

Chemical Analysis Report

SO-DIST-2024-03-06-02

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

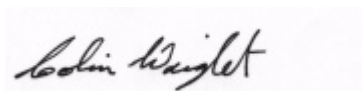
Event Description: **2024 SMP : Highlands Creeks**
Request ID: **RQ-2024-03-04-66**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 314
Fort Myers, FL 33901-3381
Attn: Nicole Reistad

For additional information please contact
Colin Wright, Ph.D.
Chris Bowen, B.S.
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Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 26-MAR-2024 10:24



NON-CONFORMANCE REPORT INCLUDED

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: BONNET CREEK AT SR 64

Collection Date/Time: 03/05/2024 10:15

Field ID: G4SD0107

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2473692	EPA 8321B	2,4-D	0.0020	U	ug/L	P442372	
		Acesulfame K	0.10	U	ug/L	P442353	
		2,4,5-T	0.0040	U	ug/L	P442372	
		AMPA	0.10	U	ug/L	P442353	
		Acetaminophen	0.0080	U	ug/L	P442372	
		Acetamiprid	0.0020	U	ug/L	P442372	
		Endothall	0.25	U	ug/L	P442353	
		Glufosinate	0.10	U	ug/L	P442353	
		Glyphosate	0.10	U	ug/L	P442353	
		Afidopyropen	0.0020	U	ug/L	P442372	
		Bentazon	0.039		ug/L	P442372	
		Sucralose	0.040	I	ug/L	P442353	
		Benzovindiflupyr	0.0020	U	ug/L	P442372	
		Carbamazepine	8.0E-04	U	ug/L	P442372	
		Clothianidin	0.018		ug/L	P442372	
		Dinotefuran	0.0020	U	ug/L	P442372	
		Diuron	0.0020	U	ug/L	P442372	
		Fenuron	0.032	U	ug/L	P442372	
		Fluridone	8.0E-04	U	ug/L	P442372	
		Imazapyr	0.0040	U	ug/L	P442372	
		Hydrocodone	0.0020	U	ug/L	P442372	
		Ibuprofen	0.080	U	ug/L	P442372	
		Imidacloprid	0.016		ug/L	P442372	
		Linuron	0.0040	U	ug/L	P442372	
		Mandestrobin	0.0020	U	ug/L	P442372	
		MCPP	0.0020	U	ug/L	P442372	
		Naproxen	0.0080	U	ug/L	P442372	RPD
		Primidone	0.0040	U	ug/L	P442372	
		Pyraclostrobin	0.0020	U	ug/L	P442372	
		Silvex	0.0040	U	ug/L	P442372	
		Thiamethoxam	0.078		ug/L	P442372	
		Tolfenpyrad	0.0020	U	ug/L	P442372	
		Triclopyr	0.0040	U	ug/L	P442372	

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 LAKE AT CENTER

Collection Date/Time: 03/05/2024 11:40

Field ID: G4SD0157

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2473682	DEP SOP: NU-094-1	Color (true)	13		PCU	P442386	
	EPA 180.1 Rev. 2.0	Turbidity	4.7	A	NTU	P442377	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P442619	
		Sulfate	22		mg SO4/L	P442622	
	SM 2320 B-2011	Total Alkalinity	17		mg CaCO3/L	P442491	RPD
	SM 2540 C-2015	TDS	98		mg/L	P442712	
	SM 2540 D-2015	TSS	3	I	mg/L	P442610	
	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P442494	
2473683	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P442516	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.80		mg N/L	P442498	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P442556	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P442503	
	SM 5310 B-2014	Organic Carbon	7.5		mg C/L	P442531	

