Chemical Analysis Report

TLH-ROC-2018-04-18-01

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

Event Description: **A-b/t/m**
Request ID: **RQ-2018-04-09-55**
Customer: **TLH-ROC**
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 07-MAY-2018 14:56

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: LEXINGTON CREEK @ TIMBERLA **Collection Date/Time: 04/18/2018 09:25**

Field ID: G1TLHR0088 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985568	EPA 180.1 Rev. 2.0	Turbidity	6.5		NTU	P343682	
	EPA 300.0 Rev. 2.1	Chloride	7.4		mg Cl/L	P343782	
		Sulfate	1.8		mg SO4/L	P343785	
	SM 2120 B	Color (true)	37		PCU	P343671	
	SM 2320 B-97	Total Alkalinity	28		mg CaCO3/L	P344296	
	SM 2540 C-97	TDS	51		mg/L	P344256	
	SM 2540 D-97	TSS	4	I	mg/L	P344262	
	SM 4500 F-C-97	Fluoride	0.080	I	mg F/L	P344300	
1985569	EPA 350.1 Rev. 2.0	Ammonia-N	0.19		mg N/L	P344165	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40		mg N/L	P343883	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P343904	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P343974	
	SM 5310 B-00	Organic Carbon	2.6		mg C/L	P343980	
1985570	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P343677	
1985575	EPA 8321B	2,4-D	0.0020	U	ug/L	P343642	
		Bentazon	0.0016	I	ug/L	P343642	
		MCPP	0.0020	U	ug/L	P343642	
		Triclopyr**	0.0040	U	ug/L	P343642	
		Imidacloprid	0.079		ug/L	P343642	
		Diuron	0.0020	U	ug/L	P343642	
		Pyraclostrobin**	0.0020	U	ug/L	P343642	
		Primidone**	0.0040	U	ug/L	P343642	
		Linuron	0.0040	U	ug/L	P343642	
		Acetaminophen**	0.77		ug/L	P343642	
		Fenuron	0.016	U	ug/L	P343642	
		Imazapyr**	0.0040	U	ug/L	P343642	
		Carbamazepine**	4.0E-04	U	ug/L	P343642	
		Fluridone**	0.0023	I	ug/L	P343642	
		Hydrocodone**	8.0E-04	U	ug/L	P343642	
		Sucralose**	0.35	I	ug/L	P343665	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate:Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P343682

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report
Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343782

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343785

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344165

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343883

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343904

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343974

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P343677

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

Reference Method: EPA 8321B
Batch ID: P343642

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P343642

Component	Result	Code	Units
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: P343665

Component	Result	Code	Units
Sucralose	0.10	U	ug/L

Reference Method: SM 2120 B
Batch ID: P343671

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P344296

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

Reference Method: SM 2540 C-97
Batch ID: P344256

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P344262

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P344300

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P343980

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343782

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343785

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344165

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343883

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: P343904

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: P343974

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P343677

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

Reference Method: EPA 8321B
Batch ID: P343642

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	111		P	40 - 150
Acetaminophen	122		P	30 - 150
Bentazon	134		P	30 - 150
Carbamazepine	116		P	40 - 150
Diuron	80.7		P	40 - 150
Fenuron	134		P	40 - 150
Fluridone	58.8		P	40 - 150
Hydrocodone	115		P	40 - 150
Imazapyr	107		P	40 - 150
Imidacloprid	129		P	40 - 160

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P343642

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Linuron	81.4		P	40 - 150
MCPP	105		P	40 - 150
Primidone	139		P	40 - 150
Pyraclostrobin	59.7		P	40 - 150
Triclopyr	105		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P343665

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	105		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P344296

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

Reference Method: SM 4500 F-C-97
Batch ID: P344300

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.4		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P343980

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.0		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343782

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985354	Chloride	98.8		P	90 - 110
1985578	Chloride	98.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343785

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985354	Sulfate	97.1		P	90 - 110
1985578	Sulfate	96.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344165

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344165

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985512	Ammonia-N	99.2	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343883

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985901	Kjeldahl Nitrogen	102	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343904

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985584	NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343974

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985584	Total-P	106	104	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P343642

