

Chemical Analysis Report

NW-DIST-2022-04-15-02

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

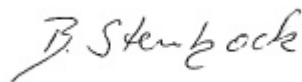
Event Description: **Dune Lakes Run**
Request ID: **RQ-2022-04-11-30**
Customer: **NW-DIST**
Project ID: **SMP**

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

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 06-MAY-2022 14:42



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: Eastern Lake off of Center Avenue

Collection Date/Time: 04/13/2022 12:05

Field ID: G3NW0124

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2319754	EPA 8321B	Acesulfame K	0.10	U	ug/L	P412505	
		2,4-D	0.0020	U	ug/L	P412403	
		AMPA	1.0	U	ug/L	P412505	
		2,4,5-T	0.0040	U	ug/L	P412403	
		Acetaminophen	0.0080	U	ug/L	P412403	
		Endothall	0.25	U	ug/L	P412505	
		Acetamiprid	0.0020	U	ug/L	P412403	
		Glufosinate	1.0	U	ug/L	P412505	
		Glyphosate	1.0	U	ug/L	P412505	
		Afidopyropen	0.0020	U	ug/L	P412403	
		Sucralose	0.042		ug/L	P412505	
		Bentazon	8.1E-04	I	ug/L	P412403	
		Benzovindiflupyr	0.0020	U	ug/L	P412403	
		Carbamazepine	8.0E-04	U	ug/L	P412403	
		Clothianidin	0.0020	U	ug/L	P412403	
		Dinotefuran	0.0020	U	ug/L	P412403	
		Diuron	0.0020	U	ug/L	P412403	
		Fenuron	0.016	U	ug/L	P412403	
		Fluridone	8.0E-04	U	ug/L	P412403	
		Imazapyr	0.0049	I	ug/L	P412403	
		Hydrocodone	0.0020	U	ug/L	P412403	
		Ibuprofen	0.020	U	ug/L	P412403	
		Imidacloprid	0.0075	I	ug/L	P412403	
		Linuron	0.0040	U	ug/L	P412403	
		Mandestrobin	0.0020	U	ug/L	P412403	
		MCPP	0.0020	U	ug/L	P412403	
		Naproxen	0.0080	U	ug/L	P412403	RPD
		Primidone	0.0040	U	ug/L	P412403	
		Pyraclostrobin	0.0020	U	ug/L	P412403	
		Silvex	0.0040	U	ug/L	P412403	
		Thiamethoxam	0.0020	U	ug/L	P412403	
		Tolfenpyrad	0.0020	U	ug/L	P412403	
		Triclopyr	0.0040	U	ug/L	P412403	

Ref. Method and Comment:
 EPA 8321B: Some MDLs are elevated due to required dilution of sample matrix.

Sample Location: Western Lake

Collection Date/Time: 04/13/2022 11:00

Field ID: G3NW0007

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2319759	SM 2320 B-2011	Total Alkalinity	44	A	mg CaCO3/L	P412808	
	SM 2540 D-2011	TSS	3	U	mg/L	P412993	
	SM 4500-F- C-2011	Fluoride	0.33		mg F/L	P412811	
2319761	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P412709	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33	I	mg N/L	P412825	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P412688	
	EPA 365.1 Rev. 2.0	Total-P	0.007	I	mg P/L	P412669	
	SM 5310 B-2011	Organic Carbon	7.7		mg C/L	P412872	

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: Alligator Lake

Collection Date/Time: 04/13/2022 10:20

Field ID: G3NW0219

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2319758	SM 2320 B-2011	Total Alkalinity	40		mg CaCO3/L	P412808	
	SM 2540 D-2011	TSS	5	I	mg/L	P412993	
	SM 4500-F- C-2011	Fluoride	0.34		mg F/L	P413150	
2319760	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P412546	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P412766	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P412688	
	EPA 365.1 Rev. 2.0	Total-P	0.01	I	mg P/L	P412669	
	SM 5310 B-2011	Organic Carbon	10		mg C/L	P412975	

Ref. Method and Comment:

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

Non-Conformance Report

NCR ID: 9353

Event(s)

NW-DIST-2022-04-15-02

Job(s)

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Samples arrived late

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

Resolution: Samples will be qualified as appropriate.

