

Chemical Analysis Report

SO-DIST-2020-01-09-01

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

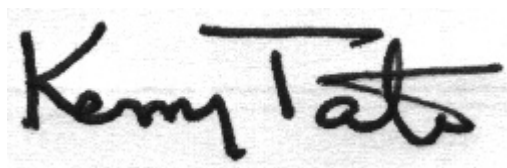
Event Description: **2020 SMP : DeSoto Cricks**
Request ID: **RQ-2020-01-06-46**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
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FLDEP South District Office
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 28-JAN-2020 10:20

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: HawthorneCreek@Reynolds

Collection Date/Time: 01/08/2020 10:10

Field ID: G3SD0011

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2148185	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P376883	
	EPA 300.0 Rev. 2.1	Chloride	190		mg Cl/L	P377019	
		Sulfate	160		mg SO4/L	P377021	
	SM 2120 B-2011	Color (true)	38	A	PCU	P377024	
	SM 2320 B-2011	Total Alkalinity	136		mg CaCO3/L	P377393	
	SM 2540 C-2011	TDS	730	A	mg/L	P377344	
	SM 2540 D-2011	TSS	2	UA	mg/L	P377032	
2148186	SM 4500 F-C-2011	Fluoride	0.42		mg F/L	P377395	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.035		mg N/L	P377165	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P377195	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.57		mg N/L	P376965	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P377243	
2148187	SM 5310 B-2011	Organic Carbon	11		mg C/L	P377045	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P377266	
2148207	EPA 8321B	2,4-D	0.024	J	ug/L	P376840	LCS
		Acesulfame K**	0.10	U	ug/L	P376808	MS
		AMPA**	1.4		ug/L	P376808	
		Sucralose**	0.10	U	ug/L	P376808	
		Acetaminophen**	0.0080	U	ug/L	P376840	
		Acetamiprid**	0.0020	U	ug/L	P376840	
		Endothall**	0.25	U	ug/L	P376808	
		Glufosinate**	0.10	U	ug/L	P376808	
		Glyphosate**	0.53		ug/L	P376808	
		Afidopyropen**	0.0020	UJ	ug/L	P376840	
		Bentazon	0.0099		ug/L	P376840	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P376840	
		Carbamazepine**	8.0E-04	U	ug/L	P376840	
		Clothianidin**	0.19		ug/L	P376840	
		Dinotefuran**	0.0020	U	ug/L	P376840	
		Diuron	0.014		ug/L	P376840	
		Fenuron	0.17		ug/L	P376840	
		Fluridone**	8.0E-04	U	ug/L	P376840	
		Imazapyr**	0.015	I	ug/L	P376840	
		Hydrocodone**	0.0020	U	ug/L	P376840	
		Ibuprofen**	0.020	U	ug/L	P376840	
		Imidacloprid	0.69		ug/L	P376840	MS
		Linuron	0.0040	U	ug/L	P376840	
		Mandestrobin**	0.0020	UJ	ug/L	P376840	
		MCP	0.0020	U	ug/L	P376840	
		Naproxen**	0.0080	U	ug/L	P376840	
		Primidone**	0.0040	U	ug/L	P376840	
		Pyraclostrobin**	0.0020	U	ug/L	P376840	
		Thiamethoxam**	0.42		ug/L	P376840	

Field ID: G3SD0011

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2148207	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P376840	
		Triclopyr**	0.0040	U	ug/L	P376840	
2148210	EPA 200.7 Rev. 4.4	Barium	41.5		ug/L	P377073	
		Calcium	115		mg/L	P377073	
		Iron	130		ug/L	P377073	
		Magnesium	29.9		mg/L	P377073	
		Potassium	11.5		mg/L	P377073	
		Sodium	83.1		mg/L	P377073	
		Zinc	5.0	U	ug/L	P377073	
	EPA 200.8 Rev. 5.4	Aluminum	30		ug/L	P377073	
		Antimony	0.69		ug/L	P377073	
		Arsenic	1.15		ug/L	P377073	
		Boron**	68.6		ug/L	P377073	
		Cadmium	0.101		ug/L	P377073	
		Chromium	0.40	U	ug/L	P377073	
		Copper	1.20		ug/L	P377073	
		Lead	0.20	U	ug/L	P377073	
		Nickel	2.0		ug/L	P377073	
		Selenium	0.22	I	ug/L	P377073	
		Silver	0.010	U	ug/L	P377073	
		Thallium	0.10	U	ug/L	P377073	
	SM 2340B	Hardness	410		mg/L	P377073	

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

EPA 8321B: MDL elevated due to matrix interference.

