

Chemical Analysis Report

CEN-DIST-2021-09-09-03

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

Event Description: **Rose Bay/Turnbull/Strickland**
Request ID: **RQ-2021-07-19-38**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Matt Bearden

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

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

Date Certified: 04-OCT-2021 10:34



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: Turnbull Bay 1.2km S of Turnbull Bay Rd.

Collection Date/Time: 09/08/2021 13:47

Field ID: G5CE0130

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2274833	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P403552	
	SM 2320 B-2011	Total Alkalinity	144		mg CaCO3/L	P403656	
	SM 2540 D-2011	TSS	23	A	mg/L	P403985	
	SM 4500 F-C-2011	Fluoride	0.74		mg F/L	P403660	
2274834	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P403643	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.80		mg N/L	P403595	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P403622	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P403688	
	SM 5310 B-2011	Organic Carbon	13		mg C/L	P403962	
2274835	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P403525	

Sample Location: Spruce Creek @ 175m US of RR Bridge

Collection Date/Time: 09/08/2021 12:28

Field ID: G5CE0135

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2274855	EPA 8321B	Acesulfame K	0.10	U	ug/L	P403501	
		2,4-D	0.0063	I	ug/L	P403651	MS
		AMPA	1.0	U	ug/L	P403501	
		2,4,5-T	0.0040	U	ug/L	P403651	
		Acetaminophen	0.0080	U	ug/L	P403651	
		Endothall	0.25	U	ug/L	P403501	
		Acetamiprid	0.0020	U	ug/L	P403651	
		Glufosinate	1.0	U	ug/L	P403501	
		Glyphosate	1.0	U	ug/L	P403501	
		Afidopyropen	0.0020	U	ug/L	P403651	
		Sucralose	0.70		ug/L	P403501	
		Bentazon	0.11		ug/L	P403651	
		Benzovindiflupyr	0.0020	U	ug/L	P403651	
		Carbamazepine	0.0018	I	ug/L	P403651	
		Clothianidin	0.0030	I	ug/L	P403651	
		Dinotefuran	0.0020	U	ug/L	P403651	
		Diuron	0.0083		ug/L	P403651	
		Fenuron	0.016	U	ug/L	P403651	
		Fluridone	0.015		ug/L	P403651	
		Imazapyr	0.16		ug/L	P403651	
		Hydrocodone	0.0020	U	ug/L	P403651	
		Ibuprofen	0.020	U	ug/L	P403651	
		Imidacloprid	0.011		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: MDL for some parameters elevated due to matrix interference.

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

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: P403643

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403595

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: P403643

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: P403595

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.0		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
MCPP	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: P403643

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2274834	Ammonia-N	98.4	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403595

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2274818	Kjeldahl Nitrogen	97.8	96.8	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	Afidopyropen	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	MCPPP	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: P403643

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2274834	Ammonia-N	0.343	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403595

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2274818	Kjeldahl Nitrogen	0.870	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: 2274855

Field Sample ID: G5CE0135

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	108	P	30 - 160
EPA 8321B	2,4-D-d3	108	P	30 - 160
EPA 8321B	Acetaminophen-d4	47.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	47.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	81.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	81.3	P	30 - 160
EPA 8321B	Carbaryl-d7	72.7	P	30 - 160
EPA 8321B	Carbaryl-d7	72.7	P	30 - 160
EPA 8321B	Diuron-d6	76.0	P	30 - 160
EPA 8321B	Diuron-d6	76.0	P	30 - 160
EPA 8321B	Endothall-d6	58.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	43.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	83.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	83.4	P	30 - 160
EPA 8321B	Primidone-d5	46.0	P	30 - 160
EPA 8321B	Primidone-d5	46.0	P	30 - 160
EPA 8321B	Sucralose-d6	90.3	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A107698

Included Lab Sample IDs: 2274835

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.7	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A107705

Included Lab Sample IDs: 2274833

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: 2274855

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	84.0	82.6	P/P	60 - 160
Glufosinate	100	99.0	P/P	60 - 160
Glyphosate	93.2	93.7	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A107746

