

Chemical Analysis Report

SW-DIST-2020-03-20-01

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

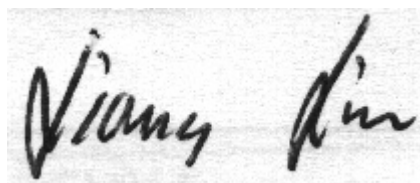
Event Description: **SMP RUN 6**
Request ID: **RQ-2020-03-23-04**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 13-APR-2020 16:19

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

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals, Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited 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: Owen Creek

Collection Date/Time: 03/19/2020 10:50

Field ID: G3SW0053

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2167157	EPA 180.1 Rev. 2.0	Turbidity	0.60		NTU	P381157	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P381909	
	SM 2120 B-2011	Color (true)	32		PCU	P381032	
	SM 2320 B-2011	Total Alkalinity	67		mg CaCO3/L	P381413	
	SM 2540 C-2011	TDS	473		mg/L	P381579	
	SM 2540 D-2011	TSS	2	I	mg/L	P381582	
	SM 4500 F-C-2011	Fluoride	0.47		mg F/L	P381456	
2167159	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P381425	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40		mg N/L	P381369	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P381547	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P381364	
	SM 5310 B-2011	Organic Carbon	7.1		mg C/L	P381174	
2167161	EPA 300.0 Rev. 2.1 dissolved	Sulfate	250		mg SO4/L	P381910	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.14		mg P/L	P381151	
2167170	EPA 8321B	2,4-D	0.0049	I	ug/L	P381156	
		Acesulfame K**	0.10	U	ug/L	P380955	
		AMPA**	0.63		ug/L	P380955	
		Sucralose**	0.010	U	ug/L	P380955	
		Acetaminophen**	0.0080	U	ug/L	P381156	
		Acetamiprid**	0.0020	U	ug/L	P381156	
		Endothall**	0.25	U	ug/L	P380955	
		Glufosinate**	0.10	U	ug/L	P380955	
		Glyphosate**	0.64		ug/L	P380955	
		Afidopyropen**	0.0020	UJ	ug/L	P381156	
		Bentazon	0.0082		ug/L	P381156	
		Benzovindiflupyr**	0.0022	IJ	ug/L	P381156	
		Carbamazepine**	8.0E-04	U	ug/L	P381156	
		Clothianidin**	0.0020	U	ug/L	P381156	
		Dinotefuran**	0.17		ug/L	P381156	
		Diuron	0.0020	U	ug/L	P381156	
		Fenuron	0.016	U	ug/L	P381156	
		Fluridone**	8.0E-04	U	ug/L	P381156	
		Imazapyr**	0.0040	U	ug/L	P381156	
		Hydrocodone**	0.0020	U	ug/L	P381156	
		Ibuprofen**	0.020	U	ug/L	P381156	
		Imidacloprid	0.039		ug/L	P381156	
		Linuron	0.0040	U	ug/L	P381156	
		Mandestrobin**	0.0020	UJ	ug/L	P381156	
		MCP	0.0020	U	ug/L	P381156	
		Naproxen**	0.0080	U	ug/L	P381156	
		Primidone**	0.0040	U	ug/L	P381156	
		Pyraclostrobin**	0.0020	U	ug/L	P381156	
		Thiamethoxam**	0.0025	I	ug/L	P381156	

Field ID: G3SW0053

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2167170	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P381156	
		Triclopyr**	0.0040	U	ug/L	P381156	

Ref. Method and Comment:

SM 2540 D-2011: 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.

