromium	99.3	101	P/P	90 - 110
Copper	95.5	95.1	P/P	90 - 110
Lead	106	105	P/P	90 - 110
Silver	101	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A86566

Included Lab Sample IDs: 2024273, 2024274, 2024285

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

Reference Method: SM 5310 B-00

Run ID: A86572

Included Lab Sample IDs: 2024283

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.8	99.9	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A86574

Included Lab Sample IDs: 2024275, 2024276, 2024280, 2024286

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.1	94.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A86586

Included Lab Sample IDs: 2024282

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A86586

Included Lab Sample IDs: 2024282

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	99.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A86696

Included Lab Sample IDs: 2024334, 2024335

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	69.1	71.1	P/P	60 - 160
Carbamazepine	110	110	P/P	60 - 160
Diuron	111	107	P/P	60 - 150
Fenuron	103	99.3	P/P	60 - 150
Fluridone	95.7	104	P/P	60 - 160
Hydrocodone	92.9	91.4	P/P	60 - 150
Imazapyr	76.8	82.9	P/P	50 - 150
Imidacloprid	88.8	80.7	P/P	60 - 150
Linuron	103	96.2	P/P	60 - 150
Primidone	83.5	86.3	P/P	60 - 150
Pyraclostrobin	100	103	P/P	60 - 150

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A86697

Included Lab Sample IDs: 2024337, 2024338

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nickel	95.0	90.9	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						6.29	
	Turbidity						2.83	
EPA 200.7 Rev. 4.4	Calcium	104	103	104	104			0.294
	Iron	100	101	103	102			0.613
	Magnesium	106	105	107	107			0.0656
	Potassium	99.4	104	105	104			1.08
	Sodium	101	101	104				0.406
	Zinc	98.2	98.5	103	101			1.64
EPA 200.8 Rev. 5.4	Arsenic	102	103	104	104			0.199
	Cadmium	102	102	104	104			0.0846
	Chromium	104	105	107	108			0.454
	Copper	98.1	97.0	100	99.7			0.281
	Lead	103	103	105	105			0.0488
	Nickel	97.1	96.1	96.6	96.9			0.491
	Silver	101	103	104	104			0.216
EPA 300.0 Rev. 2.1	Chloride	100	98.6	100			0.658	
	Sulfate	99.9	97.2	100			0.702	
EPA 350.1 Rev. 2.0	Ammonia-N	106						1.22
	Ammonia-N	99.0	97.8	101				2.56
	Ammonia-N	94.6	97.1	97.4				0.231
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	98.9	95.0				2.75
	Kjeldahl Nitrogen	103	104	104				0.280
EPA 353.2 Rev. 2.0	NO2NO3-N	100	100	102				0.990
	NO2NO3-N	102	101	101				0.0
EPA 365.1 Rev. 2.0	Total-P	109	103	104				0.820
	Total-P	99.8	107	102				4.65
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.6	93.4	94.7				1.38
	O-Phosphate-P	100	95.6	97.1				1.40
EPA 8321B	2,4-D	95.8	139	144				3.06
	Acesulfame K	78.3	68.6	81.6				17.2
	Acetaminophen	83.5	76.4	69.6				9.28
	Bentazon	87.4	68.5	80.6				9.75
	Carbamazepine	89.2	65.8	60.9				7.80
	Diuron	79.5	57.8	51.6				11.3
	Fenuron	95.9	53.6	52.1				2.94
	Fluridone	79.3	83.4	77.5				7.11
	Hydrocodone	105	77.8	73.3				5.84
	Ibuprofen	109	102	103				1.39
	Imazapyr	77.5	89.4	86.9				1.67
	Imidacloprid	85.6	113	112				1.43
	Linuron	69.1	59.2	58.8				0.627
	MCPP	96.5	148	176				17.4
	Naproxen	102	137	142				3.24
	Primidone	69.6	62.7	61.4				2.18
	Pyraclostrobin	80.5	81.5	80.8				0.821
	Sucralose	100	117	114				2.41
	Triclopyr	95.0	167	178				6.32
SM 2120 B	Color (true)	97.6					0.513	
SM 2320 B-97	Total Alkalinity	102					1.10	
	Total Alkalinity	103					0.204	
SM 2540 C-97	TDS						8.45	
SM 4500 F-C-97	Fluoride	97.9	97.9	97.3				0.480
	Fluoride	95.2	96.1	96.1				0.0
SM 5310 B-00	Organic Carbon	99.4	99.3	100				1.03

