

Chemical Analysis Report

SO-DIST-2021-11-23-01

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

Event Description: **2021 SMP : Myakka Cricks**

Request ID: **RQ-2021-11-22-33**

Customer: **SO-DIST**

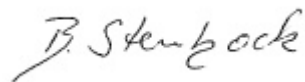
Project ID: **SMP**

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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 15-DEC-2021 16:53



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: Little Alligator Creek @ Midway Blvd.

Collection Date/Time: 11/22/2021 08:30

Field ID: G3SD0071

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2291039	EPA 180.1 Rev. 2.0	Turbidity	1.2	A	NTU	P406721	
	SM 2320 B-2011	Total Alkalinity	157		mg CaCO3/L	P406756	
	SM 2540 D-2011	TSS	5	IA	mg/L	P407053	
	SM 4500 F-C-2011	Fluoride	0.82		mg F/L	P406758	
2291040	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P406853	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P406868	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.060		mg N/L	P406952	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P406701	
	SM 5310 B-2011	Organic Carbon	8.6		mg C/L	P407177	
2291041	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.078		mg P/L	P406713	
2291049	EPA 8321B	Acesulfame K	0.39	I	ug/L	P406666	
		2,4-D	0.0020	U	ug/L	P406695	
		AMPA	1.0	U	ug/L	P406666	
		2,4,5-T	0.0040	U	ug/L	P406695	
		Acetaminophen	0.0080	U	ug/L	P406695	
		Endothall	0.25	U	ug/L	P406666	
		Acetamiprid	0.0020	U	ug/L	P406695	
		Glufosinate	1.0	U	ug/L	P406666	
		Glyphosate	1.0	U	ug/L	P406666	
		Afidopyropen	0.0020	UJ	ug/L	P406695	LCS
		Sucralose	0.47		ug/L	P406666	
		Bentazon	0.013		ug/L	P406695	
		Benzovindiflupyr	0.0020	U	ug/L	P406695	
		Carbamazepine	0.0057		ug/L	P406695	
		Clothianidin	0.0038	I	ug/L	P406695	
		Dinotefuran	0.0020	U	ug/L	P406695	
		Diuron	0.0070	I	ug/L	P406695	
		Fenuron	0.017	I	ug/L	P406695	
		Fluridone	0.014		ug/L	P406695	
		Imazapyr	0.021		ug/L	P406695	
		Hydrocodone	0.0020	U	ug/L	P406695	
		Ibuprofen	0.020	U	ug/L	P406695	
		Imidacloprid	0.018		ug/L	P406695	MS
		Linuron	0.0040	U	ug/L	P406695	
		Mandestrobin	0.0020	U	ug/L	P406695	
		MCP	0.0040	U	ug/L	P406695	
		Naproxen	0.0080	U	ug/L	P406695	
		Primidone	0.0054	I	ug/L	P406695	
		Pyraclostrobin	0.0020	U	ug/L	P406695	
		Silvex	0.0040	U	ug/L	P406695	
		Thiamethoxam	0.0056	I	ug/L	P406695	MS
		Tolfenpyrad	0.0020	U	ug/L	P406695	
		Triclopyr	0.0040	U	ug/L	P406695	

Field ID: G3SD0071

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2291050	EPA 200.7 Rev. 4.4	Calcium	230		mg/L	P406980	
		Iron	90	U	ug/L	P406980	
		Magnesium	583		mg/L	P406980	
		Strontium	4.74E+03		ug/L	P406980	
		Tin	30	U	ug/L	P406980	
		Vanadium	6.0	U	ug/L	P406980	
	EPA 200.8 Rev. 5.4	Zinc	15	U	ug/L	P406980	
		Aluminum	47	I	ug/L	P406980	
		Antimony	0.28	I	ug/L	P406980	
		Arsenic	2.25		ug/L	P406980	
		Beryllium	0.040	U	ug/L	P406980	
		Cadmium	0.080	U	ug/L	P406980	
		Chromium	1.6	U	ug/L	P406980	
		Cobalt	0.084	I	ug/L	P406980	
		Copper	1.6	U	ug/L	P406980	
		Lead	0.80	U	ug/L	P406980	
		Manganese	10.5		ug/L	P406980	
		Molybdenum	8.1		ug/L	P406980	
		Nickel	2.0	U	ug/L	P406980	
		Selenium	0.80	U	ug/L	P406980	
		Silver	0.040	U	ug/L	P406980	

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: MDL for some parameters elevated due to matrix interference.

EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample. Refer to the Lab Analysis Report for an explanation of QC Codes.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for magnesium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Rock Creek @ Eisenhower Dr.

Collection Date/Time: 11/22/2021 09:15

Field ID: G3SD0070

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2291042	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P406721	
	SM 2320 B-2011	Total Alkalinity	89		mg CaCO3/L	P406756	
	SM 2540 D-2011	TSS	3	IA	mg/L	P407052	
	SM 4500 F-C-2011	Fluoride	0.44		mg F/L	P406758	
2291043	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P406853	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.83		mg N/L	P406868	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P406952	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P406701	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P406794	
2291044	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.14		mg P/L	P406713	
2291051	EPA 200.7 Rev. 4.4	Calcium	121		mg/L	P406980	
		Iron	260	I	ug/L	P406980	
		Magnesium	238		mg/L	P406980	
		Strontium	3.08E+03		ug/L	P406980	
		Tin	30	U	ug/L	P406980	
		Vanadium	6.0	U	ug/L	P406980	
		Zinc	15	U	ug/L	P406980	
	EPA 200.8 Rev. 5.4	Aluminum	97		ug/L	P406980	
		Antimony	0.20	U	ug/L	P406980	
		Arsenic	1.54		ug/L	P406980	
		Beryllium	0.040	U	ug/L	P406980	
		Cadmium	0.080	U	ug/L	P406980	
		Chromium	1.6	U	ug/L	P406980	
		Cobalt	0.086	I	ug/L	P406980	
		Copper	1.6	U	ug/L	P406980	
		Lead	0.80	U	ug/L	P406980	
		Manganese	8.6		ug/L	P406980	
		Molybdenum	2.6		ug/L	P406980	
		Nickel	2.0	U	ug/L	P406980	
		Selenium	0.80	U	ug/L	P406980	
		Silver	0.040	U	ug/L	P406980	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for magnesium 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: P406721

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P406980

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P406980

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
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406853

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406868

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P406952

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P406701

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P406713

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

Reference Method: EPA 8321B

Batch ID: P406666

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: P406695

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	0.0040	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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P406756

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

Reference Method: SM 2540 D-2011
Batch ID: P407052

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P407053

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P406758

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P406794

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

Reference Method: SM 5310 B-2011
Batch ID: P407177

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: P406980

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115
Iron	98.5		P	85 - 115
Magnesium	103		P	85 - 115
Strontium	92.0		P	85 - 115
Tin	97.2		P	85 - 115
Vanadium	95.2		P	85 - 115
Zinc	95.9		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P406980

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	100		P	85 - 115
Arsenic	98.1		P	85 - 115
Beryllium	93.2		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	99.7		P	85 - 115
Cobalt	95.8		P	85 - 115
Copper	96.7		P	85 - 115
Lead	97.8		P	85 - 115
Manganese	98.5		P	85 - 115
Molybdenum	101		P	85 - 115
Nickel	97.7		P	85 - 115
Selenium	95.3		P	85 - 115
Silver	99.2		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406853

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406868

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.6		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P406952

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P406701

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406713

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

Reference Method: EPA 8321B
Batch ID: P406666

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	107		P	40 - 150
AMPA	93.4		P	40 - 160
Endothall	87.0		P	40 - 150
Glufosinate	95.7		P	40 - 160
Glyphosate	97.4		P	40 - 160
Sucralose	98.4		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P406695

