

Chemical Analysis Report

SW-DIST-2018-06-01-01

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

Event Description: **WOLF SIMS Mckay Rice**

Request ID: **RQ-2018-05-21-06**

Customer: **SW-DIST**

Project ID: **SMP**

Send Reports to:

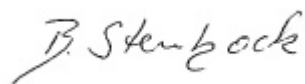
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Date Certified: 27-JUN-2018 14:05



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: Biggest Flowing Ditch @ 45th

Collection Date/Time: 05/31/2018 09:40

Field ID: G1SW0093

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1996501	EPA 180.1 Rev. 2.0	Turbidity	6.3	A	NTU	P346282	
	SM 2320 B-97	Total Alkalinity	132		mg CaCO3/L	P346615	
	SM 2540 D-97	TSS	5	IA	mg/L	P346449	
	SM 4500 F-C-97	Fluoride	0.31		mg F/L	P346911	
1996504	EPA 350.1 Rev. 2.0	Ammonia-N	0.25		mg N/L	P346625	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P346536	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P346330	
	EPA 365.1 Rev. 2.0	Total-P	0.48		mg P/L	P346546	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P346585	
1996507	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.36		mg P/L	P346288	

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: Biggest Flowing Ditch @ 45th

Collection Date/Time: 05/31/2018 09:40

Field ID: G1SW0093

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1996542	EPA 8321B	2,4-D	0.0032	I	ug/L	P346244	
		Bentazon	9.7E-04	I	ug/L	P346244	
		MCP	0.0039	I	ug/L	P346244	
		Triclopyr**	0.0040	U	ug/L	P346244	
		Imidacloprid	0.0060	I	ug/L	P346244	MS
		Diuron	0.0060	I	ug/L	P346244	
		Pyraclostrobin**	0.0020	U	ug/L	P346244	
		Primidone**	0.0040	U	ug/L	P346244	
		Linuron	0.0040	U	ug/L	P346244	
		Acetaminophen**	0.034		ug/L	P346244	
		Fenuron	0.016	U	ug/L	P346244	
		Imazapyr**	0.023		ug/L	P346244	
		Carbamazepine**	0.0019		ug/L	P346244	
		Fluridone**	4.0E-04	U	ug/L	P346244	
		Hydrocodone**	8.0E-04	U	ug/L	P346244	
		Sucralose**	0.41		ug/L	P346245	

Sample Location: Sandbag Ditch @ 45th

Collection Date/Time: 05/31/2018 09:45

Field ID: G1SW0094

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1996543	EPA 8321B	2,4-D	0.0041	I	ug/L	P346244	MS
		Bentazon	8.0E-04	U	ug/L	P346244	
		MCP	0.0020	U	ug/L	P346244	
		Triclopyr**	0.0040	U	ug/L	P346244	
		Imidacloprid	0.0093		ug/L	P346244	
		Diuron	0.0020	U	ug/L	P346244	
		Pyraclostrobin**	0.0020	U	ug/L	P346244	
		Primidone**	0.0066	I	ug/L	P346244	
		Linuron	0.0040	U	ug/L	P346244	
		Acetaminophen**	0.012	I	ug/L	P346244	
		Fenuron	0.016	U	ug/L	P346244	
		Imazapyr**	0.018		ug/L	P346244	
		Carbamazepine**	0.0011	I	ug/L	P346244	
		Fluridone**	0.0019		ug/L	P346244	
		Hydrocodone**	8.0E-04	U	ug/L	P346244	
		Sucralose**	0.35		ug/L	P346245	

