

Chemical Analysis Report

CEN-DIST-2019-12-11-02

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

Event Description: **Rose / Spruce / Strick**
Request ID: **RQ-2019-11-18-56**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Michael Linger

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Certified by: Colin Wright, Program Administrator

Date Certified: 08-JAN-2020 14:02



NON-CONFORMANCE REPORT INCLUDED

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 by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Spruce Creek @ 0.68 miles upstream of RR bridge

Collection Date/Time: 12/10/2019 10:39

Field ID: G5CE0099

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2142702	EPA 180.1 Rev. 2.0	Turbidity	4.4		NTU	P375713	
	EPA 300.0	Bromide	51		mg Br/L	P376393	
	SM 2320 B-97	Total Alkalinity	130		mg CaCO3/L	P376367	
	SM 2540 D-97	TSS	13		mg/L	P376329	
	SM 4500 F-C-97	Fluoride	0.89		mg F/L	P376255	
2142706	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P376139	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P375798	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.032		mg N/L	P376149	
	EPA 365.1 Rev. 2.0	Total-P	0.068		mg P/L	P375827	
	SM 5310 B-00	Organic Carbon	8.2		mg C/L	P375947	
2142710	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.034		mg P/L	P375642	
2142728	EPA 200.7 Rev. 4.4	Iron	350	I	ug/L	P375735	
		Manganese	7.9	I	ug/L	P375735	
		Zinc	20	U	ug/L	P375735	
	EPA 200.8 Rev. 5.4	Aluminum	310		ug/L	P376494	
		Antimony	0.50	U	ug/L	P376494	
		Arsenic	1.5	I	ug/L	P376494	
		Barium	16.3		ug/L	P376494	
		Beryllium	0.10	U	ug/L	P376494	
		Boron**	3.19E+03		ug/L	P376494	
		Cadmium	0.080	U	ug/L	P376494	
		Chromium	4.0	U	ug/L	P376494	
		Cobalt	0.20	U	ug/L	P376494	
		Copper	1.6	U	ug/L	P376494	
		Lead	2.0	U	ug/L	P376494	
		Manganese	7.1		ug/L	P376494	
		Molybdenum	8.7		ug/L	P376494	
		Nickel	2.0	U	ug/L	P376494	
		Selenium	2.0	U	ug/L	P376494	
		Silver	0.10	U	ug/L	P376494	
		Thallium	1.0	U	ug/L	P376494	

Ref. Method and Comment:

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

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable because of high analyte concentration in the QC sample.

Sample Location: Spruce Creek @ 500m Upstream of RR Bridge Collection Date/Time: 12/10/2019 10:48

Field ID: G5CE0091

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2142703	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P375714	
	EPA 300.0	Bromide	52		mg Br/L	P376393	
	SM 2320 B-97	Total Alkalinity	130		mg CaCO3/L	P376367	
	SM 2540 D-97	TSS	12		mg/L	P376329	
	SM 4500 F-C-97	Fluoride	0.90		mg F/L	P376255	
2142707	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P376139	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.60		mg N/L	P375798	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.026		mg N/L	P376149	
	EPA 365.1 Rev. 2.0	Total-P	0.066		mg P/L	P375827	
	SM 5310 B-00	Organic Carbon	7.6		mg C/L	P375947	
2142711	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.034		mg P/L	P375642	
2142729	EPA 200.7 Rev. 4.4	Iron	350	I	ug/L	P375735	
		Manganese	7.6	I	ug/L	P375735	
		Zinc	20	U	ug/L	P375735	
	EPA 200.8 Rev. 5.4	Aluminum	350		ug/L	P376494	
		Antimony	0.50	U	ug/L	P376494	
		Arsenic	1.6	I	ug/L	P376494	
		Barium	16.2		ug/L	P376494	
		Beryllium	0.10	U	ug/L	P376494	
		Boron**	3.42E+03		ug/L	P376494	
		Cadmium	0.080	U	ug/L	P376494	
		Chromium	4.0	U	ug/L	P376494	
		Cobalt	0.20	U	ug/L	P376494	
		Copper	1.6	U	ug/L	P376494	
		Lead	2.0	U	ug/L	P376494	
		Manganese	7.1		ug/L	P376494	
		Molybdenum	9.2		ug/L	P376494	
		Nickel	2.0	U	ug/L	P376494	
		Selenium	2.0	U	ug/L	P376494	
		Silver	0.10	U	ug/L	P376494	
		Thallium	1.0	U	ug/L	P376494	

Ref. Method and Comment:

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

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable because of high analyte concentration in the QC sample.

Sample Location: Strickland Bay @ 100m East (Downstream) of RR Crossing **Collection Date/Time: 12/10/2019 10:58**

Field ID: G5CE0081

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2142704	EPA 180.1 Rev. 2.0	Turbidity	4.9	A	NTU	P375714	
	EPA 300.0	Bromide	60		mg Br/L	P376393	
	SM 2320 B-97	Total Alkalinity	126	A	mg CaCO3/L	P376253	
	SM 2540 D-97	TSS	15		mg/L	P376329	
	SM 4500 F-C-97	Fluoride	1.0		mg F/L	P376255	
2142708	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P376139	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P375798	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P376149	
	EPA 365.1 Rev. 2.0	Total-P	0.063		mg P/L	P375827	
	SM 5310 B-00	Organic Carbon	6.6		mg C/L	P376168	
2142712	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.031		mg P/L	P375642	
2142730	EPA 200.7 Rev. 4.4	Iron	180	I	ug/L	P375735	
		Manganese	6.5	I	ug/L	P375735	
		Zinc	20	U	ug/L	P375735	
	EPA 200.8 Rev. 5.4	Aluminum	390		ug/L	P376494	
		Antimony	0.50	U	ug/L	P376494	
		Arsenic	1.7	I	ug/L	P376494	
		Barium	14.7		ug/L	P376494	
		Beryllium	0.10	U	ug/L	P376494	
		Boron**	3.79E+03		ug/L	P376494	
		Cadmium	0.080	U	ug/L	P376494	
		Chromium	4.0	U	ug/L	P376494	
		Cobalt	0.20	U	ug/L	P376494	
		Copper	1.6	U	ug/L	P376494	
		Lead	2.0	U	ug/L	P376494	
		Manganese	6.6		ug/L	P376494	
		Molybdenum	10.1		ug/L	P376494	
		Nickel	2.0	U	ug/L	P376494	
		Selenium	2.0	U	ug/L	P376494	
		Silver	0.10	U	ug/L	P376494	
		Thallium	1.0	U	ug/L	P376494	

Ref. Method and Comment:

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

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable because of high analyte concentration in the QC sample.

