

Chemical Analysis Report

NW-DIST-2022-02-09-01

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

Event Description: **Escambia Bay Whaler Run**
Request ID: **RQ-2022-02-07-32**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Myranda Butler

For additional information please contact
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 03-MAR-2022 08:46

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

NON-CONFORMANCE REPORT INCLUDED

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: Trout Bayou

Collection Date/Time: 02/07/2022 12:45

Field ID: G4NW0443

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2304480	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P409638	
	SM 2320 B-2011	Total Alkalinity	51		mg CaCO3/L	P410035	RPD
	SM 2540 D-2011	TSS	3	IA	mg/L	P409984	
	SM 4500 F-C-2011	Fluoride	0.46	I	mg F/L	P409907	
2304481	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P409952	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P409671	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.032		mg N/L	P410049	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P409630	
	SM 5310 B-2011	Organic Carbon	3.4		mg C/L	P410520	
2304482	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P409615	

Ref. Method and Comment:

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

Sample Location: Judges Bayou Mouth

Collection Date/Time: 02/07/2022 11:30

Field ID: G4NW0441

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2304477	EPA 180.1 Rev. 2.0	Turbidity	7.9	A	NTU	P409638	
	SM 2320 B-2011	Total Alkalinity	14		mg CaCO3/L	P409857	
	SM 2540 D-2011	TSS	5	I	mg/L	P409982	
	SM 4500 F-C-2011	Fluoride	0.10		mg F/L	P409860	
2304478	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P410280	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P409729	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.35		mg N/L	P410049	
	EPA 365.1 Rev. 2.0	Total-P	0.067		mg P/L	P409630	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P410400	
2304479	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	IQ	mg P/L	P409627	
2304492	EPA 8321B	Acesulfame K	0.10	U	ug/L	P409584	
		2,4-D	0.026		ug/L	P409557	
		AMPA	1.0	U	ug/L	P409584	
		2,4,5-T	0.0040	U	ug/L	P409557	
		Acetaminophen	0.0080	U	ug/L	P409557	
		Endothall	0.25	U	ug/L	P409584	
		Acetamiprid	0.0020	U	ug/L	P409557	
		Glufosinate	1.0	U	ug/L	P409584	
		Glyphosate	1.0	U	ug/L	P409584	
		Afidopyropen	0.0020	U	ug/L	P409557	
		Sucralose	0.068		ug/L	P409584	
		Bentazon	8.0E-04	U	ug/L	P409557	
		Benzovindiflupyr	0.0020	U	ug/L	P409557	
		Carbamazepine	8.0E-04	U	ug/L	P409557	
		Clothianidin	0.0020	U	ug/L	P409557	
		Dinotefuran	0.0020	U	ug/L	P409557	
		Diuron	0.0020	U	ug/L	P409557	
		Fenuron	0.016	U	ug/L	P409557	
		Fluridone	8.0E-04	U	ug/L	P409557	
		Imazapyr	0.027		ug/L	P409557	
		Hydrocodone	0.0020	U	ug/L	P409557	
		Ibuprofen	0.020	U	ug/L	P409557	RPD
		Imidacloprid	0.0020	U	ug/L	P409557	
		Linuron	0.0040	U	ug/L	P409557	
		Mandestrobin	0.0020	U	ug/L	P409557	
		MCP	0.0040	U	ug/L	P409557	
		Naproxen	0.0080	U	ug/L	P409557	
		Primidone	0.0040	U	ug/L	P409557	
		Pyraclostrobin	0.0020	U	ug/L	P409557	
		Silvex	0.0040	U	ug/L	P409557	MS
		Thiamethoxam	0.0020	U	ug/L	P409557	
		Tolfenpyrad	0.0020	U	ug/L	P409557	
		Triclopyr	0.0040	U	ug/L	P409557	MS

Field ID: G4NW0441

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired upon receipt.
EPA 8321B: Some MDLs are elevated due to required dilution of sample matrix.

Non-Conformance Report

NCR ID: 9257

Event(s)

NW-DIST-2022-02-09-01

Job(s)

TLH-2022-02-09-12

Sample(s)

2304479

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Samples arrived late

Observation: Samples arrived late, samples received within the acceptable temperature range.

Resolution: Data will be qualified as appropriate. Customer contacted, email correspondence attached to sample submittal forms.