Included Lab Sample IDs: 2274855

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A107752

Included Lab Sample IDs: 2274834

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107756

Included Lab Sample IDs: 2274834

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.5	98.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107757

Included Lab Sample IDs: 2274834

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A107760

Included Lab Sample IDs: 2274833

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

Reference Method: SM 4500 F-C-2011

Run ID: A107760

Included Lab Sample IDs: 2274833

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

Reference Method: EPA 8321B

Run ID: A107792

Included Lab Sample IDs: 2274855

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	128	107	P/P	50 - 150
2,4,5-T	115	102	P/P	50 - 150
Acetaminophen	101	102	P/P	60 - 160
Acetamiprid	98.4	101	P/P	50 - 150
Afidopyropen	109	103	P/P	50 - 150
Bentazon	127	125	P/P	50 - 160
Benzovindiflupyr	107	105	P/P	50 - 150
Carbamazepine	104	104	P/P	60 - 150
Clothianidin	81.0	78.3	P/P	60 - 150
Dinotefuran	93.9	85.8	P/P	50 - 150
Diuron	108	110	P/P	60 - 160
Fenuron	102	103	P/P	60 - 150
Fluridone	111	108	P/P	60 - 160
Hydrocodone	98.7	94.7	P/P	60 - 150
Ibuprofen	145	125	P/P	50 - 160
Imazapyr	89.3	95.5	P/P	50 - 150
Imidacloprid	84.5	82.7	P/P	60 - 150
Linuron	107	109	P/P	60 - 150
Mandestrobin	107	104	P/P	50 - 150
MCP	115	116	P/P	50 - 150
Naproxen	131	120	P/P	50 - 160
Primidone	85.7	109	P/P	60 - 150
Pyraclostrobin	106	110	P/P	60 - 150
Thiamethoxam	82.1	86.2	P/P	50 - 150
Tolfenpyrad	100	104	P/P	60 - 150
Triclopyr	109	104	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107802

Included Lab Sample IDs: 2274834

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

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A107898

Included Lab Sample IDs: 2274834

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	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					4.04	
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	98.4	98.8			0.343
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.0	97.8	96.8			0.870
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -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	2274833
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2274834
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2274834
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2274834
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2274834
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2274835

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2274855
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2274833
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2274833
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2274833
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2274834

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	2274833
EPA 350.1 Rev. 2.0	09/09/2021			09/13/2021 12:52	Ping Hua	2274834
EPA 351.2 Rev. 2.0	09/09/2021	09/10/2021 13:49	Benjamin T. Nordmann	09/13/2021 13:11	Alexandra J Mattheus	2274834
EPA 353.2 Rev. 2.0	09/09/2021			09/13/2021 09:56	Beverly Y. Sanders	2274834
EPA 365.1 Rev. 2.0	09/09/2021	09/14/2021 14:32	Simonne.V. Calhoun	09/15/2021 12:16	Shengyu Ding	2274834
EPA 365.1 Rev. 2.0 dissolved	09/09/2021			09/09/2021 12:45	James L Waggeberby	2274835
EPA 8321B	09/09/2021	09/10/2021 09:00	Juyoung Kim	09/10/2021 11:38	Juyoung Kim	2274855
	09/09/2021	09/10/2021 09:00	Juyoung Kim	09/11/2021 02:26	Juyoung Kim	2274855
	09/09/2021	09/14/2021 12:00	Hoor Shaik	09/15/2021 05:20	Juyoung Kim	2274855
	09/09/2021	09/14/2021 12:00	Hoor Shaik	09/15/2021 16:18	Juyoung Kim	2274855
SM 2320 B-2011	09/09/2021			09/14/2021 05:09	Dale L. Simmons	2274833
SM 2540 D-2011	09/09/2021			09/13/2021 14:36	Yijie Li	2274833
SM 4500 F-C-2011	09/09/2021			09/14/2021 04:10	Dale L. Simmons	2274833
SM 5310 B-2011	09/09/2021			09/20/2021 23:17	Madeline Gruver	2274834