Customer (Curtis M.) contacted by phone, customer requested that Turbidity and CHLSUITE be canceled.
Biology and Chemistry supervisors were notified by email.

Authorized by/Date: Kyle Klug 4/19/2022

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 350.1 Rev. 2.0
Batch ID: P412546

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412709

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412766

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412825

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412688

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412669

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

Reference Method: EPA 8321B
Batch ID: P412403

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P412403

Component	Result	Code	Units
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
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: P412505

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: P412808

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

Reference Method: SM 2540 D-2011

Batch ID: P412993

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011

Batch ID: P412811

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500-F- C-2011

Batch ID: P413150

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011

Batch ID: P412872

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P412975

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412546

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	93.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412709

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: P412766

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412825

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412688

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412669

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

Reference Method: EPA 8321B
Batch ID: P412403

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	77.5		P	30 - 160
2,4,5-T	67.0		P	30 - 160
Acetaminophen	56.6		P	30 - 150
Acetamiprid	91.6		P	30 - 160
Afidopyropen	53.3		P	30 - 160
Bentazon	51.0		P	30 - 150
Benzovindiflupyr	80.4		P	30 - 160
Carbamazepine	92.3		P	30 - 160
Clothianidin	95.3		P	30 - 160
Dinotefuran	82.2		P	30 - 160
Diuron	90.6		P	30 - 160
Fenuron	112		P	30 - 160
Fluridone	84.8		P	30 - 160
Hydrocodone	88.5		P	30 - 160
Ibuprofen	72.1		P	30 - 160
Imazapyr	79.4		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P412403

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Imidacloprid	92.5		P	30 - 160
Linuron	66.6		P	30 - 160
Mandestrobin	92.0		P	30 - 160
MCPP	86.6		P	30 - 160
Naproxen	59.3		P	30 - 160
Primidone	90.6		P	30 - 160
Pyraclostrobin	86.1		P	30 - 160
Silvex	64.2		P	30 - 160
Thiamethoxam	87.5		P	30 - 160
Tolfenpyrad	51.8		P	30 - 160
Triclopyr	67.0		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P412505

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	115		P	40 - 150
AMPA	98.9		P	40 - 150
Endothall	132		P	40 - 150
Glufosinate	93.2		P	40 - 150
Glyphosate	119		P	40 - 150
Sucralose	124		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P412808

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.7		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P412811

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	93 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P413150

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.6		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P412872

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.6		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P412975

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412546

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319248	Ammonia-N	101	98.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412709

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2320396	Ammonia-N	98.8	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412766

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2318920	Kjeldahl Nitrogen	94.2	96.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412825

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2318238	Kjeldahl Nitrogen	102	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412688

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319760	NO2NO3-N	94.6	94.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412669

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319642	Total-P	91.3	92.4	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P412403

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319665	2,4-D	67.1	87.3	P/P	30 - 160
2319665	2,4,5-T	64.4	70.1	P/P	30 - 160
2319665	Acetaminophen	77.3	88.9	P/P	30 - 150
2319665	Acetamiprid	94.8	109	P/P	30 - 160
2319665	Afidopyropen	66.9	80.9	P/P	30 - 160
2319665	Bentazon	48.3	58.3	P/P	30 - 150
2319665	Benzovindiflupyr	79.7	93.8	P/P	30 - 160
2319665	Carbamazepine	84.8	103	P/P	30 - 160
2319665	Clothianidin	98.5	105	P/P	30 - 160
2319665	Dinotefuran	90.3	107	P/P	30 - 160
2319665	Diuron	82.6	96.7	P/P	30 - 160
2319665	Fenuron	97.9	118	P/P	30 - 160
2319665	Fluridone	78.8	94.0	P/P	30 - 160
2319665	Hydrocodone	93.9	111	P/P	30 - 160
2319665	Ibuprofen	64.6	70.9	P/P	30 - 160
2319665	Imazapyr	95.8	117	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P412403

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319665	Imidacloprid	93.7	115	P/P	30 - 160
2319665	Linuron	63.2	72.8	P/P	30 - 160
2319665	Mandestrobin	82.1	95.1	P/P	30 - 160
2319665	MCPP	80.7	92.4	P/P	30 - 160
2319665	Naproxen	44.3	78.3	P/P	30 - 160
2319665	Primidone	93.4	95.4	P/P	30 - 160
2319665	Pyraclostrobin	88.1	97.0	P/P	30 - 160
2319665	Silvex	59.8	74.6	P/P	30 - 160
2319665	Thiamethoxam	97.3	119	P/P	30 - 160
2319665	Tolfenpyrad	39.9	51.7	P/P	30 - 160
2319665	Triclopyr	67.0	73.2	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P412505