Sample Location: Sims Branch @ Port Redwing

Collection Date/Time: 05/31/2018 10:25

Field ID: G1SW0056

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1996502	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P346282	
	SM 2320 B-97	Total Alkalinity	156		mg CaCO3/L	P346615	
	SM 2540 D-97	TSS	3	U	mg/L	P346449	
	SM 4500 F-C-97	Fluoride	0.88		mg F/L	P346619	
1996505	EPA 350.1 Rev. 2.0	Ammonia-N	0.044		mg N/L	P346695	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.60		mg N/L	P346536	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P346331	
	EPA 365.1 Rev. 2.0	Total-P	0.22		mg P/L	P346546	
	SM 5310 B-00	Organic Carbon	6.4		mg C/L	P346585	
1996508	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.21		mg P/L	P346288	

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: Wolf Branch Canal

Collection Date/Time: 05/31/2018 11:10

Field ID: G1SW0092

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1996503	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P346282	
	SM 2320 B-97	Total Alkalinity	119	A	mg CaCO3/L	P346615	
	SM 2540 D-97	TSS	3	U	mg/L	P346449	
	SM 4500 F-C-97	Fluoride	0.79		mg F/L	P346619	
1996506	EPA 350.1 Rev. 2.0	Ammonia-N	0.049		mg N/L	P346695	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.92		mg N/L	P346536	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P346331	
	EPA 365.1 Rev. 2.0	Total-P	0.29		mg P/L	P346546	
	SM 5310 B-00	Organic Carbon	9.1		mg C/L	P346585	
1996509	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.23		mg P/L	P346288	

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: Wolf Branch Canal

Collection Date/Time: 05/31/2018 11:10

Field ID: G1SW0092

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1996544	EPA 8321B	2,4-D	0.097		ug/L	P346244	
		Bentazon	0.028		ug/L	P346244	
		MCP	0.025		ug/L	P346244	
		Triclopyr**	0.0040	U	ug/L	P346244	
		Imidacloprid	0.28		ug/L	P346244	MS
		Diuron	0.0028	I	ug/L	P346244	
		Pyraclostrobin**	0.0020	U	ug/L	P346244	
		Primidone**	0.0040	U	ug/L	P346244	
		Linuron	0.0040	U	ug/L	P346244	
		Acetaminophen**	0.0080	U	ug/L	P346244	
		Fenuron	0.016	U	ug/L	P346244	
		Imazapyr**	0.031		ug/L	P346244	
		Carbamazepine**	0.0011	I	ug/L	P346244	
		Fluridone**	0.24		ug/L	P346244	
		Hydrocodone**	8.0E-04	U	ug/L	P346244	
		Sucralose**	0.39		ug/L	P346245	

Sample Location: Rice Creek @ Balm Rvrview

Collection Date/Time: 05/31/2018 11:40

Field ID: G2SW0032

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1996545	EPA 8321B	2,4-D	0.043		ug/L	P346244	
		Bentazon	0.064		ug/L	P346244	
		MCP	0.0041	I	ug/L	P346244	
		Triclopyr**	0.0040	U	ug/L	P346244	
		Imidacloprid	0.21		ug/L	P346244	MS
		Diuron	0.30		ug/L	P346244	
		Pyraclostrobin**	0.0020	U	ug/L	P346244	
		Primidone**	0.0081	I	ug/L	P346244	
		Linuron	0.0040	U	ug/L	P346244	
		Acetaminophen**	0.0080	U	ug/L	P346244	
		Fenuron	0.016	U	ug/L	P346244	
		Imazapyr**	0.36		ug/L	P346244	
		Carbamazepine**	0.0022		ug/L	P346244	
		Fluridone**	0.0059		ug/L	P346244	
		Hydrocodone**	8.0E-04	U	ug/L	P346244	
		Sucralose**	0.68		ug/L	P346245	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P346282

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346625

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346695

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P346536

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346330

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346331

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346546

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346288

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

Reference Method: EPA 8321B
Batch ID: P346244

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P346244

Component	Result	Code	Units
Diuron	0.0020	U	ug/L
Fenuron	0.016	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: P346245