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	69.8		P	40 - 150
2,4,5-T	99.0		P	40 - 150
Acetaminophen	79.4		P	30 - 150
Acetamiprid	74.7		P	40 - 150
Afidopyropen	27.7		F	40 - 150
Bentazon	107		P	30 - 150
Benzovindiflupyr	86.0		P	40 - 150
Carbamazepine	74.1		P	40 - 150
Clothianidin	92.1		P	40 - 150
Dinotefuran	80.1		P	40 - 150
Diuron	70.7		P	40 - 150
Fenuron	97.3		P	40 - 150
Fluridone	92.4		P	40 - 150
Hydrocodone	74.2		P	40 - 150
Ibuprofen	55.2		P	40 - 150
Imazapyr	70.3		P	40 - 150
Imidacloprid	76.8		P	40 - 150
Linuron	86.2		P	40 - 150
Mandestrobin	76.9		P	40 - 150
MCPP	74.9		P	40 - 150
Naproxen	62.9		P	40 - 150
Primidone	60.1		P	40 - 150
Pyraclostrobin	85.8		P	40 - 150
Silvex	68.5		P	40 - 150
Thiamethoxam	86.4		P	40 - 150
Tolfenpyrad	70.4		P	30 - 150
Triclopyr	82.9		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P406756

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.3		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P406758

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	103		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P406794

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	105		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P407177

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	105		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P406980

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2290941	Calcium	95.4		P	70 - 130
2290941	Iron	97.1	94.4	P/P	70 - 130
2290941	Strontium	91.9	87.8	P/P	70 - 130
2290941	Tin	93.7	89.0	P/P	70 - 130
2290941	Vanadium	100	97.2	P/P	70 - 130
2290941	Zinc	97.9	95.3	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P406980

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2290941	Aluminum	102	101	P/P	70 - 130
2290941	Antimony	104	102	P/P	70 - 130
2290941	Arsenic	111	109	P/P	70 - 130
2290941	Beryllium	102	102	P/P	70 - 130
2290941	Cadmium	102	100	P/P	70 - 130
2290941	Chromium	99.2	98.1	P/P	70 - 130
2290941	Cobalt	103	102	P/P	70 - 130
2290941	Copper	101	100	P/P	70 - 130
2290941	Lead	104	104	P/P	70 - 130
2290941	Manganese	95.9	93.2	P/P	70 - 130
2290941	Molybdenum	115	114	P/P	70 - 130
2290941	Nickel	104	103	P/P	70 - 130
2290941	Selenium	96.9	95.2	P/P	70 - 130
2290941	Silver	93.9	93.9	P/P	70 - 130

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P406853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2290935	Ammonia-N	95.8	95.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P406868

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2290863	Kjeldahl Nitrogen	97.4	99.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P406952

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2291040	NO2NO3-N	99.8	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P406701

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2290866	Total-P	92.1	94.2	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406713

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2290936	O-Phosphate-P	101	99.5	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P406666

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2290921	Acesulfame K	123	119	P/P	40 - 150
2290921	AMPA	100	104	P/P	40 - 160
2290921	Endothall	88.2	89.2	P/P	40 - 150
2290921	Glufosinate	101	102	P/P	40 - 160
2290921	Glyphosate	90.8	94.6	P/P	40 - 160
2290921	Sucralose	92.6	100	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P406695

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2290415	2,4-D	115	88.7	P/P	40 - 150
2290415	2,4,5-T	104	109	P/P	40 - 150
2290415	Acetaminophen	116	100	P/P	30 - 150
2290415	Acetamiprid	95.6	84.9	P/P	40 - 150
2290415	Afidopyropen	56.2	50.2	P/P	40 - 150
2290415	Benzovindiflupyr	94.6	80.2	P/P	40 - 150
2290415	Carbamazepine	110	91.5	P/P	40 - 150
2290415	Clothianidin	125	96.5	P/P	40 - 150
2290415	Dinotefuran	127	124	P/P	40 - 150
2290415	Diuron	84.6	89.2	P/P	40 - 150
2290415	Fenuron	86.1	72.3	P/P	40 - 150
2290415	Fluridone	120	89.7	P/P	40 - 150
2290415	Hydrocodone	110	95.9	P/P	40 - 150
2290415	Ibuprofen	53.3	70.1	P/P	40 - 150
2290415	Imidacloprid	204	155	F/F	40 - 150
2290415	Linuron	74.9	80.8	P/P	40 - 150
2290415	Mandestrobin	92.8	86.1	P/P	40 - 150
2290415	MCCP	87.2	82.4	P/P	40 - 150
2290415	Naproxen	115	101	P/P	40 - 150
2290415	Primidone	117	105	P/P	40 - 150
2290415	Pyraclostrobin	98.7	85.9	P/P	40 - 150
2290415	Silvex	109	81.3	P/P	40 - 150
2290415	Thiamethoxam	184	165	F/F	40 - 150
2290415	Tolfenpyrad	89.2	78.9	P/P	30 - 150
2290415	Triclopyr	103	93.5	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P406758

