

Chemical Analysis Report

NE-DIST-2019-03-21-02

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-2019-03-18-13**
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: 09-APR-2019 11:25



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: 03/20/2019 10:50

Field ID: 20030123

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2071708	EPA 180.1 Rev. 2.0	Turbidity	4.7	A	NTU	P360865	
	EPA 300.0	Bromide	1.4		mg Br/L	P361107	
	SM 2320 B-97	Total Alkalinity	46		mg CaCO3/L	P361324	RPD
	SM 2540 D-97	TSS	4	IA	mg/L	P361105	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P361328	
2071709	EPA 350.1 Rev. 2.0	Ammonia-N	0.032		mg N/L	P361250	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P361075	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.047		mg N/L	P360975	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P361193	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P361054	
2071710	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.082		mg P/L	P360860	

Ref. Method and Comment:

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

Sample Location: MONCRIEF CR AT MONCRIEF ROAD

Collection Date/Time: 03/20/2019 12:00

Field ID: 20030726

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2071705	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P360865	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P361185	
		Sulfate	40		mg SO4/L	P361188	
		Color (true)	17		PCU	P360953	
	SM 2120 B	Total Alkalinity	157		mg CaCO3/L	P361324	RPD
	SM 2540 C-97	TDS	268	A	mg/L	P361290	
	SM 2540 D-97	TSS	2	IA	mg/L	P361104	
	SM 4500 F-C-97	Fluoride	0.17		mg F/L	P361328	
2071706	EPA 350.1 Rev. 2.0	Ammonia-N	0.13		mg N/L	P361250	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P361075	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P360975	
	EPA 365.1 Rev. 2.0	Total-P	0.077		mg P/L	P361193	
	SM 5310 B-00	Organic Carbon	6.0		mg C/L	P361054	
2071707	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.023		mg P/L	P360860	
2071726	EPA 200.7 Rev. 4.4	Barium	56.1		ug/L	P360970	
		Calcium	66.3		mg/L	P360970	
		Iron	630		ug/L	P360970	
		Magnesium	9.85		mg/L	P360970	
		Potassium	2.7		mg/L	P360970	
		Sodium	19.0		mg/L	P360970	
		Zinc	7.0	I	ug/L	P360970	
	EPA 200.8 Rev. 5.4	Aluminum	16	I	ug/L	P360970	
		Antimony	0.22		ug/L	P360970	
		Arsenic	0.87		ug/L	P360970	
		Boron**	54.9		ug/L	P360970	
		Cadmium	0.020	U	ug/L	P360970	
		Chromium	0.40	U	ug/L	P360970	
		Copper	0.85		ug/L	P360970	
		Lead	0.41		ug/L	P360970	
		Nickel	0.82	I	ug/L	P360970	
		Selenium	0.20	U	ug/L	P360970	
		Silver	0.010	U	ug/L	P360970	
		Thallium	0.10	U	ug/L	P360970	

Ref. Method and Comment:

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

Sample Location: BIG FISHWEIR CR SF @ HAMILTON ST

Collection Date/Time: 03/20/2019 12:45

Field ID: 20030801

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2071725	EPA 8321B	2,4-D	0.034		ug/L	P360773	
		Acesulfame K**	0.26	I	ug/L	P360937	
		AMPA**	0.19	I	ug/L	P360937	
		Sucralose**	0.42		ug/L	P360937	
		Acetaminophen**	0.077		ug/L	P360773	
		Endothall**	0.25	U	ug/L	P360937	
		Glufosinate**	0.10	U	ug/L	P360937	
		Bentazon	0.011		ug/L	P360773	
		Glyphosate**	0.45		ug/L	P360937	
		Carbamazepine**	0.0025	I	ug/L	P360773	
		Diuron	0.015		ug/L	P360773	
		Fenuron	0.016	U	ug/L	P360773	
		Fluridone**	0.0021	I	ug/L	P360773	
		Imazapyr**	0.16		ug/L	P360773	
		Hydrocodone**	0.0020	U	ug/L	P360773	
		Ibuprofen**	0.020	U	ug/L	P360773	
		Imidacloprid	0.038		ug/L	P360773	MS
		Linuron	0.0040	U	ug/L	P360773	
		MCPP	0.013		ug/L	P360773	
		Naproxen**	0.0080	U	ug/L	P360773	
		Primidone**	0.0082	I	ug/L	P360773	
		Pyraclostrobin**	0.0020	U	ug/L	P360773	
		Triclopyr**	0.0040	U	ug/L	P360773	

Sample Location: LITTLE FISHWEIR AT OAK ST.