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P346615

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

Reference Method: SM 2540 D-97
Batch ID: P346449

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P346619

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P346911

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P346585

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346625

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346695

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P346536

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346330

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346331

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346546

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346288

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

Reference Method: EPA 8321B
Batch ID: P346244

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	65.9		P	40 - 150
Acetaminophen	117		P	30 - 150
Bentazon	77.3		P	30 - 150
Carbamazepine	105		P	40 - 150
Diuron	95.1		P	40 - 150
Fenuron	101		P	40 - 150
Fluridone	101		P	40 - 150
Hydrocodone	94.7		P	40 - 150
Imazapyr	86.4		P	40 - 150
Imidacloprid	125		P	40 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P346244

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Linuron	92.1		P	40 - 150
MCPP	117		P	40 - 150
Primidone	120		P	40 - 150
Pyraclostrobin	101		P	40 - 150
Triclopyr	109		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P346245

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	116		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P346615

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P346619

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.6		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P346911

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.2		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P346585

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346625

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1995904	Ammonia-N	107	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346695

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996506	Ammonia-N	94.2	97.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P346536

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996506	Kjeldahl Nitrogen	107	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346330

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996029	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346331

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996505	NO2NO3-N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346546

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996505	Total-P	101	97.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346288

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996666	O-Phosphate-P	94.7	96.8	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P346244

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996578	2,4-D	59.0	45.5	P/P	40 - 150
1996578	Acetaminophen	113	117	P/P	30 - 150
1996578	Bentazon	65.3	60.6	P/P	30 - 150
1996578	Carbamazepine	99.4	98.2	P/P	40 - 150
1996578	Diuron	70.0	70.9	P/P	40 - 150
1996578	Fenuron	84.3	83.8	P/P	40 - 150
1996578	Fluridone	80.7	82.0	P/P	40 - 150
1996578	Hydrocodone	73.0	82.1	P/P	40 - 150
1996578	Imazapyr	58.8	61.4	P/P	40 - 150
1996578	Imidacloprid	199	189	F/F	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P346244

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996578	Linuron	73.5	79.9	P/P	40 - 150
1996578	MCPP	141	138	P/P	40 - 150
1996578	Primidone	102	98.4	P/P	40 - 150
1996578	Pyraclostrobin	94.2	90.2	P/P	40 - 150
1996578	Triclopyr	129	135	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P346245

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996311	Sucralose	123	116	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P346619

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996503	Fluoride	94.1	92.2	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P346911

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1998168	Fluoride	98.2	97.5	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P346585

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996231	Organic Carbon	95.6	96.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P346282

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996501	Turbidity	1.76	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346625

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1995904	Ammonia-N	0.578	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346695

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996506	Ammonia-N	1.91	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P346536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996506	Kjeldahl Nitrogen	5.82	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346330

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996029	NO2NO3-N	0.477	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346331

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996505	NO2NO3-N	0.250	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346546

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996505	Total-P	2.23	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346288

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996666	O-Phosphate-P	2.05	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P346244

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996578	2,4-D	16.3	Spike	P	0 - 30
1996578	Acetaminophen	3.00	Spike	P	0 - 30
1996578	Bentazon	7.47	Spike	P	0 - 30
1996578	Carbamazepine	1.20	Spike	P	0 - 30
1996578	Diuron	0.523	Spike	P	0 - 30
1996578	Fenuron	0.572	Spike	P	0 - 30
1996578	Fluridone	1.66	Spike	P	0 - 30
1996578	Hydrocodone	11.8	Spike	P	0 - 30
1996578	Imazapyr	2.50	Spike	P	0 - 30
1996578	Imidacloprid	4.68	Spike	P	0 - 30
1996578	Linuron	8.33	Spike	P	0 - 30
1996578	MCP	2.29	Spike	P	0 - 30
1996578	Primidone	4.04	Spike	P	0 - 30
1996578	Pyraclostrobin	4.38	Spike	P	0 - 30
1996578	Triclopyr	4.50	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P346245

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996311	Sucralose	5.54	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P346615

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996503	Total Alkalinity	0.291	Sample	P	0 - 1.6

