

Chemical Analysis Report

CEN-DIST-2023-05-24-01

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

Event Description: **Run 5**
Request ID: **RQ-2023-05-22-12**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
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Certified by: Colin Wright, Program Administrator

Date Certified: 14-JUN-2023 09:37

A handwritten signature in black ink, appearing to read "Colin Wright", is shown on a light-colored 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: 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: Second Creek at SR 520

Collection Date/Time: 05/23/2023 10:34

Field ID: G3CE0066

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2412239	DEP SOP: NU-094-1	Color (true)	68		PCU	P430343	
	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P430333	
	EPA 300.0 Rev. 2.1	Chloride	37		mg Cl/L	P430755	
		Sulfate	34		mg SO4/L	P430761	
	SM 2320 B-2011	Total Alkalinity	179		mg CaCO3/L	P430652	
	SM 2540 C-2015	TDS	353		mg/L	P430791	
	SM 2540 D-2015	TSS	2	I	mg/L	P430858	
	SM 4500-F- C-2011	Fluoride	0.080	I	mg F/L	P430655	
2412240	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P430661	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.89		mg N/L	P430394	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P430984	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P430418	
	SM 5310 B-2011	Organic Carbon	21		mg C/L	P430448	

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: Falk Canal at 50M usstream of Fiske Blvd

Collection Date/Time: 05/23/2023 12:40

Field ID: G3CE0016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2412248	EPA 8321B	2,4-D	0.14		ug/L	P430400	
		Acesulfame K	0.10	U	ug/L	P430190	
		2,4,5-T	0.0040	U	ug/L	P430400	
		AMPA	0.21	I	ug/L	P430190	
		Acetaminophen	0.023	I	ug/L	P430400	
		Acetamiprid	0.0020	U	ug/L	P430400	
		Endothall	0.25	U	ug/L	P430190	
		Glufosinate	0.10	U	ug/L	P430190	
		Glyphosate	3.2		ug/L	P430190	
		Afidopyropen	0.0020	U	ug/L	P430400	
		Bentazon	0.079		ug/L	P430400	
		Sucralose	0.057		ug/L	P430190	
		Benzovindiflupyr	0.0020	U	ug/L	P430400	
		Carbamazepine	8.0E-04	U	ug/L	P430400	
		Clothianidin	0.0081		ug/L	P430400	
		Dinotefuran	0.0020	U	ug/L	P430400	
		Diuron	0.0020	U	ug/L	P430400	
		Fenuron	0.032	U	ug/L	P430400	
		Fluridone	8.0E-04	U	ug/L	P430400	
		Imazapyr	0.14		ug/L	P430400	
		Hydrocodone	0.0020	U	ug/L	P430400	
		Ibuprofen	0.080	U	ug/L	P430400	
		Imidacloprid	0.16		ug/L	P430400	
		Linuron	0.0040	U	ug/L	P430400	
		Mandestrobin	0.0020	U	ug/L	P430400	
		MCPP	0.022		ug/L	P430400	
		Naproxen	0.0080	U	ug/L	P430400	MS
		Primidone	0.0040	U	ug/L	P430400	
		Pyraclostrobin	0.0020	U	ug/L	P430400	
		Silvex	0.0040	U	ug/L	P430400	
		Thiamethoxam	0.0020	U	ug/L	P430400	
		Tolfenpyrad	0.0020	U	ug/L	P430400	
		Triclopyr	0.0040	U	ug/L	P430400	

