

Chemical Analysis Report

NE-DIST-2021-04-20-03

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

Event Description: **LSJR Southside 2021**

Request ID: **RQ-2021-04-05-30**

Customer: **NE-DIST**

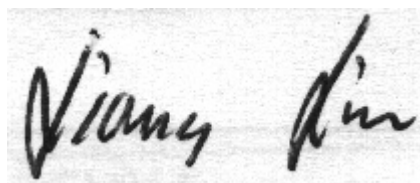
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 11-MAY-2021 13:35

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

Case Narrative

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

Results for the following analytical groups are included in this report: Metals, 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: Goodbys CR at Baymeadows

Collection Date/Time: 04/19/2021 11:30

Field ID: 20030593

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2241110	EPA 180.1 Rev. 2.0	Turbidity	6.1		NTU	P396876	
	SM 2320 B-2011	Total Alkalinity	88		mg CaCO3/L	P397115	
	SM 2540 D-2011	TSS	4	I	mg/L	P397165	
	SM 4500 F-C-2011	Fluoride	0.13		mg F/L	P396944	
2241111	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P397508	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P397106	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P397038	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P397012	
	SM 5310 B-2011	Organic Carbon	8.2		mg C/L	P397239	
2241112	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.041		mg P/L	P396859	
2241116	EPA 8276	Chlordane	5.7	U	ng/L	P397022	
		Toxaphene	34	U	ng/L	P397022	
2241117	EPA 8321B	2,4-D	0.15		ug/L	P396769	
		Acesulfame K	0.14	I	ug/L	P396893	MS
		2,4,5-T	0.0040	U	ug/L	P396769	
		AMPA	1.1		ug/L	P396893	
		Sucralose	0.21		ug/L	P396893	
		Acetaminophen	0.048		ug/L	P396769	MS, RPD
		Acetamiprid	0.0020	U	ug/L	P396769	
		Endothall	0.25	U	ug/L	P396893	
		Glufosinate	0.10	U	ug/L	P396893	
		Glyphosate	2.3		ug/L	P396893	
		Afidopyropen	0.0020	U	ug/L	P396769	
		Bentazon	0.12		ug/L	P396769	
		Benzovindiflupyr	0.0020	U	ug/L	P396769	
		Carbamazepine	8.0E-04	U	ug/L	P396769	
		Clothianidin	0.0036	I	ug/L	P396769	
		Dinotefuran	0.0056	I	ug/L	P396769	
		Diuron	0.069		ug/L	P396769	
		Fenuron	0.016	U	ug/L	P396769	
		Fluridone	0.022		ug/L	P396769	
		Imazapyr	0.39		ug/L	P396769	
		Hydrocodone	0.0020	U	ug/L	P396769	
		Ibuprofen	0.020	U	ug/L	P396769	
		Imidacloprid	0.096		ug/L	P396769	MS
		Linuron	0.0040	U	ug/L	P396769	
		Mandestrobin	0.0020	U	ug/L	P396769	
		MCP	0.0020	U	ug/L	P396769	MS
		Naproxen	0.0080	U	ug/L	P396769	
		Primidone	0.0040	U	ug/L	P396769	
		Pyraclostrobin	0.0020	U	ug/L	P396769	
		Thiamethoxam	0.013		ug/L	P396769	MS
		Tolfenpyrad	0.0020	U	ug/L	P396769	

Field ID: 20030593

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2241117	EPA 8321B	Triclopyr	0.0040	U	ug/L	P396769	RPD
2241118	EPA 200.7 Rev. 4.4	Calcium	41.7		mg/L	P397699	
		Iron	1.19E+03		ug/L	P397699	
		Magnesium	13.0		mg/L	P397699	
		Manganese	32.6		ug/L	P397699	
		Zinc	8.0	I	ug/L	P397699	
	EPA 200.8 Rev. 5.4	Aluminum	102		ug/L	P397699	
		Antimony	0.26		ug/L	P397699	
		Arsenic	2.80		ug/L	P397699	
		Beryllium	0.011	I	ug/L	P397699	
		Cadmium	0.130		ug/L	P397699	
		Chromium	0.46	I	ug/L	P397699	
		Copper	2.88		ug/L	P397699	
		Lead	0.36	I	ug/L	P397699	
		Nickel	0.50	U	ug/L	P397699	
		Selenium	0.20	U	ug/L	P397699	
		Silver	0.010	U	ug/L	P397699	
		Thallium	0.10	U	ug/L	P397699	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P396876

