

Chemical Analysis Report

SW-DIST-2019-02-19-03

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

Event Description: **SMP - English, Poley Mustang**
Request ID: **RQ-2019-02-18-23**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 05-MAR-2019 12:24

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

Case Narrative

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

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

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

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

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

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: Mustang Ranch Creek @ Hopewell

Collection Date/Time: 02/18/2019 11:35

Field ID: G2SW0026

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2063497	EPA 8321B	2,4-D	0.0020	U	ug/L	P359132	
		Acesulfame K**	0.10	U	ug/L	P358980	
		AMPA**	6.1		ug/L	P358980	
		Sucralose**	0.13		ug/L	P358980	
		Acetaminophen**	0.0080	U	ug/L	P359132	
		Endothall**	0.25	U	ug/L	P358980	
		Glufosinate**	0.10	U	ug/L	P358980	
		Bentazon	8.0E-04	U	ug/L	P359132	
		Glyphosate**	2.0		ug/L	P358980	
		Carbamazepine**	8.0E-04	U	ug/L	P359132	
		Diuron	0.0071	I	ug/L	P359132	
		Fenuron	0.016	U	ug/L	P359132	
		Imazapyr**	0.024		ug/L	P359132	
		Imidacloprid	0.11		ug/L	P359132	MS
		Linuron	0.0040	U	ug/L	P359132	
		MCPP	0.0020	U	ug/L	P359132	
		Primidone**	0.0040	U	ug/L	P359132	
		Pyraclostrobin**	0.0020	U	ug/L	P359132	
		Triclopyr**	0.0040	U	ug/L	P359132	
		Fluridone**	8.0E-04	U	ug/L	P359132	
		Hydrocodone**	0.0020	U	ug/L	P359132	
		Naproxen**	0.0080	U	ug/L	P359132	
		Ibuprofen**	0.020	U	ug/L	P359132	

Sample Location: Poley @ Shepard Rd

Collection Date/Time: 02/18/2019 11:10

Field ID: G2SW0014

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2063498	EPA 8321B	2,4-D	0.0051	I	ug/L	P359132	
		Acesulfame K**	0.19	I	ug/L	P358980	
		AMPA**	0.55		ug/L	P358980	
		Sucralose**	0.89		ug/L	P358980	
		Acetaminophen**	0.0080	U	ug/L	P359132	
		Endothall**	0.25	U	ug/L	P358980	
		Glufosinate**	0.10	U	ug/L	P358980	
		Bentazon	0.033		ug/L	P359132	
		Glyphosate**	0.60		ug/L	P358980	
		Carbamazepine**	0.0020	I	ug/L	P359132	
		Diuron	0.0020	U	ug/L	P359132	
		Fenuron	0.016	U	ug/L	P359132	
		Imazapyr**	0.064		ug/L	P359132	
		Imidacloprid	0.020		ug/L	P359132	MS
		Linuron	0.0040	U	ug/L	P359132	
		MCPP	0.0020	U	ug/L	P359132	
		Primidone**	0.0040	U	ug/L	P359132	
		Pyraclostrobin**	0.0020	U	ug/L	P359132	
		Triclopyr**	0.0040	U	ug/L	P359132	
		Fluridone**	0.030		ug/L	P359132	
		Hydrocodone**	0.0020	U	ug/L	P359132	
		Naproxen**	0.0080	U	ug/L	P359132	
		Ibuprofen**	0.020	U	ug/L	P359132	

Sample Location: English Creek above SR 60

Collection Date/Time: 02/18/2019 12:45

Field ID: G2SW0006

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2063499	EPA 8321B	2,4-D	0.023		ug/L	P359132	
		Acesulfame K**	0.10	U	ug/L	P358980	
		AMPA**	0.99		ug/L	P358980	
		Sucralose**	0.14		ug/L	P358980	
		Acetaminophen**	0.0080	U	ug/L	P359132	
		Endothall**	0.25	U	ug/L	P358980	
		Glufosinate**	0.10	U	ug/L	P358980	
		Bentazon	0.085		ug/L	P359132	
		Glyphosate**	0.94		ug/L	P358980	
		Carbamazepine**	0.0015	I	ug/L	P359132	
		Diuron	0.0072	I	ug/L	P359132	
		Fenuron	0.016	U	ug/L	P359132	
		Imazapyr**	0.17		ug/L	P359132	
		Imidacloprid	0.024		ug/L	P359132	MS
		Linuron	0.0040	U	ug/L	P359132	
		MCPP	0.0020	U	ug/L	P359132	
		Primidone**	0.0040	U	ug/L	P359132	
		Pyraclostrobin**	0.0020	U	ug/L	P359132	
		Triclopyr**	0.0040	U	ug/L	P359132	
		Fluridone**	0.0097		ug/L	P359132	
		Hydrocodone**	0.0020	U	ug/L	P359132	
		Naproxen**	0.0080	U	ug/L	P359132	
		Ibuprofen**	0.020	U	ug/L	P359132	

