

Chemical Analysis Report

NE-DIST-2018-05-04-01

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

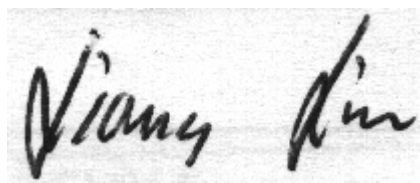
Event Description: **Bmap 1 and North Salt boat2**
Request ID: **RQ-2018-04-30-46**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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8800 Baymeadows Way West
Suite 100
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 25-MAY-2018 16:21

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored 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: 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 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: ORTEGA R BR ROOSEVELT BLVD US 17

Collection Date/Time: 05/03/2018 11:20

Field ID: 20030077

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1990307	EPA 180.1 Rev. 2.0	Turbidity	6.9		NTU	P344728	
	SM 2320 B-97	Total Alkalinity	62		mg CaCO3/L	P345177	
	SM 2540 D-97	TSS	3	I	mg/L	P345307	
	SM 4500 F-C-97	Fluoride	0.16		mg F/L	P345180	
1990308	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P345294	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.88		mg N/L	P344943	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.045		mg N/L	P345046	
	EPA 365.1 Rev. 2.0	Total-P	0.071		mg P/L	P344894	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P345196	
1990309	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.009	I	mg P/L	P344715	

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: FISHING CRK AT PUBLIC BOAT RAMP OFF
SEABOARD AVE**

Collection Date/Time: 05/03/2018 11:50

Field ID: 20030617

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1990333	EPA 8321B	2,4-D	0.018		ug/L	P344670	MS
		Bentazon	0.0075		ug/L	P344670	
		MCP	0.0053	I	ug/L	P344670	
		Triclopyr**	0.0040	U	ug/L	P344670	
		Imidacloprid	0.016		ug/L	P344670	
		Diuron	0.014		ug/L	P344670	
		Pyraclostrobin**	0.0020	U	ug/L	P344670	
		Primidone**	0.0040	U	ug/L	P344670	
		Linuron	0.0040	U	ug/L	P344670	
		Acetaminophen**	0.0080	U	ug/L	P344670	
		Fenuron	0.0080	U	ug/L	P344670	MS
		Imazapyr**	0.13		ug/L	P344670	
		Carbamazepine**	7.5E-04	I	ug/L	P344670	
		Fluridone**	0.013		ug/L	P344670	
		Hydrocodone**	8.0E-04	U	ug/L	P344670	
		Sucralose**	0.22	I	ug/L	P344930	

Sample Location: FISHING CR SE FORREST HS E PERRINE DR

Collection Date/Time: 05/03/2018 11:35

Field ID: 20030081

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1990295	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P344727	
	EPA 300.0 Rev. 2.1	Chloride	220		mg Cl/L	P345209	
		Sulfate	40		mg SO4/L	P345212	
	SM 2120 B	Color (true)	84		PCU	P344722	
	SM 2320 B-97	Total Alkalinity	79		mg CaCO3/L	P345177	
	SM 2540 C-97	TDS	534		mg/L	P345316	

Field ID: 20030081

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1990295	SM 2540 D-97	TSS	11		mg/L	P345305	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P345180	
1990298	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P345114	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P344860	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P345046	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P344894	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P345196	
1990301	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.029		mg P/L	P344714	
1990329	EPA 8321B	2,4-D	0.014		ug/L	P344670	MS
		Bentazon	0.010		ug/L	P344670	
		MCP	0.0088		ug/L	P344670	
		Triclopyr**	0.0040	U	ug/L	P344670	
		Imidacloprid	0.014		ug/L	P344670	
		Diuron	0.015		ug/L	P344670	
		Pyraclostrobin**	0.0020	U	ug/L	P344670	
		Primidone**	0.0040	U	ug/L	P344670	
		Linuron	0.0040	U	ug/L	P344670	
		Acetaminophen**	0.0080	U	ug/L	P344670	
		Fenuron	0.0080	U	ug/L	P344670	MS
		Imazapyr**	0.12		ug/L	P344670	
		Carbamazepine**	9.0E-04	I	ug/L	P344670	
		Fluridone**	0.013		ug/L	P344670	
		Hydrocodone**	8.0E-04	U	ug/L	P344670	
		Sucralose**	0.47		ug/L	P344561	
		Glyphosate**	0.39	I	ug/L	P344561	
		AMPA**	0.15	I	ug/L	P344561	
		Endothal**	0.10	U	ug/L	P344561	
		Glufosinate**	0.10	U	ug/L	P344561	MS

