

Chemical Analysis Report

NW-DIST-2020-11-13-02

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

Event Description: **Mullet Creek Continuous**
Request ID: **RQ-2020-11-09-30**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 09-DEC-2020 10:34



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: Mouth Of Mullet Creek @ Hwy 20

Collection Date/Time: 11/12/2020 11:18

Field ID: G3NW0137

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2207686	EPA 180.1 Rev. 2.0	Turbidity	0.75		NTU	P390079	
	EPA 300.0 Rev. 2.1	Bromide	0.019	I	mg Br/L	P390163	
	SM 2320 B-2011	Total Alkalinity	2.4	I	mg CaCO3/L	P390130	
	SM 2540 D-2011	TSS	2	IA	mg/L	P390208	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P390132	
2207687	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P390349	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.23		mg N/L	P390125	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.021		mg N/L	P390380	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P390223	
	SM 5310 B-2011	Organic Carbon	3.6		mg C/L	P390307	
2207688	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P390073	
2207716	EPA 8321B	2,4-D	0.0020	U	ug/L	P390102	
		Acesulfame K**	0.10	U	ug/L	P390086	
		AMPA**	0.10	U	ug/L	P390086	
		Sucralose**	0.025	I	ug/L	P390086	
		Acetaminophen**	0.0080	U	ug/L	P390102	
		Acetamiprid**	0.0020	U	ug/L	P390102	
		Endothall**	0.25	U	ug/L	P390086	
		Glufosinate**	0.10	U	ug/L	P390086	
		Glyphosate**	0.10	U	ug/L	P390086	
		Afidopyropen**	0.0020	U	ug/L	P390102	
		Bentazon	8.0E-04	U	ug/L	P390102	
		Benzovindiflupyr**	0.0020	U	ug/L	P390102	
		Carbamazepine**	8.0E-04	U	ug/L	P390102	
		Clothianidin**	0.0020	U	ug/L	P390102	
		Dinotefuran**	0.0020	U	ug/L	P390102	
		Diuron	0.0020	U	ug/L	P390102	
		Fenuron	0.016	U	ug/L	P390102	
		Fluridone**	8.0E-04	U	ug/L	P390102	
		Imazapyr**	0.0040	U	ug/L	P390102	
		Hydrocodone**	0.0020	U	ug/L	P390102	
		Ibuprofen**	0.020	U	ug/L	P390102	
		Imidacloprid	0.0020	U	ug/L	P390102	
		Linuron	0.0040	U	ug/L	P390102	
		Mandestrobin**	0.0020	U	ug/L	P390102	
		MCP	0.0020	U	ug/L	P390102	
		Naproxen**	0.0080	U	ug/L	P390102	
		Primidone**	0.0040	U	ug/L	P390102	
		Pyraclostrobin**	0.0020	U	ug/L	P390102	
		Thiamethoxam**	0.0020	U	ug/L	P390102	
		Tolfenpyrad**	0.0020	U	ug/L	P390102	
		Triclopyr**	0.0040	U	ug/L	P390102	

Field ID: G3NW0137

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P390079

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390163

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P390349

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P390125

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P390380

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390223

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P390073

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

Reference Method: EPA 8321B
Batch ID: P390086

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
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P390102

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	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
Mandestrobin	0.0020	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
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2320 B-2011
Batch ID: P390130

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

Reference Method: SM 2540 D-2011
Batch ID: P390208

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P390132

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P390307

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: P390163

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P390349

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P390125

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P390380

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390223

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: P390073

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

Reference Method: EPA 8321B
Batch ID: P390086

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	107		P	40 - 150
AMPA	96.2		P	40 - 150
Endothall	98.9		P	40 - 150
Glufosinate	103		P	40 - 150
Glyphosate	88.9		P	40 - 140
Sucralose	107		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P390102

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	91.3		P	30 - 160
Acetaminophen	91.3		P	30 - 150
Acetamiprid	87.3		P	30 - 160
Afidopyropen	70.4		P	30 - 160
Bentazon	41.9		P	30 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P390102

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Benzovindiflupyr	88.6		P	30 - 160
Carbamazepine	71.8		P	30 - 160
Clothianidin	83.7		P	30 - 160
Dinotefuran	85.5		P	30 - 160
Diuron	80.0		P	30 - 160
Fenuron	84.9		P	30 - 160
Fluridone	86.2		P	30 - 160
Hydrocodone	94.8		P	30 - 160
Ibuprofen	59.3		P	30 - 160
Imazapyr	87.8		P	30 - 160
Imidacloprid	67.9		P	30 - 160
Linuron	75.2		P	30 - 160
Mandestrobin	89.2		P	30 - 160
MCPP	76.5		P	30 - 160
Naproxen	81.2		P	30 - 160
Primidone	81.5		P	30 - 160
Pyraclostrobin	79.6		P	30 - 160
Thiamethoxam	88.1		P	30 - 160
Tolfenpyrad	63.7		P	30 - 160
Triclopyr	68.6		P	30 - 160

