

Chemical Analysis Report

NE-DIST-2019-01-25-01

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

Event Description: **Bmap 2**
Request ID: **RQ-2019-01-21-24**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 12-FEB-2019 11:18



NON-CONFORMANCE REPORT INCLUDED

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: MONCRIEF CR AT MONFRIEF RD

Collection Date/Time: 01/23/2019 10:45

Field ID: 20030726

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2056868	EPA 180.1 Rev. 2.0	Turbidity	5.5	Q	NTU	P357873	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P358248	
		Sulfate	40		mg SO4/L	P358250	
	SM 2120 B	Color (true)	15	Q	PCU	P357866	
	SM 2320 B-97	Total Alkalinity	140		mg CaCO3/L	P358238	
	SM 2540 C-97	TDS	228		mg/L	P358323	
	SM 2540 D-97	TSS	4	I	mg/L	P358196	
	SM 4500 F-C-97	Fluoride	0.16		mg F/L	P358242	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.088		mg N/L	P358185	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P357993	
2056869	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P357917	
	EPA 365.1 Rev. 2.0	Total-P	0.064		mg P/L	P358006	
	SM 5310 B-00	Organic Carbon	5.8		mg C/L	P357977	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.016	Q	mg P/L	P357851	
	dissolved						
2056908	EPA 200.7 Rev. 4.4	Barium	50.9		ug/L	P357907	
		Calcium	58.5		mg/L	P357907	
		Iron	630		ug/L	P357907	
		Magnesium	8.64		mg/L	P357907	
		Potassium	2.5		mg/L	P357907	
		Sodium	15.6		mg/L	P357907	
		Zinc	18	I	ug/L	P357907	
	EPA 200.8 Rev. 5.4	Aluminum	43		ug/L	P357907	
		Antimony	0.25		ug/L	P357907	
		Arsenic	0.88		ug/L	P357907	
		Boron**	52.9		ug/L	P357907	
		Cadmium	0.020	I	ug/L	P357907	
		Chromium	0.40	U	ug/L	P357907	
		Copper	1.47		ug/L	P357907	
		Lead	1.39		ug/L	P357907	
		Nickel	1.4	I	ug/L	P357907	
		Selenium	0.20	I	ug/L	P357907	
		Silver	0.010	U	ug/L	P357907	
		Thallium	0.10	U	ug/L	P357907	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The sample expired upon receipt.

SM 2120 B: The sample expired upon receipt.

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired upon receipt.

Sample Location: TROUT RIVER AT OLD KINGS RD

Collection Date/Time: 01/23/2019 09:55

Field ID: 20030753

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2056874	EPA 180.1 Rev. 2.0	Turbidity	2.8	Q	NTU	P357873	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P358248	
		Sulfate	5.4		mg SO4/L	P358250	
	SM 2120 B	Color (true)	220	Q	PCU	P357866	
	SM 2320 B-97	Total Alkalinity	21		mg CaCO3/L	P358238	
	SM 2540 C-97	TDS	95		mg/L	P358323	
	SM 2540 D-97	TSS	2	I	mg/L	P358196	
	SM 4500 F-C-97	Fluoride	0.047	I	mg F/L	P358242	
2056875	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P358185	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.90		mg N/L	P357993	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.018		mg N/L	P357917	
	EPA 365.1 Rev. 2.0	Total-P	0.055		mg P/L	P358006	
	SM 5310 B-00	Organic Carbon	23		mg C/L	P357977	
2056876	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.032	Q	mg P/L	P357851	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The sample expired prior to receipt.

SM 2120 B: The sample expired prior to receipt.

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired prior to receipt.

