

Chemical Analysis Report

NE-DIST-2021-10-27-01

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

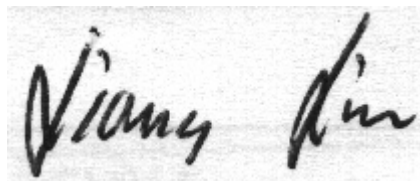
Event Description: **Nassau North 2**
Request ID: **RQ-2021-10-18-15**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 19-NOV-2021 10:11

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored 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: Escambia Slough at Escambia St

Collection Date/Time: 10/26/2021 15:05

Field ID: G4NE0287

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2286231	EPA 180.1 Rev. 2.0	Turbidity	9.3		NTU	P405687	
	SM 2320 B-2011	Total Alkalinity	108		mg CaCO3/L	P406013	
	SM 2540 D-2011	TSS	21		mg/L	P406281	
	SM 4500 F-C-2011	Fluoride	1.1		mg F/L	P406015	
2286232	EPA 350.1 Rev. 2.0	Ammonia-N	0.054		mg N/L	P406063	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P405935	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.020		mg N/L	P405807	
	EPA 365.1 Rev. 2.0	Total-P	0.075		mg P/L	P405869	
	SM 5310 B-2011	Organic Carbon	6.4		mg C/L	P406059	
2286233	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.036		mg P/L	P405680	
2286246	EPA 8321B	Acesulfame K	0.10	U	ug/L	P405602	
		2,4-D	0.0020	U	ug/L	P405750	
		AMPA	10	U	ug/L	P405602	
		2,4,5-T	0.0040	U	ug/L	P405750	
		Acetaminophen	0.023	I	ug/L	P405750	
		Endothall	0.25	U	ug/L	P405602	
		Acetamiprid	0.0020	U	ug/L	P405750	
		Glufosinate	10	U	ug/L	P405602	
		Glyphosate	10	U	ug/L	P405602	
		Afidopyropen	0.0020	U	ug/L	P405750	
		Sucralose	0.076		ug/L	P405602	
		Bentazon	0.0024	I	ug/L	P405750	
		Benzovindiflupyr	0.0020	U	ug/L	P405750	
		Carbamazepine	8.0E-04	U	ug/L	P405750	
		Clothianidin	0.0020	U	ug/L	P405750	
		Dinotefuran	0.0020	U	ug/L	P405750	
		Diuron	0.025		ug/L	P405750	
		Fenuron	0.016	U	ug/L	P405750	
		Fluridone	8.0E-04	U	ug/L	P405750	
		Imazapyr	0.016	I	ug/L	P405750	
		Hydrocodone	0.0020	U	ug/L	P405750	
		Ibuprofen	0.020	U	ug/L	P405750	
		Imidacloprid	0.0020	U	ug/L	P405750	MS
		Linuron	0.0040	U	ug/L	P405750	
		Mandestrobin	0.0020	U	ug/L	P405750	
		MCP	0.0040	U	ug/L	P405750	
		Naproxen	0.0080	U	ug/L	P405750	MS
		Primidone	0.0040	U	ug/L	P405750	
		Pyraclostrobin	0.0020	U	ug/L	P405750	
		Thiamethoxam	0.0020	U	ug/L	P405750	
		Tolfenpyrad	0.0020	U	ug/L	P405750	
		Triclopyr	0.0040	U	ug/L	P405750	
2286247	EPA 200.7 Rev. 4.4	Calcium	414		mg/L	P405697	

Field ID: G4NE0287

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2286247	EPA 200.7 Rev. 4.4	Iron	450	I	ug/L	P405697	
		Magnesium	1.11E+03		mg/L	P405697	
		Manganese	13	I	ug/L	P405697	
		Zinc	50	U	ug/L	P405697	
	EPA 200.8 Rev. 5.4	Aluminum	473		ug/L	P405697	
		Antimony	0.20	U	ug/L	P405697	
		Arsenic	3.4		ug/L	P405697	
		Beryllium	0.040	U	ug/L	P405697	
		Cadmium	0.080	U	ug/L	P405697	
		Chromium	4.0	U	ug/L	P405697	
		Copper	1.6	U	ug/L	P405697	
		Lead	0.94	I	ug/L	P405697	
		Nickel	5.0	U	ug/L	P405697	
		Selenium	0.80	U	ug/L	P405697	
		Silver	0.040	U	ug/L	P405697	
		Thallium	1.0	U	ug/L	P405697	

