

Chemical Analysis Report

SW-DIST-2020-01-14-01

Florida Department of Environmental Protection
Central Laboratory
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DOH Accreditation E31780

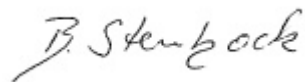
Event Description: **Polk 1 of 2**
Request ID: **RQ-2020-01-13-19**
Customer: **SW-DIST**
Project ID: **SMP**

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Date Certified: 30-JAN-2020 17:24



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 Hancock

Collection Date/Time: 01/13/2020 11:20

Field ID: TPLKHAN01L

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2148871	EPA 180.1 Rev. 2.0	Turbidity	20	A	NTU	P377124	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P377244	
		Sulfate	4.5		mg SO4/L	P377245	
	SM 2120 B-2011	Color (true)	61	A	PCU	P377118	
	SM 2320 B-2011	Total Alkalinity	65		mg CaCO3/L	P377366	
	SM 2540 C-2011	TDS	117		mg/L	P377415	
	SM 2540 D-2011	TSS	29		mg/L	P377205	
	SM 4500 F-C-2011	Fluoride	0.38		mg F/L	P377370	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P377227	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.7		mg N/L	P377277	MS
2148873	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P377414	
	EPA 365.1 Rev. 2.0	Total-P	0.33		mg P/L	P377462	
	SM 5310 B-2011	Organic Carbon	17		mg C/L	P377259	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.016		mg P/L	P377107	
	EPA 8321B	2,4-D	0.067		ug/L	P377151	
2148879		Acesulfame K**	0.10	U	ug/L	P377170	
		AMPA**	0.10	U	ug/L	P377170	
		Sucralose**	0.73		ug/L	P377170	
		Acetaminophen**	0.0080	U	ug/L	P377151	
		Acetamiprid**	0.0020	U	ug/L	P377151	
		Endothall**	0.25	U	ug/L	P377170	
		Glufosinate**	0.10	U	ug/L	P377170	
		Glyphosate**	0.10	U	ug/L	P377170	
		Afidopyropen**	0.0020	UJ	ug/L	P377151	
		Bentazon	0.0012	I	ug/L	P377151	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P377151	
		Carbamazepine**	9.4E-04	I	ug/L	P377151	
		Clothianidin**	0.0020	U	ug/L	P377151	
		Dinotefuran**	0.0020	U	ug/L	P377151	
		Diuron	0.0020	U	ug/L	P377151	
		Fenuron	0.020	I	ug/L	P377151	
		Fluridone**	0.0024	I	ug/L	P377151	
		Imazapyr**	0.020		ug/L	P377151	
		Hydrocodone**	0.0020	U	ug/L	P377151	
		Ibuprofen**	0.020	U	ug/L	P377151	
		Imidacloprid	0.0020	U	ug/L	P377151	MS
		Linuron	0.0040	U	ug/L	P377151	
		Mandestrobin**	0.0020	UJ	ug/L	P377151	
		MCP	0.0049	I	ug/L	P377151	
		Naproxen**	0.0080	U	ug/L	P377151	
		Primidone**	0.0043	I	ug/L	P377151	
		Pyraclostrobin**	0.0020	U	ug/L	P377151	
		Thiamethoxam**	0.0020	U	ug/L	P377151	MS

Field ID: TPLKHAN01L

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2148879	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P377151	
		Triclopyr**	0.0040	U	ug/L	P377151	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low 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. MS accuracy and precision for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Howell Branch in Beasville Park