Reference Method: SM 2320 B-2011

Batch ID: P390130

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	93 - 104

Reference Method: SM 4500 F-C-2011

Batch ID: P390132

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	103		P	90 - 106

Reference Method: SM 5310 B-2011

Batch ID: P390307

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P390163

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207686	Bromide	104	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P390349

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207782	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P390380

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207743	NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P390223

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207258	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P390073

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207667	O-Phosphate-P	100	99.9	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P390086

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207564	Acesulfame K	114	118	P/P	40 - 150
2207564	AMPA	102	105	P/P	40 - 150
2207564	Endothall	110	113	P/P	40 - 150
2207564	Glufosinate	91.2	91.8	P/P	40 - 150
2207564	Glyphosate	76.8	78.8	P/P	40 - 140
2207564	Sucralose	76.3	57.9	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P390102

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207871	2,4-D	85.6	79.8	P/P	30 - 160
2207871	Acetaminophen	87.7	87.9	P/P	30 - 150
2207871	Acetamiprid	88.0	97.5	P/P	30 - 160
2207871	Afidopyropen	50.8	62.8	P/P	30 - 160
2207871	Bentazon	32.2	32.0	P/P	30 - 150
2207871	Benzovindiflupyr	101	109	P/P	30 - 160
2207871	Carbamazepine	73.6	77.5	P/P	30 - 160
2207871	Clothianidin	74.9	69.2	P/P	30 - 160
2207871	Dinotefuran	89.1	83.2	P/P	30 - 160
2207871	Diuron	74.6	79.6	P/P	30 - 160
2207871	Fenuron	84.8	82.7	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P390102

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207871	Fluridone	85.2	84.6	P/P	30 - 160
2207871	Hydrocodone	76.0	87.9	P/P	30 - 160
2207871	Ibuprofen	46.7	60.0	P/P	30 - 160
2207871	Imazapyr	82.3	78.2	P/P	30 - 160
2207871	Imidacloprid	57.8	53.1	P/P	30 - 160
2207871	Linuron	70.0	66.1	P/P	30 - 160
2207871	Mandestrobin	87.7	88.9	P/P	30 - 160
2207871	MCPP	69.0	80.0	P/P	30 - 160
2207871	Naproxen	79.7	71.0	P/P	30 - 160
2207871	Primidone	64.3	60.8	P/P	30 - 160
2207871	Pyraclostrobin	79.4	86.8	P/P	30 - 160
2207871	Thiamethoxam	82.0	84.2	P/P	30 - 160
2207871	Tolfenpyrad	56.6	70.1	P/P	30 - 160
2207871	Triclopyr	52.8	57.0	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P390132

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207607	Fluoride	105	106	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P390307

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2207838	Organic Carbon	101	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P390079

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207653	Turbidity	6.13	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P390163

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207686	Bromide	2.03	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P390349

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207782	Ammonia-N	0.506	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P390125

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207752	Kjeldahl Nitrogen	7.60	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P390380

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207743	NO2NO3-N	0.496	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390223

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207258	Total-P	0.704	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P390073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207667	O-Phosphate-P	0.599	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P390086

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207564	Acesulfame K	3.33	Spike	P	0 - 30
2207564	AMPA	3.01	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P390086

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207564	Endothall	3.12	Spike	P	0 - 30
2207564	Glufosinate	0.638	Spike	P	0 - 30
2207564	Glyphosate	2.60	Spike	P	0 - 30
2207564	Sucralose	27.5	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P390102