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: Florence Lake at Center

Collection Date/Time: 05/23/2023 11:55

Field ID: G3CE0012

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2412236	DEP SOP: NU-094-1	Color (true)	86	A	PCU	P430345	
	EPA 180.1 Rev. 2.0	Turbidity	36		NTU	P430333	
	EPA 300.0 Rev. 2.1	Chloride	350		mg Cl/L	P430755	
		Sulfate	110		mg SO4/L	P430761	
	SM 2320 B-2011	Total Alkalinity	91		mg CaCO3/L	P430652	
	SM 2540 C-2015	TDS	916		mg/L	P430791	
	SM 2540 D-2015	TSS	47		mg/L	P430858	
2412237	SM 4500-F- C-2011	Fluoride	0.15		mg F/L	P430655	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P430661	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P430394	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.021		mg N/L	P430984	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P430418	
2412238	SM 5310 B-2011	Organic Carbon	19		mg C/L	P430448	
2412249	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P430346	
2412249	EPA 200.7 Rev. 4.4	Calcium	74.0		mg/L	P430405	
		Iron	1.79E+03		ug/L	P430405	
		Magnesium	28.7		mg/L	P430405	
		Potassium	5.6		mg/L	P430405	
		Sodium	175		mg/L	P430405	
		Strontium	3.14E+03		ug/L	P430405	
		Tin	3.0	U	ug/L	P430405	
	EPA 200.8 Rev. 5.4	Titanium	3.5		ug/L	P430405	
		Vanadium	3.0	I	ug/L	P430405	
		Zinc	9.6	I	ug/L	P430405	
		Aluminum	935		ug/L	P430405	
		Antimony	0.23		ug/L	P430405	
		Arsenic	2.09		ug/L	P430405	
		Barium	62.5		ug/L	P430405	
		Beryllium	0.048		ug/L	P430405	
		Boron	73.2		ug/L	P430405	
		Cadmium	0.022	I	ug/L	P430405	
		Chromium	1.4	I	ug/L	P430405	
		Cobalt	0.304		ug/L	P430405	
		Copper	2.16		ug/L	P430405	
		Lead	3.98		ug/L	P430405	
		Manganese	19.7		ug/L	P430405	
		Molybdenum	4.24		ug/L	P430405	
		Nickel	0.89	I	ug/L	P430405	
		Selenium	0.34	I	ug/L	P430405	
		Silver	0.010	U	ug/L	P430405	
		Thallium	0.10	U	ug/L	P430405	
	SM 2340 B-2011	Hardness	303		mg/L	P430405	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P430343

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P430345

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P430333

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P430405

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: P430405

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
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

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430755

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430761

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430661

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P430394

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430984

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P430418

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P430346

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

Reference Method: EPA 8321B
Batch ID: P430190

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P430400

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: P430652

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

Reference Method: SM 2540 C-2015

Batch ID: P430791

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015

Batch ID: P430858

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011

Batch ID: P430655

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P430448

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: P430343

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.8		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P430345

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: P430333

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	97.5		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P430405

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115
Iron	104		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	104		P	85 - 115
Sodium	96.1		P	85 - 115
Strontium	101		P	85 - 115
Tin	105		P	85 - 115
Titanium	102		P	85 - 115
Vanadium	101		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P430405

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.0		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	101		P	85 - 115
Barium	103		P	85 - 115
Beryllium	99.3		P	85 - 115
Boron	101		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	97.8		P	85 - 115
Cobalt	101		P	85 - 115
Copper	99.7		P	85 - 115
Lead	94.4		P	85 - 115
Manganese	97.4		P	85 - 115
Molybdenum	98.5		P	85 - 115
Nickel	98.7		P	85 - 115
Selenium	99.5		P	85 - 115
Silver	103		P	85 - 115
Thallium	97.8		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430755

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430761

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430661

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P430394

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430984

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P430418

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P430346

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.5		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P430190

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	116		P	40 - 150
AMPA	103		P	40 - 150
Endothall	146		P	40 - 150
Glufosinate	104		P	40 - 150
Glyphosate	101		P	40 - 150
Sucralose	114		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P430400

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	109		P	40 - 150
2,4,5-T	94.2		P	40 - 150
Acetaminophen	86.3		P	30 - 150
Acetamiprid	72.5		P	40 - 150
Afidopyropen	68.0		P	30 - 150
Bentazon	122		P	30 - 150
Benzovindiflupyr	78.2		P	40 - 150
Carbamazepine	85.7		P	40 - 150
Clothianidin	87.2		P	40 - 150
Dinotefuran	91.1		P	40 - 150
Diuron	97.4		P	40 - 150
Fenuron	82.8		P	40 - 150
Fluridone	84.8		P	40 - 150
Hydrocodone	86.1		P	40 - 150
Ibuprofen	77.4		P	40 - 150
Imazapyr	90.4		P	40 - 150
Imidacloprid	80.1		P	40 - 150
Linuron	75.9		P	40 - 150
Mandestrobin	83.3		P	40 - 150
MCPP	96.3		P	40 - 150
Naproxen	57.7		P	40 - 150
Primidone	75.4		P	40 - 150
Pyraclostrobin	70.0		P	40 - 150
Silvex	89.4		P	40 - 150
Thiamethoxam	85.7		P	40 - 150
Tolfenpyrad	51.9		P	30 - 150
Triclopyr	89.0		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P430652

