

Chemical Analysis Report

NW-DIST-2022-02-23-01

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

Event Description: **Escambia Bay Whaler Run**
Request ID: **RQ-2022-02-21-64**
Customer: **NW-DIST**
Project ID: **SMP**

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

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 21-MAR-2022 11:09

A handwritten signature in black ink, appearing to read "Liang Lin", is written on a light-colored, textured 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: Joes Bayou

Collection Date/Time: 02/22/2022 10:30

Field ID: G3NW0182

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2307560	EPA 180.1 Rev. 2.0	Turbidity	1.0	I	NTU	P410268	
	SM 2320 B-2011	Total Alkalinity	80		mg CaCO3/L	P410711	
	SM 2540 D-2011	TSS	7	IA	mg/L	P410807	
	SM 4500 F-C-2011	Fluoride	0.75		mg F/L	P410715	
2307561	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P410630	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.32	I	mg N/L	P410283	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P410772	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P410483	
	SM 5310 B-2011	Organic Carbon	3.1	I	mg C/L	P410891	
2307562	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P410264	
2307580	EPA 8321B	2,4-D	0.0020	U	ug/L	P410241	
		Acesulfame K	0.10	U	ug/L	P410177	
		2,4,5-T	0.0040	U	ug/L	P410241	
		AMPA	10	U	ug/L	P410177	
		Acetaminophen	0.0080	U	ug/L	P410241	
		Acetamiprid	0.0020	U	ug/L	P410241	
		Endothall	0.25	U	ug/L	P410177	
		Glufosinate	10	U	ug/L	P410177	
		Glyphosate	10	U	ug/L	P410177	
		Afidopyropen	0.0020	U	ug/L	P410241	
		Bentazon	8.0E-04	U	ug/L	P410241	
		Sucralose	0.15		ug/L	P410177	
		Benzovindiflupyr	0.0020	U	ug/L	P410241	
		Carbamazepine	8.0E-04	U	ug/L	P410241	
		Clothianidin	0.0020	U	ug/L	P410241	
		Dinotefuran	0.0020	U	ug/L	P410241	
		Diuron	0.0020	U	ug/L	P410241	
		Fenuron	0.016	U	ug/L	P410241	
		Fluridone	8.0E-04	U	ug/L	P410241	
		Imazapyr	0.0070	I	ug/L	P410241	
		Hydrocodone	0.0020	U	ug/L	P410241	
		Ibuprofen	0.020	U	ug/L	P410241	
		Imidacloprid	0.0020	U	ug/L	P410241	MS
		Linuron	0.0040	U	ug/L	P410241	
		Mandestrobin	0.0020	U	ug/L	P410241	
		MCP	0.0020	U	ug/L	P410241	
		Naproxen	0.0080	U	ug/L	P410241	
		Primidone	0.0040	U	ug/L	P410241	
		Pyraclostrobin	0.0020	U	ug/L	P410241	
		Silvex	0.0040	U	ug/L	P410241	
		Thiamethoxam	0.0020	U	ug/L	P410241	MS
		Tolfenpyrad	0.0020	U	ug/L	P410241	
		Triclopyr	0.0040	U	ug/L	P410241	

Field ID: G3NW0182

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 8321B: MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.
EPA 8321B: Some MDLs are elevated due to required dilution of sample matrix.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P410268

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410630

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410283

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410772

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P410483

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P410264

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

Reference Method: EPA 8321B
Batch ID: P410177

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

Reference Method: EPA 8321B
Batch ID: P410241

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P410241

Component	Result	Code	Units
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
Silvex	0.0040	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: P410711

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

Reference Method: SM 2540 D-2011

Batch ID: P410807

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011

Batch ID: P410715

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011

Batch ID: P410891

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P410268

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	97.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410630

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410283

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410772

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P410483

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P410264

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

Reference Method: EPA 8321B
Batch ID: P410177

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	106		P	40 - 150
AMPA	88.0		P	40 - 150
Endothall	95.0		P	40 - 150
Glufosinate	99.4		P	40 - 150
Glyphosate	87.9		P	40 - 150
Sucralose	71.8		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P410241

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	108		P	30 - 160
2,4,5-T	76.9		P	30 - 160
Acetaminophen	77.4		P	30 - 150
Acetamiprid	92.8		P	30 - 160
Afidopyropen	69.4		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P410241

