

Chemical Analysis Report

NE-DIST-2019-07-19-01

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-2019-07-15-15**
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: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 08-AUG-2019 18:55



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: BIG FISHWEIR CR SF @ HAMILTON ST

Collection Date/Time: 07/18/2019 08:45

Field ID: 20030801

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2104610	EPA 180.1 Rev. 2.0	Turbidity	70		NTU	P367643	
	EPA 300.0 Rev. 2.1	Chloride	36		mg Cl/L	P367756	
		Sulfate	45		mg SO4/L	P367758	
	SM 2120 B	Color (true)	30	A	PCU	P367650	
	SM 2320 B-97	Total Alkalinity	199		mg CaCO3/L	P367938	
	SM 2540 C-97	TDS	339		mg/L	P368115	
	SM 2540 D-97	TSS	81		mg/L	P367793	
2104611	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P367941	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.26		mg N/L	P368183	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P367892	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.25		mg N/L	P367687	
	EPA 365.1 Rev. 2.0	Total-P	0.31		mg P/L	P367748	
2104612	SM 5310 B-00	Organic Carbon	9.2		mg C/L	P367727	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.052		mg P/L	P367639	
2104644	EPA 8321B	Acesulfame K**	0.21	I	ug/L	P367668	
		2,4-D	0.014		ug/L	P367283	MS
		AMPA**	0.15	I	ug/L	P367668	
		Sucralose**	0.47		ug/L	P367668	
		Acetaminophen**	0.0080	U	ug/L	P367283	
		Endothall**	0.25	U	ug/L	P367668	
		Acetamiprid**	0.0020	UJ	ug/L	P367283	
		Glufosinate**	0.10	U	ug/L	P367668	
		Glyphosate**	0.10	U	ug/L	P367668	
		Afidopyropen**	0.0020	UJ	ug/L	P367283	
		Bentazon	0.011		ug/L	P367283	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P367283	
		Carbamazepine**	0.0030	I	ug/L	P367283	
		Clothianidin**	0.0036	IJ	ug/L	P367283	
		Dinotefuran**	0.0027	IJ	ug/L	P367283	
		Diuron	0.012		ug/L	P367283	
		Fenuron	0.016	U	ug/L	P367283	
		Fluridone**	8.0E-04	U	ug/L	P367283	
		Imazapyr**	0.59		ug/L	P367283	
		Hydrocodone**	0.0020	U	ug/L	P367283	
		Ibuprofen**	0.020	U	ug/L	P367283	
		Imidacloprid	0.070		ug/L	P367283	
		Linuron	0.0040	U	ug/L	P367283	
		Mandestrobin**	0.0020	UJ	ug/L	P367283	
		MCP	0.010		ug/L	P367283	MS
		Naproxen**	0.0080	U	ug/L	P367283	
		Primidone**	0.0092	I	ug/L	P367283	
		Pyraclostrobin**	0.0020	U	ug/L	P367283	
		Thiamethoxam**	0.0020	UJ	ug/L	P367283	MS

Field ID: 20030801

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2104644	EPA 8321B	Tolfenpyrad**	0.0020	UJ	ug/L	P367283	
		Triclopyr**	0.0040	U	ug/L	P367283	MS

Ref. Method and Comment:

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

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for imidacloprid could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: LITTLE FISHWEIR @ OAK ST

Collection Date/Time: 07/18/2019 09:25

Field ID: 20030953

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2104646	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P367668	
		2,4-D	0.0020	U	ug/L	P367283	MS
		AMPA**	0.10	U	ug/L	P367668	
		Sucralose**	0.15		ug/L	P367668	
		Acetaminophen**	0.0080	U	ug/L	P367283	
		Endothall**	0.25	U	ug/L	P367668	
		Acetamiprid**	0.0020	UJ	ug/L	P367283	
		Glufosinate**	0.10	U	ug/L	P367668	
		Glyphosate**	0.21	I	ug/L	P367668	
		Afidopyropen**	0.0020	UJ	ug/L	P367283	
		Bentazon	0.018		ug/L	P367283	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P367283	
		Carbamazepine**	0.0010	I	ug/L	P367283	
		Clothianidin**	0.0020	UJ	ug/L	P367283	
		Dinotefuran**	0.0020	UJ	ug/L	P367283	
		Diuron	0.024		ug/L	P367283	
		Fenuron	0.016	U	ug/L	P367283	
		Fluridone**	8.0E-04	U	ug/L	P367283	
		Imazapyr**	0.60		ug/L	P367283	
		Hydrocodone**	0.0020	U	ug/L	P367283	
		Ibuprofen**	0.020	U	ug/L	P367283	
		Imidacloprid	0.039		ug/L	P367283	
		Linuron	0.0040	U	ug/L	P367283	
		Mandestrobin**	0.0020	UJ	ug/L	P367283	
		MCPP	0.0027	I	ug/L	P367283	MS
		Naproxen**	0.0080	U	ug/L	P367283	
		Primidone**	0.0040	U	ug/L	P367283	
		Pyraclostrobin**	0.0020	U	ug/L	P367283	
		Thiamethoxam**	0.0020	UJ	ug/L	P367283	MS
		Tolfenpyrad**	0.0020	UJ	ug/L	P367283	
		Triclopyr**	0.0040	U	ug/L	P367283	MS