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

Collection Date/Time: 01/23/2019 09:15

Field ID: 20030123

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2056871	EPA 180.1 Rev. 2.0	Turbidity	8.0	Q	NTU	P357873	
	EPA 300.0	Bromide	0.25		mg Br/L	P358025	
	SM 2320 B-97	Total Alkalinity	38		mg CaCO3/L	P358238	
	SM 2540 D-97	TSS	9	I	mg/L	P358198	
	SM 4500 F-C-97	Fluoride	0.069	I	mg F/L	P358242	
2056872	EPA 350.1 Rev. 2.0	Ammonia-N	0.036		mg N/L	P358185	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.96		mg N/L	P357993	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.033		mg N/L	P357917	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P358006	
	SM 5310 B-00	Organic Carbon	23		mg C/L	P357977	
2056873	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.054	Q	mg P/L	P357851	
2056901	EPA 8321B	2,4-D	0.0048	I	ug/L	P357829	
		Sucralose**	0.076		ug/L	P357752	
		Bentazon	0.0018	I	ug/L	P357829	
		MCP	0.0020	I	ug/L	P357829	
		Triclopyr**	0.0040	U	ug/L	P357829	
		Imidacloprid	0.0062	I	ug/L	P357829	
		Diuron	0.0020	I	ug/L	P357829	
		Pyraclostrobin**	0.0020	U	ug/L	P357829	
		Primidone**	0.0040	U	ug/L	P357829	
		Linuron	0.0040	U	ug/L	P357829	
		Acetaminophen**	0.010	I	ug/L	P357829	
		Fenuron	0.016	U	ug/L	P357829	
		Imazapyr**	0.10		ug/L	P357829	
		Carbamazepine**	8.0E-04	U	ug/L	P357829	
		Fluridone**	0.0031	I	ug/L	P357829	
		Hydrocodone**	0.0020	U	ug/L	P357829	
		Naproxen**	0.0080	U	ug/L	P357829	
		Ibuprofen**	0.020	U	ug/L	P357829	
		Glyphosate**	0.13	I	ug/L	P357752	
		AMPA**	0.12	I	ug/L	P357752	
		Endothall**	0.25	U	ug/L	P357752	
		Glufosinate**	0.10	U	ug/L	P357752	
		Acesulfame K**	0.10	U	ug/L	P357752	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The sample expired prior to receipt.

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired prior to receipt.

Sample Location: BIG FISHWEIR CR SF @ HAMILTON ST

Collection Date/Time: 01/23/2019 11:30

Field ID: 20030801

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2056865	EPA 180.1 Rev. 2.0	Turbidity	6.4	Q	NTU	P357873	
	EPA 300.0 Rev. 2.1	Chloride	25	A	mg Cl/L	P358248	
		Sulfate	34	A	mg SO4/L	P358250	
	SM 2120 B	Color (true)	30	AQ	PCU	P357866	
	SM 2320 B-97	Total Alkalinity	157		mg CaCO3/L	P358238	
	SM 2540 C-97	TDS	257		mg/L	P358323	
	SM 2540 D-97	TSS	5	I	mg/L	P358196	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P358242	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.097		mg N/L	P358185	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P357993	
2056866	EPA 353.2 Rev. 2.0	NO2NO3-N	0.41		mg N/L	P357917	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P358006	
	SM 5310 B-00	Organic Carbon	7.7		mg C/L	P357977	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.046	Q	mg P/L	P357851	
	dissolved						
2056900	EPA 8321B	2,4-D	0.034		ug/L	P357829	
		Sucralose**	0.40		ug/L	P357752	
		Bentazon	0.0075		ug/L	P357829	
		MCP	0.015		ug/L	P357829	
		Triclopyr**	0.0040	U	ug/L	P357829	
		Imidacloprid	0.029		ug/L	P357829	
		Diuron	0.019		ug/L	P357829	
		Pyraclostrobin**	0.0020	U	ug/L	P357829	
		Primidone**	0.0058	I	ug/L	P357829	
		Linuron	0.0040	U	ug/L	P357829	
		Acetaminophen**	0.039		ug/L	P357829	
		Fenuron	0.016	U	ug/L	P357829	
		Imazapyr**	0.34		ug/L	P357829	
		Carbamazepine**	0.0016	I	ug/L	P357829	
		Fluridone**	0.0087		ug/L	P357829	
		Hydrocodone**	0.0020	U	ug/L	P357829	
		Naproxen**	0.0080	U	ug/L	P357829	
		Ibuprofen**	0.020	U	ug/L	P357829	
		Glyphosate**	0.25	I	ug/L	P357752	
		AMPA**	0.13	I	ug/L	P357752	
		Endothall**	0.25	U	ug/L	P357752	
		Glufosinate**	0.10	U	ug/L	P357752	
		Acesulfame K**	0.21	I	ug/L	P357752	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The sample expired upon receipt.

SM 2120 B: The sample expired upon receipt.

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired upon receipt.