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
SM 5310 B-00	Organic Carbon	96.0	95.2 94.2			0.575

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2024273, 2024274, 2024279, 2024282, 2024285
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2024337, 2024338
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2024337, 2024338
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2024273, 2024274, 2024285
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2024273, 2024274, 2024285
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2024275, 2024276, 2024280, 2024283, 2024286
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2024275, 2024276, 2024280, 2024283, 2024286
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2024275, 2024276, 2024280, 2024283, 2024286
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2024275, 2024276, 2024280, 2024283, 2024286
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2024277, 2024278, 2024281, 2024284, 2024287
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2024334, 2024335
SM 2120 B / E31780	True Color measured at 450 nm	2024273, 2024274, 2024285
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2024273, 2024274, 2024279, 2024282, 2024285
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2024273, 2024274, 2024285
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2024273, 2024274, 2024279, 2024282, 2024285
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2024273, 2024274, 2024279, 2024282, 2024285
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2024275, 2024276, 2024280, 2024283, 2024286

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	09/12/2018			09/12/2018 17:42	Megan Treadwell	2024273, 2024274, 2024279, 2024282, 2024285
EPA 200.7 Rev. 4.4	09/12/2018	09/12/2018 17:50	Elliott D. Healy	09/13/2018 14:50	Betina Topolski	2024337
	09/12/2018	09/12/2018 17:50	Elliott D. Healy	09/13/2018 14:57	Betina Topolski	2024338
EPA 200.8 Rev. 5.4	09/12/2018	09/12/2018 17:50	Elliott D. Healy	09/18/2018 21:35	Allison Taylor	2024337
	09/12/2018	09/12/2018 17:50	Elliott D. Healy	09/18/2018 21:45	Allison Taylor	2024338
	09/12/2018	09/12/2018 17:50	Elliott D. Healy	09/24/2018 18:37	Allison Taylor	2024337
	09/12/2018	09/12/2018 17:50	Elliott D. Healy	09/24/2018 18:47	Allison Taylor	2024338
EPA 300.0 Rev. 2.1	09/12/2018			09/19/2018 01:22	Lipi Saha	2024273
	09/12/2018			09/19/2018 01:34	Lipi Saha	2024274
	09/12/2018			09/19/2018 01:46	Lipi Saha	2024285
EPA 350.1 Rev. 2.0	09/12/2018			09/14/2018 13:08	Adrian Shelby	2024275
	09/12/2018			09/17/2018 13:52	Ping Hua	2024286
	09/12/2018			09/17/2018 14:09	Ping Hua	2024276
	09/12/2018			09/17/2018 14:10	Ping Hua	2024280
	09/12/2018			09/17/2018 16:25	Ping Hua	2024283
EPA 351.2 Rev. 2.0	09/12/2018	09/17/2018 15:30	Adrian Shelby	09/18/2018 11:43	Joseph Suarez	2024275
	09/12/2018	09/17/2018 15:30	Adrian Shelby	09/18/2018 11:45	Joseph Suarez	2024276
	09/12/2018	09/17/2018 15:30	Adrian Shelby	09/18/2018 11:46	Joseph Suarez	2024280
	09/12/2018	09/17/2018 15:30	Adrian Shelby	09/18/2018 11:48	Joseph Suarez	2024286
	09/12/2018	09/17/2018 15:30	Adrian Shelby	09/18/2018 12:39	Joseph Suarez	2024283
EPA 353.2 Rev. 2.0	09/12/2018			09/14/2018 12:28	Lauren Bottorf	2024275
	09/12/2018			09/14/2018 12:30	Lauren Bottorf	2024276
	09/12/2018			09/14/2018 12:32	Lauren Bottorf	2024280
	09/12/2018			09/14/2018 12:33	Lauren Bottorf	2024286
	09/12/2018			09/17/2018 13:43	Lauren Bottorf	2024283
EPA 365.1 Rev. 2.0	09/12/2018	09/13/2018 15:36	Sima Feizi	09/14/2018 13:15	Beverly Y. Sanders	2024275
	09/12/2018	09/13/2018 15:36	Sima Feizi	09/14/2018 13:16	Beverly Y. Sanders	2024276
	09/12/2018	09/13/2018 15:36	Sima Feizi	09/14/2018 13:17	Beverly Y. Sanders	2024280
	09/12/2018	09/13/2018 15:36	Sima Feizi	09/14/2018 13:18	Beverly Y. Sanders	2024286
	09/12/2018	09/13/2018 15:36	Sima Feizi	09/14/2018 14:16	Beverly Y. Sanders	2024283
EPA 365.1 Rev. 2.0 dissolved	09/12/2018			09/12/2018 15:10	Julia Storbeck	2024281
	09/12/2018			09/12/2018 15:38	Julia Storbeck	2024277
	09/12/2018			09/12/2018 15:39	Julia Storbeck	2024278
	09/12/2018			09/12/2018 16:02	Julia Storbeck	2024287
	09/12/2018			09/12/2018 16:13	Julia Storbeck	2024284
EPA 8321B	09/12/2018	09/13/2018 13:00	Mohammad Ghaffari	09/13/2018 18:11	Mohammad Ghaffari	2024334
	09/12/2018	09/13/2018 13:00	Mohammad Ghaffari	09/13/2018 18:26	Mohammad Ghaffari	2024335
	09/12/2018	09/13/2018 13:00	Mohammad Ghaffari	09/14/2018 20:12	Mohammad Ghaffari	2024334
	09/12/2018	09/13/2018 13:00	Mohammad Ghaffari	09/14/2018 20:26	Mohammad Ghaffari	2024335

