

Chemical Analysis Report

SW-DIST-2020-03-10-01

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

Event Description: **Scott and Hancock**
Request ID: **RQ-2020-03-09-27**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 02-APR-2020 10:03

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 Hancock - South Central

Collection Date/Time: 03/09/2020 11:35

Field ID: G2SW0091

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2163387	EPA 180.1 Rev. 2.0	Turbidity	30		NTU	P380404	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P380613	
	SM 2120 B-2011	Color (true)	56		PCU	P380437	
	SM 2320 B-2011	Total Alkalinity	70		mg CaCO3/L	P380864	
	SM 2540 C-2011	TDS	136		mg/L	P381105	
	SM 2540 D-2011	TSS	38	I	mg/L	P380979	
	SM 4500 F-C-2011	Fluoride	0.43		mg F/L	P380715	
2163388	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P380882	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	4.7		mg N/L	P380956	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P380844	
	EPA 365.1 Rev. 2.0	Total-P	0.43		mg P/L	P380733	
	SM 5310 B-2011	Organic Carbon	18		mg C/L	P380562	
2163389	EPA 300.0 Rev. 2.1 dissolved	Sulfate	4.9		mg SO4/L	P380497	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P380377	
2163392	EPA 8321B	2,4-D	0.041		ug/L	P380458	
		Acesulfame K**	0.10	U	ug/L	P380246	
		AMPA**	0.10	U	ug/L	P380246	
		Sucralose**	0.67		ug/L	P380246	
		Acetaminophen**	0.0080	U	ug/L	P380458	
		Acetamiprid**	0.0020	U	ug/L	P380458	
		Endothall**	0.25	U	ug/L	P380246	
		Glufosinate**	0.10	U	ug/L	P380246	
		Glyphosate**	0.10	U	ug/L	P380246	
		Afidopyropen**	0.0020	UJ	ug/L	P380458	
		Bentazon	0.0017	I	ug/L	P380458	MS
		Benzovindiflupyr**	0.0020	UJ	ug/L	P380458	
		Carbamazepine**	8.0E-04	U	ug/L	P380458	
		Clothianidin**	0.0020	U	ug/L	P380458	
		Dinotefuran**	0.0020	U	ug/L	P380458	
		Diuron	0.0020	U	ug/L	P380458	
		Fenuron	0.032	I	ug/L	P380458	
		Fluridone**	0.0022	I	ug/L	P380458	
		Imazapyr**	0.023		ug/L	P380458	
		Hydrocodone**	0.0020	U	ug/L	P380458	
		Ibuprofen**	0.020	U	ug/L	P380458	
		Imidacloprid	0.0020	U	ug/L	P380458	
		Linuron	0.0040	U	ug/L	P380458	
		Mandestrobin**	0.0020	UJ	ug/L	P380458	
		MCP	0.0051	I	ug/L	P380458	
		Naproxen**	0.0080	U	ug/L	P380458	
		Primidone**	0.0043	I	ug/L	P380458	
		Pyraclostrobin**	0.0020	U	ug/L	P380458	
		Thiamethoxam**	0.0020	U	ug/L	P380458	

Field ID: G2SW0091

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2163392	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P380458	
		Triclopyr**	0.0040	U	ug/L	P380458	

Ref. Method and Comment:
SM 2540 D-2011: The PQL was elevated because of sample matrix interference.
EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.
EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.
EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Scott Lake @ South Central

