

Chemical Analysis Report

NE-DIST-2019-04-24-01

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

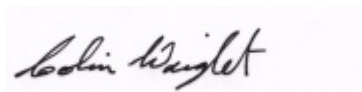
Event Description: **Bmap 2**
Request ID: **RQ-2019-04-22-08**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 13-MAY-2019 11:23

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: TROUT R @ DINSMORE BOAT RAMP DOCK
 NR US 1**

Collection Date/Time: 04/23/2019 11:15

Field ID: 20030123

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080367	EPA 180.1 Rev. 2.0	Turbidity	6.5	A	NTU	P362803	
	EPA 300.0	Bromide	2.0		mg Br/L	P362934	
	SM 2320 B-97	Total Alkalinity	55		mg CaCO3/L	P363358	
	SM 2540 D-97	TSS	8	I	mg/L	P363414	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P363362	
2080368	EPA 350.1 Rev. 2.0	Ammonia-N	0.084		mg N/L	P363038	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.93		mg N/L	P362995	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.084		mg N/L	P363007	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P362937	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P362984	
2080369	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.078		mg P/L	P362837	
2080390	EPA 8321B	2,4-D	0.014		ug/L	P362672	
		Acesulfame K**	0.10	U	ug/L	P362741	
		AMPA**	0.24	I	ug/L	P362741	
		Sucralose**	0.18		ug/L	P362741	
		Acetaminophen**	0.0080	U	ug/L	P362672	
		Endothall**	0.25	U	ug/L	P362741	
		Glufosinate**	0.10	U	ug/L	P362741	
		Bentazon	0.0056		ug/L	P362672	
		Glyphosate**	0.25	I	ug/L	P362741	
		Carbamazepine**	8.0E-04	U	ug/L	P362672	
		Diuron	0.0034	I	ug/L	P362672	
		Fenuron	0.016	U	ug/L	P362672	
		Fluridone**	0.0071		ug/L	P362672	
		Imazapyr**	0.23		ug/L	P362672	
		Hydrocodone**	0.0020	U	ug/L	P362672	
		Ibuprofen**	0.020	U	ug/L	P362672	
		Imidacloprid	0.010		ug/L	P362672	MS
		Linuron	0.0040	U	ug/L	P362672	
		MCPP	0.0034	I	ug/L	P362672	
		Naproxen**	0.0080	U	ug/L	P362672	
		Primidone**	0.0040	U	ug/L	P362672	
		Pyraclostrobin**	0.0020	U	ug/L	P362672	
		Triclopyr**	0.0040	U	ug/L	P362672	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: TROUT RIVER AT OLD KINGS RD

Collection Date/Time: 04/23/2019 11:40

Field ID: 20030753

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080370	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P362803	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P363121	
		Sulfate	7.6		mg SO4/L	P363122	
	SM 2120 B	Color (true)	200		PCU	P362807	
	SM 2320 B-97	Total Alkalinity	25		mg CaCO3/L	P363359	
	SM 2540 C-97	TDS	100		mg/L	P363470	
	SM 2540 D-97	TSS	2	I	mg/L	P363413	
	SM 4500 F-C-97	Fluoride	0.050	I	mg F/L	P363554	
2080371	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P363038	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.81		mg N/L	P362995	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.073		mg N/L	P363007	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P362937	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P362984	
2080372	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.085		mg P/L	P362837	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: MONCRIEF CR AT MONCRIEF ROAD

Collection Date/Time: 04/23/2019 12:40

Field ID: 20030726

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080364	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P362803	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P363121	
		Sulfate	26		mg SO4/L	P363122	
	SM 2120 B	Color (true)	30		PCU	P362806	
	SM 2320 B-97	Total Alkalinity	130		mg CaCO3/L	P363358	
	SM 2540 C-97	TDS	215		mg/L	P363470	
	SM 2540 D-97	TSS	3	I	mg/L	P363413	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P363362	
2080365	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P363038	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P362995	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P363007	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P362937	
	SM 5310 B-00	Organic Carbon	6.5		mg C/L	P362984	
2080366	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.034		mg P/L	P362837	
2080392	EPA 200.7 Rev. 4.4	Barium	46.4		ug/L	P362867	
		Calcium	49.5		mg/L	P362867	
		Iron	1.28E+03		ug/L	P362867	
		Magnesium	7.07		mg/L	P362867	
		Potassium	2.6		mg/L	P362867	
		Sodium	13.8		mg/L	P362867	
		Zinc	6.0	I	ug/L	P362867	
		Aluminum	13	I	ug/L	P362867	
		Antimony	0.19	I	ug/L	P362867	
		Arsenic	1.63		ug/L	P362867	
		Boron**	50.0		ug/L	P362867	
		Cadmium	0.020	U	ug/L	P362867	
		Chromium	0.40	U	ug/L	P362867	
	EPA 200.8 Rev. 5.4	Copper	12.8		ug/L	P362867	
		Lead	0.47		ug/L	P362867	
		Nickel	0.74	I	ug/L	P362867	
		Selenium	0.20	U	ug/L	P362867	
		Silver	0.010	U	ug/L	P362867	
		Thallium	0.10	U	ug/L	P362867	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: 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 boron are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: BIG FISHWEIR CR SF @ HAMILTON ST

