

Chemical Analysis Report

SO-DIST-2021-03-05-01

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

Event Description: **2021 SMP: Lee Coastal**
Request ID: **RQ-2021-03-01-57**
Customer: **SO-DIST**
Project ID: **SMP**

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FLDEP South District Office
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Date Certified: 25-MAR-2021 10:11



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: 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: Punta Rassa Cove

Collection Date/Time: 03/04/2021 09:30

Field ID: G2SD0047

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2229533	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P394573	
	EPA 300.0 Rev. 2.1	Bromide	54		mg Br/L	P394860	
	SM 2320 B-2011	Total Alkalinity	128	A	mg CaCO3/L	P394735	
	SM 2540 D-2011	TSS	5	IA	mg/L	P394839	
	SM 4500 F-C-2011	Fluoride	1.0		mg F/L	P394740	
2229534	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P394588	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40		mg N/L	P394720	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P394651	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P394653	MS
	SM 5310 B-2011	Organic Carbon	5.6		mg C/L	P395276	
2229535	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.023		mg P/L	P394572	

Ref. Method and Comment:

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

Sample Location: Imperial River near US 41

Collection Date/Time: 03/04/2021 11:10

Field ID: G1SD0057

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2229557	EPA 8321B	2,4-D	0.0020	U	ug/L	P394600	
		Acesulfame K	0.10	U	ug/L	P394640	MS
		AMPA	1.0	U	ug/L	P394640	
		2,4,5-T	0.0040	U	ug/L	P394600	
		Sucralose	0.12		ug/L	P394640	
		Acetaminophen	0.0080	U	ug/L	P394600	
		Endothall	0.25	U	ug/L	P394640	
		Acetamiprid	0.0020	U	ug/L	P394600	
		Glufosinate	1.0	U	ug/L	P394640	
		Glyphosate	1.0	U	ug/L	P394640	MS
		Afidopyropen	0.0020	U	ug/L	P394600	
		Bentazon	0.15		ug/L	P394600	
		Benzovindiflupyr	0.0020	U	ug/L	P394600	
		Carbamazepine	8.0E-04	U	ug/L	P394600	
		Clothianidin	0.0020	U	ug/L	P394600	
		Dinotefuran	0.0020	U	ug/L	P394600	
		Diuron	0.0020	U	ug/L	P394600	
		Fenuron	0.016	U	ug/L	P394600	
		Fluridone	0.012		ug/L	P394600	
		Imazapyr	0.14		ug/L	P394600	
		Hydrocodone	0.0020	U	ug/L	P394600	
		Ibuprofen	0.020	U	ug/L	P394600	
		Imidacloprid	0.0033	I	ug/L	P394600	
		Linuron	0.0040	U	ug/L	P394600	
		Mandestrobin	0.0020	U	ug/L	P394600	
		MCPP	0.0020	U	ug/L	P394600	
		Naproxen	0.0080	U	ug/L	P394600	
		Primidone	0.0040	U	ug/L	P394600	
		Pyraclostrobin	0.0020	U	ug/L	P394600	
		Thiamethoxam	0.0020	U	ug/L	P394600	
		Tolfenpyrad	0.0020	U	ug/L	P394600	
		Triclopyr	0.0040	U	ug/L	P394600	

Ref. Method and Comment:

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

EPA 8321B: MDL for some parameters elevated due to matrix interference.

Sample Location: Estero River @ Preserve

Collection Date/Time: 03/04/2021 12:25

Field ID: G1SD0104

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2229558	EPA 8321B	2,4-D	0.0060	I	ug/L	P394600	
		Acesulfame K	0.10	U	ug/L	P394640	MS
		2,4,5-T	0.0040	U	ug/L	P394600	
		AMPA	0.10	U	ug/L	P394640	
		Sucralose	0.56		ug/L	P394640	
		Acetaminophen	0.0080	U	ug/L	P394600	
		Acetamiprid	0.0020	U	ug/L	P394600	
		Endothall	0.25	U	ug/L	P394640	
		Glufosinate	0.10	U	ug/L	P394640	
		Glyphosate	0.10	U	ug/L	P394640	MS
		Afidopyropen	0.0020	U	ug/L	P394600	
		Bentazon	0.16		ug/L	P394600	
		Benzovindiflupyr	0.0020	U	ug/L	P394600	
		Carbamazepine	0.0010	I	ug/L	P394600	
		Clothianidin	0.0020	U	ug/L	P394600	
		Dinotefuran	0.0020	U	ug/L	P394600	
		Diuron	0.0020	U	ug/L	P394600	
		Fenuron	0.016	U	ug/L	P394600	
		Fluridone	0.54		ug/L	P394600	
		Imazapyr	0.16		ug/L	P394600	
		Hydrocodone	0.0020	U	ug/L	P394600	
		Ibuprofen	0.020	U	ug/L	P394600	
		Imidacloprid	0.0026	I	ug/L	P394600	
		Linuron	0.0040	U	ug/L	P394600	
		Mandestrobin	0.0020	U	ug/L	P394600	
		MCPP	0.0020	U	ug/L	P394600	
		Naproxen	0.0080	U	ug/L	P394600	
		Primidone	0.0059	I	ug/L	P394600	
		Pyraclostrobin	0.0020	U	ug/L	P394600	
		Thiamethoxam	0.0020	U	ug/L	P394600	
		Tolfenpyrad	0.0020	U	ug/L	P394600	
		Triclopyr	0.0040	U	ug/L	P394600	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394573

