

Chemical Analysis Report

SO-DIST-2021-07-16-01

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

Event Description: **2021 SMP: Tri-County Fair**

Request ID: **RQ-2021-07-05-56**

Customer: **SO-DIST**

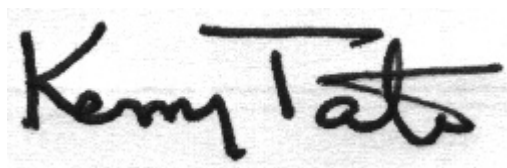
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
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Attn: William Mullen

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

Date Certified: 13-AUG-2021 11:21

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: Drainage Ditch @ CR 850

Collection Date/Time: 07/15/2021 08:35

Field ID: G1SD0061

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2262589	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P401108	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P401362	
		Sulfate	37		mg SO4/L	P401365	
		Color (true)	100		PCU	P401105	
	SM 2320 B-2011	Total Alkalinity	202		mg CaCO3/L	P401349	
	SM 2540 C-2011	TDS	332		mg/L	P401570	RPD
	SM 2540 D-2011	TSS	3	I	mg/L	P401564	
	SM 4500 F-C-2011	Fluoride	0.14		mg F/L	P401351	
2262590	EPA 350.1 Rev. 2.0	Ammonia-N	0.080		mg N/L	P401646	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P401999	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P401154	
	EPA 365.1 Rev. 2.0	Total-P	0.084		mg P/L	P401399	
	SM 5310 B-2011	Organic Carbon	17		mg C/L	P401621	
2262591	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.048		mg P/L	P401095	
2262606	EPA 200.7 Rev. 4.4	Barium	24.2		ug/L	P401304	
		Calcium	89.5		mg/L	P401304	
		Iron	1.36E+03		ug/L	P401304	
		Magnesium	8.70		mg/L	P401304	
		Manganese	14.7		ug/L	P401304	
		Potassium	8.8		mg/L	P401304	
		Sodium	12.8		mg/L	P401304	
		Zinc	6.5	I	ug/L	P401304	
	EPA 200.8 Rev. 5.4	Aluminum	35		ug/L	P401304	
		Antimony	0.17	I	ug/L	P401304	
		Arsenic	1.08		ug/L	P401304	
		Boron**	51.7		ug/L	P401304	
		Cadmium	0.020	U	ug/L	P401304	
		Chromium	0.67	I	ug/L	P401304	
		Copper	0.73	I	ug/L	P401304	
		Lead	0.20	U	ug/L	P401304	
		Nickel	0.95	I	ug/L	P401304	
		Selenium	0.21	I	ug/L	P401304	
		Silver	0.010	U	ug/L	P401304	
		Thallium	0.10	U	ug/L	P401304	
	SM 2340B	Hardness	259		mg/L	P401304	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: C-139 Annex @ Deer Fence Canal Rd

Collection Date/Time: 07/15/2021 09:55

Field ID: G1SD0076

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2262592	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P401108	
	EPA 300.0 Rev. 2.1	Chloride	59		mg Cl/L	P401362	
		Sulfate	15		mg SO4/L	P401365	
		Color (true)	130		PCU	P401105	
	SM 2320 B-2011	Total Alkalinity	188		mg CaCO3/L	P401349	
	SM 2540 C-2011	TDS	348		mg/L	P401570	RPD
	SM 2540 D-2011	TSS	6	I	mg/L	P401564	
	SM 4500 F-C-2011	Fluoride	0.24		mg F/L	P401351	
2262593	EPA 350.1 Rev. 2.0	Ammonia-N	0.096		mg N/L	P401595	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P401999	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P401154	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P401399	
	SM 5310 B-2011	Organic Carbon	23		mg C/L	P401621	
2262594	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.077		mg P/L	P401095	
2262604	EPA 8276	Chlordane	5.5	U	ng/L	P401195	
		Toxaphene	33	U	ng/L	P401195	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: Oak Creek @ Oak Creek Preserve