Collection Date/Time: 04/23/2019 13:30

Field ID: 20030801

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080391	EPA 8321B	2,4-D	0.030		ug/L	P362672	
		Acesulfame K**	0.22	I	ug/L	P362741	
		AMPA**	0.60		ug/L	P362741	
		Sucralose**	0.46		ug/L	P362741	
		Acetaminophen**	0.0096	I	ug/L	P362672	
		Endothall**	0.25	U	ug/L	P362741	
		Glufosinate**	0.10	U	ug/L	P362741	
		Bentazon	0.0049		ug/L	P362672	
		Glyphosate**	3.3		ug/L	P362741	
		Carbamazepine**	0.0021	I	ug/L	P362672	
		Diuron	0.36		ug/L	P362672	
		Fenuron	0.018	I	ug/L	P362672	
		Fluridone**	0.0012	I	ug/L	P362672	
		Imazapyr**	1.2		ug/L	P362672	
		Hydrocodone**	0.0020	U	ug/L	P362672	
		Ibuprofen**	0.020	U	ug/L	P362672	
		Imidacloprid	0.051		ug/L	P362672	MS
		Linuron	0.0040	U	ug/L	P362672	
		MCPP	0.013		ug/L	P362672	
		Naproxen**	0.0080	U	ug/L	P362672	
		Primidone**	0.0041	I	ug/L	P362672	
		Pyraclostrobin**	0.0020	U	ug/L	P362672	
		Triclopyr**	0.0040	U	ug/L	P362672	

Sample Location: LITTLE FISHWEIR AT OAK ST

Collection Date/Time: 04/23/2019 14:00

Field ID: 20030953

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080361	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P362802	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P363121	
		Sulfate	51		mg SO4/L	P363122	
	SM 2120 B	Color (true)	30	A	PCU	P362806	
	SM 2320 B-97	Total Alkalinity	155		mg CaCO3/L	P363358	
	SM 2540 C-97	TDS	300	A	mg/L	P363470	
	SM 2540 D-97	TSS	3	IA	mg/L	P363413	
2080362	SM 4500 F-C-97	Fluoride	0.23		mg F/L	P363362	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.20		mg N/L	P363038	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.70		mg N/L	P362995	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.084		mg N/L	P363007	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P362937	
2080363	SM 5310 B-00	Organic Carbon	6.8		mg C/L	P362984	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.071		mg P/L	P362837	
2080389	EPA 8321B	2,4-D	0.0020	U	ug/L	P362672	
		Acesulfame K**	0.10	U	ug/L	P362741	
		AMPA**	0.28	I	ug/L	P362741	
		Sucralose**	0.11		ug/L	P362741	
		Acetaminophen**	0.0080	U	ug/L	P362672	
		Endothall**	0.25	U	ug/L	P362741	
		Glufosinate**	0.10	U	ug/L	P362741	
		Bentazon	0.017		ug/L	P362672	
		Glyphosate**	0.62		ug/L	P362741	
		Carbamazepine**	8.0E-04	U	ug/L	P362672	
		Diuron	0.0056	I	ug/L	P362672	
		Fenuron	0.016	U	ug/L	P362672	
		Fluridone**	8.0E-04	U	ug/L	P362672	
		Imazapyr**	0.048		ug/L	P362672	
		Hydrocodone**	0.0020	U	ug/L	P362672	
		Ibuprofen**	0.020	U	ug/L	P362672	
		Imidacloprid	0.019		ug/L	P362672	MS
		Linuron	0.0040	U	ug/L	P362672	
		MCPP	0.0030	I	ug/L	P362672	
		Naproxen**	0.0080	U	ug/L	P362672	
		Primidone**	0.0040	U	ug/L	P362672	
		Pyraclostrobin**	0.0020	U	ug/L	P362672	
		Triclopyr**	0.0040	U	ug/L	P362672	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P362802