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for imidacloprid could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: MONCRIEF CR AT MONCRIEF ROAD

Collection Date/Time: 07/18/2019 10:55

Field ID: 20030726

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2104613	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P367643	
	EPA 300.0 Rev. 2.1	Chloride	21		mg Cl/L	P367756	
		Sulfate	33		mg SO4/L	P367758	
	SM 2120 B	Color (true)	23		PCU	P367620	
	SM 2320 B-97	Total Alkalinity	121		mg CaCO3/L	P367938	
	SM 2540 C-97	TDS	223	A	mg/L	P368117	
	SM 2540 D-97	TSS	4	IA	mg/L	P367795	
	SM 4500 F-C-97	Fluoride	0.21		mg F/L	P367941	
2104614	EPA 350.1 Rev. 2.0	Ammonia-N	0.16		mg N/L	P368183	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67		mg N/L	P367892	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P367687	
	EPA 365.1 Rev. 2.0	Total-P	0.082		mg P/L	P367748	
	SM 5310 B-00	Organic Carbon	5.2		mg C/L	P367727	
2104615	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.034		mg P/L	P367639	
2104647	EPA 200.7 Rev. 4.4	Barium	41.3		ug/L	P367698	
		Calcium	55.7		mg/L	P367698	
		Iron	600		ug/L	P367698	
		Magnesium	9.62		mg/L	P367698	
		Potassium	2.2		mg/L	P367698	
		Sodium	11.0		mg/L	P367698	
		Zinc	9.3	I	ug/L	P367698	
	EPA 200.8 Rev. 5.4	Aluminum	25		ug/L	P367698	
		Antimony	0.21		ug/L	P367698	
		Arsenic	1.78		ug/L	P367698	
		Boron**	51.3		ug/L	P367698	
		Cadmium	0.020	U	ug/L	P367698	
		Chromium	0.40	U	ug/L	P367698	
		Copper	0.94		ug/L	P367698	
		Lead	0.71		ug/L	P367698	
		Nickel	0.77	I	ug/L	P367698	
		Selenium	0.20	U	ug/L	P367698	
		Silver	0.010	U	ug/L	P367698	
		Thallium	0.10	U	ug/L	P367698	

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

Collection Date/Time: 07/18/2019 11:30

Field ID: 20030123

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2104616	EPA 180.1 Rev. 2.0	Turbidity	5.2	A	NTU	P367643	
	EPA 300.0	Bromide	6.5		mg Br/L	P367963	
	SM 2320 B-97	Total Alkalinity	58		mg CaCO3/L	P367938	
	SM 2540 D-97	TSS	10		mg/L	P367796	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P367941	
2104617	EPA 350.1 Rev. 2.0	Ammonia-N	0.066		mg N/L	P368303	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P367878	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P367874	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P367807	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P367727	
2104618	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.14		mg P/L	P367640	
2104645	EPA 8321B	2,4-D	0.027		ug/L	P367283	MS
		Acesulfame K**	0.10	UJ	ug/L	P367668	SUR
		AMPA**	1.0	U	ug/L	P367668	
		Sucralose**	0.16		ug/L	P367668	
		Acetaminophen**	0.0080	U	ug/L	P367283	
		Endothall**	0.25	UJ	ug/L	P367668	SUR
		Acetamiprid**	0.0020	UJ	ug/L	P367283	
		Glufosinate**	1.0	U	ug/L	P367668	
		Glyphosate**	1.0	U	ug/L	P367668	
		Afidopyropen**	0.0020	UJ	ug/L	P367283	
		Bentazon	0.0052		ug/L	P367283	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P367283	
		Carbamazepine**	8.0E-04	U	ug/L	P367283	
		Clothianidin**	0.012	J	ug/L	P367283	
		Dinotefuran**	0.0020	UJ	ug/L	P367283	
		Diuron	0.0063	I	ug/L	P367283	
		Fenuron	0.016	U	ug/L	P367283	
		Fluridone**	0.0094		ug/L	P367283	
		Imazapyr**	0.20		ug/L	P367283	
		Hydrocodone**	0.0020	U	ug/L	P367283	
		Ibuprofen**	0.020	U	ug/L	P367283	
		Imidacloprid	0.021		ug/L	P367283	
		Linuron	0.0040	U	ug/L	P367283	
		Mandestrobin**	0.0020	UJ	ug/L	P367283	
		MCP	0.0068	I	ug/L	P367283	MS
		Naproxen**	0.0080	U	ug/L	P367283	
		Primidone**	0.0040	U	ug/L	P367283	
		Pyraclostrobin**	0.0020	U	ug/L	P367283	
		Thiamethoxam**	0.0020	UJ	ug/L	P367283	MS
		Tolfenpyrad**	0.0020	UJ	ug/L	P367283	
		Triclopyr**	0.0040	U	ug/L	P367283	MS

Field ID: 20030123

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:

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

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for imidacloprid could not be assessed due to high concentration of parameter in the spiked sample.

