

Chemical Analysis Report

NE-DIST-2018-09-19-01

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

Event Description: **LSJR Downtown Boat**
Request ID: **RQ-2018-09-17-14**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256-7577
Attn: Jeremy Parrish

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 17-OCT-2018 11:24

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored background.

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: ARLINGTON R CESERY BLVD

Collection Date/Time: 09/18/2018 11:55

Field ID: 20030073

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2026300	EPA 180.1 Rev. 2.0	Turbidity	4.9		NTU	P352021	
	SM 2320 B-97	Total Alkalinity	68		mg CaCO3/L	P352056	
	SM 2540 D-97	TSS	5	I	mg/L	P352454	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P352059	
2026304	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P352274	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.74		mg N/L	P352066	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.31		mg N/L	P352208	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P351972	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P352196	
2026308	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.079		mg P/L	P351916	
2026348	EPA 200.7 Rev. 4.4	Iron	360		ug/L	P352015	
		Zinc	5.4	I	ug/L	P352015	
	EPA 200.8 Rev. 5.4	Arsenic	2.10		ug/L	P352015	
		Cadmium	0.020	U	ug/L	P352015	
		Chromium	0.48	I	ug/L	P352015	
		Copper	1.52		ug/L	P352015	
		Lead	1.11		ug/L	P352015	
		Nickel	0.51	I	ug/L	P352015	
		Silver	0.010	U	ug/L	P352898	

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: ARLINGTON RIVER AT CARLTON OAKS

Collection Date/Time: 09/18/2018 11:40

Field ID: G2NE1152

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2026301	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P352021	
	SM 2320 B-97	Total Alkalinity	68		mg CaCO3/L	P352056	
	SM 2540 D-97	TSS	4	I	mg/L	P352454	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P352059	
2026305	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P352274	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P352067	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.30		mg N/L	P352208	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P351972	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P352196	
2026309	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.081		mg P/L	P351916	
2026349	EPA 200.7 Rev. 4.4	Iron	400		ug/L	P352015	
		Zinc	5.5	I	ug/L	P352015	
	EPA 200.8 Rev. 5.4	Arsenic	2.04		ug/L	P352015	
		Cadmium	0.020	U	ug/L	P352015	
		Chromium	0.64	I	ug/L	P352015	
		Copper	1.55		ug/L	P352015	
		Lead	1.13		ug/L	P352015	
		Nickel	0.52	I	ug/L	P352015	
		Silver	0.010	U	ug/L	P352898	

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: LITTLE POTTSBURG CR @ MOUTH OF W
BRANCH**

Collection Date/Time: 09/18/2018 12:35

Field ID: 20030814

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2026302	EPA 180.1 Rev. 2.0	Turbidity	5.7		NTU	P352021	
	SM 2320 B-97	Total Alkalinity	63		mg CaCO3/L	P352056	
	SM 2540 D-97	TSS	5	I	mg/L	P352454	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P352059	
2026306	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P352274	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.88		mg N/L	P352067	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P352208	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P351973	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P352196	
2026310	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.091		mg P/L	P351916	
2026350	EPA 200.7 Rev. 4.4	Iron	480		ug/L	P352015	
		Zinc	6.8	I	ug/L	P352015	
	EPA 200.8 Rev. 5.4	Arsenic	2.62		ug/L	P352015	
		Cadmium	0.020	U	ug/L	P352015	
		Chromium	0.69	I	ug/L	P352015	
		Copper	1.68		ug/L	P352015	
		Lead	0.91		ug/L	P352015	
		Nickel	0.39	I	ug/L	P352015	
		Silver	0.010	U	ug/L	P352898	

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: LITTLE POTTSBURG CREEK AT ATLANTIC BLVD

Collection Date/Time: 09/18/2018 12:15

Field ID: 20030679

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2026303	EPA 180.1 Rev. 2.0	Turbidity	8.2	A	NTU	P352021	
	SM 2320 B-97	Total Alkalinity	68		mg CaCO3/L	P352056	
	SM 2540 D-97	TSS	9	I	mg/L	P352454	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P352059	
2026307	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P352274	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.98		mg N/L	P352067	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P352208	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P351973	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P352196	
2026311	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.088		mg P/L	P351916	
2026351	EPA 200.7 Rev. 4.4	Iron	520		ug/L	P352015	
		Zinc	6.0	I	ug/L	P352015	
	EPA 200.8 Rev. 5.4	Arsenic	1.87		ug/L	P352015	
		Cadmium	0.020	U	ug/L	P352015	
		Chromium	0.67	I	ug/L	P352015	
		Copper	1.56		ug/L	P352015	
		Lead	1.20		ug/L	P352015	
		Nickel	0.42	I	ug/L	P352015	
		Silver	0.010	U	ug/L	P352662	