Sample Location: English Creek above SR 60

Collection Date/Time: 02/18/2019 12:45

Field ID: G2SW0006

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2063487	EPA 180.1 Rev. 2.0	Turbidity	4.4		NTU	P359191	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P359739	
		Sulfate	14		mg SO4/L	P359741	
	SM 2120 B	Color (true)	110	A	PCU	P359184	
	SM 2320 B-97	Total Alkalinity	85		mg CaCO3/L	P359425	
	SM 2540 C-97	TDS	178	A	mg/L	P359536	
	SM 2540 D-97	TSS	4	IA	mg/L	P359442	
	SM 4500 F-C-97	Fluoride	0.51		mg F/L	P359429	
2063488	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P359379	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.90		mg N/L	P359321	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.1		mg N/L	P359487	
	EPA 365.1 Rev. 2.0	Total-P	0.98		mg P/L	P359307	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P359683	
2063489	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.86		mg P/L	P359178	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P359191

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359739

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359741

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359379

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359321

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359487

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359307

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359178

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

Reference Method: EPA 8321B
Batch ID: P358980

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P358980

Component	Result	Code	Units
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P359132

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	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B
Batch ID: P359184

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P359425

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-97
Batch ID: P359536

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P359442

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P359429

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P359683

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: P359739

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359741

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359379

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.5		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359321

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: P359487

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359307

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359178

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.5		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P358980

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	118		P	40 - 150
AMPA	87.8		P	40 - 150
Endothall	92.3		P	40 - 150
Glufosinate	105		P	40 - 150
Glyphosate	100		P	40 - 140
Sucralose	95.4		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P359132

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	78.2		P	40 - 150
Acetaminophen	95.1		P	30 - 150
Bentazon	115		P	30 - 150
Carbamazepine	92.2		P	40 - 150
Diuron	82.7		P	40 - 150
Fenuron	115		P	40 - 150
Fluridone	102		P	40 - 150
Hydrocodone	102		P	40 - 150
Ibuprofen	88.5		P	40 - 150
Imazapyr	102		P	40 - 150
Imidacloprid	103		P	40 - 150
Linuron	74.2		P	40 - 150
MCPP	99.7		P	40 - 150
Naproxen	75.6		P	40 - 150
Primidone	104		P	40 - 150
Pyraclostrobin	69.0		P	40 - 150
Triclopyr	64.2		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P359184

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P359425

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

Reference Method: SM 4500 F-C-97
Batch ID: P359429

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.3		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P359683

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359739

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063433	Chloride	104		P	90 - 110
2063517	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359741

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063433	Sulfate	103		P	90 - 110
2063517	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359379

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063478	Ammonia-N	102	96.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359321

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063397	Kjeldahl Nitrogen	95.4	90.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359487

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063478	NO2NO3-N	96.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359307

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063478	Total-P	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359178

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063479	O-Phosphate-P	95.5	97.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P358980

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062987	Acesulfame K	86.1	86.3	P/P	40 - 150
2062987	AMPA	67.8	67.6	P/P	40 - 150
2062987	Endothall	94.2	94.2	P/P	40 - 150
2062987	Glufosinate	77.8	71.7	P/P	40 - 150
2062987	Glyphosate	83.1	77.8	P/P	40 - 140
2062987	Sucralose	98.0	96.5	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P359132