Sample Location: Mobley Ditch @ 70

Collection Date/Time: 03/19/2020 10:40

Field ID: G3SW0056

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2167158	EPA 180.1 Rev. 2.0	Turbidity	33		NTU	P381157	
	EPA 300.0 Rev. 2.1	Chloride	120		mg Cl/L	P381909	
	SM 2120 B-2011	Color (true)	230	A	PCU	P381046	
	SM 2320 B-2011	Total Alkalinity	280		mg CaCO3/L	P381413	
	SM 2540 C-2011	TDS	530		mg/L	P381579	
	SM 2540 D-2011	TSS	23	I	mg/L	P381582	
	SM 4500 F-C-2011	Fluoride	0.23		mg F/L	P381456	
2167160	EPA 350.1 Rev. 2.0	Ammonia-N	19		mg N/L	P381439	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	27		mg N/L	P381722	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P381547	
	EPA 365.1 Rev. 2.0	Total-P	3.9		mg P/L	P381885	
	SM 5310 B-2011	Organic Carbon	45		mg C/L	P381174	
2167162	EPA 300.0 Rev. 2.1 dissolved	Sulfate	18		mg SO4/L	P381910	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	2.8		mg P/L	P381151	
2167171	EPA 8321B	2,4-D	0.13		ug/L	P381156	
		Acesulfame K**	0.10	U	ug/L	P380955	
		AMPA**	0.52		ug/L	P380955	
		Sucralose**	0.53		ug/L	P380955	
		Acetaminophen**	0.0080	U	ug/L	P381156	
		Acetamiprid**	0.0020	U	ug/L	P381156	
		Endothal**	0.25	U	ug/L	P380955	
		Glufosinate**	0.10	U	ug/L	P380955	
		Glyphosate**	4.6		ug/L	P380955	
		Afidopyropen**	0.0020	UJ	ug/L	P381156	
		Bentazon	0.0022	I	ug/L	P381156	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P381156	
		Carbamazepine**	8.0E-04	U	ug/L	P381156	
		Clothianidin**	0.0020	U	ug/L	P381156	
		Dinotefuran**	0.0020	U	ug/L	P381156	
		Diuron	0.0020	U	ug/L	P381156	
		Fenuron	0.027	I	ug/L	P381156	
		Fluridone**	8.0E-04	U	ug/L	P381156	
		Imazapyr**	0.0040	U	ug/L	P381156	
		Hydrocodone**	0.0020	U	ug/L	P381156	
		Ibuprofen**	0.18		ug/L	P381156	
		Imidacloprid	0.0081		ug/L	P381156	
		Linuron	0.0040	U	ug/L	P381156	
		Mandestrobin**	0.0020	UJ	ug/L	P381156	
		MCP	0.0020	U	ug/L	P381156	
		Naproxen**	0.0080	U	ug/L	P381156	
		Primidone**	0.0040	U	ug/L	P381156	
		Pyraclostrobin**	0.0020	U	ug/L	P381156	
		Thiamethoxam**	0.0020	U	ug/L	P381156	

Field ID: G3SW0056

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2167171	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P381156	
		Triclopyr**	0.0040	U	ug/L	P381156	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The PQL was elevated because of sample matrix interference.

EPA 8321B: J - second source check standards for some analytes were not available for analysis.

Sample Location: Indian Creek @ Fruitville Rd

Collection Date/Time: 03/19/2020 09:45

Field ID: G3SW0057

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2167154	EPA 180.1 Rev. 2.0	Turbidity	5.4	A	NTU	P381157	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P381909	
	SM 2120 B-2011	Color (true)	30	A	PCU	P381032	
	SM 2320 B-2011	Total Alkalinity	37		mg CaCO3/L	P381413	
	SM 2540 C-2011	TDS	227	A	mg/L	P381579	
	SM 2540 D-2011	TSS	3	IA	mg/L	P381582	
	SM 4500 F-C-2011	Fluoride	0.61		mg F/L	P381456	
2167155	EPA 350.1 Rev. 2.0	Ammonia-N	0.032		mg N/L	P381425	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.47		mg N/L	P381369	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.085		mg N/L	P381547	
	EPA 365.1 Rev. 2.0	Total-P	1.2		mg P/L	P381364	
	SM 5310 B-2011	Organic Carbon	8.4		mg C/L	P381174	
2167156	EPA 300.0 Rev. 2.1 dissolved	Sulfate	83		mg SO4/L	P381910	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.78		mg P/L	P381151	
2167176	EPA 200.7 Rev. 4.4	Barium	1.6	I	ug/L	P381294	
		Calcium	31.5		mg/L	P381294	
		Iron	1.66E+03		ug/L	P381294	
		Magnesium	11.9		mg/L	P381294	
		Potassium	3.7		mg/L	P381294	
		Sodium	10.2		mg/L	P381294	
		Zinc	5.0	U	ug/L	P381294	
	EPA 200.8 Rev. 5.4	Aluminum	58		ug/L	P381294	
		Antimony	0.050	U	ug/L	P381294	
		Arsenic	1.34		ug/L	P381294	
		Boron**	45.6		ug/L	P381294	
		Cadmium	0.020	U	ug/L	P381294	
		Chromium	1.2	I	ug/L	P381294	
		Copper	0.40	U	ug/L	P381294	
		Lead	0.20	U	ug/L	P381294	
		Nickel	0.50	U	ug/L	P381294	
		Selenium	0.20	U	ug/L	P381294	
		Silver	0.010	U	ug/L	P381294	
		Thallium	0.10	U	ug/L	P381294	
	SM 2340B	Hardness	128		mg/L	P381294	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P381157

