

Chemical Analysis Report

SO-DIST-2021-09-02-02

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

Event Description: **SMP: Bee Branch & Palm Creek (Kickapoo)**

Request ID: **RQ-2021-09-06-68**

Customer: **SO-DIST**

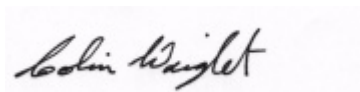
Project ID: **SMP**

Send Reports to:
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FLDEP South District Office
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Certified by: Colin Wright, Program Administrator

Date Certified: 27-SEP-2021 12:39

A handwritten signature in black ink, appearing to read "Colin Wright", is shown on a light-colored rectangular background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: 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: Palm Creek @ Lee Civic Ctr.

Collection Date/Time: 09/01/2021 08:20

Field ID: G3SD0190

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2273251	EPA 8321B	2,4-D	0.037		ug/L	P403290	
		Acesulfame K	0.22	I	ug/L	P403327	
		2,4,5-T	0.0040	U	ug/L	P403290	
		AMPA	0.78		ug/L	P403327	
		Acetaminophen	0.017	I	ug/L	P403290	
		Acetamiprid	0.0020	U	ug/L	P403290	
		Endothall	0.25	U	ug/L	P403327	
		Glufosinate	0.10	U	ug/L	P403327	
		Glyphosate	3.1		ug/L	P403327	
		Afidopyropen	0.0020	U	ug/L	P403290	
		Sucralose	0.13		ug/L	P403327	
		Bentazon	0.0044		ug/L	P403290	MS
		Benzovindiflupyr	0.0020	U	ug/L	P403290	
		Carbamazepine	8.0E-04	U	ug/L	P403290	
		Clothianidin	0.0020	U	ug/L	P403290	
		Dinotefuran	0.0020	U	ug/L	P403290	
		Diuron	0.0020	U	ug/L	P403290	
		Fenuron	0.016	U	ug/L	P403290	
		Fluridone	8.0E-04	U	ug/L	P403290	
		Imazapyr	0.019		ug/L	P403290	
		Hydrocodone	0.0020	U	ug/L	P403290	
		Ibuprofen	0.020	U	ug/L	P403290	
		Imidacloprid	0.013		ug/L	P403290	
		Linuron	0.0040	U	ug/L	P403290	
		Mandestrobin	0.0020	U	ug/L	P403290	
		MCPP	0.0020	U	ug/L	P403290	
		Naproxen	0.0080	U	ug/L	P403290	
		Primidone	0.0040	U	ug/L	P403290	MS
		Pyraclostrobin	0.0020	U	ug/L	P403290	
		Thiamethoxam	0.0020	U	ug/L	P403290	
		Tolfenpyrad	0.0020	U	ug/L	P403290	
		Triclopyr	0.0040	U	ug/L	P403290	

Ref. Method and Comment:

EPA 8321B: MS accuracy for 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.

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

Sample Location: Bee Branch @ Loblolly Bay Rd.

Collection Date/Time: 09/01/2021 09:05

Field ID: G3SD0085

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2273241	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P403332	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P403499	
		Sulfate	9.0		mg SO4/L	P403500	
	SM 2120 B-2011	Color (true)	360		PCU	P403334	
	SM 2320 B-2011	Total Alkalinity	22		mg CaCO3/L	P403437	
	SM 2540 C-2011	TDS	143		mg/L	P403572	
	SM 2540 D-2011	TSS	4	I	mg/L	P403568	
	SM 4500 F-C-2011	Fluoride	0.077	I	mg F/L	P403438	
2273242	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P403363	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P403509	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.050		mg N/L	P403348	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P403425	
	SM 5310 B-2011	Organic Carbon	35		mg C/L	P403549	
2273243	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.096		mg P/L	P403336	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P403332

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403499

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403500

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403363

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403509

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403348

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403425

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403336

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

Reference Method: EPA 8321B
Batch ID: P403290

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P403290

Component	Result	Code	Units
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: EPA 8321B

