

Chemical Analysis Report

CEN-DIST-2019-08-28-01

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

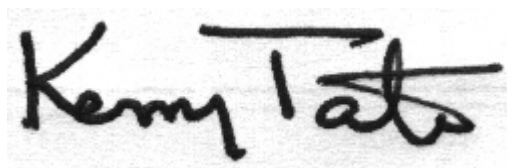
Event Description: **Rose x2 / Spruce x2 / Strickland x2**
Request ID: **RQ-2019-08-12-44**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 25-SEP-2019 13:11

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: 08/27/2019 10:07

Field ID: G5CE0099

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2115052	EPA 180.1 Rev. 2.0	Turbidity	4.4		NTU	P369858	
	EPA 300.0	Bromide	35		mg Br/L	P369921	
	SM 2320 B-97	Total Alkalinity	118		mg CaCO3/L	P370209	
	SM 2540 D-97	TSS	4	I	mg/L	P370253	
	SM 4500 F-C-97	Fluoride	0.66		mg F/L	P370211	
2115056	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P370097	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.70		mg N/L	P369919	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P370120	
	EPA 365.1 Rev. 2.0	Total-P	0.091		mg P/L	P369873	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P370041	
2115060	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.053		mg P/L	P369844	
2115091	EPA 200.7 Rev. 4.4	Iron	440		ug/L	P369941	
		Manganese	16		ug/L	P369941	
		Zinc	15	U	ug/L	P369941	
	EPA 200.8 Rev. 5.4	Aluminum	233		ug/L	P369941	
		Antimony	0.20	U	ug/L	P369941	
		Arsenic	2.27		ug/L	P369941	
		Barium	18.6		ug/L	P369941	
		Beryllium	0.10	U	ug/L	P369941	
		Boron**	2.17E+03		ug/L	P369941	
		Cadmium	0.080	U	ug/L	P369941	
		Chromium	4.0	U	ug/L	P369941	
		Cobalt	0.10	I	ug/L	P369941	
		Copper	1.6	U	ug/L	P369941	
		Lead	0.80	U	ug/L	P369941	
		Manganese	13.1		ug/L	P369941	
		Molybdenum	6.3		ug/L	P369941	
		Nickel	2.0	U	ug/L	P369941	
		Selenium	0.80	U	ug/L	P369941	
		Silver	0.040	U	ug/L	P369941	
		Thallium	0.40	U	ug/L	P369941	

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: 08/27/2019 10:18

Field ID: G5CE0091

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2115053	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P369858	
	EPA 300.0	Bromide	44		mg Br/L	P369921	
	SM 2320 B-97	Total Alkalinity	121		mg CaCO3/L	P370209	
	SM 2540 D-97	TSS	8	I	mg/L	P370253	
	SM 4500 F-C-97	Fluoride	0.79		mg F/L	P370211	
2115057	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P370158	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67		mg N/L	P369919	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P370120	
	EPA 365.1 Rev. 2.0	Total-P	0.085		mg P/L	P369873	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P370041	
2115061	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.046		mg P/L	P369844	
2115092	EPA 200.7 Rev. 4.4	Iron	360	I	ug/L	P369941	
		Manganese	13		ug/L	P369941	
		Zinc	15	U	ug/L	P369941	
	EPA 200.8 Rev. 5.4	Aluminum	228		ug/L	P369941	
		Antimony	0.20	U	ug/L	P369941	
		Arsenic	2.46		ug/L	P369941	
		Barium	15.9		ug/L	P369941	
		Beryllium	0.10	U	ug/L	P369941	
		Boron**	2.53E+03		ug/L	P369941	
		Cadmium	0.080	U	ug/L	P369941	
		Chromium	4.0	U	ug/L	P369941	
		Cobalt	0.090	I	ug/L	P369941	
		Copper	1.6	U	ug/L	P369941	
		Lead	0.80	U	ug/L	P369941	
		Manganese	10.8		ug/L	P369941	
		Molybdenum	7.3		ug/L	P369941	
		Nickel	2.0	U	ug/L	P369941	
		Selenium	0.80	U	ug/L	P369941	
		Silver	0.040	U	ug/L	P369941	
		Thallium	0.40	U	ug/L	P369941	

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: 08/27/2019 10:28**

Field ID: G5CE0081

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2115054	EPA 180.1 Rev. 2.0	Turbidity	5.2	A	NTU	P369858	
	EPA 300.0	Bromide	51		mg Br/L	P369921	
	SM 2320 B-97	Total Alkalinity	122		mg CaCO3/L	P370209	
	SM 2540 D-97	TSS	8	I	mg/L	P370253	
	SM 4500 F-C-97	Fluoride	0.90		mg F/L	P370211	
2115058	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P370158	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P369919	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P370120	
	EPA 365.1 Rev. 2.0	Total-P	0.078		mg P/L	P369873	
	SM 5310 B-00	Organic Carbon	8.2		mg C/L	P370041	
2115062	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.043		mg P/L	P369844	
2115093	EPA 200.7 Rev. 4.4	Iron	390		ug/L	P369941	
		Manganese	13		ug/L	P369941	
		Zinc	15	U	ug/L	P369941	
	EPA 200.8 Rev. 5.4	Aluminum	370		ug/L	P369941	
		Antimony	0.20	U	ug/L	P369941	
		Arsenic	2.69		ug/L	P369941	
		Barium	13.8		ug/L	P369941	
		Beryllium	0.10	U	ug/L	P369941	
		Boron**	3.21E+03		ug/L	P369941	
		Cadmium	0.080	U	ug/L	P369941	
		Chromium	4.0	U	ug/L	P369941	
		Cobalt	0.095	I	ug/L	P369941	
		Copper	1.6	U	ug/L	P369941	
		Lead	0.80	U	ug/L	P369941	
		Manganese	10.3		ug/L	P369941	
		Molybdenum	9.1		ug/L	P369941	
		Nickel	2.0	U	ug/L	P369941	
		Selenium	0.80	U	ug/L	P369941	
		Silver	0.040	U	ug/L	P369941	
		Thallium	0.40	U	ug/L	P369941	

