Chemical Analysis Report

SO-DIST-2021-06-03-01

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-2021-05-31-47**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: William Mullen

For additional information please contact
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Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
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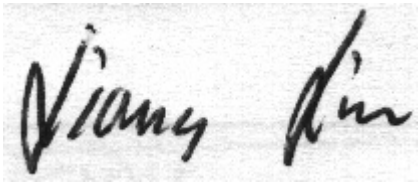
Certified by: Liang Lin, Environmental Administrator

Date Certified: 28-JUN-2021 10:35



NON-CONFORMANCE REPORT INCLUDED

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: 06/01/2021 09:20**

Field ID: G2SD0047 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2251963	SM 2320 B-2011	Total Alkalinity	121		mg CaCO3/L	P399280	
	SM 2540 D-2011	TSS	3	I A	mg/L	P399319	
	SM 4500 F-C-2011	Fluoride	1.1		mg F/L	P399274	
2251964	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P399516	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P399563	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P399262	
	EPA 365.1 Rev. 2.0	Total-P	0.046		mg P/L	P399298	
	SM 5310 B-2011	Organic Carbon	6.1		mg C/L	P399731	

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: Estero River @ Preserve **Collection Date/Time: 06/01/2021 11:15**

Field ID: G1SD0104 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2251972	EPA 8321B	Acesulfame K	0.10	U	ug/L	P399276	
		2,4-D	0.0020	U	ug/L	P399076	
		2,4,5-T	0.0040	U	ug/L	P399076	
		AMPA	0.10	UJ	ug/L	P399276	SUR
		Acetaminophen	0.015	I	ug/L	P399076	
		Endothall	0.25	U	ug/L	P399276	
		Acetamiprid	0.0020	U	ug/L	P399076	
		Glufosinate	0.10	UJ	ug/L	P399276	SUR
		Glyphosate	0.10	UJ	ug/L	P399276	SUR
		Afidopyropen	0.0020	U	ug/L	P399076	
		Sucralose	0.23		ug/L	P399276	
		Bentazon	0.080		ug/L	P399076	
		Benzovindiflupyr	0.0020	U	ug/L	P399076	
		Carbamazepine	8.0E-04	U	ug/L	P399076	
		Clothianidin	0.0020	U	ug/L	P399076	
		Dinotefuran	0.0020	U	ug/L	P399076	
		Diuron	0.0020	U	ug/L	P399076	
		Fenuron	0.016	U	ug/L	P399076	
		Fluridone	0.058		ug/L	P399076	
		Imazapyr	0.053		ug/L	P399076	
		Hydrocodone	0.0020	U	ug/L	P399076	
		Ibuprofen	0.020	U	ug/L	P399076	
		Imidacloprid	0.0020	U	ug/L	P399076	
		Linuron	0.0040	U	ug/L	P399076	
		Mandestrobin	0.0020	U	ug/L	P399076	
		MCPP	0.0020	U	ug/L	P399076	
		Naproxen	0.0080	U	ug/L	P399076	
		Primidone	0.0040	U	ug/L	P399076	
		Pyraclostrobin	0.0020	U	ug/L	P399076	
		Thiamethoxam	0.0020	U	ug/L	P399076	
		Tolfenpyrad	0.0020	U	ug/L	P399076	
		Triclopyr	0.0040	U	ug/L	P399076	

Ref. Method and Comment:
EPA 8321B: Results confirmed in re-extraction. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Imperial River near US 41 **Collection Date/Time: 06/01/2021 12:15**