EPA 8321B: Refer to the narrative for an explanation of QC Codes. Surrogate spike recovery exceeding the control limits. Results confirmed in sample duplicate. MDL for some parameters elevated due to matrix interference.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P367643

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P367698

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: P367698

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: P367963

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367756

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367758

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: P368183

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368303

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367878

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367892

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367687

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367874

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367748

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367807

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367639

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367640

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

Reference Method: EPA 8321B
Batch ID: P367283

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P367668

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: P367620

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P367650

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P367938

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

Reference Method: SM 2540 C-97
Batch ID: P368115

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P368117

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P367793

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P367795

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P367796

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P367941

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P367727

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: P367698

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	111		P	85 - 115
Iron	106		P	85 - 115
Magnesium	112		P	85 - 115
Potassium	110		P	85 - 115
Sodium	114		P	85 - 115
Zinc	99.9		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367698

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.9		P	85 - 115
Antimony	96.7		P	85 - 115
Arsenic	105		P	85 - 115
Boron	104		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	99.8		P	85 - 115
Copper	103		P	85 - 115
Lead	93.0		P	85 - 115
Nickel	103		P	85 - 115
Selenium	106		P	85 - 115
Silver	99.3		P	85 - 115
Thallium	94.2		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P367963

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	95.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367756

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367758

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368183

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	108		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368303

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367878

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367892

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367687

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367874

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367748

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367807

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: P367639

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367640

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P367283

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	132		P	40 - 150
Acetaminophen	95.6		P	30 - 150
Acetamiprid	102		P	40 - 150
Afidopyropen	105		P	40 - 150
Bentazon	94.0		P	30 - 150
Benzovindiflupyr	99.1		P	40 - 150
Carbamazepine	115		P	40 - 150
Clothianidin	111		P	40 - 150
Dinotefuran	114		P	40 - 150
Diuron	112		P	40 - 150
Fenuron	120		P	40 - 150
Fluridone	111		P	40 - 150
Hydrocodone	100		P	40 - 150
Ibuprofen	90.7		P	30 - 150
Imazapyr	91.9		P	40 - 150
Imidacloprid	103		P	40 - 150
Linuron	95.5		P	40 - 150
Mandestrobin	110		P	40 - 150
MCPP	126		P	40 - 150
Naproxen	117		P	40 - 150
Primidone	106		P	40 - 150
Pyraclostrobin	108		P	30 - 150
Thiamethoxam	111		P	40 - 150
Tolfenpyrad	66.6		P	40 - 150
Triclopyr	119		P	30 - 150

Reference Method: EPA 8321B
Batch ID: P367668

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	71.3		P	40 - 150
AMPA	102		P	40 - 150
Endothall	111		P	40 - 150
Glufosinate	90.0		P	40 - 150
Glyphosate	98.5		P	40 - 140
Sucralose	98.1		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P367620

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.7		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P367650

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P367938

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

Reference Method: SM 4500 F-C-97
Batch ID: P367941

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.2		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P367727

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P367698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104146	Barium	98.7		P	80 - 120
2104146	Calcium	101		P	80 - 120
2104146	Iron	102		P	80 - 120
2104146	Magnesium	101		P	80 - 120
2104146	Potassium	108		P	80 - 120
2104146	Sodium	102		P	80 - 120
2104146	Zinc	96.6		P	80 - 120
2104526	Barium	102	102	P/P	80 - 120
2104526	Calcium	109	108	P/P	80 - 120
2104526	Iron	105	104	P/P	80 - 120
2104526	Magnesium	111	110	P/P	80 - 120
2104526	Potassium	112	110	P/P	80 - 120
2104526	Sodium	109	108	P/P	80 - 120
2104526	Zinc	102	98.8	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104146	Aluminum	102		P	80 - 120
2104146	Antimony	101		P	80 - 120
2104146	Arsenic	108		P	80 - 120
2104146	Boron	107		P	80 - 120
2104146	Cadmium	106		P	80 - 120
2104146	Chromium	100		P	80 - 120
2104146	Copper	100		P	80 - 120
2104146	Lead	94.6		P	80 - 120
2104146	Nickel	101		P	80 - 120
2104146	Selenium	106		P	80 - 120
2104146	Silver	102		P	80 - 120
2104146	Thallium	98.9		P	80 - 120
2104526	Aluminum	102	101	P/P	80 - 120
2104526	Antimony	98.3	98.1	P/P	80 - 120
2104526	Arsenic	106	105	P/P	80 - 120
2104526	Boron	104	104	P/P	80 - 120
2104526	Cadmium	104	102	P/P	80 - 120
2104526	Chromium	102	101	P/P	80 - 120
2104526	Copper	104	104	P/P	80 - 120
2104526	Lead	95.3	94.1	P/P	80 - 120
2104526	Nickel	103	102	P/P	80 - 120
2104526	Selenium	105	105	P/P	80 - 120
2104526	Silver	99.9	99.7	P/P	80 - 120
2104526	Thallium	105	95.9	P/P	80 - 120