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P362803

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P362867

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: P362867

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
Batch ID: P362934

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363121

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363122

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363038

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362995

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363007

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362937

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362837

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

Reference Method: EPA 8321B
Batch ID: P362672

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P362672

Component	Result	Code	Units
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P362741

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: SM 2120 B
Batch ID: P362806

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P362807

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P363358

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

Reference Method: SM 2320 B-97
Batch ID: P363359

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

Reference Method: SM 2540 C-97
Batch ID: P363470

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P363413

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P363414

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P363362

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P363554

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P362984

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: P362867

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	96.9		P	85 - 115
Calcium	105		P	85 - 115
Iron	102		P	85 - 115
Magnesium	107		P	85 - 115
Potassium	98.3		P	85 - 115
Sodium	106		P	85 - 115
Zinc	95.5		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P362867

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.8		P	85 - 115
Antimony	96.8		P	85 - 115
Arsenic	98.4		P	85 - 115
Boron	107		P	85 - 115
Cadmium	99.9		P	85 - 115
Chromium	94.8		P	85 - 115
Copper	98.9		P	85 - 115
Lead	94.6		P	85 - 115
Nickel	99.6		P	85 - 115
Selenium	95.6		P	85 - 115
Silver	101		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P362934

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363121

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363122

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363038

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: P362995

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363007

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362937

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362837

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

Reference Method: EPA 8321B
Batch ID: P362672

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	74.3		P	40 - 150
Acetaminophen	94.9		P	30 - 150
Bentazon	87.5		P	30 - 150
Carbamazepine	98.4		P	40 - 150
Diuron	88.9		P	40 - 150
Fenuron	114		P	40 - 150
Fluridone	107		P	40 - 150
Hydrocodone	107		P	40 - 150
Ibuprofen	64.7		P	40 - 150
Imazapyr	103		P	40 - 150
Imidacloprid	106		P	40 - 150
Linuron	78.2		P	40 - 150
MCPP	81.4		P	40 - 150
Naproxen	80.1		P	40 - 150
Primidone	63.3		P	40 - 150
Pyraclostrobin	69.5		P	40 - 150
Triclopyr	51.5		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P362741

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	104		P	40 - 150
AMPA	131		P	40 - 150
Endothall	107		P	40 - 150
Glufosinate	125		P	40 - 150
Glyphosate	121		P	40 - 140
Sucralose	95.3		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P362806

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.5		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P362807

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

Reference Method: SM 2320 B-97
Batch ID: P363358

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P363359

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P363362

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.1		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P363554

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P362984

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P362867

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080348	Barium	97.0		P	80 - 120
2080348	Calcium	99.0		P	80 - 120
2080348	Iron	102		P	80 - 120
2080348	Magnesium	105		P	80 - 120
2080348	Potassium	101		P	80 - 120
2080348	Sodium	101		P	80 - 120
2080348	Zinc	96.6		P	80 - 120
2080487	Barium	98.1	97.0	P/P	80 - 120
2080487	Calcium	103	103	P/P	80 - 120
2080487	Iron	101	101	P/P	80 - 120
2080487	Magnesium	106	106	P/P	80 - 120
2080487	Potassium	103	101	P/P	80 - 120
2080487	Sodium	103	102	P/P	80 - 120
2080487	Zinc	95.8	95.2	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P362867

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080348	Aluminum	101		P	80 - 120
2080348	Antimony	99.6		P	80 - 120
2080348	Arsenic	102		P	80 - 120
2080348	Cadmium	101		P	80 - 120
2080348	Chromium	96.6		P	80 - 120
2080348	Copper	102		P	80 - 120
2080348	Lead	97.6		P	80 - 120
2080348	Nickel	102		P	80 - 120
2080348	Selenium	98.9		P	80 - 120
2080348	Silver	104		P	80 - 120
2080348	Thallium	103		P	80 - 120
2080487	Aluminum	98.6	99.5	P/P	80 - 120
2080487	Antimony	96.3	96.9	P/P	80 - 120
2080487	Arsenic	98.5	98.6	P/P	80 - 120
2080487	Boron	107	107	P/P	80 - 120
2080487	Cadmium	99.2	98.9	P/P	80 - 120
2080487	Chromium	95.7	96.3	P/P	80 - 120
2080487	Copper	101	101	P/P	80 - 120
2080487	Lead	95.1	95.6	P/P	80 - 120
2080487	Nickel	99.9	101	P/P	80 - 120
2080487	Selenium	96.2	97.4	P/P	80 - 120
2080487	Silver	100	102	P/P	80 - 120
2080487	Thallium	100	101	P/P	80 - 120

