

Chemical Analysis Report

CEN-DIST-2020-01-16-01

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

Event Description: **Lake Weohyakapka**
Request ID: **RQ-2020-01-13-24**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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3319 Maguire Blvd., Suite 232
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 05-FEB-2020 15:09

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: Lake Weohyakapka @ Center

Collection Date/Time: 01/15/2020 11:35

Field ID: G4CE0171

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2149893	EPA 180.1 Rev. 2.0	Turbidity	5.0		NTU	P377402	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P377408	
		Sulfate	15		mg SO4/L	P377410	
	SM 2120 B-2011	Color (true)	43		PCU	P377324	
	SM 2320 B-2011	Total Alkalinity	8.8		mg CaCO3/L	P377697	
	SM 2540 C-2011	TDS	85		mg/L	P377594	
	SM 2540 D-2011	TSS	7	I	mg/L	P377446	
	SM 4500 F-C-2011	Fluoride	0.069	I	mg F/L	P377702	
2149894	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P377376	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P377598	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P377519	
	EPA 365.1 Rev. 2.0	Total-P	0.034		mg P/L	P377631	
	SM 5310 B-2011	Organic Carbon	9.5		mg C/L	P377538	
2149895	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P377296	
2149897	EPA 8321B	2,4-D	0.0020	U	ug/L	P377352	
		Acesulfame K**	0.10	U	ug/L	P377313	MS
		AMPA**	0.10	U	ug/L	P377313	
		Sucralose**	0.045		ug/L	P377313	
		Acetaminophen**	0.0080	U	ug/L	P377352	
		Acetamiprid**	0.0020	U	ug/L	P377352	
		Endothall**	0.25	U	ug/L	P377313	
		Glufosinate**	0.10	U	ug/L	P377313	
		Glyphosate**	0.10	U	ug/L	P377313	
		Afidopyropen**	0.0020	UJ	ug/L	P377352	
		Bentazon	8.0E-04	U	ug/L	P377352	MS
		Benzovindiflupyr**	0.0020	UJ	ug/L	P377352	
		Carbamazepine**	8.0E-04	U	ug/L	P377352	
		Clothianidin**	0.0020	U	ug/L	P377352	
		Dinotefuran**	0.0020	U	ug/L	P377352	
		Diuron	0.0020	U	ug/L	P377352	
		Fenuron	0.016	U	ug/L	P377352	
		Fluridone**	0.022		ug/L	P377352	
		Imazapyr**	0.0053	I	ug/L	P377352	
		Hydrocodone**	0.0020	U	ug/L	P377352	
		Ibuprofen**	0.020	U	ug/L	P377352	
		Imidacloprid	0.0020	U	ug/L	P377352	
		Linuron	0.0040	U	ug/L	P377352	
		Mandestrobin**	0.0020	UJ	ug/L	P377352	
		MCPD	0.0020	U	ug/L	P377352	
		Naproxen**	0.0080	U	ug/L	P377352	
		Primidone**	0.0040	U	ug/L	P377352	
		Pyraclostrobin**	0.0020	U	ug/L	P377352	
		Thiamethoxam**	0.0020	U	ug/L	P377352	

Field ID: G4CE0171

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2149897	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P377352	
		Triclopyr**	0.0040	U	ug/L	P377352	

Ref. Method and Comment:

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

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for imazapyr and 2,4-D 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: P377402

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377408

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377410

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377376

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377598

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377519

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377631

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377296

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

Reference Method: EPA 8321B
Batch ID: P377313

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P377313

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

Reference Method: EPA 8321B
Batch ID: P377352

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: P377324

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P377697

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

Reference Method: SM 2540 C-2011
Batch ID: P377594

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P377446

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P377702

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P377538

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: P377408

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377410

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377376

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.9		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377598

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377519

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377631

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377296

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.5		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P377313

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	87.2		P	40 - 150
AMPA	85.0		P	40 - 150
Endothall	131		P	40 - 150
Glufosinate	93.7		P	40 - 150
Glyphosate	99.1		P	40 - 140
Sucralose	92.4		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P377352

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	121		P	40 - 160
Acetaminophen	101		P	30 - 160
Acetamiprid	97.0		P	40 - 160
Afidopyropen	110		P	40 - 160
Bentazon	63.5		P	30 - 160
Benzovindiflupyr	80.3		P	40 - 160
Carbamazepine	101		P	40 - 160
Clothianidin	99.1		P	40 - 160
Dinotefuran	97.2		P	40 - 160
Diuron	88.7		P	40 - 160
Fenuron	95.0		P	40 - 160
Fluridone	99.2		P	40 - 160
Hydrocodone	97.5		P	40 - 160
Ibuprofen	90.2		P	30 - 160
Imazapyr	80.5		P	40 - 160
Imidacloprid	104		P	40 - 160
Linuron	68.7		P	40 - 160
Mandestrobin	91.9		P	40 - 160
MCPP	132		P	40 - 160
Naproxen	76.0		P	40 - 160
Primidone	90.2		P	40 - 160
Pyraclostrobin	71.5		P	30 - 160
Thiamethoxam	96.0		P	40 - 160
Tolfenpyrad	45.2		P	40 - 160
Triclopyr	114		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P377324

