

Chemical Analysis Report

NE-DIST-2019-09-26-02

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

Event Description: **Suwannee South**
Request ID: **RQ-2019-09-23-20**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
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Certified by: Colin Wright, Program Administrator

Date Certified: 18-OCT-2019 11:54

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular 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: 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: CALF CREEK AT SE 27TH ST

Collection Date/Time: 09/25/2019 12:30

Field ID: G1NE0931

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2122955	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P371422	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P371979	
		Sulfate	6.5		mg SO4/L	P371983	
	SM 2120 B	Color (true)	90		PCU	P371415	
	SM 2320 B-97	Total Alkalinity	115		mg CaCO3/L	P371888	
	SM 2540 C-97	TDS	184	A	mg/L	P371729	
	SM 2540 D-97	TSS	2	UA	mg/L	P371566	
	SM 4500 F-C-97	Fluoride	0.18		mg F/L	P371891	
2122956	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P371968	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P371548	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.19		mg N/L	P371649	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P371636	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P371776	
2122957	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.097		mg P/L	P371407	
2122963	EPA 8321B	2,4-D	0.0037	I	ug/L	P371387	
		Acesulfame K**	0.10	U	ug/L	P371503	
		AMPA**	0.26	I	ug/L	P371503	
		Sucralose**	0.043		ug/L	P371503	
		Acetaminophen**	0.0080	U	ug/L	P371387	
		Acetamiprid**	0.0020	U	ug/L	P371387	
		Endothall**	0.25	U	ug/L	P371503	
		Glufosinate**	0.10	U	ug/L	P371503	
		Glyphosate**	0.23	I	ug/L	P371503	
		Afidopyropen**	0.0020	UJ	ug/L	P371387	
		Bentazon	0.0017	I	ug/L	P371387	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P371387	
		Carbamazepine**	8.0E-04	U	ug/L	P371387	
		Clothianidin**	0.0020	U	ug/L	P371387	
		Dinotefuran**	0.0020	U	ug/L	P371387	
		Diuron	0.0020	U	ug/L	P371387	
		Fenuron	0.016	U	ug/L	P371387	
		Fluridone**	8.0E-04	U	ug/L	P371387	
		Imazapyr**	0.021		ug/L	P371387	
		Hydrocodone**	0.0020	U	ug/L	P371387	
		Ibuprofen**	0.020	U	ug/L	P371387	
		Imidacloprid	0.0051	I	ug/L	P371387	MS
		Linuron	0.0040	U	ug/L	P371387	
		Mandestrobin**	0.0020	UJ	ug/L	P371387	
		MCPD	0.0020	U	ug/L	P371387	
		Naproxen**	0.0080	U	ug/L	P371387	
		Primidone**	0.0040	U	ug/L	P371387	
		Pyraclostrobin**	0.0020	U	ug/L	P371387	
		Thiamethoxam**	0.0020	U	ug/L	P371387	

Field ID: G1NE0931

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2122963	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P371387	
		Triclopyr**	0.0040	U	ug/L	P371387	
2122964	EPA 200.7 Rev. 4.4	Barium	12.8		ug/L	P371543	
		Calcium	38.3		mg/L	P371543	
		Iron	430		ug/L	P371543	
		Magnesium	9.98		mg/L	P371543	
		Potassium	0.81	I	mg/L	P371543	
		Sodium	8.1		mg/L	P371543	
		Zinc	5.0	U	ug/L	P371543	
	EPA 200.8 Rev. 5.4	Aluminum	131		ug/L	P371543	
		Antimony	0.071	I	ug/L	P371543	
		Arsenic	1.42		ug/L	P371543	
		Boron**	29.4		ug/L	P371543	
		Cadmium	0.020	U	ug/L	P371543	
		Chromium	0.66	I	ug/L	P371543	
		Copper	0.58	I	ug/L	P371543	
		Lead	0.32	I	ug/L	P371543	
		Nickel	0.50	U	ug/L	P371543	
		Selenium	0.20	U	ug/L	P371543	
		Silver	0.010	U	ug/L	P371543	
		Thallium	0.10	U	ug/L	P371543	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.
EPA 8321B: J - second source check standards for some analytes were not available for analysis.

