

Chemical Analysis Report

SE-DIST-2023-01-31-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Fort Pierce / Fort Drum Run**
Request ID: **RQ-2023-01-30-17**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
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Certified by: Colin Wright, Program Administrator

Date Certified: 16-FEB-2023 09:40



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: C-25 canal upstream of S50

Collection Date/Time: 01/30/2023 13:45

Field ID: G5SE0129

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2383925	EPA 8321B	2,4-D	0.42		ug/L	P425153	
		Acesulfame K	0.11	I	ug/L	P425069	
		2,4,5-T	0.0040	U	ug/L	P425153	
		AMPA	0.74		ug/L	P425069	
		Acetaminophen	0.0080	U	ug/L	P425153	
		Acetamiprid	0.0020	U	ug/L	P425153	
		Endothall	0.25	U	ug/L	P425069	
		Glufosinate	0.10	U	ug/L	P425069	
		Glyphosate	4.5		ug/L	P425069	
		Afidopyropen	0.0020	U	ug/L	P425153	
		Bentazon	0.0043		ug/L	P425153	
		Sucralose	0.15		ug/L	P425069	
		Benzovindiflupyr	0.0020	U	ug/L	P425153	
		Carbamazepine	8.0E-04	U	ug/L	P425153	
		Clothianidin	0.0049	I	ug/L	P425153	
		Dinotefuran	0.0020	U	ug/L	P425153	
		Diuron	0.0066	I	ug/L	P425153	
		Fenuron	0.032	U	ug/L	P425153	
		Fluridone	0.0012	I	ug/L	P425153	
		Imazapyr	0.12		ug/L	P425153	
		Hydrocodone	0.0020	U	ug/L	P425153	
		Ibuprofen	0.080	U	ug/L	P425153	
		Imidacloprid	0.021		ug/L	P425153	
		Linuron	0.0040	U	ug/L	P425153	
		Mandestrobin	0.0020	U	ug/L	P425153	
		MCPP	0.0020	U	ug/L	P425153	
		Naproxen	0.0080	U	ug/L	P425153	
		Primidone	0.0040	U	ug/L	P425153	
		Pyraclostrobin	0.0020	U	ug/L	P425153	
		Silvex	0.0040	U	ug/L	P425153	
		Thiamethoxam	0.0033	I	ug/L	P425153	
		Tolfenpyrad	0.0020	U	ug/L	P425153	
		Triclopyr	0.0040	U	ug/L	P425153	

Ref. Method and Comment:

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

Sample Location: Blue Cypress Creek

Collection Date/Time: 01/30/2023 10:00

Field ID: G3SE0048

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2383920	DEP SOP: NU-094-1	Color (true)	220		PCU	P425224	
	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P425230	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P425682	
		Sulfate	3.3		mg SO4/L	P425686	
	SM 2320 B-2011	Total Alkalinity	60		mg CaCO3/L	P425388	
	SM 2540 C-2015	TDS	140		mg/L	P425736	
	SM 2540 D-2015	TSS	3	I	mg/L	P425433	
	SM 4500-F- C-2011	Fluoride	0.071	I	mg F/L	P425696	
2383921	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P425723	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.95		mg N/L	P425242	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.068		mg N/L	P425306	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P425402	
	SM 5310 B-2011	Organic Carbon	24		mg C/L	P425353	

