

Chemical Analysis Report

SW-DIST-2019-10-04-01

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

Event Description: **Owen Creek Sites**
Request ID: **RQ-2019-09-30-87**
Customer: **SW-DIST**
Project ID: **SMP**

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Date Certified: 23-OCT-2019 14:33



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: Owen Creek

Collection Date/Time: 10/03/2019 11:50

Field ID: G3SW0053

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2125197	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P371958	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P372383	
		Sulfate	200		mg SO4/L	P372590	
	SM 2120 B	Color (true)	53	A	PCU	P372020	
	SM 2320 B-97	Total Alkalinity	58		mg CaCO3/L	P372158	
	SM 2540 C-97	TDS	384		mg/L	P372490	
	SM 2540 D-97	TSS	5	I	mg/L	P372480	
	SM 4500 F-C-97	Fluoride	0.32		mg F/L	P372161	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P372301	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P372064	
2125199	EPA 353.2 Rev. 2.0	NO2NO3-N	0.27		mg N/L	P372240	
	EPA 365.1 Rev. 2.0	Total-P	0.22		mg P/L	P372018	
	SM 5310 B-00	Organic Carbon	9.3		mg C/L	P372076	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.17		mg P/L	P371937	
	EPA 8321B	2,4-D	0.0020	U	ug/L	P371946	
2125209		Acesulfame K**	0.10	U	ug/L	P371944	
		AMPA**	0.36	I	ug/L	P371944	
		Sucralose**	0.010	U	ug/L	P371944	
		Acetaminophen**	0.0080	U	ug/L	P371946	
		Acetamiprid**	0.0020	U	ug/L	P371946	
		Endothall**	0.25	U	ug/L	P371944	
		Glufosinate**	0.10	U	ug/L	P371944	
		Glyphosate**	0.25	I	ug/L	P371944	
		Afidopypropan**	0.0020	UJ	ug/L	P371946	
		Bentazon	0.0058		ug/L	P371946	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P371946	
		Carbamazepine**	8.0E-04	U	ug/L	P371946	
		Clothianidin**	0.0020	U	ug/L	P371946	
		Dinotefuran**	0.045		ug/L	P371946	
		Diuron	0.0020	U	ug/L	P371946	
		Fenuron	0.016	U	ug/L	P371946	
		Fluridone**	8.0E-04	U	ug/L	P371946	
		Imazapyr**	0.0040	U	ug/L	P371946	
		Hydrocodone**	0.0020	U	ug/L	P371946	
		Ibuprofen**	0.020	U	ug/L	P371946	
		Imidacloprid	0.036		ug/L	P371946	MS
		Linuron	0.0040	U	ug/L	P371946	
		Mandestrobin**	0.0020	UJ	ug/L	P371946	
		MCP	0.0020	U	ug/L	P371946	
		Naproxen**	0.0080	U	ug/L	P371946	
		Primidone**	0.0040	U	ug/L	P371946	
		Pyraclostrobin**	0.0020	U	ug/L	P371946	
		Thiamethoxam**	0.0056	I	ug/L	P371946	MS

Field ID: G3SW0053

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2125209	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P371946	
		Triclopyr**	0.0040	U	ug/L	P371946	

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.