Reference Method: SM 4500 F-C-97
Batch ID: P346619

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996503	Fluoride	1.43	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P346911

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1998168	Fluoride	0.506	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P346585

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996231	Organic Carbon	0.404	Spike	P	0 - 20

Quality Assurance Report Precision

* 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: 1996542
Field Sample ID: G1SW0093

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	138	P	30 - 160
EPA 8321B	Acetaminophen-d4	89.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	84.0	P	30 - 160
EPA 8321B	Diuron-d6	46.0	P	30 - 160
EPA 8321B	Primidone-d5	94.6	P	30 - 160
EPA 8321B	Sucralose-d6	96.1	P	40 - 160

Lab Sample ID: 1996543
Field Sample ID: G1SW0094

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	123	P	30 - 160
EPA 8321B	Acetaminophen-d4	80.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	76.0	P	30 - 160
EPA 8321B	Diuron-d6	40.0	P	30 - 160
EPA 8321B	Primidone-d5	79.2	P	30 - 160
EPA 8321B	Sucralose-d6	95.4	P	40 - 160

Lab Sample ID: 1996544
Field Sample ID: G1SW0092

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	132	P	30 - 160
EPA 8321B	Acetaminophen-d4	98.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	115	P	30 - 160
EPA 8321B	Diuron-d6	71.9	P	30 - 160
EPA 8321B	Primidone-d5	114	P	30 - 160
EPA 8321B	Sucralose-d6	97.2	P	40 - 160

Lab Sample ID: 1996545
Field Sample ID: G2SW0032

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	116	P	30 - 160
EPA 8321B	Acetaminophen-d4	106	P	30 - 160
EPA 8321B	Carbamazepine-d10	99.2	P	30 - 160
EPA 8321B	Diuron-d6	60.1	P	30 - 160
EPA 8321B	Primidone-d5	105	P	30 - 160
EPA 8321B	Sucralose-d6	97.8	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A84305

Included Lab Sample IDs: 1996501, 1996502, 1996503

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A84307

Included Lab Sample IDs: 1996507, 1996508, 1996509

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.6	95.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A84334

Included Lab Sample IDs: 1996504, 1996505, 1996506

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.0	P/P	90 - 110
NO2NO3-N	99.0	99.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A84402

Included Lab Sample IDs: 1996542, 1996543, 1996544, 1996545

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	93.5	83.4	P/P	60 - 150

Reference Method: SM 5310 B-00

Run ID: A84443

Included Lab Sample IDs: 1996504, 1996505, 1996506

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	94.2	P/P	90 - 110
Organic Carbon	97.0	96.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A84454

Included Lab Sample IDs: 1996542, 1996543, 1996544, 1996545

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	88.1	88.3	P/P	50 - 150
Bentazon	109	109	P/P	50 - 150
MCP	112	102	P/P	50 - 150
Triclopyr	108	99.8	P/P	50 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A84457

Included Lab Sample IDs: 1996504, 1996505, 1996506

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A84458

Included Lab Sample IDs: 1996501, 1996502, 1996503

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	99.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A84458

Included Lab Sample IDs: 1996502, 1996503

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	98.1	P/P	90 - 110
Fluoride	98.6	97.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A84469

Included Lab Sample IDs: 1996504

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	106	105	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A84488