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P381294

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: P381294

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: P381909

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P381910

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381425

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381439

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P381369

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P381722

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381547

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381364

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381885

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P381151

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

Reference Method: EPA 8321B
Batch ID: P380955

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P381156

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
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 2120 B-2011
Batch ID: P381032

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P381046

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P381413

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

Reference Method: SM 2540 C-2011
Batch ID: P381579

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P381582

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P381456

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P381174

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: P381294

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	103		P	85 - 115
Iron	108		P	85 - 115
Magnesium	108		P	85 - 115
Potassium	103		P	85 - 115
Sodium	99.2		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P381294

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	99.3		P	85 - 115
Arsenic	104		P	85 - 115
Boron	110		P	85 - 115
Cadmium	104		P	85 - 115
Chromium	107		P	85 - 115
Copper	104		P	85 - 115
Lead	99.3		P	85 - 115
Nickel	104		P	85 - 115
Selenium	97.2		P	85 - 115
Silver	106		P	85 - 115
Thallium	98.2		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381909

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P381910

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381425

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381439

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P381369

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P381722

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381547

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381364

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381885

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P381151

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	93.8		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P380955

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	111		P	40 - 150
AMPA	99.1		P	40 - 150
Endothall	85.9		P	40 - 150
Glufosinate	118		P	40 - 150
Glyphosate	125		P	40 - 140
Sucralose	99.0		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P381156

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	115		P	30 - 160
Acetaminophen	86.2		P	30 - 160
Acetamiprid	98.6		P	30 - 160
Afidopyropen	110		P	30 - 160
Bentazon	87.3		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P381156

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Benzovindiflupyr	82.6		P	30 - 160
Carbamazepine	118		P	30 - 160
Clothianidin	106		P	30 - 160
Dinotefuran	94.5		P	30 - 160
Diuron	105		P	30 - 160
Fenuron	110		P	30 - 160
Fluridone	88.9		P	30 - 160
Hydrocodone	94.4		P	30 - 160
Ibuprofen	89.9		P	30 - 160
Imazapyr	87.2		P	30 - 160
Imidacloprid	107		P	30 - 160
Linuron	80.1		P	30 - 160
Mandestrobin	89.2		P	30 - 160
MCPP	137		P	30 - 160
Naproxen	71.5		P	30 - 160
Primidone	103		P	30 - 160
Pyraclostrobin	76.9		P	30 - 160
Thiamethoxam	104		P	30 - 160
Tolfenpyrad	51.8		P	30 - 160
Triclopyr	104		P	30 - 160

Reference Method: SM 2120 B-2011

Batch ID: P381032

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2120 B-2011

Batch ID: P381046

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	103		P	85 - 115

Reference Method: SM 2320 B-2011

Batch ID: P381413

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

Reference Method: SM 4500 F-C-2011

Batch ID: P381456

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.9		P	92 - 104

Reference Method: SM 5310 B-2011

Batch ID: P381174

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P381294

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167144	Barium	103	100	P/P	80 - 120
2167144	Calcium	102		P	80 - 120
2167144	Iron	104	106	P/P	80 - 120
2167144	Magnesium	102	104	P/P	80 - 120
2167144	Potassium	104	103	P/P	80 - 120
2167144	Sodium	108	104	P/P	80 - 120
2167144	Zinc	104	102	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P381294

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167144	Aluminum	97.6	95.4	P/P	80 - 120
2167144	Antimony	100	96.2	P/P	80 - 120
2167144	Arsenic	103	99.6	P/P	80 - 120
2167144	Boron	103	101	P/P	80 - 120
2167144	Cadmium	101	98.8	P/P	80 - 120
2167144	Chromium	105	102	P/P	80 - 120
2167144	Copper	102	101	P/P	80 - 120
2167144	Lead	95.1	93.5	P/P	80 - 120
2167144	Nickel	102	101	P/P	80 - 120
2167144	Selenium	99.9	99.6	P/P	80 - 120
2167144	Silver	102	99.9	P/P	80 - 120
2167144	Thallium	92.5	92.5	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381909

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167748	Chloride	99.1		P	90 - 110
2168022	Chloride	96.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P381910

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167748	Sulfate	98.8		P	90 - 110
2168022	Sulfate	95.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381425

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167159	Ammonia-N	90.8	92.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381439

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167783	Ammonia-N	99.6	99.5	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P381369

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167159	Kjeldahl Nitrogen	101	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P381722