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207871	2,4-D	6.94	Spike	P	0 - 30
2207871	Acetaminophen	0.216	Spike	P	0 - 30
2207871	Acetamiprid	10.2	Spike	P	0 - 30
2207871	Afidopyropen	21.2	Spike	P	0 - 30
2207871	Bentazon	0.622	Spike	P	0 - 30
2207871	Benzovindiflupyr	7.18	Spike	P	0 - 30
2207871	Carbamazepine	4.32	Spike	P	0 - 30
2207871	Clothianidin	8.04	Spike	P	0 - 30
2207871	Dinotefuran	6.84	Spike	P	0 - 30
2207871	Diuron	6.55	Spike	P	0 - 30
2207871	Fenuron	2.53	Spike	P	0 - 30
2207871	Fluridone	0.754	Spike	P	0 - 30
2207871	Hydrocodone	14.6	Spike	P	0 - 30
2207871	Ibuprofen	25.0	Spike	P	0 - 30
2207871	Imazapyr	5.14	Spike	P	0 - 30
2207871	Imidacloprid	7.15	Spike	P	0 - 30
2207871	Linuron	5.70	Spike	P	0 - 30
2207871	Mandestrobin	1.39	Spike	P	0 - 30
2207871	MCPP	14.8	Spike	P	0 - 30
2207871	Naproxen	11.5	Spike	P	0 - 30
2207871	Primidone	5.74	Spike	P	0 - 30
2207871	Pyraclostrobin	8.88	Spike	P	0 - 30
2207871	Thiamethoxam	2.59	Spike	P	0 - 30
2207871	Tolfenpyrad	21.3	Spike	P	0 - 30
2207871	Triclopyr	7.65	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P390130

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207607	Total Alkalinity	1.18	Sample	P	0 - 8.1

Reference Method: SM 4500 F-C-2011
Batch ID: P390132

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207607	Fluoride	0.467	Spike	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P390307

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2207838	Organic Carbon	0.763	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2207716

Field Sample ID: G3NW0137

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	98.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	98.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	96.3	P	30 - 160
EPA 8321B	Diuron-d6	80.9	P	30 - 160
EPA 8321B	Endothall-d6	100	P	40 - 160
EPA 8321B	Endothall-d6	100	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	84.8	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	84.8	P	40 - 160
EPA 8321B	Ibuprofen-d3	43.5	P	30 - 160
EPA 8321B	Primidone-d5	73.8	P	30 - 160
EPA 8321B	Sucralose-d6	103	P	30 - 160
EPA 8321B	Sucralose-d6	103	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A102133

Included Lab Sample IDs: 2207688

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A102140

Included Lab Sample IDs: 2207686

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	99.0	P/P	95 - 105

Reference Method: SM 2320 B-2011

Run ID: A102153

Included Lab Sample IDs: 2207686

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.6	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A102153

Included Lab Sample IDs: 2207686

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	103	107	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A102164

Included Lab Sample IDs: 2207686

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	98.2	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A102167

Included Lab Sample IDs: 2207716

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	94.6	96.6	P/P	60 - 160
Glufosinate	104	103	P/P	60 - 160
Glyphosate	97.4	99.4	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A102172

Included Lab Sample IDs: 2207687

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	109	110	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A102187

Included Lab Sample IDs: 2207716

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

Reference Method: EPA 8321B
 Run ID: A102187
 Included Lab Sample IDs: 2207716

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	109	106	P/P	60 - 160
Endothall	89.6	101	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0
 Run ID: A102212
 Included Lab Sample IDs: 2207687

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

Reference Method: SM 5310 B-2011
 Run ID: A102227
 Included Lab Sample IDs: 2207687

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.7	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Run ID: A102243
 Included Lab Sample IDs: 2207687

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

Reference Method: EPA 353.2 Rev. 2.0
 Run ID: A102260
 Included Lab Sample IDs: 2207687

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	99.5	P/P	90 - 110

Reference Method: EPA 8321B
 Run ID: A102296
 Included Lab Sample IDs: 2207716

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	121	139	P/P	50 - 150
Acetaminophen	100	101	P/P	60 - 160
Acetamiprid	123	125	P/P	50 - 150
Afidopyropen	76.0	102	P/P	50 - 150
Bentazon	90.0	96.4	P/P	50 - 160
Benzovindiflupyr	124	137	P/P	50 - 160
Carbamazepine	116	111	P/P	60 - 150
Clothianidin	104	103	P/P	60 - 150
Dinotefuran	88.0	104	P/P	50 - 150
Diuron	109	127	P/P	60 - 160
Fenuron	92.9	97.1	P/P	60 - 150
Fluridone	97.4	102	P/P	60 - 160
Hydrocodone	111	107	P/P	60 - 150
Ibuprofen	73.8	60.8	P/P	50 - 160
Imazapyr	78.4	103	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A102296

Included Lab Sample IDs: 2207716

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imidacloprid	80.4	95.7	P/P	60 - 150
Linuron	71.2	107	P/P	60 - 150
Mandestrobin	103	111	P/P	50 - 150
MCPP	87.2	93.8	P/P	50 - 150
Naproxen	115	122	P/P	50 - 160
Primidone	116	101	P/P	60 - 150
Pyraclostrobin	109	122	P/P	60 - 150
Thiamethoxam	102	108	P/P	50 - 150
Tolfenpyrad	138	129	P/P	60 - 150
Triclopyr	85.2	80.8	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A102384

