

Chemical Analysis Report

SO-DIST-2020-07-24-01

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

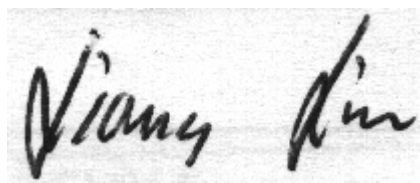
Event Description: **2020 SMP : Highlands Cricks**
Request ID: **RQ-2020-07-20-75**
Customer: **SO-DIST**
Project ID: **SMP**

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

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 12-AUG-2020 15:31

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

Case Narrative

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

Results for the following analytical groups are included in this report: 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: GrassyCreek@LakeAthorpe

Collection Date/Time: 07/23/2020 11:15

Field ID: G4SD0184

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2185460	EPA 180.1 Rev. 2.0	Turbidity	2.8	A	NTU	P385133	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P385624	
		Sulfate	21		mg SO4/L	P385628	
	SM 2120 B-2011	Color (true)	37		PCU	P385136	
	SM 2320 B-2011	Total Alkalinity	11		mg CaCO3/L	P385523	
	SM 2540 C-2011	TDS	102	A	mg/L	P385613	
	SM 2540 D-2011	TSS	4	IA	mg/L	P385650	
	SM 4500 F-C-2011	Fluoride	0.046	I	mg F/L	P385225	
2185461	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P385149	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P385372	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.40		mg N/L	P385179	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P385350	
	SM 5310 B-2011	Organic Carbon	9.2		mg C/L	P385290	
2185462	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P385130	
2185467	EPA 8321B	2,4-D	0.022		ug/L	P385172	
		Acesulfame K**	0.10	U	ug/L	P385099	MS
		AMPA**	0.33	I	ug/L	P385099	
		Sucralose**	0.80		ug/L	P385099	
		Acetaminophen**	0.0080	U	ug/L	P385172	
		Acetamiprid**	0.0020	U	ug/L	P385172	
		Endothall**	0.25	U	ug/L	P385099	
		Glufosinate**	0.10	U	ug/L	P385099	
		Glyphosate**	0.49		ug/L	P385099	
		Afidopyropen**	0.0020	U	ug/L	P385172	
		Bentazon	0.0055		ug/L	P385172	
		Benzovindiflupyr**	0.0020	U	ug/L	P385172	
		Carbamazepine**	8.0E-04	U	ug/L	P385172	
		Clothianidin**	0.0053	I	ug/L	P385172	
		Dinotefuran**	0.0020	U	ug/L	P385172	
		Diuron	0.0050	I	ug/L	P385172	
		Fenuron	0.016	U	ug/L	P385172	
		Fluridone**	0.0057		ug/L	P385172	
		Imazapyr**	0.0061	I	ug/L	P385172	
		Hydrocodone**	0.0020	U	ug/L	P385172	
		Ibuprofen**	0.020	U	ug/L	P385172	
		Imidacloprid	0.079		ug/L	P385172	
		Linuron	0.0040	U	ug/L	P385172	
		Mandestrobin**	0.0020	U	ug/L	P385172	
		MCP	0.0020	U	ug/L	P385172	
		Naproxen**	0.0080	U	ug/L	P385172	
		Primidone**	0.0050	I	ug/L	P385172	
		Pyraclostrobin**	0.0020	U	ug/L	P385172	
		Thiamethoxam**	0.011		ug/L	P385172	

Field ID: G4SD0184

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2185467	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P385172	
		Triclopyr**	0.0040	U	ug/L	P385172	

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: MS accuracy for bentazon 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: P385133

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385624

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385628

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385149

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385372

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385179

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385350

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385130

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

Reference Method: EPA 8321B
Batch ID: P385099

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P385099

Component	Result	Code	Units
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P385172