Field ID: G1SD0057 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2251973	EPA 8321B	Acesulfame K	0.10	U	ug/L	P399276	
		2,4-D	0.0036	I	ug/L	P399076	
		AMPA	1.0	U	ug/L	P399276	
		2,4,5-T	0.0040	U	ug/L	P399076	
		Acetaminophen	0.0080	U	ug/L	P399076	
		Endothall	0.25	U	ug/L	P399276	
		Acetamiprid	0.0020	U	ug/L	P399076	
		Glufosinate	1.0	U	ug/L	P399276	
		Glyphosate	1.0	U	ug/L	P399276	
		Afidopyropen	0.0020	U	ug/L	P399076	
		Sucralose	0.11		ug/L	P399276	
		Bentazon	0.13		ug/L	P399076	
		Benzovindiflupyr	0.0020	U	ug/L	P399076	
		Carbamazepine	8.0E-04	U	ug/L	P399076	
		Clothianidin	0.0020	U	ug/L	P399076	
		Dinotefuran	0.0020	U	ug/L	P399076	
		Diuron	0.0020	U	ug/L	P399076	
		Fenuron	0.016	U	ug/L	P399076	
		Fluridone	0.024		ug/L	P399076	
		Imazapyr	0.15		ug/L	P399076	
		Hydrocodone	0.0020	U	ug/L	P399076	
		Ibuprofen	0.020	U	ug/L	P399076	
		Imidacloprid	0.010		ug/L	P399076	
		Linuron	0.0040	U	ug/L	P399076	
		Mandestrobin	0.0020	U	ug/L	P399076	
		MCPP	0.0020	U	ug/L	P399076	
		Naproxen	0.0080	U	ug/L	P399076	
		Primidone	0.0040	U	ug/L	P399076	
		Pyraclostrobin	0.0020	U	ug/L	P399076	
		Thiamethoxam	0.0020	U	ug/L	P399076	
		Tolfenpyrad	0.0020	U	ug/L	P399076	
		Triclopyr	0.0040	U	ug/L	P399076	

Ref. Method and Comment:
EPA 8321B: MDL for some parameters elevated due to matrix interference.

Non-Conformance Report

NCR ID: 8872

Event(s)	Job(s)	Sample(s)	Test(s)
SO-DIST-2021-06-03-01			

NCR Type: SHIPPING/RECEIVING **NCR Category: Samples arrived late**

Observation: Samples arrived late, samples received within the acceptable temperature range.

Resolution: Customer (Curtis Musson) contacted, He asked that the short-hold analyses not be logged in.

Authorized by/Date: Joshua Ayres 6/3/2021

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report
Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399516

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P399563

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399262

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P399298

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

Reference Method: EPA 8321B
Batch ID: P399076

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
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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P399276

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: P399280

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

Reference Method: SM 2540 D-2011
Batch ID: P399319

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P399274

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P399731

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399516

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P399563

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: P399262

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P399298

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

Reference Method: EPA 8321B
Batch ID: P399076

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	97.1		P	40 - 150
2,4,5-T	103		P	40 - 150
Acetaminophen	62.1		P	30 - 150
Acetamiprid	88.6		P	40 - 150
Afidopyropen	80.4		P	40 - 150
Bentazon	110		P	30 - 150
Benzovindiflupyr	96.8		P	40 - 150
Carbamazepine	91.1		P	40 - 150
Clothianidin	76.1		P	40 - 150
Dinotefuran	71.4		P	40 - 150
Diuron	88.2		P	40 - 150
Fenuron	103		P	40 - 150
Fluridone	89.3		P	40 - 150
Hydrocodone	78.7		P	40 - 150
Ibuprofen	82.6		P	40 - 150
Imazapyr	97.3		P	40 - 150
Imidacloprid	78.0		P	40 - 150
Linuron	81.4		P	40 - 150
Mandestrobin	99.1		P	40 - 150
MCPP	105		P	40 - 150
Naproxen	84.6		P	40 - 150
Primidone	95.2		P	40 - 150
Pyraclostrobin	90.2		P	40 - 150
Thiamethoxam	82.0		P	40 - 150
Tolfenpyrad	57.3		P	30 - 150
Triclopyr	96.0		P	40 - 150

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P399276

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	76.3		P	40 - 150
AMPA	96.4		P	40 - 150
Endothall	88.4		P	40 - 150
Glufosinate	102		P	40 - 150
Glyphosate	108		P	40 - 150
Sucralose	93.9		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P399280

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.9		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P399274

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P399731

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2251252	Ammonia-N	100	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P399563

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2251877	Kjeldahl Nitrogen	97.8	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399262

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2252390	NO2NO3-N	97.5	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P399298

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2251964	Total-P	97.6	96.5	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P399076

