

Chemical Analysis Report

SE-DIST-2021-03-10-01

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

Event Description: **SMP - Okeechobee Monthly 03/20**
Request ID: **RQ-2021-03-08-32**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 31-MAR-2021 13:23

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

Case Narrative

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

Results for the following analytical groups are included in this report: 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: Taylor Creek @ 39th St.

Collection Date/Time: 03/09/2021 10:30

Field ID: G1SE0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2230291	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P394758	
	EPA 300.0 Rev. 2.1	Chloride	90		mg Cl/L	P394951	
		Sulfate	52		mg SO4/L	P394955	
	SM 2120 B-2011	Color (true)	110		PCU	P394750	
	SM 2320 B-2011	Total Alkalinity	119		mg CaCO3/L	P394943	
	SM 2540 C-2011	TDS	396		mg/L	P395160	
	SM 2540 D-2011	TSS	5	I	mg/L	P395152	
	SM 4500 F-C-2011	Fluoride	0.13		mg F/L	P394947	
2230293	EPA 350.1 Rev. 2.0	Ammonia-N	0.53		mg N/L	P394931	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P395342	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.39		mg N/L	P394889	
	EPA 365.1 Rev. 2.0	Total-P	0.42		mg P/L	P394988	
	SM 5310 B-2011	Organic Carbon	22		mg C/L	P395228	
2230295	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.31		mg P/L	P394744	
2230323	EPA 8321B	2,4-D	0.0057	I	ug/L	P394766	
		Acesulfame K	0.11	I	ug/L	P394775	
		2,4,5-T	0.0040	U	ug/L	P394766	
		AMPA	0.72		ug/L	P394775	
		Sucralose	0.11		ug/L	P394775	
		Acetaminophen	0.0087	I	ug/L	P394766	
		Acetamiprid	0.0020	U	ug/L	P394766	
		Endothall	0.25	U	ug/L	P394775	
		Glufosinate	0.10	U	ug/L	P394775	
		Glyphosate	1.9		ug/L	P394775	
		Afidopyropen	0.0020	U	ug/L	P394766	
		Bentazon	0.0018	I	ug/L	P394766	
		Benzovindiflupyr	0.0020	U	ug/L	P394766	
		Carbamazepine	8.0E-04	U	ug/L	P394766	
		Clothianidin	0.012		ug/L	P394766	
		Dinotefuran	0.015		ug/L	P394766	
		Diuron	0.0020	U	ug/L	P394766	
		Fenuron	0.016	U	ug/L	P394766	
		Fluridone	8.0E-04	U	ug/L	P394766	
		Imazapyr	0.016	I	ug/L	P394766	
		Hydrocodone	0.0020	U	ug/L	P394766	
		Ibuprofen	0.020	U	ug/L	P394766	
		Imidacloprid	0.0078	I	ug/L	P394766	
		Linuron	0.0040	U	ug/L	P394766	
		Mandestrobin	0.0020	U	ug/L	P394766	
		MCP	0.0020	U	ug/L	P394766	
		Naproxen	0.0080	U	ug/L	P394766	
		Primidone	0.0040	U	ug/L	P394766	
		Pyraclostrobin	0.0020	U	ug/L	P394766	

Field ID: G1SE0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2230323	EPA 8321B	Thiamethoxam	0.0073	I	ug/L	P394766	
		Tolfenpyrad	0.0020	U	ug/L	P394766	
		Triclopyr	0.0040	U	ug/L	P394766	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 4500 F-C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lemkin Creek @ 78

Collection Date/Time: 03/09/2021 11:00

Field ID: G1SE0026

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2230297	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P394758	
	EPA 300.0 Rev. 2.1	Chloride	210		mg Cl/L	P394951	
		Sulfate	100		mg SO4/L	P394955	
	SM 2120 B-2011	Color (true)	69		PCU	P394750	
	SM 2320 B-2011	Total Alkalinity	139		mg CaCO3/L	P394943	
	SM 2540 C-2011	TDS	676		mg/L	P395160	
	SM 2540 D-2011	TSS	5	I	mg/L	P395152	
	SM 4500 F-C-2011	Fluoride	0.12		mg F/L	P394947	
2230298	EPA 350.1 Rev. 2.0	Ammonia-N	0.048		mg N/L	P394931	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P395020	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P394889	
	EPA 365.1 Rev. 2.0	Total-P	0.086		mg P/L	P394988	
	SM 5310 B-2011	Organic Carbon	20		mg C/L	P395228	
2230299	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.040		mg P/L	P394744	

Ref. Method and Comment:

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

SM 4500 F-C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries and relative percent difference are unavailable because of analytical difficulties.

