

Chemical Analysis Report

WAS-SECT-2018-09-05-01

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

Event Description: **Little R., Black C., Wards C., Caney C.**

Request ID: **RQ-2018-09-03-22**

Customer: **WAS-SECT**

Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Curtis Musson

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 21-SEP-2018 12:17



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: Caney Creek Upstream of US 90

Collection Date/Time: 09/05/2018 08:30

Field ID: G1WA0014

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2022077	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P351160	
	EPA 300.0 Rev. 2.1	Chloride	6.4		mg Cl/L	P351786	
		Sulfate	0.87		mg SO4/L	P351788	
		Color (true)	140		PCU	P351177	
	SM 2320 B-97	Total Alkalinity	29		mg CaCO3/L	P351404	
	SM 2540 C-97	TDS	67		mg/L	P351550	
	SM 2540 D-97	TSS	9	I	mg/L	P351723	
	SM 4500 F-C-97	Fluoride	0.084	I	mg F/L	P351411	
2022079	EPA 350.1 Rev. 2.0	Ammonia-N	0.061		mg N/L	P351294	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.81		mg N/L	P351245	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.28		mg N/L	P351424	
	EPA 365.1 Rev. 2.0	Total-P	0.80		mg P/L	P351278	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P351440	
2022081	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.70		mg P/L	P351136	
2022102	EPA 200.7 Rev. 4.4	Calcium	7.14		mg/L	P351199	
		Iron	1.26E+03		ug/L	P351199	
		Magnesium	2.56		mg/L	P351199	
		Potassium	4.9		mg/L	P351199	
		Sodium	4.8		mg/L	P351199	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P351199	
		Arsenic	0.83		ug/L	P351199	
		Cadmium	0.020	U	ug/L	P351199	
		Chromium	1.2	I	ug/L	P351199	
		Copper	0.59	I	ug/L	P351199	
		Lead	0.39		ug/L	P351199	
		Nickel	0.45	I	ug/L	P351199	
		Silver	0.010	U	ug/L	P351199	

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: Caney Creek Upstream of US 90

Collection Date/Time: 09/05/2018 08:30

Field ID: G1WA0014

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2022099	EPA 8321B	2,4-D	0.0061	I	ug/L	P351097	MS
		Bentazon	8.0E-04	U	ug/L	P351097	
		MCP	0.0020	U	ug/L	P351097	MS
		Triclopyr**	0.0040	U	ug/L	P351097	MS
		Imidacloprid	0.0020	U	ug/L	P351097	
		Diuron	0.0020	U	ug/L	P351097	
		Pyraclostrobin**	0.0020	U	ug/L	P351097	
		Primidone**	0.0040	U	ug/L	P351097	
		Linuron	0.0040	U	ug/L	P351097	
		Acetaminophen**	0.0080	U	ug/L	P351097	
		Fenuron	0.016	U	ug/L	P351097	MS
		Imazapyr**	0.0040	U	ug/L	P351097	
		Carbamazepine**	8.0E-04	U	ug/L	P351097	
		Fluridone**	0.024		ug/L	P351097	
		Hydrocodone**	8.0E-04	U	ug/L	P351097	
		Naproxen**	0.0080	U	ug/L	P351097	
		Ibuprofen**	0.020	U	ug/L	P351097	
		Sucralose**	0.010	U	ug/L	P350994	
		Acesulfame K**	0.10	UJ	ug/L	P350994	SUR

Ref. Method and Comment:

EPA 8321B: "J" - estimation due to endothall-d6 surrogate spike recovery exceeding the control limits.

Sample Location: Caney Creek Upstream of US 90

Collection Date/Time: 09/05/2018 08:30

Field ID: G1WA0014_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2022086	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P351160	
	EPA 300.0 Rev. 2.1	Chloride	6.4		mg Cl/L	P351786	
		Sulfate	0.86		mg SO4/L	P351788	
	SM 2120 B	Color (true)	140		PCU	P351177	
	SM 2320 B-97	Total Alkalinity	29		mg CaCO3/L	P351405	
	SM 2540 C-97	TDS	65		mg/L	P351550	
	SM 2540 D-97	TSS	10	I	mg/L	P351723	
	SM 4500 F-C-97	Fluoride	0.083	I	mg F/L	P351412	
2022087	EPA 350.1 Rev. 2.0	Ammonia-N	0.061		mg N/L	P351294	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.81		mg N/L	P351245	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.28		mg N/L	P351424	
	EPA 365.1 Rev. 2.0	Total-P	0.80		mg P/L	P351278	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P351440	
2022088	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.70		mg P/L	P351136	
2022101	EPA 8321B	2,4-D	0.0056	I	ug/L	P351097	MS
		Bentazon	8.0E-04	U	ug/L	P351097	
		MCP	0.0020	U	ug/L	P351097	MS
		Triclopyr**	0.0040	U	ug/L	P351097	MS
		Imidacloprid	0.0020	U	ug/L	P351097	
		Diuron	0.0020	U	ug/L	P351097	
		Pyraclostrobin**	0.0020	U	ug/L	P351097	
		Primidone**	0.0040	U	ug/L	P351097	
		Linuron	0.0040	U	ug/L	P351097	
		Acetaminophen**	0.0080	U	ug/L	P351097	
		Fenuron	0.016	U	ug/L	P351097	MS
		Imazapyr**	0.0040	U	ug/L	P351097	
		Carbamazepine**	8.0E-04	U	ug/L	P351097	
		Fluridone**	0.024		ug/L	P351097	
		Hydrocodone**	8.0E-04	U	ug/L	P351097	
		Naproxen**	0.0080	U	ug/L	P351097	
		Ibuprofen**	0.020	U	ug/L	P351097	
		Sucralose**	0.010	U	ug/L	P350994	
		Acesulfame K**	0.10	UJ	ug/L	P350994	SUR
2022105	EPA 200.7 Rev. 4.4	Calcium	7.65		mg/L	P351199	
		Iron	1.29E+03		ug/L	P351199	
		Magnesium	2.70		mg/L	P351199	
		Potassium	5.2		mg/L	P351199	
		Sodium	5.1		mg/L	P351199	
		Zinc	5.0	U	ug/L	P351199	
	EPA 200.8 Rev. 5.4	Arsenic	0.81		ug/L	P351199	
		Cadmium	0.020	U	ug/L	P351199	
		Chromium	1.1	I	ug/L	P351199	
		Copper	0.55	I	ug/L	P351199	