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2251243	2,4-D	122	128	P/P	40 - 150
2251243	2,4,5-T	107	105	P/P	40 - 150
2251243	Acetaminophen	89.9	81.9	P/P	30 - 150
2251243	Acetamiprid	103	94.5	P/P	40 - 150
2251243	Afidopyropen	92.5	79.5	P/P	40 - 150
2251243	Bentazon	102	94.0	P/P	30 - 150
2251243	Benzovindiflupyr	98.2	97.1	P/P	40 - 150
2251243	Carbamazepine	103	102	P/P	40 - 150
2251243	Clothianidin	97.1	90.4	P/P	40 - 150
2251243	Dinotefuran	92.2	85.7	P/P	40 - 150
2251243	Diuron	79.8	75.4	P/P	40 - 150
2251243	Fenuron	102	104	P/P	40 - 150
2251243	Fluridone	85.2	80.8	P/P	40 - 150
2251243	Hydrocodone	88.8	94.3	P/P	40 - 150
2251243	Ibuprofen	80.6	79.1	P/P	40 - 150
2251243	Imazapyr	117	103	P/P	40 - 150
2251243	Imidacloprid	130	116	P/P	40 - 150
2251243	Linuron	74.9	79.9	P/P	40 - 150
2251243	Mandestrobin	98.8	95.5	P/P	40 - 150
2251243	MCPP	121	119	P/P	40 - 150
2251243	Naproxen	106	78.9	P/P	40 - 150
2251243	Primidone	124	99.4	P/P	40 - 150
2251243	Pyraclostrobin	98.9	96.1	P/P	40 - 150
2251243	Thiamethoxam	122	108	P/P	40 - 150
2251243	Tolfenpyrad	56.5	59.9	P/P	30 - 150
2251243	Triclopyr	119	113	P/P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P399276

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2251952	Acesulfame K	88.6	95.7	P/P	40 - 150
2251952	AMPA	104	106	P/P	40 - 150
2251952	Endothall	113	118	P/P	40 - 150
2251952	Glufosinate	113	116	P/P	40 - 150
2251952	Glyphosate	118	121	P/P	40 - 150
2251952	Sucralose	94.9	99.9	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P399274

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2251254	Fluoride	95.2	95.9	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P399731

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2252393	Organic Carbon	98.8	98.4	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2251252	Ammonia-N	0.374	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P399563

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2251877	Kjeldahl Nitrogen	3.35	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399262

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2252390	NO2NO3-N	0.512	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P399298

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2251964	Total-P	1.06	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P399076

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2251243	2,4-D	4.60	Spike	P	0 - 30
2251243	2,4,5-T	1.50	Spike	P	0 - 30
2251243	Acetaminophen	9.36	Spike	P	0 - 30
2251243	Acetamiprid	8.91	Spike	P	0 - 30
2251243	Afidopyropen	15.1	Spike	P	0 - 30
2251243	Bentazon	8.47	Spike	P	0 - 30
2251243	Benzovindiflupyr	1.20	Spike	P	0 - 30
2251243	Carbamazepine	0.696	Spike	P	0 - 30
2251243	Clothianidin	7.13	Spike	P	0 - 30
2251243	Dinotefuran	7.30	Spike	P	0 - 30
2251243	Diuron	5.56	Spike	P	0 - 30
2251243	Fenuron	2.56	Spike	P	0 - 30
2251243	Fluridone	5.29	Spike	P	0 - 30
2251243	Hydrocodone	5.95	Spike	P	0 - 30
2251243	Ibuprofen	1.86	Spike	P	0 - 30
2251243	Imazapyr	7.71	Spike	P	0 - 30
2251243	Imidacloprid	12.1	Spike	P	0 - 30
2251243	Linuron	6.44	Spike	P	0 - 30
2251243	Mandestrobin	3.39	Spike	P	0 - 30
2251243	MCPP	1.91	Spike	P	0 - 30
2251243	Naproxen	29.7	Spike	P	0 - 30
2251243	Primidone	21.9	Spike	P	0 - 30
2251243	Pyraclostrobin	2.81	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P399076

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2251243	Thiamethoxam	12.3	Spike	P	0 - 30
2251243	Tolfenpyrad	5.84	Spike	P	0 - 30
2251243	Triclopyr	5.64	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P399276

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2251952	Acesulfame K	7.77	Spike	P	0 - 30
2251952	AMPA	2.10	Spike	P	0 - 30
2251952	Endothall	3.74	Spike	P	0 - 30
2251952	Glufosinate	2.06	Spike	P	0 - 30
2251952	Glyphosate	3.11	Spike	P	0 - 30
2251952	Sucralose	4.32	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P399280

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2251254	Total Alkalinity	0.417	Sample	P	0 - 5.2