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2290755	Fluoride	99.9	99.0	P/P	92 - 107

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P406794

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2290925	Organic Carbon	99.4		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P407177

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2292469	Organic Carbon	104	105	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P406721

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2291039	Turbidity	7.53	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P406980

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2290941	Calcium	2.19	Spike	P	0 - 20
2290941	Iron	2.62	Spike	P	0 - 20
2290941	Magnesium	2.11	Spike	P	0 - 20
2290941	Strontium	2.88	Spike	P	0 - 20
2290941	Tin	5.16	Spike	P	0 - 20
2290941	Vanadium	3.30	Spike	P	0 - 20
2290941	Zinc	2.76	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P406980

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2290941	Aluminum	0.829	Spike	P	0 - 20
2290941	Antimony	1.05	Spike	P	0 - 20
2290941	Arsenic	0.984	Spike	P	0 - 20
2290941	Beryllium	0.162	Spike	P	0 - 20
2290941	Cadmium	1.51	Spike	P	0 - 20
2290941	Chromium	1.08	Spike	P	0 - 20
2290941	Cobalt	0.736	Spike	P	0 - 20
2290941	Copper	1.45	Spike	P	0 - 20
2290941	Lead	0.760	Spike	P	0 - 20
2290941	Manganese	1.84	Spike	P	0 - 20
2290941	Molybdenum	0.849	Spike	P	0 - 20
2290941	Nickel	1.48	Spike	P	0 - 20
2290941	Selenium	1.70	Spike	P	0 - 20
2290941	Silver	0.0688	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P406853

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2290935	Ammonia-N	0.730	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P406868

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2290863	Kjeldahl Nitrogen	1.98	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P406952

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2291040	NO2NO3-N	0.767	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P406701

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2290866	Total-P	2.12	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P406713

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2290936	O-Phosphate-P	1.89	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P406666

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2290921	Acesulfame K	3.07	Spike	P	0 - 30
2290921	AMPA	4.01	Spike	P	0 - 30
2290921	Endothall	1.17	Spike	P	0 - 30
2290921	Glufosinate	1.65	Spike	P	0 - 30
2290921	Glyphosate	4.10	Spike	P	0 - 30
2290921	Sucralose	5.70	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P406695

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2290415	2,4-D	22.7	Spike	P	0 - 30
2290415	2,4,5-T	4.99	Spike	P	0 - 30
2290415	Acetaminophen	14.4	Spike	P	0 - 30
2290415	Acetamiprid	11.9	Spike	P	0 - 30
2290415	Afidopyropen	11.3	Spike	P	0 - 30
2290415	Bentazon	9.55	Spike	P	0 - 30
2290415	Benzovindiflupyr	16.5	Spike	P	0 - 30
2290415	Carbamazepine	14.2	Spike	P	0 - 30
2290415	Clothianidin	26.0	Spike	P	0 - 30
2290415	Dinotefuran	2.04	Spike	P	0 - 30
2290415	Diuron	5.28	Spike	P	0 - 30
2290415	Fenuron	13.2	Spike	P	0 - 30
2290415	Fluridone	13.4	Spike	P	0 - 30
2290415	Hydrocodone	13.6	Spike	P	0 - 30
2290415	Ibuprofen	27.3	Spike	P	0 - 30
2290415	Imazapyr	4.76	Spike	P	0 - 30
2290415	Imidacloprid	24.5	Spike	P	0 - 30
2290415	Linuron	7.59	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P406695

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2290415	Mandestrobin	7.59	Spike	P	0 - 30
2290415	MCCP	5.67	Spike	P	0 - 30
2290415	Naproxen	13.1	Spike	P	0 - 30
2290415	Primidone	11.3	Spike	P	0 - 30
2290415	Pyraclostrobin	13.9	Spike	P	0 - 30
2290415	Silvex	29.4	Spike	P	0 - 30
2290415	Thiamethoxam	10.4	Spike	P	0 - 30
2290415	Tolfenpyrad	12.4	Spike	P	0 - 30
2290415	Triclopyr	9.44	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P406756