Sample Location: Kissimmee Upstream of 78

Collection Date/Time: 03/09/2021 11:20

Field ID: G4SE0131

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2230292	EPA 180.1 Rev. 2.0	Turbidity	5.3		NTU	P394758	
	EPA 300.0 Rev. 2.1	Chloride	28		mg Cl/L	P394951	
		Sulfate	11		mg SO4/L	P394955	
	SM 2120 B-2011	Color (true)	96		PCU	P394750	
	SM 2320 B-2011	Total Alkalinity	35		mg CaCO3/L	P394943	
	SM 2540 C-2011	TDS	135		mg/L	P395160	
	SM 2540 D-2011	TSS	6	I	mg/L	P395152	
	SM 4500 F-C-2011	Fluoride	0.089	I	mg F/L	P394947	
2230294	EPA 350.1 Rev. 2.0	Ammonia-N	0.085		mg N/L	P394931	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P395020	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.035		mg N/L	P394889	
	EPA 365.1 Rev. 2.0	Total-P	0.077		mg P/L	P394988	
	SM 5310 B-2011	Organic Carbon	17		mg C/L	P395228	
2230296	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.032		mg P/L	P394744	
2230324	EPA 8321B	2,4-D	0.085		ug/L	P394766	
		Acesulfame K	0.10	U	ug/L	P394775	
		2,4,5-T	0.0040	U	ug/L	P394766	
		AMPA	0.10	I	ug/L	P394775	
		Sucralose	0.32		ug/L	P394775	
		Acetaminophen	0.0080	U	ug/L	P394766	
		Acetamiprid	0.0020	U	ug/L	P394766	
		Endothall	0.25	U	ug/L	P394775	
		Glufosinate	0.10	U	ug/L	P394775	
		Glyphosate	0.10	U	ug/L	P394775	
		Afidopyropen	0.0020	U	ug/L	P394766	
		Bentazon	0.0092		ug/L	P394766	
		Benzovindiflupyr	0.0020	U	ug/L	P394766	
		Carbamazepine	8.0E-04	U	ug/L	P394766	
		Clothianidin	0.0020	U	ug/L	P394766	
		Dinotefuran	0.0020	U	ug/L	P394766	
		Diuron	0.0020	U	ug/L	P394766	
		Fenuron	0.016	U	ug/L	P394766	
		Fluridone	0.0088		ug/L	P394766	
		Imazapyr	0.023		ug/L	P394766	
		Hydrocodone	0.0020	U	ug/L	P394766	
		Ibuprofen	0.020	U	ug/L	P394766	
		Imidacloprid	0.0038	I	ug/L	P394766	
		Linuron	0.0040	U	ug/L	P394766	
		Mandestrobin	0.0020	U	ug/L	P394766	
		MCP	0.0020	U	ug/L	P394766	
		Naproxen	0.0080	U	ug/L	P394766	
		Primidone	0.0040	U	ug/L	P394766	
		Pyraclostrobin	0.0020	U	ug/L	P394766	

Field ID: G4SE0131

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2230324	EPA 8321B	Thiamethoxam	0.0020	U	ug/L	P394766	
		Tolfenpyrad	0.0020	U	ug/L	P394766	
		Triclopyr	0.0040	U	ug/L	P394766	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 4500 F-C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries and relative percent difference are unavailable because of analytical difficulties.

Sample Location: L-63 Canal @ SE 86th Blvd.