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: 08/27/2019 10:37**

Field ID: G5CE0082

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2115055	EPA 180.1 Rev. 2.0	Turbidity	5.2		NTU	P369858	
	EPA 300.0	Bromide	55		mg Br/L	P369921	
	SM 2320 B-97	Total Alkalinity	123		mg CaCO3/L	P370209	
	SM 2540 D-97	TSS	10	IA	mg/L	P370253	
	SM 4500 F-C-97	Fluoride	0.97		mg F/L	P370211	
2115059	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P370158	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P369919	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P370120	
	EPA 365.1 Rev. 2.0	Total-P	0.071		mg P/L	P370113	
	SM 5310 B-00	Organic Carbon	7.4		mg C/L	P370041	
2115063	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.041		mg P/L	P369844	
2115094	EPA 200.7 Rev. 4.4	Iron	310	I	ug/L	P369941	
		Manganese	12	I	ug/L	P369941	
		Zinc	20	U	ug/L	P369941	
	EPA 200.8 Rev. 5.4	Aluminum	304		ug/L	P369941	
		Antimony	0.20	U	ug/L	P369941	
		Arsenic	2.59		ug/L	P369941	
		Barium	12.7		ug/L	P369941	
		Beryllium	0.10	U	ug/L	P369941	
		Boron**	3.37E+03		ug/L	P369941	
		Cadmium	0.080	U	ug/L	P369941	
		Chromium	4.0	U	ug/L	P369941	
		Cobalt	0.091	I	ug/L	P369941	
		Copper	1.6	U	ug/L	P369941	
		Lead	0.80	U	ug/L	P369941	
		Manganese	9.5		ug/L	P369941	
		Molybdenum	9.2		ug/L	P369941	
		Nickel	2.0	U	ug/L	P369941	
		Selenium	0.80	U	ug/L	P369941	
		Silver	0.040	U	ug/L	P369941	
		Thallium	0.40	U	ug/L	P369941	

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: Rose Bay @ 200m E of Boat Ramp

Collection Date/Time: 08/27/2019 11:15

Field ID: G5CE0098

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2115064	EPA 180.1 Rev. 2.0	Turbidity	4.9		NTU	P369858	
	EPA 300.0	Bromide	55		mg Br/L	P369921	
	SM 2320 B-97	Total Alkalinity	132		mg CaCO3/L	P370209	
	SM 2540 D-97	TSS	7	I	mg/L	P370253	
	SM 4500 F-C-97	Fluoride	0.98		mg F/L	P370211	
2115066	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P370158	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P369919	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P370120	
	EPA 365.1 Rev. 2.0	Total-P	0.064		mg P/L	P370113	
	SM 5310 B-00	Organic Carbon	6.5		mg C/L	P370041	
2115068	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.027		mg P/L	P369844	
2115089	EPA 8321B	2,4-D	0.019		ug/L	P369994	MS
		Acesulfame K**	0.10	UJ	ug/L	P369883	SUR
		AMPA**	0.10	UJ	ug/L	P369883	SUR
		Sucralose**	0.76		ug/L	P369883	
		Acetaminophen**	0.0080	U	ug/L	P369994	
		Endothall**	0.25	UJ	ug/L	P369883	SUR
		Acetamiprid**	0.0020	U	ug/L	P369994	
		Glufosinate**	0.10	UJ	ug/L	P369883	SUR
		Glyphosate**	0.10	UJ	ug/L	P369883	SUR
		Afidopyropen**	0.0020	UJ	ug/L	P369994	
		Bentazon	0.064		ug/L	P369994	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P369994	
		Carbamazepine**	0.0025	I	ug/L	P369994	
		Clothianidin**	0.0025	I	ug/L	P369994	
		Dinotefuran**	0.0020	U	ug/L	P369994	
		Diuron	0.0093		ug/L	P369994	
		Fenuron	0.016	U	ug/L	P369994	
		Fluridone**	0.015		ug/L	P369994	
		Imazapyr**	0.027		ug/L	P369994	
		Hydrocodone**	0.0020	U	ug/L	P369994	
		Ibuprofen**	0.020	U	ug/L	P369994	
		Imidacloprid	0.0065	I	ug/L	P369994	MS
		Linuron	0.0040	U	ug/L	P369994	
		Mandestrobin**	0.0020	UJ	ug/L	P369994	
		MCP	0.0020	U	ug/L	P369994	MS
		Naproxen**	0.012	I	ug/L	P369994	
		Primidone**	0.0040	U	ug/L	P369994	
		Pyraclostrobin**	0.0020	U	ug/L	P369994	RPD
		Thiamethoxam**	0.0020	U	ug/L	P369994	MS
		Tolfenpyrad**	0.0020	U	ug/L	P369994	RPD
		Triclopyr**	0.0040	U	ug/L	P369994	

Field ID: G5CE0098

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. MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

EPA 8321B: Refer to the narrative for an explanation of QC Codes. Surrogate spike recovery exceeding the control limits. Results confirmed in sample duplicate.

