

Chemical Analysis Report

NE-DIST-2021-04-30-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

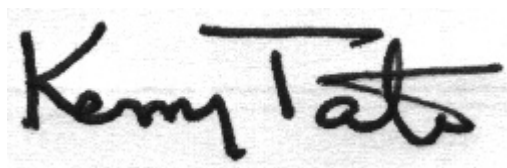
Event Description: **LSJR Lake 2021**
Request ID: **RQ-2021-04-12-40**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

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

Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 24-MAY-2021 13:48

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: Silver lake Center

Collection Date/Time: 04/29/2021 11:20

Field ID: G2NE1132

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2244470	EPA 180.1 Rev. 2.0	Turbidity	0.50		NTU	P397497	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P398559	
		Sulfate	4.0		mg SO4/L	P398562	
	SM 2120 B-2011	Color (true)	420		PCU	P397501	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P398017	
	SM 2540 C-2011	TDS	92		mg/L	P397914	
	SM 2540 D-2011	TSS	2	I	mg/L	P397793	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P397639	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.053		mg N/L	P398153	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P398356	
2244471	EPA 353.2 Rev. 2.0	NO2NO3-N	0.089		mg N/L	P397656	
	EPA 365.1 Rev. 2.0	Total-P	0.034		mg P/L	P397970	
	SM 5310 B-2011	Organic Carbon	32		mg C/L	P397882	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.015		mg P/L	P397487	
	dissolved						

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: LAKE BROWARD North

Collection Date/Time: 04/29/2021 12:40

Field ID: G2NE1219

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2244473	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P397498	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P398559	
		Sulfate	10		mg SO4/L	P398562	
	SM 2120 B-2011	Color (true)	11		PCU	P397502	
	SM 2320 B-2011	Total Alkalinity	2.5		mg CaCO3/L	P398017	
	SM 2540 C-2011	TDS	51		mg/L	P397914	
	SM 2540 D-2011	TSS	2	U	mg/L	P397793	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P397639	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P398154	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P398065	
2244475	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P397656	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P397970	
	SM 5310 B-2011	Organic Carbon	5.3		mg C/L	P397882	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P397487	
	EPA 8321B	2,4-D	0.33		ug/L	P397580	
2244484		Acesulfame K	0.10	U	ug/L	P397538	MS
		2,4,5-T	0.0040	U	ug/L	P397580	
		AMPA	0.10	U	ug/L	P397538	
		Sucralose	0.23		ug/L	P397538	MS
		Acetaminophen	0.0080	U	ug/L	P397580	
		Acetamiprid	0.0020	U	ug/L	P397580	
		Endothall	0.25	U	ug/L	P397538	
		Glufosinate	0.10	U	ug/L	P397538	
		Glyphosate	0.10	U	ug/L	P397538	
		Afidopyropen	0.0020	U	ug/L	P397580	
		Bentazon	8.0E-04	U	ug/L	P397580	
		Benzovindiflupyr	0.0020	U	ug/L	P397580	
		Carbamazepine	8.0E-04	U	ug/L	P397580	
		Clothianidin	0.0020	U	ug/L	P397580	
		Dinotefuran	0.0020	U	ug/L	P397580	
		Diuron	0.0020	U	ug/L	P397580	
		Fenuron	0.016	U	ug/L	P397580	
		Fluridone	0.0034		ug/L	P397580	
		Imazapyr	0.068		ug/L	P397580	
		Hydrocodone	0.0020	U	ug/L	P397580	
		Ibuprofen	0.020	U	ug/L	P397580	
		Imidacloprid	0.0020	U	ug/L	P397580	
		Linuron	0.0040	U	ug/L	P397580	
		Mandestrobin	0.0020	U	ug/L	P397580	
		MCPP	0.0020	U	ug/L	P397580	
		Naproxen	0.0080	U	ug/L	P397580	
		Primidone	0.0040	U	ug/L	P397580	
		Pyraclostrobin	0.0020	U	ug/L	P397580	

Field ID: G2NE1219

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2244484	EPA 8321B	Thiamethoxam	0.0020	U	ug/L	P397580	
		Tolfenpyrad	0.0020	U	ug/L	P397580	
		Triclopyr	0.0040	U	ug/L	P397580	
2244486	EPA 200.7 Rev. 4.4	Barium	10.1		ug/L	P398090	
		Calcium	4.29		mg/L	P398090	
		Iron	30	U	ug/L	P398090	
	EPA 200.8 Rev. 5.4	Magnesium	1.52		mg/L	P398090	
		Manganese	3.3	I	ug/L	P398090	
		Potassium	0.98	I	mg/L	P398090	
		Sodium	8.8		mg/L	P398090	
		Zinc	5.0	U	ug/L	P398090	
		Aluminum	39		ug/L	P398090	
		Antimony	0.084	I	ug/L	P398090	
		Arsenic	2.30		ug/L	P398090	
		Beryllium	0.010	U	ug/L	P398090	
		Boron**	29.6		ug/L	P398090	
		Cadmium	0.020	U	ug/L	P398090	
		Chromium	0.40	U	ug/L	P398090	
		Copper	0.51	I	ug/L	P398090	
		Lead	0.20	U	ug/L	P398090	
		Nickel	0.50	U	ug/L	P398090	
		Selenium	0.40	U	ug/L	P398090	
		Silver	0.010	U	ug/L	P398090	
		Thallium	0.10	U	ug/L	P398090	
	SM 2340B	Hardness	17.0		mg/L	P398090	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: LAKE BROWARD South

