

Chemical Analysis Report

NE-DIST-2019-08-21-02

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-2019-08-19-15**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 18-SEP-2019 12:11

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light-colored rectangular background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals, Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

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

Collection Date/Time: 08/20/2019 09:20

Field ID: 20030123

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2113204	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P369449	
	EPA 300.0	Bromide	0.12		mg Br/L	P369760	
	SM 2320 B-97	Total Alkalinity	29		mg CaCO3/L	P369866	
	SM 2540 D-97	TSS	4	IA	mg/L	P369931	
	SM 4500 F-C-97	Fluoride	0.066	I	mg F/L	P369869	
2113205	EPA 350.1 Rev. 2.0	Ammonia-N	0.041		mg N/L	P369880	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P369581	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.043		mg N/L	P369473	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P369685	
	SM 5310 B-00	Organic Carbon	40		mg C/L	P369623	
2113206	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.081		mg P/L	P369447	
2113231	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P369557	
		2,4-D	0.0049	I	ug/L	P369584	MS
		AMPA**	0.19	I	ug/L	P369557	
		Sucralose**	0.010	U	ug/L	P369557	
		Acetaminophen**	0.0080	U	ug/L	P369584	
		Endothall**	0.25	U	ug/L	P369557	
		Acetamiprid**	0.0020	U	ug/L	P369584	
		Glufosinate**	0.10	U	ug/L	P369557	
		Glyphosate**	0.32	I	ug/L	P369557	
		Afidopyropen**	0.0020	UJ	ug/L	P369584	
		Bentazon	8.0E-04	U	ug/L	P369584	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P369584	
		Carbamazepine**	8.0E-04	U	ug/L	P369584	
		Clothianidin**	0.0020	U	ug/L	P369584	
		Dinotefuran**	0.0020	U	ug/L	P369584	
		Diuron	0.0020	U	ug/L	P369584	
		Fenuron	0.016	U	ug/L	P369584	
		Fluridone**	0.0013	I	ug/L	P369584	
		Imazapyr**	0.023		ug/L	P369584	
		Hydrocodone**	0.0020	U	ug/L	P369584	
		Ibuprofen**	0.020	U	ug/L	P369584	
		Imidacloprid	0.0043	I	ug/L	P369584	MS
		Linuron	0.0040	U	ug/L	P369584	
		Mandestrobin**	0.0020	UJ	ug/L	P369584	
		MCP	0.0022	I	ug/L	P369584	MS
		Naproxen**	0.0080	U	ug/L	P369584	
		Primidone**	0.0040	U	ug/L	P369584	
		Pyraclostrobin**	0.0020	U	ug/L	P369584	
		Thiamethoxam**	0.0020	U	ug/L	P369584	
		Tolfenpyrad**	0.0020	U	ug/L	P369584	
		Triclopyr**	0.0040	U	ug/L	P369584	

Matrix: W-SURF-FRH

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

Sample Location: TROUT RIVER AT OLD KINGS RD

Collection Date/Time: 08/20/2019 10:00

Field ID: 20030753

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2113207	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P369449	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P369764	
		Sulfate	7.5		mg SO4/L	P369766	
	SM 2120 B	Color (true)	460		PCU	P369436	
	SM 2320 B-97	Total Alkalinity	23		mg CaCO3/L	P369866	
	SM 2540 C-97	TDS	141		mg/L	P369903	RPD
	SM 2540 D-97	TSS	3	I	mg/L	P369930	
	SM 4500 F-C-97	Fluoride	0.056	I	mg F/L	P369869	
2113208	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P369880	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P369581	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.036		mg N/L	P369473	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P369685	
	SM 5310 B-00	Organic Carbon	40		mg C/L	P369623	
2113209	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.071		mg P/L	P369447	

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: 08/20/2019 10:40

Field ID: 20030726

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2113201	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P369449	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P369764	
		Sulfate	24		mg SO4/L	P369766	
	SM 2120 B	Color (true)	22		PCU	P369436	
	SM 2320 B-97	Total Alkalinity	124		mg CaCO3/L	P369866	
	SM 2540 C-97	TDS	197		mg/L	P369903	RPD
	SM 2540 D-97	TSS	2	I	mg/L	P369930	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P369869	
2113202	EPA 350.1 Rev. 2.0	Ammonia-N	0.14		mg N/L	P369880	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.56		mg N/L	P369581	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.23		mg N/L	P369474	
	EPA 365.1 Rev. 2.0	Total-P	0.072		mg P/L	P369685	
	SM 5310 B-00	Organic Carbon	6.2		mg C/L	P369623	
2113203	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.033		mg P/L	P369447	
2113233	EPA 200.7 Rev. 4.4	Barium	43.8		ug/L	P369531	
		Calcium	49.4		mg/L	P369531	
		Iron	500		ug/L	P369531	
		Magnesium	5.87		mg/L	P369531	
		Potassium	2.4		mg/L	P369531	
		Sodium	9.9		mg/L	P369531	
		Zinc	16	I	ug/L	P369531	
	EPA 200.8 Rev. 5.4	Aluminum	29		ug/L	P369531	
		Antimony	0.26		ug/L	P369531	
		Arsenic	1.53		ug/L	P369531	
		Boron**	67.6		ug/L	P369531	
		Cadmium	0.028	I	ug/L	P369531	
		Chromium	0.40	U	ug/L	P369531	
		Copper	1.29		ug/L	P369531	
		Lead	0.97		ug/L	P369531	
		Nickel	0.80	I	ug/L	P369531	
		Selenium	0.22	I	ug/L	P369531	
		Silver	0.010	U	ug/L	P369531	
		Thallium	0.10	U	ug/L	P369531	