Collection Date/Time: 03/20/2019 13:10

Field ID: 20030953

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2071702	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P360865	
	EPA 300.0 Rev. 2.1	Chloride	23		mg Cl/L	P361185	
		Sulfate	48		mg SO4/L	P361188	
	SM 2120 B	Color (true)	35		PCU	P360953	
	SM 2320 B-97	Total Alkalinity	157		mg CaCO3/L	P361324	RPD
	SM 2540 C-97	TDS	294		mg/L	P361290	
	SM 2540 D-97	TSS	2	U	mg/L	P361104	
2071703	SM 4500 F-C-97	Fluoride	0.22		mg F/L	P361328	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.18		mg N/L	P361250	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P361075	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.088		mg N/L	P360974	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P361193	
2071704	SM 5310 B-00	Organic Carbon	7.3		mg C/L	P361054	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.058		mg P/L	P360860	
2071724	EPA 8321B	2,4-D	0.0020	U	ug/L	P360773	
		Acesulfame K**	0.10	U	ug/L	P360937	
		AMPA**	0.10	U	ug/L	P360937	
		Sucralose**	0.078		ug/L	P360937	
		Acetaminophen**	0.0080	U	ug/L	P360773	
		Endothall**	0.25	U	ug/L	P360937	
		Glufosinate**	0.10	U	ug/L	P360937	
		Bentazon	0.020		ug/L	P360773	
		Glyphosate**	0.36	I	ug/L	P360937	
		Carbamazepine**	8.0E-04	U	ug/L	P360773	
		Diuron	0.0020	U	ug/L	P360773	
		Fenuron	0.016	U	ug/L	P360773	
		Fluridone**	8.0E-04	U	ug/L	P360773	
		Imazapyr**	0.023		ug/L	P360773	
		Hydrocodone**	0.0020	U	ug/L	P360773	
		Ibuprofen**	0.020	U	ug/L	P360773	
		Imidacloprid	0.022		ug/L	P360773	MS
		Linuron	0.0040	U	ug/L	P360773	
		MCPP	0.0020	U	ug/L	P360773	
		Naproxen**	0.0080	U	ug/L	P360773	
		Primidone**	0.0040	U	ug/L	P360773	
		Pyraclostrobin**	0.0020	U	ug/L	P360773	
		Triclopyr**	0.0040	U	ug/L	P360773	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360865

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360970

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: P360970

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: P361107

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361185

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361188

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: P361250

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361075

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360974

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360975

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361193

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360860

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

Reference Method: EPA 8321B
Batch ID: P360773

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
MCP	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: P360773

Component	Result	Code	Units
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P360937

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: P360953

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P361324

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

Reference Method: SM 2540 C-97
Batch ID: P361290

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P361104

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P361105

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P361328

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P361054

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: P360970

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360970

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.1		P	85 - 115
Antimony	94.0		P	85 - 115
Arsenic	97.8		P	85 - 115
Boron	92.9		P	85 - 115
Cadmium	94.9		P	85 - 115
Chromium	89.3		P	85 - 115
Copper	98.2		P	85 - 115
Lead	92.8		P	85 - 115
Nickel	95.8		P	85 - 115
Selenium	97.1		P	85 - 115
Silver	98.5		P	85 - 115
Thallium	92.8		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P361107

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361185

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361188

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361250

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P361075

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P360974

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P360975

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P361193

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.1		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P360860