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

Sample Location: LAKEPLACIDOUTLETATSR70W

Collection Date/Time: 03/05/2024 12:15

Field ID: G4SD0213

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2473684	DEP SOP: NU-094-1	Color (true)	360		PCU	P442386	
	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P442377	
	EPA 300.0 Rev. 2.1	Chloride	15	A	mg Cl/L	P442619	
		Sulfate	19	A	mg SO4/L	P442622	
	SM 2320 B-2011	Total Alkalinity	9.1		mg CaCO3/L	P442491	RPD
	SM 2540 C-2015	TDS	146		mg/L	P442712	
	SM 2540 D-2015	TSS	2	U	mg/L	P442610	
	SM 4500-F- C-2011	Fluoride	0.089	I	mg F/L	P442494	
2473685	EPA 350.1 Rev. 2.0	Ammonia-N	0.023	Y	mg N/L	P442587	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5	Y	mg N/L	P442498	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10	Y	mg N/L	P442556	
	EPA 365.1 Rev. 2.0	Total-P	1.3	Y	mg P/L	P442503	
	SM 5310 B-2014	Organic Carbon	31	Y	mg C/L	P442531	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 350.1 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.
EPA 351.2 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.
EPA 353.2 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.
EPA 365.1 Rev. 2.0: Total-P: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.
SM 5310 B-2014: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

Non-Conformance Report

NCR ID: 10351

Event(s)

SO-DIST-2024-03-06-02

Job(s)

TLH-2024-03-06-59

Sample(s)

2473685

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Preservation Not Intact

Observation: Sample not preserved to pH < 2.

Resolution: H2SO4 Lot# SA3193140| Expiration Date: 07/31/2024
Data will be qualified as appropriate.

Authorized by/Date: Kyle Klug 3/18/2024

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report

Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P442386

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P442377

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P442619

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P442622

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P442516

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P442587

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P442498

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P442556

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P442503

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P442353

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: P442372

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: P442491

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

Reference Method: SM 2540 C-2015

Batch ID: P442712

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 D-2015
Batch ID: P442610

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P442494

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2014
Batch ID: P442531

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: P442386

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P442377

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P442619

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	93.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P442622

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	92.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P442516

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	92.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P442587

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P442498

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	106		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P442556

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P442503

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P442353

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	102		P	40 - 160
AMPA	91.4		P	40 - 160
Endothall	85.3		P	40 - 160
Glufosinate	89.0		P	40 - 160
Glyphosate	96.5		P	40 - 160
Sucralose	103		P	40 - 160

Reference Method: EPA 8321B
Batch ID: P442372

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	93.5		P	40 - 150
2,4,5-T	108		P	40 - 150
Acetaminophen	79.8		P	30 - 150
Acetamiprid	81.5		P	40 - 150
Afidopyropen	79.4		P	30 - 150
Bentazon	91.2		P	30 - 150
Benzovindiflupyr	81.9		P	40 - 150
Carbamazepine	77.2		P	40 - 150
Clothianidin	85.4		P	40 - 150
Dinotefuran	96.0		P	40 - 150
Diuron	87.0		P	40 - 150
Fenuron	84.5		P	40 - 150
Fluridone	87.4		P	40 - 150
Hydrocodone	78.0		P	40 - 150
Ibuprofen	81.9		P	40 - 150
Imazapyr	89.3		P	40 - 150
Imidacloprid	85.4		P	40 - 150
Linuron	81.4		P	40 - 150
Mandestrobin	89.1		P	40 - 150
MCPP	101		P	40 - 150
Naproxen	83.6		P	40 - 150
Primidone	81.1		P	40 - 150
Pyraclostrobin	70.8		P	40 - 150
Silvex	96.6		P	40 - 150
Thiamethoxam	84.2		P	40 - 150
Tolfenpyrad	47.5		P	30 - 150
Triclopyr	108		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P442491

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P442712

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	95.6		P	85 - 115

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2540 D-2015
Batch ID: P442610

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	93.6		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P442494

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.6		P	94 - 106

Reference Method: SM 5310 B-2014
Batch ID: P442531

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.7		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P442619

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2473684	Chloride	102		P	90 - 110
2473741	Chloride	97.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P442622