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 HERSCHEL ST

Collection Date/Time: 05/03/2018 12:55

Field ID: 20030139

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1990304	EPA 180.1 Rev. 2.0	Turbidity	13		NTU	P344728	
	SM 2320 B-97	Total Alkalinity	112		mg CaCO3/L	P345177	
	SM 2540 D-97	TSS	18		mg/L	P345307	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P345180	
1990305	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P345110	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.99		mg N/L	P344943	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P345046	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P344894	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P345196	
1990306	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.027		mg P/L	P344715	

Field ID: 20030139

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1990332	EPA 8321B	2,4-D	0.0038	I	ug/L	P344670	MS
		Bentazon	0.0066		ug/L	P344670	
		MCP	0.0020	U	ug/L	P344670	
		Triclopyr**	0.0040	U	ug/L	P344670	
		Imidacloprid	0.022		ug/L	P344670	
		Diuron	0.0046	I	ug/L	P344670	
		Pyraclostrobin**	0.0020	U	ug/L	P344670	
		Primidone**	0.0040	U	ug/L	P344670	
		Linuron	0.0051	I	ug/L	P344670	
		Acetaminophen**	0.0080	U	ug/L	P344670	
		Fenuron	0.0080	U	ug/L	P344670	MS
		Imazapyr**	0.086		ug/L	P344670	
		Carbamazepine**	0.0011	I	ug/L	P344670	
		Fluridone**	0.0048		ug/L	P344670	
		Hydrocodone**	8.0E-04	U	ug/L	P344670	
		Sucralose**	0.28	I	ug/L	P344930	

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: 05/03/2018 12:30

Field ID: 20030801

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1990296	EPA 180.1 Rev. 2.0	Turbidity	2.7	A	NTU	P344728	
	EPA 300.0 Rev. 2.1	Chloride	38		mg Cl/L	P345209	
		Sulfate	41		mg SO4/L	P345212	
	SM 2120 B	Color (true)	23		PCU	P344722	
	SM 2320 B-97	Total Alkalinity	202		mg CaCO3/L	P345177	
	SM 2540 C-97	TDS	345		mg/L	P345316	
	SM 2540 D-97	TSS	3	I	mg/L	P345305	
	SM 4500 F-C-97	Fluoride	0.18		mg F/L	P345180	
1990299	EPA 350.1 Rev. 2.0	Ammonia-N	0.049		mg N/L	P345114	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P344941	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P345046	
	EPA 365.1 Rev. 2.0	Total-P	0.066		mg P/L	P344894	
	SM 5310 B-00	Organic Carbon	7.3		mg C/L	P345196	
1990302	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.020		mg P/L	P344714	
1990330	EPA 8321B	2,4-D	0.0053	I	ug/L	P344670	MS
		Bentazon	0.0067		ug/L	P344670	
		MCP	0.0050	I	ug/L	P344670	
		Triclopyr**	0.0040	U	ug/L	P344670	
		Imidacloprid	0.054		ug/L	P344670	
		Diuron	0.0020	U	ug/L	P344670	
		Pyraclostrobin**	0.0020	U	ug/L	P344670	
		Primidone**	0.0091	I	ug/L	P344670	

Field ID: 20030801

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1990330	EPA 8321B	Linuron	0.0040	U	ug/L	P344670	
		Acetaminophen**	0.15		ug/L	P344670	
		Fenuron	0.0080	U	ug/L	P344670	MS
		Imazapyr**	0.10		ug/L	P344670	
		Carbamazepine**	0.0024		ug/L	P344670	
		Fluridone**	4.0E-04	U	ug/L	P344670	
		Hydrocodone**	8.0E-04	U	ug/L	P344670	
		Sucralose**	0.42		ug/L	P344561	
		Glyphosate**	0.32	I	ug/L	P344561	
		AMPA**	0.20	I	ug/L	P344561	
		Endothall**	0.10	U	ug/L	P344561	
		Glufosinate**	0.10	U	ug/L	P344561	MS

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: BUTCHER PEN CR AT WESCONNETT