Authorized by/Date: Kyle Klug 2/14/2022

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P409638

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409952

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410280

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409671

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409729

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410049

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409630

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409615

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409627

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: P409557

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	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	0.0040	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Silvex	0.0040	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B

Batch ID: P409584

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 2320 B-2011

Batch ID: P409857

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

Reference Method: SM 2320 B-2011

Batch ID: P410035

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P409982

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P409984

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P409860

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P409907

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P410400

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

Reference Method: SM 5310 B-2011
Batch ID: P410520

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P409638

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	96.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409952

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410280

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409671

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409729

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.8		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410049

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409630

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409615

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409627

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P409557

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	86.8		P	40 - 150
2,4,5-T	63.9		P	40 - 150
Acetaminophen	62.7		P	30 - 150
Acetamiprid	83.8		P	40 - 150
Afidopyropen	49.6		P	40 - 150
Bentazon	83.1		P	30 - 150
Benzovindiflupyr	66.9		P	40 - 150
Carbamazepine	96.6		P	40 - 150
Clothianidin	81.7		P	40 - 150
Dinotefuran	98.9		P	40 - 150
Diuron	98.1		P	40 - 150
Fenuron	86.1		P	40 - 150
Fluridone	89.1		P	40 - 150
Hydrocodone	85.0		P	40 - 150
Ibuprofen	101		P	40 - 150
Imazapyr	101		P	40 - 150
Imidacloprid	79.8		P	40 - 150
Linuron	59.2		P	40 - 150
Mandestrobin	93.4		P	40 - 150
MCPP	102		P	40 - 150
Naproxen	64.8		P	40 - 150
Primidone	109		P	40 - 150
Pyraclostrobin	70.6		P	40 - 150
Silvex	76.7		P	40 - 150
Thiamethoxam	103		P	40 - 150
Tolfenpyrad	40.4		P	30 - 150
Triclopyr	55.8		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P409584

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	95.4		P	40 - 150
AMPA	95.0		P	40 - 150
Endothall	61.7		P	40 - 150
Glufosinate	105		P	40 - 150
Glyphosate	92.5		P	40 - 150
Sucralose	90.3		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P409857

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.5		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P410035

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.5		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P409860

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P409907

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P410400

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.2		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P410520

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409952

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303923	Ammonia-N	98.6	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410280

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303682	Ammonia-N	96.0	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409671

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2304295	Kjeldahl Nitrogen	105	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409729

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2304478	Kjeldahl Nitrogen	106	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410049

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2304273	NO2NO3-N	98.5	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409630

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2304481	Total-P	100	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409615

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2304482	O-Phosphate-P	99.2	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409627

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2304531	O-Phosphate-P	94.1	94.6	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P409557

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303655	2,4-D	105	93.0	P/P	40 - 150
2303655	2,4,5-T	43.0	45.7	P/P	40 - 150
2303655	Acetaminophen	91.7	96.6	P/P	30 - 150
2303655	Acetamiprid	114	101	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P409557

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303655	Afidopyropen	96.2	100	P/P	40 - 150
2303655	Bentazon	63.4	77.2	P/P	30 - 150
2303655	Benzovindiflupyr	95.6	78.2	P/P	40 - 150
2303655	Carbamazepine	115	114	P/P	40 - 150
2303655	Clothianidin	103	96.4	P/P	40 - 150
2303655	Dinotefuran	132	117	P/P	40 - 150
2303655	Diuron	99.9	76.3	P/P	40 - 150
2303655	Fenuron	90.5	95.4	P/P	40 - 150
2303655	Fluridone	91.1	104	P/P	40 - 150
2303655	Hydrocodone	98.9	98.6	P/P	40 - 150
2303655	Ibuprofen	121	85.4	P/P	40 - 150
2303655	Imazapyr	136	141	P/P	40 - 150
2303655	Imidacloprid	114	120	P/P	40 - 150
2303655	Linuron	69.8	71.9	P/P	40 - 150
2303655	Mandestrobin	91.3	105	P/P	40 - 150
2303655	MCCP	118	104	P/P	40 - 150
2303655	Naproxen	71.5	85.6	P/P	40 - 150
2303655	Primidone	105	81.4	P/P	40 - 150
2303655	Pyraclostrobin	86.4	88.4	P/P	40 - 150
2303655	Silvex	38.8	44.0	F/P	40 - 150
2303655	Thiamethoxam	124	121	P/P	40 - 150
2303655	Tolfenpyrad	50.3	38.5	P/P	30 - 150
2303655	Triclopyr	48.9	37.5	P/F	40 - 150

