

Chemical Analysis Report

NE-DIST-2021-12-15-01

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

Event Description: **LSJR Lake**
Request ID: **RQ-2021-12-13-29**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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8800 Baymeadows Way West
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Jacksonville, FL 32256
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 10-JAN-2022 15:24

A handwritten signature in black ink, appearing to read "Liang Lin", 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: LAKE BROWARD South

Collection Date/Time: 12/14/2021 11:55

Field ID: G2NE1218

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2295278	EPA 180.1 Rev. 2.0	Turbidity	0.65		NTU	P407505	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P407592	
		Sulfate	8.8		mg SO4/L	P407595	
	SM 2120 B-2011	Color (true)	23		PCU	P407970	
	SM 2320 B-2011	Total Alkalinity	3.7		mg CaCO3/L	P407608	
	SM 2540 C-2011	TDS	54		mg/L	P407890	
	SM 2540 D-2011	TSS	2	U	mg/L	P407699	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P407610	
2295280	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P408039	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.47		mg N/L	P407954	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P407616	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P407521	
	SM 5310 B-2011	Organic Carbon	6.6		mg C/L	P407985	
2295282	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P407493	
2295293	EPA 8321B	2,4-D	0.023		ug/L	P407536	
		Acesulfame K	0.10	U	ug/L	P407479	
		2,4,5-T	0.0040	U	ug/L	P407536	
		AMPA	0.10	U	ug/L	P407479	
		Acetaminophen	0.0080	U	ug/L	P407536	
		Acetamiprid	0.0020	U	ug/L	P407536	
		Endothall	0.25	U	ug/L	P407479	
		Glufosinate	0.10	U	ug/L	P407479	
		Glyphosate	0.10	U	ug/L	P407479	
		Afidopyropen	0.0020	U	ug/L	P407536	
		Bentazon	8.0E-04	U	ug/L	P407536	
		Sucralose	0.22		ug/L	P407479	
		Benzovindiflupyr	0.0020	U	ug/L	P407536	
		Carbamazepine	8.0E-04	U	ug/L	P407536	
		Clothianidin	0.0020	U	ug/L	P407536	
		Dinotefuran	0.0020	U	ug/L	P407536	
		Diuron	0.0020	U	ug/L	P407536	
		Fenuron	0.016	U	ug/L	P407536	
		Fluridone	0.0073		ug/L	P407536	
		Imazapyr	0.23		ug/L	P407536	
		Hydrocodone	0.0020	U	ug/L	P407536	
		Ibuprofen	0.020	U	ug/L	P407536	
		Imidacloprid	0.0020	U	ug/L	P407536	MS
		Linuron	0.0040	U	ug/L	P407536	
		Mandestrobin	0.0020	U	ug/L	P407536	
		MCP	0.0040	U	ug/L	P407536	
		Naproxen	0.0080	U	ug/L	P407536	
		Primidone	0.0040	U	ug/L	P407536	
		Pyraclostrobin	0.0020	U	ug/L	P407536	

Field ID: G2NE1218

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2295293	EPA 8321B	Silvex	0.0040	U	ug/L	P407536	
		Thiamethoxam	0.0020	U	ug/L	P407536	MS
		Tolfenpyrad	0.0020	U	ug/L	P407536	
		Triclopyr	0.0040	U	ug/L	P407536	
2295295	EPA 200.7 Rev. 4.4	Barium	9.2		ug/L	P407589	
		Calcium	4.32		mg/L	P407589	
		Iron	30	U	ug/L	P407589	
		Magnesium	1.41		mg/L	P407589	
		Manganese	5.2		ug/L	P407589	
		Potassium	0.98	I	mg/L	P407589	
		Sodium	8.2		mg/L	P407589	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P407869	
		Aluminum	42		ug/L	P407589	
		Antimony	0.055	I	ug/L	P407589	
		Arsenic	2.92		ug/L	P407589	
		Beryllium	0.010	U	ug/L	P407589	
		Boron**	29.5		ug/L	P407589	
		Cadmium	0.020	U	ug/L	P407589	
		Chromium	0.40	U	ug/L	P407589	
		Copper	0.46	I	ug/L	P407589	
		Lead	0.20	U	ug/L	P407589	
		Nickel	0.50	U	ug/L	P407589	
		Selenium	0.20	U	ug/L	P407589	
		Silver	0.010	U	ug/L	P407589	
		Thallium	0.10	U	ug/L	P407589	
	SM 2340B	Hardness	16.6		mg/L	P407589	

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.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium are unavailable because of high analyte concentration in the QC sample.

