

Chemical Analysis Report

NE-DIST-2020-04-02-01

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

Event Description: **Suwannee North 2020**
Request ID: **RQ-2020-03-30-17**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

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: 23-APR-2020 15:42

A handwritten signature in black ink, appearing to read "Liang Lin", is shown 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: Little Creek At US 441

Collection Date/Time: 04/01/2020 11:55

Field ID: 21010033

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2169420	EPA 8321B	2,4-D	0.0020	U	ug/L	P381729	
		Acesulfame K**	0.10	U	ug/L	P381772	MS
		AMPA**	0.10	U	ug/L	P381772	
		Sucralose**	0.010	U	ug/L	P381772	
		Acetaminophen**	0.0080	U	ug/L	P381729	
		Acetamiprid**	0.0020	U	ug/L	P381729	
		Endothall**	0.25	U	ug/L	P381772	
		Glufosinate**	0.10	U	ug/L	P381772	
		Glyphosate**	0.10	U	ug/L	P381772	
		Afidopyropen**	0.0020	UJ	ug/L	P381729	
		Bentazon	8.0E-04	U	ug/L	P381729	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P381729	
		Carbamazepine**	8.0E-04	U	ug/L	P381729	
		Clothianidin**	0.0020	U	ug/L	P381729	
		Dinotefuran**	0.0020	U	ug/L	P381729	
		Diuron	0.0020	U	ug/L	P381729	
		Fenuron	0.016	U	ug/L	P381729	
		Fluridone**	8.0E-04	U	ug/L	P381729	
		Imazapyr**	0.016		ug/L	P381729	
		Hydrocodone**	0.0020	U	ug/L	P381729	
		Ibuprofen**	0.020	U	ug/L	P381729	
		Imidacloprid	0.0020	U	ug/L	P381729	
		Linuron	0.0040	U	ug/L	P381729	
		Mandestrobin**	0.0020	UJ	ug/L	P381729	
		MCPP	0.0020	U	ug/L	P381729	
		Naproxen**	0.0080	U	ug/L	P381729	
		Primidone**	0.0040	U	ug/L	P381729	
		Pyraclostrobin**	0.0020	U	ug/L	P381729	
		Thiamethoxam**	0.0020	U	ug/L	P381729	
		Tolfenpyrad**	0.0020	U	ug/L	P381729	
		Triclopyr**	0.0040	U	ug/L	P381729	

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Deep Creek @ Hywy 441

Collection Date/Time: 04/01/2020 11:45

Field ID: 21010051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2169413	EPA 300.0 Rev. 2.1	Chloride	8.8		mg Cl/L	P381995	
		Sulfate	0.54		mg SO4/L	P382001	
	SM 2320 B-2011	Total Alkalinity	8.4		mg CaCO3/L	P381989	
	SM 2540 C-2011	TDS	110		mg/L	P382049	
	SM 2540 D-2011	TSS	2	U	mg/L	P382052	
	SM 4500 F-C-2011	Fluoride	0.098	I	mg F/L	P381927	MS, RPD
2169414	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P381829	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P381799	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P381733	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P381805	
	SM 5310 B-2011	Organic Carbon	50		mg C/L	P381851	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381995

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P382001

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381829

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P381799

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381733

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381805

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

Reference Method: EPA 8321B
Batch ID: P381729

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P381729

Component	Result	Code	Units
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P381772

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: P381989

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

Reference Method: SM 2540 C-2011
Batch ID: P382049

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P382052

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P381927

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P381851

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: P381995

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P382001

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381829

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P381799

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381733

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	96.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381805

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

Reference Method: EPA 8321B
Batch ID: P381729

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	115		P	30 - 160
Acetaminophen	66.6		P	30 - 160
Acetamiprid	94.2		P	30 - 160
Afidopyropen	92.7		P	30 - 160
Bentazon	54.3		P	30 - 160
Benzovindiflupyr	78.1		P	30 - 160
Carbamazepine	110		P	30 - 160
Clothianidin	79.8		P	30 - 160
Dinotefuran	71.5		P	30 - 160
Diuron	94.1		P	30 - 160
Fenuron	100		P	30 - 160
Fluridone	82.1		P	30 - 160
Hydrocodone	82.5		P	30 - 160
Ibuprofen	72.8		P	30 - 160
Imazapyr	73.8		P	30 - 160
Imidacloprid	107		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P381729