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394860

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394588

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394720

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394651

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394653

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394572

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

Reference Method: EPA 8321B
Batch ID: P394600

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P394600

Component	Result	Code	Units
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: P394640

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: SM 2320 B-2011

Batch ID: P394735

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

Reference Method: SM 2540 D-2011

Batch ID: P394839

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011

Batch ID: P394740

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011

Batch ID: P395276

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394860

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394588

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394720

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394651

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394653

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	107		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394572

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.5		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P394600

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	107		P	30 - 160
2,4,5-T	90.3		P	30 - 160
Acetaminophen	87.2		P	30 - 160
Acetamiprid	89.1		P	30 - 160
Afidopyropen	68.4		P	30 - 160
Bentazon	83.9		P	30 - 160
Benzovindiflupyr	89.3		P	30 - 160
Carbamazepine	95.9		P	30 - 160
Clothianidin	95.9		P	30 - 160
Dinotefuran	88.4		P	30 - 160
Diuron	71.1		P	30 - 160
Fenuron	104		P	30 - 160
Fluridone	93.2		P	30 - 160
Hydrocodone	98.7		P	30 - 160
Ibuprofen	83.2		P	30 - 160
Imazapyr	90.3		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P394600

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Imidacloprid	93.9		P	30 - 160
Linuron	78.5		P	30 - 160
Mandestrobin	85.6		P	30 - 160
MCPP	115		P	30 - 160
Naproxen	52.1		P	30 - 160
Primidone	96.1		P	30 - 160
Pyraclostrobin	81.7		P	30 - 160
Thiamethoxam	102		P	30 - 160
Tolfenpyrad	55.3		P	30 - 160
Triclopyr	97.6		P	30 - 160

Reference Method: EPA 8321B

Batch ID: P394640

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	70.7		P	40 - 150
AMPA	92.7		P	40 - 150
Endothall	104		P	40 - 150
Glufosinate	132		P	40 - 150
Glyphosate	127		P	40 - 140
Sucralose	99.7		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P394735

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	93 - 104

Reference Method: SM 4500 F-C-2011

Batch ID: P394740

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	90 - 106

Reference Method: SM 5310 B-2011

Batch ID: P395276

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P394860

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229539	Bromide	97.1	94.9	P/P	90 - 110
2229543	Bromide	95.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P394588

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2228897	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P394720

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229069	Kjeldahl Nitrogen	106	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P394651

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229141	NO2NO3-N	107	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P394653

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229436	Total-P	111	104	F/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P394572

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229440	O-Phosphate-P	99.8	100	P/P	90 - 110

Reference Method: EPA 8321B

Batch ID: P394600

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229501	2,4-D	101	118	P/P	30 - 160
2229501	2,4,5-T	93.4	95.3	P/P	30 - 160
2229501	Acetaminophen	100	126	P/P	30 - 160
2229501	Acetamiprid	79.0	83.1	P/P	30 - 160
2229501	Afidopyropen	67.2	68.3	P/P	30 - 160
2229501	Benzovindiflupyr	80.2	88.5	P/P	30 - 160
2229501	Carbamazepine	73.6	81.6	P/P	30 - 160
2229501	Clothianidin	95.5	101	P/P	30 - 160
2229501	Dinotefuran	112	122	P/P	30 - 160
2229501	Diuron	41.9	51.6	P/P	30 - 160
2229501	Fenuron	76.7	80.2	P/P	30 - 160
2229501	Fluridone	69.6	64.0	P/P	30 - 160
2229501	Hydrocodone	90.4	103	P/P	30 - 160
2229501	Ibuprofen	77.0	87.8	P/P	30 - 160
2229501	Imidacloprid	132	138	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P394600