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: BIG POTTSBURG CR ATL BLVD

Collection Date/Time: 09/18/2018 11:15

Field ID: 20030072

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2026312	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P352021	
	SM 2320 B-97	Total Alkalinity	78		mg CaCO3/L	P352057	
	SM 2540 D-97	TSS	4	I	mg/L	P352454	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P352233	
2026314	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P352274	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.81		mg N/L	P352067	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.27		mg N/L	P352208	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P351973	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P352196	
2026316	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.084		mg P/L	P351916	
2026346	EPA 8321B	2,4-D	0.0096		ug/L	P351783	
		Bentazon	0.022		ug/L	P351783	
		MCP	0.0020	U	ug/L	P351783	
		Triclopyr**	0.0040	U	ug/L	P351783	
		Imidacloprid	0.048		ug/L	P351783	
		Diuron	0.0082		ug/L	P351783	
		Pyraclostrobin**	0.0020	U	ug/L	P351783	
		Primidone**	0.0040	U	ug/L	P351783	
		Linuron	0.0040	U	ug/L	P351783	
		Acetaminophen**	0.0080	U	ug/L	P351783	
		Fenuron	0.016	U	ug/L	P351783	
		Imazapyr**	0.12		ug/L	P351783	
		Carbamazepine**	0.0021	I	ug/L	P351783	
		Fluridone**	0.022		ug/L	P351783	
		Hydrocodone**	8.0E-04	U	ug/L	P351783	
		Naproxen**	0.0080	U	ug/L	P351783	
		Ibuprofen**	0.020	U	ug/L	P351783	
		Sucralose**	0.59		ug/L	P351652	
		Acesulfame K**	0.10	U	ug/L	P351652	
2026352	EPA 200.7 Rev. 4.4	Iron	490		ug/L	P352015	
		Zinc	5.0	U	ug/L	P352015	
	EPA 200.8 Rev. 5.4	Arsenic	2.39		ug/L	P352015	
		Cadmium	0.020	U	ug/L	P352015	
		Chromium	0.56	I	ug/L	P352015	
		Copper	1.61		ug/L	P352015	
		Lead	1.26		ug/L	P352015	
		Nickel	0.73	I	ug/L	P352015	
		Silver	0.010	U	ug/L	P352662	

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: BIG POTTSBURG @ 2000M S ATLANTIC BLVD Collection Date/Time: 09/18/2018 10:50

Field ID: 20030816

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2026313	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P352021	
	SM 2320 B-97	Total Alkalinity	84		mg CaCO3/L	P352057	
	SM 2540 D-97	TSS	4	IA	mg/L	P352455	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P352233	
2026315	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P352274	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.83		mg N/L	P352067	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P352208	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P351973	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P352196	
2026317	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.085		mg P/L	P351916	
2026347	EPA 8321B	2,4-D	0.0095		ug/L	P351783	
		Bentazon	0.028		ug/L	P351783	
		MCP	0.0020	U	ug/L	P351783	
		Triclopyr**	0.0040	U	ug/L	P351783	
		Imidacloprid	0.033		ug/L	P351783	
		Diuron	0.0084		ug/L	P351783	
		Pyraclostrobin**	0.0020	U	ug/L	P351783	
		Primidone**	0.0040	U	ug/L	P351783	
		Linuron	0.0040	U	ug/L	P351783	
		Acetaminophen**	0.0080	U	ug/L	P351783	
		Fenuron	0.016	U	ug/L	P351783	
		Imazapyr**	0.14		ug/L	P351783	
		Carbamazepine**	0.0016	I	ug/L	P351783	
		Fluridone**	0.027		ug/L	P351783	
		Hydrocodone**	8.0E-04	U	ug/L	P351783	
		Naproxen**	0.0080	U	ug/L	P351783	
		Ibuprofen**	0.020	U	ug/L	P351783	
		Sucralose**	0.48		ug/L	P351652	
		Acesulfame K**	0.10	U	ug/L	P351652	
2026353	EPA 200.7 Rev. 4.4	Iron	610		ug/L	P352015	
		Zinc	5.0	U	ug/L	P352015	
	EPA 200.8 Rev. 5.4	Arsenic	2.03		ug/L	P352015	
		Cadmium	0.020	U	ug/L	P352015	
		Chromium	0.52	I	ug/L	P352015	
		Copper	1.41		ug/L	P352015	
		Lead	1.22		ug/L	P352015	
		Nickel	0.83		ug/L	P352015	
		Silver	0.010	U	ug/L	P352662	

