

Chemical Analysis Report

SE-DIST-2021-03-23-02

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

Event Description: **SMP - Stuart Deploy 1 #1**
Request ID: **RQ-2021-03-15-62**
Customer: **SE-DIST**
Project ID: **SMP**

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Date Certified: 13-APR-2021 10:45



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: Willoughby Creek

Collection Date/Time: 03/22/2021 11:40

Field ID: G2SE0034

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2233141	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P395386	
	SM 2320 B-2011	Total Alkalinity	127	A	mg CaCO3/L	P395513	
	SM 2540 D-2011	TSS	3	I	mg/L	P395856	
	SM 4500 F-C-2011	Fluoride	1.1		mg F/L	P395518	
2233142	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P395903	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P395790	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P395594	
	EPA 365.1 Rev. 2.0	Total-P	0.042		mg P/L	P395542	
	SM 5310 B-2011	Organic Carbon	4.3		mg C/L	P395844	
2233143	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.025		mg P/L	P395365	
2233148	EPA 8276	Chlordane	6.0	I	ng/L	P395389	
		Toxaphene	33	U	ng/L	P395389	
2233149	EPA 8321B	2,4-D	0.011		ug/L	P395318	
		Acesulfame K	0.10	U	ug/L	P395329	MS
		2,4,5-T	0.0040	U	ug/L	P395318	
		AMPA	0.10	UJ	ug/L	P395329	SUR
		Sucralose	0.063		ug/L	P395329	
		Acetaminophen	0.0080	UJ	ug/L	P395318	LCS
		Acetamiprid	0.0020	U	ug/L	P395318	
		Endothall	0.25	U	ug/L	P395329	
		Glufosinate	0.10	UJ	ug/L	P395329	SUR
		Glyphosate	0.10	UJ	ug/L	P395329	SUR
		Afidopyropen	0.0020	U	ug/L	P395318	
		Bentazon	0.0056		ug/L	P395318	
		Benzovindiflupyr	0.0020	U	ug/L	P395318	
		Carbamazepine	8.0E-04	U	ug/L	P395318	
		Clothianidin	0.0020	U	ug/L	P395318	
		Dinotefuran	0.0020	U	ug/L	P395318	
		Diuron	0.012		ug/L	P395318	
		Fenuron	0.016	U	ug/L	P395318	
		Fluridone	0.0033		ug/L	P395318	
		Imazapyr	0.020		ug/L	P395318	
		Hydrocodone	0.0020	U	ug/L	P395318	
		Ibuprofen	0.020	U	ug/L	P395318	
		Imidacloprid	0.0021	I	ug/L	P395318	
		Linuron	0.0040	U	ug/L	P395318	
		Mandestrobin	0.0020	U	ug/L	P395318	
		MCP	0.0020	U	ug/L	P395318	
		Naproxen	0.0080	U	ug/L	P395318	
		Primidone	0.0040	U	ug/L	P395318	
		Pyraclostrobin	0.0020	U	ug/L	P395318	
		Thiamethoxam	0.0020	U	ug/L	P395318	
		Tolfenpyrad	0.0020	U	ug/L	P395318	

Field ID: G2SE0034

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2233149	EPA 8321B	Triclopyr	0.0040	U	ug/L	P395318	
2233150	EPA 200.7 Rev. 4.4	Calcium	360		mg/L	P395611	
		Chromium	8.1	I	ug/L	P395611	
		Iron	120	U	ug/L	P395611	
		Magnesium	1.05E+03		mg/L	P395611	
		Manganese	4.4	I	ug/L	P395611	
		Zinc	20	U	ug/L	P395611	
	EPA 200.8 Rev. 5.4	Aluminum	77	I	ug/L	P395611	
		Antimony	0.20	U	ug/L	P395611	
		Arsenic	2.22		ug/L	P395611	
		Beryllium	0.10	U	ug/L	P395611	
		Cadmium	0.080	U	ug/L	P395611	
		Copper	3.1	I	ug/L	P395611	
		Lead	0.80	U	ug/L	P395611	
		Nickel	2.0	U	ug/L	P395611	
		Selenium	0.80	U	ug/L	P395611	
		Silver	0.040	U	ug/L	P395611	
		Thallium	0.40	U	ug/L	P395611	

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: Refer to the Lab Analysis Report for an explanation of QC Codes.