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

Reference Method: EPA 8321B
 Batch ID: P360773

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	84.1		P	40 - 150
Acetaminophen	106		P	30 - 150
Bentazon	113		P	30 - 150
Carbamazepine	87.3		P	40 - 150
Diuron	103		P	40 - 150
Fenuron	148		P	40 - 150
Fluridone	114		P	40 - 150
Hydrocodone	122		P	40 - 150
Ibuprofen	63.6		P	40 - 150
Imazapyr	104		P	40 - 150
Imidacloprid	134		P	40 - 150
Linuron	80.6		P	40 - 150
MCPP	112		P	40 - 150
Naproxen	71.0		P	40 - 150
Primidone	114		P	40 - 150
Pyraclostrobin	72.3		P	40 - 150
Triclopyr	62.3		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P360937

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

Reference Method: EPA 8321B
Batch ID: P360937

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	85.4		P	40 - 150
AMPA	129		P	40 - 150
Endothall	63.2		P	40 - 150
Glufosinate	129		P	40 - 150
Glyphosate	134		P	40 - 140
Sucralose	97.4		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P360953

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	105		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P361324

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.4		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P361328

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P361054

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360970

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071561	Barium	91.9		P	80 - 120
2071561	Calcium	103		P	80 - 120
2071561	Iron	109		P	80 - 120
2071561	Magnesium	110		P	80 - 120
2071561	Potassium	105		P	80 - 120
2071561	Sodium	101		P	80 - 120
2071561	Zinc	92.6		P	80 - 120
2071726	Barium	96.1	97.6	P/P	80 - 120
2071726	Calcium	103		P	80 - 120
2071726	Iron	105	105	P/P	80 - 120
2071726	Magnesium	104		P	80 - 120
2071726	Potassium	104	105	P/P	80 - 120
2071726	Sodium	103		P	80 - 120
2071726	Zinc	98.5	99.0	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360970

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071561	Aluminum	95.7		P	80 - 120
2071561	Antimony	97.6		P	80 - 120
2071561	Arsenic	99.2		P	80 - 120
2071561	Boron	96.9		P	80 - 120
2071561	Cadmium	97.1		P	80 - 120
2071561	Chromium	92.0		P	80 - 120
2071561	Copper	96.6		P	80 - 120
2071561	Lead	96.0		P	80 - 120
2071561	Nickel	95.7		P	80 - 120
2071561	Selenium	96.9		P	80 - 120
2071561	Silver	101		P	80 - 120
2071561	Thallium	98.0		P	80 - 120
2071726	Aluminum	95.9	97.1	P/P	80 - 120
2071726	Antimony	98.4	99.0	P/P	80 - 120
2071726	Arsenic	99.9	101	P/P	80 - 120
2071726	Boron	97.1	97.1	P/P	80 - 120
2071726	Cadmium	99.9	100	P/P	80 - 120
2071726	Chromium	92.7	92.6	P/P	80 - 120
2071726	Copper	94.9	94.8	P/P	80 - 120
2071726	Lead	96.8	97.0	P/P	80 - 120
2071726	Nickel	94.8	95.0	P/P	80 - 120
2071726	Selenium	96.7	96.9	P/P	80 - 120
2071726	Silver	99.9	101	P/P	80 - 120
2071726	Thallium	98.1	99.7	P/P	80 - 120

Reference Method: EPA 300.0
Batch ID: P361107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071359	Bromide	99.6	98.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361185

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071639	Chloride	101		P	90 - 110
2071702	Chloride	99.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361188

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071639	Sulfate	101		P	90 - 110
2071702	Sulfate	99.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361250

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071676	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361075

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071676	Kjeldahl Nitrogen	101	98.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360974

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071643	NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360975

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071706	NO2NO3-N	106	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361193

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071703	Total-P	91.4	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360860

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071704	O-Phosphate-P	96.0	97.4	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P360773

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071546	2,4-D	68.7	89.6	P/P	40 - 150
2071546	Acetaminophen	137	128	P/P	30 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P360773

