

Chemical Analysis Report

NW-DIST-2019-11-06-01

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

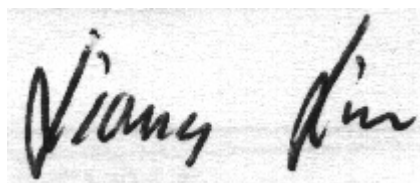
Event Description: **Pensacola Monthly**
Request ID: **RQ-2019-11-04-53**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 22-NOV-2019 15:03

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: Ten Mile Creek upstream of Pine Forest Road Collection Date/Time: 11/05/2019 09:53

Field ID: G5NW0051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2133883	EPA 8321B	2,4-D	0.0020	U	ug/L	P373745	
		Acesulfame K**	0.10	U	ug/L	P373836	
		AMPA**	0.10	U	ug/L	P373836	
		Sucralose**	0.53		ug/L	P373836	
		Acetaminophen**	0.0080	U	ug/L	P373745	
		Acetamiprid**	0.0020	U	ug/L	P373745	
		Endothall**	0.25	U	ug/L	P373836	
		Glufosinate**	0.10	U	ug/L	P373836	
		Glyphosate**	0.10	U	ug/L	P373836	
		Afidopyropen**	0.0020	UJ	ug/L	P373745	
		Bentazon	8.0E-04	U	ug/L	P373745	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P373745	
		Carbamazepine**	8.0E-04	U	ug/L	P373745	
		Clothianidin**	0.0020	U	ug/L	P373745	
		Dinotefuran**	0.0020	U	ug/L	P373745	
		Diuron	0.0020	U	ug/L	P373745	
		Fenuron	0.016	U	ug/L	P373745	
		Fluridone**	8.0E-04	U	ug/L	P373745	
		Imazapyr**	0.0087	I	ug/L	P373745	
		Hydrocodone**	0.0020	U	ug/L	P373745	
		Ibuprofen**	0.020	U	ug/L	P373745	
		Imidacloprid	0.0071	I	ug/L	P373745	MS
		Linuron	0.0040	U	ug/L	P373745	
		Mandestrobin**	0.0020	UJ	ug/L	P373745	
		MCPP	0.0020	UJ	ug/L	P373745	LCS
		Naproxen**	0.0080	U	ug/L	P373745	
		Primidone**	0.0040	U	ug/L	P373745	
		Pyraclostrobin**	0.0020	U	ug/L	P373745	
		Thiamethoxam**	0.0020	U	ug/L	P373745	
		Tolfenpyrad**	0.0020	U	ug/L	P373745	
		Triclopyr**	0.0040	U	ug/L	P373745	

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample. MS accuracy and precision for bentazon could not be assessed due to high concentration of parameter in the spiked sample. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Pace Mill Creek upstream of Hwy 90

Collection Date/Time: 11/05/2019 10:37

Field ID: G4NW0481

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2133871	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P373816	
	EPA 300.0 Rev. 2.1	Chloride	7.4		mg Cl/L	P374254	
		Sulfate	1.5		mg SO4/L	P374257	
	SM 2120 B	Color (true)	27		PCU	P373888	
	SM 2320 B-97	Total Alkalinity	9.9		mg CaCO3/L	P374211	
	SM 2540 C-97	TDS	32		mg/L	P374330	
	SM 2540 D-97	TSS	2	U	mg/L	P374336	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P374214	
2133873	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P374131	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27		mg N/L	P374143	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.50		mg N/L	P373942	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P374300	
	SM 5310 B-00	Organic Carbon	2.3		mg C/L	P374270	
2133875	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P373819	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

**Sample Location: Direct Runoff - Graveyard Branch @
 Tradewinds Dr.**

Collection Date/Time: 11/05/2019 11:10

Field ID: G4NW0176

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2133872	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P373816	
	EPA 300.0 Rev. 2.1	Chloride	7.9		mg Cl/L	P374254	
		Sulfate	7.8		mg SO4/L	P374257	
	SM 2120 B	Color (true)	10		PCU	P373888	
	SM 2320 B-97	Total Alkalinity	34		mg CaCO3/L	P374211	
	SM 2540 C-97	TDS	56		mg/L	P374330	
	SM 2540 D-97	TSS	2	U	mg/L	P374336	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P374214	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P374131	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.11	I	mg N/L	P374143	
2133874	EPA 353.2 Rev. 2.0	NO2NO3-N	0.30		mg N/L	P373942	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P374300	
	SM 5310 B-00	Organic Carbon	1.7		mg C/L	P374115	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P373819	
	dissolved						