Reference Method: EPA 300.0
Batch ID: P362934

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080373	Bromide	101	99.7	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363121

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080326	Chloride	102		P	90 - 110
2080480	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363122

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080326	Sulfate	103		P	90 - 110
2080480	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363038

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080332	Ammonia-N	93.9	96.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363007

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080343	NO2NO3-N	106	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362937

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080365	Total-P	99.8	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080336	O-Phosphate-P	97.1	99.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P362672

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2079939	2,4-D	73.8	77.8	P/P	40 - 150
2079939	Acetaminophen	102	114	P/P	30 - 150
2079939	Bentazon	69.3	74.6	P/P	30 - 150
2079939	Carbamazepine	92.9	98.8	P/P	40 - 150
2079939	Diuron	68.7	68.0	P/P	40 - 150
2079939	Fenuron	121	142	P/P	40 - 150
2079939	Fluridone	137	147	P/P	40 - 150
2079939	Hydrocodone	94.6	102	P/P	40 - 150
2079939	Ibuprofen	55.1	66.7	P/P	40 - 150
2079939	Imazapyr	75.8	101	P/P	40 - 150
2079939	Imidacloprid	143	155	P/F	40 - 150
2079939	Linuron	61.6	59.2	P/P	40 - 150
2079939	MCP	75.3	89.0	P/P	40 - 150
2079939	Naproxen	48.7	55.6	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P362672

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2079939	Primidone	88.5	81.7	P/P	40 - 150
2079939	Pyraclostrobin	75.5	81.7	P/P	40 - 150
2079939	Triclopyr	43.4	46.5	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P362741

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080156	Acesulfame K	102	79.1	P/P	40 - 150
2080156	AMPA	61.2	66.5	P/P	40 - 150
2080156	Endothall	87.0	114	P/P	40 - 150
2080156	Glufosinate	95.6	97.2	P/P	40 - 150
2080156	Glyphosate	124	123	P/P	40 - 140
2080156	Sucralose	103	105	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P363362

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081413	Fluoride	98.2	98.2	P/P	89 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P363554

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080442	Fluoride	97.0	97.7	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P362984

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080362	Organic Carbon	99.9	99.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P362802

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080326	Turbidity	2.31	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P362803

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080367	Turbidity	0.306	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P362867

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080487	Barium	1.10	Spike	P	0 - 20
2080487	Calcium	0.183	Spike	P	0 - 20
2080487	Iron	0.261	Spike	P	0 - 20
2080487	Magnesium	0.147	Spike	P	0 - 20
2080487	Potassium	1.67	Spike	P	0 - 20
2080487	Sodium	0.805	Spike	P	0 - 20
2080487	Zinc	0.627	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P362867

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080487	Aluminum	0.749	Spike	P	0 - 20
2080487	Antimony	0.664	Spike	P	0 - 20
2080487	Arsenic	0.105	Spike	P	0 - 20
2080487	Boron	0.132	Spike	P	0 - 20
2080487	Cadmium	0.339	Spike	P	0 - 20
2080487	Chromium	0.674	Spike	P	0 - 20
2080487	Copper	0.623	Spike	P	0 - 20
2080487	Lead	0.531	Spike	P	0 - 20
2080487	Nickel	1.10	Spike	P	0 - 20
2080487	Selenium	1.21	Spike	P	0 - 20
2080487	Silver	1.43	Spike	P	0 - 20
2080487	Thallium	1.34	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P362934

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080373	Bromide	1.58	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363121

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080326	Chloride	0.486	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363122

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080326	Sulfate	1.75	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363038

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080332	Ammonia-N	1.94	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362995

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080343	Kjeldahl Nitrogen	3.48	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363007

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080343	NO2NO3-N	0.475	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080365	Total-P	0.947	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080336	O-Phosphate-P	2.04	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P362672

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2079939	2,4-D	5.20	Spike	P	0 - 30
2079939	Acetaminophen	11.2	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P362672

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2079939	Bentazon	7.39	Spike	P	0 - 30
2079939	Carbamazepine	6.15	Spike	P	0 - 30
2079939	Diuron	0.993	Spike	P	0 - 30
2079939	Fenuron	16.2	Spike	P	0 - 30
2079939	Fluridone	7.34	Spike	P	0 - 30
2079939	Hydrocodone	7.27	Spike	P	0 - 30
2079939	Ibuprofen	18.0	Spike	P	0 - 30
2079939	Imazapyr	26.6	Spike	P	0 - 30
2079939	Imidacloprid	8.02	Spike	P	0 - 30
2079939	Linuron	3.96	Spike	P	0 - 30
2079939	MCPP	16.6	Spike	P	0 - 30
2079939	Naproxen	13.3	Spike	P	0 - 30
2079939	Primidone	7.98	Spike	P	0 - 30
2079939	Pyraclostrobin	7.90	Spike	P	0 - 30
2079939	Triclopyr	7.05	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P362741