Sample Location: Fivemile Creek at SR 68

Collection Date/Time: 01/30/2023 13:15

Field ID: G2SE0072

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2383926	EPA 8321B	2,4-D	0.0094		ug/L	P425153	
		Acesulfame K	0.10	U	ug/L	P425069	
		2,4,5-T	0.0040	U	ug/L	P425153	
		AMPA	0.25	I	ug/L	P425069	
		Acetaminophen	0.0080	U	ug/L	P425153	
		Acetamiprid	0.0020	U	ug/L	P425153	
		Endothall	0.25	U	ug/L	P425069	
		Glufosinate	0.10	U	ug/L	P425069	
		Glyphosate	0.56		ug/L	P425069	
		Afidopyropen	0.0020	U	ug/L	P425153	
		Bentazon	8.0E-04	U	ug/L	P425153	
		Sucralose	0.047		ug/L	P425069	
		Benzovindiflupyr	0.0020	U	ug/L	P425153	
		Carbamazepine	8.0E-04	U	ug/L	P425153	
		Clothianidin	0.0020	U	ug/L	P425153	
		Dinotefuran	0.0020	U	ug/L	P425153	
		Diuron	0.0020	U	ug/L	P425153	
		Fenuron	0.032	U	ug/L	P425153	
		Fluridone	8.0E-04	U	ug/L	P425153	
		Imazapyr	0.11		ug/L	P425153	
		Hydrocodone	0.0020	U	ug/L	P425153	
		Ibuprofen	0.080	U	ug/L	P425153	
		Imidacloprid	0.0020	U	ug/L	P425153	
		Linuron	0.0040	U	ug/L	P425153	
		Mandestrobin	0.0020	U	ug/L	P425153	
		MCPP	0.0020	U	ug/L	P425153	
		Naproxen	0.0080	U	ug/L	P425153	
		Primidone	0.0040	U	ug/L	P425153	
		Pyraclostrobin	0.0020	U	ug/L	P425153	
		Silvex	0.0040	U	ug/L	P425153	
		Thiamethoxam	0.0020	U	ug/L	P425153	
		Tolfenpyrad	0.0020	U	ug/L	P425153	
		Triclopyr	0.0040	U	ug/L	P425153	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P425224

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P425230

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425682

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425686

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425723

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425242

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425306

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425402

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

Reference Method: EPA 8321B
Batch ID: P425069

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P425069

Component	Result	Code	Units
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P425153

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	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.080	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
Silvex	0.0040	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: P425388

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

Reference Method: SM 2540 C-2015
Batch ID: P425736

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P425433

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500-F- C-2011
Batch ID: P425696

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P425353

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P425224

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.7		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P425230

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425682

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425686

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425723

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: P425242

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425306

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425402

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

Reference Method: EPA 8321B
Batch ID: P425069

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	101		P	40 - 150
AMPA	110		P	40 - 150
Endothall	115		P	40 - 150
Glufosinate	114		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P425069

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	104		P	40 - 150
Sucralose	103		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P425153

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	80.1		P	40 - 150
2,4,5-T	67.5		P	40 - 150
Acetaminophen	79.0		P	30 - 150
Acetamiprid	89.9		P	40 - 150
Afidopyropen	73.9		P	30 - 150
Bentazon	99.2		P	30 - 150
Benzovindiflupyr	67.8		P	40 - 150
Carbamazepine	69.2		P	40 - 150
Clothianidin	89.1		P	40 - 150
Dinotefuran	98.4		P	40 - 150
Diuron	69.4		P	40 - 150
Fenuron	89.4		P	40 - 150
Fluridone	79.3		P	40 - 150
Hydrocodone	76.2		P	40 - 150
Ibuprofen	94.0		P	40 - 150
Imazapyr	82.9		P	40 - 150
Imidacloprid	126		P	40 - 150
Linuron	82.9		P	40 - 150
Mandestrobin	79.7		P	40 - 150
MCPP	95.1		P	40 - 150
Naproxen	62.1		P	40 - 150
Primidone	79.8		P	40 - 150
Pyraclostrobin	67.8		P	40 - 150
Silvex	63.8		P	40 - 150
Thiamethoxam	80.5		P	40 - 150
Tolfenpyrad	35.7		P	30 - 150
Triclopyr	66.5		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P425388

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.2		P	94 - 106

Reference Method: SM 2540 C-2015
Batch ID: P425736

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

Reference Method: SM 2540 D-2015
Batch ID: P425433

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	97.3		P	85 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P425696

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.1		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P425353

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425682

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383769	Chloride	96.9		P	90 - 110
2383778	Chloride	96.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425686

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383769	Sulfate	94.7		P	90 - 110
2383778	Sulfate	91.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425723

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383888	Ammonia-N	99.8	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425242

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383444	Kjeldahl Nitrogen	110	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425306

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383912	NO2NO3-N	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425402

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383890	Total-P	105	107	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P425069

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383617	Acesulfame K	99.4	98.2	P/P	40 - 150
2383617	AMPA	108	112	P/P	40 - 150
2383617	Endothall	127	128	P/P	40 - 150
2383617	Glufosinate	103	102	P/P	40 - 150
2383617	Glyphosate	105	105	P/P	40 - 150
2383617	Sucralose	97.1	99.2	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P425153

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383988	2,4-D	75.0	76.8	P/P	40 - 150
2383988	2,4,5-T	75.8	88.1	P/P	40 - 150
2383988	Acetaminophen	68.5	65.0	P/P	30 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P425153