Reference Method: EPA 300.0
Batch ID: P367963

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105130	Bromide	92.9		P	90 - 110
2105217	Bromide	91.3	91.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367756

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104548	Chloride	102		P	90 - 110
2104625	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367758

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104548	Sulfate	102		P	90 - 110
2104625	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368183

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104551	Ammonia-N	97.5	96.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368303

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105011	Ammonia-N	104	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367878

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2103850	Kjeldahl Nitrogen	102	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367892

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104553	Kjeldahl Nitrogen	93.6	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367687

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104542	NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367874

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104617	NO2NO3-N	96.6	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104553	Total-P	106	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367807

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104249	Total-P	93.1	95.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367639

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104522	O-Phosphate-P	97.1	98.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367640

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104618	O-Phosphate-P	96.8	97.3	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P367283

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104392	2,4-D	181	164	F/F	40 - 150
2104392	Acetaminophen	110	103	P/P	30 - 150
2104392	Acetamiprid	104	110	P/P	40 - 150
2104392	Afidopyropen	106	108	P/P	40 - 150
2104392	Bentazon	65.9	63.9	P/P	30 - 150
2104392	Benzovindiflupyr	95.8	94.7	P/P	40 - 150
2104392	Carbamazepine	107	106	P/P	40 - 150
2104392	Clothianidin	149	143	P/P	40 - 150
2104392	Dinotefuran	149	129	P/P	40 - 150
2104392	Diuron	98.2	94.9	P/P	40 - 150
2104392	Fenuron	102	101	P/P	40 - 150
2104392	Fluridone	109	106	P/P	40 - 150
2104392	Hydrocodone	112	105	P/P	40 - 150
2104392	Ibuprofen	104	93.1	P/P	30 - 150
2104392	Imazapyr	88.0	87.2	P/P	40 - 150
2104392	Linuron	95.0	89.0	P/P	40 - 150
2104392	Mandestrobin	116	113	P/P	40 - 150
2104392	MCCP	189	176	F/F	40 - 150
2104392	Naproxen	134	108	P/P	40 - 150
2104392	Primidone	117	100	P/P	40 - 150
2104392	Pyraclostrobin	103	103	P/P	30 - 150
2104392	Thiamethoxam	179	171	F/F	40 - 150
2104392	Tolfenpyrad	70.2	67.3	P/P	40 - 150
2104392	Triclopyr	173	161	F/F	30 - 150

Reference Method: EPA 8321B
Batch ID: P367668

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104164	Acesulfame K	69.4	80.8	P/P	40 - 150
2104164	AMPA	98.2	99.3	P/P	40 - 150
2104164	Endothall	110	113	P/P	40 - 150
2104164	Glufosinate	91.3	95.2	P/P	40 - 150
2104164	Glyphosate	92.7	94.4	P/P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P367668

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104164	Sucralose	92.1	91.7	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P367941

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104549	Fluoride	104	104	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P367727

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104551	Organic Carbon	99.5	100	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P367643

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104616	Turbidity	0.191	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P367698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104526	Barium	0.707	Spike	P	0 - 20
2104526	Calcium	0.704	Spike	P	0 - 20
2104526	Iron	0.721	Spike	P	0 - 20
2104526	Magnesium	0.554	Spike	P	0 - 20
2104526	Potassium	1.56	Spike	P	0 - 20
2104526	Sodium	0.135	Spike	P	0 - 20
2104526	Zinc	2.75	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104526	Aluminum	1.33	Spike	P	0 - 20
2104526	Antimony	0.221	Spike	P	0 - 20
2104526	Arsenic	1.27	Spike	P	0 - 20
2104526	Boron	0.412	Spike	P	0 - 20
2104526	Cadmium	1.73	Spike	P	0 - 20
2104526	Chromium	0.485	Spike	P	0 - 20
2104526	Copper	0.0103	Spike	P	0 - 20
2104526	Lead	1.37	Spike	P	0 - 20
2104526	Nickel	1.58	Spike	P	0 - 20
2104526	Selenium	0.399	Spike	P	0 - 20
2104526	Silver	0.207	Spike	P	0 - 20
2104526	Thallium	9.19	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P367963

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105217	Bromide	0.403	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367756

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104548	Chloride	2.53	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367758

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104548	Sulfate	1.78	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368183

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104551	Ammonia-N	0.817	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368303

