

Chemical Analysis Report

NE-DIST-2021-12-01-01

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-2021-10-04-23**
Customer: **NE-DIST**
Project ID: **SMP**

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Date Certified: 27-DEC-2021 09:49



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 North

Collection Date/Time: 11/30/2021 11:55

Field ID: G2NE1219

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2291960	EPA 180.1 Rev. 2.0	Turbidity	0.70		NTU	P406923	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P407186	
		Sulfate	9.5		mg SO4/L	P407189	
	SM 2120 B-2011	Color (true)	9.3		PCU	P406897	
	SM 2320 B-2011	Total Alkalinity	2.2	I	mg CaCO3/L	P407030	
	SM 2540 C-2011	TDS	53		mg/L	P407378	
	SM 2540 D-2011	TSS	2	U	mg/L	P407347	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P407039	
2291962	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P407372	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36		mg N/L	P406997	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P406984	
	EPA 365.1 Rev. 2.0	Total-P	0.008		mg P/L	P406888	
	SM 5310 B-2011	Organic Carbon	5.3		mg C/L	P407554	
2291964	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P406902	
2291972	EPA 8321B	2,4-D	0.098		ug/L	P406988	
		Acesulfame K	0.10	U	ug/L	P406948	MS
		2,4,5-T	0.0040	U	ug/L	P406988	
		AMPA	0.10	U	ug/L	P406948	
		Acetaminophen	0.0080	U	ug/L	P406988	
		Acetamiprid	0.0020	U	ug/L	P406988	
		Endothall	0.25	U	ug/L	P406948	
		Glufosinate	0.10	U	ug/L	P406948	
		Glyphosate	0.10	U	ug/L	P406948	
		Afidopyropen	0.0020	U	ug/L	P406988	
		Bentazon	8.0E-04	U	ug/L	P406988	
		Sucralose	0.22		ug/L	P406948	
		Benzovindiflupyr	0.0020	U	ug/L	P406988	
		Carbamazepine	8.0E-04	U	ug/L	P406988	
		Clothianidin	0.0020	U	ug/L	P406988	
		Dinotefuran	0.0020	U	ug/L	P406988	
		Diuron	0.0020	U	ug/L	P406988	
		Fenuron	0.016	U	ug/L	P406988	
		Fluridone	0.0012	I	ug/L	P406988	
		Imazapyr	0.045		ug/L	P406988	
		Hydrocodone	0.0020	U	ug/L	P406988	
		Ibuprofen	0.020	U	ug/L	P406988	
		Imidacloprid	0.0020	U	ug/L	P406988	
		Linuron	0.0040	U	ug/L	P406988	RPD
		Mandestrobin	0.0020	U	ug/L	P406988	
		MCP	0.0040	U	ug/L	P406988	
		Naproxen	0.0080	U	ug/L	P406988	
		Primidone	0.0040	U	ug/L	P406988	
		Pyraclostrobin	0.0020	U	ug/L	P406988	

Field ID: G2NE1219

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2291972	EPA 8321B	Thiamethoxam	0.0020	U	ug/L	P406988	
		Tolfenpyrad	0.0020	U	ug/L	P406988	
		Triclopyr	0.0040	U	ug/L	P406988	
2291974	EPA 200.7 Rev. 4.4	Barium	8.3		ug/L	P407026	
		Calcium	3.72		mg/L	P407026	
		Iron	30	U	ug/L	P407026	
		Magnesium	1.52		mg/L	P407026	
	EPA 200.8 Rev. 5.4	Manganese	1.4	I	ug/L	P407026	
		Potassium	0.99	I	mg/L	P407026	
		Sodium	8.5		mg/L	P407026	
		Zinc	5.0	U	ug/L	P407026	
		Aluminum	38		ug/L	P407026	
		Antimony	0.062	I	ug/L	P407026	
		Arsenic	2.07		ug/L	P407026	
		Beryllium	0.010	U	ug/L	P407026	
		Boron**	28.6		ug/L	P407026	
		Cadmium	0.020	U	ug/L	P407026	
		Chromium	0.40	U	ug/L	P407026	
		Copper	0.40	U	ug/L	P407026	
		Lead	0.20	U	ug/L	P407026	
		Nickel	0.50	U	ug/L	P407026	
		Selenium	0.20	U	ug/L	P407026	MS
		Silver	0.010	U	ug/L	P407026	
		Thallium	0.10	U	ug/L	P407026	
	SM 2340B	Hardness	15.5		mg/L	P407026	