Batch ID: P403327

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: SM 2120 B-2011

Batch ID: P403334

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P403437

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

Reference Method: SM 2540 C-2011

Batch ID: P403572

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P403568

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P403438

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P403549

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: P403499

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403500

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403363

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403509

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403348

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: P403425

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403336

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

Reference Method: EPA 8321B
Batch ID: P403290

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	90.6		P	40 - 150
2,4,5-T	86.4		P	40 - 150
Acetaminophen	78.0		P	30 - 150
Acetamiprid	80.5		P	40 - 150
Afidopyropen	74.5		P	40 - 150
Bentazon	98.4		P	30 - 150
Benzovindiflupyr	86.4		P	40 - 150
Carbamazepine	80.4		P	40 - 150
Clothianidin	86.3		P	40 - 150
Dinotefuran	80.5		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P403290

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	81.8		P	40 - 150
Fenuron	89.0		P	40 - 150
Fluridone	92.3		P	40 - 150
Hydrocodone	85.3		P	40 - 150
Ibuprofen	54.2		P	40 - 150
Imazapyr	86.5		P	40 - 150
Imidacloprid	97.7		P	40 - 150
Linuron	86.3		P	40 - 150
Mandestrobin	86.4		P	40 - 150
MCPP	82.6		P	40 - 150
Naproxen	76.6		P	40 - 150
Primidone	99.3		P	40 - 150
Pyraclostrobin	72.0		P	40 - 150
Thiamethoxam	90.9		P	40 - 150
Tolfenpyrad	50.7		P	30 - 150
Triclopyr	91.8		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P403327

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	105		P	40 - 150
AMPA	71.1		P	40 - 150
Endothall	125		P	40 - 150
Glufosinate	97.7		P	40 - 150
Glyphosate	101		P	40 - 150
Sucralose	89.1		P	40 - 150

Reference Method: SM 2120 B-2011

Batch ID: P403334

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.8		P	85 - 115

Reference Method: SM 2320 B-2011

Batch ID: P403437

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

Reference Method: SM 4500 F-C-2011

Batch ID: P403438

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.5		P	93 - 104

Reference Method: SM 5310 B-2011

Batch ID: P403549

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P403499

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273152	Chloride	99.6		P	90 - 110
2273276	Chloride	99.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P403500

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273152	Sulfate	100		P	90 - 110
2273276	Sulfate	99.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P403363

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273230	Ammonia-N	98.2	97.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P403348

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273153	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P403425

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273225	Total-P	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P403336

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273163	O-Phosphate-P	101	102	P/P	90 - 110

Reference Method: EPA 8321B

Batch ID: P403290

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273120	2,4,5-T	119	118	P/P	40 - 150
2273120	Acetaminophen	70.0	64.7	P/P	30 - 150
2273120	Acetamiprid	74.3	69.4	P/P	40 - 150
2273120	Afidopyropen	92.4	79.4	P/P	40 - 150
2273120	Bentazon	227	206	F/F	30 - 150
2273120	Benzovindiflupyr	87.3	92.3	P/P	40 - 150
2273120	Carbamazepine	75.6	71.7	P/P	40 - 150
2273120	Clothianidin	46.4	43.7	P/P	40 - 150
2273120	Dinotefuran	74.6	75.9	P/P	40 - 150
2273120	Diuron	83.2	74.1	P/P	40 - 150
2273120	Fenuron	94.6	89.3	P/P	40 - 150
2273120	Fluridone	91.1	89.2	P/P	40 - 150
2273120	Hydrocodone	106	112	P/P	40 - 150
2273120	Ibuprofen	75.3	64.4	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P403290