Sample Location: Mobley Ditch @ 70

Collection Date/Time: 10/03/2019 09:50

Field ID: G3SW0056

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2125198	EPA 180.1 Rev. 2.0	Turbidity	8.8		NTU	P371958	
	EPA 300.0 Rev. 2.1	Chloride	140		mg Cl/L	P372383	
		Sulfate	17		mg SO4/L	P372387	
		Color (true)	260		PCU	P372020	
	SM 2120 B	Total Alkalinity	144		mg CaCO3/L	P372158	
	SM 2540 C-97	TDS	460		mg/L	P372490	
	SM 2540 D-97	TSS	12		mg/L	P372480	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P372161	
2125200	EPA 350.1 Rev. 2.0	Ammonia-N	0.59		mg N/L	P372301	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	4.0		mg N/L	P372064	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.40		mg N/L	P372240	
	EPA 365.1 Rev. 2.0	Total-P	2.8		mg P/L	P372018	
	SM 5310 B-00	Organic Carbon	39		mg C/L	P372076	
2125202	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	2.4		mg P/L	P371937	
2125210	EPA 8321B	2,4-D	0.0097		ug/L	P371946	
		Acesulfame K**	0.10	U	ug/L	P371944	
		AMPA**	0.44		ug/L	P371944	
		Sucralose**	0.23		ug/L	P371944	
		Acetaminophen**	0.0080	U	ug/L	P371946	
		Acetamiprid**	0.0020	U	ug/L	P371946	
		Endothall**	0.25	U	ug/L	P371944	
		Glufosinate**	0.10	U	ug/L	P371944	
		Glyphosate**	6.5		ug/L	P371944	
		Afidopypropan**	0.0020	UJ	ug/L	P371946	
		Bentazon	0.0013	I	ug/L	P371946	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P371946	
		Carbamazepine**	8.0E-04	U	ug/L	P371946	
		Clothianidin**	0.0020	U	ug/L	P371946	
		Dinotefuran**	0.0020	U	ug/L	P371946	
		Diuron	0.0020	U	ug/L	P371946	
		Fenuron	0.016	U	ug/L	P371946	
		Fluridone**	8.0E-04	U	ug/L	P371946	
		Imazapyr**	0.0040	U	ug/L	P371946	
		Hydrocodone**	0.0020	U	ug/L	P371946	
		Ibuprofen**	0.020	U	ug/L	P371946	
		Imidacloprid	0.012		ug/L	P371946	MS
		Linuron	0.0040	U	ug/L	P371946	
		Mandestrobin**	0.0020	UJ	ug/L	P371946	
		MCP	0.0020	U	ug/L	P371946	
		Naproxen**	0.0080	U	ug/L	P371946	
		Primidone**	0.0040	U	ug/L	P371946	
		Pyraclostrobin**	0.0020	U	ug/L	P371946	
		Thiamethoxam**	0.0020	U	ug/L	P371946	MS

Field ID: G3SW0056

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2125210	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P371946	
		Triclopyr**	0.0040	U	ug/L	P371946	

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.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P371958

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372383

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372387

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372590

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372301

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372064

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372240

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372018

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371937

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P371944

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: P371946

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
Batch ID: P372020

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P372158

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P372490

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P372480

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P372161

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P372076

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: P372383

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372387

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372590

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372301

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372064

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	91.9		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372240

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372018

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.1		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371937

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.7		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P371944

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	104		P	40 - 150
AMPA	117		P	40 - 150
Endothall	93.4		P	40 - 150
Glufosinate	98.7		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P371944

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	104		P	40 - 140
Sucralose	71.5		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P371946

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	110		P	40 - 160
Acetaminophen	75.0		P	30 - 160
Acetamiprid	91.1		P	40 - 160
Afidopyropen	72.7		P	40 - 160
Bentazon	99.7		P	30 - 160
Benzovindiflupyr	83.5		P	40 - 160
Carbamazepine	94.2		P	40 - 160
Clothianidin	83.5		P	40 - 160
Dinotefuran	88.0		P	40 - 160
Diuron	87.2		P	40 - 160
Fenuron	98.4		P	40 - 160
Fluridone	85.5		P	40 - 160
Hydrocodone	93.4		P	40 - 160
Ibuprofen	78.8		P	30 - 160
Imazapyr	116		P	40 - 160
Imidacloprid	96.0		P	40 - 160
Linuron	71.3		P	40 - 160
Mandestrobin	79.8		P	40 - 160
MCPP	115		P	40 - 160
Naproxen	82.8		P	40 - 160
Primidone	96.0		P	40 - 160
Pyraclostrobin	73.4		P	30 - 160
Thiamethoxam	91.2		P	40 - 160
Tolfenpyrad	50.7		P	40 - 160
Triclopyr	80.7		P	30 - 160

Reference Method: SM 2120 B
Batch ID: P372020

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

Reference Method: SM 2320 B-97
Batch ID: P372158

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

Reference Method: SM 4500 F-C-97
Batch ID: P372161

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.4		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P372076

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	102		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372383

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124951	Chloride	102		P	90 - 110
2125129	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372387

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124951	Sulfate	102		P	90 - 110
2125129	Sulfate	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372590