Collection Date/Time: 04/29/2021 13:10

Field ID: G2NE1218

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2244474	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P397498	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P398559	
		Sulfate	10		mg SO4/L	P398562	
	SM 2120 B-2011	Color (true)	18	A	PCU	P397502	
	SM 2320 B-2011	Total Alkalinity	3.1		mg CaCO3/L	P398017	
	SM 2540 C-2011	TDS	52		mg/L	P397914	
	SM 2540 D-2011	TSS	3	I	mg/L	P397793	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P397639	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P398154	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P398065	
2244476	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P397656	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P397970	
	SM 5310 B-2011	Organic Carbon	6.5		mg C/L	P397882	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P397487	
	dissolved						
2244485	EPA 8321B	2,4-D	0.55		ug/L	P397580	
		Acesulfame K	0.10	U	ug/L	P397538	MS
		2,4,5-T	0.0040	U	ug/L	P397580	
		AMPA	0.10	U	ug/L	P397538	
		Sucralose	0.30		ug/L	P397538	MS
		Acetaminophen	0.0080	U	ug/L	P397580	
		Acetamiprid	0.0020	U	ug/L	P397580	
		Endothall	0.25	U	ug/L	P397538	
		Glufosinate	0.10	U	ug/L	P397538	
		Glyphosate	0.10	U	ug/L	P397538	
		Afidopyropen	0.0020	U	ug/L	P397580	
		Bentazon	8.0E-04	U	ug/L	P397580	
		Benzovindiflupyr	0.0020	U	ug/L	P397580	
		Carbamazepine	8.0E-04	U	ug/L	P397580	
		Clothianidin	0.0020	U	ug/L	P397580	
		Dinotefuran	0.0020	U	ug/L	P397580	
		Diuron	0.0020	U	ug/L	P397580	
		Fenuron	0.016	U	ug/L	P397580	
		Fluridone	0.0089		ug/L	P397580	
		Imazapyr	0.39		ug/L	P397580	
		Hydrocodone	0.0020	U	ug/L	P397580	
		Ibuprofen	0.020	U	ug/L	P397580	
		Imidacloprid	0.0020	U	ug/L	P397580	
		Linuron	0.0040	U	ug/L	P397580	
		Mandestrobin	0.0020	U	ug/L	P397580	
		MCP	0.0020	U	ug/L	P397580	
		Naproxen	0.0080	U	ug/L	P397580	
		Primidone	0.0040	U	ug/L	P397580	
		Pyraclostrobin	0.0020	U	ug/L	P397580	

Field ID: G2NE1218

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2244485	EPA 8321B	Thiamethoxam	0.0020	U	ug/L	P397580	
		Tolfenpyrad	0.0020	U	ug/L	P397580	
		Triclopyr	0.0040	U	ug/L	P397580	
2244487	EPA 200.7 Rev. 4.4	Barium	9.4		ug/L	P398090	
		Calcium	4.79		mg/L	P398090	
		Iron	47	I	ug/L	P398090	
		Magnesium	1.49		mg/L	P398090	
		Manganese	6.0		ug/L	P398090	
		Potassium	1.0	I	mg/L	P398090	
		Sodium	8.7		mg/L	P398090	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P398090	
		Aluminum	47		ug/L	P398090	
		Antimony	0.077	I	ug/L	P398090	
		Arsenic	3.04		ug/L	P398090	
		Beryllium	0.010	U	ug/L	P398090	
		Boron**	30.2		ug/L	P398090	
		Cadmium	0.020	U	ug/L	P398090	
		Chromium	0.40	U	ug/L	P398090	
		Copper	1.09		ug/L	P398090	
		Lead	0.20	U	ug/L	P398090	
		Nickel	0.50	U	ug/L	P398090	
		Selenium	0.40	U	ug/L	P398090	
		Silver	0.010	U	ug/L	P398090	
		Thallium	0.10	U	ug/L	P398090	
	SM 2340B	Hardness	18.1		mg/L	P398090	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P397497

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P397498

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P398090

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P398090

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	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
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.40	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: P398559

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398562

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398153

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398154

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398065

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398356

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P397656

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P397970

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P397487

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

Reference Method: EPA 8321B
Batch ID: P397538

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: P397580

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	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	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
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B-2011