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P377697

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P377702

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.1		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P377538

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377408

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149739	Chloride	102		P	90 - 110
2149772	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377410

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149739	Sulfate	101		P	90 - 110
2149772	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377376

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149780	Ammonia-N	104	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377598

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149780	Kjeldahl Nitrogen	102	111	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377519

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149784	NO2NO3-N	95.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377631

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149779	Total-P	104	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377296

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149901	O-Phosphate-P	94.6	96.4	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P377313

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149642	Acesulfame K	37.8	38.7	F/F	40 - 150
2149642	AMPA	92.2	95.2	P/P	40 - 150
2149642	Endothall	138	140	P/P	40 - 150
2149642	Glufosinate	88.7	101	P/P	40 - 150
2149642	Glyphosate	91.1	83.8	P/P	40 - 140
2149642	Sucralose	87.8	93.9	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P377352

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149762	Acetaminophen	96.4	101	P/P	30 - 160
2149762	Acetamiprid	98.2	103	P/P	40 - 160
2149762	Afidopyropen	64.6	54.8	P/P	40 - 160
2149762	Bentazon	29.4	31.3	F/P	30 - 160
2149762	Benzovindiflupyr	66.6	67.8	P/P	40 - 160
2149762	Carbamazepine	77.7	84.4	P/P	40 - 160
2149762	Clothianidin	106	103	P/P	40 - 160
2149762	Dinotefuran	127	118	P/P	40 - 160
2149762	Diuron	68.2	67.9	P/P	40 - 160
2149762	Fenuron	81.4	85.1	P/P	40 - 160
2149762	Fluridone	89.6	90.8	P/P	40 - 160
2149762	Hydrocodone	79.9	64.8	P/P	40 - 160
2149762	Ibuprofen	70.6	71.3	P/P	30 - 160
2149762	Imidacloprid	156	154	P/P	40 - 160
2149762	Linuron	62.5	63.2	P/P	40 - 160
2149762	Mandestrobin	83.2	83.0	P/P	40 - 160
2149762	MCCP	100	104	P/P	40 - 160
2149762	Naproxen	65.1	71.0	P/P	40 - 160
2149762	Primidone	94.1	97.0	P/P	40 - 160
2149762	Pyraclostrobin	68.0	69.0	P/P	30 - 160
2149762	Thiamethoxam	146	145	P/P	40 - 160
2149762	Tolfenpyrad	41.8	44.1	P/P	40 - 160
2149762	Triclopyr	75.6	91.3	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
 Batch ID: P377702

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150023	Fluoride	98.0	98.0	P/P	89 - 106

Reference Method: SM 5310 B-2011
 Batch ID: P377538

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149779	Organic Carbon	106	105	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377402

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149771	Turbidity	0.464	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377408

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149739	Chloride	1.19	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377410

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149739	Sulfate	0.905	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377376

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149780	Ammonia-N	0.134	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377598

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149780	Kjeldahl Nitrogen	7.29	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377519

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149784	NO2NO3-N	0.222	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377631

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149779	Total-P	1.76	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377296

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149901	O-Phosphate-P	1.64	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P377313

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149642	Acesulfame K	2.14	Spike	P	0 - 30
2149642	AMPA	3.11	Spike	P	0 - 30
2149642	Endothall	1.67	Spike	P	0 - 30
2149642	Glufosinate	13.1	Spike	P	0 - 30
2149642	Glyphosate	8.40	Spike	P	0 - 30
2149642	Sucralose	6.36	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P377352

