

Chemical Analysis Report

WQAP-2017-04-11-01

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

Event Description: **Poley & Peace**
Request ID: **RQ-2017-04-10-55**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
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13051 N. Telecom Parkway
Tampa, FL 33637
Attn: Judy Ashton

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 27-APR-2017 13:19

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored background.

Case Narrative

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

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

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

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

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

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: PEACE R ABOVE BOWLEG

Collection Date/Time: 04/10/2017 10:10

Field ID: G3SW0042

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1887013	EPA 180.1 Rev. 2.0	Turbidity	28		NTU	P323148	
	EPA 300.0 Rev. 2.1	Chloride	31		mg Cl/L	P323490	
		Sulfate	15		mg SO4/L	P323485	
	SM 2120 B	Color (true)	48		PCU	P323116	
	SM 2320 B-97	Total Alkalinity	82		mg CaCO3/L	P323543	
	SM 2540 C-97	TDS	170		mg/L	P323435	
	SM 2540 D-97	TSS	50		mg/L	P323550	
	SM 4500 F-C-97	Fluoride	0.49		mg F/L	P323608	
1887014	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P323271	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	4.8		mg N/L	P323209	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P323317	
	EPA 365.1 Rev. 2.0	Total-P	0.48		mg P/L	P323253	
	SM 5310 B-00	Organic Carbon	21		mg C/L	P323330	
1887015	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.013		mg P/L	P323104	

Ref. Method and Comment:

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

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: PEACE R ABOVE BOWLEG

Collection Date/Time: 04/10/2017 10:10

Field ID: G3SW0042

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1887022	EPA 8321B	Sucralose**	7.2		ug/L	P323079	
	USGS O-2060-01	2,4-D	0.060		ug/L	P322959	
		Diuron	0.0080	U	ug/L	P322959	MS
		Fenuron	0.016	U	ug/L	P322959	
		Imidacloprid	0.011	I	ug/L	P322959	
		Bentazon	0.066		ug/L	P322959	
		Linuron	0.0080	U	ug/L	P322959	MS
		Acetaminophen**	0.010	U	ug/L	P322959	
		MCP	0.0040	U	ug/L	P322959	
		Carbamazepine**	0.010		ug/L	P322959	MS
		Triclopyr**	0.041		ug/L	P322959	
		Primidone**	0.017	I	ug/L	P322959	MS
		Fluridone**	0.0037		ug/L	P322959	

Ref. Method and Comment:

USGS O-2060-01: MS accuracy for bentazon and 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.

USGS O-2060-01: MDL's for some parameters elevated due to matrix interference.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P323148

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: P323485

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323490

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323271

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323209

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323317

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323253

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323104

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

Reference Method: EPA 8321B
Batch ID: P323079

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P323116

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
 Batch ID: P323543

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

Reference Method: SM 2540 C-97
 Batch ID: P323435

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
 Batch ID: P323550

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
 Batch ID: P323608

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P323330

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

Reference Method: USGS O-2060-01
 Batch ID: P322959

Component	Result	Code	Units
2,4-D	0.0040	U	ug/L
Acetaminophen	0.010	U	ug/L
Bentazon	0.0040	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0040	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0040	U	ug/L
Linuron	0.0040	U	ug/L
MCP	0.0040	U	ug/L
Primidone	0.0080	U	ug/L
Triclopyr	0.010	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P323485

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323490

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323271

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323209

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323317

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323253

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323104

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.8		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P323079

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	97.1		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P323543

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P323608

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.1		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P323330

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.6		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P322959

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	64.4		P	40 - 140
Acetaminophen	90.0		P	40 - 140
Bentazon	94.8		P	40 - 140
Carbamazepine	96.4		P	40 - 140
Diuron	75.2		P	40 - 140
Fenuron	96.4		P	40 - 140
Fluridone	103		P	40 - 140
Imidacloprid	77.2		P	40 - 160
Linuron	80.8		P	40 - 140
MCP	72.8		P	40 - 140
Primidone	80.4		P	40 - 140
Triclopyr	88.0		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323485

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1886885	Sulfate	99.9		P	90 - 110
1886960	Sulfate	98.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323490

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1886885	Chloride	103		P	90 - 110
1886960	Chloride	102		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323209