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

Collection Date/Time: 08/27/2019 11:23

Field ID: G5CE0073

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2115065	EPA 180.1 Rev. 2.0	Turbidity	5.2		NTU	P369858	
	EPA 300.0	Bromide	55		mg Br/L	P369921	
	SM 2320 B-97	Total Alkalinity	131		mg CaCO3/L	P370209	
	SM 2540 D-97	TSS	10		mg/L	P370253	
	SM 4500 F-C-97	Fluoride	0.99		mg F/L	P370211	
2115067	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P370158	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P369919	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P370120	
	EPA 365.1 Rev. 2.0	Total-P	0.067		mg P/L	P370113	
	SM 5310 B-00	Organic Carbon	6.4		mg C/L	P370041	
2115069	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.029		mg P/L	P369844	
2115090	EPA 8321B	2,4-D	0.014	J	ug/L	P369994	MS
		Acesulfame K**	0.10	UJ	ug/L	P369883	SUR
		AMPA**	0.10	UJ	ug/L	P369883	SUR
		Sucralose**	0.99		ug/L	P369883	
		Acetaminophen**	0.0080	U	ug/L	P369994	
		Endothall**	0.25	UJ	ug/L	P369883	SUR
		Acetamiprid**	0.0020	U	ug/L	P369994	
		Glufosinate**	0.10	UJ	ug/L	P369883	SUR
		Glyphosate**	0.10	UJ	ug/L	P369883	SUR
		Afidopyropen**	0.0020	UJ	ug/L	P369994	
		Bentazon	0.062		ug/L	P369994	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P369994	
		Carbamazepine**	0.0025	I	ug/L	P369994	
		Clothianidin**	0.0024	I	ug/L	P369994	
		Dinotefuran**	0.0020	U	ug/L	P369994	
		Diuron	0.011		ug/L	P369994	
		Fenuron	0.016	U	ug/L	P369994	
		Fluridone**	0.015		ug/L	P369994	
		Imazapyr**	0.028		ug/L	P369994	
		Hydrocodone**	0.0020	U	ug/L	P369994	
		Ibuprofen**	0.020	U	ug/L	P369994	
		Imidacloprid	0.0059	IJ	ug/L	P369994	MS
		Linuron	0.0040	U	ug/L	P369994	
		Mandestrobin**	0.0020	UJ	ug/L	P369994	
		MCP	0.0020	UJ	ug/L	P369994	MS
		Naproxen**	0.0080	U	ug/L	P369994	
		Primidone**	0.0040	U	ug/L	P369994	
		Pyraclostrobin**	0.0020	UJ	ug/L	P369994	RPD
		Thiamethoxam**	0.0020	UJ	ug/L	P369994	MS
		Tolfenpyrad**	0.0020	UJ	ug/L	P369994	RPD
		Triclopyr**	0.0040	U	ug/L	P369994	

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. MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample. Refer to the narrative for an explanation of QC Codes.

EPA 8321B: Refer to the narrative for an explanation of QC Codes. Surrogate spike recovery exceeding the control limits. Results confirmed in sample duplicate.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P369858

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P369941

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: P369941

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	0.20	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: P369921

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370097

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370158

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P369919

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P370120

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P369873

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P370113

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P369844

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

Reference Method: EPA 8321B
 Batch ID: P369883

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: EPA 8321B
 Batch ID: P369994

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
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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P369994

Component	Result	Code	Units
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: SM 2320 B-97
Batch ID: P370209

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

Reference Method: SM 2540 D-97
Batch ID: P370253

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P370211

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P370041

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: P369941

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	107		P	85 - 115
Manganese	104		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P369941

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	98.4		P	85 - 115
Arsenic	103		P	85 - 115
Barium	99.6		P	85 - 115
Beryllium	91.4		P	85 - 115
Boron	104		P	85 - 115
Cadmium	100		P	85 - 115
Chromium	100		P	80 - 120
Cobalt	100		P	85 - 115
Copper	99.5		P	85 - 115
Lead	98.0		P	85 - 115
Manganese	98.6		P	85 - 115
Molybdenum	101		P	85 - 115
Nickel	101		P	85 - 115
Selenium	98.3		P	85 - 115
Silver	101		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P369921

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	96.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370097

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370158

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.3		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369919

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370120

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369873

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	96.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370113

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	93.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P369844

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

Reference Method: EPA 8321B
Batch ID: P369883

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	137		P	40 - 150
AMPA	132		P	40 - 150
Endothall	95.6		P	40 - 150
Glufosinate	108		P	40 - 150
Glyphosate	110		P	40 - 140
Sucralose	93.0		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P369994

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	106		P	40 - 160
Acetaminophen	83.8		P	30 - 160
Acetamiprid	92.6		P	40 - 160
Afidopyropen	97.8		P	40 - 160
Bentazon	99.9		P	30 - 160
Benzovindiflupyr	96.7		P	40 - 160
Carbamazepine	92.9		P	40 - 160
Clothianidin	96.4		P	40 - 160
Dinotefuran	99.6		P	40 - 160
Diuron	85.3		P	40 - 160
Fenuron	106		P	40 - 160
Fluridone	114		P	40 - 160
Hydrocodone	98.6		P	40 - 160
Ibuprofen	114		P	30 - 160
Imazapyr	96.7		P	40 - 160
Imidacloprid	101		P	40 - 160
Linuron	84.8		P	40 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P369994

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Mandestrobin	101		P	40 - 160
MCP	123		P	40 - 160
Naproxen	121		P	40 - 160
Primidone	95.4		P	40 - 160
Pyraclastrobin	95.2		P	30 - 160
Thiamethoxam	108		P	40 - 160
Tolfenpyrad	64.7		P	40 - 160
Triclopyr	72.4		P	30 - 160