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bentazon	38.8		P	30 - 150
Benzovindiflupyr	91.3		P	30 - 160
Carbamazepine	100		P	30 - 160
Clothianidin	102		P	30 - 160
Dinotefuran	106		P	30 - 160
Diuron	88.0		P	30 - 160
Fenuron	125		P	30 - 160
Fluridone	108		P	30 - 160
Hydrocodone	102		P	30 - 160
Ibuprofen	90.5		P	30 - 160
Imazapyr	105		P	30 - 160
Imidacloprid	108		P	30 - 160
Linuron	95.0		P	30 - 160
Mandestrobin	99.6		P	30 - 160
MCPP	122		P	30 - 160
Naproxen	83.1		P	30 - 160
Primidone	77.4		P	30 - 160
Pyraclostrobin	87.4		P	30 - 160
Silvex	77.6		P	30 - 160
Thiamethoxam	102		P	30 - 160
Tolfenpyrad	46.5		P	30 - 160
Triclopyr	79.0		P	30 - 160

Reference Method: SM 2320 B-2011

Batch ID: P410711

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	94.8		P	94 - 106

Reference Method: SM 4500 F-C-2011

Batch ID: P410715

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.7		P	93 - 104

Reference Method: SM 5310 B-2011

Batch ID: P410891

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410630

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2307561	Ammonia-N	98.4	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410283

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2306947	Kjeldahl Nitrogen	94.9	95.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410772

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2307505	NO2NO3-N	99.9	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P410483

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2307588	Total-P	96.0	95.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P410264

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2307591	O-Phosphate-P	99.6	102	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P410177

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2306763	Acesulfame K	66.1	66.0	P/P	40 - 150
2306763	AMPA	60.9	63.6	P/P	40 - 150
2306763	Endothall	140	108	P/P	40 - 150
2306763	Glufosinate	83.7	89.1	P/P	40 - 150
2306763	Glyphosate	68.6	75.6	P/P	40 - 150
2306763	Sucralose	72.2	64.3	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P410241

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2306763	2,4-D	129	125	P/P	30 - 160
2306763	2,4,5-T	97.4	114	P/P	30 - 160
2306763	Acetaminophen	89.8	77.2	P/P	30 - 150
2306763	Acetamiprid	97.5	87.0	P/P	30 - 160
2306763	Afidopyropen	77.6	65.6	P/P	30 - 160
2306763	Benzovindiflupyr	107	86.3	P/P	30 - 160
2306763	Carbamazepine	108	95.8	P/P	30 - 160
2306763	Clothianidin	109	92.0	P/P	30 - 160
2306763	Dinotefuran	143	117	P/P	30 - 160
2306763	Diuron	87.0	77.6	P/P	30 - 160
2306763	Fenuron	125	104	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P410241

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2306763	Fluridone	121	108	P/P	30 - 160
2306763	Hydrocodone	108	97.4	P/P	30 - 160
2306763	Ibuprofen	87.3	73.7	P/P	30 - 160
2306763	Imazapyr	119	91.5	P/P	30 - 160
2306763	Imidacloprid	222	195	F/F	30 - 160
2306763	Linuron	97.1	97.4	P/P	30 - 160
2306763	Mandestrobin	112	100	P/P	30 - 160
2306763	MCCP	135	135	P/P	30 - 160
2306763	Naproxen	82.2	73.1	P/P	30 - 160
2306763	Primidone	114	84.6	P/P	30 - 160
2306763	Pyraclostrobin	108	90.9	P/P	30 - 160
2306763	Silvex	106	116	P/P	30 - 160
2306763	Thiamethoxam	166	152	F/P	30 - 160
2306763	Tolfenpyrad	65.7	55.4	P/P	30 - 160
2306763	Triclopyr	104	100	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P410715

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2307282	Fluoride	98.9	99.7	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P410891

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2307596	Organic Carbon	93.7	91.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P410268

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2307504	Turbidity	4.55	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P410630

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2307561	Ammonia-N	1.49	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P410283

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306947	Kjeldahl Nitrogen	0.468	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P410772

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2307505	NO2NO3-N	0.438	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P410483

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2307588	Total-P	0.661	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P410264

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2307591	O-Phosphate-P	1.19	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P410177

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306763	Acesulfame K	0.166	Spike	P	0 - 30
2306763	AMPA	4.10	Spike	P	0 - 30
2306763	Endothall	25.5	Spike	P	0 - 30
2306763	Glufosinate	6.29	Spike	P	0 - 30
2306763	Glyphosate	8.08	Spike	P	0 - 30
2306763	Sucralose	11.1	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P410241

