

Chemical Analysis Report

CEN-DIST-2019-02-07-02

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

Event Description: **Long / Econ Trib/ UnDrain / Roberts**
Request ID: **RQ-2019-02-04-58**
Customer: **CEN-DIST**
Project ID: **SMP**

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

Date Certified: 27-FEB-2019 10:17

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 "T" and a long horizontal stroke at the end.

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: LONG BRANCH @ 350M DS OF CR 13

Collection Date/Time: 02/06/2019 12:52

Field ID: G2CE0199

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2060599	EPA 8321B	2,4-D	0.0020	U	ug/L	P358394	
		Sucralose**	0.25		ug/L	P358378	
		Bentazon	8.0E-04	U	ug/L	P358394	
		MCP	0.0020	U	ug/L	P358394	
		Triclopyr**	0.0040	U	ug/L	P358394	
		Imidacloprid	0.0020	U	ug/L	P358394	MS
		Diuron	0.0028	I	ug/L	P358394	
		Pyraclostrobin**	0.0020	U	ug/L	P358394	
		Primidone**	0.0041	I	ug/L	P358394	
		Linuron	0.0040	U	ug/L	P358394	
		Acetaminophen**	0.0080	U	ug/L	P358394	
		Fenuron	0.016	U	ug/L	P358394	
		Imazapyr**	0.019		ug/L	P358394	
		Carbamazepine**	8.0E-04	U	ug/L	P358394	
		Fluridone**	0.0021	I	ug/L	P358394	
		Hydrocodone**	0.0020	U	ug/L	P358394	
		Naproxen**	0.0080	U	ug/L	P358394	
		Ibuprofen**	0.020	U	ug/L	P358394	
		Glyphosate**	0.10	U	ug/L	P358378	
		AMPA**	0.10	U	ug/L	P358378	
		Endothall**	0.25	U	ug/L	P358378	
		Glufosinate**	0.10	U	ug/L	P358378	
		Acesulfame K**	0.10	U	ug/L	P358378	

Sample Location: LONG BRANCH @ 0.7 MI DS OF CR 13

Collection Date/Time: 02/06/2019 12:24

Field ID: G2CE0036

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2060600	EPA 8321B	2,4-D	0.0020	U	ug/L	P358573	
		Sucralose**	0.26		ug/L	P358378	
		Bentazon	8.0E-04	U	ug/L	P358573	
		MCP	0.0020	U	ug/L	P358573	
		Triclopyr**	0.0040	U	ug/L	P358573	
		Imidacloprid	0.0020	U	ug/L	P358573	MS
		Diuron	0.0020	U	ug/L	P358573	
		Pyraclostrobin**	0.0020	U	ug/L	P358573	
		Primidone**	0.0040	U	ug/L	P358573	
		Linuron	0.0040	U	ug/L	P358573	
		Acetaminophen**	0.0080	U	ug/L	P358573	
		Fenuron	0.016	U	ug/L	P358573	
		Imazapyr**	0.019		ug/L	P358573	
		Carbamazepine**	8.0E-04	U	ug/L	P358573	
		Fluridone**	0.0021	I	ug/L	P358573	
		Hydrocodone**	0.0020	U	ug/L	P358573	
		Naproxen**	0.0080	U	ug/L	P358573	
		Ibuprofen**	0.020	U	ug/L	P358573	
		Glyphosate**	0.10	U	ug/L	P358378	
		AMPA**	0.10	U	ug/L	P358378	
		Endothall**	0.25	U	ug/L	P358378	
		Glufosinate**	0.10	U	ug/L	P358378	
		Acesulfame K**	0.10	U	ug/L	P358378	

Ref. Method and Comment:

EPA 8321B: MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample.