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: 11/30/2021 12:15

Field ID: G2NE1218

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2291961	EPA 180.1 Rev. 2.0	Turbidity	0.65		NTU	P406923	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P407186	
		Sulfate	8.8		mg SO4/L	P407189	
	SM 2120 B-2011	Color (true)	21		PCU	P406897	
	SM 2320 B-2011	Total Alkalinity	3.3		mg CaCO3/L	P407030	
	SM 2540 C-2011	TDS	53		mg/L	P407378	
	SM 2540 D-2011	TSS	2	U	mg/L	P407347	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P407039	
2291963	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P407372	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40		mg N/L	P406997	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P406984	
	EPA 365.1 Rev. 2.0	Total-P	0.008		mg P/L	P406888	
	SM 5310 B-2011	Organic Carbon	6.5		mg C/L	P407554	
2291965	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P406902	
2291973	EPA 8321B	2,4-D	0.033		ug/L	P406988	
		Acesulfame K	0.13	I	ug/L	P406948	MS
		2,4,5-T	0.0040	U	ug/L	P406988	
		AMPA	0.10	U	ug/L	P406948	
		Acetaminophen	0.0080	U	ug/L	P406988	
		Acetamiprid	0.0020	U	ug/L	P406988	
		Endothall	0.25	U	ug/L	P406948	
		Glufosinate	0.10	U	ug/L	P406948	
		Glyphosate	0.10	U	ug/L	P406948	
		Afidopyropen	0.0020	U	ug/L	P406988	
		Bentazon	8.0E-04	U	ug/L	P406988	
		Sucralose	0.33		ug/L	P406948	
		Benzovindiflupyr	0.0020	U	ug/L	P406988	
		Carbamazepine	8.0E-04	U	ug/L	P406988	
		Clothianidin	0.0020	U	ug/L	P406988	
		Dinotefuran	0.0020	U	ug/L	P406988	
		Diuron	0.0020	U	ug/L	P406988	
		Fenuron	0.016	U	ug/L	P406988	
		Fluridone	0.0087		ug/L	P406988	
		Imazapyr	0.23		ug/L	P406988	
		Hydrocodone	0.0020	U	ug/L	P406988	
		Ibuprofen	0.020	U	ug/L	P406988	
		Imidacloprid	0.0020	U	ug/L	P406988	
		Linuron	0.0040	U	ug/L	P406988	RPD
		Mandestrobin	0.0020	U	ug/L	P406988	
		MCP	0.0040	U	ug/L	P406988	
		Naproxen	0.0080	U	ug/L	P406988	
		Primidone	0.0040	U	ug/L	P406988	
		Pyraclostrobin	0.0020	U	ug/L	P406988	

Field ID: G2NE1218

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2291973	EPA 8321B	Thiamethoxam	0.0020	U	ug/L	P406988	
		Tolfenpyrad	0.0020	U	ug/L	P406988	
		Triclopyr	0.0040	U	ug/L	P406988	
2291975	EPA 200.7 Rev. 4.4	Barium	10		ug/L	P407026	
		Calcium	4.25		mg/L	P407026	
		Iron	30	U	ug/L	P407026	
		Magnesium	1.48		mg/L	P407026	
		Manganese	3.9	I	ug/L	P407026	
		Potassium	1.0	I	mg/L	P407026	
		Sodium	8.3		mg/L	P407026	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P407026	
		Aluminum	44		ug/L	P407026	
		Antimony	0.054	I	ug/L	P407026	
		Arsenic	2.69		ug/L	P407026	
		Beryllium	0.011	I	ug/L	P407026	
		Boron**	29.1		ug/L	P407026	
		Cadmium	0.020	U	ug/L	P407026	
		Chromium	0.40	U	ug/L	P407026	
		Copper	0.49	I	ug/L	P407026	
		Lead	0.20	U	ug/L	P407026	
		Nickel	0.50	U	ug/L	P407026	
		Selenium	0.20	U	ug/L	P407026	MS
		Silver	0.010	U	ug/L	P407026	
		Thallium	0.10	U	ug/L	P407026	
	SM 2340B	Hardness	16.7		mg/L	P407026	