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071546	Bentazon	100	94.2	P/P	30 - 150
2071546	Carbamazepine	114	103	P/P	40 - 150
2071546	Diuron	99.9	102	P/P	40 - 150
2071546	Fenuron	144	138	P/P	40 - 150
2071546	Fluridone	118	114	P/P	40 - 150
2071546	Hydrocodone	102	109	P/P	40 - 150
2071546	Ibuprofen	65.8	65.5	P/P	40 - 150
2071546	Imazapyr	113	98.6	P/P	40 - 150
2071546	Imidacloprid	184	174	F/F	40 - 150
2071546	Linuron	90.5	85.2	P/P	40 - 150
2071546	MCPP	114	105	P/P	40 - 150
2071546	Naproxen	99.4	87.0	P/P	40 - 150
2071546	Primidone	122	94.3	P/P	40 - 150
2071546	Pyraclostrobin	107	108	P/P	40 - 150
2071546	Triclopyr	62.1	58.9	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P360937

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071724	Acesulfame K	101	87.6	P/P	40 - 150
2071724	AMPA	105	111	P/P	40 - 150
2071724	Endothall	111	123	P/P	40 - 150
2071724	Glufosinate	132	122	P/P	40 - 150
2071724	Glyphosate	131	131	P/P	40 - 140
2071724	Sucralose	73.3	71.5	P/P	40 - 150

Reference Method: SM 4500 F-C-97

Batch ID: P361328

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072023	Fluoride	103	104	P/P	91 - 105

Reference Method: SM 5310 B-00

Batch ID: P361054

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070675	Organic Carbon	99.9	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360865

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071708	Turbidity	1.48	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360970

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071726	Barium	1.31	Spike	P	0 - 20
2071726	Calcium	1.42	Spike	P	0 - 20
2071726	Iron	0.0820	Spike	P	0 - 20
2071726	Magnesium	0.00543	Spike	P	0 - 20
2071726	Potassium	1.09	Spike	P	0 - 20
2071726	Sodium	1.41	Spike	P	0 - 20
2071726	Zinc	0.502	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360970

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071726	Aluminum	1.23	Spike	P	0 - 20
2071726	Antimony	0.623	Spike	P	0 - 20
2071726	Arsenic	1.03	Spike	P	0 - 20
2071726	Boron	0.0122	Spike	P	0 - 20
2071726	Cadmium	0.134	Spike	P	0 - 20
2071726	Chromium	0.0817	Spike	P	0 - 20
2071726	Copper	0.136	Spike	P	0 - 20
2071726	Lead	0.157	Spike	P	0 - 20
2071726	Nickel	0.131	Spike	P	0 - 20
2071726	Selenium	0.178	Spike	P	0 - 20
2071726	Silver	0.973	Spike	P	0 - 20
2071726	Thallium	1.68	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P361107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071359	Bromide	0.614	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361185

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071639	Chloride	1.50	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361188

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071639	Sulfate	0.942	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071676	Ammonia-N	0.256	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361075

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071676	Kjeldahl Nitrogen	1.66	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360974

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071643	NO2NO3-N	0.826	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360975

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071706	NO2NO3-N	0.539	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361193

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071703	Total-P	3.45	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360860

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071704	O-Phosphate-P	0.908	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P360773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071546	2,4-D	26.4	Spike	P	0 - 30
2071546	Acetaminophen	6.76	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P360773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071546	Bentazon	5.99	Spike	P	0 - 30
2071546	Carbamazepine	10.1	Spike	P	0 - 30
2071546	Diuron	1.87	Spike	P	0 - 30
2071546	Fenuron	3.97	Spike	P	0 - 30
2071546	Fluridone	2.86	Spike	P	0 - 30
2071546	Hydrocodone	5.95	Spike	P	0 - 30
2071546	Ibuprofen	0.352	Spike	P	0 - 30
2071546	Imazapyr	13.9	Spike	P	0 - 30
2071546	Imidacloprid	5.26	Spike	P	0 - 30
2071546	Linuron	5.94	Spike	P	0 - 30
2071546	MCPP	7.83	Spike	P	0 - 30
2071546	Naproxen	13.3	Spike	P	0 - 30
2071546	Primidone	25.9	Spike	P	0 - 30
2071546	Pyraclostrobin	0.860	Spike	P	0 - 30
2071546	Triclopyr	5.22	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P360937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071724	Acesulfame K	14.1	Spike	P	0 - 30
2071724	AMPA	4.88	Spike	P	0 - 30
2071724	Endothall	10.7	Spike	P	0 - 30
2071724	Glufosinate	8.01	Spike	P	0 - 30
2071724	Glyphosate	0.183	Spike	P	0 - 30
2071724	Sucralose	2.38	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P360953