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2290755	Total Alkalinity	0.597	Sample	P	0 - 5.2

Reference Method: SM 4500 F-C-2011
Batch ID: P406758

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2290755	Fluoride	0.476	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P406794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2290925	Organic Carbon	5.03	Sample	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P407177

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2292469	Organic Carbon	0.808	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2291049

Field Sample ID: G3SD0071

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	107	P	30 - 160
EPA 8321B	Acetaminophen-d4	104	P	30 - 160
EPA 8321B	Carbamazepine-d10	105	P	30 - 160
EPA 8321B	Diuron-d6	64.1	P	30 - 160
EPA 8321B	Endothall-d6	74.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	48.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	43.2	P	30 - 160
EPA 8321B	Primidone-d5	93.8	P	30 - 160
EPA 8321B	Sucralose-d6	95.6	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A109057

Included Lab Sample IDs: 2291041, 2291044

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A109065

Included Lab Sample IDs: 2291039, 2291042

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105

Reference Method: SM 2320 B-2011

Run ID: A109087

Included Lab Sample IDs: 2291039, 2291042

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	97.7	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A109087

Included Lab Sample IDs: 2291039, 2291042

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

Reference Method: EPA 8321B

Run ID: A109092

Included Lab Sample IDs: 2291049

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	113	97.6	P/P	60 - 160
Endothall	90.5	88.3	P/P	60 - 160
Sucralose	102	101	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A109101

Included Lab Sample IDs: 2291049

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	107	106	P/P	60 - 160
Glufosinate	88.8	97.3	P/P	60 - 160
Glyphosate	91.2	98.7	P/P	60 - 160

Reference Method: SM 5310 B-2011

Run ID: A109117

Included Lab Sample IDs: 2291043

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	99.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A109129

Included Lab Sample IDs: 2291040, 2291043

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.3	95.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A109151

Included Lab Sample IDs: 2291043

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A109171

Included Lab Sample IDs: 2291040

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A109175

Included Lab Sample IDs: 2291040, 2291043

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A109193

Included Lab Sample IDs: 2291040, 2291043

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.5	97.7	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A109201

Included Lab Sample IDs: 2291050, 2291051

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.0	97.1	P/P	90 - 110
Antimony	91.8	92.7	P/P	90 - 110
Arsenic	96.2	95.1	P/P	90 - 110
Beryllium	92.0	91.7	P/P	90 - 110
Cadmium	96.2	95.8	P/P	90 - 110
Chromium	92.2	92.5	P/P	90 - 110
Cobalt	90.4	90.5	P/P	90 - 110
Copper	92.6	92.6	P/P	90 - 110
Lead	91.6	91.9	P/P	90 - 110
Manganese	93.9	92.3	P/P	90 - 110
Molybdenum	95.1	95.8	P/P	90 - 110
Nickel	92.9	93.5	P/P	90 - 110
Selenium	93.6	93.4	P/P	90 - 110
Silver	93.4	95.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A109229

Included Lab Sample IDs: 2291050, 2291051

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Magnesium	102	103	P/P	90 - 110
Tin	102	102	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A109260

Included Lab Sample IDs: 2291040

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A109280

Included Lab Sample IDs: 2291050, 2291051

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	97.3	96.9	P/P	95 - 105
Iron	99.3	99.4	P/P	95 - 105
Magnesium	98.6	98.3	P/P	95 - 105
Strontium	100	102	P/P	95 - 105
Vanadium	98.2	97.5	P/P	95 - 105
Zinc	99.2	98.1	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A109350