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105011	Ammonia-N	2.61	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367878

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103850	Kjeldahl Nitrogen	2.81	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367892

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104553	Kjeldahl Nitrogen	5.62	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367687

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104542	NO2NO3-N	0.610	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367874

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104617	NO2NO3-N	0.964	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104553	Total-P	2.26	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P367807

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104249	Total-P	1.87	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P367639

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104522	O-Phosphate-P	1.84	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P367640

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104618	O-Phosphate-P	0.450	Spike	P	0 - 20

Reference Method: EPA 8321B
 Batch ID: P367283

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104392	2,4-D	8.18	Spike	P	0 - 30
2104392	Acetaminophen	6.87	Spike	P	0 - 30
2104392	Acetamiprid	5.16	Spike	P	0 - 30
2104392	Afidopyrophen	1.94	Spike	P	0 - 30
2104392	Bentazon	3.12	Spike	P	0 - 30
2104392	Benzovindiflupyr	1.19	Spike	P	0 - 30
2104392	Carbamazepine	1.68	Spike	P	0 - 30
2104392	Clothianidin	3.01	Spike	P	0 - 30
2104392	Dinotefuran	11.6	Spike	P	0 - 30
2104392	Diuron	3.06	Spike	P	0 - 30
2104392	Fenuron	1.10	Spike	P	0 - 30
2104392	Fluridone	3.53	Spike	P	0 - 30
2104392	Hydrocodone	7.32	Spike	P	0 - 30
2104392	Ibuprofen	10.7	Spike	P	0 - 30
2104392	Imazapyr	0.816	Spike	P	0 - 30
2104392	Imidacloprid	23.7	Spike	P	0 - 30
2104392	Linuron	6.52	Spike	P	0 - 30
2104392	Mandestrobin	2.41	Spike	P	0 - 30
2104392	MCPP	7.38	Spike	P	0 - 30
2104392	Naproxen	21.5	Spike	P	0 - 30
2104392	Primidone	14.9	Spike	P	0 - 30
2104392	Pyraclostrobin	0.164	Spike	P	0 - 30
2104392	Thiamethoxam	4.12	Spike	P	0 - 30
2104392	Tolfenpyrad	4.28	Spike	P	0 - 30
2104392	Triclopyr	7.40	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P367668

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104164	Acesulfame K	15.2	Spike	P	0 - 30
2104164	AMPA	1.08	Spike	P	0 - 30
2104164	Endothall	2.51	Spike	P	0 - 30
2104164	Glufosinate	4.24	Spike	P	0 - 30
2104164	Glyphosate	1.79	Spike	P	0 - 30
2104164	Sucralose	0.474	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P367620

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104548	Color (true)	3.45	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P367650

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104610	Color (true)	2.43	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P367938

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104549	Total Alkalinity	2.72	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P368115

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104549	TDS	3.33	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P368117

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104613	TDS	0.897	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P367941

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104549	Fluoride	0.0	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P367727

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104551	Organic Carbon	0.636	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: 2104644
Field Sample ID: 20030801

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	133	P	30 - 160
EPA 8321B	Acetaminophen-d4	91.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	80.2	P	30 - 160
EPA 8321B	Diuron-d6	85.8	P	30 - 160
EPA 8321B	Endothall-d6	76.2	P	30 - 160
EPA 8321B	Endothall-d6	76.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	56.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	56.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	95.7	P	30 - 160
EPA 8321B	Primidone-d5	102	P	30 - 160
EPA 8321B	Sucralose-d6	140	P	30 - 160
EPA 8321B	Sucralose-d6	140	P	30 - 160

Lab Sample ID: 2104645
Field Sample ID: 20030123

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	84.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	113	P	30 - 160
EPA 8321B	Carbamazepine-d10	86.0	P	30 - 160
EPA 8321B	Diuron-d6	96.4	P	30 - 160
EPA 8321B	Endothall-d6	243	F	30 - 160
EPA 8321B	Endothall-d6	243	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	49.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	49.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	116	P	30 - 160
EPA 8321B	Primidone-d5	116	P	30 - 160
EPA 8321B	Sucralose-d6	141	P	30 - 160
EPA 8321B	Sucralose-d6	141	P	30 - 160

Lab Sample ID: 2104646
Field Sample ID: 20030953

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	104	P	30 - 160
EPA 8321B	Acetaminophen-d4	130	P	30 - 160
EPA 8321B	Carbamazepine-d10	98.8	P	30 - 160
EPA 8321B	Diuron-d6	112	P	30 - 160
EPA 8321B	Endothall-d6	81.4	P	30 - 160
EPA 8321B	Endothall-d6	81.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	59.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	59.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	125	P	30 - 160
EPA 8321B	Primidone-d5	136	P	30 - 160
EPA 8321B	Sucralose-d6	143	P	30 - 160
EPA 8321B	Sucralose-d6	143	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A92848