Sample Location: Hog Bay @ CR 763

Collection Date/Time: 01/08/2020 11:00

Field ID: G3SD0096

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2148182	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P376883	
	EPA 300.0 Rev. 2.1	Chloride	120		mg Cl/L	P377019	
		Sulfate	140		mg SO4/L	P377021	
	SM 2120 B-2011	Color (true)	40		PCU	P377024	
	SM 2320 B-2011	Total Alkalinity	110		mg CaCO3/L	P377392	
	SM 2540 C-2011	TDS	532		mg/L	P377344	
	SM 2540 D-2011	TSS	4	I	mg/L	P377032	
	SM 4500 F-C-2011	Fluoride	0.27		mg F/L	P377394	
2148183	EPA 350.1 Rev. 2.0	Ammonia-N	0.077		mg N/L	P377165	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P377195	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.0		mg N/L	P376965	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P377243	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P377045	
2148184	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.083		mg P/L	P377266	
2148206	EPA 8321B	2,4-D	0.0020	UJ	ug/L	P376840	LCS
		Acesulfame K**	0.10	U	ug/L	P376808	MS
		AMPA**	1.5		ug/L	P376808	
		Sucralose**	0.10	U	ug/L	P376808	
		Acetaminophen**	0.0080	U	ug/L	P376840	
		Acetamiprid**	0.0020	U	ug/L	P376840	
		Endothall**	0.25	U	ug/L	P376808	
		Glufosinate**	0.10	U	ug/L	P376808	
		Glyphosate**	1.5		ug/L	P376808	
		Afidopyropen**	0.0020	UJ	ug/L	P376840	
		Bentazon	8.0E-04	U	ug/L	P376840	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P376840	
		Carbamazepine**	8.0E-04	U	ug/L	P376840	
		Clothianidin**	0.21		ug/L	P376840	
		Dinotefuran**	0.0020	U	ug/L	P376840	
		Diuron	0.0035	I	ug/L	P376840	
		Fenuron	0.016	U	ug/L	P376840	
		Fluridone**	8.0E-04	U	ug/L	P376840	
		Imazapyr**	0.030		ug/L	P376840	
		Hydrocodone**	0.0020	U	ug/L	P376840	
		Ibuprofen**	0.020	U	ug/L	P376840	
		Imidacloprid	0.84		ug/L	P376840	MS
		Linuron	0.0040	U	ug/L	P376840	
		Mandestrobin**	0.0020	UJ	ug/L	P376840	
		MCP	0.0020	U	ug/L	P376840	
		Naproxen**	0.0080	U	ug/L	P376840	
		Primidone**	0.0040	U	ug/L	P376840	
		Pyraclostrobin**	0.0020	U	ug/L	P376840	
		Thiamethoxam**	0.29		ug/L	P376840	

Field ID: G3SD0096

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2148206	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P376840	
		Triclopyr**	0.0040	U	ug/L	P376840	
2148209	EPA 200.7 Rev. 4.4	Barium	41.6		ug/L	P377073	
		Calcium	85.8		mg/L	P377073	
		Iron	330		ug/L	P377073	
		Magnesium	21.1		mg/L	P377073	
		Potassium	14.6		mg/L	P377073	
		Sodium	59.9		mg/L	P377073	
		Zinc	5.2	I	ug/L	P377073	
	EPA 200.8 Rev. 5.4	Aluminum	92		ug/L	P377073	
		Antimony	1.54		ug/L	P377073	
		Arsenic	0.86		ug/L	P377073	
		Boron**	86.7		ug/L	P377073	
		Cadmium	0.030	I	ug/L	P377073	
		Chromium	0.73	I	ug/L	P377073	
		Copper	1.44		ug/L	P377073	
		Lead	0.20	U	ug/L	P377073	
		Nickel	2.9		ug/L	P377073	
		Selenium	0.44	I	ug/L	P377073	
		Silver	0.010	U	ug/L	P377073	
		Thallium	0.14	I	ug/L	P377073	
	SM 2340B	Hardness	301		mg/L	P377073	

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

EPA 8321B: MDL elevated due to matrix interference.

Sample Location: MyrtleSlough@PinelIsland

Collection Date/Time: 01/08/2020 11:40

Field ID: G3SD0095

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2148188	EPA 180.1 Rev. 2.0	Turbidity	5.2	A	NTU	P376883	
	EPA 300.0 Rev. 2.1	Chloride	38		mg Cl/L	P377019	
		Sulfate	11		mg SO4/L	P377021	
	SM 2120 B-2011	Color (true)	45		PCU	P377024	
	SM 2320 B-2011	Total Alkalinity	280		mg CaCO3/L	P377393	
	SM 2540 C-2011	TDS	391		mg/L	P377344	
	SM 2540 D-2011	TSS	2	I	mg/L	P377032	
	SM 4500 F-C-2011	Fluoride	0.17		mg F/L	P377395	
2148189	EPA 350.1 Rev. 2.0	Ammonia-N	0.061		mg N/L	P377167	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.82		mg N/L	P377195	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P376965	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P377243	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P377045	
2148190	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P377266	
2148208	EPA 8321B	2,4-D	0.0020	UJ	ug/L	P376840	LCS
		Acesulfame K**	0.10	U	ug/L	P376808	MS
		AMPA**	0.10	U	ug/L	P376808	
		Sucralose**	0.016	I	ug/L	P376808	
		Acetaminophen**	0.0080	U	ug/L	P376840	
		Acetamiprid**	0.0020	U	ug/L	P376840	
		Endothall**	0.25	U	ug/L	P376808	
		Glufosinate**	0.10	U	ug/L	P376808	
		Glyphosate**	0.10	U	ug/L	P376808	
		Afidopyropen**	0.0020	UJ	ug/L	P376840	
		Bentazon	8.0E-04	U	ug/L	P376840	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P376840	
		Carbamazepine**	8.0E-04	U	ug/L	P376840	
		Clothianidin**	0.0020	U	ug/L	P376840	
		Dinotefuran**	0.0020	U	ug/L	P376840	
		Diuron	0.0020	U	ug/L	P376840	
		Fenuron	0.016	U	ug/L	P376840	
		Fluridone**	0.011		ug/L	P376840	
		Imazapyr**	0.017		ug/L	P376840	
		Hydrocodone**	0.0020	U	ug/L	P376840	
		Ibuprofen**	0.020	U	ug/L	P376840	
		Imidacloprid	0.0020	U	ug/L	P376840	MS
		Linuron	0.0040	U	ug/L	P376840	
		Mandestrobin**	0.0020	UJ	ug/L	P376840	
		MCP	0.0020	U	ug/L	P376840	
		Naproxen**	0.0080	U	ug/L	P376840	
		Primidone**	0.0040	U	ug/L	P376840	
		Pyraclostrobin**	0.0020	U	ug/L	P376840	
		Thiamethoxam**	0.0020	U	ug/L	P376840	