Reference Method: SM 2320 B-97
Batch ID: P370209

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	105		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P370211

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P370041

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.7		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P369941

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2114477	Iron	103	99.9	P/P	70 - 130
2114477	Manganese	98.1	97.3	P/P	70 - 130
2114477	Zinc	106	106	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P369941

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2114477	Aluminum	107	109	P/P	70 - 130
2114477	Antimony	103	103	P/P	70 - 130
2114477	Arsenic	112	111	P/P	70 - 130
2114477	Barium	103	103	P/P	70 - 130
2114477	Beryllium	101	97.7	P/P	70 - 130
2114477	Cadmium	97.2	98.9	P/P	70 - 130
2114477	Chromium	97.1	96.5	P/P	70 - 130
2114477	Cobalt	98.3	98.4	P/P	70 - 130
2114477	Copper	99.3	100	P/P	70 - 130
2114477	Lead	103	104	P/P	70 - 130
2114477	Manganese	90.3	89.8	P/P	70 - 130
2114477	Molybdenum	102	102	P/P	70 - 130
2114477	Nickel	100	100	P/P	70 - 130
2114477	Selenium	108	105	P/P	70 - 130
2114477	Silver	95.4	95.2	P/P	70 - 130
2114477	Thallium	107	108	P/P	70 - 130

Reference Method: EPA 300.0
Batch ID: P369921

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115127	Bromide	92.4	93.2	P/P	90 - 110
2115133	Bromide	94.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370097

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2114718	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370158

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115317	Ammonia-N	100	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369919

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2114718	Kjeldahl Nitrogen	98.8	98.5	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P370120

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115057	NO2NO3-N	99.4	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P369873

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2114548	Total-P	97.1	97.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P370113

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2114535	Total-P	96.4	96.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P369844

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115068	O-Phosphate-P	98.3	98.8	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P369883

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2114790	Acesulfame K	97.6	81.2	P/P	40 - 150
2114790	AMPA	61.6	64.5	P/P	40 - 150
2114790	Endothall	82.6	92.6	P/P	40 - 150
2114790	Glufosinate	72.5	72.4	P/P	40 - 150
2114790	Glyphosate	94.7	107	P/P	40 - 140
2114790	Sucralose	78.5	91.0	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P369994

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115090	2,4-D	172	151	F/P	40 - 160
2115090	Acetaminophen	99.3	83.7	P/P	30 - 160
2115090	Acetamiprid	120	116	P/P	40 - 160
2115090	Afidopyropen	136	134	P/P	40 - 160
2115090	Benzovindiflupyr	106	85.4	P/P	40 - 160
2115090	Carbamazepine	111	105	P/P	40 - 160
2115090	Clothianidin	131	118	P/P	40 - 160
2115090	Dinotefuran	132	131	P/P	40 - 160
2115090	Diuron	99.4	81.6	P/P	40 - 160
2115090	Fenuron	105	96.8	P/P	40 - 160
2115090	Fluridone	124	106	P/P	40 - 160
2115090	Hydrocodone	117	105	P/P	40 - 160
2115090	Ibuprofen	153	127	P/P	30 - 160
2115090	Imazapyr	116	127	P/P	40 - 160
2115090	Imidacloprid	219	196	F/F	40 - 160
2115090	Linuron	94.6	88.3	P/P	40 - 160
2115090	Mandestrobin	112	99.3	P/P	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P369994

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115090	MCP	223	178	F/F	40 - 160
2115090	Naproxen	138	157	P/P	40 - 160
2115090	Primidone	120	113	P/P	40 - 160
2115090	Pyraclostrobin	111	75.2	P/P	30 - 160
2115090	Thiamethoxam	165	173	F/F	40 - 160
2115090	Tolfenpyrad	78.5	46.2	P/P	40 - 160
2115090	Triclopyr	128	97.0	P/P	30 - 160

Reference Method: SM 4500 F-C-97
Batch ID: P370211

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115531	Fluoride	97.5	96.9	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P370041

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115056	Organic Carbon	92.7	95.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P369858

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115054	Turbidity	4.06	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P369941

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114477	Iron	2.82	Spike	P	0 - 20
2114477	Manganese	0.750	Spike	P	0 - 20
2114477	Zinc	0.160	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P369941

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114477	Aluminum	1.76	Spike	P	0 - 20
2114477	Antimony	0.393	Spike	P	0 - 20
2114477	Arsenic	0.691	Spike	P	0 - 20
2114477	Barium	0.0949	Spike	P	0 - 20
2114477	Beryllium	3.68	Spike	P	0 - 20
2114477	Boron	0.894	Spike	P	0 - 20
2114477	Cadmium	1.79	Spike	P	0 - 20
2114477	Chromium	0.675	Spike	P	0 - 20
2114477	Cobalt	0.0752	Spike	P	0 - 20
2114477	Copper	0.812	Spike	P	0 - 20
2114477	Lead	0.123	Spike	P	0 - 20
2114477	Manganese	0.433	Spike	P	0 - 20
2114477	Molybdenum	0.109	Spike	P	0 - 20
2114477	Nickel	0.0686	Spike	P	0 - 20
2114477	Selenium	3.00	Spike	P	0 - 20
2114477	Silver	0.128	Spike	P	0 - 20
2114477	Thallium	1.27	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P369921

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115127	Bromide	0.648	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370097

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114718	Ammonia-N	0.490	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115317	Ammonia-N	2.01	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369919

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114718	Kjeldahl Nitrogen	0.243	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370120