Sample Location: LITTLE WACCASASSA RIVER 0.5 MILE DOWN FROM BLUE SPRINGS **Collection Date/Time: 09/25/2019 10:20**

Field ID: 23020032

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2122952	EPA 180.1 Rev. 2.0	Turbidity	0.75		NTU	P371422	
	EPA 300.0 Rev. 2.1	Chloride	5.1		mg Cl/L	P371979	
		Sulfate	1.1		mg SO4/L	P371983	
	SM 2120 B	Color (true)	83		PCU	P371415	
	SM 2320 B-97	Total Alkalinity	88		mg CaCO3/L	P371888	
	SM 2540 C-97	TDS	113		mg/L	P371729	
	SM 2540 D-97	TSS	2	U	mg/L	P371566	
	SM 4500 F-C-97	Fluoride	0.061	I	mg F/L	P371891	
2122953	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P371968	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29		mg N/L	P371548	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.81		mg N/L	P371649	
	EPA 365.1 Rev. 2.0	Total-P	0.038		mg P/L	P371636	
	SM 5310 B-00	Organic Carbon	6.8		mg C/L	P371776	
2122954	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P371407	
2122962	EPA 8321B	2,4-D	0.0020	U	ug/L	P371387	
		Acesulfame K**	0.10	U	ug/L	P371503	
		AMPA**	0.10	U	ug/L	P371503	
		Sucralose**	0.010	I	ug/L	P371503	
		Acetaminophen**	0.0080	U	ug/L	P371387	
		Acetamiprid**	0.0020	U	ug/L	P371387	
		Endothall**	0.25	U	ug/L	P371503	
		Glufosinate**	0.10	U	ug/L	P371503	
		Glyphosate**	0.10	U	ug/L	P371503	
		Afidopyropen**	0.0020	UJ	ug/L	P371387	
		Bentazon	8.0E-04	U	ug/L	P371387	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P371387	
		Carbamazepine**	8.0E-04	U	ug/L	P371387	
		Clothianidin**	0.0020	U	ug/L	P371387	
		Dinotefuran**	0.0020	U	ug/L	P371387	
		Diuron	0.0020	U	ug/L	P371387	
		Fenuron	0.016	U	ug/L	P371387	
		Fluridone**	8.0E-04	U	ug/L	P371387	
		Imazapyr**	0.0040	U	ug/L	P371387	
		Hydrocodone**	0.0020	U	ug/L	P371387	
		Ibuprofen**	0.020	U	ug/L	P371387	
		Imidacloprid	0.0020	U	ug/L	P371387	MS
		Linuron	0.0040	U	ug/L	P371387	
		Mandestrobin**	0.0020	UJ	ug/L	P371387	
		MCPP	0.0020	U	ug/L	P371387	
		Naproxen**	0.0080	U	ug/L	P371387	
		Primidone**	0.0040	U	ug/L	P371387	
		Pyraclostrobin**	0.0020	U	ug/L	P371387	

Field ID: 23020032

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2122962	EPA 8321B	Thiamethoxam**	0.0020	U	ug/L	P371387	
		Tolfenpyrad**	0.0020	U	ug/L	P371387	
		Triclopyr**	0.0040	U	ug/L	P371387	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high 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: P371422

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P371543

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/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: P371543

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	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
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371979

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371983

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P371968

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P371548

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P371649

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P371636

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P371407

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

Reference Method: EPA 8321B
 Batch ID: P371387

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P371503

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: P371415

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P371888

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

Reference Method: SM 2540 C-97
Batch ID: P371729

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P371566

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P371891

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P371776

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: P371543

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	101		P	85 - 115
Calcium	110		P	85 - 115
Iron	111		P	85 - 115
Magnesium	112		P	85 - 115
Potassium	106		P	85 - 115
Sodium	107		P	85 - 115
Zinc	99.2		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P371543