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Linuron	64.4		P	30 - 160
Mandestrobin	80.0		P	30 - 160
MCP	124		P	30 - 160
Naproxen	69.1		P	30 - 160
Primidone	91.9		P	30 - 160
Pyraclostrobin	77.8		P	30 - 160
Thiamethoxam	90.2		P	30 - 160
Tolfenpyrad	52.5		P	30 - 160
Triclopyr	98.0		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P381772

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	102		P	40 - 150
AMPA	88.5		P	40 - 150
Endothall	92.0		P	40 - 150
Glufosinate	101		P	40 - 150
Glyphosate	95.7		P	40 - 140
Sucralose	99.4		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P381989

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P381927

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	103		P	92 - 104

Reference Method: SM 5310 B-2011
Batch ID: P381851

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381995

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2169345	Chloride	97.5		P	90 - 110
2169413	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P382001

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2169345	Sulfate	98.8		P	90 - 110
2169413	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381829

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2169458	Ammonia-N	103	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P381799

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2169372	Kjeldahl Nitrogen	91.0	91.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381733

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2169437	NO2NO3-N	94.0	95.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381805

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2169401	Total-P	104	106	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P381729

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2169069	2,4-D	119	111	P/P	30 - 160
2169069	Acetaminophen	101	88.6	P/P	30 - 160
2169069	Acetamiprid	90.9	81.2	P/P	30 - 160
2169069	Afidopyropen	110	96.1	P/P	30 - 160
2169069	Benzovindiflupyr	87.2	75.0	P/P	30 - 160
2169069	Carbamazepine	91.1	80.7	P/P	30 - 160
2169069	Clothianidin	82.2	78.3	P/P	30 - 160
2169069	Dinotefuran	92.8	92.5	P/P	30 - 160
2169069	Diuron	96.4	83.4	P/P	30 - 160
2169069	Fenuron	66.4	58.8	P/P	30 - 160
2169069	Fluridone	89.5	73.5	P/P	30 - 160
2169069	Hydrocodone	86.6	76.6	P/P	30 - 160
2169069	Ibuprofen	73.9	63.1	P/P	30 - 160
2169069	Imazapyr	110	89.1	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P381729

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2169069	Imidacloprid	144	125	P/P	30 - 160
2169069	Linuron	66.7	53.9	P/P	30 - 160
2169069	Mandestrobin	91.1	78.4	P/P	30 - 160
2169069	MCCP	127	111	P/P	30 - 160
2169069	Naproxen	80.9	66.9	P/P	30 - 160
2169069	Primidone	82.2	70.3	P/P	30 - 160
2169069	Pyraclostrobin	90.5	80.8	P/P	30 - 160
2169069	Thiamethoxam	116	100	P/P	30 - 160
2169069	Tolfenpyrad	60.3	51.6	P/P	30 - 160
2169069	Triclopyr	118	102	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P381772

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2169045	Acesulfame K	18.8	18.0	F/F	40 - 150
2169045	AMPA	59.9	56.5	P/P	40 - 150
2169045	Endothall	98.6	111	P/P	40 - 150
2169045	Glufosinate	93.7	89.1	P/P	40 - 150
2169045	Glyphosate	100	84.2	P/P	40 - 140
2169045	Sucralose	95.5	87.1	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P381927

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2169176	Fluoride	106	103	F/P	91 - 105

Reference Method: SM 5310 B-2011
Batch ID: P381851

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2169460	Organic Carbon	97.2	96.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381995

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2169345	Chloride	0.102	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P382001

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2169345	Sulfate	0.192	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381829

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2169458	Ammonia-N	1.04	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P381799

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2169372	Kjeldahl Nitrogen	0.489	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381733

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2169437	NO2NO3-N	0.602	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381805

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2169401	Total-P	2.16	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P381729

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2169069	2,4-D	5.17	Spike	P	0 - 30
2169069	Acetaminophen	12.7	Spike	P	0 - 30
2169069	Acetamiprid	11.2	Spike	P	0 - 30
2169069	Afidopyropen	13.5	Spike	P	0 - 30
2169069	Bentazon	6.74	Spike	P	0 - 30
2169069	Benzovindiflupyr	15.1	Spike	P	0 - 30
2169069	Carbamazepine	12.1	Spike	P	0 - 30
2169069	Clothianidin	4.66	Spike	P	0 - 30
2169069	Dinotefuran	0.228	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P381729