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115057	NO2NO3-N	1.01	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369873

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114548	Total-P	0.798	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370113

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114535	Total-P	0.0955	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P369844

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115068	O-Phosphate-P	0.398	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P369883

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114790	Acesulfame K	18.3	Spike	P	0 - 30
2114790	AMPA	3.04	Spike	P	0 - 30
2114790	Endothall	11.4	Spike	P	0 - 30
2114790	Glufosinate	0.171	Spike	P	0 - 30
2114790	Glyphosate	7.91	Spike	P	0 - 30
2114790	Sucralose	14.7	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P369994

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115090	2,4-D	12.0	Spike	P	0 - 30
2115090	Acetaminophen	17.1	Spike	P	0 - 30
2115090	Acetamiprid	3.58	Spike	P	0 - 30
2115090	Afidopyropen	1.49	Spike	P	0 - 30
2115090	Bentazon	7.44	Spike	P	0 - 30
2115090	Benzovindiflupyr	21.4	Spike	P	0 - 30
2115090	Carbamazepine	4.70	Spike	P	0 - 30
2115090	Clothianidin	10.1	Spike	P	0 - 30
2115090	Dinotefuran	1.07	Spike	P	0 - 30
2115090	Diuron	17.1	Spike	P	0 - 30
2115090	Fenuron	8.30	Spike	P	0 - 30
2115090	Fluridone	9.99	Spike	P	0 - 30
2115090	Hydrocodone	10.2	Spike	P	0 - 30
2115090	Ibuprofen	19.1	Spike	P	0 - 30
2115090	Imazapyr	7.10	Spike	P	0 - 30
2115090	Imidacloprid	10.3	Spike	P	0 - 30
2115090	Linuron	6.88	Spike	P	0 - 30
2115090	Mandestrobin	11.6	Spike	P	0 - 30
2115090	MCPP	22.4	Spike	P	0 - 30
2115090	Naproxen	12.6	Spike	P	0 - 30
2115090	Primidone	6.63	Spike	P	0 - 30
2115090	Pyraclostrobin	38.5	Spike	F	0 - 30
2115090	Thiamethoxam	4.98	Spike	P	0 - 30
2115090	Tolfenpyrad	51.8	Spike	F	0 - 30
2115090	Triclopyr	27.5	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P370209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115918	Total Alkalinity	0.386	Sample	P	0 - 2.8

Reference Method: SM 4500 F-C-97
Batch ID: P370211

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115531	Fluoride	0.473	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P370041

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115056	Organic Carbon	2.01	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: 2115089
Field Sample ID: G5CE0098

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	136	P	30 - 160
EPA 8321B	Acetaminophen-d4	78.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	89.5	P	30 - 160
EPA 8321B	Diuron-d6	85.0	P	30 - 160
EPA 8321B	Endothall-d6	301	F	30 - 160
EPA 8321B	Endothall-d6	301	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	0.0	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	0.0	F	30 - 160
EPA 8321B	Ibuprofen-d3	86.2	P	30 - 160
EPA 8321B	Primidone-d5	115	P	30 - 160
EPA 8321B	Sucralose-d6	98.7	P	30 - 160
EPA 8321B	Sucralose-d6	98.7	P	30 - 160

Lab Sample ID: 2115090
Field Sample ID: G5CE0073

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	130	P	30 - 160
EPA 8321B	Acetaminophen-d4	79.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	88.9	P	30 - 160
EPA 8321B	Diuron-d6	81.7	P	30 - 160
EPA 8321B	Endothall-d6	313	F	30 - 160
EPA 8321B	Endothall-d6	313	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	0.0	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	0.0	F	30 - 160
EPA 8321B	Ibuprofen-d3	102	P	30 - 160
EPA 8321B	Primidone-d5	110	P	30 - 160
EPA 8321B	Sucralose-d6	135	P	30 - 160
EPA 8321B	Sucralose-d6	135	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0

Run ID: A93817

Included Lab Sample IDs: 2115052, 2115053, 2115054, 2115055, 2115064, 2115065

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	101	105	P/P	90 - 110
Bromide	105	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A93839

Included Lab Sample IDs: 2115060, 2115061, 2115062, 2115063, 2115068, 2115069

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	100	P/P	90 - 110
O-Phosphate-P	99.6	99.3	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A93844

Included Lab Sample IDs: 2115052, 2115053, 2115054, 2115055, 2115064, 2115065

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A93925

Included Lab Sample IDs: 2115056, 2115057

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A93934

Included Lab Sample IDs: 2115058, 2115059, 2115066, 2115067

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.8	99.4	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A93938

Included Lab Sample IDs: 2115056, 2115057, 2115058, 2115059, 2115066, 2115067

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.7	100	P/P	90 - 110
Organic Carbon	99.0	97.7	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A93944

Included Lab Sample IDs: 2115089, 2115090

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	117	68.6	P/P	60 - 160
Glufosinate	104	65.3	P/P	60 - 160
Glyphosate	109	77.3	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A93946

Included Lab Sample IDs: 2115089, 2115090

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	115	110	P/P	60 - 160
Endothall	98.9	99.4	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A93961

Included Lab Sample IDs: 2115091, 2115092, 2115093, 2115094

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A93962

Included Lab Sample IDs: 2115056

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A93971

Included Lab Sample IDs: 2115056, 2115057, 2115058, 2115059, 2115066, 2115067

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A93973

Included Lab Sample IDs: 2115059, 2115066, 2115067

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A93978

Included Lab Sample IDs: 2115056, 2115057, 2115058

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.0	97.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A93986