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.9		P	92 - 105

Reference Method: SM 2540 C-2015

Batch ID: P430791

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

Reference Method: SM 2540 D-2015

Batch ID: P430858

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	88.1		P	85 - 106

Reference Method: SM 4500-F- C-2011

Batch ID: P430655

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P430448

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P430405

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2411765	Calcium	102		P	80 - 120
2411765	Iron	103	104	P/P	80 - 120
2411765	Magnesium	104		P	80 - 120
2411765	Potassium	106		P	80 - 120
2411765	Sodium	95.8		P	80 - 120
2411765	Strontium	101	99.7	P/P	80 - 120
2411765	Tin	98.7	97.9	P/P	80 - 120
2411765	Titanium	101	102	P/P	80 - 120
2411765	Vanadium	102	101	P/P	80 - 120
2411765	Zinc	102	102	P/P	80 - 120
2412143	Calcium	101		P	80 - 120
2412143	Iron	101		P	80 - 120
2412143	Magnesium	103		P	80 - 120
2412143	Potassium	102		P	80 - 120
2412143	Sodium	94.3		P	80 - 120
2412143	Strontium	100		P	80 - 120
2412143	Tin	104		P	80 - 120
2412143	Titanium	102		P	80 - 120
2412143	Vanadium	103		P	80 - 120
2412143	Zinc	102		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P430405

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2411765	Aluminum	98.7	101	P/P	80 - 120
2411765	Antimony	102	103	P/P	80 - 120
2411765	Arsenic	102	104	P/P	80 - 120
2411765	Barium	102	103	P/P	80 - 120
2411765	Beryllium	99.9	101	P/P	80 - 120
2411765	Boron	103	103	P/P	80 - 120
2411765	Cadmium	98.4	100	P/P	80 - 120
2411765	Chromium	96.7	97.3	P/P	80 - 120
2411765	Cobalt	101	102	P/P	80 - 120
2411765	Copper	101	102	P/P	80 - 120
2411765	Lead	95.3	96.5	P/P	80 - 120
2411765	Manganese	98.2	101	P/P	80 - 120
2411765	Molybdenum	100	103	P/P	80 - 120
2411765	Nickel	100	102	P/P	80 - 120
2411765	Selenium	100	102	P/P	80 - 120
2411765	Silver	101	102	P/P	80 - 120
2411765	Thallium	100	102	P/P	80 - 120
2412143	Aluminum	98.1		P	80 - 120
2412143	Antimony	101		P	80 - 120
2412143	Arsenic	99.7		P	80 - 120
2412143	Barium	104		P	80 - 120
2412143	Beryllium	96.1		P	80 - 120
2412143	Boron	102		P	80 - 120
2412143	Cadmium	99.4		P	80 - 120
2412143	Chromium	97.0		P	80 - 120
2412143	Cobalt	100		P	80 - 120
2412143	Copper	98.9		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P430405

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2412143	Lead	91.2		P	80 - 120
2412143	Manganese	101		P	80 - 120
2412143	Molybdenum	99.9		P	80 - 120
2412143	Nickel	99.6		P	80 - 120
2412143	Selenium	98.7		P	80 - 120
2412143	Silver	103		P	80 - 120
2412143	Thallium	95.0		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430755

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2412215	Chloride	94.8		P	90 - 110
2412322	Chloride	94.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430761

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2412215	Sulfate	97.4		P	90 - 110
2412322	Sulfate	95.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430661

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2412220	Ammonia-N	97.6	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P430394