Collection Date/Time: 07/15/2021 12:05

Field ID: G1SD0050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2262586	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P401108	
	EPA 300.0 Rev. 2.1	Chloride	51		mg Cl/L	P401362	
		Sulfate	19		mg SO4/L	P401365	
	SM 2120 B-2011	Color (true)	30	A	PCU	P401105	
	SM 2320 B-2011	Total Alkalinity	243		mg CaCO3/L	P401349	
	SM 2540 C-2011	TDS	360		mg/L	P401570	RPD
	SM 2540 D-2011	TSS	2	I	mg/L	P401564	
	SM 4500 F-C-2011	Fluoride	0.10		mg F/L	P401351	
2262587	EPA 350.1 Rev. 2.0	Ammonia-N	0.12		mg N/L	P401597	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.80		mg N/L	P401999	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P401152	
	EPA 365.1 Rev. 2.0	Total-P	0.032		mg P/L	P401398	
	SM 5310 B-2011	Organic Carbon	8.8		mg C/L	P401489	
2262588	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P401095	
2262605	EPA 8321B	2,4-D	0.0069	I	ug/L	P401065	
		Acesulfame K	0.10	U	ug/L	P400997	
		2,4,5-T	0.0040	U	ug/L	P401065	
		AMPA	0.12	I	ug/L	P400997	
		Acetaminophen	0.0080	U	ug/L	P401065	
		Acetamiprid	0.0020	U	ug/L	P401065	
		Endothall	0.25	U	ug/L	P400997	
		Glufosinate	0.10	U	ug/L	P400997	
		Glyphosate	0.17	I	ug/L	P400997	
		Afidopyropen	0.0020	U	ug/L	P401065	
		Bentazon	0.042		ug/L	P401065	
		Sucralose	0.032	I	ug/L	P400997	
		Benzovindiflupyr	0.0020	U	ug/L	P401065	
		Carbamazepine	8.0E-04	U	ug/L	P401065	
		Clothianidin	0.0022	I	ug/L	P401065	
		Dinotefuran	0.0021	I	ug/L	P401065	
		Diuron	0.0066	I	ug/L	P401065	
		Fenuron	0.016	U	ug/L	P401065	
		Fluridone	0.037		ug/L	P401065	
		Imazapyr	0.090		ug/L	P401065	
		Hydrocodone	0.0020	U	ug/L	P401065	
		Ibuprofen	0.020	U	ug/L	P401065	
		Imidacloprid	0.018		ug/L	P401065	
		Linuron	0.0040	U	ug/L	P401065	
		Mandestrobin	0.0020	U	ug/L	P401065	
		MCPD	0.0020	U	ug/L	P401065	
		Naproxen	0.0080	U	ug/L	P401065	
		Primidone	0.0040	U	ug/L	P401065	
		Pyraclostrobin	0.0020	U	ug/L	P401065	

Field ID: G1SD0050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2262605	EPA 8321B	Thiamethoxam	0.0024	I	ug/L	P401065	
		Tolfenpyrad	0.0020	U	ug/L	P401065	
		Triclopyr	0.0040	U	ug/L	P401065	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high 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: P401108

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P401304

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: P401304

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	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: P401362

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401365

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401595

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401597

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401646

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P401999

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401152

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401154

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401398

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401399

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401095

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

Reference Method: EPA 8276
Batch ID: P401195

Component	Result	Code	Units
Chlordane	5.0	U	ng/L
Chlordane	5.0	U	ng/L
Toxaphene	30	U	ng/L
Toxaphene	30	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P400997

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: P401065

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: P401105

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P401349

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P401570

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P401564

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P401351

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P401489

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

Reference Method: SM 5310 B-2011
Batch ID: P401621

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: P401304

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	92.0		P	85 - 115
Calcium	97.1		P	85 - 115
Iron	96.2		P	85 - 115
Magnesium	98.5		P	85 - 115
Manganese	91.4		P	85 - 115
Potassium	95.2		P	85 - 115
Sodium	99.0		P	85 - 115
Zinc	87.2		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P401304

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.0		P	85 - 115
Antimony	94.3		P	85 - 115
Arsenic	96.0		P	85 - 115
Boron	97.9		P	85 - 115
Cadmium	91.5		P	85 - 115
Chromium	90.7		P	85 - 115
Copper	93.8		P	85 - 115
Lead	93.5		P	85 - 115
Nickel	94.3		P	85 - 115
Selenium	93.7		P	85 - 115
Silver	113		P	85 - 115
Thallium	97.3		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P401362

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P401365

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P401595

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P401597

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401646

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P401999

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401152

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	101		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401154

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: P401398

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401399

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401095

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

Reference Method: EPA 8276
Batch ID: P401195

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	83.8	85.3	P/P	56 - 117
Toxaphene	72.0	73.5	P/P	45 - 116