Batch ID: P397501

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011

Batch ID: P397502

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P398017

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

Reference Method: SM 2540 C-2011

Batch ID: P397914

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P397793

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P397639

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P397882

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P398090

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	98.9		P	85 - 115
Calcium	93.7		P	85 - 115
Iron	104		P	85 - 115
Magnesium	102		P	85 - 115
Manganese	103		P	85 - 115
Potassium	95.2		P	85 - 115
Sodium	89.0		P	85 - 115
Zinc	98.8		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P398090

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	95.3		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	105		P	85 - 115
Beryllium	97.7		P	85 - 115
Boron	106		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	98.2		P	85 - 115
Copper	102		P	85 - 115
Lead	101		P	85 - 115
Nickel	101		P	85 - 115
Selenium	101		P	85 - 115
Silver	105		P	85 - 115
Thallium	108		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398559

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398562

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398153

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398154

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398065

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398356

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: P397656

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P397970

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P397487

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.6		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P397538

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	137		P	40 - 150
AMPA	98.9		P	40 - 150
Endothall	79.2		P	40 - 150
Glufosinate	111		P	40 - 150
Glyphosate	90.7		P	40 - 140
Sucralose	84.5		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P397580

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	113		P	30 - 160
2,4,5-T	119		P	30 - 160
Acetaminophen	121		P	30 - 160
Acetamiprid	77.3		P	30 - 160
Afidopyropen	69.0		P	30 - 160
Bentazon	142		P	30 - 160
Benzovindiflupyr	72.2		P	30 - 160
Carbamazepine	83.2		P	30 - 160
Clothianidin	95.3		P	30 - 160
Dinotefuran	79.5		P	30 - 160
Diuron	59.6		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P397580

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	99.9		P	30 - 160
Fluridone	85.7		P	30 - 160
Hydrocodone	90.3		P	30 - 160
Ibuprofen	74.8		P	30 - 160
Imazapyr	100		P	30 - 160
Imidacloprid	101		P	30 - 160
Linuron	67.8		P	30 - 160
Mandestrobin	84.8		P	30 - 160
MCP	115		P	30 - 160
Naproxen	67.9		P	30 - 160
Primidone	81.7		P	30 - 160
Pyraclostrobin	70.5		P	30 - 160
Thiamethoxam	90.5		P	30 - 160
Tolfenpyrad	46.4		P	30 - 160
Triclopyr	119		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P397501

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.7		P	85 - 115

Reference Method: SM 2120 B-2011
Batch ID: P397502

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P398017

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P397639

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.8		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P397882

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P398090

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2244083	Barium	106		P	80 - 120
2244083	Calcium	106		P	80 - 120
2244083	Iron	106		P	80 - 120
2244083	Magnesium	103		P	80 - 120
2244083	Manganese	110		P	80 - 120
2244083	Potassium	95.0		P	80 - 120
2244083	Sodium	100		P	80 - 120
2244083	Zinc	106		P	80 - 120
2244486	Barium	100	102	P/P	80 - 120
2244486	Calcium	97.0		P	80 - 120
2244486	Iron	105	109	P/P	80 - 120
2244486	Magnesium	102	108	P/P	80 - 120
2244486	Manganese	105	107	P/P	80 - 120
2244486	Potassium	96.7	99.2	P/P	80 - 120
2244486	Sodium	92.2		P	80 - 120
2244486	Zinc	101	103	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P398090

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2244083	Aluminum	91.7		P	80 - 120
2244083	Antimony	101		P	80 - 120
2244083	Arsenic	105		P	80 - 120
2244083	Beryllium	98.6		P	80 - 120
2244083	Boron	109		P	80 - 120
2244083	Cadmium	102		P	80 - 120
2244083	Chromium	97.5		P	80 - 120
2244083	Copper	104		P	80 - 120
2244083	Lead	103		P	80 - 120
2244083	Nickel	102		P	80 - 120
2244083	Selenium	99.8		P	80 - 120
2244083	Silver	105		P	80 - 120
2244083	Thallium	109		P	80 - 120
2244486	Aluminum	94.9	95.1	P/P	80 - 120
2244486	Antimony	102	102	P/P	80 - 120
2244486	Arsenic	104	104	P/P	80 - 120
2244486	Beryllium	98.9	102	P/P	80 - 120
2244486	Boron	103	99.9	P/P	80 - 120
2244486	Cadmium	102	102	P/P	80 - 120
2244486	Chromium	98.1	98.7	P/P	80 - 120
2244486	Copper	100	100	P/P	80 - 120
2244486	Lead	102	102	P/P	80 - 120
2244486	Nickel	98.4	98.7	P/P	80 - 120
2244486	Selenium	101	102	P/P	80 - 120
2244486	Silver	104	104	P/P	80 - 120
2244486	Thallium	108	109	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P398559

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
---------------	-----------	---------	---------	-----------	----------------

