

Chemical Analysis Report

NE-DIST-2021-03-12-02

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

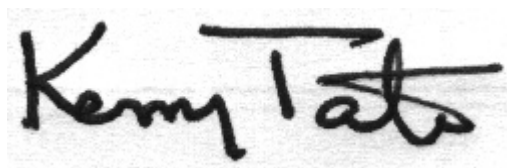
Event Description: **Moses Creek**
Request ID: **RQ-2021-03-08-26**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

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: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 01-APR-2021 13:00

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

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 at Preserve Dock

Collection Date/Time: 03/11/2021 11:00

Field ID: G5NE0004

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2231346	EPA 180.1 Rev. 2.0	Turbidity	7.2		NTU	P394921	
	EPA 300.0 Rev. 2.1	Bromide	30		mg Br/L	P395293	
	SM 2320 B-2011	Total Alkalinity	93	A	mg CaCO3/L	P395082	
	SM 2540 D-2011	TSS	15		mg/L	P395378	
	SM 4500 F-C-2011	Fluoride	0.58		mg F/L	P395085	
2231347	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P395249	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.74		mg N/L	P395163	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P395019	
	EPA 365.1 Rev. 2.0	Total-P	0.066		mg P/L	P395100	
	SM 5310 B-2011	Organic Carbon	17		mg C/L	P395502	
2231348	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.030		mg P/L	P394916	

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: Moses CR at US 1

Collection Date/Time: 03/11/2021 12:00

Field ID: 27010050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2231356	EPA 8321B	2,4-D	0.0065	I	ug/L	P395071	
		Acesulfame K	0.10	U	ug/L	P395013	MS
		2,4,5-T	0.0040	U	ug/L	P395071	
		AMPA	0.10	U	ug/L	P395013	
		Sucralose	0.010	U	ug/L	P395013	
		Acetaminophen	0.075		ug/L	P395071	
		Acetamiprid	0.0020	U	ug/L	P395071	
		Endothall	0.25	U	ug/L	P395013	
		Glufosinate	0.10	U	ug/L	P395013	
		Glyphosate	0.10	U	ug/L	P395013	
		Afidopyropen	0.0020	U	ug/L	P395071	
		Bentazon	0.017		ug/L	P395071	
		Benzovindiflupyr	0.0020	U	ug/L	P395071	
		Carbamazepine	8.0E-04	U	ug/L	P395071	
		Clothianidin	0.0020	U	ug/L	P395071	
		Dinotefuran	0.0020	U	ug/L	P395071	
		Diuron	0.0020	U	ug/L	P395071	
		Fenuron	0.016	U	ug/L	P395071	
		Fluridone	0.0091		ug/L	P395071	
		Imazapyr	0.14		ug/L	P395071	
		Hydrocodone	0.0020	U	ug/L	P395071	
		Ibuprofen	0.020	U	ug/L	P395071	
		Imidacloprid	0.021		ug/L	P395071	
		Linuron	0.0040	U	ug/L	P395071	
		Mandestrobin	0.0020	U	ug/L	P395071	
		MCPP	0.0020	U	ug/L	P395071	
		Naproxen	0.0080	U	ug/L	P395071	
		Primidone	0.0040	U	ug/L	P395071	
		Pyraclostrobin	0.0020	U	ug/L	P395071	
		Thiamethoxam	0.0020	U	ug/L	P395071	
		Tolfenpyrad	0.0020	U	ug/L	P395071	
		Triclopyr	0.0040	U	ug/L	P395071	