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: P406923

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P407026

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: P407026

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: P407186

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P407189

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P407372

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406997

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P406984

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P406888

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406902

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

Reference Method: EPA 8321B
Batch ID: P406948

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: P406988

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P406988

Component	Result	Code	Units
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
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: P406897

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P407030

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

Reference Method: SM 2540 C-2011
Batch ID: P407378

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P407347

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P407039

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P407554

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: P407026

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	104		P	85 - 115
Calcium	105		P	85 - 115
Iron	107		P	85 - 115
Magnesium	109		P	85 - 115
Manganese	105		P	85 - 115
Potassium	101		P	85 - 115
Sodium	101		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P407026

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	98.4		P	85 - 115
Beryllium	100		P	85 - 115
Boron	102		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	100		P	85 - 115
Copper	98.1		P	85 - 115
Lead	97.6		P	85 - 115
Nickel	98.2		P	85 - 115
Selenium	97.7		P	85 - 115
Silver	102		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P407186

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P407189

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P407372

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P406997

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P406984

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P406888

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P406902

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.8		P	90 - 110

Reference Method: EPA 8321B

Batch ID: P406948

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	81.0		P	40 - 150
AMPA	111		P	40 - 160
Endothall	71.4		P	40 - 150
Glufosinate	96.1		P	40 - 160
Glyphosate	115		P	40 - 160
Sucralose	100		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P406988

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	99.1		P	40 - 150
2,4,5-T	109		P	40 - 150
Acetaminophen	100		P	30 - 150
Acetamiprid	96.1		P	40 - 150
Afidopyropen	70.4		P	40 - 150
Bentazon	95.1		P	30 - 150
Benzovindiflupyr	75.6		P	40 - 150
Carbamazepine	86.7		P	40 - 150
Clothianidin	112		P	40 - 150
Dinotefuran	89.9		P	40 - 150
Diuron	103		P	40 - 150
Fenuron	94.3		P	40 - 150
Fluridone	91.8		P	40 - 150
Hydrocodone	92.9		P	40 - 150
Ibuprofen	57.7		P	40 - 150
Imazapyr	120		P	40 - 150
Imidacloprid	103		P	40 - 150
Linuron	107		P	40 - 150
Mandestrobin	86.2		P	40 - 150
MCPP	104		P	40 - 150
Naproxen	140		P	40 - 150
Primidone	91.4		P	40 - 150
Pyraclostrobin	83.7		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P406988

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Thiamethoxam	105		P	40 - 150
Tolfenpyrad	36.4		P	30 - 150
Triclopyr	129		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P406897

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.2		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P407030

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.9		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P407039

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P407554

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P407026

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2292107	Barium	103	103	P/P	80 - 120
2292107	Calcium	105	103	P/P	80 - 120
2292107	Iron	108	105	P/P	80 - 120
2292107	Magnesium	110	108	P/P	80 - 120
2292107	Manganese	105	105	P/P	80 - 120
2292107	Potassium	106	105	P/P	80 - 120
2292107	Sodium	100		P	80 - 120
2292107	Zinc	107	106	P/P	80 - 120
2292629	Barium	103		P	80 - 120
2292629	Calcium	102		P	80 - 120
2292629	Iron	108		P	80 - 120
2292629	Magnesium	109		P	80 - 120
2292629	Manganese	105		P	80 - 120
2292629	Potassium	100		P	80 - 120
2292629	Sodium	100		P	80 - 120
2292629	Zinc	110		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P407026

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2292107	Aluminum	98.8	98.9	P/P	80 - 120
2292107	Antimony	102	102	P/P	80 - 120
2292107	Arsenic	96.5	98.0	P/P	80 - 120
2292107	Beryllium	92.3	94.6	P/P	80 - 120
2292107	Boron	100	100	P/P	80 - 120
2292107	Cadmium	102	102	P/P	80 - 120
2292107	Chromium	103	103	P/P	80 - 120
2292107	Copper	96.4	96.5	P/P	80 - 120
2292107	Lead	97.8	97.5	P/P	80 - 120
2292107	Nickel	102	103	P/P	80 - 120
2292107	Selenium	49.8	56.4	F/F	80 - 120
2292107	Silver	101	101	P/P	80 - 120
2292107	Thallium	103	103	P/P	80 - 120
2292629	Aluminum	99.3		P	80 - 120
2292629	Antimony	101		P	80 - 120
2292629	Arsenic	97.3		P	80 - 120
2292629	Beryllium	96.8		P	80 - 120
2292629	Boron	101		P	80 - 120
2292629	Cadmium	101		P	80 - 120
2292629	Chromium	102		P	80 - 120
2292629	Copper	95.4		P	80 - 120
2292629	Lead	97.9		P	80 - 120
2292629	Nickel	96.4		P	80 - 120
2292629	Selenium	91.8		P	80 - 120
2292629	Silver	99.9		P	80 - 120
2292629	Thallium	103		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P407186