Collection Date/Time: 03/09/2021 12:00

Field ID: G1SE0022

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2230300	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P394758	
	EPA 300.0 Rev. 2.1	Chloride	89		mg Cl/L	P394951	
		Sulfate	44		mg SO4/L	P394955	
	SM 2120 B-2011	Color (true)	140		PCU	P394750	
	SM 2320 B-2011	Total Alkalinity	101		mg CaCO3/L	P394943	
	SM 2540 C-2011	TDS	390		mg/L	P395160	
	SM 2540 D-2011	TSS	2	I	mg/L	P395152	
	SM 4500 F-C-2011	Fluoride	0.12		mg F/L	P394947	
2230301	EPA 350.1 Rev. 2.0	Ammonia-N	0.068		mg N/L	P394931	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P395140	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.27		mg N/L	P394890	
	EPA 365.1 Rev. 2.0	Total-P	0.33		mg P/L	P394988	
	SM 5310 B-2011	Organic Carbon	24		mg C/L	P395228	
2230302	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.26		mg P/L	P394744	

Ref. Method and Comment:

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

SM 4500 F-C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Henry Creek @ 710

Collection Date/Time: 03/09/2021 12:40

Field ID: G1SE0002

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2230303	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P394759	
	EPA 300.0 Rev. 2.1	Chloride	670		mg Cl/L	P394951	
		Sulfate	150		mg SO4/L	P394955	
	SM 2120 B-2011	Color (true)	150		PCU	P394751	
	SM 2320 B-2011	Total Alkalinity	77		mg CaCO3/L	P394943	
	SM 2540 C-2011	TDS	1.34E+03		mg/L	P395161	
	SM 2540 D-2011	TSS	2	I	mg/L	P395153	
	SM 4500 F-C-2011	Fluoride	0.25		mg F/L	P394947	
2230304	EPA 350.1 Rev. 2.0	Ammonia-N	0.065		mg N/L	P394931	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P395140	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P394890	
	EPA 365.1 Rev. 2.0	Total-P	0.28		mg P/L	P394988	
	SM 5310 B-2011	Organic Carbon	26		mg C/L	P395228	
2230305	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.22		mg P/L	P394744	

Ref. Method and Comment:

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

SM 4500 F-C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lettuce Creek @ 710

Collection Date/Time: 03/09/2021 12:50

Field ID: G1SE0015

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2230325	EPA 200.7 Rev. 4.4	Barium	16.1		ug/L	P394795	
		Calcium	28.7		mg/L	P394795	
		Iron	780		ug/L	P394795	
		Magnesium	5.89		mg/L	P394795	
		Manganese	11.8		ug/L	P394795	
		Potassium	3.2		mg/L	P394795	
		Sodium	27.8		mg/L	P394795	
	EPA 200.8 Rev. 5.4	Zinc	6.8	I	ug/L	P394795	
		Aluminum	181		ug/L	P394795	
		Antimony	0.073	I	ug/L	P394795	
		Arsenic	0.74		ug/L	P394795	
		Beryllium	0.023	I	ug/L	P394795	
		Boron**	39.5		ug/L	P394795	
		Cadmium	0.020	U	ug/L	P394795	
		Chromium	0.79	I	ug/L	P394795	
		Copper	0.40	U	ug/L	P394795	
		Lead	0.20	U	ug/L	P394795	
		Nickel	0.50	U	ug/L	P394795	
		Selenium	0.20	U	ug/L	P394795	
		Silver	0.010	U	ug/L	P394795	
		Thallium	0.10	U	ug/L	P394795	
	SM 2340B	Hardness	95.9		mg/L	P394795	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394758

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394759

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P394795

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P394795

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
Boron	2.0	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 300.0 Rev. 2.1
Batch ID: P394951

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394955

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394931

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395020

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395140

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395342

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394889

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394890

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394988

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394744

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

Reference Method: EPA 8321B
Batch ID: P394766

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P394766

Component	Result	Code	Units
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: P394775