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: P352021

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P352015

Component	Result	Code	Units
Iron	30	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352015

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352662

Component	Result	Code	Units
Silver	0.010	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352898

Component	Result	Code	Units
Silver	0.010	U	ug/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P352274

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352066

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352067

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P352208

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351972

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351973

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351916

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

Reference Method: EPA 8321B
Batch ID: P351652

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

Reference Method: EPA 8321B
Batch ID: P351783

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P352056

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

Reference Method: SM 2320 B-97
Batch ID: P352057

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

Reference Method: SM 2540 D-97
Batch ID: P352454

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P352455

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P352059

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P352233

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P352196

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: P352015

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	112		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352015

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	101		P	85 - 115
Cadmium	100		P	85 - 115
Chromium	96.7		P	85 - 115
Copper	99.2		P	85 - 115
Lead	95.8		P	85 - 115
Nickel	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352662

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Silver	98.2		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352898

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Silver	95.8		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P352274

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352066

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352067

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P352208

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P351972

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P351973

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: P351916

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

Reference Method: EPA 8321B
 Batch ID: P351652

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	91.4		P	40 - 150
Sucralose	122		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P351783

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	77.6		P	40 - 150
Acetaminophen	77.3		P	30 - 150
Bentazon	70.6		P	30 - 150
Carbamazepine	70.9		P	40 - 150
Diuron	63.7		P	40 - 150
Fenuron	93.5		P	40 - 150
Fluridone	85.5		P	40 - 150
Hydrocodone	89.5		P	40 - 150
Ibuprofen	89.7		P	40 - 150
Imazapyr	74.5		P	40 - 150
Imidacloprid	77.6		P	40 - 160
Linuron	56.8		P	40 - 150
MCPP	101		P	40 - 150
Naproxen	70.2		P	40 - 150
Primidone	63.8		P	40 - 150
Pyraclostrobin	68.4		P	40 - 150
Triclopyr	94.0		P	40 - 150

Reference Method: SM 2320 B-97
 Batch ID: P352056

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P352057

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

Reference Method: SM 4500 F-C-97
Batch ID: P352059

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.7		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P352233

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.6		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P352196

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P352015

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2026324	Iron	107		P	80 - 120
2026324	Zinc	102		P	80 - 120
2026566	Iron	107	104	P/P	80 - 120
2026566	Zinc	99.1	97.9	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352015

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2026324	Arsenic	106		P	80 - 120
2026324	Cadmium	102		P	80 - 120
2026324	Chromium	96.2		P	80 - 120
2026324	Copper	99.7		P	80 - 120
2026324	Lead	99.6		P	80 - 120
2026324	Nickel	99.0		P	80 - 120
2026566	Arsenic	100	99.7	P/P	80 - 120
2026566	Cadmium	99.7	97.5	P/P	80 - 120
2026566	Chromium	96.3	96.5	P/P	80 - 120
2026566	Copper	98.0	97.7	P/P	80 - 120
2026566	Lead	96.5	96.0	P/P	80 - 120
2026566	Nickel	97.5	97.4	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352662

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2026444	Silver	98.0	98.1	P/P	80 - 120
2026834	Silver	97.7		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352898

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027624	Silver	95.0	95.0	P/P	80 - 120
2027661	Silver	95.5		P	80 - 120

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P352274

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2026289	Ammonia-N	96.4	99.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352066

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2026289	Kjeldahl Nitrogen	102	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352067

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352067

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2026378	Kjeldahl Nitrogen	102	97.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P352208

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2026282	NO2NO3-N	102	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351972

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2026288	Total-P	98.3	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351973

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2026378	Total-P	98.3	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351916

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2026290	O-Phosphate-P	95.2	96.6	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P351652