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306763	2,4-D	2.47	Spike	P	0 - 30
2306763	2,4,5-T	15.4	Spike	P	0 - 30
2306763	Acetaminophen	15.1	Spike	P	0 - 30
2306763	Acetamiprid	11.4	Spike	P	0 - 30
2306763	Afidopyropen	16.8	Spike	P	0 - 30
2306763	Bentazon	1.31	Spike	P	0 - 30
2306763	Benzovindiflupyr	21.5	Spike	P	0 - 30
2306763	Carbamazepine	12.0	Spike	P	0 - 30
2306763	Clothianidin	17.2	Spike	P	0 - 30
2306763	Dinotefuran	20.0	Spike	P	0 - 30
2306763	Diuron	11.4	Spike	P	0 - 30
2306763	Fenuron	19.0	Spike	P	0 - 30
2306763	Fluridone	11.0	Spike	P	0 - 30
2306763	Hydrocodone	10.0	Spike	P	0 - 30
2306763	Ibuprofen	16.9	Spike	P	0 - 30
2306763	Imazapyr	13.8	Spike	P	0 - 30
2306763	Imidacloprid	13.1	Spike	P	0 - 30
2306763	Linuron	0.248	Spike	P	0 - 30
2306763	Mandestrobin	11.3	Spike	P	0 - 30
2306763	MCP	0.504	Spike	P	0 - 30
2306763	Naproxen	11.7	Spike	P	0 - 30
2306763	Primidone	29.4	Spike	P	0 - 30
2306763	Pyraclostrobin	17.4	Spike	P	0 - 30
2306763	Silvex	9.36	Spike	P	0 - 30
2306763	Thiamethoxam	9.07	Spike	P	0 - 30
2306763	Tolfenpyrad	17.1	Spike	P	0 - 30
2306763	Triclopyr	3.32	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P410711

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2307282	Total Alkalinity	1.50	Sample	P	0 - 5.2

Reference Method: SM 4500 F-C-2011
Batch ID: P410715

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2307282	Fluoride	0.516	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P410891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2307596	Organic Carbon	2.11	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2307580

Field Sample ID: G3NW0182

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	138	P	30 - 160
EPA 8321B	Acetaminophen-d4	95.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	112	P	30 - 160
EPA 8321B	Diuron-d6	80.1	P	30 - 160
EPA 8321B	Endothall-d6	91.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	84.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	93.1	P	30 - 160
EPA 8321B	Primidone-d5	105	P	30 - 160
EPA 8321B	Sucralose-d6	67.5	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A110574

Included Lab Sample IDs: 2307562

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.3	99.6	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A110576

Included Lab Sample IDs: 2307560

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

Reference Method: EPA 8321B

Run ID: A110616

Included Lab Sample IDs: 2307580

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	91.3	95.8	P/P	60 - 160
Glufosinate	114	113	P/P	60 - 160
Glyphosate	101	98.9	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A110643

Included Lab Sample IDs: 2307580

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	89.1	112	P/P	50 - 150
2,4,5-T	125	127	P/P	50 - 150
Acetaminophen	117	110	P/P	60 - 160
Acetamiprid	109	110	P/P	50 - 150
Afidopyropen	114	103	P/P	50 - 150
Bentazon	105	106	P/P	50 - 160
Benzovindiflupyr	103	109	P/P	50 - 160
Carbamazepine	111	105	P/P	60 - 150
Clothianidin	108	99.4	P/P	60 - 150
Dinotefuran	110	109	P/P	50 - 150
Diuron	101	110	P/P	60 - 160
Fenuron	109	113	P/P	60 - 150
Fluridone	114	122	P/P	60 - 160
Hydrocodone	109	114	P/P	60 - 150
Ibuprofen	98.6	95.5	P/P	50 - 160
Imazapyr	111	111	P/P	50 - 150
Imidacloprid	96.1	103	P/P	60 - 150
Linuron	122	127	P/P	60 - 150
Mandestrobin	107	113	P/P	50 - 150
MCPP	117	115	P/P	50 - 150
Naproxen	77.6	147	P/P	50 - 160
Primidone	94.7	88.0	P/P	60 - 150
Pyraclostrobin	120	114	P/P	60 - 150
Silvex	98.2	106	P/P	50 - 150
Thiamethoxam	115	106	P/P	50 - 150
Tolfenpyrad	127	121	P/P	60 - 150
Triclopyr	104	128	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A110657
Included Lab Sample IDs: 2307580

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	112	111	P/P	60 - 160
Endothall	142	135	P/P	60 - 160
Sucralose	86.9	91.3	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A110688
Included Lab Sample IDs: 2307561

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A110734
Included Lab Sample IDs: 2307561

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A110768
Included Lab Sample IDs: 2307561