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273120	Imazapyr	106	111	P/P	40 - 150
2273120	Imidacloprid	88.2	82.7	P/P	40 - 150
2273120	Linuron	85.1	91.6	P/P	40 - 150
2273120	Mandestrobin	98.4	98.5	P/P	40 - 150
2273120	MCPP	123	114	P/P	40 - 150
2273120	Naproxen	93.1	71.6	P/P	40 - 150
2273120	Primidone	25.0	23.9	F/F	40 - 150
2273120	Pyraclostrobin	90.2	91.2	P/P	40 - 150
2273120	Thiamethoxam	75.0	79.4	P/P	40 - 150
2273120	Tolfenpyrad	48.7	52.4	P/P	30 - 150
2273120	Triclopyr	110	113	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P403327

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273120	Acesulfame K	148	148	P/P	40 - 150
2273120	AMPA	101	99.9	P/P	40 - 150
2273120	Endothall	113	109	P/P	40 - 150
2273120	Glufosinate	108	109	P/P	40 - 150
2273120	Sucralose	90.1	92.2	P/P	40 - 150

Reference Method: SM 4500 F-C-2011

Batch ID: P403438

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273302	Fluoride	97.6	100	P/P	92 - 107

Reference Method: SM 5310 B-2011

Batch ID: P403549

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273256	Organic Carbon	95.6	95.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P403332

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273152	Turbidity	10.5	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P403499

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273152	Chloride	0.969	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P403363

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273230	Ammonia-N	0.540	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P403509

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273208	Kjeldahl Nitrogen	2.92	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P403348

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273153	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P403425

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273225	Total-P	0.397	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P403336

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273163	O-Phosphate-P	0.295	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P403290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273120	2,4-D	5.50	Spike	P	0 - 30
2273120	2,4,5-T	1.19	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P403290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273120	Acetaminophen	7.77	Spike	P	0 - 30
2273120	Acetamiprid	6.83	Spike	P	0 - 30
2273120	Afidopyropen	15.1	Spike	P	0 - 30
2273120	Bentazon	8.88	Spike	P	0 - 30
2273120	Benzovindiflupyr	5.58	Spike	P	0 - 30
2273120	Carbamazepine	4.86	Spike	P	0 - 30
2273120	Clothianidin	5.99	Spike	P	0 - 30
2273120	Dinotefuran	0.784	Spike	P	0 - 30
2273120	Diuron	10.7	Spike	P	0 - 30
2273120	Fenuron	5.78	Spike	P	0 - 30
2273120	Fluridone	2.01	Spike	P	0 - 30
2273120	Hydrocodone	5.12	Spike	P	0 - 30
2273120	Ibuprofen	15.5	Spike	P	0 - 30
2273120	Imazapyr	3.01	Spike	P	0 - 30
2273120	Imidacloprid	6.44	Spike	P	0 - 30
2273120	Linuron	7.29	Spike	P	0 - 30
2273120	Mandestrobin	0.0138	Spike	P	0 - 30
2273120	MCPP	8.03	Spike	P	0 - 30
2273120	Naproxen	26.1	Spike	P	0 - 30
2273120	Primidone	4.72	Spike	P	0 - 30
2273120	Pyraclostrobin	1.04	Spike	P	0 - 30
2273120	Thiamethoxam	4.80	Spike	P	0 - 30
2273120	Tolfenpyrad	7.34	Spike	P	0 - 30
2273120	Triclopyr	2.54	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P403327

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273120	Acesulfame K	0.279	Spike	P	0 - 30
2273120	AMPA	0.431	Spike	P	0 - 30
2273120	Endothall	3.43	Spike	P	0 - 30
2273120	Glufosinate	1.17	Spike	P	0 - 30
2273120	Glyphosate	6.53	Spike	P	0 - 30
2273120	Sucralose	2.26	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P403334

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273207	Color (true)	0.546	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P403437

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273302	Total Alkalinity	1.28	Sample	P	0 - 5.2

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P403572

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273023	TDS	5.53	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P403438

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273302	Fluoride	1.90	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P403549

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273256	Organic Carbon	0.137	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2273251

