Chemical Analysis Report

SW-DIST-2018-04-12-01

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

Event Description: **Spartman, Flint, Bellows, Baker**
Request ID: **RQ-2018-04-09-07**
Customer: **SW-DIST**
Project ID: **SMP**

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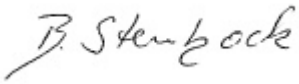
Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator Date Certified: 03-MAY-2018 16:08



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: BAKER CREEK @ THONOTOSASSA RD **Collection Date/Time: 04/11/2018 09:45**

Field ID: G2SW0012 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1984002	EPA 8321B	2,4-D	0.076		ug/L	P343184	
		Bentazon	0.0082		ug/L	P343184	
		MCPP	0.0020	U	ug/L	P343184	
		Triclopyr**	0.0040	U	ug/L	P343184	
		Imidacloprid	0.046		ug/L	P343184	MS
		Diuron	0.016		ug/L	P343184	
		Pyraclostrobin**	0.017		ug/L	P343184	
		Primidone**	0.0040	U	ug/L	P343184	
		Linuron	0.0040	U	ug/L	P343184	
		Acetaminophen**	0.0080	U	ug/L	P343184	
		Fenuron	0.018	I	ug/L	P343184	
		Imazapyr**	0.17		ug/L	P343184	
		Carbamazepine**	9.0E-04	I	ug/L	P343184	
		Fluridone**	0.0014	I	ug/L	P343184	
		Hydrocodone**	8.0E-04	U	ug/L	P343184	
		Sucralose**	0.19	I	ug/L	P343272	
		Glyphosate**	5.8		ug/L	P343272	
		AMPA**	2.4		ug/L	P343272	MS
		Endothall**	0.10	U	ug/L	P343272	
		Glufosinate**	0.10	U	ug/L	P343272	

Sample Location: BELLOWS LAKE OUTLET DUP **Collection Date/Time: 04/11/2018 11:45**

Field ID: G1SW0060_DUP Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1983952	EPA 180.1 Rev. 2.0	Turbidity	16		NTU	P343335	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P343435	
		Sulfate	15		mg SO4/L	P343438	
	SM 2120 B	Color (true)	65		PCU	P343303	
	SM 2320 B-97	Total Alkalinity	105		mg CaCO3/L	P343812	
	SM 2540 C-97	TDS	149		mg/L	P343628	
	SM 2540 D-97	TSS	20		mg/L	P343520	
	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P343816	
1983955	EPA 350.1 Rev. 2.0	Ammonia-N	4.6		mg N/L	P343689	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	6.6		mg N/L	P343422	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.022		mg N/L	P343571	
	EPA 365.1 Rev. 2.0	Total-P	0.70		mg P/L	P343537	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P343737	
1983958	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.48		mg P/L	P343296	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The result was confirmed on 4/20/2018.

Sample Location: Field Blank **Collection Date/Time: 04/11/2018 12:20**

Field ID: BLANK Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1983953	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P343336	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P343435	
		Sulfate	0.20	U	mg SO4/L	P343438	
	SM 2120 B	Color (true)	2.5	U	PCU	P343300	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P343812	
	SM 2540 C-97	TDS	15	U	mg/L	P343628	
	SM 2540 D-97	TSS	2	U	mg/L	P343520	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P343816	
1983956	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P343689	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P343422	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P343571	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P343537	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P343737	
1983959	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P343296	

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: SPARTMAN BRANCH AT HARVEY TEW RD **Collection Date/Time: 04/11/2018 10:25**

Field ID: G2SW0067 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1984003	EPA 8321B	2,4-D	0.0020	U	ug/L	P343184	
		Bentazon	0.0098		ug/L	P343184	
		MCPP	0.0020	U	ug/L	P343184	
		Triclopyr**	0.0040	U	ug/L	P343184	
		Imidacloprid	0.027		ug/L	P343184	MS
		Diuron	0.0020	U	ug/L	P343184	
		Pyraclostrobin**	0.0020	U	ug/L	P343184	
		Primidone**	0.0040	U	ug/L	P343184	
		Linuron	0.0040	U	ug/L	P343184	
		Acetaminophen**	0.0080	U	ug/L	P343184	
		Fenuron	0.016	U	ug/L	P343184	
		Imazapyr**	0.023		ug/L	P343184	
		Carbamazepine**	4.0E-04	U	ug/L	P343184	
		Fluridone**	0.0046		ug/L	P343184	
		Hydrocodone**	8.0E-04	U	ug/L	P343184	
		Sucralose**	0.10	U	ug/L	P343272	
		Glyphosate**	1.9		ug/L	P343272	
		AMPA**	0.66		ug/L	P343272	MS
		Endothall**	0.10	U	ug/L	P343272	
		Glufosinate**	0.10	U	ug/L	P343272	