Field ID: G1WA0014_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2022105	EPA 200.8 Rev. 5.4	Lead	0.32		ug/L	P351199	
		Nickel	0.39	I	ug/L	P351199	
		Silver	0.010	U	ug/L	P351199	

Ref. Method and Comment:

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

EPA 8321B: "J" - estimation due to endothall-d6 surrogate spike recovery exceeding the control limits.

Sample Location: Field Blank

Collection Date/Time: 09/05/2018 08:52

Field ID: BLANK_09052018

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2022083	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P351160	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P351786	
		Sulfate	0.20	U	mg SO4/L	P351788	
		Color (true)	2.5	U	PCU	P351177	
	SM 2120 B	Total Alkalinity	0.65	U	mg CaCO3/L	P351405	
	SM 2540 C-97	TDS	15	U	mg/L	P351547	
	SM 2540 D-97	TSS	2	U	mg/L	P351720	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P351412	
2022084	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P351294	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P351245	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P351424	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P351278	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P351440	
2022085	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P351136	
2022100	EPA 8321B	2,4-D	0.0020	U	ug/L	P351097	MS
		Bentazon	8.0E-04	U	ug/L	P351097	
		MCP	0.0020	U	ug/L	P351097	MS
		Triclopyr**	0.0040	U	ug/L	P351097	MS
		Imidacloprid	0.0020	U	ug/L	P351097	
		Diuron	0.0020	U	ug/L	P351097	
		Pyraclostrobin**	0.0020	U	ug/L	P351097	
		Primidone**	0.0040	U	ug/L	P351097	
		Linuron	0.0040	U	ug/L	P351097	
		Acetaminophen**	0.0080	U	ug/L	P351097	
		Fenuron	0.016	U	ug/L	P351097	MS
		Imazapyr**	0.0040	U	ug/L	P351097	
		Carbamazepine**	8.0E-04	U	ug/L	P351097	
		Fluridone**	4.0E-04	U	ug/L	P351097	
		Hydrocodone**	8.0E-04	U	ug/L	P351097	
		Naproxen**	0.0080	U	ug/L	P351097	
		Ibuprofen**	0.020	U	ug/L	P351097	
		Sucralose**	0.010	U	ug/L	P350994	
		Acesulfame K**	0.10	U	ug/L	P350994	
2022104	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P351199	
		Iron	30	U	ug/L	P351199	
		Magnesium	0.040	U	mg/L	P351199	
		Potassium	0.30	U	mg/L	P351199	
		Sodium	0.50	U	mg/L	P351199	
		Zinc	5.0	U	ug/L	P351199	
	EPA 200.8 Rev. 5.4	Arsenic	0.050	U	ug/L	P351199	
		Cadmium	0.020	U	ug/L	P351199	
		Chromium	0.40	U	ug/L	P351199	
		Copper	0.20	U	ug/L	P351199	

Field ID: BLANK_09052018

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2022104	EPA 200.8 Rev. 5.4	Lead	0.050	U	ug/L	P351199	
		Nickel	0.20	U	ug/L	P351199	
		Silver	0.010	U	ug/L	P351199	

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: Wards Creek Upstream of CR259

