

Chemical Analysis Report

NE-DIST-2020-01-28-01

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

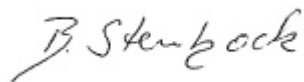
Event Description: **LSJR Palatka 2020**
Request ID: **RQ-2020-01-13-27**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 14-FEB-2020 14:45



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: Unnamed Ditch 250m upstream of Deep cr.

Collection Date/Time: 01/27/2020 12:10

Field ID: G2NE1211

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2151988	EPA 180.1 Rev. 2.0	Turbidity	6.2	A	NTU	P377808	
	EPA 300.0 Rev. 2.1	Chloride	360		mg Cl/L	P378153	
		Sulfate	290		mg SO4/L	P378157	
	SM 2120 B-2011	Color (true)	31		PCU	P377813	
	SM 2320 B-2011	Total Alkalinity	112		mg CaCO3/L	P378053	
	SM 2540 C-2011	TDS	1.13E+03		mg/L	P378370	
	SM 2540 D-2011	TSS	4	I	mg/L	P378134	
	SM 4500 F-C-2011	Fluoride	0.36		mg F/L	P378058	
2151989	EPA 350.1 Rev. 2.0	Ammonia-N	0.057		mg N/L	P378396	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.83		mg N/L	P378202	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.53		mg N/L	P378002	
	EPA 365.1 Rev. 2.0	Total-P	0.096		mg P/L	P378072	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P377957	
2151990	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.039		mg P/L	P377811	
2152000	EPA 8321B	2,4-D	0.0020	U	ug/L	P377753	
		Acesulfame K**	1.0	U	ug/L	P377680	
		AMPA**	0.19	I	ug/L	P377680	
		Sucralose**	0.10	U	ug/L	P377680	
		Acetaminophen**	0.0080	U	ug/L	P377753	
		Acetamiprid**	0.0020	U	ug/L	P377753	
		Endothall**	2.5	U	ug/L	P377680	
		Glufosinate**	0.10	U	ug/L	P377680	
		Glyphosate**	0.14	I	ug/L	P377680	
		Afidopyropen**	0.0020	UJ	ug/L	P377753	
		Bentazon	9.5E-04	I	ug/L	P377753	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P377753	
		Carbamazepine**	8.0E-04	U	ug/L	P377753	
		Clothianidin**	0.0077	I	ug/L	P377753	
		Dinotefuran**	0.0020	U	ug/L	P377753	
		Diuron	0.0020	U	ug/L	P377753	
		Fenuron	0.016	U	ug/L	P377753	
		Fluridone**	8.0E-04	U	ug/L	P377753	
		Imazapyr**	0.0040	U	ug/L	P377753	
		Hydrocodone**	0.0020	U	ug/L	P377753	
		Ibuprofen**	0.020	U	ug/L	P377753	
		Imidacloprid	0.014		ug/L	P377753	
		Linuron	0.0040	U	ug/L	P377753	
		Mandestrobin**	0.0020	UJ	ug/L	P377753	
		MCP	0.0020	U	ug/L	P377753	
		Naproxen**	0.0080	U	ug/L	P377753	
		Primidone**	0.0040	U	ug/L	P377753	
		Pyraclostrobin**	0.0020	U	ug/L	P377753	
		Thiamethoxam**	0.034		ug/L	P377753	

Field ID: G2NE1211

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2152000	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P377753	
		Triclopyr**	0.0040	U	ug/L	P377753	

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 8321B: J - second source check standards for some analytes were not available for analysis.

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

EPA 8321B: MDL elevated due to matrix interference.

Sample Location: Moccassin Branch At Winford Masters Rd

Collection Date/Time: 01/27/2020 10:15

Field ID: 20030557

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2151985	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P377807	
	EPA 300.0 Rev. 2.1	Chloride	150		mg Cl/L	P378153	
		Sulfate	480		mg SO4/L	P378157	
		Color (true)	38		PCU	P377813	
	SM 2320 B-2011	Total Alkalinity	102		mg CaCO3/L	P378053	
	SM 2540 C-2011	TDS	1.02E+03		mg/L	P378370	
	SM 2540 D-2011	TSS	3	I	mg/L	P378134	
	SM 4500 F-C-2011	Fluoride	0.49		mg F/L	P378058	
2151986	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P378396	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31		mg N/L	P378202	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P378002	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P378072	
	SM 5310 B-2011	Organic Carbon	7.2		mg C/L	P377957	
2151987	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.069		mg P/L	P377811	