Field ID: G3SD0095

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2148208	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P376840	
		Triclopyr**	0.0040	U	ug/L	P376840	

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P376883

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P377073

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: P377073

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: P377019

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377021

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377165

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: P377167

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P377195

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P376965

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P377243

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P377266

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

Reference Method: EPA 8321B
 Batch ID: P376808

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: P376840

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: P376840

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 2120 B-2011
Batch ID: P377024

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P377392

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

Reference Method: SM 2320 B-2011
Batch ID: P377393

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

Reference Method: SM 2540 C-2011
Batch ID: P377344

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P377032

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P377394

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P377395

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P377045

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: P377073

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	97.6		P	85 - 115
Calcium	101		P	85 - 115
Iron	102		P	85 - 115
Magnesium	101		P	85 - 115
Potassium	101		P	85 - 115
Sodium	100		P	85 - 115
Zinc	98.0		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P377073

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	80 - 120
Antimony	102		P	80 - 120
Arsenic	99.4		P	80 - 120
Boron	106		P	85 - 115
Cadmium	98.8		P	80 - 120
Chromium	101		P	80 - 120
Copper	108		P	85 - 115
Lead	99.2		P	80 - 120
Nickel	99.7		P	80 - 120
Selenium	96.0		P	80 - 120
Silver	102		P	80 - 120
Thallium	106		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377019

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377021

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377165

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377167

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377195

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376965

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377243

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: P377266

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

Reference Method: EPA 8321B
Batch ID: P376808

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	111		P	40 - 150
AMPA	83.6		P	40 - 150
Endothall	141		P	40 - 150
Glufosinate	108		P	40 - 150
Glyphosate	107		P	40 - 140
Sucralose	108		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P376840

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	176		F	40 - 160
Acetaminophen	92.7		P	30 - 160
Acetamiprid	104		P	40 - 160
Afidopyropen	120		P	40 - 160
Bentazon	81.3		P	30 - 160
Benzovindiflupyr	97.1		P	40 - 160
Carbamazepine	115		P	40 - 160
Clothianidin	102		P	40 - 160
Dinotefuran	96.0		P	40 - 160
Diuron	91.6		P	40 - 160
Fenuron	111		P	40 - 160
Fluridone	106		P	40 - 160
Hydrocodone	105		P	40 - 160
Ibuprofen	99.9		P	30 - 160
Imazapyr	115		P	40 - 160
Imidacloprid	118		P	40 - 160
Linuron	98.0		P	40 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P376840

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Mandestrobin	99.7		P	40 - 160
MCP	153		P	40 - 160
Naproxen	72.2		P	40 - 160
Primidone	112		P	40 - 160
Pyraclostrobin	94.4		P	30 - 160
Thiamethoxam	112		P	40 - 160
Tolfenpyrad	55.7		P	40 - 160
Triclopyr	131		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P377024

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.6		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P377392

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

Reference Method: SM 2320 B-2011
Batch ID: P377393

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

Reference Method: SM 4500 F-C-2011
Batch ID: P377394

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.2		P	92 - 103

Reference Method: SM 4500 F-C-2011
Batch ID: P377395

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.7		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P377045

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P377073

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2148228	Barium	98.2		P	80 - 120
2148228	Calcium	104		P	80 - 120
2148228	Iron	101		P	80 - 120
2148228	Magnesium	103		P	80 - 120
2148228	Potassium	98.3		P	80 - 120
2148228	Sodium	102		P	80 - 120
2148228	Zinc	99.5		P	80 - 120
2148690	Barium	95.3	96.7	P/P	80 - 120
2148690	Calcium	111		P	80 - 120
2148690	Iron	99.9	104	P/P	80 - 120
2148690	Magnesium	108		P	80 - 120
2148690	Potassium	93.8	96.5	P/P	80 - 120
2148690	Sodium	108		P	80 - 120
2148690	Zinc	95.8	97.7	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P377073