Ref. Method and Comment:

SM 2540 D-97: 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: P373816

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374254

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374257

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374131

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374143

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373942

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374300

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373819

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

Reference Method: EPA 8321B
Batch ID: P373745

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: P373745

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: P373836

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
Batch ID: P373888

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P374211

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

Reference Method: SM 2540 C-97
Batch ID: P374330

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P374336

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P374214

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P374115

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-00
Batch ID: P374270

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: P374254

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374257

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374131

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: P374143

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373942

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: P374300

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: P373819

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.2		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P373745

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	132		P	40 - 160
Acetaminophen	84.4		P	30 - 160
Acetamiprid	93.8		P	40 - 160
Afidopyropen	108		P	40 - 160
Bentazon	105		P	30 - 160
Benzovindiflupyr	97.4		P	40 - 160
Carbamazepine	106		P	40 - 160
Clothianidin	91.4		P	40 - 160
Dinotefuran	89.1		P	40 - 160
Diuron	99.2		P	40 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P373745

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	102		P	40 - 160
Fluridone	104		P	40 - 160
Hydrocodone	94.0		P	40 - 160
Ibuprofen	102		P	30 - 160
Imazapyr	84.4		P	40 - 160
Imidacloprid	110		P	40 - 160
Linuron	80.4		P	40 - 160
Mandestrobin	85.5		P	40 - 160
MCPP	160		F	40 - 160
Naproxen	80.7		P	40 - 160
Primidone	95.3		P	40 - 160
Pyraclostrobin	88.8		P	30 - 160
Thiamethoxam	99.5		P	40 - 160
Tolfenpyrad	67.8		P	40 - 160
Triclopyr	111		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P373836

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	89.1		P	40 - 150
AMPA	76.9		P	40 - 150
Endothall	85.0		P	40 - 150
Glufosinate	100		P	40 - 150
Glyphosate	106		P	40 - 140
Sucralose	115		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P373888

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.5		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P374211

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P374214

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.8		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P374115

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P374270

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	103		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374254

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2133723	Chloride	101		P	90 - 110
2133887	Chloride	98.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374257

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2133723	Sulfate	99.5		P	90 - 110
2133887	Sulfate	98.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374131

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2133840	Ammonia-N	99.5	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374143

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2133874	Kjeldahl Nitrogen	98.0	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373942

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2133839	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374300

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2133840	Total-P	95.8	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373819

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2133875	O-Phosphate-P	98.1	98.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P373745

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2133811	2,4-D	145	132	P/P	40 - 160
2133811	Acetaminophen	74.6	74.7	P/P	30 - 160
2133811	Acetamiprid	95.5	76.0	P/P	40 - 160
2133811	Afidopyropen	116	101	P/P	40 - 160
2133811	Benzovindiflupyr	97.1	88.9	P/P	40 - 160
2133811	Carbamazepine	97.0	94.3	P/P	40 - 160
2133811	Dinotefuran	119	105	P/P	40 - 160
2133811	Diuron	91.6	86.4	P/P	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P373745

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2133811	Fenuron	86.8	81.5	P/P	40 - 160
2133811	Hydrocodone	92.9	90.3	P/P	40 - 160
2133811	Ibuprofen	101	101	P/P	30 - 160
2133811	Imidacloprid	160	145	F/P	40 - 160
2133811	Linuron	78.2	72.5	P/P	40 - 160
2133811	Mandestrobin	94.4	84.3	P/P	40 - 160
2133811	MCPP	158	148	P/P	40 - 160
2133811	Naproxen	94.6	89.5	P/P	40 - 160
2133811	Primidone	108	101	P/P	40 - 160
2133811	Pyraclostrobin	86.1	81.4	P/P	30 - 160
2133811	Tolfenpyrad	55.3	57.5	P/P	40 - 160
2133811	Triclopyr	121	102	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P373836