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2473684	Sulfate	99.2		P	90 - 110
2473741	Sulfate	97.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P442516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2473616	Ammonia-N	96.4	97.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P442587

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2473712	Ammonia-N	97.0	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P442498

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2473654	Kjeldahl Nitrogen	101	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P442556

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2473683	NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P442503

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2473653	Total-P	105	103	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P442353

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2473524	Acesulfame K	104	106	P/P	40 - 160
2473524	AMPA	92.4	93.5	P/P	40 - 160
2473524	Endothall	93.0	91.0	P/P	40 - 160
2473524	Glufosinate	91.5	86.3	P/P	40 - 160
2473524	Glyphosate	95.8	91.4	P/P	40 - 160
2473524	Sucralose	103	100	P/P	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P442372

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2473520	2,4-D	82.5	82.1	P/P	40 - 150
2473520	2,4,5-T	93.1	92.1	P/P	40 - 150
2473520	Acetaminophen	90.0	88.9	P/P	30 - 150
2473520	Acetamiprid	62.6	53.3	P/P	40 - 150
2473520	Afidopyropen	69.0	53.4	P/P	30 - 150
2473520	Benzovindiflupyr	91.9	88.9	P/P	40 - 150
2473520	Carbamazepine	72.0	64.6	P/P	40 - 150
2473520	Clothianidin	78.2	78.1	P/P	40 - 150
2473520	Dinotefuran	87.9	85.4	P/P	40 - 150
2473520	Diuron	83.2	76.2	P/P	40 - 150
2473520	Fenuron	75.2	74.5	P/P	40 - 150
2473520	Hydrocodone	65.6	62.2	P/P	40 - 150
2473520	Ibuprofen	103	107	P/P	40 - 150
2473520	Imidacloprid	86.0	81.5	P/P	40 - 150
2473520	Linuron	84.7	78.8	P/P	40 - 150
2473520	Mandestrobin	91.6	91.4	P/P	40 - 150
2473520	MCCP	94.5	95.0	P/P	40 - 150
2473520	Naproxen	123	84.4	P/P	40 - 150
2473520	Primidone	93.5	86.2	P/P	40 - 150
2473520	Pyraclostrobin	86.7	84.6	P/P	40 - 150
2473520	Silvex	104	101	P/P	40 - 150
2473520	Thiamethoxam	71.3	68.8	P/P	40 - 150
2473520	Tolfenpyrad	58.6	57.5	P/P	30 - 150
2473520	Triclopyr	96.8	96.7	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P442494

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2473074	Fluoride	101	101	P/P	94 - 106

Reference Method: SM 5310 B-2014
Batch ID: P442531

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2473616	Organic Carbon	96.7	97.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P442386

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2473711	Color (true)	1.15	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P442377

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2473682	Turbidity	2.75	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P442619

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2473684	Chloride	1.26	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P442622

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2473684	Sulfate	2.21	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P442516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2473616	Ammonia-N	0.653	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P442587

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2473712	Ammonia-N	0.978	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P442498

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2473654	Kjeldahl Nitrogen	2.61	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P442556

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2473683	NO2NO3-N	0.501	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P442503

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2473653	Total-P	1.68	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P442353

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2473524	Acesulfame K	2.47	Spike	P	0 - 30
2473524	AMPA	1.24	Spike	P	0 - 30
2473524	Endothall	2.11	Spike	P	0 - 30
2473524	Glufosinate	5.81	Spike	P	0 - 30
2473524	Glyphosate	4.53	Spike	P	0 - 30
2473524	Sucralose	2.16	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P442372