**Sample Location: ECON RIVER TRIB @ 170M N OF JAY
 BLANCHARD TRAIL**

Collection Date/Time: 02/06/2019 14:05

Field ID: G2CE0198

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2060582	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P358525	
	EPA 300.0 Rev. 2.1	Chloride	21		mg Cl/L	P359272	
		Sulfate	5.8		mg SO4/L	P359275	
	SM 2120 B	Color (true)	82	A	PCU	P358543	
	SM 2320 B-97	Total Alkalinity	62		mg CaCO3/L	P359099	
	SM 2540 C-97	TDS	149		mg/L	P358882	
	SM 2540 D-97	TSS	2	U	mg/L	P358740	
	SM 4500 F-C-97	Fluoride	0.052	I	mg F/L	P359103	
2060583	EPA 350.1 Rev. 2.0	Ammonia-N	0.041		mg N/L	P358795	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P358763	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.24		mg N/L	P358852	
	EPA 365.1 Rev. 2.0	Total-P	0.056		mg P/L	P358702	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P358674	
2060584	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.033		mg P/L	P358539	
2060601	EPA 200.7 Rev. 4.4	Barium	14.1		ug/L	P358547	
		Calcium	29.7		mg/L	P358547	
		Iron	350		ug/L	P358547	
		Magnesium	2.00		mg/L	P358547	
		Potassium	1.3		mg/L	P358547	
		Sodium	11.8		mg/L	P358547	
		Zinc	5.1	I	ug/L	P358547	
	EPA 200.8 Rev. 5.4	Aluminum	114		ug/L	P358547	
		Antimony	0.11	I	ug/L	P358547	
		Arsenic	0.54		ug/L	P358547	
		Boron**	27.7		ug/L	P358547	
		Cadmium	0.020	U	ug/L	P358547	
		Chromium	0.66	I	ug/L	P358547	
		Copper	1.23		ug/L	P358547	
		Lead	0.23	I	ug/L	P358547	
		Nickel	0.50	U	ug/L	P358547	
		Selenium	0.20	U	ug/L	P358547	
		Silver	0.010	U	ug/L	P358547	
		Thallium	0.10	U	ug/L	P358547	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P358525

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P358547

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P358547

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	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 Rev. 2.1
Batch ID: P359272

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359275

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358795

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: P358763

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P358852

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P358702

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P358539

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

Reference Method: EPA 8321B
 Batch ID: P358378

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: P358394

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P358573

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

Reference Method: SM 2120 B
Batch ID: P358543

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P359099

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

Reference Method: SM 2540 C-97
Batch ID: P358882

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P358740

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P359103

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P358674

Component	Result	Code	Units
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Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P358674

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: P358547

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	101		P	85 - 115
Calcium	111		P	85 - 115
Iron	110		P	85 - 115
Magnesium	112		P	85 - 115
Potassium	102		P	85 - 115
Sodium	103		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P358547

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	98.2		P	85 - 115
Arsenic	104		P	85 - 115
Boron	106		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	103		P	85 - 115
Copper	102		P	85 - 115
Lead	104		P	85 - 115
Nickel	102		P	85 - 115
Selenium	101		P	85 - 115
Silver	101		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P359272

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P359275

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P358795

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P358763

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P358852

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P358702

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P358539

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

Reference Method: EPA 8321B
 Batch ID: P358378

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	113		P	40 - 150
AMPA	91.1		P	40 - 150
Endothall	98.8		P	40 - 150
Glufosinate	71.3		P	40 - 150
Glyphosate	79.3		P	40 - 140
Sucralose	99.4		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P358394

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	87.2		P	40 - 150
Acetaminophen	89.9		P	30 - 150
Bentazon	98.3		P	30 - 150
Carbamazepine	88.5		P	40 - 150
Diuron	78.2		P	40 - 150
Fenuron	117		P	40 - 150
Fluridone	104		P	40 - 150
Hydrocodone	98.7		P	40 - 150
Ibuprofen	85.3		P	40 - 150
Imazapyr	92.7		P	40 - 150
Imidacloprid	94.4		P	40 - 150
Linuron	77.0		P	40 - 150
MCPP	115		P	40 - 150
Naproxen	95.6		P	40 - 150
Primidone	95.5		P	40 - 150
Pyraclostrobin	65.5		P	40 - 150
Triclopyr	75.5		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P358573