EPA 8321B: Results confirmed in sample duplicate. Refer to the Lab Analysis Report for an explanation of QC Codes.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium and magnesium are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P395386

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P395611

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Chromium	1.0	U	ug/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P395611

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	U	ug/L
Cadmium	0.020	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 350.1 Rev. 2.0
Batch ID: P395903

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395790

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395594

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395542

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395365

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

Reference Method: EPA 8276
Batch ID: P395389

Component	Result	Code	Units
Chlordane	5.0	U	ng/L
Toxaphene	30	U	ng/L

Reference Method: EPA 8321B
Batch ID: P395318

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.030	I	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: EPA 8321B
Batch ID: P395329

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: SM 2320 B-2011
Batch ID: P395513

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

Reference Method: SM 2540 D-2011
Batch ID: P395856

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P395518

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P395844

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: P395611

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Chromium	97.5		P	85 - 115
Iron	105		P	85 - 115
Magnesium	99.3		P	85 - 115
Manganese	103		P	85 - 115
Zinc	99.7		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P395611

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.1		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	96.7		P	85 - 115
Beryllium	88.0		P	85 - 115
Cadmium	98.6		P	85 - 115
Copper	96.8		P	85 - 115
Lead	99.5		P	85 - 115
Nickel	98.3		P	85 - 115
Selenium	97.6		P	85 - 115
Silver	103		P	85 - 115
Thallium	105		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395903

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395790

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395594

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395542

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395365

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8276
Batch ID: P395389

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	106	99.3	P/P	56 - 117
Toxaphene	78.8	81.5	P/P	45 - 116

Reference Method: EPA 8321B
Batch ID: P395318

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	126		P	30 - 160
2,4,5-T	96.7		P	30 - 160
Acetaminophen	203		F	30 - 160
Acetamiprid	83.0		P	30 - 160
Afidopyropen	70.3		P	30 - 160
Bentazon	62.6		P	30 - 160
Benzovindiflupyr	86.8		P	30 - 160
Carbamazepine	91.1		P	30 - 160
Clothianidin	93.6		P	30 - 160
Dinotefuran	82.0		P	30 - 160
Diuron	68.1		P	30 - 160
Fenuron	87.9		P	30 - 160
Fluridone	79.5		P	30 - 160
Hydrocodone	91.3		P	30 - 160
Ibuprofen	80.2		P	30 - 160
Imazapyr	78.9		P	30 - 160
Imidacloprid	103		P	30 - 160
Linuron	67.1		P	30 - 160
Mandestrobin	85.2		P	30 - 160
MCPP	110		P	30 - 160
Naproxen	62.8		P	30 - 160
Primidone	91.1		P	30 - 160
Pyraclostrobin	78.8		P	30 - 160
Thiamethoxam	99.4		P	30 - 160
Tolfenpyrad	44.4		P	30 - 160
Triclopyr	111		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P395329

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	146		P	40 - 150
AMPA	97.4		P	40 - 150
Endothall	95.3		P	40 - 150
Glufosinate	111		P	40 - 150
Glyphosate	119		P	40 - 140
Sucralose	92.2		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P395513

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.8		P	93 - 104

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P395518

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.9		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P395844

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P395611

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233660	Chromium	94.4	92.5	P/P	70 - 130
2233660	Iron	103	98.8	P/P	70 - 130
2233660	Manganese	100	97.0	P/P	70 - 130
2233660	Zinc	101	100	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P395611

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233660	Aluminum	101	100	P/P	70 - 130
2233660	Antimony	104	103	P/P	70 - 130
2233660	Arsenic	103	104	P/P	70 - 130
2233660	Beryllium	107	106	P/P	70 - 130
2233660	Cadmium	94.7	95.5	P/P	70 - 130
2233660	Copper	104	102	P/P	70 - 130
2233660	Lead	99.7	99.7	P/P	70 - 130
2233660	Nickel	106	106	P/P	70 - 130
2233660	Selenium	102	101	P/P	70 - 130
2233660	Silver	94.3	91.0	P/P	70 - 130
2233660	Thallium	104	105	P/P	70 - 130

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P395903

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233142	Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P395790

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2232840	Kjeldahl Nitrogen	95.0	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P395594

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2232840	NO2NO3-N	98.2	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P395542

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2232839	Total-P	98.2	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P395365

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233143	O-Phosphate-P	97.6	98.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8276

Batch ID: P395389

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233148	Chlordane	106	85.6	P/P	47 - 128
2233148	Toxaphene	88.4	85.3	P/P	11 - 163