Included Lab Sample IDs: 2104644, 2104645, 2104646

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	98.6	108	P/P	50 - 150
Acetaminophen	101	116	P/P	60 - 160
Acetamiprid	113	119	P/P	50 - 150
Afidopyropen	134	111	P/P	50 - 150
Bentazon	93.7	92.7	P/P	50 - 160
Benzovindiflupyr	109	110	P/P	50 - 150
Carbamazepine	123	128	P/P	60 - 150
Clothianidin	129	143	P/P	60 - 150
Dinotefuran	123	125	P/P	50 - 150
Diuron	124	119	P/P	60 - 150
Fenuron	128	126	P/P	60 - 150
Fluridone	127	124	P/P	60 - 160
Hydrocodone	105	115	P/P	60 - 150
Ibuprofen	105	98.1	P/P	50 - 160
Imazapyr	107	83.7	P/P	50 - 150
Imidacloprid	105	108	P/P	60 - 150
Linuron	116	118	P/P	60 - 150
Mandestrobin	131	133	P/P	50 - 150
MCPP	103	104	P/P	50 - 150
Naproxen	80.5	108	P/P	50 - 160
Primidone	104	107	P/P	60 - 150
Pyraclostrobin	122	118	P/P	60 - 150
Thiamethoxam	113	121	P/P	50 - 150
Tolfenpyrad	108	106	P/P	60 - 150
Triclopyr	102	91.6	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A92908

Included Lab Sample IDs: 2104612, 2104615, 2104618

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	99.5	P/P	90 - 110
O-Phosphate-P	99.7	98.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A92909

Included Lab Sample IDs: 2104610, 2104613, 2104616

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

Reference Method: SM 2120 B

Run ID: A92910

Included Lab Sample IDs: 2104610

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92937

Included Lab Sample IDs: 2104611, 2104614

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A92945

Included Lab Sample IDs: 2104611, 2104614, 2104617

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.5	96.4	P/P	90 - 110
Organic Carbon	99.8	98.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A92954

Included Lab Sample IDs: 2104610, 2104613

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A92966

Included Lab Sample IDs: 2104647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	103	103	P/P	90 - 110
Calcium	102	98.1	P/P	90 - 110
Iron	102	97.5	P/P	90 - 110
Magnesium	102	97.5	P/P	90 - 110
Potassium	102	98.3	P/P	90 - 110
Sodium	108	106	P/P	90 - 110
Zinc	102	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92978

Included Lab Sample IDs: 2104611, 2104614

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

Reference Method: EPA 8321B

Run ID: A92984

Included Lab Sample IDs: 2104644, 2104645, 2104646

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	81.4	79.7	P/P	60 - 160
Endothall	110	109	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A92986

Included Lab Sample IDs: 2104644, 2104645, 2104646

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

Reference Method: EPA 8321B

Run ID: A92986

Included Lab Sample IDs: 2104644, 2104645, 2104646

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	99.6	102	P/P	60 - 160
Glufosinate	87.0	88.2	P/P	60 - 160
Glyphosate	96.3	91.0	P/P	60 - 160

Reference Method: EPA 300.0

Run ID: A92993

Included Lab Sample IDs: 2104616

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A93009

Included Lab Sample IDs: 2104617

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A93017

Included Lab Sample IDs: 2104617

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A93033

Included Lab Sample IDs: 2104610, 2104613, 2104616

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	106	P/P	90 - 110
Total Alkalinity	103	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A93033

Included Lab Sample IDs: 2104610, 2104613, 2104616

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A93054

Included Lab Sample IDs: 2104611, 2104614, 2104617

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	109	P/P	90 - 110
Kjeldahl Nitrogen	109	107	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A93176

Included Lab Sample IDs: 2104647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	104	104	P/P	90 - 110
Antimony	97.3	98.2	P/P	90 - 110
Arsenic	107	106	P/P	90 - 110
Boron	104	106	P/P	90 - 110
Cadmium	103	104	P/P	90 - 110
Chromium	105	105	P/P	90 - 110
Copper	107	106	P/P	90 - 110
Lead	100	100	P/P	90 - 110
Nickel	105	106	P/P	90 - 110
Silver	101	101	P/P	90 - 110
Thallium	94.4	91.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A93196

Included Lab Sample IDs: 2104617

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	105	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A93230

Included Lab Sample IDs: 2104644, 2104645, 2104646

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	99.9	88.6	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A93243

Included Lab Sample IDs: 2104611, 2104614

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	107	107	P/P	90 - 110
Ammonia-N	99.0	104	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A93257