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2412265	Kjeldahl Nitrogen	96.1	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430984

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2412217	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P430418

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2412216	Total-P	106	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P430346

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2412324	O-Phosphate-P	99.0	98.9	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P430190

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2411694	Acesulfame K	102	101	P/P	40 - 150
2411694	AMPA	75.9	75.3	P/P	40 - 150
2411694	Endothall	146	149	P/P	40 - 150
2411694	Glufosinate	60.2	65.4	P/P	40 - 150
2411694	Glyphosate	66.9	64.4	P/P	40 - 150
2411694	Sucralose	117	111	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P430400

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2412140	2,4-D	97.6	90.3	P/P	40 - 150
2412140	2,4,5-T	92.6	85.8	P/P	40 - 150
2412140	Acetaminophen	91.5	82.6	P/P	30 - 150
2412140	Afidopyropen	42.8	51.2	P/P	30 - 150
2412140	Carbamazepine	77.8	71.7	P/P	40 - 150
2412140	Clothianidin	100	92.8	P/P	40 - 150
2412140	Diuron	78.3	79.3	P/P	40 - 150
2412140	Fenuron	64.6	58.8	P/P	40 - 150
2412140	Fluridone	75.5	71.6	P/P	40 - 150
2412140	Hydrocodone	74.9	70.5	P/P	40 - 150
2412140	Ibuprofen	71.9	59.0	P/P	40 - 150
2412140	Imazapyr	92.5	88.9	P/P	40 - 150
2412140	Imidacloprid	121	106	P/P	40 - 150
2412140	Linuron	75.6	63.6	P/P	40 - 150
2412140	Mandestrobin	74.0	69.0	P/P	40 - 150
2412140	MCCP	89.9	83.6	P/P	40 - 150
2412140	Naproxen	37.4	34.5	F/F	40 - 150
2412140	Primidone	78.9	70.9	P/P	40 - 150
2412140	Silvex	71.1	63.5	P/P	40 - 150
2412140	Thiamethoxam	94.0	86.7	P/P	40 - 150
2412140	Tolfenpyrad	45.4	42.4	P/P	30 - 150
2412140	Triclopyr	95.0	89.6	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P430655

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2412213	Fluoride	102	102	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P430448

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2412099	Organic Carbon	92.6	95.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P430343

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2412214	Color (true)	0.752	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P430345

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2412236	Color (true)	1.09	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P430333

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2412108	Turbidity	0.396	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P430405

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2411765	Calcium	0.371	Spike	P	0 - 20
2411765	Iron	0.241	Spike	P	0 - 20
2411765	Magnesium	0.0418	Spike	P	0 - 20
2411765	Potassium	0.0829	Spike	P	0 - 20
2411765	Sodium	1.19	Spike	P	0 - 20
2411765	Strontium	0.845	Spike	P	0 - 20
2411765	Tin	0.730	Spike	P	0 - 20
2411765	Titanium	0.0750	Spike	P	0 - 20
2411765	Vanadium	0.371	Spike	P	0 - 20
2411765	Zinc	0.0963	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P430405

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2411765	Aluminum	2.43	Spike	P	0 - 20
2411765	Antimony	0.976	Spike	P	0 - 20
2411765	Arsenic	1.39	Spike	P	0 - 20
2411765	Barium	0.955	Spike	P	0 - 20
2411765	Beryllium	1.27	Spike	P	0 - 20
2411765	Boron	0.289	Spike	P	0 - 20
2411765	Cadmium	1.93	Spike	P	0 - 20
2411765	Chromium	0.636	Spike	P	0 - 20
2411765	Cobalt	0.780	Spike	P	0 - 20
2411765	Copper	0.431	Spike	P	0 - 20
2411765	Lead	1.27	Spike	P	0 - 20
2411765	Manganese	2.49	Spike	P	0 - 20
2411765	Molybdenum	2.73	Spike	P	0 - 20
2411765	Nickel	1.32	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P430405

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2411765	Selenium	1.49	Spike	P	0 - 20
2411765	Silver	1.60	Spike	P	0 - 20
2411765	Thallium	1.69	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430755