Collection Date/Time: 03/09/2020 12:35

Field ID: G2SW0060

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2163384	EPA 180.1 Rev. 2.0	Turbidity	34		NTU	P380404	
	EPA 300.0 Rev. 2.1	Chloride	27	A	mg Cl/L	P380613	
	SM 2120 B-2011	Color (true)	9.8	A	PCU	P380437	
	SM 2320 B-2011	Total Alkalinity	51		mg CaCO3/L	P380863	
	SM 2540 C-2011	TDS	110		mg/L	P381105	
	SM 2540 D-2011	TSS	40	I	mg/L	P380979	
	SM 4500 F-C-2011	Fluoride	0.31		mg F/L	P380715	
2163385	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P380882	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.6		mg N/L	P380524	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P380844	
	EPA 365.1 Rev. 2.0	Total-P	0.35		mg P/L	P380659	
	SM 5310 B-2011	Organic Carbon	8.4		mg C/L	P380562	
2163386	EPA 300.0 Rev. 2.1 dissolved	Sulfate	9.7		mg SO4/L	P380497	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P380377	
2163393	EPA 200.7 Rev. 4.4	Barium	11.2		ug/L	P380556	
		Calcium	22.9		mg/L	P380556	
		Iron	150		ug/L	P380556	
		Magnesium	5.04		mg/L	P380556	
		Potassium	3.0		mg/L	P380556	
		Sodium	14.2		mg/L	P380556	
		Zinc	9.8	I	ug/L	P380556	
	EPA 200.8 Rev. 5.4	Aluminum	408		ug/L	P380556	
		Antimony	0.17	I	ug/L	P380556	
		Arsenic	4.81		ug/L	P380556	
		Boron**	32.2		ug/L	P380556	
		Cadmium	0.035	I	ug/L	P380556	
		Chromium	0.74	I	ug/L	P380556	
		Copper	7.26		ug/L	P380875	
		Lead	1.61		ug/L	P380875	
		Nickel	0.50	U	ug/L	P380556	
		Selenium	0.20	U	ug/L	P380556	
		Silver	0.010	U	ug/L	P380556	
		Thallium	0.10	U	ug/L	P380556	
		Hardness	78.0		mg/L	P380556	
	SM 2340B						

Ref. Method and Comment:

SM 2540 D-2011: The PQL was elevated because of sample matrix interference.

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for lead are unavailable for one of two spiked samples 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: P380404

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P380556

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
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: P380556

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
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 200.8 Rev. 5.4
Batch ID: P380875

Component	Result	Code	Units
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380613

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P380497

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380882

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380882

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380524

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380956

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380844

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380659

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380733

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380377

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

Reference Method: EPA 8321B
Batch ID: P380246

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P380458

Component	Result	Code	Units
2,4-D	0.0020	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: P380437

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P380863

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

Reference Method: SM 2320 B-2011
Batch ID: P380864

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

Reference Method: SM 2540 C-2011
Batch ID: P381105

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P380979

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P380715

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P380562

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: P380556

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	99.9		P	85 - 115
Calcium	101		P	85 - 115
Iron	105		P	85 - 115
Magnesium	105		P	85 - 115
Potassium	101		P	85 - 115
Sodium	99.0		P	85 - 115
Zinc	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380556

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	95.4		P	85 - 115
Antimony	90.6		P	85 - 115
Arsenic	97.4		P	85 - 115
Boron	98.1		P	85 - 115
Cadmium	102		P	80 - 120
Chromium	97.4		P	85 - 115
Nickel	96.6		P	85 - 115
Selenium	96.3		P	85 - 115
Silver	95.1		P	85 - 115
Thallium	99.9		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380875

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Copper	107		P	85 - 115
Lead	99.7		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380613

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P380497

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380882

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380524

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

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380524

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380956

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380844

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: P380659

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380733

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380377

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

Reference Method: EPA 8321B
Batch ID: P380246

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	73.2		P	40 - 150
AMPA	91.6		P	40 - 150
Endothall	113		P	40 - 150
Glufosinate	107		P	40 - 150
Glyphosate	120		P	40 - 140
Sucralose	97.5		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P380458

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	105		P	30 - 160
Acetaminophen	70.3		P	30 - 160
Acetamiprid	81.0		P	30 - 160
Afidopyropen	84.1		P	30 - 160
Bentazon	72.5		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P380458