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025880	Acesulfame K	54.9	56.4	P/P	40 - 150
2025880	Sucralose	122	127	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P351783

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025880	2,4-D	116	95.7	P/P	40 - 150
2025880	Acetaminophen	76.8	91.9	P/P	30 - 150
2025880	Bentazon	81.4	53.0	P/P	30 - 150
2025880	Carbamazepine	55.7	56.8	P/P	40 - 150
2025880	Diuron	45.9	50.3	P/P	40 - 150
2025880	Fenuron	60.5	64.8	P/P	40 - 150
2025880	Fluridone	77.4	91.4	P/P	40 - 150
2025880	Hydrocodone	77.5	93.3	P/P	40 - 150
2025880	Ibuprofen	116	121	P/P	40 - 150
2025880	Imazapyr	79.7	94.2	P/P	40 - 150
2025880	Imidacloprid	96.5	119	P/P	40 - 160
2025880	Linuron	47.2	53.3	P/P	40 - 150
2025880	MCP	127	135	P/P	40 - 150
2025880	Naproxen	92.2	88.3	P/P	40 - 150
2025880	Primidone	62.0	65.9	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P351783

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025880	Pyraclostrobin	80.8	93.5	P/P	40 - 150
2025880	Triclopyr	138	135	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P352059

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2026224	Fluoride	101	99.9	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P352233

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2026507	Fluoride	93.9	95.7	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P352196

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2026233	Organic Carbon	107		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P352021

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026303	Turbidity	1.34	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P352015

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026566	Iron	2.36	Spike	P	0 - 20
2026566	Zinc	1.24	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352015

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026566	Arsenic	0.449	Spike	P	0 - 20
2026566	Cadmium	2.24	Spike	P	0 - 20
2026566	Chromium	0.197	Spike	P	0 - 20
2026566	Copper	0.296	Spike	P	0 - 20
2026566	Lead	0.522	Spike	P	0 - 20
2026566	Nickel	0.0183	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026444	Silver	0.148	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352898

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027624	Silver	0.0318	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P352274

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026289	Ammonia-N	2.69	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352066

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026289	Kjeldahl Nitrogen	1.40	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352067

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026378	Kjeldahl Nitrogen	4.12	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P352208

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026282	NO2NO3-N	1.31	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026288	Total-P	0.517	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351973

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026378	Total-P	2.19	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351916

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026290	O-Phosphate-P	1.36	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P351652

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025880	Acesulfame K	2.84	Spike	P	0 - 30
2025880	Sucralose	1.80	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P351783

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025880	2,4-D	16.6	Spike	P	0 - 30
2025880	Acetaminophen	17.9	Spike	P	0 - 30
2025880	Bentazon	25.0	Spike	P	0 - 30
2025880	Carbamazepine	1.98	Spike	P	0 - 30
2025880	Diuron	9.19	Spike	P	0 - 30
2025880	Fenuron	6.88	Spike	P	0 - 30
2025880	Fluridone	16.4	Spike	P	0 - 30
2025880	Hydrocodone	18.6	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P351783

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025880	Ibuprofen	4.44	Spike	P	0 - 30
2025880	Imazapyr	9.36	Spike	P	0 - 30
2025880	Imidacloprid	16.1	Spike	P	0 - 30
2025880	Linuron	12.0	Spike	P	0 - 30
2025880	MCP	6.08	Spike	P	0 - 30
2025880	Naproxen	4.32	Spike	P	0 - 30
2025880	Primidone	5.41	Spike	P	0 - 30
2025880	Pyraclostrobin	14.5	Spike	P	0 - 30
2025880	Triclopyr	1.95	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P352056

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026224	Total Alkalinity	0.186	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P352057

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026507	Total Alkalinity	0.527	Sample	P	0 - 1.6

Reference Method: SM 4500 F-C-97
Batch ID: P352059

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026224	Fluoride	0.513	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P352233

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026507	Fluoride	0.972	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P352196

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026233	Organic Carbon	0.901	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 2026346
Field Sample ID: 20030072

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	97.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	110	P	30 - 160
EPA 8321B	Carbamazepine-d10	64.4	P	30 - 160
EPA 8321B	Diuron-d6	63.0	P	30 - 160
EPA 8321B	Endothall-d6	154	P	40 - 160
EPA 8321B	Ibuprofen-d3	73.6	P	30 - 160
EPA 8321B	Primidone-d5	79.3	P	30 - 160
EPA 8321B	Sucralose-d6	149	P	40 - 160