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149762	2,4-D	9.45	Spike	P	0 - 30
2149762	Acetaminophen	4.81	Spike	P	0 - 30
2149762	Acetamiprid	4.49	Spike	P	0 - 30
2149762	Afidopyropen	16.4	Spike	P	0 - 30
2149762	Bentazon	6.15	Spike	P	0 - 30
2149762	Benzovindiflupyr	1.79	Spike	P	0 - 30
2149762	Carbamazepine	8.18	Spike	P	0 - 30
2149762	Clothianidin	2.92	Spike	P	0 - 30
2149762	Dinotefuran	7.10	Spike	P	0 - 30
2149762	Diuron	0.487	Spike	P	0 - 30
2149762	Fenuron	4.35	Spike	P	0 - 30
2149762	Fluridone	1.29	Spike	P	0 - 30
2149762	Hydrocodone	20.9	Spike	P	0 - 30
2149762	Ibuprofen	1.01	Spike	P	0 - 30
2149762	Imazapyr	0.322	Spike	P	0 - 30
2149762	Imidacloprid	1.63	Spike	P	0 - 30
2149762	Linuron	1.11	Spike	P	0 - 30
2149762	Mandestrobin	0.332	Spike	P	0 - 30
2149762	MCPP	4.00	Spike	P	0 - 30
2149762	Naproxen	8.66	Spike	P	0 - 30
2149762	Primidone	3.06	Spike	P	0 - 30
2149762	Pyraclostrobin	1.37	Spike	P	0 - 30
2149762	Thiamethoxam	0.518	Spike	P	0 - 30
2149762	Tolfenpyrad	5.32	Spike	P	0 - 30
2149762	Triclopyr	18.8	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P377324

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149772	Color (true)	2.60	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P377697

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150023	Total Alkalinity	0.297	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P377594

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149843	TDS	2.10	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P377702

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150023	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
Batch ID: P377538

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149779	Organic Carbon	0.423	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2149897

Field Sample ID: G4CE0171

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	96.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	94.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	91.7	P	30 - 160
EPA 8321B	Diuron-d6	78.7	P	30 - 160
EPA 8321B	Endothall-d6	145	P	30 - 160
EPA 8321B	Endothall-d6	145	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	85.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	85.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	84.4	P	30 - 160
EPA 8321B	Primidone-d5	104	P	30 - 160
EPA 8321B	Sucralose-d6	98.2	P	30 - 160
EPA 8321B	Sucralose-d6	98.2	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A96853

Included Lab Sample IDs: 2149893

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A96944

Included Lab Sample IDs: 2149895

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.1	95.6	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A96956

Included Lab Sample IDs: 2149893

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A96977

Included Lab Sample IDs: 2149894

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A96988

Included Lab Sample IDs: 2149893

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

Reference Method: EPA 8321B

Run ID: A96995

Included Lab Sample IDs: 2149897

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	104	101	P/P	60 - 160
Glufosinate	82.2	98.9	P/P	60 - 160
Glyphosate	92.1	96.8	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A96997

Included Lab Sample IDs: 2149897

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	75.2	74.0	P/P	60 - 160
Endothall	126	139	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A97022

Included Lab Sample IDs: 2149897

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	84.6	91.9	P/P	50 - 150
Acetaminophen	122	100	P/P	60 - 160
Acetamiprid	97.0	105	P/P	50 - 150
Afidopyropen	102	109	P/P	50 - 150
Bentazon	94.6	92.9	P/P	50 - 160
Benzovindiflupyr	93.8	93.8	P/P	50 - 150
Carbamazepine	109	90.3	P/P	60 - 150
Clothianidin	113	99.0	P/P	60 - 150
Dinotefuran	106	86.3	P/P	50 - 150
Diuron	98.2	110	P/P	60 - 150
Fenuron	109	109	P/P	60 - 150
Fluridone	110	112	P/P	60 - 160
Hydrocodone	98.8	97.8	P/P	60 - 150
Ibuprofen	101	97.0	P/P	50 - 160
Imazapyr	95.0	82.0	P/P	50 - 150
Imidacloprid	98.0	97.9	P/P	60 - 150
Linuron	101	97.2	P/P	60 - 150
Mandestrobin	102	107	P/P	50 - 150
MCPP	82.4	91.4	P/P	50 - 150
Naproxen	72.4	80.1	P/P	50 - 160
Primidone	103	100	P/P	60 - 150
Pyraclostrobin	86.8	87.1	P/P	60 - 150
Thiamethoxam	112	101	P/P	50 - 150
Tolfenpyrad	82.0	82.2	P/P	60 - 150
Triclopyr	84.3	95.4	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A97036

Included Lab Sample IDs: 2149894

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	105	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A97050

Included Lab Sample IDs: 2149894

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

Reference Method: SM 2320 B-2011

Run ID: A97099

Included Lab Sample IDs: 2149893

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

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A97099

Included Lab Sample IDs: 2149893

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

Reference Method: EPA 8321B

Run ID: A97109

Included Lab Sample IDs: 2149897

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	92.8	90.1	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A97111