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P407186

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2291650	Chloride	98.1		P	90 - 110
2291960	Chloride	99.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P407189

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2291650	Sulfate	93.5		P	90 - 110
2291960	Sulfate	95.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P407372

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2291962	Ammonia-N	98.0	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406997

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2291950	Kjeldahl Nitrogen	108	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P406984

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2291949	NO2NO3-N	99.0	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P406888

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2291948	Total-P	106	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406902

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2291964	O-Phosphate-P	102	99.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P406948

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2291412	Acesulfame K	168	177	F/F	40 - 150
2291412	AMPA	82.8	97.7	P/P	40 - 160
2291412	Endothall	79.4	81.4	P/P	40 - 150
2291412	Glufosinate	78.5	89.1	P/P	40 - 160
2291412	Glyphosate	79.7	85.3	P/P	40 - 160
2291412	Sucralose	104	109	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P406988

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2291477	2,4,5-T	141	108	P/P	40 - 150
2291477	Acetaminophen	88.9	114	P/P	30 - 150
2291477	Acetamiprid	92.1	94.8	P/P	40 - 150
2291477	Afidopyropen	82.6	82.8	P/P	40 - 150
2291477	Benzovindiflupyr	80.3	87.3	P/P	40 - 150
2291477	Carbamazepine	82.8	94.2	P/P	40 - 150
2291477	Clothianidin	118	109	P/P	40 - 150
2291477	Dinotefuran	107	120	P/P	40 - 150
2291477	Diuron	80.8	76.5	P/P	40 - 150
2291477	Fenuron	81.6	84.0	P/P	40 - 150
2291477	Hydrocodone	101	103	P/P	40 - 150
2291477	Ibuprofen	68.2	61.1	P/P	40 - 150
2291477	Imazapyr	98.1	125	P/P	40 - 150
2291477	Imidacloprid	128	130	P/P	40 - 150
2291477	Linuron	102	69.9	P/P	40 - 150
2291477	Mandestrobin	78.1	87.6	P/P	40 - 150
2291477	MCPP	97.0	95.3	P/P	40 - 150
2291477	Naproxen	59.6	78.6	P/P	40 - 150
2291477	Primidone	102	103	P/P	40 - 150
2291477	Pyraclostrobin	76.2	85.4	P/P	40 - 150
2291477	Thiamethoxam	132	146	P/P	40 - 150
2291477	Tolfenpyrad	44.8	57.0	P/P	30 - 150
2291477	Triclopyr	110	82.5	P/P	40 - 150

Reference Method: SM 4500 F-C-2011

Batch ID: P407039

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2291991	Fluoride	98.9	98.9	P/P	92 - 107

Reference Method: SM 5310 B-2011

Batch ID: P407554

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2292006	Organic Carbon	97.2	97.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P406923

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2291878	Turbidity	4.52	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P407026

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2292107	Barium	0.232	Spike	P	0 - 20
2292107	Calcium	1.86	Spike	P	0 - 20
2292107	Iron	1.67	Spike	P	0 - 20
2292107	Magnesium	1.80	Spike	P	0 - 20
2292107	Manganese	0.245	Spike	P	0 - 20
2292107	Potassium	1.04	Spike	P	0 - 20
2292107	Sodium	0.637	Spike	P	0 - 20
2292107	Zinc	0.952	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P407026

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2292107	Aluminum	0.143	Spike	P	0 - 20
2292107	Antimony	0.135	Spike	P	0 - 20
2292107	Arsenic	1.47	Spike	P	0 - 20
2292107	Beryllium	2.23	Spike	P	0 - 20
2292107	Boron	0.326	Spike	P	0 - 20
2292107	Cadmium	0.171	Spike	P	0 - 20
2292107	Chromium	0.311	Spike	P	0 - 20
2292107	Copper	0.0656	Spike	P	0 - 20
2292107	Lead	0.264	Spike	P	0 - 20
2292107	Nickel	0.397	Spike	P	0 - 20
2292107	Selenium	12.5	Spike	P	0 - 20
2292107	Silver	0.278	Spike	P	0 - 20
2292107	Thallium	0.445	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P407186

