

Chemical Analysis Report

NE-DIST-2019-02-13-02

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

Event Description: **Suwannee Central**
Request ID: **RQ-2019-02-11-17**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 05-MAR-2019 11:17

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular 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: Five Mile Cr At SW 150th blvd

Collection Date/Time: 02/12/2019 09:55

Field ID: G1NE0919

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2062096	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P358888	
	EPA 300.0 Rev. 2.1	Chloride	9.3		mg Cl/L	P359451	
		Sulfate	0.21	I	mg SO4/L	P359455	
	SM 2120 B	Color (true)	540		PCU	P358874	
	SM 2320 B-97	Total Alkalinity	5.0		mg CaCO3/L	P359117	
	SM 2540 C-97	TDS	119		mg/L	P359434	
	SM 2540 D-97	TSS	2	U	mg/L	P359334	
	SM 4500 F-C-97	Fluoride	0.057	I	mg F/L	P359122	
2062097	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P359266	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P359521	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P359145	
	EPA 365.1 Rev. 2.0	Total-P	0.076		mg P/L	P358959	
	SM 5310 B-00	Organic Carbon	48		mg C/L	P359403	
2062098	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.052		mg P/L	P358892	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Sunshine Lake Center

Collection Date/Time: 02/12/2019 10:40

Field ID: G1NE0857

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2062093	EPA 180.1 Rev. 2.0	Turbidity	0.75		NTU	P358887	
	EPA 300.0 Rev. 2.1	Chloride	6.4		mg Cl/L	P359451	
		Sulfate	1.6		mg SO4/L	P359455	
	SM 2120 B	Color (true)	120		PCU	P358874	
	SM 2320 B-97	Total Alkalinity	10		mg CaCO3/L	P359117	
	SM 2540 C-97	TDS	55		mg/L	P359434	
	SM 2540 D-97	TSS	2	U	mg/L	P359334	
	SM 4500 F-C-97	Fluoride	0.085	I	mg F/L	P359122	
2062094	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P359266	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.89		mg N/L	P358934	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.24		mg N/L	P359145	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P358959	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P359402	
2062095	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.076		mg P/L	P358890	
2062110	EPA 200.7 Rev. 4.4	Barium	3.9	I	ug/L	P358974	
		Calcium	5.95		mg/L	P358974	
		Iron	140		ug/L	P358974	
		Magnesium	1.23		mg/L	P358974	
		Potassium	0.56	I	mg/L	P358974	
		Sodium	3.5		mg/L	P358974	
		Zinc	5.0	U	ug/L	P358974	
		Aluminum	136		ug/L	P358974	
		Antimony	0.050	U	ug/L	P358974	
		Arsenic	0.70		ug/L	P358974	
	EPA 200.8 Rev. 5.4	Boron**	15.2		ug/L	P358974	
		Cadmium	0.020	U	ug/L	P358974	
		Chromium	0.45	I	ug/L	P358974	
		Copper	0.46	I	ug/L	P358974	
		Lead	0.20	U	ug/L	P358974	
		Nickel	0.50	U	ug/L	P358974	
		Selenium	0.20	U	ug/L	P358974	
		Silver	0.010	U	ug/L	P358974	
		Thallium	0.10	U	ug/L	P358974	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Rocky Creek at 156th av

Collection Date/Time: 02/12/2019 11:11

Field ID: G1NE0020

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2062090	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P358887	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P359451	
		Sulfate	1.4		mg SO4/L	P359455	
	SM 2120 B	Color (true)	450		PCU	P358874	
	SM 2320 B-97	Total Alkalinity	12		mg CaCO3/L	P359117	
	SM 2540 C-97	TDS	117		mg/L	P359433	
	SM 2540 D-97	TSS	2	U	mg/L	P359333	
	SM 4500 F-C-97	Fluoride	0.075	I	mg F/L	P359122	
2062091	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P359264	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P358934	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P359145	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P358958	
	SM 5310 B-00	Organic Carbon	37		mg C/L	P359403	
2062092	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.081		mg P/L	P358890	
2062109	EPA 200.7 Rev. 4.4	Barium	8.6		ug/L	P358974	
		Calcium	8.87		mg/L	P358974	
		Iron	1.06E+03		ug/L	P358974	
		Magnesium	2.54		mg/L	P358974	
		Potassium	0.90	I	mg/L	P358974	
		Sodium	5.6		mg/L	P358974	
		Zinc	5.0	U	ug/L	P358974	
	EPA 200.8 Rev. 5.4	Aluminum	607		ug/L	P358974	
		Antimony	0.059	I	ug/L	P358974	
		Arsenic	0.79		ug/L	P358974	
		Boron**	16.2		ug/L	P358974	
		Cadmium	0.020	U	ug/L	P358974	
		Chromium	1.3	I	ug/L	P358974	
		Copper	0.40	U	ug/L	P358974	
		Lead	0.59		ug/L	P358974	
		Nickel	0.79	I	ug/L	P358974	
		Selenium	0.21	I	ug/L	P358974	
		Silver	0.010	U	ug/L	P358974	
		Thallium	0.10	U	ug/L	P358974	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Calf Creek at SE 27th st