Sample Location: BELLOWS LAKE OUTLET **Collection Date/Time: 04/11/2018 11:40**

Field ID: G1SW0060 Matrix: W-SURF-FRH

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

Field ID: G1SW0060 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1983954	EPA 180.1 Rev. 2.0	Turbidity	16		NTU	P343336	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P343435	
		Sulfate	15		mg SO4/L	P343438	
	SM 2120 B	Color (true)	65		PCU	P343303	
	SM 2320 B-97	Total Alkalinity	106		mg CaCO3/L	P343952	
	SM 2540 C-97	TDS	156		mg/L	P343628	
	SM 2540 D-97	TSS	14		mg/L	P343520	
	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P343956	
1983957	EPA 350.1 Rev. 2.0	Ammonia-N	4.5		mg N/L	P343689	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	6.4		mg N/L	P343422	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.020		mg N/L	P343571	
	EPA 365.1 Rev. 2.0	Total-P	0.67		mg P/L	P343537	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P343737	
1983960	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.48		mg P/L	P343296	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The result was confirmed on 4/20/2018.

Sample Location: FLINT CREEK @ KNIGHTS GRIFFIN RD **Collection Date/Time: 04/11/2018 10:45**

Field ID: G2SW0066 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1984004	EPA 8321B	2,4-D	0.0077	I	ug/L	P343184	
		Bentazon	0.0021	I	ug/L	P343184	
		MCPP	0.0020	U	ug/L	P343184	
		Triclopyr**	0.0040	U	ug/L	P343184	
		Imidacloprid	0.0065	I	ug/L	P343184	MS
		Diuron	0.40		ug/L	P343184	
		Pyraclostrobin**	0.0020	U	ug/L	P343184	
		Primidone**	0.0040	U	ug/L	P343184	
		Linuron	0.0040	U	ug/L	P343184	
		Acetaminophen**	0.0080	U	ug/L	P343184	
		Fenuron	0.11		ug/L	P343184	
		Imazapyr**	0.10		ug/L	P343184	
		Carbamazepine**	4.0E-04	U	ug/L	P343184	
		Fluridone**	0.0047		ug/L	P343184	
		Hydrocodone**	8.0E-04	U	ug/L	P343184	
		Sucralose**	0.12	I	ug/L	P343272	
		Glyphosate**	0.35	I	ug/L	P343272	
		AMPA**	1.0		ug/L	P343272	MS
		Endothall**	0.10	U	ug/L	P343272	
		Glufosinate**	0.10	U	ug/L	P343272	

Sample Location: FLINT CREEK @ SR301, TP39 **Collection Date/Time: 04/11/2018 11:05**

Field ID: G2SW0004 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1984005	EPA 8321B	2,4-D	0.0020	U	ug/L	P343184	
		Bentazon	0.0018	I	ug/L	P343184	
		MCPP	0.0020	U	ug/L	P343184	
		Triclopyr**	0.0040	U	ug/L	P343184	
		Imidacloprid	0.0062	I	ug/L	P343184	MS
		Diuron	0.17		ug/L	P343184	
		Pyraclostrobin**	0.0020	U	ug/L	P343184	
		Primidone**	0.0040	U	ug/L	P343184	
		Linuron	0.0040	U	ug/L	P343184	
		Acetaminophen**	0.0080	U	ug/L	P343184	
		Fenuron	0.097		ug/L	P343184	
		Imazapyr**	0.084		ug/L	P343184	
		Carbamazepine**	4.0E-04	U	ug/L	P343184	
		Fluridone**	0.0027	I	ug/L	P343184	
		Hydrocodone**	8.0E-04	U	ug/L	P343184	
		Sucralose**	0.10	U	ug/L	P343272	
		Glyphosate**	0.47		ug/L	P343272	
		AMPA**	0.82		ug/L	P343272	MS
		Endothall**	0.10	U	ug/L	P343272	
		Glufosinate**	0.10	U	ug/L	P343272	