Sample Location: Strickland Bay @ 525m East (Downstream) of RR Crossing **Collection Date/Time: 12/10/2019 11:07**

Field ID: G5CE0082

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2142705	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P375714	
	EPA 300.0	Bromide	59		mg Br/L	P376393	
	SM 2320 B-97	Total Alkalinity	128		mg CaCO3/L	P376367	
	SM 2540 D-97	TSS	11		mg/L	P376328	
	SM 4500 F-C-97	Fluoride	1.0		mg F/L	P376255	
2142709	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P376139	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P375798	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P376149	
	EPA 365.1 Rev. 2.0	Total-P	0.058		mg P/L	P375919	
	SM 5310 B-00	Organic Carbon	6.2		mg C/L	P376168	
2142713	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.029		mg P/L	P375642	
2142731	EPA 200.7 Rev. 4.4	Iron	270	I	ug/L	P375735	
		Manganese	6.3	I	ug/L	P375735	
		Zinc	20	U	ug/L	P375735	
	EPA 200.8 Rev. 5.4	Aluminum	290		ug/L	P376494	
		Antimony	0.50	U	ug/L	P376494	
		Arsenic	1.8	I	ug/L	P376494	
		Barium	14.0		ug/L	P376494	
		Beryllium	0.10	U	ug/L	P376494	
		Boron**	3.87E+03		ug/L	P376494	
		Cadmium	0.080	U	ug/L	P376494	
		Chromium	4.0	U	ug/L	P376494	
		Cobalt	0.20	U	ug/L	P376494	
		Copper	1.6	U	ug/L	P376494	
		Lead	2.0	U	ug/L	P376494	
		Manganese	5.9		ug/L	P376494	
		Molybdenum	10.2		ug/L	P376494	
		Nickel	2.0	U	ug/L	P376494	
		Selenium	2.0	U	ug/L	P376494	
		Silver	0.10	U	ug/L	P376494	
		Thallium	1.0	U	ug/L	P376494	

Ref. Method and Comment:

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable because of high analyte concentration in the QC sample.

Sample Location: Rose Bay @200m E of Boat Ramp

Collection Date/Time: 12/10/2019 11:47

Field ID: G5CE0098

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2142696	EPA 180.1 Rev. 2.0	Turbidity	5.1		NTU	P375713	
	EPA 300.0	Bromide	61		mg Br/L	P376393	
	SM 2320 B-97	Total Alkalinity	128		mg CaCO3/L	P376367	
	SM 2540 D-97	TSS	14		mg/L	P376329	
	SM 4500 F-C-97	Fluoride	1.1		mg F/L	P376255	
2142698	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I Y	mg N/L	P376136	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53	Y	mg N/L	P375798	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	UY	mg N/L	P376148	
	EPA 365.1 Rev. 2.0	Total-P	0.065	Y	mg P/L	P375827	
	SM 5310 B-00	Organic Carbon	6.0	Y	mg C/L	P375947	
2142700	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P375640	
2142726	EPA 8321B	2,4-D	0.010		ug/L	P375653	
		Acesulfame K**	0.10	UJ	ug/L	P375838	SUR
		AMPA**	1.0	U	ug/L	P375838	
		Sucralose**	0.36		ug/L	P375838	
		Acetaminophen**	0.0080	U	ug/L	P375653	
		Acetamiprid**	0.0020	U	ug/L	P375653	
		Endothall**	0.25	UJ	ug/L	P375838	SUR
		Glufosinate**	1.0	U	ug/L	P375838	
		Glyphosate**	1.0	U	ug/L	P375838	
		Afidopyropen**	0.0020	UJ	ug/L	P375653	
		Bentazon	0.023		ug/L	P375653	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P375653	
		Carbamazepine**	0.0012	I	ug/L	P375653	
		Clothianidin**	0.0020	U	ug/L	P375653	
		Dinotefuran**	0.0020	U	ug/L	P375653	
		Diuron	0.0028	I	ug/L	P375653	
		Fenuron	0.016	U	ug/L	P375653	
		Fluridone**	0.0061		ug/L	P375653	
		Imazapyr**	0.030		ug/L	P375653	
		Hydrocodone**	0.0020	U	ug/L	P375653	
		Ibuprofen**	0.020	U	ug/L	P375653	
		Imidacloprid	0.0020	U	ug/L	P375653	MS
		Linuron	0.0040	U	ug/L	P375653	
		Mandestrobin**	0.0020	UJ	ug/L	P375653	
		MCP	0.0020	U	ug/L	P375653	
		Naproxen**	0.0080	U	ug/L	P375653	
		Primidone**	0.0040	U	ug/L	P375653	
		Pyraclostrobin**	0.0020	U	ug/L	P375653	
		Thiamethoxam**	0.0020	U	ug/L	P375653	
		Tolfenpyrad**	0.0020	U	ug/L	P375653	
		Triclopyr**	0.0040	U	ug/L	P375653	

Matrix: W-SURF-SLT

EPA 8321B: Results confirmed in sample duplicate. MS accuracy for glyphosate could not be assessed due to high concentration of parameter in the spiked sample. MDL for some parameters elevated due to matrix interference. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Rose Bay @ 125m NE of Boat Ramp