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2291650	Chloride	0.983	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P407189

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2291650	Sulfate	0.0726	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P407372

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2291962	Ammonia-N	1.64	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P406997

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2291950	Kjeldahl Nitrogen	0.799	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P406984

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2291949	NO2NO3-N	0.252	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P406888

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2291948	Total-P	0.349	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P406902

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2291964	O-Phosphate-P	1.69	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P406948

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2291412	Acesulfame K	5.18	Spike	P	0 - 30
2291412	AMPA	16.5	Spike	P	0 - 30
2291412	Endothall	2.51	Spike	P	0 - 30
2291412	Glufosinate	12.6	Spike	P	0 - 30
2291412	Glyphosate	6.81	Spike	P	0 - 30
2291412	Sucralose	4.48	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P406988

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2291477	2,4-D	20.9	Spike	P	0 - 30
2291477	2,4,5-T	26.4	Spike	P	0 - 30
2291477	Acetaminophen	24.6	Spike	P	0 - 30
2291477	Acetamiprid	2.92	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P406988

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2291477	Afidopyropen	0.164	Spike	P	0 - 30
2291477	Bentazon	27.0	Spike	P	0 - 30
2291477	Benzovindiflupyr	8.39	Spike	P	0 - 30
2291477	Carbamazepine	12.3	Spike	P	0 - 30
2291477	Clothianidin	8.05	Spike	P	0 - 30
2291477	Dinotefuran	11.0	Spike	P	0 - 30
2291477	Diuron	4.69	Spike	P	0 - 30
2291477	Fenuron	2.92	Spike	P	0 - 30
2291477	Fluridone	2.80	Spike	P	0 - 30
2291477	Hydrocodone	2.54	Spike	P	0 - 30
2291477	Ibuprofen	11.0	Spike	P	0 - 30
2291477	Imazapyr	24.3	Spike	P	0 - 30
2291477	Imidacloprid	1.74	Spike	P	0 - 30
2291477	Linuron	37.2	Spike	F	0 - 30
2291477	Mandestrobin	11.5	Spike	P	0 - 30
2291477	MCPP	1.86	Spike	P	0 - 30
2291477	Naproxen	27.6	Spike	P	0 - 30
2291477	Primidone	1.01	Spike	P	0 - 30
2291477	Pyraclostrobin	11.4	Spike	P	0 - 30
2291477	Thiamethoxam	9.57	Spike	P	0 - 30
2291477	Tolfenpyrad	24.0	Spike	P	0 - 30
2291477	Triclopyr	28.5	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P406897

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2291840	Color (true)	2.00	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P407030

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2291991	Total Alkalinity	4.56	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P407378

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2291887	TDS	4.62	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P407039

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2291991	Fluoride	0.0	Spike	P	0 - 2.1

Quality Assurance Report

Precision

Reference Method: SM 5310 B-2011
Batch ID: P407554

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2292006	Organic Carbon	0.0944	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2291972
Field Sample ID: G2NE1219

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	129	P	30 - 160
EPA 8321B	Acetaminophen-d4	96.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	113	P	30 - 160
EPA 8321B	Diuron-d6	76.4	P	30 - 160
EPA 8321B	Endothall-d6	78.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	91.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	83.1	P	30 - 160
EPA 8321B	Primidone-d5	115	P	30 - 160
EPA 8321B	Sucralose-d6	90.2	P	30 - 160

Lab Sample ID: 2291973
Field Sample ID: G2NE1218

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	126	P	30 - 160
EPA 8321B	Acetaminophen-d4	98.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	118	P	30 - 160
EPA 8321B	Diuron-d6	67.5	P	30 - 160
EPA 8321B	Endothall-d6	82.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	81.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	53.5	P	30 - 160
EPA 8321B	Primidone-d5	125	P	30 - 160
EPA 8321B	Sucralose-d6	88.3	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B-2011

Run ID: A109149

Included Lab Sample IDs: 2291960, 2291961

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	99.8	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A109150