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126419	Sulfate	105		P	90 - 110
2126534	Sulfate	104		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372301

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2125242	Ammonia-N	99.4	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372064

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2125199	Kjeldahl Nitrogen	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372240

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2125214	NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372018

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2125158	Total-P	105	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371937

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2125245	O-Phosphate-P	96.9	97.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P371944

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2125209	Acesulfame K	52.8	52.4	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P371944

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2125209	AMPA	51.5	45.8	P/P	40 - 150
2125209	Endothall	70.0	69.1	P/P	40 - 150
2125209	Glufosinate	75.6	70.8	P/P	40 - 150
2125209	Glyphosate	98.6	80.2	P/P	40 - 140
2125209	Sucralose	78.4	85.4	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P371946

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124717	2,4-D	135	122	P/P	40 - 160
2124717	Acetaminophen	75.3	71.7	P/P	30 - 160
2124717	Acetamiprid	117	107	P/P	40 - 160
2124717	Afidopyropen	72.7	63.3	P/P	40 - 160
2124717	Bentazon	68.9	66.8	P/P	30 - 160
2124717	Benzovindiflupyr	91.5	78.7	P/P	40 - 160
2124717	Carbamazepine	104	96.6	P/P	40 - 160
2124717	Clothianidin	109	97.7	P/P	40 - 160
2124717	Dinotefuran	118	109	P/P	40 - 160
2124717	Diuron	85.7	83.0	P/P	40 - 160
2124717	Fenuron	91.4	86.1	P/P	40 - 160
2124717	Fluridone	91.1	88.1	P/P	40 - 160
2124717	Hydrocodone	99.9	91.2	P/P	40 - 160
2124717	Ibuprofen	84.6	77.3	P/P	30 - 160
2124717	Imazapyr	101	106	P/P	40 - 160
2124717	Imidacloprid	205	186	F/F	40 - 160
2124717	Linuron	81.3	80.0	P/P	40 - 160
2124717	Mandestrobin	88.1	78.9	P/P	40 - 160
2124717	MCPP	147	137	P/P	40 - 160
2124717	Naproxen	103	105	P/P	40 - 160
2124717	Primidone	116	105	P/P	40 - 160
2124717	Pyraclostrobin	83.0	75.8	P/P	30 - 160
2124717	Thiamethoxam	167	152	F/P	40 - 160
2124717	Tolfenpyrad	66.5	58.4	P/P	40 - 160
2124717	Triclopyr	118	90.5	P/P	30 - 160

Reference Method: SM 4500 F-C-97
Batch ID: P372161

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124610	Fluoride	96.0	95.5	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P372076

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2125255	Organic Carbon	98.5	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P371958

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2125157	Turbidity	1.96	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372383

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124951	Chloride	0.402	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372387

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124951	Sulfate	0.357	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372590

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126419	Sulfate	0.725	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372301

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2125242	Ammonia-N	1.71	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372064

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2125199	Kjeldahl Nitrogen	0.429	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372240

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2125214	NO2NO3-N	0.697	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372018

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2125158	Total-P	4.41	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2125245	O-Phosphate-P	0.206	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P371944

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2125209	Acesulfame K	0.714	Spike	P	0 - 30
2125209	AMPA	6.74	Spike	P	0 - 30
2125209	Endothall	1.24	Spike	P	0 - 30
2125209	Glufosinate	6.54	Spike	P	0 - 30
2125209	Glyphosate	16.0	Spike	P	0 - 30
2125209	Sucralose	8.59	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P371946