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	101		P	85 - 115
Boron	102		P	85 - 115
Cadmium	98.5		P	85 - 115
Chromium	98.4		P	85 - 115
Copper	98.0		P	85 - 115
Lead	102		P	85 - 115
Nickel	98.7		P	85 - 115
Selenium	98.8		P	85 - 115
Silver	99.6		P	85 - 115
Thallium	104		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371979

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371983

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P371968

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371548

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	105		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P371649

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371636

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371407

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

Reference Method: EPA 8321B
Batch ID: P371387

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	130		P	40 - 160
Acetaminophen	66.5		P	30 - 160
Acetamiprid	77.6		P	40 - 160
Afidopyropen	90.8		P	40 - 160
Bentazon	99.7		P	30 - 160
Benzovindiflupyr	87.3		P	40 - 160
Carbamazepine	95.3		P	40 - 160
Clothianidin	88.0		P	40 - 160
Dinotefuran	82.7		P	40 - 160
Diuron	93.8		P	40 - 160
Fenuron	89.4		P	40 - 160
Fluridone	87.9		P	40 - 160
Hydrocodone	86.0		P	40 - 160
Ibuprofen	81.5		P	30 - 160
Imazapyr	91.1		P	40 - 160
Imidacloprid	88.8		P	40 - 160
Linuron	78.9		P	40 - 160
Mandestrobin	89.6		P	40 - 160
MCPP	133		P	40 - 160
Naproxen	75.5		P	40 - 160
Primidone	79.5		P	40 - 160
Pyraclostrobin	87.3		P	30 - 160
Thiamethoxam	91.3		P	40 - 160
Tolfenpyrad	58.0		P	40 - 160
Triclopyr	103		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P371503

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	119		P	40 - 150
AMPA	118		P	40 - 150
Endothall	94.7		P	40 - 150
Glufosinate	90.5		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P371503

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	98.2		P	40 - 140
Sucralose	106		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P371415

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P371888

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

Reference Method: SM 4500 F-C-97
Batch ID: P371891

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P371776

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P371543

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2122656	Barium	103		P	80 - 120
2122656	Calcium	104		P	80 - 120
2122656	Iron	113		P	80 - 120
2122656	Magnesium	108		P	80 - 120
2122656	Potassium	100		P	80 - 120
2122656	Sodium	102		P	80 - 120
2122656	Zinc	103		P	80 - 120
2123022	Barium	108	108	P/P	80 - 120
2123022	Calcium	113	114	P/P	80 - 120
2123022	Iron	114	114	P/P	80 - 120
2123022	Magnesium	116	117	P/P	80 - 120
2123022	Potassium	107	109	P/P	80 - 120
2123022	Sodium	111	111	P/P	80 - 120
2123022	Zinc	107	107	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P371543

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2122656	Aluminum	102		P	80 - 120
2122656	Antimony	104		P	80 - 120
2122656	Arsenic	102		P	80 - 120
2122656	Boron	99.3		P	80 - 120
2122656	Cadmium	99.7		P	80 - 120
2122656	Chromium	98.0		P	80 - 120
2122656	Copper	98.8		P	80 - 120
2122656	Lead	103		P	80 - 120
2122656	Nickel	97.8		P	80 - 120
2122656	Selenium	99.2		P	80 - 120
2122656	Silver	100		P	80 - 120
2122656	Thallium	109		P	80 - 120
2123022	Aluminum	99.2	101	P/P	80 - 120
2123022	Antimony	102	105	P/P	80 - 120
2123022	Arsenic	100	103	P/P	80 - 120
2123022	Boron	101	104	P/P	80 - 120
2123022	Cadmium	98.6	99.7	P/P	80 - 120
2123022	Chromium	99.2	100	P/P	80 - 120
2123022	Copper	98.9	102	P/P	80 - 120
2123022	Lead	101	104	P/P	80 - 120
2123022	Nickel	97.9	99.5	P/P	80 - 120
2123022	Selenium	97.7	98.4	P/P	80 - 120
2123022	Silver	98.9	102	P/P	80 - 120
2123022	Thallium	102	108	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371979