Collection Date/Time: 02/12/2019 12:05

Field ID: G1NE0931

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2062087	EPA 180.1 Rev. 2.0	Turbidity	4.4	A	NTU	P358887	
	EPA 300.0 Rev. 2.1	Chloride	13	A	mg Cl/L	P359451	
		Sulfate	8.2	A	mg SO4/L	P359455	
	SM 2120 B	Color (true)	160	A	PCU	P358874	
	SM 2320 B-97	Total Alkalinity	80		mg CaCO3/L	P359117	
	SM 2540 C-97	TDS	159		mg/L	P359433	
	SM 2540 D-97	TSS	2	U	mg/L	P359333	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P359122	
2062088	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P359264	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.80		mg N/L	P358934	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.28		mg N/L	P359144	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P358958	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P358986	
2062089	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.076		mg P/L	P358890	
2062107	EPA 8321B	2,4-D	0.0020	U	ug/L	P358820	
		Acesulfame K**	0.10	U	ug/L	P358749	
		AMPA**	0.10	U	ug/L	P358749	
		Sucralose**	0.12		ug/L	P358749	
		Acetaminophen**	0.0080	U	ug/L	P358820	
		Endothall**	0.25	U	ug/L	P358749	MS
		Glufosinate**	0.10	U	ug/L	P358749	
		Bentazon	8.0E-04	U	ug/L	P358820	
		Glyphosate**	0.12	I	ug/L	P358749	
		Carbamazepine**	8.0E-04	U	ug/L	P358820	
		Diuron	0.0020	U	ug/L	P358820	
		Fenuron	0.016	U	ug/L	P358820	
		Imazapyr**	0.019		ug/L	P358820	
		Imidacloprid	0.0025	I	ug/L	P358820	MS
		Linuron	0.0040	U	ug/L	P358820	
		MCPP	0.0024	I	ug/L	P358820	
		Primidone**	0.0040	U	ug/L	P358820	
		Pyraclostrobin**	0.0020	U	ug/L	P358820	
		Triclopyr**	0.0040	U	ug/L	P358820	
		Fluridone**	8.0E-04	U	ug/L	P358820	
		Hydrocodone**	0.0020	U	ug/L	P358820	
		Naproxen**	0.0080	U	ug/L	P358820	
		Ibuprofen**	0.020	U	ug/L	P358820	
2062108	EPA 200.7 Rev. 4.4	Barium	12.3		ug/L	P358974	
		Calcium	30.7		mg/L	P358974	
		Iron	560		ug/L	P358974	
		Magnesium	5.62		mg/L	P358974	
		Potassium	0.85	I	mg/L	P358974	
		Sodium	7.4		mg/L	P358974	

Field ID: G1NE0931

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2062108	EPA 200.7 Rev. 4.4	Zinc	5.0	U	ug/L	P358974	
	EPA 200.8 Rev. 5.4	Aluminum	275		ug/L	P358974	
		Antimony	0.090	I	ug/L	P358974	
		Arsenic	1.15		ug/L	P358974	
		Boron**	28.7		ug/L	P358974	
		Cadmium	0.020	U	ug/L	P358974	
		Chromium	0.99	I	ug/L	P358974	
		Copper	0.51	I	ug/L	P358974	
		Lead	0.44		ug/L	P358974	
		Nickel	0.60	I	ug/L	P358974	
		Selenium	0.22	I	ug/L	P358974	
		Silver	0.010	U	ug/L	P358974	
		Thallium	0.10	U	ug/L	P358974	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P358887

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P358888

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P358974

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: P358974

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: P359451

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359455

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359264

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359266

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358934

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359521

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359144

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359145

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358958

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358959

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358890

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358892

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

Reference Method: EPA 8321B
Batch ID: P358749

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: P358820

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	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
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B
Batch ID: P358874