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2169069	Diuron	14.4	Spike	P	0 - 30
2169069	Fenuron	12.1	Spike	P	0 - 30
2169069	Fluridone	15.7	Spike	P	0 - 30
2169069	Hydrocodone	12.3	Spike	P	0 - 30
2169069	Ibuprofen	15.8	Spike	P	0 - 30
2169069	Imazapyr	15.7	Spike	P	0 - 30
2169069	Imidacloprid	13.4	Spike	P	0 - 30
2169069	Linuron	21.3	Spike	P	0 - 30
2169069	Mandestrobin	15.0	Spike	P	0 - 30
2169069	MCP	13.9	Spike	P	0 - 30
2169069	Naproxen	19.0	Spike	P	0 - 30
2169069	Primidone	15.6	Spike	P	0 - 30
2169069	Pyraclostrobin	11.3	Spike	P	0 - 30
2169069	Thiamethoxam	13.4	Spike	P	0 - 30
2169069	Tolfenpyrad	15.6	Spike	P	0 - 30
2169069	Triclopyr	14.2	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P381772

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2169045	Acesulfame K	4.28	Spike	P	0 - 30
2169045	AMPA	3.91	Spike	P	0 - 30
2169045	Endothall	11.7	Spike	P	0 - 30
2169045	Glufosinate	5.02	Spike	P	0 - 30
2169045	Glyphosate	15.5	Spike	P	0 - 30
2169045	Sucralose	9.15	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P381989

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2169462	Total Alkalinity	1.88	Sample	P	0 - 3.3

Reference Method: SM 2540 C-2011
Batch ID: P382049

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2169348	TDS	5.13	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P381927

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2169176	Fluoride	2.85	Spike	F	0 - 2.0

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P381851

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2169460	Organic Carbon	0.299	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2169420
Field Sample ID: 21010033

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	82.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	85.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	90.4	P	30 - 160
EPA 8321B	Diuron-d6	83.6	P	30 - 160
EPA 8321B	Endothall-d6	123	P	30 - 160
EPA 8321B	Endothall-d6	123	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	79.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	79.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	92.1	P	30 - 160
EPA 8321B	Primidone-d5	46.1	P	30 - 160
EPA 8321B	Sucralose-d6	77.9	P	30 - 160
EPA 8321B	Sucralose-d6	77.9	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A98609

Included Lab Sample IDs: 2169414

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	96.0	95.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A98658

Included Lab Sample IDs: 2169414

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

Reference Method: SM 5310 B-2011

Run ID: A98666

Included Lab Sample IDs: 2169414

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.3	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98668

Included Lab Sample IDs: 2169414

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	104	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A98669

Included Lab Sample IDs: 2169414

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.3	94.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A98686

Included Lab Sample IDs: 2169413

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Sulfate	102	103	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A98689

Included Lab Sample IDs: 2169420

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	96.3	95.5	P/P	50 - 150
Acetaminophen	87.1	93.0	P/P	60 - 160
Acetamiprid	96.6	96.5	P/P	50 - 150
Afidopyropen	91.0	99.8	P/P	50 - 150
Bentazon	87.5	71.0	P/P	50 - 160
Benzovindiflupyr	104	110	P/P	50 - 150
Carbamazepine	96.9	99.6	P/P	60 - 150
Clothianidin	90.9	96.0	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A98689
Included Lab Sample IDs: 2169420

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Dinotefuran	85.4	87.8	P/P	50 - 150
Diuron	97.3	98.4	P/P	60 - 160
Fenuron	88.9	88.3	P/P	60 - 150
Fluridone	109	110	P/P	60 - 160
Hydrocodone	97.7	107	P/P	60 - 150
Ibuprofen	108	99.0	P/P	50 - 160
Imazapyr	102	98.1	P/P	50 - 150
Imidacloprid	91.7	102	P/P	60 - 150
Linuron	106	105	P/P	60 - 150
Mandestrobin	104	112	P/P	50 - 150
MCPP	98.6	91.9	P/P	50 - 150
Naproxen	106	134	P/P	50 - 160
Primidone	94.9	86.1	P/P	60 - 150
Pyraclostrobin	113	116	P/P	60 - 150
Thiamethoxam	89.4	96.6	P/P	50 - 150
Tolfenpyrad	98.7	116	P/P	60 - 150
Triclopyr	86.3	96.9	P/P	50 - 150

Reference Method: SM 4500 F-C-2011
Run ID: A98694
Included Lab Sample IDs: 2169413

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

Reference Method: EPA 8321B
Run ID: A98699
Included Lab Sample IDs: 2169420

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	105	103	P/P	60 - 160
Endothall	101	102	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A98702
Included Lab Sample IDs: 2169420

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	83.3	83.8	P/P	40 - 200
Glufosinate	111	109	P/P	40 - 200
Glyphosate	104	97.0	P/P	40 - 200

Reference Method: SM 2320 B-2011
Run ID: A98727
Included Lab Sample IDs: 2169413

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.6	99.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A98790
Included Lab Sample IDs: 2169420