Sample Location: LAKE BROWARD North

Collection Date/Time: 12/14/2021 11:15

Field ID: G2NE1219

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2295279	EPA 180.1 Rev. 2.0	Turbidity	0.70		NTU	P407505	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P407592	
		Sulfate	9.7		mg SO4/L	P407595	
	SM 2120 B-2011	Color (true)	11		PCU	P407970	
	SM 2320 B-2011	Total Alkalinity	2.2	I	mg CaCO3/L	P407608	
	SM 2540 C-2011	TDS	43		mg/L	P407890	
	SM 2540 D-2011	TSS	2	U	mg/L	P407699	
2295281	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P407610	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P408039	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38		mg N/L	P407954	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P407616	
	EPA 365.1 Rev. 2.0	Total-P	0.007		mg P/L	P407521	
2295283	SM 5310 B-2011	Organic Carbon	5.3		mg C/L	P408215	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P407493	
2295294	EPA 8321B	2,4-D	0.062		ug/L	P407536	
		Acesulfame K	0.10	U	ug/L	P407479	
		2,4,5-T	0.0040	U	ug/L	P407536	
		AMPA	0.10	U	ug/L	P407479	
		Acetaminophen	0.0080	U	ug/L	P407536	
		Acetamiprid	0.0020	U	ug/L	P407536	
		Endothall	0.25	U	ug/L	P407479	
		Glufosinate	0.10	U	ug/L	P407479	
		Glyphosate	0.10	U	ug/L	P407479	
		Afidopyropen	0.0020	U	ug/L	P407536	
		Bentazon	8.0E-04	U	ug/L	P407536	
		Sucralose	0.14		ug/L	P407479	
		Benzovindiflupyr	0.0020	U	ug/L	P407536	
		Carbamazepine	8.0E-04	U	ug/L	P407536	
		Clothianidin	0.0020	U	ug/L	P407536	
		Dinotefuran	0.0020	U	ug/L	P407536	
		Diuron	0.0020	U	ug/L	P407536	
		Fenuron	0.016	U	ug/L	P407536	
		Fluridone	0.0011	I	ug/L	P407536	
		Imazapyr	0.041		ug/L	P407536	
		Hydrocodone	0.0020	U	ug/L	P407536	
		Ibuprofen	0.020	U	ug/L	P407536	
		Imidacloprid	0.0020	U	ug/L	P407536	MS
		Linuron	0.0040	U	ug/L	P407536	
		Mandestrobin	0.0020	U	ug/L	P407536	
		MCP	0.0040	U	ug/L	P407536	
		Naproxen	0.0080	U	ug/L	P407536	
		Primidone	0.0040	U	ug/L	P407536	
		Pyraclostrobin	0.0020	U	ug/L	P407536	

Field ID: G2NE1219

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2295294	EPA 8321B	Silvex	0.0040	U	ug/L	P407536	
		Thiamethoxam	0.0020	U	ug/L	P407536	MS
		Tolfenpyrad	0.0020	U	ug/L	P407536	
		Triclopyr	0.0040	U	ug/L	P407536	
2295296	EPA 200.7 Rev. 4.4	Barium	8.6		ug/L	P407589	
		Calcium	3.96		mg/L	P407589	
		Iron	30	U	ug/L	P407589	
		Magnesium	1.52		mg/L	P407589	
	EPA 200.8 Rev. 5.4	Manganese	1.6	I	ug/L	P407589	
		Potassium	0.99	I	mg/L	P407589	
		Sodium	8.8		mg/L	P407589	
		Zinc	5.0	U	ug/L	P407589	
		Aluminum	34		ug/L	P407589	
		Antimony	0.062	I	ug/L	P407589	
		Arsenic	2.31		ug/L	P407589	
		Beryllium	0.010	U	ug/L	P407589	
		Boron**	30.4		ug/L	P407589	
		Cadmium	0.020	U	ug/L	P407589	
		Chromium	0.40	U	ug/L	P407589	
		Copper	0.40	U	ug/L	P407589	
		Lead	0.20	U	ug/L	P407589	
		Nickel	0.50	U	ug/L	P407589	
		Selenium	0.20	U	ug/L	P407589	
		Silver	0.010	U	ug/L	P407589	
		Thallium	0.10	U	ug/L	P407589	
	SM 2340B	Hardness	16.1		mg/L	P407589	

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.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P407505

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P407589

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	10	I	ug/L

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P407869

Component	Result	Code	Units
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P407589

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	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P407592

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P407595

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: P408039

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P407954

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P407616

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P407521

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P407493

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

Reference Method: EPA 8321B
Batch ID: P407479

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P407536

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P407536

Component	Result	Code	Units
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	0.0040	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 2120 B-2011