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P359117

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

Reference Method: SM 2540 C-97
Batch ID: P359433

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P359434

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P359333

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P359334

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P359122

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P358986

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

Reference Method: SM 5310 B-00
Batch ID: P359402

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

Reference Method: SM 5310 B-00
Batch ID: P359403

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: P358974

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	104		P	85 - 115
Calcium	101		P	85 - 115
Iron	101		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	95.0		P	85 - 115
Sodium	97.7		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P358974

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	101		P	85 - 115
Boron	101		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	101		P	85 - 115
Copper	95.0		P	85 - 115
Lead	96.5		P	85 - 115
Nickel	98.0		P	85 - 115
Selenium	99.9		P	85 - 115
Silver	101		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359451

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359455

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359264

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359266

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358934

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359521

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359144

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359145

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358958

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358959

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358890

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358892

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.9		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P358749

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	112		P	40 - 150
AMPA	103		P	40 - 150
Endothall	100		P	40 - 150
Glufosinate	94.1		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P358749

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	107		P	40 - 140
Sucralose	99.4		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P358820

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	74.1		P	40 - 150
Acetaminophen	99.9		P	30 - 150
Bentazon	79.2		P	30 - 150
Carbamazepine	85.4		P	40 - 150
Diuron	76.2		P	40 - 150
Fenuron	116		P	40 - 150
Fluridone	111		P	40 - 150
Hydrocodone	99.0		P	40 - 150
Ibuprofen	104		P	40 - 150
Imazapyr	89.6		P	40 - 150
Imidacloprid	101		P	40 - 150
Linuron	75.1		P	40 - 150
MCPP	113		P	40 - 150
Naproxen	79.8		P	40 - 150
Primidone	107		P	40 - 150
Pyraclostrobin	82.0		P	40 - 150
Triclopyr	75.7		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P358874

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

Reference Method: SM 2320 B-97
Batch ID: P359117

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P359122

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	93.1		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P358986

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P359402

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.4		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P359403

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P358974

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062015	Barium	104	103	P/P	80 - 120
2062015	Calcium	100		P	80 - 120
2062015	Iron	100	102	P/P	80 - 120
2062015	Magnesium	103	104	P/P	80 - 120
2062015	Potassium	96.5	96.9	P/P	80 - 120
2062015	Sodium	99.0		P	80 - 120
2062015	Zinc	103	103	P/P	80 - 120
2062110	Barium	105		P	80 - 120
2062110	Calcium	102		P	80 - 120
2062110	Iron	103		P	80 - 120
2062110	Magnesium	105		P	80 - 120
2062110	Potassium	95.6		P	80 - 120
2062110	Sodium	96.5		P	80 - 120
2062110	Zinc	105		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P358974

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062015	Aluminum	99.3	98.0	P/P	80 - 120
2062015	Antimony	102	102	P/P	80 - 120
2062015	Arsenic	101	101	P/P	80 - 120
2062015	Boron	104	104	P/P	80 - 120
2062015	Cadmium	101	103	P/P	80 - 120
2062015	Chromium	101	100	P/P	80 - 120
2062015	Copper	94.1	93.7	P/P	80 - 120
2062015	Lead	96.0	96.4	P/P	80 - 120
2062015	Nickel	97.2	97.2	P/P	80 - 120
2062015	Selenium	98.2	98.1	P/P	80 - 120
2062015	Silver	102	103	P/P	80 - 120
2062015	Thallium	105	106	P/P	80 - 120
2062110	Aluminum	98.9		P	80 - 120
2062110	Antimony	99.7		P	80 - 120
2062110	Arsenic	101		P	80 - 120
2062110	Boron	101		P	80 - 120
2062110	Cadmium	101		P	80 - 120
2062110	Chromium	99.2		P	80 - 120
2062110	Copper	94.1		P	80 - 120
2062110	Lead	96.5		P	80 - 120
2062110	Nickel	98.3		P	80 - 120
2062110	Selenium	97.2		P	80 - 120
2062110	Silver	100		P	80 - 120
2062110	Thallium	106		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359451

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062087	Chloride	102		P	90 - 110
2062359	Chloride	99.8		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359455

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062087	Sulfate	101		P	90 - 110
2062359	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359264

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062088	Ammonia-N	98.9	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359266

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062310	Ammonia-N	103	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358934

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062088	Kjeldahl Nitrogen	99.2	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359521

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063975	Kjeldahl Nitrogen	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359144

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2061987	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359145

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062091	NO2NO3-N	96.5	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358958