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2412215	Chloride	0.265	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430761

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2412215	Sulfate	0.961	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430661

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2412220	Ammonia-N	0.362	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P430394

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2412265	Kjeldahl Nitrogen	2.32	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430984

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2412217	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P430418

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2412216	Total-P	0.118	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P430346

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P430346

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2412324	O-Phosphate-P	0.101	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P430190

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2411694	Acesulfame K	0.681	Spike	P	0 - 30
2411694	AMPA	0.788	Spike	P	0 - 30
2411694	Endothall	2.18	Spike	P	0 - 30
2411694	Glufosinate	8.27	Spike	P	0 - 30
2411694	Glyphosate	3.86	Spike	P	0 - 30
2411694	Sucralose	4.39	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P430400

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2412140	2,4-D	7.84	Spike	P	0 - 30
2412140	2,4,5-T	7.64	Spike	P	0 - 30
2412140	Acetaminophen	10.2	Spike	P	0 - 30
2412140	Acetamiprid	12.7	Spike	P	0 - 30
2412140	Afidopyropen	17.9	Spike	P	0 - 30
2412140	Bentazon	1.81	Spike	P	0 - 30
2412140	Benzovindiflupyr	8.94	Spike	P	0 - 30
2412140	Carbamazepine	8.11	Spike	P	0 - 30
2412140	Clothianidin	6.79	Spike	P	0 - 30
2412140	Dinotefuran	0.636	Spike	P	0 - 30
2412140	Diuron	0.915	Spike	P	0 - 30
2412140	Fenuron	9.41	Spike	P	0 - 30
2412140	Fluridone	5.10	Spike	P	0 - 30
2412140	Hydrocodone	6.09	Spike	P	0 - 30
2412140	Ibuprofen	19.8	Spike	P	0 - 30
2412140	Imazapyr	3.96	Spike	P	0 - 30
2412140	Imidacloprid	7.29	Spike	P	0 - 30
2412140	Linuron	17.3	Spike	P	0 - 30
2412140	Mandestrobin	7.01	Spike	P	0 - 30
2412140	MCPP	7.31	Spike	P	0 - 30
2412140	Naproxen	8.02	Spike	P	0 - 30
2412140	Primidone	10.6	Spike	P	0 - 30
2412140	Pyraclostrobin	6.90	Spike	P	0 - 30
2412140	Silvex	11.4	Spike	P	0 - 30
2412140	Thiamethoxam	5.24	Spike	P	0 - 30
2412140	Tolfenpyrad	6.83	Spike	P	0 - 30
2412140	Triclopyr	5.93	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P430652

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2412213	Total Alkalinity	0.638	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P430791

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2412215	TDS	3.28	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P430655

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2412213	Fluoride	0.0	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P430448

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2412099	Organic Carbon	1.99	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2412248
Field Sample ID: G3CE0016

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	92.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	100	P	30 - 160
EPA 8321B	Carbamazepine-d10	70.7	P	30 - 160
EPA 8321B	Diuron-d6	65.9	P	30 - 160
EPA 8321B	Endothall-d6	129	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	73.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	55.6	P	30 - 160
EPA 8321B	Primidone-d5	82.3	P	30 - 160
EPA 8321B	Sucralose-d6	123	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A119380

Included Lab Sample IDs: 2412236, 2412239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	97.5	97.5	P/P	95 - 105

Reference Method: DEP SOP: NU-094-1

Run ID: A119382

Included Lab Sample IDs: 2412236, 2412239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.2	99.7	P/P	90 - 110
Color (true)	98.8	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A119384

Included Lab Sample IDs: 2412238

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.0	97.8	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A119426

Included Lab Sample IDs: 2412237, 2412240

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A119433

Included Lab Sample IDs: 2412237

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A119434

Included Lab Sample IDs: 2412240

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	97.8	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A119443

Included Lab Sample IDs: 2412248

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	99.2	105	P/P	60 - 160
Endothall	148	150	P/P	60 - 160
Glufosinate	91.3	105	P/P	60 - 160
Glyphosate	87.2	91.2	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A119444
Included Lab Sample IDs: 2412248