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: 08/20/2019 11:20

Field ID: 20030801

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2113232	EPA 8321B	Acesulfame K**	0.40		ug/L	P369557	
		2,4-D	0.015		ug/L	P369584	MS
		AMPA**	0.66		ug/L	P369557	
		Sucralose**	0.11		ug/L	P369557	
		Acetaminophen**	0.014	I	ug/L	P369584	
		Endothall**	0.25	U	ug/L	P369557	
		Acetamiprid**	0.0020	U	ug/L	P369584	
		Glufosinate**	0.10	U	ug/L	P369557	
		Glyphosate**	1.0		ug/L	P369557	
		Afidopyropen**	0.0020	UJ	ug/L	P369584	
		Bentazon	0.0089		ug/L	P369584	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P369584	
		Carbamazepine**	0.0023	I	ug/L	P369584	
		Clothianidin**	0.0020	U	ug/L	P369584	
		Dinotefuran**	0.0079	I	ug/L	P369584	
		Diuron	0.014		ug/L	P369584	
		Fenuron	0.016	U	ug/L	P369584	
		Fluridone**	8.0E-04	U	ug/L	P369584	
		Imazapyr**	0.23		ug/L	P369584	
		Hydrocodone**	0.0020	U	ug/L	P369584	
		Ibuprofen**	0.020	U	ug/L	P369584	
		Imidacloprid	0.061		ug/L	P369584	MS
		Linuron	0.0040	U	ug/L	P369584	
		Mandestrobin**	0.0020	UJ	ug/L	P369584	
		MCPP	0.0074	I	ug/L	P369584	MS
		Naproxen**	0.0080	U	ug/L	P369584	
		Primidone**	0.0061	I	ug/L	P369584	
		Pyraclostrobin**	0.0020	U	ug/L	P369584	
		Thiamethoxam**	0.0020	U	ug/L	P369584	
		Tolfenpyrad**	0.0020	U	ug/L	P369584	
		Triclopyr**	0.0040	U	ug/L	P369584	

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis.

Sample Location: LITTLE FISHWEIR AT OAK ST.

Collection Date/Time: 08/20/2019 11:45

Field ID: 20030953

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2113198	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P369449	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P369764	
		Sulfate	44		mg SO4/L	P369766	
	SM 2120 B	Color (true)	44	A	PCU	P369436	
	SM 2320 B-97	Total Alkalinity	159	A	mg CaCO3/L	P369866	
	SM 2540 C-97	TDS	298		mg/L	P369903	RPD
	SM 2540 D-97	TSS	3	I	mg/L	P369930	
	SM 4500 F-C-97	Fluoride	0.22		mg F/L	P369869	
2113199	EPA 350.1 Rev. 2.0	Ammonia-N	0.23		mg N/L	P369880	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P369581	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P369473	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P369517	
	SM 5310 B-00	Organic Carbon	8.4		mg C/L	P369623	
2113200	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.079		mg P/L	P369447	
2113230	EPA 8321B	Acesulfame K**	0.11	I	ug/L	P369557	
		2,4-D	0.016		ug/L	P369584	MS
		AMPA**	0.26	I	ug/L	P369557	
		Sucralose**	0.13		ug/L	P369557	
		Acetaminophen**	0.0080	U	ug/L	P369584	
		Endothall**	0.25	U	ug/L	P369557	
		Acetamiprid**	0.0020	U	ug/L	P369584	
		Glufosinate**	0.10	U	ug/L	P369557	
		Glyphosate**	2.3		ug/L	P369557	
		Afidopyropen**	0.0020	UJ	ug/L	P369584	
		Bentazon	0.020		ug/L	P369584	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P369584	
		Carbamazepine**	8.0E-04	U	ug/L	P369584	
		Clothianidin**	0.0020	U	ug/L	P369584	
		Dinotefuran**	0.0020	U	ug/L	P369584	
		Diuron	0.0032	I	ug/L	P369584	
		Fenuron	0.016	U	ug/L	P369584	
		Fluridone**	8.0E-04	U	ug/L	P369584	
		Imazapyr**	0.22		ug/L	P369584	
		Hydrocodone**	0.0020	U	ug/L	P369584	
		Ibuprofen**	0.020	U	ug/L	P369584	
		Imidacloprid	0.029		ug/L	P369584	MS
		Linuron	0.0040	U	ug/L	P369584	
		Mandestrobin**	0.0020	UJ	ug/L	P369584	
		MCP	0.0020	U	ug/L	P369584	MS
		Naproxen**	0.013	I	ug/L	P369584	
		Primidone**	0.0040	U	ug/L	P369584	
		Pyraclostrobin**	0.0020	U	ug/L	P369584	
		Thiamethoxam**	0.0020	U	ug/L	P369584	