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Benzovindiflupyr	72.1		P	30 - 160
Carbamazepine	89.3		P	30 - 160
Clothianidin	74.9		P	30 - 160
Dinotefuran	73.4		P	30 - 160
Diuron	75.1		P	30 - 160
Fenuron	78.3		P	30 - 160
Fluridone	69.7		P	30 - 160
Hydrocodone	64.8		P	30 - 160
Ibuprofen	75.5		P	30 - 160
Imazapyr	83.4		P	30 - 160
Imidacloprid	86.3		P	30 - 160
Linuron	72.0		P	30 - 160
Mandestrobin	73.3		P	30 - 160
MCPP	95.7		P	30 - 160
Naproxen	74.5		P	30 - 160
Primidone	79.0		P	30 - 160
Pyraclostrobin	71.6		P	30 - 160
Thiamethoxam	85.0		P	30 - 160
Tolfenpyrad	51.1		P	30 - 160
Triclopyr	111		P	30 - 160

Reference Method: SM 2120 B-2011

Batch ID: P380437

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	85 - 115

Reference Method: SM 2320 B-2011

Batch ID: P380863

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 2320 B-2011

Batch ID: P380864

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 4500 F-C-2011

Batch ID: P380715

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.7		P	92 - 103

Reference Method: SM 5310 B-2011

Batch ID: P380562

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P380556

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163644	Barium	101	103	P/P	80 - 120
2163644	Calcium	103		P	80 - 120
2163644	Iron	104	104	P/P	80 - 120
2163644	Magnesium	102	102	P/P	80 - 120
2163644	Potassium	101	101	P/P	80 - 120
2163644	Sodium	100		P	80 - 120
2163644	Zinc	102	104	P/P	80 - 120
2164291	Barium	99.2		P	80 - 120
2164291	Calcium	102		P	80 - 120
2164291	Iron	105		P	80 - 120
2164291	Magnesium	103		P	80 - 120
2164291	Potassium	97.4		P	80 - 120
2164291	Sodium	99.7		P	80 - 120
2164291	Zinc	102		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380556

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163644	Aluminum	93.9	95.6	P/P	80 - 120
2163644	Antimony	97.8	100	P/P	80 - 120
2163644	Arsenic	97.4	99.4	P/P	80 - 120
2163644	Boron	98.2	100	P/P	80 - 120
2163644	Cadmium	96.5	101	P/P	80 - 120
2163644	Chromium	97.9	99.8	P/P	80 - 120
2163644	Nickel	95.5	97.4	P/P	80 - 120
2163644	Selenium	87.7	90.8	P/P	80 - 120
2163644	Silver	98.2	99.4	P/P	80 - 120
2163644	Thallium	102	103	P/P	80 - 120
2164291	Aluminum	95.8		P	80 - 120
2164291	Antimony	96.5		P	80 - 120
2164291	Arsenic	100		P	80 - 120
2164291	Boron	99.9		P	80 - 120
2164291	Cadmium	96.5		P	80 - 120
2164291	Chromium	101		P	80 - 120
2164291	Nickel	94.1		P	80 - 120
2164291	Selenium	91.5		P	80 - 120
2164291	Silver	98.5		P	80 - 120
2164291	Thallium	105		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380875

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163421	Copper	105	109	P/P	80 - 120
2163421	Lead	100	103	P/P	80 - 120
2163799	Copper	116		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380613

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: P380613

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163384	Chloride	95.7		P	90 - 110
2163476	Chloride	97.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P380497

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162902	Sulfate	98.2		P	90 - 110
2163042	Sulfate	97.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380882

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163376	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380524

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163376	Kjeldahl Nitrogen	101	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380956

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2165003	Kjeldahl Nitrogen	97.6	99.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380844

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163347	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380659

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163273	Total-P	105	104	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P380246

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163209	Acesulfame K	128	139	P/P	40 - 150
2163209	AMPA	104	112	P/P	40 - 150
2163209	Endothall	122	138	P/P	40 - 150
2163209	Glufosinate	109	108	P/P	40 - 150
2163209	Glyphosate	109	109	P/P	40 - 140
2163209	Sucralose	99.4	99.9	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P380458