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.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377807

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377808

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378153

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378157

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378396

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378202

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378002

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378072

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377811

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: P377680

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: P377753

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: P377813

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P378053

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: P378370

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P378134

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P378058

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P377957

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: P378153

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378157

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378396

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: P378202

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378002

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378072

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377811

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

Reference Method: EPA 8321B
Batch ID: P377680

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	126		P	40 - 150
AMPA	85.5		P	40 - 150
Endothall	118		P	40 - 150
Glufosinate	89.6		P	40 - 150
Glyphosate	80.1		P	40 - 140
Sucralose	80.9		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P377753

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	124		P	30 - 160
Acetaminophen	102		P	30 - 160
Acetamiprid	91.4		P	30 - 160
Afidopyropen	88.8		P	30 - 160
Bentazon	71.2		P	30 - 160
Benzovindiflupyr	83.8		P	30 - 160
Carbamazepine	100		P	30 - 160
Clothianidin	89.4		P	30 - 160
Dinotefuran	92.5		P	30 - 160
Diuron	77.9		P	30 - 160
Fenuron	100		P	30 - 160
Fluridone	98.3		P	30 - 160
Hydrocodone	96.1		P	30 - 160
Ibuprofen	93.3		P	30 - 160
Imazapyr	89.6		P	30 - 160
Imidacloprid	97.1		P	30 - 160
Linuron	73.6		P	30 - 160
Mandestrobin	92.2		P	30 - 160
MCPP	125		P	30 - 160
Naproxen	87.4		P	30 - 160
Primidone	92.7		P	30 - 160
Pyraclostrobin	84.5		P	30 - 160
Thiamethoxam	97.8		P	30 - 160
Tolfenpyrad	59.8		P	30 - 160
Triclopyr	81.4		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P377813

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.2		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P378053

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P378058

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.7		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P377957

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378153

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151851	Chloride	103		P	90 - 110
2151966	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378157

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151851	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378396

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152004	Ammonia-N	103	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378202

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152230	Kjeldahl Nitrogen	98.8	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378002

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151945	NO2NO3-N	100	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378072

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151947	Total-P	103	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377811

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151987	O-Phosphate-P	95.1	96.0	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P377680

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151558	Acesulfame K	41.2	41.2	P/P	40 - 150
2151558	AMPA	95.4	96.6	P/P	40 - 150
2151558	Endothall	125	130	P/P	40 - 150
2151558	Glufosinate	86.4	97.1	P/P	40 - 150
2151558	Glyphosate	68.0	72.5	P/P	40 - 140
2151558	Sucralose	82.5	82.3	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P377753

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151974	2,4-D	109	112	P/P	30 - 160
2151974	Acetaminophen	85.7	84.2	P/P	30 - 160
2151974	Acetamiprid	97.4	84.9	P/P	30 - 160
2151974	Afidopyropen	93.6	95.7	P/P	30 - 160
2151974	Bentazon	38.5	39.4	P/P	30 - 160
2151974	Benzovindiflupyr	79.2	81.3	P/P	30 - 160
2151974	Carbamazepine	77.8	80.2	P/P	30 - 160
2151974	Clothianidin	94.7	103	P/P	30 - 160
2151974	Dinotefuran	114	117	P/P	30 - 160
2151974	Diuron	65.5	65.3	P/P	30 - 160
2151974	Fenuron	83.4	81.8	P/P	30 - 160
2151974	Fluridone	89.3	98.5	P/P	30 - 160
2151974	Hydrocodone	87.8	106	P/P	30 - 160
2151974	Ibuprofen	72.3	74.6	P/P	30 - 160
2151974	Imazapyr	81.4	77.6	P/P	30 - 160
2151974	Imidacloprid	142	150	P/P	30 - 160
2151974	Linuron	65.6	64.2	P/P	30 - 160
2151974	Mandestrobin	84.7	85.5	P/P	30 - 160
2151974	MCPP	109	109	P/P	30 - 160
2151974	Naproxen	69.7	62.3	P/P	30 - 160
2151974	Primidone	87.5	89.9	P/P	30 - 160
2151974	Pyraclostrobin	79.9	82.9	P/P	30 - 160
2151974	Thiamethoxam	142	136	P/P	30 - 160
2151974	Tolfenpyrad	46.7	45.7	P/P	30 - 160
2151974	Triclopyr	80.7	88.9	P/P	30 - 160