Field ID: 20030953

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2113230	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P369584	
		Triclopyr**	0.0040	U	ug/L	P369584	

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.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P369449

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P369531

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: P369531

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: P369760

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369764

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369766

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: P369880

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369581

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369473

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369474

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369517

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369685

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P369447

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

Reference Method: EPA 8321B
Batch ID: P369557

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P369584

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: SM 2120 B
Batch ID: P369436

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P369866

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

Reference Method: SM 2540 C-97
Batch ID: P369903

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P369930

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P369931

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P369869

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P369623

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: P369531

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	105		P	85 - 115
Calcium	108		P	85 - 115
Iron	109		P	85 - 115
Magnesium	111		P	85 - 115
Potassium	108		P	85 - 115
Sodium	110		P	85 - 115
Zinc	105		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P369531

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.1		P	85 - 115
Antimony	96.6		P	85 - 115
Arsenic	103		P	85 - 115
Boron	101		P	85 - 115
Cadmium	99.7		P	85 - 115
Chromium	101		P	85 - 115
Copper	101		P	85 - 115
Lead	101		P	85 - 115
Nickel	101		P	85 - 115
Selenium	104		P	85 - 115
Silver	106		P	85 - 115
Thallium	97.7		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P369760

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	98.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369764

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369766

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369880

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369581

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369473

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369474

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369517

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369685

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	93.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P369447

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

Reference Method: EPA 8321B
Batch ID: P369557

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	95.1		P	40 - 150
AMPA	97.9		P	40 - 150
Endothall	96.3		P	40 - 150
Glufosinate	110		P	40 - 150
Glyphosate	122		P	40 - 140
Sucralose	60.4		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P369584

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	128		P	40 - 160
Acetaminophen	80.9		P	30 - 160
Acetamiprid	86.1		P	40 - 160
Afidopyropen	67.7		P	40 - 160
Bentazon	90.2		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P369584

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Benzovindiflupyr	75.5		P	40 - 160
Carbamazepine	84.4		P	40 - 160
Clothianidin	78.7		P	40 - 160
Dinotefuran	82.1		P	40 - 160
Diuron	83.7		P	40 - 160
Fenuron	94.0		P	40 - 160
Fluridone	80.2		P	40 - 160
Hydrocodone	84.9		P	40 - 160
Ibuprofen	69.6		P	30 - 160
Imazapyr	109		P	40 - 160
Imidacloprid	94.9		P	40 - 160
Linuron	64.8		P	40 - 160
Mandestrobin	74.9		P	40 - 160
MCPP	138		P	40 - 160
Naproxen	79.4		P	40 - 160
Primidone	83.7		P	40 - 160
Pyraclostrobin	78.6		P	30 - 160
Thiamethoxam	92.1		P	40 - 160
Tolfenpyrad	55.7		P	40 - 160
Triclopyr	117		P	30 - 160

Reference Method: SM 2120 B

Batch ID: P369436

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2320 B-97

Batch ID: P369866

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	105		P	98 - 106

Reference Method: SM 4500 F-C-97

Batch ID: P369869

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.9		P	92 - 103

Reference Method: SM 5310 B-00

Batch ID: P369623

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P369531

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113054	Barium	104	105	P/P	80 - 120
2113054	Calcium	109	108	P/P	80 - 120
2113054	Iron	109	108	P/P	80 - 120
2113054	Magnesium	112	111	P/P	80 - 120
2113054	Potassium	115	116	P/P	80 - 120
2113054	Sodium	102	96.5	P/P	80 - 120
2113054	Zinc	103	104	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P369531

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113054	Aluminum	101	99.5	P/P	80 - 120
2113054	Antimony	96.2	95.9	P/P	80 - 120
2113054	Arsenic	101	100	P/P	80 - 120
2113054	Boron	107	104	P/P	80 - 120
2113054	Cadmium	99.5	101	P/P	80 - 120
2113054	Chromium	103	102	P/P	80 - 120
2113054	Copper	100	100	P/P	80 - 120
2113054	Lead	101	101	P/P	80 - 120
2113054	Nickel	102	102	P/P	80 - 120
2113054	Selenium	101	100	P/P	80 - 120
2113054	Silver	105	107	P/P	80 - 120
2113054	Thallium	98.5	100	P/P	80 - 120