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398559

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2244181	Chloride	96.9		P	90 - 110
2244474	Chloride	97.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398562

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2244181	Sulfate	96.2		P	90 - 110
2244474	Sulfate	96.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398153

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2244415	Ammonia-N	95.4	96.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398154

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2244475	Ammonia-N	95.0	96.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2245461	Kjeldahl Nitrogen	106	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398356

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246351	Kjeldahl Nitrogen	102	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P397656

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2244425	NO2NO3-N	99.0	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P397970

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2244415	Total-P	105	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P397487

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2244335	O-Phosphate-P	92.4	94.5	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P397538

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2243842	Acesulfame K	172	168	F/F	40 - 150
2243842	AMPA	103	109	P/P	40 - 150
2243842	Endothall	117	91.8	P/P	40 - 150
2243842	Glufosinate	74.7	71.8	P/P	40 - 150
2243842	Glyphosate	88.9	117	P/P	40 - 140
2243842	Sucralose	26.7	39.0	F/F	40 - 150

Reference Method: EPA 8321B
Batch ID: P397580

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2243842	2,4-D	118	113	P/P	30 - 160
2243842	2,4,5-T	99.2	107	P/P	30 - 160
2243842	Acetaminophen	88.3	90.1	P/P	30 - 160
2243842	Acetamiprid	72.6	73.5	P/P	30 - 160
2243842	Afidopyropen	77.1	78.2	P/P	30 - 160
2243842	Benzovindiflupyr	68.8	72.0	P/P	30 - 160
2243842	Carbamazepine	65.0	67.6	P/P	30 - 160
2243842	Clothianidin	100	95.6	P/P	30 - 160
2243842	Dinotefuran	98.3	101	P/P	30 - 160
2243842	Diuron	41.6	43.5	P/P	30 - 160
2243842	Fenuron	73.7	77.4	P/P	30 - 160
2243842	Hydrocodone	94.8	86.9	P/P	30 - 160
2243842	Ibuprofen	65.8	75.4	P/P	30 - 160
2243842	Imidacloprid	125	137	P/P	30 - 160
2243842	Linuron	52.2	60.4	P/P	30 - 160
2243842	Mandestrobin	73.9	81.0	P/P	30 - 160
2243842	MCP	98.8	103	P/P	30 - 160
2243842	Naproxen	62.4	81.0	P/P	30 - 160
2243842	Primidone	94.7	93.6	P/P	30 - 160
2243842	Pyraclostrobin	67.7	75.2	P/P	30 - 160
2243842	Thiamethoxam	111	119	P/P	30 - 160
2243842	Tolfenpyrad	43.3	47.7	P/P	30 - 160
2243842	Triclopyr	104	114	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P397639

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2244453	Fluoride	97.5	98.0	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P397882

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2245283	Organic Carbon	98.8	98.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P397497

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244178	Turbidity	1.47	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P397498

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244317	Turbidity	3.33	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P398090

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244486	Barium	1.08	Spike	P	0 - 20
2244486	Calcium	2.43	Spike	P	0 - 20
2244486	Iron	3.30	Spike	P	0 - 20
2244486	Magnesium	3.69	Spike	P	0 - 20
2244486	Manganese	1.33	Spike	P	0 - 20
2244486	Potassium	2.05	Spike	P	0 - 20
2244486	Sodium	2.38	Spike	P	0 - 20
2244486	Zinc	1.46	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P398090

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244486	Aluminum	0.191	Spike	P	0 - 20
2244486	Antimony	0.108	Spike	P	0 - 20
2244486	Arsenic	0.0246	Spike	P	0 - 20
2244486	Beryllium	2.77	Spike	P	0 - 20
2244486	Boron	2.47	Spike	P	0 - 20
2244486	Cadmium	0.153	Spike	P	0 - 20
2244486	Chromium	0.620	Spike	P	0 - 20
2244486	Copper	0.0450	Spike	P	0 - 20
2244486	Lead	0.0253	Spike	P	0 - 20
2244486	Nickel	0.322	Spike	P	0 - 20
2244486	Selenium	1.67	Spike	P	0 - 20
2244486	Silver	0.0953	Spike	P	0 - 20
2244486	Thallium	0.215	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398559

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244181	Chloride	0.616	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398562

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244181	Sulfate	0.897	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398153

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244415	Ammonia-N	0.915	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398154

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244475	Ammonia-N	1.36	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2245461	Kjeldahl Nitrogen	4.41	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398356

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246351	Kjeldahl Nitrogen	3.50	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P397656

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244425	NO2NO3-N	1.01	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P397970

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244415	Total-P	0.897	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P397487

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244335	O-Phosphate-P	2.25	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P397538

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2243842	Acesulfame K	2.43	Spike	P	0 - 30
2243842	AMPA	4.71	Spike	P	0 - 30
2243842	Endothall	24.5	Spike	P	0 - 30
2243842	Glufosinate	4.02	Spike	P	0 - 30
2243842	Glyphosate	23.7	Spike	P	0 - 30
2243842	Sucralose	19.3	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P397580

