

Chemical Analysis Report

SW-DIST-2020-07-14-02

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

Event Description: **Harvey & Starvation**
Request ID: **RQ-2020-06-22-03**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Judy Ashton

For additional information please contact
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 31-JUL-2020 15:36



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: Lake Harvey Center

Collection Date/Time: 07/13/2020 10:45

Field ID: G1SW0001

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2182730	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P384594	
	EPA 300.0 Rev. 2.1	Chloride	30		mg Cl/L	P384899	
		Sulfate	3.2		mg SO ₄ /L	P384903	
	SM 2120 B-2011	Color (true)	53		PCU	P384601	
	SM 2320 B-2011	Total Alkalinity	25		mg CaCO ₃ /L	P384924	
	SM 2540 C-2011	TDS	100	A	mg/L	P384945	
	SM 2540 D-2011	TSS	2	IA	mg/L	P385022	
	SM 4500 F-C-2011	Fluoride	0.070	I	mg F/L	P384853	
2182732	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	IY	mg N/L	P384816	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76	Y	mg N/L	P384696	
	EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	0.004	UY	mg N/L	P384710	
	EPA 365.1 Rev. 2.0	Total-P	0.017	Y	mg P/L	P384634	
	SM 5310 B-2011	Organic Carbon	13	Y	mg C/L	P384699	
2182734	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P384587	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

EPA 350.1 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

EPA 351.2 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

EPA 353.2 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

EPA 365.1 Rev. 2.0: Total-P: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

SM 5310 B-2011: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

Sample Location: Starvation Lake @ Center

Collection Date/Time: 07/13/2020 11:20

Field ID: G1SW0110

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2182731	EPA 180.1 Rev. 2.0	Turbidity	0.85		NTU	P384594	
	EPA 300.0 Rev. 2.1	Chloride	26		mg Cl/L	P384899	
		Sulfate	2.0		mg SO4/L	P384903	
	SM 2120 B-2011	Color (true)	48		PCU	P384601	
	SM 2320 B-2011	Total Alkalinity	26		mg CaCO3/L	P384924	
	SM 2540 C-2011	TDS	88		mg/L	P384945	
	SM 2540 D-2011	TSS	2	U	mg/L	P385022	
	SM 4500 F-C-2011	Fluoride	0.097	I	mg F/L	P384853	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P384816	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.57		mg N/L	P384697	
2182733	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P384710	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P384634	
	SM 5310 B-2011	Organic Carbon	10		mg C/L	P384699	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P384587	
	dissolved						

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Starvation Lake @ Center

Collection Date/Time: 07/13/2020 11:20

Field ID: G1SW0110

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2182738	EPA 8321B	2,4-D	0.0020	U	ug/L	P384706	
		Acesulfame K**	0.10	U	ug/L	P384573	MS
		AMPA**	0.10	U	ug/L	P384573	
		Sucralose**	0.73		ug/L	P384573	
		Acetaminophen**	0.0080	U	ug/L	P384706	
		Acetamiprid**	0.0020	U	ug/L	P384706	
		Endothall**	0.25	U	ug/L	P384573	
		Glufosinate**	0.10	U	ug/L	P384573	
		Glyphosate**	0.10	U	ug/L	P384573	
		Afidopyropen**	0.0020	U	ug/L	P384706	
		Bentazon	0.0037		ug/L	P384706	
		Benzovindiflupyr**	0.0020	U	ug/L	P384706	
		Carbamazepine**	8.0E-04	U	ug/L	P384706	
		Clothianidin**	0.0020	U	ug/L	P384706	
		Dinotefuran**	0.0020	U	ug/L	P384706	
		Diuron	0.0020	U	ug/L	P384706	
		Fenuron	0.016	U	ug/L	P384706	
		Fluridone**	0.010		ug/L	P384706	
		Imazapyr**	0.026		ug/L	P384706	
		Hydrocodone**	0.0020	U	ug/L	P384706	
		Ibuprofen**	0.020	U	ug/L	P384706	
		Imidacloprid	0.0020	U	ug/L	P384706	
		Linuron	0.0040	U	ug/L	P384706	
		Mandestrobin**	0.0020	U	ug/L	P384706	
		MCPP	0.0020	U	ug/L	P384706	
		Naproxen**	0.0080	U	ug/L	P384706	
		Primidone**	0.0040	U	ug/L	P384706	
		Pyraclostrobin**	0.0020	U	ug/L	P384706	
		Thiamethoxam**	0.0020	U	ug/L	P384706	
		Tolfenpyrad**	0.0020	U	ug/L	P384706	
		Triclopyr**	0.0040	U	ug/L	P384706	

Non-Conformance Report

NCR ID: 8351

Event(s)

SW-DIST-2020-07-14-02

Job(s)

TLH-2020-07-14-30

Sample(s)

2182732

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Preservation Not Intact

Observation: Sample not preserved to pH < 2.