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2148228	Aluminum	99.2		P	80 - 120
2148228	Antimony	103		P	80 - 120
2148228	Arsenic	99.3		P	80 - 120
2148228	Boron	104		P	80 - 120
2148228	Cadmium	99.3		P	80 - 120
2148228	Chromium	101		P	80 - 120
2148228	Copper	105		P	80 - 120
2148228	Lead	101		P	80 - 120
2148228	Nickel	97.9		P	80 - 120
2148228	Selenium	90.7		P	80 - 120
2148228	Silver	99.5		P	80 - 120
2148228	Thallium	108		P	80 - 120
2148690	Aluminum	99.5	96.8	P/P	80 - 120
2148690	Antimony	105	102	P/P	80 - 120
2148690	Arsenic	101	98.0	P/P	80 - 120
2148690	Boron	110	109	P/P	80 - 120
2148690	Cadmium	103	98.0	P/P	80 - 120
2148690	Chromium	103	101	P/P	80 - 120
2148690	Copper	111	106	P/P	80 - 120
2148690	Lead	102	98.7	P/P	80 - 120
2148690	Nickel	99.4	95.6	P/P	80 - 120
2148690	Selenium	90.3	88.1	P/P	80 - 120
2148690	Silver	101	99.8	P/P	80 - 120
2148690	Thallium	109	105	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377019

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2147892	Chloride	99.5		P	90 - 110
2148160	Chloride	101		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377021

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2147892	Sulfate	99.8		P	90 - 110
2148160	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377165

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2148126	Ammonia-N	101	98.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377167

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2148306	Ammonia-N	105	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377195

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2148217	Kjeldahl Nitrogen	101	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376965

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2147492	NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377243

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2148143	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377266

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2148184	O-Phosphate-P	96.8	97.7	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P376808

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2147735	Acesulfame K	38.4	38.2	F/F	40 - 150
2147735	AMPA	74.6	72.4	P/P	40 - 150
2147735	Endothall	149	149	P/P	40 - 150
2147735	Glufosinate	112	84.2	P/P	40 - 150
2147735	Glyphosate	140	116	P/P	40 - 140
2147735	Sucralose	109	108	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P376840

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2147782	2,4-D	121	122	P/P	40 - 160
2147782	Acetaminophen	102	97.6	P/P	30 - 160
2147782	Acetamiprid	96.2	97.8	P/P	40 - 160
2147782	Afidopyropen	104	102	P/P	40 - 160
2147782	Benzovindiflupyr	83.5	83.2	P/P	40 - 160
2147782	Carbamazepine	87.2	86.3	P/P	40 - 160
2147782	Clothianidin	93.4	103	P/P	40 - 160
2147782	Dinotefuran	121	119	P/P	40 - 160
2147782	Diuron	67.2	66.3	P/P	40 - 160
2147782	Fenuron	86.6	85.9	P/P	40 - 160
2147782	Fluridone	86.8	88.0	P/P	40 - 160
2147782	Hydrocodone	106	100	P/P	40 - 160
2147782	Ibuprofen	83.5	79.4	P/P	30 - 160
2147782	Imazapyr	94.7	85.6	P/P	40 - 160
2147782	Imidacloprid	171	172	F/F	40 - 160
2147782	Linuron	81.2	81.4	P/P	40 - 160
2147782	Mandestrobin	88.0	84.8	P/P	40 - 160
2147782	MCP	119	121	P/P	40 - 160
2147782	Naproxen	94.2	72.9	P/P	40 - 160
2147782	Primidone	100	101	P/P	40 - 160
2147782	Pyraclostrobin	88.0	88.0	P/P	30 - 160
2147782	Thiamethoxam	144	143	P/P	40 - 160
2147782	Tolfenpyrad	61.4	60.1	P/P	40 - 160
2147782	Triclopyr	97.9	101	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
 Batch ID: P377394

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2148160	Fluoride	97.1	95.4	P/P	89 - 106

Reference Method: SM 4500 F-C-2011
 Batch ID: P377395

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2148673	Fluoride	96.9	96.3	P/P	89 - 106

Reference Method: SM 5310 B-2011
 Batch ID: P377045

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2148186	Organic Carbon	104	97.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P376883

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148188	Turbidity	4.65	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P377073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148690	Barium	1.37	Spike	P	0 - 20
2148690	Calcium	1.82	Spike	P	0 - 20
2148690	Iron	3.61	Spike	P	0 - 20
2148690	Magnesium	4.04	Spike	P	0 - 20
2148690	Potassium	1.50	Spike	P	0 - 20
2148690	Sodium	1.35	Spike	P	0 - 20
2148690	Zinc	1.94	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P377073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148690	Aluminum	2.26	Spike	P	0 - 20
2148690	Antimony	3.68	Spike	P	0 - 20
2148690	Arsenic	3.33	Spike	P	0 - 20
2148690	Boron	0.738	Spike	P	0 - 20
2148690	Cadmium	4.52	Spike	P	0 - 20
2148690	Chromium	2.41	Spike	P	0 - 20
2148690	Copper	3.46	Spike	P	0 - 20
2148690	Lead	2.91	Spike	P	0 - 20
2148690	Nickel	3.89	Spike	P	0 - 20
2148690	Selenium	2.42	Spike	P	0 - 20
2148690	Silver	0.988	Spike	P	0 - 20
2148690	Thallium	3.60	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377019