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383988	Acetamiprid	71.8	73.5	P/P	40 - 150
2383988	Afidopyropen	63.9	59.9	P/P	30 - 150
2383988	Bentazon	66.5	66.7	P/P	30 - 150
2383988	Benzovindiflupyr	71.4	70.1	P/P	40 - 150
2383988	Clothianidin	79.3	86.6	P/P	40 - 150
2383988	Dinotefuran	72.4	72.9	P/P	40 - 150
2383988	Diuron	56.1	54.5	P/P	40 - 150
2383988	Fenuron	60.7	67.5	P/P	40 - 150
2383988	Fluridone	64.8	70.0	P/P	40 - 150
2383988	Hydrocodone	45.7	45.7	P/P	40 - 150
2383988	Ibuprofen	74.5	83.1	P/P	40 - 150
2383988	Imazapyr	85.7	87.2	P/P	40 - 150
2383988	Linuron	82.5	78.2	P/P	40 - 150
2383988	Mandestrobin	70.0	75.2	P/P	40 - 150
2383988	MCP	88.0	81.4	P/P	40 - 150
2383988	Naproxen	76.4	76.5	P/P	40 - 150
2383988	Pyraclostrobin	69.6	74.5	P/P	40 - 150
2383988	Silvex	62.9	73.2	P/P	40 - 150
2383988	Thiamethoxam	80.2	74.2	P/P	40 - 150
2383988	Tolfenpyrad	56.2	52.9	P/P	30 - 150
2383988	Triclopyr	66.2	79.2	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P425696

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383791	Fluoride	94.0	95.2	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P425353

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383949	Organic Carbon	96.0	95.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P425224

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383883	Color (true)	1.69	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P425230

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383883	Turbidity	16.3	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425682

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383769	Chloride	3.00	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425686

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383769	Sulfate	5.81	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425723

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383888	Ammonia-N	0.0	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425242

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383444	Kjeldahl Nitrogen	0.457	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425306

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383912	NO2NO3-N	0.484	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425402

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383890	Total-P	1.42	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P425069

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383617	Acesulfame K	1.16	Spike	P	0 - 30
2383617	AMPA	3.50	Spike	P	0 - 30
2383617	Endothall	1.24	Spike	P	0 - 30
2383617	Glufosinate	0.856	Spike	P	0 - 30
2383617	Glyphosate	0.137	Spike	P	0 - 30
2383617	Sucralose	2.15	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P425153

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383988	2,4-D	1.53	Spike	P	0 - 30
2383988	2,4,5-T	15.0	Spike	P	0 - 30
2383988	Acetaminophen	5.18	Spike	P	0 - 30
2383988	Acetamiprid	2.26	Spike	P	0 - 30
2383988	Afidopyropen	6.45	Spike	P	0 - 30
2383988	Bentazon	0.297	Spike	P	0 - 30
2383988	Benzovindiflupyr	1.71	Spike	P	0 - 30
2383988	Carbamazepine	9.37	Spike	P	0 - 30
2383988	Clothianidin	8.15	Spike	P	0 - 30
2383988	Dinotefuran	0.368	Spike	P	0 - 30
2383988	Diuron	2.95	Spike	P	0 - 30
2383988	Fenuron	10.6	Spike	P	0 - 30
2383988	Fluridone	7.69	Spike	P	0 - 30
2383988	Hydrocodone	0.0422	Spike	P	0 - 30
2383988	Ibuprofen	10.8	Spike	P	0 - 30
2383988	Imazapyr	1.62	Spike	P	0 - 30
2383988	Imidacloprid	3.77	Spike	P	0 - 30
2383988	Linuron	5.35	Spike	P	0 - 30
2383988	Mandestrobin	7.13	Spike	P	0 - 30
2383988	MCPP	7.81	Spike	P	0 - 30
2383988	Naproxen	0.144	Spike	P	0 - 30
2383988	Primidone	4.00	Spike	P	0 - 30
2383988	Pyraclostrobin	6.84	Spike	P	0 - 30
2383988	Silvex	15.2	Spike	P	0 - 30
2383988	Thiamethoxam	7.74	Spike	P	0 - 30
2383988	Tolfenpyrad	6.06	Spike	P	0 - 30
2383988	Triclopyr	17.8	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P425388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383791	Total Alkalinity	0.0995	Sample	P	0 - 3.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-2015
Batch ID: P425736

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383583	TDS	3.10	Sample	P	0 - 10

Reference Method: SM 2540 D-2015
Batch ID: P425433

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383583	TSS	5.04	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P425696