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163321	Acetaminophen	82.8	72.8	P/P	30 - 160
2163321	Acetamiprid	84.6	69.5	P/P	30 - 160
2163321	Afidopyropen	120	115	P/P	30 - 160
2163321	Bentazon	27.3	29.7	F/F	30 - 160
2163321	Benzovindiflupyr	82.4	83.3	P/P	30 - 160
2163321	Carbamazepine	75.6	70.0	P/P	30 - 160
2163321	Clothianidin	68.6	89.2	P/P	30 - 160
2163321	Dinotefuran	97.6	104	P/P	30 - 160
2163321	Diuron	67.1	72.0	P/P	30 - 160
2163321	Fenuron	54.2	70.2	P/P	30 - 160
2163321	Fluridone	75.6	75.2	P/P	30 - 160
2163321	Hydrocodone	70.6	80.5	P/P	30 - 160
2163321	Ibuprofen	68.0	71.3	P/P	30 - 160
2163321	Imazapyr	63.7	67.3	P/P	30 - 160
2163321	Imidacloprid	142	152	P/P	30 - 160
2163321	Linuron	61.0	65.0	P/P	30 - 160
2163321	Mandestrobin	75.1	77.1	P/P	30 - 160
2163321	MCP	96.0	102	P/P	30 - 160
2163321	Naproxen	78.9	78.0	P/P	30 - 160
2163321	Primidone	72.3	88.2	P/P	30 - 160
2163321	Pyraclostrobin	82.2	84.4	P/P	30 - 160
2163321	Thiamethoxam	109	125	P/P	30 - 160
2163321	Tolfenpyrad	75.9	75.0	P/P	30 - 160
2163321	Triclopyr	132	124	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
 Batch ID: P380715

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163662	Fluoride	101	100	P/P	89 - 106

Reference Method: SM 5310 B-2011
 Batch ID: P380562

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163385	Organic Carbon	96.6	95.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P380404

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163345	Turbidity	1.60	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P380556

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163644	Barium	2.16	Spike	P	0 - 20
2163644	Calcium	0.515	Spike	P	0 - 20
2163644	Iron	0.231	Spike	P	0 - 20
2163644	Magnesium	0.246	Spike	P	0 - 20
2163644	Potassium	0.291	Spike	P	0 - 20
2163644	Sodium	0.544	Spike	P	0 - 20
2163644	Zinc	2.47	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380556

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163644	Aluminum	1.74	Spike	P	0 - 20
2163644	Antimony	2.36	Spike	P	0 - 20
2163644	Arsenic	1.87	Spike	P	0 - 20
2163644	Boron	1.63	Spike	P	0 - 20
2163644	Cadmium	4.72	Spike	P	0 - 20
2163644	Chromium	1.91	Spike	P	0 - 20
2163644	Nickel	2.01	Spike	P	0 - 20
2163644	Selenium	3.46	Spike	P	0 - 20
2163644	Silver	1.27	Spike	P	0 - 20
2163644	Thallium	1.52	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380875

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163421	Copper	3.15	Spike	P	0 - 20
2163421	Lead	2.43	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380613

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163384	Chloride	0.0160	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P380497

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

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P380497

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162902	Sulfate	0.0556	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380882

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163376	Ammonia-N	0.319	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380524

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163376	Kjeldahl Nitrogen	1.95	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380956

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2165003	Kjeldahl Nitrogen	1.09	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380844

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163347	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380659

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163273	Total-P	0.779	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380733

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163388	Total-P	1.73	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380377

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163268	O-Phosphate-P	1.03	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P380246

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163209	Acesulfame K	8.05	Spike	P	0 - 30
2163209	AMPA	7.07	Spike	P	0 - 30
2163209	Endothall	12.2	Spike	P	0 - 30
2163209	Glufosinate	0.846	Spike	P	0 - 30
2163209	Glyphosate	0.138	Spike	P	0 - 30
2163209	Sucralose	0.478	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P380458

