

Chemical Analysis Report

CEN-DIST-2021-07-23-01

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-2021-07-12-45**
Customer: **CEN-DIST**
Project ID: **SMP**

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

Date Certified: 19-AUG-2021 13:51



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: Spruce Creek @ 175m US of RR Bridge

Collection Date/Time: 07/22/2021 10:57

Field ID: G5CE0135

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2264720	EPA 8321B	2,4-D	0.91		ug/L	P401377	
		Acesulfame K	0.10	U	ug/L	P401371	
		2,4,5-T	0.0040	U	ug/L	P401377	
		AMPA	0.10	U	ug/L	P401371	
		Acetaminophen	0.030	I	ug/L	P401377	
		Acetamiprid	0.0020	U	ug/L	P401377	
		Endothall	0.25	U	ug/L	P401371	
		Glufosinate	0.10	U	ug/L	P401371	
		Glyphosate	0.47		ug/L	P401371	
		Afidopyropen	0.0020	U	ug/L	P401377	
		Bentazon	0.46		ug/L	P401377	
		Sucralose	1.6		ug/L	P401371	
		Benzovindiflupyr	0.0020	U	ug/L	P401377	
		Carbamazepine	0.0035		ug/L	P401377	
		Clothianidin	0.059		ug/L	P401377	
		Dinotefuran	0.0033	I	ug/L	P401377	
		Diuron	0.0031	I	ug/L	P401377	
		Fenuron	0.016	U	ug/L	P401377	
		Fluridone	0.17		ug/L	P401377	
		Imazapyr	0.84		ug/L	P401377	
		Hydrocodone	0.0020	U	ug/L	P401377	
		Ibuprofen	0.020	U	ug/L	P401377	
		Imidacloprid	0.15		ug/L	P401377	
		Linuron	0.0040	U	ug/L	P401377	
		Mandestrobin	0.0020	U	ug/L	P401377	
		MCPP	0.0051	I	ug/L	P401377	
		Naproxen	0.0080	U	ug/L	P401377	
		Primidone	0.010	I	ug/L	P401377	
		Pyraclostrobin	0.0020	U	ug/L	P401377	
		Thiamethoxam	0.0037	I	ug/L	P401377	
		Tolfenpyrad	0.0020	U	ug/L	P401377	
		Triclopyr	0.0040	U	ug/L	P401377	

Sample Location: Turnbull Bay 1.2 km S of Turnbull Bay Rd

Collection Date/Time: 07/22/2021 12:09

Field ID: G5CE0130

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2264702	EPA 180.1 Rev. 2.0	Turbidity	16		NTU	P401499	
	SM 2320 B-2011	Total Alkalinity	178		mg CaCO3/L	P401517	
	SM 2540 D-2011	TSS	35		mg/L	P401965	
	SM 4500 F-C-2011	Fluoride	0.33		mg F/L	P401521	
2264703	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P401886	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2	J	mg N/L	P402351	LCS, MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P401579	
	EPA 365.1 Rev. 2.0	Total-P	0.25		mg P/L	P401691	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P402026	
2264704	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.16		mg P/L	P401482	

Ref. Method and Comment:

EPA 351.2 Rev. 2.0: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: FB

Collection Date/Time: 07/22/2021 12:30

Field ID: FB_07222021

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2264705	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P401500	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P401614	
	SM 2540 D-2011	TSS	2	U	mg/L	P401965	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P401616	
2264706	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P402061	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P402350	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P401626	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P401665	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P402026	
2264707	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P401483	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P401499

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P401500

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401886

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402061

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402350

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402351

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401579

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401626

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401665

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

Batch ID: P401691

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P401482

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P401483

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

Reference Method: EPA 8321B

Batch ID: P401371

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: P401377

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P401377

Component	Result	Code	Units
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: P401517

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

Reference Method: SM 2320 B-2011
Batch ID: P401614

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

Reference Method: SM 2540 D-2011
Batch ID: P401965

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P401521

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P401616

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P402026

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: P401886

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P402061

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P402350

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P402351

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	111		F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P401579

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P401626

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: P401665

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	105		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P401691

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P401482

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.9		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401483