Ref. Method and Comment:

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

EPA 8321B: MDL for some parameters elevated due to matrix interference.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium and magnesium are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P405687

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P405697

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P405697

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	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 350.1 Rev. 2.0
Batch ID: P406063

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P405935

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P405807

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P405869

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P405680

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

Reference Method: EPA 8321B
Batch ID: P405602

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

Reference Method: EPA 8321B
Batch ID: P405750

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
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2320 B-2011
Batch ID: P406013

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: P406281

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P406015

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P406059

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: P405697

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Iron	101		P	85 - 115
Magnesium	102		P	85 - 115
Manganese	107		P	85 - 115
Zinc	108		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P405697

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	107		P	85 - 115
Antimony	108		P	85 - 115
Arsenic	104		P	85 - 115
Beryllium	100		P	85 - 115
Cadmium	104		P	85 - 115
Chromium	102		P	85 - 115
Copper	102		P	85 - 115
Lead	101		P	85 - 115
Nickel	94.8		P	85 - 115
Selenium	102		P	85 - 115
Silver	103		P	85 - 115
Thallium	109		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P406063

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P405935

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P405807

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P405869

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: P405680

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P405602

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	104		P	40 - 150
AMPA	95.8		P	40 - 160
Endothall	82.9		P	40 - 150
Glufosinate	97.0		P	40 - 160
Glyphosate	95.6		P	40 - 160
Sucralose	94.8		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P405750

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	89.0		P	40 - 150
2,4,5-T	89.5		P	40 - 150
Acetaminophen	82.9		P	30 - 150
Acetamiprid	84.3		P	40 - 150
Afidopyropen	68.8		P	40 - 150
Bentazon	88.0		P	30 - 150
Benzovindiflupyr	75.5		P	40 - 150
Carbamazepine	86.1		P	40 - 150
Clothianidin	88.8		P	40 - 150
Dinotefuran	74.6		P	40 - 150
Diuron	80.2		P	40 - 150
Fenuron	83.2		P	40 - 150
Fluridone	89.9		P	40 - 150
Hydrocodone	78.1		P	40 - 150
Ibuprofen	79.0		P	40 - 150
Imazapyr	92.9		P	40 - 150
Imidacloprid	80.8		P	40 - 150
Linuron	69.4		P	40 - 150
Mandestrobin	77.1		P	40 - 150
MCPP	88.2		P	40 - 150
Naproxen	95.5		P	40 - 150
Primidone	81.7		P	40 - 150
Pyraclostrobin	77.9		P	40 - 150
Thiamethoxam	81.6		P	40 - 150
Tolfenpyrad	50.2		P	30 - 150
Triclopyr	90.1		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P406013

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.0		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P406015

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.4		P	93 - 104

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P406059

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P405697

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2285349	Iron	111	104	P/P	70 - 130
2285349	Manganese	102	100	P/P	70 - 130
2285349	Zinc	101	100	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P405697

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2285349	Aluminum	111	124	P/P	70 - 130
2285349	Antimony	115	127	P/P	70 - 130
2285349	Arsenic	107	107	P/P	70 - 130
2285349	Beryllium	113	123	P/P	70 - 130
2285349	Cadmium	107	117	P/P	70 - 130
2285349	Chromium	101	120	P/P	70 - 130
2285349	Copper	103	114	P/P	70 - 130
2285349	Lead	113	126	P/P	70 - 130
2285349	Nickel	103	103	P/P	70 - 130
2285349	Selenium	101	112	P/P	70 - 130
2285349	Silver	96.8	105	P/P	70 - 130
2285349	Thallium	112	113	P/P	70 - 130

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P406063

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287093	Ammonia-N	102	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P405935

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2285673	Kjeldahl Nitrogen	93.1	94.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P405807