Reference Method: EPA 8321B
Batch ID: P400997

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	102		P	40 - 150
AMPA	98.8		P	40 - 150
Endothall	90.2		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P400997

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glufosinate	98.8		P	40 - 150
Glyphosate	102		P	40 - 150
Sucralose	96.9		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P401065

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	125		P	30 - 160
2,4,5-T	117		P	30 - 160
Acetaminophen	91.8		P	30 - 160
Acetamiprid	90.4		P	30 - 160
Afidopyropen	76.1		P	30 - 160
Bentazon	105		P	30 - 160
Benzovindiflupyr	93.8		P	30 - 160
Carbamazepine	98.6		P	30 - 160
Clothianidin	98.7		P	30 - 160
Dinotefuran	100		P	30 - 160
Diuron	88.3		P	30 - 160
Fenuron	102		P	30 - 160
Fluridone	95.7		P	30 - 160
Hydrocodone	99.7		P	30 - 160
Ibuprofen	93.1		P	30 - 160
Imazapyr	107		P	30 - 160
Imidacloprid	99.9		P	30 - 160
Linuron	82.8		P	30 - 160
Mandestrobin	99.8		P	30 - 160
MCPP	119		P	30 - 160
Naproxen	80.9		P	30 - 160
Primidone	95.3		P	30 - 160
Pyraclostrobin	90.5		P	30 - 160
Thiamethoxam	102		P	30 - 160
Tolfenpyrad	52.5		P	30 - 160
Triclopyr	119		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P401105

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.3		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P401349

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P401351

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	93 - 104

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P401489

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

Reference Method: SM 5310 B-2011
Batch ID: P401621

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P401304

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262527	Barium	96.7	96.3	P/P	80 - 120
2262527	Calcium	100	102	P/P	80 - 120
2262527	Iron	101	103	P/P	80 - 120
2262527	Magnesium	103	105	P/P	80 - 120
2262527	Manganese	95.8	95.2	P/P	80 - 120
2262527	Potassium	99.0	102	P/P	80 - 120
2262527	Sodium	102	105	P/P	80 - 120
2262527	Zinc	91.3	92.2	P/P	80 - 120
2263350	Barium	108		P	80 - 120
2263350	Calcium	114		P	80 - 120
2263350	Iron	112		P	80 - 120
2263350	Magnesium	116		P	80 - 120
2263350	Manganese	106		P	80 - 120
2263350	Potassium	107		P	80 - 120
2263350	Sodium	113		P	80 - 120
2263350	Zinc	102		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P401304

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262527	Aluminum	91.1	93.4	P/P	80 - 120
2262527	Antimony	91.2	92.0	P/P	80 - 120
2262527	Arsenic	89.3	89.5	P/P	80 - 120
2262527	Boron	92.3	93.8	P/P	80 - 120
2262527	Cadmium	88.7	89.6	P/P	80 - 120
2262527	Chromium	85.1	86.1	P/P	80 - 120
2262527	Copper	88.7	89.9	P/P	80 - 120
2262527	Lead	91.3	91.3	P/P	80 - 120
2262527	Nickel	87.6	88.6	P/P	80 - 120
2262527	Selenium	87.0	86.9	P/P	80 - 120
2262527	Silver	111	110	P/P	80 - 120
2262527	Thallium	94.1	95.4	P/P	80 - 120
2263350	Aluminum	92.1		P	80 - 120
2263350	Antimony	92.4		P	80 - 120
2263350	Arsenic	90.3		P	80 - 120
2263350	Boron	90.3		P	80 - 120
2263350	Cadmium	87.9		P	80 - 120
2263350	Chromium	88.6		P	80 - 120
2263350	Copper	90.1		P	80 - 120
2263350	Lead	90.3		P	80 - 120
2263350	Nickel	92.0		P	80 - 120
2263350	Selenium	89.6		P	80 - 120
2263350	Silver	111		P	80 - 120
2263350	Thallium	94.6		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P401362

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262509	Chloride	100		P	90 - 110
2262657	Chloride	99.4		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P401365

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262509	Sulfate	99.4		P	90 - 110
2262657	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P401595

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262558	Ammonia-N	95.2	95.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P401646

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262520	Ammonia-N	98.6	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P401999

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262520	Kjeldahl Nitrogen	101	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P401152

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262520	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P401154

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262590	NO2NO3-N	99.5	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P401398

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262482	Total-P	105	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P401399

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262590	Total-P	106	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P401095