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	60.5		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P358573

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	82.2		P	30 - 150
Bentazon	64.9		P	30 - 150
Carbamazepine	85.2		P	40 - 150
Diuron	83.0		P	40 - 150
Fenuron	101		P	40 - 150
Fluridone	101		P	40 - 150
Hydrocodone	96.7		P	40 - 150
Ibuprofen	75.9		P	40 - 150
Imazapyr	74.4		P	40 - 150
Imidacloprid	111		P	40 - 150
Linuron	82.4		P	40 - 150
MCPP	79.2		P	40 - 150
Naproxen	70.7		P	40 - 150
Primidone	94.4		P	40 - 150
Pyraclostrobin	78.1		P	40 - 150
Triclopyr	50.5		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P358543

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P359099

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P359103

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

Reference Method: SM 5310 B-00
Batch ID: P358674

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P358547

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060347	Barium	101	100	P/P	80 - 120
2060347	Calcium	108	113	P/P	80 - 120
2060347	Iron	108	113	P/P	80 - 120
2060347	Magnesium	110	115	P/P	80 - 120
2060347	Potassium	104	108	P/P	80 - 120
2060347	Sodium	97.9	98.6	P/P	80 - 120
2060347	Zinc	103	102	P/P	80 - 120
2060476	Barium	99.5		P	80 - 120
2060476	Calcium	108		P	80 - 120
2060476	Iron	108		P	80 - 120
2060476	Magnesium	104		P	80 - 120
2060476	Potassium	99.4		P	80 - 120
2060476	Sodium	98.8		P	80 - 120
2060476	Zinc	103		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P358547

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060347	Aluminum	101	99.1	P/P	80 - 120
2060347	Antimony	101	98.5	P/P	80 - 120
2060347	Arsenic	106	106	P/P	80 - 120
2060347	Boron	109	107	P/P	80 - 120
2060347	Cadmium	105	105	P/P	80 - 120
2060347	Chromium	108	109	P/P	80 - 120
2060347	Copper	107	107	P/P	80 - 120
2060347	Lead	107	106	P/P	80 - 120
2060347	Nickel	109	109	P/P	80 - 120
2060347	Selenium	103	102	P/P	80 - 120
2060347	Silver	102	102	P/P	80 - 120
2060347	Thallium	106	107	P/P	80 - 120
2060476	Aluminum	101		P	80 - 120
2060476	Antimony	104		P	80 - 120
2060476	Arsenic	109		P	80 - 120
2060476	Boron	109		P	80 - 120
2060476	Cadmium	107		P	80 - 120
2060476	Chromium	107		P	80 - 120
2060476	Copper	104		P	80 - 120
2060476	Lead	107		P	80 - 120
2060476	Nickel	105		P	80 - 120
2060476	Selenium	104		P	80 - 120
2060476	Silver	106		P	80 - 120
2060476	Thallium	108		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P359272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060482	Chloride	95.4		P	90 - 110
2060578	Chloride	97.4		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359275

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060482	Sulfate	95.3		P	90 - 110
2060578	Sulfate	97.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358795

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060583	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358763

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060640	Kjeldahl Nitrogen	99.2	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358852

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060555	NO2NO3-N	98.5	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358702

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060519	Total-P	104	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358539

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060644	O-Phosphate-P	96.7	97.5	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P358378

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2059643	Acesulfame K	113	116	P/P	40 - 150
2059643	AMPA	140	144	P/P	40 - 150
2059643	Endothall	109	114	P/P	40 - 150
2059643	Glufosinate	70.4	68.9	P/P	40 - 150
2059643	Glyphosate	77.3	78.3	P/P	40 - 140
2059643	Sucralose	94.4	103	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P358394

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2059339	2,4-D	102	97.0	P/P	40 - 150
2059339	Acetaminophen	132	127	P/P	30 - 150
2059339	Bentazon	65.4	54.1	P/P	30 - 150
2059339	Carbamazepine	81.6	68.4	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P358394