Included Lab Sample IDs: 2291049

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	73.4	72.4	P/P	50 - 150
2,4,5-T	82.6	94.6	P/P	50 - 150
Acetaminophen	102	95.0	P/P	60 - 160
Acetamiprid	112	101	P/P	50 - 150
Afidopyropen	94.7	96.7	P/P	50 - 150
Bentazon	122	101	P/P	50 - 160
Benzovindiflupyr	120	104	P/P	50 - 150
Carbamazepine	101	96.0	P/P	60 - 150
Clothianidin	132	121	P/P	60 - 150
Dinotefuran	106	96.9	P/P	50 - 150
Diuron	79.3	107	P/P	60 - 160
Fenuron	98.5	97.4	P/P	60 - 150
Fluridone	111	83.9	P/P	60 - 160
Hydrocodone	106	96.9	P/P	60 - 150
Ibuprofen	101	76.6	P/P	50 - 160
Imazapyr	97.2	81.8	P/P	50 - 150
Imidacloprid	99.9	101	P/P	60 - 150
Linuron	76.2	126	P/P	60 - 150
Mandestrobin	101	116	P/P	50 - 150
MCPP	105	88.6	P/P	50 - 150
Naproxen	120	89.1	P/P	50 - 160
Primidone	100	70.6	P/P	60 - 150
Pyraclostrobin	109	106	P/P	60 - 150
Silvex	99.7	106	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A109350

Included Lab Sample IDs: 2291049

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thiamethoxam	101	101	P/P	50 - 150
Tolfenpyrad	106	77.2	P/P	60 - 150
Triclopyr	87.8	83.8	P/P	50 - 150

* 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					7.53	
EPA 200.7 Rev. 4.4	Calcium	102	95.4				2.19
	Iron	98.5	97.1	94.4			2.62
	Magnesium	103					2.11
	Strontium	92.0	91.9	87.8			2.88
	Tin	97.2	93.7	89.0			5.16
	Vanadium	95.2	100	97.2			3.30
	Zinc	95.9	97.9	95.3			2.76
EPA 200.8 Rev. 5.4	Aluminum	100	102	101			0.829
	Antimony	100	104	102			1.05
	Arsenic	98.1	111	109			0.984
	Beryllium	93.2	102	102			0.162
	Cadmium	101	102	100			1.51
	Chromium	99.7	99.2	98.1			1.08
	Cobalt	95.8	103	102			0.736
	Copper	96.7	101	100			1.45
	Lead	97.8	104	104			0.760
	Manganese	98.5	95.9	93.2			1.84
	Molybdenum	101	115	114			0.849
	Nickel	97.7	104	103			1.48
	Selenium	95.3	96.9	95.2			1.70
	Silver	99.2	93.9	93.9			0.0688
EPA 350.1 Rev. 2.0	Ammonia-N	96.8	95.8	95.0			0.730
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.6	97.4	99.6			1.98
EPA 353.2 Rev. 2.0	NO2NO3-N	100	99.8	101			0.767
EPA 365.1 Rev. 2.0	Total-P	104	92.1	94.2			2.12
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	101	99.5			1.89
EPA 8321B	2,4-D	69.8	115	88.7			22.7
	2,4,5-T	99.0	104	109			4.99
	Acesulfame K	107	123	119			3.07
	Acetaminophen	79.4	116	100			14.4
	Acetamiprid	74.7	95.6	84.9			11.9
	Afidopyropen	27.7	56.2	50.2			11.3
	AMPA	93.4	100	104			4.01
	Bentazon	107					9.55
	Benzovindiflupyr	86.0	94.6	80.2			16.5
	Carbamazepine	74.1	110	91.5			14.2
	Clothianidin	92.1	125	96.5			26.0
	Dinotefuran	80.1	127	124			2.04
	Diuron	70.7	84.6	89.2			5.28
	Endothall	87.0	88.2	89.2			1.17
	Fenuron	97.3	86.1	72.3			13.2
	Fluridone	92.4	120	89.7			13.4
	Glufosinate	95.7	101	102			1.65
	Glyphosate	97.4	90.8	94.6			4.10
	Hydrocodone	74.2	110	95.9			13.6
	Ibuprofen	55.2	53.3	70.1			27.3
	Imazapyr	70.3					4.76
	Imidacloprid	76.8	204	155			24.5
	Linuron	86.2	74.9	80.8			7.59
	Mandestrobin	76.9	92.8	86.1			7.59
	MCPD	74.9	87.2	82.4			5.67
	Naproxen	62.9	115	101			13.1
	Primidone	60.1	117	105			11.3