Reference Method: SM 4500 F-C-2011

Batch ID: P378058

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151966	Fluoride	100	99.5	P/P	89 - 106

Reference Method: SM 5310 B-2011

Batch ID: P377957

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151986	Organic Carbon	97.8	99.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377807

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151960	Turbidity	3.48	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377808

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151988	Turbidity	1.62	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378153

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151851	Chloride	1.49	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378157

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151851	Sulfate	0.639	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378396

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152004	Ammonia-N	0.503	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152230	Kjeldahl Nitrogen	5.48	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378002

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151945	NO2NO3-N	0.847	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378072

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151947	Total-P	1.40	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P377811

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151987	O-Phosphate-P	0.548	Spike	P	0 - 20

Reference Method: EPA 8321B
 Batch ID: P377680

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151558	Acesulfame K	0.0146	Spike	P	0 - 30
2151558	AMPA	1.24	Spike	P	0 - 30
2151558	Endothall	3.89	Spike	P	0 - 30
2151558	Glufosinate	11.7	Spike	P	0 - 30
2151558	Glyphosate	6.44	Spike	P	0 - 30
2151558	Sucralose	0.220	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P377753

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151974	2,4-D	2.48	Spike	P	0 - 30
2151974	Acetaminophen	1.84	Spike	P	0 - 30
2151974	Acetamiprid	13.8	Spike	P	0 - 30
2151974	Afidopyrophen	2.26	Spike	P	0 - 30
2151974	Bentazon	0.914	Spike	P	0 - 30
2151974	Benzovindiflupyr	2.55	Spike	P	0 - 30
2151974	Carbamazepine	3.04	Spike	P	0 - 30
2151974	Clothianidin	8.11	Spike	P	0 - 30
2151974	Dinotefuran	1.72	Spike	P	0 - 30
2151974	Diuron	0.285	Spike	P	0 - 30
2151974	Fenuron	1.97	Spike	P	0 - 30
2151974	Fluridone	9.79	Spike	P	0 - 30
2151974	Hydrocodone	18.9	Spike	P	0 - 30
2151974	Ibuprofen	3.20	Spike	P	0 - 30
2151974	Imazapyr	4.80	Spike	P	0 - 30
2151974	Imidacloprid	4.58	Spike	P	0 - 30
2151974	Linuron	2.16	Spike	P	0 - 30
2151974	Mandestrobin	1.05	Spike	P	0 - 30
2151974	MCPP	0.159	Spike	P	0 - 30
2151974	Naproxen	11.1	Spike	P	0 - 30
2151974	Primidone	2.76	Spike	P	0 - 30
2151974	Pyraclostrobin	3.72	Spike	P	0 - 30
2151974	Thiamethoxam	4.42	Spike	P	0 - 30
2151974	Tolfenpyrad	2.17	Spike	P	0 - 30
2151974	Triclopyr	9.64	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
 Batch ID: P377813

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151942	Color (true)	0.756	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P378053

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151966	Total Alkalinity	0.438	Sample	P	0 - 2.8

Reference Method: SM 2540 C-2011
Batch ID: P378370

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151960	TDS	0.976	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P378058

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151966	Fluoride	0.477	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
Batch ID: P377957

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151986	Organic Carbon	1.00	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2152000
Field Sample ID: G2NE1211

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	98.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	94.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	67.2	P	30 - 160
EPA 8321B	Diuron-d6	67.6	P	30 - 160
EPA 8321B	Endothall-d6	133	P	30 - 160
EPA 8321B	Endothall-d6	133	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	74.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	74.8	P	30 - 160
EPA 8321B	Ibuprofen-d3	88.2	P	30 - 160
EPA 8321B	Primidone-d5	87.1	P	30 - 160
EPA 8321B	Sucralose-d6	86.6	P	30 - 160
EPA 8321B	Sucralose-d6	86.6	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A97146

Included Lab Sample IDs: 2151985, 2151988

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A97147

Included Lab Sample IDs: 2151987, 2151990

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.1	P/P	90 - 110
O-Phosphate-P	99.5	99.6	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A97148

