

Chemical Analysis Report

SO-DIST-2023-06-02-01

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

Event Description: **2023 SMP: Glades Slough**
Request ID: **RQ-2023-05-08-44**
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: William Mullen

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: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 20-JUN-2023 09:29



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: Metals, 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: FENCELINE DRAIN AT BLUE HEAD RANCH

Collection Date/Time: 06/01/2023 10:20

Field ID: G4SD0193

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes	
2414179	EPA 200.7 Rev. 4.4	Calcium	28.9		mg/L	P430809		
		Iron	1.28E+03		ug/L	P430809		
		Magnesium	12.1		mg/L	P430809		
		Potassium	1.1	I	mg/L	P430809		
		Sodium	40.5		mg/L	P430809		
		Strontium	187		ug/L	P430809		
		Tin	3.0	U	ug/L	P430809		
		Titanium	1.3	I	ug/L	P430809		
		Vanadium	2.0	U	ug/L	P430809		
		Zinc	5.0	U	ug/L	P430809		
	EPA 200.8 Rev. 5.4	Aluminum	269		ug/L	P430809		
		Antimony	0.13	I	ug/L	P430809		
		Arsenic	2.61		ug/L	P430809		
		Barium	22.7		ug/L	P430809		
		Beryllium	0.019	I	ug/L	P430809		
		Boron	55.7		ug/L	P430809		
		Cadmium	0.020	U	ug/L	P430809		
		Chromium	0.46	I	ug/L	P430809		
		Cobalt	0.470		ug/L	P430809		
		Copper	0.62	I	ug/L	P430809		
		Lead	0.42		ug/L	P430809		
		Manganese	42.6		ug/L	P430809		
		Molybdenum	1.23		ug/L	P430809		
		Nickel	0.69	I	ug/L	P430809		
		Selenium	0.30	I	ug/L	P430809		
		Silver	0.010	U	ug/L	P430809		
		Thallium	0.10	U	ug/L	P430809		
		SM 2340 B-2011	Hardness	122		mg/L	P430809	

Sample Location: GATOR SLOUGH AT US27

Collection Date/Time: 06/01/2023 11:20

Field ID: G4SD0214

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2414159	DEP SOP: NU-094-1	Color (true)	350		PCU	P430748	
	EPA 180.1 Rev. 2.0	Turbidity	70		NTU	P430750	
	EPA 300.0 Rev. 2.1	Chloride	8.2		mg Cl/L	P430854	
		Sulfate	1.8		mg SO4/L	P430856	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P430931	
	SM 2540 C-2015	TDS	108		mg/L	P431083	
	SM 2540 D-2015	TSS	166		mg/L	P431069	
	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P430934	MS
2414162	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P430850	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P431035	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P430986	
	EPA 365.1 Rev. 2.0	Total-P	0.36		mg P/L	P430795	
	SM 5310 B-2011	Organic Carbon	35		mg C/L	P430954	

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: BOOTHEELCREEKEASTBRANCH

Collection Date/Time: 06/01/2023 11:45

Field ID: G4SD0105

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2414160	DEP SOP: NU-094-1	Color (true)	450		PCU	P430745	
	EPA 180.1 Rev. 2.0	Turbidity	4.3		NTU	P430749	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P430854	
		Sulfate	8.5		mg SO4/L	P430856	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P430931	
	SM 2540 C-2015	TDS	154		mg/L	P431083	
	SM 2540 D-2015	TSS	3	I	mg/L	P431069	
	SM 4500-F- C-2011	Fluoride	0.071	I	mg F/L	P430934	MS
2414163	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P430850	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P431035	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P430986	
	EPA 365.1 Rev. 2.0	Total-P	0.23		mg P/L	P430795	
	SM 5310 B-2011	Organic Carbon	48		mg C/L	P430954	

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: RAINEY SLOUGH AT FARABEE RD

Collection Date/Time: 06/01/2023 12:30

Field ID: G4SD0111

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2414180	EPA 200.7 Rev. 4.4	Calcium	39.1		mg/L	P430809	
		Iron	1.36E+03		ug/L	P430809	
		Magnesium	5.12		mg/L	P430809	
		Potassium	4.3		mg/L	P430809	
		Sodium	15.9		mg/L	P430809	
		Strontium	334		ug/L	P430809	
		Tin	3.0	U	ug/L	P430809	
		Titanium	1.1	I	ug/L	P430809	
		Vanadium	2.0	U	ug/L	P430809	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P430809	
		Aluminum	98		ug/L	P430809	
		Antimony	0.15	I	ug/L	P430809	
		Arsenic	1.44		ug/L	P430809	
		Barium	28.3		ug/L	P430809	
		Beryllium	0.016	I	ug/L	P430809	
		Boron	22.2		ug/L	P430809	
		Cadmium	0.020	U	ug/L	P430809	
		Chromium	0.46	I	ug/L	P430809	
		Cobalt	0.310		ug/L	P430809	
		Copper	0.69	I	ug/L	P430809	
		Lead	0.22	I	ug/L	P430809	
		Manganese	23.2		ug/L	P430809	
		Molybdenum	2.27		ug/L	P430809	
		Nickel	0.58	I	ug/L	P430809	
		Selenium	0.20	I	ug/L	P430809	
		Silver	0.010	U	ug/L	P430809	
		Thallium	0.10	U	ug/L	P430809	
	SM 2340 B-2011	Hardness	119		mg/L	P430809	