Sample Location: Moses Creek @ CR 206

Collection Date/Time: 03/11/2021 12:25

Field ID: 27010051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2231357	EPA 8321B	2,4-D	0.0020	U	ug/L	P395071	
		Acesulfame K	0.10	U	ug/L	P395013	MS
		2,4,5-T	0.0040	U	ug/L	P395071	
		AMPA	0.10	U	ug/L	P395013	
		Sucralose	0.010	U	ug/L	P395013	
		Acetaminophen	0.010	I	ug/L	P395071	
		Acetamiprid	0.0020	U	ug/L	P395071	
		Endothall	0.25	U	ug/L	P395013	
		Glufosinate	0.10	U	ug/L	P395013	
		Glyphosate	0.10	U	ug/L	P395013	
		Afidopyropen	0.0020	U	ug/L	P395071	
		Bentazon	8.0E-04	U	ug/L	P395071	
		Benzovindiflupyr	0.0020	U	ug/L	P395071	
		Carbamazepine	8.0E-04	U	ug/L	P395071	
		Clothianidin	0.0020	U	ug/L	P395071	
		Dinotefuran	0.0020	U	ug/L	P395071	
		Diuron	0.0020	U	ug/L	P395071	
		Fenuron	0.016	U	ug/L	P395071	
		Fluridone	8.0E-04	U	ug/L	P395071	
		Imazapyr	0.078		ug/L	P395071	
		Hydrocodone	0.0020	U	ug/L	P395071	
		Ibuprofen	0.020	U	ug/L	P395071	
		Imidacloprid	0.0020	U	ug/L	P395071	
		Linuron	0.0040	U	ug/L	P395071	
		Mandestrobin	0.0020	U	ug/L	P395071	
		MCPP	0.0020	U	ug/L	P395071	
		Naproxen	0.0080	U	ug/L	P395071	
		Primidone	0.0040	U	ug/L	P395071	
		Pyraclostrobin	0.0020	U	ug/L	P395071	
		Thiamethoxam	0.0020	U	ug/L	P395071	
		Tolfenpyrad	0.0020	U	ug/L	P395071	
		Triclopyr	0.0040	U	ug/L	P395071	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394921

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395293

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395249

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395163

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395019

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395100

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394916

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

Reference Method: EPA 8321B
Batch ID: P395013

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P395071

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	0.0020	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: P395082

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 D-2011

Batch ID: P395378

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011

Batch ID: P395085

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011

Batch ID: P395502

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395293

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395249

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: P395163

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	109		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395019

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395100

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	106		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394916

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

Reference Method: EPA 8321B
Batch ID: P395013

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	132		P	40 - 150
AMPA	96.9		P	40 - 150
Endothall	91.9		P	40 - 150
Glufosinate	109		P	40 - 150
Glyphosate	125		P	40 - 140
Sucralose	92.4		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P395071

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	133		P	30 - 160
2,4,5-T	103		P	30 - 160
Acetaminophen	92.2		P	30 - 160
Acetamiprid	109		P	30 - 160
Afidopyropen	79.1		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P395071

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bentazon	91.2		P	30 - 160
Benzovindiflupyr	92.0		P	30 - 160
Carbamazepine	105		P	30 - 160
Clothianidin	103		P	30 - 160
Dinotefuran	106		P	30 - 160
Diuron	78.3		P	30 - 160
Fenuron	107		P	30 - 160
Fluridone	101		P	30 - 160
Hydrocodone	105		P	30 - 160
Ibuprofen	102		P	30 - 160
Imazapyr	112		P	30 - 160
Imidacloprid	112		P	30 - 160
Linuron	85.5		P	30 - 160
Mandestrobin	96.1		P	30 - 160
MCPP	123		P	30 - 160
Naproxen	56.1		P	30 - 160
Primidone	99.7		P	30 - 160
Pyraclostrobin	89.1		P	30 - 160
Thiamethoxam	110		P	30 - 160
Tolfenpyrad	62.8		P	30 - 160
Triclopyr	107		P	30 - 160

Reference Method: SM 2320 B-2011
Batch ID: P395082

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

Reference Method: SM 4500 F-C-2011
Batch ID: P395085

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.2		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P395502

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395293

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2231346	Bromide	97.5	96.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395249

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230846	Ammonia-N	104	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395163

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230844	Kjeldahl Nitrogen	102	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395019

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230943	NO2NO3-N	99.4	99.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395100

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2231347	Total-P	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394916

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2231348	O-Phosphate-P	98.1	98.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P395013

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2231261	Acesulfame K	174	176	F/F	40 - 150
2231261	AMPA	126	117	P/P	40 - 150
2231261	Endothall	86.4	78.0	P/P	40 - 150
2231261	Glufosinate	108	134	P/P	40 - 150
2231261	Glyphosate	106	119	P/P	40 - 140
2231261	Sucralose	88.1	85.2	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P395071

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2231596	2,4-D	116	124	P/P	30 - 160
2231596	2,4,5-T	98.9	103	P/P	30 - 160
2231596	Acetaminophen	94.8	103	P/P	30 - 160
2231596	Acetamiprid	107	97.0	P/P	30 - 160
2231596	Afidopyropen	78.5	65.5	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P395071