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B-2011
Batch ID: P385136

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P385523

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

Reference Method: SM 2540 C-2011
Batch ID: P385613

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P385650

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P385225

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P385290

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: P385624

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385628

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385149

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385372

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385179

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385350

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385130

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

Reference Method: EPA 8321B
Batch ID: P385099

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	89.9		P	40 - 150
AMPA	76.2		P	40 - 150
Endothall	116		P	40 - 150
Glufosinate	102		P	40 - 150
Glyphosate	95.7		P	40 - 140
Sucralose	94.1		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P385172

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	83.0		P	30 - 160
Acetaminophen	71.0		P	30 - 160
Acetamiprid	73.9		P	30 - 160
Afidopyropen	67.1		P	30 - 160
Bentazon	49.4		P	30 - 160
Benzovindiflupyr	57.4		P	30 - 160
Carbamazepine	68.9		P	30 - 160
Clothianidin	81.8		P	30 - 160
Dinotefuran	82.4		P	30 - 160
Diuron	59.8		P	30 - 160
Fenuron	80.4		P	30 - 160
Fluridone	85.5		P	30 - 160
Hydrocodone	73.4		P	30 - 160
Ibuprofen	62.0		P	30 - 160
Imazapyr	56.7		P	30 - 160
Imidacloprid	92.8		P	30 - 160
Linuron	59.8		P	30 - 160
Mandestrobin	70.3		P	30 - 160
MCPP	93.3		P	30 - 160
Naproxen	52.4		P	30 - 160
Primidone	79.9		P	30 - 160
Pyraclostrobin	52.6		P	30 - 160
Thiamethoxam	80.5		P	30 - 160
Tolfenpyrad	33.7		P	30 - 160
Triclopyr	61.9		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P385136

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P385523

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P385225

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.7		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P385290

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385624

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2185455	Chloride	101		P	90 - 110
2185482	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385628

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2185455	Sulfate	103		P	90 - 110
2185482	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385149

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2185282	Ammonia-N	98.6	92.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385372

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2185286	Kjeldahl Nitrogen	109	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385179

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2185456	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385350

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2185197	Total-P	106	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385130

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2185457	O-Phosphate-P	90.9	91.3	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P385099

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2185131	Acesulfame K	34.1	36.5	F/F	40 - 150
2185131	AMPA	71.0	73.1	P/P	40 - 150
2185131	Endothall	111	119	P/P	40 - 150
2185131	Glufosinate	76.8	78.5	P/P	40 - 150
2185131	Glyphosate	60.7	65.2	P/P	40 - 140
2185131	Sucralose	95.5	101	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P385172

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2185211	2,4-D	80.8	91.8	P/P	30 - 160
2185211	Acetaminophen	92.3	92.9	P/P	30 - 160
2185211	Acetamiprid	77.8	82.1	P/P	30 - 160
2185211	Afidopyropen	60.3	73.6	P/P	30 - 160
2185211	Benzovindiflupyr	53.9	57.1	P/P	30 - 160
2185211	Carbamazepine	51.3	58.8	P/P	30 - 160
2185211	Clothianidin	88.9	95.0	P/P	30 - 160
2185211	Dinotefuran	96.8	101	P/P	30 - 160
2185211	Diuron	48.8	54.4	P/P	30 - 160
2185211	Fenuron	75.9	75.3	P/P	30 - 160
2185211	Fluridone	85.5	86.5	P/P	30 - 160
2185211	Hydrocodone	75.2	76.4	P/P	30 - 160
2185211	Ibuprofen	66.4	64.0	P/P	30 - 160
2185211	Imazapyr	63.6	64.7	P/P	30 - 160
2185211	Imidacloprid	138	144	P/P	30 - 160
2185211	Linuron	52.8	57.1	P/P	30 - 160
2185211	Mandestrobin	68.9	69.5	P/P	30 - 160
2185211	MCP	93.9	97.0	P/P	30 - 160
2185211	Naproxen	47.2	40.4	P/P	30 - 160
2185211	Primidone	92.7	89.9	P/P	30 - 160
2185211	Pyraclostrobin	52.6	57.9	P/P	30 - 160
2185211	Thiamethoxam	97.4	104	P/P	30 - 160
2185211	Tolfenpyrad	33.8	37.2	P/P	30 - 160
2185211	Triclopyr	69.3	67.8	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P385225