Collection Date/Time: 12/10/2019 11:55

Field ID: G5CE0073

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2142697	EPA 180.1 Rev. 2.0	Turbidity	6.1		NTU	P375713	
	EPA 300.0	Bromide	62		mg Br/L	P376393	
	SM 2320 B-97	Total Alkalinity	128		mg CaCO3/L	P376367	
	SM 2540 D-97	TSS	18		mg/L	P376329	
	SM 4500 F-C-97	Fluoride	1.1		mg F/L	P376255	
2142699	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P376136	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P375798	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P376148	
	EPA 365.1 Rev. 2.0	Total-P	0.064		mg P/L	P375827	
	SM 5310 B-00	Organic Carbon	5.8		mg C/L	P375947	
2142701	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.026		mg P/L	P375642	
2142727	EPA 8321B	2,4-D	0.012		ug/L	P375653	
		Acesulfame K**	0.10	UJ	ug/L	P375838	SUR
		AMPA**	1.0	U	ug/L	P375838	
		Sucralose**	0.19		ug/L	P375838	
		Acetaminophen**	0.0080	U	ug/L	P375653	
		Acetamiprid**	0.0020	U	ug/L	P375653	
		Endothall**	0.25	UJ	ug/L	P375838	SUR
		Glufosinate**	1.0	U	ug/L	P375838	
		Glyphosate**	1.0	U	ug/L	P375838	
		Afidopyropen**	0.0020	UJ	ug/L	P375653	
		Bentazon	0.023		ug/L	P375653	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P375653	
		Carbamazepine**	0.0011	I	ug/L	P375653	
		Clothianidin**	0.0020	U	ug/L	P375653	
		Dinotefuran**	0.0020	U	ug/L	P375653	
		Diuron	0.0023	I	ug/L	P375653	
		Fenuron	0.016	U	ug/L	P375653	
		Fluridone**	0.0064		ug/L	P375653	
		Imazapyr**	0.030		ug/L	P375653	
		Hydrocodone**	0.0020	U	ug/L	P375653	
		Ibuprofen**	0.020	U	ug/L	P375653	
		Imidacloprid	0.0020	U	ug/L	P375653	MS
		Linuron	0.0040	U	ug/L	P375653	
		Mandestrobin**	0.0020	UJ	ug/L	P375653	
		MCP	0.0020	U	ug/L	P375653	
		Naproxen**	0.0080	U	ug/L	P375653	
		Primidone**	0.0040	U	ug/L	P375653	
		Pyraclostrobin**	0.0020	U	ug/L	P375653	
		Thiamethoxam**	0.0020	U	ug/L	P375653	
		Tolfenpyrad**	0.0020	U	ug/L	P375653	
		Triclopyr**	0.0040	U	ug/L	P375653	

Field ID: G5CE0073

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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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 - second source check standards for some analytes were not available for analysis.
EPA 8321B: Results confirmed in sample duplicate. MS accuracy for glyphosate could not be assessed due to high concentration of parameter in the spiked sample. MDL for some parameters elevated due to matrix interference. Refer to the Lab Analysis Report for an explanation of QC Codes.

Non-Conformance Report

NCR ID: 8061

Event(s)

CEN-DIST-2019-12-11-02

Job(s)

TLH-2019-12-11-83

Sample(s)

2142698

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Preservation Not Intact

Observation: Sample not preserved to pH < 2.

Resolution: Sample preserved in the laboratory with sulfuric acid.
H2SO4 Lot# SA9203100 | Expiration Date: 07/22/2020
Data will be qualified as appropriate.

Authorized by/Date: Joshua Ayres 12/17/2019

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P375713

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P375714

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P375735

Component	Result	Code	Units
Iron	30	U	ug/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P376494

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0
Batch ID: P376393

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376136

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376139

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375798

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376148

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376149

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375827

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375919

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375640

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375642

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

Reference Method: EPA 8321B
Batch ID: P375653

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P375653

Component	Result	Code	Units
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	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
Mandestrobin	0.0020	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
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P375838

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P376253

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

Reference Method: SM 2320 B-97
Batch ID: P376367

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

Reference Method: SM 2540 D-97
Batch ID: P376328

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P376329

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P376255

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P375947

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

Reference Method: SM 5310 B-00
Batch ID: P376168

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: P375735

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	104		P	85 - 115
Manganese	102		P	85 - 115
Zinc	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P376494

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	103		P	85 - 115
Antimony	106		P	85 - 115
Arsenic	101		P	85 - 115
Barium	104		P	85 - 115
Beryllium	101		P	85 - 115
Boron	105		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	102		P	85 - 115
Cobalt	101		P	85 - 115
Copper	102		P	85 - 115
Lead	106		P	85 - 115
Manganese	98.4		P	85 - 115
Molybdenum	103		P	85 - 115
Nickel	103		P	85 - 115
Selenium	94.3		P	85 - 115
Silver	99.2		P	85 - 115
Thallium	111		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P376393

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376136

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376139

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375798

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P376148

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P376149

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P375827

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	108		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P375919

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P375640

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P375642

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

Reference Method: EPA 8321B
 Batch ID: P375653

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	139		P	30 - 160
Acetaminophen	97.4		P	30 - 150
Acetamiprid	101		P	30 - 160
Afidopyropen	99.8		P	30 - 160
Bentazon	85.3		P	30 - 150
Benzovindiflupyr	94.8		P	30 - 160
Carbamazepine	107		P	30 - 160
Clothianidin	97.8		P	30 - 160
Dinotefuran	103		P	30 - 160
Diuron	80.0		P	30 - 160
Fenuron	103		P	30 - 160
Fluridone	97.2		P	30 - 160
Hydrocodone	94.7		P	30 - 160
Ibuprofen	77.9		P	30 - 160
Imazapyr	96.5		P	30 - 160
Imidacloprid	110		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P375653

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Linuron	81.2		P	30 - 160
Mandestrobin	84.7		P	30 - 160
MCP	132		P	30 - 160
Naproxen	63.9		P	30 - 160
Primidone	98.5		P	30 - 160
Pyraclostrobin	84.7		P	30 - 160
Thiamethoxam	102		P	30 - 160
Tolfenpyrad	52.8		P	30 - 160
Triclopyr	106		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P375838

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	92.7		P	40 - 150
AMPA	85.3		P	40 - 150
Endothall	94.5		P	40 - 150
Glufosinate	87.5		P	40 - 150
Glyphosate	119		P	40 - 140
Sucralose	77.9		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P376253