Sample Location: JOHNNENRYSLOUGH ATCR731

Collection Date/Time: 06/01/2023 12:45

Field ID: G4SD0215

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2414165	DEP SOP: NU-094-1	Color (true)	160		PCU	P430746	
	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P430749	
	EPA 300.0 Rev. 2.1	Chloride	330		mg Cl/L	P430854	
		Sulfate	220		mg SO4/L	P430856	
	SM 2320 B-2011	Total Alkalinity	4.3		mg CaCO3/L	P430931	
	SM 2540 C-2015	TDS	810		mg/L	P431083	
	SM 2540 D-2015	TSS	3	I	mg/L	P431069	
	SM 4500-F- C-2011	Fluoride	0.11		mg F/L	P430934	MS
2414166	EPA 350.1 Rev. 2.0	Ammonia-N	0.022	Y	mg N/L	P430850	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3	Y	mg N/L	P431035	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.036	Y	mg N/L	P431073	
	EPA 365.1 Rev. 2.0	Total-P	0.071	Y	mg P/L	P430795	
	SM 5310 B-2011	Organic Carbon	28	Y	mg C/L	P430954	
2414178	EPA 8321B	2,4-D	0.0020	U	ug/L	P430834	
		Acesulfame K	0.10	U	ug/L	P430789	
		2,4,5-T	0.0040	U	ug/L	P430834	
		AMPA	0.10	U	ug/L	P430789	
		Acetaminophen	0.0080	U	ug/L	P430834	
		Acetamiprid	0.0020	U	ug/L	P430834	
		Endothall	0.25	U	ug/L	P430789	
		Glufosinate	0.10	U	ug/L	P430789	
		Glyphosate	0.10	U	ug/L	P430789	
		Afidopyropen	0.0020	U	ug/L	P430834	
		Bentazon	8.0E-04	U	ug/L	P430834	
		Sucralose	0.010	U	ug/L	P430789	
		Benzovindiflupyr	0.0020	U	ug/L	P430834	
		Carbamazepine	8.0E-04	U	ug/L	P430834	
		Clothianidin	0.0020	U	ug/L	P430834	
		Dinotefuran	0.0020	U	ug/L	P430834	
		Diuron	0.0020	U	ug/L	P430834	
		Fenuron	0.032	U	ug/L	P430834	
		Fluridone	8.0E-04	U	ug/L	P430834	
		Imazapyr	0.0040	U	ug/L	P430834	
		Hydrocodone	0.0020	U	ug/L	P430834	
		Ibuprofen	0.080	U	ug/L	P430834	
		Imidacloprid	0.0060	I	ug/L	P430834	
		Linuron	0.0040	U	ug/L	P430834	
		Mandestrobin	0.0020	U	ug/L	P430834	
		MCP	0.0020	U	ug/L	P430834	
		Naproxen	0.0080	U	ug/L	P430834	
		Primidone	0.0040	U	ug/L	P430834	
		Pyraclostrobin	0.0020	U	ug/L	P430834	
		Silvex	0.0040	U	ug/L	P430834	
		Thiamethoxam	0.0020	U	ug/L	P430834	

Field ID: G4SD0215

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2414178	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P430834	
		Triclopyr	0.0040	U	ug/L	P430834	

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-2011: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

Sample Location: GOPHER GULLY AT US27

Collection Date/Time: 06/01/2023 13:15

Field ID: G4SD0216

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2414161	DEP SOP: NU-094-1	Color (true)	840		PCU	P430748	
	EPA 180.1 Rev. 2.0	Turbidity	21		NTU	P430749	
	EPA 300.0 Rev. 2.1	Chloride	35		mg Cl/L	P430854	
		Sulfate	14		mg SO4/L	P430856	
	SM 2320 B-2011	Total Alkalinity	33		mg CaCO3/L	P430931	
	SM 2540 C-2015	TDS	328		mg/L	P431083	
	SM 2540 D-2015	TSS	47		mg/L	P431069	
	SM 4500-F- C-2011	Fluoride	0.13		mg F/L	P430934	MS
2414164	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P430850	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	4.9		mg N/L	P431035	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P430986	
	EPA 365.1 Rev. 2.0	Total-P	2.0		mg P/L	P430795	
	SM 5310 B-2011	Organic Carbon	91		mg C/L	P430954	

Ref. Method and Comment:

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

Non-Conformance Report

NCR ID: 9907

Event(s)

SO-DIST-2023-06-02-01

Job(s)

TLH-2023-06-02-38

Sample(s)

2414166

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Preservation Not Intact

Observation: Sample not preserved to pH < 2.