Collection Date/Time: 01/13/2020 10:15

Field ID: G2SW0115

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2148872	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P377124	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P377244	
		Sulfate	24		mg SO4/L	P377245	
	SM 2120 B-2011	Color (true)	36		PCU	P377117	
	SM 2320 B-2011	Total Alkalinity	158		mg CaCO3/L	P377366	
	SM 2540 C-2011	TDS	268		mg/L	P377415	
	SM 2540 D-2011	TSS	2	I	mg/L	P377205	
	SM 4500 F-C-2011	Fluoride	0.58		mg F/L	P377370	
2148874	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P377227	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P377277	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.0		mg N/L	P377414	
	EPA 365.1 Rev. 2.0	Total-P	1.2		mg P/L	P377462	
	SM 5310 B-2011	Organic Carbon	6.6		mg C/L	P377259	
2148876	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	1.0		mg P/L	P377107	
2148880	EPA 8321B	2,4-D	0.0020	U	ug/L	P377151	
		Acesulfame K**	0.10	U	ug/L	P377170	
		AMPA**	2.7		ug/L	P377170	
		Sucralose**	0.81		ug/L	P377170	
		Acetaminophen**	0.0080	U	ug/L	P377151	
		Acetamiprid**	0.0020	U	ug/L	P377151	
		Endothall**	0.25	U	ug/L	P377170	
		Glufosinate**	0.10	U	ug/L	P377170	
		Glyphosate**	1.6		ug/L	P377170	
		Afidopyropen**	0.0020	UJ	ug/L	P377151	
		Bentazon	0.0038		ug/L	P377151	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P377151	
		Carbamazepine**	0.0023	I	ug/L	P377151	
		Clothianidin**	0.013		ug/L	P377151	
		Dinotefuran**	0.021		ug/L	P377151	
		Diuron	0.0044	I	ug/L	P377151	
		Fenuron	0.016	U	ug/L	P377151	
		Fluridone**	0.011		ug/L	P377151	
		Imazapyr**	0.056		ug/L	P377151	
		Hydrocodone**	0.0020	U	ug/L	P377151	
		Ibuprofen**	0.020	U	ug/L	P377151	
		Imidacloprid	0.014		ug/L	P377151	MS
		Linuron	0.0040	U	ug/L	P377151	
		Mandestrobin**	0.0020	UJ	ug/L	P377151	
		MCP	0.0020	U	ug/L	P377151	
		Naproxen**	0.0080	U	ug/L	P377151	
		Primidone**	0.0078	I	ug/L	P377151	
		Pyraclostrobin**	0.033		ug/L	P377151	
		Thiamethoxam**	0.053		ug/L	P377151	MS

Field ID: G2SW0115

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2148880	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P377151	
		Triclopyr**	0.0040	U	ug/L	P377151	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low 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. MS accuracy and precision for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377124

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377244

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377245

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377227

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377277

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377414

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377462

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377107

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

Reference Method: EPA 8321B
Batch ID: P377151

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P377151

Component	Result	Code	Units
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: EPA 8321B
Batch ID: P377170

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 2120 B-2011
Batch ID: P377117

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P377118

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P377366

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: P377415

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P377205

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P377370

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P377259

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: P377244

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377245

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377227

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: P377277

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	107		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377414

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	97.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377462

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: P377107

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.0		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P377151

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	140		P	40 - 160
Acetaminophen	95.8		P	30 - 160
Acetamiprid	100		P	40 - 160
Afidopyropen	92.1		P	40 - 160
Bentazon	72.9		P	30 - 160
Benzovindiflupyr	93.4		P	40 - 160
Carbamazepine	105		P	40 - 160
Clothianidin	112		P	40 - 160
Dinotefuran	102		P	40 - 160
Diuron	81.7		P	40 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P377151

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	109		P	40 - 160
Fluridone	104		P	40 - 160
Hydrocodone	102		P	40 - 160
Ibuprofen	87.0		P	30 - 160
Imazapyr	88.6		P	40 - 160
Imidacloprid	103		P	40 - 160
Linuron	81.9		P	40 - 160
Mandestrobin	94.4		P	40 - 160
MCPP	125		P	40 - 160
Naproxen	79.7		P	40 - 160
Primidone	96.6		P	40 - 160
Pyraclostrobin	86.2		P	30 - 160
Thiamethoxam	104		P	40 - 160
Tolfenpyrad	53.8		P	40 - 160
Triclopyr	77.2		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P377170

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	103		P	40 - 150
AMPA	96.4		P	40 - 150
Endothall	85.5		P	40 - 150
Glufosinate	99.1		P	40 - 150
Glyphosate	104		P	40 - 140
Sucralose	90.9		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P377117

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.0		P	85 - 115

Reference Method: SM 2120 B-2011
Batch ID: P377118

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.6		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P377366