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124717	2,4-D	9.54	Spike	P	0 - 30
2124717	Acetaminophen	4.93	Spike	P	0 - 30
2124717	Acetamiprid	8.65	Spike	P	0 - 30
2124717	Afidopyrophen	13.8	Spike	P	0 - 30
2124717	Bentazon	3.04	Spike	P	0 - 30
2124717	Benzovindiflupyr	15.1	Spike	P	0 - 30
2124717	Carbamazepine	7.56	Spike	P	0 - 30
2124717	Clothianidin	10.9	Spike	P	0 - 30
2124717	Dinotefuran	8.14	Spike	P	0 - 30
2124717	Diuron	3.11	Spike	P	0 - 30
2124717	Fenuron	5.99	Spike	P	0 - 30
2124717	Fluridone	3.37	Spike	P	0 - 30
2124717	Hydrocodone	9.06	Spike	P	0 - 30
2124717	Ibuprofen	9.06	Spike	P	0 - 30
2124717	Imazapyr	4.96	Spike	P	0 - 30
2124717	Imidacloprid	10.0	Spike	P	0 - 30
2124717	Linuron	1.65	Spike	P	0 - 30
2124717	Mandestrobin	11.1	Spike	P	0 - 30
2124717	MCPP	6.80	Spike	P	0 - 30
2124717	Naproxen	1.95	Spike	P	0 - 30
2124717	Primidone	9.76	Spike	P	0 - 30
2124717	Pyraclostrobin	9.05	Spike	P	0 - 30
2124717	Thiamethoxam	9.65	Spike	P	0 - 30
2124717	Tolfenpyrad	13.0	Spike	P	0 - 30
2124717	Triclopyr	26.8	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P372020

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2125197	Color (true)	0.756	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P372158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124610	Total Alkalinity	0.222	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P372490

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2125163	TDS	3.16	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P372161

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124610	Fluoride	0.473	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P372076

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2125255	Organic Carbon	1.74	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2125209
Field Sample ID: G3SW0053

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	134	P	30 - 160
EPA 8321B	Acetaminophen-d4	67.1	P	30 - 160
EPA 8321B	Bentazon-d7	73.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	93.1	P	30 - 160
EPA 8321B	Diuron-d6	81.3	P	30 - 160
EPA 8321B	Endothall-d6	81.9	P	30 - 160
EPA 8321B	Endothall-d6	81.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	97.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	97.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	80.3	P	30 - 160
EPA 8321B	Primidone-d5	101	P	30 - 160
EPA 8321B	Sucralose-d6	100	P	30 - 160
EPA 8321B	Sucralose-d6	100	P	30 - 160

Lab Sample ID: 2125210
Field Sample ID: G3SW0056

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	136	P	30 - 160
EPA 8321B	Acetaminophen-d4	57.3	P	30 - 160
EPA 8321B	Bentazon-d7	38.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	70.3	P	30 - 160
EPA 8321B	Diuron-d6	65.3	P	30 - 160
EPA 8321B	Endothall-d6	82.9	P	30 - 160
EPA 8321B	Endothall-d6	82.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	100	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	100	P	30 - 160
EPA 8321B	Ibuprofen-d3	83.4	P	30 - 160
EPA 8321B	Primidone-d5	72.8	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A94737

Included Lab Sample IDs: 2125201, 2125202

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.5	94.3	P/P	90 - 110
O-Phosphate-P	97.8	98.2	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A94747

Included Lab Sample IDs: 2125197, 2125198

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A94760

Included Lab Sample IDs: 2125199, 2125200

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

Reference Method: SM 2120 B

Run ID: A94765

Included Lab Sample IDs: 2125197, 2125198

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

Reference Method: SM 5310 B-00

Run ID: A94780

Included Lab Sample IDs: 2125199, 2125200

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	95.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A94793

Included Lab Sample IDs: 2125199, 2125200

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	102	P/P	90 - 110
Total-P	103	104	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A94818

Included Lab Sample IDs: 2125197, 2125198

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: A94818

Included Lab Sample IDs: 2125197, 2125198

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.1	99.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A94823

Included Lab Sample IDs: 2125209, 2125210

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	113	112	P/P	60 - 160
Glufosinate	102	105	P/P	60 - 160
Glyphosate	102	106	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A94824

Included Lab Sample IDs: 2125209, 2125210

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	106	105	P/P	60 - 160
Endothall	94.5	97.6	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A94834

Included Lab Sample IDs: 2125199, 2125200

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	97.0	P/P	90 - 110
Kjeldahl Nitrogen	97.0	97.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A94848

Included Lab Sample IDs: 2125209, 2125210

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	73.8	80.8	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A94868

Included Lab Sample IDs: 2125199, 2125200

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	99.3	P/P	90 - 110
Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A94876