Lab Sample ID: 2026347
Field Sample ID: 20030816

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	80.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	91.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	59.9	P	30 - 160
EPA 8321B	Diuron-d6	55.6	P	30 - 160
EPA 8321B	Endothall-d6	150	P	40 - 160
EPA 8321B	Ibuprofen-d3	73.2	P	30 - 160
EPA 8321B	Primidone-d5	65.2	P	30 - 160
EPA 8321B	Sucralose-d6	143	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A86590

Included Lab Sample IDs: 2026308, 2026309, 2026310, 2026311, 2026316, 2026317

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

Reference Method: EPA 8321B

Run ID: A86591

Included Lab Sample IDs: 2026346, 2026347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	89.6	90.7	P/P	60 - 150

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A86621

Included Lab Sample IDs: 2026300, 2026301, 2026302, 2026303, 2026312, 2026313

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86627

Included Lab Sample IDs: 2026304, 2026305, 2026306, 2026307, 2026314, 2026315

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	102	P/P	90 - 110
Total-P	102	103	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A86635

Included Lab Sample IDs: 2026300, 2026301, 2026302, 2026303, 2026312, 2026313

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.1	P/P	90 - 110
Total Alkalinity	103	99.8	P/P	90 - 110
Total Alkalinity	99.1	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A86635

Included Lab Sample IDs: 2026300, 2026301, 2026302, 2026303

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

Reference Method: EPA 8321B

Run ID: A86652

Included Lab Sample IDs: 2026346, 2026347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	113	116	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A86655

Included Lab Sample IDs: 2026348, 2026349, 2026350, 2026351, 2026352, 2026353

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	102	102	P/P	90 - 110
Zinc	101	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A86677

Included Lab Sample IDs: 2026304, 2026305, 2026306, 2026307, 2026314, 2026315

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	99.5	P/P	90 - 110
Kjeldahl Nitrogen	99.5	97.9	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A86696

Included Lab Sample IDs: 2026346, 2026347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	71.6	77.5	P/P	60 - 160
Carbamazepine	106	103	P/P	60 - 160
Diuron	101	98.9	P/P	60 - 150
Fenuron	95.9	98.5	P/P	60 - 150
Fluridone	108	109	P/P	60 - 160
Hydrocodone	94.0	94.9	P/P	60 - 150
Imazapyr	85.1	70.0	P/P	50 - 150
Imidacloprid	79.9	80.2	P/P	60 - 150
Linuron	99.2	101	P/P	60 - 150
Primidone	72.0	76.5	P/P	60 - 150
Pyraclostrobin	97.8	112	P/P	60 - 150

Reference Method: SM 5310 B-00

Run ID: A86702

Included Lab Sample IDs: 2026304, 2026305, 2026306, 2026307, 2026314, 2026315

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.8	94.8	P/P	90 - 110
Organic Carbon	96.6	94.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A86710

Included Lab Sample IDs: 2026304, 2026305, 2026306, 2026307, 2026314, 2026315

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO ₂ NO ₃ -N	102	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A86715

Included Lab Sample IDs: 2026312, 2026313

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.0	97.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A86725

Included Lab Sample IDs: 2026304, 2026305, 2026306, 2026307, 2026314, 2026315

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	105	P/P	90 - 110
Ammonia-N	98.6	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A86770

Included Lab Sample IDs: 2026346, 2026347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	118	124	P/P	50 - 150
Bentazon	135	136	P/P	50 - 160
Ibuprofen	89.8	120	P/P	50 - 160
MCP	110	103	P/P	50 - 150
Naproxen	103	119	P/P	50 - 160
Triclopyr	123	113	P/P	50 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A86804

Included Lab Sample IDs: 2026348, 2026349, 2026350, 2026351, 2026352, 2026353

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	99.2	96.6	P/P	90 - 110
Cadmium	95.7	95.4	P/P	90 - 110
Copper	99.5	95.6	P/P	90 - 110
Lead	97.2	95.2	P/P	90 - 110
Nickel	99.6	95.4	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A86828

Included Lab Sample IDs: 2026348, 2026349, 2026350, 2026351, 2026352, 2026353

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	94.2	95.7	P/P	90 - 110
Chromium	95.7	94.9	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A86934

Included Lab Sample IDs: 2026351, 2026352, 2026353

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	94.7	92.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A87002