Collection Date/Time: 09/05/2018 09:25

Field ID: G1WA0074

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2022078	EPA 180.1 Rev. 2.0	Turbidity	0.55		NTU	P351160	
	EPA 300.0 Rev. 2.1	Chloride	3.6		mg Cl/L	P351786	
		Sulfate	0.20	U	mg SO4/L	P351788	
		Color (true)	170		PCU	P351177	
	SM 2320 B-97	Total Alkalinity	8.8		mg CaCO3/L	P351404	
	SM 2540 C-97	TDS	51		mg/L	P351550	
	SM 2540 D-97	TSS	2	I	mg/L	P351723	
	SM 4500 F-C-97	Fluoride	0.051	I	mg F/L	P351411	
2022080	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P351294	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P351245	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P351424	
	EPA 365.1 Rev. 2.0	Total-P	0.037		mg P/L	P351278	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P351440	
2022082	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.010		mg P/L	P351136	
2022103	EPA 200.7 Rev. 4.4	Calcium	3.69		mg/L	P351199	
		Iron	790		ug/L	P351199	
		Magnesium	1.70		mg/L	P351199	
		Potassium	1.2		mg/L	P351199	
		Sodium	2.1		mg/L	P351199	
		Zinc	5.0	U	ug/L	P351199	
	EPA 200.8 Rev. 5.4	Arsenic	0.30		ug/L	P351199	
		Cadmium	0.020	U	ug/L	P351199	
		Chromium	0.56	I	ug/L	P351199	
		Copper	0.31	I	ug/L	P351199	
		Lead	0.059	I	ug/L	P351199	
		Nickel	0.46	I	ug/L	P351199	
		Silver	0.010	U	ug/L	P351199	

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: Caney Creek Upstream of US 90

Collection Date/Time: 09/05/2018 08:30

Field ID: G1WA0014

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2022111	EPA 8321B	2,4-D	0.0062	I	ug/L	P351097	MS
		Bentazon	8.0E-04	U	ug/L	P351097	
		MCP	0.0020	U	ug/L	P351097	MS
		Triclopyr**	0.0040	U	ug/L	P351097	MS
		Imidacloprid	0.0020	U	ug/L	P351097	
		Diuron	0.0020	U	ug/L	P351097	
		Pyraclostrobin**	0.0020	U	ug/L	P351097	
		Primidone**	0.0040	U	ug/L	P351097	
		Linuron	0.0040	U	ug/L	P351097	
		Acetaminophen**	0.0080	U	ug/L	P351097	
		Fenuron	0.016	U	ug/L	P351097	MS
		Imazapyr**	0.0040	U	ug/L	P351097	
		Carbamazepine**	8.0E-04	U	ug/L	P351097	
		Fluridone**	0.024		ug/L	P351097	
		Hydrocodone**	8.0E-04	U	ug/L	P351097	
		Naproxen**	0.0080	U	ug/L	P351097	
		Ibuprofen**	0.020	U	ug/L	P351097	
		Sucralose**	0.029	I	ug/L	P351113	
		Glyphosate**	0.10	U	ug/L	P351113	
		AMPA**	0.10	U	ug/L	P351113	
		Endothall**	0.10	U	ug/L	P351113	MS
		Glufosinate**	0.10	U	ug/L	P351113	
		Acesulfame K**	0.10	U	ug/L	P351113	MS

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P351160

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P351199

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: P351199

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: P351786

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351788

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351294

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351245

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: P351424

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351278

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351136

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

Reference Method: EPA 8321B
Batch ID: P350994

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

Reference Method: EPA 8321B
Batch ID: P351097

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: EPA 8321B
Batch ID: P351113

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.10	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P351113

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P351177

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P351404

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

Reference Method: SM 2320 B-97
Batch ID: P351405

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

Reference Method: SM 2540 C-97
Batch ID: P351547

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P351550

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P351720

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P351723

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P351411

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-97

Batch ID: P351412

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00

Batch ID: P351440

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: P351199

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	111		P	85 - 115
Iron	109		P	85 - 115
Magnesium	114		P	85 - 115
Potassium	111		P	85 - 115
Sodium	112		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P351199

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	101		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	106		P	85 - 115
Copper	96.7		P	85 - 115
Lead	104		P	85 - 115
Nickel	98.7		P	85 - 115
Silver	104		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P351786

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P351788

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P351294

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P351245

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P351424

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P351278

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P351136

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

Reference Method: EPA 8321B

Batch ID: P350994

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	93.9		P	40 - 150
Sucralose	81.3		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P351097

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	110		P	40 - 150
Acetaminophen	83.2		P	30 - 150
Bentazon	105		P	30 - 150
Carbamazepine	122		P	40 - 150
Diuron	100		P	40 - 150
Fenuron	97.0		P	40 - 150
Fluridone	97.4		P	40 - 150
Hydrocodone	78.7		P	40 - 150
Ibuprofen	84.7		P	40 - 150
Imazapyr	120		P	40 - 150
Imidacloprid	115		P	40 - 160
Linuron	75.9		P	40 - 150
MCPP	111		P	40 - 150
Naproxen	103		P	40 - 150
Primidone	101		P	40 - 150
Pyraclostrobin	81.7		P	40 - 150
Triclopyr	103		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P351113

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	87.1		P	40 - 150
AMPA	107		P	40 - 150
Endothall	96.6		P	40 - 150
Glufosinate	94.5		P	40 - 150
Glyphosate	82.8		P	40 - 140
Sucralose	93.8		P	40 - 150

Reference Method: SM 2120 B

Batch ID: P351177

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

Reference Method: SM 2120 B
Batch ID: P351177

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.7		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P351404

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

Reference Method: SM 2320 B-97
Batch ID: P351405

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

Reference Method: SM 4500 F-C-97
Batch ID: P351411

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P351412

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.7		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P351440