Batch ID: P407970

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P407608

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

Reference Method: SM 2540 C-2011

Batch ID: P407890

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011

Batch ID: P407699

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011

Batch ID: P407610

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011

Batch ID: P407985

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P408215

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: P407589

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	106		P	85 - 115
Calcium	104		P	85 - 115
Iron	105		P	85 - 115
Magnesium	108		P	85 - 115
Manganese	105		P	85 - 115
Potassium	98.8		P	85 - 115
Sodium	103		P	85 - 115
Zinc	106		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P407869

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Zinc	99.8		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P407589

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	103		P	80 - 120
Antimony	99.3		P	85 - 115
Arsenic	107		P	80 - 120
Beryllium	96.6		P	85 - 115
Boron	105		P	80 - 120
Cadmium	102		P	80 - 120
Chromium	98.7		P	85 - 115
Copper	106		P	80 - 120
Lead	96.8		P	85 - 115
Nickel	105		P	80 - 120
Selenium	100		P	80 - 120
Silver	103		P	80 - 120
Thallium	106		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P407592

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P407595

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P408039

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P407954

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P407616

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: P407521

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	109		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P407493

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.5		P	90 - 110

Reference Method: EPA 8321B

Batch ID: P407479

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	108		P	40 - 150
AMPA	102		P	40 - 150
Endothall	81.3		P	40 - 150
Glufosinate	102		P	40 - 150
Glyphosate	93.5		P	40 - 150
Sucralose	78.5		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P407536

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	110		P	40 - 150
2,4,5-T	122		P	40 - 150
Acetaminophen	79.0		P	30 - 150
Acetamiprid	89.5		P	40 - 150
Afidopyropen	72.9		P	40 - 150
Bentazon	98.5		P	30 - 150
Benzovindiflupyr	86.5		P	40 - 150
Carbamazepine	91.3		P	40 - 150
Clothianidin	92.2		P	40 - 150
Dinotefuran	83.1		P	40 - 150
Diuron	91.7		P	40 - 150
Fenuron	93.0		P	40 - 150
Fluridone	84.2		P	40 - 150
Hydrocodone	92.7		P	40 - 150
Ibuprofen	91.2		P	40 - 150
Imazapyr	117		P	40 - 150
Imidacloprid	92.0		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P407536

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Linuron	79.3		P	40 - 150
Mandestrobin	67.2		P	40 - 150
MCPP	106		P	40 - 150
Naproxen	59.7		P	40 - 150
Primidone	125		P	40 - 150
Pyraclostrobin	93.1		P	40 - 150
Silvex	84.3		P	40 - 150
Thiamethoxam	81.5		P	40 - 150
Tolfenpyrad	62.4		P	30 - 150
Triclopyr	111		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P407970

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P407608

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.4		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P407610

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	103		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P407985

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.6		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P408215

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P407589

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2295242	Barium	99.9	102	P/P	80 - 120
2295242	Iron	104	104	P/P	80 - 120
2295242	Magnesium	104	105	P/P	80 - 120
2295242	Manganese	100	102	P/P	80 - 120
2295242	Potassium	101	102	P/P	80 - 120
2295242	Sodium	102	103	P/P	80 - 120
2295242	Zinc	101	102	P/P	80 - 120
2295262	Barium	100		P	80 - 120
2295262	Iron	104		P	80 - 120
2295262	Magnesium	99.0		P	80 - 120
2295262	Manganese	101		P	80 - 120
2295262	Potassium	92.6		P	80 - 120
2295262	Sodium	101		P	80 - 120
2295262	Zinc	99.6		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P407869

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2295295	Zinc	95.1	96.8	P/P	80 - 120
2295421	Zinc	96.4		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P407589

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2295242	Aluminum	100	101	P/P	80 - 120
2295242	Antimony	102	99.6	P/P	80 - 120
2295242	Arsenic	109	107	P/P	80 - 120
2295242	Beryllium	99.4	95.1	P/P	80 - 120
2295242	Boron	103	105	P/P	80 - 120
2295242	Cadmium	107	103	P/P	80 - 120
2295242	Chromium	98.0	97.0	P/P	80 - 120
2295242	Copper	102	101	P/P	80 - 120
2295242	Lead	98.0	95.4	P/P	80 - 120
2295242	Nickel	103	102	P/P	80 - 120
2295242	Selenium	101	98.5	P/P	80 - 120
2295242	Silver	104	102	P/P	80 - 120
2295242	Thallium	111	109	P/P	80 - 120
2295262	Aluminum	102		P	80 - 120
2295262	Antimony	103		P	80 - 120
2295262	Arsenic	110		P	80 - 120
2295262	Beryllium	97.3		P	80 - 120
2295262	Boron	102		P	80 - 120
2295262	Cadmium	105		P	80 - 120
2295262	Chromium	101		P	80 - 120
2295262	Copper	103		P	80 - 120
2295262	Lead	98.9		P	80 - 120
2295262	Nickel	106		P	80 - 120
2295262	Selenium	101		P	80 - 120
2295262	Silver	103		P	80 - 120
2295262	Thallium	113		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P407592