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062088	Total-P	103	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358959

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062309	Total-P	105	103	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358890

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2061953	O-Phosphate-P	96.6	97.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358892

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062312	O-Phosphate-P	95.4	96.7	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P358749

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2061239	Acesulfame K	71.3	72.6	P/P	40 - 150
2061239	Endothall	25.1	20.9	F/F	40 - 150
2061239	Sucralose	101	109	P/P	40 - 150
2061887	AMPA	94.0	92.8	P/P	40 - 150
2061887	Glufosinate	80.5	85.4	P/P	40 - 150
2061887	Glyphosate	89.8	89.1	P/P	40 - 140

Reference Method: EPA 8321B
Batch ID: P358820

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062398	2,4-D	88.2	91.8	P/P	40 - 150
2062398	Acetaminophen	113	126	P/P	30 - 150
2062398	Bentazon	60.0	65.0	P/P	30 - 150
2062398	Carbamazepine	80.9	88.6	P/P	40 - 150
2062398	Diuron	72.3	79.6	P/P	40 - 150
2062398	Fenuron	101	112	P/P	40 - 150
2062398	Fluridone	91.6	104	P/P	40 - 150
2062398	Hydrocodone	74.6	85.0	P/P	40 - 150
2062398	Ibuprofen	89.2	107	P/P	40 - 150
2062398	Imazapyr	118	122	P/P	40 - 150
2062398	Imidacloprid	174	191	F/F	40 - 150
2062398	Linuron	77.3	81.9	P/P	40 - 150
2062398	MCPP	117	131	P/P	40 - 150
2062398	Naproxen	98.6	81.2	P/P	40 - 150
2062398	Primidone	118	139	P/P	40 - 150
2062398	Pyraclostrobin	81.8	93.4	P/P	40 - 150
2062398	Triclopyr	60.7	68.3	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P359122

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2061974	Fluoride	92.5	92.5	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P358986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2061950	Organic Carbon	99.0	99.4	P/P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P359402

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062486	Organic Carbon	95.2	94.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P358887

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062087	Turbidity	0.459	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P358888

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062125	Turbidity	6.49	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P358974

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062015	Barium	1.02	Spike	P	0 - 20
2062015	Calcium	1.29	Spike	P	0 - 20
2062015	Iron	1.40	Spike	P	0 - 20
2062015	Magnesium	0.227	Spike	P	0 - 20
2062015	Potassium	0.350	Spike	P	0 - 20
2062015	Sodium	0.123	Spike	P	0 - 20
2062015	Zinc	0.809	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P358974

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062015	Aluminum	1.34	Spike	P	0 - 20
2062015	Antimony	0.00873	Spike	P	0 - 20
2062015	Arsenic	0.0187	Spike	P	0 - 20
2062015	Boron	0.0224	Spike	P	0 - 20
2062015	Cadmium	2.05	Spike	P	0 - 20
2062015	Chromium	0.221	Spike	P	0 - 20
2062015	Copper	0.498	Spike	P	0 - 20
2062015	Lead	0.443	Spike	P	0 - 20
2062015	Nickel	0.0504	Spike	P	0 - 20
2062015	Selenium	0.0903	Spike	P	0 - 20
2062015	Silver	0.622	Spike	P	0 - 20
2062015	Thallium	1.13	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359451

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062087	Chloride	0.438	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359455

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062087	Sulfate	0.848	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359264

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062088	Ammonia-N	0.964	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062310	Ammonia-N	1.26	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358934

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062088	Kjeldahl Nitrogen	1.14	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063975	Kjeldahl Nitrogen	0.0747	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359144

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2061987	NO2NO3-N	0.980	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359145

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062091	NO2NO3-N	0.317	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358958

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062088	Total-P	3.33	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358959

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062309	Total-P	1.52	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358890

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2061953	O-Phosphate-P	0.516	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358892

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062312	O-Phosphate-P	1.02	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P358749

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2061239	Acesulfame K	1.72	Spike	P	0 - 30
2061239	Endothall	18.5	Spike	P	0 - 30
2061239	Sucralose	5.41	Spike	P	0 - 30
2061887	AMPA	1.37	Spike	P	0 - 30
2061887	Glufosinate	5.80	Spike	P	0 - 30
2061887	Glyphosate	0.769	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P358820