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2122930	Chloride	99.5		P	90 - 110
2123013	Chloride	104		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371983

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2122930	Sulfate	102		P	90 - 110
2123013	Sulfate	105		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P371968

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2123016	Ammonia-N	102	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P371649

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2122933	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371636

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2122933	Total-P	93.7	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371407

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2122954	O-Phosphate-P	95.9	96.2	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P371387

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2122592	2,4-D	155	138	P/P	40 - 160
2122592	Acetaminophen	71.1	65.2	P/P	30 - 160
2122592	Acetamiprid	109	97.4	P/P	40 - 160
2122592	Afidopyropen	100	86.4	P/P	40 - 160
2122592	Bentazon	101	88.7	P/P	30 - 160
2122592	Benzovindiflupyr	101	88.4	P/P	40 - 160
2122592	Carbamazepine	108	93.0	P/P	40 - 160
2122592	Clothianidin	106	94.6	P/P	40 - 160
2122592	Dinotefuran	103	92.8	P/P	40 - 160
2122592	Diuron	110	98.2	P/P	40 - 160
2122592	Fenuron	102	91.8	P/P	40 - 160
2122592	Fluridone	105	91.7	P/P	40 - 160
2122592	Hydrocodone	104	90.3	P/P	40 - 160
2122592	Ibuprofen	89.4	84.6	P/P	30 - 160
2122592	Imazapyr	136	118	P/P	40 - 160
2122592	Imidacloprid	163	139	F/P	40 - 160
2122592	Linuron	83.5	76.8	P/P	40 - 160
2122592	Mandestrobin	101	92.0	P/P	40 - 160
2122592	MCP	151	128	P/P	40 - 160
2122592	Naproxen	107	87.6	P/P	40 - 160
2122592	Primidone	88.7	78.4	P/P	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P371387

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2122592	Pyraclostrobin	97.9	93.4	P/P	30 - 160
2122592	Thiamethoxam	125	123	P/P	40 - 160
2122592	Tolfenpyrad	48.1	44.7	P/P	40 - 160
2122592	Triclopyr	125	112	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P371503

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2122962	Acesulfame K	90.7	92.9	P/P	40 - 150
2122962	AMPA	83.3	80.6	P/P	40 - 150
2122962	Endothall	49.9	52.4	P/P	40 - 150
2122962	Glufosinate	87.1	80.7	P/P	40 - 150
2122962	Glyphosate	83.9	81.6	P/P	40 - 140
2122962	Sucralose	110	107	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P371891

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2123040	Fluoride	97.9	97.3	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P371776

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2122935	Organic Carbon	104	105	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P371422

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2122945	Turbidity	4.73	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P371543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2123022	Barium	0.159	Spike	P	0 - 20
2123022	Calcium	0.922	Spike	P	0 - 20
2123022	Iron	0.191	Spike	P	0 - 20
2123022	Magnesium	0.873	Spike	P	0 - 20
2123022	Potassium	1.49	Spike	P	0 - 20
2123022	Sodium	0.544	Spike	P	0 - 20
2123022	Zinc	0.448	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P371543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2123022	Aluminum	1.83	Spike	P	0 - 20
2123022	Antimony	2.82	Spike	P	0 - 20
2123022	Arsenic	2.38	Spike	P	0 - 20
2123022	Boron	2.71	Spike	P	0 - 20
2123022	Cadmium	1.12	Spike	P	0 - 20
2123022	Chromium	1.21	Spike	P	0 - 20
2123022	Copper	3.10	Spike	P	0 - 20
2123022	Lead	3.31	Spike	P	0 - 20
2123022	Nickel	1.64	Spike	P	0 - 20
2123022	Selenium	0.766	Spike	P	0 - 20
2123022	Silver	2.63	Spike	P	0 - 20
2123022	Thallium	5.55	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371979

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2122930	Chloride	0.305	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371983

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2122930	Sulfate	1.12	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P371968

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2123016	Ammonia-N	1.83	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371548