Reference Method: EPA 300.0
 Batch ID: P369760

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113204	Bromide	94.1	96.3	P/P	90 - 110
2113615	Bromide	97.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P369764

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2112761	Chloride	102	104	P/P	90 - 110
2113043	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P369766

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2112761	Sulfate	102	104	P/P	90 - 110
2113043	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P369880

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113051	Ammonia-N	102	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369581

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113199	Kjeldahl Nitrogen	96.0	95.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369473

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113023	NO2NO3-N	95.8		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369474

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113202	NO2NO3-N	98.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369517

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113023	Total-P	105	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369685

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113202	Total-P	97.2	92.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P369447

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113045	O-Phosphate-P	96.9	98.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P369557

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113071	Acesulfame K	86.2	80.2	P/P	40 - 150
2113071	AMPA	58.9	51.1	P/P	40 - 150
2113071	Endothall	56.6	59.5	P/P	40 - 150
2113071	Glufosinate	86.3	81.1	P/P	40 - 150
2113071	Glyphosate	96.9	89.9	P/P	40 - 140
2113071	Sucralose	67.5	74.8	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P369584

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113805	2,4-D	158	165	P/F	40 - 160
2113805	Acetaminophen	73.6	80.7	P/P	30 - 160
2113805	Acetamiprid	94.7	101	P/P	40 - 160
2113805	Afidopyropen	76.4	95.9	P/P	40 - 160
2113805	Bentazon	70.9	83.1	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P369584

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113805	Benzovindiflupyr	79.9	85.0	P/P	40 - 160
2113805	Carbamazepine	80.7	86.9	P/P	40 - 160
2113805	Clothianidin	84.3	86.1	P/P	40 - 160
2113805	Dinotefuran	91.4	99.1	P/P	40 - 160
2113805	Diuron	79.8	86.9	P/P	40 - 160
2113805	Fenuron	72.4	79.0	P/P	40 - 160
2113805	Fluridone	79.4	85.5	P/P	40 - 160
2113805	Hydrocodone	80.7	88.6	P/P	40 - 160
2113805	Ibuprofen	79.5	89.1	P/P	30 - 160
2113805	Imazapyr	94.8	109	P/P	40 - 160
2113805	Imidacloprid	174	185	F/F	40 - 160
2113805	Linuron	67.4	69.2	P/P	40 - 160
2113805	Mandestrobin	80.8	84.7	P/P	40 - 160
2113805	MCP	171	181	F/F	40 - 160
2113805	Naproxen	110	126	P/P	40 - 160
2113805	Primidone	92.0	92.3	P/P	40 - 160
2113805	Pyraclostrobin	81.9	84.1	P/P	30 - 160
2113805	Thiamethoxam	125	137	P/P	40 - 160
2113805	Tolfenpyrad	54.2	58.6	P/P	40 - 160
2113805	Triclopyr	141	134	P/P	30 - 160

Reference Method: SM 4500 F-C-97
Batch ID: P369869

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113198	Fluoride	99.5	98.8	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P369623

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2113303	Organic Carbon	97.6	97.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P369449

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113117	Turbidity	0.154	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P369531

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113054	Barium	0.233	Spike	P	0 - 20
2113054	Calcium	1.14	Spike	P	0 - 20
2113054	Iron	0.904	Spike	P	0 - 20
2113054	Magnesium	0.760	Spike	P	0 - 20
2113054	Potassium	1.20	Spike	P	0 - 20
2113054	Sodium	3.73	Spike	P	0 - 20
2113054	Zinc	0.805	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P369531

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113054	Aluminum	1.31	Spike	P	0 - 20
2113054	Antimony	0.372	Spike	P	0 - 20
2113054	Arsenic	0.665	Spike	P	0 - 20
2113054	Boron	2.33	Spike	P	0 - 20
2113054	Cadmium	1.16	Spike	P	0 - 20
2113054	Chromium	0.575	Spike	P	0 - 20
2113054	Copper	0.424	Spike	P	0 - 20
2113054	Lead	0.0350	Spike	P	0 - 20
2113054	Nickel	0.0118	Spike	P	0 - 20
2113054	Selenium	0.768	Spike	P	0 - 20
2113054	Silver	2.63	Spike	P	0 - 20
2113054	Thallium	1.81	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P369760

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113204	Bromide	1.88	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369764

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2112761	Chloride	1.84	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369766

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2112761	Sulfate	2.42	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369880

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113051	Ammonia-N	1.95	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369581

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113199	Kjeldahl Nitrogen	0.388	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369473

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113023	NO2NO3-N	0.350	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369474

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113202	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369517

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113023	Total-P	2.73	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369685

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113202	Total-P	4.55	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P369447

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113045	O-Phosphate-P	1.23	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P369557

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113071	Acesulfame K	7.27	Spike	P	0 - 30
2113071	AMPA	10.1	Spike	P	0 - 30
2113071	Endothall	5.05	Spike	P	0 - 30
2113071	Glufosinate	6.28	Spike	P	0 - 30
2113071	Glyphosate	5.31	Spike	P	0 - 30
2113071	Sucralose	9.76	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P369584