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2295206	Chloride	101		P	90 - 110
2295363	Chloride	99.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P407595

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2295206	Sulfate	99.2		P	90 - 110
2295363	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P408039

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2295281	Ammonia-N	97.4	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P407954

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2295109	Kjeldahl Nitrogen	97.6	93.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P407616

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2295186	NO2NO3-N	97.4	96.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P407521

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2295280	Total-P	110	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P407493

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2295282	O-Phosphate-P	98.8	97.3	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P407479

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2295214	Acesulfame K	71.6	72.8	P/P	40 - 150
2295214	AMPA	86.8	86.2	P/P	40 - 150
2295214	Endothall	91.1	95.6	P/P	40 - 150
2295214	Glufosinate	93.2	92.6	P/P	40 - 150
2295214	Glyphosate	101	101	P/P	40 - 150
2295214	Sucralose	68.0	67.2	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P407536

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2295261	2,4-D	142	148	P/P	40 - 150
2295261	2,4,5-T	121	131	P/P	40 - 150
2295261	Acetaminophen	139	118	P/P	30 - 150
2295261	Acetamiprid	89.0	100	P/P	40 - 150
2295261	Afidopyropen	69.3	76.8	P/P	40 - 150
2295261	Benzovindiflupyr	76.7	72.0	P/P	40 - 150
2295261	Carbamazepine	93.5	106	P/P	40 - 150
2295261	Clothianidin	140	142	P/P	40 - 150
2295261	Dinotefuran	135	143	P/P	40 - 150
2295261	Fenuron	85.0	88.3	P/P	40 - 150
2295261	Hydrocodone	111	110	P/P	40 - 150
2295261	Ibuprofen	49.3	55.5	P/P	40 - 150
2295261	Imidacloprid	189	203	F/F	40 - 150
2295261	Linuron	68.3	61.3	P/P	40 - 150
2295261	Mandestrobin	78.6	81.7	P/P	40 - 150
2295261	MCCP	99.7	91.0	P/P	40 - 150
2295261	Naproxen	97.0	80.4	P/P	40 - 150
2295261	Primidone	144	147	P/P	40 - 150
2295261	Pyraclostrobin	90.8	101	P/P	40 - 150
2295261	Silvex	119	123	P/P	40 - 150
2295261	Thiamethoxam	161	180	F/F	40 - 150
2295261	Tolfenpyrad	59.6	60.9	P/P	30 - 150
2295261	Triclopyr	133	136	P/P	40 - 150

Reference Method: SM 4500 F-C-2011

Batch ID: P407610

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2295363	Fluoride	102	104	P/P	92 - 107

Reference Method: SM 5310 B-2011

Batch ID: P407985

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2295367	Organic Carbon	93.5	98.6	P/P	85 - 115

Reference Method: SM 5310 B-2011

Batch ID: P408215

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2295334	Organic Carbon	97.3	95.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P407505

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2295256	Turbidity	3.54	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P407589

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2295242	Barium	1.91	Spike	P	0 - 20
2295242	Calcium	0.458	Spike	P	0 - 20
2295242	Iron	0.0901	Spike	P	0 - 20
2295242	Magnesium	0.567	Spike	P	0 - 20
2295242	Manganese	1.69	Spike	P	0 - 20
2295242	Potassium	0.970	Spike	P	0 - 20
2295242	Sodium	0.502	Spike	P	0 - 20
2295242	Zinc	0.261	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P407869

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2295295	Zinc	1.73	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P407589

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2295242	Aluminum	0.680	Spike	P	0 - 20
2295242	Antimony	2.60	Spike	P	0 - 20
2295242	Arsenic	2.15	Spike	P	0 - 20
2295242	Beryllium	3.98	Spike	P	0 - 20
2295242	Boron	1.30	Spike	P	0 - 20
2295242	Cadmium	4.16	Spike	P	0 - 20
2295242	Chromium	0.953	Spike	P	0 - 20
2295242	Copper	1.59	Spike	P	0 - 20
2295242	Lead	2.65	Spike	P	0 - 20
2295242	Nickel	1.01	Spike	P	0 - 20
2295242	Selenium	2.37	Spike	P	0 - 20
2295242	Silver	2.17	Spike	P	0 - 20
2295242	Thallium	1.81	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P407592

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2295206	Chloride	0.256	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P407595

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2295206	Sulfate	0.491	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P408039

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2295281	Ammonia-N	1.11	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P407954

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2295109	Kjeldahl Nitrogen	3.68	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P407616

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2295186	NO2NO3-N	0.487	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P407521

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2295280	Total-P	1.25	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P407493