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229501	Linuron	53.8	63.3	P/P	30 - 160
2229501	Mandestrobin	73.1	80.1	P/P	30 - 160
2229501	MCPP	102	103	P/P	30 - 160
2229501	Naproxen	62.5	81.4	P/P	30 - 160
2229501	Primidone	81.8	97.6	P/P	30 - 160
2229501	Pyraclostrobin	77.1	85.8	P/P	30 - 160
2229501	Thiamethoxam	133	147	P/P	30 - 160
2229501	Tolfenpyrad	51.5	58.3	P/P	30 - 160
2229501	Triclopyr	97.7	102	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P394640

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229501	Acesulfame K	141	165	P/F	40 - 150
2229501	AMPA	118	116	P/P	40 - 150
2229501	Endothall	148	113	P/P	40 - 150
2229501	Glufosinate	118	130	P/P	40 - 150
2229501	Glyphosate	39.6	54.5	F/P	40 - 140
2229501	Sucralose	123	120	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P394740

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227520	Fluoride	97.9	99.7	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P395276

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2228899	Organic Carbon	91.3	93.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394573

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229444	Turbidity	2.64	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394860

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229539	Bromide	1.81	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394588

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228897	Ammonia-N	0.168	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394720

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229069	Kjeldahl Nitrogen	2.78	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394651

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229141	NO2NO3-N	0.426	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394653

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229436	Total-P	5.84	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394572

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229440	O-Phosphate-P	0.554	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P394600

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229501	2,4-D	9.49	Spike	P	0 - 30
2229501	2,4,5-T	2.09	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P394600

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229501	Acetaminophen	13.7	Spike	P	0 - 30
2229501	Acetamiprid	5.14	Spike	P	0 - 30
2229501	Afidopyropen	1.64	Spike	P	0 - 30
2229501	Bentazon	7.56	Spike	P	0 - 30
2229501	Benzovindiflupyr	9.79	Spike	P	0 - 30
2229501	Carbamazepine	9.68	Spike	P	0 - 30
2229501	Clothianidin	5.83	Spike	P	0 - 30
2229501	Dinotefuran	8.45	Spike	P	0 - 30
2229501	Diuron	16.8	Spike	P	0 - 30
2229501	Fenuron	4.42	Spike	P	0 - 30
2229501	Fluridone	4.91	Spike	P	0 - 30
2229501	Hydrocodone	13.0	Spike	P	0 - 30
2229501	Ibuprofen	13.1	Spike	P	0 - 30
2229501	Imazapyr	12.0	Spike	P	0 - 30
2229501	Imidacloprid	3.44	Spike	P	0 - 30
2229501	Linuron	16.3	Spike	P	0 - 30
2229501	Mandestrobin	9.19	Spike	P	0 - 30
2229501	MCPP	0.679	Spike	P	0 - 30
2229501	Naproxen	26.2	Spike	P	0 - 30
2229501	Primidone	14.9	Spike	P	0 - 30
2229501	Pyraclostrobin	10.6	Spike	P	0 - 30
2229501	Thiamethoxam	10.3	Spike	P	0 - 30
2229501	Tolfenpyrad	12.4	Spike	P	0 - 30
2229501	Triclopyr	3.94	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P394640

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229501	Acesulfame K	13.2	Spike	P	0 - 30
2229501	AMPA	1.65	Spike	P	0 - 30
2229501	Endothall	27.2	Spike	P	0 - 30
2229501	Glufosinate	9.09	Spike	P	0 - 30
2229501	Glyphosate	17.2	Spike	P	0 - 30
2229501	Sucralose	1.86	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
 Batch ID: P394735

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229533	Total Alkalinity	0.0382	Sample	P	0 - 8.1

Reference Method: SM 4500 F-C-2011
 Batch ID: P394740

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227520	Fluoride	1.46	Spike	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P395276

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228899	Organic Carbon	2.27	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2229557
Field Sample ID: G1SD0057

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	111	P	30 - 160
EPA 8321B	Acetaminophen-d4	105	P	30 - 160
EPA 8321B	Carbamazepine-d10	71.9	P	30 - 160
EPA 8321B	Diuron-d6	56.2	P	30 - 160
EPA 8321B	Endothall-d6	48.1	P	40 - 160
EPA 8321B	Endothall-d6	48.1	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	134	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	134	P	40 - 160
EPA 8321B	Ibuprofen-d3	67.7	P	30 - 160
EPA 8321B	Primidone-d5	81.6	P	30 - 160
EPA 8321B	Sucralose-d6	129	P	30 - 160
EPA 8321B	Sucralose-d6	129	P	30 - 160

