

Chemical Analysis Report

SW-DIST-2023-04-20-01

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

Event Description: **SMP:: Run 13**
Request ID: **RQ-2023-03-27-10**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Ben Paswater

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

Certified by: Colin Wright, Program Administrator

Date Certified: 11-MAY-2023 08:51

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray 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: MCDONALD BRANCH AT THOMPSON RD

Collection Date/Time: 04/19/2023 10:00

Field ID: G2SW0093

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2401838	EPA 8321B	2,4-D	0.0020	U	ug/L	P428783	
		Acesulfame K	0.10	U	ug/L	P428748	
		2,4,5-T	0.0040	U	ug/L	P428783	
		AMPA	1.0	U	ug/L	P428748	
		Acetaminophen	0.0080	U	ug/L	P428783	
		Acetamiprid	0.0020	U	ug/L	P428783	
		Endothall	0.25	U	ug/L	P428748	
		Glufosinate	1.0	U	ug/L	P428748	
		Glyphosate	1.0	U	ug/L	P428748	
		Afidopyropen	0.0020	U	ug/L	P428783	
		Bentazon	8.0E-04	U	ug/L	P428783	
		Sucralose	0.14		ug/L	P428748	
		Benzovindiflupyr	0.0020	U	ug/L	P428783	
		Carbamazepine	8.0E-04	U	ug/L	P428783	
		Clothianidin	0.0020	U	ug/L	P428783	
		Dinotefuran	0.0020	U	ug/L	P428783	
		Diuron	0.0020	U	ug/L	P428783	
		Fenuron	0.032	U	ug/L	P428783	
		Fluridone	0.0031	I	ug/L	P428783	
		Imazapyr	0.0040	U	ug/L	P428783	
		Hydrocodone	0.0020	U	ug/L	P428783	
		Ibuprofen	0.080	U	ug/L	P428783	
		Imidacloprid	0.0027	I	ug/L	P428783	
		Linuron	0.0040	U	ug/L	P428783	
		Mandestrobin	0.0020	U	ug/L	P428783	
		MCPP	0.0020	U	ug/L	P428783	
		Naproxen	0.0080	U	ug/L	P428783	
		Primidone	0.0040	U	ug/L	P428783	
		Pyraclostrobin	0.0020	U	ug/L	P428783	
		Silvex	0.0040	U	ug/L	P428783	
		Thiamethoxam	0.0020	U	ug/L	P428783	
		Tolfenpyrad	0.0020	U	ug/L	P428783	
		Triclopyr	0.0040	U	ug/L	P428783	

Ref. Method and Comment:

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

EPA 8321B: Some MDLs are elevated due to required dilution of sample matrix.

**Sample Location: ALAFIA RIVER S PRONG WEST BRANCH AT
KEYSVILLE RD**

Collection Date/Time: 04/19/2023 10:25

Field ID: G2SW0160

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2401813	DEP SOP: NU-094-1	Color (true)	36		PCU	P428785	
	EPA 180.1 Rev. 2.0	Turbidity	0.95	I	NTU	P428795	
	EPA 300.0 Rev. 2.1	Chloride	26	A	mg Cl/L	P429068	
		Sulfate	53	A	mg SO4/L	P429072	
	SM 2320 B-2011	Total Alkalinity	29		mg CaCO3/L	P428869	
	SM 2540 C-2015	TDS	171		mg/L	P429119	
	SM 2540 D-2015	TSS	2	U	mg/L	P429121	
	SM 4500-F- C-2011	Fluoride	0.36		mg F/L	P429442	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.039		mg N/L	P429094	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P428995	
2401815	EPA 353.2 Rev. 2.0	NO2NO3-N	1.8		mg N/L	P429141	
	EPA 365.1 Rev. 2.0	Total-P	0.47		mg P/L	P428835	
	SM 5310 B-2011	Organic Carbon	6.2		mg C/L	P429040	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: MOCCASSIN CREEK AT CR 39