Sample Location: SPARTMAN BRANCH @ US 92 **Collection Date/Time: 04/11/2018 10:05**

Field ID: G2SW0013 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1984006	EPA 8321B	2,4-D	0.0033	I	ug/L	P343184	
		Bentazon	0.0080		ug/L	P343184	
		MCPP	0.0020	U	ug/L	P343184	
		Triclopyr**	0.0040	U	ug/L	P343184	
		Imidacloprid	0.011		ug/L	P343184	MS
		Diuron	0.0020	U	ug/L	P343184	
		Pyraclostrobin**	0.0020	U	ug/L	P343184	
		Primidone**	0.0040	U	ug/L	P343184	
		Linuron	0.0040	U	ug/L	P343184	
		Acetaminophen**	0.0080	U	ug/L	P343184	
		Fenuron	0.016	U	ug/L	P343184	
		Imazapyr**	0.021		ug/L	P343184	
		Carbamazepine**	4.0E-04	U	ug/L	P343184	
		Fluridone**	0.0046		ug/L	P343184	
		Hydrocodone**	8.0E-04	U	ug/L	P343184	
		Sucralose**	0.10	U	ug/L	P343272	
		Glyphosate**	0.96		ug/L	P343272	
		AMPA**	0.28	I	ug/L	P343272	MS
		Endothall**	0.10	U	ug/L	P343272	
		Glufosinate**	0.10	U	ug/L	P343272	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P343335

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P343336

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343435

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343438

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343689

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343422

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343571

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343537

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P343296

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P343184

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	0.016	U	ug/L
Fluridone	8.0E-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: P343272

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: P343300

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P343303

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P343812

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

Reference Method: SM 2320 B-97
Batch ID: P343952

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

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P343628

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P343520

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P343816

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P343956

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P343737

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: P343435

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343438

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343689

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343422

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343422

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: P343571

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: P343537

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P343296

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

Reference Method: EPA 8321B
Batch ID: P343184

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	78.5		P	40 - 150
Acetaminophen	91.0		P	30 - 150
Bentazon	68.4		P	30 - 150
Carbamazepine	80.4		P	40 - 150
Diuron	63.8		P	40 - 150
Fenuron	110		P	40 - 150
Fluridone	61.9		P	40 - 150
Hydrocodone	103		P	40 - 150
Imazapyr	65.5		P	40 - 150
Imidacloprid	104		P	40 - 160
Linuron	72.0		P	40 - 150
MCPP	64.0		P	40 - 150
Primidone	106		P	40 - 150
Pyraclostrobin	69.2		P	40 - 150
Triclopyr	63.4		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P343272

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
AMPA	81.1		P	40 - 140
Endothall	100		P	40 - 140
Glufosinate	68.5		P	40 - 140
Glyphosate	94.4		P	40 - 140
Sucralose	113		P	40 - 150

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P343812

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

Reference Method: SM 2320 B-97
Batch ID: P343952

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

Reference Method: SM 4500 F-C-97
Batch ID: P343816

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.8		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P343956

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.3		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P343737

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.4		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343435

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1983697	Chloride	98.7		P	90 - 110
1983952	Chloride	94.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343438

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1983697	Sulfate	97.0		P	90 - 110
1983952	Sulfate	94.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343689

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1983923	Ammonia-N	97.2	97.0	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343422

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1983922	Kjeldahl Nitrogen	97.3	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343571

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1984047	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343537

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1984025	Total-P	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P343296

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1983949	O-Phosphate-P	99.0	100	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P343184