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.0		P	85 - 115

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P351199

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021575	Calcium	113		P	80 - 120
2021575	Iron	111		P	80 - 120
2021575	Magnesium	117		P	80 - 120
2021575	Potassium	108		P	80 - 120
2021575	Sodium	111		P	80 - 120
2021575	Zinc	105		P	80 - 120
2022031	Calcium	112	111	P/P	80 - 120
2022031	Iron	111	110	P/P	80 - 120
2022031	Magnesium	114	114	P/P	80 - 120
2022031	Potassium	109	107	P/P	80 - 120
2022031	Sodium	108	107	P/P	80 - 120
2022031	Zinc	106	103	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P351199

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021575	Arsenic	104		P	80 - 120
2021575	Cadmium	106		P	80 - 120
2021575	Chromium	111		P	80 - 120
2021575	Copper	99.7		P	80 - 120
2021575	Lead	106		P	80 - 120
2021575	Nickel	102		P	80 - 120
2021575	Silver	105		P	80 - 120
2022031	Arsenic	99.9	100	P/P	80 - 120
2022031	Cadmium	103	105	P/P	80 - 120
2022031	Chromium	111	107	P/P	80 - 120
2022031	Copper	96.4	96.6	P/P	80 - 120
2022031	Lead	105	104	P/P	80 - 120
2022031	Nickel	100	97.8	P/P	80 - 120
2022031	Silver	104	104	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P351786

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021815	Chloride	97.8		P	90 - 110
2022077	Chloride	97.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P351788

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021815	Sulfate	98.2		P	90 - 110
2022077	Sulfate	99.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P351294

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022080	Ammonia-N	104	103	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351245

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022080	Kjeldahl Nitrogen	105	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351424

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022080	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351278

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022127	Total-P	102	96.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351136

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022082	O-Phosphate-P	97.0	96.4	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P350994

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021271	Acesulfame K	64.1	63.3	P/P	40 - 150
2021271	Sucralose	68.7	78.8	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P351097

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022149	2,4-D	185	187	F/F	40 - 150
2022149	Acetaminophen	81.7	89.4	P/P	30 - 150
2022149	Bentazon	80.0	83.8	P/P	30 - 150
2022149	Carbamazepine	67.6	75.7	P/P	40 - 150
2022149	Diuron	49.7	58.5	P/P	40 - 150
2022149	Fenuron	31.5	35.0	F/F	40 - 150
2022149	Fluridone	90.3	83.9	P/P	40 - 150
2022149	Hydrocodone	61.5	58.8	P/P	40 - 150
2022149	Ibuprofen	87.4	75.4	P/P	40 - 150
2022149	Imazapyr	86.0	91.1	P/P	40 - 150
2022149	Imidacloprid	51.2	92.5	P/P	40 - 160
2022149	Linuron	57.0	64.4	P/P	40 - 150
2022149	MCPP	181	186	F/F	40 - 150
2022149	Naproxen	149	149	P/P	40 - 150
2022149	Primidone	42.0	44.0	P/P	40 - 150
2022149	Pyraclostrobin	82.3	91.2	P/P	40 - 150
2022149	Triclopyr	221	235	F/F	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P351113

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022149	Acesulfame K	23.2	27.8	F/F	40 - 150
2022149	AMPA	81.7	81.9	P/P	40 - 150
2022149	Endothall	131	154	P/F	40 - 150
2022149	Glufosinate	70.2	78.7	P/P	40 - 150
2022149	Glyphosate	61.5	59.2	P/P	40 - 140
2022149	Sucralose	102	97.4	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P351411

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022229	Fluoride	97.6	97.6	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P351412

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022280	Fluoride	97.5	98.2	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P351440

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021734	Organic Carbon	98.8		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P351160

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022043	Turbidity	5.50	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P351199

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022031	Calcium	0.437	Spike	P	0 - 20
2022031	Iron	0.815	Spike	P	0 - 20
2022031	Magnesium	0.155	Spike	P	0 - 20
2022031	Potassium	1.75	Spike	P	0 - 20
2022031	Sodium	0.873	Spike	P	0 - 20
2022031	Zinc	3.54	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P351199

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022031	Arsenic	0.356	Spike	P	0 - 20
2022031	Cadmium	2.33	Spike	P	0 - 20
2022031	Chromium	3.66	Spike	P	0 - 20
2022031	Copper	0.165	Spike	P	0 - 20
2022031	Lead	0.626	Spike	P	0 - 20
2022031	Nickel	2.19	Spike	P	0 - 20
2022031	Silver	0.0735	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351786

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021815	Chloride	0.143	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351788

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021815	Sulfate	0.167	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022080	Ammonia-N	1.11	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P351245

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022080	Kjeldahl Nitrogen	0.987	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P351424

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022080	NO2NO3-N	0.475	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P351278

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022127	Total-P	3.64	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P351136

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022082	O-Phosphate-P	0.561	Spike	P	0 - 20

Reference Method: EPA 8321B
 Batch ID: P350994

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021271	Acesulfame K	1.25	Spike	P	0 - 30
2021271	Sucralose	12.2	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P351097