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062398	2,4-D	3.99	Spike	P	0 - 30
2062398	Acetaminophen	10.8	Spike	P	0 - 30
2062398	Bentazon	7.94	Spike	P	0 - 30
2062398	Carbamazepine	9.13	Spike	P	0 - 30
2062398	Diuron	9.56	Spike	P	0 - 30
2062398	Fenuron	10.2	Spike	P	0 - 30
2062398	Fluridone	12.4	Spike	P	0 - 30
2062398	Hydrocodone	13.0	Spike	P	0 - 30
2062398	Ibuprofen	17.7	Spike	P	0 - 30
2062398	Imazapyr	3.66	Spike	P	0 - 30
2062398	Imidacloprid	9.12	Spike	P	0 - 30
2062398	Linuron	5.88	Spike	P	0 - 30
2062398	MCPP	11.3	Spike	P	0 - 30
2062398	Naproxen	19.3	Spike	P	0 - 30
2062398	Primidone	16.3	Spike	P	0 - 30
2062398	Pyraclostrobin	13.3	Spike	P	0 - 30
2062398	Triclopyr	11.8	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P358874

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062087	Color (true)	13.7	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P359117

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2061974	Total Alkalinity	1.37	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P359433

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2061975	TDS	3.84	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P359434

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062125	TDS	2.21	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P359122

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2061974	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P358986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2061950	Organic Carbon	0.384	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P359402

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062486	Organic Carbon	0.858	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P359403

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062097	Organic Carbon	0.802	Spike	P	0 - 20

Quality Assurance Report

Precision

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 2062107
Field Sample ID: G1NE0931

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	98.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	119	P	30 - 160
EPA 8321B	Carbamazepine-d10	66.1	P	30 - 160
EPA 8321B	Diuron-d6	63.9	P	30 - 160
EPA 8321B	Endothall-d6	113	P	40 - 160
EPA 8321B	Endothall-d6	113	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	72.7	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	72.7	P	40 - 160
EPA 8321B	Ibuprofen-d3	98.9	P	30 - 160
EPA 8321B	Primidone-d5	101	P	30 - 160
EPA 8321B	Sucralose-d6	112	P	40 - 160
EPA 8321B	Sucralose-d6	112	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A89398

Included Lab Sample IDs: 2062087, 2062090, 2062093, 2062096

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	90 - 115
Color (true)	103	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A89400

Included Lab Sample IDs: 2062087, 2062090, 2062093, 2062096

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105
Turbidity	100	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A89401

Included Lab Sample IDs: 2062089, 2062092, 2062095, 2062098

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

Reference Method: SM 5310 B-00

Run ID: A89440

Included Lab Sample IDs: 2062088

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A89442

Included Lab Sample IDs: 2062088, 2062091, 2062094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	107	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A89456

Included Lab Sample IDs: 2062108, 2062109, 2062110

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	103	104	P/P	90 - 110
Barium	104	103	P/P	90 - 110
Calcium	102	101	P/P	90 - 110
Calcium	99.7	102	P/P	90 - 110
Iron	101	99.5	P/P	90 - 110
Iron	99.7	101	P/P	90 - 110
Magnesium	101	102	P/P	90 - 110
Magnesium	102	101	P/P	90 - 110
Potassium	96.0	97.3	P/P	90 - 110
Potassium	97.3	97.3	P/P	90 - 110
Sodium	98.0	99.9	P/P	90 - 110
Sodium	99.9	99.9	P/P	90 - 110
Zinc	103	104	P/P	90 - 110
Zinc	104	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A89461

Included Lab Sample IDs: 2062107

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	97.5	98.2	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89476

Included Lab Sample IDs: 2062088, 2062091

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	102	P/P	90 - 110
Total-P	103	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A89490

Included Lab Sample IDs: 2062087, 2062090, 2062093, 2062096

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

Reference Method: SM 4500 F-C-97

Run ID: A89490

Included Lab Sample IDs: 2062087, 2062090, 2062093, 2062096

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	94.9	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A89498

Included Lab Sample IDs: 2062088, 2062091, 2062094, 2062097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	98.5	P/P	90 - 110
NO2NO3-N	99.0	98.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A89502

Included Lab Sample IDs: 2062107

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	90.6	125	P/P	50 - 150
Acetaminophen	114	120	P/P	60 - 160
Bentazon	92.5	85.1	P/P	50 - 160
Carbamazepine	101	90.8	P/P	60 - 150
Diuron	101	101	P/P	60 - 150
Fenuron	99.3	101	P/P	60 - 150
Fluridone	101	103	P/P	60 - 160
Hydrocodone	98.8	97.5	P/P	60 - 150
Ibuprofen	113	109	P/P	50 - 160
Imazapyr	83.3	85.5	P/P	50 - 150
Imidacloprid	96.9	94.6	P/P	60 - 150
Linuron	105	99.2	P/P	60 - 150
MCP	90.6	93.5	P/P	50 - 150
Naproxen	76.2	113	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A89502