Included Lab Sample IDs: 2291964, 2291965

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	99.0	P/P	90 - 110
O-Phosphate-P	99.6	99.4	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A109159

Included Lab Sample IDs: 2291960, 2291961

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

Reference Method: EPA 8321B

Run ID: A109189

Included Lab Sample IDs: 2291972, 2291973

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	96.6	99.5	P/P	60 - 160
Glufosinate	96.9	97.1	P/P	60 - 160
Glyphosate	101	107	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A109190

Included Lab Sample IDs: 2291962, 2291963

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

Reference Method: SM 2320 B-2011

Run ID: A109203

Included Lab Sample IDs: 2291960, 2291961

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.9	99.0	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A109203

Included Lab Sample IDs: 2291960, 2291961

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A109217

Included Lab Sample IDs: 2291962, 2291963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	99.2	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A109218

Included Lab Sample IDs: 2291972, 2291973

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	77.4	66.8	P/P	60 - 160
Endothall	70.4	64.9	P/P	60 - 160
Sucralose	106	104	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A109220

Included Lab Sample IDs: 2291962, 2291963

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A109229

Included Lab Sample IDs: 2291974, 2291975

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	102	101	P/P	90 - 110
Calcium	99.7	99.0	P/P	90 - 110
Iron	103	102	P/P	90 - 110
Magnesium	102	102	P/P	90 - 110
Manganese	102	101	P/P	90 - 110
Potassium	97.1	96.4	P/P	90 - 110
Sodium	98.6	97.9	P/P	90 - 110
Zinc	99.2	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A109251

Included Lab Sample IDs: 2291974, 2291975

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.1	95.8	P/P	90 - 110
Antimony	94.2	94.6	P/P	90 - 110
Arsenic	95.6	94.1	P/P	90 - 110
Beryllium	94.5	91.8	P/P	90 - 110
Boron	100	102	P/P	90 - 110
Cadmium	97.1	97.6	P/P	90 - 110
Chromium	96.7	95.9	P/P	90 - 110
Copper	92.7	90.7	P/P	90 - 110
Lead	92.6	91.9	P/P	90 - 110
Selenium	96.1	96.9	P/P	90 - 110
Silver	96.6	96.1	P/P	90 - 110
Thallium	95.3	94.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A109256

Included Lab Sample IDs: 2291960, 2291961

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110
Chloride	98.3	100	P/P	90 - 110
Sulfate	98.0	98.4	P/P	90 - 110
Sulfate	98.4	99.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A109281

Included Lab Sample IDs: 2291974, 2291975

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nickel	98.4	94.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A109347

Included Lab Sample IDs: 2291962, 2291963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.9	98.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A109350

Included Lab Sample IDs: 2291972, 2291973

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	119	69.6	P/P	50 - 150
2,4,5-T	100	94.5	P/P	50 - 150
Acetaminophen	94.6	91.9	P/P	60 - 160
Acetamiprid	103	96.1	P/P	50 - 150
Afidopyropen	104	102	P/P	50 - 150
Bentazon	110	111	P/P	50 - 160
Benzovindiflupyr	83.0	118	P/P	50 - 150
Carbamazepine	107	96.2	P/P	60 - 150
Clothianidin	106	115	P/P	60 - 150
Dinotefuran	118	93.1	P/P	50 - 150
Diuron	109	109	P/P	60 - 160
Fenuron	100	102	P/P	60 - 150
Fluridone	99.7	111	P/P	60 - 160
Hydrocodone	99.0	98.4	P/P	60 - 150
Ibuprofen	113	69.9	P/P	50 - 160
Imazapyr	94.6	85.4	P/P	50 - 150
Imidacloprid	75.3	94.6	P/P	60 - 150
Linuron	92.2	84.6	P/P	60 - 150
Mandestrobin	106	111	P/P	50 - 150
MCPP	94.1	110	P/P	50 - 150
Naproxen	141	92.8	P/P	50 - 160
Primidone	111	83.0	P/P	60 - 150
Pyraclostrobin	117	108	P/P	60 - 150
Thiamethoxam	111	113	P/P	50 - 150
Tolfenpyrad	101	61.8	P/P	60 - 150
Triclopyr	108	87.3	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A109430