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1983224	2,4-D	130	136	P/P	40 - 150
1983224	Acetaminophen	122	128	P/P	30 - 150
1983224	Bentazon	41.1	43.3	P/P	30 - 150
1983224	Carbamazepine	103	103	P/P	40 - 150
1983224	Diuron	79.4	73.3	P/P	40 - 150
1983224	Fenuron	111	108	P/P	40 - 150
1983224	Fluridone	61.8	70.7	P/P	40 - 150
1983224	Hydrocodone	147	141	P/P	40 - 150
1983224	Imazapyr	89.8	74.8	P/P	40 - 150
1983224	Imidacloprid	248	245	F/F	40 - 160
1983224	Linuron	89.4	88.5	P/P	40 - 150
1983224	MCPP	96.0	99.7	P/P	40 - 150
1983224	Primidone	130	122	P/P	40 - 150
1983224	Pyraclostrobin	75.5	75.8	P/P	40 - 150
1983224	Triclopyr	92.0	96.4	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P343272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1983451	AMPA	34.7	35.8	F/F	40 - 140
1983451	Endothall	113	112	P/P	40 - 140
1983451	Glufosinate	92.3	92.6	P/P	40 - 140
1983451	Glyphosate	61.1	61.9	P/P	40 - 140
1983451	Sucralose	60.7	59.3	P/P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P343816

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1983728	Fluoride	96.1	96.9	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P343956

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1984236	Fluoride	95.2	95.7	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P343737

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1983923	Organic Carbon	95.6	96.2	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P343335

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1983877	Turbidity	10.3	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P343336

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1984235	Turbidity	1.40	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343435

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1983697	Chloride	0.0356	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343438

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1983697	Sulfate	0.135	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343689

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1983923	Ammonia-N	0.0974	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343422

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1983922	Kjeldahl Nitrogen	1.94	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343571

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1984047	NO2NO3-N	0.388	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343537

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1984025	Total-P	0.357	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P343296

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1983949	O-Phosphate-P	0.623	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P343184

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1983224	2,4-D	4.71	Spike	P	0 - 30
1983224	Acetaminophen	4.60	Spike	P	0 - 30
1983224	Bentazon	5.22	Spike	P	0 - 30
1983224	Carbamazepine	0.542	Spike	P	0 - 30
1983224	Diuron	8.02	Spike	P	0 - 30
1983224	Fenuron	2.41	Spike	P	0 - 30
1983224	Fluridone	13.5	Spike	P	0 - 30
1983224	Hydrocodone	4.30	Spike	P	0 - 30
1983224	Imazapyr	15.4	Spike	P	0 - 30
1983224	Imidacloprid	1.39	Spike	P	0 - 30
1983224	Linuron	0.996	Spike	P	0 - 30
1983224	MCPP	3.82	Spike	P	0 - 30
1983224	Primidone	6.33	Spike	P	0 - 30
1983224	Pyraclostrobin	0.414	Spike	P	0 - 30
1983224	Triclopyr	4.67	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P343272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1983451	AMPA	2.07	Spike	P	0 - 30
1983451	Endothall	0.886	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P343272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1983451	Glufosinate	0.325	Spike	P	0 - 30
1983451	Glyphosate	0.691	Spike	P	0 - 30
1983451	Sucralose	0.882	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P343300

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1984046	Color (true)	2.14	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P343303

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1983783	Color (true)	0.911	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P343812

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1983728	Total Alkalinity	0.445	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P343952

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1984236	Total Alkalinity	0.123	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P343628

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1983921	TDS	1.28	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P343816

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1983728	Fluoride	0.480	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P343956

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

Quality Assurance Report
Precision

Reference Method: SM 4500 F-C-97
Batch ID: P343956

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1984236	Fluoride	0.514	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P343737

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1983923	Organic Carbon	0.371	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: 1984002
Field Sample ID: G2SW0012

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	110	P	30 - 160
EPA 8321B	2,4-D-d3	110	P	30 - 160
EPA 8321B	Acetaminophen-d4	128	P	30 - 160
EPA 8321B	Acetaminophen-d4	128	P	30 - 160
EPA 8321B	Carbamazepine-d10	130	P	30 - 160
EPA 8321B	Carbamazepine-d10	130	P	30 - 160
EPA 8321B	Diuron-d6	93.0	P	30 - 160
EPA 8321B	Diuron-d6	93.0	P	30 - 160
EPA 8321B	Endothall-d6	93.5	P	40 - 160
EPA 8321B	Endothall-d6	93.5	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	46.5	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	46.5	P	40 - 160
EPA 8321B	Primidone-d5	148	P	30 - 160
EPA 8321B	Primidone-d5	148	P	30 - 160
EPA 8321B	Sucralose-d6	63.3	P	40 - 160
EPA 8321B	Sucralose-d6	63.3	P	40 - 160