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2285753	NO2NO3-N	99.6	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P405869

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2286571	Total-P	104	99.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P405680

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2286213	O-Phosphate-P	97.0	98.2	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P405602

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2285918	Acesulfame K	150	142	P/P	40 - 150
2285918	AMPA	61.8	60.3	P/P	40 - 160
2285918	Endothall	96.3	89.5	P/P	40 - 150
2285918	Glufosinate	64.7	65.4	P/P	40 - 160
2285918	Glyphosate	106	107	P/P	40 - 160
2285918	Sucralose	94.5	96.6	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P405750

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2286692	2,4-D	110	95.7	P/P	40 - 150
2286692	2,4,5-T	109	113	P/P	40 - 150
2286692	Acetaminophen	115	102	P/P	30 - 150
2286692	Acetamiprid	84.1	85.6	P/P	40 - 150
2286692	Afidopyropen	79.4	74.3	P/P	40 - 150
2286692	Bentazon	58.9	62.3	P/P	30 - 150
2286692	Benzovindiflupyr	95.1	89.9	P/P	40 - 150
2286692	Carbamazepine	106	102	P/P	40 - 150
2286692	Clothianidin	124	103	P/P	40 - 150
2286692	Dinotefuran	131	115	P/P	40 - 150
2286692	Diuron	85.1	80.1	P/P	40 - 150
2286692	Fenuron	93.8	92.4	P/P	40 - 150
2286692	Fluridone	106	97.7	P/P	40 - 150
2286692	Hydrocodone	107	97.8	P/P	40 - 150
2286692	Ibuprofen	89.6	90.7	P/P	40 - 150
2286692	Imazapyr	135	93.1	P/P	40 - 150
2286692	Imidacloprid	166	160	F/F	40 - 150
2286692	Linuron	80.9	82.1	P/P	40 - 150
2286692	Mandestrobin	95.0	94.6	P/P	40 - 150
2286692	MCPP	110	114	P/P	40 - 150
2286692	Naproxen	156	121	F/P	40 - 150
2286692	Primidone	99.3	98.8	P/P	40 - 150
2286692	Pyraclostrobin	91.2	86.4	P/P	40 - 150
2286692	Thiamethoxam	126	146	P/P	40 - 150
2286692	Tolfenpyrad	57.4	53.8	P/P	30 - 150
2286692	Triclopyr	107	110	P/P	40 - 150

Reference Method: SM 4500 F-C-2011

Batch ID: P406015

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2286760	Fluoride	98.0	99.5	P/P	92 - 107

Reference Method: SM 5310 B-2011

Batch ID: P406059

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2286762	Organic Carbon	92.2	93.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P405687

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286189	Turbidity	1.85	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P405697

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2285349	Calcium	1.39	Spike	P	0 - 20
2285349	Iron	1.81	Spike	P	0 - 20
2285349	Magnesium	1.94	Spike	P	0 - 20
2285349	Manganese	1.93	Spike	P	0 - 20
2285349	Zinc	0.593	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P405697

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2285349	Aluminum	9.26	Spike	P	0 - 20
2285349	Antimony	9.99	Spike	P	0 - 20
2285349	Arsenic	0.0743	Spike	P	0 - 20
2285349	Beryllium	8.73	Spike	P	0 - 20
2285349	Cadmium	9.10	Spike	P	0 - 20
2285349	Chromium	17.2	Spike	P	0 - 20
2285349	Copper	10.3	Spike	P	0 - 20
2285349	Lead	10.3	Spike	P	0 - 20
2285349	Nickel	0.107	Spike	P	0 - 20
2285349	Selenium	9.91	Spike	P	0 - 20
2285349	Silver	8.55	Spike	P	0 - 20
2285349	Thallium	1.27	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P406063

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287093	Ammonia-N	1.87	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P405935

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2285673	Kjeldahl Nitrogen	1.21	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P405807

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2285753	NO2NO3-N	1.25	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P405869

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286571	Total-P	4.28	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P405680

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286213	O-Phosphate-P	1.03	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P405602