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

Reference Method: EPA 8321B
Batch ID: P401371

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	81.5		P	40 - 150
AMPA	97.5		P	40 - 150
Endothall	80.8		P	40 - 150
Glufosinate	101		P	40 - 150
Glyphosate	103		P	40 - 150
Sucralose	84.1		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P401377

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	138		P	30 - 160
2,4,5-T	146		P	30 - 160
Acetaminophen	94.2		P	30 - 160
Acetamiprid	99.1		P	30 - 160
Afidopyropen	64.8		P	30 - 160
Bentazon	98.9		P	30 - 160
Benzovindiflupyr	107		P	30 - 160
Carbamazepine	112		P	30 - 160
Clothianidin	116		P	30 - 160
Dinotefuran	114		P	30 - 160
Diuron	110		P	30 - 160
Fenuron	112		P	30 - 160
Fluridone	99.1		P	30 - 160
Hydrocodone	115		P	30 - 160
Ibuprofen	116		P	30 - 160
Imazapyr	146		P	30 - 160
Imidacloprid	114		P	30 - 160
Linuron	99.5		P	30 - 160
Mandestrobin	105		P	30 - 160
MCPP	143		P	30 - 160
Naproxen	92.4		P	30 - 160
Primidone	121		P	30 - 160
Pyraclostrobin	95.9		P	30 - 160
Thiamethoxam	116		P	30 - 160
Tolfenpyrad	56.9		P	30 - 160
Triclopyr	149		P	30 - 160

Reference Method: SM 2320 B-2011
Batch ID: P401517

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P401614

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

Reference Method: SM 4500 F-C-2011
Batch ID: P401521

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P401616

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.4		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P402026

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.7		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401886

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264703	Ammonia-N	94.8	97.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402061

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264776	Ammonia-N	98.6	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402350

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264571	Kjeldahl Nitrogen	113	111	F/F	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402351

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264703	Kjeldahl Nitrogen	112	121	F/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401579

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264394	NO2NO3-N	99.6	99.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401626

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264682	NO2NO3-N	99.6	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401665

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264603	Total-P	108	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401691

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264739	Total-P	107	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401482

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264660	O-Phosphate-P	101	105	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401483

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264779	O-Phosphate-P	92.2	92.0	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P401371

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264038	Acesulfame K	112	109	P/P	40 - 150
2264038	AMPA	90.3	92.0	P/P	40 - 150
2264038	Endothall	97.8	98.1	P/P	40 - 150
2264038	Glufosinate	112	115	P/P	40 - 150
2264038	Glyphosate	87.5	91.3	P/P	40 - 150
2264038	Sucralose	85.9	85.5	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P401377

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264038	2,4-D	99.6	111	P/P	30 - 160
2264038	2,4,5-T	114	114	P/P	30 - 160
2264038	Acetaminophen	83.6	78.2	P/P	30 - 160
2264038	Acetamiprid	93.7	92.0	P/P	30 - 160
2264038	Afidopyrophen	58.8	58.4	P/P	30 - 160
2264038	Bentazon	71.1	75.1	P/P	30 - 160
2264038	Benzovindiflupyr	94.9	92.4	P/P	30 - 160
2264038	Carbamazepine	101	106	P/P	30 - 160
2264038	Clothianidin	111	109	P/P	30 - 160
2264038	Dinotefuran	115	113	P/P	30 - 160
2264038	Diuron	87.5	86.7	P/P	30 - 160
2264038	Fenuron	90.9	89.3	P/P	30 - 160
2264038	Fluridone	82.7	83.1	P/P	30 - 160
2264038	Hydrocodone	114	112	P/P	30 - 160
2264038	Ibuprofen	100	96.0	P/P	30 - 160
2264038	Imazapyr	104	102	P/P	30 - 160
2264038	Imidacloprid	132	133	P/P	30 - 160
2264038	Linuron	85.4	85.7	P/P	30 - 160
2264038	Mandestrobin	94.6	92.8	P/P	30 - 160
2264038	MCPP	119	122	P/P	30 - 160
2264038	Naproxen	81.4	81.9	P/P	30 - 160
2264038	Primidone	119	119	P/P	30 - 160
2264038	Pyraclostrobin	85.0	82.3	P/P	30 - 160
2264038	Thiamethoxam	136	132	P/P	30 - 160
2264038	Tolfenpyrad	56.1	55.3	P/P	30 - 160
2264038	Triclopyr	119	120	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P401521