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080156	Acesulfame K	25.0	Spike	P	0 - 30
2080156	AMPA	2.96	Spike	P	0 - 30
2080156	Endothall	26.8	Spike	P	0 - 30
2080156	Glufosinate	1.60	Spike	P	0 - 30
2080156	Glyphosate	0.186	Spike	P	0 - 30
2080156	Sucralose	2.19	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P362806

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080361	Color (true)	1.71	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P362807

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080442	Color (true)	0.0968	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P363358

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081413	Total Alkalinity	0.378	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
 Batch ID: P363359

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080442	Total Alkalinity	2.11	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
 Batch ID: P363470

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080361	TDS	9.33	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P363362

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081413	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
 Batch ID: P363554

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080442	Fluoride	0.513	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P362984

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080362	Organic Carbon	0.336	Spike	P	0 - 20

* 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: 2080389
Field Sample ID: 20030953

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	80.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	86.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	83.3	P	30 - 160
EPA 8321B	Diuron-d6	76.0	P	30 - 160
EPA 8321B	Endothall-d6	99.5	P	30 - 160
EPA 8321B	Endothall-d6	99.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	103	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	103	P	30 - 160
EPA 8321B	Ibuprofen-d3	63.8	P	30 - 160
EPA 8321B	Primidone-d5	80.1	P	30 - 160
EPA 8321B	Sucralose-d6	106	P	30 - 160
EPA 8321B	Sucralose-d6	106	P	30 - 160

Lab Sample ID: 2080390
Field Sample ID: 20030123

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	66.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	81.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	80.0	P	30 - 160
EPA 8321B	Diuron-d6	70.8	P	30 - 160
EPA 8321B	Endothall-d6	119	P	30 - 160
EPA 8321B	Endothall-d6	119	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	43.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	43.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	60.9	P	30 - 160
EPA 8321B	Primidone-d5	62.7	P	30 - 160
EPA 8321B	Sucralose-d6	90.7	P	30 - 160
EPA 8321B	Sucralose-d6	90.7	P	30 - 160

Lab Sample ID: 2080391
Field Sample ID: 20030801

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	69.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	85.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	86.7	P	30 - 160
EPA 8321B	Diuron-d6	72.9	P	30 - 160
EPA 8321B	Endothall-d6	82.4	P	30 - 160
EPA 8321B	Endothall-d6	82.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	105	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	105	P	30 - 160
EPA 8321B	Ibuprofen-d3	53.3	P	30 - 160
EPA 8321B	Primidone-d5	78.6	P	30 - 160
EPA 8321B	Sucralose-d6	104	P	30 - 160
EPA 8321B	Sucralose-d6	104	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0

Run ID: A90903

Included Lab Sample IDs: 2080367

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	99.0	103	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A90974

Included Lab Sample IDs: 2080361, 2080364, 2080367, 2080370

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

Reference Method: SM 2120 B

Run ID: A90975

Included Lab Sample IDs: 2080361, 2080364, 2080370

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A90987

Included Lab Sample IDs: 2080363, 2080366, 2080369, 2080372

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	95.7	94.6	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A90991

Included Lab Sample IDs: 2080389, 2080390, 2080391

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	99.4	96.6	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A91044

Included Lab Sample IDs: 2080392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	97.0	96.7	P/P	90 - 110
Calcium	99.4	100	P/P	90 - 110
Iron	98.4	99.0	P/P	90 - 110
Magnesium	98.8	98.9	P/P	90 - 110
Potassium	98.9	98.5	P/P	90 - 110
Sodium	99.2	99.6	P/P	90 - 110
Zinc	95.5	95.4	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A91057

Included Lab Sample IDs: 2080362, 2080365, 2080368, 2080371

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

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A91057

Included Lab Sample IDs: 2080362, 2080365, 2080368, 2080371

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.7	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A91059

Included Lab Sample IDs: 2080362, 2080365, 2080368, 2080371

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A91072

Included Lab Sample IDs: 2080362, 2080365, 2080368, 2080371

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	102	P/P	90 - 110
Ammonia-N	102	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A91075

