

Chemical Analysis Report

NE-DIST-2021-09-09-02

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

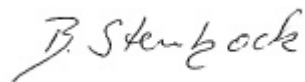
Event Description: **Moses Creek**
Request ID: **RQ-2021-09-06-23**
Customer: **NE-DIST**
Project ID: **SMP**

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

Date Certified: 04-OCT-2021 12:00



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: MOSES CREEK @ CR 206

Collection Date/Time: 09/08/2021 10:30

Field ID: 27010051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2274874	EPA 8321B	Acesulfame K	0.10	U	ug/L	P403501	
		2,4-D	0.0022	I	ug/L	P403651	MS
		2,4,5-T	0.0040	U	ug/L	P403651	
		AMPA	0.10	U	ug/L	P403501	
		Acetaminophen	0.0080	U	ug/L	P403651	
		Acetamiprid	0.0020	U	ug/L	P403651	
		Endothall	0.25	U	ug/L	P403501	
		Glufosinate	0.10	U	ug/L	P403501	
		Glyphosate	0.10	U	ug/L	P403501	
		Afidopyropen	0.0020	U	ug/L	P403651	
		Bentazon	0.048		ug/L	P403651	
		Sucralose	0.022	I	ug/L	P403501	
		Benzovindiflupyr	0.0020	U	ug/L	P403651	
		Carbamazepine	8.0E-04	U	ug/L	P403651	
		Clothianidin	0.0020	U	ug/L	P403651	
		Dinotefuran	0.0020	U	ug/L	P403651	
		Diuron	0.0020	U	ug/L	P403651	
		Fenuron	0.016	U	ug/L	P403651	
		Fluridone	8.0E-04	U	ug/L	P403651	
		Imazapyr	0.082		ug/L	P403651	
		Hydrocodone	0.0020	U	ug/L	P403651	
		Ibuprofen	0.020	U	ug/L	P403651	
		Imidacloprid	0.0024	I	ug/L	P403651	
		Linuron	0.0040	U	ug/L	P403651	
		Mandestrobin	0.0020	U	ug/L	P403651	
		MCPP	0.0020	U	ug/L	P403651	MS
		Naproxen	0.0080	U	ug/L	P403651	MS
		Primidone	0.0040	U	ug/L	P403651	
		Pyraclostrobin	0.0020	U	ug/L	P403651	
		Thiamethoxam	0.0020	U	ug/L	P403651	
		Tolfenpyrad	0.0020	U	ug/L	P403651	
		Triclopyr	0.0040	U	ug/L	P403651	MS

Ref. Method and Comment:

EPA 8321B: MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: MOSES CR AT US 1

Collection Date/Time: 09/08/2021 10:45

Field ID: 27010050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2274875	EPA 8321B	Acesulfame K	0.10	U	ug/L	P403501	
		2,4-D	0.030		ug/L	P403651	MS
		2,4,5-T	0.0040	U	ug/L	P403651	
		AMPA	0.13	I	ug/L	P403501	
		Acetaminophen	0.051		ug/L	P403651	
		Acetamiprid	0.0020	U	ug/L	P403651	
		Endothall	0.25	U	ug/L	P403501	
		Glufosinate	0.10	U	ug/L	P403501	
		Glyphosate	0.23	I	ug/L	P403501	
		Afidopyropen	0.0020	U	ug/L	P403651	
		Bentazon	0.12		ug/L	P403651	
		Sucralose	0.044		ug/L	P403501	
		Benzovindiflupyr	0.0020	U	ug/L	P403651	
		Carbamazepine	8.0E-04	U	ug/L	P403651	
		Clothianidin	0.0025	I	ug/L	P403651	
		Dinotefuran	0.0020	U	ug/L	P403651	
		Diuron	0.0020	I	ug/L	P403651	
		Fenuron	0.016	U	ug/L	P403651	
		Fluridone	0.0019	I	ug/L	P403651	
		Imazapyr	0.21		ug/L	P403651	
		Hydrocodone	0.0020	U	ug/L	P403651	
		Ibuprofen	0.020	U	ug/L	P403651	
		Imidacloprid	0.0075	I	ug/L	P403651	
		Linuron	0.0040	U	ug/L	P403651	
		Mandestrobin	0.0020	U	ug/L	P403651	
		MCPP	0.0020	U	ug/L	P403651	MS
		Naproxen	0.0080	U	ug/L	P403651	MS
		Primidone	0.0040	U	ug/L	P403651	
		Pyraclostrobin	0.0020	U	ug/L	P403651	
		Thiamethoxam	0.0020	U	ug/L	P403651	
		Tolfenpyrad	0.0020	U	ug/L	P403651	
		Triclopyr	0.0040	U	ug/L	P403651	MS