Included Lab Sample IDs: 2115057, 2115058, 2115059, 2115066, 2115067

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A93996

Included Lab Sample IDs: 2115089, 2115090

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	86.2	84.4	P/P	60 - 160

Reference Method: SM 2320 B-97

Run ID: A94011

Included Lab Sample IDs: 2115052, 2115053, 2115054, 2115055, 2115064, 2115065

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	105	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A94011

Included Lab Sample IDs: 2115052, 2115053, 2115054, 2115055, 2115064, 2115065

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

Reference Method: EPA 8321B

Run ID: A94124

Included Lab Sample IDs: 2115089, 2115090

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	106	108	P/P	50 - 150
Acetaminophen	94.6	96.4	P/P	60 - 160
Acetamiprid	109	106	P/P	50 - 150
Afidopyropen	104	106	P/P	50 - 150
Bentazon	98.8	97.4	P/P	50 - 160
Benzovindiflupyr	113	104	P/P	50 - 150
Carbamazepine	109	108	P/P	60 - 150
Clothianidin	107	99.8	P/P	60 - 150
Dinotefuran	102	106	P/P	50 - 150
Diuron	91.6	96.2	P/P	60 - 150
Fenuron	108	111	P/P	60 - 150
Fluridone	119	123	P/P	60 - 160
Hydrocodone	106	109	P/P	60 - 150
Ibuprofen	98.8	103	P/P	50 - 160
Imazapyr	93.2	95.5	P/P	50 - 150
Imidacloprid	99.2	93.8	P/P	60 - 150
Linuron	94.0	90.5	P/P	60 - 150
Mandestrobin	121	121	P/P	50 - 150
MCPP	101	107	P/P	50 - 150
Naproxen	67.7	94.0	P/P	50 - 160
Primidone	107	106	P/P	60 - 150
Pyraclostrobin	105	105	P/P	60 - 150
Thiamethoxam	111	100	P/P	50 - 150
Tolfenpyrad	116	111	P/P	60 - 150
Triclopyr	98.2	110	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94164

Included Lab Sample IDs: 2115091, 2115092, 2115093, 2115094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	103	P/P	90 - 110
Antimony	98.3	97.8	P/P	90 - 110
Arsenic	100	101	P/P	90 - 110
Barium	100	100	P/P	90 - 110
Beryllium	95.4	98.1	P/P	90 - 110
Boron	103	97.5	P/P	90 - 110
Boron	97.5	98.2	P/P	90 - 110
Cadmium	96.8	95.8	P/P	90 - 110
Cobalt	95.2	95.7	P/P	90 - 110
Copper	97.7	98.2	P/P	90 - 110
Lead	94.9	94.8	P/P	90 - 110
Manganese	96.4	94.8	P/P	90 - 110
Molybdenum	97.2	97.0	P/P	90 - 110
Molybdenum	98.8	97.2	P/P	90 - 110
Nickel	98.1	99.5	P/P	90 - 110
Selenium	99.3	98.3	P/P	90 - 110
Silver	97.1	96.6	P/P	90 - 110
Thallium	92.9	92.6	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94248

Included Lab Sample IDs: 2115091, 2115092

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94383

Included Lab Sample IDs: 2115093, 2115094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Beryllium	101	100	P/P	90 - 110
Chromium	102	99.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94443

Included Lab Sample IDs: 2115092

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Beryllium	95.4	98.2	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						4.06	
EPA 200.7 Rev. 4.4	Iron	107		103	99.9			2.82
	Manganese	104		98.1	97.3			0.750
	Zinc	103		106	106			0.160
EPA 200.8 Rev. 5.4	Aluminum	100		107	109			1.76
	Antimony	98.4		103	103			0.393
	Arsenic	103		112	111			0.691
	Barium	99.6		103	103			0.0949
	Beryllium	91.4		101	97.7			3.68
	Boron	104						0.894
	Cadmium	100		97.2	98.9			1.79
	Chromium	100		97.1	96.5			0.675
	Cobalt	100		98.3	98.4			0.0752
	Copper	99.5		99.3	100			0.812
	Lead	98.0		103	104			0.123
	Manganese	98.6		90.3	89.8			0.433
	Molybdenum	101		102	102			0.109
	Nickel	101		100	100			0.0686
	Selenium	98.3		108	105			3.00
	Silver	101		95.4	95.2			0.128
	Thallium	103		107	108			1.27
EPA 300.0	Bromide	96.4		92.4	93.2	94.7		0.648
EPA 350.1 Rev. 2.0	Ammonia-N	97.9		101	101			0.490
	Ammonia-N	94.3		100	97.2			2.01
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105		98.8	98.5			0.243
EPA 353.2 Rev. 2.0	NO2NO3-N	102		99.4	98.4			1.01
EPA 365.1 Rev. 2.0	Total-P	96.9		97.1	97.9			0.798
	Total-P	93.2		96.4	96.4			0.0955
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102		98.3	98.8			0.398
EPA 8321B	2,4-D	106		172	151			12.0
	Acesulfame K	137		97.6	81.2			18.3
	Acetaminophen	83.8		99.3	83.7			17.1
	Acetamiprid	92.6		120	116			3.58
	Afidopyrophen	97.8		136	134			1.49
	AMPA	132		61.6	64.5			3.04
	Bentazon	99.9						7.44
	Benzovindiflupyr	96.7		106	85.4			21.4
	Carbamazepine	92.9		111	105			4.70
	Clothianidin	96.4		131	118			10.1
	Dinotefuran	99.6		132	131			1.07
	Diuron	85.3		99.4	81.6			17.1
	Endothall	95.6		82.6	92.6			11.4
	Fenuron	106		105	96.8			8.30
	Fluridone	114		124	106			9.99
	Glufosinate	108		72.5	72.4			0.171
	Glyphosate	110		94.7	107			7.91
	Hydrocodone	98.6		117	105			10.2
	Ibuprofen	114		153	127			19.1
	Imazapyr	96.7		116	127			7.10
	Imidacloprid	101		219	196			10.3
	Linuron	84.8		94.6	88.3			6.88
	Mandestrobin	101		112	99.3			11.6
	MCP	123		223	178			22.4
	Naproxen	121		138	157			12.6