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2147892	Chloride	0.395	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377021

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2147892	Sulfate	0.00464	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377165

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148126	Ammonia-N	1.66	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377167

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148306	Ammonia-N	2.55	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377195

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148217	Kjeldahl Nitrogen	1.33	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376965

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2147492	NO2NO3-N	0.501	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377243

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148143	Total-P	0.236	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148184	O-Phosphate-P	0.499	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P376808

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2147735	Acesulfame K	0.494	Spike	P	0 - 30
2147735	AMPA	1.98	Spike	P	0 - 30
2147735	Endothall	0.0932	Spike	P	0 - 30
2147735	Glufosinate	28.1	Spike	P	0 - 30
2147735	Glyphosate	15.7	Spike	P	0 - 30
2147735	Sucralose	1.19	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P376840

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2147782	2,4-D	0.723	Spike	P	0 - 30
2147782	Acetaminophen	4.33	Spike	P	0 - 30
2147782	Acetamiprid	1.68	Spike	P	0 - 30
2147782	Afidopyropen	1.66	Spike	P	0 - 30
2147782	Bentazon	0.311	Spike	P	0 - 30
2147782	Benzovindiflupyr	0.405	Spike	P	0 - 30
2147782	Carbamazepine	0.869	Spike	P	0 - 30
2147782	Clothianidin	9.33	Spike	P	0 - 30
2147782	Dinotefuran	1.65	Spike	P	0 - 30
2147782	Diuron	1.19	Spike	P	0 - 30
2147782	Fenuron	0.784	Spike	P	0 - 30
2147782	Fluridone	1.31	Spike	P	0 - 30
2147782	Hydrocodone	6.24	Spike	P	0 - 30
2147782	Ibuprofen	5.02	Spike	P	0 - 30
2147782	Imazapyr	6.01	Spike	P	0 - 30
2147782	Imidacloprid	0.270	Spike	P	0 - 30
2147782	Linuron	0.269	Spike	P	0 - 30
2147782	Mandestrobin	3.72	Spike	P	0 - 30
2147782	MCPP	1.17	Spike	P	0 - 30
2147782	Naproxen	25.4	Spike	P	0 - 30
2147782	Primidone	0.958	Spike	P	0 - 30
2147782	Pyraclostrobin	0.000909	Spike	P	0 - 30
2147782	Thiamethoxam	0.288	Spike	P	0 - 30
2147782	Tolfenpyrad	2.12	Spike	P	0 - 30
2147782	Triclopyr	2.82	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
 Batch ID: P377024

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148185	Color (true)	0.312	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
 Batch ID: P377392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148160	Total Alkalinity	0.155	Sample	P	0 - 2.8

Reference Method: SM 2320 B-2011
 Batch ID: P377393

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148673	Total Alkalinity	0.594	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P377344

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148185	TDS	0.685	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P377394

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148160	Fluoride	1.47	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-2011
Batch ID: P377395

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148673	Fluoride	0.477	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
Batch ID: P377045

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148186	Organic Carbon	4.65	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2148206
Field Sample ID: G3SD0096

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	122	P	30 - 160
EPA 8321B	Acetaminophen-d4	91.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	89.5	P	30 - 160
EPA 8321B	Diuron-d6	72.1	P	30 - 160
EPA 8321B	Endothall-d6	109	P	30 - 160
EPA 8321B	Endothall-d6	109	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	74.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	74.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	83.9	P	30 - 160
EPA 8321B	Primidone-d5	93.6	P	30 - 160
EPA 8321B	Sucralose-d6	94.8	P	30 - 160
EPA 8321B	Sucralose-d6	94.8	P	30 - 160

Lab Sample ID: 2148207
Field Sample ID: G3SD0011

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	123	P	30 - 160
EPA 8321B	Acetaminophen-d4	91.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	89.9	P	30 - 160
EPA 8321B	Diuron-d6	75.6	P	30 - 160
EPA 8321B	Endothall-d6	114	P	30 - 160
EPA 8321B	Endothall-d6	114	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	77.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	77.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	90.7	P	30 - 160
EPA 8321B	Primidone-d5	109	P	30 - 160
EPA 8321B	Sucralose-d6	89.7	P	30 - 160
EPA 8321B	Sucralose-d6	89.7	P	30 - 160

Lab Sample ID: 2148208
Field Sample ID: G3SD0095

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	111	P	30 - 160
EPA 8321B	Acetaminophen-d4	95.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	77.6	P	30 - 160
EPA 8321B	Diuron-d6	61.1	P	30 - 160
EPA 8321B	Endothall-d6	93.5	P	30 - 160
EPA 8321B	Endothall-d6	93.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	81.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	81.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	86.1	P	30 - 160
EPA 8321B	Primidone-d5	93.5	P	30 - 160
EPA 8321B	Sucralose-d6	38.5	P	30 - 160
EPA 8321B	Sucralose-d6	38.5	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B-2011