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	145	147	P/P	60 - 160
Sucralose	111	108	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A119456
Included Lab Sample IDs: 2412249

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.8	99.5	P/P	90 - 110
Antimony	99.2	98.7	P/P	90 - 110
Arsenic	99.0	98.2	P/P	90 - 110
Barium	97.1	98.4	P/P	90 - 110
Beryllium	98.6	98.2	P/P	90 - 110
Boron	97.5	98.7	P/P	90 - 110
Cadmium	98.8	98.1	P/P	90 - 110
Chromium	100	100	P/P	90 - 110
Cobalt	101	100	P/P	90 - 110
Copper	95.7	96.4	P/P	90 - 110
Lead	92.8	92.8	P/P	90 - 110
Manganese	97.6	98.1	P/P	90 - 110
Molybdenum	97.8	97.6	P/P	90 - 110
Nickel	97.9	96.0	P/P	90 - 110
Selenium	98.0	97.2	P/P	90 - 110
Silver	101	101	P/P	90 - 110
Thallium	97.0	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A119470
Included Lab Sample IDs: 2412237, 2412240

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	107	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A119496
Included Lab Sample IDs: 2412236, 2412239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.8	98.6	P/P	90 - 110
Chloride	98.6	98.5	P/P	90 - 110
Sulfate	96.8	97.7	P/P	90 - 110
Sulfate	97.7	97.5	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A119510
Included Lab Sample IDs: 2412236, 2412239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	93.9	97.3	P/P	90 - 110
Total Alkalinity	97.7	93.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A119510

Included Lab Sample IDs: 2412236, 2412239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	104	104	P/P	90 - 110
Fluoride	104	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A119511

Included Lab Sample IDs: 2412237, 2412240

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.4	99.1	P/P	90 - 110
Ammonia-N	98.6	98.4	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A119529

Included Lab Sample IDs: 2412249

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	101	P/P	90 - 110
Iron	103	102	P/P	90 - 110
Magnesium	102	101	P/P	90 - 110
Potassium	102	102	P/P	90 - 110
Sodium	94.2	95.2	P/P	90 - 110
Strontium	99.3	99.8	P/P	90 - 110
Tin	100	99.6	P/P	90 - 110
Titanium	101	101	P/P	90 - 110
Vanadium	99.8	99.9	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A119557

Included Lab Sample IDs: 2412249

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Zinc	99.7	102	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A119586

Included Lab Sample IDs: 2412248

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	97.6	94.1	P/P	50 - 150
2,4,5-T	101	117	P/P	50 - 150
Acetaminophen	104	104	P/P	60 - 160
Acetamiprid	98.3	103	P/P	50 - 150
Afidopyropen	122	101	P/P	50 - 150
Bentazon	136	130	P/P	50 - 160
Benzovindiflupyr	103	99.2	P/P	50 - 150
Carbamazepine	106	109	P/P	60 - 150
Clothianidin	103	104	P/P	60 - 150
Dinotefuran	116	111	P/P	50 - 150
Diuron	117	124	P/P	60 - 160
Fenuron	99.8	103	P/P	60 - 150
Fluridone	113	104	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A119586
Included Lab Sample IDs: 2412248

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Hydrocodone	106	108	P/P	60 - 150
Ibuprofen	69.0	97.1	P/P	50 - 160
Imazapyr	107	116	P/P	50 - 150
Imidacloprid	99.0	101	P/P	60 - 150
Linuron	116	105	P/P	60 - 150
Mandestrobin	108	106	P/P	50 - 150
MCPP	103	105	P/P	50 - 150
Naproxen	68.5	106	P/P	50 - 160
Primidone	93.6	101	P/P	60 - 150
Pyraclostrobin	102	103	P/P	60 - 150
Silvex	109	105	P/P	50 - 150
Thiamethoxam	101	106	P/P	50 - 150
Tolfenpyrad	95.6	99.0	P/P	60 - 150
Triclopyr	94.4	82.7	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A119661
Included Lab Sample IDs: 2412237, 2412240