Reference Method: SM 4500 F-C-2011
Batch ID: P399274

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2251254	Fluoride	0.502	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P399731

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2252393	Organic Carbon	0.289	Spike	P	0 - 20

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

Quality Assurance Report
Surrogates

Lab Sample ID: 2251972
Field Sample ID: G1SD0104

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	156	P	30 - 160
EPA 8321B	Acetaminophen-d4	95.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	86.5	P	30 - 160
EPA 8321B	Diuron-d6	58.0	P	30 - 160
EPA 8321B	Endothall-d6	72.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	2.93	F	30 - 160
EPA 8321B	Ibuprofen-d3	67.8	P	30 - 160
EPA 8321B	Primidone-d5	86.3	P	30 - 160
EPA 8321B	Sucralose-d6	87.4	P	30 - 160

Lab Sample ID: 2251973
Field Sample ID: G1SD0057

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	122	P	30 - 160
EPA 8321B	Acetaminophen-d4	107	P	30 - 160
EPA 8321B	Carbamazepine-d10	96.3	P	30 - 160
EPA 8321B	Diuron-d6	67.1	P	30 - 160
EPA 8321B	Endothall-d6	88.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	38.8	P	30 - 160
EPA 8321B	Ibuprofen-d3	66.6	P	30 - 160
EPA 8321B	Primidone-d5	99.3	P	30 - 160
EPA 8321B	Sucralose-d6	97.4	P	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A105889
Included Lab Sample IDs: 2251964

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

Reference Method: SM 4500 F-C-2011
Run ID: A105892
Included Lab Sample IDs: 2251963

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

Reference Method: SM 2320 B-2011
Run ID: A105902
Included Lab Sample IDs: 2251963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.3	96.5	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A105919
Included Lab Sample IDs: 2251972, 2251973

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	146	120	P/P	60 - 160
Endothall	105	90.1	P/P	60 - 160
Sucralose	112	123	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A105927
Included Lab Sample IDs: 2251972, 2251973

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	104	107	P/P	60 - 160
AMPA	107	120	P/P	60 - 160
Glufosinate	116	126	P/P	60 - 160
Glufosinate	96.4	116	P/P	60 - 160
Glyphosate	104	117	P/P	60 - 160
Glyphosate	117	131	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A105964
Included Lab Sample IDs: 2251964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A105993
Included Lab Sample IDs: 2251964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.1	97.6	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A106040
Included Lab Sample IDs: 2251972, 2251973