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Primidone	95.4	120	113		6.63
	Pyraclostrobin	95.2	111	75.2		38.5
	Sucralose	93.0	78.5	91.0		14.7
	Thiamethoxam	108	165	173		4.98
	Tolfenpyrad	64.7	78.5	46.2		51.8
	Triclopyr	72.4	128	97.0		27.5
SM 2320 B-97	Total Alkalinity	105			0.386	
SM 4500 F-C-97	Fluoride	96.5	97.5	96.9		0.473
SM 5310 B-00	Organic Carbon	95.7	92.7	95.3		2.01

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2115052, 2115053, 2115054, 2115055, 2115064, 2115065
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2115091, 2115092, 2115093, 2115094
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2115091, 2115092, 2115093, 2115094
EPA 300.0 / E31780	Bromide in aqueous matrices	2115052, 2115053, 2115054, 2115055, 2115064, 2115065
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2115056, 2115057, 2115058, 2115059, 2115066, 2115067
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2115056, 2115057, 2115058, 2115059, 2115066, 2115067
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2115056, 2115057, 2115058, 2115059, 2115066, 2115067
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2115056, 2115057, 2115058, 2115059, 2115066, 2115067
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2115060, 2115061, 2115062, 2115063, 2115068, 2115069
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2115089, 2115090
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2115089, 2115090
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2115052, 2115053, 2115054, 2115055, 2115064, 2115065
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2115052, 2115053, 2115054, 2115055, 2115064, 2115065
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2115052, 2115053, 2115054, 2115055, 2115064, 2115065
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2115056, 2115057, 2115058, 2115059, 2115066, 2115067

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	08/28/2019			08/28/2019 17:22	Rosalyn Ballman	2115052, 2115053, 2115054, 2115055, 2115064, 2115065
EPA 200.7 Rev. 4.4	08/28/2019	08/29/2019 16:50	Elliott D. Healy	09/03/2019 11:25	Alexander Thompson	2115091
	08/28/2019	08/29/2019 16:50	Elliott D. Healy	09/03/2019 11:32	Alexander Thompson	2115092
	08/28/2019	08/29/2019 16:50	Elliott D. Healy	09/03/2019 11:40	Alexander Thompson	2115093
	08/28/2019	08/29/2019 16:50	Elliott D. Healy	09/03/2019 11:47	Alexander Thompson	2115094
EPA 200.8 Rev. 5.4	08/28/2019	08/29/2019 16:50	Elliott D. Healy	09/11/2019 19:23	Justin Cutchin	2115091
	08/28/2019	08/29/2019 16:50	Elliott D. Healy	09/11/2019 19:33	Justin Cutchin	2115092
	08/28/2019	08/29/2019 16:50	Elliott D. Healy	09/11/2019 19:42	Justin Cutchin	2115093
	08/28/2019	08/29/2019 16:50	Elliott D. Healy	09/11/2019 20:20	Justin Cutchin	2115094
	08/28/2019	08/29/2019 16:50	Elliott D. Healy	09/11/2019 22:14	Justin Cutchin	2115091
	08/28/2019	08/29/2019 16:50	Elliott D. Healy	09/11/2019 22:24	Justin Cutchin	2115092
	08/28/2019	08/29/2019 16:50	Elliott D. Healy	09/11/2019 22:33	Justin Cutchin	2115093
	08/28/2019	08/29/2019 16:50	Elliott D. Healy	09/11/2019 22:43	Justin Cutchin	2115094
	08/28/2019	08/29/2019 16:50	Elliott D. Healy	09/16/2019 15:16	Justin Cutchin	2115091
	08/28/2019	08/29/2019 16:50	Elliott D. Healy	09/16/2019 15:22	Justin Cutchin	2115092
	08/28/2019	08/29/2019 16:50	Elliott D. Healy	09/19/2019 11:52	Justin Cutchin	2115093
	08/28/2019	08/29/2019 16:50	Elliott D. Healy	09/19/2019 11:58	Justin Cutchin	2115094
EPA 300.0	08/28/2019			08/28/2019 21:59	Jhamieka S. Greenwood	2115052
	08/28/2019			08/28/2019 22:50	Jhamieka S. Greenwood	2115053
	08/28/2019			08/28/2019 23:07	Jhamieka S. Greenwood	2115054
	08/28/2019			08/28/2019 23:24	Jhamieka S. Greenwood	2115055
	08/28/2019			08/28/2019 23:41	Jhamieka S. Greenwood	2115064
	08/28/2019			08/28/2019 23:58	Jhamieka S. Greenwood	2115065
EPA 350.1 Rev. 2.0	08/28/2019			09/03/2019 11:48	Ping Hua	2115056
	08/28/2019			09/04/2019 14:20	Ping Hua	2115057
	08/28/2019			09/04/2019 14:22	Ping Hua	2115058
	08/28/2019			09/04/2019 14:23	Ping Hua	2115059
	08/28/2019			09/04/2019 14:25	Ping Hua	2115066
	08/28/2019			09/04/2019 14:26	Ping Hua	2115067
EPA 351.2 Rev. 2.0	08/28/2019	08/29/2019 11:55	Sima Feizi	08/30/2019 12:37	Joseph Suarez	2115056
	08/28/2019	08/29/2019 11:55	Sima Feizi	08/30/2019 12:38	Joseph Suarez	2115057
	08/28/2019	08/29/2019 11:55	Sima Feizi	08/30/2019 15:03	Joseph Suarez	2115058
	08/28/2019	08/29/2019 11:55	Sima Feizi	08/30/2019 15:05	Joseph Suarez	2115059
	08/28/2019	08/29/2019 11:55	Sima Feizi	08/30/2019 15:07	Joseph Suarez	2115066
	08/28/2019	08/29/2019 11:55	Sima Feizi	08/30/2019 15:08	Joseph Suarez	2115067
EPA 353.2 Rev. 2.0	08/28/2019			09/04/2019 09:30	Beverly Y. Sanders	2115057
	08/28/2019			09/04/2019 09:38	Beverly Y. Sanders	2115056
	08/28/2019			09/04/2019 09:39	Beverly Y. Sanders	2115058
	08/28/2019			09/04/2019 09:40	Beverly Y. Sanders	2115059