Included Lab Sample IDs: 2062107

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Primidone	102	91.6	P/P	60 - 150
Pyraclostrobin	119	115	P/P	60 - 150
Triclopyr	96.4	91.9	P/P	50 - 150

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89514

Included Lab Sample IDs: 2062108, 2062109, 2062110

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.0	98.6	P/P	90 - 110
Antimony	98.7	99.6	P/P	90 - 110
Arsenic	96.6	96.3	P/P	90 - 110
Boron	101	99.7	P/P	90 - 110
Chromium	99.6	99.5	P/P	90 - 110
Lead	96.7	97.3	P/P	90 - 110
Nickel	96.2	95.8	P/P	90 - 110
Silver	101	100	P/P	90 - 110
Thallium	94.4	95.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A89542

Included Lab Sample IDs: 2062088, 2062091, 2062094, 2062097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	102	P/P	90 - 110
Ammonia-N	102	101	P/P	90 - 110
Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89551

Included Lab Sample IDs: 2062108, 2062109, 2062110

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	99.5	101	P/P	90 - 110
Selenium	97.1	99.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89560

Included Lab Sample IDs: 2062094, 2062097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	104	103	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A89578

Included Lab Sample IDs: 2062107

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	107	99.0	P/P	60 - 160
Glufosinate	105	98.3	P/P	60 - 160
Glyphosate	116	113	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A89585

Included Lab Sample IDs: 2062107

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	104	108	P/P	60 - 160
Endothall	90.1	103	P/P	60 - 160

Reference Method: SM 5310 B-00

Run ID: A89596

Included Lab Sample IDs: 2062091, 2062094, 2062097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	92.6	96.6	P/P	90 - 110
Organic Carbon	93.4	96.2	P/P	90 - 110
Organic Carbon	96.2	98.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A89617

Included Lab Sample IDs: 2062087, 2062090, 2062093, 2062096

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	104	P/P	90 - 110
Sulfate	103	104	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89642

Included Lab Sample IDs: 2062108, 2062109, 2062110

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	93.5	95.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A89719

Included Lab Sample IDs: 2062097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	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						0.459	
	Turbidity						6.49	
EPA 200.7 Rev. 4.4	Barium	104	104	103	105			1.02
	Calcium	101	100	102				1.29
	Iron	101	100	102	103			1.40
	Magnesium	104	103	104	105			0.227
	Potassium	95.0	96.5	96.9	95.6			0.350
	Sodium	97.7	99.0	96.5				0.123
	Zinc	103	103	103	105			0.809
EPA 200.8 Rev. 5.4	Aluminum	100	99.3	98.0	98.9			1.34
	Antimony	101	102	102	99.7			0.0087
	Arsenic	101	101	101	101			0.0187
	Boron	101	104	104	101			0.0224
	Cadmium	103	101	103	101			2.05
	Chromium	101	101	100	99.2			0.221
	Copper	95.0	94.1	93.7	94.1			0.498
	Lead	96.5	96.0	96.4	96.5			0.443
	Nickel	98.0	97.2	97.2	98.3			0.0504
	Selenium	99.9	98.2	98.1	97.2			0.0903
	Silver	101	102	103	100			0.622
	Thallium	103	105	106	106			1.13
EPA 300.0 Rev. 2.1	Chloride	103	102	99.8			0.438	
	Sulfate	104	101	103			0.848	
EPA 350.1 Rev. 2.0	Ammonia-N	98.0	98.9	100				0.964
	Ammonia-N	101	103	104				1.26
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	99.2	101				1.14
	Kjeldahl Nitrogen	105	101	101				0.0747
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	102	102				0.980
	NO ₂ NO ₃ -N	100	96.5	96.0				0.317
EPA 365.1 Rev. 2.0	Total-P	105	103	99.0				3.33
	Total-P	104	105	103				1.52
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.6	96.6	97.1				0.516
	O-Phosphate-P	96.9	95.4	96.7				1.02
EPA 8321B	2,4-D	74.1	88.2	91.8				3.99
	Acesulfame K	112	71.3	72.6				1.72
	Acetaminophen	99.9	113	126				10.8
	AMPA	103	94.0	92.8				1.37
	Bentazon	79.2	60.0	65.0				7.94
	Carbamazepine	85.4	80.9	88.6				9.13
	Diuron	76.2	72.3	79.6				9.56
	Endothall	100	25.1	20.9				18.5
	Fenuron	116	101	112				10.2
	Fluridone	111	91.6	104				12.4
	Glufosinate	94.1	80.5	85.4				5.80
	Glyphosate	107	89.8	89.1				0.769
	Hydrocodone	99.0	74.6	85.0				13.0
	Ibuprofen	104	89.2	107				17.7
	Imazapyr	89.6	118	122				3.66
	Imidacloprid	101	174	191				9.12
	Linuron	75.1	77.3	81.9				5.88
	MCPP	113	117	131				11.3
	Naproxen	79.8	98.6	81.2				19.3
	Primidone	107	118	139				16.3
	Pyraclostrobin	82.0	81.8	93.4				13.3