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2285918	Acesulfame K	5.21	Spike	P	0 - 30
2285918	AMPA	2.38	Spike	P	0 - 30
2285918	Endothall	7.33	Spike	P	0 - 30
2285918	Glufosinate	1.06	Spike	P	0 - 30
2285918	Glyphosate	0.379	Spike	P	0 - 30
2285918	Sucralose	1.28	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P405750

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286692	2,4-D	9.82	Spike	P	0 - 30
2286692	2,4,5-T	3.75	Spike	P	0 - 30
2286692	Acetaminophen	12.2	Spike	P	0 - 30
2286692	Acetamiprid	1.74	Spike	P	0 - 30
2286692	Afidopyropen	6.75	Spike	P	0 - 30
2286692	Bentazon	5.56	Spike	P	0 - 30
2286692	Benzovindiflupyr	5.66	Spike	P	0 - 30
2286692	Carbamazepine	3.54	Spike	P	0 - 30
2286692	Clothianidin	9.41	Spike	P	0 - 30
2286692	Dinotefuran	13.2	Spike	P	0 - 30
2286692	Diuron	4.48	Spike	P	0 - 30
2286692	Fenuron	1.47	Spike	P	0 - 30
2286692	Fluridone	8.48	Spike	P	0 - 30
2286692	Hydrocodone	9.38	Spike	P	0 - 30
2286692	Ibuprofen	1.29	Spike	P	0 - 30
2286692	Imazapyr	15.0	Spike	P	0 - 30
2286692	Imidacloprid	1.03	Spike	P	0 - 30
2286692	Linuron	1.49	Spike	P	0 - 30
2286692	Mandestrobin	0.469	Spike	P	0 - 30
2286692	MCPP	3.81	Spike	P	0 - 30
2286692	Naproxen	25.1	Spike	P	0 - 30
2286692	Primidone	0.473	Spike	P	0 - 30
2286692	Pyraclostrobin	5.36	Spike	P	0 - 30
2286692	Thiamethoxam	4.21	Spike	P	0 - 30
2286692	Tolfenpyrad	6.37	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P405750

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286692	Triclopyr	3.04	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P406013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286760	Total Alkalinity	0.963	Sample	P	0 - 5.2

Reference Method: SM 4500 F-C-2011
Batch ID: P406015

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286760	Fluoride	0.967	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P406059

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286762	Organic Carbon	1.52	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2286246

Field Sample ID: G4NE0287

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	105	P	30 - 160
EPA 8321B	Acetaminophen-d4	104	P	30 - 160
EPA 8321B	Carbamazepine-d10	104	P	30 - 160
EPA 8321B	Diuron-d6	95.1	P	30 - 160
EPA 8321B	Endothall-d6	62.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	132	P	30 - 160
EPA 8321B	Ibuprofen-d3	79.9	P	30 - 160
EPA 8321B	Primidone-d5	106	P	30 - 160
EPA 8321B	Sucralose-d6	73.1	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A108565

Included Lab Sample IDs: 2286233

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	98.5	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A108569

Included Lab Sample IDs: 2286231

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	100	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A108618

Included Lab Sample IDs: 2286246

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	99.7	93.8	P/P	60 - 160
Endothall	80.5	76.9	P/P	60 - 160
Sucralose	87.9	94.0	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A108641

Included Lab Sample IDs: 2286246

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	96.0	97.2	P/P	60 - 160
Glufosinate	93.6	93.3	P/P	60 - 160
Glyphosate	104	102	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A108647

Included Lab Sample IDs: 2286232

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A108653

Included Lab Sample IDs: 2286247

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	105	105	P/P	90 - 110
Antimony	104	105	P/P	90 - 110
Beryllium	101	99.1	P/P	90 - 110
Cadmium	101	102	P/P	90 - 110
Chromium	95.6	96.6	P/P	90 - 110
Copper	101	98.2	P/P	90 - 110
Lead	95.6	96.2	P/P	90 - 110
Selenium	102	101	P/P	90 - 110
Silver	99.9	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A108667

Included Lab Sample IDs: 2286247

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Magnesium	106	106	P/P	90 - 110
Manganese	105	104	P/P	90 - 110
Zinc	105	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A108668