Reference Method: EPA 8321B
Batch ID: P409584

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2304429	Acesulfame K	97.0	98.2	P/P	40 - 150
2304429	AMPA	54.5	53.6	P/P	40 - 150
2304429	Endothall	89.1	89.8	P/P	40 - 150
2304429	Glufosinate	86.1	84.8	P/P	40 - 150
2304429	Glyphosate	70.3	64.7	P/P	40 - 150
2304429	Sucralose	91.1	94.3	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P409860

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2304818	Fluoride	98.6	98.6	P/P	92 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P409907

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2305354	Fluoride	97.0	97.8	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P410400

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303952	Organic Carbon	101		P	85 - 115

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P410520

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2306636	Organic Carbon	92.3	93.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P409638

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2304477	Turbidity	10.6	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409952

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303923	Ammonia-N	0.941	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410280

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303682	Ammonia-N	7.09	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409671

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2304295	Kjeldahl Nitrogen	2.72	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409729

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2304478	Kjeldahl Nitrogen	2.31	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410049

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2304273	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409630

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2304481	Total-P	2.42	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409615

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2304482	O-Phosphate-P	1.40	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409627

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2304531	O-Phosphate-P	0.504	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P409557

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303655	2,4-D	11.7	Spike	P	0 - 30
2303655	2,4,5-T	6.20	Spike	P	0 - 30
2303655	Acetaminophen	5.18	Spike	P	0 - 30
2303655	Acetamiprid	12.8	Spike	P	0 - 30
2303655	Afidopyropen	4.19	Spike	P	0 - 30
2303655	Bentazon	11.3	Spike	P	0 - 30
2303655	Benzovindiflupyr	20.0	Spike	P	0 - 30
2303655	Carbamazepine	0.304	Spike	P	0 - 30
2303655	Clothianidin	6.40	Spike	P	0 - 30
2303655	Dinotefuran	12.2	Spike	P	0 - 30
2303655	Diuron	25.2	Spike	P	0 - 30
2303655	Fenuron	5.28	Spike	P	0 - 30
2303655	Fluridone	12.6	Spike	P	0 - 30
2303655	Hydrocodone	0.229	Spike	P	0 - 30
2303655	Ibuprofen	34.6	Spike	F	0 - 30
2303655	Imazapyr	3.09	Spike	P	0 - 30
2303655	Imidacloprid	5.12	Spike	P	0 - 30
2303655	Linuron	2.95	Spike	P	0 - 30
2303655	Mandestrobin	13.7	Spike	P	0 - 30
2303655	MCP	12.4	Spike	P	0 - 30
2303655	Naproxen	18.0	Spike	P	0 - 30
2303655	Primidone	25.0	Spike	P	0 - 30
2303655	Pyraclostrobin	2.21	Spike	P	0 - 30
2303655	Silvex	12.8	Spike	P	0 - 30
2303655	Thiamethoxam	2.62	Spike	P	0 - 30
2303655	Tolfenpyrad	26.5	Spike	P	0 - 30
2303655	Triclopyr	26.3	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P409584

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2304429	Acesulfame K	1.24	Spike	P	0 - 30
2304429	AMPA	1.44	Spike	P	0 - 30
2304429	Endothall	0.718	Spike	P	0 - 30
2304429	Glufosinate	1.54	Spike	P	0 - 30
2304429	Glyphosate	6.98	Spike	P	0 - 30
2304429	Sucralose	3.29	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
 Batch ID: P409857

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2304818	Total Alkalinity	0.689	Sample	P	0 - 5.2

Reference Method: SM 2320 B-2011
 Batch ID: P410035

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306102	Total Alkalinity	6.63	Sample	F	0 - 5.2

Reference Method: SM 4500 F-C-2011
 Batch ID: P409860

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2304818	Fluoride	0.0	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011
 Batch ID: P409907

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2305354	Fluoride	0.470	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
 Batch ID: P410400

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303952	Organic Carbon	0.370	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
 Batch ID: P410520

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306636	Organic Carbon	1.24	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2304492

Field Sample ID: G4NW0441

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	85.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	90.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	147	P	30 - 160
EPA 8321B	Diuron-d6	79.3	P	30 - 160
EPA 8321B	Endothall-d6	86.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	79.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	86.7	P	30 - 160
EPA 8321B	Primidone-d5	118	P	30 - 160
EPA 8321B	Sucralose-d6	93.6	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A110306