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	08/28/2019			09/04/2019 09:42	Beverly Y. Sanders	2115066
	08/28/2019			09/04/2019 09:43	Beverly Y. Sanders	2115067
EPA 365.1 Rev. 2.0	08/28/2019	08/29/2019 07:30	Joseph Suarez	08/30/2019 12:59	Lipi Saha	2115056
	08/28/2019	08/29/2019 07:30	Joseph Suarez	08/30/2019 13:00	Lipi Saha	2115057
	08/28/2019	08/29/2019 07:30	Joseph Suarez	08/30/2019 13:01	Lipi Saha	2115058
	08/28/2019	09/03/2019 13:30	Lipi Saha	09/04/2019 12:29	Lipi Saha	2115059
	08/28/2019	09/03/2019 13:30	Lipi Saha	09/04/2019 12:30	Lipi Saha	2115066
	08/28/2019	09/03/2019 13:30	Lipi Saha	09/04/2019 12:31	Lipi Saha	2115067
EPA 365.1 Rev. 2.0 dissolved	08/28/2019			08/28/2019 14:40	Jhamieka S. Greenwood	2115068
	08/28/2019			08/28/2019 15:13	Jhamieka S. Greenwood	2115060
	08/28/2019			08/28/2019 15:14	Jhamieka S. Greenwood	2115061
	08/28/2019			08/28/2019 15:15	Jhamieka S. Greenwood	2115062, 2115063
	08/28/2019			08/28/2019 15:16	Jhamieka S. Greenwood	2115069
EPA 8321B	08/28/2019	08/29/2019 09:45	Rebecca Ware	08/29/2019 16:47	Rebecca Ware	2115089
	08/28/2019	08/29/2019 09:45	Rebecca Ware	08/29/2019 17:00	Rebecca Ware	2115090
	08/28/2019	08/29/2019 09:45	Rebecca Ware	08/30/2019 11:49	Rebecca Ware	2115089
	08/28/2019	08/29/2019 09:45	Rebecca Ware	08/30/2019 12:00	Rebecca Ware	2115090
	08/28/2019	08/29/2019 09:45	Rebecca Ware	09/04/2019 23:11	Rebecca Ware	2115089
	08/28/2019	08/29/2019 09:45	Rebecca Ware	09/04/2019 23:23	Rebecca Ware	2115090
	08/28/2019	09/03/2019 08:00	Fe-Val Siddell	09/03/2019 16:18	Juyoung Kim	2115090
	08/28/2019	09/03/2019 08:00	Fe-Val Siddell	09/03/2019 16:53	Juyoung Kim	2115089
SM 2320 B-97	08/28/2019			09/05/2019 05:35	Dale L. Simmons	2115052
	08/28/2019			09/05/2019 05:48	Dale L. Simmons	2115053
	08/28/2019			09/05/2019 06:00	Dale L. Simmons	2115054
	08/28/2019			09/05/2019 06:12	Dale L. Simmons	2115055
	08/28/2019			09/05/2019 06:24	Dale L. Simmons	2115064
	08/28/2019			09/05/2019 06:36	Dale L. Simmons	2115065
SM 2540 D-97	08/28/2019			08/30/2019 15:41	Yijie Li	2115052, 2115053, 2115054, 2115055, 2115064, 2115065
SM 4500 F-C-97	08/28/2019			09/05/2019 03:09	Dale L. Simmons	2115052
	08/28/2019			09/05/2019 03:13	Dale L. Simmons	2115053
	08/28/2019			09/05/2019 03:17	Dale L. Simmons	2115054
	08/28/2019			09/05/2019 03:22	Dale L. Simmons	2115055
	08/28/2019			09/05/2019 03:26	Dale L. Simmons	2115064
	08/28/2019			09/05/2019 03:30	Dale L. Simmons	2115065
SM 5310 B-00	08/28/2019			08/31/2019 03:46	Madeline Funaro	2115056
	08/28/2019			08/31/2019 05:21	Madeline Funaro	2115057
	08/28/2019			08/31/2019 05:33	Madeline Funaro	2115058
	08/28/2019			08/31/2019 06:12	Madeline Funaro	2115059
	08/28/2019			08/31/2019 06:24	Madeline Funaro	2115066

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	08/28/2019			08/31/2019 06:53	Madeline Funaro	2115067