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2185606	Fluoride	105	106	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P385290

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2185191	Organic Carbon	102	104	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P385133

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2185460	Turbidity	5.73	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385624

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2185482	Chloride	0.374	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385628

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2185482	Sulfate	0.795	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385149

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2185282	Ammonia-N	5.63	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385372

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2185286	Kjeldahl Nitrogen	3.39	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385179

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2185456	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385350

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2185197	Total-P	0.0826	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385130

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2185457	O-Phosphate-P	0.439	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P385099

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2185131	Acesulfame K	6.96	Spike	P	0 - 30
2185131	AMPA	2.86	Spike	P	0 - 30
2185131	Endothall	7.01	Spike	P	0 - 30
2185131	Glufosinate	2.23	Spike	P	0 - 30
2185131	Glyphosate	7.10	Spike	P	0 - 30
2185131	Sucralose	4.32	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P385172

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2185211	2,4-D	10.5	Spike	P	0 - 30
2185211	Acetaminophen	0.724	Spike	P	0 - 30
2185211	Acetamiprid	5.32	Spike	P	0 - 30
2185211	Afidopyropen	19.9	Spike	P	0 - 30
2185211	Bentazon	1.05	Spike	P	0 - 30
2185211	Benzovindiflupyr	5.78	Spike	P	0 - 30
2185211	Carbamazepine	7.22	Spike	P	0 - 30
2185211	Clothianidin	6.36	Spike	P	0 - 30
2185211	Dinotefuran	4.28	Spike	P	0 - 30
2185211	Diuron	9.33	Spike	P	0 - 30
2185211	Fenuron	0.758	Spike	P	0 - 30
2185211	Fluridone	1.23	Spike	P	0 - 30
2185211	Hydrocodone	1.53	Spike	P	0 - 30
2185211	Ibuprofen	3.67	Spike	P	0 - 30
2185211	Imazapyr	1.11	Spike	P	0 - 30
2185211	Imidacloprid	3.15	Spike	P	0 - 30
2185211	Linuron	7.90	Spike	P	0 - 30
2185211	Mandestrobin	0.860	Spike	P	0 - 30
2185211	MCPP	3.11	Spike	P	0 - 30
2185211	Naproxen	15.4	Spike	P	0 - 30
2185211	Primidone	3.05	Spike	P	0 - 30
2185211	Pyraclostrobin	9.49	Spike	P	0 - 30
2185211	Thiamethoxam	6.83	Spike	P	0 - 30
2185211	Tolfenpyrad	9.63	Spike	P	0 - 30
2185211	Triclopyr	2.15	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P385136

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2185455	Color (true)	2.92	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P385523

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186718	Total Alkalinity	0.594	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P385613

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2185460	TDS	2.96	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P385225

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2185606	Fluoride	0.988	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P385290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2185191	Organic Carbon	1.83	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2185467
Field Sample ID: G4SD0184

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	96.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	76.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	51.1	P	30 - 160
EPA 8321B	Diuron-d6	55.6	P	30 - 160
EPA 8321B	Endothall-d6	110	P	30 - 160
EPA 8321B	Endothall-d6	110	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	132	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	132	P	30 - 160
EPA 8321B	Ibuprofen-d3	68.4	P	30 - 160
EPA 8321B	Primidone-d5	82.5	P	30 - 160
EPA 8321B	Sucralose-d6	102	P	30 - 160
EPA 8321B	Sucralose-d6	102	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A100070

Included Lab Sample IDs: 2185462

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.7	96.9	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A100071