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2473520	2,4-D	0.488	Spike	P	0 - 30
2473520	2,4,5-T	1.01	Spike	P	0 - 30
2473520	Acetaminophen	1.15	Spike	P	0 - 30
2473520	Acetamiprid	16.0	Spike	P	0 - 30
2473520	Afidopyropen	25.5	Spike	P	0 - 30
2473520	Bentazon	4.34	Spike	P	0 - 30
2473520	Benzovindiflupyr	3.28	Spike	P	0 - 30
2473520	Carbamazepine	8.46	Spike	P	0 - 30
2473520	Clothianidin	0.163	Spike	P	0 - 30
2473520	Dinotefuran	2.93	Spike	P	0 - 30
2473520	Diuron	7.91	Spike	P	0 - 30
2473520	Fenuron	0.896	Spike	P	0 - 30
2473520	Fluridone	1.00	Spike	P	0 - 30
2473520	Hydrocodone	5.39	Spike	P	0 - 30
2473520	Ibuprofen	3.70	Spike	P	0 - 30
2473520	Imazapyr	1.66	Spike	P	0 - 30
2473520	Imidacloprid	5.38	Spike	P	0 - 30
2473520	Linuron	7.22	Spike	P	0 - 30
2473520	Mandestrobin	0.260	Spike	P	0 - 30
2473520	MCPP	0.559	Spike	P	0 - 30
2473520	Naproxen	36.8	Spike	F	0 - 30
2473520	Primidone	7.63	Spike	P	0 - 30
2473520	Pyraclostrobin	2.37	Spike	P	0 - 30
2473520	Silvex	3.46	Spike	P	0 - 30
2473520	Thiamethoxam	3.63	Spike	P	0 - 30
2473520	Tolfenpyrad	1.94	Spike	P	0 - 30
2473520	Triclopyr	0.156	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: SM 2320 B-2011
Batch ID: P442491

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2473074	Total Alkalinity	4.45	Sample	F	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P442712

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2473772	TDS	0.593	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P442494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2473074	Fluoride	0.0	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2014
Batch ID: P442531

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2473616	Organic Carbon	0.785	Spike	P	0 - 15

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

Quality Assurance Report

Surrogates

Lab Sample ID: 2473692

Field Sample ID: G4SD0107

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	90.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	96.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	76.9	P	30 - 160
EPA 8321B	Diuron-d6	85.0	P	30 - 160
EPA 8321B	Endothall-d6	83.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	95.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	104	P	30 - 160
EPA 8321B	Primidone-d5	91.3	P	30 - 160
EPA 8321B	Sucralose-d6	95.9	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A124568
Included Lab Sample IDs: 2473682, 2473684

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

Reference Method: DEP SOP: NU-094-1
Run ID: A124572
Included Lab Sample IDs: 2473682, 2473684

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	99.7	P/P	90 - 110
Color (true)	100	98.7	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A124581
Included Lab Sample IDs: 2473682, 2473684

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.8	98.0	P/P	90 - 110
Sulfate	98.2	97.3	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A124627
Included Lab Sample IDs: 2473682, 2473684

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	96.6	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A124627
Included Lab Sample IDs: 2473682, 2473684

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A124638
Included Lab Sample IDs: 2473683

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.6	99.0	P/P	90 - 110

Reference Method: SM 5310 B-2014
Run ID: A124643
Included Lab Sample IDs: 2473683, 2473685

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	115	98.2	P/P	70 - 130

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A124657
Included Lab Sample IDs: 2473683, 2473685

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

Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A124657
Included Lab Sample IDs: 2473683, 2473685

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

Reference Method: EPA 8321B
Run ID: A124658
Included Lab Sample IDs: 2473692

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	92.8	92.8	P/P	60 - 160
Endothall	76.4	76.2	P/P	60 - 160
Glufosinate	95.5	86.1	P/P	60 - 160
Glyphosate	97.8	92.9	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A124660
Included Lab Sample IDs: 2473692

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	101	99.8	P/P	60 - 160
Sucralose	97.3	95.1	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A124673
Included Lab Sample IDs: 2473685

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.4	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A124674
Included Lab Sample IDs: 2473685