Lab Sample ID: 1984003
Field Sample ID: G2SW0067

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	139	P	30 - 160
EPA 8321B	2,4-D-d3	139	P	30 - 160
EPA 8321B	Acetaminophen-d4	122	P	30 - 160
EPA 8321B	Acetaminophen-d4	122	P	30 - 160
EPA 8321B	Carbamazepine-d10	125	P	30 - 160
EPA 8321B	Carbamazepine-d10	125	P	30 - 160
EPA 8321B	Diuron-d6	83.9	P	30 - 160
EPA 8321B	Diuron-d6	83.9	P	30 - 160
EPA 8321B	Endothall-d6	93.4	P	40 - 160
EPA 8321B	Endothall-d6	93.4	P	40 - 160

Quality Assurance Report
Surrogates

Lab Sample ID: 1984003
Field Sample ID: G2SW0067

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Glyphosate 13C 15N	66.5	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	66.5	P	40 - 160
EPA 8321B	Primidone-d5	124	P	30 - 160
EPA 8321B	Primidone-d5	124	P	30 - 160
EPA 8321B	Sucralose-d6	58.4	P	40 - 160
EPA 8321B	Sucralose-d6	58.4	P	40 - 160

Lab Sample ID: 1984004
Field Sample ID: G2SW0066

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	111	P	30 - 160
EPA 8321B	2,4-D-d3	111	P	30 - 160
EPA 8321B	Acetaminophen-d4	134	P	30 - 160
EPA 8321B	Acetaminophen-d4	134	P	30 - 160
EPA 8321B	Carbamazepine-d10	112	P	30 - 160
EPA 8321B	Carbamazepine-d10	112	P	30 - 160
EPA 8321B	Diuron-d6	79.6	P	30 - 160
EPA 8321B	Diuron-d6	79.6	P	30 - 160
EPA 8321B	Endothall-d6	88.6	P	40 - 160
EPA 8321B	Endothall-d6	88.6	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	81.4	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	81.4	P	40 - 160
EPA 8321B	Primidone-d5	139	P	30 - 160
EPA 8321B	Primidone-d5	139	P	30 - 160
EPA 8321B	Sucralose-d6	61.1	P	40 - 160
EPA 8321B	Sucralose-d6	61.1	P	40 - 160

Lab Sample ID: 1984005
Field Sample ID: G2SW0004

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	91.6	P	30 - 160
EPA 8321B	2,4-D-d3	91.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	110	P	30 - 160
EPA 8321B	Acetaminophen-d4	110	P	30 - 160
EPA 8321B	Carbamazepine-d10	92.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	92.6	P	30 - 160
EPA 8321B	Diuron-d6	52.7	P	30 - 160
EPA 8321B	Diuron-d6	52.7	P	30 - 160
EPA 8321B	Endothall-d6	92.4	P	40 - 160
EPA 8321B	Endothall-d6	92.4	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	72.5	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	72.5	P	40 - 160
EPA 8321B	Primidone-d5	124	P	30 - 160
EPA 8321B	Primidone-d5	124	P	30 - 160
EPA 8321B	Sucralose-d6	61.9	P	40 - 160
EPA 8321B	Sucralose-d6	61.9	P	40 - 160

Quality Assurance Report
Surrogates

Lab Sample ID: 1984006
Field Sample ID: G2SW0013

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	151	P	30 - 160
EPA 8321B	2,4-D-d3	151	P	30 - 160
EPA 8321B	Acetaminophen-d4	107	P	30 - 160
EPA 8321B	Acetaminophen-d4	107	P	30 - 160
EPA 8321B	Carbamazepine-d10	106	P	30 - 160
EPA 8321B	Carbamazepine-d10	106	P	30 - 160
EPA 8321B	Diuron-d6	69.3	P	30 - 160
EPA 8321B	Diuron-d6	69.3	P	30 - 160
EPA 8321B	Endothall-d6	90.9	P	40 - 160
EPA 8321B	Endothall-d6	90.9	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	68.5	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	68.5	P	40 - 160
EPA 8321B	Primidone-d5	102	P	30 - 160
EPA 8321B	Primidone-d5	102	P	30 - 160
EPA 8321B	Sucralose-d6	56.2	P	40 - 160
EPA 8321B	Sucralose-d6	56.2	P	40 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A83196
Included Lab Sample IDs: 1983958, 1983959, 1983960