Ref. Method and Comment:

EPA 8321B: MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Moses Creek at Preserve Dock

Collection Date/Time: 09/08/2021 11:55

Field ID: G5NE0004

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2274864	EPA 180.1 Rev. 2.0	Turbidity	13		NTU	P403552	
	SM 2320 B-2011	Total Alkalinity	111		mg CaCO3/L	P403656	
	SM 2540 D-2011	TSS	27		mg/L	P403985	
	SM 4500 F-C-2011	Fluoride	1.0		mg F/L	P403660	
2274865	EPA 350.1 Rev. 2.0	Ammonia-N	0.088		mg N/L	P403645	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.72		mg N/L	P403629	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P403622	
	EPA 365.1 Rev. 2.0	Total-P	0.092		mg P/L	P403688	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P403962	
2274866	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.040		mg P/L	P403525	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P403552

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403645

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403629

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403622

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403688

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403525

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

Reference Method: EPA 8321B
Batch ID: P403501

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: P403651

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P403651

Component	Result	Code	Units
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2320 B-2011

Batch ID: P403656

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

Reference Method: SM 2540 D-2011

Batch ID: P403985

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011

Batch ID: P403660

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011

Batch ID: P403962

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: P403645

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: P403629

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: P403622

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: P403688

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403525

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

Reference Method: EPA 8321B
Batch ID: P403501

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	96.2		P	40 - 150
AMPA	78.7		P	40 - 160
Endothall	70.3		P	40 - 150
Glufosinate	100		P	40 - 160
Glyphosate	91.5		P	40 - 160
Sucralose	113		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P403651

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	102		P	40 - 150
2,4,5-T	94.4		P	40 - 150
Acetaminophen	88.6		P	30 - 150
Acetamiprid	86.9		P	40 - 150
Afidopyropen	72.0		P	40 - 150
Bentazon	137		P	30 - 150
Benzovindiflupyr	76.2		P	40 - 150
Carbamazepine	92.0		P	40 - 150
Clothianidin	95.9		P	40 - 150
Dinotefuran	78.4		P	40 - 150
Diuron	92.9		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P403651

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	87.0		P	40 - 150
Fluridone	90.4		P	40 - 150
Hydrocodone	86.6		P	40 - 150
Ibuprofen	72.3		P	40 - 150
Imazapyr	81.7		P	40 - 150
Imidacloprid	85.7		P	40 - 150
Linuron	80.4		P	40 - 150
Mandestrobin	85.0		P	40 - 150
MCP	116		P	40 - 150
Naproxen	78.8		P	40 - 150
Primidone	90.0		P	40 - 150
Pyraclostrobin	76.3		P	40 - 150
Thiamethoxam	83.4		P	40 - 150
Tolfenpyrad	44.1		P	30 - 150
Triclopyr	96.5		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P403656

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P403660

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

Reference Method: SM 5310 B-2011
Batch ID: P403962

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403645

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2275245	Ammonia-N	97.8	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403629

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2274923	Kjeldahl Nitrogen	97.6	97.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403622

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2274834	NO2NO3-N	97.2	97.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403688

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2274834	Total-P	101	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403525

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2274866	O-Phosphate-P	105	103	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P403501

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2274874	Acesulfame K	116	100	P/P	40 - 150
2274874	AMPA	68.0	69.8	P/P	40 - 160
2274874	Endothall	94.3	82.4	P/P	40 - 150
2274874	Glufosinate	116	118	P/P	40 - 160
2274874	Glyphosate	70.8	70.1	P/P	40 - 160
2274874	Sucralose	141	122	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P403651

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2274827	2,4-D	153	139	F/P	40 - 150
2274827	2,4,5-T	143	123	P/P	40 - 150
2274827	Acetaminophen	53.8	55.6	P/P	30 - 150
2274827	Acetamiprid	93.8	95.8	P/P	40 - 150
2274827	Afidopyrophen	106	93.0	P/P	40 - 150
2274827	Benzovindiflupyr	91.6	92.5	P/P	40 - 150
2274827	Carbamazepine	89.3	92.5	P/P	40 - 150
2274827	Clothianidin	53.4	55.2	P/P	40 - 150
2274827	Dinotefuran	98.7	98.8	P/P	40 - 150
2274827	Diuron	92.7	99.6	P/P	40 - 150
2274827	Fenuron	97.8	93.3	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P403651