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2168932	Kjeldahl Nitrogen	107	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381547

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167155	NO2NO3-N	96.9	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381364

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167126	Total-P	108	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381885

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2169109	Total-P	102	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P381151

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167184	O-Phosphate-P	90.9	90.2	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P380955

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2166972	Acesulfame K	140	139	P/P	40 - 150
2166972	AMPA	103	94.4	P/P	40 - 150
2166972	Endothall	101	97.2	P/P	40 - 150
2166972	Glufosinate	114	106	P/P	40 - 150
2166972	Glyphosate	113	117	P/P	40 - 140
2166972	Sucralose	87.8	92.5	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P381156

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2166972	2,4-D	128	133	P/P	30 - 160
2166972	Acetaminophen	103	107	P/P	30 - 160
2166972	Acetamiprid	105	116	P/P	30 - 160
2166972	Afidopyropen	110	114	P/P	30 - 160
2166972	Bentazon	64.4	64.4	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P381156

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2166972	Benzovindiflupyr	83.4	77.5	P/P	30 - 160
2166972	Carbamazepine	105	102	P/P	30 - 160
2166972	Clothianidin	121	125	P/P	30 - 160
2166972	Dinotefuran	140	123	P/P	30 - 160
2166972	Diuron	96.7	97.9	P/P	30 - 160
2166972	Fenuron	81.4	85.4	P/P	30 - 160
2166972	Fluridone	88.0	86.0	P/P	30 - 160
2166972	Hydrocodone	122	118	P/P	30 - 160
2166972	Ibuprofen	86.1	78.5	P/P	30 - 160
2166972	Imazapyr	121	119	P/P	30 - 160
2166972	Imidacloprid	159	159	P/P	30 - 160
2166972	Linuron	78.2	77.0	P/P	30 - 160
2166972	Mandestrobin	86.5	86.6	P/P	30 - 160
2166972	MCP	143	147	P/P	30 - 160
2166972	Naproxen	73.9	89.0	P/P	30 - 160
2166972	Primidone	120	110	P/P	30 - 160
2166972	Pyraclostrobin	87.9	85.6	P/P	30 - 160
2166972	Thiamethoxam	157	160	P/P	30 - 160
2166972	Tolfenpyrad	55.1	56.8	P/P	30 - 160
2166972	Triclopyr	112	117	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P381456

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2166472	Fluoride	98.9	99.5	P/P	91 - 105

Reference Method: SM 5310 B-2011
Batch ID: P381174

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167159	Organic Carbon	99.8	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P381157

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167154	Turbidity	2.99	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P381294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167144	Barium	2.39	Spike	P	0 - 20
2167144	Calcium	1.20	Spike	P	0 - 20
2167144	Iron	1.75	Spike	P	0 - 20
2167144	Magnesium	1.87	Spike	P	0 - 20
2167144	Potassium	0.636	Spike	P	0 - 20
2167144	Sodium	2.90	Spike	P	0 - 20
2167144	Zinc	2.14	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P381294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167144	Aluminum	2.31	Spike	P	0 - 20
2167144	Antimony	4.02	Spike	P	0 - 20
2167144	Arsenic	3.46	Spike	P	0 - 20
2167144	Boron	1.59	Spike	P	0 - 20
2167144	Cadmium	2.28	Spike	P	0 - 20
2167144	Chromium	2.72	Spike	P	0 - 20
2167144	Copper	1.59	Spike	P	0 - 20
2167144	Lead	1.63	Spike	P	0 - 20
2167144	Nickel	1.55	Spike	P	0 - 20
2167144	Selenium	0.223	Spike	P	0 - 20
2167144	Silver	1.88	Spike	P	0 - 20
2167144	Thallium	0.103	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381909

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167748	Chloride	0.0160	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P381910

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167748	Sulfate	0.385	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381425

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167159	Ammonia-N	1.11	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381439

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167783	Ammonia-N	0.0689	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P381369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167159	Kjeldahl Nitrogen	1.79	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P381722

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2168932	Kjeldahl Nitrogen	3.24	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381547

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167155	NO2NO3-N	1.07	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381364

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167126	Total-P	2.41	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381885

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2169109	Total-P	4.00	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P381151

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167184	O-Phosphate-P	0.511	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P380955

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2166972	Acesulfame K	1.00	Spike	P	0 - 30
2166972	AMPA	9.02	Spike	P	0 - 30
2166972	Endothall	4.27	Spike	P	0 - 30
2166972	Glufosinate	6.73	Spike	P	0 - 30
2166972	Glyphosate	3.24	Spike	P	0 - 30
2166972	Sucralose	5.24	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P381156