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071674	Color (true)	0.288	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P361324

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072023	Total Alkalinity	3.79	Sample	F	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P361290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071705	TDS	1.49	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P361328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072023	Fluoride	0.484	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P361054

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070675	Organic Carbon	0.863	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: 2071724
Field Sample ID: 20030953

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	70.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	80.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	84.1	P	30 - 160
EPA 8321B	Diuron-d6	69.1	P	30 - 160
EPA 8321B	Endothall-d6	83.1	P	30 - 160
EPA 8321B	Endothall-d6	83.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	109	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	109	P	30 - 160
EPA 8321B	Ibuprofen-d3	54.8	P	30 - 160
EPA 8321B	Primidone-d5	78.3	P	30 - 160
EPA 8321B	Sucralose-d6	94.3	P	30 - 160
EPA 8321B	Sucralose-d6	94.3	P	30 - 160

Lab Sample ID: 2071725
Field Sample ID: 20030801

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	66.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	93.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	77.0	P	30 - 160
EPA 8321B	Diuron-d6	63.3	P	30 - 160
EPA 8321B	Endothall-d6	110	P	30 - 160
EPA 8321B	Endothall-d6	110	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	109	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	109	P	30 - 160
EPA 8321B	Ibuprofen-d3	71.2	P	30 - 160
EPA 8321B	Primidone-d5	75.3	P	30 - 160
EPA 8321B	Sucralose-d6	142	P	30 - 160
EPA 8321B	Sucralose-d6	142	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A90164

Included Lab Sample IDs: 2071704, 2071707, 2071710

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.1	99.1	P/P	90 - 110
O-Phosphate-P	99.6	98.5	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A90165

Included Lab Sample IDs: 2071702, 2071705, 2071708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A90212

Included Lab Sample IDs: 2071702, 2071705

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90217

Included Lab Sample IDs: 2071703, 2071706, 2071709

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	104	P/P	90 - 110
NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A90220

Included Lab Sample IDs: 2071724, 2071725

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	126	135	P/P	60 - 160
Glufosinate	137	134	P/P	60 - 160
Glyphosate	135	133	P/P	60 - 160

Reference Method: SM 5310 B-00

Run ID: A90237

Included Lab Sample IDs: 2071703, 2071706, 2071709

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.3	97.6	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A90245

Included Lab Sample IDs: 2071726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	98.4	104	P/P	90 - 110
Calcium	102	103	P/P	90 - 110
Iron	101	102	P/P	90 - 110
Magnesium	102	103	P/P	90 - 110
Potassium	99.8	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A90245

Included Lab Sample IDs: 2071726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sodium	103	103	P/P	90 - 110
Zinc	98.7	104	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A90252

Included Lab Sample IDs: 2071708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	104	105	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90254

Included Lab Sample IDs: 2071726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	99.0	P/P	90 - 110
Antimony	99.3	98.0	P/P	90 - 110
Arsenic	99.2	99.1	P/P	90 - 110
Boron	96.9	98.8	P/P	90 - 110
Cadmium	99.3	98.6	P/P	90 - 110
Chromium	99.8	99.2	P/P	90 - 110
Copper	100	99.8	P/P	90 - 110
Lead	98.6	97.9	P/P	90 - 110
Nickel	98.4	99.1	P/P	90 - 110
Selenium	98.7	97.8	P/P	90 - 110
Silver	104	104	P/P	90 - 110
Thallium	94.4	91.7	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A90259