Included Lab Sample IDs: 1996542, 1996543, 1996544, 1996545

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	144	155	P/P	60 - 160
Acetaminophen	155	146	P/P	60 - 160
Carbamazepine	132	148	P/P	60 - 150
Carbamazepine	148	139	P/P	60 - 150
Diuron	113	125	P/P	60 - 150
Diuron	125	136	P/P	60 - 150
Fenuron	101	102	P/P	60 - 150
Fenuron	104	101	P/P	60 - 150
Fluridone	130	138	P/P	60 - 160
Fluridone	138	134	P/P	60 - 160
Hydrocodone	111	111	P/P	60 - 150
Hydrocodone	111	109	P/P	60 - 150
Imazapyr	103	97.9	P/P	50 - 150
Imazapyr	98.8	103	P/P	50 - 150
Imidacloprid	118	121	P/P	60 - 150
Imidacloprid	121	106	P/P	60 - 150
Linuron	128	143	P/P	60 - 150
Linuron	143	147	P/P	60 - 150
Primidone	122	138	P/P	60 - 150
Primidone	130	122	P/P	60 - 150
Pyraclostrobin	115	133	P/P	60 - 150
Pyraclostrobin	133	144	P/P	60 - 150

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A84494

Included Lab Sample IDs: 1996505, 1996506

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	98.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A84494

Included Lab Sample IDs: 1996505, 1996506

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.3	98.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A84520

Included Lab Sample IDs: 1996504, 1996505, 1996506

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.7	96.2	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A84524

Included Lab Sample IDs: 1996545

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Diuron	111	98.6	P/P	60 - 150

Reference Method: SM 4500 F-C-97

Run ID: A84586

Included Lab Sample IDs: 1996501

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.2	99.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A84801

Included Lab Sample IDs: 1996544

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluridone	111	105	P/P	60 - 160

* 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	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					1.76	
EPA 350.1 Rev. 2.0	Ammonia-N	106	107	106			0.578
	Ammonia-N	101	94.2	97.9			1.91
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	107	99.0			5.82
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	101	101			0.477
	NO ₂ NO ₃ -N	102	100				0.250
EPA 365.1 Rev. 2.0	Total-P	100	101	97.9			2.23
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.4	94.7	96.8			2.05
EPA 8321B	2,4-D	65.9	59.0	45.5			16.3
	Acetaminophen	117	113	117			3.00
	Bentazon	77.3	65.3	60.6			7.47
	Carbamazepine	105	99.4	98.2			1.20
	Diuron	95.1	70.0	70.9			0.523
	Fenuron	101	84.3	83.8			0.572
	Fluridone	101	80.7	82.0			1.66
	Hydrocodone	94.7	73.0	82.1			11.8
	Imazapyr	86.4	58.8	61.4			2.50
	Imidacloprid	125	199	189			4.68
	Linuron	92.1	73.5	79.9			8.33
	MCPP	117	141	138			2.29
	Primidone	120	102	98.4			4.04
	Pyraclostrobin	101	94.2	90.2			4.38
	Sucralose	116	123	116			5.54
	Triclopyr	109	129	135			4.50
SM 2320 B-97	Total Alkalinity	103				0.291	
SM 4500 F-C-97	Fluoride	95.6	94.1	92.2			1.43
	Fluoride	96.2	98.2	97.5			0.506
SM 5310 B-00	Organic Carbon	97.0	95.6	96.0			0.404

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1996501, 1996502, 1996503
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1996504, 1996505, 1996506
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1996504, 1996505, 1996506
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1996504, 1996505, 1996506
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1996504, 1996505, 1996506
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1996507, 1996508, 1996509
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1996542, 1996543, 1996544, 1996545
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1996501, 1996502, 1996503
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	1996501, 1996502, 1996503
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1996501, 1996502, 1996503
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1996504, 1996505, 1996506