Sample Location: LITTLE FISHWIER CR AT OAK ST

Collection Date/Time: 01/23/2019 12:10

Field ID: 20030953

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2056902	EPA 8321B	2,4-D	0.011		ug/L	P357829	
		Sucralose**	0.070		ug/L	P357752	
		Bentazon	0.031		ug/L	P357829	
		MCP	0.011		ug/L	P357829	
		Triclopyr**	0.0040	U	ug/L	P357829	
		Imidacloprid	0.074		ug/L	P357829	
		Diuron	0.016		ug/L	P357829	
		Pyraclostrobin**	0.0020	U	ug/L	P357829	
		Primidone**	0.0040	U	ug/L	P357829	
		Linuron	0.0040	U	ug/L	P357829	
		Acetaminophen**	0.0080	U	ug/L	P357829	
		Fenuron	0.016	U	ug/L	P357829	
		Imazapyr**	0.048		ug/L	P357829	
		Carbamazepine**	8.0E-04	U	ug/L	P357829	
		Fluridone**	8.0E-04	U	ug/L	P357829	
		Hydrocodone**	0.0020	U	ug/L	P357829	
		Naproxen**	0.0080	U	ug/L	P357829	
		Ibuprofen**	0.020	U	ug/L	P357829	
		Glyphosate**	0.10	U	ug/L	P357752	
		AMPA**	0.10	U	ug/L	P357752	
		Endothall**	0.25	U	ug/L	P357752	
		Glufosinate**	0.10	U	ug/L	P357752	
		Acesulfame K**	0.10	U	ug/L	P357752	

Non-Conformance Report

NCR ID: 7458

Event(s)

NE-DIST-2019-01-25-01

Job(s)

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Samples arrived late

Observation: Samples arrived one or more days late by FedEx, samples received within the acceptable temperature range.
Tracking number: 4751 8774 8729 / 4751 8774 8718

Resolution: Samples will be qualified as appropriate.

Authorized by/Date: Joshua Ayres 1/31/2019

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P357873

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P357907

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: P357907

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: P358025

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358248

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358250

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: P358185

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357993

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357917

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358006

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357851

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

Reference Method: EPA 8321B
Batch ID: P357752

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: P357829

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P357829

Component	Result	Code	Units
Linuron	0.0040	U	ug/L
MCP	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: P357866

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P358238

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-97
Batch ID: P358323

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P358196

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P358198

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P358242

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P357977

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: P357907

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	104		P	85 - 115
Calcium	105		P	85 - 115
Iron	107		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	108		P	85 - 115
Sodium	103		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P357907

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	103		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	106		P	85 - 115
Boron	105		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	104		P	85 - 115
Copper	103		P	85 - 115
Lead	105		P	85 - 115
Nickel	103		P	85 - 115
Selenium	103		P	85 - 115
Silver	102		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P358025

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358248

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358250

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358185

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.5		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P357993

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: P357917

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P358006

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P357851

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.8		P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P357752

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	87.0		P	40 - 150
AMPA	101		P	40 - 150
Endothall	97.4		P	40 - 150
Glufosinate	95.1		P	40 - 150
Glyphosate	90.8		P	40 - 140
Sucralose	79.4		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P357829

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	64.0		P	40 - 150
Acetaminophen	79.8		P	30 - 150
Bentazon	70.4		P	30 - 150
Carbamazepine	78.5		P	40 - 150
Diuron	63.3		P	40 - 150
Fenuron	93.2		P	40 - 150
Fluridone	75.9		P	40 - 150
Hydrocodone	82.9		P	40 - 150
Ibuprofen	70.1		P	40 - 150
Imazapyr	79.6		P	40 - 150
Imidacloprid	82.9		P	40 - 160
Linuron	55.7		P	40 - 150
MCPP	91.2		P	40 - 150
Naproxen	53.5		P	40 - 150
Primidone	79.9		P	40 - 150
Pyraclostrobin	44.8		P	40 - 150
Triclopyr	42.5		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P357866

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

Reference Method: SM 2320 B-97
Batch ID: P358238

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

Reference Method: SM 4500 F-C-97
Batch ID: P358242

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.7		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P357977

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P357907

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2055992	Barium	101		P	80 - 120
2055992	Calcium	99.4		P	80 - 120
2055992	Iron	106		P	80 - 120
2055992	Magnesium	102		P	80 - 120
2055992	Potassium	106		P	80 - 120
2055992	Sodium	97.9		P	80 - 120
2055992	Zinc	101		P	80 - 120
2056739	Barium	103	104	P/P	80 - 120
2056739	Calcium	102		P	80 - 120
2056739	Iron	105	108	P/P	80 - 120
2056739	Magnesium	101		P	80 - 120
2056739	Potassium	109	112	P/P	80 - 120
2056739	Sodium	103		P	80 - 120
2056739	Zinc	101	103	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P357907