Included Lab Sample IDs: 2071702, 2071705

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	103	P/P	90 - 110
Chloride	102	102	P/P	90 - 110
Sulfate	104	104	P/P	90 - 110
Sulfate	104	104	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A90265

Included Lab Sample IDs: 2071724, 2071725

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	94.9	60.9	P/P	60 - 160
Endothall	69.7	79.8	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90268

Included Lab Sample IDs: 2071703, 2071706, 2071709

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90268

Included Lab Sample IDs: 2071703, 2071706, 2071709

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	103	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A90274

Included Lab Sample IDs: 2071724, 2071725

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	105	90.9	P/P	50 - 150
2,4-D	90.9	92.9	P/P	50 - 150
Acetaminophen	109	92.7	P/P	60 - 160
Acetaminophen	92.7	123	P/P	60 - 160
Bentazon	86.4	91.8	P/P	50 - 160
Bentazon	91.8	80.6	P/P	50 - 160
Carbamazepine	106	91.9	P/P	60 - 150
Carbamazepine	91.9	110	P/P	60 - 150
Diuron	108	109	P/P	60 - 150
Diuron	94.9	108	P/P	60 - 150
Fenuron	108	109	P/P	60 - 150
Fenuron	109	106	P/P	60 - 150
Fluridone	124	93.4	P/P	60 - 160
Fluridone	93.4	69.9	P/P	60 - 160
Hydrocodone	105	99.1	P/P	60 - 150
Hydrocodone	99.1	114	P/P	60 - 150
Ibuprofen	108	86.4	P/P	50 - 160
Ibuprofen	113	108	P/P	50 - 160
Imazapyr	83.8	85.8	P/P	50 - 150
Imazapyr	98.4	83.8	P/P	50 - 150
Imidacloprid	103	106	P/P	60 - 150
Imidacloprid	106	95.3	P/P	60 - 150
Linuron	104	85.8	P/P	60 - 150
Linuron	88.8	104	P/P	60 - 150
MCPP	87.5	96.6	P/P	50 - 150
MCPP	96.6	92.9	P/P	50 - 150
Naproxen	125	84.5	P/P	50 - 160
Naproxen	97.8	125	P/P	50 - 160
Primidone	121	135	P/P	60 - 150
Primidone	135	112	P/P	60 - 150
Pyraclostrobin	87.2	87.3	P/P	60 - 150
Pyraclostrobin	87.3	89.2	P/P	60 - 150
Triclopyr	101	98.2	P/P	50 - 150
Triclopyr	104	101	P/P	50 - 150

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90315

Included Lab Sample IDs: 2071703, 2071706, 2071709

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90320

Included Lab Sample IDs: 2071703, 2071706, 2071709

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	103	P/P	90 - 110
Total-P	99.4	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A90337

Included Lab Sample IDs: 2071702, 2071705, 2071708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.4	98.9	P/P	90 - 110
Total Alkalinity	98.9	99.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A90337