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163321	2,4-D	2.12	Spike	P	0 - 30
2163321	Acetaminophen	8.34	Spike	P	0 - 30
2163321	Acetamiprid	19.6	Spike	P	0 - 30
2163321	Afidopyropen	4.94	Spike	P	0 - 30
2163321	Bentazon	2.92	Spike	P	0 - 30
2163321	Benzovindiflupyr	1.08	Spike	P	0 - 30
2163321	Carbamazepine	7.73	Spike	P	0 - 30
2163321	Clothianidin	24.9	Spike	P	0 - 30
2163321	Dinotefuran	6.53	Spike	P	0 - 30
2163321	Diuron	7.03	Spike	P	0 - 30
2163321	Fenuron	25.7	Spike	P	0 - 30
2163321	Fluridone	0.527	Spike	P	0 - 30
2163321	Hydrocodone	13.1	Spike	P	0 - 30
2163321	Ibuprofen	4.75	Spike	P	0 - 30
2163321	Imazapyr	2.10	Spike	P	0 - 30
2163321	Imidacloprid	6.51	Spike	P	0 - 30
2163321	Linuron	6.27	Spike	P	0 - 30
2163321	Mandestrobin	2.63	Spike	P	0 - 30
2163321	MCP	6.38	Spike	P	0 - 30
2163321	Naproxen	1.18	Spike	P	0 - 30
2163321	Primidone	19.8	Spike	P	0 - 30
2163321	Pyraclostrobin	2.59	Spike	P	0 - 30
2163321	Thiamethoxam	13.4	Spike	P	0 - 30
2163321	Tolfenpyrad	1.18	Spike	P	0 - 30
2163321	Triclopyr	6.69	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P380437

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163384	Color (true)	0.984	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P380863

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163043	Total Alkalinity	0.128	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
 Batch ID: P380864

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163648	Total Alkalinity	0.484	Sample	P	0 - 2.8

Reference Method: SM 2540 C-2011
 Batch ID: P381105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163256	TDS	5.10	Sample	P	0 - 10

Reference Method: SM 2540 D-2011
 Batch ID: P380979

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163269	TSS	3.64	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
 Batch ID: P380715

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163662	Fluoride	0.992	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
 Batch ID: P380562

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163385	Organic Carbon	0.653	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2163392

Field Sample ID: G2SW0091

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	81.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	66.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	70.0	P	30 - 160
EPA 8321B	Diuron-d6	75.9	P	30 - 160
EPA 8321B	Endothall-d6	153	P	30 - 160
EPA 8321B	Endothall-d6	153	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	99.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	99.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	74.2	P	30 - 160
EPA 8321B	Primidone-d5	71.2	P	30 - 160
EPA 8321B	Sucralose-d6	96.0	P	30 - 160
EPA 8321B	Sucralose-d6	96.0	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A98096

Included Lab Sample IDs: 2163384, 2163387

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.6	98.9	P/P	90 - 110
Chloride	98.6	98.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1 dissolved

Run ID: A98096

Included Lab Sample IDs: 2163386, 2163389

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	99.7	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A98103

Included Lab Sample IDs: 2163386, 2163389

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A98117

Included Lab Sample IDs: 2163384, 2163387

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

Reference Method: SM 2120 B-2011

Run ID: A98123

Included Lab Sample IDs: 2163384, 2163387

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	103	P/P	90 - 115

Reference Method: EPA 8321B

Run ID: A98129

Included Lab Sample IDs: 2163392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	80.6	74.5	P/P	60 - 160
Endothall	133	134	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A98160

Included Lab Sample IDs: 2163392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	99.2	100	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A98161

Included Lab Sample IDs: 2163392

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

Reference Method: EPA 8321B

Run ID: A98161

Included Lab Sample IDs: 2163392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	89.2	94.1	P/P	40 - 200
Glufosinate	108	103	P/P	40 - 200
Glyphosate	116	100	P/P	40 - 200

Reference Method: SM 5310 B-2011

Run ID: A98163

Included Lab Sample IDs: 2163385, 2163388

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	102	P/P	90 - 110
Organic Carbon	95.6	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A98181