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985615	2,4-D	68.9	71.4	P/P	40 - 150
1985615	Acetaminophen	116	120	P/P	30 - 150
1985615	Bentazon	70.5	89.7	P/P	30 - 150
1985615	Carbamazepine	106	110	P/P	40 - 150
1985615	Diuron	73.3	71.4	P/P	40 - 150
1985615	Fenuron	116	125	P/P	40 - 150
1985615	Fluridone	47.0	47.4	P/P	40 - 150
1985615	Hydrocodone	118	115	P/P	40 - 150
1985615	Imazapyr	78.0	82.2	P/P	40 - 150
1985615	Imidacloprid	128	136	P/P	40 - 160
1985615	Linuron	67.8	71.1	P/P	40 - 150
1985615	MCPP	74.6	66.9	P/P	40 - 150
1985615	Primidone	112	122	P/P	40 - 150
1985615	Pyraclostrobin	60.3	53.3	P/P	40 - 150
1985615	Triclopyr	70.9	70.3	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P343665

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985613	Sucralose	71.3	65.1	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P344300

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985334	Fluoride	94.5	96.7	P/P	91 - 105

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P343980

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985460	Organic Carbon	94.6	93.6	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P343682

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985466	Turbidity	1.79	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343782

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985354	Chloride	0.411	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344165

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985512	Ammonia-N	0.0848	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343883

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985901	Kjeldahl Nitrogen	0.740	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343904

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985584	NO2NO3-N	0.873	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343974

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985584	Total-P	1.24	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P343677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985570	O-Phosphate-P	0.776	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P343642

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985615	2,4-D	3.61	Spike	P	0 - 30
1985615	Acetaminophen	3.23	Spike	P	0 - 30
1985615	Bentazon	24.0	Spike	P	0 - 30
1985615	Carbamazepine	3.79	Spike	P	0 - 30
1985615	Diuron	2.69	Spike	P	0 - 30
1985615	Fenuron	7.51	Spike	P	0 - 30
1985615	Fluridone	0.994	Spike	P	0 - 30
1985615	Hydrocodone	2.47	Spike	P	0 - 30
1985615	Imazapyr	5.21	Spike	P	0 - 30
1985615	Imidacloprid	5.51	Spike	P	0 - 30
1985615	Linuron	4.75	Spike	P	0 - 30
1985615	MCPP	10.8	Spike	P	0 - 30
1985615	Primidone	9.12	Spike	P	0 - 30
1985615	Pyraclostrobin	12.3	Spike	P	0 - 30
1985615	Triclopyr	0.844	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P343665

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985613	Sucralose	7.89	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P343671

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985522	Color (true)	3.09	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P344296

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985334	Total Alkalinity	0.474	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P344256

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985583	TDS	7.27	Sample	P	0 - 10

Quality Assurance Report
Precision

Reference Method: SM 4500 F-C-97
Batch ID: P344300

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985334	Fluoride	1.94	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P343980

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985460	Organic Carbon	0.578	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: 1985575
Field Sample ID: G1TLHR0088

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	62.1	P	30 - 160
EPA 8321B	2,4-D-d3	62.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	124	P	30 - 160
EPA 8321B	Acetaminophen-d4	124	P	30 - 160
EPA 8321B	Carbamazepine-d10	133	P	30 - 160
EPA 8321B	Carbamazepine-d10	133	P	30 - 160
EPA 8321B	Diuron-d6	83.3	P	30 - 160
EPA 8321B	Diuron-d6	83.3	P	30 - 160
EPA 8321B	Primidone-d5	133	P	30 - 160
EPA 8321B	Primidone-d5	133	P	30 - 160
EPA 8321B	Sucralose-d6	99.2	P	40 - 160
EPA 8321B	Sucralose-d6	99.2	P	40 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A83267
Included Lab Sample IDs: 1985568

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.0	99.0	P/P	90 - 110
Sulfate	99.2	99.6	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A83322
Included Lab Sample IDs: 1985568

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	99.7	P/P	90 - 115

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A83323
Included Lab Sample IDs: 1985570

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A83324
Included Lab Sample IDs: 1985568

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

Reference Method: EPA 8321B
Run ID: A83370
Included Lab Sample IDs: 1985575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	94.1	104	P/P	60 - 150

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A83402
Included Lab Sample IDs: 1985569

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A83417
Included Lab Sample IDs: 1985569

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.9	99.5	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A83430
Included Lab Sample IDs: 1985569

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.9	97.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A83447
Included Lab Sample IDs: 1985569

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A83491
Included Lab Sample IDs: 1985569

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

Quality Assurance Report
Calibration Verification

Reference Method: SM 2320 B-97
Run ID: A83541
Included Lab Sample IDs: 1985568

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.9	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A83541
Included Lab Sample IDs: 1985568