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2055992	Aluminum	100		P	80 - 120
2055992	Antimony	103		P	80 - 120
2055992	Arsenic	107		P	80 - 120
2055992	Boron	102		P	80 - 120
2055992	Cadmium	104		P	80 - 120
2055992	Chromium	102		P	80 - 120
2055992	Copper	99.6		P	80 - 120
2055992	Lead	104		P	80 - 120
2055992	Nickel	102		P	80 - 120
2055992	Selenium	103		P	80 - 120
2055992	Silver	101		P	80 - 120
2055992	Thallium	105		P	80 - 120
2056739	Aluminum	100	102	P/P	80 - 120
2056739	Antimony	102	104	P/P	80 - 120
2056739	Arsenic	106	107	P/P	80 - 120
2056739	Boron	105	105	P/P	80 - 120
2056739	Cadmium	103	106	P/P	80 - 120
2056739	Chromium	102	103	P/P	80 - 120
2056739	Copper	98.6	101	P/P	80 - 120
2056739	Lead	103	105	P/P	80 - 120
2056739	Nickel	99.0	100	P/P	80 - 120
2056739	Selenium	102	102	P/P	80 - 120
2056739	Silver	102	104	P/P	80 - 120
2056739	Thallium	101	104	P/P	80 - 120

Reference Method: EPA 300.0
Batch ID: P358025

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2054875	Bromide	107	92.9	P/P	90 - 110
2056871	Bromide	104	103	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P358248

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2056777	Chloride	98.6		P	90 - 110
2056865	Chloride	98.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P358250

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2056777	Sulfate	99.3		P	90 - 110
2056865	Sulfate	96.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P358185

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2056819	Ammonia-N	102	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P357993

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2056875	Kjeldahl Nitrogen	98.9	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P357917

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2056817	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P358006

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2056869	Total-P	105	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P357851

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2056947	O-Phosphate-P	92.6	92.7	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P357752

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2055989	Acesulfame K	76.1	68.6	P/P	40 - 150
2055989	AMPA	93.5	99.0	P/P	40 - 150
2055989	Endothall	103	91.1	P/P	40 - 150
2055989	Glufosinate	78.0	81.6	P/P	40 - 150
2055989	Glyphosate	83.4	83.5	P/P	40 - 140
2055989	Sucralose	79.9	71.6	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P357829

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2056863	2,4-D	108	118	P/P	40 - 150
2056863	Acetaminophen	88.7	88.2	P/P	30 - 150
2056863	Bentazon	54.9	51.7	P/P	30 - 150
2056863	Carbamazepine	78.0	73.8	P/P	40 - 150
2056863	Diuron	65.4	63.3	P/P	40 - 150
2056863	Fenuron	71.9	72.9	P/P	40 - 150
2056863	Fluridone	103	92.1	P/P	40 - 150
2056863	Hydrocodone	88.2	92.3	P/P	40 - 150
2056863	Ibuprofen	75.6	82.2	P/P	40 - 150
2056863	Imazapyr	114	109	P/P	40 - 150
2056863	Imidacloprid	153	142	P/P	40 - 160
2056863	Linuron	64.0	56.6	P/P	40 - 150
2056863	MCPP	135	140	P/P	40 - 150
2056863	Naproxen	62.6	57.4	P/P	40 - 150
2056863	Primidone	78.3	81.3	P/P	40 - 150
2056863	Pyraclostrobin	70.7	63.8	P/P	40 - 150
2056863	Triclopyr	69.4	85.9	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P358242

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2056815	Fluoride	95.4	94.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P357977

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2056818	Organic Carbon	98.3		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P357873

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2056976	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P357907

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2056739	Barium	1.06	Spike	P	0 - 20
2056739	Calcium	0.834	Spike	P	0 - 20
2056739	Iron	2.51	Spike	P	0 - 20
2056739	Magnesium	2.38	Spike	P	0 - 20
2056739	Potassium	1.83	Spike	P	0 - 20
2056739	Sodium	0.673	Spike	P	0 - 20
2056739	Zinc	2.07	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P357907

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2056739	Aluminum	1.58	Spike	P	0 - 20
2056739	Antimony	1.28	Spike	P	0 - 20
2056739	Arsenic	1.16	Spike	P	0 - 20
2056739	Boron	0.452	Spike	P	0 - 20
2056739	Cadmium	2.20	Spike	P	0 - 20
2056739	Chromium	1.14	Spike	P	0 - 20
2056739	Copper	2.13	Spike	P	0 - 20
2056739	Lead	2.18	Spike	P	0 - 20
2056739	Nickel	1.20	Spike	P	0 - 20
2056739	Selenium	0.807	Spike	P	0 - 20
2056739	Silver	1.35	Spike	P	0 - 20
2056739	Thallium	3.18	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P358025

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2054875	Bromide	14.1	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358248

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2056865	Chloride	0.234	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2056865	Sulfate	0.0866	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358185

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2056819	Ammonia-N	0.674	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357993