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319559	Acesulfame K	113	115	P/P	40 - 150
2319559	AMPA	81.6	85.9	P/P	40 - 150
2319559	Endothall	133	121	P/P	40 - 150
2319559	Glufosinate	108	101	P/P	40 - 150
2319559	Glyphosate	122	115	P/P	40 - 150
2319559	Sucralose	124	140	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P412811

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319759	Fluoride	99.1	97.7	P/P	92 - 107

Reference Method: SM 4500-F- C-2011
Batch ID: P413150

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2318659	Fluoride	96.8	97.7	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P412872

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319761	Organic Carbon	88.3	90.2	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P412975

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319637	Organic Carbon	86.8	89.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412546

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319248	Ammonia-N	2.44	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412709

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2320396	Ammonia-N	1.34	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412766

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2318920	Kjeldahl Nitrogen	2.19	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412825

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2318238	Kjeldahl Nitrogen	3.64	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412688

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319760	NO2NO3-N	0.530	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412669

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319642	Total-P	1.17	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P412403

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319665	2,4-D	26.1	Spike	P	0 - 30
2319665	2,4,5-T	8.35	Spike	P	0 - 30
2319665	Acetaminophen	14.0	Spike	P	0 - 30
2319665	Acetamiprid	14.0	Spike	P	0 - 30
2319665	Afidopyropen	18.9	Spike	P	0 - 30
2319665	Bentazon	18.8	Spike	P	0 - 30
2319665	Benzovindiflupyr	16.2	Spike	P	0 - 30
2319665	Carbamazepine	19.3	Spike	P	0 - 30
2319665	Clothianidin	6.69	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P412403

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319665	Dinotefuran	17.1	Spike	P	0 - 30
2319665	Diuron	15.7	Spike	P	0 - 30
2319665	Fenuron	18.6	Spike	P	0 - 30
2319665	Fluridone	17.6	Spike	P	0 - 30
2319665	Hydrocodone	17.1	Spike	P	0 - 30
2319665	Ibuprofen	9.35	Spike	P	0 - 30
2319665	Imazapyr	19.6	Spike	P	0 - 30
2319665	Imidacloprid	20.5	Spike	P	0 - 30
2319665	Linuron	14.1	Spike	P	0 - 30
2319665	Mandestrobin	14.7	Spike	P	0 - 30
2319665	MCPPP	13.5	Spike	P	0 - 30
2319665	Naproxen	55.6	Spike	F	0 - 30
2319665	Primidone	2.18	Spike	P	0 - 30
2319665	Pyraclostrobin	9.60	Spike	P	0 - 30
2319665	Silvex	22.0	Spike	P	0 - 30
2319665	Thiamethoxam	20.3	Spike	P	0 - 30
2319665	Tolfenpyrad	25.8	Spike	P	0 - 30
2319665	Triclopyr	8.81	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P412505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319559	Acesulfame K	1.93	Spike	P	0 - 30
2319559	AMPA	4.44	Spike	P	0 - 30
2319559	Endothall	9.11	Spike	P	0 - 30
2319559	Glufosinate	6.04	Spike	P	0 - 30
2319559	Glyphosate	4.75	Spike	P	0 - 30
2319559	Sucralose	5.27	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P412808

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319759	Total Alkalinity	3.36	Sample	P	0 - 5.2

Reference Method: SM 4500-F- C-2011
Batch ID: P412811

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319759	Fluoride	0.953	Spike	P	0 - 2.1

Reference Method: SM 4500-F- C-2011
Batch ID: P413150

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2318659	Fluoride	0.520	Spike	P	0 - 2.1

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P412872

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319761	Organic Carbon	1.75	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P412975

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319637	Organic Carbon	2.76	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2319754

Field Sample ID: G3NW0124

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	93.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	88.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	116	P	30 - 160
EPA 8321B	Diuron-d6	92.9	P	30 - 160
EPA 8321B	Endothall-d6	95.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	47.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	85.8	P	30 - 160
EPA 8321B	Primidone-d5	113	P	30 - 160
EPA 8321B	Sucralose-d6	114	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A111551