Resolution: H2SO4 Lot# SA9203100 | Expiration Date: 07/22/2020.
Data will be qualified as appropriate.
Sample preserved in the laboratory.
Customer notified by email.
Supervisor notified by email.

Authorized by/Date: Joshua Ayres 7/20/2020

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 180.1 Rev. 2.0
Batch ID: P384594

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384899

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384903

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384816

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384696

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384697

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384710

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384634

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384587

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P384573

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P384706

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: P384601

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P384924

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P384945

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P385022

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P384853

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P384699

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: P384899

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384903

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384816

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: P384696

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384697

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384710

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: P384634

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384587

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

Reference Method: EPA 8321B
Batch ID: P384573

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	79.0		P	40 - 150
AMPA	83.8		P	40 - 150
Endothall	102		P	40 - 150
Glufosinate	96.8		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P384573

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	92.2		P	40 - 140
Sucralose	84.9		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P384706

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	104		P	30 - 160
Acetaminophen	62.1		P	30 - 160
Acetamiprid	76.1		P	30 - 160
Afidopyropen	59.3		P	30 - 160
Bentazon	51.4		P	30 - 160
Benzovindiflupyr	61.7		P	30 - 160
Carbamazepine	61.6		P	30 - 160
Clothianidin	77.9		P	30 - 160
Dinotefuran	85.6		P	30 - 160
Diuron	51.4		P	30 - 160
Fenuron	88.8		P	30 - 160
Fluridone	79.7		P	30 - 160
Hydrocodone	73.7		P	30 - 160
Ibuprofen	66.1		P	30 - 160
Imazapyr	95.9		P	30 - 160
Imidacloprid	93.7		P	30 - 160
Linuron	57.5		P	30 - 160
Mandestrobin	66.9		P	30 - 160
MCPP	115		P	30 - 160
Naproxen	71.3		P	30 - 160
Primidone	76.7		P	30 - 160
Pyraclostrobin	68.6		P	30 - 160
Thiamethoxam	89.4		P	30 - 160
Tolfenpyrad	56.2		P	30 - 160
Triclopyr	92.0		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P384601

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.6		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P384924

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.9		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P384853

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.0		P	90 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P384699

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.9		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384899

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182625	Chloride	102		P	90 - 110
2182742	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384903

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182625	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384816

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182627	Ammonia-N	103	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384696

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182694	Kjeldahl Nitrogen	101	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384710

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182725	NO2NO3-N	99.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384634

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182628	Total-P	104	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384587

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182629	O-Phosphate-P	98.3	99.5	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P384573

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182347	Acesulfame K	37.9	38.4	F/F	40 - 150
2182347	AMPA	65.0	61.5	P/P	40 - 150
2182347	Endothall	101	106	P/P	40 - 150
2182347	Glufosinate	81.6	76.2	P/P	40 - 150
2182347	Glyphosate	83.5	73.4	P/P	40 - 140
2182347	Sucralose	60.3	68.1	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P384706

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182738	2,4-D	117	102	P/P	30 - 160
2182738	Acetaminophen	69.7	77.9	P/P	30 - 160
2182738	Acetamiprid	66.7	66.9	P/P	30 - 160
2182738	Afidopyropen	68.8	68.0	P/P	30 - 160
2182738	Bentazon	44.0	41.1	P/P	30 - 160
2182738	Benzovindiflupyr	70.8	65.0	P/P	30 - 160
2182738	Carbamazepine	52.3	53.9	P/P	30 - 160
2182738	Clothianidin	61.9	66.0	P/P	30 - 160
2182738	Dinotefuran	73.1	76.9	P/P	30 - 160
2182738	Diuron	45.6	49.5	P/P	30 - 160
2182738	Fenuron	70.2	73.3	P/P	30 - 160
2182738	Fluridone	89.5	82.3	P/P	30 - 160
2182738	Hydrocodone	57.4	62.3	P/P	30 - 160
2182738	Ibuprofen	71.6	63.0	P/P	30 - 160
2182738	Imazapyr	98.9	99.6	P/P	30 - 160
2182738	Imidacloprid	114	120	P/P	30 - 160
2182738	Linuron	61.9	58.7	P/P	30 - 160
2182738	Mandestrobin	74.5	73.2	P/P	30 - 160
2182738	MCP	121	115	P/P	30 - 160
2182738	Naproxen	68.9	73.0	P/P	30 - 160
2182738	Primidone	80.6	75.3	P/P	30 - 160
2182738	Pyraclostrobin	77.3	75.0	P/P	30 - 160
2182738	Thiamethoxam	79.7	84.7	P/P	30 - 160
2182738	Tolfenpyrad	47.5	47.4	P/P	30 - 160
2182738	Triclopyr	103	89.1	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P384853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2183318	Fluoride	100	100	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P384699