Included Lab Sample IDs: 2163385

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	96.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98192

Included Lab Sample IDs: 2163393

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.8	100	P/P	90 - 110
Antimony	91.6	96.1	P/P	90 - 110
Arsenic	101	102	P/P	90 - 110
Boron	101	103	P/P	90 - 110
Chromium	99.1	101	P/P	90 - 110
Nickel	99.8	102	P/P	90 - 110
Selenium	97.7	99.2	P/P	90 - 110
Silver	93.3	94.6	P/P	90 - 110
Thallium	97.1	98.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A98214

Included Lab Sample IDs: 2163392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	81.3	88.6	P/P	50 - 150
Acetaminophen	92.7	92.3	P/P	60 - 160
Acetamiprid	106	108	P/P	50 - 150
Afidopyropen	118	129	P/P	50 - 150
Bentazon	124	118	P/P	50 - 160
Benzovindiflupyr	107	108	P/P	50 - 150
Carbamazepine	109	112	P/P	60 - 150
Clothianidin	94.6	98.9	P/P	60 - 150
Dinotefuran	95.5	92.1	P/P	50 - 150
Diuron	111	123	P/P	60 - 150
Fenuron	92.7	95.3	P/P	60 - 150
Fluridone	94.1	98.2	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A98214

Included Lab Sample IDs: 2163392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Hydrocodone	99.4	101	P/P	60 - 150
Ibuprofen	104	86.7	P/P	50 - 160
Imazapyr	97.4	100	P/P	50 - 150
Imidacloprid	91.6	98.8	P/P	60 - 150
Linuron	107	107	P/P	60 - 150
Mandestrobin	97.8	101	P/P	50 - 150
MCPD	71.2	70.5	P/P	50 - 150
Naproxen	149	95.7	P/P	50 - 160
Primidone	87.5	94.3	P/P	60 - 150
Pyraclostrobin	102	102	P/P	60 - 150
Thiamethoxam	95.9	107	P/P	50 - 150
Tolfenpyrad	111	113	P/P	60 - 150
Triclopyr	97.9	109	P/P	50 - 150

Reference Method: SM 4500 F-C-2011

Run ID: A98215

Included Lab Sample IDs: 2163384, 2163387

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A98216

Included Lab Sample IDs: 2163385, 2163388

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO ₂ NO ₃ -N	102	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98232

Included Lab Sample IDs: 2163393

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	108	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98237

Included Lab Sample IDs: 2163385

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A98252

Included Lab Sample IDs: 2163393

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	99.7	101	P/P	90 - 110
Calcium	101	103	P/P	90 - 110
Iron	103	104	P/P	90 - 110
Magnesium	101	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A98252

Included Lab Sample IDs: 2163393

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Potassium	98.7	100	P/P	90 - 110
Sodium	99.8	101	P/P	90 - 110
Zinc	98.1	99.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98265

Included Lab Sample IDs: 2163388

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

Reference Method: SM 2320 B-2011

Run ID: A98269

Included Lab Sample IDs: 2163384, 2163387

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A98276

Included Lab Sample IDs: 2163385, 2163388

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A98369

Included Lab Sample IDs: 2163388

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.8	96.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98446

Included Lab Sample IDs: 2163393

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	98.2	96.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98497