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2243842	2,4-D	3.56	Spike	P	0 - 30
2243842	2,4,5-T	7.20	Spike	P	0 - 30
2243842	Acetaminophen	1.93	Spike	P	0 - 30
2243842	Acetamiprid	1.31	Spike	P	0 - 30
2243842	Afidopyropen	1.37	Spike	P	0 - 30
2243842	Bentazon	14.1	Spike	P	0 - 30
2243842	Benzovindiflupyr	4.52	Spike	P	0 - 30
2243842	Carbamazepine	3.44	Spike	P	0 - 30
2243842	Clothianidin	4.47	Spike	P	0 - 30
2243842	Dinotefuran	2.16	Spike	P	0 - 30
2243842	Diuron	3.88	Spike	P	0 - 30
2243842	Fenuron	4.81	Spike	P	0 - 30
2243842	Fluridone	11.7	Spike	P	0 - 30
2243842	Hydrocodone	8.60	Spike	P	0 - 30
2243842	Ibuprofen	13.6	Spike	P	0 - 30
2243842	Imazapyr	2.18	Spike	P	0 - 30
2243842	Imidacloprid	8.69	Spike	P	0 - 30
2243842	Linuron	14.6	Spike	P	0 - 30
2243842	Mandestrobin	9.17	Spike	P	0 - 30
2243842	MCPP	4.07	Spike	P	0 - 30
2243842	Naproxen	26.0	Spike	P	0 - 30
2243842	Primidone	1.11	Spike	P	0 - 30
2243842	Pyraclostrobin	10.6	Spike	P	0 - 30
2243842	Thiamethoxam	6.90	Spike	P	0 - 30
2243842	Tolfenpyrad	9.73	Spike	P	0 - 30
2243842	Triclopyr	9.46	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P397501

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244182	Color (true)	0.190	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P397502

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

Quality Assurance Report Precision

Reference Method: SM 2120 B-2011
Batch ID: P397502

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244474	Color (true)	1.70	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P398017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244453	Total Alkalinity	1.41	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P397914

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244178	TDS	5.37	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P397639

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2244453	Fluoride	0.474	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P397882

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2245283	Organic Carbon	0.469	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2244484

Field Sample ID: G2NE1219

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	138	P	30 - 160
EPA 8321B	Acetaminophen-d4	101	P	30 - 160
EPA 8321B	Carbamazepine-d10	80.9	P	30 - 160
EPA 8321B	Diuron-d6	61.6	P	30 - 160
EPA 8321B	Endothall-d6	79.3	P	40 - 160
EPA 8321B	Endothall-d6	79.3	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	93.8	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	93.8	P	40 - 160
EPA 8321B	Ibuprofen-d3	86.1	P	30 - 160
EPA 8321B	Primidone-d5	99.8	P	30 - 160
EPA 8321B	Sucralose-d6	98.8	P	30 - 160
EPA 8321B	Sucralose-d6	98.8	P	30 - 160

Lab Sample ID: 2244485

Field Sample ID: G2NE1218

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	133	P	30 - 160
EPA 8321B	Acetaminophen-d4	97.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	77.2	P	30 - 160
EPA 8321B	Diuron-d6	56.5	P	30 - 160
EPA 8321B	Endothall-d6	91.3	P	40 - 160
EPA 8321B	Endothall-d6	91.3	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	87.5	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	87.5	P	40 - 160
EPA 8321B	Ibuprofen-d3	84.5	P	30 - 160
EPA 8321B	Primidone-d5	85.8	P	30 - 160
EPA 8321B	Sucralose-d6	96.5	P	30 - 160
EPA 8321B	Sucralose-d6	96.5	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A105108

Included Lab Sample IDs: 2244472, 2244477, 2244478

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	103	102	P/P	90 - 110
O-Phosphate-P	99.3	103	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A105114

Included Lab Sample IDs: 2244470, 2244473, 2244474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	98.0	P/P	95 - 105
Turbidity	98.0	99.0	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A105115

Included Lab Sample IDs: 2244470, 2244473, 2244474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	90 - 115

Reference Method: EPA 8321B

Run ID: A105159

Included Lab Sample IDs: 2244484, 2244485

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	108	91.5	P/P	40 - 160
AMPA	81.0	79.7	P/P	40 - 160
Endothall	91.5	90.4	P/P	40 - 160
Glufosinate	75.2	80.3	P/P	40 - 160
Glyphosate	103	115	P/P	40 - 160

Reference Method: SM 4500 F-C-2011

Run ID: A105174

Included Lab Sample IDs: 2244470, 2244473, 2244474

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A105180

Included Lab Sample IDs: 2244471, 2244475, 2244476

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

Reference Method: EPA 8321B

Run ID: A105241

Included Lab Sample IDs: 2244484, 2244485

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	87.0	91.3	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A105278