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P376367

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P376255

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P375947

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	103		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P376168

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P375735

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2141773	Iron	96.9	101	P/P	80 - 120
2141773	Manganese	95.8	97.6	P/P	80 - 120
2141773	Zinc	99.9	101	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P376494

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2145329	Aluminum	119	119	P/P	70 - 130
2145329	Antimony	112	110	P/P	70 - 130
2145329	Arsenic	110	110	P/P	70 - 130
2145329	Barium	110	107	P/P	70 - 130
2145329	Beryllium	116	118	P/P	70 - 130
2145329	Cadmium	97.4	94.6	P/P	70 - 130
2145329	Chromium	75.2	73.1	P/P	70 - 130
2145329	Cobalt	95.4	94.1	P/P	70 - 130
2145329	Copper	91.9	92.3	P/P	70 - 130
2145329	Lead	110	109	P/P	70 - 130
2145329	Manganese	85.8	82.6	P/P	70 - 130
2145329	Molybdenum	120	119	P/P	70 - 130
2145329	Nickel	92.5	91.8	P/P	70 - 130
2145329	Selenium	96.9	97.2	P/P	70 - 130
2145329	Silver	103	104	P/P	70 - 130
2145329	Thallium	116	115	P/P	70 - 130
2145907	Aluminum	111		P	70 - 130
2145907	Antimony	111		P	70 - 130
2145907	Arsenic	108		P	70 - 130
2145907	Barium	109		P	70 - 130
2145907	Beryllium	115		P	70 - 130
2145907	Cadmium	100		P	70 - 130
2145907	Chromium	82.0		P	70 - 130
2145907	Cobalt	97.0		P	70 - 130
2145907	Copper	94.8		P	70 - 130
2145907	Lead	107		P	70 - 130
2145907	Manganese	87.8		P	70 - 130
2145907	Molybdenum	113		P	70 - 130
2145907	Nickel	90.7		P	70 - 130
2145907	Selenium	106		P	70 - 130
2145907	Silver	106		P	70 - 130
2145907	Thallium	109		P	70 - 130

Reference Method: EPA 300.0
Batch ID: P376393

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2143832	Bromide	99.9	102	P/P	90 - 110
2143833	Bromide	99.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376136

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376136

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2142526	Ammonia-N	101	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376139

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2142748	Ammonia-N	105	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375798

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2142750	Kjeldahl Nitrogen	101	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376148

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2142463	NO2NO3-N	104	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376149

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2142706	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375827

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2142565	Total-P	107	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375919

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2142709	Total-P	100	93.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375640

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2142557	O-Phosphate-P	95.3	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375642

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2142701	O-Phosphate-P	93.6	95.2	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P375653

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2142333	2,4-D	107	107	P/P	30 - 160
2142333	Acetaminophen	95.4	101	P/P	30 - 150
2142333	Acetamiprid	99.2	107	P/P	30 - 160
2142333	Afidopyropen	96.0	98.2	P/P	30 - 160
2142333	Bentazon	40.1	46.3	P/P	30 - 150
2142333	Benzovindiflupyr	90.7	96.2	P/P	30 - 160
2142333	Carbamazepine	82.0	81.4	P/P	30 - 160
2142333	Clothianidin	89.4	94.8	P/P	30 - 160
2142333	Dinotefuran	115	121	P/P	30 - 160
2142333	Diuron	63.9	66.3	P/P	30 - 160
2142333	Fenuron	73.1	78.9	P/P	30 - 160
2142333	Fluridone	87.1	90.5	P/P	30 - 160
2142333	Hydrocodone	80.8	88.8	P/P	30 - 160
2142333	Ibuprofen	70.1	70.8	P/P	30 - 160
2142333	Imazapyr	76.5	78.7	P/P	30 - 160
2142333	Imidacloprid	156	160	P/F	30 - 160
2142333	Linuron	71.0	69.2	P/P	30 - 160
2142333	Mandestrobin	81.1	81.7	P/P	30 - 160
2142333	MCP	124	131	P/P	30 - 160
2142333	Naproxen	82.2	81.5	P/P	30 - 160
2142333	Primidone	98.1	102	P/P	30 - 160
2142333	Pyraclostrobin	87.3	88.7	P/P	30 - 160
2142333	Thiamethoxam	116	122	P/P	30 - 160
2142333	Tolfenpyrad	56.0	54.7	P/P	30 - 160
2142333	Triclopyr	129	122	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P375838

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2142668	Acesulfame K	127	131	P/P	40 - 150
2142668	AMPA	69.1	83.7	P/P	40 - 150
2142668	Endothall	93.1	72.3	P/P	40 - 150
2142668	Glufosinate	99.9	84.5	P/P	40 - 150
2142668	Sucralose	79.2	79.2	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P376255

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2141767	Fluoride	99.5	102	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P375947

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2142619	Organic Carbon	100	102	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P376168

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

Reference Method: SM 5310 B-00
Batch ID: P376168

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2142709	Organic Carbon	100	99.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P375713

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142618	Turbidity	2.91	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P375714

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142704	Turbidity	12.5	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P375735

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2141773	Iron	2.66	Spike	P	0 - 20
2141773	Manganese	1.72	Spike	P	0 - 20
2141773	Zinc	1.55	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P376494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2145329	Aluminum	0.453	Spike	P	0 - 20
2145329	Antimony	1.98	Spike	P	0 - 20
2145329	Arsenic	0.549	Spike	P	0 - 20
2145329	Barium	2.61	Spike	P	0 - 20
2145329	Beryllium	1.84	Spike	P	0 - 20
2145329	Boron	1.40	Spike	P	0 - 20
2145329	Cadmium	2.91	Spike	P	0 - 20
2145329	Chromium	2.91	Spike	P	0 - 20
2145329	Cobalt	1.29	Spike	P	0 - 20
2145329	Copper	0.524	Spike	P	0 - 20
2145329	Lead	0.941	Spike	P	0 - 20
2145329	Manganese	3.38	Spike	P	0 - 20
2145329	Molybdenum	0.911	Spike	P	0 - 20
2145329	Nickel	0.698	Spike	P	0 - 20
2145329	Selenium	0.226	Spike	P	0 - 20
2145329	Silver	0.663	Spike	P	0 - 20
2145329	Thallium	1.27	Spike	P	0 - 20