Resolution: Sample preserved in the laboratory with sulfuric acid.
H2SO4 Lot# SA3013020 | Expiration Date: 01/25/2024

Authorized by/Date: Kyle Klug 6/9/2023

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: P430745

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P430746

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P430748

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P430749

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P430750

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P430809

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P430809

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P430809

Component	Result	Code	Units
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430854

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430856

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430850

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P431035

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430986

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P431073

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P430795

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P430789

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: P430834

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: P430931

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

Reference Method: SM 2540 C-2015

Batch ID: P431083

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2015
Batch ID: P431069

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P430934

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P430954

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: P430745

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.6		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P430746

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.5		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P430748

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: P430749

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	99.0		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P430750

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P430809

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Iron	102		P	85 - 115
Magnesium	101		P	85 - 115
Potassium	101		P	85 - 115
Sodium	96.3		P	85 - 115
Strontium	99.5		P	85 - 115
Tin	101		P	85 - 115
Titanium	101		P	85 - 115
Vanadium	101		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P430809

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.8		P	85 - 115
Antimony	104		P	85 - 115
Arsenic	98.8		P	85 - 115
Barium	103		P	85 - 115
Beryllium	97.0		P	85 - 115
Boron	101		P	85 - 115
Cadmium	99.6		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P430809

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chromium	95.7		P	85 - 115
Cobalt	99.4		P	85 - 115
Copper	96.8		P	85 - 115
Lead	100		P	85 - 115
Manganese	96.1		P	85 - 115
Molybdenum	97.1		P	85 - 115
Nickel	96.8		P	85 - 115
Selenium	99.1		P	85 - 115
Silver	103		P	85 - 115
Thallium	95.2		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430854

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430856

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430850

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P431035

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: P430986

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P431073

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: P430795

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P430789

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	106		P	40 - 150
AMPA	79.3		P	40 - 150
Endothall	90.9		P	40 - 150
Glufosinate	84.0		P	40 - 150
Glyphosate	71.4		P	40 - 150
Sucralose	82.6		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P430834

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	109		P	40 - 150
2,4,5-T	96.0		P	40 - 150
Acetaminophen	89.9		P	30 - 150
Acetamiprid	79.5		P	40 - 150
Afidopyropen	73.4		P	30 - 150
Bentazon	99.3		P	30 - 150
Benzovindiflupyr	80.3		P	40 - 150
Carbamazepine	83.1		P	40 - 150
Clothianidin	88.3		P	40 - 150
Dinotefuran	90.4		P	40 - 150
Diuron	83.5		P	40 - 150
Fenuron	85.4		P	40 - 150
Fluridone	90.6		P	40 - 150
Hydrocodone	86.6		P	40 - 150
Ibuprofen	119		P	40 - 150
Imazapyr	95.6		P	40 - 150
Imidacloprid	85.0		P	40 - 150
Linuron	82.0		P	40 - 150
Mandestrobin	84.5		P	40 - 150
MCPP	96.0		P	40 - 150
Naproxen	67.0		P	40 - 150
Primidone	81.5		P	40 - 150
Pyraclostrobin	77.8		P	40 - 150
Silvex	94.4		P	40 - 150
Thiamethoxam	84.7		P	40 - 150
Tolfenpyrad	58.4		P	30 - 150
Triclopyr	77.8		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P430931

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.3		P	92 - 105

Reference Method: SM 2540 C-2015

Batch ID: P431083

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 D-2015
Batch ID: P431069

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	96.9		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P430934

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	105		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P430954

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P430809

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2414260	Calcium	99.3		P	80 - 120
2414260	Iron	94.6	102	P/P	80 - 120
2414260	Magnesium	92.8	105	P/P	80 - 120
2414260	Potassium	96.0	104	P/P	80 - 120
2414260	Sodium	97.4		P	80 - 120
2414260	Strontium	93.4	101	P/P	80 - 120
2414260	Tin	93.1	102	P/P	80 - 120
2414260	Titanium	92.9	100	P/P	80 - 120
2414260	Vanadium	91.7	99.5	P/P	80 - 120
2414260	Zinc	92.0	100	P/P	80 - 120
2414410	Calcium	101		P	80 - 120
2414410	Iron	103		P	80 - 120
2414410	Magnesium	102		P	80 - 120
2414410	Potassium	105		P	80 - 120
2414410	Sodium	104		P	80 - 120
2414410	Strontium	101		P	80 - 120
2414410	Tin	101		P	80 - 120
2414410	Titanium	101		P	80 - 120
2414410	Vanadium	102		P	80 - 120
2414410	Zinc	104		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P430809