Included Lab Sample IDs: 2071702, 2071705, 2071708

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

Reference Method: EPA 8321B

Run ID: A90433

Included Lab Sample IDs: 2071724, 2071725

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	126	95.0	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						1.48	
EPA 200.7 Rev. 4.4	Barium	104	91.9	96.1	97.6			1.31
	Calcium	107	103	103				1.42
	Iron	103	109	105	105			0.0820
	Magnesium	107	110	104				0.0054
	Potassium	105	105	104	105			1.09
	Sodium	104	101	103				1.41
	Zinc	105	92.6	98.5	99.0			0.502
EPA 200.8 Rev. 5.4	Aluminum	97.1	95.7	95.9	97.1			1.23
	Antimony	94.0	97.6	98.4	99.0			0.623
	Arsenic	97.8	99.2	99.9	101			1.03
	Boron	92.9	96.9	97.1	97.1			0.0122
	Cadmium	94.9	97.1	99.9	100			0.134
	Chromium	89.3	92.0	92.7	92.6			0.0817
	Copper	98.2	96.6	94.9	94.8			0.136
	Lead	92.8	96.0	96.8	97.0			0.157
	Nickel	95.8	95.7	94.8	95.0			0.131
	Selenium	97.1	96.9	96.7	96.9			0.178
	Silver	98.5	101	99.9	101			0.973
	Thallium	92.8	98.0	98.1	99.7			1.68
EPA 300.0	Bromide	105	99.6	98.8				0.614
EPA 300.0 Rev. 2.1	Chloride	99.4	101	99.6			1.50	
	Sulfate	99.8	101	99.4			0.942	
EPA 350.1 Rev. 2.0	Ammonia-N	102	102	101				0.256
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	101	98.7				1.66
EPA 353.2 Rev. 2.0	NO2NO3-N	106	103	102				0.826
	NO2NO3-N	106	106	107				0.539
EPA 365.1 Rev. 2.0	Total-P	98.1	91.4	95.8				3.45
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104	96.0	97.4				0.908
EPA 8321B	2,4-D	84.1	68.7	89.6				26.4
	Acesulfame K	85.4	101	87.6				14.1
	Acetaminophen	106	137	128				6.76
	AMPA	129	105	111				4.88
	Bentazon	113	100	94.2				5.99
	Carbamazepine	87.3	114	103				10.1
	Diuron	103	99.9	102				1.87
	Endothall	63.2	111	123				10.7
	Fenuron	148	144	138				3.97
	Fluridone	114	118	114				2.86
	Glufosinate	129	132	122				8.01
	Glyphosate	134	131	131				0.183
	Hydrocodone	122	102	109				5.95
	Ibuprofen	63.6	65.8	65.5				0.352
	Imazapyr	104	113	98.6				13.9
	Imidacloprid	134	184	174				5.26
	Linuron	80.6	90.5	85.2				5.94
	MCPP	112	114	105				7.83
	Naproxen	71.0	99.4	87.0				13.3
	Primidone	114	122	94.3				25.9
	Pyraclostrobin	72.3	107	108				0.860
	Sucralose	97.4	73.3	71.5				2.38
	Triclopyr	62.3	62.1	58.9				5.22
SM 2120 B	Color (true)	105					0.288	
SM 2320 B-97	Total Alkalinity	98.4					3.79	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
SM 2540 C-97	TDS					1.49	
SM 4500 F-C-97	Fluoride	100	103	104			0.484
SM 5310 B-00	Organic Carbon	99.8	99.9	101			0.863

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2071702, 2071705, 2071708
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2071726
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2071726
EPA 300.0 / E31780	Bromide in aqueous matrices	2071708
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2071702, 2071705
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2071702, 2071705
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2071703, 2071706, 2071709
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2071703, 2071706, 2071709
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2071703, 2071706, 2071709
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2071703, 2071706, 2071709
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2071704, 2071707, 2071710
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2071724, 2071725
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2071724, 2071725
SM 2120 B / E31780	True Color measured at 450 nm	2071702, 2071705
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2071702, 2071705, 2071708
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2071702, 2071705
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2071702, 2071705, 2071708
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2071702, 2071705, 2071708
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2071703, 2071706, 2071709