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2166972	2,4-D	3.67	Spike	P	0 - 30
2166972	Acetaminophen	4.10	Spike	P	0 - 30
2166972	Acetamiprid	9.98	Spike	P	0 - 30
2166972	Afidopyropen	3.77	Spike	P	0 - 30
2166972	Bentazon	0.0481	Spike	P	0 - 30
2166972	Benzovindiflupyr	7.35	Spike	P	0 - 30
2166972	Carbamazepine	3.35	Spike	P	0 - 30
2166972	Clothianidin	3.79	Spike	P	0 - 30
2166972	Dinotefuran	12.8	Spike	P	0 - 30
2166972	Diuron	1.20	Spike	P	0 - 30
2166972	Fenuron	4.84	Spike	P	0 - 30
2166972	Fluridone	2.35	Spike	P	0 - 30
2166972	Hydrocodone	2.96	Spike	P	0 - 30
2166972	Ibuprofen	9.28	Spike	P	0 - 30
2166972	Imazapyr	2.17	Spike	P	0 - 30
2166972	Imidacloprid	0.210	Spike	P	0 - 30
2166972	Linuron	1.58	Spike	P	0 - 30
2166972	Mandestrobin	0.120	Spike	P	0 - 30
2166972	MCPP	2.51	Spike	P	0 - 30
2166972	Naproxen	18.6	Spike	P	0 - 30
2166972	Primidone	8.45	Spike	P	0 - 30
2166972	Pyraclostrobin	2.56	Spike	P	0 - 30
2166972	Thiamethoxam	1.78	Spike	P	0 - 30
2166972	Tolfenpyrad	2.91	Spike	P	0 - 30
2166972	Triclopyr	4.17	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P381032

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167154	Color (true)	11.6	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P381046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167158	Color (true)	5.81	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P381413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2166937	Total Alkalinity	0.0452	Sample	P	0 - 3.3

Reference Method: SM 2540 C-2011
Batch ID: P381579

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167154	TDS	6.17	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P381456

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2166472	Fluoride	0.533	Spike	P	0 - 2.0

Reference Method: SM 5310 B-2011
Batch ID: P381174

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167159	Organic Carbon	0.516	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2167170
Field Sample ID: G3SW0053

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	127	P	30 - 160
EPA 8321B	Acetaminophen-d4	157	P	30 - 160
EPA 8321B	Carbamazepine-d10	120	P	30 - 160
EPA 8321B	Diuron-d6	153	P	30 - 160
EPA 8321B	Endothall-d6	88.5	P	30 - 160
EPA 8321B	Endothall-d6	88.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	90.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	90.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	107	P	30 - 160
EPA 8321B	Primidone-d5	123	P	30 - 160
EPA 8321B	Sucralose-d6	84.2	P	30 - 200
EPA 8321B	Sucralose-d6	84.2	P	30 - 200

Lab Sample ID: 2167171
Field Sample ID: G3SW0056

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	82.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	67.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	67.1	P	30 - 160
EPA 8321B	Diuron-d6	87.3	P	30 - 160
EPA 8321B	Endothall-d6	108	P	30 - 160
EPA 8321B	Endothall-d6	108	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	108	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	108	P	30 - 160
EPA 8321B	Ibuprofen-d3	79.8	P	30 - 160
EPA 8321B	Primidone-d5	53.8	P	30 - 160
EPA 8321B	Sucralose-d6	80.8	P	30 - 200
EPA 8321B	Sucralose-d6	80.8	P	30 - 200

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B-2011

Run ID: A98335

Included Lab Sample IDs: 2167154, 2167157

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	104	P/P	90 - 115

Reference Method: SM 2120 B-2011

Run ID: A98339

Included Lab Sample IDs: 2167158

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.0	102	P/P	90 - 115

Reference Method: EPA 8321B

Run ID: A98352

Included Lab Sample IDs: 2167170, 2167171

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	125	109	P/P	60 - 160
Endothall	106	102	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A98362

Included Lab Sample IDs: 2167170, 2167171

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	108	105	P/P	40 - 200
Glufosinate	118	120	P/P	40 - 200
Glyphosate	130	135	P/P	40 - 200

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A98383

Included Lab Sample IDs: 2167156, 2167161, 2167162

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.1	95.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A98384

Included Lab Sample IDs: 2167154, 2167157, 2167158

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	98.0	P/P	95 - 105

Reference Method: SM 5310 B-2011

Run ID: A98395

Included Lab Sample IDs: 2167155, 2167159, 2167160

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	97.0	P/P	90 - 110
Organic Carbon	99.9	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A98487