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2414260	Aluminum	97.5	97.8	P/P	80 - 120
2414260	Antimony	105	105	P/P	80 - 120
2414260	Arsenic	99.3	99.5	P/P	80 - 120
2414260	Barium	102	102	P/P	80 - 120
2414260	Beryllium	96.1	94.5	P/P	80 - 120
2414260	Boron	98.4	99.8	P/P	80 - 120
2414260	Cadmium	100	102	P/P	80 - 120
2414260	Chromium	94.3	95.0	P/P	80 - 120
2414260	Cobalt	97.8	98.0	P/P	80 - 120
2414260	Copper	95.7	95.0	P/P	80 - 120
2414260	Lead	102	102	P/P	80 - 120
2414260	Manganese	94.8	95.2	P/P	80 - 120
2414260	Molybdenum	98.5	98.6	P/P	80 - 120
2414260	Nickel	95.4	95.8	P/P	80 - 120
2414260	Selenium	99.3	100	P/P	80 - 120
2414260	Silver	103	103	P/P	80 - 120
2414260	Thallium	97.3	99.5	P/P	80 - 120
2414410	Aluminum	97.5		P	80 - 120
2414410	Antimony	103		P	80 - 120
2414410	Arsenic	97.4		P	80 - 120
2414410	Barium	102		P	80 - 120
2414410	Beryllium	94.5		P	80 - 120
2414410	Boron	101		P	80 - 120
2414410	Cadmium	100		P	80 - 120
2414410	Chromium	97.8		P	80 - 120
2414410	Cobalt	97.6		P	80 - 120
2414410	Copper	95.9		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P430809

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2414410	Lead	103		P	80 - 120
2414410	Manganese	98.9		P	80 - 120
2414410	Molybdenum	96.5		P	80 - 120
2414410	Nickel	97.4		P	80 - 120
2414410	Selenium	97.7		P	80 - 120
2414410	Silver	102		P	80 - 120
2414410	Thallium	98.2		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430854

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2414039	Chloride	105		P	90 - 110
2414161	Chloride	106		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430856

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2414039	Sulfate	101		P	90 - 110
2414161	Sulfate	94.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430850

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2414166	Ammonia-N	98.4	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P431035

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2414188	Kjeldahl Nitrogen	104	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2414097	NO2NO3-N	104	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P431073

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2414166	NO2NO3-N	94.8	94.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P430795

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2414187	Total-P	100	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P430789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2413933	Acesulfame K	102	101	P/P	40 - 150
2413933	AMPA	101	96.7	P/P	40 - 150
2413933	Endothall	86.9	82.6	P/P	40 - 150
2413933	Glufosinate	80.1	78.3	P/P	40 - 150
2413933	Glyphosate	60.2	59.5	P/P	40 - 150
2413933	Sucralose	90.3	90.6	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P430834

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2414406	2,4-D	104	112	P/P	40 - 150
2414406	2,4,5-T	133	103	P/P	40 - 150
2414406	Acetaminophen	90.6	98.4	P/P	30 - 150
2414406	Acetamiprid	76.5	77.5	P/P	40 - 150
2414406	Afidopyropen	69.3	62.1	P/P	30 - 150
2414406	Bentazon	83.4	87.1	P/P	30 - 150
2414406	Benzovindiflupyr	80.9	91.4	P/P	40 - 150
2414406	Carbamazepine	86.0	89.9	P/P	40 - 150
2414406	Clothianidin	101	108	P/P	40 - 150
2414406	Dinotefuran	95.0	99.8	P/P	40 - 150
2414406	Diuron	78.5	89.1	P/P	40 - 150
2414406	Fenuron	79.2	85.8	P/P	40 - 150
2414406	Fluridone	89.9	92.6	P/P	40 - 150
2414406	Hydrocodone	86.9	93.8	P/P	40 - 150
2414406	Ibuprofen	112	128	P/P	40 - 150
2414406	Imazapyr	94.4	98.4	P/P	40 - 150
2414406	Imidacloprid	103	114	P/P	40 - 150
2414406	Linuron	81.2	82.7	P/P	40 - 150
2414406	Mandestrobin	88.6	87.4	P/P	40 - 150
2414406	MCPP	96.8	103	P/P	40 - 150
2414406	Naproxen	51.9	54.2	P/P	40 - 150
2414406	Primidone	80.3	84.0	P/P	40 - 150
2414406	Pyraclostrobin	81.1	84.2	P/P	40 - 150
2414406	Silvex	90.2	90.9	P/P	40 - 150
2414406	Thiamethoxam	100	103	P/P	40 - 150
2414406	Tolfenpyrad	52.7	59.7	P/P	30 - 150
2414406	Triclopyr	83.5	103	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P430934

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2414185	Fluoride	107	105	F/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P430954

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2414134	Organic Carbon	94.2	96.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P430745

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414078	Color (true)	1.52	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P430746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414182	Color (true)	4.80	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P430748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414391	Color (true)	2.78	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P430749

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414039	Turbidity	2.06	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P430750

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414248	Turbidity	17.5	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P430809

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414260	Calcium	7.03	Spike	P	0 - 20
2414260	Iron	7.59	Spike	P	0 - 20
2414260	Magnesium	7.74	Spike	P	0 - 20
2414260	Potassium	6.39	Spike	P	0 - 20
2414260	Sodium	7.71	Spike	P	0 - 20
2414260	Strontium	7.21	Spike	P	0 - 20
2414260	Tin	9.03	Spike	P	0 - 20
2414260	Titanium	7.48	Spike	P	0 - 20
2414260	Vanadium	8.12	Spike	P	0 - 20
2414260	Zinc	8.47	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P430809

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
--------------------------	-----------	-----------	-------------------	-----------	----------------