Reference Method: EPA 300.0
 Batch ID: P376393

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2143832	Bromide	1.04	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376136

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142526	Ammonia-N	1.38	Spike	P	0 - 15

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376139

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142748	Ammonia-N	1.27	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375798

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142750	Kjeldahl Nitrogen	0.668	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376148

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142463	NO2NO3-N	0.484	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376149

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142706	NO2NO3-N	0.426	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375827

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142565	Total-P	3.05	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375919

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142709	Total-P	6.78	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375640

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142557	O-Phosphate-P	0.718	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375642

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142701	O-Phosphate-P	1.33	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P375653

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142333	2,4-D	0.583	Spike	P	0 - 30
2142333	Acetaminophen	5.80	Spike	P	0 - 30
2142333	Acetamiprid	7.79	Spike	P	0 - 30
2142333	Afidopyropen	2.25	Spike	P	0 - 30
2142333	Bentazon	6.65	Spike	P	0 - 30
2142333	Benzovindiflupyr	5.87	Spike	P	0 - 30
2142333	Carbamazepine	0.758	Spike	P	0 - 30
2142333	Clothianidin	5.73	Spike	P	0 - 30
2142333	Dinotefuran	4.65	Spike	P	0 - 30
2142333	Diuron	3.51	Spike	P	0 - 30
2142333	Fenuron	7.60	Spike	P	0 - 30
2142333	Fluridone	2.96	Spike	P	0 - 30
2142333	Hydrocodone	9.50	Spike	P	0 - 30
2142333	Ibuprofen	1.03	Spike	P	0 - 30
2142333	Imazapyr	2.04	Spike	P	0 - 30
2142333	Imidacloprid	2.84	Spike	P	0 - 30
2142333	Linuron	2.59	Spike	P	0 - 30
2142333	Mandestrobin	0.752	Spike	P	0 - 30
2142333	MCP	5.67	Spike	P	0 - 30
2142333	Naproxen	0.875	Spike	P	0 - 30
2142333	Primidone	3.39	Spike	P	0 - 30
2142333	Pyraclostrobin	1.61	Spike	P	0 - 30
2142333	Thiamethoxam	4.67	Spike	P	0 - 30
2142333	Tolfenpyrad	2.25	Spike	P	0 - 30
2142333	Triclopyr	4.98	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P375838

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142668	Acesulfame K	3.34	Spike	P	0 - 30
2142668	AMPA	9.25	Spike	P	0 - 30
2142668	Endothall	25.2	Spike	P	0 - 30
2142668	Glufosinate	16.7	Spike	P	0 - 30
2142668	Glyphosate	7.27	Spike	P	0 - 30
2142668	Sucralose	0.00455	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P376253

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142704	Total Alkalinity	0.159	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
 Batch ID: P376367

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142558	Total Alkalinity	0.00765	Sample	P	0 - 2.8

Reference Method: SM 2540 D-97
 Batch ID: P376328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142555	TSS	3.28	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P376255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2141767	Fluoride	2.00	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P375947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142619	Organic Carbon	1.39	Spike	P	0 - 20

Reference Method: SM 5310 B-00
 Batch ID: P376168

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142709	Organic Carbon	0.521	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2142726
Field Sample ID: G5CE0098

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	109	P	30 - 160
EPA 8321B	Acetaminophen-d4	103	P	30 - 160
EPA 8321B	Carbamazepine-d10	86.9	P	30 - 160
EPA 8321B	Diuron-d6	72.9	P	30 - 160
EPA 8321B	Endothall-d6	236	F	30 - 160
EPA 8321B	Endothall-d6	236	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	63.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	63.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	65.8	P	30 - 160
EPA 8321B	Primidone-d5	86.5	P	30 - 160
EPA 8321B	Sucralose-d6	76.5	P	30 - 160
EPA 8321B	Sucralose-d6	76.5	P	30 - 160

Lab Sample ID: 2142727
Field Sample ID: G5CE0073

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	118	P	30 - 160
EPA 8321B	Acetaminophen-d4	110	P	30 - 160
EPA 8321B	Carbamazepine-d10	89.8	P	30 - 160
EPA 8321B	Diuron-d6	82.8	P	30 - 160
EPA 8321B	Endothall-d6	226	F	30 - 160
EPA 8321B	Endothall-d6	226	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	52.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	52.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	68.3	P	30 - 160
EPA 8321B	Primidone-d5	92.9	P	30 - 160
EPA 8321B	Sucralose-d6	52.5	P	30 - 160
EPA 8321B	Sucralose-d6	52.5	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A96266

Included Lab Sample IDs: 2142700, 2142701, 2142710, 2142711, 2142712, 2142713

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	93.6	95.1	P/P	90 - 110
O-Phosphate-P	95.8	96.1	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A96288

Included Lab Sample IDs: 2142696, 2142697, 2142702, 2142703, 2142704, 2142705

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A96335

Included Lab Sample IDs: 2142728, 2142729, 2142730, 2142731

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	100	99.4	P/P	90 - 110
Manganese	100	99.9	P/P	90 - 110
Zinc	101	102	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A96375

Included Lab Sample IDs: 2142698, 2142699, 2142706, 2142707

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	102	97.4	P/P	90 - 110
Organic Carbon	97.4	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A96382

Included Lab Sample IDs: 2142698, 2142699, 2142706, 2142707, 2142708, 2142709

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	105	P/P	90 - 110
Kjeldahl Nitrogen	105	98.2	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A96386

Included Lab Sample IDs: 2142726, 2142727

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	76.2	85.0	P/P	60 - 160
Glufosinate	97.6	104	P/P	60 - 160
Glyphosate	132	126	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A96388

Included Lab Sample IDs: 2142726, 2142727

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	110	124	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A96388

Included Lab Sample IDs: 2142726, 2142727

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	124	152	P/P	60 - 160
Endothall	109	93.5	P/P	60 - 160
Endothall	93.5	93.5	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96409