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	06/01/2018			06/01/2018 16:16	Julia Storbeck	1996501, 1996502, 1996503
EPA 350.1 Rev. 2.0	06/01/2018			06/08/2018 14:55	Adrian Shelby	1996504
	06/01/2018			06/11/2018 14:35	Julia Storbeck	1996506
	06/01/2018			06/11/2018 15:50	Julia Storbeck	1996505
EPA 351.2 Rev. 2.0	06/01/2018	06/07/2018 11:15	Adrian Shelby	06/12/2018 11:38	Joseph Suarez	1996504
	06/01/2018	06/07/2018 11:15	Adrian Shelby	06/12/2018 11:40	Joseph Suarez	1996505
	06/01/2018	06/07/2018 11:15	Adrian Shelby	06/12/2018 11:41	Joseph Suarez	1996506
EPA 353.2 Rev. 2.0	06/01/2018			06/04/2018 13:02	Lauren Bottorf	1996504
	06/01/2018			06/04/2018 13:09	Lauren Bottorf	1996505
	06/01/2018			06/04/2018 13:17	Lauren Bottorf	1996506
EPA 365.1 Rev. 2.0	06/01/2018	06/07/2018 11:15	Sima Feizi	06/08/2018 10:19	Beverly Y. Sanders	1996505
	06/01/2018	06/07/2018 11:15	Sima Feizi	06/08/2018 10:25	Beverly Y. Sanders	1996504
	06/01/2018	06/07/2018 11:15	Sima Feizi	06/08/2018 10:26	Beverly Y. Sanders	1996506
EPA 365.1 Rev. 2.0 dissolved	06/01/2018			06/01/2018 17:54	Megan Treadwell	1996508
	06/01/2018			06/01/2018 17:55	Megan Treadwell	1996507, 1996509
EPA 8321B	06/01/2018	06/01/2018 16:00	Hoor Shaik	06/05/2018 13:49	Mohammad Ghaffari	1996542
	06/01/2018	06/01/2018 16:00	Hoor Shaik	06/05/2018 14:08	Mohammad Ghaffari	1996543
	06/01/2018	06/01/2018 16:00	Hoor Shaik	06/05/2018 14:26	Mohammad Ghaffari	1996544
	06/01/2018	06/01/2018 16:00	Hoor Shaik	06/05/2018 14:45	Mohammad Ghaffari	1996545
	06/01/2018	06/05/2018 12:00	Hoor Shaik	06/07/2018 06:10	Juyoung Kim	1996542
	06/01/2018	06/05/2018 12:00	Hoor Shaik	06/07/2018 06:45	Juyoung Kim	1996543
	06/01/2018	06/05/2018 12:00	Hoor Shaik	06/07/2018 07:19	Juyoung Kim	1996544
	06/01/2018	06/05/2018 12:00	Hoor Shaik	06/07/2018 07:54	Juyoung Kim	1996545
	06/01/2018	06/05/2018 12:00	Hoor Shaik	06/09/2018 02:29	Juyoung Kim	1996542
	06/01/2018	06/05/2018 12:00	Hoor Shaik	06/09/2018 08:15	Juyoung Kim	1996543
	06/01/2018	06/05/2018 12:00	Hoor Shaik	06/09/2018 08:50	Juyoung Kim	1996544
	06/01/2018	06/05/2018 12:00	Hoor Shaik	06/09/2018 09:24	Juyoung Kim	1996545
	06/01/2018	06/05/2018 12:00	Hoor Shaik	06/12/2018 09:10	Juyoung Kim	1996545
	06/01/2018	06/05/2018 12:00	Hoor Shaik	06/22/2018 13:52	Juyoung Kim	1996544
SM 2320 B-97	06/01/2018			06/07/2018 11:58	Dale L. Simmons	1996503
	06/01/2018			06/07/2018 12:09	Dale L. Simmons	1996501
	06/01/2018			06/07/2018 12:19	Dale L. Simmons	1996502
SM 2540 D-97	06/01/2018			06/04/2018 13:40	William L. Brown IV	1996501, 1996502, 1996503
SM 4500 F-C-97	06/01/2018			06/07/2018 10:46	Dale L. Simmons	1996503
	06/01/2018			06/07/2018 11:34	Dale L. Simmons	1996502
	06/01/2018			06/13/2018 23:33	Dale L. Simmons	1996501
SM 5310 B-00	06/01/2018			06/07/2018 06:46	Megan Treadwell	1996504
	06/01/2018			06/07/2018 07:16	Megan Treadwell	1996505
	06/01/2018			06/07/2018 08:03	Megan Treadwell	1996506