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2295282	O-Phosphate-P	1.53	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P407479

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2295214	Acesulfame K	1.63	Spike	P	0 - 30
2295214	AMPA	0.517	Spike	P	0 - 30
2295214	Endothall	4.83	Spike	P	0 - 30
2295214	Glufosinate	0.684	Spike	P	0 - 30
2295214	Glyphosate	0.288	Spike	P	0 - 30
2295214	Sucralose	0.963	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P407536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2295261	2,4-D	4.19	Spike	P	0 - 30
2295261	2,4,5-T	7.86	Spike	P	0 - 30
2295261	Acetaminophen	16.3	Spike	P	0 - 30
2295261	Acetamiprid	11.9	Spike	P	0 - 30
2295261	Afidopyropen	10.3	Spike	P	0 - 30
2295261	Bentazon	6.94	Spike	P	0 - 30
2295261	Benzovindiflupyr	6.36	Spike	P	0 - 30
2295261	Carbamazepine	12.2	Spike	P	0 - 30
2295261	Clothianidin	1.08	Spike	P	0 - 30
2295261	Dinotefuran	6.00	Spike	P	0 - 30
2295261	Diuron	0.605	Spike	P	0 - 30
2295261	Fenuron	3.77	Spike	P	0 - 30
2295261	Fluridone	4.20	Spike	P	0 - 30
2295261	Hydrocodone	1.04	Spike	P	0 - 30
2295261	Ibuprofen	11.8	Spike	P	0 - 30
2295261	Imazapyr	0.621	Spike	P	0 - 30
2295261	Imidacloprid	6.11	Spike	P	0 - 30
2295261	Linuron	10.9	Spike	P	0 - 30
2295261	Mandestrobin	3.84	Spike	P	0 - 30
2295261	MCPP	9.14	Spike	P	0 - 30
2295261	Naproxen	18.7	Spike	P	0 - 30
2295261	Primidone	1.94	Spike	P	0 - 30
2295261	Pyraclostrobin	10.5	Spike	P	0 - 30
2295261	Silvex	3.04	Spike	P	0 - 30
2295261	Thiamethoxam	11.3	Spike	P	0 - 30
2295261	Tolfenpyrad	2.11	Spike	P	0 - 30
2295261	Triclopyr	2.15	Spike	P	0 - 30

Reference Method: SM 2120 B-2011

Batch ID: P407970

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2295366	Color (true)	3.23	Sample	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P407608

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2295363	Total Alkalinity	0.780	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011

Batch ID: P407890

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2295256	TDS	0.220	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P407610

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2295363	Fluoride	1.46	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P407985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2295367	Organic Carbon	4.61	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P408215

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2295334	Organic Carbon	1.52	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2295293
Field Sample ID: G2NE1218

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	116	P	30 - 160
EPA 8321B	Acetaminophen-d4	119	P	30 - 160
EPA 8321B	Carbamazepine-d10	134	P	30 - 160
EPA 8321B	Diuron-d6	102	P	30 - 160
EPA 8321B	Endothall-d6	88.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	90.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	91.0	P	30 - 160
EPA 8321B	Primidone-d5	106	P	30 - 160
EPA 8321B	Sucralose-d6	112	P	30 - 160

Lab Sample ID: 2295294
Field Sample ID: G2NE1219

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	92.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	100	P	30 - 160
EPA 8321B	Carbamazepine-d10	114	P	30 - 160
EPA 8321B	Diuron-d6	94.8	P	30 - 160
EPA 8321B	Endothall-d6	85.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	91.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	60.3	P	30 - 160
EPA 8321B	Primidone-d5	102	P	30 - 160
EPA 8321B	Sucralose-d6	112	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A109378

Included Lab Sample IDs: 2295278, 2295279

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A109401

Included Lab Sample IDs: 2295282, 2295283

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.8	98.7	P/P	90 - 110
O-Phosphate-P	98.7	98.4	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A109406

Included Lab Sample IDs: 2295278, 2295279

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	99.0	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A109412

Included Lab Sample IDs: 2295293, 2295294

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	124	136	P/P	60 - 160
Glufosinate	92.8	98.2	P/P	60 - 160
Glyphosate	90.1	99.7	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A109424

Included Lab Sample IDs: 2295293, 2295294

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	106	72.3	P/P	60 - 160
Endothall	74.7	77.4	P/P	60 - 160
Sucralose	77.8	73.3	P/P	60 - 160

Reference Method: SM 2320 B-2011

Run ID: A109453

Included Lab Sample IDs: 2295278, 2295279

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	94.7	99.1	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A109453