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P430809

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414260	Aluminum	0.304	Spike	P	0 - 20
2414260	Antimony	0.461	Spike	P	0 - 20
2414260	Arsenic	0.228	Spike	P	0 - 20
2414260	Barium	0.115	Spike	P	0 - 20
2414260	Beryllium	1.61	Spike	P	0 - 20
2414260	Boron	0.999	Spike	P	0 - 20
2414260	Cadmium	1.64	Spike	P	0 - 20
2414260	Chromium	0.740	Spike	P	0 - 20
2414260	Cobalt	0.169	Spike	P	0 - 20
2414260	Copper	0.761	Spike	P	0 - 20
2414260	Lead	0.542	Spike	P	0 - 20
2414260	Manganese	0.404	Spike	P	0 - 20
2414260	Molybdenum	0.157	Spike	P	0 - 20
2414260	Nickel	0.344	Spike	P	0 - 20
2414260	Selenium	0.937	Spike	P	0 - 20
2414260	Silver	0.299	Spike	P	0 - 20
2414260	Thallium	2.19	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P430854

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414039	Chloride	0.454	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P430856

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414039	Sulfate	0.0318	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P430850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414166	Ammonia-N	0.845	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P431035

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414188	Kjeldahl Nitrogen	0.356	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P430986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
--------------------------	-----------	-----------	-------------------	-----------	----------------

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414097	NO2NO3-N	0.466	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P431073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414166	NO2NO3-N	0.443	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P430795

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414187	Total-P	3.03	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P430789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2413933	Acesulfame K	0.197	Spike	P	0 - 30
2413933	AMPA	4.57	Spike	P	0 - 30
2413933	Endothall	5.10	Spike	P	0 - 30
2413933	Glufosinate	2.28	Spike	P	0 - 30
2413933	Glyphosate	1.13	Spike	P	0 - 30
2413933	Sucralose	0.255	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P430834

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414406	2,4-D	7.77	Spike	P	0 - 30
2414406	2,4,5-T	25.3	Spike	P	0 - 30
2414406	Acetaminophen	8.21	Spike	P	0 - 30
2414406	Acetamiprid	1.31	Spike	P	0 - 30
2414406	Afidopyropen	11.0	Spike	P	0 - 30
2414406	Bentazon	4.37	Spike	P	0 - 30
2414406	Benzovindiflupyr	12.2	Spike	P	0 - 30
2414406	Carbamazepine	4.38	Spike	P	0 - 30
2414406	Clothianidin	6.79	Spike	P	0 - 30
2414406	Dinotefuran	4.99	Spike	P	0 - 30
2414406	Diuron	12.6	Spike	P	0 - 30
2414406	Fenuron	8.00	Spike	P	0 - 30
2414406	Fluridone	3.00	Spike	P	0 - 30
2414406	Hydrocodone	7.63	Spike	P	0 - 30
2414406	Ibuprofen	13.4	Spike	P	0 - 30
2414406	Imazapyr	4.17	Spike	P	0 - 30
2414406	Imidacloprid	10.2	Spike	P	0 - 30
2414406	Linuron	1.83	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P430834

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414406	Mandestrobin	1.29	Spike	P	0 - 30
2414406	MCP	6.49	Spike	P	0 - 30
2414406	Naproxen	4.48	Spike	P	0 - 30
2414406	Primidone	4.47	Spike	P	0 - 30
2414406	Pyraclostrobin	3.82	Spike	P	0 - 30
2414406	Silvex	0.689	Spike	P	0 - 30
2414406	Thiamethoxam	3.16	Spike	P	0 - 30
2414406	Tolfenpyrad	12.5	Spike	P	0 - 30
2414406	Triclopyr	21.1	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P430931

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414185	Total Alkalinity	1.13	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P431083

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414248	TDS	4.62	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P430934

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414185	Fluoride	1.48	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P430954

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414134	Organic Carbon	1.16	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2414178
Field Sample ID: G4SD0215

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	65.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	105	P	30 - 160
EPA 8321B	Carbamazepine-d10	64.7	P	30 - 160
EPA 8321B	Diuron-d6	58.3	P	30 - 160
EPA 8321B	Endothall-d6	98.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	63.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	73.1	P	30 - 160
EPA 8321B	Primidone-d5	69.0	P	30 - 160
EPA 8321B	Sucralose-d6	155	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A119551

Included Lab Sample IDs: 2414159, 2414160, 2414161, 2414165

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.7	99.7	P/P	90 - 110
Color (true)	98.9	99.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A119552

Included Lab Sample IDs: 2414159, 2414160, 2414161, 2414165

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A119595

Included Lab Sample IDs: 2414162, 2414163, 2414164, 2414166

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	101	P/P	90 - 110
Total-P	102	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A119602

Included Lab Sample IDs: 2414162, 2414163, 2414164, 2414166

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.9	99.1	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A119605

Included Lab Sample IDs: 2414159, 2414160, 2414161, 2414165

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	96.9	98.5	P/P	90 - 110
Chloride	97.6	96.9	P/P	90 - 110
Sulfate	98.6	100	P/P	90 - 110
Sulfate	99.2	98.6	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A119619