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383791	Fluoride	0.978	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P425353

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383949	Organic Carbon	0.158	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2383925
Field Sample ID: G5SE0129

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	101	P	30 - 160
EPA 8321B	Acetaminophen-d4	90.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	64.4	P	30 - 160
EPA 8321B	Diuron-d6	56.7	P	30 - 160
EPA 8321B	Endothall-d6	142	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	84.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	80.0	P	30 - 160
EPA 8321B	Primidone-d5	83.1	P	30 - 160
EPA 8321B	Sucralose-d6	90.7	P	30 - 160

Lab Sample ID: 2383926
Field Sample ID: G2SE0072

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	87.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	95.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	63.3	P	30 - 160
EPA 8321B	Diuron-d6	52.6	P	30 - 160
EPA 8321B	Endothall-d6	113	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	80.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	63.3	P	30 - 160
EPA 8321B	Primidone-d5	86.1	P	30 - 160
EPA 8321B	Sucralose-d6	98.2	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A117186

Included Lab Sample IDs: 2383920

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A117193

Included Lab Sample IDs: 2383920

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A117222

Included Lab Sample IDs: 2383921

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	105	106	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A117223

Included Lab Sample IDs: 2383925, 2383926

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	104	100	P/P	50 - 150
2,4,5-T	105	97.2	P/P	50 - 150
Acetaminophen	104	105	P/P	60 - 160
Acetamiprid	116	120	P/P	50 - 150
Afidopyropen	102	93.3	P/P	50 - 150
Bentazon	125	112	P/P	50 - 160
Benzovindiflupyr	114	105	P/P	50 - 150
Carbamazepine	104	105	P/P	60 - 150
Clothianidin	106	91.1	P/P	60 - 150
Dinotefuran	118	121	P/P	50 - 150
Diuron	122	124	P/P	60 - 160
Fenuron	103	90.4	P/P	60 - 150
Fluridone	125	115	P/P	60 - 160
Hydrocodone	104	108	P/P	60 - 150
Ibuprofen	103	113	P/P	50 - 160
Imazapyr	100	101	P/P	50 - 150
Imidacloprid	141	124	P/P	60 - 150
Linuron	117	100	P/P	60 - 150
Mandestrobin	90.8	110	P/P	50 - 150
MCPP	109	108	P/P	50 - 150
Naproxen	82.4	89.2	P/P	50 - 160
Primidone	96.9	104	P/P	60 - 150
Pyraclostrobin	113	117	P/P	60 - 150
Silvex	123	105	P/P	50 - 150
Thiamethoxam	104	90.0	P/P	50 - 150
Tolfenpyrad	105	103	P/P	60 - 150
Triclopyr	114	121	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A117227

Included Lab Sample IDs: 2383925, 2383926

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	102	96.3	P/P	60 - 160
Sucralose	103	102	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A117233

Included Lab Sample IDs: 2383925, 2383926

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	111	111	P/P	60 - 160
Endothall	113	114	P/P	60 - 160
Glufosinate	111	119	P/P	60 - 160
Glyphosate	107	108	P/P	60 - 160

Reference Method: SM 5310 B-2011

Run ID: A117252

Included Lab Sample IDs: 2383921

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A117258

Included Lab Sample IDs: 2383921

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.9	96.9	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A117269

Included Lab Sample IDs: 2383920

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.2	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A117302

Included Lab Sample IDs: 2383921

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.4	102	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A117317

Included Lab Sample IDs: 2383920

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	96.1	97.2	P/P	90 - 110
Sulfate	94.7	95.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A117395

Included Lab Sample IDs: 2383920

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	98.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A117404