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182627	Organic Carbon	100	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P384594

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182743	Turbidity	0.934	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384899

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182742	Chloride	0.735	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384903

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182742	Sulfate	0.921	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384816

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182627	Ammonia-N	0.526	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384696

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182694	Kjeldahl Nitrogen	1.64	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384697

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182747	Kjeldahl Nitrogen	4.23	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384710

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182725	NO2NO3-N	0.244	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384634

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182628	Total-P	1.60	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384587

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182629	O-Phosphate-P	1.21	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P384573

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182347	Acesulfame K	1.19	Spike	P	0 - 30
2182347	AMPA	3.25	Spike	P	0 - 30
2182347	Endothall	4.87	Spike	P	0 - 30
2182347	Glufosinate	6.88	Spike	P	0 - 30
2182347	Glyphosate	9.96	Spike	P	0 - 30
2182347	Sucralose	12.0	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P384706

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182738	2,4-D	13.5	Spike	P	0 - 30
2182738	Acetaminophen	11.1	Spike	P	0 - 30
2182738	Acetamiprid	0.416	Spike	P	0 - 30
2182738	Afidopyropen	1.16	Spike	P	0 - 30
2182738	Bentazon	3.25	Spike	P	0 - 30
2182738	Benzovindiflupyr	8.44	Spike	P	0 - 30
2182738	Carbamazepine	3.16	Spike	P	0 - 30
2182738	Clothianidin	6.53	Spike	P	0 - 30
2182738	Dinotefuran	5.16	Spike	P	0 - 30
2182738	Diuron	8.30	Spike	P	0 - 30
2182738	Fenuron	4.36	Spike	P	0 - 30
2182738	Fluridone	5.24	Spike	P	0 - 30
2182738	Hydrocodone	8.22	Spike	P	0 - 30
2182738	Ibuprofen	12.8	Spike	P	0 - 30
2182738	Imazapyr	0.477	Spike	P	0 - 30
2182738	Imidacloprid	5.22	Spike	P	0 - 30
2182738	Linuron	5.26	Spike	P	0 - 30
2182738	Mandestrobin	1.66	Spike	P	0 - 30
2182738	MCPP	4.93	Spike	P	0 - 30
2182738	Naproxen	5.86	Spike	P	0 - 30
2182738	Primidone	6.87	Spike	P	0 - 30
2182738	Pyraclostrobin	3.08	Spike	P	0 - 30
2182738	Thiamethoxam	6.05	Spike	P	0 - 30
2182738	Tolfenpyrad	0.181	Spike	P	0 - 30
2182738	Triclopyr	14.1	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P384601

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182692	Color (true)	0.606	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P384924

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2181870	Total Alkalinity	0.219	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P384945

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182730	TDS	2.99	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P384853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183318	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P384699

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182627	Organic Carbon	0.587	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2182738

Field Sample ID: G1SW0110

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	108	P	30 - 160
EPA 8321B	Acetaminophen-d4	76.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	54.6	P	30 - 160
EPA 8321B	Diuron-d6	52.2	P	30 - 160
EPA 8321B	Endothall-d6	101	P	30 - 160
EPA 8321B	Endothall-d6	101	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	79.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	79.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	63.4	P	30 - 160
EPA 8321B	Primidone-d5	72.8	P	30 - 160
EPA 8321B	Sucralose-d6	95.7	P	30 - 160
EPA 8321B	Sucralose-d6	95.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A99861

Included Lab Sample IDs: 2182734, 2182735

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.7	96.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A99865