Included Lab Sample IDs: 2295278, 2295279

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A109457

Included Lab Sample IDs: 2295280, 2295281

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

Reference Method: EPA 8321B

Run ID: A109497

Included Lab Sample IDs: 2295293, 2295294

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	74.3	91.8	P/P	50 - 150
2,4-D	91.8	85.0	P/P	50 - 150
2,4,5-T	105	99.1	P/P	50 - 150
2,4,5-T	108	105	P/P	50 - 150
Acetaminophen	97.3	88.4	P/P	60 - 160
Acetaminophen	99.4	97.3	P/P	60 - 160
Acetamiprid	91.6	92.9	P/P	50 - 150
Acetamiprid	95.8	91.6	P/P	50 - 150
Afidopyropen	82.5	86.0	P/P	50 - 150
Afidopyropen	86.0	101	P/P	50 - 150
Bentazon	109	101	P/P	50 - 160
Bentazon	91.2	109	P/P	50 - 160
Benzovindiflupyr	101	93.6	P/P	50 - 150
Benzovindiflupyr	106	101	P/P	50 - 150
Carbamazepine	84.8	91.1	P/P	60 - 150
Carbamazepine	89.2	84.8	P/P	60 - 150
Clothianidin	109	105	P/P	60 - 150
Clothianidin	98.6	109	P/P	60 - 150
Dinotefuran	109	82.1	P/P	50 - 150
Dinotefuran	78.8	109	P/P	50 - 150
Diuron	102	113	P/P	60 - 160
Diuron	113	102	P/P	60 - 160
Fenuron	92.2	96.4	P/P	60 - 150
Fenuron	96.4	85.2	P/P	60 - 150
Fluridone	75.2	91.9	P/P	60 - 160
Fluridone	91.9	92.4	P/P	60 - 160
Hydrocodone	103	99.9	P/P	60 - 150
Hydrocodone	99.9	94.5	P/P	60 - 150
Ibuprofen	79.2	89.3	P/P	50 - 160
Ibuprofen	89.3	109	P/P	50 - 160
Imazapyr	104	90.4	P/P	50 - 150
Imazapyr	99.5	104	P/P	50 - 150
Imidacloprid	90.9	98.5	P/P	60 - 150
Imidacloprid	91.2	90.9	P/P	60 - 150
Linuron	122	120	P/P	60 - 150
Linuron	88.8	122	P/P	60 - 150
Mandestrobin	80.0	80.7	P/P	50 - 150
Mandestrobin	80.7	80.4	P/P	50 - 150
MCPP	76.8	82.5	P/P	50 - 150
MCPP	91.1	76.8	P/P	50 - 150
Naproxen	65.4	85.7	P/P	50 - 160
Naproxen	85.7	66.2	P/P	50 - 160
Primidone	135	120	P/P	60 - 150
Primidone	96.8	135	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A109497

Included Lab Sample IDs: 2295293, 2295294

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Pyraclostrobin	105	94.5	P/P	60 - 150
Pyraclostrobin	94.5	100	P/P	60 - 150
Silvex	104	82.8	P/P	50 - 150
Silvex	111	104	P/P	50 - 150
Thiamethoxam	87.8	98.3	P/P	50 - 150
Thiamethoxam	98.3	95.2	P/P	50 - 150
Tolfenpyrad	84.5	95.0	P/P	60 - 150
Tolfenpyrad	95.0	76.4	P/P	60 - 150
Triclopyr	82.1	98.5	P/P	50 - 150
Triclopyr	92.2	82.1	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A109515

Included Lab Sample IDs: 2295280, 2295281

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	98.2	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A109520

Included Lab Sample IDs: 2295295, 2295296

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	99.8	101	P/P	90 - 110
Calcium	101	101	P/P	90 - 110
Iron	100	100	P/P	90 - 110
Magnesium	100	100	P/P	90 - 110
Manganese	102	98.9	P/P	90 - 110
Potassium	95.2	96.0	P/P	90 - 110
Sodium	99.8	99.9	P/P	90 - 110
Zinc	96.1	96.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A109523

Included Lab Sample IDs: 2295295, 2295296

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	92.4	94.3	P/P	90 - 110
Antimony	91.9	91.8	P/P	90 - 110
Arsenic	98.3	97.3	P/P	90 - 110
Boron	97.5	101	P/P	90 - 110
Cadmium	96.1	97.0	P/P	90 - 110
Chromium	90.8	90.6	P/P	90 - 110
Copper	94.3	94.0	P/P	90 - 110
Nickel	93.7	94.3	P/P	90 - 110
Selenium	93.8	93.4	P/P	90 - 110
Silver	96.3	97.4	P/P	90 - 110
Thallium	98.5	97.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A109571

Included Lab Sample IDs: 2295295, 2295296

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Beryllium	94800	92800	P/P	90 - 110
Lead	91400	92000	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A109611