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P397699

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P397699

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P397508

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P397106

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P397038

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P397012

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P396859

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

Reference Method: EPA 8276
Batch ID: P397022

Component	Result	Code	Units
Chlordane	5.0	U	ng/L
Toxaphene	30	U	ng/L

Reference Method: EPA 8321B
Batch ID: P396769

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
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: EPA 8321B
Batch ID: P396893

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: SM 2320 B-2011
Batch ID: P397115

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

Reference Method: SM 2540 D-2011
Batch ID: P397165

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P396944

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P397239

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P397699

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	109		P	85 - 115
Iron	105		P	85 - 115
Magnesium	105		P	85 - 115
Manganese	104		P	85 - 115
Zinc	105		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P397699

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	90.1		P	85 - 115
Antimony	99.2		P	85 - 115
Arsenic	91.4		P	85 - 115
Beryllium	91.9		P	85 - 115
Cadmium	92.5		P	85 - 115
Chromium	90.9		P	85 - 115
Copper	91.2		P	85 - 115
Lead	98.1		P	85 - 115
Nickel	89.3		P	85 - 115
Selenium	91.8		P	85 - 115
Silver	95.7		P	85 - 115
Thallium	100		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P397508

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P397106

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P397038

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: P397012

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P396859

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.6		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8276

Batch ID: P397022

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	100	92.4	P/P	56 - 117
Toxaphene	81.0	80.6	P/P	45 - 116

Reference Method: EPA 8321B

Batch ID: P396769

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	127		P	30 - 160
2,4,5-T	119		P	30 - 160
Acetaminophen	76.4		P	30 - 150
Acetamiprid	94.3		P	30 - 160
Afidopyropen	73.3		P	30 - 160
Bentazon	37.3		P	30 - 150
Benzovindiflupyr	82.9		P	30 - 160
Carbamazepine	85.9		P	30 - 160
Clothianidin	97.4		P	30 - 160
Dinotefuran	87.2		P	30 - 160
Diuron	76.7		P	30 - 160
Fenuron	98.2		P	30 - 160
Fluridone	97.0		P	30 - 160
Hydrocodone	93.0		P	30 - 160
Ibuprofen	82.3		P	30 - 160
Imazapyr	107		P	30 - 160
Imidacloprid	107		P	30 - 160
Linuron	70.9		P	30 - 160
Mandestrobin	90.0		P	30 - 160
MCPP	140		P	30 - 160
Naproxen	99.3		P	30 - 160
Primidone	75.4		P	30 - 160
Pyraclostrobin	79.3		P	30 - 160
Thiamethoxam	101		P	30 - 160
Tolfenpyrad	56.7		P	30 - 160
Triclopyr	125		P	30 - 160

Reference Method: EPA 8321B

Batch ID: P396893

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	124		P	40 - 150
AMPA	97.8		P	40 - 150
Endothall	143		P	40 - 150
Glufosinate	99.6		P	40 - 150
Glyphosate	89.4		P	40 - 140
Sucralose	105		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P397115

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	93 - 104

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P396944

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.1		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P397239

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P397699

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2241376	Calcium	107	107	P/P	80 - 120
2241376	Iron	106	106	P/P	80 - 120
2241376	Magnesium	105	105	P/P	80 - 120
2241376	Manganese	102	103	P/P	80 - 120
2241376	Zinc	104	104	P/P	80 - 120
2241409	Calcium	105		P	80 - 120
2241409	Iron	105		P	80 - 120
2241409	Magnesium	104		P	80 - 120
2241409	Manganese	105		P	80 - 120
2241409	Zinc	107		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P397699

