

Chemical Analysis Report

NE-DIST-2019-02-21-01

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

Event Description: **Bmap 2**
Request ID: **RQ-2019-02-18-10**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 13-MAR-2019 14:44

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: TROUT RIVER AT OLD KINGS RD

Collection Date/Time: 02/20/2019 11:45

Field ID: 20030753

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2064314	EPA 180.1 Rev. 2.0	Turbidity	4.5		NTU	P359317	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P360099	
		Sulfate	4.3		mg SO4/L	P360101	
	SM 2120 B	Color (true)	240		PCU	P359325	
	SM 2320 B-97	Total Alkalinity	24		mg CaCO3/L	P359597	
	SM 2540 C-97	TDS	113		mg/L	P359561	
	SM 2540 D-97	TSS	2	U	mg/L	P359480	
	SM 4500 F-C-97	Fluoride	0.054	I	mg F/L	P359601	
2064315	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P359557	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.93		mg N/L	P359524	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.027		mg N/L	P359583	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P359393	
	SM 5310 B-00	Organic Carbon	24		mg C/L	P359684	
2064316	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.064		mg P/L	P359323	

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: LITTLE FISHWEIR AT OAKS ST

Collection Date/Time: 02/20/2019 13:30

Field ID: 20030953

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2064325	EPA 8321B	Acesulfame K**	0.14	I	ug/L	P359225	
		2,4-D	0.23		ug/L	P359229	
		AMPA**	0.18	I	ug/L	P359225	
		Sucralose**	0.14		ug/L	P359225	
		Endothall**	0.25	U	ug/L	P359225	
		Acetaminophen**	0.018	I	ug/L	P359229	
		Glufosinate**	0.10	U	ug/L	P359225	
		Glyphosate**	0.15	I	ug/L	P359225	
		Bentazon	0.023		ug/L	P359229	
		Carbamazepine**	8.0E-04	U	ug/L	P359229	
		Diuron	0.0020	U	ug/L	P359229	
		Fenuron	0.016	U	ug/L	P359229	
		Fluridone**	8.0E-04	U	ug/L	P359229	
		Imazapyr**	0.033		ug/L	P359229	
		Hydrocodone**	0.0020	U	ug/L	P359229	
		Ibuprofen**	0.020	U	ug/L	P359229	
		Imidacloprid	0.033		ug/L	P359229	MS
		Linuron	0.0040	U	ug/L	P359229	
		MCPP	0.056		ug/L	P359229	
		Naproxen**	0.0080	U	ug/L	P359229	
		Primidone**	0.0040	U	ug/L	P359229	
		Pyraclostrobin**	0.0020	U	ug/L	P359229	
		Triclopyr**	0.0040	U	ug/L	P359229	

Ref. Method and Comment:

EPA 8321B: MS accuracy for glyphosate could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: BIG FISHWEIR CR SF @ HAMILTON ST

Collection Date/Time: 02/20/2019 13:55

Field ID: 20030801

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2064311	EPA 180.1 Rev. 2.0	Turbidity	6.4	A	NTU	P359317	
	EPA 300.0 Rev. 2.1	Chloride	27	A	mg Cl/L	P360099	
		Sulfate	37	A	mg SO4/L	P360101	
	SM 2120 B	Color (true)	36		PCU	P359325	
	SM 2320 B-97	Total Alkalinity	148		mg CaCO3/L	P359597	
	SM 2540 C-97	TDS	270		mg/L	P359561	
	SM 2540 D-97	TSS	2	I	mg/L	P359480	
	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P359601	
2064312	EPA 350.1 Rev. 2.0	Ammonia-N	0.034		mg N/L	P359557	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.56		mg N/L	P359524	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.43		mg N/L	P359583	
	EPA 365.1 Rev. 2.0	Total-P	0.060		mg P/L	P359393	
	SM 5310 B-00	Organic Carbon	9.9		mg C/L	P359684	
2064313	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P359323	
2064324	EPA 8321B	Acesulfame K**	0.44		ug/L	P359225	
		2,4-D	0.14		ug/L	P359229	
		AMPA**	0.20	I	ug/L	P359225	
		Sucralose**	0.51		ug/L	P359225	
		Endothall**	0.25	U	ug/L	P359225	
		Acetaminophen**	0.18		ug/L	P359229	
		Glufosinate**	0.10	U	ug/L	P359225	
		Glyphosate**	0.31	I	ug/L	P359225	
		Bentazon	0.0062		ug/L	P359229	
		Carbamazepine**	8.0E-04	U	ug/L	P359229	
		Diuron	0.24		ug/L	P359229	
		Fenuron	0.016	U	ug/L	P359229	
		Fluridone**	8.0E-04	U	ug/L	P359229	
		Imazapyr**	0.079		ug/L	P359229	
		Hydrocodone**	0.0020	U	ug/L	P359229	
		Ibuprofen**	0.020	U	ug/L	P359229	
		Imidacloprid	0.038		ug/L	P359229	MS
		Linuron	0.0040	U	ug/L	P359229	
		MCPP	0.048		ug/L	P359229	
		Naproxen**	0.0080	U	ug/L	P359229	
		Primidone**	0.0040	U	ug/L	P359229	
		Pyraclostrobin**	0.0020	U	ug/L	P359229	
		Triclopyr**	0.0040	U	ug/L	P359229	