Included Lab Sample IDs: 2244471, 2244475, 2244476

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.8	100	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A105344

Included Lab Sample IDs: 2244470, 2244473, 2244474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.8	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A105367

Included Lab Sample IDs: 2244471, 2244475, 2244476

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A105376

Included Lab Sample IDs: 2244484, 2244485

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	104	116	P/P	50 - 150
2,4,5-T	98.6	124	P/P	50 - 150
Acetaminophen	88.5	98.9	P/P	60 - 160
Acetamiprid	97.1	106	P/P	50 - 150
Afidopyropen	109	119	P/P	50 - 150
Bentazon	87.3	158	P/P	50 - 160
Benzovindiflupyr	96.6	122	P/P	50 - 160
Carbamazepine	99.0	101	P/P	60 - 150
Clothianidin	109	107	P/P	60 - 150
Dinotefuran	93.7	86.6	P/P	50 - 150
Diuron	104	108	P/P	60 - 160
Fenuron	106	109	P/P	60 - 150
Fluridone	122	133	P/P	60 - 160
Hydrocodone	101	108	P/P	60 - 150
Ibuprofen	89.9	103	P/P	50 - 160
Imazapyr	90.5	118	P/P	50 - 160
Imidacloprid	93.1	98.1	P/P	60 - 150
Linuron	104	110	P/P	60 - 150
Mandestrobin	108	129	P/P	50 - 150
MCPP	110	129	P/P	50 - 150
Naproxen	92.1	147	P/P	50 - 160
Primidone	89.8	87.0	P/P	60 - 150
Pyraclostrobin	110	122	P/P	60 - 150
Thiamethoxam	99.6	97.2	P/P	50 - 150
Tolfenpyrad	96.2	114	P/P	60 - 150
Triclopyr	114	122	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A105413

Included Lab Sample IDs: 2244475, 2244476

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.6	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A105414

Included Lab Sample IDs: 2244471, 2244475, 2244476

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.8	98.8	P/P	90 - 110
Ammonia-N	98.3	97.8	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A105421

Included Lab Sample IDs: 2244486, 2244487

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	101	99.9	P/P	90 - 110
Calcium	99.7	105	P/P	90 - 110
Iron	96.9	103	P/P	90 - 110
Magnesium	96.1	102	P/P	90 - 110
Manganese	106	105	P/P	90 - 110
Potassium	93.9	100	P/P	90 - 110
Sodium	94.0	101	P/P	90 - 110
Zinc	104	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A105428

Included Lab Sample IDs: 2244486, 2244487

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	100	103	P/P	90 - 110
Aluminum	103	101	P/P	90 - 110
Antimony	103	103	P/P	90 - 110
Antimony	104	103	P/P	90 - 110
Arsenic	106	105	P/P	90 - 110
Arsenic	107	106	P/P	90 - 110
Beryllium	107	105	P/P	90 - 110
Beryllium	108	107	P/P	90 - 110
Cadmium	103	103	P/P	90 - 110
Cadmium	103	103	P/P	90 - 110
Chromium	100	99.2	P/P	90 - 110
Chromium	101	100	P/P	90 - 110
Copper	102	102	P/P	90 - 110
Copper	103	102	P/P	90 - 110
Lead	105	106	P/P	90 - 110
Lead	106	105	P/P	90 - 110
Nickel	102	102	P/P	90 - 110
Nickel	104	102	P/P	90 - 110
Thallium	106	107	P/P	90 - 110
Thallium	107	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A105446

Included Lab Sample IDs: 2244486, 2244487

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	103	106	P/P	90 - 110
Boron	107	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A105451

Included Lab Sample IDs: 2244486, 2244487

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	100	101	P/P	90 - 110
Silver	98.1	100	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A105483

Included Lab Sample IDs: 2244486, 2244487

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	103	106	P/P	90 - 110
Selenium	106	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A105542

Included Lab Sample IDs: 2244471

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.0	102	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A105550