Included Lab Sample IDs: 2149894

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97149

Included Lab Sample IDs: 2149894

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	105	104	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					0.464	
EPA 300.0 Rev. 2.1	Chloride	101	102	101		1.19	
	Sulfate	101	101	102		0.905	
EPA 350.1 Rev. 2.0	Ammonia-N	98.9	104	104			0.134
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	102	111			7.29
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104	95.8				0.222
EPA 365.1 Rev. 2.0	Total-P	106	104	106			1.76
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.5	94.6	96.4			1.64
EPA 8321B	2,4-D	121					9.45
	Acesulfame K	87.2	37.8	38.7			2.14
	Acetaminophen	101	96.4	101			4.81
	Acetamiprid	97.0	98.2	103			4.49
	Afidopyropen	110	64.6	54.8			16.4
	AMPA	85.0	92.2	95.2			3.11
	Bentazon	63.5	29.4	31.3			6.15
	Benzovindiflupyr	80.3	66.6	67.8			1.79
	Carbamazepine	101	77.7	84.4			8.18
	Clothianidin	99.1	106	103			2.92
	Dinotefuran	97.2	127	118			7.10
	Diuron	88.7	68.2	67.9			0.487
	Endothall	131	138	140			1.67
	Fenuron	95.0	81.4	85.1			4.35
	Fluridone	99.2	89.6	90.8			1.29
	Glufosinate	93.7	88.7	101			13.1
	Glyphosate	99.1	91.1	83.8			8.40
	Hydrocodone	97.5	79.9	64.8			20.9
	Ibuprofen	90.2	70.6	71.3			1.01
	Imazapyr	80.5					0.322
	Imidacloprid	104	156	154			1.63
	Linuron	68.7	62.5	63.2			1.11
	Mandestrobin	91.9	83.2	83.0			0.332
	MCPP	132	100	104			4.00
	Naproxen	76.0	65.1	71.0			8.66
	Primidone	90.2	94.1	97.0			3.06
	Pyraclostrobin	71.5	68.0	69.0			1.37
	Sucralose	92.4	87.8	93.9			6.36
	Thiamethoxam	96.0	146	145			0.518
	Tolfenpyrad	45.2	41.8	44.1			5.32
	Triclopyr	114	75.6	91.3			18.8
SM 2120 B-2011	Color (true)	101				2.60	
SM 2320 B-2011	Total Alkalinity	103				0.297	
SM 2540 C-2011	TDS					2.10	
SM 4500 F-C-2011	Fluoride	97.1	98.0	98.0			0.0
SM 5310 B-2011	Organic Carbon	101	106	105			0.423

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2149893
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2149893

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2149893
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2149894
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2149894
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2149894
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2149894
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2149895
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2149897
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2149897
SM 2120 B-2011 / E31780	True Color measured at 450 nm (not valid for NPDES monitoring)	2149893
SM 2320 B-2011 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2149893
SM 2540 C-2011 / E31780	Total Dissolved Solids in aqueous matrices	2149893
SM 2540 D-2011 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2149893
SM 4500 F-C-2011 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2149893
SM 5310 B-2011 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2149894

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	01/16/2020			01/16/2020 10:51	Blanca Fach	2149893
EPA 300.0 Rev. 2.1	01/16/2020			01/18/2020 01:38	Lipi Saha	2149893
EPA 350.1 Rev. 2.0	01/16/2020			01/17/2020 13:46	Ping Hua	2149894
EPA 351.2 Rev. 2.0	01/16/2020	01/23/2020 11:30	Jhamieka S. Greenwood	01/24/2020 09:40	Jhamieka S. Greenwood	2149894
EPA 353.2 Rev. 2.0	01/16/2020			01/22/2020 11:43	Beverly Y. Sanders	2149894
EPA 365.1 Rev. 2.0	01/16/2020	01/23/2020 15:35	Yen Ta	01/28/2020 15:41	Benjamin T. Nordmann	2149894
EPA 365.1 Rev. 2.0 dissolved	01/16/2020			01/16/2020 13:30	Carlos Miranda	2149895
EPA 8321B	01/16/2020	01/17/2020 11:00	Rebecca Ware	01/17/2020 18:18	Rebecca Ware	2149897
	01/16/2020	01/17/2020 11:00	Rebecca Ware	01/19/2020 22:33	Rebecca Ware	2149897
	01/16/2020	01/17/2020 11:00	Rebecca Ware	01/24/2020 02:12	Rebecca Ware	2149897
	01/16/2020	01/21/2020 11:00	Hoor Shaik	01/22/2020 01:37	Juyoung Kim	2149897
SM 2120 B-2011	01/16/2020			01/16/2020 11:48	Madeline Funaro	2149893
SM 2320 B-2011	01/16/2020			01/25/2020 06:11	Dale L. Simmons	2149893
SM 2540 C-2011	01/16/2020			01/17/2020 18:00	Blanca Fach	2149893
SM 2540 D-2011	01/16/2020			01/17/2020 18:00	Blanca Fach	2149893
SM 4500 F-C-2011	01/16/2020			01/25/2020 06:11	Dale L. Simmons	2149893
SM 5310 B-2011	01/16/2020			01/22/2020 05:43	Madeline Funaro	2149894