Reference Method: EPA 8321B

Batch ID: P395318

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2232693	2,4-D	112	98.8	P/P	30 - 160
2232693	2,4,5-T	104	97.7	P/P	30 - 160
2232693	Acetaminophen	108	98.9	P/P	30 - 160
2232693	Acetamiprid	93.9	75.5	P/P	30 - 160
2232693	Afidopyropen	80.5	64.6	P/P	30 - 160
2232693	Bentazon	36.4	37.6	P/P	30 - 160
2232693	Benzovindiflupyr	91.8	81.8	P/P	30 - 160
2232693	Carbamazepine	75.9	74.6	P/P	30 - 160
2232693	Clothianidin	83.2	96.8	P/P	30 - 160
2232693	Dinotefuran	120	113	P/P	30 - 160
2232693	Diuron	53.1	48.9	P/P	30 - 160
2232693	Fenuron	67.5	65.6	P/P	30 - 160
2232693	Fluridone	84.5	68.2	P/P	30 - 160
2232693	Hydrocodone	99.5	96.2	P/P	30 - 160
2232693	Ibuprofen	82.8	71.7	P/P	30 - 160
2232693	Imazapyr	93.7	83.8	P/P	30 - 160
2232693	Imidacloprid	152	142	P/P	30 - 160
2232693	Linuron	61.9	56.1	P/P	30 - 160
2232693	Mandestrobin	91.4	82.9	P/P	30 - 160
2232693	MCP	103	94.5	P/P	30 - 160
2232693	Naproxen	58.5	48.2	P/P	30 - 160
2232693	Primidone	102	97.6	P/P	30 - 160
2232693	Pyraclostrobin	86.9	76.6	P/P	30 - 160
2232693	Thiamethoxam	135	127	P/P	30 - 160
2232693	Tolfenpyrad	55.5	55.3	P/P	30 - 160
2232693	Triclopyr	117	107	P/P	30 - 160

Reference Method: EPA 8321B

Batch ID: P395329

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233034	Acesulfame K	279	282	F/F	40 - 150
2233034	AMPA	117	114	P/P	40 - 150
2233034	Endothall	81.0	75.1	P/P	40 - 150
2233034	Glufosinate	138	138	P/P	40 - 150
2233034	Glyphosate	112	94.6	P/P	40 - 140
2233034	Sucralose	108	111	P/P	40 - 150

Reference Method: SM 4500 F-C-2011

Batch ID: P395518

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2232838	Fluoride	96.7	96.7	P/P	94 - 107

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P395844

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233343	Organic Carbon	87.2	87.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P395386

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233087	Turbidity	1.94	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P395611

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233660	Calcium	3.70	Spike	P	0 - 20
2233660	Chromium	2.02	Spike	P	0 - 20
2233660	Iron	3.10	Spike	P	0 - 20
2233660	Magnesium	3.89	Spike	P	0 - 20
2233660	Manganese	2.30	Spike	P	0 - 20
2233660	Zinc	0.493	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P395611

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233660	Aluminum	0.159	Spike	P	0 - 20
2233660	Antimony	0.963	Spike	P	0 - 20
2233660	Arsenic	0.957	Spike	P	0 - 20
2233660	Beryllium	0.423	Spike	P	0 - 20
2233660	Cadmium	0.838	Spike	P	0 - 20
2233660	Copper	2.08	Spike	P	0 - 20
2233660	Lead	0.0234	Spike	P	0 - 20
2233660	Nickel	0.394	Spike	P	0 - 20
2233660	Selenium	0.635	Spike	P	0 - 20
2233660	Silver	3.55	Spike	P	0 - 20
2233660	Thallium	1.21	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P395903

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233142	Ammonia-N	1.41	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P395790

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2232840	Kjeldahl Nitrogen	8.40	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P395594

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2232840	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P395542

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2232839	Total-P	1.83	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P395365

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233143	O-Phosphate-P	0.327	Spike	P	0 - 20

Reference Method: EPA 8276

Batch ID: P395389

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233148	Chlordane	20.2	Spike	P	0 - 30
2233148	Toxaphene	3.62	Spike	P	0 - 30
LFB	Chlordane	6.36	LCS	P	0 - 30
LFB	Toxaphene	3.34	LCS	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P395318

