

Chemical Analysis Report

NE-DIST-2019-10-15-03

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

Event Description: **Continuous Monitoring Event**
Request ID: **RQ-2019-10-07-20**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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8800 Baymeadows Way West
Suite 100
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 08-NOV-2019 10:02



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: Metals, 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: Big Fishweir Creek at end of Merrimac Ave

Collection Date/Time: 10/14/2019 14:15

Field ID: G2NE1175

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2128112	EPA 180.1 Rev. 2.0	Turbidity	2.8	A	NTU	P372507	
	EPA 300.0	Bromide	4.0		mg Br/L	P372704	
	SM 2320 B-97	Total Alkalinity	154		mg CaCO3/L	P372877	
	SM 2540 D-97	TSS	2	IA	mg/L	P373258	
	SM 4500 F-C-97	Fluoride	0.22		mg F/L	P372881	
2128113	EPA 350.1 Rev. 2.0	Ammonia-N	0.094		mg N/L	P372884	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P372652	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P372917	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P372742	
	SM 5310 B-00	Organic Carbon	9.8		mg C/L	P372782	
2128114	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.10		mg P/L	P372515	
2128135	EPA 8321B	2,4-D	0.022		ug/L	P372475	
		Acesulfame K**	0.13	I	ug/L	P372361	
		AMPA**	0.10	U	ug/L	P372361	
		Acetaminophen**	0.0080	U	ug/L	P372475	
		Acetamiprid**	0.0020	U	ug/L	P372475	
		Endothall**	0.25	U	ug/L	P372361	
		Glufosinate**	0.10	U	ug/L	P372361	
		Glyphosate**	0.49		ug/L	P372361	
		Afidopyropen**	0.0020	UJ	ug/L	P372475	
		Bentazon	0.013		ug/L	P372475	
		Sucralose**	0.67		ug/L	P372361	MS
		Benzovindiflupyr**	0.0020	UJ	ug/L	P372475	
		Carbamazepine**	0.0021	I	ug/L	P372475	
		Clothianidin**	0.0043	I	ug/L	P372475	
		Dinotefuran**	0.0020	U	ug/L	P372475	
		Diuron	0.024		ug/L	P372475	
		Fenuron	0.016	U	ug/L	P372475	
		Fluridone**	0.0024	I	ug/L	P372475	
		Imazapyr**	0.16		ug/L	P372475	
		Hydrocodone**	0.0020	U	ug/L	P372475	
		Ibuprofen**	0.020	U	ug/L	P372475	
		Imidacloprid	0.045		ug/L	P372475	MS
		Linuron	0.0040	U	ug/L	P372475	
		Mandestrobin**	0.0020	UJ	ug/L	P372475	
		MCP	0.0068	I	ug/L	P372475	
		Naproxen**	0.0080	U	ug/L	P372475	
		Primidone**	0.0052	I	ug/L	P372475	
		Pyraclostrobin**	0.0020	U	ug/L	P372475	
		Thiamethoxam**	0.0020	U	ug/L	P372475	MS
		Tolfenpyrad**	0.0020	U	ug/L	P372475	
		Triclopyr**	0.0040	U	ug/L	P372475	
2128136	EPA 200.7 Rev. 4.4	Barium	71.3		ug/L	P372597	

Field ID: G2NE1175

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2128136	EPA 200.7 Rev. 4.4	Calcium	88.0		mg/L	P372597	
		Iron	320		ug/L	P372597	
		Manganese	56.1		ug/L	P372597	
		Potassium	26		mg/L	P372597	
		Sodium	652		mg/L	P372597	
	EPA 200.8 Rev. 5.4	Zinc	6.3	I	ug/L	P372597	
		Aluminum	28		ug/L	P372597	
		Antimony	0.22		ug/L	P372597	
		Arsenic	1.64		ug/L	P372597	
		Cadmium	0.020	U	ug/L	P372597	
		Chromium	0.40	U	ug/L	P372597	
		Copper	0.82		ug/L	P372597	
		Lead	0.45		ug/L	P372597	
		Nickel	0.65	I	ug/L	P373262	
		Selenium	0.20	U	ug/L	P372597	
		Silver	0.010	U	ug/L	P372597	
		Thallium	0.10	U	ug/L	P372597	

Ref. Method and Comment:

SM 2540 D-97: 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 bentazon and imazapyr 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: P372507

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P372597

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Manganese	1.0	U	ug/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P372597

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P373262

Component	Result	Code	Units
Nickel	0.50	U	ug/L

Reference Method: EPA 300.0
Batch ID: P372704

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372884

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372652

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372917

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372742

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372515

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

Reference Method: EPA 8321B
Batch ID: P372361

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P372475

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P372475

Component	Result	Code	Units
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P372877

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

Reference Method: SM 2540 D-97
Batch ID: P373258

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P372881

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P372782

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P372597

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	100		P	85 - 115
Calcium	103		P	85 - 115
Iron	102		P	85 - 115
Manganese	99.9		P	85 - 115
Potassium	102		P	85 - 115
Sodium	108		P	85 - 115
Zinc	98.5		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P372597

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.3		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	103		P	85 - 115
Cadmium	97.9		P	85 - 115
Chromium	98.2		P	85 - 115
Copper	91.6		P	85 - 115
Lead	99.8		P	85 - 115
Selenium	97.1		P	85 - 115
Silver	100		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P373262

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Nickel	91.3		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P372704

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372884

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.9		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372652

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372917

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P372742

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	94.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P372515

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

Reference Method: EPA 8321B
 Batch ID: P372361

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	64.0		P	40 - 150
AMPA	116		P	40 - 150
Endothall	86.6		P	40 - 150
Glufosinate	88.6		P	40 - 150
Glyphosate	86.3		P	40 - 140
Sucralose	112		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P372475

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	147		P	40 - 160
Acetaminophen	94.0		P	30 - 160
Acetamiprid	98.8		P	40 - 160
Afidopyropen	101		P	40 - 160
Bentazon	127		P	30 - 160
Benzovindiflupyr	99.4		P	40 - 160
Carbamazepine	114		P	40 - 160
Clothianidin	102		P	40 - 160
Dinotefuran	91.2		P	40 - 160
Diuron	107		P	40 - 160
Fenuron	106		P	40 - 160
Fluridone	103		P	40 - 160
Hydrocodone	99.1		P	40 - 160
Ibuprofen	92.7		P	30 - 160
Imazapyr	101		P	40 - 160
Imidacloprid	108		P	40 - 160
Linuron	89.0		P	40 - 160
Mandestrobin	111		P	40 - 160
MCPP	159		P	40 - 160
Naproxen	114		P	40 - 160
Primidone	102		P	40 - 160
Pyraclostrobin	95.2		P	30 - 160
Thiamethoxam	105		P	40 - 160
Tolfenpyrad	58.7		P	40 - 160
Triclopyr	139		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P372877

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	105		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P372881

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.8		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P372782

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P372597

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127981	Barium	99.0	99.6	P/P	80 - 120
2127981	Calcium	102		P	80 - 120
2127981	Iron	99.8		P	80 - 120
2127981	Manganese	97.4	98.2	P/P	80 - 120
2127981	Potassium	113	112	P/P	80 - 120
2127981	Sodium	109	107	P/P	80 - 120
2127981	Zinc	98.3	98.6	P/P	80 - 120
2127995	Barium	101		P	80 - 120
2127995	Calcium	107		P	80 - 120
2127995	Iron	106		P	80 - 120
2127995	Manganese	100		P	80 - 120
2127995	Potassium	102		P	80 - 120
2127995	Sodium	102		P	80 - 120
2127995	Zinc	100		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P372597

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127981	Aluminum	97.0	95.9	P/P	80 - 120
2127981	Antimony	103	104	P/P	80 - 120
2127981	Arsenic	98.9	102	P/P	80 - 120
2127981	Cadmium	98.3	99.6	P/P	80 - 120
2127981	Chromium	98.9	94.6	P/P	80 - 120
2127981	Copper	97.4	92.8	P/P	80 - 120
2127981	Lead	101	101	P/P	80 - 120
2127981	Selenium	90.5	94.9	P/P	80 - 120
2127981	Silver	101	101	P/P	80 - 120
2127981	Thallium	105	104	P/P	80 - 120
2127995	Aluminum	97.5		P	80 - 120
2127995	Antimony	102		P	80 - 120
2127995	Arsenic	100		P	80 - 120
2127995	Cadmium	99.3		P	80 - 120
2127995	Chromium	91.3		P	80 - 120
2127995	Copper	89.6		P	80 - 120
2127995	Lead	98.9		P	80 - 120
2127995	Selenium	94.6		P	80 - 120
2127995	Silver	101		P	80 - 120
2127995	Thallium	102		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P373262