Ref. Method and Comment:

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

EPA 8321B: MS accuracy for glyphosate could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P359317

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360099

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360101

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359557

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359524

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359583

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359393

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359323

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

Reference Method: EPA 8321B
Batch ID: P359225

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: P359225

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

Reference Method: EPA 8321B
Batch ID: P359229

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: P359325

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P359597

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

Reference Method: SM 2540 C-97
Batch ID: P359561

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P359480

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P359601

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P359684

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: P360099

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	107		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360101

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359557

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359524

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359583

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: P359393

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	107		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359323

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.7		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P359225

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	113		P	40 - 150
AMPA	64.7		P	40 - 150
Endothall	93.1		P	40 - 150
Glufosinate	89.0		P	40 - 150
Glyphosate	91.9		P	40 - 140
Sucralose	98.2		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P359229

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	84.2		P	40 - 150
Acetaminophen	94.8		P	30 - 150
Bentazon	112		P	30 - 150
Carbamazepine	89.6		P	40 - 150
Diuron	83.6		P	40 - 150
Fenuron	129		P	40 - 150
Fluridone	114		P	40 - 150
Hydrocodone	115		P	40 - 150
Ibuprofen	78.0		P	40 - 150
Imazapyr	102		P	40 - 150
Imidacloprid	104		P	40 - 150
Linuron	82.6		P	40 - 150
MCPP	97.3		P	40 - 150
Naproxen	75.3		P	40 - 150
Primidone	103		P	40 - 150
Pyraclostrobin	69.3		P	40 - 150
Triclopyr	56.7		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P359325

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.3		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P359597

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

Reference Method: SM 4500 F-C-97
Batch ID: P359601

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P359684

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360099

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064311	Chloride	103		P	90 - 110
2064330	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360101

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064311	Sulfate	104		P	90 - 110
2064330	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359557

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064312	Ammonia-N	98.6	109	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359524

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064332	Kjeldahl Nitrogen	100	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359583

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064285	NO2NO3-N	97.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359393

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064331	Total-P	102	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359323

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064286	O-Phosphate-P	94.9	96.8	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P359225

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063987	Acesulfame K	90.0	87.7	P/P	40 - 150
2063987	AMPA	53.0	62.5	P/P	40 - 150
2063987	Endothall	128	119	P/P	40 - 150
2063987	Glufosinate	87.4	95.8	P/P	40 - 150
2063987	Sucralose	104	105	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P359229

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065167	2,4-D	107	100	P/P	40 - 150
2065167	Acetaminophen	103	103	P/P	30 - 150
2065167	Bentazon	90.7	73.0	P/P	30 - 150
2065167	Carbamazepine	79.7	79.0	P/P	40 - 150
2065167	Diuron	74.6	72.4	P/P	40 - 150
2065167	Fenuron	111	105	P/P	40 - 150
2065167	Fluridone	117	111	P/P	40 - 150
2065167	Hydrocodone	124	123	P/P	40 - 150
2065167	Ibuprofen	83.8	77.5	P/P	40 - 150
2065167	Imazapyr	111	99.2	P/P	40 - 150
2065167	Imidacloprid	194	192	F/F	40 - 150
2065167	Linuron	78.0	71.2	P/P	40 - 150
2065167	MCPP	123	113	P/P	40 - 150
2065167	Naproxen	71.6	67.4	P/P	40 - 150
2065167	Primidone	119	116	P/P	40 - 150
2065167	Pyraclostrobin	86.3	81.4	P/P	40 - 150
2065167	Triclopyr	67.3	59.4	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P359601