Included Lab Sample IDs: 2104647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	98.5	97.8	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery			MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity								0.191	
EPA 200.7 Rev. 4.4	Barium	102			98.7	102	102			0.707
	Calcium	111			101	109	108			0.704
	Iron	106			102	105	104			0.721
	Magnesium	112			101	111	110			0.554
	Potassium	110			108	112	110			1.56
	Sodium	114			102	109	108			0.135
	Zinc	99.9			96.6	102	98.8			2.75
EPA 200.8 Rev. 5.4	Aluminum	99.9			102	102	101			1.33
	Antimony	96.7			101	98.3	98.1			0.221
	Arsenic	105			108	106	105			1.27
	Boron	104			107	104	104			0.412
	Cadmium	101			106	104	102			1.73
	Chromium	99.8			100	102	101			0.485
	Copper	103			100	104	104			0.0103
	Lead	93.0			94.6	95.3	94.1			1.37
	Nickel	103			101	103	102			1.58
	Selenium	106			106	105	105			0.399
	Silver	99.3			102	99.9	99.7			0.207
	Thallium	94.2			98.9	105	95.9			9.19
EPA 300.0	Bromide	95.2			91.3	91.8	92.9			0.403
EPA 300.0 Rev. 2.1	Chloride	102			102	102			2.53	
	Sulfate	103			102	103			1.78	
EPA 350.1 Rev. 2.0	Ammonia-N	108			97.5	96.6				0.817
	Ammonia-N	105			104	108				2.61
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102			102	105				2.81
	Kjeldahl Nitrogen	106			93.6	102				5.62
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100			100	99.5				0.610
	NO ₂ NO ₃ -N	100			96.6	97.6				0.964
EPA 365.1 Rev. 2.0	Total-P	98.8			106	104				2.26
	Total-P	102			93.1	95.0				1.87
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100			97.1	98.9				1.84
	O-Phosphate-P	100			96.8	97.3				0.450
EPA 8321B	2,4-D	132			181	164				8.18
	Acesulfame K	71.3			69.4	80.8				15.2
	Acetaminophen	95.6			110	103				6.87
	Acetamiprid	102			104	110				5.16
	Afidopyropen	105			106	108				1.94
	AMPA	102			98.2	99.3				1.08
	Bentazon	94.0			65.9	63.9				3.12
	Benzovindiflupyr	99.1			95.8	94.7				1.19
	Carbamazepine	115			107	106				1.68
	Clothianidin	111			149	143				3.01
	Dinotefuran	114			149	129				11.6
	Diuron	112			98.2	94.9				3.06
	Endothall	111			110	113				2.51
	Fenuron	120			102	101				1.10
	Fluridone	111			109	106				3.53
	Glufosinate	90.0			91.3	95.2				4.24
	Glyphosate	98.5			92.7	94.4				1.79
	Hydrocodone	100			112	105				7.32
	Ibuprofen	90.7			104	93.1				10.7
	Imazapyr	91.9			88.0	87.2				0.816
	Imidacloprid	103								23.7

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	SMP
EPA 8321B	Linuron	95.5	95.0	89.0		6.52
	Mandestrobin	110	116	113		2.41
	MCCP	126	189	176		7.38
	Naproxen	117	134	108		21.5
	Primidone	106	117	100		14.9
	Pyraclostrobin	108	103	103		0.164
	Sucralose	98.1	92.1	91.7		0.474
	Thiamethoxam	111	179	171		4.12
	Tolfenpyrad	66.6	70.2	67.3		4.28
	Triclopyr	119	173	161		7.40
SM 2120 B	Color (true)	99.7				3.45
	Color (true)	102				2.43
SM 2320 B-97	Total Alkalinity	103				2.72
SM 2540 C-97	TDS					3.33
	TDS					0.897
SM 4500 F-C-97	Fluoride	97.2	104	104		0.0
SM 5310 B-00	Organic Carbon	98.6	99.5	100		0.636

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2104610, 2104613, 2104616
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2104647
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2104647
EPA 300.0 / E31780	Bromide in aqueous matrices	2104616
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2104610, 2104613
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2104610, 2104613
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2104611, 2104614, 2104617
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2104611, 2104614, 2104617
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2104611, 2104614, 2104617
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2104611, 2104614, 2104617
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2104612, 2104615, 2104618
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2104644, 2104645, 2104646
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2104644, 2104645, 2104646
SM 2120 B / E31780	True Color measured at 450 nm	2104610, 2104613
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2104610, 2104613, 2104616
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2104610, 2104613
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2104610, 2104613, 2104616
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2104610, 2104613, 2104616
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2104611, 2104614, 2104617