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

Reference Method: EPA 8321B
Run ID: A124691
Included Lab Sample IDs: 2473692

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	102	109	P/P	50 - 150
2,4,5-T	107	120	P/P	50 - 150
Acetaminophen	109	111	P/P	60 - 160
Acetamiprid	109	108	P/P	50 - 150
Afidopyropen	91.2	119	P/P	50 - 150
Bentazon	99.5	105	P/P	50 - 160
Benzovindiflupyr	120	111	P/P	50 - 150
Carbamazepine	105	106	P/P	60 - 150
Clothianidin	103	107	P/P	60 - 150
Dinotefuran	108	112	P/P	50 - 150
Diuron	118	112	P/P	60 - 160
Fenuron	107	108	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A124691
Included Lab Sample IDs: 2473692

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluridone	110	114	P/P	60 - 160
Hydrocodone	108	105	P/P	60 - 150
Ibuprofen	85.6	138	P/P	50 - 160
Imazapyr	105	102	P/P	50 - 150
Imidacloprid	106	106	P/P	60 - 150
Linuron	107	108	P/P	60 - 150
Mandestrobin	110	109	P/P	50 - 150
MCPP	122	125	P/P	50 - 150
Naproxen	114	127	P/P	50 - 160
Primidone	96.3	104	P/P	60 - 150
Pyraclostrobin	111	108	P/P	60 - 150
Silvex	107	107	P/P	50 - 150
Thiamethoxam	106	108	P/P	50 - 150
Tolfenpyrad	93.7	103	P/P	60 - 150
Triclopyr	111	116	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A124692
Included Lab Sample IDs: 2473683, 2473685

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A124764
Included Lab Sample IDs: 2473683

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.5	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	MS
DEP SOP: NU-094-1	Color (true)	100			1.15	
EPA 180.1 Rev. 2.0	Turbidity	105			2.75	
EPA 300.0 Rev. 2.1	Chloride	93.1	102	97.7	1.26	
	Sulfate	92.5	99.2	97.7	2.21	
EPA 350.1 Rev. 2.0	Ammonia-N	92.8	96.4	97.2		0.653
	Ammonia-N	96.6	97.0	98.0		0.978
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	101	106		2.61
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	100	99.5		0.501
EPA 365.1 Rev. 2.0	Total-P	103	105	103		1.68
EPA 8321B	2,4-D	93.5	82.5	82.1		0.488
	2,4,5-T	108	93.1	92.1		1.01
	Acesulfame K	102	104	106		2.47
	Acetaminophen	79.8	90.0	88.9		1.15
	Acetamiprid	81.5	62.6	53.3		16.0
	Afidopyropen	79.4	69.0	53.4		25.5
	AMPA	91.4	92.4	93.5		1.24
	Bentazon	91.2				4.34
	Benzovindiflupyr	81.9	91.9	88.9		3.28
	Carbamazepine	77.2	72.0	64.6		8.46
	Clothianidin	85.4	78.2	78.1		0.163
	Dinotefuran	96.0	87.9	85.4		2.93
	Diuron	87.0	83.2	76.2		7.91
	Endothall	85.3	93.0	91.0		2.11
	Fenuron	84.5	75.2	74.5		0.896
	Fluridone	87.4				1.00
	Glufosinate	89.0	91.5	86.3		5.81
	Glyphosate	96.5	95.8	91.4		4.53
	Hydrocodone	78.0	65.6	62.2		5.39
	Ibuprofen	81.9	103	107		3.70
	Imazapyr	89.3				1.66
	Imidacloprid	85.4	86.0	81.5		5.38
	Linuron	81.4	84.7	78.8		7.22
	Mandestrobin	89.1	91.6	91.4		0.260
	MCPP	101	94.5	95.0		0.559
	Naproxen	83.6	123	84.4		36.8
	Primidone	81.1	93.5	86.2		7.63
	Pyraclostrobin	70.8	86.7	84.6		2.37
	Silvex	96.6	104	101		3.46
	Sucralose	103	103	100		2.16
	Thiamethoxam	84.2	71.3	68.8		3.63
	Tolfenpyrad	47.5	58.6	57.5		1.94
	Triclopyr	108	96.8	96.7		0.156
SM 2320 B-2011	Total Alkalinity	104			4.45	
SM 2540 C-2015	TDS	95.6			0.593	
SM 2540 D-2015	TSS	93.6				
SM 4500-F- C-2011	Fluoride	99.6	101	101		0.0
SM 5310 B-2014	Organic Carbon	96.7	96.7	97.5		0.785