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: SM 2120 B-2011

Batch ID: P394750

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011

Batch ID: P394751

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P394943

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P395160

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P395161

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P395152

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P395153

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P394947

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P395228

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: P394795

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	98.1		P	85 - 115
Calcium	106		P	85 - 115
Iron	98.1		P	85 - 115
Magnesium	97.2		P	85 - 115
Manganese	99.8		P	85 - 115
Potassium	97.8		P	85 - 115
Sodium	100		P	85 - 115
Zinc	93.5		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P394795

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.7		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	99.2		P	85 - 115
Beryllium	96.8		P	85 - 115
Boron	95.7		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	96.6		P	85 - 115
Copper	99.7		P	85 - 115
Lead	106		P	85 - 115
Nickel	98.1		P	85 - 115
Selenium	100		P	85 - 115
Silver	106		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394951

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394955

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394931

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395020

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395140

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.9		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395342

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394889

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394890

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394988

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394744

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

Reference Method: EPA 8321B
Batch ID: P394766

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	119		P	30 - 160
2,4,5-T	115		P	30 - 160
Acetaminophen	144		P	30 - 160
Acetamiprid	88.1		P	30 - 160
Afidopyropen	64.2		P	30 - 160
Bentazon	80.8		P	30 - 160
Benzovindiflupyr	98.0		P	30 - 160
Carbamazepine	102		P	30 - 160
Clothianidin	70.1		P	30 - 160
Dinotefuran	94.7		P	30 - 160
Diuron	84.1		P	30 - 160
Fenuron	106		P	30 - 160
Fluridone	84.2		P	30 - 160
Hydrocodone	100		P	30 - 160
Ibuprofen	99.4		P	30 - 160
Imazapyr	90.4		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P394766

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Imidacloprid	99.3		P	30 - 160
Linuron	80.7		P	30 - 160
Mandestrobin	96.0		P	30 - 160
MCPP	133		P	30 - 160
Naproxen	63.5		P	30 - 160
Primidone	93.8		P	30 - 160
Pyraclostrobin	84.4		P	30 - 160
Thiamethoxam	101		P	30 - 160
Tolfenpyrad	56.5		P	30 - 160
Triclopyr	121		P	30 - 160

Reference Method: EPA 8321B

Batch ID: P394775

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	85.5		P	40 - 150
AMPA	102		P	40 - 150
Endothall	84.9		P	40 - 150
Glufosinate	110		P	40 - 150
Glyphosate	136		P	40 - 140
Sucralose	105		P	40 - 150

Reference Method: SM 2120 B-2011

Batch ID: P394750

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.1		P	90 - 110

Reference Method: SM 2120 B-2011

Batch ID: P394751

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	90 - 110

Reference Method: SM 2320 B-2011

Batch ID: P394943

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

Reference Method: SM 4500 F-C-2011

Batch ID: P394947

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.3		P	90 - 106

Reference Method: SM 5310 B-2011

Batch ID: P395228

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P394795

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230395	Barium	98.7		P	80 - 120
2230395	Calcium	106		P	80 - 120
2230395	Iron	101		P	80 - 120
2230395	Magnesium	99.9		P	80 - 120
2230395	Manganese	100		P	80 - 120
2230395	Potassium	97.7		P	80 - 120
2230395	Sodium	101		P	80 - 120
2230395	Zinc	94.3		P	80 - 120
2230396	Barium	97.4	102	P/P	80 - 120
2230396	Calcium	101		P	80 - 120
2230396	Iron	107	107	P/P	80 - 120
2230396	Magnesium	107	105	P/P	80 - 120
2230396	Manganese	101	103	P/P	80 - 120
2230396	Potassium	102	102	P/P	80 - 120
2230396	Sodium	103	104	P/P	80 - 120
2230396	Zinc	92.8	96.3	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P394795