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2133300	Acesulfame K	98.3	95.1	P/P	40 - 150
2133300	AMPA	102	103	P/P	40 - 150
2133300	Endothall	67.6	85.1	P/P	40 - 150
2133300	Glufosinate	104	99.2	P/P	40 - 150
2133300	Glyphosate	93.0	96.4	P/P	40 - 140
2133300	Sucralose	96.1	103	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P374214

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2133723	Fluoride	99.1	98.4	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P374115

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2133874	Organic Carbon	103	103	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P374270

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2134974	Organic Carbon	103	104	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P373816

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133837	Turbidity	5.59	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374254

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133723	Chloride	0.235	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374257

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133723	Sulfate	0.205	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374131

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133840	Ammonia-N	2.93	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374143

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133874	Kjeldahl Nitrogen	4.96	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373942

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133839	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374300

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133840	Total-P	2.09	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373819

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133875	O-Phosphate-P	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P373745

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133811	2,4-D	9.15	Spike	P	0 - 30
2133811	Acetaminophen	0.168	Spike	P	0 - 30
2133811	Acetamiprid	10.7	Spike	P	0 - 30
2133811	Afidopyropen	13.9	Spike	P	0 - 30
2133811	Benzovindiflupyr	8.77	Spike	P	0 - 30
2133811	Carbamazepine	2.53	Spike	P	0 - 30
2133811	Clothianidin	4.61	Spike	P	0 - 30
2133811	Dinotefuran	12.2	Spike	P	0 - 30
2133811	Diuron	5.44	Spike	P	0 - 30
2133811	Fenuron	4.81	Spike	P	0 - 30
2133811	Fluridone	3.26	Spike	P	0 - 30
2133811	Hydrocodone	2.90	Spike	P	0 - 30
2133811	Ibuprofen	0.524	Spike	P	0 - 30
2133811	Imazapyr	8.31	Spike	P	0 - 30
2133811	Imidacloprid	7.09	Spike	P	0 - 30
2133811	Linuron	7.50	Spike	P	0 - 30
2133811	Mandestrobin	11.3	Spike	P	0 - 30
2133811	MCPP	6.67	Spike	P	0 - 30
2133811	Naproxen	5.44	Spike	P	0 - 30
2133811	Primidone	6.73	Spike	P	0 - 30
2133811	Pyraclostrobin	5.62	Spike	P	0 - 30
2133811	Thiamethoxam	5.07	Spike	P	0 - 30
2133811	Tolfenpyrad	3.84	Spike	P	0 - 30
2133811	Triclopyr	16.8	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P373836

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133300	Acesulfame K	3.35	Spike	P	0 - 30
2133300	AMPA	0.954	Spike	P	0 - 30
2133300	Endothall	22.9	Spike	P	0 - 30
2133300	Glufosinate	4.84	Spike	P	0 - 30
2133300	Glyphosate	3.57	Spike	P	0 - 30
2133300	Sucralose	6.80	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P373888

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133835	Color (true)	2.60	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P374211

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133723	Total Alkalinity	0.251	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P374330

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133836	TDS	7.89	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P374214

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133723	Fluoride	0.524	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P374115

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133874	Organic Carbon	0.493	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P374270

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2134974	Organic Carbon	0.465	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2133883

Field Sample ID: G5NW0051

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	118	P	30 - 160
EPA 8321B	Acetaminophen-d4	83.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	90.0	P	30 - 160
EPA 8321B	Diuron-d6	86.1	P	30 - 160
EPA 8321B	Endothall-d6	101	P	30 - 160
EPA 8321B	Endothall-d6	101	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	103	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	103	P	30 - 160
EPA 8321B	Ibuprofen-d3	113	P	30 - 160
EPA 8321B	Primidone-d5	107	P	30 - 160
EPA 8321B	Sucralose-d6	96.0	P	30 - 160
EPA 8321B	Sucralose-d6	96.0	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A95526

Included Lab Sample IDs: 2133871, 2133872

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A95528

Included Lab Sample IDs: 2133875, 2133876

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	97.4	P/P	90 - 110
O-Phosphate-P	99.4	99.0	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A95559

Included Lab Sample IDs: 2133871, 2133872

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A95598

Included Lab Sample IDs: 2133873, 2133874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A95629