Field Sample ID: G3SD0190

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	114	P	30 - 160
EPA 8321B	Acetaminophen-d4	55.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	85.1	P	30 - 160
EPA 8321B	Diuron-d6	93.6	P	30 - 160
EPA 8321B	Endothall-d6	119	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	84.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	84.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	58.6	P	30 - 160
EPA 8321B	Primidone-d5	30.1	P	30 - 160
EPA 8321B	Sucralose-d6	103	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A107623

Included Lab Sample IDs: 2273241

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

Reference Method: SM 2120 B-2011

Run ID: A107624

Included Lab Sample IDs: 2273241

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A107625

Included Lab Sample IDs: 2273243

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.4	97.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A107639

Included Lab Sample IDs: 2273242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107641

Included Lab Sample IDs: 2273242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.9	98.3	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A107646

Included Lab Sample IDs: 2273251

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	77.4		P	60 - 160
Glufosinate	98.3		P	60 - 160
Glyphosate	103		P	60 - 160

Reference Method: EPA 8321B

Run ID: A107647

Included Lab Sample IDs: 2273251

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	101	102	P/P	60 - 160
Endothall	117	103	P/P	60 - 160
Sucralose	89.2	87.8	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A107667
Included Lab Sample IDs: 2273251

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	115	122	P/P	50 - 150
2,4,5-T	90.7	96.7	P/P	50 - 150
Acetaminophen	106	103	P/P	60 - 160
Acetamiprid	112	102	P/P	50 - 150
Afidopyropen	118	90.6	P/P	50 - 150
Bentazon	85.2	106	P/P	50 - 160
Benzovindiflupyr	108	96.8	P/P	50 - 150
Carbamazepine	105	95.6	P/P	60 - 150
Clothianidin	108	106	P/P	60 - 150
Dinotefuran	101	106	P/P	50 - 150
Diuron	98.7	98.5	P/P	60 - 160
Fenuron	102	104	P/P	60 - 150
Fluridone	108	96.4	P/P	60 - 160
Hydrocodone	105	89.8	P/P	60 - 150
Ibuprofen	129	84.2	P/P	50 - 160
Imazapyr	104	101	P/P	50 - 150
Imidacloprid	109	118	P/P	60 - 150
Linuron	109	98.1	P/P	60 - 150
Mandestrobin	111	101	P/P	50 - 150
MCPP	107	91.7	P/P	50 - 150
Naproxen	119	108	P/P	50 - 160
Primidone	115	123	P/P	60 - 150
Pyraclostrobin	119	110	P/P	60 - 150
Thiamethoxam	101	97.9	P/P	50 - 150
Tolfenpyrad	117	109	P/P	60 - 150
Triclopyr	102	89.6	P/P	50 - 150

Reference Method: SM 2320 B-2011
Run ID: A107669
Included Lab Sample IDs: 2273241

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	104	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A107669
Included Lab Sample IDs: 2273241

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A107673
Included Lab Sample IDs: 2273242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.6	96.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A107690

Included Lab Sample IDs: 2273241

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	100	P/P	90 - 110
Sulfate	99.6	99.6	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A107704

Included Lab Sample IDs: 2273242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107739