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113805	2,4-D	4.02	Spike	P	0 - 30
2113805	Acetaminophen	9.14	Spike	P	0 - 30
2113805	Acetamiprid	6.19	Spike	P	0 - 30
2113805	Afidopyropen	22.5	Spike	P	0 - 30
2113805	Bentazon	8.56	Spike	P	0 - 30
2113805	Benzovindiflupyr	6.14	Spike	P	0 - 30
2113805	Carbamazepine	7.44	Spike	P	0 - 30
2113805	Clothianidin	2.13	Spike	P	0 - 30
2113805	Dinotefuran	8.03	Spike	P	0 - 30
2113805	Diuron	8.47	Spike	P	0 - 30
2113805	Fenuron	8.71	Spike	P	0 - 30
2113805	Fluridone	7.34	Spike	P	0 - 30
2113805	Hydrocodone	9.37	Spike	P	0 - 30
2113805	Ibuprofen	11.4	Spike	P	0 - 30
2113805	Imazapyr	10.9	Spike	P	0 - 30
2113805	Imidacloprid	6.34	Spike	P	0 - 30
2113805	Linuron	2.63	Spike	P	0 - 30
2113805	Mandestrobin	4.78	Spike	P	0 - 30
2113805	MCPP	5.90	Spike	P	0 - 30
2113805	Naproxen	13.2	Spike	P	0 - 30
2113805	Primidone	0.342	Spike	P	0 - 30
2113805	Pyraclostrobin	2.60	Spike	P	0 - 30
2113805	Thiamethoxam	9.12	Spike	P	0 - 30
2113805	Tolfenpyrad	7.88	Spike	P	0 - 30
2113805	Triclopyr	4.49	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P369436

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113198	Color (true)	0.389	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P369866

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113198	Total Alkalinity	0.463	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P369903

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113022	TDS	10.6	Sample	F	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P369869

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113198	Fluoride	0.476	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P369623

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113303	Organic Carbon	0.0864	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: 2113230
Field Sample ID: 20030953

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	116	P	30 - 160
EPA 8321B	Acetaminophen-d4	77.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	67.4	P	30 - 160
EPA 8321B	Diuron-d6	65.5	P	30 - 160
EPA 8321B	Endothall-d6	64.3	P	30 - 160
EPA 8321B	Endothall-d6	64.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	83.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	83.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	98.2	P	30 - 160
EPA 8321B	Primidone-d5	83.9	P	30 - 160
EPA 8321B	Sucralose-d6	48.5	P	30 - 160
EPA 8321B	Sucralose-d6	48.5	P	30 - 160

Lab Sample ID: 2113231
Field Sample ID: 20030123

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	145	P	30 - 160
EPA 8321B	Acetaminophen-d4	81.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	63.6	P	30 - 160
EPA 8321B	Diuron-d6	67.7	P	30 - 160
EPA 8321B	Endothall-d6	76.6	P	30 - 160
EPA 8321B	Endothall-d6	76.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	97.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	97.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	103	P	30 - 160
EPA 8321B	Primidone-d5	71.2	P	30 - 160
EPA 8321B	Sucralose-d6	66.9	P	30 - 160
EPA 8321B	Sucralose-d6	66.9	P	30 - 160

Lab Sample ID: 2113232
Field Sample ID: 20030801

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	151	P	30 - 160
EPA 8321B	Acetaminophen-d4	96.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	79.8	P	30 - 160
EPA 8321B	Diuron-d6	80.2	P	30 - 160
EPA 8321B	Endothall-d6	66.1	P	30 - 160
EPA 8321B	Endothall-d6	66.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	74.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	74.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	102	P	30 - 160
EPA 8321B	Primidone-d5	104	P	30 - 160
EPA 8321B	Sucralose-d6	32.8	P	30 - 160
EPA 8321B	Sucralose-d6	32.8	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A93691

Included Lab Sample IDs: 2113198, 2113201, 2113207

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	90 - 115
Color (true)	101	102	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A93695

Included Lab Sample IDs: 2113200, 2113203, 2113206, 2113209

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A93696

Included Lab Sample IDs: 2113198, 2113201, 2113204, 2113207

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	102	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A93712

Included Lab Sample IDs: 2113199, 2113202, 2113205, 2113208

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

Reference Method: SM 5310 B-00

Run ID: A93766

Included Lab Sample IDs: 2113199, 2113202, 2113205, 2113208

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	94.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A93783

Included Lab Sample IDs: 2113199

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.4	96.7	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A93786

Included Lab Sample IDs: 2113230, 2113231, 2113232

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	93.6	145	P/P	60 - 160
Endothall	94.2	101	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A93788

Included Lab Sample IDs: 2113230, 2113231, 2113232

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	100	101	P/P	60 - 160
Glufosinate	104	98.6	P/P	60 - 160
Glyphosate	108	110	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A93789