Included Lab Sample IDs: 2304482

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.9	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A110311

Included Lab Sample IDs: 2304479

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.9	98.9	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A110314

Included Lab Sample IDs: 2304477, 2304480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.0	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A110365

Included Lab Sample IDs: 2304478, 2304481

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	101	P/P	90 - 110
Total-P	104	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A110380

Included Lab Sample IDs: 2304492

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	86.3	113	P/P	50 - 150
2,4,5-T	119	149	P/P	50 - 150
Acetaminophen	97.2	114	P/P	60 - 160
Acetamiprid	111	108	P/P	50 - 150
Afidopyropen	102	121	P/P	50 - 150
Bentazon	98.2	103	P/P	50 - 160
Benzovindiflupyr	77.8	94.8	P/P	50 - 150
Carbamazepine	98.0	116	P/P	60 - 150
Clothianidin	111	113	P/P	60 - 150
Dinotefuran	99.8	114	P/P	50 - 150
Diuron	110	112	P/P	60 - 160
Fenuron	89.1	113	P/P	60 - 150
Fluridone	108	119	P/P	60 - 160
Hydrocodone	96.9	102	P/P	60 - 150
Ibuprofen	135	112	P/P	50 - 160
Imazapyr	106	108	P/P	50 - 150
Imidacloprid	115	107	P/P	60 - 150
Linuron	81.0	126	P/P	60 - 150
Mandestrobin	119	121	P/P	50 - 150
MCPP	95.5	112	P/P	50 - 150
Naproxen	69.6	55.1	P/P	50 - 160
Primidone	107	99.8	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A110380
Included Lab Sample IDs: 2304492

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Pyraclostrobin	120	143	P/P	60 - 150
Silvex	104	143	P/P	50 - 150
Thiamethoxam	102	114	P/P	50 - 150
Tolfenpyrad	94.9	138	P/P	60 - 150
Triclopyr	99.5	139	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A110387
Included Lab Sample IDs: 2304492

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	97.2	99.2	P/P	60 - 160
Glufosinate	105	104	P/P	60 - 160
Glyphosate	95.7	95.4	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A110393
Included Lab Sample IDs: 2304492

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	88.9	98.4	P/P	60 - 160
Endothall	72.6	83.6	P/P	60 - 160
Sucralose	82.0	84.8	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A110402
Included Lab Sample IDs: 2304481

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.1	94.6	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A110414
Included Lab Sample IDs: 2304477

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.7	94.8	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A110414
Included Lab Sample IDs: 2304477

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A110427
Included Lab Sample IDs: 2304478

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.2	98.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A110433

Included Lab Sample IDs: 2304480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A110454

Included Lab Sample IDs: 2304481

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.3	98.6	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A110482

Included Lab Sample IDs: 2304480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.3	93.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A110486

Included Lab Sample IDs: 2304478, 2304481

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A110582

Included Lab Sample IDs: 2304478

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

Reference Method: SM 5310 B-2011

Run ID: A110642

Included Lab Sample IDs: 2304478

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.0	95.8	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A110694