Included Lab Sample IDs: 2295278, 2295279

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.4	104	P/P	85 - 115

Reference Method: SM 5310 B-2011

Run ID: A109634

Included Lab Sample IDs: 2295280

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.8	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A109640

Included Lab Sample IDs: 2295280, 2295281

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.3	95.6	P/P	90 - 110
Kjeldahl Nitrogen	95.6	97.2	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A109642

Included Lab Sample IDs: 2295295

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Zinc	95.1	93.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A109647

Included Lab Sample IDs: 2295280, 2295281

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.3	100	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A109725

Included Lab Sample IDs: 2295281

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.8	95.3	P/P	90 - 110

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

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						3.54	
EPA 200.7 Rev. 4.4	Barium	106	99.9	102	100			1.91
	Calcium	104						0.458
	Iron	105	104	104	104			0.0901
	Magnesium	108	104	105	99.0			0.567
	Manganese	105	100	102	101			1.69
	Potassium	98.8	101	102	92.6			0.970
	Sodium	103	102	103	101			0.502
	Zinc	106	101	102	99.6			0.261
	Zinc	99.8	95.1	96.8	96.4			1.73
EPA 200.8 Rev. 5.4	Aluminum	103	100	101	102			0.680
	Antimony	99.3	102	99.6	103			2.60
	Arsenic	107	110	109	107			2.15
	Beryllium	96.6	99.4	95.1	97.3			3.98
	Boron	105	103	105	102			1.30
	Cadmium	102	107	103	105			4.16
	Chromium	98.7	98.0	97.0	101			0.953
	Copper	106	102	101	103			1.59
	Lead	96.8	98.0	95.4	98.9			2.65
	Nickel	105	103	102	106			1.01
	Selenium	100	101	98.5	101			2.37
	Silver	103	104	102	103			2.17
	Thallium	106	111	109	113			1.81
EPA 300.0 Rev. 2.1	Chloride	100	101	99.9			0.256	
	Sulfate	99.5	99.2	100			0.491	
EPA 350.1 Rev. 2.0	Ammonia-N	99.4	97.4	98.6				1.11
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	97.6	93.7				3.68
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	97.4	96.9				0.487
EPA 365.1 Rev. 2.0	Total-P	109	110	108				1.25
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.5	98.8	97.3				1.53
EPA 8321B	2,4-D	110	142	148				4.19
	2,4,5-T	122	121	131				7.86
	Acesulfame K	108	71.6	72.8				1.63
	Acetaminophen	79.0	139	118				16.3
	Acetamiprid	89.5	89.0	100				11.9
	Afidopyropen	72.9	69.3	76.8				10.3
	AMPA	102	86.8	86.2				0.517
	Bentazon	98.5						6.94
	Benzovindiflupyr	86.5	76.7	72.0				6.36
	Carbamazepine	91.3	93.5	106				12.2
	Clothianidin	92.2	140	142				1.08
	Dinotefuran	83.1	135	143				6.00
	Diuron	91.7						0.605
	Endothall	81.3	91.1	95.6				4.83
	Fenuron	93.0	85.0	88.3				3.77
	Fluridone	84.2						4.20
	Glufosinate	102	93.2	92.6				0.684
	Glyphosate	93.5	101	101				0.288
	Hydrocodone	92.7	111	110				1.04
	Ibuprofen	91.2	49.3	55.5				11.8
	Imazapyr	117						0.621
	Imidacloprid	92.0	189	203				6.11
	Linuron	79.3	68.3	61.3				10.9
	Mandestrobin	67.2	78.6	81.7				3.84

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8321B	MCPP	106	99.7	91.0			9.14
	Naproxen	59.7	97.0	80.4			18.7
	Primidone	125	144	147			1.94
	Pyraclostrobin	93.1	90.8	101			10.5
	Silvex	84.3	119	123			3.04
	Sucralose	78.5	68.0	67.2			0.963
	Thiamethoxam	81.5	161	180			11.3
	Tolfenpyrad	62.4	59.6	60.9			2.11
	Triclopyr	111	133	136			2.15
SM 2120 B-2011	Color (true)	100				3.23	
SM 2320 B-2011	Total Alkalinity	98.4				0.780	
SM 2540 C-2011	TDS					0.220	
SM 4500 F-C-2011	Fluoride	103	102	104			1.46
SM 5310 B-2011	Organic Carbon	97.6	93.5	98.6			4.61
	Organic Carbon	95.8	97.3	95.2			1.52

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2295278, 2295279
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2295295, 2295296
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2295295, 2295296
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2295278, 2295279
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2295278, 2295279
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2295280, 2295281
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2295280, 2295281
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2295280, 2295281
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2295280, 2295281
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2295282, 2295283
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2295293, 2295294
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2295278, 2295279
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2295278, 2295279
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2295295, 2295296
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2295278, 2295279
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2295278, 2295279
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2295278, 2295279
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2295280, 2295281