Collection Date/Time: 05/03/2018 12:05

Field ID: 20030760

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1990297	EPA 180.1 Rev. 2.0	Turbidity	5.6		NTU	P344728	
	EPA 300.0 Rev. 2.1	Chloride	26		mg Cl/L	P345209	
		Sulfate	17		mg SO4/L	P345212	
	SM 2120 B	Color (true)	60		PCU	P344722	
	SM 2320 B-97	Total Alkalinity	112		mg CaCO3/L	P345177	
	SM 2540 C-97	TDS	206	A	mg/L	P345316	
	SM 2540 D-97	TSS	4	IA	mg/L	P345305	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P345180	
1990300	EPA 350.1 Rev. 2.0	Ammonia-N	0.15		mg N/L	P345114	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P344943	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P345046	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P344894	
	SM 5310 B-00	Organic Carbon	8.7		mg C/L	P345196	
1990303	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.058		mg P/L	P344714	
1990331	EPA 8321B	2,4-D	0.0023	I	ug/L	P344670	MS
		Bentazon	0.0060		ug/L	P344670	
		MCP	0.0037	I	ug/L	P344670	
		Triclopyr**	0.0040	U	ug/L	P344670	
		Imidacloprid	0.014		ug/L	P344670	
		Diuron	0.0020	U	ug/L	P344670	
		Pyraclostrobin**	0.0020	U	ug/L	P344670	
		Primidone**	0.0040	U	ug/L	P344670	
		Linuron	0.0040	U	ug/L	P344670	
		Acetaminophen**	0.0080	U	ug/L	P344670	
		Fenuron	0.0080	U	ug/L	P344670	MS
		Imazapyr**	0.23		ug/L	P344670	

Field ID: 20030760

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1990331	EPA 8321B	Carbamazepine**	4.0E-04	U	ug/L	P344670	
		Fluridone**	5.9E-04	I	ug/L	P344670	
		Hydrocodone**	8.0E-04	U	ug/L	P344670	
		Sucralose**	0.12	I	ug/L	P344930	
		Glyphosate**	1.3		ug/L	P344930	
		AMPA**	0.61	J	ug/L	P344930	MS
		Endothall**	0.10	UJ	ug/L	P344930	MS
		Glufosinate**	0.10	UJ	ug/L	P344930	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: Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P344727

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P344728

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P345209

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P345212

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345110

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345114

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345294

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P344860

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P344941

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P344943

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345046

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P344894

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P344714

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P344715

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

Reference Method: EPA 8321B
Batch ID: P344561

Component	Result	Code	Units
AMPA	0.10	U	ug/L
Endothall	0.10	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P344561

Component	Result	Code	Units
Sucralose	0.10	U	ug/L

Reference Method: EPA 8321B
Batch ID: P344670

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P344930

Component	Result	Code	Units
AMPA	0.10	U	ug/L
Endothall	0.10	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.10	U	ug/L

Reference Method: SM 2120 B
Batch ID: P344722

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P345177

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

Reference Method: SM 2540 C-97
Batch ID: P345316

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P345305

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P345307

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P345180

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P345196

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P345209

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	96.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P345212

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345110

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345114

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345294

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P345294

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P344860

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P344941

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P344943

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P345046

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P344894

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P344714

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P344715

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

Reference Method: EPA 8321B
 Batch ID: P344561

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
AMPA	108		P	40 - 140
Endothall	104		P	40 - 140
Glufosinate	125		P	40 - 140
Glyphosate	136		P	40 - 140

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P344561

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	96.6		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P344670

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	61.4		P	40 - 150
Acetaminophen	109		P	30 - 150
Bentazon	72.8		P	30 - 150
Carbamazepine	85.7		P	40 - 150
Diuron	83.9		P	40 - 150
Fenuron	105		P	40 - 150
Fluridone	117		P	40 - 150
Hydrocodone	108		P	40 - 150
Imazapyr	93.6		P	40 - 150
Imidacloprid	108		P	40 - 160
Linuron	95.8		P	40 - 150
MCPP	94.5		P	40 - 150
Primidone	92.9		P	40 - 150
Pyraclostrobin	87.5		P	40 - 150
Triclopyr	94.6		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P344930

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
AMPA	93.2		P	40 - 140
Endothall	97.3		P	40 - 140
Glufosinate	95.9		P	40 - 140
Glyphosate	98.5		P	40 - 140
Sucralose	118		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P345177

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

Reference Method: SM 4500 F-C-97
Batch ID: P345180

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.1		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P345196