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2241376	Aluminum	100	97.6	P/P	80 - 120
2241376	Antimony	103	104	P/P	80 - 120
2241376	Arsenic	97.4	98.0	P/P	80 - 120
2241376	Beryllium	94.5	92.3	P/P	80 - 120
2241376	Cadmium	102	101	P/P	80 - 120
2241376	Chromium	100	100	P/P	80 - 120
2241376	Copper	99.3	100	P/P	80 - 120
2241376	Lead	109	103	P/P	80 - 120
2241376	Nickel	96.8	97.9	P/P	80 - 120
2241376	Selenium	99.8	97.4	P/P	80 - 120
2241376	Silver	99.1	99.2	P/P	80 - 120
2241376	Thallium	105	105	P/P	80 - 120
2241409	Aluminum	86.8		P	80 - 120
2241409	Antimony	103		P	80 - 120
2241409	Arsenic	98.1		P	80 - 120
2241409	Beryllium	90.4		P	80 - 120
2241409	Cadmium	105		P	80 - 120
2241409	Chromium	101		P	80 - 120
2241409	Copper	97.4		P	80 - 120
2241409	Lead	108		P	80 - 120
2241409	Nickel	98.6		P	80 - 120
2241409	Selenium	97.5		P	80 - 120
2241409	Silver	100		P	80 - 120
2241409	Thallium	105		P	80 - 120

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P397508

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2241032	Ammonia-N	96.0	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P397106

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2240980	Kjeldahl Nitrogen	105	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P397038

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2241111	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P397012

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2240977	Total-P	109	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P396859

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2240922	O-Phosphate-P	97.8	97.8	P/P	90 - 110

Reference Method: EPA 8276

Batch ID: P397022

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2241684	Chlordane	109	115	P/P	47 - 128
2241684	Toxaphene	75.7	79.0	P/P	11 - 163

Reference Method: EPA 8321B

Batch ID: P396769

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2240190	2,4-D	130	149	P/P	30 - 160
2240190	2,4,5-T	97.7	132	P/P	30 - 160
2240190	Acetaminophen	96.0	237	P/F	30 - 150
2240190	Acetamiprid	106	109	P/P	30 - 160
2240190	Afidopyropen	80.6	79.3	P/P	30 - 160
2240190	Bentazon	33.0	41.8	P/P	30 - 150
2240190	Benzovindiflupyr	85.2	96.8	P/P	30 - 160
2240190	Carbamazepine	84.5	95.2	P/P	30 - 160
2240190	Clothianidin	120	129	P/P	30 - 160
2240190	Dinotefuran	114	118	P/P	30 - 160
2240190	Diuron	74.4	70.0	P/P	30 - 160
2240190	Fenuron	112	122	P/P	30 - 160
2240190	Fluridone	103	106	P/P	30 - 160
2240190	Hydrocodone	115	125	P/P	30 - 160
2240190	Ibuprofen	69.9	90.7	P/P	30 - 160
2240190	Imazapyr	129	149	P/P	30 - 160
2240190	Imidacloprid	149	185	P/F	30 - 160
2240190	Linuron	89.4	94.7	P/P	30 - 160
2240190	Mandestrobin	88.6	94.9	P/P	30 - 160
2240190	MCCPP	152	177	P/F	30 - 160
2240190	Naproxen	90.5	99.2	P/P	30 - 160
2240190	Primidone	108	112	P/P	30 - 160
2240190	Pyraclostrobin	77.8	87.0	P/P	30 - 160
2240190	Thiamethoxam	146	170	P/F	30 - 160
2240190	Tolfenpyrad	62.1	57.3	P/P	30 - 160
2240190	Triclopyr	98.0	149	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P396893