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

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
DEP SOP: NU-094-1	Color (true)	98.8				0.752	
	Color (true)	101				1.09	
EPA 180.1 Rev. 2.0	Turbidity	97.5				0.396	
EPA 200.7 Rev. 4.4	Calcium	102	102	101			0.371
	Iron	104	103	104	101		0.241
	Magnesium	104	104	103			0.0418
	Potassium	104	106	102			0.0829
	Sodium	96.1	95.8	94.3			1.19
	Strontium	101	101	99.7	100		0.845
	Tin	105	98.7	97.9	104		0.730
	Titanium	102	101	102	102		0.0750
	Vanadium	101	102	101	103		0.371
	Zinc	101	102	102	102		0.0963
EPA 200.8 Rev. 5.4	Aluminum	99.0	98.7	101	98.1		2.43
	Antimony	101	102	103	101		0.976
	Arsenic	101	102	104	99.7		1.39
	Barium	103	102	103	104		0.955
	Beryllium	99.3	99.9	101	96.1		1.27
	Boron	101	103	103	102		0.289
	Cadmium	101	98.4	100	99.4		1.93
	Chromium	97.8	96.7	97.3	97.0		0.636
	Cobalt	101	101	102	100		0.780
	Copper	99.7	101	102	98.9		0.431
	Lead	94.4	95.3	96.5	91.2		1.27
	Manganese	97.4	98.2	101	101		2.49
	Molybdenum	98.5	100	103	99.9		2.73
	Nickel	98.7	100	102	99.6		1.32
	Selenium	99.5	100	102	98.7		1.49
	Silver	103	101	102	103		1.60
	Thallium	97.8	100	102	95.0		1.69
EPA 300.0 Rev. 2.1	Chloride	99.2	94.8	94.7		0.265	
	Sulfate	97.8	97.4	95.6		0.961	
EPA 350.1 Rev. 2.0	Ammonia-N	96.4	97.6	97.2			0.362
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	96.1	100			2.32
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104	104			0.0
EPA 365.1 Rev. 2.0	Total-P	102	106	106			0.118
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.5	99.0	98.9			0.101
EPA 8321B	2,4-D	109	97.6	90.3			7.84
	2,4,5-T	94.2	92.6	85.8			7.64
	Acesulfame K	116	102	101			0.681
	Acetaminophen	86.3	91.5	82.6			10.2
	Acetamiprid	72.5					12.7
	Afidopyropen	68.0	42.8	51.2			17.9
	AMPA	103	75.9	75.3			0.788
	Bentazon	122					1.81
	Benzovindiflupyr	78.2					8.94
	Carbamazepine	85.7	77.8	71.7			8.11
	Clothianidin	87.2	100	92.8			6.79
	Dinotefuran	91.1					0.636
	Diuron	97.4	78.3	79.3			0.915
	Endothall	146	146	149			2.18
	Fenuron	82.8	64.6	58.8			9.41
	Fluridone	84.8	75.5	71.6			5.10
	Glufosinate	104	60.2	65.4			8.27

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Glyphosate	101	66.9	64.4		3.86
	Hydrocodone	86.1	74.9	70.5		6.09
	Ibuprofen	77.4	71.9	59.0		19.8
	Imazapyr	90.4	92.5	88.9		3.96
	Imidacloprid	80.1	121	106		7.29
	Linuron	75.9	75.6	63.6		17.3
	Mandestrobin	83.3	74.0	69.0		7.01
	MCP	96.3	89.9	83.6		7.31
	Naproxen	57.7	37.4	34.5		8.02
	Primidone	75.4	78.9	70.9		10.6
	Pyraclorobin	70.0				6.90
	Silvex	89.4	71.1	63.5		11.4
	Sucralose	114	117	111		4.39
	Thiamethoxam	85.7	94.0	86.7		5.24
	Tolfenpyrad	51.9	45.4	42.4		6.83
	Triclopyr	89.0	95.0	89.6		5.93
SM 2320 B-2011	Total Alkalinity	97.9			0.638	
SM 2540 C-2015	TDS	104			3.28	
SM 2540 D-2015	TSS	88.1				
SM 4500-F- C-2011	Fluoride	102	102	102		0.0
SM 5310 B-2011	Organic Carbon	93.4	92.6	95.2		1.99