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127969	Nickel	89.4		P	80 - 120
2127982	Nickel	87.8	88.6	P/P	80 - 120

Reference Method: EPA 300.0
Batch ID: P372704

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127738	Bromide	99.1	99.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372884

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2128267	Ammonia-N	104	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372652

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2128071	Kjeldahl Nitrogen	94.2	93.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372917

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127847	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372742

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2128061	Total-P	90.0	92.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372515

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127715	O-Phosphate-P	97.6	98.0	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P372361

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127774	Acesulfame K	86.6	82.5	P/P	40 - 150
2127774	AMPA	82.9	80.2	P/P	40 - 150
2127774	Endothall	115	101	P/P	40 - 150
2127774	Glufosinate	80.0	75.5	P/P	40 - 150
2127774	Glyphosate	84.8	85.0	P/P	40 - 140
2127774	Sucralose	30.6	26.5	F/F	40 - 150

Reference Method: EPA 8321B
Batch ID: P372475

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127757	2,4-D	141	152	P/P	40 - 160
2127757	Acetaminophen	95.1	85.5	P/P	30 - 160
2127757	Acetamiprid	110	120	P/P	40 - 160
2127757	Afidopyropen	116	122	P/P	40 - 160
2127757	Benzovindiflupyr	111	114	P/P	40 - 160
2127757	Carbamazepine	121	117	P/P	40 - 160
2127757	Clothianidin	111	111	P/P	40 - 160
2127757	Dinotefuran	109	115	P/P	40 - 160
2127757	Diuron	113	110	P/P	40 - 160
2127757	Fenuron	116	101	P/P	40 - 160
2127757	Fluridone	104	94.7	P/P	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P372475

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127757	Hydrocodone	110	111	P/P	40 - 160
2127757	Ibuprofen	98.4	92.6	P/P	30 - 160
2127757	Imidacloprid	171	158	F/P	40 - 160
2127757	Linuron	79.3	77.8	P/P	40 - 160
2127757	Mandestrobin	124	117	P/P	40 - 160
2127757	MCP	149	153	P/P	40 - 160
2127757	Naproxen	91.5	91.2	P/P	40 - 160
2127757	Primidone	98.5	116	P/P	40 - 160
2127757	Pyraclostrobin	107	112	P/P	30 - 160
2127757	Thiamethoxam	158	162	P/F	40 - 160
2127757	Tolfenpyrad	74.6	83.6	P/P	40 - 160
2127757	Triclopyr	111	118	P/P	30 - 160

Reference Method: SM 4500 F-C-97
Batch ID: P372881

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2128000	Fluoride	95.3	94.8	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P372782

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127988	Organic Carbon	100	98.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P372507

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2128112	Turbidity	0.714	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P372597

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127981	Barium	0.528	Spike	P	0 - 20
2127981	Calcium	1.53	Spike	P	0 - 20
2127981	Iron	1.69	Spike	P	0 - 20
2127981	Manganese	0.609	Spike	P	0 - 20
2127981	Potassium	1.49	Spike	P	0 - 20
2127981	Sodium	1.22	Spike	P	0 - 20
2127981	Zinc	0.303	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P372597

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127981	Aluminum	1.18	Spike	P	0 - 20
2127981	Antimony	1.30	Spike	P	0 - 20
2127981	Arsenic	3.14	Spike	P	0 - 20
2127981	Cadmium	1.24	Spike	P	0 - 20
2127981	Chromium	4.43	Spike	P	0 - 20
2127981	Copper	4.51	Spike	P	0 - 20
2127981	Lead	0.369	Spike	P	0 - 20
2127981	Selenium	4.81	Spike	P	0 - 20
2127981	Silver	0.321	Spike	P	0 - 20
2127981	Thallium	1.05	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P373262

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127982	Nickel	0.953	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P372704

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127738	Bromide	0.0330	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372884

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2128267	Ammonia-N	1.39	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372652

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2128071	Kjeldahl Nitrogen	0.409	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372917