Included Lab Sample IDs: 2304481

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	105	95.2	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	96.1				10.6	
EPA 350.1 Rev. 2.0	Ammonia-N	100	98.6	100			0.941
	Ammonia-N	102	96.0	104			7.09
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	105	108			2.72
	Kjeldahl Nitrogen	96.8	106	103			2.31
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	98.5	98.5			0.0
EPA 365.1 Rev. 2.0	Total-P	104	100	103			2.42
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.1	99.2	101			1.40
	O-Phosphate-P	100	94.1	94.6			0.504
EPA 8321B	2,4-D	86.8	105	93.0			11.7
	2,4,5-T	63.9	43.0	45.7			6.20
	Acesulfame K	95.4	97.0	98.2			1.24
	Acetaminophen	62.7	91.7	96.6			5.18
	Acetamiprid	83.8	114	101			12.8
	Afidopyropen	49.6	96.2	100			4.19
	AMPA	95.0	54.5	53.6			1.44
	Bentazon	83.1	63.4	77.2			11.3
	Benzovindiflupyr	66.9	95.6	78.2			20.0
	Carbamazepine	96.6	115	114			0.304
	Clothianidin	81.7	103	96.4			6.40
	Dinotefuran	98.9	132	117			12.2
	Diuron	98.1	99.9	76.3			25.2
	Endothall	61.7	89.1	89.8			0.718
	Fenuron	86.1	90.5	95.4			5.28
	Fluridone	89.1	91.1	104			12.6
	Glufosinate	105	86.1	84.8			1.54
	Glyphosate	92.5	70.3	64.7			6.98
	Hydrocodone	85.0	98.9	98.6			0.229
	Ibuprofen	101	121	85.4			34.6
	Imazapyr	101	136	141			3.09
	Imidacloprid	79.8	114	120			5.12
	Linuron	59.2	69.8	71.9			2.95
	Mandestrobin	93.4	91.3	105			13.7
	MCPP	102	118	104			12.4
	Naproxen	64.8	71.5	85.6			18.0
	Primidone	109	105	81.4			25.0
	Pyraclostrobin	70.6	86.4	88.4			2.21
	Silvex	76.7	38.8	44.0			12.8
	Sucralose	90.3	91.1	94.3			3.29
	Thiamethoxam	103	124	121			2.62
	Tolfenpyrad	40.4	50.3	38.5			26.5
	Triclopyr	55.8	48.9	37.5			26.3
SM 2320 B-2011	Total Alkalinity	99.5				0.689	
	Total Alkalinity	96.5				6.63	
SM 4500 F-C-2011	Fluoride	98.2	98.6	98.6			0.0
	Fluoride	97.9	97.0	97.8			0.470
SM 5310 B-2011	Organic Carbon	97.2	101				0.370
	Organic Carbon	95.2	92.3	93.5			1.24

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2304477, 2304480

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2304478, 2304481
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2304478, 2304481
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2304478, 2304481
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2304478, 2304481
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2304479, 2304482
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2304492
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2304477, 2304480
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2304477, 2304480
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2304477, 2304480
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2304478, 2304481

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	02/09/2022			02/09/2022 11:19	Khloe J Berg	2304477
	02/09/2022			02/09/2022 11:22	Khloe J Berg	2304480
EPA 350.1 Rev. 2.0	02/09/2022			02/16/2022 13:38	Ping Hua	2304481
	02/09/2022			02/23/2022 15:11	Judith K. Clark	2304478
EPA 351.2 Rev. 2.0	02/09/2022	02/11/2022 10:40	Samantha L Bates	02/14/2022 16:52	Alexandra J Mattheus	2304481
	02/09/2022	02/14/2022 16:13	Samantha L Bates	02/15/2022 15:04	Alexandra J Mattheus	2304478
EPA 353.2 Rev. 2.0	02/09/2022			02/17/2022 17:11	Nathaniel J Jones	2304478
	02/09/2022			02/17/2022 17:12	Nathaniel J Jones	2304481
EPA 365.1 Rev. 2.0	02/09/2022	02/10/2022 14:00	Simonne.V. Calhoun	02/11/2022 15:05	Shengyu Ding	2304481
	02/09/2022	02/10/2022 14:00	Simonne.V. Calhoun	02/11/2022 15:19	Shengyu Ding	2304478
EPA 365.1 Rev. 2.0 dissolved	02/09/2022			02/09/2022 12:17	Blanca Fach	2304482
	02/09/2022			02/09/2022 14:31	James L Waggeberby	2304479
EPA 8321B	02/09/2022	02/09/2022 13:30	June Rhew	02/11/2022 13:10	Juyoung Kim	2304492
	02/09/2022	02/11/2022 09:00	Umesh Chiluwai	02/11/2022 15:34	Umesh Chiluwai	2304492
	02/09/2022	02/11/2022 09:00	Umesh Chiluwai	02/11/2022 18:44	Umesh Chiluwai	2304492
SM 2320 B-2011	02/09/2022			02/15/2022 02:10	Dale L. Simmons	2304477
	02/09/2022			02/18/2022 01:23	Dale L. Simmons	2304480
SM 2540 D-2011	02/09/2022			02/11/2022 14:02	Yijie Li	2304477, 2304480
SM 4500 F-C-2011	02/09/2022			02/15/2022 02:10	Dale L. Simmons	2304477
	02/09/2022			02/16/2022 03:12	Dale L. Simmons	2304480
SM 5310 B-2011	02/09/2022			02/27/2022 02:07	Touraj Touran	2304478
	02/09/2022			02/28/2022 09:39	Touraj Touran	2304481