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264010	Fluoride	98.7	100	P/P	92 - 107

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P401616

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264754	Fluoride	98.6	99.1	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P402026

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264683	Organic Carbon	95.9	97.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P401499

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264599	Turbidity	0.134	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P401500

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264753	Turbidity	0.409	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401886

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264703	Ammonia-N	1.81	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402061

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264776	Ammonia-N	0.184	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402350

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264571	Kjeldahl Nitrogen	1.21	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402351

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264703	Kjeldahl Nitrogen	5.23	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401579

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264394	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401626

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264682	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P401665

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264603	Total-P	0.717	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P401691

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264739	Total-P	0.950	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P401482

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264660	O-Phosphate-P	4.08	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P401483

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264779	O-Phosphate-P	0.217	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P401371

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264038	Acesulfame K	2.68	Spike	P	0 - 30
2264038	AMPA	1.84	Spike	P	0 - 30
2264038	Endothall	0.314	Spike	P	0 - 30
2264038	Glufosinate	2.69	Spike	P	0 - 30
2264038	Glyphosate	4.33	Spike	P	0 - 30
2264038	Sucralose	0.381	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P401377

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264038	2,4-D	5.86	Spike	P	0 - 30
2264038	2,4,5-T	0.503	Spike	P	0 - 30
2264038	Acetaminophen	5.92	Spike	P	0 - 30
2264038	Acetamiprid	1.83	Spike	P	0 - 30
2264038	Afidopyropen	0.745	Spike	P	0 - 30
2264038	Bentazon	3.06	Spike	P	0 - 30
2264038	Benzovindiflupyr	2.64	Spike	P	0 - 30
2264038	Carbamazepine	4.13	Spike	P	0 - 30
2264038	Clothianidin	1.83	Spike	P	0 - 30
2264038	Dinotefuran	1.78	Spike	P	0 - 30
2264038	Diuron	0.999	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P401377

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264038	Fenuron	1.70	Spike	P	0 - 30
2264038	Fluridone	0.469	Spike	P	0 - 30
2264038	Hydrocodone	1.43	Spike	P	0 - 30
2264038	Ibuprofen	4.29	Spike	P	0 - 30
2264038	Imazapyr	2.08	Spike	P	0 - 30
2264038	Imidacloprid	0.413	Spike	P	0 - 30
2264038	Linuron	0.437	Spike	P	0 - 30
2264038	Mandestrobin	1.83	Spike	P	0 - 30
2264038	MCCP	2.97	Spike	P	0 - 30
2264038	Naproxen	0.566	Spike	P	0 - 30
2264038	Primidone	0.407	Spike	P	0 - 30
2264038	Pyraclostrobin	3.16	Spike	P	0 - 30
2264038	Thiamethoxam	3.15	Spike	P	0 - 30
2264038	Tolfenpyrad	1.47	Spike	P	0 - 30
2264038	Triclopyr	1.13	Spike	P	0 - 30

Reference Method: SM 2320 B-2011

Batch ID: P401517

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264010	Total Alkalinity	2.06	Sample	P	0 - 5.2

Reference Method: SM 2320 B-2011

Batch ID: P401614

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264754	Total Alkalinity	3.65	Sample	P	0 - 5.2

Reference Method: SM 2540 D-2011

Batch ID: P401965

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264580	TSS	2.67	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011

Batch ID: P401521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264010	Fluoride	0.953	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011

Batch ID: P401616

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264754	Fluoride	0.472	Spike	P	0 - 2.1

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P402026

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264683	Organic Carbon	0.900	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2264720

Field Sample ID: G5CE0135

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	137	P	30 - 160
EPA 8321B	Acetaminophen-d4	121	P	30 - 160
EPA 8321B	Carbamazepine-d10	110	P	30 - 160
EPA 8321B	Diuron-d6	79.3	P	30 - 160
EPA 8321B	Endothall-d6	91.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	32.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	98.1	P	30 - 160
EPA 8321B	Primidone-d5	124	P	30 - 160
EPA 8321B	Sucralose-d6	76.9	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A106768
Included Lab Sample IDs: 2264720