Included Lab Sample IDs: 2291962, 2291963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.5	96.4	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						4.52	
EPA 200.7 Rev. 4.4	Barium	104	103	103	103			0.232
	Calcium	105	105	103	102			1.86
	Iron	107	108	105	108			1.67
	Magnesium	109	110	108	109			1.80
	Manganese	105	105	105	105			0.245
	Potassium	101	106	105	100			1.04
	Sodium	101	100	100				0.637
	Zinc	104	107	106	110			0.952
EPA 200.8 Rev. 5.4	Aluminum	101	99.3	98.8	98.9			0.143
	Antimony	101	101	102	102			0.135
	Arsenic	98.4	97.3	96.5	98.0			1.47
	Beryllium	100	96.8	92.3	94.6			2.23
	Boron	102	101	100	100			0.326
	Cadmium	103	101	102	102			0.171
	Chromium	100	102	103	103			0.311
	Copper	98.1	95.4	96.4	96.5			0.0656
	Lead	97.6	97.9	97.8	97.5			0.264
	Nickel	98.2	102	103	96.4			0.397
	Selenium	97.7	91.8	49.8	56.4			12.5
	Silver	102	99.9	101	101			0.278
	Thallium	102	103	103	103			0.445
EPA 300.0 Rev. 2.1	Chloride	98.8	98.1	99.5			0.983	
	Sulfate	96.3	93.5	95.8			0.0726	
EPA 350.1 Rev. 2.0	Ammonia-N	99.4	98.0	99.8				1.64
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	108	107				0.799
EPA 353.2 Rev. 2.0	NO2NO3-N	102	99.0	99.5				0.252
EPA 365.1 Rev. 2.0	Total-P	102	106	106				0.349
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.8	102	99.9				1.69
EPA 8321B	2,4-D	99.1						20.9
	2,4,5-T	109	141	108				26.4
	Acesulfame K	81.0	168	177				5.18
	Acetaminophen	100	88.9	114				24.6
	Acetamiprid	96.1	92.1	94.8				2.92
	Afidopyropen	70.4	82.6	82.8				0.164
	AMPA	111	82.8	97.7				16.5
	Bentazon	95.1						27.0
	Benzovindiflupyr	75.6	80.3	87.3				8.39
	Carbamazepine	86.7	82.8	94.2				12.3
	Clothianidin	112	118	109				8.05
	Dinotefuran	89.9	107	120				11.0
	Diuron	103	80.8	76.5				4.69
	Endothall	71.4	79.4	81.4				2.51
	Fenuron	94.3	81.6	84.0				2.92
	Fluridone	91.8						2.80
	Glufosinate	96.1	78.5	89.1				12.6
	Glyphosate	115	79.7	85.3				6.81
	Hydrocodone	92.9	101	103				2.54
	Ibuprofen	57.7	68.2	61.1				11.0
	Imazapyr	120	98.1	125				24.3
	Imidacloprid	103	128	130				1.74
	Linuron	107	102	69.9				37.2
	Mandestrobin	86.2	78.1	87.6				11.5
	MCPP	104	97.0	95.3				1.86

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
EPA 8321B	Naproxen	140	59.6	78.6			27.6
	Primidone	91.4	102	103			1.01
	Pyraclostrobin	83.7	76.2	85.4			11.4
	Sucralose	100	104	109			4.48
	Thiamethoxam	105	132	146			9.57
	Tolfenpyrad	36.4	44.8	57.0			24.0
	Triclopyr	129	110	82.5			28.5
SM 2120 B-2011	Color (true)	99.2				2.00	
SM 2320 B-2011	Total Alkalinity	98.9				4.56	
SM 2540 C-2011	TDS					4.62	
SM 4500 F-C-2011	Fluoride	102	98.9	98.9			0.0
SM 5310 B-2011	Organic Carbon	94.5	97.2	97.4			0.0944

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2291960, 2291961
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2291974, 2291975
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2291974, 2291975
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2291960, 2291961
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2291960, 2291961
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2291962, 2291963
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2291962, 2291963
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2291962, 2291963
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2291962, 2291963
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2291964, 2291965
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2291972, 2291973
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2291960, 2291961
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2291960, 2291961
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2291974, 2291975
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2291960, 2291961
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2291960, 2291961
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2291960, 2291961
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2291962, 2291963