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063322	2,4-D	104	104	P/P	40 - 150
2063322	Acetaminophen	125	125	P/P	30 - 150
2063322	Bentazon	90.8	105	P/P	30 - 150
2063322	Carbamazepine	81.5	84.8	P/P	40 - 150
2063322	Diuron	69.4	81.9	P/P	40 - 150
2063322	Fenuron	88.7	86.9	P/P	40 - 150
2063322	Fluridone	113	122	P/P	40 - 150
2063322	Hydrocodone	100	117	P/P	40 - 150
2063322	Ibuprofen	86.0	73.8	P/P	40 - 150
2063322	Imazapyr	130	149	P/P	40 - 150
2063322	Imidacloprid	202	215	F/F	40 - 150
2063322	Linuron	72.5	82.3	P/P	40 - 150
2063322	MCPP	130	140	P/P	40 - 150
2063322	Naproxen	87.2	87.2	P/P	40 - 150
2063322	Primidone	104	109	P/P	40 - 150
2063322	Pyraclostrobin	72.1	69.5	P/P	40 - 150
2063322	Triclopyr	85.8	86.3	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P359429

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063517	Fluoride	98.9	98.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P359683

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063449	Organic Carbon	103		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P359191

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063477	Turbidity	2.65	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359739

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063517	Chloride	0.0364	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359741

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063517	Sulfate	0.222	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359379

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063478	Ammonia-N	2.95	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359321

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063397	Kjeldahl Nitrogen	3.53	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359487

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063478	NO2NO3-N	0.219	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359307

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063478	Total-P	0.595	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359178

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063479	O-Phosphate-P	1.48	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P358980

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062987	Acesulfame K	0.222	Spike	P	0 - 30
2062987	AMPA	0.353	Spike	P	0 - 30
2062987	Endothall	0.0242	Spike	P	0 - 30
2062987	Glufosinate	8.12	Spike	P	0 - 30
2062987	Glyphosate	5.80	Spike	P	0 - 30
2062987	Sucralose	1.44	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P359132

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063322	2,4-D	0.0714	Spike	P	0 - 30
2063322	Acetaminophen	0.329	Spike	P	0 - 30
2063322	Bentazon	9.96	Spike	P	0 - 30
2063322	Carbamazepine	3.92	Spike	P	0 - 30
2063322	Diuron	15.6	Spike	P	0 - 30
2063322	Fenuron	1.95	Spike	P	0 - 30
2063322	Fluridone	6.46	Spike	P	0 - 30
2063322	Hydrocodone	15.6	Spike	P	0 - 30
2063322	Ibuprofen	15.3	Spike	P	0 - 30
2063322	Imazapyr	8.26	Spike	P	0 - 30
2063322	Imidacloprid	5.85	Spike	P	0 - 30
2063322	Linuron	12.7	Spike	P	0 - 30
2063322	MCP	7.54	Spike	P	0 - 30
2063322	Naproxen	0.00172	Spike	P	0 - 30
2063322	Primidone	4.77	Spike	P	0 - 30
2063322	Pyraclostrobin	3.61	Spike	P	0 - 30
2063322	Triclopyr	0.627	Spike	P	0 - 30

Reference Method: SM 2120 B
 Batch ID: P359184

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063487	Color (true)	0.676	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P359425

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063517	Total Alkalinity	0.279	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
 Batch ID: P359536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063487	TDS	3.92	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P359429

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063517	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P359683

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063449	Organic Carbon	0.424	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: 2063497
Field Sample ID: G2SW0026

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	92.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	103	P	30 - 160
EPA 8321B	Carbamazepine-d10	63.8	P	30 - 160
EPA 8321B	Diuron-d6	58.0	P	30 - 160
EPA 8321B	Endothall-d6	111	P	40 - 160
EPA 8321B	Endothall-d6	111	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	99.8	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	99.8	P	40 - 160
EPA 8321B	Ibuprofen-d3	59.6	P	30 - 160
EPA 8321B	Primidone-d5	79.8	P	30 - 160
EPA 8321B	Sucralose-d6	106	P	40 - 160
EPA 8321B	Sucralose-d6	106	P	40 - 160

Lab Sample ID: 2063498
Field Sample ID: G2SW0014

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	86.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	106	P	30 - 160
EPA 8321B	Carbamazepine-d10	68.0	P	30 - 160
EPA 8321B	Diuron-d6	61.6	P	30 - 160
EPA 8321B	Endothall-d6	97.9	P	40 - 160
EPA 8321B	Endothall-d6	97.9	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	96.2	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	96.2	P	40 - 160
EPA 8321B	Ibuprofen-d3	58.8	P	30 - 160
EPA 8321B	Primidone-d5	89.9	P	30 - 160
EPA 8321B	Sucralose-d6	103	P	40 - 160
EPA 8321B	Sucralose-d6	103	P	40 - 160