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2240988	Acesulfame K	152	137	F/P	40 - 150
2240988	AMPA	99.5	102	P/P	40 - 150
2240988	Endothall	98.4	90.0	P/P	40 - 150
2240988	Glufosinate	101	94.4	P/P	40 - 150
2240988	Glyphosate	63.8	80.9	P/P	40 - 140
2240988	Sucralose	108	107	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P396944

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2240949	Fluoride	98.5	97.9	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P397239

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2240950	Organic Carbon	96.9	99.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P396876

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240948	Turbidity	1.48	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P397699

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2241376	Calcium	0.230	Spike	P	0 - 20
2241376	Iron	0.376	Spike	P	0 - 20
2241376	Magnesium	0.116	Spike	P	0 - 20
2241376	Manganese	0.406	Spike	P	0 - 20
2241376	Zinc	0.196	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P397699

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2241376	Aluminum	2.29	Spike	P	0 - 20
2241376	Antimony	0.374	Spike	P	0 - 20
2241376	Arsenic	0.597	Spike	P	0 - 20
2241376	Beryllium	2.30	Spike	P	0 - 20
2241376	Cadmium	0.856	Spike	P	0 - 20
2241376	Chromium	0.113	Spike	P	0 - 20
2241376	Copper	0.979	Spike	P	0 - 20
2241376	Lead	5.85	Spike	P	0 - 20
2241376	Nickel	1.16	Spike	P	0 - 20
2241376	Selenium	2.39	Spike	P	0 - 20
2241376	Silver	0.0470	Spike	P	0 - 20
2241376	Thallium	0.684	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P397508

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2241032	Ammonia-N	1.88	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P397106

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240980	Kjeldahl Nitrogen	3.26	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P397038

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2241111	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P397012

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240977	Total-P	2.59	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P396859

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240922	O-Phosphate-P	0.0	Spike	P	0 - 20

Reference Method: EPA 8276

Batch ID: P397022

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2241684	Chlordane	5.91	Spike	P	0 - 30
2241684	Toxaphene	4.30	Spike	P	0 - 30
LFB	Chlordane	8.04	LCS	P	0 - 30
LFB	Toxaphene	0.462	LCS	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P396769

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240190	2,4-D	13.6	Spike	P	0 - 30
2240190	2,4,5-T	29.7	Spike	P	0 - 30
2240190	Acetaminophen	84.5	Spike	F	0 - 30
2240190	Acetamiprid	2.55	Spike	P	0 - 30
2240190	Afidopyropen	1.68	Spike	P	0 - 30
2240190	Bentazon	17.0	Spike	P	0 - 30
2240190	Benzovindiflupyr	12.8	Spike	P	0 - 30
2240190	Carbamazepine	11.0	Spike	P	0 - 30
2240190	Clothianidin	7.28	Spike	P	0 - 30
2240190	Dinotefuran	3.60	Spike	P	0 - 30
2240190	Diuron	6.08	Spike	P	0 - 30
2240190	Fenuron	8.32	Spike	P	0 - 30
2240190	Fluridone	2.87	Spike	P	0 - 30
2240190	Hydrocodone	8.23	Spike	P	0 - 30
2240190	Ibuprofen	25.9	Spike	P	0 - 30
2240190	Imazapyr	14.4	Spike	P	0 - 30
2240190	Imidacloprid	19.2	Spike	P	0 - 30
2240190	Linuron	5.80	Spike	P	0 - 30
2240190	Mandestrobin	6.94	Spike	P	0 - 30
2240190	MCPP	14.7	Spike	P	0 - 30
2240190	Naproxen	9.23	Spike	P	0 - 30
2240190	Primidone	2.91	Spike	P	0 - 30
2240190	Pyraclostrobin	11.1	Spike	P	0 - 30
2240190	Thiamethoxam	15.5	Spike	P	0 - 30
2240190	Tolfenpyrad	8.09	Spike	P	0 - 30
2240190	Triclopyr	41.0	Spike	F	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P396893