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2232693	2,4-D	12.1	Spike	P	0 - 30
2232693	2,4,5-T	5.77	Spike	P	0 - 30
2232693	Acetaminophen	8.43	Spike	P	0 - 30
2232693	Acetamiprid	21.7	Spike	P	0 - 30
2232693	Afidopyropen	21.8	Spike	P	0 - 30
2232693	Bentazon	3.25	Spike	P	0 - 30
2232693	Benzovindiflupyr	11.5	Spike	P	0 - 30
2232693	Carbamazepine	1.75	Spike	P	0 - 30
2232693	Clothianidin	15.1	Spike	P	0 - 30
2232693	Dinotefuran	5.98	Spike	P	0 - 30
2232693	Diuron	8.12	Spike	P	0 - 30
2232693	Fenuron	2.80	Spike	P	0 - 30
2232693	Fluridone	21.4	Spike	P	0 - 30
2232693	Hydrocodone	3.36	Spike	P	0 - 30
2232693	Ibuprofen	14.4	Spike	P	0 - 30
2232693	Imazapyr	5.74	Spike	P	0 - 30
2232693	Imidacloprid	7.06	Spike	P	0 - 30
2232693	Linuron	9.67	Spike	P	0 - 30
2232693	Mandestrobin	9.80	Spike	P	0 - 30
2232693	MCPP	8.54	Spike	P	0 - 30
2232693	Naproxen	19.3	Spike	P	0 - 30
2232693	Primidone	4.40	Spike	P	0 - 30
2232693	Pyraclostrobin	12.6	Spike	P	0 - 30
2232693	Thiamethoxam	5.64	Spike	P	0 - 30
2232693	Tolfenpyrad	0.337	Spike	P	0 - 30
2232693	Triclopyr	8.82	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P395329

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233034	Acesulfame K	1.15	Spike	P	0 - 30
2233034	AMPA	2.46	Spike	P	0 - 30
2233034	Endothall	7.53	Spike	P	0 - 30
2233034	Glufosinate	0.110	Spike	P	0 - 30
2233034	Glyphosate	13.0	Spike	P	0 - 30
2233034	Sucralose	2.92	Spike	P	0 - 30

Reference Method: SM 2320 B-2011

Batch ID: P395513

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233141	Total Alkalinity	0.239	Sample	P	0 - 8.1

Reference Method: SM 4500 F-C-2011

Batch ID: P395518

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2232838	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011

Batch ID: P395844

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233343	Organic Carbon	0.507	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2233148
Field Sample ID: G2SE0034

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8276	Decachlorobiphenyl	67.1	P	29 - 92.0
EPA 8276	PCNB	77.1	P	43 - 134

Lab Sample ID: 2233149
Field Sample ID: G2SE0034

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	126	P	30 - 160
EPA 8321B	Acetaminophen-d4	95.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	93.3	P	30 - 160
EPA 8321B	Diuron-d6	78.2	P	30 - 160
EPA 8321B	Endothall-d6	106	P	40 - 160
EPA 8321B	Endothall-d6	106	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	33.5	F	40 - 160
EPA 8321B	Glyphosate 13C 15N	33.5	F	40 - 160
EPA 8321B	Ibuprofen-d3	81.6	P	30 - 160
EPA 8321B	Primidone-d5	106	P	30 - 160
EPA 8321B	Sucralose-d6	83.3	P	30 - 160
EPA 8321B	Sucralose-d6	83.3	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A104225

Included Lab Sample IDs: 2233143

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.3	98.4	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A104229

Included Lab Sample IDs: 2233141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	101	P/P	95 - 105

Reference Method: SM 2320 B-2011

Run ID: A104288

Included Lab Sample IDs: 2233141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.8	99.8	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A104288