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2059339	Diuron	71.1	60.3	P/P	40 - 150
2059339	Fenuron	87.8	77.7	P/P	40 - 150
2059339	Fluridone	95.1	74.8	P/P	40 - 150
2059339	Hydrocodone	95.5	82.4	P/P	40 - 150
2059339	Ibuprofen	94.3	91.2	P/P	40 - 150
2059339	Imazapyr	100	88.8	P/P	40 - 150
2059339	Imidacloprid	192	175	F/F	40 - 150
2059339	Linuron	73.9	62.8	P/P	40 - 150
2059339	MCP	145	121	P/P	40 - 150
2059339	Naproxen	101	99.2	P/P	40 - 150
2059339	Primidone	101	100	P/P	40 - 150
2059339	Pyraclostrobin	83.3	69.9	P/P	40 - 150
2059339	Triclopyr	86.2	77.7	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P358573

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2061239	2,4-D	70.1	65.3	P/P	40 - 150
2061239	Acetaminophen	118	116	P/P	30 - 150
2061239	Bentazon	36.7	36.3	P/P	30 - 150
2061239	Carbamazepine	71.9	74.9	P/P	40 - 150
2061239	Diuron	62.4	66.4	P/P	40 - 150
2061239	Fenuron	83.3	80.6	P/P	40 - 150
2061239	Fluridone	80.8	87.0	P/P	40 - 150
2061239	Hydrocodone	78.8	79.7	P/P	40 - 150
2061239	Ibuprofen	87.9	87.0	P/P	40 - 150
2061239	Imidacloprid	184	167	F/F	40 - 150
2061239	Linuron	66.6	70.5	P/P	40 - 150
2061239	MCP	88.5	79.5	P/P	40 - 150
2061239	Naproxen	51.7	50.3	P/P	40 - 150
2061239	Primidone	109	102	P/P	40 - 150
2061239	Pyraclostrobin	78.7	76.3	P/P	40 - 150
2061239	Triclopyr	47.4	40.6	P/P	40 - 150

Reference Method: SM 4500 F-C-97
 Batch ID: P359103

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060786	Fluoride	97.0	97.0	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P358674

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2060583	Organic Carbon	92.9	91.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P358525

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060578	Turbidity	0.308	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P358547

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060347	Barium	1.08	Spike	P	0 - 20
2060347	Calcium	4.15	Spike	P	0 - 20
2060347	Iron	4.03	Spike	P	0 - 20
2060347	Magnesium	4.55	Spike	P	0 - 20
2060347	Potassium	3.86	Spike	P	0 - 20
2060347	Sodium	0.456	Spike	P	0 - 20
2060347	Zinc	1.46	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P358547

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060347	Aluminum	1.28	Spike	P	0 - 20
2060347	Antimony	2.01	Spike	P	0 - 20
2060347	Arsenic	0.0787	Spike	P	0 - 20
2060347	Boron	2.14	Spike	P	0 - 20
2060347	Cadmium	0.916	Spike	P	0 - 20
2060347	Chromium	0.697	Spike	P	0 - 20
2060347	Copper	0.709	Spike	P	0 - 20
2060347	Lead	0.490	Spike	P	0 - 20
2060347	Nickel	0.255	Spike	P	0 - 20
2060347	Selenium	0.653	Spike	P	0 - 20
2060347	Silver	0.630	Spike	P	0 - 20
2060347	Thallium	0.895	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P359272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060578	Chloride	1.13	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P359275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060578	Sulfate	1.05	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358795

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060583	Ammonia-N	0.238	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358763

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060640	Kjeldahl Nitrogen	2.36	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060555	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358702

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060519	Total-P	1.90	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358539

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060644	O-Phosphate-P	0.824	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P358378

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2059643	Acesulfame K	2.45	Spike	P	0 - 30
2059643	AMPA	2.99	Spike	P	0 - 30
2059643	Endothall	4.98	Spike	P	0 - 30
2059643	Glufosinate	2.15	Spike	P	0 - 30
2059643	Glyphosate	1.27	Spike	P	0 - 30
2059643	Sucralose	8.45	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P358394