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	100	P/P	90 - 110
O-Phosphate-P	99.7	100	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A83198
Included Lab Sample IDs: 1983952, 1983953, 1983954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	99.7	P/P	90 - 115
Color (true)	98.4	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A83212
Included Lab Sample IDs: 1983952, 1983953, 1983954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	98.5	P/P	95 - 105
Turbidity	99.0	98.5	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A83234
Included Lab Sample IDs: 1983952, 1983953, 1983954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	100	P/P	90 - 110
Chloride	99.5	102	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A83234
Included Lab Sample IDs: 1983952, 1983953, 1983954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	100	103	P/P	90 - 110
Sulfate	102	102	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A83252
Included Lab Sample IDs: 1984002, 1984003, 1984004, 1984005, 1984006

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	86.4	91.7	P/P	60 - 150
Endothall	96.6	98.4	P/P	60 - 150
Glufosinate	103	92.5	P/P	60 - 150
Glyphosate	121	128	P/P	60 - 150
Sucralose	115	114	P/P	60 - 130

Reference Method: EPA 8321B
Run ID: A83283
Included Lab Sample IDs: 1984002, 1984003, 1984004, 1984005, 1984006

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	101	91.2	P/P	50 - 150
Acetaminophen	106	99.1	P/P	60 - 150
Acetaminophen	99.1	85.0	P/P	60 - 150
Bentazon	83.8	89.2	P/P	50 - 150
Carbamazepine	102	94.0	P/P	60 - 150
Carbamazepine	103	102	P/P	60 - 150
Diuron	103	81.4	P/P	60 - 150
Diuron	105	103	P/P	60 - 150
Fenuron	113	108	P/P	60 - 150
Fenuron	118	113	P/P	60 - 150
Fluridone	100	107	P/P	60 - 160
Fluridone	102	100	P/P	60 - 160
Hydrocodone	108	87.3	P/P	60 - 150
Hydrocodone	109	108	P/P	60 - 150
Imazapyr	72.9	65.9	P/P	50 - 150
Imazapyr	87.7	72.9	P/P	50 - 150
Imidacloprid	104	113	P/P	60 - 150
Imidacloprid	113	106	P/P	60 - 150
Linuron	110	101	P/P	60 - 150
Linuron	112	110	P/P	60 - 150
MCPP	106	100	P/P	50 - 150
Primidone	111	76.8	P/P	60 - 150
Primidone	117	111	P/P	60 - 150
Pyraclostrobin	101	105	P/P	60 - 150
Pyraclostrobin	105	101	P/P	60 - 150
Triclopyr	98.1	95.3	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A83287
Included Lab Sample IDs: 1983955, 1983956, 1983957

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits

Quality Assurance Report
Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A83287
Included Lab Sample IDs: 1983955, 1983956, 1983957

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A83295
Included Lab Sample IDs: 1983955, 1983956, 1983957

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	102	P/P	90 - 110
Kjeldahl Nitrogen	95.5	96.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A83326
Included Lab Sample IDs: 1983955, 1983956, 1983957

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

Reference Method: SM 5310 B-00
Run ID: A83342
Included Lab Sample IDs: 1983955, 1983956, 1983957

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.5	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A83357
Included Lab Sample IDs: 1983956

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A83365
Included Lab Sample IDs: 1983955, 1983957

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

Reference Method: SM 2320 B-97
Run ID: A83371
Included Lab Sample IDs: 1983952, 1983953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	99.0	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A83371
Included Lab Sample IDs: 1983952, 1983953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits