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887084	Kjeldahl Nitrogen	103	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323317

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887108	NO2NO3-N	97.0	99.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323253

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887140	Total-P	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323104

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1886838	O-Phosphate-P	98.5	97.0	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P323079

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887097	Sucralose	104	100	P/P	40 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P323608

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887137	Fluoride	94.2	96.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P323330

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887282	Organic Carbon	93.2	97.6	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P322959

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1886675	Acetaminophen	53.2	51.6	P/P	40 - 140
1886675	Carbamazepine	37.4	40.2	F/P	40 - 140
1886675	Diuron	33.6	44.0	F/P	40 - 140
1886675	Fenuron	48.8	52.8	P/P	40 - 140
1886675	Fluridone	55.2	60.8	P/P	40 - 140
1886675	Imidacloprid	56.0	66.4	P/P	40 - 160
1886675	Linuron	136	143	P/F	40 - 140
1886675	MCP	124	103	P/P	40 - 140
1886675	Primidone	39.6	52.0	F/P	40 - 140
1886675	Triclopyr	118	108	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P323148

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1886834	Turbidity	5.88	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323485

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1886885	Sulfate	1.12	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323490

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1886885	Chloride	0.0661	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323271

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1886867	Ammonia-N	0.182	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887084	Kjeldahl Nitrogen	0.466	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323317

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887108	NO2NO3-N	2.04	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323253

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887140	Total-P	0.941	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323104

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1886838	O-Phosphate-P	0.887	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P323079

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887097	Sucralose	3.28	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P323116

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887318	Color (true)	1.38	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P323543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887138	Total Alkalinity	0.0884	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P323435

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1886606	TDS	5.59	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P323608

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887137	Fluoride	1.96	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P323330

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887282	Organic Carbon	3.65	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P322959

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1886675	2,4-D	5.31	Spike	P	0 - 30
1886675	Acetaminophen	3.05	Spike	P	0 - 30
1886675	Bentazon	2.54	Spike	P	0 - 30
1886675	Carbamazepine	4.03	Spike	P	0 - 30
1886675	Diuron	23.3	Spike	P	0 - 30
1886675	Fenuron	7.87	Spike	P	0 - 30
1886675	Fluridone	5.45	Spike	P	0 - 30
1886675	Imidacloprid	6.79	Spike	P	0 - 30
1886675	Linuron	4.86	Spike	P	0 - 30
1886675	MCP	17.0	Spike	P	0 - 30
1886675	Primidone	10.0	Spike	P	0 - 30
1886675	Triclopyr	8.31	Spike	P	0 - 30

* 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: 1887022
 Field Sample ID: G3SW0042

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	103	P	40 - 150
USGS O-2060-01	2,4-D-d3	93.8	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	68.2	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	54.6	P	40 - 160
USGS O-2060-01	Diuron-d6	58.0	P	40 - 150
USGS O-2060-01	Primidone-d5	55.6	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Run ID: A75721
 Included Lab Sample IDs: 1887015

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	98.4	P/P	90 - 110

Reference Method: SM 2120 B
 Run ID: A75722
 Included Lab Sample IDs: 1887013

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	103	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
 Run ID: A75732
 Included Lab Sample IDs: 1887013

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

Reference Method: EPA 350.1 Rev. 2.0
 Run ID: A75750
 Included Lab Sample IDs: 1887014

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

Reference Method: EPA 8321B
 Run ID: A75756
 Included Lab Sample IDs: 1887022

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	106	106	P/P	60 - 150

Reference Method: EPA 353.2 Rev. 2.0
 Run ID: A75759
 Included Lab Sample IDs: 1887014

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	97.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75762

Included Lab Sample IDs: 1887014

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.9	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75763

Included Lab Sample IDs: 1887014

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	104	105	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A75769

Included Lab Sample IDs: 1887014

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.8	95.6	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A75776

Included Lab Sample IDs: 1887022

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	123	130	P/P	60 - 150
Carbamazepine	143	150	P/P	60 - 150
Diuron	104	108	P/P	60 - 150
Fenuron	124	135	P/P	60 - 150
Fluridone	126	128	P/P	60 - 150
Imidacloprid	109	114	P/P	60 - 150
Linuron	90.8	88.8	P/P	60 - 150
Primidone	96.8	137	P/P	60 - 150