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2059339	2,4-D	4.22	Spike	P	0 - 30
2059339	Acetaminophen	3.76	Spike	P	0 - 30
2059339	Bentazon	2.58	Spike	P	0 - 30
2059339	Carbamazepine	16.5	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P358394

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2059339	Diuron	15.7	Spike	P	0 - 30
2059339	Fenuron	12.2	Spike	P	0 - 30
2059339	Fluridone	4.94	Spike	P	0 - 30
2059339	Hydrocodone	14.7	Spike	P	0 - 30
2059339	Ibuprofen	3.34	Spike	P	0 - 30
2059339	Imazapyr	6.29	Spike	P	0 - 30
2059339	Imidacloprid	9.05	Spike	P	0 - 30
2059339	Linuron	16.2	Spike	P	0 - 30
2059339	MCP	18.0	Spike	P	0 - 30
2059339	Naproxen	1.31	Spike	P	0 - 30
2059339	Primidone	0.471	Spike	P	0 - 30
2059339	Pyraclostrobin	17.6	Spike	P	0 - 30
2059339	Triclopyr	10.4	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P358573

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2061239	2,4-D	4.88	Spike	P	0 - 30
2061239	Acetaminophen	2.21	Spike	P	0 - 30
2061239	Bentazon	0.308	Spike	P	0 - 30
2061239	Carbamazepine	3.99	Spike	P	0 - 30
2061239	Diuron	5.81	Spike	P	0 - 30
2061239	Fenuron	3.35	Spike	P	0 - 30
2061239	Fluridone	3.32	Spike	P	0 - 30
2061239	Hydrocodone	1.14	Spike	P	0 - 30
2061239	Ibuprofen	1.12	Spike	P	0 - 30
2061239	Imazapyr	24.4	Spike	P	0 - 30
2061239	Imidacloprid	7.98	Spike	P	0 - 30
2061239	Linuron	5.72	Spike	P	0 - 30
2061239	MCP	10.6	Spike	P	0 - 30
2061239	Naproxen	2.75	Spike	P	0 - 30
2061239	Primidone	6.24	Spike	P	0 - 30
2061239	Pyraclostrobin	3.10	Spike	P	0 - 30
2061239	Triclopyr	15.6	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P358543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060582	Color (true)	2.78	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P359099

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060786	Total Alkalinity	0.489	Sample	P	0 - 1.6

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P358882

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060552	TDS	2.16	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P358740

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060552	TSS	3.17	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P359103

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060786	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P358674

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2060583	Organic Carbon	0.768	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: 2060599
Field Sample ID: G2CE0199

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	83.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	119	P	30 - 160
EPA 8321B	Carbamazepine-d10	69.5	P	30 - 160
EPA 8321B	Diuron-d6	66.6	P	30 - 160
EPA 8321B	Endothall-d6	107	P	40 - 160
EPA 8321B	Endothall-d6	107	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	42.5	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	42.5	P	40 - 160
EPA 8321B	Ibuprofen-d3	79.2	P	30 - 160
EPA 8321B	Primidone-d5	92.9	P	30 - 160
EPA 8321B	Sucralose-d6	92.4	P	40 - 160
EPA 8321B	Sucralose-d6	92.4	P	40 - 160

Lab Sample ID: 2060600
Field Sample ID: G2CE0036

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	85.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	108	P	30 - 160
EPA 8321B	Carbamazepine-d10	60.9	P	30 - 160
EPA 8321B	Diuron-d6	60.3	P	30 - 160
EPA 8321B	Endothall-d6	103	P	40 - 160
EPA 8321B	Endothall-d6	103	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	41.8	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	41.8	P	40 - 160
EPA 8321B	Ibuprofen-d3	86.4	P	30 - 160
EPA 8321B	Primidone-d5	82.5	P	30 - 160
EPA 8321B	Sucralose-d6	86.9	P	40 - 160
EPA 8321B	Sucralose-d6	86.9	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A89266