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2122934	Kjeldahl Nitrogen	7.47	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P371649

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2122933	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371636

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2122933	Total-P	4.92	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371407

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2122954	O-Phosphate-P	0.242	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P371387

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2122592	2,4-D	11.7	Spike	P	0 - 30
2122592	Acetaminophen	8.63	Spike	P	0 - 30
2122592	Acetamiprid	10.9	Spike	P	0 - 30
2122592	Afidopyropen	14.6	Spike	P	0 - 30
2122592	Bentazon	8.91	Spike	P	0 - 30
2122592	Benzovindiflupyr	13.2	Spike	P	0 - 30
2122592	Carbamazepine	14.9	Spike	P	0 - 30
2122592	Clothianidin	11.5	Spike	P	0 - 30
2122592	Dinotefuran	10.2	Spike	P	0 - 30
2122592	Diuron	11.5	Spike	P	0 - 30
2122592	Fenuron	10.3	Spike	P	0 - 30
2122592	Fluridone	12.5	Spike	P	0 - 30
2122592	Hydrocodone	14.1	Spike	P	0 - 30
2122592	Ibuprofen	5.54	Spike	P	0 - 30
2122592	Imazapyr	12.5	Spike	P	0 - 30
2122592	Imidacloprid	15.7	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P371387

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2122592	Linuron	8.30	Spike	P	0 - 30
2122592	Mandestrobin	9.54	Spike	P	0 - 30
2122592	MCP	16.7	Spike	P	0 - 30
2122592	Naproxen	19.7	Spike	P	0 - 30
2122592	Primidone	12.3	Spike	P	0 - 30
2122592	Pyraclostrobin	4.72	Spike	P	0 - 30
2122592	Thiamethoxam	1.40	Spike	P	0 - 30
2122592	Tolfenpyrad	7.43	Spike	P	0 - 30
2122592	Triclopyr	11.1	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P371503

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2122962	Acesulfame K	2.39	Spike	P	0 - 30
2122962	AMPA	3.35	Spike	P	0 - 30
2122962	Endothall	4.93	Spike	P	0 - 30
2122962	Glufosinate	7.64	Spike	P	0 - 30
2122962	Glyphosate	2.80	Spike	P	0 - 30
2122962	Sucralose	2.89	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P371415

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2122766	Color (true)	3.02	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P371888

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2123040	Total Alkalinity	1.10	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P371729

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2122955	TDS	2.72	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P371891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2123040	Fluoride	0.476	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P371776

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2122935	Organic Carbon	0.156	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2122962
Field Sample ID: 23020032

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	140	P	30 - 160
EPA 8321B	Acetaminophen-d4	80.9	P	30 - 160
EPA 8321B	Bentazon-d7	85.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	107	P	30 - 160
EPA 8321B	Diuron-d6	103	P	30 - 160
EPA 8321B	Endothall-d6	76.0	P	30 - 160
EPA 8321B	Endothall-d6	76.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	75.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	75.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	91.4	P	30 - 160
EPA 8321B	Primidone-d5	90.9	P	30 - 160
EPA 8321B	Sucralose-d6	94.5	P	30 - 160
EPA 8321B	Sucralose-d6	94.5	P	30 - 160

Lab Sample ID: 2122963
Field Sample ID: G1NE0931

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	116	P	30 - 160
EPA 8321B	Acetaminophen-d4	60.2	P	30 - 160
EPA 8321B	Bentazon-d7	55.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	84.4	P	30 - 160
EPA 8321B	Diuron-d6	82.8	P	30 - 160
EPA 8321B	Endothall-d6	78.1	P	30 - 160
EPA 8321B	Endothall-d6	78.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	92.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	92.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	69.9	P	30 - 160
EPA 8321B	Primidone-d5	79.1	P	30 - 160
EPA 8321B	Sucralose-d6	113	P	30 - 160
EPA 8321B	Sucralose-d6	113	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A94535

Included Lab Sample IDs: 2122954, 2122957

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.1	98.0	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A94538