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P345209

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990231	Chloride	97.3		P	90 - 110
1990422	Chloride	91.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P345212

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990231	Sulfate	96.8		P	90 - 110
1990422	Sulfate	91.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345110

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989832	Ammonia-N	99.3	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345114

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990219	Ammonia-N	98.6	98.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345294

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990358	Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P344860

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990234	Kjeldahl Nitrogen	104	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P344941

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989659	Kjeldahl Nitrogen	101	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P344943

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990367	Kjeldahl Nitrogen	97.1	97.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345046

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990235	NO2NO3-N	96.4	96.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P344894

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990299	Total-P	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P344714

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990222	O-Phosphate-P	101	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P344715

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990306	O-Phosphate-P	94.2	91.7	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P344561

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989731	AMPA	95.5	101	P/P	40 - 140
1989731	Endothall	102	109	P/P	40 - 140
1989731	Glufosinate	164	165	F/F	40 - 140
1989731	Glyphosate	120	113	P/P	40 - 140
1989731	Sucralose	114	99.2	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P344670

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990379	2,4-D	35.2	52.4	F/P	40 - 150
1990379	Acetaminophen	70.6	76.6	P/P	30 - 150
1990379	Bentazon	77.2	92.0	P/P	30 - 150
1990379	Carbamazepine	54.3	53.2	P/P	40 - 150
1990379	Diuron	51.7	45.5	P/P	40 - 150
1990379	Fenuron	21.1	19.3	F/F	40 - 150
1990379	Fluridone	82.7	85.1	P/P	40 - 150
1990379	Hydrocodone	96.3	91.6	P/P	40 - 150
1990379	Imazapyr	87.7	88.4	P/P	40 - 150
1990379	Imidacloprid	132	135	P/P	40 - 160
1990379	Linuron	71.9	75.0	P/P	40 - 150
1990379	MCP	68.5	72.5	P/P	40 - 150
1990379	Primidone	80.6	77.0	P/P	40 - 150
1990379	Pyraclostrobin	70.8	78.0	P/P	40 - 150
1990379	Triclopyr	69.0	74.6	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P344930

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990331	AMPA	36.9	34.5	F/F	40 - 140
1990331	Endothall	169	160	F/F	40 - 140
1990331	Glufosinate	183	139	F/P	40 - 140
1990331	Glyphosate	51.9	59.6	P/P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P344930

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990331	Sucralose	77.9	77.2	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P345180

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990422	Fluoride	95.9	96.5	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P345196

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990298	Organic Carbon	98.0	100	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P344727

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990216	Turbidity	8.09	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P344728

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990296	Turbidity	2.93	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P345209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990231	Chloride	0.919	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P345212

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990231	Sulfate	0.456	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345110

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989832	Ammonia-N	0.805	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345114

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990219	Ammonia-N	0.151	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990358	Ammonia-N	0.661	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P344860

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990234	Kjeldahl Nitrogen	0.553	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P344941

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989659	Kjeldahl Nitrogen	3.92	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P344943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990367	Kjeldahl Nitrogen	0.0828	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990235	NO2NO3-N	0.476	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P344894

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990299	Total-P	0.440	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P344714

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990222	O-Phosphate-P	2.00	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P344715

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990306	O-Phosphate-P	2.09	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P344561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989731	AMPA	5.38	Spike	P	0 - 30
1989731	Endothall	6.59	Spike	P	0 - 30
1989731	Glufosinate	0.547	Spike	P	0 - 30
1989731	Glyphosate	5.74	Spike	P	0 - 30
1989731	Sucralose	12.9	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P344670

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990379	2,4-D	25.7	Spike	P	0 - 30
1990379	Acetaminophen	8.16	Spike	P	0 - 30
1990379	Bentazon	13.8	Spike	P	0 - 30
1990379	Carbamazepine	2.06	Spike	P	0 - 30
1990379	Diuron	12.8	Spike	P	0 - 30
1990379	Fenuron	1.90	Spike	P	0 - 30
1990379	Fluridone	2.89	Spike	P	0 - 30
1990379	Hydrocodone	5.03	Spike	P	0 - 30
1990379	Imazapyr	0.833	Spike	P	0 - 30
1990379	Imidacloprid	1.87	Spike	P	0 - 30
1990379	Linuron	4.18	Spike	P	0 - 30
1990379	MCPP	4.83	Spike	P	0 - 30
1990379	Primidone	4.55	Spike	P	0 - 30
1990379	Pyraclostrobin	9.63	Spike	P	0 - 30
1990379	Triclopyr	7.81	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P344930