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	12/15/2021			12/15/2021 17:52	Khloe J Berg	2295278, 2295279
EPA 200.7 Rev. 4.4	12/15/2021	12/17/2021 10:40	Vijayalakshmi Reddy	12/21/2021 21:56	Josef B Mick	2295295
	12/15/2021	12/17/2021 10:40	Vijayalakshmi Reddy	12/21/2021 22:04	Josef B Mick	2295296
	12/15/2021	12/27/2021 11:00	Vijayalakshmi Reddy	01/03/2022 17:31	Josef B Mick	2295295
EPA 200.8 Rev. 5.4	12/15/2021	12/17/2021 10:40	Vijayalakshmi Reddy	12/22/2021 05:02	Alexander Thompson	2295295
	12/15/2021	12/17/2021 10:40	Vijayalakshmi Reddy	12/22/2021 05:11	Alexander Thompson	2295296
	12/15/2021	12/17/2021 10:40	Vijayalakshmi Reddy	12/27/2021 18:28	Alexander Thompson	2295295
	12/15/2021	12/17/2021 10:40	Vijayalakshmi Reddy	12/27/2021 18:35	Alexander Thompson	2295296
EPA 300.0 Rev. 2.1	12/15/2021			12/16/2021 22:31	Roberta Tatti	2295278
	12/15/2021			12/16/2021 22:43	Roberta Tatti	2295279
EPA 350.1 Rev. 2.0	12/15/2021			01/03/2022 13:36	Ping Hua	2295281
	12/15/2021			01/03/2022 13:44	Ping Hua	2295280
EPA 351.2 Rev. 2.0	12/15/2021	12/29/2021 11:36	Samantha L Bates	01/03/2022 15:39	Alexandra J Mattheus	2295280
	12/15/2021	12/29/2021 11:36	Samantha L Bates	01/03/2022 15:44	Alexandra J Mattheus	2295281
EPA 353.2 Rev. 2.0	12/15/2021			12/17/2021 10:56	Beverly Y. Sanders	2295280
	12/15/2021			12/17/2021 10:57	Beverly Y. Sanders	2295281
EPA 365.1 Rev. 2.0	12/15/2021	12/16/2021 12:00	Simonne.V. Calhoun	12/21/2021 15:12	Shengyu Ding	2295280
	12/15/2021	12/16/2021 12:00	Simonne.V. Calhoun	12/21/2021 15:14	Shengyu Ding	2295281
EPA 365.1 Rev. 2.0 dissolved	12/15/2021			12/15/2021 14:54	James L Waggeberby	2295282
	12/15/2021			12/15/2021 15:03	James L Waggeberby	2295283
EPA 8321B	12/15/2021	12/15/2021 15:00	Juyoung Kim	12/15/2021 16:21	Juyoung Kim	2295293
	12/15/2021	12/15/2021 15:00	Juyoung Kim	12/15/2021 16:32	Juyoung Kim	2295294
	12/15/2021	12/15/2021 15:00	Juyoung Kim	12/15/2021 20:27	Manjita Shrestha	2295293
	12/15/2021	12/15/2021 15:00	Juyoung Kim	12/15/2021 20:42	Manjita Shrestha	2295294
	12/15/2021	12/17/2021 10:00	Hoor Shaik	12/18/2021 19:17	Juyoung Kim	2295293
	12/15/2021	12/17/2021 10:00	Hoor Shaik	12/18/2021 20:26	Juyoung Kim	2295294
SM 2120 B-2011	12/15/2021			12/15/2021 16:03	Samantha L Bates	2295278
	12/15/2021			12/15/2021 16:04	Samantha L Bates	2295279
SM 2320 B-2011	12/15/2021			12/16/2021 22:44	Dale L. Simmons	2295278
	12/15/2021			12/16/2021 22:53	Dale L. Simmons	2295279
SM 2340B	12/15/2021			12/21/2021 21:56	Josef B Mick	2295295
	12/15/2021			12/21/2021 22:04	Josef B Mick	2295296
SM 2540 C-2011	12/15/2021			12/17/2021 14:20	Simonne.V. Calhoun	2295278, 2295279
SM 2540 D-2011	12/15/2021			12/17/2021 14:20	Simonne.V. Calhoun	2295278, 2295279
SM 4500 F-C-2011	12/15/2021			12/16/2021 22:44	Dale L. Simmons	2295278
	12/15/2021			12/16/2021 22:53	Dale L. Simmons	2295279
SM 5310 B-2011	12/15/2021			01/04/2022 23:12	Touraj Touran	2295281
	12/15/2021			12/29/2021 19:28	Khloe J Berg	2295280