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

Reference Method: SM 4500 F-C-2011
Batch ID: P377370

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.4		P	92 - 103

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P377259

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P377244

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2148651	Chloride	100		P	90 - 110
2148871	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P377245

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2148651	Sulfate	99.8		P	90 - 110
2148871	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P377227

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2148884	Ammonia-N	102	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P377277

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2148889	Kjeldahl Nitrogen	105	111	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P377414

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2148873	NO2NO3-N	97.0	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P377462

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2148884	Total-P	107	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P377107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2148751	O-Phosphate-P	96.8	98.0	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P377151

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2148853	2,4-D	125	141	P/P	40 - 160
2148853	Acetaminophen	105	107	P/P	30 - 160
2148853	Acetamiprid	102	120	P/P	40 - 160
2148853	Afidopyropen	102	112	P/P	40 - 160
2148853	Benzovindiflupyr	88.1	94.1	P/P	40 - 160
2148853	Carbamazepine	98.4	103	P/P	40 - 160
2148853	Clothianidin	111	121	P/P	40 - 160
2148853	Dinotefuran	121	135	P/P	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P377151

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2148853	Diuron	74.3	78.0	P/P	40 - 160
2148853	Fenuron	97.8	101	P/P	40 - 160
2148853	Fluridone	104	106	P/P	40 - 160
2148853	Hydrocodone	123	124	P/P	40 - 160
2148853	Ibuprofen	83.8	84.3	P/P	30 - 160
2148853	Imazapyr	101	103	P/P	40 - 160
2148853	Imidacloprid	164	176	F/F	40 - 160
2148853	Linuron	81.0	85.1	P/P	40 - 160
2148853	Mandestrobin	93.7	97.4	P/P	40 - 160
2148853	MCP	119	128	P/P	40 - 160
2148853	Naproxen	83.0	99.7	P/P	40 - 160
2148853	Primidone	106	119	P/P	40 - 160
2148853	Pyraclostrobin	86.9	92.4	P/P	30 - 160
2148853	Thiamethoxam	154	166	P/F	40 - 160
2148853	Tolfenpyrad	56.1	61.3	P/P	40 - 160
2148853	Triclopyr	77.5	98.5	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P377170

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2148567	Acesulfame K	57.7	59.1	P/P	40 - 150
2148567	AMPA	88.0	87.8	P/P	40 - 150
2148567	Endothall	115	125	P/P	40 - 150
2148567	Glufosinate	83.8	76.0	P/P	40 - 150
2148567	Glyphosate	76.8	84.8	P/P	40 - 140
2148567	Sucralose	96.1	97.0	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P377370

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149335	Fluoride	98.5	98.5	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P377259

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2148799	Organic Carbon	98.2	97.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377124

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148871	Turbidity	3.54	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377244

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148651	Chloride	0.279	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377227

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148884	Ammonia-N	1.19	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377277

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148889	Kjeldahl Nitrogen	4.77	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377414

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148873	NO2NO3-N	1.04	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377462

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148884	Total-P	1.32	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148751	O-Phosphate-P	1.09	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P377151

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148853	2,4-D	11.6	Spike	P	0 - 30
2148853	Acetaminophen	2.36	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P377151

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148853	Acetamiprid	16.1	Spike	P	0 - 30
2148853	Afidopyropen	9.09	Spike	P	0 - 30
2148853	Benzovindiflupyr	6.60	Spike	P	0 - 30
2148853	Carbamazepine	4.44	Spike	P	0 - 30
2148853	Clothianidin	8.16	Spike	P	0 - 30
2148853	Dinotefuran	9.29	Spike	P	0 - 30
2148853	Diuron	4.05	Spike	P	0 - 30
2148853	Fenuron	3.19	Spike	P	0 - 30
2148853	Fluridone	1.59	Spike	P	0 - 30
2148853	Hydrocodone	0.363	Spike	P	0 - 30
2148853	Ibuprofen	0.608	Spike	P	0 - 30
2148853	Imazapyr	1.39	Spike	P	0 - 30
2148853	Imidacloprid	5.85	Spike	P	0 - 30
2148853	Linuron	4.99	Spike	P	0 - 30
2148853	Mandestrobin	3.91	Spike	P	0 - 30
2148853	MCPP	7.42	Spike	P	0 - 30
2148853	Naproxen	18.3	Spike	P	0 - 30
2148853	Primidone	11.7	Spike	P	0 - 30
2148853	Pyraclostrobin	6.13	Spike	P	0 - 30
2148853	Thiamethoxam	7.24	Spike	P	0 - 30
2148853	Tolfenpyrad	8.91	Spike	P	0 - 30
2148853	Triclopyr	23.9	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P377170