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990331	AMPA	4.14	Spike	P	0 - 30
1990331	Endothall	5.17	Spike	P	0 - 30
1990331	Glufosinate	27.7	Spike	P	0 - 30
1990331	Glyphosate	7.12	Spike	P	0 - 30
1990331	Sucralose	0.843	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P344722

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990285	Color (true)	9.06	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P345177

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990422	Total Alkalinity	0.141	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P345316

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990297	TDS	7.77	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P345180

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990422	Fluoride	0.473	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P345196

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990298	Organic Carbon	1.46	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: 1990329
Field Sample ID: 20030081

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	70.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	85.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	60.1	P	30 - 160
EPA 8321B	Diuron-d6	57.6	P	30 - 160
EPA 8321B	Endothall-d6	126	P	50 - 160
EPA 8321B	Glyphosate 13C 15N	49.2	P	40 - 160
EPA 8321B	Primidone-d5	84.3	P	30 - 160
EPA 8321B	Sucralose-d6	59.8	P	40 - 160

Lab Sample ID: 1990330
Field Sample ID: 20030801

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	71.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	107	P	30 - 160
EPA 8321B	Carbamazepine-d10	66.8	P	30 - 160
EPA 8321B	Diuron-d6	60.8	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1990330
Field Sample ID: 20030801

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Endothall-d6	133	P	50 - 160
EPA 8321B	Glyphosate 13C 15N	41.2	P	40 - 160
EPA 8321B	Primidone-d5	133	P	30 - 160
EPA 8321B	Sucralose-d6	71.5	P	40 - 160

Lab Sample ID: 1990331
Field Sample ID: 20030760

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	73.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	106	P	30 - 160
EPA 8321B	Carbamazepine-d10	53.4	P	30 - 160
EPA 8321B	Diuron-d6	61.1	P	30 - 160
EPA 8321B	Endothall-d6	131	P	50 - 160
EPA 8321B	Glyphosate 13C 15N	70.6	P	40 - 160
EPA 8321B	Primidone-d5	115	P	30 - 160
EPA 8321B	Sucralose-d6	67.6	P	40 - 160

Lab Sample ID: 1990332
Field Sample ID: 20030139

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	74.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	98.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	52.6	P	30 - 160
EPA 8321B	Diuron-d6	57.2	P	30 - 160
EPA 8321B	Primidone-d5	116	P	30 - 160
EPA 8321B	Sucralose-d6	78.1	P	40 - 160

Lab Sample ID: 1990333
Field Sample ID: 20030617

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	69.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	93.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	46.9	P	30 - 160
EPA 8321B	Diuron-d6	52.9	P	30 - 160
EPA 8321B	Primidone-d5	95.2	P	30 - 160
EPA 8321B	Sucralose-d6	55.5	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A83676
Included Lab Sample IDs: 1990301, 1990302, 1990303, 1990306, 1990309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.6	P/P	90 - 110
O-Phosphate-P	99.3	101	P/P	90 - 110
O-Phosphate-P	99.6	99.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A83677

Included Lab Sample IDs: 1990295, 1990296, 1990297

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	104	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A83678

Included Lab Sample IDs: 1990295, 1990296, 1990297, 1990304, 1990307

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A83732

Included Lab Sample IDs: 1990295, 1990296, 1990297

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	94.1	96.8	P/P	90 - 110
Sulfate	95.1	95.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A83792

Included Lab Sample IDs: 1990298, 1990299, 1990300, 1990305, 1990308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	103	P/P	90 - 110
Total-P	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A83794

Included Lab Sample IDs: 1990298

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.3	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A83806

Included Lab Sample IDs: 1990298, 1990299, 1990300, 1990305, 1990308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A83815

Included Lab Sample IDs: 1990299

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A83820

Included Lab Sample IDs: 1990298, 1990299, 1990300, 1990305

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	101	P/P	90 - 110
Ammonia-N	98.4	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A83824

Included Lab Sample IDs: 1990300, 1990305, 1990308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	99.5	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A83837

Included Lab Sample IDs: 1990295, 1990296, 1990297, 1990304, 1990307

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.0	P/P	90 - 110
Total Alkalinity	99.0	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A83837