Included Lab Sample IDs: 2244470, 2244473, 2244474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.7	P/P	90 - 110
Chloride	99.7	99.9	P/P	90 - 110
Sulfate	98.7	99.0	P/P	90 - 110
Sulfate	99.6	98.7	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 SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					1.47	
	Turbidity					3.33	
EPA 200.7 Rev. 4.4	Barium	98.9	106	100	102		1.08
	Calcium	93.7	106	97.0			2.43
	Iron	104	106	105	109		3.30
	Magnesium	102	103	102	108		3.69
	Manganese	103	110	105	107		1.33
	Potassium	95.2	95.0	96.7	99.2		2.05
	Sodium	89.0	100	92.2			2.38
	Zinc	98.8	106	101	103		1.46
EPA 200.8 Rev. 5.4	Aluminum	95.3	91.7	94.9	95.1		0.191
	Antimony	102	101	102	102		0.108
	Arsenic	105	105	104	104		0.0246
	Beryllium	97.7	98.6	98.9	102		2.77
	Boron	106	109	103	99.9		2.47
	Cadmium	101	102	102	102		0.153
	Chromium	98.2	97.5	98.1	98.7		0.620
	Copper	102	104	100	100		0.0450
	Lead	101	103	102	102		0.0253
	Nickel	101	102	98.4	98.7		0.322
	Selenium	101	101	102	99.8		1.67
	Silver	105	105	104	104		0.0953
	Thallium	108	109	108	109		0.215
EPA 300.0 Rev. 2.1	Chloride	100	96.9	97.8		0.616	
	Sulfate	98.9	96.2	96.8		0.897	
EPA 350.1 Rev. 2.0	Ammonia-N	98.0	95.4	96.4			0.915
	Ammonia-N	98.4	95.0	96.4			1.36
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	106	100			4.41
	Kjeldahl Nitrogen	104	102	108			3.50
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	99.0	100			1.01
EPA 365.1 Rev. 2.0	Total-P	105	105	106			0.897
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.6	92.4	94.5			2.25
EPA 8321B	2,4-D	113	118	113			3.56
	2,4,5-T	119	99.2	107			7.20
	Acesulfame K	137	172	168			2.43
	Acetaminophen	121	88.3	90.1			1.93
	Acetamiprid	77.3	72.6	73.5			1.31
	Afidopyropen	69.0	77.1	78.2			1.37
	AMPA	98.9	103	109			4.71
	Bentazon	142					14.1
	Benzovindiflupyr	72.2	68.8	72.0			4.52
	Carbamazepine	83.2	65.0	67.6			3.44
	Clothianidin	95.3	100	95.6			4.47
	Dinotefuran	79.5	98.3	101			2.16
	Diuron	59.6	41.6	43.5			3.88
	Endothall	79.2	117	91.8			24.5
	Fenuron	99.9	73.7	77.4			4.81
	Fluridone	85.7					11.7
	Glufosinate	111	74.7	71.8			4.02
	Glyphosate	90.7	88.9	117			23.7
	Hydrocodone	90.3	94.8	86.9			8.60
	Ibuprofen	74.8	65.8	75.4			13.6
	Imazapyr	100					2.18
	Imidacloprid	101	125	137			8.69

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Linuron	67.8	52.2	60.4		14.6
	Mandestrobin	84.8	73.9	81.0		9.17
	MCCP	115	98.8	103		4.07
	Naproxen	67.9	62.4	81.0		26.0
	Primidone	81.7	94.7	93.6		1.11
	Pyraclostrobin	70.5	67.7	75.2		10.6
	Sucralose	84.5	26.7	39.0		19.3
	Thiamethoxam	90.5	111	119		6.90
	Tolfenpyrad	46.4	43.3	47.7		9.73
	Triclopyr	119	104	114		9.46
SM 2120 B-2011	Color (true)	99.7			0.190	
	Color (true)	101			1.70	
SM 2320 B-2011	Total Alkalinity	100			1.41	
SM 2540 C-2011	TDS				5.37	
SM 4500 F-C-2011	Fluoride	96.8	97.5	98.0		0.474
SM 5310 B-2011	Organic Carbon	101	98.8	98.0		0.469

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2244470, 2244473, 2244474
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2244486, 2244487
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2244486, 2244487
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2244470, 2244473, 2244474
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2244470, 2244473, 2244474
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2244471, 2244475, 2244476
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2244471, 2244475, 2244476
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2244471, 2244475, 2244476
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2244471, 2244475, 2244476
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2244472, 2244477, 2244478
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2244484, 2244485
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2244484, 2244485
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2244470, 2244473, 2244474
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2244470, 2244473, 2244474
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2244486, 2244487
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2244470, 2244473, 2244474
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2244470, 2244473, 2244474
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2244470, 2244473, 2244474
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2244471, 2244475, 2244476