Lab Sample ID: 2229558
Field Sample ID: G1SD0104

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	116	P	30 - 160
EPA 8321B	Acetaminophen-d4	112	P	30 - 160
EPA 8321B	Carbamazepine-d10	91.4	P	30 - 160
EPA 8321B	Diuron-d6	59.7	P	30 - 160
EPA 8321B	Endothall-d6	58.3	P	40 - 160
EPA 8321B	Endothall-d6	58.3	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	61.5	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	61.5	P	40 - 160
EPA 8321B	Ibuprofen-d3	77.8	P	30 - 160
EPA 8321B	Primidone-d5	118	P	30 - 160
EPA 8321B	Sucralose-d6	110	P	30 - 160
EPA 8321B	Sucralose-d6	110	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A103917

Included Lab Sample IDs: 2229535

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	99.4	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A103918

Included Lab Sample IDs: 2229533

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A103925

Included Lab Sample IDs: 2229534

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.8	98.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A103962

Included Lab Sample IDs: 2229534

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A103966

Included Lab Sample IDs: 2229557, 2229558

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	81.0	90.1	P/P	50 - 150
2,4,5-T	87.5	84.3	P/P	50 - 150
Acetaminophen	104	110	P/P	60 - 160
Acetamiprid	107	104	P/P	50 - 150
Afidopyropen	84.7	86.3	P/P	50 - 150
Bentazon	105	103	P/P	50 - 160
Benzovindiflupyr	107	106	P/P	50 - 160
Carbamazepine	99.6	100	P/P	60 - 150
Clothianidin	102	107	P/P	60 - 150
Dinotefuran	115	109	P/P	50 - 150
Diuron	107	106	P/P	60 - 160
Fenuron	108	104	P/P	60 - 150
Fluridone	110	125	P/P	60 - 160
Fluridone	118	93.6	P/P	60 - 160
Hydrocodone	112	106	P/P	60 - 150
Ibuprofen	95.5	91.6	P/P	50 - 160
Imazapyr	89.6	101	P/P	50 - 160
Imidacloprid	101	90.2	P/P	60 - 150
Linuron	101	107	P/P	60 - 150
Mandestrobin	104	99.6	P/P	50 - 150
MCPP	100	92.7	P/P	50 - 150
Naproxen	65.4	84.0	P/P	50 - 160
Primidone	92.0	94.7	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A103966

Included Lab Sample IDs: 2229557, 2229558

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Pyraclostrobin	98.1	99.8	P/P	60 - 150
Thiamethoxam	104	108	P/P	50 - 150
Tolfenpyrad	97.1	97.2	P/P	60 - 150
Triclopyr	93.4	101	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A103978

Included Lab Sample IDs: 2229557, 2229558

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	76.8	60.2	P/P	60 - 160
AMPA	84.0	81.7	P/P	60 - 160
AMPA	91.8	81.7	P/P	60 - 160
Endothall	128	99.9	P/P	60 - 160
Glufosinate	79.2	104	P/P	60 - 160
Glufosinate	96.8	103	P/P	60 - 160
Glyphosate	151	127	P/P	60 - 160
Glyphosate	153	141	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A103980

Included Lab Sample IDs: 2229533

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103985

Included Lab Sample IDs: 2229534

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

Reference Method: SM 2320 B-2011

Run ID: A103989

Included Lab Sample IDs: 2229533

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.7	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A103989

Included Lab Sample IDs: 2229533

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A104011

Included Lab Sample IDs: 2229534

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.8	103	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A104071