Lab Sample ID: 2063499
Field Sample ID: G2SW0006

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	93.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	120	P	30 - 160
EPA 8321B	Carbamazepine-d10	70.5	P	30 - 160
EPA 8321B	Diuron-d6	62.0	P	30 - 160
EPA 8321B	Endothall-d6	114	P	40 - 160
EPA 8321B	Endothall-d6	114	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	106	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	106	P	40 - 160
EPA 8321B	Ibuprofen-d3	81.1	P	30 - 160
EPA 8321B	Primidone-d5	94.7	P	30 - 160
EPA 8321B	Sucralose-d6	108	P	40 - 160
EPA 8321B	Sucralose-d6	108	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A89509

Included Lab Sample IDs: 2063489

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

Reference Method: SM 2120 B

Run ID: A89510

Included Lab Sample IDs: 2063487

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A89511

Included Lab Sample IDs: 2063487

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A89547

Included Lab Sample IDs: 2063497, 2063498, 2063499

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	84.7	78.1	P/P	60 - 160
Glufosinate	99.5	105	P/P	60 - 160
Glyphosate	110	101	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89588

Included Lab Sample IDs: 2063488

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A89592

Included Lab Sample IDs: 2063488

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

Reference Method: EPA 8321B

Run ID: A89599

Included Lab Sample IDs: 2063497, 2063498, 2063499

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	93.9	99.4	P/P	60 - 160

Reference Method: SM 2320 B-97

Run ID: A89606

Included Lab Sample IDs: 2063487

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97
Run ID: A89606
Included Lab Sample IDs: 2063487

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.4	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A89606
Included Lab Sample IDs: 2063487

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	98.5	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A89610
Included Lab Sample IDs: 2063497, 2063498, 2063499

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	71.7	95.5	P/P	50 - 150
Acetaminophen	107	113	P/P	60 - 160
Bentazon	70.5	79.2	P/P	50 - 160
Carbamazepine	99.2	98.8	P/P	60 - 150
Diuron	107	105	P/P	60 - 150
Fenuron	99.5	105	P/P	60 - 150
Fluridone	103	104	P/P	60 - 160
Hydrocodone	103	96.3	P/P	60 - 150
Ibuprofen	74.3	79.9	P/P	50 - 160
Imazapyr	92.5	98.7	P/P	50 - 150
Imidacloprid	101	95.4	P/P	60 - 150
Linuron	98.1	105	P/P	60 - 150
MCPP	98.9	104	P/P	50 - 150
Naproxen	119	116	P/P	50 - 160
Primidone	108	100	P/P	60 - 150
Pyraclostrobin	98.8	99.3	P/P	60 - 150
Triclopyr	94.7	107	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A89633
Included Lab Sample IDs: 2063488

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A89640
Included Lab Sample IDs: 2063488

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A89674
Included Lab Sample IDs: 2063487

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A89674

Included Lab Sample IDs: 2063487

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

Reference Method: EPA 8321B

Run ID: A89676

Included Lab Sample IDs: 2063497, 2063498, 2063499

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	127	91.8	P/P	60 - 160
Endothall	94.1	104	P/P	60 - 160

Reference Method: SM 5310 B-00

Run ID: A89721

Included Lab Sample IDs: 2063488

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.0	93.1	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		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					2.65	
EPA 300.0 Rev. 2.1	Chloride	104	101	104		0.0364	
	Sulfate	105	100	103		0.222	
EPA 350.1 Rev. 2.0	Ammonia-N	96.5	102	96.7			2.95
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	95.4	90.7			3.53
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.0	96.2				0.219
EPA 365.1 Rev. 2.0	Total-P	105	103	102			0.595
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.5	95.5	97.1			1.48
EPA 8321B	2,4-D	78.2	104	104			0.0714
	Acesulfame K	118	86.1	86.3			0.222
	Acetaminophen	95.1	125	125			0.329
	AMPA	87.8	67.8	67.6			0.353
	Bentazon	115	90.8	105			9.96
	Carbamazepine	92.2	81.5	84.8			3.92
	Diuron	82.7	69.4	81.9			15.6
	Endothall	92.3	94.2	94.2			0.0242
	Fenuron	115	88.7	86.9			1.95
	Fluridone	102	113	122			6.46
	Glufosinate	105	77.8	71.7			8.12
	Glyphosate	100	83.1	77.8			5.80
	Hydrocodone	102	100	117			15.6
	Ibuprofen	88.5	86.0	73.8			15.3
	Imazapyr	102	130	149			8.26
	Imidacloprid	103	202	215			5.85
	Linuron	74.2	72.5	82.3			12.7
	MCPP	99.7	130	140			7.54
	Naproxen	75.6	87.2	87.2			0.0017
	Primidone	104	104	109			4.77
	Pyraclostrobin	69.0	72.1	69.5			3.61
	Sucralose	95.4	98.0	96.5			1.44
	Triclopyr	64.2	85.8	86.3			0.627
SM 2120 B	Color (true)	102				0.676	
SM 2320 B-97	Total Alkalinity	101				0.279	
SM 2540 C-97	TDS					3.92	
SM 4500 F-C-97	Fluoride	97.3	98.9	98.9			0.0
SM 5310 B-00	Organic Carbon	94.3	103				0.424