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Sucralose	99.4	101	109		5.41
	Triclopyr	75.7	60.7	68.3		11.8
SM 2120 B	Color (true)	102			13.7	
SM 2320 B-97	Total Alkalinity	101			1.37	
SM 2540 C-97	TDS				3.84	
	TDS				2.21	
SM 4500 F-C-97	Fluoride	93.1	92.5	92.5		0.0
SM 5310 B-00	Organic Carbon	97.4	99.0	99.4		0.384
	Organic Carbon	98.4	95.2	94.0		0.858
	Organic Carbon	98.2				0.802

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2062087, 2062090, 2062093, 2062096
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2062108, 2062109, 2062110
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2062108, 2062109, 2062110
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2062087, 2062090, 2062093, 2062096
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2062087, 2062090, 2062093, 2062096
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2062088, 2062091, 2062094, 2062097
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2062088, 2062091, 2062094, 2062097
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2062088, 2062091, 2062094, 2062097
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2062088, 2062091, 2062094, 2062097
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2062089, 2062092, 2062095, 2062098
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2062107
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2062107
SM 2120 B / E31780	True Color measured at 450 nm	2062087, 2062090, 2062093, 2062096
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2062087, 2062090, 2062093, 2062096
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2062087, 2062090, 2062093, 2062096
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2062087, 2062090, 2062093, 2062096
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2062087, 2062090, 2062093, 2062096
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2062088, 2062091, 2062094, 2062097