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262567	O-Phosphate-P	95.5	97.6	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8276

Batch ID: P401195

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262809	Chlordane	87.3	83.5	P/P	47 - 128
2262809	Toxaphene	75.4	74.3	P/P	11 - 163

Reference Method: EPA 8321B

Batch ID: P400997

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262210	Acesulfame K	128	131	P/P	40 - 150
2262210	AMPA	66.7	70.9	P/P	40 - 150
2262210	Endothall	111	115	P/P	40 - 150
2262210	Glufosinate	79.3	80.3	P/P	40 - 150
2262210	Glyphosate	68.4	67.3	P/P	40 - 150
2262210	Sucralose	104	100	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P401065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262208	2,4-D	111	118	P/P	30 - 160
2262208	2,4,5-T	99.6	102	P/P	30 - 160
2262208	Acetaminophen	102	107	P/P	30 - 160
2262208	Acetamiprid	84.0	92.5	P/P	30 - 160
2262208	Afidopyropen	61.9	70.1	P/P	30 - 160
2262208	Benzovindiflupyr	84.6	85.5	P/P	30 - 160
2262208	Carbamazepine	89.1	83.0	P/P	30 - 160
2262208	Clothianidin	107	112	P/P	30 - 160
2262208	Dinotefuran	124	128	P/P	30 - 160
2262208	Diuron	72.3	70.6	P/P	30 - 160
2262208	Fenuron	97.2	94.3	P/P	30 - 160
2262208	Fluridone	79.7	80.1	P/P	30 - 160
2262208	Hydrocodone	113	112	P/P	30 - 160
2262208	Ibuprofen	71.6	74.8	P/P	30 - 160
2262208	Imidacloprid	145	151	P/P	30 - 160
2262208	Linuron	68.0	68.0	P/P	30 - 160
2262208	Mandestrobin	88.2	87.7	P/P	30 - 160
2262208	MCPP	99.5	104	P/P	30 - 160
2262208	Naproxen	71.1	75.8	P/P	30 - 160
2262208	Primidone	104	103	P/P	30 - 160
2262208	Pyraclostrobin	85.3	87.4	P/P	30 - 160
2262208	Thiamethoxam	141	147	P/P	30 - 160
2262208	Tolfenpyrad	52.0	52.0	P/P	30 - 160
2262208	Triclopyr	100	103	P/P	30 - 160

Reference Method: SM 4500 F-C-2011

Batch ID: P401351

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262793	Fluoride	99.0	101	P/P	92 - 107

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P401489

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262587	Organic Carbon	95.4	97.4	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P401621

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262593	Organic Carbon	101		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P401108

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262531	Turbidity	0.697	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P401304

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262527	Barium	0.482	Spike	P	0 - 20
2262527	Calcium	1.38	Spike	P	0 - 20
2262527	Iron	1.79	Spike	P	0 - 20
2262527	Magnesium	1.75	Spike	P	0 - 20
2262527	Manganese	0.578	Spike	P	0 - 20
2262527	Potassium	2.59	Spike	P	0 - 20
2262527	Sodium	2.04	Spike	P	0 - 20
2262527	Zinc	1.01	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P401304

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262527	Aluminum	2.47	Spike	P	0 - 20
2262527	Antimony	0.859	Spike	P	0 - 20
2262527	Arsenic	0.317	Spike	P	0 - 20
2262527	Boron	1.34	Spike	P	0 - 20
2262527	Cadmium	1.02	Spike	P	0 - 20
2262527	Chromium	1.08	Spike	P	0 - 20
2262527	Copper	1.32	Spike	P	0 - 20
2262527	Lead	0.0351	Spike	P	0 - 20
2262527	Nickel	1.10	Spike	P	0 - 20
2262527	Selenium	0.178	Spike	P	0 - 20
2262527	Silver	0.431	Spike	P	0 - 20
2262527	Thallium	1.38	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P401362

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262657	Chloride	0.393	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P401595

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262558	Ammonia-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401597

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263124	Ammonia-N	1.68	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401646

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262520	Ammonia-N	0.534	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P401999

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262520	Kjeldahl Nitrogen	0.308	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401152

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262520	NO2NO3-N	0.985	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401154

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262590	NO2NO3-N	0.868	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401398

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262482	Total-P	2.01	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401399

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262590	Total-P	0.977	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401095

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262567	O-Phosphate-P	2.18	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8276
Batch ID: P401195