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	101	97.1	P/P	50 - 150
2,4,5-T	106	101	P/P	50 - 150
Acetaminophen	122	122	P/P	60 - 160
Acetamiprid	107	106	P/P	50 - 150
Afidopyropen	112	117	P/P	50 - 150
Bentazon	114	118	P/P	50 - 160
Benzovindiflupyr	114	111	P/P	50 - 160
Carbamazepine	117	115	P/P	60 - 150
Clothianidin	110	106	P/P	60 - 150
Dinotefuran	113	110	P/P	50 - 150
Diuron	127	126	P/P	60 - 160
Fenuron	109	107	P/P	60 - 150
Fluridone	101	104	P/P	60 - 160
Hydrocodone	116	115	P/P	60 - 150
Ibuprofen	112	110	P/P	50 - 160
Imazapyr	114	116	P/P	50 - 160
Imidacloprid	104	103	P/P	60 - 150
Linuron	114	111	P/P	60 - 150
Mandestrobin	110	110	P/P	50 - 150
MCPP	106	103	P/P	50 - 150
Naproxen	101	98.4	P/P	50 - 160
Primidone	116	107	P/P	60 - 150
Pyraclostrobin	106	106	P/P	60 - 150
Thiamethoxam	111	111	P/P	50 - 150
Tolfenpyrad	108	108	P/P	60 - 150
Triclopyr	109	103	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A106799
Included Lab Sample IDs: 2264720

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	106	110	P/P	60 - 160
Glufosinate	104	104	P/P	60 - 160
Glyphosate	110	110	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A106800
Included Lab Sample IDs: 2264704, 2264707

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.8	97.7	P/P	90 - 110
O-Phosphate-P	99.3	98.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A106805
Included Lab Sample IDs: 2264702, 2264705

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.5	P/P	95 - 105
Turbidity	99.5	100	P/P	95 - 105

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A106812
Included Lab Sample IDs: 2264720

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	78.3	81.1	P/P	60 - 160
Endothall	79.4	86.6	P/P	60 - 160
Sucralose	81.3	79.6	P/P	60 - 160

Reference Method: SM 2320 B-2011
Run ID: A106814
Included Lab Sample IDs: 2264702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.9	102	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A106814
Included Lab Sample IDs: 2264702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	103	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A106846
Included Lab Sample IDs: 2264703

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A106865
Included Lab Sample IDs: 2264705

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.6	102	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A106865
Included Lab Sample IDs: 2264705

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A106874
Included Lab Sample IDs: 2264706

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A106914
Included Lab Sample IDs: 2264706

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106914

Included Lab Sample IDs: 2264706

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106934

Included Lab Sample IDs: 2264703

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	104	105	P/P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107003

Included Lab Sample IDs: 2264703

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.8	95.6	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A107056

Included Lab Sample IDs: 2264703, 2264706

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.8	96.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107064

Included Lab Sample IDs: 2264706

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.3	99.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107223

Included Lab Sample IDs: 2264703, 2264706

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.6	102	P/P	90 - 110
Kjeldahl Nitrogen	98.4	97.6	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					0.134	
	Turbidity					0.409	
EPA 350.1 Rev. 2.0	Ammonia-N	97.6	94.8	97.2			1.81
	Ammonia-N	101	98.6	98.8			0.184
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	113	111			1.21
	Kjeldahl Nitrogen	111	112	121			5.23
EPA 353.2 Rev. 2.0	NO2NO3-N	100	99.6	99.6			0.0
	NO2NO3-N	102	99.6	99.6			0.0
EPA 365.1 Rev. 2.0	Total-P	105	108	107			0.717
	Total-P	109	107	108			0.950
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.9	101	105			4.08
	O-Phosphate-P	98.1	92.2	92.0			0.217
EPA 8321B	2,4-D	138	99.6	111			5.86
	2,4,5-T	146	114	114			0.503
	Acesulfame K	81.5	112	109			2.68
	Acetaminophen	94.2	83.6	78.2			5.92
	Acetamiprid	99.1	93.7	92.0			1.83
	Afidopyropen	64.8	58.8	58.4			0.745
	AMPA	97.5	90.3	92.0			1.84
	Bentazon	98.9	71.1	75.1			3.06
	Benzovindiflupyr	107	94.9	92.4			2.64
	Carbamazepine	112	101	106			4.13
	Clothianidin	116	111	109			1.83
	Dinotefuran	114	115	113			1.78
	Diuron	110	87.5	86.7			0.999
	Endothall	80.8	97.8	98.1			0.314
	Fenuron	112	90.9	89.3			1.70
	Fluridone	99.1	82.7	83.1			0.469
	Glufosinate	101	112	115			2.69
	Glyphosate	103	87.5	91.3			4.33
	Hydrocodone	115	114	112			1.43
	Ibuprofen	116	100	96.0			4.29
	Imazapyr	146	104	102			2.08
	Imidacloprid	114	132	133			0.413
	Linuron	99.5	85.4	85.7			0.437
	Mandestrobin	105	94.6	92.8			1.83
	MCPP	143	119	122			2.97
	Naproxen	92.4	81.4	81.9			0.566
	Primidone	121	119	119			0.407
	Pyraclostrobin	95.9	85.0	82.3			3.16
	Sucralose	84.1	85.9	85.5			0.381
	Thiamethoxam	116	136	132			3.15
	Tolfenpyrad	56.9	56.1	55.3			1.47
	Triclopyr	149	119	120			1.13
SM 2320 B-2011	Total Alkalinity	102				2.06	
	Total Alkalinity	103				3.65	
SM 2540 D-2011	TSS					2.67	
SM 4500 F-C-2011	Fluoride	102	98.7	100			0.953
	Fluoride	98.4	98.6	99.1			0.472
SM 5310 B-2011	Organic Carbon	95.7	95.9	97.2			0.900