Included Lab Sample IDs: 2125209, 2125210

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	82.7	93.3	P/P	50 - 150
Acetaminophen	94.7	88.6	P/P	60 - 160
Acetamiprid	107	104	P/P	50 - 150
Afidopyropen	84.2	90.3	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A94876

Included Lab Sample IDs: 2125209, 2125210

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bentazon	101	102	P/P	50 - 160
Benzovindiflupyr	90.1	96.3	P/P	50 - 150
Carbamazepine	105	104	P/P	60 - 150
Clothianidin	92.9	97.5	P/P	60 - 150
Dinotefuran	99.5	97.9	P/P	50 - 150
Diuron	103	105	P/P	60 - 150
Fenuron	94.6	107	P/P	60 - 150
Fluridone	96.8	102	P/P	60 - 160
Hydrocodone	100	99.4	P/P	60 - 150
Ibuprofen	83.0	78.4	P/P	50 - 160
Imazapyr	108	106	P/P	50 - 150
Imidacloprid	93.8	97.5	P/P	60 - 150
Linuron	100	99.8	P/P	60 - 150
Mandestrobin	84.5	85.0	P/P	50 - 150
MCP	77.2	77.3	P/P	50 - 150
Naproxen	74.5	90.3	P/P	50 - 160
Primidone	79.8	106	P/P	60 - 150
Pyraclostrobin	89.8	93.3	P/P	60 - 150
Thiamethoxam	103	95.6	P/P	50 - 150
Tolfenpyrad	102	104	P/P	60 - 150
Triclopyr	69.9	84.2	P/P	50 - 150

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A94920

Included Lab Sample IDs: 2125197, 2125198

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A95003

Included Lab Sample IDs: 2125197

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	104	103	P/P	90 - 110

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

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements. Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					1.96	
EPA 300.0 Rev. 2.1	Chloride	102	102	102		0.402	
	Sulfate	102	102	102		0.357	
	Sulfate	104	105	104		0.725	
EPA 350.1 Rev. 2.0	Ammonia-N	98.4	99.4	102			1.71
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	91.9	101	101			0.429
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	101	100			0.697
EPA 365.1 Rev. 2.0	Total-P	99.1	105	99.5			4.41
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.7	96.9	97.1			0.206
EPA 8321B	2,4-D	110	135	122			9.54
	Acesulfame K	104	52.8	52.4			0.714
	Acetaminophen	75.0	75.3	71.7			4.93
	Acetamiprid	91.1	117	107			8.65
	Afidopyropen	72.7	72.7	63.3			13.8
	AMPA	117	51.5	45.8			6.74
	Bentazon	99.7	68.9	66.8			3.04
	Benzovindiflupyr	83.5	91.5	78.7			15.1
	Carbamazepine	94.2	104	96.6			7.56
	Clothianidin	83.5	109	97.7			10.9
	Dinotefuran	88.0	118	109			8.14
	Diuron	87.2	85.7	83.0			3.11
	Endothall	93.4	70.0	69.1			1.24
	Fenuron	98.4	91.4	86.1			5.99
	Fluridone	85.5	91.1	88.1			3.37
	Glufosinate	98.7	75.6	70.8			6.54
	Glyphosate	104	98.6	80.2			16.0
	Hydrocodone	93.4	99.9	91.2			9.06
	Ibuprofen	78.8	84.6	77.3			9.06
	Imazapyr	116	101	106			4.96
	Imidacloprid	96.0	205	186			10.0
	Linuron	71.3	81.3	80.0			1.65
	Mandestrobin	79.8	88.1	78.9			11.1
	MCPP	115	147	137			6.80
	Naproxen	82.8	103	105			1.95
	Primidone	96.0	116	105			9.76
	Pyraclostrobin	73.4	83.0	75.8			9.05
	Sucralose	71.5	78.4	85.4			8.59
	Thiamethoxam	91.2	167	152			9.65
	Tolfenpyrad	50.7	66.5	58.4			13.0
	Triclopyr	80.7	118	90.5			26.8
SM 2120 B	Color (true)	99.6				0.756	
SM 2320 B-97	Total Alkalinity	104				0.222	
SM 2540 C-97	TDS					3.16	
SM 4500 F-C-97	Fluoride	96.4	96.0	95.5			0.473
SM 5310 B-00	Organic Carbon	102	98.5	101			1.74