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262809	Chlordane	4.41	Spike	P	0 - 30
2262809	Toxaphene	1.48	Spike	P	0 - 30
LFB	Chlordane	1.81	LCS	P	0 - 30
LFB	Toxaphene	2.01	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P400997

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262210	Acesulfame K	2.31	Spike	P	0 - 30
2262210	AMPA	2.15	Spike	P	0 - 30
2262210	Endothall	3.85	Spike	P	0 - 30
2262210	Glufosinate	1.28	Spike	P	0 - 30
2262210	Glyphosate	0.513	Spike	P	0 - 30
2262210	Sucralose	3.01	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P401065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262208	2,4-D	4.85	Spike	P	0 - 30
2262208	2,4,5-T	2.58	Spike	P	0 - 30
2262208	Acetaminophen	4.50	Spike	P	0 - 30
2262208	Acetamiprid	9.67	Spike	P	0 - 30
2262208	Afidopyropen	12.5	Spike	P	0 - 30
2262208	Bentazon	12.0	Spike	P	0 - 30
2262208	Benzovindiflupyr	1.03	Spike	P	0 - 30
2262208	Carbamazepine	7.12	Spike	P	0 - 30
2262208	Clothianidin	4.16	Spike	P	0 - 30
2262208	Dinotefuran	3.03	Spike	P	0 - 30
2262208	Diuron	2.18	Spike	P	0 - 30
2262208	Fenuron	3.02	Spike	P	0 - 30
2262208	Fluridone	0.465	Spike	P	0 - 30
2262208	Hydrocodone	1.20	Spike	P	0 - 30
2262208	Ibuprofen	4.39	Spike	P	0 - 30
2262208	Imazapyr	12.7	Spike	P	0 - 30
2262208	Imidacloprid	3.93	Spike	P	0 - 30
2262208	Linuron	0.0942	Spike	P	0 - 30
2262208	Mandestrobin	0.527	Spike	P	0 - 30
2262208	MCPP	4.68	Spike	P	0 - 30
2262208	Naproxen	6.38	Spike	P	0 - 30
2262208	Primidone	1.08	Spike	P	0 - 30
2262208	Pyraclostrobin	2.47	Spike	P	0 - 30
2262208	Thiamethoxam	3.93	Spike	P	0 - 30
2262208	Tolfenpyrad	0.112	Spike	P	0 - 30
2262208	Triclopyr	3.12	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2120 B-2011
Batch ID: P401105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262586	Color (true)	1.24	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P401349

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262793	Total Alkalinity	0.0204	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P401570

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262470	TDS	10.0	Sample	F	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P401351

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262793	Fluoride	1.41	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P401489

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262587	Organic Carbon	1.42	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P401621

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262593	Organic Carbon	1.87	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2262604
Field Sample ID: G1SD0076

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8276	Decachlorobiphenyl	63.2	P	29 - 92.0
EPA 8276	PCNB	81.7	P	43 - 134

Lab Sample ID: 2262605
Field Sample ID: G1SD0050

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	108	P	30 - 160
EPA 8321B	Acetaminophen-d4	97.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	89.8	P	30 - 160
EPA 8321B	Diuron-d6	71.4	P	30 - 160
EPA 8321B	Endothall-d6	99.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	71.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	78.7	P	30 - 160
EPA 8321B	Primidone-d5	100	P	30 - 160
EPA 8321B	Sucralose-d6	99.8	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A106658
Included Lab Sample IDs: 2262605

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	103	104	P/P	60 - 160
Glufosinate	101	101	P/P	60 - 160
Glyphosate	102	105	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A106667
Included Lab Sample IDs: 2262588, 2262591, 2262594

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.3	98.6	P/P	90 - 110
O-Phosphate-P	99.8	98.3	P/P	90 - 110

Reference Method: SM 2120 B-2011
Run ID: A106668
Included Lab Sample IDs: 2262586, 2262589, 2262592

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A106669
Included Lab Sample IDs: 2262586, 2262589, 2262592

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	102	P/P	95 - 105

Reference Method: EPA 8321B
Run ID: A106673
Included Lab Sample IDs: 2262605

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	108	105	P/P	60 - 160
Endothall	95.4	94.7	P/P	60 - 160
Sucralose	95.7	126	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A106682
Included Lab Sample IDs: 2262587, 2262590, 2262593