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240988	Acesulfame K	10.0	Spike	P	0 - 30
2240988	AMPA	2.79	Spike	P	0 - 30
2240988	Endothall	8.93	Spike	P	0 - 30
2240988	Glufosinate	6.28	Spike	P	0 - 30
2240988	Glyphosate	23.7	Spike	P	0 - 30
2240988	Sucralose	0.828	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P397115

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240949	Total Alkalinity	0.595	Sample	P	0 - 8.1

Reference Method: SM 2540 D-2011
Batch ID: P397165

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2241567	TSS	8.96	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P396944

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240949	Fluoride	0.454	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P397239

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240950	Organic Carbon	2.22	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2241116
Field Sample ID: 20030593

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8276	Decachlorobiphenyl	59.4	P	29 - 92.0
EPA 8276	PCNB	77.8	P	43 - 134

Lab Sample ID: 2241117
Field Sample ID: 20030593

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	116	P	30 - 160
EPA 8321B	Acetaminophen-d4	111	P	30 - 160
EPA 8321B	Carbamazepine-d10	96.1	P	30 - 160
EPA 8321B	Diuron-d6	57.5	P	30 - 160
EPA 8321B	Endothall-d6	120	P	40 - 160
EPA 8321B	Endothall-d6	120	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	69.7	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	69.7	P	40 - 160
EPA 8321B	Ibuprofen-d3	70.1	P	30 - 160
EPA 8321B	Primidone-d5	110	P	30 - 160
EPA 8321B	Sucralose-d6	112	P	30 - 160
EPA 8321B	Sucralose-d6	112	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A104857

Included Lab Sample IDs: 2241112

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.6	99.9	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A104861

Included Lab Sample IDs: 2241110

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	100	P/P	95 - 105

Reference Method: SM 4500 F-C-2011

Run ID: A104891

Included Lab Sample IDs: 2241110

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

Reference Method: EPA 8321B

Run ID: A104895

Included Lab Sample IDs: 2241117

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	128	96.0	P/P	40 - 160
AMPA	107	102	P/P	40 - 160
Endothall	139	104	P/P	40 - 160
Glufosinate	83.4	103	P/P	40 - 160
Glyphosate	89.6	86.0	P/P	40 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A104904

Included Lab Sample IDs: 2241111

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A104942

Included Lab Sample IDs: 2241111

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

Reference Method: SM 2320 B-2011

Run ID: A104962

Included Lab Sample IDs: 2241110

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.6	98.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A104990

Included Lab Sample IDs: 2241111

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.8	98.0	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A105018

Included Lab Sample IDs: 2241111

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.7	95.3	P/P	90 - 110

Reference Method: EPA 8276

Run ID: A105045

Included Lab Sample IDs: 2241116

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	101		P	80 - 120
Toxaphene	95.7		P	80 - 120

Reference Method: EPA 8321B

Run ID: A105083

Included Lab Sample IDs: 2241117

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	111	110	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A105098

Included Lab Sample IDs: 2241117

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	97.4	116	P/P	50 - 150
2,4,5-T	118	109	P/P	50 - 150
Acetaminophen	93.2	125	P/P	60 - 160
Acetamiprid	116	122	P/P	50 - 150
Afidopyropen	108	133	P/P	50 - 150
Bentazon	130	127	P/P	50 - 160
Benzovindiflupyr	101	114	P/P	50 - 160
Carbamazepine	104	119	P/P	60 - 150
Clothianidin	107	108	P/P	60 - 150
Dinotefuran	111	135	P/P	50 - 150
Diuron	88.3	110	P/P	60 - 160
Fenuron	107	116	P/P	60 - 150
Fluridone	117	129	P/P	60 - 160
Hydrocodone	113	130	P/P	60 - 150
Ibuprofen	86.0	89.7	P/P	50 - 160
Imazapyr	126	129	P/P	50 - 150
Imidacloprid	102	124	P/P	60 - 150
Linuron	100	122	P/P	60 - 150
Mandestrobin	109	117	P/P	50 - 150
MCPP	112	113	P/P	50 - 150
Naproxen	113	116	P/P	50 - 160
Primidone	95.8	110	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A105098
 Included Lab Sample IDs: 2241117