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2231596	Bentazon	67.7	70.4	P/P	30 - 160
2231596	Benzovindiflupyr	89.4	92.9	P/P	30 - 160
2231596	Carbamazepine	95.3	91.9	P/P	30 - 160
2231596	Clothianidin	113	101	P/P	30 - 160
2231596	Dinotefuran	109	95.4	P/P	30 - 160
2231596	Diuron	64.9	67.1	P/P	30 - 160
2231596	Fenuron	93.9	97.0	P/P	30 - 160
2231596	Fluridone	87.5	90.0	P/P	30 - 160
2231596	Hydrocodone	108	104	P/P	30 - 160
2231596	Ibuprofen	82.1	83.6	P/P	30 - 160
2231596	Imazapyr	118	113	P/P	30 - 160
2231596	Imidacloprid	137	135	P/P	30 - 160
2231596	Linuron	74.3	73.9	P/P	30 - 160
2231596	Mandestrobin	86.6	88.4	P/P	30 - 160
2231596	MCP	107	112	P/P	30 - 160
2231596	Naproxen	73.6	80.1	P/P	30 - 160
2231596	Primidone	101	99.6	P/P	30 - 160
2231596	Pyraclostrobin	85.7	84.9	P/P	30 - 160
2231596	Thiamethoxam	135	126	P/P	30 - 160
2231596	Tolfenpyrad	58.0	59.2	P/P	30 - 160
2231596	Triclopyr	102	103	P/P	30 - 160

Reference Method: SM 4500 F-C-2011

Batch ID: P395085

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230131	Fluoride	100	99.0	P/P	94 - 107

Reference Method: SM 5310 B-2011

Batch ID: P395502

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2232839	Organic Carbon	93.4	94.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394921

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231115	Turbidity	2.34	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395293

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231346	Bromide	0.495	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395249

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230846	Ammonia-N	1.71	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395163

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230844	Kjeldahl Nitrogen	5.58	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395019

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230943	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395100

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231347	Total-P	0.769	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394916

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231348	O-Phosphate-P	0.625	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P395013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231261	Acesulfame K	1.28	Spike	P	0 - 30
2231261	AMPA	7.79	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P395013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231261	Endothall	10.2	Spike	P	0 - 30
2231261	Glufosinate	21.6	Spike	P	0 - 30
2231261	Glyphosate	11.3	Spike	P	0 - 30
2231261	Sucralose	3.27	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P395071

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231596	2,4-D	7.04	Spike	P	0 - 30
2231596	2,4,5-T	3.76	Spike	P	0 - 30
2231596	Acetaminophen	7.94	Spike	P	0 - 30
2231596	Acetamiprid	9.90	Spike	P	0 - 30
2231596	Afidopyropen	18.0	Spike	P	0 - 30
2231596	Bentazon	3.94	Spike	P	0 - 30
2231596	Benzovindiflupyr	3.90	Spike	P	0 - 30
2231596	Carbamazepine	3.55	Spike	P	0 - 30
2231596	Clothianidin	10.8	Spike	P	0 - 30
2231596	Dinotefuran	12.9	Spike	P	0 - 30
2231596	Diuron	3.40	Spike	P	0 - 30
2231596	Fenuron	3.30	Spike	P	0 - 30
2231596	Fluridone	2.78	Spike	P	0 - 30
2231596	Hydrocodone	4.03	Spike	P	0 - 30
2231596	Ibuprofen	1.90	Spike	P	0 - 30
2231596	Imazapyr	4.41	Spike	P	0 - 30
2231596	Imidacloprid	1.59	Spike	P	0 - 30
2231596	Linuron	0.482	Spike	P	0 - 30
2231596	Mandestrobin	2.10	Spike	P	0 - 30
2231596	MCP	5.39	Spike	P	0 - 30
2231596	Naproxen	8.42	Spike	P	0 - 30
2231596	Primidone	1.68	Spike	P	0 - 30
2231596	Pyraclostrobin	0.919	Spike	P	0 - 30
2231596	Thiamethoxam	6.85	Spike	P	0 - 30
2231596	Tolfenpyrad	2.03	Spike	P	0 - 30
2231596	Triclopyr	1.54	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P395082

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231346	Total Alkalinity	0.0898	Sample	P	0 - 8.1

Reference Method: SM 4500 F-C-2011
Batch ID: P395085

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230131	Fluoride	0.909	Spike	P	0 - 2.8