Quality Assurance Report
Calibration Verification

Reference Method: SM 4500 F-C-97
Run ID: A83371
Included Lab Sample IDs: 1983952, 1983953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	100	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A83420
Included Lab Sample IDs: 1983954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.2	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A83420
Included Lab Sample IDs: 1983954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	99.1	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		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					10.3	
	Turbidity					1.40	
EPA 300.0 Rev. 2.1	Chloride	98.4	98.7	94.7		0.0356	
	Sulfate	105	97.0	94.7		0.135	
EPA 350.1 Rev. 2.0	Ammonia-N	96.2	97.2	97.0			0.0974
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	97.3	100			1.94
EPA 353.2 Rev. 2.0	NO2NO3-N	101	102	102			0.388
EPA 365.1 Rev. 2.0	Total-P	103	101	102			0.357
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.9	99.0	100			0.623
EPA 8321B	2,4-D	78.5	130	136			4.71
	Acetaminophen	91.0	122	128			4.60
	AMPA	81.1	34.7	35.8			2.07
	Bentazon	68.4	41.1	43.3			5.22
	Carbamazepine	80.4	103	103			0.542
	Diuron	63.8	79.4	73.3			8.02
	Endothall	100	113	112			0.886
	Fenuron	110	111	108			2.41
	Fluridone	61.9	61.8	70.7			13.5
	Glufosinate	68.5	92.3	92.6			0.325
	Glyphosate	94.4	61.1	61.9			0.691
	Hydrocodone	103	147	141			4.30
	Imazapyr	65.5	89.8	74.8			15.4
	Imidacloprid	104	248	245			1.39
	Linuron	72.0	89.4	88.5			0.996
	MCPP	64.0	96.0	99.7			3.82

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 8321B	Primidone	106	130	122			6.33
	Pyraclostrobin	69.2	75.5	75.8			0.414
	Sucralose	113	60.7	59.3			0.882
	Triclopyr	63.4	92.0	96.4			4.67
SM 2120 B	Color (true)					2.14	
	Color (true)					0.911	
SM 2320 B-97	Total Alkalinity	101				0.445	
	Total Alkalinity	101				0.123	
SM 2540 C-97	TDS					1.28	
SM 4500 F-C-97	Fluoride	94.8	96.1	96.9			0.480
	Fluoride	96.3	95.2	95.7			0.514
SM 5310 B-00	Organic Carbon	94.4	95.6	96.2			0.371

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1983952, 1983953, 1983954
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1983952, 1983953, 1983954
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1983952, 1983953, 1983954
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1983955, 1983956, 1983957
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1983955, 1983956, 1983957
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1983955, 1983956, 1983957
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1983955, 1983956, 1983957
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1983958, 1983959, 1983960
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1984002, 1984003, 1984004, 1984005, 1984006
SM 2120 B / E31780	True Color measured at 450 nm	1983952, 1983953, 1983954
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1983952, 1983953, 1983954
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1983952, 1983953, 1983954
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1983952, 1983953, 1983954
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1983952, 1983953, 1983954
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1983955, 1983956, 1983957