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2412236, 2412239
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2412236, 2412239
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2412249
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2412249
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2412236, 2412239
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2412236, 2412239
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2412237, 2412240
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2412237, 2412240
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2412237, 2412240
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2412237, 2412240
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2412238
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2412248
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2412236, 2412239
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2412249
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2412236, 2412239
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2412236, 2412239
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2412236, 2412239
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2412237, 2412240

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	05/24/2023			05/24/2023 14:59	Anna M. Plaviak	2412239
	05/24/2023			05/24/2023 15:14	Anna M. Plaviak	2412236
EPA 180.1 Rev. 2.0	05/24/2023			05/24/2023 14:13	Alexis Price	2412236
	05/24/2023			05/24/2023 14:16	Alexis Price	2412239
EPA 200.7 Rev. 4.4	05/24/2023	05/25/2023 12:45	George D Taylor	06/01/2023 23:39	McKinley C Carter	2412249
	05/24/2023	05/25/2023 12:45	George D Taylor	06/02/2023 14:44	McKinley C Carter	2412249
EPA 200.8 Rev. 5.4	05/24/2023	05/25/2023 12:45	George D Taylor	05/26/2023 18:44	Emily M Philpot	2412249
EPA 300.0 Rev. 2.1	05/24/2023			06/01/2023 16:18	James L Waggeberby	2412236
	05/24/2023			06/01/2023 17:03	James L Waggeberby	2412239
EPA 350.1 Rev. 2.0	05/24/2023			05/31/2023 14:42	Khloe J Berg	2412237
	05/24/2023			05/31/2023 15:14	Khloe J Berg	2412240
EPA 351.2 Rev. 2.0	05/24/2023	05/25/2023 11:58	Dana G. Hughes	05/30/2023 13:01	Ping Hua	2412237
	05/24/2023	05/25/2023 11:58	Dana G. Hughes	05/30/2023 13:02	Ping Hua	2412240
EPA 353.2 Rev. 2.0	05/24/2023			06/08/2023 09:57	Beverly Y. Sanders	2412237
	05/24/2023			06/08/2023 09:59	Beverly Y. Sanders	2412240
EPA 365.1 Rev. 2.0	05/24/2023	05/25/2023 14:40	Adam P Silver	05/26/2023 11:43	Chandler E Cox	2412237
	05/24/2023	05/25/2023 14:40	Adam P Silver	05/26/2023 12:16	Chandler E Cox	2412240
EPA 365.1 Rev. 2.0 dissolved	05/24/2023			05/24/2023 15:39	Adam P Silver	2412238
EPA 8321B	05/24/2023	05/24/2023 12:00	Touraj Touran	05/24/2023 17:07	Touraj Touran	2412248
	05/24/2023	05/24/2023 12:00	Touraj Touran	05/25/2023 05:02	Touraj Touran	2412248
	05/24/2023	05/30/2023 09:00	Hoor Shaik	06/05/2023 19:38	Juyoung Kim	2412248
	05/24/2023	05/30/2023 09:00	Hoor Shaik	06/06/2023 11:36	Juyoung Kim	2412248
SM 2320 B-2011	05/24/2023			05/31/2023 21:03	Dale L. Simmons	2412239
	05/24/2023			05/31/2023 22:30	Dale L. Simmons	2412236
SM 2340 B-2011	05/24/2023			06/01/2023 23:39	McKinley C Carter	2412249
SM 2540 C-2015	05/24/2023			05/26/2023 16:01	Yijie Li	2412236, 2412239
SM 2540 D-2015	05/24/2023			05/26/2023 16:01	Yijie Li	2412236, 2412239
SM 4500-F- C-2011	05/24/2023			05/31/2023 21:03	Dale L. Simmons	2412239
	05/24/2023			05/31/2023 22:30	Dale L. Simmons	2412236
SM 5310 B-2011	05/24/2023			05/26/2023 04:27	Elise M. Gillis	2412237
	05/24/2023			05/26/2023 04:41	Elise M. Gillis	2412240