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2274827	Fluridone	110	101	P/P	40 - 150
2274827	Hydrocodone	130	119	P/P	40 - 150
2274827	Ibuprofen	127	125	P/P	40 - 150
2274827	Imazapyr	128	110	P/P	40 - 150
2274827	Imidacloprid	97.3	108	P/P	40 - 150
2274827	Linuron	81.9	77.8	P/P	40 - 150
2274827	Mandestrobin	96.2	103	P/P	40 - 150
2274827	MCPP	183	170	F/F	40 - 150
2274827	Naproxen	151	142	F/P	40 - 150
2274827	Primidone	50.5	66.4	P/P	40 - 150
2274827	Pyraclostrobin	85.4	88.1	P/P	40 - 150
2274827	Thiamethoxam	105	105	P/P	40 - 150
2274827	Tolfenpyrad	53.9	56.9	P/P	30 - 150
2274827	Triclopyr	157	138	F/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P403660

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2274336	Fluoride	99.9	101	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P403962

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2274865	Organic Carbon	98.0	97.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P403552

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2274621	Turbidity	4.04	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403645

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2275245	Ammonia-N	0.551	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403629

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2274923	Kjeldahl Nitrogen	0.192	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403622

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2274834	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403688

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2274834	Total-P	0.661	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403525

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2274866	O-Phosphate-P	1.32	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P403501

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2274874	Acesulfame K	14.2	Spike	P	0 - 30
2274874	AMPA	2.63	Spike	P	0 - 30
2274874	Endothall	13.5	Spike	P	0 - 30
2274874	Glufosinate	1.21	Spike	P	0 - 30
2274874	Glyphosate	0.985	Spike	P	0 - 30
2274874	Sucralose	14.3	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P403651

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2274827	2,4-D	8.88	Spike	P	0 - 30
2274827	2,4,5-T	15.3	Spike	P	0 - 30
2274827	Acetaminophen	3.16	Spike	P	0 - 30
2274827	Acetamiprid	2.15	Spike	P	0 - 30
2274827	Afidopyropen	12.6	Spike	P	0 - 30
2274827	Bentazon	6.63	Spike	P	0 - 30
2274827	Benzovindiflupyr	0.981	Spike	P	0 - 30
2274827	Carbamazepine	3.47	Spike	P	0 - 30
2274827	Clothianidin	3.02	Spike	P	0 - 30
2274827	Dinotefuran	0.114	Spike	P	0 - 30
2274827	Diuron	6.69	Spike	P	0 - 30
2274827	Fenuron	4.65	Spike	P	0 - 30
2274827	Fluridone	5.09	Spike	P	0 - 30
2274827	Hydrocodone	8.95	Spike	P	0 - 30
2274827	Ibuprofen	1.84	Spike	P	0 - 30
2274827	Imazapyr	9.34	Spike	P	0 - 30
2274827	Imidacloprid	9.08	Spike	P	0 - 30
2274827	Linuron	5.19	Spike	P	0 - 30
2274827	Mandestrobin	7.19	Spike	P	0 - 30
2274827	MCP	7.17	Spike	P	0 - 30
2274827	Naproxen	6.14	Spike	P	0 - 30
2274827	Primidone	27.1	Spike	P	0 - 30
2274827	Pyraclostrobin	3.16	Spike	P	0 - 30
2274827	Thiamethoxam	0.294	Spike	P	0 - 30
2274827	Tolfenpyrad	5.44	Spike	P	0 - 30
2274827	Triclopyr	13.0	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
 Batch ID: P403656

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2274336	Total Alkalinity	1.93	Sample	P	0 - 5.2

Reference Method: SM 2540 D-2011
 Batch ID: P403985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2274833	TSS	5.13	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
 Batch ID: P403660

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2274336	Fluoride	0.461	Spike	P	0 - 2.1

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P403962

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2274865	Organic Carbon	0.352	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2274874