Included Lab Sample IDs: 2233141

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

Reference Method: EPA 8321B

Run ID: A104297

Included Lab Sample IDs: 2233149

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	111	112	P/P	50 - 150
2,4,5-T	99.0	98.4	P/P	50 - 150
Acetaminophen	102	101	P/P	60 - 160
Acetamiprid	107	108	P/P	50 - 150
Afidopyropen	105	93.3	P/P	50 - 150
Bentazon	81.3	82.8	P/P	50 - 160
Benzovindiflupyr	118	118	P/P	50 - 160
Carbamazepine	107	110	P/P	60 - 150
Clothianidin	112	113	P/P	60 - 150
Dinotefuran	102	111	P/P	50 - 150
Diuron	107	115	P/P	60 - 160
Fenuron	98.8	103	P/P	60 - 150
Fluridone	114	115	P/P	60 - 160
Hydrocodone	111	108	P/P	60 - 150
Ibuprofen	105	100	P/P	50 - 160
Imazapyr	84.2	75.7	P/P	50 - 160
Imidacloprid	104	107	P/P	60 - 150
Linuron	106	106	P/P	60 - 150
Mandestrobin	110	109	P/P	50 - 150
MCPP	112	103	P/P	50 - 150
Naproxen	124	73.0	P/P	50 - 160
Primidone	97.0	99.5	P/P	60 - 150
Pyraclostrobin	108	112	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A104297
Included Lab Sample IDs: 2233149

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thiamethoxam	111	119	P/P	50 - 150
Tolfenpyrad	112	110	P/P	60 - 150
Triclopyr	108	103	P/P	50 - 150

Reference Method: EPA 8276
Run ID: A104313
Included Lab Sample IDs: 2233148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	94.6		P	80 - 120
Toxaphene	99.7		P	80 - 120

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A104327
Included Lab Sample IDs: 2233142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A104334
Included Lab Sample IDs: 2233142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	99.5	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A104350
Included Lab Sample IDs: 2233149

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	153	127	P/P	40 - 160
AMPA	99.2	105	P/P	40 - 160
Endothall	98.6	95.4	P/P	40 - 160
Glufosinate	114	111	P/P	40 - 160
Glyphosate	111	143	P/P	40 - 160

Reference Method: EPA 8321B
Run ID: A104354
Included Lab Sample IDs: 2233149

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	99.0	93.1	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A104403
Included Lab Sample IDs: 2233150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	103	103	P/P	90 - 110
Antimony	98.8	97.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A104403

Included Lab Sample IDs: 2233150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	99.2	98.9	P/P	90 - 110
Beryllium	102	102	P/P	90 - 110
Cadmium	99.0	96.8	P/P	90 - 110
Copper	100	101	P/P	90 - 110
Lead	100	98.7	P/P	90 - 110
Nickel	102	102	P/P	90 - 110
Selenium	98.8	98.8	P/P	90 - 110
Silver	96.7	95.2	P/P	90 - 110
Thallium	105	104	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A104442

Included Lab Sample IDs: 2233142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.0	96.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A104453

Included Lab Sample IDs: 2233142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.2	93.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A104463

Included Lab Sample IDs: 2233142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.4	99.9	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A104609

Included Lab Sample IDs: 2233150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	102	P/P	90 - 110
Chromium	102	101	P/P	90 - 110
Iron	103	102	P/P	90 - 110
Magnesium	98.4	97.8	P/P	90 - 110
Manganese	103	103	P/P	90 - 110
Zinc	103	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						1.94	
EPA 200.7 Rev. 4.4	Calcium	104						3.70
	Chromium	97.5		94.4	92.5			2.02
	Iron	105		103	98.8			3.10
	Magnesium	99.3						3.89
	Manganese	103		100	97.0			2.30
	Zinc	99.7		101	100			0.493
EPA 200.8 Rev. 5.4	Aluminum	98.1		101	100			0.159
	Antimony	102		104	103			0.963
	Arsenic	96.7		103	104			0.957
	Beryllium	88.0		107	106			0.423
	Cadmium	98.6		94.7	95.5			0.838
	Copper	96.8		104	102			2.08
	Lead	99.5		99.7	99.7			0.0234
	Nickel	98.3		106	106			0.394
	Selenium	97.6		102	101			0.635
	Silver	103		94.3	91.0			3.55
	Thallium	105		104	105			1.21
EPA 350.1 Rev. 2.0	Ammonia-N	99.2		101	102			1.41
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.2		95.0	105			8.40
EPA 353.2 Rev. 2.0	NO2NO3-N	98.0		98.2	98.2			0.0
EPA 365.1 Rev. 2.0	Total-P	108		98.2	100			1.83
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.1		97.6	98.0			0.327
EPA 8276	Chlordane	106	99.3	106	85.6	6.36		20.2
	Toxaphene	81.5	78.8	88.4	85.3	3.34		3.62
EPA 8321B	2,4-D	126		112	98.8			12.1
	2,4,5-T	96.7		104	97.7			5.77
	Acesulfame K	146		279	282			1.15
	Acetaminophen	203		108	98.9			8.43
	Acetamiprid	83.0		93.9	75.5			21.7
	Afidopyropen	70.3		80.5	64.6			21.8
	AMPA	97.4		117	114			2.46
	Bentazon	62.6		36.4	37.6			3.25
	Benzovindiflupyr	86.8		91.8	81.8			11.5
	Carbamazepine	91.1		75.9	74.6			1.75
	Clothianidin	93.6		83.2	96.8			15.1
	Dinotefuran	82.0		120	113			5.98
	Diuron	68.1		53.1	48.9			8.12
	Endothall	95.3		81.0	75.1			7.53
	Fenuron	87.9		67.5	65.6			2.80
	Fluridone	79.5		84.5	68.2			21.4
	Glufosinate	111		138	138			0.110
	Glyphosate	119		112	94.6			13.0
	Hydrocodone	91.3		99.5	96.2			3.36
	Ibuprofen	80.2		82.8	71.7			14.4
	Imazapyr	78.9		93.7	83.8			5.74
	Imidacloprid	103		152	142			7.06
	Linuron	67.1		61.9	56.1			9.67
	Mandestrobin	85.2		91.4	82.9			9.80
	MCPP	110		103	94.5			8.54
	Naproxen	62.8		58.5	48.2			19.3
	Primidone	91.1		102	97.6			4.40
	Pyraclostrobin	78.8		86.9	76.6			12.6
	Sucralose	92.2		108	111			2.92