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148567	Acesulfame K	2.53	Spike	P	0 - 30
2148567	AMPA	0.188	Spike	P	0 - 30
2148567	Endothall	8.10	Spike	P	0 - 30
2148567	Glufosinate	9.77	Spike	P	0 - 30
2148567	Glyphosate	7.79	Spike	P	0 - 30
2148567	Sucralose	0.884	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P377117

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148798	Color (true)	2.92	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P377118

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148871	Color (true)	0.638	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P377366

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149335	Total Alkalinity	0.767	Sample	P	0 - 2.8

Reference Method: SM 2540 C-2011
Batch ID: P377415

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148651	TDS	2.71	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P377370

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149335	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
Batch ID: P377259

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2148799	Organic Carbon	0.535	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2148879
Field Sample ID: TPLKHAN01L

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	79.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	69.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	75.8	P	30 - 160
EPA 8321B	Diuron-d6	56.9	P	30 - 160
EPA 8321B	Endothall-d6	124	P	30 - 160
EPA 8321B	Endothall-d6	124	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	85.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	85.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	49.1	P	30 - 160
EPA 8321B	Primidone-d5	86.3	P	30 - 160
EPA 8321B	Sucralose-d6	100	P	30 - 160
EPA 8321B	Sucralose-d6	100	P	30 - 160

Lab Sample ID: 2148880
Field Sample ID: G2SW0115

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	114	P	30 - 160
EPA 8321B	Acetaminophen-d4	106	P	30 - 160
EPA 8321B	Carbamazepine-d10	113	P	30 - 160
EPA 8321B	Diuron-d6	90.2	P	30 - 160
EPA 8321B	Endothall-d6	152	P	30 - 160
EPA 8321B	Endothall-d6	152	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	93.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	93.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	97.7	P	30 - 160
EPA 8321B	Primidone-d5	109	P	30 - 160
EPA 8321B	Sucralose-d6	107	P	30 - 160
EPA 8321B	Sucralose-d6	107	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A96853

Included Lab Sample IDs: 2148871, 2148872

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110
Chloride	99.8	100	P/P	90 - 110
Sulfate	100	101	P/P	90 - 110
Sulfate	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A96878

Included Lab Sample IDs: 2148875, 2148876

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.1	96.7	P/P	90 - 110
O-Phosphate-P	98.7	98.1	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A96880

Included Lab Sample IDs: 2148871, 2148872

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	90 - 115
Color (true)	101	102	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A96881

Included Lab Sample IDs: 2148871, 2148872

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A96907

Included Lab Sample IDs: 2148873, 2148874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.3	102	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A96933

Included Lab Sample IDs: 2148873, 2148874

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A96974

Included Lab Sample IDs: 2148873, 2148874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	95.0	P/P	90 - 110
NO2NO3-N	97.0	98.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A96976

Included Lab Sample IDs: 2148871, 2148872

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

Reference Method: SM 4500 F-C-2011

Run ID: A96976

Included Lab Sample IDs: 2148871, 2148872

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

Reference Method: EPA 8321B

Run ID: A96999

Included Lab Sample IDs: 2148879, 2148880

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	94.9	80.7	P/P	60 - 160
Glufosinate	86.9	92.3	P/P	60 - 160
Glyphosate	85.7	96.4	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A97000

Included Lab Sample IDs: 2148879, 2148880

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	115	82.9	P/P	60 - 160
Endothall	89.1	106	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A97004

Included Lab Sample IDs: 2148873, 2148874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	98.9	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A97022