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2264702, 2264705
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2264703, 2264706
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2264703, 2264706
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2264703, 2264706
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2264703, 2264706
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2264704, 2264707
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2264720
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2264702, 2264705
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2264702, 2264705
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2264702, 2264705
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2264703, 2264706

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	07/23/2021			07/23/2021 16:14	Sarah A Nixon	2264702, 2264705
EPA 350.1 Rev. 2.0	07/23/2021			08/03/2021 12:05	Roberta Tatti	2264703
	07/23/2021			08/05/2021 13:42	Ping Hua	2264706
EPA 351.2 Rev. 2.0	07/23/2021	08/11/2021 18:38	Madeline Gruver	08/12/2021 12:46	Virginia P. Brown	2264706
	07/23/2021	08/11/2021 18:38	Madeline Gruver	08/12/2021 13:10	Virginia P. Brown	2264703
EPA 353.2 Rev. 2.0	07/23/2021			07/27/2021 11:01	Beverly Y. Sanders	2264703
	07/23/2021			07/28/2021 09:48	Beverly Y. Sanders	2264706
EPA 365.1 Rev. 2.0	07/23/2021	07/28/2021 14:07	Simonne.V. Calhoun	07/29/2021 12:03	Shengyu Ding	2264706
	07/23/2021	07/29/2021 12:32	Simonne.V. Calhoun	07/30/2021 10:23	Shengyu Ding	2264703
EPA 365.1 Rev. 2.0 dissolved	07/23/2021			07/23/2021 13:37	Lipi Saha	2264704
	07/23/2021			07/23/2021 13:48	Lipi Saha	2264707
EPA 8321B	07/23/2021	07/23/2021 12:00	Pramila Ghimire	07/23/2021 12:58	Juyoung Kim	2264720
	07/23/2021	07/23/2021 12:00	Pramila Ghimire	07/23/2021 19:34	Pramila Ghimire	2264720
	07/23/2021	07/23/2021 13:00	Hoor Shaik	07/24/2021 04:13	Juyoung Kim	2264720
	07/23/2021	07/23/2021 13:00	Hoor Shaik	07/26/2021 15:20	Juyoung Kim	2264720
SM 2320 B-2011	07/23/2021			07/24/2021 06:05	Dale L. Simmons	2264702
	07/23/2021			07/27/2021 16:50	Dale L. Simmons	2264705
SM 2540 D-2011	07/23/2021			07/27/2021 14:56	Yijie Li	2264702, 2264705
SM 4500 F-C-2011	07/23/2021			07/24/2021 05:11	Dale L. Simmons	2264702
	07/23/2021			07/27/2021 16:50	Dale L. Simmons	2264705
SM 5310 B-2011	07/23/2021			08/05/2021 04:46	Madeline Gruver	2264703
	07/23/2021			08/05/2021 04:58	Madeline Gruver	2264706