Included Lab Sample IDs: 2185460

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

Reference Method: SM 2120 B-2011

Run ID: A100072

Included Lab Sample IDs: 2185460

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 115

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A100074

Included Lab Sample IDs: 2185461

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A100089

Included Lab Sample IDs: 2185461

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

Reference Method: EPA 8321B

Run ID: A100097

Included Lab Sample IDs: 2185467

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	81.4	80.5	P/P	60 - 160
Glufosinate	113	110	P/P	60 - 160
Glyphosate	99.0	99.4	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A100110

Included Lab Sample IDs: 2185467

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	78.7	84.3	P/P	60 - 160
Endothall	118	117	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A100116

Included Lab Sample IDs: 2185460

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

Reference Method: EPA 8321B

Run ID: A100141

Included Lab Sample IDs: 2185467

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	95.6	94.3	P/P	60 - 160

Reference Method: SM 5310 B-2011

Run ID: A100142

Included Lab Sample IDs: 2185461

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100209

Included Lab Sample IDs: 2185461

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.2	99.8	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A100227

Included Lab Sample IDs: 2185460

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.4	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A100252

Included Lab Sample IDs: 2185461

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	93.2	92.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100267

Included Lab Sample IDs: 2185460

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

Reference Method: EPA 8321B

Run ID: A100276

Included Lab Sample IDs: 2185467

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	74.9	83.2	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A100276
 Included Lab Sample IDs: 2185467

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	113	108	P/P	60 - 160
Acetamiprid	118	113	P/P	50 - 150
Afidopyropen	114	99.0	P/P	50 - 150
Bentazon	78.2	76.5	P/P	50 - 160
Benzovindiflupyr	97.8	91.5	P/P	50 - 150
Carbamazepine	124	120	P/P	60 - 150
Clothianidin	105	110	P/P	60 - 150
Dinotefuran	99.0	96.6	P/P	50 - 150
Diuron	115	107	P/P	60 - 160
Fenuron	117	110	P/P	60 - 150
Fluridone	124	121	P/P	60 - 160
Hydrocodone	107	101	P/P	60 - 150
Ibuprofen	87.6	91.4	P/P	50 - 160
Imazapyr	74.1	70.6	P/P	50 - 150
Imidacloprid	109	103	P/P	60 - 150
Linuron	106	98.1	P/P	60 - 150
Mandestrobin	120	119	P/P	50 - 150
MCPP	93.0	97.8	P/P	50 - 150
Naproxen	82.0	77.8	P/P	50 - 160
Primidone	107	110	P/P	60 - 150
Pyraclostrobin	97.6	98.2	P/P	60 - 150
Thiamethoxam	112	113	P/P	50 - 150
Tolfenpyrad	76.4	76.2	P/P	60 - 150
Triclopyr	86.0	84.8	P/P	50 - 150