Included Lab Sample IDs: 2122952, 2122955

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A94539

Included Lab Sample IDs: 2122952, 2122955

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A94627

Included Lab Sample IDs: 2122953, 2122956

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

Reference Method: EPA 8321B

Run ID: A94630

Included Lab Sample IDs: 2122962, 2122963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	111	117	P/P	60 - 160
Endothall	87.1	102	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A94632

Included Lab Sample IDs: 2122962, 2122963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	65.9	65.6	P/P	60 - 160
Glufosinate	84.6	96.2	P/P	60 - 160
Glyphosate	86.9	91.8	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A94656

Included Lab Sample IDs: 2122956

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A94659

Included Lab Sample IDs: 2122953

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A94661

Included Lab Sample IDs: 2122953, 2122956

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.3	101	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A94666

Included Lab Sample IDs: 2122964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	103	102	P/P	90 - 110
Calcium	103	101	P/P	90 - 110
Iron	106	104	P/P	90 - 110
Magnesium	105	105	P/P	90 - 110
Potassium	102	102	P/P	90 - 110
Sodium	101	101	P/P	90 - 110
Zinc	102	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A94677

Included Lab Sample IDs: 2122962, 2122963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	99.4	117	P/P	50 - 150
Acetaminophen	91.2	87.8	P/P	60 - 160
Acetamiprid	102	101	P/P	50 - 150
Afidopyropen	101	90.1	P/P	50 - 150
Bentazon	108	109	P/P	50 - 160
Benzovindiflupyr	106	105	P/P	50 - 150
Carbamazepine	103	104	P/P	60 - 150
Clothianidin	91.5	102	P/P	60 - 150
Dinotefuran	89.3	89.5	P/P	50 - 150
Diuron	104	111	P/P	60 - 150
Fenuron	102	102	P/P	60 - 150
Fluridone	102	105	P/P	60 - 160
Hydrocodone	93.6	92.7	P/P	60 - 150
Ibuprofen	104	90.4	P/P	50 - 160
Imazapyr	86.3	107	P/P	50 - 150
Imidacloprid	92.4	94.0	P/P	60 - 150
Linuron	96.6	101	P/P	60 - 150
Mandestrobin	100	100	P/P	50 - 150
MCPP	101	96.7	P/P	50 - 150
Naproxen	79.8	91.4	P/P	50 - 160
Primidone	87.7	94.1	P/P	60 - 150
Pyraclostrobin	105	106	P/P	60 - 150
Thiamethoxam	95.0	83.3	P/P	50 - 150
Tolfenpyrad	95.7	100	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A94677

Included Lab Sample IDs: 2122962, 2122963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Triclopyr	107	116	P/P	50 - 150

Reference Method: SM 5310 B-00

Run ID: A94678

Included Lab Sample IDs: 2122953, 2122956

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A94686

Included Lab Sample IDs: 2122952, 2122955

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	101	P/P	90 - 110
Sulfate	103	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A94689

Included Lab Sample IDs: 2122962, 2122963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	110	102	P/P	60 - 160

Reference Method: SM 2320 B-97

Run ID: A94720

Included Lab Sample IDs: 2122952, 2122955

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

Reference Method: SM 4500 F-C-97

Run ID: A94720

Included Lab Sample IDs: 2122952, 2122955

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A94750

Included Lab Sample IDs: 2122953, 2122956

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.1	100	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94947

Included Lab Sample IDs: 2122964

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94947

Included Lab Sample IDs: 2122964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	103	P/P	90 - 110
Antimony	102	103	P/P	90 - 110
Arsenic	101	102	P/P	90 - 110
Boron	102	102	P/P	90 - 110
Cadmium	101	102	P/P	90 - 110
Chromium	100	102	P/P	90 - 110
Copper	101	102	P/P	90 - 110
Lead	105	105	P/P	90 - 110
Nickel	101	102	P/P	90 - 110
Silver	98.8	99.0	P/P	90 - 110
Thallium	98.6	98.7	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94978