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064733	Fluoride	98.0	97.3	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P359684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064201	Organic Carbon	96.4	96.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P359317

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064311	Turbidity	5.35	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360099

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064311	Chloride	0.734	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360101

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064311	Sulfate	0.849	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359557

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064312	Ammonia-N	6.05	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359524

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064332	Kjeldahl Nitrogen	6.42	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359583

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064285	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359393

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064331	Total-P	2.92	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359323

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064286	O-Phosphate-P	1.50	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P359225

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063987	Acesulfame K	2.48	Spike	P	0 - 30
2063987	AMPA	9.77	Spike	P	0 - 30
2063987	Endothall	7.35	Spike	P	0 - 30
2063987	Glufosinate	9.20	Spike	P	0 - 30
2063987	Glyphosate	8.75	Spike	P	0 - 30
2063987	Sucralose	0.796	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P359229

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065167	2,4-D	6.48	Spike	P	0 - 30
2065167	Acetaminophen	0.828	Spike	P	0 - 30
2065167	Bentazon	6.36	Spike	P	0 - 30
2065167	Carbamazepine	0.809	Spike	P	0 - 30
2065167	Diuron	3.06	Spike	P	0 - 30
2065167	Fenuron	5.16	Spike	P	0 - 30
2065167	Fluridone	4.45	Spike	P	0 - 30
2065167	Hydrocodone	0.752	Spike	P	0 - 30
2065167	Ibuprofen	7.83	Spike	P	0 - 30
2065167	Imazapyr	4.88	Spike	P	0 - 30
2065167	Imidacloprid	0.779	Spike	P	0 - 30
2065167	Linuron	9.10	Spike	P	0 - 30
2065167	MCPP	8.15	Spike	P	0 - 30
2065167	Naproxen	6.05	Spike	P	0 - 30
2065167	Primidone	2.81	Spike	P	0 - 30
2065167	Pyraclostrobin	5.86	Spike	P	0 - 30
2065167	Triclopyr	12.4	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P359325

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064284	Color (true)	0.181	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P359597

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064733	Total Alkalinity	0.126	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P359561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064330	TDS	2.23	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P359601

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064733	Fluoride	0.470	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P359684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064201	Organic Carbon	0.423	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: 2064324
Field Sample ID: 20030801

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	79.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	50.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	43.5	P	30 - 160
EPA 8321B	Diuron-d6	42.3	P	30 - 160
EPA 8321B	Endothall-d6	111	P	40 - 160
EPA 8321B	Endothall-d6	111	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	82.4	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	82.4	P	40 - 160
EPA 8321B	Ibuprofen-d3	68.4	P	30 - 160
EPA 8321B	Primidone-d5	80.1	P	30 - 160
EPA 8321B	Sucralose-d6	97.0	P	40 - 160
EPA 8321B	Sucralose-d6	97.0	P	40 - 160

Lab Sample ID: 2064325
Field Sample ID: 20030953

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	85.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	87.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	60.9	P	30 - 160
EPA 8321B	Diuron-d6	58.4	P	30 - 160
EPA 8321B	Endothall-d6	107	P	40 - 160
EPA 8321B	Endothall-d6	107	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	80.1	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	80.1	P	40 - 160
EPA 8321B	Ibuprofen-d3	78.6	P	30 - 160
EPA 8321B	Primidone-d5	95.9	P	30 - 160
EPA 8321B	Sucralose-d6	106	P	40 - 160
EPA 8321B	Sucralose-d6	106	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A89562

Included Lab Sample IDs: 2064311, 2064314

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A89564

Included Lab Sample IDs: 2064313, 2064316

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.9	95.4	P/P	90 - 110
O-Phosphate-P	99.3	98.9	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A89565