Included Lab Sample IDs: 2286247

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	94.2	94.2	P/P	90 - 110
Nickel	94.9	94.8	P/P	90 - 110
Thallium	96.3	96.6	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A108702

Included Lab Sample IDs: 2286247

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	104	108	P/P	90 - 110
Iron	101	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A108713

Included Lab Sample IDs: 2286232

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	102	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A108714

Included Lab Sample IDs: 2286231

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.8	98.9	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A108714

Included Lab Sample IDs: 2286231

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A108721

Included Lab Sample IDs: 2286232

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.5	97.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A108741

Included Lab Sample IDs: 2286232

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.4	98.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A108743

Included Lab Sample IDs: 2286232

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.9	96.8	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A108750

Included Lab Sample IDs: 2286246

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	110	91.2	P/P	50 - 150
2,4,5-T	101	99.3	P/P	50 - 150
Acetaminophen	91.7	101	P/P	60 - 160
Acetamiprid	102	105	P/P	50 - 150
Afidopyropen	98.4	97.5	P/P	50 - 150
Bentazon	105	107	P/P	50 - 160
Benzovindiflupyr	110	103	P/P	50 - 150
Carbamazepine	100	103	P/P	60 - 150
Clothianidin	109	109	P/P	60 - 150
Dinotefuran	96.5	105	P/P	50 - 150
Diuron	96.9	117	P/P	60 - 160
Fenuron	97.0	98.9	P/P	60 - 150
Fluridone	105	111	P/P	60 - 160
Hydrocodone	96.4	101	P/P	60 - 150
Ibuprofen	127	84.4	P/P	50 - 160
Imazapyr	105	141	P/P	50 - 150
Imidacloprid	96.1	94.5	P/P	60 - 150
Linuron	107	104	P/P	60 - 150
Mandestrobin	104	103	P/P	50 - 150
MCP	89.6	86.1	P/P	50 - 150
Naproxen	109	113	P/P	50 - 160
Primidone	109	103	P/P	60 - 150
Pyraclostrobin	102	98.7	P/P	60 - 150
Thiamethoxam	96.2	97.1	P/P	50 - 150
Tolfenpyrad	106	106	P/P	60 - 150
Triclopyr	102	102	P/P	50 - 150

* 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						1.85	
EPA 200.7 Rev. 4.4	Calcium	101						1.39
	Iron	101		111	104			1.81
	Magnesium	102						1.94
	Manganese	107		102	100			1.93
	Zinc	108		101	100			0.593
EPA 200.8 Rev. 5.4	Aluminum	107		111	124			9.26
	Antimony	108		115	127			9.99
	Arsenic	104		107	107			0.0743
	Beryllium	100		113	123			8.73
	Cadmium	104		107	117			9.10
	Chromium	102		101	120			17.2
	Copper	102		103	114			10.3
	Lead	101		113	126			10.3
	Nickel	94.8		103	103			0.107
	Selenium	102		101	112			9.91
	Silver	103		96.8	105			8.55
	Thallium	109		112	113			1.27
EPA 350.1 Rev. 2.0	Ammonia-N	98.4		102	100			1.87
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104		93.1	94.9			1.21
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5		99.6	98.2			1.25
EPA 365.1 Rev. 2.0	Total-P	104		104	99.7			4.28
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.7		97.0	98.2			1.03
EPA 8321B	2,4-D	89.0		110	95.7			9.82
	2,4,5-T	89.5		109	113			3.75
	Acesulfame K	104		150	142			5.21
	Acetaminophen	82.9		115	102			12.2
	Acetamiprid	84.3		84.1	85.6			1.74
	Afidopyropen	68.8		79.4	74.3			6.75
	AMPA	95.8		61.8	60.3			2.38
	Bentazon	88.0		58.9	62.3			5.56
	Benzovindiflupyr	75.5		95.1	89.9			5.66
	Carbamazepine	86.1		106	102			3.54
	Clothianidin	88.8		124	103			9.41
	Dinotefuran	74.6		131	115			13.2
	Diuron	80.2		85.1	80.1			4.48
	Endothall	82.9		96.3	89.5			7.33
	Fenuron	83.2		93.8	92.4			1.47
	Fluridone	89.9		106	97.7			8.48
	Glufosinate	97.0		64.7	65.4			1.06
	Glyphosate	95.6		106	107			0.379
	Hydrocodone	78.1		107	97.8			9.38
	Ibuprofen	79.0		89.6	90.7			1.29
	Imazapyr	92.9		135	93.1			15.0
	Imidacloprid	80.8		166	160			1.03
	Linuron	69.4		80.9	82.1			1.49
	Mandestrobin	77.1		95.0	94.6			0.469
	MCPP	88.2		110	114			3.81
	Naproxen	95.5		156	121			25.1
	Primidone	81.7		99.3	98.8			0.473
	Pyraclostrobin	77.9		91.2	86.4			5.36
	Sucralose	94.8		94.5	96.6			1.28
	Thiamethoxam	81.6		126	146			4.21
	Tolfenpyrad	50.2		57.4	53.8			6.37