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

Reference Method: EPA 8321B
Run ID: A106699
Included Lab Sample IDs: 2262605

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	102	102	P/P	50 - 150
2,4,5-T	101	108	P/P	50 - 150
Acetaminophen	105	102	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A106699
Included Lab Sample IDs: 2262605

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetamiprid	104	102	P/P	50 - 150
Afidopyropen	106	109	P/P	50 - 150
Bentazon	117	115	P/P	50 - 160
Benzovindiflupyr	110	109	P/P	50 - 160
Carbamazepine	106	106	P/P	60 - 150
Clothianidin	104	104	P/P	60 - 150
Dinotefuran	106	106	P/P	50 - 150
Diuron	115	112	P/P	60 - 160
Fenuron	106	106	P/P	60 - 150
Fluridone	111	106	P/P	60 - 160
Hydrocodone	111	107	P/P	60 - 150
Ibuprofen	99.9	111	P/P	50 - 160
Imazapyr	101	103	P/P	50 - 160
Imidacloprid	101	101	P/P	60 - 150
Linuron	105	106	P/P	60 - 150
Mandestrobin	111	110	P/P	50 - 150
MCPP	105	105	P/P	50 - 150
Naproxen	96.7	98.4	P/P	50 - 160
Primidone	101	99.9	P/P	60 - 150
Pyraclostrobin	114	113	P/P	60 - 150
Thiamethoxam	106	108	P/P	50 - 150
Tolfenpyrad	105	104	P/P	60 - 150
Triclopyr	104	107	P/P	50 - 150

Reference Method: SM 2320 B-2011
Run ID: A106753
Included Lab Sample IDs: 2262586, 2262589, 2262592

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A106753
Included Lab Sample IDs: 2262586, 2262589, 2262592

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A106762
Included Lab Sample IDs: 2262586, 2262589, 2262592

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A106786
Included Lab Sample IDs: 2262590, 2262593

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106786

Included Lab Sample IDs: 2262590, 2262593

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106790

Included Lab Sample IDs: 2262587

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

Reference Method: EPA 8276

Run ID: A106792

Included Lab Sample IDs: 2262604

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	100		P	80 - 120
Toxaphene	97.1		P	80 - 120

Reference Method: SM 5310 B-2011

Run ID: A106803

Included Lab Sample IDs: 2262587

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.1	99.1	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A106833

Included Lab Sample IDs: 2262606

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.6	93.2	P/P	90 - 110
Antimony	97.7	96.1	P/P	90 - 110
Arsenic	98.4	94.3	P/P	90 - 110
Boron	97.6	95.9	P/P	90 - 110
Cadmium	95.1	93.2	P/P	90 - 110
Chromium	94.0	90.5	P/P	90 - 110
Copper	96.8	92.3	P/P	90 - 110
Lead	95.9	93.1	P/P	90 - 110
Nickel	97.7	92.6	P/P	90 - 110
Selenium	95.2	92.2	P/P	90 - 110
Thallium	95.3	91.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A106850

Included Lab Sample IDs: 2262587, 2262593

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.6	98.0	P/P	90 - 110
Ammonia-N	98.0	98.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A106870

Included Lab Sample IDs: 2262590, 2262593

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.5	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A106882

Included Lab Sample IDs: 2262590

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.3	98.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A106941

Included Lab Sample IDs: 2262606

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	99.4	100	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A106958

Included Lab Sample IDs: 2262606

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	105	105	P/P	90 - 110
Calcium	106	102	P/P	90 - 110
Iron	105	100	P/P	90 - 110
Magnesium	105	100	P/P	90 - 110
Manganese	103	103	P/P	90 - 110
Potassium	105	101	P/P	90 - 110
Sodium	107	103	P/P	90 - 110
Zinc	105	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107072