Included Lab Sample IDs: 2064311, 2064314

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.5	98.5	P/P	85 - 115
Color (true)	98.9	96.2	P/P	85 - 115

Reference Method: EPA 8321B

Run ID: A89599

Included Lab Sample IDs: 2064324, 2064325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	93.1	104	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89630

Included Lab Sample IDs: 2064312, 2064315

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.9	99.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A89670

Included Lab Sample IDs: 2064312, 2064315

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

Reference Method: SM 2320 B-97

Run ID: A89680

Included Lab Sample IDs: 2064311, 2064314

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.7	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A89680

Included Lab Sample IDs: 2064311, 2064314

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

Reference Method: SM 4500 F-C-97

Run ID: A89680

Included Lab Sample IDs: 2064311, 2064314

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A89683

Included Lab Sample IDs: 2064312, 2064315

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A89706

Included Lab Sample IDs: 2064324, 2064325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	114	87.9	P/P	60 - 160
Endothall	103	112	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A89708

Included Lab Sample IDs: 2064324, 2064325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	70.4	71.5	P/P	60 - 160
Glufosinate	112	111	P/P	60 - 160
Glyphosate	122	110	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A89717

Included Lab Sample IDs: 2064324, 2064325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	107	122	P/P	50 - 150
Acetaminophen	112	115	P/P	60 - 160
Bentazon	118	116	P/P	50 - 160
Carbamazepine	106	104	P/P	60 - 150
Diuron	111	113	P/P	60 - 150
Fenuron	109	111	P/P	60 - 150
Fluridone	109	111	P/P	60 - 160
Hydrocodone	110	111	P/P	60 - 150
Ibuprofen	106	87.8	P/P	50 - 160
Imazapyr	101	98.8	P/P	50 - 150
Imidacloprid	100	103	P/P	60 - 150
Linuron	110	105	P/P	60 - 150
MCPP	87.3	88.8	P/P	50 - 150
Naproxen	107	96.9	P/P	50 - 160
Primidone	104	104	P/P	60 - 150
Pyraclostrobin	101	102	P/P	60 - 150
Triclopyr	86.8	93.9	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A89719

Included Lab Sample IDs: 2064312, 2064315

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	108	104	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A89721

Included Lab Sample IDs: 2064312, 2064315

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.5	94.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A89885

Included Lab Sample IDs: 2064311, 2064314

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	104	105	P/P	90 - 110
Sulfate	104	104	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					5.35	
EPA 300.0 Rev. 2.1	Chloride	107	103	103		0.734	
	Sulfate	106	104	103		0.849	
EPA 350.1 Rev. 2.0	Ammonia-N	99.2	98.6	109			6.05
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	100	108			6.42
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.0	97.5				0.0
EPA 365.1 Rev. 2.0	Total-P	107	102	99.1			2.92
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.7	94.9	96.8			1.50
EPA 8321B	2,4-D	84.2	107	100			6.48
	Acesulfame K	113	90.0	87.7			2.48
	Acetaminophen	94.8	103	103			0.828
	AMPA	64.7	53.0	62.5			9.77
	Bentazon	112	90.7	73.0			6.36
	Carbamazepine	89.6	79.7	79.0			0.809
	Diuron	83.6	74.6	72.4			3.06
	Endothall	93.1	128	119			7.35
	Fenuron	129	111	105			5.16
	Fluridone	114	117	111			4.45
	Glufosinate	89.0	87.4	95.8			9.20
	Glyphosate	91.9					8.75
	Hydrocodone	115	124	123			0.752
	Ibuprofen	78.0	83.8	77.5			7.83
	Imazapyr	102	111	99.2			4.88
	Imidacloprid	104	194	192			0.779
	Linuron	82.6	78.0	71.2			9.10
	MCP	97.3	123	113			8.15
	Naproxen	75.3	71.6	67.4			6.05
	Primidone	103	119	116			2.81
	Pyraclostrobin	69.3	86.3	81.4			5.86
	Sucralose	98.2	104	105			0.796
	Triclopyr	56.7	67.3	59.4			12.4
SM 2120 B	Color (true)	97.3				0.181	
SM 2320 B-97	Total Alkalinity	101				0.126	
SM 2540 C-97	TDS					2.23	
SM 4500 F-C-97	Fluoride	96.5	98.0	97.3			0.470
SM 5310 B-00	Organic Carbon	95.4	96.4	96.9			0.423