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	03/21/2019			03/21/2019 15:47	Adrian Shelby	2071702, 2071705, 2071708
EPA 200.7 Rev. 4.4	03/21/2019	03/25/2019 13:00	Elliott D. Healy	03/26/2019 16:10	Betina Topolski	2071726
EPA 200.8 Rev. 5.4	03/21/2019	03/25/2019 13:00	Elliott D. Healy	03/27/2019 07:58	Robert K Palmer	2071726
EPA 300.0	03/21/2019			03/23/2019 00:08	Lipi Saha	2071708
EPA 300.0 Rev. 2.1	03/21/2019			03/27/2019 21:56	Lipi Saha	2071702
	03/21/2019			03/28/2019 01:21	Lipi Saha	2071705
EPA 350.1 Rev. 2.0	03/21/2019			03/28/2019 11:23	Ping Hua	2071703
	03/21/2019			03/28/2019 11:25	Ping Hua	2071706
	03/21/2019			03/28/2019 11:26	Ping Hua	2071709
EPA 351.2 Rev. 2.0	03/21/2019	03/26/2019 12:00	Adrian Shelby	03/27/2019 12:17	Joseph Suarez	2071703
	03/21/2019	03/26/2019 12:00	Adrian Shelby	03/27/2019 12:19	Joseph Suarez	2071706
	03/21/2019	03/26/2019 12:00	Adrian Shelby	03/27/2019 12:20	Joseph Suarez	2071709
EPA 353.2 Rev. 2.0	03/21/2019			03/25/2019 11:16	Beverly Y. Sanders	2071703
	03/21/2019			03/25/2019 11:24	Beverly Y. Sanders	2071706
	03/21/2019			03/25/2019 11:29	Beverly Y. Sanders	2071709
EPA 365.1 Rev. 2.0	03/21/2019	03/28/2019 13:10	Adrian Shelby	03/28/2019 18:11	Rosalyn Ballman	2071703
	03/21/2019	03/28/2019 13:10	Adrian Shelby	03/28/2019 18:20	Rosalyn Ballman	2071706
	03/21/2019	03/28/2019 13:10	Adrian Shelby	03/28/2019 18:21	Rosalyn Ballman	2071709
EPA 365.1 Rev. 2.0 dissolved	03/21/2019			03/21/2019 15:32	Julia Storbeck	2071704
	03/21/2019			03/21/2019 15:58	Julia Storbeck	2071710
	03/21/2019			03/21/2019 15:59	Julia Storbeck	2071707
EPA 8321B	03/21/2019	03/25/2019 09:45	Rebecca Ware	03/25/2019 12:08	Rebecca Ware	2071724
	03/21/2019	03/25/2019 09:45	Rebecca Ware	03/25/2019 12:17	Rebecca Ware	2071725
	03/21/2019	03/25/2019 09:45	Rebecca Ware	03/26/2019 13:18	Rebecca Ware	2071724
	03/21/2019	03/25/2019 09:45	Rebecca Ware	03/26/2019 13:32	Rebecca Ware	2071725
	03/21/2019	03/25/2019 09:45	Rebecca Ware	04/02/2019 10:36	Rebecca Ware	2071724
	03/21/2019	03/25/2019 09:45	Rebecca Ware	04/02/2019 10:45	Rebecca Ware	2071725
	03/21/2019	03/26/2019 12:30	Hoor Shaik	03/27/2019 22:30	Juyoung Kim	2071724
	03/21/2019	03/26/2019 12:30	Hoor Shaik	03/27/2019 23:39	Juyoung Kim	2071725
SM 2120 B	03/21/2019			03/21/2019 16:05	Mariam Hanna	2071702, 2071705
SM 2320 B-97	03/21/2019			03/30/2019 07:47	Samantha Davila	2071702
	03/21/2019			03/30/2019 08:00	Samantha Davila	2071705
	03/21/2019			03/30/2019 10:04	Samantha Davila	2071708
SM 2540 C-97	03/21/2019			03/25/2019 17:20	Mariam Hanna	2071702, 2071705
SM 2540 D-97	03/21/2019			03/25/2019 17:00	Mariam Hanna	2071702, 2071705, 2071708
SM 4500 F-C-97	03/21/2019			03/30/2019 07:47	Samantha Davila	2071702
	03/21/2019			03/30/2019 08:00	Samantha Davila	2071705
	03/21/2019			03/30/2019 10:04	Samantha Davila	2071708
SM 5310 B-00	03/21/2019			03/25/2019 20:23	Julia Storbeck	2071703
	03/21/2019			03/25/2019 20:35	Julia Storbeck	2071706

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	03/21/2019			03/25/2019 20:47	Julia Storbeck	2071709