Included Lab Sample IDs: 2182730, 2182731

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

Reference Method: SM 2120 B-2011

Run ID: A99866

Included Lab Sample IDs: 2182730, 2182731

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	100	P/P	90 - 115

Reference Method: EPA 8321B

Run ID: A99878

Included Lab Sample IDs: 2182738

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	86.7	85.5	P/P	60 - 160

Reference Method: SM 5310 B-2011

Run ID: A99908

Included Lab Sample IDs: 2182732, 2182733

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.0	95.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A99910

Included Lab Sample IDs: 2182732, 2182733

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

Reference Method: EPA 8321B

Run ID: A99933

Included Lab Sample IDs: 2182738

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	70.5	68.1	P/P	60 - 160
Endothall	99.7	98.3	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A99934

Included Lab Sample IDs: 2182738

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	81.5	83.7	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A99934
Included Lab Sample IDs: 2182738

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Glufosinate	106	101	P/P	60 - 160
Glyphosate	101	98.7	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A99951
Included Lab Sample IDs: 2182733

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.1	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A99952
Included Lab Sample IDs: 2182732

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.4	98.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A99954
Included Lab Sample IDs: 2182732, 2182733

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A99960
Included Lab Sample IDs: 2182732, 2182733

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	98.5	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A99965
Included Lab Sample IDs: 2182730, 2182731

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A99978
Included Lab Sample IDs: 2182730, 2182731

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	103	P/P	90 - 110
Sulfate	102	102	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A99981
Included Lab Sample IDs: 2182738

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A99981

Included Lab Sample IDs: 2182738

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	126	117	P/P	50 - 150
Acetaminophen	102	111	P/P	60 - 160
Acetamiprid	118	119	P/P	50 - 150
Afidopyropen	104	106	P/P	50 - 150
Bentazon	107	101	P/P	50 - 160
Benzovindiflupyr	112	103	P/P	50 - 150
Carbamazepine	112	112	P/P	60 - 150
Clothianidin	109	105	P/P	60 - 150
Dinotefuran	108	106	P/P	50 - 150
Diuron	113	118	P/P	60 - 160
Fenuron	111	111	P/P	60 - 150
Fluridone	113	110	P/P	60 - 160
Hydrocodone	113	114	P/P	60 - 150
Ibuprofen	83.4	74.6	P/P	50 - 160
Imazapyr	123	130	P/P	50 - 150
Imidacloprid	101	103	P/P	60 - 150
Linuron	108	107	P/P	60 - 150
Mandestrobin	121	118	P/P	50 - 150
MCPP	121	112	P/P	50 - 150
Naproxen	122	125	P/P	50 - 160
Primidone	105	93.7	P/P	60 - 150
Pyraclostrobin	124	117	P/P	60 - 150
Thiamethoxam	105	97.5	P/P	50 - 150
Tolfenpyrad	122	110	P/P	60 - 150
Triclopyr	105	112	P/P	50 - 150

Reference Method: SM 2320 B-2011

Run ID: A99986

Included Lab Sample IDs: 2182730, 2182731

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.6	97.0	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	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					0.934	
EPA 300.0 Rev. 2.1	Chloride	103	101	102		0.735	
	Sulfate	100	101			0.921	
EPA 350.1 Rev. 2.0	Ammonia-N	99.8	103	104			0.526
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	101	104			1.64
	Kjeldahl Nitrogen	99.5					4.23
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	99.8				0.244
EPA 365.1 Rev. 2.0	Total-P	104	104	106			1.60
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.6	98.3	99.5			1.21
EPA 8321B	2,4-D	104	117	102			13.5
	Acesulfame K	79.0	37.9	38.4			1.19
	Acetaminophen	62.1	69.7	77.9			11.1
	Acetamiprid	76.1	66.7	66.9			0.416
	Afidopyropen	59.3	68.8	68.0			1.16
	AMPA	83.8	65.0	61.5			3.25
	Bentazon	51.4	44.0	41.1			3.25
	Benzovindiflupyr	61.7	70.8	65.0			8.44
	Carbamazepine	61.6	52.3	53.9			3.16
	Clothianidin	77.9	61.9	66.0			6.53
	Dinotefuran	85.6	73.1	76.9			5.16
	Diuron	51.4	45.6	49.5			8.30
	Endothall	102	101	106			4.87
	Fenuron	88.8	70.2	73.3			4.36
	Fluridone	79.7	89.5	82.3			5.24
	Glufosinate	96.8	81.6	76.2			6.88
	Glyphosate	92.2	83.5	73.4			9.96
	Hydrocodone	73.7	57.4	62.3			8.22
	Ibuprofen	66.1	71.6	63.0			12.8
	Imazapyr	95.9	98.9	99.6			0.477
	Imidacloprid	93.7	114	120			5.22
	Linuron	57.5	61.9	58.7			5.26
	Mandestrobin	66.9	74.5	73.2			1.66
	MCPP	115	121	115			4.93
	Naproxen	71.3	68.9	73.0			5.86
	Primidone	76.7	80.6	75.3			6.87
	Pyraclostrobin	68.6	77.3	75.0			3.08
	Sucralose	84.9	60.3	68.1			12.0
	Thiamethoxam	89.4	79.7	84.7			6.05
	Tolfenpyrad	56.2	47.5	47.4			0.181
	Triclopyr	92.0	103	89.1			14.1
SM 2120 B-2011	Color (true)	98.6				0.606	
SM 2320 B-2011	Total Alkalinity	98.9				0.219	
SM 2540 C-2011	TDS					2.99	
SM 4500 F-C-2011	Fluoride	98.0	100	100			0.0
SM 5310 B-2011	Organic Carbon	99.9	100	101			0.587