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A75780

Included Lab Sample IDs: 1887013

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	102	P/P	90 - 110
Sulfate	97.3	100	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A75820

Included Lab Sample IDs: 1887022

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	95.6	107	P/P	50 - 150
Bentazon	97.2	100	P/P	50 - 150
MCP	130	131	P/P	50 - 150
Triclopyr	105	111	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97
 Run ID: A75835
 Included Lab Sample IDs: 1887013

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	105	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Run ID: A75855
 Included Lab Sample IDs: 1887013

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.1	99.0	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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					5.88	
EPA 300.0 Rev. 2.1	Chloride	102	103	102		0.0661	
	Sulfate	99.2	99.9	98.1		1.12	
EPA 350.1 Rev. 2.0	Ammonia-N	100					0.182
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.2	103	102			0.466
EPA 353.2 Rev. 2.0	NO2NO3-N	100	97.0	99.0			2.04
EPA 365.1 Rev. 2.0	Total-P	101	102	101			0.941
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.8	98.5	97.0			0.887
EPA 8321B	Sucralose	97.1	104	100			3.28
SM 2120 B	Color (true)					1.38	
SM 2320 B-97	Total Alkalinity	104				0.0884	
SM 2540 C-97	TDS					5.59	
SM 4500 F-C-97	Fluoride	95.1	94.2	96.6			1.96
SM 5310 B-00	Organic Carbon	99.6	93.2	97.6			3.65
USGS O-2060-01	2,4-D	64.4					5.31
	Acetaminophen	90.0	53.2	51.6			3.05
	Bentazon	94.8					2.54
	Carbamazepine	96.4	37.4	40.2			4.03
	Diuron	75.2	33.6	44.0			23.3
	Fenuron	96.4	48.8	52.8			7.87
	Fluridone	103	55.2	60.8			5.45
	Imidacloprid	77.2	56.0	66.4			6.79
	Linuron	80.8	136	143			4.86
	MCP	72.8	124	103			17.0
	Primidone	80.4	39.6	52.0			10.0
	Triclopyr	88.0	118	108			8.31

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
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Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1887013
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1887013
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1887013
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1887014
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1887014
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1887014
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1887014
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1887015
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1887022
SM 2120 B / E31780	True Color measured at 450 nm	1887013
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1887013
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1887013
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1887013
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1887013
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1887014
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1887022
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1887022

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	04/11/2017			04/11/2017 16:14	Blanca Fach	1887013
EPA 300.0 Rev. 2.1	04/11/2017			04/15/2017	Ping Hua	1887013
EPA 350.1 Rev. 2.0	04/11/2017			04/12/2017	Julie Michelle Frank	1887014
EPA 351.2 Rev. 2.0	04/11/2017	04/12/2017	Adrian Shelby	04/13/2017	Joseph Suarez	1887014
EPA 353.2 Rev. 2.0	04/11/2017			04/13/2017	Beverly Y. Sanders	1887014
EPA 365.1 Rev. 2.0	04/11/2017	04/12/2017	Vijayalakshmi Reddy	04/13/2017	Lipi Saha	1887014
EPA 365.1 Rev. 2.0 dissolved	04/11/2017			04/11/2017 14:17	Lipi Saha	1887015
EPA 8321B	04/11/2017	04/12/2017	Mohammad Ghaffari	04/12/2017	Mohammad Ghaffari	1887022
SM 2120 B	04/11/2017			04/11/2017 16:45	Julia Storbeck	1887013
SM 2320 B-97	04/11/2017			04/17/2017	Dale L. Simmons	1887013
SM 2540 C-97	04/11/2017			04/12/2017	Yijie Li	1887013
SM 2540 D-97	04/11/2017			04/12/2017	Yijie Li	1887013
SM 4500 F-C-97	04/11/2017			04/18/2017	Dale L. Simmons	1887013
SM 5310 B-00	04/11/2017			04/13/2017	Julie Michelle Frank	1887014
USGS O-2060-01	04/11/2017	04/12/2017	Hoor Shaik	04/13/2017	Juyoung Kim	1887022
	04/11/2017	04/12/2017	Hoor Shaik	04/16/2017	Juyoung Kim	1887022