Field Sample ID: 27010051

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	145	P	30 - 160
EPA 8321B	2,4-D-d3	145	P	30 - 160
EPA 8321B	Acetaminophen-d4	41.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	41.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	60.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	60.1	P	30 - 160
EPA 8321B	Carbaryl-d7	55.0	P	30 - 160
EPA 8321B	Carbaryl-d7	55.0	P	30 - 160
EPA 8321B	Diuron-d6	64.3	P	30 - 160
EPA 8321B	Diuron-d6	64.3	P	30 - 160
EPA 8321B	Endothall-d6	74.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	72.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	87.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	87.4	P	30 - 160
EPA 8321B	Primidone-d5	41.9	P	30 - 160
EPA 8321B	Primidone-d5	41.9	P	30 - 160
EPA 8321B	Sucralose-d6	118	P	30 - 160

Lab Sample ID: 2274875

Field Sample ID: 27010050

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	154	P	30 - 160
EPA 8321B	2,4-D-d3	154	P	30 - 160
EPA 8321B	Acetaminophen-d4	44.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	44.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	66.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	66.9	P	30 - 160
EPA 8321B	Carbaryl-d7	59.7	P	30 - 160
EPA 8321B	Carbaryl-d7	59.7	P	30 - 160
EPA 8321B	Diuron-d6	63.2	P	30 - 160
EPA 8321B	Diuron-d6	63.2	P	30 - 160
EPA 8321B	Endothall-d6	59.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	76.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	95.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	95.5	P	30 - 160
EPA 8321B	Primidone-d5	47.2	P	30 - 160
EPA 8321B	Primidone-d5	47.2	P	30 - 160
EPA 8321B	Sucralose-d6	119	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A107698

Included Lab Sample IDs: 2274866

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.3	99.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A107705

Included Lab Sample IDs: 2274864

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	100	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A107720

Included Lab Sample IDs: 2274874, 2274875

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	80.8	84.0	P/P	60 - 160
Glufosinate	98.2	100	P/P	60 - 160
Glyphosate	89.6	93.2	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A107746

Included Lab Sample IDs: 2274874, 2274875

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	86.3	86.7	P/P	60 - 160
Acesulfame K	86.7	105	P/P	60 - 160
Endothall	62.4	69.3	P/P	60 - 160
Endothall	69.3	65.3	P/P	60 - 160
Sucralose	101	97.6	P/P	60 - 160
Sucralose	104	101	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A107752

Included Lab Sample IDs: 2274865

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: A107757

Included Lab Sample IDs: 2274865

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.8	99.8	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A107760

Included Lab Sample IDs: 2274864

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

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A107760

Included Lab Sample IDs: 2274864

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107775

Included Lab Sample IDs: 2274865

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

Reference Method: EPA 8321B

Run ID: A107792

Included Lab Sample IDs: 2274874, 2274875

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	107	131	P/P	50 - 150
2,4,5-T	102	107	P/P	50 - 150
Acetaminophen	102	101	P/P	60 - 160
Acetamiprid	101	98.6	P/P	50 - 150
Afidopyropen	103	102	P/P	50 - 150
Bentazon	120	127	P/P	50 - 160
Bentazon	127	125	P/P	50 - 160
Benzovindiflupyr	105	105	P/P	50 - 150
Carbamazepine	104	107	P/P	60 - 150
Clothianidin	78.3	85.0	P/P	60 - 150
Dinotefuran	85.8	93.3	P/P	50 - 150
Diuron	110	106	P/P	60 - 160
Fenuron	103	104	P/P	60 - 150
Fluridone	108	112	P/P	60 - 160
Hydrocodone	94.7	96.0	P/P	60 - 150
Ibuprofen	125	145	P/P	50 - 160
Imazapyr	95.5	84.3	P/P	50 - 150
Imidacloprid	82.7	94.3	P/P	60 - 150
Linuron	109	107	P/P	60 - 150
Mandestrobin	104	105	P/P	50 - 150
MCPP	116	126	P/P	50 - 150
Naproxen	120	125	P/P	50 - 160
Primidone	109	88.6	P/P	60 - 150
Pyraclostrobin	110	111	P/P	60 - 150
Thiamethoxam	86.2	80.0	P/P	50 - 150
Tolfenpyrad	104	108	P/P	60 - 150
Triclopyr	104	109	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107809

Included Lab Sample IDs: 2274865

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	99.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A107898