Included Lab Sample IDs: 2383921

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.2	97.2	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		Precision	
					LCS	SMP
DEP SOP: NU-094-1	Color (true)	99.7				1.69
EPA 180.1 Rev. 2.0	Turbidity	101				16.3
EPA 300.0 Rev. 2.1	Chloride	99.7	96.9	96.5		3.00
	Sulfate	98.3	94.7	91.1		5.81
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	99.8	99.8		
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	110	109		0.0
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104	103		0.484
EPA 365.1 Rev. 2.0	Total-P	104	105	107		1.42
EPA 8321B	2,4-D	80.1	75.0	76.8		1.53
	2,4,5-T	67.5	75.8	88.1		15.0
	Acesulfame K	101	99.4	98.2		1.16
	Acetaminophen	79.0	68.5	65.0		5.18
	Acetamiprid	89.9	71.8	73.5		2.26
	Afidopyropen	73.9	63.9	59.9		6.45
	AMPA	110	108	112		3.50
	Bentazon	99.2	66.5	66.7		0.297
	Benzovindiflupyr	67.8	71.4	70.1		1.71
	Carbamazepine	69.2				9.37
	Clothianidin	89.1	79.3	86.6		8.15
	Dinotefuran	98.4	72.4	72.9		0.368
	Diuron	69.4	56.1	54.5		2.95
	Endothall	115	127	128		1.24
	Fenuron	89.4	60.7	67.5		10.6
	Fluridone	79.3	64.8	70.0		7.69
	Glufosinate	114	103	102		0.856
	Glyphosate	104	105	105		0.137
	Hydrocodone	76.2	45.7	45.7		0.0422
	Ibuprofen	94.0	74.5	83.1		10.8
	Imazapyr	82.9	85.7	87.2		1.62
	Imidacloprid	126				3.77
	Linuron	82.9	82.5	78.2		5.35
	Mandestrobin	79.7	70.0	75.2		7.13
	MCPP	95.1	88.0	81.4		7.81
	Naproxen	62.1	76.4	76.5		0.144
	Primidone	79.8				4.00
	Pyraclostrobin	67.8	69.6	74.5		6.84
	Silvex	63.8	62.9	73.2		15.2
	Sucralose	103	97.1	99.2		2.15
	Thiamethoxam	80.5	80.2	74.2		7.74
	Tolfenpyrad	35.7	56.2	52.9		6.06
	Triclopyr	66.5	66.2	79.2		17.8
SM 2320 B-2011	Total Alkalinity	97.2				0.0995
SM 2540 C-2015	TDS	98.5				3.10
SM 2540 D-2015	TSS	97.3				5.04
SM 4500-F- C-2011	Fluoride	96.1	94.0	95.2		0.978
SM 5310 B-2011	Organic Carbon	97.4	96.0	95.8		0.158

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2383920
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2383920
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2383920

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2383920
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2383921
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2383921
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2383921
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2383921
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2383925, 2383926
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2383920
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2383920
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2383920
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2383920
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2383921

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	01/31/2023			01/31/2023 14:32	Alexis Price	2383920
EPA 180.1 Rev. 2.0	01/31/2023			01/31/2023 13:43	Khloe J Berg	2383920
EPA 300.0 Rev. 2.1	01/31/2023			02/10/2023 20:20	Anna M. Plaviak	2383920
EPA 350.1 Rev. 2.0	01/31/2023			02/13/2023 12:18	Khloe J Berg	2383921
EPA 351.2 Rev. 2.0	01/31/2023	02/01/2023 12:25	Simonne.V. Calhoun	02/03/2023 12:30	Samantha L Bates	2383921
EPA 353.2 Rev. 2.0	01/31/2023			02/02/2023 10:38	Beverly Y. Sanders	2383921
EPA 365.1 Rev. 2.0	01/31/2023	02/06/2023 03:24	Adam P Silver	02/07/2023 14:28	Simonne.V. Calhoun	2383921
EPA 8321B	01/31/2023	01/31/2023 13:00	June Rhew	02/01/2023 20:35	Juyoung Kim	2383925
	01/31/2023	01/31/2023 13:00	June Rhew	02/01/2023 20:53	Juyoung Kim	2383926
	01/31/2023	02/01/2023 08:00	Manjita Shrestha	02/01/2023 12:10	Manjita Shrestha	2383925
	01/31/2023	02/01/2023 08:00	Manjita Shrestha	02/01/2023 12:25	Manjita Shrestha	2383926
	01/31/2023	02/01/2023 08:00	Manjita Shrestha	02/01/2023 20:53	Manjita Shrestha	2383925
	01/31/2023	02/01/2023 08:00	Manjita Shrestha	02/01/2023 21:06	Manjita Shrestha	2383926
SM 2320 B-2011	01/31/2023			02/04/2023 09:08	Dale L. Simmons	2383920
SM 2540 C-2015	01/31/2023			02/01/2023 14:18	Yijie Li	2383920
SM 2540 D-2015	01/31/2023			02/01/2023 14:18	Yijie Li	2383920
SM 4500-F- C-2011	01/31/2023			02/10/2023 01:18	Dale L. Simmons	2383920
SM 5310 B-2011	01/31/2023			02/03/2023 00:34	Khloe J Berg	2383921