Collection Date/Time: 04/19/2023 11:00

Field ID: G2SW0161

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2401814	DEP SOP: NU-094-1	Color (true)	73		PCU	P428785	
	EPA 180.1 Rev. 2.0	Turbidity	5.8		NTU	P428795	
	EPA 300.0 Rev. 2.1	Chloride	41		mg Cl/L	P429068	
		Sulfate	81		mg SO4/L	P429486	
	SM 2320 B-2011	Total Alkalinity	30		mg CaCO3/L	P428869	
	SM 2540 C-2015	TDS	255		mg/L	P429119	
	SM 2540 D-2015	TSS	9	I	mg/L	P429121	
	SM 4500-F- C-2011	Fluoride	0.20		mg F/L	P429442	
2401816	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P429094	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P428995	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.084		mg N/L	P429141	
	EPA 365.1 Rev. 2.0	Total-P	0.28		mg P/L	P428835	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P429040	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: FISHHAWK CREEK AT HA SITE

Collection Date/Time: 04/19/2023 12:15

Field ID: G2SW0144

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2401837	EPA 8321B	2,4-D	0.079		ug/L	P428783	
		Acesulfame K	0.10	U	ug/L	P428748	
		2,4,5-T	0.0040	U	ug/L	P428783	
		AMPA	2.2	J	ug/L	P428748	SUR
		Acetaminophen	0.0080	U	ug/L	P428783	
		Acetamiprid	0.0020	U	ug/L	P428783	
		Endothall	0.25	U	ug/L	P428748	
		Glufosinate	0.10	UJ	ug/L	P428748	SUR
		Glyphosate	4.5	J	ug/L	P428748	SUR
		Afidopyropen	0.0020	U	ug/L	P428783	
		Bentazon	0.0063		ug/L	P428783	
		Sucralose	0.34		ug/L	P428748	
		Benzovindiflupyr	0.0020	U	ug/L	P428783	
		Carbamazepine	8.0E-04	U	ug/L	P428783	
		Clothianidin	0.13		ug/L	P428783	
		Dinotefuran	0.0020	U	ug/L	P428783	
		Diuron	0.0020	U	ug/L	P428783	
		Fenuron	0.032	U	ug/L	P428783	
		Fluridone	8.0E-04	U	ug/L	P428783	
		Imazapyr	0.12		ug/L	P428783	
		Hydrocodone	0.0020	U	ug/L	P428783	
		Ibuprofen	0.080	U	ug/L	P428783	
		Imidacloprid	0.042		ug/L	P428783	
		Linuron	0.0040	U	ug/L	P428783	
		Mandestrobin	0.0020	U	ug/L	P428783	
		MCP	0.0028	I	ug/L	P428783	
		Naproxen	0.0080	U	ug/L	P428783	
		Primidone	0.0040	U	ug/L	P428783	
		Pyraclostrobin	0.0020	U	ug/L	P428783	
		Silvex	0.0040	U	ug/L	P428783	
		Thiamethoxam	0.0020	U	ug/L	P428783	
		Tolfenpyrad	0.0020	U	ug/L	P428783	
		Triclopyr	0.0040	U	ug/L	P428783	

Ref. Method and Comment:

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

EPA 8321B: Results confirmed in re-analysis. Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P428785

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P428795

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429068

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429072

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429486

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429094

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428995

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P429141

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P428835

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P428748

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: P428783

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: P428869

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

Reference Method: SM 2540 C-2015

Batch ID: P429119

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2015
Batch ID: P429121

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P429442

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P429040

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: P428785

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P428795

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429068

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429072

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429486

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429094

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428995

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	92.7		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P429141

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: P428835

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P428748

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	111		P	40 - 150
AMPA	120		P	40 - 150
Endothall	101		P	40 - 150
Glufosinate	97.8		P	40 - 150
Glyphosate	127		P	40 - 150
Sucralose	97.4		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P428783

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	114		P	40 - 150
2,4,5-T	113		P	40 - 150
Acetaminophen	92.7		P	30 - 150
Acetamiprid	83.7		P	40 - 150
Afidopyropen	49.5		P	30 - 150
Bentazon	109		P	30 - 150
Benzovindiflupyr	89.3		P	40 - 150
Carbamazepine	100		P	40 - 150
Clothianidin	109		P	40 - 150
Dinotefuran	101		P	40 - 150
Diuron	101		P	40 - 150
Fenuron	101		P	40 - 150
Fluridone	91.5		P	40 - 150
Hydrocodone	94.0		P	40 - 150
Ibuprofen	93.2		P	40 - 150
Imazapyr	105		P	40 - 150
Imidacloprid	88.3		P	40 - 150
Linuron	91.5		P	40 - 150
Mandestrobin	92.9		P	40 - 150
MCPP	114		P	40 - 150
Naproxen	61.6		P	40 - 150
Primidone	104		P	40 - 150
Pyraclostrobin	82.7		P	40 - 150
Silvex	97.8		P	40 - 150
Thiamethoxam	110		P	40 - 150
Tolfenpyrad	56.7		P	30 - 150
Triclopyr	114		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P428869