Included Lab Sample IDs: 2274865

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	99.8	P/P	90 - 110

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

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				4.04	
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	97.8 97.2			0.551
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	97.6 97.3			0.192
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5	97.2 97.2			0.0
EPA 365.1 Rev. 2.0	Total-P	103	101 99.8			0.661
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	105 103			1.32
EPA 8321B	2,4-D	102	139 153			8.88
	2,4,5-T	94.4	143 123			15.3
	Acesulfame K	96.2	116 100			14.2
	Acetaminophen	88.6	55.6 53.8			3.16
	Acetamiprid	86.9	95.8 93.8			2.15
	Afidopyropen	72.0	93.0 106			12.6
	AMPA	78.7	68.0 69.8			2.63
	Bentazon	137				6.63
	Benzovindiflupyr	76.2	92.5 91.6			0.981
	Carbamazepine	92.0	92.5 89.3			3.47
	Clothianidin	95.9	55.2 53.4			3.02
	Dinotefuran	78.4	98.8 98.7			0.114
	Diuron	92.9	99.6 92.7			6.69
	Endothall	70.3	94.3 82.4			13.5
	Fenuron	87.0	93.3 97.8			4.65
	Fluridone	90.4	101 110			5.09
	Glufosinate	100	116 118			1.21
	Glyphosate	91.5	70.1 70.8			0.985
	Hydrocodone	86.6	119 130			8.95
	Ibuprofen	72.3	127 125			1.84
	Imazapyr	81.7	110 128			9.34
	Imidacloprid	85.7	108 97.3			9.08
	Linuron	80.4	77.8 81.9			5.19
	Mandestrobin	85.0	103 96.2			7.19
	MCPP	116	183 170			7.17
	Naproxen	78.8	142 151			6.14
	Primidone	90.0	66.4 50.5			27.1
	Pyraclostrobin	76.3	88.1 85.4			3.16
	Sucralose	113	141 122			14.3
	Thiamethoxam	83.4	105 105			0.294
	Tolfenpyrad	44.1	56.9 53.9			5.44
	Triclopyr	96.5	138 157			13.0
SM 2320 B-2011	Total Alkalinity	103			1.93	
SM 2540 D-2011	TSS				5.13	
SM 4500 F-C-2011	Fluoride	101	99.9 101			0.461
SM 5310 B-2011	Organic Carbon	99.3	98.0 97.5			0.352

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2274864
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2274865
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2274865
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2274865
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2274865
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2274866

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2274874, 2274875
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2274864
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2274864
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2274864
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2274865

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	09/09/2021			09/09/2021 15:33	Sarah A Nixon	2274864
EPA 350.1 Rev. 2.0	09/09/2021			09/13/2021 13:32	Ping Hua	2274865
EPA 351.2 Rev. 2.0	09/09/2021	09/13/2021 12:00	Benjamin T. Nordmann	09/14/2021 11:49	Alexandra J Mattheus	2274865
EPA 353.2 Rev. 2.0	09/09/2021			09/13/2021 10:12	Beverly Y. Sanders	2274865
EPA 365.1 Rev. 2.0	09/09/2021	09/14/2021 14:32	Simonne.V. Calhoun	09/15/2021 15:37	Shengyu Ding	2274865
EPA 365.1 Rev. 2.0 dissolved	09/09/2021			09/09/2021 12:38	James L Waggeberby	2274866
EPA 8321B	09/09/2021	09/10/2021 09:00	Juyoung Kim	09/10/2021 10:23	Juyoung Kim	2274874
	09/09/2021	09/10/2021 09:00	Juyoung Kim	09/10/2021 10:34	Juyoung Kim	2274875
	09/09/2021	09/10/2021 09:00	Juyoung Kim	09/11/2021 00:57	Juyoung Kim	2274874
	09/09/2021	09/10/2021 09:00	Juyoung Kim	09/11/2021 03:10	Juyoung Kim	2274875
	09/09/2021	09/14/2021 12:00	Hoor Shaik	09/15/2021 07:38	Juyoung Kim	2274874
	09/09/2021	09/14/2021 12:00	Hoor Shaik	09/15/2021 08:13	Juyoung Kim	2274875
	09/09/2021	09/14/2021 12:00	Hoor Shaik	09/15/2021 18:02	Juyoung Kim	2274875
SM 2320 B-2011	09/09/2021			09/14/2021 05:24	Dale L. Simmons	2274864
SM 2540 D-2011	09/09/2021			09/13/2021 14:36	Yijie Li	2274864
SM 4500 F-C-2011	09/09/2021			09/14/2021 04:16	Dale L. Simmons	2274864
SM 5310 B-2011	09/09/2021			09/20/2021 22:38	Madeline Gruver	2274865