Included Lab Sample IDs: 2142698, 2142699, 2142706, 2142707, 2142708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96441

Included Lab Sample IDs: 2142709

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.0	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A96459

Included Lab Sample IDs: 2142698, 2142699, 2142706, 2142707, 2142708, 2142709

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	101	P/P	90 - 110
Ammonia-N	99.9	99.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A96466

Included Lab Sample IDs: 2142698, 2142699, 2142706, 2142707, 2142708, 2142709

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

Reference Method: SM 5310 B-00

Run ID: A96470

Included Lab Sample IDs: 2142708, 2142709

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	101	P/P	90 - 110
Organic Carbon	99.4	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A96509

Included Lab Sample IDs: 2142704

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

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A96509

Included Lab Sample IDs: 2142696, 2142697, 2142702, 2142703, 2142704, 2142705

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

Reference Method: EPA 8321B

Run ID: A96534

Included Lab Sample IDs: 2142726, 2142727

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	79.1	86.9	P/P	60 - 160
Sucralose	86.9	96.1	P/P	60 - 160

Reference Method: SM 2320 B-97

Run ID: A96556

Included Lab Sample IDs: 2142696, 2142697, 2142702, 2142703, 2142705

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

Reference Method: EPA 8321B

Run ID: A96566

Included Lab Sample IDs: 2142726, 2142727

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	81.8	87.2	P/P	50 - 150
Acetaminophen	110	97.6	P/P	60 - 160
Acetamiprid	105	100	P/P	60 - 160
Afidopyropen	101	107	P/P	50 - 150
Bentazon	77.5	110	P/P	50 - 160
Benzovindiflupyr	112	94.8	P/P	60 - 150
Carbamazepine	93.2	88.8	P/P	60 - 150
Clothianidin	100	87.3	P/P	50 - 150
Dinotefuran	107	99.3	P/P	50 - 150
Diuron	95.6	91.2	P/P	60 - 150
Fenuron	106	103	P/P	60 - 150
Fluridone	109	102	P/P	60 - 160
Hydrocodone	104	95.5	P/P	60 - 150
Ibuprofen	79.4	84.9	P/P	50 - 160
Imazapyr	94.0	109	P/P	50 - 150
Imidacloprid	96.9	82.9	P/P	60 - 150
Linuron	103	95.9	P/P	60 - 150
Mandestrobin	96.3	95.8	P/P	50 - 150
MCPP	63.5	84.1	P/P	50 - 150
Naproxen	85.3	99.4	P/P	50 - 160
Primidone	102	89.3	P/P	60 - 150
Pyraclostrobin	103	100	P/P	60 - 150
Thiamethoxam	104	92.3	P/P	60 - 150
Tolfenpyrad	98.3	89.9	P/P	50 - 150
Triclopyr	64.9	86.7	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0

Run ID: A96567

Included Lab Sample IDs: 2142696, 2142697, 2142702, 2142703, 2142704, 2142705

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	101	105	P/P	90 - 110
Bromide	105	106	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A96661

Included Lab Sample IDs: 2142728, 2142729, 2142730, 2142731

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	107	108	P/P	90 - 110
Barium	108	110	P/P	90 - 110
Cadmium	108	107	P/P	90 - 110
Cobalt	106	105	P/P	90 - 110
Copper	105	103	P/P	90 - 110
Lead	107	107	P/P	90 - 110
Manganese	103	102	P/P	90 - 110
Molybdenum	107	107	P/P	90 - 110
Nickel	104	101	P/P	90 - 110
Thallium	105	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A96686

Included Lab Sample IDs: 2142728, 2142729, 2142730, 2142731

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	102	P/P	90 - 110
Arsenic	103	104	P/P	90 - 110
Beryllium	99.6	103	P/P	90 - 110
Boron	98.9	96.5	P/P	90 - 110
Chromium	96.5	95.0	P/P	90 - 110
Selenium	101	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A96742

Included Lab Sample IDs: 2142728, 2142729, 2142730, 2142731

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	99.2	99.7	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						2.91	
	Turbidity						12.5	
EPA 200.7 Rev. 4.4	Iron	104	96.9	101				2.66
	Manganese	102	95.8	97.6				1.72
	Zinc	100	99.9	101				1.55
EPA 200.8 Rev. 5.4	Aluminum	103	119	119	111			0.453
	Antimony	106	112	110	111			1.98
	Arsenic	101	110	110	108			0.549
	Barium	104	110	107	109			2.61
	Beryllium	101	116	118	115			1.84
	Boron	105						1.40
	Cadmium	102	97.4	94.6	100			2.91
	Chromium	102	75.2	73.1	82.0			2.91
	Cobalt	101	95.4	94.1	97.0			1.29
	Copper	102	91.9	92.3	94.8			0.524
	Lead	106	110	109	107			0.941
	Manganese	98.4	85.8	82.6	87.8			3.38
	Molybdenum	103	120	119	113			0.911
	Nickel	103	92.5	91.8	90.7			0.698
	Selenium	94.3	96.9	97.2	106			0.226
	Silver	99.2	103	104	106			0.663
	Thallium	111	116	115	109			1.27
EPA 300.0	Bromide	103	99.9	102	99.4			1.04
EPA 350.1 Rev. 2.0	Ammonia-N	97.4	101	103				1.38
	Ammonia-N	98.2	105	104				1.27
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	101	100				0.668
EPA 353.2 Rev. 2.0	NO2NO3-N	101	104	103				0.484
	NO2NO3-N	101	101	101				0.426
EPA 365.1 Rev. 2.0	Total-P	108	107	104				3.05
	Total-P	103	100	93.4				6.78
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.6	95.3	96.2				0.718
	O-Phosphate-P	97.1	95.2	93.6				1.33
EPA 8321B	2,4-D	139	107	107				0.583
	Acesulfame K	92.7	127	131				3.34
	Acetaminophen	97.4	101	95.4				5.80
	Acetamiprid	101	99.2	107				7.79
	Afidopyropen	99.8	96.0	98.2				2.25
	AMPA	85.3	69.1	83.7				9.25
	Bentazon	85.3	40.1	46.3				6.65
	Benzovindiflupyr	94.8	90.7	96.2				5.87
	Carbamazepine	107	82.0	81.4				0.758
	Clothianidin	97.8	89.4	94.8				5.73
	Dinotefuran	103	121	115				4.65
	Diuron	80.0	63.9	66.3				3.51
	Endothall	94.5	93.1	72.3				25.2
	Fenuron	103	73.1	78.9				7.60
	Fluridone	97.2	87.1	90.5				2.96
	Glufosinate	87.5	99.9	84.5				16.7
	Glyphosate	119						7.27
	Hydrocodone	94.7	88.8	80.8				9.50
	Ibuprofen	77.9	70.1	70.8				1.03
	Imazapyr	96.5	76.5	78.7				2.04
	Imidacloprid	110	156	160				2.84
	Linuron	81.2	71.0	69.2				2.59