Run ID: A96787

Included Lab Sample IDs: 2148182, 2148185, 2148188

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A96797

Included Lab Sample IDs: 2148182, 2148185, 2148188

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A96823

Included Lab Sample IDs: 2148206, 2148207, 2148208

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	100	117	P/P	50 - 150
Acetaminophen	104	103	P/P	60 - 160
Acetamiprid	102	102	P/P	50 - 150
Afidopyropen	121	111	P/P	50 - 150
Bentazon	90.7	93.3	P/P	50 - 160
Benzovindiflupyr	112	108	P/P	50 - 150
Carbamazepine	108	107	P/P	60 - 150
Clothianidin	107	111	P/P	60 - 150
Dinotefuran	92.1	97.8	P/P	50 - 150
Diuron	103	102	P/P	60 - 150
Fenuron	103	101	P/P	60 - 150
Fluridone	107	107	P/P	60 - 160
Hydrocodone	103	104	P/P	60 - 150
Ibuprofen	109	98.9	P/P	50 - 160
Imazapyr	104	116	P/P	50 - 150
Imidacloprid	102	99.7	P/P	60 - 150
Linuron	112	119	P/P	60 - 150
Mandestrobin	106	103	P/P	50 - 150
MCPP	98.7	95.8	P/P	50 - 150
Naproxen	80.5	81.4	P/P	50 - 160
Primidone	107	106	P/P	60 - 150
Pyraclostrobin	108	104	P/P	60 - 150
Thiamethoxam	107	101	P/P	50 - 150
Tolfenpyrad	106	102	P/P	60 - 150
Triclopyr	113	114	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A96824

Included Lab Sample IDs: 2148183, 2148186, 2148189

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	100	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A96850

Included Lab Sample IDs: 2148206, 2148207, 2148208

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	90.8	92.9	P/P	60 - 160
AMPA	92.9	94.3	P/P	60 - 160
Glufosinate	100	116	P/P	60 - 160
Glufosinate	116	82.9	P/P	60 - 160
Glyphosate	92.1	95.9	P/P	60 - 160
Glyphosate	95.9	95.7	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A96852

Included Lab Sample IDs: 2148206, 2148207, 2148208

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	85.1	89.1	P/P	60 - 160
Acesulfame K	85.2	85.1	P/P	60 - 160
Endothall	139	146	P/P	60 - 160
Endothall	146	143	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A96853

Included Lab Sample IDs: 2148182, 2148185, 2148188

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	101	P/P	90 - 110
Chloride	99.7	101	P/P	90 - 110
Sulfate	100	102	P/P	90 - 110
Sulfate	102	102	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A96861

Included Lab Sample IDs: 2148183, 2148186, 2148189

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A96897

Included Lab Sample IDs: 2148183, 2148186, 2148189

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	103	P/P	90 - 110
Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A96908

Included Lab Sample IDs: 2148209, 2148210

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	100	101	P/P	90 - 110
Calcium	100	103	P/P	90 - 110
Iron	100	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A96908

Included Lab Sample IDs: 2148209, 2148210

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

Reference Method: EPA 8321B

Run ID: A96922

Included Lab Sample IDs: 2148206, 2148207, 2148208

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	117	95.9	P/P	60 - 160
Sucralose	119	115	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A96934

Included Lab Sample IDs: 2148184, 2148187, 2148190

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.6	95.9	P/P	90 - 110
O-Phosphate-P	98.3	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A96936

Included Lab Sample IDs: 2148183, 2148186, 2148189

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.3	95.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A96957

Included Lab Sample IDs: 2148209, 2148210

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.2	98.1	P/P	90 - 110
Antimony	98.5	98.6	P/P	90 - 110
Arsenic	101	99.7	P/P	90 - 110
Cadmium	101	103	P/P	90 - 110
Chromium	104	104	P/P	90 - 110
Lead	97.6	97.7	P/P	90 - 110
Nickel	102	101	P/P	90 - 110
Selenium	102	102	P/P	90 - 110
Silver	102	103	P/P	90 - 110
Thallium	99.6	99.1	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A96983

Included Lab Sample IDs: 2148209, 2148210

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A96987

Included Lab Sample IDs: 2148182, 2148185, 2148188

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

Reference Method: SM 4500 F-C-2011

Run ID: A96987

Included Lab Sample IDs: 2148182, 2148185, 2148188

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97002

Included Lab Sample IDs: 2148183, 2148186

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97003

Included Lab Sample IDs: 2148189

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.5	97.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A97009