Included Lab Sample IDs: 2133883

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	88.4	100	P/P	50 - 150
Acetaminophen	102	105	P/P	60 - 160
Acetamiprid	106	108	P/P	50 - 150
Afidopyropen	108	96.0	P/P	50 - 150
Bentazon	106	105	P/P	50 - 160
Benzovindiflupyr	113	110	P/P	50 - 150
Carbamazepine	109	108	P/P	60 - 150
Clothianidin	98.9	98.1	P/P	60 - 150
Dinotefuran	103	103	P/P	50 - 150
Diuron	107	109	P/P	60 - 150
Fenuron	110	111	P/P	60 - 150
Fluridone	118	110	P/P	60 - 160
Hydrocodone	106	104	P/P	60 - 150
Ibuprofen	91.1	92.0	P/P	50 - 160
Imazapyr	87.3	83.6	P/P	50 - 150
Imidacloprid	103	100	P/P	60 - 150
Linuron	106	107	P/P	60 - 150
Mandestrobin	109	110	P/P	50 - 150
MCPP	96.4	97.8	P/P	50 - 150
Naproxen	69.9	106	P/P	50 - 160
Primidone	107	101	P/P	60 - 150
Pyraclostrobin	100	99.0	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A95629
Included Lab Sample IDs: 2133883

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thiamethoxam	98.5	104	P/P	50 - 150
Tolfenpyrad	103	104	P/P	60 - 150
Triclopyr	77.4	89.3	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A95640
Included Lab Sample IDs: 2133883

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	102	92.0	P/P	60 - 160
Glufosinate	100	103	P/P	60 - 160
Glyphosate	100	95.6	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A95655
Included Lab Sample IDs: 2133883

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	80.1	71.9	P/P	60 - 160
Endothall	93.4	108	P/P	60 - 160

Reference Method: SM 5310 B-00
Run ID: A95686
Included Lab Sample IDs: 2133874

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A95691
Included Lab Sample IDs: 2133873, 2133874

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

Reference Method: SM 2320 B-97
Run ID: A95725
Included Lab Sample IDs: 2133871, 2133872

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.5	105	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A95725
Included Lab Sample IDs: 2133871, 2133872

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

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A95750
Included Lab Sample IDs: 2133873

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A95756
Included Lab Sample IDs: 2133873, 2133874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	98.8	P/P	90 - 110
Kjeldahl Nitrogen	98.8	102	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A95765
Included Lab Sample IDs: 2133871, 2133872

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

Reference Method: EPA 8321B
Run ID: A95766
Included Lab Sample IDs: 2133883

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	111	112	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A95807
Included Lab Sample IDs: 2133873, 2133874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	98.5	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					5.59	
EPA 300.0 Rev. 2.1	Chloride	101	101	98.5		0.235	
	Sulfate	100	99.5	98.5		0.205	
EPA 350.1 Rev. 2.0	Ammonia-N	101	99.5	103			2.93
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	98.0	103			4.96
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	102	102			0.0
EPA 365.1 Rev. 2.0	Total-P	101	95.8	99.0			2.09
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.2	98.1	98.1			0.0
EPA 8321B	2,4-D	132	145	132			9.15
	Acesulfame K	89.1	98.3	95.1			3.35
	Acetaminophen	84.4	74.6	74.7			0.168
	Acetamiprid	93.8	95.5	76.0			10.7
	Afidopyropen	108	116	101			13.9
	AMPA	76.9	102	103			0.954
	Bentazon	105					
	Benzovindiflupyr	97.4	97.1	88.9			8.77
	Carbamazepine	106	97.0	94.3			2.53
	Clothianidin	91.4					4.61
	Dinotefuran	89.1	119	105			12.2
	Diuron	99.2	91.6	86.4			5.44
	Endothall	85.0	67.6	85.1			22.9
	Fenuron	102	86.8	81.5			4.81
	Fluridone	104					3.26
	Glufosinate	100	104	99.2			4.84
	Glyphosate	106	93.0	96.4			3.57
	Hydrocodone	94.0	92.9	90.3			2.90
	Ibuprofen	102	101	101			0.524
	Imazapyr	84.4					8.31
	Imidacloprid	110	160	145			7.09
	Linuron	80.4	78.2	72.5			7.50
	Mandestrobin	85.5	94.4	84.3			11.3
	MCPP	160	158	148			6.67
	Naproxen	80.7	94.6	89.5			5.44
	Primidone	95.3	108	101			6.73
	Pyraclostrobin	88.8	86.1	81.4			5.62
	Sucralose	115	96.1	103			6.80
	Thiamethoxam	99.5					5.07
	Tolfenpyrad	67.8	55.3	57.5			3.84
	Triclopyr	111	121	102			16.8
SM 2120 B	Color (true)	99.5				2.60	
SM 2320 B-97	Total Alkalinity	101				0.251	
SM 2540 C-97	TDS					7.89	
SM 4500 F-C-97	Fluoride	98.8	99.1	98.4			0.524
SM 5310 B-00	Organic Carbon	105	103	103			0.493
	Organic Carbon	103	103	104			0.465