Quality Assurance Report

Precision

Reference Method: SM 5310 B-2011
Batch ID: P395502

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2232839	Organic Carbon	0.563	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2231356
Field Sample ID: 27010050

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	91.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	102	P	30 - 160
EPA 8321B	Carbamazepine-d10	68.2	P	30 - 160
EPA 8321B	Diuron-d6	52.0	P	30 - 160
EPA 8321B	Endothall-d6	126	P	40 - 160
EPA 8321B	Endothall-d6	126	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	63.8	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	63.8	P	40 - 160
EPA 8321B	Ibuprofen-d3	83.1	P	30 - 160
EPA 8321B	Primidone-d5	68.7	P	30 - 160
EPA 8321B	Sucralose-d6	56.0	P	30 - 160
EPA 8321B	Sucralose-d6	56.0	P	30 - 160

Lab Sample ID: 2231357
Field Sample ID: 27010051

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	99.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	100	P	30 - 160
EPA 8321B	Carbamazepine-d10	64.7	P	30 - 160
EPA 8321B	Diuron-d6	51.8	P	30 - 160
EPA 8321B	Endothall-d6	132	P	40 - 160
EPA 8321B	Endothall-d6	132	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	89.4	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	89.4	P	40 - 160
EPA 8321B	Ibuprofen-d3	82.5	P	30 - 160
EPA 8321B	Primidone-d5	79.1	P	30 - 160
EPA 8321B	Sucralose-d6	66.7	P	30 - 160
EPA 8321B	Sucralose-d6	66.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A104041

Included Lab Sample IDs: 2231348

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.2	98.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A104045

Included Lab Sample IDs: 2231346

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A104081

Included Lab Sample IDs: 2231347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	104	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A104088

Included Lab Sample IDs: 2231356, 2231357

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	155	110	P/P	60 - 160
AMPA	112	114	P/P	60 - 160
Endothall	126	98.2	P/P	60 - 160
Glufosinate	108	101	P/P	60 - 160
Glyphosate	120	145	P/P	60 - 160

Reference Method: SM 2320 B-2011

Run ID: A104103

Included Lab Sample IDs: 2231346

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.5	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A104103

Included Lab Sample IDs: 2231346

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A104154

Included Lab Sample IDs: 2231347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A104177

Included Lab Sample IDs: 2231347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	108	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A104179

Included Lab Sample IDs: 2231347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.1	97.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A104198

Included Lab Sample IDs: 2231346

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	100	106	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A104272

Included Lab Sample IDs: 2231356, 2231357

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	96.4	96.7	P/P	60 - 160

Reference Method: SM 5310 B-2011

Run ID: A104280

Included Lab Sample IDs: 2231347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.0	96.6	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A104297

Included Lab Sample IDs: 2231356, 2231357

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	102	116	P/P	50 - 150
2,4,5-T	112	100	P/P	50 - 150
Acetaminophen	121	106	P/P	60 - 160
Acetamiprid	112	107	P/P	50 - 150
Afidopyropen	105	103	P/P	50 - 150
Bentazon	108	117	P/P	50 - 160
Benzovindiflupyr	110	115	P/P	50 - 160
Carbamazepine	115	104	P/P	60 - 150
Clothianidin	114	113	P/P	60 - 150
Dinotefuran	126	108	P/P	50 - 150
Diuron	113	107	P/P	60 - 160
Fenuron	111	105	P/P	60 - 150
Fluridone	122	101	P/P	60 - 160
Hydrocodone	111	114	P/P	60 - 150
Ibuprofen	120	117	P/P	50 - 160
Imazapyr	102	97.3	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A104297