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022149	2,4-D	0.753	Spike	P	0 - 30
2022149	Acetaminophen	8.99	Spike	P	0 - 30
2022149	Bentazon	4.22	Spike	P	0 - 30
2022149	Carbamazepine	11.3	Spike	P	0 - 30
2022149	Diuron	3.60	Spike	P	0 - 30
2022149	Fenuron	10.4	Spike	P	0 - 30
2022149	Fluridone	6.89	Spike	P	0 - 30
2022149	Hydrocodone	4.40	Spike	P	0 - 30
2022149	Ibuprofen	14.8	Spike	P	0 - 30
2022149	Imazapyr	5.40	Spike	P	0 - 30
2022149	Imidacloprid	12.4	Spike	P	0 - 30
2022149	Linuron	12.2	Spike	P	0 - 30
2022149	MCP	2.54	Spike	P	0 - 30
2022149	Naproxen	0.467	Spike	P	0 - 30
2022149	Primidone	4.63	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P351097

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022149	Pyraclostrobin	10.3	Spike	P	0 - 30
2022149	Triclopyr	6.23	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P351113

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022149	Acesulfame K	18.3	Spike	P	0 - 30
2022149	AMPA	0.127	Spike	P	0 - 30
2022149	Endothall	16.3	Spike	P	0 - 30
2022149	Glufosinate	11.4	Spike	P	0 - 30
2022149	Glyphosate	1.12	Spike	P	0 - 30
2022149	Sucralose	4.29	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P351177

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022125	Color (true)	7.01	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P351404

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022229	Total Alkalinity	0.574	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P351405

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022280	Total Alkalinity	0.869	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P351547

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021538	TDS	6.56	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P351550

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022125	TDS	5.33	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P351411

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022229	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P351412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022280	Fluoride	0.473	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P351440

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021734	Organic Carbon	0.298	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: 2022099

Field Sample ID: G1WA0014

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	150	P	30 - 160
EPA 8321B	Acetaminophen-d4	114	P	30 - 160
EPA 8321B	Carbamazepine-d10	104	P	30 - 160
EPA 8321B	Diuron-d6	92.4	P	30 - 160
EPA 8321B	Endothall-d6	167	F	40 - 160
EPA 8321B	Ibuprofen-d3	96.0	P	30 - 160
EPA 8321B	Primidone-d5	59.6	P	30 - 160
EPA 8321B	Sucralose-d6	120	P	40 - 160

Lab Sample ID: 2022100

Field Sample ID: BLANK_09052018

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	86.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	81.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	109	P	30 - 160
EPA 8321B	Diuron-d6	99.2	P	30 - 160
EPA 8321B	Endothall-d6	114	P	40 - 160
EPA 8321B	Ibuprofen-d3	82.0	P	30 - 160
EPA 8321B	Primidone-d5	87.2	P	30 - 160
EPA 8321B	Sucralose-d6	96.7	P	40 - 160

Lab Sample ID: 2022101

Field Sample ID: G1WA0014_DUP

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	135	P	30 - 160
EPA 8321B	Acetaminophen-d4	125	P	30 - 160
EPA 8321B	Carbamazepine-d10	92.6	P	30 - 160
EPA 8321B	Diuron-d6	99.8	P	30 - 160
EPA 8321B	Endothall-d6	172	F	40 - 160
EPA 8321B	Ibuprofen-d3	89.8	P	30 - 160
EPA 8321B	Primidone-d5	59.5	P	30 - 160
EPA 8321B	Sucralose-d6	99.1	P	40 - 160

Lab Sample ID: 2022111

Field Sample ID: G1WA0014

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	152	P	30 - 160
EPA 8321B	Acetaminophen-d4	124	P	30 - 160
EPA 8321B	Carbamazepine-d10	102	P	30 - 160
EPA 8321B	Diuron-d6	95.4	P	30 - 160
EPA 8321B	Endothall-d6	143	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	87.0	P	40 - 160
EPA 8321B	Ibuprofen-d3	90.9	P	30 - 160
EPA 8321B	Primidone-d5	60.4	P	30 - 160
EPA 8321B	Sucralose-d6	117	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A86300

Included Lab Sample IDs: 2022081, 2022082, 2022085, 2022088

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	100	P/P	90 - 110
O-Phosphate-P	101	100	P/P	90 - 110
O-Phosphate-P	99.9	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A86302

Included Lab Sample IDs: 2022099, 2022100, 2022101

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	94.9	116	P/P	60 - 160

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A86309

Included Lab Sample IDs: 2022077, 2022078, 2022083, 2022086

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

Reference Method: SM 2120 B

Run ID: A86311

Included Lab Sample IDs: 2022077, 2022078, 2022083, 2022086

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	96.6	98.9	P/P	90 - 115
Color (true)	98.9	99.5	P/P	90 - 115

Reference Method: EPA 8321B

Run ID: A86330

Included Lab Sample IDs: 2022099, 2022100, 2022101

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	89.2	93.8	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A86338

Included Lab Sample IDs: 2022111

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	114	147	P/P	60 - 160
Glufosinate	96.1	103	P/P	60 - 160
Glyphosate	86.5	105	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A86350

Included Lab Sample IDs: 2022079, 2022080, 2022084, 2022087

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A86357

Included Lab Sample IDs: 2022111

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	95.3	102	P/P	60 - 150
Endothall	93.7	92.4	P/P	60 - 150