Included Lab Sample IDs: 2167170, 2167171

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	95.0	99.0	P/P	40 - 200

Reference Method: SM 2320 B-2011

Run ID: A98490

Included Lab Sample IDs: 2167154, 2167157, 2167158

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A98491

Included Lab Sample IDs: 2167155, 2167159

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	101	P/P	90 - 110
Ammonia-N	101	99.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A98492

Included Lab Sample IDs: 2167160

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

Reference Method: SM 4500 F-C-2011

Run ID: A98495

Included Lab Sample IDs: 2167154, 2167157, 2167158

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	99.1	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98497

Included Lab Sample IDs: 2167176

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.8	105	P/P	90 - 110
Antimony	99.5	99.7	P/P	90 - 110
Arsenic	101	103	P/P	90 - 110
Boron	104	110	P/P	90 - 110
Cadmium	100	99.3	P/P	90 - 110
Chromium	100	104	P/P	90 - 110
Copper	100	108	P/P	90 - 110
Lead	96.6	96.8	P/P	90 - 110
Nickel	101	109	P/P	90 - 110
Selenium	98.7	102	P/P	90 - 110
Silver	103	104	P/P	90 - 110
Thallium	90.7	90.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A98506

Included Lab Sample IDs: 2167155, 2167159

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	103	P/P	90 - 110
Kjeldahl Nitrogen	103	96.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A98517

Included Lab Sample IDs: 2167155, 2167159, 2167160

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A98518

Included Lab Sample IDs: 2167170, 2167171

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	104	102	P/P	50 - 150
Acetaminophen	137	152	P/P	60 - 160
Acetamiprid	128	132	P/P	50 - 150
Afidopyropen	105	114	P/P	50 - 150
Bentazon	143	121	P/P	50 - 160
Benzovindiflupyr	135	132	P/P	50 - 150
Carbamazepine	131	130	P/P	60 - 150
Clothianidin	134	127	P/P	60 - 150
Dinotefuran	129	129	P/P	50 - 150
Diuron	147	143	P/P	60 - 160
Fenuron	134	145	P/P	60 - 150
Fluridone	125	123	P/P	60 - 160
Hydrocodone	141	139	P/P	60 - 150
Ibuprofen	121	121	P/P	50 - 160
Imazapyr	108	93.9	P/P	50 - 150
Imidacloprid	115	119	P/P	60 - 150
Linuron	141	132	P/P	60 - 150
Mandestrobin	125	128	P/P	50 - 150
MCPP	104	105	P/P	50 - 150
Naproxen	82.9	77.4	P/P	50 - 160
Primidone	121	119	P/P	60 - 150
Pyraclostrobin	131	129	P/P	60 - 150
Thiamethoxam	125	129	P/P	50 - 150
Tolfenpyrad	118	116	P/P	60 - 150
Triclopyr	106	103	P/P	50 - 150

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A98543

Included Lab Sample IDs: 2167176

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	98.4	101	P/P	90 - 110
Calcium	98.3	101	P/P	90 - 110
Iron	100	103	P/P	90 - 110
Magnesium	97.8	101	P/P	90 - 110
Potassium	97.7	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A98543

Included Lab Sample IDs: 2167176

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sodium	100	104	P/P	90 - 110
Zinc	96.2	98.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98618

Included Lab Sample IDs: 2167155, 2167159

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	100	P/P	90 - 110
Total-P	104	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A98645

Included Lab Sample IDs: 2167160

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	99.3	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A98686

Included Lab Sample IDs: 2167154, 2167157, 2167158

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.5	P/P	90 - 110
Chloride	98.8	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1 dissolved