Included Lab Sample IDs: 2080362, 2080365, 2080368, 2080371

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

Reference Method: EPA 8321B

Run ID: A91087

Included Lab Sample IDs: 2080389, 2080390, 2080391

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	118	68.6	P/P	60 - 160
Acesulfame K	68.6	87.5	P/P	60 - 160
Endothall	90.5	72.7	P/P	60 - 160
Endothall	97.1	90.5	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A91091

Included Lab Sample IDs: 2080389, 2080390, 2080391

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	121	120	P/P	60 - 160
Glufosinate	126	122	P/P	60 - 160
Glyphosate	120	127	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A91098

Included Lab Sample IDs: 2080362, 2080365, 2080368, 2080371

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.9	99.9	P/P	90 - 110
Kjeldahl Nitrogen	99.9	105	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A91105

Included Lab Sample IDs: 2080361, 2080364, 2080370

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A91143

Included Lab Sample IDs: 2080392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	100	100	P/P	90 - 110
Antimony	99.4	98.9	P/P	90 - 110
Arsenic	101	100	P/P	90 - 110
Boron	97.8	104	P/P	90 - 110
Cadmium	100	99.9	P/P	90 - 110
Chromium	99.8	100	P/P	90 - 110
Copper	100	99.7	P/P	90 - 110
Lead	96.5	96.4	P/P	90 - 110
Nickel	99.7	98.9	P/P	90 - 110
Selenium	101	100	P/P	90 - 110
Silver	102	102	P/P	90 - 110
Thallium	96.5	96.8	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A91204

Included Lab Sample IDs: 2080361, 2080364, 2080367, 2080370

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.2	P/P	90 - 110
Total Alkalinity	99.2	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A91204

Included Lab Sample IDs: 2080361, 2080364, 2080367

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	98.1	P/P	90 - 110
Fluoride	98.1	99.1	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A91231

Included Lab Sample IDs: 2080389, 2080390, 2080391

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	98.4	96.7	P/P	50 - 150
Acetaminophen	135	103	P/P	60 - 160
Bentazon	103	101	P/P	50 - 160
Carbamazepine	113	120	P/P	60 - 150
Diuron	119	116	P/P	60 - 150
Fenuron	107	113	P/P	60 - 150
Fluridone	113	128	P/P	60 - 160
Hydrocodone	113	112	P/P	60 - 150
Ibuprofen	70.6	72.3	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A91231

Included Lab Sample IDs: 2080389, 2080390, 2080391

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imazapyr	109	106	P/P	50 - 150
Imidacloprid	112	93.5	P/P	60 - 150
Linuron	79.8	84.7	P/P	60 - 150
MCPP	96.3	79.9	P/P	50 - 150
Naproxen	77.5	95.1	P/P	50 - 160
Primidone	118	109	P/P	60 - 150
Pyraclostrobin	105	107	P/P	60 - 150
Triclopyr	96.9	88.3	P/P	50 - 150

Reference Method: SM 4500 F-C-97

Run ID: A91266

Included Lab Sample IDs: 2080370

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A91289

Included Lab Sample IDs: 2080391

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imazapyr	108	98.4	P/P	50 - 150