Included Lab Sample IDs: 2060582

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A89268

Included Lab Sample IDs: 2060584

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.9	98.1	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A89269

Included Lab Sample IDs: 2060582

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	100	P/P	90 - 115

Reference Method: EPA 8321B

Run ID: A89271

Included Lab Sample IDs: 2060599, 2060600

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	124	124	P/P	60 - 160
Endothall	99.2	104	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A89308

Included Lab Sample IDs: 2060599, 2060600

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	120	124	P/P	60 - 160
Glufosinate	78.2	79.1	P/P	60 - 160
Glyphosate	94.4	87.8	P/P	60 - 160

Reference Method: SM 5310 B-00

Run ID: A89322

Included Lab Sample IDs: 2060583

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	92.0	92.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89359

Included Lab Sample IDs: 2060583

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A89374

Included Lab Sample IDs: 2060583

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A89395

Included Lab Sample IDs: 2060583

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A89396

Included Lab Sample IDs: 2060601

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	97.1	99.9	P/P	90 - 110
Calcium	102	107	P/P	90 - 110
Iron	103	105	P/P	90 - 110
Magnesium	102	104	P/P	90 - 110
Potassium	96.8	97.6	P/P	90 - 110
Sodium	94.5	95.9	P/P	90 - 110
Zinc	99.6	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A89402

Included Lab Sample IDs: 2060583

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.8	99.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89439

Included Lab Sample IDs: 2060601

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	104	104	P/P	90 - 110
Antimony	98.0	99.5	P/P	90 - 110
Arsenic	102	102	P/P	90 - 110
Boron	105	103	P/P	90 - 110
Cadmium	101	102	P/P	90 - 110
Chromium	105	107	P/P	90 - 110
Copper	103	103	P/P	90 - 110
Lead	105	105	P/P	90 - 110
Nickel	104	104	P/P	90 - 110
Selenium	99.3	102	P/P	90 - 110
Silver	98.5	99.4	P/P	90 - 110
Thallium	99.9	99.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A89461

Included Lab Sample IDs: 2060599, 2060600

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	105	90.0	P/P	60 - 160

Reference Method: SM 2320 B-97

Run ID: A89482

Included Lab Sample IDs: 2060582

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

Reference Method: SM 4500 F-C-97

Run ID: A89482

Included Lab Sample IDs: 2060582

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

Reference Method: EPA 8321B

Run ID: A89502

Included Lab Sample IDs: 2060599, 2060600

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	69.5	80.2	P/P	50 - 150
2,4-D	70.7	67.3	P/P	50 - 150
Acetaminophen	113	111	P/P	60 - 160
Acetaminophen	115	111	P/P	60 - 160
Bentazon	83.7	74.6	P/P	50 - 160
Bentazon	88.4	93.8	P/P	50 - 160
Carbamazepine	98.8	100	P/P	60 - 150
Carbamazepine	99.4	98.4	P/P	60 - 150
Diuron	97.4	89.5	P/P	60 - 150
Diuron	98.1	92.5	P/P	60 - 150
Fenuron	100	97.0	P/P	60 - 150
Fenuron	92.8	82.6	P/P	60 - 150
Fluridone	102	107	P/P	60 - 160
Fluridone	98.2	104	P/P	60 - 160
Hydrocodone	108	92.8	P/P	60 - 150
Hydrocodone	110	98.7	P/P	60 - 150
Ibuprofen	113	94.7	P/P	50 - 160
Ibuprofen	71.3	82.8	P/P	50 - 160
Imazapyr	78.0	69.6	P/P	50 - 150
Imazapyr	79.3	63.5	P/P	50 - 150
Imidacloprid	108	93.7	P/P	60 - 150
Imidacloprid	120	105	P/P	60 - 150
Linuron	96.1	104	P/P	60 - 150
Linuron	97.3	101	P/P	60 - 150
MCPP	83.5	87.0	P/P	50 - 150
MCPP	93.3	90.9	P/P	50 - 150
Naproxen	102	93.1	P/P	50 - 160
Naproxen	128	117	P/P	50 - 160
Primidone	106	91.5	P/P	60 - 150
Primidone	90.4	101	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A89502