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2133871, 2133872
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2133871, 2133872

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2133871, 2133872
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2133873, 2133874
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2133873, 2133874
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2133873, 2133874
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2133873, 2133874
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2133875, 2133876
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2133883
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2133883
SM 2120 B / E31780	True Color measured at 450 nm	2133871, 2133872
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2133871, 2133872
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2133871, 2133872
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2133871, 2133872
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2133871, 2133872
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2133873, 2133874

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	11/06/2019			11/06/2019 16:38	Rosalyn Ballman	2133871, 2133872
EPA 300.0 Rev. 2.1	11/06/2019			11/14/2019 23:46	Lipi Saha	2133871
	11/06/2019			11/14/2019 23:58	Lipi Saha	2133872
EPA 350.1 Rev. 2.0	11/06/2019			11/12/2019 12:10	Ping Hua	2133873
	11/06/2019			11/12/2019 12:31	Ping Hua	2133874
EPA 351.2 Rev. 2.0	11/06/2019	11/13/2019 17:08	Sima Feizi	11/14/2019 18:31	Jhamieka S. Greenwood	2133874
	11/06/2019	11/13/2019 17:08	Sima Feizi	11/14/2019 18:49	Jhamieka S. Greenwood	2133873
EPA 353.2 Rev. 2.0	11/06/2019			11/08/2019 11:34	Beverly Y. Sanders	2133873
	11/06/2019			11/08/2019 11:36	Beverly Y. Sanders	2133874
EPA 365.1 Rev. 2.0	11/06/2019	11/15/2019 13:05	Yen Ta	11/18/2019 17:03	Benjamin T. Nordmann	2133873
	11/06/2019	11/15/2019 13:05	Yen Ta	11/18/2019 17:04	Benjamin T. Nordmann	2133874
EPA 365.1 Rev. 2.0 dissolved	11/06/2019			11/06/2019 16:08	Julia Storbeck	2133875
	11/06/2019			11/06/2019 16:37	Julia Storbeck	2133876
EPA 8321B	11/06/2019	11/07/2019 10:30	Rebecca Ware	11/07/2019 19:34	Rebecca Ware	2133883
	11/06/2019	11/07/2019 10:30	Rebecca Ware	11/08/2019 18:40	Rebecca Ware	2133883
	11/06/2019	11/07/2019 10:30	Rebecca Ware	11/13/2019 21:04	Rebecca Ware	2133883
	11/06/2019	11/07/2019 14:00	Hoor Shaik	11/10/2019 04:49	Juyoung Kim	2133883
SM 2120 B	11/06/2019			11/06/2019 18:19	Madeline Funaro	2133871
	11/06/2019			11/06/2019 18:20	Madeline Funaro	2133872
SM 2320 B-97	11/06/2019			11/14/2019 04:33	Dale L. Simmons	2133871
	11/06/2019			11/14/2019 04:45	Dale L. Simmons	2133872
SM 2540 C-97	11/06/2019			11/08/2019 15:16	Yijie Li	2133871, 2133872
SM 2540 D-97	11/06/2019			11/08/2019 15:16	Yijie Li	2133871, 2133872
SM 4500 F-C-97	11/06/2019			11/14/2019 04:33	Dale L. Simmons	2133871
	11/06/2019			11/14/2019 04:45	Dale L. Simmons	2133872
SM 5310 B-00	11/06/2019			11/12/2019 16:35	Madeline Funaro	2133874
	11/06/2019			11/14/2019 16:45	Madeline Funaro	2133873