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
EPA 8321B	Pyraclostrobin	85.8	98.7	85.9		13.9
	Silvex	68.5	109	81.3		29.4
	Sucralose	98.4	92.6	100		5.70
	Thiamethoxam	86.4	184	165		10.4
	Tolfenpyrad	70.4	89.2	78.9		12.4
	Triclopyr	82.9	103	93.5		9.44
SM 2320 B-2011	Total Alkalinity	98.3			0.597	
SM 4500 F-C-2011	Fluoride	103	99.9	99.0		0.476
SM 5310 B-2011	Organic Carbon	105	99.4		5.03	
	Organic Carbon	105	104	105		0.808

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2291039, 2291042
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2291050, 2291051
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2291050, 2291051
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2291040, 2291043
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2291040, 2291043
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2291040, 2291043
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2291040, 2291043
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2291041, 2291044
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2291049
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2291039, 2291042
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2291039, 2291042
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2291039, 2291042
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2291040, 2291043

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	11/23/2021			11/23/2021 16:13	Khloe J Berg	2291039, 2291042
EPA 200.7 Rev. 4.4	11/23/2021	12/03/2021 10:15	Vijayalakshmi Reddy	12/06/2021 14:14	Josef B Mick	2291050
	11/23/2021	12/03/2021 10:15	Vijayalakshmi Reddy	12/06/2021 14:45	Josef B Mick	2291051
	11/23/2021	12/03/2021 10:15	Vijayalakshmi Reddy	12/08/2021 14:11	Josef B Mick	2291050
	11/23/2021	12/03/2021 10:15	Vijayalakshmi Reddy	12/08/2021 14:19	Josef B Mick	2291051
EPA 200.8 Rev. 5.4	11/23/2021	12/03/2021 10:15	Vijayalakshmi Reddy	12/03/2021 22:31	Alexander Thompson	2291050
	11/23/2021	12/03/2021 10:15	Vijayalakshmi Reddy	12/03/2021 22:41	Alexander Thompson	2291051
EPA 350.1 Rev. 2.0	11/23/2021			11/30/2021 14:54	Ping Hua	2291040
	11/23/2021			11/30/2021 14:55	Ping Hua	2291043
EPA 351.2 Rev. 2.0	11/23/2021	12/01/2021 11:50	Benjamin T. Nordmann	12/03/2021 11:00	Alexandra J Mattheus	2291040
	11/23/2021	12/01/2021 11:50	Benjamin T. Nordmann	12/03/2021 11:02	Alexandra J Mattheus	2291043
EPA 353.2 Rev. 2.0	11/23/2021			12/02/2021 11:09	Nathaniel J Jones	2291040
	11/23/2021			12/02/2021 11:15	Nathaniel J Jones	2291043
EPA 365.1 Rev. 2.0	11/23/2021	11/24/2021 15:46	Simonne.V. Calhoun	12/01/2021 15:54	Sarah A Nixon	2291043
	11/23/2021	11/24/2021 15:46	Simonne.V. Calhoun	12/02/2021 12:06	Shengyu Ding	2291040
EPA 365.1 Rev. 2.0 dissolved	11/23/2021			11/23/2021 15:06	James L Waggeberby	2291041
	11/23/2021			11/23/2021 15:08	James L Waggeberby	2291044
EPA 8321B	11/23/2021	11/24/2021 09:00	Juyoung Kim	11/24/2021 10:48	Juyoung Kim	2291049
	11/23/2021	11/24/2021 09:00	Juyoung Kim	11/24/2021 13:05	Manjita Shrestha	2291049
	11/23/2021	11/24/2021 09:00	Manjita Shrestha	12/10/2021 05:19	Juyoung Kim	2291049
SM 2320 B-2011	11/23/2021			11/24/2021 05:01	Dale L. Simmons	2291042
	11/23/2021			11/24/2021 06:25	Dale L. Simmons	2291039
SM 2540 D-2011	11/23/2021			11/24/2021 14:26	Yijie Li	2291039, 2291042
SM 4500 F-C-2011	11/23/2021			11/24/2021 03:10	Dale L. Simmons	2291042
	11/23/2021			11/24/2021 03:42	Dale L. Simmons	2291039
SM 5310 B-2011	11/23/2021			11/27/2021 09:03	Touraj Touran	2291043
	11/23/2021			12/08/2021 01:02	Khloe J Berg	2291040