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2056875	Kjeldahl Nitrogen	1.27	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357917

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2056817	NO2NO3-N	0.447	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358006

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2056869	Total-P	1.85	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357851

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2056947	O-Phosphate-P	0.103	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P357752

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055989	Acesulfame K	9.79	Spike	P	0 - 30
2055989	AMPA	4.28	Spike	P	0 - 30
2055989	Endothall	12.4	Spike	P	0 - 30
2055989	Glufosinate	4.47	Spike	P	0 - 30
2055989	Glyphosate	0.0757	Spike	P	0 - 30
2055989	Sucralose	9.69	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P357829

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2056863	2,4-D	7.13	Spike	P	0 - 30
2056863	Acetaminophen	0.530	Spike	P	0 - 30
2056863	Bentazon	4.03	Spike	P	0 - 30
2056863	Carbamazepine	5.63	Spike	P	0 - 30
2056863	Diuron	3.27	Spike	P	0 - 30
2056863	Fenuron	1.38	Spike	P	0 - 30
2056863	Fluridone	9.72	Spike	P	0 - 30
2056863	Hydrocodone	4.56	Spike	P	0 - 30
2056863	Ibuprofen	8.34	Spike	P	0 - 30
2056863	Imazapyr	3.53	Spike	P	0 - 30
2056863	Imidacloprid	7.15	Spike	P	0 - 30
2056863	Linuron	12.3	Spike	P	0 - 30
2056863	MCP	3.03	Spike	P	0 - 30
2056863	Naproxen	8.68	Spike	P	0 - 30
2056863	Primidone	3.88	Spike	P	0 - 30
2056863	Pyraclostrobin	10.2	Spike	P	0 - 30
2056863	Triclopyr	21.3	Spike	P	0 - 30

Reference Method: SM 2120 B
 Batch ID: P357866

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2056865	Color (true)	1.11	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P358238

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2056815	Total Alkalinity	0.921	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
 Batch ID: P358323

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2056815	TDS	6.30	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P358242

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2056815	Fluoride	0.516	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
 Batch ID: P357977

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
--------------------------	-----------	-----------	-------------------	-----------	----------------

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P357977

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2056818	Organic Carbon	0.0911	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: 2056900
Field Sample ID: 20030801

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	82.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	94.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	61.0	P	30 - 160
EPA 8321B	Diuron-d6	55.7	P	30 - 160
EPA 8321B	Endothall-d6	66.9	P	40 - 160
EPA 8321B	Endothall-d6	66.9	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	43.2	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	43.2	P	40 - 160
EPA 8321B	Ibuprofen-d3	75.0	P	30 - 160
EPA 8321B	Primidone-d5	91.7	P	30 - 160
EPA 8321B	Sucralose-d6	80.6	P	40 - 160
EPA 8321B	Sucralose-d6	80.6	P	40 - 160

Lab Sample ID: 2056901
Field Sample ID: 20030123

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	82.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	92.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	72.1	P	30 - 160
EPA 8321B	Diuron-d6	68.7	P	30 - 160
EPA 8321B	Endothall-d6	72.4	P	40 - 160
EPA 8321B	Endothall-d6	72.4	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	46.6	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	46.6	P	40 - 160
EPA 8321B	Ibuprofen-d3	89.9	P	30 - 160
EPA 8321B	Primidone-d5	86.7	P	30 - 160
EPA 8321B	Sucralose-d6	98.0	P	40 - 160
EPA 8321B	Sucralose-d6	98.0	P	40 - 160

Lab Sample ID: 2056902
Field Sample ID: 20030953

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	92.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	102	P	30 - 160
EPA 8321B	Carbamazepine-d10	67.3	P	30 - 160
EPA 8321B	Diuron-d6	62.9	P	30 - 160
EPA 8321B	Endothall-d6	74.4	P	40 - 160
EPA 8321B	Endothall-d6	74.4	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	44.9	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	44.9	P	40 - 160
EPA 8321B	Ibuprofen-d3	91.8	P	30 - 160
EPA 8321B	Primidone-d5	100	P	30 - 160
EPA 8321B	Sucralose-d6	80.7	P	40 - 160
EPA 8321B	Sucralose-d6	80.7	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A89025

Included Lab Sample IDs: 2056867, 2056870, 2056873, 2056876

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.1	98.6	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A89027

Included Lab Sample IDs: 2056865, 2056868, 2056874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	102	P/P	90 - 115
Color (true)	99.8	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A89028