Included Lab Sample IDs: 2113199, 2113202, 2113205, 2113208

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.9	97.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A93792

Included Lab Sample IDs: 2113233

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	102	101	P/P	90 - 110
Iron	102	100	P/P	90 - 110
Potassium	101	98.4	P/P	90 - 110
Sodium	93.5	92.7	P/P	90 - 110
Zinc	101	101	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A93817

Included Lab Sample IDs: 2113204

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A93819

Included Lab Sample IDs: 2113198, 2113201, 2113207

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	103	P/P	90 - 110
Sulfate	104	105	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A93822

Included Lab Sample IDs: 2113233

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	99.3	101	P/P	90 - 110
Magnesium	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A93831

Included Lab Sample IDs: 2113202, 2113205, 2113208

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	98.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A93831

Included Lab Sample IDs: 2113202, 2113205, 2113208

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.6	99.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A93838

Included Lab Sample IDs: 2113230, 2113231, 2113232

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	102	102	P/P	50 - 150
Acetaminophen	114	107	P/P	60 - 160
Acetamiprid	115	100	P/P	50 - 150
Afidopyropen	75.0	96.7	P/P	50 - 150
Bentazon	104	106	P/P	50 - 160
Benzovindiflupyr	96.3	99.1	P/P	50 - 150
Carbamazepine	113	113	P/P	60 - 150
Clothianidin	99.9	103	P/P	60 - 150
Dinotefuran	104	105	P/P	50 - 150
Diuron	101	115	P/P	60 - 150
Fenuron	110	110	P/P	60 - 150
Fluridone	100	103	P/P	60 - 160
Hydrocodone	113	108	P/P	60 - 150
Ibuprofen	84.4	70.1	P/P	50 - 160
Imazapyr	94.2	116	P/P	50 - 150
Imidacloprid	103	105	P/P	60 - 150
Linuron	95.7	94.3	P/P	60 - 150
Mandestrobin	108	113	P/P	50 - 150
MCPP	93.3	94.5	P/P	50 - 150
Naproxen	98.8	130	P/P	50 - 160
Primidone	102	102	P/P	60 - 150
Pyraclostrobin	101	109	P/P	60 - 150
Thiamethoxam	106	95.7	P/P	50 - 150
Tolfenpyrad	101	102	P/P	60 - 150
Triclopyr	108	101	P/P	50 - 150

Reference Method: SM 2320 B-97

Run ID: A93845

Included Lab Sample IDs: 2113198, 2113201, 2113204, 2113207

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

Reference Method: SM 4500 F-C-97

Run ID: A93845

Included Lab Sample IDs: 2113198, 2113201, 2113204, 2113207

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A93846

Included Lab Sample IDs: 2113199, 2113202, 2113205, 2113208

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	106	107	P/P	90 - 110
Ammonia-N	108	106	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A93861

Included Lab Sample IDs: 2113230, 2113231, 2113232

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	79.6	83.6	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94112

Included Lab Sample IDs: 2113233

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	103	105	P/P	90 - 110
Antimony	97.7	98.8	P/P	90 - 110
Arsenic	105	105	P/P	90 - 110
Cadmium	104	105	P/P	90 - 110
Copper	106	107	P/P	90 - 110
Lead	105	106	P/P	90 - 110
Nickel	105	107	P/P	90 - 110
Silver	107	107	P/P	90 - 110
Thallium	97.8	97.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94206

Included Lab Sample IDs: 2113233

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	98.9	103	P/P	90 - 110
Selenium	103	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94208