Included Lab Sample IDs: 1990295, 1990296, 1990297, 1990304, 1990307

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.1	98.1	P/P	90 - 110
Fluoride	97.6	97.1	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A83843

Included Lab Sample IDs: 1990298, 1990299, 1990300, 1990305, 1990308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.2	97.4	P/P	90 - 110
Organic Carbon	97.4	97.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A83883

Included Lab Sample IDs: 1990329

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	141	128	P/P	60 - 150
Carbamazepine	123	113	P/P	60 - 150
Diuron	128	125	P/P	60 - 150
Fenuron	109	113	P/P	60 - 150
Fluridone	122	127	P/P	60 - 160
Hydrocodone	124	120	P/P	60 - 150
Imazapyr	105	103	P/P	50 - 150
Imidacloprid	97.4	103	P/P	60 - 150
Linuron	107	112	P/P	60 - 150
Primidone	93.6	101	P/P	60 - 150
Pyraclostrobin	103	96.3	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A83887

Included Lab Sample IDs: 1990329, 1990330, 1990331, 1990332, 1990333

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	104	106	P/P	50 - 150
Bentazon	107	109	P/P	50 - 150
MCP	106	105	P/P	50 - 150
Tricopyr	111	104	P/P	50 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A83889

Included Lab Sample IDs: 1990308

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

Reference Method: EPA 8321B

Run ID: A83892

Included Lab Sample IDs: 1990330, 1990331, 1990332, 1990333

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	113	116	P/P	60 - 150
Carbamazepine	116	125	P/P	60 - 150
Diuron	108	117	P/P	60 - 150
Fenuron	109	110	P/P	60 - 150
Fluridone	103	110	P/P	60 - 160
Hydrocodone	93.4	96.1	P/P	60 - 150
Imazapyr	105	106	P/P	50 - 150
Imidacloprid	101	108	P/P	60 - 150
Linuron	108	109	P/P	60 - 150
Primidone	101	102	P/P	60 - 150
Pyraclorobin	103	99.7	P/P	60 - 150

Reference Method: EPA 8321B

Run ID: A83902

Included Lab Sample IDs: 1990329, 1990330

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	97.4	104	P/P	60 - 160
Endothall	112	103	P/P	60 - 160
Glufosinate	109	99.9	P/P	60 - 160
Glyphosate	106	102	P/P	60 - 160
Sucralose	157	110	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A83982

Included Lab Sample IDs: 1990331, 1990332, 1990333

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	97.2	109	P/P	60 - 160
Endothall	110	105	P/P	60 - 160
Glufosinate	98.2	108	P/P	60 - 160
Glyphosate	86.8	155	P/P	60 - 160
Sucralose	135	142	P/P	60 - 160

Quality Assurance Report Calibration Verification

* 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					8.09	
	Turbidity					2.93	
EPA 300.0 Rev. 2.1	Chloride	96.2	97.3	91.2		0.919	
	Sulfate	95.9	96.8	91.0		0.456	
EPA 350.1 Rev. 2.0	Ammonia-N	101	99.3	100			0.805
	Ammonia-N	101	98.6	98.8			0.151
	Ammonia-N	102	101	102			0.661
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	104	104			0.553
	Kjeldahl Nitrogen	106	101	106			3.92
	Kjeldahl Nitrogen	102	97.1	97.0			0.0828
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	96.4	96.0			0.476
EPA 365.1 Rev. 2.0	Total-P	99.0	103	102			0.440
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.2	101	99.1			2.00
	O-Phosphate-P	101	94.2	91.7			2.09
EPA 8321B	2,4-D	61.4	35.2	52.4			25.7
	Acetaminophen	109	70.6	76.6			8.16
	AMPA	108	95.5	101			5.38
	AMPA	93.2	36.9	34.5			4.14
	Bentazon	72.8	77.2	92.0			13.8
	Carbamazepine	85.7	54.3	53.2			2.06
	Diuron	83.9	51.7	45.5			12.8
	Endothall	104	102	109			6.59
	Endothall	97.3	169	160			5.17
	Fenuron	105	21.1	19.3			1.90
	Fluridone	117	82.7	85.1			2.89
	Glufosinate	125	164	165			0.547
	Glufosinate	95.9	183	139			27.7
	Glyphosate	136	120	113			5.74
	Glyphosate	98.5	51.9	59.6			7.12
	Hydrocodone	108	96.3	91.6			5.03
	Imazapyr	93.6	87.7	88.4			0.833
	Imidacloprid	108	132	135			1.87
	Linuron	95.8	71.9	75.0			4.18
	MCPP	94.5	68.5	72.5			4.83
	Primidone	92.9	80.6	77.0			4.55
	Pyraclostrobin	87.5	70.8	78.0			9.63
	Sucralose	96.6	114	99.2			12.9
	Sucralose	118	77.9	77.2			0.843
	Triclopyr	94.6	69.0	74.6			7.81
SM 2120 B	Color (true)					9.06	
SM 2320 B-97	Total Alkalinity	101				0.141	
SM 2540 C-97	TDS					7.77	
SM 4500 F-C-97	Fluoride	95.1	95.9	96.5			0.473
SM 5310 B-00	Organic Carbon	100	98.0	100			1.46