Included Lab Sample IDs: 2231356, 2231357

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imidacloprid	106	103	P/P	60 - 150
Linuron	109	97.2	P/P	60 - 150
Mandestrobin	104	108	P/P	50 - 150
MCPP	113	107	P/P	50 - 150
Naproxen	90.4	98.6	P/P	50 - 160
Primidone	104	97.1	P/P	60 - 150
Pyraclostrobin	111	110	P/P	60 - 150
Thiamethoxam	111	110	P/P	50 - 150
Tolfenpyrad	111	106	P/P	60 - 150
Triclopyr	104	117	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					2.34	
EPA 300.0 Rev. 2.1	Bromide	101	97.5	96.7			0.495
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	104	106			1.71
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	109	102	109			5.58
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	99.4	99.4			0.0
EPA 365.1 Rev. 2.0	Total-P	106	104	103			0.769
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	98.1	98.9			0.625
EPA 8321B	2,4-D	133	116	124			7.04
	2,4,5-T	103	98.9	103			3.76
	Acesulfame K	132	174	176			1.28
	Acetaminophen	92.2	94.8	103			7.94
	Acetamiprid	109	107	97.0			9.90
	Afidopyropen	79.1	78.5	65.5			18.0
	AMPA	96.9	126	117			7.79
	Bentazon	91.2	67.7	70.4			3.94
	Benzovindiflupyr	92.0	89.4	92.9			3.90
	Carbamazepine	105	95.3	91.9			3.55
	Clothianidin	103	113	101			10.8
	Dinotefuran	106	109	95.4			12.9
	Diuron	78.3	64.9	67.1			3.40
	Endothall	91.9	86.4	78.0			10.2
	Fenuron	107	93.9	97.0			3.30
	Fluridone	101	87.5	90.0			2.78
	Glufosinate	109	108	134			21.6
	Glyphosate	125	106	119			11.3
	Hydrocodone	105	108	104			4.03
	Ibuprofen	102	82.1	83.6			1.90
	Imazapyr	112	118	113			4.41
	Imidacloprid	112	137	135			1.59
	Linuron	85.5	74.3	73.9			0.482
	Mandestrobin	96.1	86.6	88.4			2.10
	MCPP	123	107	112			5.39
	Naproxen	56.1	73.6	80.1			8.42
	Primidone	99.7	101	99.6			1.68
	Pyraclostrobin	89.1	85.7	84.9			0.919
	Sucralose	92.4	88.1	85.2			3.27
	Thiamethoxam	110	135	126			6.85
	Tolfenpyrad	62.8	58.0	59.2			2.03
	Triclopyr	107	102	103			1.54
SM 2320 B-2011	Total Alkalinity	101				0.0898	
SM 4500 F-C-2011	Fluoride	99.2	100	99.0			0.909
SM 5310 B-2011	Organic Carbon	96.5	93.4	94.1			0.563

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2231346
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2231346
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2231347
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2231347
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2231347
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2231347

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2231348
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2231356, 2231357
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2231356, 2231357
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2231346
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2231346
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2231346
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2231347

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	03/12/2021			03/12/2021 14:31	Yen Ta	2231346
EPA 300.0 Rev. 2.1	03/12/2021			03/15/2021 22:37	Lipi Saha	2231346
EPA 350.1 Rev. 2.0	03/12/2021			03/20/2021 13:12	Ping Hua	2231347
EPA 351.2 Rev. 2.0	03/12/2021	03/18/2021 12:16	Yen Ta	03/19/2021 17:04	Julia Storbeck	2231347
EPA 353.2 Rev. 2.0	03/12/2021			03/16/2021 09:55	Beverly Y. Sanders	2231347
EPA 365.1 Rev. 2.0	03/12/2021	03/17/2021 13:18	Yen Ta	03/18/2021 15:29	Shengyu Ding	2231347
EPA 365.1 Rev. 2.0 dissolved	03/12/2021			03/12/2021 15:21	Patrick M. Roche	2231348
EPA 8321B	03/12/2021	03/16/2021 10:30	Rebecca Ware	03/16/2021 14:03	Rebecca Ware	2231356
	03/12/2021	03/16/2021 10:30	Rebecca Ware	03/16/2021 14:17	Rebecca Ware	2231357
	03/12/2021	03/16/2021 10:30	Rebecca Ware	03/24/2021 14:44	Rebecca Ware	2231356
	03/12/2021	03/16/2021 10:30	Rebecca Ware	03/24/2021 14:56	Rebecca Ware	2231357
	03/12/2021	03/18/2021 09:00	Hoor Shaik	03/25/2021 23:01	Juyoung Kim	2231356
	03/12/2021	03/18/2021 09:00	Hoor Shaik	03/25/2021 23:35	Juyoung Kim	2231357
SM 2320 B-2011	03/12/2021			03/17/2021 10:23	Dale L. Simmons	2231346
SM 2540 D-2011	03/12/2021			03/15/2021 15:01	Yijie Li	2231346
SM 4500 F-C-2011	03/12/2021			03/17/2021 08:31	Dale L. Simmons	2231346
SM 5310 B-2011	03/12/2021			03/25/2021 09:04	Madeline Gruver	2231347