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2473682, 2473684
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2473682, 2473684

Reference Method Descriptions

Method	Description	Associated Samples
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2473682, 2473684
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2473682, 2473684
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2473683, 2473685
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2473683, 2473685
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2473683, 2473685
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2473683, 2473685
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2473692
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2473682, 2473684
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2473682, 2473684
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2473682, 2473684
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2473682, 2473684
SM 5310 B-2014	Nonpurgeable Organic Carbon in aqueous matrices	2473683, 2473685

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	03/06/2024			03/06/2024 14:31	Jessica K Wilks	2473682
	03/06/2024			03/06/2024 14:46	Jessica K Wilks	2473684
EPA 180.1 Rev. 2.0	03/06/2024			03/06/2024 13:15	Chandler E Cox	2473682
	03/06/2024			03/06/2024 13:17	Chandler E Cox	2473684
EPA 300.0 Rev. 2.1	03/06/2024			03/09/2024 07:18	Samantha L Bates	2473684
	03/06/2024			03/09/2024 09:19	Samantha L Bates	2473682
EPA 350.1 Rev. 2.0	03/06/2024			03/08/2024 13:28	Kenneth H Lee	2473683
	03/06/2024			03/11/2024 11:38	Khloe J Berg	2473685
EPA 351.2 Rev. 2.0	03/06/2024	03/08/2024 14:09	Simonne.V. Calhoun	03/12/2024 10:34	Ping Hua	2473683
	03/06/2024	03/08/2024 14:09	Simonne.V. Calhoun	03/12/2024 10:36	Ping Hua	2473685
EPA 353.2 Rev. 2.0	03/06/2024			03/08/2024 15:03	Fadila Guebre	2473683
	03/06/2024			03/08/2024 15:09	Fadila Guebre	2473685
EPA 365.1 Rev. 2.0	03/06/2024	03/08/2024 12:35	Josephine W Gitau	03/11/2024 12:34	Chandler E Cox	2473685
	03/06/2024	03/08/2024 12:35	Josephine W Gitau	03/14/2024 13:25	Chandler E Cox	2473683
EPA 8321B	03/06/2024	03/08/2024 12:00	Samatha Luckman	03/08/2024 19:13	Samatha Luckman	2473692
	03/06/2024	03/08/2024 12:00	Samatha Luckman	03/09/2024 07:00	Samatha Luckman	2473692
	03/06/2024	03/08/2024 13:00	Hoor Shaik	03/09/2024 07:16	Juyoung Kim	2473692
SM 2320 B-2011	03/06/2024			03/08/2024 07:11	Dale L. Simmons	2473682
	03/06/2024			03/08/2024 07:23	Dale L. Simmons	2473684
SM 2540 C-2015	03/06/2024			03/08/2024 13:20	Ping Hua	2473682, 2473684
SM 2540 D-2015	03/06/2024			03/08/2024 13:20	Ping Hua	2473682, 2473684
SM 4500-F- C-2011	03/06/2024			03/08/2024 07:11	Dale L. Simmons	2473682
	03/06/2024			03/08/2024 07:23	Dale L. Simmons	2473684
SM 5310 B-2014	03/06/2024			03/07/2024 16:43	Khloe J Berg	2473683
	03/06/2024			03/07/2024 16:58	Khloe J Berg	2473685