Included Lab Sample IDs: 2273242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	105	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					10.5	
EPA 300.0 Rev. 2.1	Chloride	100	99.6	99.5		0.969	
	Sulfate	100	100	99.9			
EPA 350.1 Rev. 2.0	Ammonia-N	100	98.2	97.4			0.540
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105					2.92
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	102	102			0.0
EPA 365.1 Rev. 2.0	Total-P	108	102	102			0.397
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	101	102			0.295
EPA 8321B	2,4-D	90.6					5.50
	2,4,5-T	86.4	119	118			1.19
	Acesulfame K	105	148	148			0.279
	Acetaminophen	78.0	70.0	64.7			7.77
	Acetamiprid	80.5	74.3	69.4			6.83
	Afidopyropen	74.5	92.4	79.4			15.1
	AMPA	71.1	101	99.9			0.431
	Bentazon	98.4	227	206			8.88
	Benzovindiflupyr	86.4	87.3	92.3			5.58
	Carbamazepine	80.4	75.6	71.7			4.86
	Clothianidin	86.3	46.4	43.7			5.99
	Dinotefuran	80.5	74.6	75.9			0.784
	Diuron	81.8	83.2	74.1			10.7
	Endothall	125	113	109			3.43
	Fenuron	89.0	94.6	89.3			5.78
	Fluridone	92.3	91.1	89.2			2.01
	Glufosinate	97.7	108	109			1.17
	Glyphosate	101					6.53
	Hydrocodone	85.3	106	112			5.12
	Ibuprofen	54.2	75.3	64.4			15.5
	Imazapyr	86.5	106	111			3.01
	Imidacloprid	97.7	88.2	82.7			6.44
	Linuron	86.3	85.1	91.6			7.29
	Mandestrobin	86.4	98.4	98.5			0.0138
	MCP	82.6	123	114			8.03
	Naproxen	76.6	93.1	71.6			26.1
	Primidone	99.3	25.0	23.9			4.72
	Pyraclostrobin	72.0	90.2	91.2			1.04
	Sucralose	89.1	90.1	92.2			2.26
	Thiamethoxam	90.9	75.0	79.4			4.80
	Tolfenpyrad	50.7	48.7	52.4			7.34
	Triclopyr	91.8	110	113			2.54
SM 2120 B-2011	Color (true)	99.8				0.546	
SM 2320 B-2011	Total Alkalinity	103				1.28	
SM 2540 C-2011	TDS					5.53	
SM 4500 F-C-2011	Fluoride	99.5	97.6	100			1.90
SM 5310 B-2011	Organic Carbon	94.8	95.6	95.4			0.137

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2273241
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2273241
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2273241
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2273242

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2273242
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2273242
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2273242
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2273243
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2273251
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2273241
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2273241
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2273241
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2273241
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2273241
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2273242

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	09/02/2021			09/02/2021 13:29	Sarah A Nixon	2273241
EPA 300.0 Rev. 2.1	09/02/2021			09/08/2021 16:07	Roberta Tatti	2273241
EPA 350.1 Rev. 2.0	09/02/2021			09/03/2021 13:22	Ping Hua	2273242
EPA 351.2 Rev. 2.0	09/02/2021	09/09/2021 12:30	Benjamin T. Nordmann	09/10/2021 11:26	Virginia P. Brown	2273242
EPA 353.2 Rev. 2.0	09/02/2021			09/03/2021 09:21	Beverly Y. Sanders	2273242
EPA 365.1 Rev. 2.0	09/02/2021	09/07/2021 15:50	Simonne.V. Calhoun	09/08/2021 10:29	Shengyu Ding	2273242
EPA 365.1 Rev. 2.0 dissolved	09/02/2021			09/02/2021 16:38	James L Waggerby	2273243
EPA 8321B	09/02/2021	09/03/2021 08:00	Mohammad Ghaffari	09/03/2021 10:57	Mohammad Ghaffari	2273251
	09/02/2021	09/03/2021 08:00	Mohammad Ghaffari	09/03/2021 13:21	Mohammad Ghaffari	2273251
	09/02/2021	09/03/2021 14:00	Hoor Shaik	09/08/2021 16:23	Juyoung Kim	2273251
SM 2120 B-2011	09/02/2021			09/02/2021 15:18	Sarah A Nixon	2273241
SM 2320 B-2011	09/02/2021			09/07/2021 19:37	Sarah A Nixon	2273241
SM 2540 C-2011	09/02/2021			09/03/2021 14:31	Yijie Li	2273241
SM 2540 D-2011	09/02/2021			09/03/2021 14:31	Yijie Li	2273241
SM 4500 F-C-2011	09/02/2021			09/07/2021 19:37	Sarah A Nixon	2273241
SM 5310 B-2011	09/02/2021			09/09/2021 02:48	Madeline Gruver	2273242