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1990295, 1990296, 1990297, 1990304, 1990307
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1990295, 1990296, 1990297
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1990295, 1990296, 1990297
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1990298, 1990299, 1990300, 1990305, 1990308
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1990298, 1990299, 1990300, 1990305, 1990308
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1990298, 1990299, 1990300, 1990305, 1990308
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1990298, 1990299, 1990300, 1990305, 1990308
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1990301, 1990302, 1990303, 1990306, 1990309
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1990329, 1990330, 1990331, 1990332, 1990333
SM 2120 B / E31780	True Color measured at 450 nm	1990295, 1990296, 1990297
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1990295, 1990296, 1990297, 1990304, 1990307
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1990295, 1990296, 1990297
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1990295, 1990296, 1990297, 1990304, 1990307
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1990295, 1990296, 1990297, 1990304, 1990307
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1990298, 1990299, 1990300, 1990305, 1990308

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	05/04/2018			05/04/2018 15:24	Tanya Welborn	1990295, 1990296, 1990297, 1990304, 1990307
EPA 300.0 Rev. 2.1	05/04/2018			05/10/2018 15:34	Lipi Saha	1990295
	05/04/2018			05/10/2018 15:46	Lipi Saha	1990296
	05/04/2018			05/10/2018 15:58	Lipi Saha	1990297
EPA 350.1 Rev. 2.0	05/04/2018			05/10/2018 11:27	Ping Hua	1990305
	05/04/2018			05/10/2018 13:31	Ping Hua	1990298
	05/04/2018			05/10/2018 13:33	Ping Hua	1990299
	05/04/2018			05/10/2018 13:34	Ping Hua	1990300
	05/04/2018			05/11/2018 10:20	Ping Hua	1990308
EPA 351.2 Rev. 2.0	05/04/2018	05/08/2018 11:00	Adrian Shelby	05/10/2018 11:38	Joseph Suarez	1990298
	05/04/2018	05/09/2018 11:30	Adrian Shelby	05/10/2018 14:34	Joseph Suarez	1990299
	05/04/2018	05/09/2018 11:30	Adrian Shelby	05/11/2018 11:19	Joseph Suarez	1990300
	05/04/2018	05/09/2018 11:30	Adrian Shelby	05/11/2018 11:20	Joseph Suarez	1990305
	05/04/2018	05/09/2018 11:30	Adrian Shelby	05/11/2018 11:22	Joseph Suarez	1990308
EPA 353.2 Rev. 2.0	05/04/2018			05/10/2018 12:23	Lauren Bottorf	1990298
	05/04/2018			05/10/2018 12:25	Lauren Bottorf	1990299
	05/04/2018			05/10/2018 12:26	Lauren Bottorf	1990300
	05/04/2018			05/10/2018 12:27	Lauren Bottorf	1990305
	05/04/2018			05/10/2018 12:28	Lauren Bottorf	1990308
EPA 365.1 Rev. 2.0	05/04/2018	05/08/2018 12:00	Sima Feizi	05/10/2018 09:13	Beverly Y. Sanders	1990299
	05/04/2018	05/08/2018 12:00	Sima Feizi	05/10/2018 09:23	Beverly Y. Sanders	1990298
	05/04/2018	05/08/2018 12:00	Sima Feizi	05/10/2018 09:24	Beverly Y. Sanders	1990300
	05/04/2018	05/08/2018 12:00	Sima Feizi	05/10/2018 09:25	Beverly Y. Sanders	1990305
	05/04/2018	05/08/2018 12:00	Sima Feizi	05/10/2018 09:26	Beverly Y. Sanders	1990308
EPA 365.1 Rev. 2.0 dissolved	05/04/2018			05/04/2018 14:48	Megan Treadwell	1990306
	05/04/2018			05/04/2018 15:13	Megan Treadwell	1990301
	05/04/2018			05/04/2018 15:14	Megan Treadwell	1990302
	05/04/2018			05/04/2018 15:15	Megan Treadwell	1990303
	05/04/2018			05/04/2018 15:20	Megan Treadwell	1990309
EPA 8321B	05/04/2018	05/04/2018 17:00	Hoor Shaik	05/04/2018 18:38	Juyoung Kim	1990329
	05/04/2018	05/04/2018 17:00	Hoor Shaik	05/04/2018 18:56	Juyoung Kim	1990330
	05/04/2018	05/09/2018 09:00	Hoor Shaik	05/10/2018 11:10	Juyoung Kim	1990329
	05/04/2018	05/09/2018 09:00	Hoor Shaik	05/11/2018 11:57	Juyoung Kim	1990329
	05/04/2018	05/09/2018 09:00	Hoor Shaik	05/11/2018 12:32	Juyoung Kim	1990330
	05/04/2018	05/09/2018 09:00	Hoor Shaik	05/11/2018 13:06	Juyoung Kim	1990331
	05/04/2018	05/09/2018 09:00	Hoor Shaik	05/11/2018 13:41	Juyoung Kim	1990332
	05/04/2018	05/09/2018 09:00	Hoor Shaik	05/11/2018 14:16	Juyoung Kim	1990333
	05/04/2018	05/09/2018 09:00	Hoor Shaik	05/15/2018 01:53	Juyoung Kim	1990330
	05/04/2018	05/09/2018 09:00	Hoor Shaik	05/15/2018 02:27	Juyoung Kim	1990331