Included Lab Sample IDs: 2148209, 2148210

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	103	100	P/P	90 - 110
Boron	97.1	103	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						4.65	
EPA 200.7 Rev. 4.4	Barium	97.6	98.2	95.3	96.7			1.37
	Calcium	101	104	111				1.82
	Iron	102	101	99.9	104			3.61
	Magnesium	101	103	108				4.04
	Potassium	101	98.3	93.8	96.5			1.50
	Sodium	100	102	108				1.35
	Zinc	98.0	99.5	95.8	97.7			1.94
EPA 200.8 Rev. 5.4	Aluminum	100	99.2	99.5	96.8			2.26
	Antimony	102	103	105	102			3.68
	Arsenic	99.4	99.3	101	98.0			3.33
	Boron	106	110	109	104			0.738
	Cadmium	98.8	99.3	103	98.0			4.52
	Chromium	101	101	103	101			2.41
	Copper	108	105	111	106			3.46
	Lead	99.2	101	102	98.7			2.91
	Nickel	99.7	97.9	99.4	95.6			3.89
	Selenium	96.0	90.7	90.3	88.1			2.42
	Silver	102	99.5	101	99.8			0.988
	Thallium	106	108	109	105			3.60
EPA 300.0 Rev. 2.1	Chloride	101	99.5	101			0.395	
	Sulfate	100	99.8	100			0.0046	
EPA 350.1 Rev. 2.0	Ammonia-N	99.1	101	98.6				1.66
	Ammonia-N	102	105	108				2.55
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.3	101	99.0				1.33
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	99.5	100				0.501
EPA 365.1 Rev. 2.0	Total-P	103	104	104				0.236
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	96.8	97.7				0.499
EPA 8321B	2,4-D	176	122	121				0.723
	Acesulfame K	111	38.4	38.2				0.494
	Acetaminophen	92.7	102	97.6				4.33
	Acetamiprid	104	96.2	97.8				1.68
	Afidopyropen	120	104	102				1.66
	AMPA	83.6	72.4	74.6				1.98
	Bentazon	81.3						0.311
	Benzovindiflupyr	97.1	83.2	83.5				0.405
	Carbamazepine	115	87.2	86.3				0.869
	Clothianidin	102	93.4	103				9.33
	Dinotefuran	96.0	121	119				1.65
	Diuron	91.6	67.2	66.3				1.19
	Endothall	141	149	149				0.0932
	Fenuron	111	86.6	85.9				0.784
	Fluridone	106	86.8	88.0				1.31
	Glufosinate	108	84.2	112				28.1
	Glyphosate	107	140	116				15.7
	Hydrocodone	105	106	100				6.24
	Ibuprofen	99.9	79.4	83.5				5.02
	Imazapyr	115	85.6	94.7				6.01
	Imidacloprid	118	171	172				0.270
	Linuron	98.0	81.2	81.4				0.269
	Mandestrobin	99.7	88.0	84.8				3.72
	MCP	153	121	119				1.17
	Naproxen	72.2	72.9	94.2				25.4
	Primidone	112	100	101				0.958

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Pyraclostrobin	94.4	88.0	88.0		0.0009
	Sucralose	108	109	108		1.19
	Thiamethoxam	112	144	143		0.288
	Tolfenpyrad	55.7	60.1	61.4		2.12
	Triclopyr	131	101	97.9		2.82
SM 2120 B-2011	Color (true)	98.6			0.312	
SM 2320 B-2011	Total Alkalinity	105			0.155	
	Total Alkalinity	105			0.594	
SM 2540 C-2011	TDS				0.685	
SM 4500 F-C-2011	Fluoride	96.2	97.1	95.4		1.47
	Fluoride	96.7	96.9	96.3		0.477
SM 5310 B-2011	Organic Carbon	100	104	97.0		4.65

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2148182, 2148185, 2148188
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2148209, 2148210
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2148209, 2148210
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2148182, 2148185, 2148188
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2148182, 2148185, 2148188
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2148183, 2148186, 2148189
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2148183, 2148186, 2148189
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2148183, 2148186, 2148189
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2148183, 2148186, 2148189
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2148184, 2148187, 2148190
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2148206, 2148207, 2148208
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2148206, 2148207, 2148208
SM 2120 B-2011 / E31780	True Color measured at 450 nm	2148182, 2148185, 2148188
SM 2320 B-2011 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2148182, 2148185, 2148188
SM 2340B / E31780	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2148209, 2148210
SM 2540 C-2011 / E31780	Total Dissolved Solids in aqueous matrices	2148182, 2148185, 2148188
SM 2540 D-2011 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2148182, 2148185, 2148188
SM 4500 F-C-2011 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2148182, 2148185, 2148188
SM 5310 B-2011 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2148183, 2148186, 2148189