Included Lab Sample IDs: 2151985, 2151988

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A97170

Included Lab Sample IDs: 2151985, 2151988

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

Reference Method: SM 5310 B-2011

Run ID: A97198

Included Lab Sample IDs: 2151986, 2151989

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	99.4	P/P	90 - 110
Organic Carbon	98.8	98.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A97203

Included Lab Sample IDs: 2152000

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	66.1	60.2	P/P	60 - 160
Endothall	136	150	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A97204

Included Lab Sample IDs: 2152000

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	79.5	83.2	P/P	60 - 160
Glufosinate	89.5	75.7	P/P	60 - 160
Glyphosate	86.8	78.0	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A97211

Included Lab Sample IDs: 2151986, 2151989

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A97228

Included Lab Sample IDs: 2151985, 2151988

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	103	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A97228

Included Lab Sample IDs: 2151985, 2151988

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

Reference Method: EPA 8321B

Run ID: A97267

Included Lab Sample IDs: 2152000

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	97.6	97.1	P/P	50 - 150
Acetaminophen	98.4	99.7	P/P	60 - 160
Acetamiprid	100	102	P/P	50 - 150
Afidopyropen	107	99.9	P/P	50 - 150
Bentazon	99.2	90.4	P/P	50 - 160
Benzovindiflupyr	107	108	P/P	50 - 150
Carbamazepine	100	90.3	P/P	60 - 150
Clothianidin	113	119	P/P	60 - 150
Dinotefuran	97.0	108	P/P	50 - 150
Diuron	108	101	P/P	60 - 150
Fenuron	104	107	P/P	60 - 150
Fluridone	102	101	P/P	60 - 160
Hydrocodone	111	111	P/P	60 - 150
Ibuprofen	105	91.8	P/P	50 - 160
Imazapyr	107	107	P/P	50 - 150
Imidacloprid	97.8	103	P/P	60 - 150
Linuron	95.6	99.3	P/P	60 - 150
Mandestrobin	107	111	P/P	50 - 150
MCPP	89.8	96.7	P/P	50 - 150
Naproxen	100	98.6	P/P	50 - 160
Primidone	102	96.3	P/P	60 - 150
Pyraclostrobin	105	103	P/P	60 - 150
Thiamethoxam	108	114	P/P	50 - 150
Tolfenpyrad	107	100	P/P	60 - 150
Triclopyr	92.7	107	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A97273
Included Lab Sample IDs: 2152000

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	83.8	88.6	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A97292
Included Lab Sample IDs: 2151986, 2151989

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A97331
Included Lab Sample IDs: 2151986, 2151989

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	98.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A97349
Included Lab Sample IDs: 2151986, 2151989

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	102	P/P	90 - 110
Ammonia-N	102	103	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					3.48	
	Turbidity					1.62	
EPA 300.0 Rev. 2.1	Chloride	102	103	102		1.49	
	Sulfate	101	102			0.639	
EPA 350.1 Rev. 2.0	Ammonia-N	101	103	103			0.503
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.5	98.8	106			5.48
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	100	99.2			0.847
EPA 365.1 Rev. 2.0	Total-P	101	103	105			1.40
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.6	95.1	96.0			0.548
EPA 8321B	2,4-D	124	109	112			2.48
	Acesulfame K	126	41.2	41.2			0.0146
	Acetaminophen	102	84.2	85.7			1.84
	Acetamiprid	91.4	84.9	97.4			13.8
	Afidopyropen	88.8	95.7	93.6			2.26
	AMPA	85.5	95.4	96.6			1.24
	Bentazon	71.2	39.4	38.5			0.914
	Benzovindiflupyr	83.8	81.3	79.2			2.55
	Carbamazepine	100	80.2	77.8			3.04
	Clothianidin	89.4	103	94.7			8.11
	Dinotefuran	92.5	117	114			1.72
	Diuron	77.9	65.3	65.5			0.285
	Endothall	118	125	130			3.89
	Fenuron	100	81.8	83.4			1.97
	Fluridone	98.3	98.5	89.3			9.79
	Glufosinate	89.6	86.4	97.1			11.7
	Glyphosate	80.1	68.0	72.5			6.44
	Hydrocodone	96.1	106	87.8			18.9
	Ibuprofen	93.3	72.3	74.6			3.20
	Imazapyr	89.6	77.6	81.4			4.80
	Imidacloprid	97.1	150	142			4.58
	Linuron	73.6	64.2	65.6			2.16
	Mandestrobin	92.2	85.5	84.7			1.05
	MCPP	125	109	109			0.159
	Naproxen	87.4	69.7	62.3			11.1
	Primidone	92.7	89.9	87.5			2.76
	Pyraclostrobin	84.5	82.9	79.9			3.72
	Sucralose	80.9	82.5	82.3			0.220
	Thiamethoxam	97.8	136	142			4.42
	Tolfenpyrad	59.8	45.7	46.7			2.17
	Triclopyr	81.4	80.7	88.9			9.64
SM 2120 B-2011	Color (true)	99.2				0.756	
SM 2320 B-2011	Total Alkalinity	104				0.438	
SM 2540 C-2011	TDS					0.976	
SM 4500 F-C-2011	Fluoride	97.7	100	99.5			0.477
SM 5310 B-2011	Organic Carbon	98.6	99.2	97.8			1.00