Included Lab Sample IDs: 2414179, 2414180

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.5	98.5	P/P	90 - 110
Antimony	103	103	P/P	90 - 110
Arsenic	98.5	97.8	P/P	90 - 110
Barium	99.9	98.9	P/P	90 - 110
Beryllium	96.8	96.6	P/P	90 - 110
Boron	96.0	97.5	P/P	90 - 110
Cadmium	98.7	98.4	P/P	90 - 110
Chromium	97.1	97.3	P/P	90 - 110
Cobalt	99.3	98.1	P/P	90 - 110
Copper	95.4	94.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A119619

Included Lab Sample IDs: 2414179, 2414180

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	100	100	P/P	90 - 110
Manganese	97.0	99.4	P/P	90 - 110
Molybdenum	97.5	96.9	P/P	90 - 110
Nickel	96.1	95.4	P/P	90 - 110
Selenium	98.4	100	P/P	90 - 110
Silver	102	102	P/P	90 - 110
Thallium	99.5	98.6	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A119631

Included Lab Sample IDs: 2414178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	106	107	P/P	60 - 160
Sucralose	87.7	77.2	P/P	60 - 160

Reference Method: SM 2320 B-2011

Run ID: A119632

Included Lab Sample IDs: 2414159, 2414160, 2414161, 2414165

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	94.5	P/P	90 - 110
Total Alkalinity	94.5	99.6	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A119632

Included Lab Sample IDs: 2414159, 2414160, 2414161, 2414165

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	106	103	P/P	90 - 110
Fluoride	106	106	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A119635

Included Lab Sample IDs: 2414178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	90.6	93.8	P/P	60 - 160
Endothall	91.0	90.1	P/P	60 - 160
Glufosinate	91.9	78.8	P/P	60 - 160
Glyphosate	91.8	92.5	P/P	60 - 160

Reference Method: SM 5310 B-2011

Run ID: A119648

Included Lab Sample IDs: 2414162, 2414163, 2414164, 2414166

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.1	95.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A119660
Included Lab Sample IDs: 2414178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	84.9	91.2	P/P	50 - 150
2,4,5-T	90.8	91.0	P/P	50 - 150
Acetaminophen	103	112	P/P	60 - 160
Acetamiprid	98.5	106	P/P	50 - 150
Afidopyropen	109	109	P/P	50 - 150
Bentazon	108	115	P/P	50 - 160
Benzovindiflupyr	97.6	102	P/P	50 - 150
Carbamazepine	103	106	P/P	60 - 150
Clothianidin	99.6	103	P/P	60 - 150
Dinotefuran	99.9	110	P/P	50 - 150
Diuron	109	108	P/P	60 - 160
Fenuron	97.7	105	P/P	60 - 150
Fluridone	116	110	P/P	60 - 160
Hydrocodone	105	104	P/P	60 - 150
Ibuprofen	135	75.7	P/P	50 - 160
Imazapyr	101	98.3	P/P	50 - 150
Imidacloprid	94.2	97.3	P/P	60 - 150
Linuron	85.4	101	P/P	60 - 150
Mandestrobin	101	102	P/P	50 - 150
MCPP	92.8	89.8	P/P	50 - 150
Naproxen	86.8	138	P/P	50 - 160
Primidone	96.0	94.9	P/P	60 - 150
Pyraclostrobin	101	101	P/P	60 - 150
Silvex	104	107	P/P	50 - 150
Thiamethoxam	94.6	101	P/P	50 - 150
Tolfenpyrad	92.0	95.6	P/P	60 - 150
Triclopyr	86.4	74.5	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A119661
Included Lab Sample IDs: 2414162, 2414163, 2414164

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

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A119677
Included Lab Sample IDs: 2414179, 2414180

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	97.6	97.3	P/P	90 - 110
Iron	98.6	100	P/P	90 - 110
Magnesium	97.4	99.7	P/P	90 - 110
Potassium	98.5	100	P/P	90 - 110
Sodium	96.7	97.6	P/P	90 - 110
Strontium	98.3	99.4	P/P	90 - 110
Tin	101	101	P/P	90 - 110
Titanium	100	100	P/P	90 - 110
Vanadium	100	99.9	P/P	90 - 110
Zinc	99.3	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A119691