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Pyraclostrobin	116	120	P/P	60 - 150
Thiamethoxam	116	131	P/P	50 - 150
Tolfenpyrad	116	127	P/P	60 - 150
Triclopyr	98.7	115	P/P	50 - 150

Reference Method: EPA 350.1 Rev. 2.0
 Run ID: A105117
 Included Lab Sample IDs: 2241111

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.4	97.9	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
 Run ID: A105239
 Included Lab Sample IDs: 2241118

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	103	P/P	90 - 110
Iron	102	104	P/P	90 - 110
Magnesium	102	103	P/P	90 - 110
Manganese	103	103	P/P	90 - 110
Zinc	104	104	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
 Run ID: A105242
 Included Lab Sample IDs: 2241118

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	103	103	P/P	90 - 110
Antimony	104	105	P/P	90 - 110
Arsenic	99.0	99.6	P/P	90 - 110
Beryllium	99.6	99.5	P/P	90 - 110
Cadmium	102	103	P/P	90 - 110
Chromium	99.9	102	P/P	90 - 110
Copper	97.3	98.7	P/P	90 - 110
Nickel	97.9	99.2	P/P	90 - 110
Selenium	101	103	P/P	90 - 110
Silver	99.4	100	P/P	90 - 110
Thallium	101	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
 Run ID: A105268
 Included Lab Sample IDs: 2241118

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	105	95.0	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							1.48	
EPA 200.7 Rev. 4.4	Calcium	109		107	107	105			0.230
	Iron	105		106	106	105			0.376
	Magnesium	105		105	105	104			0.116
	Manganese	104		102	103	105			0.406
	Zinc	105		104	104	107			0.196
EPA 200.8 Rev. 5.4	Aluminum	90.1		100	97.6	86.8			2.29
	Antimony	99.2		103	104	103			0.374
	Arsenic	91.4		97.4	98.0	98.1			0.597
	Beryllium	91.9		94.5	92.3	90.4			2.30
	Cadmium	92.5		102	101	105			0.856
	Chromium	90.9		100	100	101			0.113
	Copper	91.2		99.3	100	97.4			0.979
	Lead	98.1		109	103	108			5.85
	Nickel	89.3		96.8	97.9	98.6			1.16
	Selenium	91.8		99.8	97.4	97.5			2.39
	Silver	95.7		99.1	99.2	100			0.0470
	Thallium	100		105	105	105			0.684
EPA 350.1 Rev. 2.0	Ammonia-N	96.6		96.0	98.0				1.88
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104		105	101				3.26
EPA 353.2 Rev. 2.0	NO2NO3-N	102		100	100				0.0
EPA 365.1 Rev. 2.0	Total-P	109		109	106				2.59
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.6		97.8	97.8				0.0
EPA 8276	Chlordane	100	92.4	109	115		8.04		5.91
	Toxaphene	81.0	80.6	75.7	79.0		0.462		4.30
EPA 8321B	2,4-D	127		130	149				13.6
	2,4,5-T	119		97.7	132				29.7
	Acesulfame K	124		152	137				10.0
	Acetaminophen	76.4		96.0	237				84.5
	Acetamiprid	94.3		106	109				2.55
	Afidopyropen	73.3		80.6	79.3				1.68
	AMPA	97.8		102	99.5				2.79
	Bentazon	37.3		33.0	41.8				17.0
	Benzovindiflupyr	82.9		85.2	96.8				12.8
	Carbamazepine	85.9		84.5	95.2				11.0
	Clothianidin	97.4		120	129				7.28
	Dinotefuran	87.2		114	118				3.60
	Diuron	76.7		74.4	70.0				6.08
	Endothall	143		98.4	90.0				8.93
	Fenuron	98.2		112	122				8.32
	Fluridone	97.0		103	106				2.87
	Glufosinate	99.6		94.4	101				6.28
	Glyphosate	89.4		63.8	80.9				23.7
	Hydrocodone	93.0		115	125				8.23
	Ibuprofen	82.3		69.9	90.7				25.9
	Imazapyr	107		129	149				14.4
	Imidacloprid	107		149	185				19.2
	Linuron	70.9		89.4	94.7				5.80
	Mandestrobin	90.0		88.6	94.9				6.94
	MCPP	140		152	177				14.7
	Naproxen	99.3		90.5	99.2				9.23
	Primidone	75.4		108	112				2.91
	Pyraclostrobin	79.3		77.8	87.0				11.1
	Sucralose	105		108	107				0.828