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	12/01/2021			12/01/2021 17:34	Khloe J Berg	2291960, 2291961
EPA 200.7 Rev. 4.4	12/01/2021	12/06/2021 10:13	Emily M Philpot	12/06/2021 23:20	Josef B Mick	2291974
	12/01/2021	12/06/2021 10:13	Emily M Philpot	12/06/2021 23:28	Josef B Mick	2291975
EPA 200.8 Rev. 5.4	12/01/2021	12/06/2021 10:13	Emily M Philpot	12/07/2021 17:49	Alexander Thompson	2291974
	12/01/2021	12/06/2021 10:13	Emily M Philpot	12/07/2021 17:58	Alexander Thompson	2291975
	12/01/2021	12/06/2021 10:13	Emily M Philpot	12/08/2021 16:12	Alexander Thompson	2291974
	12/01/2021	12/06/2021 10:13	Emily M Philpot	12/08/2021 16:18	Alexander Thompson	2291975
EPA 300.0 Rev. 2.1	12/01/2021			12/07/2021 16:13	Roberta Tatti	2291960
	12/01/2021			12/07/2021 18:51	Roberta Tatti	2291961
EPA 350.1 Rev. 2.0	12/01/2021			12/13/2021 12:46	Ping Hua	2291962
	12/01/2021			12/13/2021 12:57	Ping Hua	2291963
EPA 351.2 Rev. 2.0	12/01/2021	12/03/2021 12:35	Benjamin T. Nordmann	12/06/2021 12:17	Alexandra J Mattheus	2291962
	12/01/2021	12/03/2021 12:35	Benjamin T. Nordmann	12/06/2021 12:18	Alexandra J Mattheus	2291963
EPA 353.2 Rev. 2.0	12/01/2021			12/03/2021 10:00	Beverly Y. Sanders	2291962
	12/01/2021			12/03/2021 10:01	Beverly Y. Sanders	2291963
EPA 365.1 Rev. 2.0	12/01/2021	12/02/2021 14:15	Simonne.V. Calhoun	12/06/2021 12:42	Shengyu Ding	2291962
	12/01/2021	12/02/2021 14:15	Simonne.V. Calhoun	12/06/2021 12:43	Shengyu Ding	2291963
EPA 365.1 Rev. 2.0 dissolved	12/01/2021			12/01/2021 14:41	James L Waggeberby	2291964
	12/01/2021			12/01/2021 14:56	James L Waggeberby	2291965
EPA 8321B	12/01/2021	12/02/2021 15:00	Juyoung Kim	12/02/2021 23:30	Juyoung Kim	2291972
	12/01/2021	12/02/2021 15:00	Juyoung Kim	12/02/2021 23:41	Juyoung Kim	2291973
	12/01/2021	12/02/2021 15:00	Juyoung Kim	12/03/2021 14:51	Manjita Shrestha	2291972
	12/01/2021	12/02/2021 15:00	Juyoung Kim	12/03/2021 15:05	Manjita Shrestha	2291973
	12/01/2021	12/06/2021 09:00	Hoor Shaik	12/11/2021 07:52	Juyoung Kim	2291972
	12/01/2021	12/06/2021 09:00	Hoor Shaik	12/11/2021 08:26	Juyoung Kim	2291973
SM 2120 B-2011	12/01/2021			12/01/2021 15:56	Samantha L Bates	2291960
	12/01/2021			12/01/2021 15:57	Samantha L Bates	2291961
SM 2320 B-2011	12/01/2021			12/04/2021 05:19	Dale L. Simmons	2291960
	12/01/2021			12/04/2021 05:28	Dale L. Simmons	2291961
SM 2340B	12/01/2021			12/06/2021 23:20	Josef B Mick	2291974
	12/01/2021			12/06/2021 23:28	Josef B Mick	2291975
SM 2540 C-2011	12/01/2021			12/03/2021 15:08	Yijie Li	2291960, 2291961
SM 2540 D-2011	12/01/2021			12/03/2021 15:35	Yijie Li	2291960, 2291961
SM 4500 F-C-2011	12/01/2021			12/04/2021 05:19	Dale L. Simmons	2291960
	12/01/2021			12/04/2021 05:28	Dale L. Simmons	2291961
SM 5310 B-2011	12/01/2021			12/15/2021 20:27	Khloe J Berg	2291962
	12/01/2021			12/15/2021 20:43	Khloe J Berg	2291963