Run ID: A98686

Included Lab Sample IDs: 2167156, 2167161, 2167162

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98706

Included Lab Sample IDs: 2167160

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

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						2.99	
EPA 200.7 Rev. 4.4	Barium	102		103	100			2.39
	Calcium	103		102				1.20
	Iron	108		104	106			1.75
	Magnesium	108		102	104			1.87
	Potassium	103		104	103			0.636
	Sodium	99.2		108	104			2.90
	Zinc	104		104	102			2.14
EPA 200.8 Rev. 5.4	Aluminum	100		97.6	95.4			2.31
	Antimony	99.3		100	96.2			4.02
	Arsenic	104		103	99.6			3.46
	Boron	110		103	101			1.59
	Cadmium	104		101	98.8			2.28
	Chromium	107		105	102			2.72
	Copper	104		102	101			1.59
	Lead	99.3		95.1	93.5			1.63
	Nickel	104		102	101			1.55
	Selenium	97.2		99.9	99.6			0.223
	Silver	106		102	99.9			1.88
	Thallium	98.2		92.5	92.5			0.103
EPA 300.0 Rev. 2.1	Chloride	99.1		99.1	96.6		0.0160	
EPA 300.0 Rev. 2.1 dissolved	Sulfate	99.7		98.8	95.0		0.385	
EPA 350.1 Rev. 2.0	Ammonia-N	101		90.8	92.5			1.11
	Ammonia-N	100		99.6	99.5			0.0689
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102		101	103			1.79
	Kjeldahl Nitrogen	100		107	103			3.24
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5		96.9	98.4			1.07
EPA 365.1 Rev. 2.0	Total-P	108		108	106			2.41
	Total-P	103		102	98.2			4.00
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	93.8		90.9	90.2			0.511
EPA 8321B	2,4-D	115		128	133			3.67
	Acesulfame K	111		140	139			1.00
	Acetaminophen	86.2		103	107			4.10
	Acetamiprid	98.6		105	116			9.98
	Afidopyropen	110		110	114			3.77
	AMPA	99.1		103	94.4			9.02
	Bentazon	87.3		64.4	64.4			0.0481
	Benzovindiflupyr	82.6		83.4	77.5			7.35
	Carbamazepine	118		105	102			3.35
	Clothianidin	106		121	125			3.79
	Dinotefuran	94.5		140	123			12.8
	Diuron	105		96.7	97.9			1.20
	Endothall	85.9		101	97.2			4.27
	Fenuron	110		81.4	85.4			4.84
	Fluridone	88.9		88.0	86.0			2.35
	Glufosinate	118		114	106			6.73
	Glyphosate	125		113	117			3.24
	Hydrocodone	94.4		122	118			2.96
	Ibuprofen	89.9		86.1	78.5			9.28
	Imazapyr	87.2		121	119			2.17
	Imidacloprid	107		159	159			0.210
	Linuron	80.1		78.2	77.0			1.58
	Mandestrobin	89.2		86.5	86.6			0.120
	MCPP	137		143	147			2.51

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Naproxen	71.5	73.9	89.0		18.6
	Primidone	103	120	110		8.45
	Pyraclostrobin	76.9	87.9	85.6		2.56
	Sucralose	99.0	87.8	92.5		5.24
	Thiamethoxam	104	157	160		1.78
	Tolfenpyrad	51.8	55.1	56.8		2.91
	Triclopyr	104	112	117		4.17
SM 2120 B-2011	Color (true)	101			11.6	
	Color (true)	103			5.81	
SM 2320 B-2011	Total Alkalinity	104			0.0452	
SM 2540 C-2011	TDS				6.17	
SM 4500 F-C-2011	Fluoride	95.9	98.9	99.5		0.533
SM 5310 B-2011	Organic Carbon	99.4	99.8	101		0.516

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2167154, 2167157, 2167158
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2167176
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2167176
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2167154, 2167157, 2167158
EPA 300.0 Rev. 2.1 dissolved	Sulfate, dissolved, in filtered, aqueous matrices	2167156, 2167161, 2167162
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2167155, 2167159, 2167160
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2167155, 2167159, 2167160
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2167155, 2167159, 2167160
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2167155, 2167159, 2167160
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2167156, 2167161, 2167162
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2167170, 2167171
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2167170, 2167171
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2167154, 2167157, 2167158
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2167154, 2167157, 2167158
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2167176
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2167154, 2167157, 2167158
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2167154, 2167157, 2167158
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2167154, 2167157, 2167158
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2167155, 2167159, 2167160