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2063487
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2063487
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2063487
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2063488
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2063488
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2063488
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2063488

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2063489
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2063497, 2063498, 2063499
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2063497, 2063498, 2063499
SM 2120 B / E31780	True Color measured at 450 nm	2063487
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2063487
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2063487
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2063487
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2063487
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2063488

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	02/19/2019			02/19/2019 17:21	Adrian Shelby	2063487
EPA 300.0 Rev. 2.1	02/19/2019			02/28/2019 14:12	Lipi Saha	2063487
EPA 350.1 Rev. 2.0	02/19/2019			02/22/2019 12:06	Ping Hua	2063488
EPA 351.2 Rev. 2.0	02/19/2019	02/21/2019 16:30	Adrian Shelby	02/22/2019 14:24	Joseph Suarez	2063488
EPA 353.2 Rev. 2.0	02/19/2019			02/25/2019 11:55	Beverly Y. Sanders	2063488
EPA 365.1 Rev. 2.0	02/19/2019	02/21/2019 13:10	Sima Feizi	02/22/2019 11:06	Rosalyn Ballman	2063488
EPA 365.1 Rev. 2.0 dissolved	02/19/2019			02/19/2019 15:00	Jhamieka S. Greenwood	2063489
EPA 8321B	02/19/2019	02/20/2019 11:00	Rebecca Ware	02/20/2019 13:27	Mohammad Ghaffari	2063497
	02/19/2019	02/20/2019 11:00	Rebecca Ware	02/20/2019 13:38	Mohammad Ghaffari	2063498
	02/19/2019	02/20/2019 11:00	Rebecca Ware	02/20/2019 13:49	Mohammad Ghaffari	2063499
	02/19/2019	02/20/2019 11:00	Rebecca Ware	02/20/2019 21:06	Rebecca Ware	2063497
	02/19/2019	02/20/2019 11:00	Rebecca Ware	02/20/2019 21:20	Rebecca Ware	2063498
	02/19/2019	02/20/2019 11:00	Rebecca Ware	02/20/2019 21:34	Rebecca Ware	2063499
	02/19/2019	02/20/2019 11:00	Rebecca Ware	02/22/2019 21:05	Mohammad Ghaffari	2063497
	02/19/2019	02/20/2019 11:00	Rebecca Ware	02/22/2019 21:18	Mohammad Ghaffari	2063498
	02/19/2019	02/20/2019 11:00	Rebecca Ware	02/22/2019 21:30	Mohammad Ghaffari	2063499
	02/19/2019	02/21/2019 10:00	Hoor Shaik	02/24/2019 15:00	Juyoung Kim	2063497
	02/19/2019	02/21/2019 10:00	Hoor Shaik	02/24/2019 15:34	Juyoung Kim	2063498
	02/19/2019	02/21/2019 10:00	Hoor Shaik	02/24/2019 16:09	Juyoung Kim	2063499
SM 2120 B	02/19/2019			02/19/2019 16:45	Chelsea Hernandez	2063487
SM 2320 B-97	02/19/2019			02/23/2019 11:11	Lauren Lees	2063487
SM 2540 C-97	02/19/2019			02/20/2019 16:21	Yijie Li	2063487
SM 2540 D-97	02/19/2019			02/20/2019 16:21	Yijie Li	2063487
SM 4500 F-C-97	02/19/2019			02/23/2019 11:11	Lauren Lees	2063487
SM 5310 B-00	02/19/2019			02/27/2019 05:49	Chelsea Hernandez	2063488