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A86361

Included Lab Sample IDs: 2022102, 2022103, 2022104, 2022105

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	103	P/P	90 - 110
Calcium	104	102	P/P	90 - 110
Iron	103	105	P/P	90 - 110
Iron	104	103	P/P	90 - 110
Magnesium	104	105	P/P	90 - 110
Magnesium	104	104	P/P	90 - 110
Potassium	106	106	P/P	90 - 110
Potassium	107	107	P/P	90 - 110
Sodium	105	106	P/P	90 - 110
Sodium	105	104	P/P	90 - 110
Zinc	101	102	P/P	90 - 110
Zinc	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86365

Included Lab Sample IDs: 2022079, 2022087

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A86368

Included Lab Sample IDs: 2022079, 2022080, 2022084, 2022087

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.7	99.4	P/P	90 - 110
Kjeldahl Nitrogen	99.4	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86370

Included Lab Sample IDs: 2022080, 2022084

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

Reference Method: EPA 8321B

Run ID: A86372

Included Lab Sample IDs: 2022099, 2022100, 2022101, 2022111

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	106	113	P/P	50 - 150
Acetaminophen	88.6	79.6	P/P	60 - 160
Bentazon	127	114	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A86372

Included Lab Sample IDs: 2022099, 2022100, 2022101, 2022111

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Carbamazepine	87.0	98.0	P/P	60 - 160
Diuron	110	122	P/P	60 - 150
Fenuron	98.8	106	P/P	60 - 150
Fluridone	114	122	P/P	60 - 160
Hydrocodone	96.4	97.6	P/P	60 - 150
Ibuprofen	89.7	107	P/P	50 - 160
Imazapyr	99.7	117	P/P	50 - 150
Imidacloprid	91.9	83.5	P/P	60 - 150
Linuron	109	110	P/P	60 - 150
MCPP	94.9	94.5	P/P	50 - 150
Naproxen	138	122	P/P	50 - 160
Primidone	91.4	101	P/P	60 - 150
Pyraclostrobin	95.4	89.9	P/P	60 - 150
Triclopyr	105	88.4	P/P	50 - 160

Reference Method: SM 2320 B-97

Run ID: A86400

Included Lab Sample IDs: 2022077, 2022078, 2022083, 2022086

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

Reference Method: SM 4500 F-C-97

Run ID: A86400

Included Lab Sample IDs: 2022077, 2022078, 2022083, 2022086

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	100	P/P	90 - 110
Fluoride	99.5	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A86403

Included Lab Sample IDs: 2022079, 2022080, 2022084, 2022087

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

Reference Method: SM 5310 B-00

Run ID: A86406

Included Lab Sample IDs: 2022079, 2022080, 2022084, 2022087

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	91.4	92.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A86410

Included Lab Sample IDs: 2022111

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	103	105	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A86537

Included Lab Sample IDs: 2022102, 2022103, 2022104, 2022105

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	94.7	95.5	P/P	90 - 110
Arsenic	95.5	94.9	P/P	90 - 110
Cadmium	96.0	97.2	P/P	90 - 110
Cadmium	96.1	96.0	P/P	90 - 110
Chromium	101	101	P/P	90 - 110
Chromium	100	101	P/P	90 - 110
Copper	92.6	93.3	P/P	90 - 110
Copper	93.3	93.3	P/P	90 - 110
Lead	103	104	P/P	90 - 110
Lead	104	103	P/P	90 - 110
Nickel	93.8	93.9	P/P	90 - 110
Nickel	93.9	93.8	P/P	90 - 110
Silver	98.9	100	P/P	90 - 110
Silver	99.4	98.9	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A86543