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	82.9	98.7	P/P	50 - 150
2,4,5-T	119	115	P/P	50 - 150
Acetaminophen	91.7	92.3	P/P	60 - 160
Acetamiprid	105	107	P/P	50 - 150
Afidopyropen	122	81.5	P/P	50 - 150
Bentazon	138	133	P/P	50 - 160
Benzovindiflupyr	109	113	P/P	50 - 150
Carbamazepine	108	109	P/P	60 - 150
Clothianidin	99.7	103	P/P	60 - 150
Dinotefuran	97.6	102	P/P	50 - 150
Diuron	101	112	P/P	60 - 160
Fenuron	91.3	92.4	P/P	60 - 150
Fluridone	106	103	P/P	60 - 160
Hydrocodone	94.2	93.8	P/P	60 - 150
Ibuprofen	95.4	87.1	P/P	50 - 160
Imazapyr	123	113	P/P	50 - 150
Imidacloprid	91.3	93.8	P/P	60 - 150
Linuron	95.6	99.6	P/P	60 - 150
Mandestrobin	96.7	104	P/P	50 - 150
MCPP	121	126	P/P	50 - 150
Naproxen	102	111	P/P	50 - 160
Primidone	113	105	P/P	60 - 150
Pyraclostrobin	107	104	P/P	60 - 150
Thiamethoxam	99.3	99.0	P/P	50 - 150
Tolfenpyrad	97.9	100	P/P	60 - 150
Triclopyr	103	115	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A106075
Included Lab Sample IDs: 2251964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.8	106	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A106083
Included Lab Sample IDs: 2251964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	98.9	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		
					LCS	SMP	MS
EPA 350.1 Rev. 2.0	Ammonia-N	99.0	100	99.8			0.374
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.3	97.8	102			3.35
EPA 353.2 Rev. 2.0	NO2NO3-N	100	97.5	98.0			0.512
EPA 365.1 Rev. 2.0	Total-P	102	97.6	96.5			1.06
EPA 8321B	2,4-D	97.1	128	122			4.60
	2,4,5-T	103	107	105			1.50
	Acesulfame K	76.3	88.6	95.7			7.77
	Acetaminophen	62.1	81.9	89.9			9.36
	Acetamiprid	88.6	94.5	103			8.91
	Afidopyropen	80.4	79.5	92.5			15.1
	AMPA	96.4	104	106			2.10
	Bentazon	110	102	94.0			8.47
	Benzovindiflupyr	96.8	97.1	98.2			1.20
	Carbamazepine	91.1	102	103			0.696
	Clothianidin	76.1	90.4	97.1			7.13
	Dinotefuran	71.4	85.7	92.2			7.30
	Diuron	88.2	75.4	79.8			5.56
	Endothall	88.4	113	118			3.74
	Fenuron	103	104	102			2.56
	Fluridone	89.3	80.8	85.2			5.29
	Glufosinate	102	113	116			2.06
	Glyphosate	108	118	121			3.11
	Hydrocodone	78.7	94.3	88.8			5.95
	Ibuprofen	82.6	80.6	79.1			1.86
	Imazapyr	97.3	103	117			7.71
	Imidacloprid	78.0	116	130			12.1
	Linuron	81.4	79.9	74.9			6.44
	Mandestrobin	99.1	95.5	98.8			3.39
	MCPP	105	119	121			1.91
	Naproxen	84.6	78.9	106			29.7
	Primidone	95.2	99.4	124			21.9
	Pyraclostrobin	90.2	96.1	98.9			2.81
	Sucralose	93.9	94.9	99.9			4.32
	Thiamethoxam	82.0	108	122			12.3
	Tolfenpyrad	57.3	59.9	56.5			5.84
	Triclopyr	96.0	113	119			5.64
SM 2320 B-2011	Total Alkalinity	99.9				0.417	
SM 4500 F-C-2011	Fluoride	99.3	95.2	95.9			0.502
SM 5310 B-2011	Organic Carbon	99.8	98.8	98.4			0.289

Reference Method Descriptions

Method	Description	Associated Samples
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2251964
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2251964
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2251964
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2251964
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2251972, 2251973
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2251963
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2251963
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2251963
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2251964

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 350.1 Rev. 2.0	06/03/2021			06/10/2021 13:05	Roberta Tatti	2251964
EPA 351.2 Rev. 2.0	06/03/2021	06/11/2021 14:03	Benjamin T. Nordmann	06/14/2021 13:53	Virginia P. Brown	2251964
EPA 353.2 Rev. 2.0	06/03/2021			06/04/2021 16:07	Touraj Touran	2251964
EPA 365.1 Rev. 2.0	06/03/2021	06/07/2021 13:53	Yen Ta	06/09/2021 11:11	Shengyu Ding	2251964
EPA 8321B	06/03/2021	06/07/2021 08:00	Pramila Ghimire	06/07/2021 12:25	Juyoung Kim	2251972
	06/03/2021	06/07/2021 08:00	Pramila Ghimire	06/07/2021 13:11	Pramila Ghimire	2251972
	06/03/2021	06/07/2021 08:00	Pramila Ghimire	06/07/2021 13:24	Pramila Ghimire	2251973
	06/03/2021	06/07/2021 08:00	Pramila Ghimire	06/07/2021 14:34	Juyoung Kim	2251973
	06/03/2021	06/07/2021 09:00	Hoor Shaik	06/12/2021 05:16	Juyoung Kim	2251972
	06/03/2021	06/07/2021 09:00	Hoor Shaik	06/12/2021 05:51	Juyoung Kim	2251973
	06/03/2021	06/07/2021 09:00	Hoor Shaik	06/12/2021 11:37	Juyoung Kim	2251972
	06/03/2021	06/07/2021 09:00	Hoor Shaik	06/12/2021 12:12	Juyoung Kim	2251973
SM 2320 B-2011	06/03/2021			06/06/2021 19:37	Dale L. Simmons	2251963
SM 2540 D-2011	06/03/2021			06/04/2021 14:29	Yijie Li	2251963
SM 4500 F-C-2011	06/03/2021			06/04/2021 21:30	Dale L. Simmons	2251963
SM 5310 B-2011	06/03/2021			06/15/2021 12:37	Madeline Gruver	2251964