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 8321B	Thiamethoxam	101	146 170			15.5
	Tolfenpyrad	56.7	62.1 57.3			8.09
	Triclopyr	125	98.0 149			41.0
SM 2320 B-2011	Total Alkalinity	100			0.595	
SM 2540 D-2011	TSS				8.96	
SM 4500 F-C-2011	Fluoride	99.1	98.5 97.9			0.454
SM 5310 B-2011	Organic Carbon	96.9	96.9 99.7			2.22

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2241110
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2241118
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2241118
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2241111
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2241111
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2241111
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2241111
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2241112
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2241116
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2241117
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2241117
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2241110
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2241110
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2241110
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2241111

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	04/20/2021			04/20/2021 15:50	Yen Ta	2241110
EPA 200.7 Rev. 4.4	04/20/2021	05/05/2021 17:10	Elliott D. Healy	05/06/2021 19:23	Betina Topolski	2241118
EPA 200.8 Rev. 5.4	04/20/2021	05/05/2021 17:10	Elliott D. Healy	05/06/2021 19:19	McKinley C Carter	2241118
	04/20/2021	05/05/2021 17:10	Elliott D. Healy	05/08/2021 06:11	Alexander Thompson	2241118
EPA 350.1 Rev. 2.0	04/20/2021			05/01/2021 10:18	Ping Hua	2241111
EPA 351.2 Rev. 2.0	04/20/2021	04/25/2021 14:43	Benjamin T. Nordmann	04/26/2021 15:14	Virginia P. Brown	2241111
EPA 353.2 Rev. 2.0	04/20/2021			04/22/2021 11:27	Beverly Y. Sanders	2241111
EPA 365.1 Rev. 2.0	04/20/2021	04/22/2021 16:03	Yen Ta	04/23/2021 13:36	Shengyu Ding	2241111
EPA 365.1 Rev. 2.0 dissolved	04/20/2021			04/20/2021 14:43	Patrick M. Roche	2241112
EPA 8276	04/20/2021	04/23/2021 08:00	Fe-Val Siddell	04/27/2021 00:43	Michael Poppell	2241116
EPA 8321B	04/20/2021	04/20/2021 14:00	Hoor Shaik	04/30/2021 16:08	Juyoung Kim	2241117
	04/20/2021	04/20/2021 14:00	Hoor Shaik	05/03/2021 10:03	Juyoung Kim	2241117
	04/20/2021	04/21/2021 12:00	Rebecca Ware	04/21/2021 14:21	Rebecca Ware	2241117
	04/20/2021	04/21/2021 12:00	Rebecca Ware	04/28/2021 22:06	Rebecca Ware	2241117
SM 2320 B-2011	04/20/2021			04/23/2021 20:14	Dale L. Simmons	2241110
SM 2540 D-2011	04/20/2021			04/23/2021 15:31	Yijie Li	2241110
SM 4500 F-C-2011	04/20/2021			04/21/2021 22:37	Dale L. Simmons	2241110
SM 5310 B-2011	04/20/2021			04/24/2021 00:05	Lauren Lees	2241111