Included Lab Sample IDs: 2060599, 2060600

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Pyraclostrobin	111	112	P/P	60 - 150
Pyraclostrobin	115	111	P/P	60 - 150
Triclopyr	106	88.5	P/P	50 - 150
Triclopyr	79.0	82.1	P/P	50 - 150

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A89517

Included Lab Sample IDs: 2060582

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.5	97.7	P/P	90 - 110
Sulfate	97.2	97.4	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						0.308	
EPA 200.7 Rev. 4.4	Barium	101	101	100	99.5			1.08
	Calcium	111	108	113	108			4.15
	Iron	110	108	113	108			4.03
	Magnesium	112	110	115	104			4.55
	Potassium	102	104	108	99.4			3.86
	Sodium	103	97.9	98.6	98.8			0.456
	Zinc	102	103	102	103			1.46
EPA 200.8 Rev. 5.4	Aluminum	100	101	99.1	101			1.28
	Antimony	98.2	101	98.5	104			2.01
	Arsenic	104	106	106	109			0.0787
	Boron	106	109	107	109			2.14
	Cadmium	103	105	105	107			0.916
	Chromium	103	108	109	107			0.697
	Copper	102	107	107	104			0.709
	Lead	104	107	106	107			0.490
	Nickel	102	109	109	105			0.255
	Selenium	101	103	102	104			0.653
	Silver	101	102	102	106			0.630
	Thallium	102	106	107	108			0.895
EPA 300.0 Rev. 2.1	Chloride	98.3	97.4	95.4			1.13	
	Sulfate	97.1	97.0	95.3			1.05	
EPA 350.1 Rev. 2.0	Ammonia-N	100	101	101				0.238
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	99.2	103				2.36
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	98.5	98.5				0.0
EPA 365.1 Rev. 2.0	Total-P	106	104	106				1.90
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	96.7	97.5				0.824
EPA 8321B	2,4-D	87.2	102	97.0				4.22
	2,4-D	60.5	65.3	70.1				4.88
	Acesulfame K	113	113	116				2.45
	Acetaminophen	89.9	132	127				3.76
	Acetaminophen	82.2	116	118				2.21
	AMPA	91.1	140	144				2.99
	Bentazon	98.3	65.4	54.1				2.58
	Bentazon	64.9	36.3	36.7				0.308
	Carbamazepine	88.5	81.6	68.4				16.5
	Carbamazepine	85.2	74.9	71.9				3.99
	Diuron	78.2	71.1	60.3				15.7
	Diuron	83.0	66.4	62.4				5.81
	Endothall	98.8	109	114				4.98
	Fenuron	117	87.8	77.7				12.2
	Fenuron	101	80.6	83.3				3.35
	Fluridone	104	95.1	74.8				4.94
	Fluridone	101	87.0	80.8				3.32
	Glufosinate	71.3	70.4	68.9				2.15
	Glyphosate	79.3	77.3	78.3				1.27
	Hydrocodone	98.7	95.5	82.4				14.7
	Hydrocodone	96.7	79.7	78.8				1.14
	Ibuprofen	85.3	94.3	91.2				3.34
	Ibuprofen	75.9	87.0	87.9				1.12
	Imazapyr	92.7	100	88.8				6.29
	Imazapyr	74.4						24.4
	Imidacloprid	94.4	192	175				9.05
	Imidacloprid	111	167	184				7.98