Included Lab Sample IDs: 2026348, 2026349, 2026350

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	93.9	93.4	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 SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					1.34	
EPA 200.7 Rev. 4.4	Iron	112	107	107	104		2.36
	Zinc	102	102	99.1	97.9		1.24
EPA 200.8 Rev. 5.4	Arsenic	101	106	100	99.7		0.449
	Cadmium	100	102	99.7	97.5		2.24
	Chromium	96.7	96.2	96.3	96.5		0.197
	Copper	99.2	99.7	98.0	97.7		0.296
	Lead	95.8	99.6	96.5	96.0		0.522
	Nickel	100	99.0	97.5	97.4		0.0183
	Silver	98.2	98.0	98.1	97.7		0.148
	Silver	95.8	95.0	95.0	95.5		0.0318
EPA 350.1 Rev. 2.0	Ammonia-N	97.9	96.4	99.3			2.69
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	110	102	99.5			1.40
	Kjeldahl Nitrogen	104	102	97.7			4.12
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102	104			1.31
EPA 365.1 Rev. 2.0	Total-P	98.2	98.3	98.8			0.517
	Total-P	99.8	98.3	100			2.19
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.4	95.2	96.6			1.36
EPA 8321B	2,4-D	77.6	116	95.7			16.6
	Acesulfame K	91.4	54.9	56.4			2.84
	Acetaminophen	77.3	76.8	91.9			17.9
	Bentazon	70.6	81.4	53.0			25.0
	Carbamazepine	70.9	55.7	56.8			1.98
	Diuron	63.7	45.9	50.3			9.19
	Fenuron	93.5	60.5	64.8			6.88
	Fluridone	85.5	77.4	91.4			16.4
	Hydrocodone	89.5	77.5	93.3			18.6
	Ibuprofen	89.7	116	121			4.44
	Imazapyr	74.5	79.7	94.2			9.36
	Imidacloprid	77.6	96.5	119			16.1
	Linuron	56.8	47.2	53.3			12.0
	MCPP	101	127	135			6.08
	Naproxen	70.2	92.2	88.3			4.32
	Primidone	63.8	62.0	65.9			5.41
	Pyraclostrobin	68.4	80.8	93.5			14.5
	Sucralose	122	122	127			1.80
	Triclopyr	94.0	138	135			1.95
SM 2320 B-97	Total Alkalinity	102				0.186	
	Total Alkalinity	103				0.527	
SM 4500 F-C-97	Fluoride	99.7	101	99.9			0.513
	Fluoride	95.6	93.9	95.7			0.972
SM 5310 B-00	Organic Carbon	98.4	107				0.901

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2026300, 2026301, 2026302, 2026303, 2026312, 2026313
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2026348, 2026349, 2026350, 2026351, 2026352, 2026353
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2026348, 2026349, 2026350, 2026351, 2026352, 2026353
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2026304, 2026305, 2026306, 2026307, 2026314, 2026315

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2026304, 2026305, 2026306, 2026307, 2026314, 2026315
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2026304, 2026305, 2026306, 2026307, 2026314, 2026315
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2026304, 2026305, 2026306, 2026307, 2026314, 2026315
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2026308, 2026309, 2026310, 2026311, 2026316, 2026317
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2026346, 2026347
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2026300, 2026301, 2026302, 2026303, 2026312, 2026313
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2026300, 2026301, 2026302, 2026303, 2026312, 2026313
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2026300, 2026301, 2026302, 2026303, 2026312, 2026313
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2026304, 2026305, 2026306, 2026307, 2026314, 2026315