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.5		P	94 - 106

Reference Method: SM 2540 C-2015

Batch ID: P429119

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	97.4		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 D-2015
Batch ID: P429121

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	89.6		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P429442

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P429040

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429068

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2401813	Chloride	101		P	90 - 110
2401909	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429072

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2401909	Sulfate	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429486

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2403181	Sulfate	98.7		P	90 - 110
2403247	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429094

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2401815	Ammonia-N	99.0	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428995

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2401858	Kjeldahl Nitrogen	95.7	92.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P429141

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2401244	NO2NO3-N	98.5	98.5	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P428748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2401447	Acesulfame K	107	108	P/P	40 - 150
2401447	AMPA	126	119	P/P	40 - 150
2401447	Endothall	105	110	P/P	40 - 150
2401447	Glufosinate	100	99.7	P/P	40 - 150
2401447	Glyphosate	101	105	P/P	40 - 150
2401447	Sucralose	94.6	93.1	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P428783

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2401716	2,4-D	110	104	P/P	40 - 150
2401716	2,4,5-T	129	110	P/P	40 - 150
2401716	Acetaminophen	99.9	93.3	P/P	30 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P428783

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2401716	Acetamiprid	84.9	82.0	P/P	40 - 150
2401716	Afidopyropen	75.9	86.7	P/P	30 - 150
2401716	Benzovindiflupyr	83.9	77.1	P/P	40 - 150
2401716	Carbamazepine	80.6	84.2	P/P	40 - 150
2401716	Clothianidin	113	110	P/P	40 - 150
2401716	Dinotefuran	81.5	79.7	P/P	40 - 150
2401716	Diuron	82.0	82.8	P/P	40 - 150
2401716	Fenuron	64.4	66.1	P/P	40 - 150
2401716	Fluridone	81.8	80.4	P/P	40 - 150
2401716	Hydrocodone	71.6	68.4	P/P	40 - 150
2401716	Ibuprofen	89.1	72.7	P/P	40 - 150
2401716	Imazapyr	107	112	P/P	40 - 150
2401716	Imidacloprid	118	109	P/P	40 - 150
2401716	Linuron	81.5	83.6	P/P	40 - 150
2401716	Mandestrobin	88.4	85.8	P/P	40 - 150
2401716	MCPP	122	123	P/P	40 - 150
2401716	Naproxen	63.3	65.4	P/P	40 - 150
2401716	Primidone	105	104	P/P	40 - 150
2401716	Pyraclostrobin	79.7	76.0	P/P	40 - 150
2401716	Silvex	103	95.3	P/P	40 - 150
2401716	Thiamethoxam	105	101	P/P	40 - 150
2401716	Tolfenpyrad	49.7	49.0	P/P	30 - 150
2401716	Triclopyr	128	118	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P429442

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2401813	Fluoride	102	101	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P429040

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2401722	Organic Carbon	95.0	96.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P428785

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2401711	Color (true)	0.0498	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P428795

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2401609	Turbidity	7.35	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429068

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2401813	Chloride	0.0105	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429072

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2401813	Sulfate	0.716	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429486

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2403181	Sulfate	0.476	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429094

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2401815	Ammonia-N	1.46	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428995

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2401858	Kjeldahl Nitrogen	2.03	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P429141

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2401244	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P428835

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2401815	Total-P	2.80	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P428748

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2401447	Acesulfame K	1.25	Spike	P	0 - 30
2401447	AMPA	5.72	Spike	P	0 - 30
2401447	Endothall	5.18	Spike	P	0 - 30
2401447	Glufosinate	0.488	Spike	P	0 - 30
2401447	Glyphosate	4.50	Spike	P	0 - 30
2401447	Sucralose	1.50	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P428783