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	04/12/2018			04/12/2018 17:21	William L. Brown IV	1983952, 1983953, 1983954
EPA 300.0 Rev. 2.1	04/12/2018			04/14/2018 05:51	Lipi Saha	1983952
	04/12/2018			04/14/2018 10:14	Lipi Saha	1983953
	04/12/2018			04/14/2018 10:26	Lipi Saha	1983954
EPA 350.1 Rev. 2.0	04/12/2018			04/17/2018 12:12	Ping Hua	1983956
	04/12/2018			04/17/2018 13:48	Ping Hua	1983955
	04/12/2018			04/17/2018 13:49	Ping Hua	1983957
EPA 351.2 Rev. 2.0	04/12/2018	04/16/2018 10:00	Adrian Shelby	04/17/2018 15:07	Joseph Suarez	1983956
	04/12/2018	04/16/2018 10:00	Adrian Shelby	04/17/2018 17:41	Joseph Suarez	1983955
	04/12/2018	04/16/2018 10:00	Adrian Shelby	04/17/2018 17:42	Joseph Suarez	1983957
EPA 353.2 Rev. 2.0	04/12/2018			04/17/2018 14:36	Lauren Bottorf	1983956
	04/12/2018			04/17/2018 14:37	Lauren Bottorf	1983957
	04/12/2018			04/17/2018 14:38	Lauren Bottorf	1983955
EPA 365.1 Rev. 2.0	04/12/2018	04/17/2018 13:49	Sima Feizi	04/19/2018 09:02	Beverly Y. Sanders	1983955
	04/12/2018	04/17/2018 13:49	Sima Feizi	04/19/2018 09:04	Beverly Y. Sanders	1983957
	04/12/2018	04/17/2018 13:49	Sima Feizi	04/19/2018 15:03	Beverly Y. Sanders	1983956
EPA 365.1 Rev. 2.0 dissolved	04/12/2018			04/12/2018 14:36	Megan Treadwell	1983959
	04/12/2018			04/12/2018 14:55	Megan Treadwell	1983958
	04/12/2018			04/12/2018 14:56	Megan Treadwell	1983960
EPA 8321B	04/12/2018	04/13/2018 10:00	Hoor Shaik	04/14/2018 12:56	Julie Michelle Frank	1984002
	04/12/2018	04/13/2018 10:00	Hoor Shaik	04/14/2018 13:30	Julie Michelle Frank	1984003
	04/12/2018	04/13/2018 10:00	Hoor Shaik	04/14/2018 14:05	Julie Michelle Frank	1984004
	04/12/2018	04/13/2018 10:00	Hoor Shaik	04/14/2018 14:39	Julie Michelle Frank	1984005
	04/12/2018	04/13/2018 10:00	Hoor Shaik	04/14/2018 15:14	Julie Michelle Frank	1984006
	04/12/2018	04/13/2018 10:00	Hoor Shaik	04/15/2018 03:55	Julie Michelle Frank	1984002
	04/12/2018	04/13/2018 10:00	Hoor Shaik	04/15/2018 04:30	Julie Michelle Frank	1984003
	04/12/2018	04/13/2018 10:00	Hoor Shaik	04/15/2018 05:04	Julie Michelle Frank	1984004
	04/12/2018	04/13/2018 10:00	Hoor Shaik	04/15/2018 06:13	Julie Michelle Frank	1984005
	04/12/2018	04/13/2018 10:00	Hoor Shaik	04/15/2018 06:48	Julie Michelle Frank	1984006
	04/12/2018	04/13/2018 12:00	Hoor Shaik	04/13/2018 23:17	S. M. Reddy	1984002
	04/12/2018	04/13/2018 12:00	Hoor Shaik	04/13/2018 23:32	S. M. Reddy	1984003
	04/12/2018	04/13/2018 12:00	Hoor Shaik	04/13/2018 23:48	S. M. Reddy	1984004
	04/12/2018	04/13/2018 12:00	Hoor Shaik	04/14/2018 00:04	S. M. Reddy	1984005
	04/12/2018	04/13/2018 12:00	Hoor Shaik	04/14/2018 00:20	S. M. Reddy	1984006
SM 2120 B	04/12/2018			04/12/2018 15:36	Tanya Welborn	1983953
	04/12/2018			04/12/2018 16:15	Tanya Welborn	1983952, 1983954
SM 2320 B-97	04/12/2018			04/20/2018 00:09	Dale L. Simmons	1983952
	04/12/2018			04/20/2018 00:18	Dale L. Simmons	1983953
	04/12/2018			04/24/2018 05:52	Dale L. Simmons	1983954
SM 2540 C-97	04/12/2018			04/13/2018 13:20	DeAsia Armster	1983952, 1983953, 1983954

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2540 D-97	04/12/2018			04/13/2018 13:20	DeAsia Armster	1983952, 1983953, 1983954
SM 4500 F-C-97	04/12/2018			04/20/2018 00:09	Dale L. Simmons	1983952
	04/12/2018			04/20/2018 00:18	Dale L. Simmons	1983953
	04/12/2018			04/24/2018 05:52	Dale L. Simmons	1983954
SM 5310 B-00	04/12/2018			04/18/2018 20:54	Megan Treadwell	1983955
	04/12/2018			04/18/2018 21:08	Megan Treadwell	1983956
	04/12/2018			04/18/2018 21:23	Megan Treadwell	1983957