Included Lab Sample IDs: 2262587, 2262590, 2262593

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	98.6	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							0.697	
EPA 200.7 Rev. 4.4	Barium	92.0		96.7	96.3	108			0.482
	Calcium	97.1		100	102	114			1.38
	Iron	96.2		101	103	112			1.79
	Magnesium	98.5		103	105	116			1.75
	Manganese	91.4		95.8	95.2	106			0.578
	Potassium	95.2		99.0	102	107			2.59
	Sodium	99.0		102	105	113			2.04
	Zinc	87.2		91.3	92.2	102			1.01
EPA 200.8 Rev. 5.4	Aluminum	97.0		91.1	93.4	92.1			2.47
	Antimony	94.3		91.2	92.0	92.4			0.859
	Arsenic	96.0		89.3	89.5	90.3			0.317
	Boron	97.9		92.3	93.8	90.3			1.34
	Cadmium	91.5		88.7	89.6	87.9			1.02
	Chromium	90.7		88.6	85.1	86.1			1.08
	Copper	93.8		88.7	89.9	90.1			1.32
	Lead	93.5		91.3	91.3	90.3			0.0351
	Nickel	94.3		87.6	88.6	92.0			1.10
	Selenium	93.7		87.0	86.9	89.6			0.178
	Silver	113		111	110	111			0.431
	Thallium	97.3		94.1	95.4	94.6			1.38
EPA 300.0 Rev. 2.1	Chloride	101		99.4	100			0.393	
	Sulfate	101		101	99.4				
EPA 350.1 Rev. 2.0	Ammonia-N	98.4		95.2	95.2				0.0
	Ammonia-N	99.8							1.68
	Ammonia-N	102		98.6	98.0				0.534
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	109		101	102				0.308
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101		101	102				0.985
	NO ₂ NO ₃ -N	102		99.5	101				0.868
EPA 365.1 Rev. 2.0	Total-P	103		105	107				2.01
	Total-P	103		106	107				0.977
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.8		95.5	97.6				2.18
EPA 8276	Chlordane	83.8	85.3	87.3	83.5		1.81		4.41
	Toxaphene	72.0	73.5	75.4	74.3		2.01		1.48
EPA 8321B	2,4-D	125		111	118				4.85
	2,4,5-T	117		99.6	102				2.58
	Acesulfame K	102		128	131				2.31
	Acetaminophen	91.8		102	107				4.50
	Acetamiprid	90.4		84.0	92.5				9.67
	Afidopyropen	76.1		61.9	70.1				12.5
	AMPA	98.8		66.7	70.9				2.15
	Bentazon	105							12.0
	Benzovindiflupyr	93.8		84.6	85.5				1.03
	Carbamazepine	98.6		89.1	83.0				7.12
	Clothianidin	98.7		107	112				4.16
	Dinotefuran	100		124	128				3.03
	Diuron	88.3		72.3	70.6				2.18
	Endothall	90.2		111	115				3.85
	Fenuron	102		97.2	94.3				3.02
	Fluridone	95.7		79.7	80.1				0.465
	Glufosinate	98.8		79.3	80.3				1.28
	Glyphosate	102		68.4	67.3				0.513
	Hydrocodone	99.7		113	112				1.20
	Ibuprofen	93.1		71.6	74.8				4.39

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Imazapyr	107				12.7
	Imidacloprid	99.9	145	151		3.93
	Linuron	82.8	68.0	68.0		0.0942
	Mandestrobin	99.8	88.2	87.7		0.527
	MCPP	119	99.5	104		4.68
	Naproxen	80.9	71.1	75.8		6.38
	Primidone	95.3	104	103		1.08
	Pyraclostrobin	90.5	85.3	87.4		2.47
	Sucralose	96.9	104	100		3.01
	Thiamethoxam	102	141	147		3.93
	Tolfenpyrad	52.5	52.0	52.0		0.112
	Triclopyr	119	100	103		3.12
SM 2120 B-2011	Color (true)	99.3			1.24	
SM 2320 B-2011	Total Alkalinity	103			0.0204	
SM 2540 C-2011	TDS				10.0	
SM 4500 F-C-2011	Fluoride	101	99.0	101		1.41
SM 5310 B-2011	Organic Carbon	95.8	95.4	97.4		1.42
	Organic Carbon	96.8	101			1.87

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2262586, 2262589, 2262592
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2262606
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2262606
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2262586, 2262589, 2262592
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2262586, 2262589, 2262592
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2262587, 2262590, 2262593
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2262587, 2262590, 2262593
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2262587, 2262590, 2262593
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2262587, 2262590, 2262593
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2262588, 2262591, 2262594
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2262604
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2262605
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2262586, 2262589, 2262592
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2262586, 2262589, 2262592
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2262606
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2262586, 2262589, 2262592
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2262586, 2262589, 2262592
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2262586, 2262589, 2262592
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2262587, 2262590, 2262593