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2401716	2,4-D	4.47	Spike	P	0 - 30
2401716	2,4,5-T	15.7	Spike	P	0 - 30
2401716	Acetaminophen	6.84	Spike	P	0 - 30
2401716	Acetamiprid	3.48	Spike	P	0 - 30
2401716	Afidopyropen	13.3	Spike	P	0 - 30
2401716	Bentazon	10.9	Spike	P	0 - 30
2401716	Benzovindiflupyr	8.43	Spike	P	0 - 30
2401716	Carbamazepine	4.07	Spike	P	0 - 30
2401716	Clothianidin	2.61	Spike	P	0 - 30
2401716	Dinotefuran	2.20	Spike	P	0 - 30
2401716	Diuron	0.982	Spike	P	0 - 30
2401716	Fenuron	2.54	Spike	P	0 - 30
2401716	Fluridone	1.31	Spike	P	0 - 30
2401716	Hydrocodone	4.55	Spike	P	0 - 30
2401716	Ibuprofen	20.3	Spike	P	0 - 30
2401716	Imazapyr	2.40	Spike	P	0 - 30
2401716	Imidacloprid	8.29	Spike	P	0 - 30
2401716	Linuron	2.53	Spike	P	0 - 30
2401716	Mandestrobin	2.98	Spike	P	0 - 30
2401716	MCPP	1.16	Spike	P	0 - 30
2401716	Naproxen	3.31	Spike	P	0 - 30
2401716	Primidone	0.842	Spike	P	0 - 30
2401716	Pyraclostrobin	4.73	Spike	P	0 - 30
2401716	Silvex	7.95	Spike	P	0 - 30
2401716	Thiamethoxam	3.43	Spike	P	0 - 30
2401716	Tolfenpyrad	1.41	Spike	P	0 - 30
2401716	Triclopyr	7.77	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P428869

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2401465	Total Alkalinity	1.23	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P429119

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2401764	TDS	1.55	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P429442

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2401813	Fluoride	0.483	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P429040

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2401722	Organic Carbon	1.43	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2401837

Field Sample ID: G2SW0144

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	85.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	96.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	61.0	P	30 - 160
EPA 8321B	Diuron-d6	55.6	P	30 - 160
EPA 8321B	Endothall-d6	109	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	219	F	30 - 160
EPA 8321B	Ibuprofen-d3	63.2	P	30 - 160
EPA 8321B	Primidone-d5	87.9	P	30 - 160
EPA 8321B	Sucralose-d6	90.2	P	30 - 160

Lab Sample ID: 2401838

Field Sample ID: G2SW0093

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	122	P	30 - 160
EPA 8321B	Acetaminophen-d4	97.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	87.4	P	30 - 160
EPA 8321B	Diuron-d6	81.1	P	30 - 160
EPA 8321B	Endothall-d6	107	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	129	P	30 - 160
EPA 8321B	Ibuprofen-d3	83.5	P	30 - 160
EPA 8321B	Primidone-d5	113	P	30 - 160
EPA 8321B	Sucralose-d6	95.3	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A118689

Included Lab Sample IDs: 2401813, 2401814

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.2	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A118691

Included Lab Sample IDs: 2401813, 2401814

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A118723

Included Lab Sample IDs: 2401815, 2401816

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	100	P/P	90 - 110
Total-P	99.1	99.0	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A118726

Included Lab Sample IDs: 2401813, 2401814

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.7	94.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A118755

Included Lab Sample IDs: 2401813, 2401814

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

Reference Method: EPA 8321B

Run ID: A118758

Included Lab Sample IDs: 2401837, 2401838

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	110	110	P/P	60 - 160
Acesulfame K	113	110	P/P	60 - 160
Sucralose	94.2	91.1	P/P	60 - 160
Sucralose	97.8	99.3	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A118762

Included Lab Sample IDs: 2401837, 2401838

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	115	128	P/P	60 - 160
AMPA	132	139	P/P	60 - 160
Endothall	103	108	P/P	60 - 160
Glufosinate	92.3	90.7	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A118762

Included Lab Sample IDs: 2401837, 2401838

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Glufosinate	93.8	102	P/P	60 - 160
Glyphosate	116	112	P/P	60 - 160
Glyphosate	117	117	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A118780