Included Lab Sample IDs: 2056865, 2056868, 2056871, 2056874

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A89046

Included Lab Sample IDs: 2056866, 2056869, 2056872, 2056875

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

Reference Method: EPA 8321B

Run ID: A89056

Included Lab Sample IDs: 2056900, 2056901, 2056902

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	125	122	P/P	60 - 160
Glufosinate	115	105	P/P	60 - 160
Glyphosate	109	107	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A89057

Included Lab Sample IDs: 2056900, 2056901, 2056902

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	75.2	77.3	P/P	60 - 160
Endothall	102	104	P/P	60 - 160

Reference Method: SM 5310 B-00

Run ID: A89070

Included Lab Sample IDs: 2056866, 2056869, 2056872, 2056875

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0

Run ID: A89080

Included Lab Sample IDs: 2056871

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89090

Included Lab Sample IDs: 2056866, 2056869, 2056872, 2056875

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A89104

Included Lab Sample IDs: 2056908

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A89112

Included Lab Sample IDs: 2056865, 2056868, 2056874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.7	99.9	P/P	90 - 110
Chloride	99.9	101	P/P	90 - 110
Sulfate	100	101	P/P	90 - 110
Sulfate	99.1	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A89115

Included Lab Sample IDs: 2056866, 2056869, 2056872, 2056875

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A89123

Included Lab Sample IDs: 2056866, 2056869, 2056872, 2056875

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A89154

Included Lab Sample IDs: 2056865, 2056868, 2056871, 2056874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110
Total Alkalinity	101	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A89154

Included Lab Sample IDs: 2056865, 2056868, 2056871, 2056874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.1	98.6	P/P	90 - 110
Fluoride	98.6	97.6	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89155

Included Lab Sample IDs: 2056908

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	101	P/P	90 - 110
Antimony	98.5	98.7	P/P	90 - 110
Arsenic	100	101	P/P	90 - 110
Boron	101	103	P/P	90 - 110
Cadmium	98.8	99.7	P/P	90 - 110
Chromium	101	101	P/P	90 - 110
Copper	101	102	P/P	90 - 110
Lead	103	104	P/P	90 - 110
Nickel	100	101	P/P	90 - 110
Selenium	99.6	99.8	P/P	90 - 110
Silver	97.0	97.5	P/P	90 - 110
Thallium	95.5	96.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A89162

Included Lab Sample IDs: 2056900, 2056901, 2056902

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	88.4	91.8	P/P	50 - 150
Acetaminophen	108	108	P/P	60 - 160
Bentazon	105	103	P/P	50 - 160
Carbamazepine	108	106	P/P	60 - 150
Diuron	109	107	P/P	60 - 150
Fenuron	103	105	P/P	60 - 150
Fluridone	104	102	P/P	60 - 160
Hydrocodone	101	99.9	P/P	60 - 150
Ibuprofen	97.9	68.8	P/P	50 - 160
Imazapyr	94.6	87.5	P/P	50 - 150
Imidacloprid	92.1	96.4	P/P	60 - 150
Linuron	106	104	P/P	60 - 150
MCPP	95.3	95.0	P/P	50 - 150
Naproxen	129	136	P/P	50 - 160
Primidone	98.8	106	P/P	60 - 150
Pyraclostrobin	107	102	P/P	60 - 150
Triclopyr	115	116	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A89207

Included Lab Sample IDs: 2056900, 2056901, 2056902

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	76.1	80.6	P/P	60 - 160
Sucralose	77.5	80.6	P/P	60 - 160