Included Lab Sample IDs: 2113233

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	97.6	99.4	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					0.154	
EPA 200.7 Rev. 4.4	Barium	105	104	105			0.233
	Calcium	108	109	108			1.14
	Iron	109	109	108			0.904
	Magnesium	111	112	111			0.760
	Potassium	108	115	116			1.20
	Sodium	110	102	96.5			3.73
	Zinc	105	103	104			0.805
EPA 200.8 Rev. 5.4	Aluminum	99.1	101	99.5			1.31
	Antimony	96.6	96.2	95.9			0.372
	Arsenic	103	101	100			0.665
	Boron	101	107	104			2.33
	Cadmium	99.7	99.5	101			1.16
	Chromium	101	103	102			0.575
	Copper	101	100	100			0.424
	Lead	101	101	101			0.0350
	Nickel	101	102	102			0.0118
	Selenium	104	101	100			0.768
	Silver	106	105	107			2.63
	Thallium	97.7	98.5	100			1.81
EPA 300.0	Bromide	98.7	94.1	96.3	97.3		1.88
EPA 300.0 Rev. 2.1	Chloride	101	102	104	102		1.84
	Sulfate	101	102	104	102		2.42
EPA 350.1 Rev. 2.0	Ammonia-N	103	102	104			1.95
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	96.0	95.4			0.388
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	95.8				0.350
	NO ₂ NO ₃ -N	104	98.5				0.0
EPA 365.1 Rev. 2.0	Total-P	104	105	101			2.73
	Total-P	93.2	97.2	92.1			4.55
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.1	96.9	98.1			1.23
EPA 8321B	2,4-D	128	165	158			4.02
	Acesulfame K	95.1	86.2	80.2			7.27
	Acetaminophen	80.9	73.6	80.7			9.14
	Acetamiprid	86.1	94.7	101			6.19
	Afidopyropen	67.7	95.9	76.4			22.5
	AMPA	97.9	58.9	51.1			10.1
	Bentazon	90.2	83.1	70.9			8.56
	Benzovindiflupyr	75.5	85.0	79.9			6.14
	Carbamazepine	84.4	80.7	86.9			7.44
	Clothianidin	78.7	84.3	86.1			2.13
	Dinotefuran	82.1	91.4	99.1			8.03
	Diuron	83.7	79.8	86.9			8.47
	Endothall	96.3	56.6	59.5			5.05
	Fenuron	94.0	72.4	79.0			8.71
	Fluridone	80.2	85.5	79.4			7.34
	Glufosinate	110	86.3	81.1			6.28
	Glyphosate	122	96.9	89.9			5.31
	Hydrocodone	84.9	80.7	88.6			9.37
	Ibuprofen	69.6	89.1	79.5			11.4
	Imazapyr	109	109	94.8			10.9
	Imidacloprid	94.9	174	185			6.34
	Linuron	64.8	69.2	67.4			2.63
	Mandestrobin	74.9	84.7	80.8			4.78
	MCPP	138	181	171			5.90

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Naproxen	79.4	126	110		13.2
	Primidone	83.7	92.0	92.3		0.342
	Pyraclostrobin	78.6	84.1	81.9		2.60
	Sucralose	60.4	67.5	74.8		9.76
	Thiamethoxam	92.1	125	137		9.12
	Tolfenpyrad	55.7	58.6	54.2		7.88
	Triclopyr	117	134	141		4.49
SM 2120 B	Color (true)	101			0.389	
SM 2320 B-97	Total Alkalinity	105			0.463	
SM 2540 C-97	TDS				10.6	
SM 4500 F-C-97	Fluoride	98.9	99.5	98.8		0.476
SM 5310 B-00	Organic Carbon	96.6	97.6	97.7		0.0864

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2113198, 2113201, 2113204, 2113207
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2113233
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2113233
EPA 300.0 / E31780	Bromide in aqueous matrices	2113204
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2113198, 2113201, 2113207
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2113198, 2113201, 2113207
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2113199, 2113202, 2113205, 2113208
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2113199, 2113202, 2113205, 2113208
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2113199, 2113202, 2113205, 2113208
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2113199, 2113202, 2113205, 2113208
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2113200, 2113203, 2113206, 2113209
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2113230, 2113231, 2113232
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2113230, 2113231, 2113232
SM 2120 B / E31780	True Color measured at 450 nm	2113198, 2113201, 2113207
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2113198, 2113201, 2113204, 2113207
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2113198, 2113201, 2113207
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2113198, 2113201, 2113204, 2113207
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2113198, 2113201, 2113204, 2113207
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2113199, 2113202, 2113205, 2113208