Included Lab Sample IDs: 2414166

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A119727

Included Lab Sample IDs: 2414162, 2414163, 2414164, 2414166

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	99.8	P/P	90 - 110
Kjeldahl Nitrogen	99.8	97.7	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	MS
			LCS	SMP	MS		
DEP SOP: NU-094-1	Color (true)	99.6				1.52	
	Color (true)	99.5				4.80	
	Color (true)	101				2.78	
EPA 180.1 Rev. 2.0	Turbidity	99.0				2.06	
	Turbidity	99.4				17.5	
EPA 200.7 Rev. 4.4	Calcium	101	99.3	101			7.03
	Iron	102	94.6	102	103		7.59
	Magnesium	101	92.8	105	102		7.74
	Potassium	101	96.0	104	105		6.39
	Sodium	96.3	97.4	104			7.71
	Strontium	99.5	93.4	101	101		7.21
	Tin	101	93.1	102	101		9.03
	Titanium	101	92.9	100	101		7.48
	Vanadium	101	91.7	99.5	102		8.12
	Zinc	102	92.0	100	104		8.47
EPA 200.8 Rev. 5.4	Aluminum	98.8	97.5	97.8	97.5		0.304
	Antimony	104	105	105	103		0.461
	Arsenic	98.8	99.3	99.5	97.4		0.228
	Barium	103	102	102	102		0.115
	Beryllium	97.0	96.1	94.5	94.5		1.61
	Boron	101	98.4	99.8	101		0.999
	Cadmium	99.6	100	102	100		1.64
	Chromium	95.7	94.3	95.0	97.8		0.740
	Cobalt	99.4	97.8	98.0	97.6		0.169
	Copper	96.8	95.7	95.0	95.9		0.761
	Lead	100	102	102	103		0.542
	Manganese	96.1	94.8	95.2	98.9		0.404
	Molybdenum	97.1	98.5	98.6	96.5		0.157
	Nickel	96.8	95.4	95.8	97.4		0.344
	Selenium	99.1	99.3	100	97.7		0.937
	Silver	103	103	103	102		0.299
	Thallium	95.2	97.3	99.5	98.2		2.19
EPA 300.0 Rev. 2.1	Chloride	99.9	105	106		0.454	
	Sulfate	98.2	101	94.1		0.0318	
EPA 350.1 Rev. 2.0	Ammonia-N	97.4	98.4	99.6			0.845
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	104	103			0.356
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104	105			0.466
	NO2NO3-N	102	94.8	94.4			0.443
EPA 365.1 Rev. 2.0	Total-P	99.4	100	104			3.03
EPA 8321B	2,4-D	109	104	112			7.77
	2,4,5-T	96.0	133	103			25.3
	Acesulfame K	106	102	101			0.197
	Acetaminophen	89.9	90.6	98.4			8.21
	Acetamiprid	79.5	76.5	77.5			1.31
	Afidopyropen	73.4	69.3	62.1			11.0
	AMPA	79.3	101	96.7			4.57
	Bentazon	99.3	83.4	87.1			4.37
	Benzovindiflupyr	80.3	80.9	91.4			12.2
	Carbamazepine	83.1	86.0	89.9			4.38
	Clothianidin	88.3	101	108			6.79
	Dinotefuran	90.4	95.0	99.8			4.99
	Diuron	83.5	78.5	89.1			12.6
	Endothall	90.9	86.9	82.6			5.10
	Fenuron	85.4	79.2	85.8			8.00

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Fluridone	90.6	89.9	92.6		3.00
	Glufosinate	84.0	80.1	78.3		2.28
	Glyphosate	71.4	60.2	59.5		1.13
	Hydrocodone	86.6	86.9	93.8		7.63
	Ibuprofen	119	112	128		13.4
	Imazapyr	95.6	94.4	98.4		4.17
	Imidacloprid	85.0	103	114		10.2
	Linuron	82.0	81.2	82.7		1.83
	Mandestrobin	84.5	88.6	87.4		1.29
	MCP	96.0	96.8	103		6.49
	Naproxen	67.0	51.9	54.2		4.48
	Primidone	81.5	80.3	84.0		4.47
	Pyraclostrobin	77.8	81.1	84.2		3.82
	Silvex	94.4	90.2	90.9		0.689
	Sucralose	82.6	90.3	90.6		0.255
	Thiamethoxam	84.7	100	103		3.16
	Tolfenpyrad	58.4	52.7	59.7		12.5
	Triclopyr	77.8	83.5	103		21.1
SM 2320 B-2011	Total Alkalinity	99.3			1.13	
SM 2540 C-2015	TDS	102			4.62	
SM 2540 D-2015	TSS	96.9				
SM 4500-F- C-2011	Fluoride	105	107	105		1.48
SM 5310 B-2011	Organic Carbon	93.0	94.2	96.0		1.16

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2414159, 2414160, 2414161, 2414165
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2414159, 2414160, 2414161, 2414165
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2414179, 2414180
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2414179, 2414180
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2414159, 2414160, 2414161, 2414165
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2414159, 2414160, 2414161, 2414165
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2414162, 2414163, 2414164, 2414166
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2414162, 2414163, 2414164, 2414166
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2414162, 2414163, 2414164, 2414166
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2414162, 2414163, 2414164, 2414166
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2414178
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2414159, 2414160, 2414161, 2414165
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2414179, 2414180
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2414159, 2414160, 2414161, 2414165
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2414159, 2414160, 2414161, 2414165
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2414159, 2414160, 2414161, 2414165
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2414162, 2414163, 2414164, 2414166