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127847	NO2NO3-N	0.499	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372742

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2128061	Total-P	2.54	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372515

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127715	O-Phosphate-P	0.409	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P372361

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127774	Acesulfame K	4.81	Spike	P	0 - 30
2127774	AMPA	3.39	Spike	P	0 - 30
2127774	Endothall	12.9	Spike	P	0 - 30
2127774	Glufosinate	5.79	Spike	P	0 - 30
2127774	Glyphosate	0.133	Spike	P	0 - 30
2127774	Sucralose	14.5	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P372475

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127757	2,4-D	6.65	Spike	P	0 - 30
2127757	Acetaminophen	10.6	Spike	P	0 - 30
2127757	Acetamiprid	8.74	Spike	P	0 - 30
2127757	Afidopyropen	4.64	Spike	P	0 - 30
2127757	Bentazon	1.47	Spike	P	0 - 30
2127757	Benzovindiflupyr	2.69	Spike	P	0 - 30
2127757	Carbamazepine	3.36	Spike	P	0 - 30
2127757	Clothianidin	0.124	Spike	P	0 - 30
2127757	Dinotefuran	5.29	Spike	P	0 - 30
2127757	Diuron	1.68	Spike	P	0 - 30
2127757	Fenuron	14.6	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P372475

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127757	Fluridone	5.60	Spike	P	0 - 30
2127757	Hydrocodone	1.23	Spike	P	0 - 30
2127757	Ibuprofen	6.09	Spike	P	0 - 30
2127757	Imazapyr	1.59	Spike	P	0 - 30
2127757	Imidacloprid	6.50	Spike	P	0 - 30
2127757	Linuron	2.00	Spike	P	0 - 30
2127757	Mandestrobin	5.93	Spike	P	0 - 30
2127757	MCP	2.87	Spike	P	0 - 30
2127757	Naproxen	0.384	Spike	P	0 - 30
2127757	Primidone	15.9	Spike	P	0 - 30
2127757	Pyraclostrobin	5.10	Spike	P	0 - 30
2127757	Thiamethoxam	2.15	Spike	P	0 - 30
2127757	Tolfenpyrad	11.4	Spike	P	0 - 30
2127757	Triclopyr	6.09	Spike	P	0 - 30

Reference Method: SM 2320 B-97
 Batch ID: P372877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2128000	Total Alkalinity	0.360	Sample	P	0 - 2.8

Reference Method: SM 4500 F-C-97
 Batch ID: P372881

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2128000	Fluoride	0.477	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P372782

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127988	Organic Carbon	1.97	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2128135

Field Sample ID: G2NE1175

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	146	P	30 - 160
EPA 8321B	Acetaminophen-d4	67.7	P	30 - 160
EPA 8321B	Bentazon-d7	62.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	92.9	P	30 - 160
EPA 8321B	Diuron-d6	74.9	P	30 - 160
EPA 8321B	Endothall-d6	121	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	31.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	86.6	P	30 - 160
EPA 8321B	Primidone-d5	93.1	P	30 - 160
EPA 8321B	Sucralose-d6	97.5	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A94965

Included Lab Sample IDs: 2128112

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.0	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A94971

Included Lab Sample IDs: 2128114

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.9	98.9	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A94981

Included Lab Sample IDs: 2128135

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	121	114	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A94986

Included Lab Sample IDs: 2128135

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	97.2	92.0	P/P	60 - 160
Glufosinate	94.5	97.4	P/P	60 - 160
Glyphosate	115	109	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A95006

Included Lab Sample IDs: 2128135

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	70.7	65.6	P/P	60 - 160
Endothall	105	107	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A95043

Included Lab Sample IDs: 2128136

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	101	101	P/P	90 - 110
Calcium	102	101	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Manganese	102	102	P/P	90 - 110
Potassium	101	101	P/P	90 - 110
Sodium	101	98.8	P/P	90 - 110
Zinc	99.1	99.6	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A95046