Included Lab Sample IDs: 2319760

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.3	98.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A111593

Included Lab Sample IDs: 2319760, 2319761

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A111601

Included Lab Sample IDs: 2319761

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.4	99.3	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A111606

Included Lab Sample IDs: 2319754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	92.5	93.2	P/P	60 - 160
Sucralose	105	104	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A111608

Included Lab Sample IDs: 2319754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	85.6	81.7	P/P	60 - 160
Endothall	103	102	P/P	60 - 160
Glufosinate	95.0	91.1	P/P	60 - 160
Glyphosate	115	117	P/P	60 - 160

Reference Method: SM 2320 B-2011

Run ID: A111656

Included Lab Sample IDs: 2319758, 2319759

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.6	98.2	P/P	90 - 110
Total Alkalinity	98.2	95.9	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A111656

Included Lab Sample IDs: 2319759

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

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A111683

Included Lab Sample IDs: 2319761

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	93.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A111695

Included Lab Sample IDs: 2319760

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	107	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A111701

Included Lab Sample IDs: 2319760, 2319761

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

Reference Method: SM 5310 B-2011

Run ID: A111730

Included Lab Sample IDs: 2319760

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.3	95.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A111752

Included Lab Sample IDs: 2319761

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.6	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A111767

Included Lab Sample IDs: 2319754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	86.8	80.5	P/P	50 - 150
2,4,5-T	94.5	76.0	P/P	50 - 150
Acetaminophen	79.7	79.7	P/P	60 - 160
Acetamiprid	98.7	98.4	P/P	50 - 150
Afidopyropen	77.3	80.8	P/P	50 - 150
Bentazon	93.9	95.7	P/P	50 - 160
Benzovindiflupyr	101	94.8	P/P	50 - 150
Carbamazepine	97.4	90.4	P/P	60 - 150
Clothianidin	94.3	89.3	P/P	60 - 150
Dinotefuran	79.1	75.2	P/P	50 - 150
Diuron	93.3	94.1	P/P	60 - 160
Fenuron	96.0	97.1	P/P	60 - 150
Fluridone	102	101	P/P	60 - 160
Hydrocodone	98.8	90.3	P/P	60 - 150
Ibuprofen	66.9	73.1	P/P	50 - 160
Imazapyr	91.1	80.4	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A111767
Included Lab Sample IDs: 2319754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imidacloprid	89.4	92.7	P/P	60 - 150
Linuron	94.1	97.5	P/P	60 - 150
Mandestrobin	99.8	99.8	P/P	50 - 150
MCPP	85.9	85.4	P/P	50 - 150
Naproxen	125	84.0	P/P	50 - 160
Primidone	90.7	88.9	P/P	60 - 150
Pyraclostrobin	109	108	P/P	60 - 150
Silvex	92.4	77.5	P/P	50 - 150
Thiamethoxam	92.2	94.2	P/P	50 - 150
Tolfenpyrad	96.3	88.9	P/P	60 - 150
Triclopyr	97.2	82.5	P/P	50 - 150

Reference Method: SM 4500-F- C-2011
Run ID: A111807
Included Lab Sample IDs: 2319758