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	02/13/2019			02/13/2019 16:57	Adrian Shelby	2062087, 2062090, 2062093, 2062096
EPA 200.7 Rev. 4.4	02/13/2019	02/14/2019 18:40	Elliott D. Healy	02/15/2019 16:57	Betina Topolski	2062108
	02/13/2019	02/14/2019 18:40	Elliott D. Healy	02/15/2019 17:05	Betina Topolski	2062109
	02/13/2019	02/14/2019 18:40	Elliott D. Healy	02/15/2019 17:36	Betina Topolski	2062110
EPA 200.8 Rev. 5.4	02/13/2019	02/14/2019 18:40	Elliott D. Healy	02/20/2019 01:05	Robert K Palmer	2062108
	02/13/2019	02/14/2019 18:40	Elliott D. Healy	02/20/2019 01:15	Robert K Palmer	2062109
	02/13/2019	02/14/2019 18:40	Elliott D. Healy	02/20/2019 01:24	Robert K Palmer	2062110
	02/13/2019	02/14/2019 18:40	Elliott D. Healy	02/20/2019 22:51	Robert K Palmer	2062108
	02/13/2019	02/14/2019 18:40	Elliott D. Healy	02/20/2019 23:00	Robert K Palmer	2062109
	02/13/2019	02/14/2019 18:40	Elliott D. Healy	02/20/2019 23:10	Robert K Palmer	2062110
	02/13/2019	02/14/2019 18:40	Elliott D. Healy	02/25/2019 19:36	Robert K Palmer	2062108
	02/13/2019	02/14/2019 18:40	Elliott D. Healy	02/25/2019 19:41	Robert K Palmer	2062109
	02/13/2019	02/14/2019 18:40	Elliott D. Healy	02/25/2019 19:47	Robert K Palmer	2062110
EPA 300.0 Rev. 2.1	02/13/2019			02/23/2019 14:41	Lipi Saha	2062087
	02/13/2019			02/23/2019 15:41	Lipi Saha	2062090
	02/13/2019			02/23/2019 15:55	Lipi Saha	2062093
	02/13/2019			02/23/2019 16:10	Lipi Saha	2062096
EPA 350.1 Rev. 2.0	02/13/2019			02/20/2019 11:31	Ping Hua	2062088
	02/13/2019			02/20/2019 11:51	Ping Hua	2062091
	02/13/2019			02/20/2019 12:36	Ping Hua	2062094
	02/13/2019			02/20/2019 12:37	Ping Hua	2062097
EPA 351.2 Rev. 2.0	02/13/2019	02/14/2019 12:45	Adrian Shelby	02/15/2019 12:37	Joseph Suarez	2062088
	02/13/2019	02/14/2019 12:45	Adrian Shelby	02/15/2019 12:41	Joseph Suarez	2062091
	02/13/2019	02/14/2019 12:45	Adrian Shelby	02/15/2019 12:43	Joseph Suarez	2062094
	02/13/2019	02/26/2019 11:30	Adrian Shelby	02/28/2019 09:10	Joseph Suarez	2062097
EPA 353.2 Rev. 2.0	02/13/2019			02/19/2019 10:07	Beverly Y. Sanders	2062088
	02/13/2019			02/19/2019 10:15	Beverly Y. Sanders	2062091
	02/13/2019			02/19/2019 10:20	Beverly Y. Sanders	2062094
	02/13/2019			02/19/2019 10:22	Beverly Y. Sanders	2062097
EPA 365.1 Rev. 2.0	02/13/2019	02/14/2019 13:40	Sima Feizi	02/15/2019 16:49	Rosalyn Ballman	2062088
	02/13/2019	02/14/2019 13:40	Sima Feizi	02/15/2019 17:00	Rosalyn Ballman	2062091
	02/13/2019	02/14/2019 13:40	Sima Feizi	02/20/2019 18:53	Rosalyn Ballman	2062094
	02/13/2019	02/14/2019 13:40	Sima Feizi	02/20/2019 18:54	Rosalyn Ballman	2062097
EPA 365.1 Rev. 2.0 dissolved	02/13/2019			02/13/2019 15:35	Jhamieka S. Greenwood	2062089, 2062092
	02/13/2019			02/13/2019 15:36	Jhamieka S. Greenwood	2062095
	02/13/2019			02/13/2019 15:40	Jhamieka S. Greenwood	2062098
EPA 8321B	02/13/2019	02/13/2019 14:30	Rebecca Ware	02/13/2019 21:49	Mohammad Ghaffari	2062107
	02/13/2019	02/13/2019 14:30	Rebecca Ware	02/14/2019 15:07	Mohammad Ghaffari	2062107
	02/13/2019	02/13/2019 14:30	Rebecca Ware	02/16/2019 15:46	Mohammad Ghaffari	2062107
	02/13/2019	02/15/2019 10:00	Hoor Shaik	02/20/2019 22:14	Juyoung Kim	2062107

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2120 B	02/13/2019			02/13/2019 15:32	Chelsea Hernandez	2062093
	02/13/2019			02/13/2019 15:49	Chelsea Hernandez	2062090
	02/13/2019			02/13/2019 15:50	Chelsea Hernandez	2062096
	02/13/2019			02/13/2019 15:52	Chelsea Hernandez	2062087
SM 2320 B-97	02/13/2019			02/16/2019 22:12	Dale L. Simmons	2062087
	02/13/2019			02/16/2019 22:23	Dale L. Simmons	2062090
	02/13/2019			02/16/2019 22:34	Dale L. Simmons	2062093
	02/13/2019			02/16/2019 22:44	Dale L. Simmons	2062096
SM 2540 C-97	02/13/2019			02/16/2019 22:18	Yijie Li	2062087, 2062090, 2062093, 2062096
SM 2540 D-97	02/13/2019			02/16/2019 22:18	Yijie Li	2062087, 2062090, 2062093, 2062096
SM 4500 F-C-97	02/13/2019			02/16/2019 22:12	Dale L. Simmons	2062087
	02/13/2019			02/16/2019 22:23	Dale L. Simmons	2062090
	02/13/2019			02/16/2019 22:34	Dale L. Simmons	2062093
	02/13/2019			02/16/2019 22:44	Dale L. Simmons	2062096
SM 5310 B-00	02/13/2019			02/15/2019 04:23	Chelsea Hernandez	2062088
	02/13/2019			02/20/2019 08:21	Julia Storbeck	2062094
	02/13/2019			02/21/2019 02:56	Julia Storbeck	2062097
	02/13/2019			02/21/2019 04:57	Julia Storbeck	2062091