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

Reference Method: SM 2320 B-2011
Run ID: A110777
Included Lab Sample IDs: 2307560

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.2	96.3	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A110777
Included Lab Sample IDs: 2307560

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A110805
Included Lab Sample IDs: 2307561

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	102	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A110845
Included Lab Sample IDs: 2307561

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

Reference Method: SM 5310 B-2011

Run ID: A110845

Included Lab Sample IDs: 2307561

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.2	92.4	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	97.7				4.55	
EPA 350.1 Rev. 2.0	Ammonia-N	99.8	98.4	100			1.49
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	94.9	95.4			0.468
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	99.9	100			0.438
EPA 365.1 Rev. 2.0	Total-P	102	96.0	95.3			0.661
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.9	99.6	102			1.19
EPA 8321B	2,4-D	108	129	125			2.47
	2,4,5-T	76.9	97.4	114			15.4
	Acesulfame K	106	66.1	66.0			0.166
	Acetaminophen	77.4	89.8	77.2			15.1
	Acetamiprid	92.8	97.5	87.0			11.4
	Afidopyropen	69.4	77.6	65.6			16.8
	AMPA	88.0	60.9	63.6			4.10
	Bentazon	38.8					1.31
	Benzovindiflupyr	91.3	107	86.3			21.5
	Carbamazepine	100	108	95.8			12.0
	Clothianidin	102	109	92.0			17.2
	Dinotefuran	106	143	117			20.0
	Diuron	88.0	87.0	77.6			11.4
	Endothall	95.0	140	108			25.5
	Fenuron	125	125	104			19.0
	Fluridone	108	121	108			11.0
	Glufosinate	99.4	83.7	89.1			6.29
	Glyphosate	87.9	68.6	75.6			8.08
	Hydrocodone	102	108	97.4			10.0
	Ibuprofen	90.5	87.3	73.7			16.9
	Imazapyr	105	119	91.5			13.8
	Imidacloprid	108	222	195			13.1
	Linuron	95.0	97.1	97.4			0.248
	Mandestrobin	99.6	112	100			11.3
	MCPP	122	135	135			0.504
	Naproxen	83.1	82.2	73.1			11.7
	Primidone	77.4	114	84.6			29.4
	Pyraclostrobin	87.4	108	90.9			17.4
	Silvex	77.6	106	116			9.36
	Sucralose	71.8	72.2	64.3			11.1
	Thiamethoxam	102	166	152			9.07
	Tolfenpyrad	46.5	65.7	55.4			17.1
	Triclopyr	79.0	104	100			3.32
SM 2320 B-2011	Total Alkalinity	94.8				1.50	
SM 4500 F-C-2011	Fluoride	98.7	98.9	99.7			0.516
SM 5310 B-2011	Organic Carbon	98.0	93.7	91.3			2.11

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2307560
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2307561
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2307561
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2307561
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2307561
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2307562

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2307580
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2307560
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2307560
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2307560
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2307561

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	02/23/2022			02/23/2022 14:58	Khloe J Berg	2307560
EPA 350.1 Rev. 2.0	02/23/2022			03/03/2022 11:04	Judith K. Clark	2307561
EPA 351.2 Rev. 2.0	02/23/2022	02/25/2022 10:06	Samantha L Bates	03/01/2022 12:46	Alexandra J Mattheus	2307561
EPA 353.2 Rev. 2.0	02/23/2022			03/04/2022 18:04	Nathaniel J Jones	2307561
EPA 365.1 Rev. 2.0	02/23/2022	03/02/2022 15:00	Simonne.V. Calhoun	03/04/2022 15:09	Sarah A Nixon	2307561
EPA 365.1 Rev. 2.0 dissolved	02/23/2022			02/23/2022 17:37	James L Waggerby	2307562
EPA 8321B	02/23/2022	02/23/2022 12:30	Umesh Chiluwal	02/23/2022 13:49	Manjita Shrestha	2307580
	02/23/2022	02/23/2022 12:30	Umesh Chiluwal	02/26/2022 08:50	Umesh Chiluwal	2307580
	02/23/2022	02/24/2022 09:00	June Rhew	02/26/2022 13:39	Juyoung Kim	2307580
SM 2320 B-2011	02/23/2022			03/04/2022 08:05	Dale L. Simmons	2307560
SM 2540 D-2011	02/23/2022			02/28/2022 15:12	Yijie Li	2307560
SM 4500 F-C-2011	02/23/2022			03/04/2022 04:32	Dale L. Simmons	2307560
SM 5310 B-2011	02/23/2022			03/09/2022 13:08	Touraj Touran	2307561