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	09/12/2018	09/13/2018 14:00	Hoor Shaik	09/15/2018 19:17	Juyoung Kim	2024334
	09/12/2018	09/13/2018 14:00	Hoor Shaik	09/15/2018 19:52	Juyoung Kim	2024335
	09/12/2018	09/13/2018 14:00	Hoor Shaik	09/22/2018 22:21	Mohammad Ghaffari	2024334
	09/12/2018	09/13/2018 14:00	Hoor Shaik	09/22/2018 22:56	Mohammad Ghaffari	2024335
SM 2120 B	09/12/2018			09/12/2018 16:00	DeAsia Armster	2024285
	09/12/2018			09/12/2018 16:27	DeAsia Armster	2024273
	09/12/2018			09/12/2018 16:28	DeAsia Armster	2024274
SM 2320 B-97	09/12/2018			09/14/2018 00:49	Dale L. Simmons	2024273
	09/12/2018			09/14/2018 01:00	Dale L. Simmons	2024274
	09/12/2018			09/14/2018 01:11	Dale L. Simmons	2024279
	09/12/2018			09/14/2018 01:22	Dale L. Simmons	2024285
	09/12/2018			09/14/2018 06:08	Dale L. Simmons	2024282
SM 2540 C-97	09/12/2018			09/14/2018 15:32	Yijie Li	2024273, 2024274, 2024285
SM 2540 D-97	09/12/2018			09/14/2018 15:32	Yijie Li	2024273, 2024274, 2024279, 2024282, 2024285
SM 4500 F-C-97	09/12/2018			09/14/2018 00:49	Dale L. Simmons	2024273
	09/12/2018			09/14/2018 01:00	Dale L. Simmons	2024274
	09/12/2018			09/14/2018 01:11	Dale L. Simmons	2024279
	09/12/2018			09/14/2018 01:22	Dale L. Simmons	2024285
	09/12/2018			09/18/2018 23:05	Dale L. Simmons	2024282
SM 5310 B-00	09/12/2018			09/17/2018 19:23	Megan Treadwell	2024275
	09/12/2018			09/17/2018 19:37	Megan Treadwell	2024276
	09/12/2018			09/17/2018 19:53	Megan Treadwell	2024280
	09/12/2018			09/17/2018 20:07	Megan Treadwell	2024286
	09/12/2018			09/18/2018 11:44	Megan Treadwell	2024283