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 8321B	Triclopyr	90.1	107 110			3.04
SM 2320 B-2011	Total Alkalinity	99.0			0.963	
SM 4500 F-C-2011	Fluoride	99.4	98.0 99.5			0.967
SM 5310 B-2011	Organic Carbon	101	92.2 93.8			1.52

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2286231
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2286247
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2286247
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2286232
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2286232
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2286232
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2286232
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2286233
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2286246
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2286231
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2286231
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2286231
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2286232

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	10/27/2021			10/27/2021 15:55	Sarah A Nixon	2286231
EPA 200.7 Rev. 4.4	10/27/2021	10/28/2021 09:15	Emily M Philpot	11/02/2021 23:07	Josef B Mick	2286247
	10/27/2021	10/28/2021 09:15	Emily M Philpot	11/02/2021 23:15	Josef B Mick	2286247
	10/27/2021	10/28/2021 09:15	Emily M Philpot	11/03/2021 19:50	Josef B Mick	2286247
	10/27/2021	10/28/2021 09:15	Emily M Philpot	11/01/2021 18:06	Alexander Thompson	2286247
EPA 200.8 Rev. 5.4	10/27/2021	10/28/2021 09:15	Emily M Philpot	11/01/2021 18:44	Alexander Thompson	2286247
	10/27/2021	10/28/2021 09:15	Emily M Philpot	11/02/2021 14:46	Alexander Thompson	2286247
	10/27/2021	10/28/2021 09:15	Emily M Philpot	11/04/2021 11:40	Ping Hua	2286232
EPA 350.1 Rev. 2.0	10/27/2021			11/04/2021 12:08	Alexandra J Mattheus	2286232
EPA 351.2 Rev. 2.0	10/27/2021	11/03/2021 12:43	Benjamin T. Nordmann	11/01/2021 10:49	Beverly Y. Sanders	2286232
EPA 353.2 Rev. 2.0	10/27/2021			11/04/2021 14:23	Lipi Saha	2286232
EPA 365.1 Rev. 2.0	10/27/2021	11/02/2021 16:18	Simonne.V. Calhoun	10/27/2021 15:09	James L Waggeberby	2286233
EPA 365.1 Rev. 2.0 dissolved	10/27/2021			10/29/2021 13:50	Manjita Shrestha	2286246
EPA 8321B	10/27/2021	10/29/2021 10:35	Mohammad Ghaffari	10/29/2021 16:07	Mohammad Ghaffari	2286246
	10/27/2021	10/29/2021 10:35	Mohammad Ghaffari	11/03/2021 07:37	Juyoung Kim	2286246
	10/27/2021	10/29/2021 14:00	Hoor Shaik	11/03/2021 00:03	Dale L. Simmons	2286231
SM 2320 B-2011	10/27/2021			11/01/2021 14:21	Yijie Li	2286231
SM 2540 D-2011	10/27/2021			11/02/2021 22:33	Dale L. Simmons	2286231
SM 4500 F-C-2011	10/27/2021			11/04/2021 05:50	Khloe J Berg	2286232
SM 5310 B-2011	10/27/2021					