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2182730, 2182731
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2182730, 2182731
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2182730, 2182731
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2182732, 2182733

Reference Method Descriptions

Method	Description	Associated Samples
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2182732, 2182733
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2182732, 2182733
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2182732, 2182733
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2182734, 2182735
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2182738
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2182738
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2182730, 2182731
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2182730, 2182731
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2182730, 2182731
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2182730, 2182731
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2182730, 2182731
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2182732, 2182733

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	07/14/2020			07/14/2020 15:46	Yen Ta	2182730, 2182731
EPA 300.0 Rev. 2.1	07/14/2020			07/17/2020 18:34	Julia Storbeck	2182730
	07/14/2020			07/17/2020 18:46	Julia Storbeck	2182731
EPA 350.1 Rev. 2.0	07/14/2020			07/18/2020 10:21	Ping Hua	2182732
	07/14/2020			07/18/2020 10:23	Ping Hua	2182733
EPA 351.2 Rev. 2.0	07/14/2020	07/16/2020 09:35	Sima Feizi	07/17/2020 14:36	Jhamieka S. Greenwood	2182733
	07/14/2020	07/16/2020 09:35	Sima Feizi	07/17/2020 17:31	Jhamieka S. Greenwood	2182732
EPA 353.2 Rev. 2.0	07/14/2020			07/16/2020 10:05	Beverly Y. Sanders	2182732
	07/14/2020			07/16/2020 10:06	Beverly Y. Sanders	2182733
EPA 365.1 Rev. 2.0	07/14/2020	07/15/2020 12:01	Yen Ta	07/17/2020 11:12	Lipi Saha	2182732, 2182733
EPA 365.1 Rev. 2.0 dissolved	07/14/2020			07/14/2020 15:02	Carlos Miranda	2182734, 2182735
EPA 8321B	07/14/2020	07/14/2020 15:15	Rebecca Ware	07/15/2020 02:46	Rebecca Ware	2182738
	07/14/2020	07/14/2020 15:15	Rebecca Ware	07/15/2020 12:56	Rebecca Ware	2182738
	07/14/2020	07/14/2020 15:15	Rebecca Ware	07/15/2020 17:03	Rebecca Ware	2182738
	07/14/2020	07/20/2020 08:45	Hoor Shaik	07/21/2020 04:01	Juyoung Kim	2182738
SM 2120 B-2011	07/14/2020			07/14/2020 16:16	Benjamin T. Nordmann	2182730
	07/14/2020			07/14/2020 16:17	Benjamin T. Nordmann	2182731
SM 2320 B-2011	07/14/2020			07/20/2020 19:33	Samantha Davila	2182730
	07/14/2020			07/20/2020 19:50	Samantha Davila	2182731
SM 2540 C-2011	07/14/2020			07/15/2020 15:29	Yijie Li	2182730, 2182731
SM 2540 D-2011	07/14/2020			07/15/2020 15:29	Yijie Li	2182730, 2182731
SM 4500 F-C-2011	07/14/2020			07/18/2020 03:46	Samantha Davila	2182730
	07/14/2020			07/18/2020 03:59	Samantha Davila	2182731
SM 5310 B-2011	07/14/2020			07/15/2020 21:31	David Boose	2182732
	07/14/2020			07/15/2020 21:46	David Boose	2182733