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2064311, 2064314
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2064311, 2064314
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2064311, 2064314
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2064312, 2064315
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2064312, 2064315
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2064312, 2064315
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2064312, 2064315

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	2064313, 2064316
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2064324, 2064325
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2064324, 2064325
SM 2120 B / E31780	True Color measured at 450 nm	2064311, 2064314
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2064311, 2064314
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2064311, 2064314
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2064311, 2064314
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2064311, 2064314
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2064312, 2064315

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	02/21/2019			02/21/2019 15:40	Adrian Shelby	2064311, 2064314
EPA 300.0 Rev. 2.1	02/21/2019			03/06/2019 19:04	Lipi Saha	2064311
	02/21/2019			03/06/2019 20:33	Lipi Saha	2064314
EPA 350.1 Rev. 2.0	02/21/2019			02/26/2019 11:17	Ping Hua	2064312
	02/21/2019			02/26/2019 11:23	Ping Hua	2064315
EPA 351.2 Rev. 2.0	02/21/2019	02/26/2019 11:30	Adrian Shelby	02/28/2019 10:38	Joseph Suarez	2064312
	02/21/2019	02/26/2019 11:30	Adrian Shelby	02/28/2019 10:39	Joseph Suarez	2064315
EPA 353.2 Rev. 2.0	02/21/2019			02/27/2019 09:09	Beverly Y. Sanders	2064312
	02/21/2019			02/27/2019 09:11	Beverly Y. Sanders	2064315
EPA 365.1 Rev. 2.0	02/21/2019	02/22/2019 13:00	Sima Feizi	02/25/2019 13:02	Rosalyn Ballman	2064312
	02/21/2019	02/22/2019 13:00	Sima Feizi	02/25/2019 13:03	Rosalyn Ballman	2064315
EPA 365.1 Rev. 2.0 dissolved	02/21/2019			02/21/2019 14:47	Jhamieka S. Greenwood	2064313
	02/21/2019			02/21/2019 14:52	Jhamieka S. Greenwood	2064316
EPA 8321B	02/21/2019	02/22/2019 10:00	Rebecca Ware	02/22/2019 14:43	Rebecca Ware	2064324
	02/21/2019	02/22/2019 10:00	Rebecca Ware	02/22/2019 14:54	Rebecca Ware	2064325
	02/21/2019	02/22/2019 10:00	Rebecca Ware	02/22/2019 20:43	Rebecca Ware	2064324
	02/21/2019	02/22/2019 10:00	Rebecca Ware	02/22/2019 20:57	Rebecca Ware	2064325
	02/21/2019	02/22/2019 10:00	Rebecca Ware	02/23/2019 08:47	Mohammad Ghaffari	2064324
	02/21/2019	02/22/2019 10:00	Rebecca Ware	02/23/2019 08:59	Mohammad Ghaffari	2064325
	02/21/2019	02/27/2019 09:30	Hoor Shaik	02/28/2019 00:23	Juyoung Kim	2064324
	02/21/2019	02/27/2019 09:30	Hoor Shaik	02/28/2019 00:58	Juyoung Kim	2064325
SM 2120 B	02/21/2019			02/21/2019 16:08	Chelsea Hernandez	2064311
	02/21/2019			02/21/2019 16:29	Chelsea Hernandez	2064314
SM 2320 B-97	02/21/2019			02/26/2019 05:46	Dale L. Simmons	2064311
	02/21/2019			02/26/2019 05:57	Dale L. Simmons	2064314
SM 2540 C-97	02/21/2019			02/22/2019 11:32	Mariam Hanna	2064311, 2064314
SM 2540 D-97	02/21/2019			02/22/2019 15:00	Mariam Hanna	2064311, 2064314
SM 4500 F-C-97	02/21/2019			02/26/2019 05:46	Dale L. Simmons	2064311
	02/21/2019			02/26/2019 05:57	Dale L. Simmons	2064314
SM 5310 B-00	02/21/2019			02/28/2019 04:10	Chelsea Hernandez	2064312
	02/21/2019			02/28/2019 04:24	Chelsea Hernandez	2064315