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	03/20/2020			03/20/2020 16:05	Blanca Fach	2167154, 2167157, 2167158
EPA 200.7 Rev. 4.4	03/20/2020	03/25/2020 17:30	Elliott D. Healy	03/30/2020 14:40	Vijayalakshmi Reddy	2167176
EPA 200.8 Rev. 5.4	03/20/2020	03/25/2020 17:30	Elliott D. Healy	03/27/2020 16:45	Justin Cutchin	2167176
EPA 300.0 Rev. 2.1	03/20/2020			04/06/2020 23:32	Julia Storbeck	2167154
	03/20/2020			04/07/2020 00:12	Julia Storbeck	2167157
	03/20/2020			04/07/2020 00:25	Julia Storbeck	2167158
EPA 300.0 Rev. 2.1 dissolved	03/20/2020			04/07/2020 00:51	Julia Storbeck	2167156
	03/20/2020			04/07/2020 01:04	Julia Storbeck	2167161
	03/20/2020			04/07/2020 01:17	Julia Storbeck	2167162
EPA 350.1 Rev. 2.0	03/20/2020			03/28/2020 11:55	Ping Hua	2167159
	03/20/2020			03/28/2020 12:16	Ping Hua	2167155
	03/20/2020			03/29/2020 10:37	Ping Hua	2167160
EPA 351.2 Rev. 2.0	03/20/2020	03/27/2020 09:45	Sima Feizi	03/30/2020 07:50	Jhamieka S. Greenwood	2167159
	03/20/2020	03/27/2020 09:45	Sima Feizi	03/30/2020 08:06	Jhamieka S. Greenwood	2167155
	03/20/2020	04/02/2020 14:50	Jhamieka S. Greenwood	04/03/2020 14:32	Jhamieka S. Greenwood	2167160
EPA 353.2 Rev. 2.0	03/20/2020			03/30/2020 17:31	Lauren Lees	2167155
	03/20/2020			03/30/2020 17:42	Lauren Lees	2167159
	03/20/2020			03/30/2020 17:44	Lauren Lees	2167160
EPA 365.1 Rev. 2.0	03/20/2020	03/26/2020 17:15	Yen Ta	04/02/2020 21:06	Benjamin T. Nordmann	2167159
	03/20/2020	03/26/2020 17:15	Yen Ta	04/02/2020 21:25	Benjamin T. Nordmann	2167155
	03/20/2020	04/07/2020 12:35	Lipi Saha	04/08/2020 12:06	Lipi Saha	2167160
EPA 365.1 Rev. 2.0 dissolved	03/20/2020			03/20/2020 20:30	Carlos Miranda	2167156
	03/20/2020			03/20/2020 20:31	Carlos Miranda	2167161
	03/20/2020			03/20/2020 20:32	Carlos Miranda	2167162
EPA 8321B	03/20/2020	03/20/2020 15:30	Mohammad Ghaffari	03/20/2020 19:41	Mohammad Ghaffari	2167170
	03/20/2020	03/20/2020 15:30	Mohammad Ghaffari	03/20/2020 19:51	Mohammad Ghaffari	2167171
	03/20/2020	03/20/2020 15:30	Mohammad Ghaffari	03/22/2020 20:08	Mohammad Ghaffari	2167170
	03/20/2020	03/20/2020 15:30	Mohammad Ghaffari	03/22/2020 20:23	Mohammad Ghaffari	2167171
	03/20/2020	03/20/2020 15:30	Mohammad Ghaffari	03/27/2020 10:14	Mohammad Ghaffari	2167170
	03/20/2020	03/20/2020 15:30	Mohammad Ghaffari	03/27/2020 10:26	Mohammad Ghaffari	2167171
	03/20/2020	03/24/2020 09:00	Hoor Shaik	03/26/2020 16:48	Mohammad Ghaffari	2167170
	03/20/2020	03/24/2020 09:00	Hoor Shaik	03/26/2020 17:23	Mohammad Ghaffari	2167171
SM 2120 B-2011	03/20/2020			03/20/2020 14:28	Madeline Gruver	2167154, 2167157
	03/20/2020			03/20/2020 17:44	Madeline Gruver	2167158
SM 2320 B-2011	03/20/2020			03/27/2020 12:52	Dale L. Simmons	2167154
	03/20/2020			03/27/2020 13:02	Dale L. Simmons	2167157
	03/20/2020			03/27/2020 13:16	Dale L. Simmons	2167158
SM 2340B	03/20/2020			03/30/2020 14:40	Vijayalakshmi Reddy	2167176
SM 2540 C-2011	03/20/2020			03/25/2020 15:08	Yijie Li	2167154, 2167157, 2167158
SM 2540 D-2011	03/20/2020			03/25/2020 15:32	Yijie Li	2167154, 2167157, 2167158

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-2011	03/20/2020			03/28/2020 02:19	Dale L. Simmons	2167154
	03/20/2020			03/28/2020 02:24	Dale L. Simmons	2167157
	03/20/2020			03/28/2020 02:29	Dale L. Simmons	2167158
SM 5310 B-2011	03/20/2020			03/24/2020 02:01	Lauren Lees	2167159
	03/20/2020			03/24/2020 03:30	Lauren Lees	2167155
	03/20/2020			03/24/2020 03:42	Lauren Lees	2167160