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	05/04/2018	05/09/2018 09:00	Hoor Shaik	05/15/2018 03:02	Juyoung Kim	1990332
	05/04/2018	05/09/2018 09:00	Hoor Shaik	05/15/2018 03:37	Juyoung Kim	1990333
	05/04/2018	05/09/2018 13:00	Mohammad Ghaffari	05/10/2018 10:35	Juyoung Kim	1990333
	05/04/2018	05/09/2018 13:00	Mohammad Ghaffari	05/10/2018 10:53	Juyoung Kim	1990332
	05/04/2018	05/09/2018 13:00	Mohammad Ghaffari	05/10/2018 11:12	Juyoung Kim	1990331
SM 2120 B	05/04/2018			05/04/2018 17:01	Tanya Welborn	1990295
	05/04/2018			05/04/2018 17:02	Tanya Welborn	1990296
	05/04/2018			05/04/2018 17:03	Tanya Welborn	1990297
SM 2320 B-97	05/04/2018			05/12/2018 02:49	Dale L. Simmons	1990296
	05/04/2018			05/12/2018 02:59	Dale L. Simmons	1990297
	05/04/2018			05/12/2018 05:14	Dale L. Simmons	1990295
	05/04/2018			05/12/2018 05:24	Dale L. Simmons	1990304
	05/04/2018			05/12/2018 05:35	Dale L. Simmons	1990307
SM 2540 C-97	05/04/2018			05/09/2018 15:08	Yijie Li	1990295, 1990296, 1990297
SM 2540 D-97	05/04/2018			05/09/2018 15:08	Yijie Li	1990295, 1990296, 1990297, 1990304, 1990307
SM 4500 F-C-97	05/04/2018			05/12/2018 02:49	Dale L. Simmons	1990296
	05/04/2018			05/12/2018 02:59	Dale L. Simmons	1990297
	05/04/2018			05/12/2018 05:14	Dale L. Simmons	1990295
	05/04/2018			05/12/2018 05:24	Dale L. Simmons	1990304
	05/04/2018			05/12/2018 05:35	Dale L. Simmons	1990307
SM 5310 B-00	05/04/2018			05/11/2018 20:55	Julia Storbeck	1990298
	05/04/2018			05/11/2018 22:35	Julia Storbeck	1990299
	05/04/2018			05/11/2018 22:47	Julia Storbeck	1990300
	05/04/2018			05/11/2018 22:59	Julia Storbeck	1990305
	05/04/2018			05/11/2018 23:12	Julia Storbeck	1990308