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	06/02/2023			06/02/2023 15:51	Alexis Price	2414160
	06/02/2023			06/02/2023 15:52	Alexis Price	2414165
	06/02/2023			06/02/2023 16:11	Alexis Price	2414159
	06/02/2023			06/02/2023 16:12	Alexis Price	2414161
EPA 180.1 Rev. 2.0	06/02/2023			06/02/2023 13:47	Alexis Price	2414160
	06/02/2023			06/02/2023 13:48	Alexis Price	2414161
	06/02/2023			06/02/2023 13:49	Alexis Price	2414165
	06/02/2023			06/02/2023 14:17	Alexis Price	2414159
EPA 200.7 Rev. 4.4	06/02/2023	06/05/2023 12:00	George D Taylor	06/09/2023 00:24	McKinley C Carter	2414179
	06/02/2023	06/05/2023 12:00	George D Taylor	06/09/2023 00:32	McKinley C Carter	2414180
EPA 200.8 Rev. 5.4	06/02/2023	06/05/2023 12:00	George D Taylor	06/06/2023 16:52	Conrad Hartmann	2414179
	06/02/2023	06/05/2023 12:00	George D Taylor	06/06/2023 17:01	Conrad Hartmann	2414180
EPA 300.0 Rev. 2.1	06/02/2023			06/06/2023 04:41	James L Waggeberby	2414161
	06/02/2023			06/06/2023 08:11	James L Waggeberby	2414159
	06/02/2023			06/06/2023 08:27	James L Waggeberby	2414160
	06/02/2023			06/06/2023 08:42	James L Waggeberby	2414165
EPA 350.1 Rev. 2.0	06/02/2023			06/06/2023 12:28	Khloe J Berg	2414166
	06/02/2023			06/06/2023 12:32	Khloe J Berg	2414162
	06/02/2023			06/06/2023 12:34	Khloe J Berg	2414163
	06/02/2023			06/06/2023 12:35	Khloe J Berg	2414164
EPA 351.2 Rev. 2.0	06/02/2023	06/09/2023 11:22	Ping Hua	06/12/2023 10:42	Samantha L Bates	2414162
	06/02/2023	06/09/2023 11:22	Ping Hua	06/12/2023 10:47	Samantha L Bates	2414163
	06/02/2023	06/09/2023 11:22	Ping Hua	06/12/2023 10:48	Samantha L Bates	2414164
	06/02/2023	06/09/2023 11:22	Ping Hua	06/12/2023 10:50	Samantha L Bates	2414166
EPA 353.2 Rev. 2.0	06/02/2023			06/08/2023 10:47	Beverly Y. Sanders	2414162
	06/02/2023			06/08/2023 10:48	Beverly Y. Sanders	2414163
	06/02/2023			06/08/2023 10:50	Beverly Y. Sanders	2414164
	06/02/2023			06/09/2023 10:14	Beverly Y. Sanders	2414166
EPA 365.1 Rev. 2.0	06/02/2023	06/05/2023 14:34	Adam P Silver	06/06/2023 10:38	James L Waggeberby	2414162
	06/02/2023	06/05/2023 14:34	Adam P Silver	06/06/2023 10:39	James L Waggeberby	2414163
	06/02/2023	06/05/2023 14:34	Adam P Silver	06/06/2023 10:41	James L Waggeberby	2414166
	06/02/2023	06/05/2023 14:34	Adam P Silver	06/06/2023 11:25	James L Waggeberby	2414164
EPA 8321B	06/02/2023	06/06/2023 14:00	Touraj Touran	06/06/2023 18:10	Touraj Touran	2414178
	06/02/2023	06/06/2023 14:00	Touraj Touran	06/07/2023 04:53	Touraj Touran	2414178
	06/02/2023	06/07/2023 11:00	Hoor Shaik	06/07/2023 18:20	Juyoung Kim	2414178
SM 2320 B-2011	06/02/2023			06/07/2023 05:10	Dale L. Simmons	2414159
	06/02/2023			06/07/2023 05:19	Dale L. Simmons	2414160
	06/02/2023			06/07/2023 05:32	Dale L. Simmons	2414161
	06/02/2023			06/07/2023 06:28	Dale L. Simmons	2414165
SM 2340 B-2011	06/02/2023			06/09/2023 00:24	McKinley C Carter	2414179

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2340 B-2011	06/02/2023			06/09/2023 00:32	McKinley C Carter	2414180
SM 2540 C-2015	06/02/2023			06/06/2023 14:58	Yijie Li	2414159, 2414160, 2414161, 2414165
SM 2540 D-2015	06/02/2023			06/06/2023 14:58	Yijie Li	2414159, 2414160, 2414161, 2414165
SM 4500-F- C-2011	06/02/2023			06/07/2023 05:10	Dale L. Simmons	2414159
	06/02/2023			06/07/2023 05:19	Dale L. Simmons	2414160
	06/02/2023			06/07/2023 05:32	Dale L. Simmons	2414161
	06/02/2023			06/07/2023 06:28	Dale L. Simmons	2414165
SM 5310 B-2011	06/02/2023			06/07/2023 14:46	Elise M. Gillis	2414162
	06/02/2023			06/07/2023 15:02	Elise M. Gillis	2414163
	06/02/2023			06/07/2023 15:18	Elise M. Gillis	2414164
	06/02/2023			06/07/2023 15:34	Elise M. Gillis	2414166