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	09/19/2018			09/19/2018 14:56	Megan Treadwell	2026300, 2026301, 2026302, 2026303, 2026312, 2026313
EPA 200.7 Rev. 4.4	09/19/2018	09/20/2018 17:45	Elliott D. Healy	09/21/2018 18:07	Betina Topolski	2026348
	09/19/2018	09/20/2018 17:45	Elliott D. Healy	09/21/2018 18:18	Betina Topolski	2026349
	09/19/2018	09/20/2018 17:45	Elliott D. Healy	09/21/2018 18:29	Betina Topolski	2026350
	09/19/2018	09/20/2018 17:45	Elliott D. Healy	09/21/2018 18:41	Betina Topolski	2026351
	09/19/2018	09/20/2018 17:45	Elliott D. Healy	09/21/2018 18:52	Betina Topolski	2026352
	09/19/2018	09/20/2018 17:45	Elliott D. Healy	09/21/2018 19:03	Betina Topolski	2026353
EPA 200.8 Rev. 5.4	09/19/2018	09/20/2018 17:45	Elliott D. Healy	10/01/2018 02:50	Robert K Palmer	2026348
	09/19/2018	09/20/2018 17:45	Elliott D. Healy	10/01/2018 02:59	Robert K Palmer	2026349
	09/19/2018	09/20/2018 17:45	Elliott D. Healy	10/01/2018 03:09	Robert K Palmer	2026350
	09/19/2018	09/20/2018 17:45	Elliott D. Healy	10/01/2018 03:18	Robert K Palmer	2026351
	09/19/2018	09/20/2018 17:45	Elliott D. Healy	10/01/2018 03:28	Robert K Palmer	2026352
	09/19/2018	09/20/2018 17:45	Elliott D. Healy	10/01/2018 03:37	Robert K Palmer	2026353
	09/19/2018	09/20/2018 17:45	Elliott D. Healy	10/01/2018 16:28	Robert K Palmer	2026348
	09/19/2018	09/20/2018 17:45	Elliott D. Healy	10/01/2018 16:46	Robert K Palmer	2026349
	09/19/2018	09/20/2018 17:45	Elliott D. Healy	10/01/2018 16:52	Robert K Palmer	2026350
	09/19/2018	09/20/2018 17:45	Elliott D. Healy	10/01/2018 16:59	Robert K Palmer	2026351
	09/19/2018	09/20/2018 17:45	Elliott D. Healy	10/01/2018 17:05	Robert K Palmer	2026352
	09/19/2018	09/20/2018 17:45	Elliott D. Healy	10/01/2018 17:11	Robert K Palmer	2026353
	09/19/2018	10/03/2018 12:17	Devin Thornton	10/04/2018 22:26	Robert K Palmer	2026351
	09/19/2018	10/03/2018 12:17	Devin Thornton	10/04/2018 22:32	Robert K Palmer	2026352
	09/19/2018	10/03/2018 12:17	Devin Thornton	10/04/2018 22:38	Robert K Palmer	2026353
	09/19/2018	10/08/2018 10:04	Devin Thornton	10/08/2018 20:10	Robert K Palmer	2026348
	09/19/2018	10/08/2018 10:04	Devin Thornton	10/08/2018 20:16	Robert K Palmer	2026349
	09/19/2018	10/08/2018 10:04	Devin Thornton	10/08/2018 20:22	Robert K Palmer	2026350
EPA 350.1 Rev. 2.0	09/19/2018			09/24/2018 11:26	Ping Hua	2026304
	09/19/2018			09/24/2018 11:28	Ping Hua	2026305
	09/19/2018			09/24/2018 11:35	Ping Hua	2026306
	09/19/2018			09/24/2018 11:37	Ping Hua	2026307
	09/19/2018			09/24/2018 11:38	Ping Hua	2026314
	09/19/2018			09/24/2018 11:40	Ping Hua	2026315
EPA 351.2 Rev. 2.0	09/19/2018	09/21/2018 09:50	Adrian Shelby	09/24/2018 12:31	Joseph Suarez	2026304
	09/19/2018	09/21/2018 09:50	Adrian Shelby	09/24/2018 12:39	Joseph Suarez	2026305
	09/19/2018	09/21/2018 09:50	Adrian Shelby	09/24/2018 12:41	Joseph Suarez	2026306
	09/19/2018	09/21/2018 09:50	Adrian Shelby	09/24/2018 12:42	Joseph Suarez	2026307
	09/19/2018	09/21/2018 09:50	Adrian Shelby	09/24/2018 12:44	Joseph Suarez	2026314
	09/19/2018	09/21/2018 09:50	Adrian Shelby	09/24/2018 12:45	Joseph Suarez	2026315
EPA 353.2 Rev. 2.0	09/19/2018			09/25/2018 12:52	Lauren Bottorf	2026304
	09/19/2018			09/25/2018 12:53	Lauren Bottorf	2026305