* 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						0.0	
EPA 200.7 Rev. 4.4	Barium	104	101	103	104			1.06
	Calcium	105	99.4	102				0.834
	Iron	107	106	105	108			2.51
	Magnesium	104	102	101				2.38
	Potassium	108	106	109	112			1.83
	Sodium	103	97.9	103				0.673
	Zinc	102	101	101	103			2.07
EPA 200.8 Rev. 5.4	Aluminum	103	100	100	102			1.58
	Antimony	101	103	102	104			1.28
	Arsenic	106	107	106	107			1.16
	Boron	105	102	105	105			0.452
	Cadmium	103	104	103	106			2.20
	Chromium	104	102	102	103			1.14
	Copper	103	99.6	98.6	101			2.13
	Lead	105	104	103	105			2.18
	Nickel	103	102	99.0	100			1.20
	Selenium	103	103	102	102			0.807
	Silver	102	101	102	104			1.35
	Thallium	102	105	101	104			3.18
EPA 300.0	Bromide	106	107	92.9	104			14.1
			103					
EPA 300.0 Rev. 2.1	Chloride	97.9	98.4	98.6			0.234	
	Sulfate	97.9	96.8	99.3			0.0866	
EPA 350.1 Rev. 2.0	Ammonia-N	97.5	102	103				0.674
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	109	98.9	101				1.27
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102	102				0.447
EPA 365.1 Rev. 2.0	Total-P	107	105	103				1.85
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.8	92.6	92.7				0.103
EPA 8321B	2,4-D	64.0	108	118				7.13
	Acesulfame K	87.0	76.1	68.6				9.79
	Acetaminophen	79.8	88.7	88.2				0.530
	AMPA	101	93.5	99.0				4.28
	Bentazon	70.4	54.9	51.7				4.03
	Carbamazepine	78.5	78.0	73.8				5.63
	Diuron	63.3	65.4	63.3				3.27
	Endothall	97.4	103	91.1				12.4
	Fenuron	93.2	71.9	72.9				1.38
	Fluridone	75.9	103	92.1				9.72
	Glufosinate	95.1	78.0	81.6				4.47
	Glyphosate	90.8	83.4	83.5				0.0757
	Hydrocodone	82.9	88.2	92.3				4.56
	Ibuprofen	70.1	75.6	82.2				8.34
	Imazapyr	79.6	114	109				3.53
	Imidacloprid	82.9	153	142				7.15
	Linuron	55.7	64.0	56.6				12.3
	MCPP	91.2	135	140				3.03
	Naproxen	53.5	62.6	57.4				8.68
	Primidone	79.9	78.3	81.3				3.88
	Pyraclostrobin	44.8	70.7	63.8				10.2
	Sucralose	79.4	79.9	71.6				9.69
	Triclopyr	42.5	69.4	85.9				21.3
SM 2120 B	Color (true)	100					1.11	
SM 2320 B-97	Total Alkalinity	101					0.921	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
SM 2540 C-97	TDS					6.30	
SM 4500 F-C-97	Fluoride	96.7	95.4	94.9			0.516
SM 5310 B-00	Organic Carbon	97.4	98.3				0.0911

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2056865, 2056868, 2056871, 2056874
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2056908
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2056908
EPA 300.0 / E31780	Bromide in aqueous matrices	2056871
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2056865, 2056868, 2056874
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2056865, 2056868, 2056874
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2056866, 2056869, 2056872, 2056875
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2056866, 2056869, 2056872, 2056875
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2056866, 2056869, 2056872, 2056875
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2056866, 2056869, 2056872, 2056875
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2056867, 2056870, 2056873, 2056876
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2056900, 2056901, 2056902
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2056900, 2056901, 2056902
SM 2120 B / E31780	True Color measured at 450 nm	2056865, 2056868, 2056874
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2056865, 2056868, 2056871, 2056874
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2056865, 2056868, 2056874
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2056865, 2056868, 2056871, 2056874
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2056865, 2056868, 2056871, 2056874
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2056866, 2056869, 2056872, 2056875