* 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	MS
							SMP	
EPA 180.1 Rev. 2.0	Turbidity						2.31	
	Turbidity						0.306	
EPA 200.7 Rev. 4.4	Barium	96.9	97.0	98.1	97.0			1.10
	Calcium	105	99.0	103	103			0.183
	Iron	102	102	101	101			0.261
	Magnesium	107	105	106	106			0.147
	Potassium	98.3	101	103	101			1.67
	Sodium	106	101	103	102			0.805
	Zinc	95.5	96.6	95.8	95.2			0.627
EPA 200.8 Rev. 5.4	Aluminum	97.8	101	98.6	99.5			0.749
	Antimony	96.8	99.6	96.3	96.9			0.664
	Arsenic	98.4	102	98.5	98.6			0.105
	Boron	107	107	107				0.132
	Cadmium	99.9	101	99.2	98.9			0.339
	Chromium	94.8	96.6	95.7	96.3			0.674
	Copper	98.9	102	101	101			0.623
	Lead	94.6	97.6	95.1	95.6			0.531
	Nickel	99.6	102	99.9	101			1.10
	Selenium	95.6	98.9	96.2	97.4			1.21
	Silver	101	104	100	102			1.43
	Thallium	101	103	100	101			1.34
EPA 300.0	Bromide	104	101	99.7				1.58
EPA 300.0 Rev. 2.1	Chloride	101	102	103			0.486	
	Sulfate	101	103	103			1.75	
EPA 350.1 Rev. 2.0	Ammonia-N	101	93.9	96.2				1.94
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	109						3.48
EPA 353.2 Rev. 2.0	NO2NO3-N	103	106	105				0.475
EPA 365.1 Rev. 2.0	Total-P	102	99.8	101				0.947
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	105	97.1	99.1				2.04
EPA 8321B	2,4-D	74.3	73.8	77.8				5.20
	Acesulfame K	104	102	79.1				25.0
	Acetaminophen	94.9	102	114				11.2
	AMPA	131	61.2	66.5				2.96
	Bentazon	87.5	69.3	74.6				7.39
	Carbamazepine	98.4	92.9	98.8				6.15
	Diuron	88.9	68.7	68.0				0.993
	Endothall	107	87.0	114				26.8
	Fenuron	114	121	142				16.2
	Fluridone	107	137	147				7.34
	Glufosinate	125	95.6	97.2				1.60
	Glyphosate	121	124	123				0.186
	Hydrocodone	107	94.6	102				7.27
	Ibuprofen	64.7	55.1	66.7				18.0
	Imazapyr	103	75.8	101				26.6
	Imidacloprid	106	143	155				8.02
	Linuron	78.2	61.6	59.2				3.96
	MCPP	81.4	75.3	89.0				16.6
	Naproxen	80.1	48.7	55.6				13.3
	Primidone	63.3	88.5	81.7				7.98
	Pyraclostrobin	69.5	75.5	81.7				7.90
	Sucralose	95.3	103	105				2.19
	Triclopyr	51.5	43.4	46.5				7.05
SM 2120 B	Color (true)	99.5					1.71	
	Color (true)	100					0.0968	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
SM 2320 B-97	Total Alkalinity	101				0.378	
	Total Alkalinity	101				2.11	
SM 2540 C-97	TDS					9.33	
SM 4500 F-C-97	Fluoride	97.1	98.2	98.2			0.0
	Fluoride	96.5	97.0	97.7			0.513
SM 5310 B-00	Organic Carbon	98.4	99.9	99.5			0.336

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2080361, 2080364, 2080367, 2080370
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2080392
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2080392
EPA 300.0 / E31780	Bromide in aqueous matrices	2080367
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2080361, 2080364, 2080370
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2080361, 2080364, 2080370
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2080362, 2080365, 2080368, 2080371
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2080362, 2080365, 2080368, 2080371
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2080362, 2080365, 2080368, 2080371
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2080362, 2080365, 2080368, 2080371
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2080363, 2080366, 2080369, 2080372
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2080389, 2080390, 2080391
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2080389, 2080390, 2080391
SM 2120 B / E31780	True Color measured at 450 nm	2080361, 2080364, 2080370
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2080361, 2080364, 2080367, 2080370
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2080361, 2080364, 2080370
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2080361, 2080364, 2080367, 2080370
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2080361, 2080364, 2080367, 2080370
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2080362, 2080365, 2080368, 2080371