Included Lab Sample IDs: 2022077, 2022078, 2022083, 2022086

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	101	P/P	90 - 110
Chloride	101	102	P/P	90 - 110
Sulfate	100	101	P/P	90 - 110
Sulfate	101	101	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						5.50	
EPA 200.7 Rev. 4.4	Calcium	111	113	112	111			0.437
	Iron	109	111	110	111			0.815
	Magnesium	114	117	114	114			0.155
	Potassium	111	108	109	107			1.75
	Sodium	112	111	108	107			0.873
	Zinc	104	105	106	103			3.54
EPA 200.8 Rev. 5.4	Arsenic	101	104	99.9	100			0.356
	Cadmium	103	106	103	105			2.33
	Chromium	106	111	111	107			3.66
	Copper	96.7	99.7	96.4	96.6			0.165
	Lead	104	106	105	104			0.626
	Nickel	98.7	102	100	97.8			2.19
	Silver	104	105	104	104			0.0735
EPA 300.0 Rev. 2.1	Chloride	100	97.8	97.7			0.143	
	Sulfate	99.2	98.2	99.1			0.167	
EPA 350.1 Rev. 2.0	Ammonia-N	101	104	103				1.11
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	105	103				0.987
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	103	103				0.475
EPA 365.1 Rev. 2.0	Total-P	101	102	96.4				3.64
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	97.0	96.4				0.561
EPA 8321B	2,4-D	110	185	187				0.753
	Acesulfame K	93.9	64.1	63.3				1.25
	Acesulfame K	87.1	23.2	27.8				18.3
	Acetaminophen	83.2	81.7	89.4				8.99
	AMPA	107	81.7	81.9				0.127
	Bentazon	105	80.0	83.8				4.22
	Carbamazepine	122	67.6	75.7				11.3
	Diuron	100	49.7	58.5				3.60
	Endothall	96.6	131	154				16.3
	Fenuron	97.0	31.5	35.0				10.4
	Fluridone	97.4	90.3	83.9				6.89
	Glufosinate	94.5	70.2	78.7				11.4
	Glyphosate	82.8	61.5	59.2				1.12
	Hydrocodone	78.7	61.5	58.8				4.40
	Ibuprofen	84.7	87.4	75.4				14.8
	Imazapyr	120	86.0	91.1				5.40
	Imidacloprid	115	51.2	92.5				12.4
	Linuron	75.9	57.0	64.4				12.2
	MCPP	111	181	186				2.54
	Naproxen	103	149	149				0.467
	Primidone	101	42.0	44.0				4.63
	Pyraclostrobin	81.7	82.3	91.2				10.3
	Sucralose	81.3	68.7	78.8				12.2
	Sucralose	93.8	102	97.4				4.29
	Triclopyr	103	221	235				6.23
SM 2120 B	Color (true)	98.7					7.01	
SM 2320 B-97	Total Alkalinity	103					0.574	
	Total Alkalinity	103					0.869	
SM 2540 C-97	TDS						6.56	
	TDS						5.33	
SM 4500 F-C-97	Fluoride	98.2	97.6	97.6				0.0
	Fluoride	98.7	97.5	98.2				0.473
SM 5310 B-00	Organic Carbon	94.0	98.8					0.298

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2022077, 2022078, 2022083, 2022086
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2022102, 2022103, 2022104, 2022105
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2022102, 2022103, 2022104, 2022105
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2022077, 2022078, 2022083, 2022086
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2022077, 2022078, 2022083, 2022086
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2022079, 2022080, 2022084, 2022087
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2022079, 2022080, 2022084, 2022087
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2022079, 2022080, 2022084, 2022087
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2022079, 2022080, 2022084, 2022087
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2022081, 2022082, 2022085, 2022088
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2022099, 2022100, 2022101, 2022111
SM 2120 B / E31780	True Color measured at 450 nm	2022077, 2022078, 2022083, 2022086
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2022077, 2022078, 2022083, 2022086
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2022077, 2022078, 2022083, 2022086
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2022077, 2022078, 2022083, 2022086
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2022077, 2022078, 2022083, 2022086
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2022079, 2022080, 2022084, 2022087

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	09/05/2018			09/05/2018 16:03	Megan Treadwell	2022077, 2022078, 2022083, 2022086
EPA 200.7 Rev. 4.4	09/05/2018	09/06/2018 17:15	Elliott D. Healy	09/07/2018 20:10	Martin Acosta	2022104
	09/05/2018	09/06/2018 17:15	Elliott D. Healy	09/07/2018 22:29	Martin Acosta	2022102
	09/05/2018	09/06/2018 17:15	Elliott D. Healy	09/07/2018 22:35	Martin Acosta	2022103
	09/05/2018	09/06/2018 17:15	Elliott D. Healy	09/07/2018 22:39	Martin Acosta	2022105
EPA 200.8 Rev. 5.4	09/05/2018	09/06/2018 17:15	Elliott D. Healy	09/14/2018 18:57	Allison Taylor	2022104
	09/05/2018	09/06/2018 17:15	Elliott D. Healy	09/14/2018 21:31	Allison Taylor	2022102
	09/05/2018	09/06/2018 17:15	Elliott D. Healy	09/14/2018 21:40	Allison Taylor	2022103
	09/05/2018	09/06/2018 17:15	Elliott D. Healy	09/14/2018 21:50	Allison Taylor	2022105
EPA 300.0 Rev. 2.1	09/05/2018			09/13/2018 14:47	Lipi Saha	2022077
	09/05/2018			09/13/2018 17:24	Lipi Saha	2022078
	09/05/2018			09/13/2018 17:36	Lipi Saha	2022083
	09/05/2018			09/13/2018 17:48	Lipi Saha	2022086
EPA 350.1 Rev. 2.0	09/05/2018			09/07/2018 11:22	Ping Hua	2022079
	09/05/2018			09/07/2018 11:27	Ping Hua	2022080
	09/05/2018			09/07/2018 11:28	Ping Hua	2022087
	09/05/2018			09/07/2018 11:45	Ping Hua	2022084
EPA 351.2 Rev. 2.0	09/05/2018	09/07/2018 09:40	Adrian Shelby	09/10/2018 10:25	Joseph Suarez	2022079
	09/05/2018	09/07/2018 09:40	Adrian Shelby	09/10/2018 10:27	Joseph Suarez	2022080
	09/05/2018	09/07/2018 09:40	Adrian Shelby	09/10/2018 10:34	Joseph Suarez	2022084
	09/05/2018	09/07/2018 09:40	Adrian Shelby	09/10/2018 10:36	Joseph Suarez	2022087
EPA 353.2 Rev. 2.0	09/05/2018			09/11/2018 12:18	Lauren Bottorf	2022080
	09/05/2018			09/11/2018 12:24	Lauren Bottorf	2022084
	09/05/2018			09/11/2018 12:25	Lauren Bottorf	2022079
	09/05/2018			09/11/2018 12:26	Lauren Bottorf	2022087
EPA 365.1 Rev. 2.0	09/05/2018	09/07/2018 11:52	Sima Feizi	09/10/2018 09:39	Beverly Y. Sanders	2022079
	09/05/2018	09/07/2018 11:52	Sima Feizi	09/10/2018 09:41	Beverly Y. Sanders	2022087
	09/05/2018	09/07/2018 11:52	Sima Feizi	09/10/2018 12:53	Beverly Y. Sanders	2022084
	09/05/2018	09/07/2018 11:52	Sima Feizi	09/10/2018 12:54	Beverly Y. Sanders	2022080
EPA 365.1 Rev. 2.0 dissolved	09/05/2018			09/05/2018 16:49	Julia Storbeck	2022082
	09/05/2018			09/05/2018 17:10	Julia Storbeck	2022085
	09/05/2018			09/05/2018 17:47	Julia Storbeck	2022081
	09/05/2018			09/05/2018 17:48	Julia Storbeck	2022088
EPA 8321B	09/05/2018	09/05/2018 13:30	Mohammad Ghaffari	09/05/2018 15:57	Mohammad Ghaffari	2022100
	09/05/2018	09/05/2018 13:30	Mohammad Ghaffari	09/05/2018 16:12	Mohammad Ghaffari	2022099
	09/05/2018	09/05/2018 13:30	Mohammad Ghaffari	09/05/2018 16:27	Mohammad Ghaffari	2022101
	09/05/2018	09/05/2018 13:30	Mohammad Ghaffari	09/06/2018 16:36	Mohammad Ghaffari	2022100
	09/05/2018	09/05/2018 13:30	Mohammad Ghaffari	09/06/2018 16:50	Mohammad Ghaffari	2022099
	09/05/2018	09/05/2018 13:30	Mohammad Ghaffari	09/06/2018 17:05	Mohammad Ghaffari	2022101
	09/05/2018	09/06/2018 09:00	Hoor Shaik	09/07/2018 21:50	Juyoung Kim	2022099