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	08/21/2019			08/21/2019 13:32	Rosalyn Ballman	2113198, 2113201, 2113204, 2113207
EPA 200.7 Rev. 4.4	08/21/2019	08/22/2019 16:00	Elliott D. Healy	08/26/2019 11:07	Alexander Thompson	2113233
	08/21/2019	08/22/2019 16:00	Elliott D. Healy	08/27/2019 14:25	Alexander Thompson	2113233
EPA 200.8 Rev. 5.4	08/21/2019	08/22/2019 16:00	Elliott D. Healy	09/11/2019 01:51	Robert K Palmer	2113233
	08/21/2019	08/22/2019 16:00	Elliott D. Healy	09/12/2019 13:01	Robert K Palmer	2113233
	08/21/2019	08/22/2019 16:00	Elliott D. Healy	09/13/2019 22:34	Robert K Palmer	2113233
EPA 300.0	08/21/2019			08/27/2019 00:51	Jhamieka S. Greenwood	2113204
EPA 300.0 Rev. 2.1	08/21/2019			08/27/2019 03:11	Jhamieka S. Greenwood	2113198
	08/21/2019			08/27/2019 03:23	Jhamieka S. Greenwood	2113201
	08/21/2019			08/27/2019 03:36	Jhamieka S. Greenwood	2113207
EPA 350.1 Rev. 2.0	08/21/2019			08/28/2019 14:36	Ping Hua	2113199
	08/21/2019			08/28/2019 14:37	Ping Hua	2113202
	08/21/2019			08/28/2019 14:45	Ping Hua	2113205
	08/21/2019			08/28/2019 14:46	Ping Hua	2113208
EPA 351.2 Rev. 2.0	08/21/2019	08/23/2019 12:40	Sima Feizi	08/26/2019 14:17	Joseph Suarez	2113199
	08/21/2019	08/23/2019 12:40	Sima Feizi	08/26/2019 14:21	Joseph Suarez	2113202
	08/21/2019	08/23/2019 12:40	Sima Feizi	08/26/2019 14:23	Joseph Suarez	2113205
	08/21/2019	08/23/2019 12:40	Sima Feizi	08/26/2019 14:24	Joseph Suarez	2113208
EPA 353.2 Rev. 2.0	08/21/2019			08/22/2019 09:50	Beverly Y. Sanders	2113199
	08/21/2019			08/22/2019 09:51	Beverly Y. Sanders	2113205
	08/21/2019			08/22/2019 09:52	Beverly Y. Sanders	2113208
	08/21/2019			08/22/2019 10:00	Beverly Y. Sanders	2113202
EPA 365.1 Rev. 2.0	08/21/2019	08/22/2019 12:30	Lipi Saha	08/23/2019 17:20	Lipi Saha	2113199
	08/21/2019	08/27/2019 13:00	Lipi Saha	08/28/2019 09:36	Lipi Saha	2113202
	08/21/2019	08/27/2019 13:00	Lipi Saha	08/28/2019 09:48	Lipi Saha	2113205
	08/21/2019	08/27/2019 13:00	Lipi Saha	08/28/2019 09:49	Lipi Saha	2113208
EPA 365.1 Rev. 2.0 dissolved	08/21/2019			08/21/2019 15:14	Jhamieka S. Greenwood	2113200, 2113203
	08/21/2019			08/21/2019 15:16	Jhamieka S. Greenwood	2113206
	08/21/2019			08/21/2019 15:17	Jhamieka S. Greenwood	2113209
EPA 8321B	08/21/2019	08/23/2019 09:45	Rebecca Ware	08/23/2019 15:28	Rebecca Ware	2113230
	08/21/2019	08/23/2019 09:45	Rebecca Ware	08/23/2019 15:42	Rebecca Ware	2113231
	08/21/2019	08/23/2019 09:45	Rebecca Ware	08/23/2019 15:56	Rebecca Ware	2113232
	08/21/2019	08/23/2019 09:45	Rebecca Ware	08/26/2019 11:32	Rebecca Ware	2113230
	08/21/2019	08/23/2019 09:45	Rebecca Ware	08/26/2019 11:43	Rebecca Ware	2113231
	08/21/2019	08/23/2019 09:45	Rebecca Ware	08/26/2019 11:54	Rebecca Ware	2113232
	08/21/2019	08/23/2019 09:45	Rebecca Ware	08/28/2019 21:59	Rebecca Ware	2113230
	08/21/2019	08/23/2019 09:45	Rebecca Ware	08/28/2019 22:11	Rebecca Ware	2113231
	08/21/2019	08/23/2019 09:45	Rebecca Ware	08/28/2019 22:23	Rebecca Ware	2113232
	08/21/2019	08/26/2019 10:00	Hoor Shaik	08/29/2019 00:07	Juyoung Kim	2113230
	08/21/2019	08/26/2019 10:00	Hoor Shaik	08/29/2019 00:42	Juyoung Kim	2113231

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	08/21/2019	08/26/2019 10:00	Hoor Shaik	08/29/2019 01:16	Juyoung Kim	2113232
SM 2120 B	08/21/2019			08/21/2019 15:12	Madeline Funaro	2113198
	08/21/2019			08/21/2019 15:13	Madeline Funaro	2113201
	08/21/2019			08/21/2019 15:28	Madeline Funaro	2113207
SM 2320 B-97	08/21/2019			08/28/2019 09:56	Dale L. Simmons	2113198
	08/21/2019			08/28/2019 11:11	Dale L. Simmons	2113201
	08/21/2019			08/28/2019 11:23	Dale L. Simmons	2113204
	08/21/2019			08/28/2019 11:36	Dale L. Simmons	2113207
SM 2540 C-97	08/21/2019			08/23/2019 14:56	Yijie Li	2113198, 2113201, 2113207
SM 2540 D-97	08/21/2019			08/23/2019 14:56	Yijie Li	2113198, 2113201, 2113204, 2113207
SM 4500 F-C-97	08/21/2019			08/28/2019 09:02	Dale L. Simmons	2113198
	08/21/2019			08/28/2019 11:11	Dale L. Simmons	2113201
	08/21/2019			08/28/2019 11:23	Dale L. Simmons	2113204
	08/21/2019			08/28/2019 11:36	Dale L. Simmons	2113207
SM 5310 B-00	08/21/2019			08/23/2019 17:42	Madeline Funaro	2113199
	08/21/2019			08/23/2019 17:54	Madeline Funaro	2113202
	08/21/2019			08/23/2019 18:06	Madeline Funaro	2113205
	08/21/2019			08/23/2019 18:18	Madeline Funaro	2113208