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	04/24/2019			04/24/2019 16:07	Adrian Shelby	2080361, 2080364, 2080367, 2080370
EPA 200.7 Rev. 4.4	04/24/2019	04/25/2019 16:50	Elliott D. Healy	04/26/2019 18:01	Betina Topolski	2080392
EPA 200.8 Rev. 5.4	04/24/2019	04/25/2019 16:50	Elliott D. Healy	05/01/2019 21:22	Robert K Palmer	2080392
EPA 300.0	04/24/2019			04/25/2019 19:47	Lipi Saha	2080367
EPA 300.0 Rev. 2.1	04/24/2019			04/29/2019 21:07	Jhamieka S. Greenwood	2080361
	04/24/2019			04/29/2019 21:20	Jhamieka S. Greenwood	2080364
	04/24/2019			04/29/2019 21:32	Jhamieka S. Greenwood	2080370
EPA 350.1 Rev. 2.0	04/24/2019			04/29/2019 11:05	Ping Hua	2080362
	04/24/2019			04/29/2019 11:07	Ping Hua	2080365
	04/24/2019			04/29/2019 11:14	Ping Hua	2080368
	04/24/2019			04/29/2019 11:16	Ping Hua	2080371
EPA 351.2 Rev. 2.0	04/24/2019	04/29/2019 13:15	Adrian Shelby	04/30/2019 13:13	Joseph Suarez	2080362
	04/24/2019	04/29/2019 13:15	Adrian Shelby	04/30/2019 13:14	Joseph Suarez	2080365
	04/24/2019	04/29/2019 13:15	Adrian Shelby	04/30/2019 13:16	Joseph Suarez	2080368
	04/24/2019	04/29/2019 13:15	Adrian Shelby	04/30/2019 13:21	Joseph Suarez	2080371
EPA 353.2 Rev. 2.0	04/24/2019			04/29/2019 10:11	Beverly Y. Sanders	2080362
	04/24/2019			04/29/2019 10:12	Beverly Y. Sanders	2080365
	04/24/2019			04/29/2019 10:13	Beverly Y. Sanders	2080368
	04/24/2019			04/29/2019 10:14	Beverly Y. Sanders	2080371
EPA 365.1 Rev. 2.0	04/24/2019	04/26/2019 14:10	Sima Feizi	04/29/2019 13:46	Rosalyn Ballman	2080365
	04/24/2019	04/26/2019 14:10	Sima Feizi	04/29/2019 13:49	Rosalyn Ballman	2080362
	04/24/2019	04/26/2019 14:10	Sima Feizi	04/29/2019 13:50	Rosalyn Ballman	2080368
	04/24/2019	04/26/2019 14:10	Sima Feizi	04/29/2019 13:52	Rosalyn Ballman	2080371
EPA 365.1 Rev. 2.0 dissolved	04/24/2019			04/24/2019 19:55	Jhamieka S. Greenwood	2080363
	04/24/2019			04/24/2019 19:56	Jhamieka S. Greenwood	2080366
	04/24/2019			04/24/2019 19:57	Jhamieka S. Greenwood	2080369
	04/24/2019			04/24/2019 19:58	Jhamieka S. Greenwood	2080372
EPA 8321B	04/24/2019	04/24/2019 14:45	Rebecca Ware	04/25/2019 09:47	Rebecca Ware	2080389
	04/24/2019	04/24/2019 14:45	Rebecca Ware	04/25/2019 09:59	Rebecca Ware	2080390
	04/24/2019	04/24/2019 14:45	Rebecca Ware	04/25/2019 10:11	Rebecca Ware	2080391
	04/24/2019	04/24/2019 14:45	Rebecca Ware	04/25/2019 23:13	Rebecca Ware	2080389
	04/24/2019	04/24/2019 14:45	Rebecca Ware	04/25/2019 23:40	Rebecca Ware	2080391
	04/24/2019	04/24/2019 14:45	Rebecca Ware	04/26/2019 09:03	Rebecca Ware	2080390
	04/24/2019	04/24/2019 14:45	Rebecca Ware	04/26/2019 20:11	Rebecca Ware	2080389
	04/24/2019	04/24/2019 14:45	Rebecca Ware	04/26/2019 20:20	Rebecca Ware	2080390
	04/24/2019	04/24/2019 14:45	Rebecca Ware	04/26/2019 20:28	Rebecca Ware	2080391
	04/24/2019	04/29/2019 10:00	Hoor Shaik	05/02/2019 16:46	Juyoung Kim	2080389
	04/24/2019	04/29/2019 10:00	Hoor Shaik	05/02/2019 17:21	Juyoung Kim	2080390
	04/24/2019	04/29/2019 10:00	Hoor Shaik	05/02/2019 17:55	Juyoung Kim	2080391
	04/24/2019	04/29/2019 10:00	Hoor Shaik	05/04/2019 02:23	Juyoung Kim	2080391

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2120 B	04/24/2019			04/24/2019 16:19	Mariam Hanna	2080361, 2080364
	04/24/2019			04/24/2019 16:39	Mariam Hanna	2080370
SM 2320 B-97	04/24/2019			05/03/2019 22:22	Samantha Davila	2080361
	04/24/2019			05/03/2019 23:21	Samantha Davila	2080364
	04/24/2019			05/03/2019 23:33	Samantha Davila	2080367
	04/24/2019			05/04/2019 01:14	Samantha Davila	2080370
SM 2540 C-97	04/24/2019			04/26/2019 14:16	Yijie Li	2080361, 2080364, 2080370
SM 2540 D-97	04/24/2019			04/26/2019 14:16	Yijie Li	2080361, 2080364, 2080367, 2080370
SM 4500 F-C-97	04/24/2019			05/03/2019 22:22	Samantha Davila	2080361
	04/24/2019			05/03/2019 23:21	Samantha Davila	2080364
	04/24/2019			05/03/2019 23:33	Samantha Davila	2080367
SM 5310 B-00	04/24/2019			05/07/2019 15:48	Dale L. Simmons	2080370
	04/24/2019			04/26/2019 19:45	Julia Storbeck	2080362
	04/24/2019			04/26/2019 20:58	Julia Storbeck	2080365
	04/24/2019			04/26/2019 21:10	Julia Storbeck	2080368
	04/24/2019			04/26/2019 21:47	Julia Storbeck	2080371