Included Lab Sample IDs: 2128135

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A95046

Included Lab Sample IDs: 2128135

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	107	116	P/P	50 - 150
Acetaminophen	106	104	P/P	60 - 160
Acetamiprid	106	106	P/P	50 - 150
Afidopyropen	123	119	P/P	50 - 150
Bentazon	126	128	P/P	50 - 160
Benzovindiflupyr	113	126	P/P	50 - 150
Carbamazepine	111	114	P/P	60 - 150
Clothianidin	100	109	P/P	60 - 150
Dinotefuran	100	105	P/P	50 - 150
Diuron	117	114	P/P	60 - 150
Fenuron	106	107	P/P	60 - 150
Fluridone	112	105	P/P	60 - 160
Hydrocodone	101	97.5	P/P	60 - 150
Ibuprofen	118	119	P/P	50 - 160
Imazapyr	103	87.4	P/P	50 - 150
Imidacloprid	110	108	P/P	60 - 150
Linuron	101	103	P/P	60 - 150
Mandestrobin	125	124	P/P	50 - 150
MCPP	135	107	P/P	50 - 150
Naproxen	97.7	144	P/P	50 - 160
Primidone	102	91.6	P/P	60 - 150
Pyraclostrobin	113	117	P/P	60 - 150
Thiamethoxam	101	107	P/P	50 - 150
Tolfenpyrad	113	114	P/P	60 - 150
Triclopyr	127	115	P/P	50 - 150

Reference Method: EPA 300.0

Run ID: A95051

Included Lab Sample IDs: 2128112

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

Reference Method: SM 5310 B-00

Run ID: A95085

Included Lab Sample IDs: 2128113

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	103	97.6	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A95130

Included Lab Sample IDs: 2128112

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A95130

Included Lab Sample IDs: 2128112

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	98.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A95132

Included Lab Sample IDs: 2128113

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A95141

Included Lab Sample IDs: 2128113

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A95144

Included Lab Sample IDs: 2128113

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.5	93.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A95154

Included Lab Sample IDs: 2128113

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.6	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A95182

Included Lab Sample IDs: 2128136

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	95.8	101	P/P	90 - 110
Antimony	102	104	P/P	90 - 110
Arsenic	105	106	P/P	90 - 110
Cadmium	103	103	P/P	90 - 110
Lead	101	102	P/P	90 - 110
Selenium	102	106	P/P	90 - 110
Silver	101	101	P/P	90 - 110
Thallium	98.2	98.9	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A95228

Included Lab Sample IDs: 2128136

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	92.6	90.6	P/P	90 - 110
Copper	90.9	92.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A95490

Included Lab Sample IDs: 2128136

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nickel	95.8	98.4	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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						0.714	
EPA 200.7 Rev. 4.4	Barium	100	99.0	99.6	101			0.528
	Calcium	103	102	107				1.53
	Iron	102	99.8	106				1.69
	Manganese	99.9	97.4	98.2	100			0.609
	Potassium	102	113	112	102			1.49
	Sodium	108	109	107	102			1.22
	Zinc	98.5	98.3	98.6	100			0.303
EPA 200.8 Rev. 5.4	Aluminum	98.3	97.0	95.9	97.5			1.18
	Antimony	103	103	104	102			1.30
	Arsenic	103	98.9	102	100			3.14
	Cadmium	97.9	98.3	99.6	99.3			1.24
	Chromium	98.2	98.9	94.6	91.3			4.43
	Copper	91.6	97.4	92.8	89.6			4.51
	Lead	99.8	101	101	98.9			0.369
	Nickel	91.3	89.4	87.8	88.6			0.953
	Selenium	97.1	90.5	94.9	94.6			4.81
	Silver	100	101	101	101			0.321
	Thallium	103	105	104	102			1.05
EPA 300.0	Bromide	101	99.1	99.1				0.0330
EPA 350.1 Rev. 2.0	Ammonia-N	99.9	104	106				1.39
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.2	94.2	93.7				0.409
EPA 353.2 Rev. 2.0	NO2NO3-N	100	100	100				0.499
EPA 365.1 Rev. 2.0	Total-P	94.5	90.0	92.5				2.54
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.2	97.6	98.0				0.409
EPA 8321B	2,4-D	147	141	152				6.65
	Acesulfame K	64.0	86.6	82.5				4.81
	Acetaminophen	94.0	95.1	85.5				10.6
	Acetamiprid	98.8	110	120				8.74
	Afidopyropen	101	116	122				4.64
	AMPA	116	82.9	80.2				3.39
	Bentazon	127						1.47
	Benzovindiflupyr	99.4	111	114				2.69
	Carbamazepine	114	121	117				3.36
	Clothianidin	102	111	111				0.124
	Dinotefuran	91.2	109	115				5.29
	Diuron	107	113	110				1.68
	Endothall	86.6	115	101				12.9
	Fenuron	106	116	101				14.6
	Fluridone	103	104	94.7				5.60
	Glufosinate	88.6	80.0	75.5				5.79
	Glyphosate	86.3	84.8	85.0				0.133
	Hydrocodone	99.1	110	111				1.23
	Ibuprofen	92.7	98.4	92.6				6.09
	Imazapyr	101						1.59
	Imidacloprid	108	171	158				6.50
	Linuron	89.0	79.3	77.8				2.00
	Mandestrobin	111	124	117				5.93
	MCPP	159	149	153				2.87
	Naproxen	114	91.5	91.2				0.384
	Primidone	102	98.5	116				15.9
	Pyraclostrobin	95.2	107	112				5.10
	Sucralose	112	30.6	26.5				14.5
	Thiamethoxam	105	158	162				2.15