Included Lab Sample IDs: 2401837, 2401838

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.8	97.6	P/P	50 - 150
2,4,5-T	102	112	P/P	50 - 150
Acetaminophen	110	113	P/P	60 - 160
Acetamiprid	104	106	P/P	50 - 150
Afidopyropen	85.9	85.5	P/P	50 - 150
Bentazon	136	141	P/P	50 - 160
Benzovindiflupyr	103	101	P/P	50 - 150
Carbamazepine	111	107	P/P	60 - 150
Clothianidin	107	110	P/P	60 - 150
Dinotefuran	104	111	P/P	50 - 150
Diuron	119	111	P/P	60 - 160
Fenuron	99.3	98.6	P/P	60 - 150
Fluridone	116	111	P/P	60 - 160
Hydrocodone	119	124	P/P	60 - 150
Ibuprofen	107	104	P/P	50 - 160
Imazapyr	113	114	P/P	50 - 150
Imidacloprid	94.8	94.1	P/P	60 - 150
Linuron	112	112	P/P	60 - 150
Mandestrobin	104	105	P/P	50 - 150
MCPP	96.0	113	P/P	50 - 150
Naproxen	83.5	100	P/P	50 - 160
Primidone	125	119	P/P	60 - 150
Pyraclostrobin	106	106	P/P	60 - 150
Silvex	90.5	99.3	P/P	50 - 150
Thiamethoxam	121	111	P/P	50 - 150
Tolfenpyrad	103	106	P/P	60 - 150
Triclopyr	107	106	P/P	50 - 150

Reference Method: SM 5310 B-2011

Run ID: A118810

Included Lab Sample IDs: 2401815, 2401816

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	97.2	P/P	90 - 110
Organic Carbon	97.9	97.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A118827

Included Lab Sample IDs: 2401815, 2401816

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A118833

Included Lab Sample IDs: 2401815, 2401816

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	91.8	99.2	P/P	90 - 110
Kjeldahl Nitrogen	97.8	91.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A118856

Included Lab Sample IDs: 2401815, 2401816

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	100	P/P	90 - 110
NO2NO3-N	99.5	99.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A118919

Included Lab Sample IDs: 2401814

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

Reference Method: SM 4500-F- C-2011

Run ID: A118968

Included Lab Sample IDs: 2401813, 2401814

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	102	P/P	90 - 110
Fluoride	102	102	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	
DEP SOP: NU-094-1	Color (true)	101				0.0498	
EPA 180.1 Rev. 2.0	Turbidity	100				7.35	
EPA 300.0 Rev. 2.1	Chloride	101	101	103		0.0105	
	Sulfate	102		103		0.716	
	Sulfate	104	98.7	102		0.476	
	Ammonia-N	96.2	99.0	102			1.46
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	92.7	95.7	92.4			2.03
EPA 353.2 Rev. 2.0	NO2NO3-N	102	98.5	98.5			0.0
EPA 365.1 Rev. 2.0	Total-P	102					2.80
EPA 8321B	2,4-D	114	110	104			4.47
	2,4,5-T	113	129	110			15.7
	Acesulfame K	111	107	108			1.25
	Acetaminophen	92.7	99.9	93.3			6.84
	Acetamiprid	83.7	84.9	82.0			3.48
	Afidopyropen	49.5	75.9	86.7			13.3
	AMPA	120	126	119			5.72
	Bentazon	109					10.9
	Benzovindiflupyr	89.3	83.9	77.1			8.43
	Carbamazepine	100	80.6	84.2			4.07
	Clothianidin	109	113	110			2.61
	Dinotefuran	101	81.5	79.7			2.20
	Diuron	101	82.0	82.8			0.982
	Endothall	101	105	110			5.18
	Fenuron	101	64.4	66.1			2.54
	Fluridone	91.5	81.8	80.4			1.31
	Glufosinate	97.8	100	99.7			0.488
	Glyphosate	127	101	105			4.50
	Hydrocodone	94.0	71.6	68.4			4.55
	Ibuprofen	93.2	89.1	72.7			20.3
	Imazapyr	105	107	112			2.40
	Imidacloprid	88.3	118	109			8.29
	Linuron	91.5	81.5	83.6			2.53
	Mandestrobin	92.9	88.4	85.8			2.98
	MCPP	114	122	123			1.16
	Naproxen	61.6	63.3	65.4			3.31
	Primidone	104	105	104			0.842
	Pyraclostrobin	82.7	79.7	76.0			4.73
	Silvex	97.8	103	95.3			7.95
	Sucralose	97.4	94.6	93.1			1.50
	Thiamethoxam	110	105	101			3.43
	Tolfenpyrad	56.7	49.7	49.0			1.41
	Triclopyr	114	128	118			7.77
SM 2320 B-2011	Total Alkalinity	96.5				1.23	
SM 2540 C-2015	TDS	97.4				1.55	
SM 2540 D-2015	TSS	89.6					
SM 4500-F- C-2011	Fluoride	100	102	101			0.483
SM 5310 B-2011	Organic Carbon	98.3	95.0	96.6			1.43