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 353.2 Rev. 2.0	09/19/2018			09/25/2018 12:54	Lauren Bottorf	2026306
	09/19/2018			09/25/2018 12:55	Lauren Bottorf	2026307
	09/19/2018			09/25/2018 12:57	Lauren Bottorf	2026314
	09/19/2018			09/25/2018 12:58	Lauren Bottorf	2026315
EPA 365.1 Rev. 2.0	09/19/2018	09/20/2018 13:10	Sima Feizi	09/21/2018 09:52	Beverly Y. Sanders	2026304
	09/19/2018	09/20/2018 13:10	Sima Feizi	09/21/2018 09:53	Beverly Y. Sanders	2026305
	09/19/2018	09/20/2018 13:10	Sima Feizi	09/21/2018 10:02	Beverly Y. Sanders	2026306
	09/19/2018	09/20/2018 13:10	Sima Feizi	09/21/2018 10:03	Beverly Y. Sanders	2026307
	09/19/2018	09/20/2018 13:10	Sima Feizi	09/21/2018 10:04	Beverly Y. Sanders	2026314
	09/19/2018	09/20/2018 13:10	Sima Feizi	09/21/2018 10:05	Beverly Y. Sanders	2026315
EPA 365.1 Rev. 2.0 dissolved	09/19/2018			09/19/2018 15:01	Julia Storbeck	2026308
	09/19/2018			09/19/2018 15:02	Julia Storbeck	2026309
	09/19/2018			09/19/2018 15:03	Julia Storbeck	2026310
	09/19/2018			09/19/2018 15:09	Julia Storbeck	2026311, 2026316
	09/19/2018			09/19/2018 15:10	Julia Storbeck	2026317
EPA 8321B	09/19/2018	09/19/2018 15:30	Mohammad Ghaffari	09/19/2018 19:36	Mohammad Ghaffari	2026346
	09/19/2018	09/19/2018 15:30	Mohammad Ghaffari	09/19/2018 19:50	Mohammad Ghaffari	2026347
	09/19/2018	09/19/2018 15:30	Mohammad Ghaffari	09/21/2018 21:12	Mohammad Ghaffari	2026346
	09/19/2018	09/19/2018 15:30	Mohammad Ghaffari	09/21/2018 21:27	Mohammad Ghaffari	2026347
	09/19/2018	09/20/2018 10:00	Hoor Shaik	09/24/2018 07:18	Mohammad Ghaffari	2026346
	09/19/2018	09/20/2018 10:00	Hoor Shaik	09/24/2018 07:52	Mohammad Ghaffari	2026347
	09/19/2018	09/20/2018 10:00	Hoor Shaik	09/27/2018 15:33	Juyoung Kim	2026346
	09/19/2018	09/20/2018 10:00	Hoor Shaik	09/27/2018 16:08	Juyoung Kim	2026347
SM 2320 B-97	09/19/2018			09/20/2018 21:00	Dale L. Simmons	2026300
	09/19/2018			09/20/2018 21:11	Dale L. Simmons	2026301
	09/19/2018			09/20/2018 21:22	Dale L. Simmons	2026302
	09/19/2018			09/20/2018 22:10	Dale L. Simmons	2026303
	09/19/2018			09/21/2018 01:09	Dale L. Simmons	2026312
SM 2540 D-97	09/19/2018			09/21/2018 01:20	Dale L. Simmons	2026313
	09/19/2018			09/21/2018 16:15	Yijie Li	2026300, 2026301, 2026302, 2026303, 2026312, 2026313
SM 4500 F-C-97	09/19/2018			09/20/2018 21:00	Dale L. Simmons	2026300
	09/19/2018			09/20/2018 21:11	Dale L. Simmons	2026301
	09/19/2018			09/20/2018 21:22	Dale L. Simmons	2026302
	09/19/2018			09/20/2018 22:10	Dale L. Simmons	2026303
	09/19/2018			09/25/2018 23:28	Dale L. Simmons	2026313
SM 5310 B-00	09/19/2018			09/25/2018 23:33	Dale L. Simmons	2026312
	09/19/2018			09/24/2018 18:14	Megan Treadwell	2026304
	09/19/2018			09/24/2018 18:28	Megan Treadwell	2026305
	09/19/2018			09/24/2018 19:09	Megan Treadwell	2026306

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	09/19/2018			09/24/2018 19:22	Megan Treadwell	2026307
	09/19/2018			09/24/2018 19:36	Megan Treadwell	2026314
	09/19/2018			09/24/2018 19:49	Megan Treadwell	2026315