Included Lab Sample IDs: 2163393

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	108	101	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						1.60	
EPA 200.7 Rev. 4.4	Barium	99.9	101	103	99.2			2.16
	Calcium	101	103	102				0.515
	Iron	105	104	104	105			0.231
	Magnesium	105	102	102	103			0.246
	Potassium	101	101	101	97.4			0.291
	Sodium	99.0	100	99.7				0.544
	Zinc	100	102	104	102			2.47
EPA 200.8 Rev. 5.4	Aluminum	95.4	93.9	95.6	95.8			1.74
	Antimony	90.6	97.8	100	96.5			2.36
	Arsenic	97.4	97.4	99.4	100			1.87
	Boron	98.1	98.2	100	99.9			1.63
	Cadmium	102	96.5	101	96.5			4.72
	Chromium	97.4	97.9	99.8	101			1.91
	Copper	107	105	109	116			3.15
	Lead	99.7	100	103				2.43
	Nickel	96.6	95.5	97.4	94.1			2.01
	Selenium	96.3	87.7	90.8	91.5			3.46
	Silver	95.1	98.2	99.4	98.5			1.27
	Thallium	99.9	102	103	105			1.52
EPA 300.0 Rev. 2.1	Chloride	99.3	95.7	97.8			0.0160	
EPA 300.0 Rev. 2.1 dissolved	Sulfate	99.1	98.2	97.2			0.0556	
EPA 350.1 Rev. 2.0	Ammonia-N	101	102	102				0.319
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	101	103				1.95
	Kjeldahl Nitrogen	98.2	97.6	99.6				1.09
EPA 353.2 Rev. 2.0	NO2NO3-N	102	101	101				0.0
EPA 365.1 Rev. 2.0	Total-P	106	105	104				0.779
	Total-P	107						1.73
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101						1.03
EPA 8321B	2,4-D	105						2.12
	Acesulfame K	73.2	128	139				8.05
	Acetaminophen	70.3	82.8	72.8				8.34
	Acetamiprid	81.0	84.6	69.5				19.6
	Afidopyropen	84.1	120	115				4.94
	AMPA	91.6	104	112				7.07
	Bentazon	72.5	27.3	29.7				2.92
	Benzovindiflupyr	72.1	82.4	83.3				1.08
	Carbamazepine	89.3	75.6	70.0				7.73
	Clothianidin	74.9	68.6	89.2				24.9
	Dinotefuran	73.4	97.6	104				6.53
	Diuron	75.1	67.1	72.0				7.03
	Endothall	113	122	138				12.2
	Fenuron	78.3	54.2	70.2				25.7
	Fluridone	69.7	75.6	75.2				0.527
	Glufosinate	107	109	108				0.846
	Glyphosate	120	109	109				0.138
	Hydrocodone	64.8	70.6	80.5				13.1
	Ibuprofen	75.5	68.0	71.3				4.75
	Imazapyr	83.4	63.7	67.3				2.10
	Imidacloprid	86.3	142	152				6.51
	Linuron	72.0	61.0	65.0				6.27
	Mandestrobin	73.3	75.1	77.1				2.63
	MCPP	95.7	96.0	102				6.38
	Naproxen	74.5	78.9	78.0				1.18

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8321B	Primidone	79.0	72.3	88.2			19.8
	Pyraclostrobin	71.6	82.2	84.4			2.59
	Sucralose	97.5	99.4	99.9			0.478
	Thiamethoxam	85.0	109	125			13.4
	Tolfenpyrad	51.1	75.9	75.0			1.18
	Triclopyr	111	132	124			6.69
SM 2120 B-2011	Color (true)	102				0.984	
SM 2320 B-2011	Total Alkalinity	103				0.128	
	Total Alkalinity	103				0.484	
SM 2540 C-2011	TDS					5.10	
SM 2540 D-2011	TSS					3.64	
SM 4500 F-C-2011	Fluoride	98.7	101	100			0.992
SM 5310 B-2011	Organic Carbon	96.2	96.6	95.6			0.653

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2163384, 2163387
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2163393
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2163393
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2163384, 2163387
EPA 300.0 Rev. 2.1 dissolved	Sulfate, dissolved, in filtered, aqueous matrices	2163386, 2163389
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2163385, 2163388
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2163385, 2163388
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2163385, 2163388
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2163385, 2163388
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2163386, 2163389
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2163392
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2163392
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2163384, 2163387
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2163384, 2163387
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2163393
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2163384, 2163387
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2163384, 2163387
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2163384, 2163387
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2163385, 2163388