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.1	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A83600
Included Lab Sample IDs: 1985575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	123	119	P/P	50 - 150
Acetaminophen	137	121	P/P	60 - 150
Bentazon	142	141	P/P	50 - 150
Carbamazepine	127	137	P/P	60 - 150
Diuron	127	135	P/P	60 - 150
Fenuron	126	132	P/P	60 - 150
Fluridone	112	108	P/P	60 - 160
Hydrocodone	120	116	P/P	60 - 150
Imazapyr	109	126	P/P	50 - 150
Imidacloprid	122	120	P/P	60 - 150
Linuron	129	126	P/P	60 - 150
MCPP	128	124	P/P	50 - 150
Primidone	135	116	P/P	60 - 150
Pyraclostrobin	106	101	P/P	60 - 150
Triclopyr	131	127	P/P	50 - 150

* 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					1.79	
EPA 300.0 Rev. 2.1	Chloride	97.7	98.8	98.3		0.411	
	Sulfate	95.1	97.1	96.7			
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	99.2	99.4			0.0848
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	102	100			0.740
EPA 353.2 Rev. 2.0	NO2NO3-N	101	100	101			0.873
EPA 365.1 Rev. 2.0	Total-P	98.2	106	104			1.24
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100					0.776
EPA 8321B	2,4-D	111	68.9	71.4			3.61
	Acetaminophen	122	116	120			3.23
	Bentazon	134	70.5	89.7			24.0

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 8321B	Carbamazepine	116	106	110			3.79
	Diuron	80.7	73.3	71.4			2.69
	Fenuron	134	116	125			7.51
	Fluridone	58.8	47.0	47.4			0.994
	Hydrocodone	115	118	115			2.47
	Imazapyr	107	78.0	82.2			5.21
	Imidacloprid	129	128	136			5.51
	Linuron	81.4	67.8	71.1			4.75
	MCPP	105	74.6	66.9			10.8
	Primidone	139	112	122			9.12
	Pyraclostrobin	59.7	60.3	53.3			12.3
	Sucralose	105	71.3	65.1			7.89
	Triclopyr	105	70.9	70.3			0.844
SM 2120 B	Color (true)					3.09	
SM 2320 B-97	Total Alkalinity	101				0.474	
SM 2540 C-97	TDS					7.27	
SM 4500 F-C-97	Fluoride	95.4	94.5	96.7			1.94
SM 5310 B-00	Organic Carbon	95.0	94.6	93.6			0.578

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1985568
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1985568
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1985568
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1985569
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1985569
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1985569
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1985569
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1985570
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1985575
SM 2120 B / E31780	True Color measured at 450 nm	1985568
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1985568
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1985568
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1985568
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1985568
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1985569

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	04/18/2018			04/18/2018 16:38	William L. Brown IV	1985568
EPA 300.0 Rev. 2.1	04/18/2018			04/19/2018 22:33	Lipi Saha	1985568
EPA 350.1 Rev. 2.0	04/18/2018			04/24/2018 11:59	Ping Hua	1985569
EPA 351.2 Rev. 2.0	04/18/2018	04/23/2018 11:15	Adrian Shelby	04/24/2018 11:51	Joseph Suarez	1985569
EPA 353.2 Rev. 2.0	04/18/2018			04/23/2018 13:05	Lauren Bottorf	1985569
EPA 365.1 Rev. 2.0	04/18/2018	04/24/2018 15:27	Sima Feizi	04/25/2018 09:25	Beverly Y. Sanders	1985569
EPA 365.1 Rev. 2.0 dissolved	04/18/2018			04/18/2018 15:31	Megan Treadwell	1985570
EPA 8321B	04/18/2018	04/19/2018 12:30	Hoor Shaik	04/19/2018 18:11	S. M. Reddy	1985575
	04/18/2018	04/20/2018 10:00	Hoor Shaik	04/22/2018 14:53	Julie Michelle Frank	1985575
	04/18/2018	04/20/2018 10:00	Hoor Shaik	04/23/2018 06:28	Julie Michelle Frank	1985575
SM 2120 B	04/18/2018			04/18/2018 15:53	Julia Storbeck	1985568
SM 2320 B-97	04/18/2018			04/27/2018 23:23	Dale L. Simmons	1985568
SM 2540 C-97	04/18/2018			04/24/2018 15:21	Yijie Li	1985568
SM 2540 D-97	04/18/2018			04/24/2018 15:21	Yijie Li	1985568
SM 4500 F-C-97	04/18/2018			04/27/2018 23:23	Dale L. Simmons	1985568
SM 5310 B-00	04/18/2018			04/23/2018 20:45	Megan Treadwell	1985569