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8321B	Thiamethoxam	99.4	135	127			5.64
	Tolfenpyrad	44.4	55.5	55.3			0.337
	Triclopyr	111	117	107			8.82
SM 2320 B-2011	Total Alkalinity	99.8				0.239	
SM 4500 F-C-2011	Fluoride	98.9	96.7	96.7			0.0
SM 5310 B-2011	Organic Carbon	95.8	87.2	87.8			0.507

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2233141
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2233150
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2233150
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2233142
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2233142
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2233142
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2233142
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2233143
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2233148
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2233149
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2233149
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2233141
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2233141
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2233141
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2233142

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	03/23/2021			03/23/2021 15:57	Yen Ta	2233141
EPA 200.7 Rev. 4.4	03/23/2021	03/29/2021 15:05	Elliott D. Healy	04/10/2021 01:43	Betina Topolski	2233150
	03/23/2021	03/29/2021 15:05	Elliott D. Healy	04/10/2021 01:55	Betina Topolski	2233150
EPA 200.8 Rev. 5.4	03/23/2021	03/29/2021 15:05	Elliott D. Healy	03/31/2021 14:43	Alexander Thompson	2233150
	03/23/2021	03/29/2021 15:05	Elliott D. Healy	03/31/2021 16:37	Alexander Thompson	2233150
EPA 350.1 Rev. 2.0	03/23/2021			04/02/2021 18:08	Ping Hua	2233142
EPA 351.2 Rev. 2.0	03/23/2021	04/01/2021 12:36	Benjamin T. Nordmann	04/02/2021 12:44	Virginia P. Brown	2233142
EPA 353.2 Rev. 2.0	03/23/2021			03/29/2021 10:13	Beverly Y. Sanders	2233142
EPA 365.1 Rev. 2.0	03/23/2021	03/26/2021 12:49	Yen Ta	03/29/2021 13:47	Shengyu Ding	2233142
EPA 365.1 Rev. 2.0 dissolved	03/23/2021			03/23/2021 14:19	Lipi Saha	2233143
EPA 8276	03/23/2021	03/25/2021 08:00	Fe-Val Siddell	03/27/2021 03:15	Julie Wi	2233148
EPA 8321B	03/23/2021	03/23/2021 14:30	Rebecca Ware	03/23/2021 15:18	Rebecca Ware	2233149
	03/23/2021	03/23/2021 14:30	Rebecca Ware	03/25/2021 12:52	Rebecca Ware	2233149
	03/23/2021	03/25/2021 09:00	Hoor Shaik	03/27/2021 01:01	Juyoung Kim	2233149
SM 2320 B-2011	03/23/2021			03/24/2021 23:16	Dale L. Simmons	2233141
SM 2540 D-2011	03/23/2021			03/26/2021 15:08	Yijie Li	2233141
SM 4500 F-C-2011	03/23/2021			03/24/2021 22:39	Dale L. Simmons	2233141
SM 5310 B-2011	03/23/2021			04/01/2021 03:30	Madeline Gruver	2233142