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2151985, 2151988
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2151985, 2151988
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2151985, 2151988
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2151986, 2151989

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2151986, 2151989
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2151986, 2151989
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2151986, 2151989
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2151987, 2151990
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2152000
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2152000
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2151985, 2151988
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2151985, 2151988
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2151985, 2151988
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2151985, 2151988
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2151985, 2151988
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2151986, 2151989

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	01/28/2020			01/28/2020 15:30	Yen Ta	2151985, 2151988
EPA 300.0 Rev. 2.1	01/28/2020			01/31/2020 08:15	Lipi Saha	2151985
	01/28/2020			01/31/2020 08:27	Lipi Saha	2151988
EPA 350.1 Rev. 2.0	01/28/2020			02/04/2020 14:02	Ping Hua	2151989
	01/28/2020			02/04/2020 14:14	Ping Hua	2151986
EPA 351.2 Rev. 2.0	01/28/2020	02/04/2020 12:30	Jhamieka S. Greenwood	02/05/2020 11:57	Jhamieka S. Greenwood	2151986
	01/28/2020	02/04/2020 12:30	Jhamieka S. Greenwood	02/05/2020 11:59	Jhamieka S. Greenwood	2151989
EPA 353.2 Rev. 2.0	01/28/2020			01/30/2020 10:56	Beverly Y. Sanders	2151986
	01/28/2020			01/30/2020 10:57	Beverly Y. Sanders	2151989
EPA 365.1 Rev. 2.0	01/28/2020	01/31/2020 14:34	Yen Ta	02/03/2020 15:41	Benjamin T. Nordmann	2151986
	01/28/2020	01/31/2020 14:34	Yen Ta	02/03/2020 15:42	Benjamin T. Nordmann	2151989
EPA 365.1 Rev. 2.0 dissolved	01/28/2020			01/28/2020 16:46	Carlos Miranda	2151987
	01/28/2020			01/28/2020 17:07	Carlos Miranda	2151990
EPA 8321B	01/28/2020	01/28/2020 11:30	Rebecca Ware	01/28/2020 13:50	Rebecca Ware	2152000
	01/28/2020	01/28/2020 11:30	Rebecca Ware	01/29/2020 11:00	Rebecca Ware	2152000
	01/28/2020	01/28/2020 11:30	Rebecca Ware	01/30/2020 05:20	Rebecca Ware	2152000
	01/28/2020	01/29/2020 10:00	Hoor Shaik	02/01/2020 02:03	Juyoung Kim	2152000
SM 2120 B-2011	01/28/2020			01/28/2020 16:28	Madeline Funaro	2151985
	01/28/2020			01/28/2020 16:29	Madeline Funaro	2151988
SM 2320 B-2011	01/28/2020			01/30/2020 13:54	Dale L. Simmons	2151985
	01/28/2020			01/30/2020 14:06	Dale L. Simmons	2151988
SM 2540 C-2011	01/28/2020			01/30/2020 14:40	Sima Feizi	2151985, 2151988
SM 2540 D-2011	01/28/2020			01/30/2020 14:40	Sima Feizi	2151985, 2151988
SM 4500 F-C-2011	01/28/2020			01/30/2020 13:54	Dale L. Simmons	2151985
	01/28/2020			01/30/2020 14:06	Dale L. Simmons	2151988
SM 5310 B-2011	01/28/2020			01/29/2020 23:08	Madeline Funaro	2151986
	01/28/2020			01/30/2020 04:30	Madeline Funaro	2151989