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	07/16/2021			07/16/2021 15:58	Sarah A Nixon	2262586, 2262589, 2262592
EPA 200.7 Rev. 4.4	07/16/2021	07/21/2021 14:50	Elliott D. Healy	07/30/2021 21:00	Betina Topolski	2262606
EPA 200.8 Rev. 5.4	07/16/2021	07/21/2021 14:50	Elliott D. Healy	07/26/2021 19:40	Alexander Thompson	2262606
	07/16/2021	07/21/2021 14:50	Elliott D. Healy	07/29/2021 14:48	McKinley C Carter	2262606
EPA 300.0 Rev. 2.1	07/16/2021			07/21/2021 09:57	Lipi Saha	2262586
	07/16/2021			07/21/2021 10:09	Lipi Saha	2262589
	07/16/2021			07/21/2021 10:21	Lipi Saha	2262592
EPA 350.1 Rev. 2.0	07/16/2021			07/27/2021 12:46	Roberta Tatti	2262593
	07/16/2021			07/27/2021 13:40	Roberta Tatti	2262587
	07/16/2021			07/28/2021 14:06	Roberta Tatti	2262590
EPA 351.2 Rev. 2.0	07/16/2021	08/04/2021 14:07	Benjamin T. Nordmann	08/05/2021 15:06	Virginia P. Brown	2262587
	07/16/2021	08/04/2021 14:07	Benjamin T. Nordmann	08/05/2021 15:07	Virginia P. Brown	2262590
	07/16/2021	08/04/2021 14:07	Benjamin T. Nordmann	08/05/2021 15:09	Virginia P. Brown	2262593
EPA 353.2 Rev. 2.0	07/16/2021			07/19/2021 10:45	Beverly Y. Sanders	2262587
	07/16/2021			07/19/2021 10:52	Beverly Y. Sanders	2262590
	07/16/2021			07/19/2021 10:58	Beverly Y. Sanders	2262593
EPA 365.1 Rev. 2.0	07/16/2021	07/22/2021 12:02	Shengyu Ding	07/23/2021 09:17	Shengyu Ding	2262590
	07/16/2021	07/22/2021 12:02	Shengyu Ding	07/23/2021 09:22	Shengyu Ding	2262593
	07/16/2021	07/22/2021 12:02	Shengyu Ding	07/23/2021 10:36	Shengyu Ding	2262587
EPA 365.1 Rev. 2.0 dissolved	07/16/2021			07/16/2021 14:42	Ping Hua	2262588
	07/16/2021			07/16/2021 14:43	Ping Hua	2262591
	07/16/2021			07/16/2021 14:48	Ping Hua	2262594
EPA 8276	07/16/2021	07/21/2021 08:00	Fe-Val Siddell	07/23/2021 05:08	Julie Wi	2262604
EPA 8321B	07/16/2021	07/16/2021 12:30	Pramila Ghimire	07/16/2021 12:34	Juyoung Kim	2262605
	07/16/2021	07/16/2021 12:30	Pramila Ghimire	07/17/2021 02:10	Pramila Ghimire	2262605
	07/16/2021	07/19/2021 09:00	Hoor Shaik	07/20/2021 11:46	Juyoung Kim	2262605
SM 2120 B-2011	07/16/2021			07/16/2021 16:42	Sarah A Nixon	2262586
	07/16/2021			07/16/2021 16:46	Sarah A Nixon	2262589
	07/16/2021			07/16/2021 16:47	Sarah A Nixon	2262592
SM 2320 B-2011	07/16/2021			07/21/2021 03:14	Dale L. Simmons	2262586
	07/16/2021			07/21/2021 03:30	Dale L. Simmons	2262589
	07/16/2021			07/21/2021 03:46	Dale L. Simmons	2262592
SM 2340B	07/16/2021			07/30/2021 21:00	Betina Topolski	2262606
SM 2540 C-2011	07/16/2021			07/20/2021 14:56	Yijie Li	2262586, 2262589, 2262592
SM 2540 D-2011	07/16/2021			07/20/2021 14:56	Yijie Li	2262586, 2262589, 2262592
SM 4500 F-C-2011	07/16/2021			07/21/2021 03:14	Dale L. Simmons	2262586
	07/16/2021			07/21/2021 03:30	Dale L. Simmons	2262589
	07/16/2021			07/21/2021 03:46	Dale L. Simmons	2262592
SM 5310 B-2011	07/16/2021			07/22/2021 10:44	Madeline Gruver	2262587
	07/16/2021			07/26/2021 21:13	Touraj Touran	2262593

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	07/16/2021			07/26/2021 22:47	Touraj Touran	2262590