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	SMP
EPA 8321B	Linuron	77.0	73.9	62.8		
	Linuron	82.4	70.5	66.6		
	MCP	115	145	121		
	MCP	79.2	79.5	88.5		
	Naproxen	95.6	101	99.2		
	Naproxen	70.7	50.3	51.7		
	Primidone	95.5	101	100		
	Primidone	94.4	102	109		
	Pyraclostrobin	65.5	83.3	69.9		
	Pyraclostrobin	78.1	76.3	78.7		
	Sucralose	99.4	94.4	103		
	Triclopyr	75.5	86.2	77.7		
	Triclopyr	50.5	40.6	47.4		
SM 2120 B	Color (true)	100				2.78
SM 2320 B-97	Total Alkalinity	104				0.489
SM 2540 C-97	TDS					2.16
SM 2540 D-97	TSS					3.17
SM 4500 F-C-97	Fluoride	98.2	97.0	97.0		
SM 5310 B-00	Organic Carbon	93.4	92.9	91.7		

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2060582
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2060601
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2060601
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2060582
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2060582
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2060583
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2060583
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2060583
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2060583
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2060584
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2060599, 2060600
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2060599, 2060600
SM 2120 B / E31780	True Color measured at 450 nm	2060582
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2060582
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2060582
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2060582
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2060582
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2060583

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	02/07/2019			02/07/2019 15:33	Adrian Shelby	2060582
EPA 200.7 Rev. 4.4	02/07/2019	02/07/2019 18:15	Elliott D. Healy	02/13/2019 13:06	Betina Topolski	2060601
EPA 200.8 Rev. 5.4	02/07/2019	02/07/2019 18:15	Elliott D. Healy	02/15/2019 03:46	Allison Taylor	2060601
EPA 300.0 Rev. 2.1	02/07/2019			02/20/2019 09:36	Lipi Saha	2060582
EPA 350.1 Rev. 2.0	02/07/2019			02/12/2019 12:07	Ping Hua	2060583
EPA 351.2 Rev. 2.0	02/07/2019	02/12/2019 12:25	Adrian Shelby	02/13/2019 12:34	Joseph Suarez	2060583
EPA 353.2 Rev. 2.0	02/07/2019			02/13/2019 10:54	Beverly Y. Sanders	2060583
EPA 365.1 Rev. 2.0	02/07/2019	02/11/2019 13:40	Sima Feizi	02/12/2019 10:16	Rosalyn Ballman	2060583
EPA 365.1 Rev. 2.0 dissolved	02/07/2019			02/07/2019 15:59	Jhamieka S. Greenwood	2060584
EPA 8321B	02/07/2019	02/07/2019 12:00	Hoor Shaik	02/19/2019 14:32	Juyoung Kim	2060599
	02/07/2019	02/07/2019 15:30	Mohammad Ghaffari	02/08/2019 03:32	Mohammad Ghaffari	2060599
	02/07/2019	02/07/2019 15:30	Mohammad Ghaffari	02/08/2019 03:46	Mohammad Ghaffari	2060600
	02/07/2019	02/07/2019 15:30	Mohammad Ghaffari	02/08/2019 11:55	Mohammad Ghaffari	2060599
	02/07/2019	02/07/2019 15:30	Mohammad Ghaffari	02/08/2019 12:06	Mohammad Ghaffari	2060600
	02/07/2019	02/07/2019 15:30	Mohammad Ghaffari	02/15/2019 20:09	Mohammad Ghaffari	2060599
	02/07/2019	02/07/2019 15:30	Mohammad Ghaffari	02/15/2019 20:23	Mohammad Ghaffari	2060600
	02/07/2019	02/12/2019 12:00	Hoor Shaik	02/19/2019 21:27	Juyoung Kim	2060600
SM 2120 B	02/07/2019			02/07/2019 16:47	Chelsea Hernandez	2060582
SM 2320 B-97	02/07/2019			02/15/2019 03:07	Dale L. Simmons	2060582
SM 2540 C-97	02/07/2019			02/08/2019 17:55	Mariam Hanna	2060582
SM 2540 D-97	02/07/2019			02/08/2019 18:20	Mariam Hanna	2060582
SM 4500 F-C-97	02/07/2019			02/15/2019 03:07	Dale L. Simmons	2060582
SM 5310 B-00	02/07/2019			02/09/2019 06:18	Chelsea Hernandez	2060583