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	07/19/2019			07/19/2019 17:01	Samantha Davila	2104610, 2104613, 2104616
EPA 200.7 Rev. 4.4	07/19/2019	07/22/2019 15:20	Elliott D. Healy	07/23/2019 15:38	Betina Topolski	2104647
EPA 200.8 Rev. 5.4	07/19/2019	07/22/2019 15:20	Elliott D. Healy	07/31/2019 13:06	Robert K Palmer	2104647
	07/19/2019	07/22/2019 15:20	Elliott D. Healy	08/02/2019 17:24	Robert K Palmer	2104647
EPA 300.0	07/19/2019			07/25/2019 16:52	Jhamieka S. Greenwood	2104616
EPA 300.0 Rev. 2.1	07/19/2019			07/22/2019 23:32	Jhamieka S. Greenwood	2104610
	07/19/2019			07/22/2019 23:44	Jhamieka S. Greenwood	2104613
EPA 350.1 Rev. 2.0	07/19/2019			07/31/2019 13:25	Virginia P. Brown	2104617
	07/19/2019			08/02/2019 15:06	Virginia P. Brown	2104614
	07/19/2019			08/02/2019 15:35	Virginia P. Brown	2104611
EPA 351.2 Rev. 2.0	07/19/2019	07/25/2019 12:00	Adrian Shelby	07/26/2019 09:41	Joseph Suarez	2104617
	07/19/2019	07/25/2019 12:00	Adrian Shelby	07/26/2019 10:31	Joseph Suarez	2104611
	07/19/2019	07/25/2019 12:00	Adrian Shelby	07/26/2019 10:33	Joseph Suarez	2104614
EPA 353.2 Rev. 2.0	07/19/2019			07/22/2019 10:56	Beverly Y. Sanders	2104611
	07/19/2019			07/22/2019 10:57	Beverly Y. Sanders	2104614
	07/19/2019			07/25/2019 09:25	Beverly Y. Sanders	2104617
EPA 365.1 Rev. 2.0	07/19/2019	07/23/2019 11:20	Vijayalakshmi Reddy	07/24/2019 10:42	Lipi Saha	2104611
	07/19/2019	07/23/2019 11:20	Vijayalakshmi Reddy	07/24/2019 10:44	Lipi Saha	2104614
	07/19/2019	07/24/2019 11:15	Vijayalakshmi Reddy	07/25/2019 08:51	Lipi Saha	2104617
EPA 365.1 Rev. 2.0 dissolved	07/19/2019			07/19/2019 15:41	Jhamieka S. Greenwood	2104618
	07/19/2019			07/19/2019 16:01	Jhamieka S. Greenwood	2104612
	07/19/2019			07/19/2019 16:02	Jhamieka S. Greenwood	2104615
EPA 8321B	07/19/2019	07/19/2019 13:00	Hoor Shaik	07/20/2019 07:43	Juyoung Kim	2104644
	07/19/2019	07/19/2019 13:00	Hoor Shaik	07/20/2019 08:18	Juyoung Kim	2104645
	07/19/2019	07/19/2019 13:00	Hoor Shaik	07/20/2019 08:52	Juyoung Kim	2104646
	07/19/2019	07/22/2019 10:00	Rebecca Ware	07/22/2019 14:20	Rebecca Ware	2104644
	07/19/2019	07/22/2019 10:00	Rebecca Ware	07/22/2019 14:34	Rebecca Ware	2104645
	07/19/2019	07/22/2019 10:00	Rebecca Ware	07/22/2019 14:48	Rebecca Ware	2104646
	07/19/2019	07/22/2019 10:00	Rebecca Ware	07/23/2019 13:34	Rebecca Ware	2104644
	07/19/2019	07/22/2019 10:00	Rebecca Ware	07/23/2019 13:55	Rebecca Ware	2104646
	07/19/2019	07/22/2019 10:00	Rebecca Ware	07/23/2019 14:27	Rebecca Ware	2104645
	07/19/2019	07/22/2019 10:00	Rebecca Ware	08/02/2019 02:25	Rebecca Ware	2104644
	07/19/2019	07/22/2019 10:00	Rebecca Ware	08/02/2019 02:37	Rebecca Ware	2104645
	07/19/2019	07/22/2019 10:00	Rebecca Ware	08/02/2019 02:49	Rebecca Ware	2104646
SM 2120 B	07/19/2019			07/19/2019 14:27	Blanca Fach	2104613
	07/19/2019			07/19/2019 17:11	Madeline Funaro	2104610
SM 2320 B-97	07/19/2019			07/25/2019 00:50	Dale L. Simmons	2104610
	07/19/2019			07/25/2019 01:03	Dale L. Simmons	2104613
	07/19/2019			07/25/2019 04:30	Dale L. Simmons	2104616
SM 2540 C-97	07/19/2019			07/22/2019 15:00	Sima Feizi	2104610, 2104613

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2540 D-97	07/19/2019			07/22/2019 15:00	Sima Feizi	2104610, 2104613, 2104616
SM 4500 F-C-97	07/19/2019			07/25/2019 00:50	Dale L. Simmons	2104610
	07/19/2019			07/25/2019 01:03	Dale L. Simmons	2104613
	07/19/2019			07/25/2019 04:30	Dale L. Simmons	2104616
	07/19/2019			07/23/2019 03:27	Madeline Funaro	2104611
SM 5310 B-00	07/19/2019			07/23/2019 03:40	Madeline Funaro	2104614
	07/19/2019			07/23/2019 04:16	Madeline Funaro	2104617