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	01/09/2020			01/09/2020 15:29	Yen Ta	2148182, 2148185, 2148188
EPA 200.7 Rev. 4.4	01/09/2020	01/14/2020 15:20	Elliott D. Healy	01/15/2020 15:52	Betina Topolski	2148209
	01/09/2020	01/14/2020 15:20	Elliott D. Healy	01/15/2020 16:00	Betina Topolski	2148210
EPA 200.8 Rev. 5.4	01/09/2020	01/14/2020 15:20	Elliott D. Healy	01/16/2020 14:34	Alexander Thompson	2148209
	01/09/2020	01/14/2020 15:20	Elliott D. Healy	01/16/2020 14:43	Alexander Thompson	2148210
	01/09/2020	01/14/2020 15:20	Elliott D. Healy	01/17/2020 17:04	Alexander Thompson	2148209
	01/09/2020	01/14/2020 15:20	Elliott D. Healy	01/17/2020 17:14	Alexander Thompson	2148210
	01/09/2020	01/14/2020 15:20	Elliott D. Healy	01/21/2020 14:48	Alexander Thompson	2148209
	01/09/2020	01/14/2020 15:20	Elliott D. Healy	01/21/2020 15:29	Alexander Thompson	2148210
EPA 300.0 Rev. 2.1	01/09/2020			01/13/2020 22:23	Lipi Saha	2148182
	01/09/2020			01/13/2020 22:35	Lipi Saha	2148185
	01/09/2020			01/13/2020 23:11	Lipi Saha	2148188
EPA 350.1 Rev. 2.0	01/09/2020			01/14/2020 13:01	Ping Hua	2148183
	01/09/2020			01/14/2020 13:03	Ping Hua	2148186
	01/09/2020			01/14/2020 13:15	Ping Hua	2148189
EPA 351.2 Rev. 2.0	01/09/2020	01/15/2020 11:30	Jhamieka S. Greenwood	01/16/2020 13:03	Virginia P. Brown	2148183
	01/09/2020	01/15/2020 11:30	Jhamieka S. Greenwood	01/16/2020 13:05	Virginia P. Brown	2148186
	01/09/2020	01/15/2020 11:30	Jhamieka S. Greenwood	01/16/2020 13:06	Virginia P. Brown	2148189
EPA 353.2 Rev. 2.0	01/09/2020			01/13/2020 10:25	Beverly Y. Sanders	2148186
	01/09/2020			01/13/2020 10:26	Beverly Y. Sanders	2148189
	01/09/2020			01/13/2020 10:42	Beverly Y. Sanders	2148183
EPA 365.1 Rev. 2.0	01/09/2020	01/15/2020 01:48	Yen Ta	01/17/2020 14:58	Benjamin T. Nordmann	2148183
	01/09/2020	01/15/2020 01:48	Yen Ta	01/17/2020 14:59	Benjamin T. Nordmann	2148186
	01/09/2020	01/15/2020 01:48	Yen Ta	01/21/2020 13:24	Benjamin T. Nordmann	2148189
EPA 365.1 Rev. 2.0 dissolved	01/09/2020			01/09/2020 17:40	Carlos Miranda	2148184
	01/09/2020			01/09/2020 18:03	Carlos Miranda	2148187
	01/09/2020			01/09/2020 18:04	Carlos Miranda	2148190
EPA 8321B	01/09/2020	01/09/2020 16:00	Rebecca Ware	01/09/2020 17:27	Rebecca Ware	2148206
	01/09/2020	01/09/2020 16:00	Rebecca Ware	01/09/2020 17:38	Rebecca Ware	2148207
	01/09/2020	01/09/2020 16:00	Rebecca Ware	01/09/2020 17:59	Rebecca Ware	2148208
	01/09/2020	01/09/2020 16:00	Rebecca Ware	01/10/2020 18:33	Rebecca Ware	2148206
	01/09/2020	01/09/2020 16:00	Rebecca Ware	01/10/2020 18:46	Rebecca Ware	2148207
	01/09/2020	01/09/2020 16:00	Rebecca Ware	01/10/2020 19:14	Rebecca Ware	2148208
	01/09/2020	01/09/2020 16:00	Rebecca Ware	01/13/2020 23:09	Rebecca Ware	2148208
	01/09/2020	01/09/2020 16:00	Rebecca Ware	01/14/2020 12:00	Rebecca Ware	2148206
	01/09/2020	01/09/2020 16:00	Rebecca Ware	01/14/2020 12:11	Rebecca Ware	2148207
	01/09/2020	01/10/2020 12:00	Hoor Shaik	01/11/2020 00:25	Juyoung Kim	2148206
	01/09/2020	01/10/2020 12:00	Hoor Shaik	01/11/2020 01:00	Juyoung Kim	2148207
	01/09/2020	01/10/2020 12:00	Hoor Shaik	01/11/2020 01:34	Juyoung Kim	2148208
SM 2120 B-2011	01/09/2020			01/09/2020 15:19	Madeline Funaro	2148182

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2120 B-2011	01/09/2020			01/09/2020 15:20	Madeline Funaro	2148185
	01/09/2020			01/09/2020 15:21	Madeline Funaro	2148188
SM 2320 B-2011	01/09/2020			01/15/2020 20:18	Dale L. Simmons	2148182
	01/09/2020			01/15/2020 21:46	Dale L. Simmons	2148185
	01/09/2020			01/15/2020 22:01	Dale L. Simmons	2148188
SM 2340B	01/09/2020			01/15/2020 15:52	Betina Topolski	2148209
	01/09/2020			01/15/2020 16:00	Betina Topolski	2148210
SM 2540 C-2011	01/09/2020			01/10/2020 16:20	Sima Feizi	2148182, 2148185, 2148188
SM 2540 D-2011	01/09/2020			01/10/2020 16:20	Sima Feizi	2148182, 2148185, 2148188
SM 4500 F-C-2011	01/09/2020			01/15/2020 20:18	Dale L. Simmons	2148182
	01/09/2020			01/15/2020 21:46	Dale L. Simmons	2148185
	01/09/2020			01/15/2020 22:01	Dale L. Simmons	2148188
SM 5310 B-2011	01/09/2020			01/14/2020 00:02	Madeline Funaro	2148186
	01/09/2020			01/14/2020 02:37	Madeline Funaro	2148183
	01/09/2020			01/14/2020 02:50	Madeline Funaro	2148189