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2401813, 2401814
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2401813, 2401814

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2401813, 2401814
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2401813, 2401814
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2401815, 2401816
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2401815, 2401816
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2401815, 2401816
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2401815, 2401816
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2401837, 2401838
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2401813, 2401814
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2401813, 2401814
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2401813, 2401814
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2401813, 2401814
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2401815, 2401816

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	04/20/2023			04/20/2023 14:28	Chandler E Cox	2401813
	04/20/2023			04/20/2023 14:29	Chandler E Cox	2401814
EPA 180.1 Rev. 2.0	04/20/2023			04/20/2023 14:44	Anna M. Plaviak	2401813
	04/20/2023			04/20/2023 14:45	Anna M. Plaviak	2401814
EPA 300.0 Rev. 2.1	04/20/2023			04/27/2023 04:03	James L Waggeberby	2401813
	04/20/2023			04/27/2023 05:04	James L Waggeberby	2401814
	04/20/2023			05/03/2023 16:18	James L Waggeberby	2401814
EPA 350.1 Rev. 2.0	04/20/2023			04/27/2023 11:25	Khloe J Berg	2401815
	04/20/2023			04/27/2023 11:31	Khloe J Berg	2401816
	04/20/2023	04/26/2023 12:20	Dana G. Hughes	04/27/2023 13:11	Ping Hua	2401815
EPA 351.2 Rev. 2.0	04/20/2023	04/26/2023 12:20	Dana G. Hughes	04/27/2023 13:16	Ping Hua	2401816
	04/20/2023			04/28/2023 10:27	Anna M. Plaviak	2401816
EPA 353.2 Rev. 2.0	04/20/2023			04/28/2023 10:54	Anna M. Plaviak	2401815
	04/20/2023	04/21/2023 14:25	Adam P Silver	04/22/2023 15:57	James L Waggeberby	2401815
EPA 365.1 Rev. 2.0	04/20/2023	04/21/2023 14:25	Adam P Silver	04/22/2023 16:05	James L Waggeberby	2401816
	04/20/2023	04/21/2023 13:00	Manjita Shrestha	04/21/2023 19:05	Manjita Shrestha	2401837
EPA 8321B	04/20/2023	04/21/2023 13:00	Manjita Shrestha	04/21/2023 19:18	Manjita Shrestha	2401838
	04/20/2023	04/21/2023 13:00	Manjita Shrestha	04/22/2023 02:04	Manjita Shrestha	2401838
	04/20/2023	04/21/2023 13:00	Manjita Shrestha	04/22/2023 15:05	Manjita Shrestha	2401838
	04/20/2023	04/21/2023 13:00	Manjita Shrestha	04/22/2023 18:21	Manjita Shrestha	2401837
	04/20/2023	04/24/2023 09:00	Hoor Shaik	04/26/2023 12:17	Juyoung Kim	2401837
	04/20/2023	04/24/2023 09:00	Hoor Shaik	04/26/2023 12:36	Juyoung Kim	2401838
	04/20/2023			04/22/2023 06:17	Dale L. Simmons	2401813
SM 2320 B-2011	04/20/2023			04/22/2023 06:28	Dale L. Simmons	2401814
	04/20/2023			04/21/2023 13:06	Dana G. Hughes	2401813, 2401814
SM 2540 C-2015	04/20/2023			04/21/2023 13:06	Dana G. Hughes	2401813, 2401814
SM 2540 D-2015	04/20/2023			05/04/2023 22:16	Adam P Silver	2401813
	04/20/2023			05/04/2023 23:53	Adam P Silver	2401814
SM 4500-F- C-2011	04/20/2023			04/26/2023 18:07	Elise M. Gillis	2401815
	04/20/2023			04/26/2023 18:48	Elise M. Gillis	2401816