* 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	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					5.73	
EPA 300.0 Rev. 2.1	Chloride	102	101	101		0.374	
	Sulfate	103	101	103		0.795	
EPA 350.1 Rev. 2.0	Ammonia-N	99.8	98.6	92.4			5.63
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	109	105			3.39
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	101	101			0.0
EPA 365.1 Rev. 2.0	Total-P	106	106	107			0.0826
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.1	90.9	91.3			0.439
EPA 8321B	2,4-D	83.0	80.8	91.8			10.5
	Acesulfame K	89.9	34.1	36.5			6.96
	Acetaminophen	71.0	92.3	92.9			0.724
	Acetamiprid	73.9	77.8	82.1			5.32
	Afidopyropen	67.1	60.3	73.6			19.9
	AMPA	76.2	71.0	73.1			2.86
	Bentazon	49.4					1.05
	Benzovindiflupyr	57.4	53.9	57.1			5.78
	Carbamazepine	68.9	51.3	58.8			7.22
	Clothianidin	81.8	88.9	95.0			6.36
	Dinotefuran	82.4	96.8	101			4.28
	Diuron	59.8	48.8	54.4			9.33
	Endothall	116	111	119			7.01
	Fenuron	80.4	75.9	75.3			0.758
	Fluridone	85.5	85.5	86.5			1.23
	Glufosinate	102	76.8	78.5			2.23
	Glyphosate	95.7	60.7	65.2			7.10
	Hydrocodone	73.4	75.2	76.4			1.53
	Ibuprofen	62.0	66.4	64.0			3.67
	Imazapyr	56.7	63.6	64.7			1.11
	Imidacloprid	92.8	138	144			3.15
	Linuron	59.8	52.8	57.1			7.90
	Mandestrobin	70.3	68.9	69.5			0.860
	MCPP	93.3	93.9	97.0			3.11
	Naproxen	52.4	47.2	40.4			15.4
	Primidone	79.9	92.7	89.9			3.05
	Pyraclostrobin	52.6	52.6	57.9			9.49
	Sucralose	94.1	95.5	101			4.32
	Thiamethoxam	80.5	97.4	104			6.83
	Tolfenpyrad	33.7	33.8	37.2			9.63
	Triclopyr	61.9	69.3	67.8			2.15
SM 2120 B-2011	Color (true)	102				2.92	
SM 2320 B-2011	Total Alkalinity	101				0.594	
SM 2540 C-2011	TDS					2.96	
SM 4500 F-C-2011	Fluoride	97.7	105	106			0.988
SM 5310 B-2011	Organic Carbon	98.5	102	104			1.83

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2185460
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2185460
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2185460
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2185461
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2185461

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2185461
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2185461
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2185462
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2185467
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2185467
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2185460
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2185460
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2185460
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2185460
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2185460
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2185461

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	07/24/2020			07/24/2020 15:04	Samantha Davila	2185460
EPA 300.0 Rev. 2.1	07/24/2020			07/31/2020 23:04	Julia Storbeck	2185460
EPA 350.1 Rev. 2.0	07/24/2020			07/26/2020 12:38	Ping Hua	2185461
EPA 351.2 Rev. 2.0	07/24/2020	07/30/2020 12:15	Jhamieka S. Greenwood	07/31/2020 13:53	Jhamieka S. Greenwood	2185461
EPA 353.2 Rev. 2.0	07/24/2020			07/27/2020 08:43	Beverly Y. Sanders	2185461
EPA 365.1 Rev. 2.0	07/24/2020	07/30/2020 11:20	Lipi Saha	08/04/2020 11:35	Benjamin T. Nordmann	2185461
EPA 365.1 Rev. 2.0 dissolved	07/24/2020			07/24/2020 15:20	Carlos Miranda	2185462
EPA 8321B	07/24/2020	07/27/2020 09:45	Mohammad Ghaffari	07/27/2020 10:25	Mohammad Ghaffari	2185467
	07/24/2020	07/27/2020 09:45	Mohammad Ghaffari	07/27/2020 15:39	Mohammad Ghaffari	2185467
	07/24/2020	07/27/2020 09:45	Mohammad Ghaffari	07/28/2020 13:22	Mohammad Ghaffari	2185467
	07/24/2020	07/29/2020 09:00	Hoor Shaik	08/01/2020 00:48	Juyoung Kim	2185467
SM 2120 B-2011	07/24/2020			07/24/2020 15:38	Blanca Fach	2185460
SM 2320 B-2011	07/24/2020			08/01/2020 07:04	Dale L. Simmons	2185460
SM 2540 C-2011	07/24/2020			07/29/2020 15:16	Yijie Li	2185460
SM 2540 D-2011	07/24/2020			07/29/2020 15:16	Yijie Li	2185460
SM 4500 F-C-2011	07/24/2020			07/27/2020 18:35	Lauren Lees	2185460
SM 5310 B-2011	07/24/2020			07/28/2020 21:47	David Boose	2185461