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	04/30/2021			04/30/2021 16:21	Sarah A Nixon	2244470, 2244473, 2244474
EPA 200.7 Rev. 4.4	04/30/2021	05/12/2021 16:40	Elliott D. Healy	05/13/2021 16:19	Josef B Mick	2244486
	04/30/2021	05/12/2021 16:40	Elliott D. Healy	05/13/2021 16:47	Josef B Mick	2244487
EPA 200.8 Rev. 5.4	04/30/2021	05/12/2021 16:40	Elliott D. Healy	05/14/2021 08:17	Alexander Thompson	2244486
	04/30/2021	05/12/2021 16:40	Elliott D. Healy	05/14/2021 09:24	Alexander Thompson	2244487
	04/30/2021	05/12/2021 16:40	Elliott D. Healy	05/15/2021 01:34	Alexander Thompson	2244486
	04/30/2021	05/12/2021 16:40	Elliott D. Healy	05/15/2021 02:22	Alexander Thompson	2244487
	04/30/2021	05/12/2021 16:40	Elliott D. Healy	05/16/2021 14:17	Alexander Thompson	2244486
	04/30/2021	05/12/2021 16:40	Elliott D. Healy	05/16/2021 14:59	Alexander Thompson	2244487
	04/30/2021	05/12/2021 16:40	Elliott D. Healy	05/17/2021 14:49	McKinley C Carter	2244487
	04/30/2021	05/12/2021 16:40	Elliott D. Healy	05/17/2021 15:40	McKinley C Carter	2244486
EPA 300.0 Rev. 2.1	04/30/2021			05/20/2021 15:25	Lipi Saha	2244474
	04/30/2021			05/20/2021 18:01	Lipi Saha	2244470
	04/30/2021			05/20/2021 18:13	Lipi Saha	2244473
EPA 350.1 Rev. 2.0	04/30/2021			05/13/2021 13:34	Ping Hua	2244471
	04/30/2021			05/13/2021 13:47	Ping Hua	2244475
	04/30/2021			05/13/2021 13:51	Ping Hua	2244476
EPA 351.2 Rev. 2.0	04/30/2021	05/12/2021 13:45	Benjamin T. Nordmann	05/13/2021 12:00	Virginia P. Brown	2244475
	04/30/2021	05/12/2021 13:45	Benjamin T. Nordmann	05/13/2021 12:02	Virginia P. Brown	2244476
	04/30/2021	05/18/2021 13:32	Benjamin T. Nordmann	05/19/2021 14:34	Virginia P. Brown	2244471
EPA 353.2 Rev. 2.0	04/30/2021			05/05/2021 10:26	Beverly Y. Sanders	2244471
	04/30/2021			05/05/2021 10:27	Beverly Y. Sanders	2244475
	04/30/2021			05/05/2021 10:28	Beverly Y. Sanders	2244476
EPA 365.1 Rev. 2.0	04/30/2021	05/11/2021 14:29	Yen Ta	05/12/2021 12:40	Shengyu Ding	2244471
	04/30/2021	05/11/2021 14:29	Yen Ta	05/12/2021 12:41	Shengyu Ding	2244475
	04/30/2021	05/11/2021 14:29	Yen Ta	05/12/2021 12:42	Shengyu Ding	2244476
EPA 365.1 Rev. 2.0 dissolved	04/30/2021			04/30/2021 14:47	Lipi Saha	2244472
	04/30/2021			04/30/2021 14:48	Lipi Saha	2244477
	04/30/2021			04/30/2021 14:53	Lipi Saha	2244478
EPA 8321B	04/30/2021	05/03/2021 12:15	Rebecca Ware	05/03/2021 20:17	Rebecca Ware	2244484
	04/30/2021	05/03/2021 12:15	Rebecca Ware	05/03/2021 20:31	Rebecca Ware	2244485
	04/30/2021	05/03/2021 12:15	Rebecca Ware	05/06/2021 13:11	Rebecca Ware	2244484
	04/30/2021	05/03/2021 12:15	Rebecca Ware	05/06/2021 13:22	Rebecca Ware	2244485
	04/30/2021	05/05/2021 09:00	Hoor Shaik	05/06/2021 06:37	Juyoung Kim	2244484
	04/30/2021	05/05/2021 09:00	Hoor Shaik	05/06/2021 07:12	Juyoung Kim	2244485
SM 2120 B-2011	04/30/2021			04/30/2021 15:39	Madeline Gruver	2244473
	04/30/2021			04/30/2021 15:40	Madeline Gruver	2244474
	04/30/2021			04/30/2021 15:41	Madeline Gruver	2244470
SM 2320 B-2011	04/30/2021			05/12/2021 01:13	Dale L. Simmons	2244470
	04/30/2021			05/12/2021 01:19	Dale L. Simmons	2244473

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-2011	04/30/2021			05/12/2021 01:26	Dale L. Simmons	2244474
SM 2340B	04/30/2021			05/13/2021 16:19	Josef B Mick	2244486
	04/30/2021			05/13/2021 16:47	Josef B Mick	2244487
SM 2540 C-2011	04/30/2021			05/04/2021 15:06	Yijie Li	2244470, 2244473, 2244474
SM 2540 D-2011	04/30/2021			05/04/2021 15:06	Yijie Li	2244470, 2244473, 2244474
SM 4500 F-C-2011	04/30/2021			05/04/2021 18:26	Dale L. Simmons	2244470
	04/30/2021			05/04/2021 18:35	Dale L. Simmons	2244473
	04/30/2021			05/04/2021 18:45	Dale L. Simmons	2244474
SM 5310 B-2011	04/30/2021			05/08/2021 03:07	Madeline Gruver	2244471
	04/30/2021			05/08/2021 03:20	Madeline Gruver	2244475
	04/30/2021			05/08/2021 03:33	Madeline Gruver	2244476