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	01/25/2019			01/25/2019 13:45	Megan Treadwell	2056865
	01/25/2019			01/25/2019 13:46	Megan Treadwell	2056868
	01/25/2019			01/25/2019 13:47	Megan Treadwell	2056871
	01/25/2019			01/25/2019 13:49	Megan Treadwell	2056874
EPA 200.7 Rev. 4.4	01/25/2019	01/28/2019 13:20	Elliott D. Healy	01/30/2019 14:51	Betina Topolski	2056908
EPA 200.8 Rev. 5.4	01/25/2019	01/28/2019 13:20	Elliott D. Healy	02/01/2019 11:10	Allison Taylor	2056908
EPA 300.0	01/25/2019			01/29/2019 16:56	Lipi Saha	2056871
EPA 300.0 Rev. 2.1	01/25/2019			01/31/2019 17:40	Lipi Saha	2056865
	01/25/2019			01/31/2019 21:21	Lipi Saha	2056868
	01/25/2019			01/31/2019 21:36	Lipi Saha	2056874
	01/25/2019			01/31/2019 11:01	Ping Hua	2056866
EPA 350.1 Rev. 2.0	01/25/2019			01/31/2019 11:10	Ping Hua	2056869
	01/25/2019			01/31/2019 11:12	Ping Hua	2056872
	01/25/2019			01/31/2019 11:13	Ping Hua	2056875
	01/25/2019			01/31/2019 09:41	Joseph Suarez	2056866
EPA 351.2 Rev. 2.0	01/25/2019	01/29/2019 12:30	Adrian Shelby	01/31/2019 09:42	Joseph Suarez	2056869
	01/25/2019	01/29/2019 12:30	Adrian Shelby	01/31/2019 09:44	Joseph Suarez	2056872
	01/25/2019	01/29/2019 12:30	Adrian Shelby	01/31/2019 09:46	Joseph Suarez	2056875
	01/25/2019			01/28/2019 10:35	Beverly Y. Sanders	2056866
EPA 353.2 Rev. 2.0	01/25/2019			01/28/2019 10:36	Beverly Y. Sanders	2056869
	01/25/2019			01/28/2019 10:37	Beverly Y. Sanders	2056872
	01/25/2019			01/28/2019 10:39	Beverly Y. Sanders	2056875
	01/25/2019			01/30/2019 13:29	Julia Storbeck	2056869
EPA 365.1 Rev. 2.0	01/25/2019	01/29/2019 14:25	Sima Feizi	01/30/2019 13:32	Julia Storbeck	2056866
	01/25/2019	01/29/2019 14:25	Sima Feizi	01/30/2019 13:33	Julia Storbeck	2056872
	01/25/2019	01/29/2019 14:25	Sima Feizi	01/30/2019 13:34	Julia Storbeck	2056875
	01/25/2019			01/25/2019 13:03	Jhamieka S. Greenwood	2056867
EPA 365.1 Rev. 2.0 dissolved	01/25/2019			01/25/2019 13:04	Jhamieka S. Greenwood	2056870
	01/25/2019			01/25/2019 13:05	Jhamieka S. Greenwood	2056873
	01/25/2019			01/25/2019 13:06	Jhamieka S. Greenwood	2056876
	01/25/2019			01/28/2019 12:57	Mohammad Ghaffari	2056900
EPA 8321B	01/25/2019	01/28/2019 09:45	Mohammad Ghaffari	01/28/2019 13:08	Mohammad Ghaffari	2056901
	01/25/2019	01/28/2019 09:45	Mohammad Ghaffari	01/28/2019 13:19	Mohammad Ghaffari	2056902
	01/25/2019	01/28/2019 09:45	Mohammad Ghaffari	01/28/2019 16:16	Mohammad Ghaffari	2056900
	01/25/2019	01/28/2019 09:45	Mohammad Ghaffari	01/28/2019 16:30	Mohammad Ghaffari	2056901
	01/25/2019	01/28/2019 09:45	Mohammad Ghaffari	01/28/2019 16:43	Mohammad Ghaffari	2056902
	01/25/2019	01/28/2019 09:45	Mohammad Ghaffari	02/05/2019 13:06	Rebecca Ware	2056900
	01/25/2019	01/28/2019 09:45	Mohammad Ghaffari	02/05/2019 13:20	Rebecca Ware	2056901
	01/25/2019	01/28/2019 09:45	Mohammad Ghaffari	02/05/2019 13:33	Rebecca Ware	2056902
	01/25/2019	01/30/2019 09:00	Hoor Shaik	01/31/2019 12:26	Juyoung Kim	2056900

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	01/25/2019	01/30/2019 09:00	Hoor Shaik	01/31/2019 13:01	Juyoung Kim	2056901
	01/25/2019	01/30/2019 09:00	Hoor Shaik	01/31/2019 13:35	Juyoung Kim	2056902
SM 2120 B	01/25/2019			01/25/2019 15:12	Chelsea Hernandez	2056865
	01/25/2019			01/25/2019 15:13	Chelsea Hernandez	2056868
	01/25/2019			01/25/2019 15:44	Chelsea Hernandez	2056874
SM 2320 B-97	01/25/2019			02/02/2019 17:23	Dale L. Simmons	2056865
	01/25/2019			02/02/2019 18:19	Dale L. Simmons	2056868
	01/25/2019			02/02/2019 18:31	Dale L. Simmons	2056871
	01/25/2019			02/02/2019 18:43	Dale L. Simmons	2056874
SM 2540 C-97	01/25/2019			01/28/2019 14:20	Yijie Li	2056865, 2056868, 2056874
SM 2540 D-97	01/25/2019			01/28/2019 14:20	Yijie Li	2056865, 2056868, 2056871, 2056874
SM 4500 F-C-97	01/25/2019			02/02/2019 17:23	Dale L. Simmons	2056865
	01/25/2019			02/02/2019 18:19	Dale L. Simmons	2056868
	01/25/2019			02/02/2019 18:31	Dale L. Simmons	2056871
	01/25/2019			02/02/2019 18:43	Dale L. Simmons	2056874
SM 5310 B-00	01/25/2019			01/29/2019 03:07	Chelsea Hernandez	2056866
	01/25/2019			01/29/2019 03:19	Chelsea Hernandez	2056869
	01/25/2019			01/29/2019 03:32	Chelsea Hernandez	2056872
	01/25/2019			01/29/2019 04:08	Chelsea Hernandez	2056875