Included Lab Sample IDs: 2148879, 2148880

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	99.7	97.2	P/P	50 - 150
Acetaminophen	114	109	P/P	60 - 160
Acetamiprid	110	111	P/P	50 - 150
Afidopyropen	93.2	92.3	P/P	50 - 150
Bentazon	103	105	P/P	50 - 160
Benzovindiflupyr	111	109	P/P	50 - 150
Carbamazepine	110	104	P/P	60 - 150
Clothianidin	101	121	P/P	60 - 150
Dinotefuran	111	118	P/P	50 - 150
Diuron	115	116	P/P	60 - 150
Fenuron	105	109	P/P	60 - 150
Fluridone	113	119	P/P	60 - 160
Hydrocodone	99.6	97.9	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A97022

Included Lab Sample IDs: 2148879, 2148880

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ibuprofen	104	98.9	P/P	50 - 160
Imazapyr	93.1	104	P/P	50 - 150
Imidacloprid	101	113	P/P	60 - 150
Linuron	116	84.3	P/P	60 - 150
Mandestrobin	106	111	P/P	50 - 150
MCPP	93.6	98.3	P/P	50 - 150
Naproxen	79.3	105	P/P	50 - 160
Primidone	112	107	P/P	60 - 150
Pyraclostrobin	104	102	P/P	60 - 150
Thiamethoxam	96.8	107	P/P	50 - 150
Tolfenpyrad	103	99.7	P/P	60 - 150
Triclopyr	98.7	105	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97092

Included Lab Sample IDs: 2148873, 2148874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.6	101	P/P	90 - 110
Total-P	98.3	97.8	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A97109

Included Lab Sample IDs: 2148879, 2148880

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	94.2	112	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		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					3.54	
EPA 300.0 Rev. 2.1	Chloride	99.8	100	100		0.279	
	Sulfate	99.7	99.8	100			
EPA 350.1 Rev. 2.0	Ammonia-N	101	104	102			1.19
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	105	111			4.77
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	97.0	97.0	96.0			1.04
EPA 365.1 Rev. 2.0	Total-P	104	107	106			1.32
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.0	96.8	98.0			1.09
EPA 8321B	2,4-D	140	125	141			11.6
	Acesulfame K	103	57.7	59.1			2.53
	Acetaminophen	95.8	105	107			2.36
	Acetamiprid	100	102	120			16.1
	Afidopyropen	92.1	102	112			9.09
	AMPA	96.4	88.0	87.8			0.188
	Bentazon	72.9					
	Benzovindiflupyr	93.4	88.1	94.1			6.60
	Carbamazepine	105	98.4	103			4.44
	Clothianidin	112	111	121			8.16
	Dinotefuran	102	121	135			9.29
	Diuron	81.7	74.3	78.0			4.05
	Endothall	85.5	115	125			8.10
	Fenuron	109	97.8	101			3.19
	Fluridone	104	104	106			1.59
	Glufosinate	99.1	83.8	76.0			9.77
	Glyphosate	104	76.8	84.8			7.79
	Hydrocodone	102	123	124			0.363
	Ibuprofen	87.0	83.8	84.3			0.608
	Imazapyr	88.6	101	103			1.39
	Imidacloprid	103	164	176			5.85
	Linuron	81.9	81.0	85.1			4.99
	Mandestrobin	94.4	93.7	97.4			3.91
	MCPP	125	119	128			7.42
	Naproxen	79.7	83.0	99.7			18.3
	Primidone	96.6	106	119			11.7
	Pyraclostrobin	86.2	86.9	92.4			6.13
	Sucralose	90.9	96.1	97.0			0.884
	Thiamethoxam	104	154	166			7.24
	Tolfenpyrad	53.8	56.1	61.3			8.91
	Triclopyr	77.2	77.5	98.5			23.9
SM 2120 B-2011	Color (true)	99.0				2.92	
	Color (true)	99.6				0.638	
SM 2320 B-2011	Total Alkalinity	104				0.767	
SM 2540 C-2011	TDS					2.71	
SM 4500 F-C-2011	Fluoride	99.4	98.5	98.5			0.0
SM 5310 B-2011	Organic Carbon	97.6	98.2	97.4			0.535

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2148871, 2148872
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2148871, 2148872