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Mandestrobin	84.7	81.1	81.7		0.752
	MCCP	132	124	131		5.67
	Naproxen	63.9	82.2	81.5		0.875
	Primidone	98.5	102	98.1		3.39
	Pyraclostrobin	84.7	87.3	88.7		1.61
	Sucralose	77.9	79.2	79.2		0.0045
	Thiamethoxam	102	122	116		4.67
	Tolfenpyrad	52.8	56.0	54.7		2.25
	Triclopyr	106	129	122		4.98
SM 2320 B-97	Total Alkalinity	103			0.159	
	Total Alkalinity	103			0.0076	
SM 2540 D-97	TSS				3.28	
SM 4500 F-C-97	Fluoride	97.9	99.5	102		2.00
SM 5310 B-00	Organic Carbon	103	100	102		1.39
	Organic Carbon	101	100	99.5		0.521

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2142696, 2142697, 2142702, 2142703, 2142704, 2142705
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2142728, 2142729, 2142730, 2142731
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2142728, 2142729, 2142730, 2142731
EPA 300.0 / E31780	Bromide in aqueous matrices	2142696, 2142697, 2142702, 2142703, 2142704, 2142705
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2142698, 2142699, 2142706, 2142707, 2142708, 2142709
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2142698, 2142699, 2142706, 2142707, 2142708, 2142709
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2142698, 2142699, 2142706, 2142707, 2142708, 2142709
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2142698, 2142699, 2142706, 2142707, 2142708, 2142709
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2142700, 2142701, 2142710, 2142711, 2142712, 2142713
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2142726, 2142727
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2142726, 2142727
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2142696, 2142697, 2142702, 2142703, 2142704, 2142705
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2142696, 2142697, 2142702, 2142703, 2142704, 2142705
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2142696, 2142697, 2142702, 2142703, 2142704, 2142705
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2142698, 2142699, 2142706, 2142707, 2142708, 2142709

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	12/11/2019			12/11/2019 17:15	Yen Ta	2142696, 2142697, 2142702, 2142703, 2142704, 2142705
EPA 200.7 Rev. 4.4	12/11/2019	12/12/2019 16:30	Elliott D. Healy	12/13/2019 15:26	Betina Topolski	2142728
	12/11/2019	12/12/2019 16:30	Elliott D. Healy	12/13/2019 15:34	Betina Topolski	2142729
	12/11/2019	12/12/2019 16:30	Elliott D. Healy	12/13/2019 15:41	Betina Topolski	2142730
	12/11/2019	12/12/2019 16:30	Elliott D. Healy	12/13/2019 15:49	Betina Topolski	2142731
EPA 200.8 Rev. 5.4	12/11/2019	12/27/2019 15:40	Elliott D. Healy	01/02/2020 18:39	Alexander Thompson	2142728
	12/11/2019	12/27/2019 15:40	Elliott D. Healy	01/02/2020 18:49	Alexander Thompson	2142729
	12/11/2019	12/27/2019 15:40	Elliott D. Healy	01/02/2020 18:59	Alexander Thompson	2142730
	12/11/2019	12/27/2019 15:40	Elliott D. Healy	01/02/2020 19:09	Alexander Thompson	2142731
	12/11/2019	12/27/2019 15:40	Elliott D. Healy	01/02/2020 22:54	Alexander Thompson	2142728
	12/11/2019	12/27/2019 15:40	Elliott D. Healy	01/02/2020 23:03	Alexander Thompson	2142729
	12/11/2019	12/27/2019 15:40	Elliott D. Healy	01/02/2020 23:13	Alexander Thompson	2142730
	12/11/2019	12/27/2019 15:40	Elliott D. Healy	01/02/2020 23:23	Alexander Thompson	2142731
	12/11/2019	12/27/2019 15:40	Elliott D. Healy	01/03/2020 15:34	Alexander Thompson	2142728
	12/11/2019	12/27/2019 15:40	Elliott D. Healy	01/03/2020 15:44	Alexander Thompson	2142729
	12/11/2019	12/27/2019 15:40	Elliott D. Healy	01/03/2020 15:54	Alexander Thompson	2142730
	12/11/2019	12/27/2019 15:40	Elliott D. Healy	01/03/2020 16:04	Alexander Thompson	2142731
	12/11/2019	12/27/2019 15:40	Elliott D. Healy	01/07/2020 17:06	Alexander Thompson	2142728
	12/11/2019	12/27/2019 15:40	Elliott D. Healy	01/07/2020 17:13	Alexander Thompson	2142729
	12/11/2019	12/27/2019 15:40	Elliott D. Healy	01/07/2020 17:21	Alexander Thompson	2142730
	12/11/2019	12/27/2019 15:40	Elliott D. Healy	01/07/2020 17:28	Alexander Thompson	2142731
EPA 300.0	12/11/2019			12/24/2019 00:35	Jhamieka S. Greenwood	2142696
	12/11/2019			12/24/2019 00:52	Jhamieka S. Greenwood	2142697
	12/11/2019			12/24/2019 01:09	Jhamieka S. Greenwood	2142702
	12/11/2019			12/24/2019 02:00	Jhamieka S. Greenwood	2142703
	12/11/2019			12/24/2019 02:18	Jhamieka S. Greenwood	2142704
	12/11/2019			12/24/2019 02:35	Jhamieka S. Greenwood	2142705
EPA 350.1 Rev. 2.0	12/11/2019			12/17/2019 11:35	Ping Hua	2142698
	12/11/2019			12/17/2019 11:36	Ping Hua	2142699
	12/11/2019			12/17/2019 12:51	Ping Hua	2142707
	12/11/2019			12/17/2019 12:53	Ping Hua	2142708
	12/11/2019			12/17/2019 12:55	Ping Hua	2142709
	12/11/2019			12/17/2019 12:56	Ping Hua	2142706
EPA 351.2 Rev. 2.0	12/11/2019	12/13/2019 13:00	Sima Feizi	12/16/2019 17:38	Jhamieka S. Greenwood	2142698
	12/11/2019	12/13/2019 13:00	Sima Feizi	12/16/2019 17:39	Jhamieka S. Greenwood	2142699
	12/11/2019	12/13/2019 13:00	Sima Feizi	12/16/2019 17:41	Jhamieka S. Greenwood	2142706
	12/11/2019	12/13/2019 13:00	Sima Feizi	12/16/2019 17:46	Jhamieka S. Greenwood	2142707
	12/11/2019	12/13/2019 13:00	Sima Feizi	12/16/2019 17:47	Jhamieka S. Greenwood	2142708
	12/11/2019	12/13/2019 13:00	Sima Feizi	12/16/2019 17:49	Jhamieka S. Greenwood	2142709