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	03/10/2020			03/10/2020 16:49	Blanca Fach	2163384, 2163387
EPA 200.7 Rev. 4.4	03/10/2020	03/12/2020 15:45	Elliott D. Healy	03/17/2020 14:45	Betina Topolski	2163393
EPA 200.8 Rev. 5.4	03/10/2020	03/12/2020 15:45	Elliott D. Healy	03/13/2020 22:04	Alexander Thompson	2163393
	03/10/2020	03/12/2020 15:45	Elliott D. Healy	03/16/2020 13:05	Justin Cutchin	2163393
	03/10/2020	03/18/2020 14:20	Elliott D. Healy	03/24/2020 17:26	Justin Cutchin	2163393
	03/10/2020	03/18/2020 14:20	Elliott D. Healy	03/27/2020 18:32	Justin Cutchin	2163393
EPA 300.0 Rev. 2.1	03/10/2020			03/12/2020 14:23	Lipi Saha	2163384
	03/10/2020			03/12/2020 19:01	Lipi Saha	2163387
EPA 300.0 Rev. 2.1 dissolved	03/10/2020			03/12/2020 01:01	Lipi Saha	2163386
	03/10/2020			03/12/2020 01:13	Lipi Saha	2163389
EPA 350.1 Rev. 2.0	03/10/2020			03/18/2020 11:36	Ping Hua	2163385
	03/10/2020			03/18/2020 11:37	Ping Hua	2163388
EPA 351.2 Rev. 2.0	03/10/2020	03/12/2020 11:45	Sima Feizi	03/13/2020 09:35	Jhamieka S. Greenwood	2163385
	03/10/2020	03/19/2020 11:35	Sima Feizi	03/23/2020 08:34	Jhamieka S. Greenwood	2163388
EPA 353.2 Rev. 2.0	03/10/2020			03/16/2020 10:30	Beverly Y. Sanders	2163385
	03/10/2020			03/16/2020 10:31	Beverly Y. Sanders	2163388
EPA 365.1 Rev. 2.0	03/10/2020	03/13/2020 14:30	Yen Ta	03/16/2020 12:13	Benjamin T. Nordmann	2163385
	03/10/2020	03/16/2020 14:28	Yen Ta	03/17/2020 14:22	Benjamin T. Nordmann	2163388
EPA 365.1 Rev. 2.0 dissolved	03/10/2020			03/10/2020 16:40	Carlos Miranda	2163386, 2163389
EPA 8321B	03/10/2020	03/10/2020 14:30	Rebecca Ware	03/10/2020 22:02	Rebecca Ware	2163392
	03/10/2020	03/10/2020 14:30	Rebecca Ware	03/11/2020 14:02	Rebecca Ware	2163392
	03/10/2020	03/10/2020 14:30	Rebecca Ware	03/12/2020 06:02	Rebecca Ware	2163392
	03/10/2020	03/12/2020 10:00	Hoor Shaik	03/15/2020 06:00	Juyoung Kim	2163392
SM 2120 B-2011	03/10/2020			03/11/2020 11:13	Madeline Gruver	2163384
	03/10/2020			03/11/2020 11:14	Madeline Gruver	2163387
SM 2320 B-2011	03/10/2020			03/18/2020 04:13	Dale L. Simmons	2163384
	03/10/2020			03/18/2020 05:10	Dale L. Simmons	2163387
SM 2340B	03/10/2020			03/17/2020 14:45	Betina Topolski	2163393
SM 2540 C-2011	03/10/2020			03/13/2020 15:32	Yijie Li	2163384, 2163387
SM 2540 D-2011	03/10/2020			03/13/2020 15:32	Yijie Li	2163384, 2163387
SM 4500 F-C-2011	03/10/2020			03/13/2020 06:15	Dale L. Simmons	2163384
	03/10/2020			03/13/2020 06:28	Dale L. Simmons	2163387
SM 5310 B-2011	03/10/2020			03/11/2020 21:07	Lauren Lees	2163385
	03/10/2020			03/12/2020 01:51	Lauren Lees	2163388