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	101	102	P/P	60 - 160

* 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	MS
EPA 300.0 Rev. 2.1	Chloride	98.3	97.5	101	0.102	
	Sulfate	99.2	98.8	101	0.192	
EPA 350.1 Rev. 2.0	Ammonia-N	101	103	101		1.04
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	91.0	91.8		0.489
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	96.0	94.0	95.0		0.602
EPA 365.1 Rev. 2.0	Total-P	104	104	106		2.16
EPA 8321B	2,4-D	115	119	111		5.17
	Acesulfame K	102	18.8	18.0		4.28
	Acetaminophen	66.6	101	88.6		12.7
	Acetamiprid	94.2	90.9	81.2		11.2
	Afidopyropen	92.7	110	96.1		13.5
	AMPA	88.5	59.9	56.5		3.91
	Bentazon	54.3				6.74
	Benzovindiflupyr	78.1	87.2	75.0		15.1
	Carbamazepine	110	91.1	80.7		12.1
	Clothianidin	79.8	82.2	78.3		4.66
	Dinotefuran	71.5	92.8	92.5		0.228
	Diuron	94.1	96.4	83.4		14.4
	Endothall	92.0	98.6	111		11.7
	Fenuron	100	66.4	58.8		12.1
	Fluridone	82.1	89.5	73.5		15.7
	Glufosinate	101	93.7	89.1		5.02
	Glyphosate	95.7	100	84.2		15.5
	Hydrocodone	82.5	86.6	76.6		12.3
	Ibuprofen	72.8	73.9	63.1		15.8
	Imazapyr	73.8	110	89.1		15.7
	Imidacloprid	107	144	125		13.4
	Linuron	64.4	66.7	53.9		21.3
	Mandestrobin	80.0	91.1	78.4		15.0
	MCPP	124	127	111		13.9
	Naproxen	69.1	80.9	66.9		19.0
	Primidone	91.9	82.2	70.3		15.6
	Pyraclostrobin	77.8	90.5	80.8		11.3
	Sucralose	99.4	87.1	95.5		9.15
	Thiamethoxam	90.2	116	100		13.4
	Tolfenpyrad	52.5	60.3	51.6		15.6
	Triclopyr	98.0	118	102		14.2
SM 2320 B-2011	Total Alkalinity	101			1.88	
SM 2540 C-2011	TDS				5.13	
SM 4500 F-C-2011	Fluoride	103	106	103		2.85
SM 5310 B-2011	Organic Carbon	97.2	97.2	96.6		0.299

Reference Method Descriptions

Method	Description	Associated Samples
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2169413
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2169413
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2169414
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2169414
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2169414
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2169414
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2169420
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2169420

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2169413
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2169413
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2169413
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2169413
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2169414

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 300.0 Rev. 2.1	04/02/2020			04/09/2020 22:52	Jhamieka S. Greenwood	2169413
EPA 350.1 Rev. 2.0	04/02/2020			04/04/2020 13:43	Ping Hua	2169414
EPA 351.2 Rev. 2.0	04/02/2020	04/03/2020 09:10	Sima Feizi	04/06/2020 10:58	Jhamieka S. Greenwood	2169414
EPA 353.2 Rev. 2.0	04/02/2020			04/02/2020 15:36	Lauren Lees	2169414
EPA 365.1 Rev. 2.0	04/02/2020	04/03/2020 14:45	Yen Ta	04/06/2020 09:32	Lipi Saha	2169414
EPA 8321B	04/02/2020	04/03/2020 11:30	Rebecca Ware	04/03/2020 15:06	Rebecca Ware	2169420
	04/02/2020	04/03/2020 11:30	Rebecca Ware	04/06/2020 17:16	Rebecca Ware	2169420
	04/02/2020	04/03/2020 11:30	Rebecca Ware	04/14/2020 21:01	Rebecca Ware	2169420
	04/02/2020	04/06/2020 09:00	Hoor Shaik	04/08/2020 14:50	Juyoung Kim	2169420
SM 2320 B-2011	04/02/2020			04/10/2020 05:33	Samantha Davila	2169413
SM 2540 C-2011	04/02/2020			04/07/2020 14:10	Yijie Li	2169413
SM 2540 D-2011	04/02/2020			04/07/2020 14:10	Yijie Li	2169413
SM 4500 F-C-2011	04/02/2020			04/07/2020 18:59	Samantha Davila	2169413
SM 5310 B-2011	04/02/2020			04/04/2020 06:18	Madeline Gruver	2169414