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	12/11/2019			12/19/2019 10:02	Beverly Y. Sanders	2142698
	12/11/2019			12/19/2019 10:03	Beverly Y. Sanders	2142699
	12/11/2019			12/19/2019 10:10	Beverly Y. Sanders	2142706
	12/11/2019			12/19/2019 10:16	Beverly Y. Sanders	2142707
	12/11/2019			12/19/2019 10:17	Beverly Y. Sanders	2142708
	12/11/2019			12/19/2019 10:18	Beverly Y. Sanders	2142709
EPA 365.1 Rev. 2.0	12/11/2019	12/13/2019 14:35	Yen Ta	12/17/2019 17:06	Benjamin T. Nordmann	2142698
	12/11/2019	12/13/2019 14:35	Yen Ta	12/17/2019 17:07	Benjamin T. Nordmann	2142699
	12/11/2019	12/13/2019 14:35	Yen Ta	12/17/2019 17:08	Benjamin T. Nordmann	2142706
	12/11/2019	12/13/2019 14:35	Yen Ta	12/17/2019 17:09	Benjamin T. Nordmann	2142707
	12/11/2019	12/13/2019 14:35	Yen Ta	12/17/2019 17:10	Benjamin T. Nordmann	2142708
	12/11/2019	12/16/2019 14:17	Yen Ta	12/18/2019 14:58	Benjamin T. Nordmann	2142709
EPA 365.1 Rev. 2.0 dissolved	12/11/2019			12/11/2019 14:16	Samantha Davila	2142700
	12/11/2019			12/11/2019 14:53	Samantha Davila	2142701
	12/11/2019			12/11/2019 14:56	Samantha Davila	2142710
	12/11/2019			12/11/2019 14:57	Samantha Davila	2142711, 2142712
	12/11/2019			12/11/2019 14:58	Samantha Davila	2142713
EPA 8321B	12/11/2019	12/13/2019 10:00	Hoor Shaik	12/23/2019 04:46	Juyoung Kim	2142726
	12/11/2019	12/13/2019 10:00	Hoor Shaik	12/23/2019 05:20	Juyoung Kim	2142727
	12/11/2019	12/16/2019 10:00	Rebecca Ware	12/16/2019 11:47	Rebecca Ware	2142726
	12/11/2019	12/16/2019 10:00	Rebecca Ware	12/16/2019 12:27	Rebecca Ware	2142727
	12/11/2019	12/16/2019 10:00	Rebecca Ware	12/16/2019 16:43	Rebecca Ware	2142726
	12/11/2019	12/16/2019 10:00	Rebecca Ware	12/16/2019 16:54	Rebecca Ware	2142727
	12/11/2019	12/16/2019 10:00	Rebecca Ware	12/23/2019 14:16	Mohammad Ghaffari	2142726
	12/11/2019	12/16/2019 10:00	Rebecca Ware	12/23/2019 15:12	Mohammad Ghaffari	2142727
SM 2320 B-97	12/11/2019			12/18/2019 08:06	Dale L. Simmons	2142704
	12/11/2019			12/21/2019 11:36	Dale L. Simmons	2142696
	12/11/2019			12/21/2019 11:45	Dale L. Simmons	2142697
	12/11/2019			12/21/2019 11:55	Dale L. Simmons	2142702
	12/11/2019			12/21/2019 12:05	Dale L. Simmons	2142703
	12/11/2019			12/21/2019 12:16	Dale L. Simmons	2142705
SM 2540 D-97	12/11/2019			12/13/2019 16:21	Yijie Li	2142696, 2142697, 2142702, 2142703, 2142704, 2142705
SM 4500 F-C-97	12/11/2019			12/17/2019 23:49	Dale L. Simmons	2142696
	12/11/2019			12/17/2019 23:53	Dale L. Simmons	2142697
	12/11/2019			12/17/2019 23:57	Dale L. Simmons	2142702
	12/11/2019			12/18/2019 00:01	Dale L. Simmons	2142703
	12/11/2019			12/18/2019 00:05	Dale L. Simmons	2142704
	12/11/2019			12/18/2019 00:51	Dale L. Simmons	2142705
SM 5310 B-00	12/11/2019			12/16/2019 18:39	Madeline Funaro	2142698

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	12/11/2019			12/16/2019 21:19	Madeline Funaro	2142699
	12/11/2019			12/16/2019 21:34	Madeline Funaro	2142706
	12/11/2019			12/16/2019 21:47	Madeline Funaro	2142707
	12/11/2019			12/18/2019 22:18	Madeline Funaro	2142709
	12/11/2019			12/18/2019 23:24	Madeline Funaro	2142708