Included Lab Sample IDs: 2229557, 2229558

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	100	107	P/P	60 - 160

Reference Method: SM 5310 B-2011

Run ID: A104189

Included Lab Sample IDs: 2229534

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.8	94.2	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					2.64	
EPA 300.0 Rev. 2.1	Bromide	99.5	97.1	94.9	95.7		1.81
EPA 350.1 Rev. 2.0	Ammonia-N	97.4	102	102			0.168
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	106	109			2.78
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	107	107			0.426
EPA 365.1 Rev. 2.0	Total-P	107	111	104			5.84
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.5	99.8	100			0.554
EPA 8321B	2,4-D	107	101	118			9.49
	2,4,5-T	90.3	93.4	95.3			2.09
	Acesulfame K	70.7	141	165			13.2
	Acetaminophen	87.2	100	126			13.7
	Acetamiprid	89.1	79.0	83.1			5.14
	Afidopyropen	68.4	67.2	68.3			1.64
	AMPA	92.7	118	116			1.65
	Bentazon	83.9					7.56
	Benzovindiflupyr	89.3	80.2	88.5			9.79
	Carbamazepine	95.9	73.6	81.6			9.68
	Clothianidin	95.9	95.5	101			5.83
	Dinotefuran	88.4	112	122			8.45
	Diuron	71.1	41.9	51.6			16.8
	Endothall	104	148	113			27.2
	Fenuron	104	76.7	80.2			4.42
	Fluridone	93.2	69.6	64.0			4.91
	Glufosinate	132	118	130			9.09
	Glyphosate	127	39.6	54.5			17.2
	Hydrocodone	98.7	90.4	103			13.0
	Ibuprofen	83.2	77.0	87.8			13.1
	Imazapyr	90.3					12.0
	Imidacloprid	93.9	132	138			3.44
	Linuron	78.5	53.8	63.3			16.3
	Mandestrobin	85.6	73.1	80.1			9.19
	MCPP	115	102	103			0.679
	Naproxen	52.1	62.5	81.4			26.2
	Primidone	96.1	81.8	97.6			14.9
	Pyraclostrobin	81.7	77.1	85.8			10.6
	Sucralose	99.7	123	120			1.86
	Thiamethoxam	102	133	147			10.3
	Tolfenpyrad	55.3	51.5	58.3			12.4
	Triclopyr	97.6	97.7	102			3.94
SM 2320 B-2011	Total Alkalinity	100				0.0382	
SM 4500 F-C-2011	Fluoride	98.2	97.9	99.7			1.46
SM 5310 B-2011	Organic Carbon	94.6	91.3	93.6			2.27

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2229533
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2229533
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2229534
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2229534
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2229534
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2229534

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2229535
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2229557, 2229558
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2229557, 2229558
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2229533
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2229533
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2229533
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2229534

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	03/05/2021			03/05/2021 14:57	Yen Ta	2229533
EPA 300.0 Rev. 2.1	03/05/2021			03/10/2021 16:14	Lipi Saha	2229533
EPA 350.1 Rev. 2.0	03/05/2021			03/07/2021 12:39	Ping Hua	2229534
EPA 351.2 Rev. 2.0	03/05/2021	03/10/2021 12:23	Benjamin T. Nordmann	03/11/2021 13:17	Virginia P. Brown	2229534
EPA 353.2 Rev. 2.0	03/05/2021			03/09/2021 10:20	Beverly Y. Sanders	2229534
EPA 365.1 Rev. 2.0	03/05/2021	03/09/2021 11:56	Yen Ta	03/10/2021 12:31	Shengyu Ding	2229534
EPA 365.1 Rev. 2.0 dissolved	03/05/2021			03/05/2021 15:20	Patrick M. Roche	2229535
EPA 8321B	03/05/2021	03/09/2021 10:00	Hoor Shaik	03/09/2021 23:35	Juyoung Kim	2229557
	03/05/2021	03/09/2021 10:00	Hoor Shaik	03/10/2021 00:10	Juyoung Kim	2229558
	03/05/2021	03/09/2021 10:00	Hoor Shaik	03/10/2021 10:34	Juyoung Kim	2229557
	03/05/2021	03/09/2021 10:00	Hoor Shaik	03/10/2021 11:08	Juyoung Kim	2229558
	03/05/2021	03/09/2021 10:00	Rebecca Ware	03/09/2021 12:00	Rebecca Ware	2229557
	03/05/2021	03/09/2021 10:00	Rebecca Ware	03/09/2021 12:14	Rebecca Ware	2229558
	03/05/2021	03/09/2021 10:00	Rebecca Ware	03/09/2021 16:23	Rebecca Ware	2229557
	03/05/2021	03/09/2021 10:00	Rebecca Ware	03/12/2021 19:30	Rebecca Ware	2229557
	03/05/2021	03/09/2021 10:00	Rebecca Ware	03/12/2021 19:42	Rebecca Ware	2229558
SM 2320 B-2011	03/05/2021			03/10/2021 07:07	Dale L. Simmons	2229533
SM 2540 D-2011	03/05/2021			03/08/2021 14:25	Yijie Li	2229533
SM 4500 F-C-2011	03/05/2021			03/10/2021 06:40	Dale L. Simmons	2229533
SM 5310 B-2011	03/05/2021			03/20/2021 21:47	Madeline Gruver	2229534