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2148871, 2148872
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2148873, 2148874
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2148873, 2148874
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2148873, 2148874
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2148873, 2148874
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2148875, 2148876
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2148879, 2148880
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2148879, 2148880
SM 2120 B-2011 / E31780	True Color measured at 450 nm (not valid for NPDES monitoring)	2148871, 2148872
SM 2320 B-2011 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2148871, 2148872
SM 2540 C-2011 / E31780	Total Dissolved Solids in aqueous matrices	2148871, 2148872
SM 2540 D-2011 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2148871, 2148872
SM 4500 F-C-2011 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2148871, 2148872
SM 5310 B-2011 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2148873, 2148874

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	01/14/2020			01/14/2020 16:34	Yen Ta	2148871, 2148872
EPA 300.0 Rev. 2.1	01/14/2020			01/15/2020 16:10	Lipi Saha	2148871
	01/14/2020			01/15/2020 20:34	Lipi Saha	2148872
EPA 350.1 Rev. 2.0	01/14/2020			01/15/2020 13:46	Ping Hua	2148873
	01/14/2020			01/15/2020 13:47	Ping Hua	2148874
EPA 351.2 Rev. 2.0	01/14/2020	01/16/2020 13:40	Jhamieka S. Greenwood	01/21/2020 12:59	Virginia P. Brown	2148873
	01/14/2020	01/16/2020 13:40	Jhamieka S. Greenwood	01/21/2020 13:01	Virginia P. Brown	2148874
EPA 353.2 Rev. 2.0	01/14/2020			01/17/2020 10:45	Beverly Y. Sanders	2148873
	01/14/2020			01/17/2020 12:52	Beverly Y. Sanders	2148874
EPA 365.1 Rev. 2.0	01/14/2020	01/21/2020 14:26	Yen Ta	01/22/2020 11:38	Benjamin T. Nordmann	2148873
	01/14/2020	01/21/2020 14:26	Yen Ta	01/22/2020 12:57	Benjamin T. Nordmann	2148874
EPA 365.1 Rev. 2.0 dissolved	01/14/2020			01/14/2020 17:18	Julia Storbeck	2148875
	01/14/2020			01/14/2020 17:26	Julia Storbeck	2148876
EPA 8321B	01/14/2020	01/15/2020 14:30	Rebecca Ware	01/15/2020 20:03	Rebecca Ware	2148879
	01/14/2020	01/15/2020 14:30	Rebecca Ware	01/15/2020 20:16	Rebecca Ware	2148880
	01/14/2020	01/15/2020 14:30	Rebecca Ware	01/16/2020 13:12	Rebecca Ware	2148879
	01/14/2020	01/15/2020 14:30	Rebecca Ware	01/16/2020 13:22	Rebecca Ware	2148880
	01/14/2020	01/15/2020 14:30	Rebecca Ware	01/23/2020 14:37	Rebecca Ware	2148879
	01/14/2020	01/15/2020 14:30	Rebecca Ware	01/23/2020 14:48	Rebecca Ware	2148880
	01/14/2020	01/16/2020 10:00	Hoor Shaik	01/18/2020 01:12	Juyoung Kim	2148879
	01/14/2020	01/16/2020 10:00	Hoor Shaik	01/18/2020 01:47	Juyoung Kim	2148880
SM 2120 B-2011	01/14/2020			01/14/2020 17:18	Madeline Funaro	2148872
	01/14/2020			01/14/2020 17:26	Madeline Funaro	2148871
SM 2320 B-2011	01/14/2020			01/17/2020 00:59	Dale L. Simmons	2148871
	01/14/2020			01/17/2020 01:12	Dale L. Simmons	2148872
SM 2540 C-2011	01/14/2020			01/14/2020 17:25	Yijie Li	2148871, 2148872
SM 2540 D-2011	01/14/2020			01/14/2020 17:25	Yijie Li	2148871, 2148872
SM 4500 F-C-2011	01/14/2020			01/17/2020 00:59	Dale L. Simmons	2148871
	01/14/2020			01/17/2020 01:12	Dale L. Simmons	2148872
SM 5310 B-2011	01/14/2020			01/16/2020 04:09	Madeline Funaro	2148873
	01/14/2020			01/16/2020 04:22	Madeline Funaro	2148874