Included Lab Sample IDs: 2207716

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	111	108	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					6.13	
EPA 300.0 Rev. 2.1	Bromide	105	102	104			2.03
EPA 350.1 Rev. 2.0	Ammonia-N	102	102	102			0.506
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107					7.60
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	100	101			0.496
EPA 365.1 Rev. 2.0	Total-P	101	104	104			0.704
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	100	99.9			0.599
EPA 8321B	2,4-D	91.3	85.6	79.8			6.94
	Acesulfame K	107	114	118			3.33
	Acetaminophen	91.3	87.7	87.9			0.216
	Acetamiprid	87.3	88.0	97.5			10.2
	Afidopyropen	70.4	50.8	62.8			21.2
	AMPA	96.2	102	105			3.01
	Bentazon	41.9	32.2	32.0			0.622
	Benzovindiflupyr	88.6	101	109			7.18
	Carbamazepine	71.8	73.6	77.5			4.32
	Clothianidin	83.7	74.9	69.2			8.04
	Dinotefuran	85.5	89.1	83.2			6.84
	Diuron	80.0	74.6	79.6			6.55
	Endothall	98.9	110	113			3.12
	Fenuron	84.9	84.8	82.7			2.53
	Fluridone	86.2	85.2	84.6			0.754
	Glufosinate	103	91.2	91.8			0.638
	Glyphosate	88.9	76.8	78.8			2.60
	Hydrocodone	94.8	76.0	87.9			14.6
	Ibuprofen	59.3	46.7	60.0			25.0
	Imazapyr	87.8	82.3	78.2			5.14
	Imidacloprid	67.9	57.8	53.1			7.15
	Linuron	75.2	70.0	66.1			5.70
	Mandestrobin	89.2	87.7	88.9			1.39
	MCPP	76.5	69.0	80.0			14.8
	Naproxen	81.2	79.7	71.0			11.5
	Primidone	81.5	64.3	60.8			5.74
	Pyraclostrobin	79.6	79.4	86.8			8.88
	Sucralose	107	76.3	57.9			27.5
	Thiamethoxam	88.1	82.0	84.2			2.59
	Tolfenpyrad	63.7	56.6	70.1			21.3
	Triclopyr	68.6	52.8	57.0			7.65
SM 2320 B-2011	Total Alkalinity	101				1.18	
SM 4500 F-C-2011	Fluoride	103	105	106			0.467
SM 5310 B-2011	Organic Carbon	101	101	102			0.763

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2207686
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2207686
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2207687
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2207687
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2207687
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2207687
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2207688

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2207716
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2207716
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2207686
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2207686
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2207686
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2207687

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	11/13/2020			11/13/2020 14:13	Yen Ta	2207686
EPA 300.0 Rev. 2.1	11/13/2020			11/16/2020 20:10	Lipi Saha	2207686
EPA 350.1 Rev. 2.0	11/13/2020			11/21/2020 11:34	Ping Hua	2207687
EPA 351.2 Rev. 2.0	11/13/2020	11/16/2020 13:44	David Boose	11/17/2020 13:07	Elliott Rodriguez	2207687
EPA 353.2 Rev. 2.0	11/13/2020			11/23/2020 10:06	Beverly Y. Sanders	2207687
EPA 365.1 Rev. 2.0	11/13/2020	11/18/2020 13:03	Yen Ta	11/19/2020 13:51	Shengyu Wang	2207687
EPA 365.1 Rev. 2.0 dissolved	11/13/2020			11/13/2020 13:18	Blanca Fach	2207688
EPA 8321B	11/13/2020	11/16/2020 11:30	Rebecca Ware	11/16/2020 13:24	Rebecca Ware	2207716
	11/13/2020	11/16/2020 11:30	Rebecca Ware	11/17/2020 17:05	Rebecca Ware	2207716
	11/13/2020	11/16/2020 11:30	Rebecca Ware	11/25/2020 14:26	Rebecca Ware	2207716
	11/13/2020	11/17/2020 09:00	Hoor Shaik	11/24/2020 11:34	Mohammad Ghaffari	2207716
SM 2320 B-2011	11/13/2020			11/16/2020 22:22	Dale L. Simmons	2207686
SM 2540 D-2011	11/13/2020			11/16/2020 14:25	Yijie Li	2207686
SM 4500 F-C-2011	11/13/2020			11/16/2020 22:22	Dale L. Simmons	2207686
SM 5310 B-2011	11/13/2020			11/18/2020 19:33	Touraj Touran	2207687