Included Lab Sample IDs: 2122964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	100	102	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						4.73	
EPA 200.7 Rev. 4.4	Barium	101	103	108	108			0.159
	Calcium	110	104	113	114			0.922
	Iron	111	113	114	114			0.191
	Magnesium	112	108	116	117			0.873
	Potassium	106	100	107	109			1.49
	Sodium	107	102	111	111			0.544
	Zinc	99.2	103	107	107			0.448
EPA 200.8 Rev. 5.4	Aluminum	100	102	99.2	101			1.83
	Antimony	102	104	102	105			2.82
	Arsenic	101	102	100	103			2.38
	Boron	102	99.3	101	104			2.71
	Cadmium	98.5	99.7	98.6	99.7			1.12
	Chromium	98.4	98.0	99.2	100			1.21
	Copper	98.0	98.8	98.9	102			3.10
	Lead	102	103	101	104			3.31
	Nickel	98.7	97.8	97.9	99.5			1.64
	Selenium	98.8	99.2	97.7	98.4			0.766
	Silver	99.6	100	98.9	102			2.63
	Thallium	104	109	102	108			5.55
EPA 300.0 Rev. 2.1	Chloride	101	99.5	104			0.305	
	Sulfate	101	102	105			1.12	
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	102	103				1.83
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105						7.47
EPA 353.2 Rev. 2.0	NO2NO3-N	104	102	102				0.0
EPA 365.1 Rev. 2.0	Total-P	97.4	93.7	98.8				4.92
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	95.9	96.2				0.242
EPA 8321B	2,4-D	130	155	138				11.7
	Acesulfame K	119	90.7	92.9				2.39
	Acetaminophen	66.5	65.2	71.1				8.63
	Acetamiprid	77.6	97.4	109				10.9
	Afidopyropen	90.8	86.4	100				14.6
	AMPA	118	83.3	80.6				3.35
	Bentazon	99.7	101	88.7				8.91
	Benzovindiflupyr	87.3	101	88.4				13.2
	Carbamazepine	95.3	93.0	108				14.9
	Clothianidin	88.0	94.6	106				11.5
	Dinotefuran	82.7	92.8	103				10.2
	Diuron	93.8	98.2	110				11.5
	Endothall	94.7	49.9	52.4				4.93
	Fenuron	89.4	91.8	102				10.3
	Fluridone	87.9	91.7	105				12.5
	Glufosinate	90.5	87.1	80.7				7.64
	Glyphosate	98.2	83.9	81.6				2.80
	Hydrocodone	86.0	90.3	104				14.1
	Ibuprofen	81.5	89.4	84.6				5.54
	Imazapyr	91.1	136	118				12.5
	Imidacloprid	88.8	139	163				15.7
	Linuron	78.9	76.8	83.5				8.30
	Mandestrobin	89.6	92.0	101				9.54
	MCPD	133	151	128				16.7
	Naproxen	75.5	107	87.6				19.7
	Primidone	79.5	78.4	88.7				12.3
	Pyraclostrobin	87.3	97.9	93.4				4.72

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
EPA 8321B	Sucralose	106	110	107		2.89
	Thiamethoxam	91.3	123	125		1.40
	Tolfenpyrad	58.0	48.1	44.7		7.43
	Triclopyr	103	125	112		11.1
SM 2120 B	Color (true)	101			3.02	
SM 2320 B-97	Total Alkalinity	103			1.10	
SM 2540 C-97	TDS				2.72	
SM 4500 F-C-97	Fluoride	98.2	97.9	97.3		0.476
SM 5310 B-00	Organic Carbon	103	104	105		0.156

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2122952, 2122955
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2122964
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2122964
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2122952, 2122955
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2122952, 2122955
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2122953, 2122956
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2122953, 2122956
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2122953, 2122956
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2122953, 2122956
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2122954, 2122957
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2122962, 2122963
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2122962, 2122963
SM 2120 B / E31780	True Color measured at 450 nm	2122952, 2122955
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2122952, 2122955
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2122952, 2122955
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2122952, 2122955
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2122952, 2122955
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2122953, 2122956