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	100	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 350.1 Rev. 2.0	Ammonia-N	93.4	101	98.6			2.44
	Ammonia-N	98.6	98.8	100			1.34
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.0	94.2	96.5			2.19
	Kjeldahl Nitrogen	95.1	102	108			3.64
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	94.6	94.1			0.530
EPA 365.1 Rev. 2.0	Total-P	101	91.3	92.4			1.17
EPA 8321B	2,4-D	77.5	67.1	87.3			26.1
	2,4,5-T	67.0	64.4	70.1			8.35
	Acesulfame K	115	113	115			1.93
	Acetaminophen	56.6	77.3	88.9			14.0
	Acetamiprid	91.6	94.8	109			14.0
	Afidopyropen	53.3	66.9	80.9			18.9
	AMPA	98.9	81.6	85.9			4.44
	Bentazon	51.0	48.3	58.3			18.8
	Benzovindiflupyr	80.4	79.7	93.8			16.2
	Carbamazepine	92.3	84.8	103			19.3
	Clothianidin	95.3	98.5	105			6.69
	Dinotefuran	82.2	90.3	107			17.1
	Diuron	90.6	82.6	96.7			15.7
	Endothall	132	133	121			9.11
	Fenuron	112	97.9	118			18.6
	Fluridone	84.8	78.8	94.0			17.6
	Glufosinate	93.2	108	101			6.04
	Glyphosate	119	122	115			4.75
	Hydrocodone	88.5	93.9	111			17.1
	Ibuprofen	72.1	64.6	70.9			9.35
	Imazapyr	79.4	95.8	117			19.6
	Imidacloprid	92.5	93.7	115			20.5
	Linuron	66.6	63.2	72.8			14.1
	Mandestrobin	92.0	82.1	95.1			14.7
	MCPP	86.6	80.7	92.4			13.5
	Naproxen	59.3	44.3	78.3			55.6
	Primidone	90.6	93.4	95.4			2.18
	Pyraclostrobin	86.1	88.1	97.0			9.60
	Silvex	64.2	59.8	74.6			22.0
	Sucralose	124	124	140			5.27
	Thiamethoxam	87.5	97.3	119			20.3
	Tolfenpyrad	51.8	39.9	51.7			25.8
	Triclopyr	67.0	67.0	73.2			8.81
SM 2320 B-2011	Total Alkalinity	97.7				3.36	
SM 4500-F- C-2011	Fluoride	101	99.1	97.7			0.953
	Fluoride	99.6	96.8	97.7			0.520
SM 5310 B-2011	Organic Carbon	96.6	88.3	90.2			1.75
	Organic Carbon	96.8	86.8	89.3			2.76

Reference Method Descriptions

Method	Description	Associated Samples
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2319760, 2319761
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2319760, 2319761
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2319760, 2319761
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2319760, 2319761
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2319754

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2319758, 2319759
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2319758, 2319759
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2319758, 2319759
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2319760, 2319761

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 350.1 Rev. 2.0	04/15/2022			04/19/2022 12:58	Ping Hua	2319760
	04/15/2022			04/21/2022 12:19	Ping Hua	2319761
EPA 351.2 Rev. 2.0	04/15/2022	04/25/2022 12:07	Alexandra J Mattheus	04/26/2022 13:21	Alexandra J Mattheus	2319760
	04/15/2022	04/26/2022 16:44	Samantha L Bates	04/27/2022 13:33	Samantha L Bates	2319761
EPA 353.2 Rev. 2.0	04/15/2022			04/21/2022 10:04	Beverly Y. Sanders	2319760
	04/15/2022			04/21/2022 10:10	Beverly Y. Sanders	2319761
EPA 365.1 Rev. 2.0	04/15/2022	04/22/2022 16:40	Simonne.V. Calhoun	04/26/2022 16:08	James L Waggerby	2319760
	04/15/2022	04/22/2022 16:40	Simonne.V. Calhoun	04/26/2022 16:09	James L Waggerby	2319761
EPA 8321B	04/15/2022	04/18/2022 10:00	June Rhew	04/22/2022 07:30	Juyoung Kim	2319754
	04/15/2022	04/19/2022 10:00	Umesh Chiluwal	04/19/2022 15:36	Manjita Shrestha	2319754
	04/15/2022	04/19/2022 10:00	Umesh Chiluwal	04/19/2022 17:57	Manjita Shrestha	2319754
	04/15/2022	04/19/2022 10:00	Umesh Chiluwal	04/20/2022 05:48	Manjita Shrestha	2319754
SM 2320 B-2011	04/15/2022			04/22/2022 08:40	Sarah A Nixon	2319759
	04/15/2022			04/22/2022 11:24	Sarah A Nixon	2319758
SM 2540 D-2011	04/15/2022			04/20/2022 10:01	Yijie Li	2319758
	04/15/2022			04/20/2022 10:09	Yijie Li	2319759
SM 4500-F- C-2011	04/15/2022			04/22/2022 12:26	Sarah A Nixon	2319759
	04/15/2022			04/29/2022 01:40	Dale L. Simmons	2319758
SM 5310 B-2011	04/15/2022			04/20/2022 06:39	Judith K. Clark	2319760
	04/15/2022			04/25/2022 23:30	Khloe J Berg	2319761