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	09/05/2018	09/06/2018 09:00	Hoor Shaik	09/07/2018 22:25	Juyoung Kim	2022100
	09/05/2018	09/06/2018 09:00	Hoor Shaik	09/07/2018 22:59	Juyoung Kim	2022101
	09/05/2018	09/06/2018 09:00	Hoor Shaik	09/07/2018 23:34	Juyoung Kim	2022111
	09/05/2018	09/06/2018 09:00	Hoor Shaik	09/08/2018 20:53	Juyoung Kim	2022099
	09/05/2018	09/06/2018 09:00	Hoor Shaik	09/08/2018 21:28	Juyoung Kim	2022100
	09/05/2018	09/06/2018 09:00	Hoor Shaik	09/08/2018 22:03	Juyoung Kim	2022101
	09/05/2018	09/06/2018 09:00	Hoor Shaik	09/08/2018 22:37	Juyoung Kim	2022111
	09/05/2018	09/06/2018 15:00	Mohammad Ghaffari	09/07/2018 09:43	Mohammad Ghaffari	2022111
	09/05/2018	09/06/2018 15:00	Mohammad Ghaffari	09/09/2018 19:46	Mohammad Ghaffari	2022111
SM 2120 B	09/05/2018	09/06/2018 15:00	Mohammad Ghaffari	09/10/2018 21:04	Mohammad Ghaffari	2022111
	09/05/2018			09/05/2018 16:24	DeAsia Armster	2022077
	09/05/2018			09/05/2018 16:26	DeAsia Armster	2022083
	09/05/2018			09/05/2018 16:27	DeAsia Armster	2022086
SM 2320 B-97	09/05/2018			09/05/2018 16:37	DeAsia Armster	2022078
	09/05/2018			09/11/2018 03:28	Dale L. Simmons	2022077
	09/05/2018			09/11/2018 03:38	Dale L. Simmons	2022078
	09/05/2018			09/11/2018 05:19	Dale L. Simmons	2022083
SM 2540 C-97	09/05/2018			09/11/2018 05:29	Dale L. Simmons	2022086
SM 2540 D-97	09/05/2018			09/07/2018 15:06	Yijie Li	2022077, 2022078, 2022083, 2022086
SM 4500 F-C-97	09/05/2018			09/07/2018 15:06	Yijie Li	2022077, 2022078, 2022083, 2022086
SM 5310 B-00	09/05/2018			09/11/2018 03:28	Dale L. Simmons	2022077
	09/05/2018			09/11/2018 03:38	Dale L. Simmons	2022078
	09/05/2018			09/11/2018 05:19	Dale L. Simmons	2022083
	09/05/2018			09/11/2018 05:29	Dale L. Simmons	2022086
	09/05/2018			09/11/2018 06:33	Megan Treadwell	2022079
	09/05/2018			09/11/2018 06:49	Megan Treadwell	2022080
	09/05/2018			09/11/2018 07:02	Megan Treadwell	2022084
	09/05/2018			09/11/2018 07:15	Megan Treadwell	2022087