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	09/26/2019			09/26/2019 16:38	Rosalyn Ballman	2122952, 2122955
EPA 200.7 Rev. 4.4	09/26/2019	09/30/2019 14:15	Elliott D. Healy	10/02/2019 14:03	Alexander Thompson	2122964
EPA 200.8 Rev. 5.4	09/26/2019	09/30/2019 14:15	Elliott D. Healy	10/14/2019 17:25	Robert K Palmer	2122964
	09/26/2019	09/30/2019 14:15	Elliott D. Healy	10/15/2019 21:48	Robert K Palmer	2122964
EPA 300.0 Rev. 2.1	09/26/2019			10/05/2019 05:39	Julia Storbeck	2122952
	09/26/2019			10/05/2019 05:51	Julia Storbeck	2122955
EPA 350.1 Rev. 2.0	09/26/2019			10/04/2019 12:02	Ping Hua	2122953
	09/26/2019			10/04/2019 12:03	Ping Hua	2122956
EPA 351.2 Rev. 2.0	09/26/2019	09/30/2019 13:30	Jhamieka S. Greenwood	10/01/2019 18:26	Julia Storbeck	2122953
	09/26/2019	09/30/2019 13:30	Jhamieka S. Greenwood	10/01/2019 18:28	Julia Storbeck	2122956
EPA 353.2 Rev. 2.0	09/26/2019			10/01/2019 12:39	Beverly Y. Sanders	2122953
	09/26/2019			10/01/2019 12:40	Beverly Y. Sanders	2122956
EPA 365.1 Rev. 2.0	09/26/2019	10/01/2019 12:41	Vijayalakshmi Reddy	10/02/2019 11:27	Lipi Saha	2122956
	09/26/2019	10/01/2019 12:41	Vijayalakshmi Reddy	10/02/2019 13:08	Lipi Saha	2122953
EPA 365.1 Rev. 2.0 dissolved	09/26/2019			09/26/2019 15:15	Ping Hua	2122954
	09/26/2019			09/26/2019 15:17	Ping Hua	2122957
EPA 8321B	09/26/2019	09/30/2019 09:00	Hoor Shaik	10/02/2019 12:20	Juyoung Kim	2122962
	09/26/2019	09/30/2019 09:00	Hoor Shaik	10/02/2019 12:55	Juyoung Kim	2122963
	09/26/2019	09/30/2019 11:00	Rebecca Ware	09/30/2019 14:28	Rebecca Ware	2122962
	09/26/2019	09/30/2019 11:00	Rebecca Ware	09/30/2019 14:42	Rebecca Ware	2122963
	09/26/2019	09/30/2019 11:00	Rebecca Ware	10/01/2019 11:37	Rebecca Ware	2122962
	09/26/2019	09/30/2019 11:00	Rebecca Ware	10/01/2019 11:47	Rebecca Ware	2122963
	09/26/2019	09/30/2019 11:00	Rebecca Ware	10/02/2019 10:51	Rebecca Ware	2122962
	09/26/2019	09/30/2019 11:00	Rebecca Ware	10/02/2019 11:02	Rebecca Ware	2122963
SM 2120 B	09/26/2019			09/26/2019 15:54	Madeline Funaro	2122952, 2122955
SM 2320 B-97	09/26/2019			10/03/2019 07:20	Dale L. Simmons	2122952
	09/26/2019			10/03/2019 07:32	Dale L. Simmons	2122955
SM 2540 C-97	09/26/2019			09/27/2019 17:15	Rosalyn Ballman	2122952, 2122955
SM 2540 D-97	09/26/2019			09/27/2019 17:15	Rosalyn Ballman	2122952, 2122955
SM 4500 F-C-97	09/26/2019			10/03/2019 07:20	Dale L. Simmons	2122952
	09/26/2019			10/03/2019 07:32	Dale L. Simmons	2122955
SM 5310 B-00	09/26/2019			10/02/2019 16:01	Madeline Funaro	2122956
	09/26/2019			10/02/2019 18:55	Madeline Funaro	2122953