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 8321B	Tolfenpyrad	58.7	74.6 83.6			11.4
	Triclopyr	139	111 118			6.09
SM 2320 B-97	Total Alkalinity	105			0.360	
SM 4500 F-C-97	Fluoride	94.8	95.3 94.8			0.477
SM 5310 B-00	Organic Carbon	99.1	100 98.1			1.97

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2128112
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2128136
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2128136
EPA 300.0 / E31780	Bromide in aqueous matrices	2128112
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2128113
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2128113
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2128113
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2128113
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2128114
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2128135
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2128112
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2128112
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2128112
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2128113

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	10/15/2019			10/15/2019 16:32	Samantha Davila	2128112
EPA 200.7 Rev. 4.4	10/15/2019	10/16/2019 16:55	Elliott D. Healy	10/17/2019 17:05	Alexander Thompson	2128136
	10/15/2019	10/16/2019 16:55	Elliott D. Healy	10/17/2019 17:12	Alexander Thompson	2128136
EPA 200.8 Rev. 5.4	10/15/2019	10/16/2019 16:55	Elliott D. Healy	10/23/2019 08:13	Robert K Palmer	2128136
	10/15/2019	10/16/2019 16:55	Elliott D. Healy	10/24/2019 23:02	Robert K Palmer	2128136
	10/15/2019	10/28/2019 17:00	Elliott D. Healy	11/04/2019 22:02	Justin Cutchin	2128136
EPA 300.0	10/15/2019			10/18/2019 02:31	Lipi Saha	2128112
EPA 350.1 Rev. 2.0	10/15/2019			10/21/2019 12:46	Ping Hua	2128113
EPA 351.2 Rev. 2.0	10/15/2019	10/17/2019 11:10	Sima Feizi	10/18/2019 16:47	Jhamieka S. Greenwood	2128113
EPA 353.2 Rev. 2.0	10/15/2019			10/22/2019 13:36	Lauren Lees	2128113
EPA 365.1 Rev. 2.0	10/15/2019	10/18/2019 15:10	Lipi Saha	10/22/2019 11:56	Beverly Y. Sanders	2128113
EPA 365.1 Rev. 2.0 dissolved	10/15/2019			10/15/2019 16:06	Virginia P. Brown	2128114
EPA 8321B	10/15/2019	10/15/2019 16:00	Mohammad Ghaffari	10/15/2019 20:45	Mohammad Ghaffari	2128135
	10/15/2019	10/15/2019 16:00	Mohammad Ghaffari	10/16/2019 00:53	Mohammad Ghaffari	2128135
	10/15/2019	10/15/2019 16:00	Mohammad Ghaffari	10/16/2019 15:48	Mohammad Ghaffari	2128135
	10/15/2019	10/17/2019 10:00	Hoor Shaik	10/18/2019 13:26	Juyoung Kim	2128135
SM 2320 B-97	10/15/2019			10/19/2019 11:13	Dale L. Simmons	2128112
SM 2540 D-97	10/15/2019			10/18/2019 15:45	Yijie Li	2128112
SM 4500 F-C-97	10/15/2019			10/19/2019 11:13	Dale L. Simmons	2128112
SM 5310 B-00	10/15/2019			10/19/2019 00:20	Madeline Funaro	2128113