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2125197, 2125198
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2125197, 2125198

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2125197, 2125198
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2125199, 2125200
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2125199, 2125200
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2125199, 2125200
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2125199, 2125200
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2125201, 2125202
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2125209, 2125210
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2125209, 2125210
SM 2120 B / E31780	True Color measured at 450 nm	2125197, 2125198
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2125197, 2125198
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2125197, 2125198
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2125197, 2125198
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2125197, 2125198
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2125199, 2125200

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	10/04/2019			10/04/2019 17:02	Samantha Davila	2125197, 2125198
EPA 300.0 Rev. 2.1	10/04/2019			10/12/2019 17:07	Julia Storbeck	2125197
	10/04/2019			10/12/2019 17:19	Julia Storbeck	2125198
	10/04/2019			10/15/2019 18:49	Jhamieka S. Greenwood	2125197
EPA 350.1 Rev. 2.0	10/04/2019			10/10/2019 12:34	Ping Hua	2125199
	10/04/2019			10/10/2019 15:04	Ping Hua	2125200
EPA 351.2 Rev. 2.0	10/04/2019	10/08/2019 11:15	Sima Feizi	10/09/2019 11:28	Jhamieka S. Greenwood	2125199
	10/04/2019	10/08/2019 11:15	Sima Feizi	10/09/2019 11:44	Jhamieka S. Greenwood	2125200
EPA 353.2 Rev. 2.0	10/04/2019			10/07/2019 11:40	Beverly Y. Sanders	2125199
	10/04/2019			10/07/2019 11:42	Beverly Y. Sanders	2125200
EPA 365.1 Rev. 2.0	10/04/2019	10/07/2019 13:45	Vijayalakshmi Reddy	10/08/2019 11:32	Lipi Saha	2125199
	10/04/2019	10/07/2019 13:45	Vijayalakshmi Reddy	10/08/2019 11:54	Lipi Saha	2125200
EPA 365.1 Rev. 2.0 dissolved	10/04/2019			10/04/2019 17:31	Julia Storbeck	2125202
	10/04/2019			10/04/2019 17:58	Julia Storbeck	2125201
EPA 8321B	10/04/2019	10/07/2019 10:30	Rebecca Ware	10/07/2019 16:33	Rebecca Ware	2125209
	10/04/2019	10/07/2019 10:30	Rebecca Ware	10/07/2019 16:44	Rebecca Ware	2125210
	10/04/2019	10/07/2019 10:30	Rebecca Ware	10/08/2019 16:25	Rebecca Ware	2125209
	10/04/2019	10/07/2019 10:30	Rebecca Ware	10/08/2019 16:39	Rebecca Ware	2125210
	10/04/2019	10/07/2019 10:30	Rebecca Ware	10/09/2019 16:38	Rebecca Ware	2125209
	10/04/2019	10/07/2019 10:30	Rebecca Ware	10/09/2019 16:50	Rebecca Ware	2125210
	10/04/2019	10/09/2019 09:00	Hoor Shaik	10/10/2019 00:40	Juyoung Kim	2125209
	10/04/2019	10/09/2019 09:00	Hoor Shaik	10/10/2019 01:14	Juyoung Kim	2125210
SM 2120 B	10/04/2019			10/04/2019 17:26	Madeline Funaro	2125197
	10/04/2019			10/04/2019 18:06	Madeline Funaro	2125198
SM 2320 B-97	10/04/2019			10/09/2019 08:54	Dale L. Simmons	2125197
	10/04/2019			10/09/2019 09:07	Dale L. Simmons	2125198
SM 2540 C-97	10/04/2019			10/09/2019 13:46	Yijie Li	2125197, 2125198
SM 2540 D-97	10/04/2019			10/09/2019 13:46	Yijie Li	2125197, 2125198
SM 4500 F-C-97	10/04/2019			10/09/2019 08:54	Dale L. Simmons	2125197
	10/04/2019			10/09/2019 09:07	Dale L. Simmons	2125198
SM 5310 B-00	10/04/2019			10/08/2019 01:22	Madeline Funaro	2125199
	10/04/2019			10/08/2019 01:36	Madeline Funaro	2125200