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230395	Aluminum	101		P	80 - 120
2230395	Antimony	100		P	80 - 120
2230395	Arsenic	96.0		P	80 - 120
2230395	Beryllium	94.0		P	80 - 120
2230395	Boron	99.4		P	80 - 120
2230395	Cadmium	102		P	80 - 120
2230395	Chromium	96.8		P	80 - 120
2230395	Copper	95.3		P	80 - 120
2230395	Lead	107		P	80 - 120
2230395	Nickel	93.4		P	80 - 120
2230395	Selenium	94.8		P	80 - 120
2230395	Silver	106		P	80 - 120
2230395	Thallium	106		P	80 - 120
2230396	Aluminum	94.9	99.8	P/P	80 - 120
2230396	Antimony	99.2	99.1	P/P	80 - 120
2230396	Arsenic	97.2	98.1	P/P	80 - 120
2230396	Beryllium	87.5	89.9	P/P	80 - 120
2230396	Boron	97.4	99.2	P/P	80 - 120
2230396	Cadmium	99.8	99.8	P/P	80 - 120
2230396	Chromium	96.5	97.5	P/P	80 - 120
2230396	Copper	98.8	99.9	P/P	80 - 120
2230396	Lead	107	106	P/P	80 - 120
2230396	Nickel	96.6	97.9	P/P	80 - 120
2230396	Selenium	94.3	96.3	P/P	80 - 120
2230396	Silver	106	105	P/P	80 - 120
2230396	Thallium	106	106	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P394951

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394951

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230044	Chloride	103		P	90 - 110
2230373	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394955

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230044	Sulfate	102		P	90 - 110
2230373	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394931

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230375	Ammonia-N	96.4	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395140

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230408	Kjeldahl Nitrogen	97.2	98.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395342

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2231431	Kjeldahl Nitrogen	98.4	96.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394889

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230113	NO2NO3-N	98.5	98.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394890

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230301	NO2NO3-N	92.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394988

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230288	Total-P	102	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394744

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230296	O-Phosphate-P	98.3	98.6	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P394766

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229932	2,4-D	101	119	P/P	30 - 160
2229932	2,4,5-T	103	106	P/P	30 - 160
2229932	Acetaminophen	93.0	98.4	P/P	30 - 160
2229932	Acetamiprid	84.4	89.6	P/P	30 - 160
2229932	Afidopyropen	67.3	77.7	P/P	30 - 160
2229932	Bentazon	60.1	65.2	P/P	30 - 160
2229932	Benzovindiflupyr	88.7	99.1	P/P	30 - 160
2229932	Carbamazepine	93.9	104	P/P	30 - 160
2229932	Clothianidin	69.2	78.9	P/P	30 - 160
2229932	Dinotefuran	94.4	108	P/P	30 - 160
2229932	Diuron	70.2	72.2	P/P	30 - 160
2229932	Fenuron	93.4	97.9	P/P	30 - 160
2229932	Fluridone	77.5	78.4	P/P	30 - 160
2229932	Hydrocodone	96.6	109	P/P	30 - 160
2229932	Ibuprofen	72.5	85.8	P/P	30 - 160
2229932	Imazapyr	76.1	86.5	P/P	30 - 160
2229932	Imidacloprid	119	127	P/P	30 - 160
2229932	Linuron	65.3	72.2	P/P	30 - 160
2229932	Mandestrobin	94.4	98.9	P/P	30 - 160
2229932	MCCP	119	136	P/P	30 - 160
2229932	Naproxen	64.5	58.0	P/P	30 - 160
2229932	Primidone	101	105	P/P	30 - 160
2229932	Pyraclostrobin	83.4	91.7	P/P	30 - 160
2229932	Thiamethoxam	118	122	P/P	30 - 160
2229932	Tolfenpyrad	55.5	59.4	P/P	30 - 160
2229932	Triclopyr	108	110	P/P	30 - 160

Reference Method: EPA 8321B
 Batch ID: P394775

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229932	Acesulfame K	126	114	P/P	40 - 150
2229932	AMPA	120	116	P/P	40 - 150
2229932	Endothall	86.4	100	P/P	40 - 150
2229932	Glufosinate	117	120	P/P	40 - 150
2229932	Glyphosate	109	128	P/P	40 - 140
2229932	Sucralose	115	116	P/P	40 - 150

Reference Method: SM 5310 B-2011
 Batch ID: P395228

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230293	Organic Carbon	101		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394758

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230251	Turbidity	1.96	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394759

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230333	Turbidity	0.873	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P394795

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230396	Barium	4.00	Spike	P	0 - 20
2230396	Calcium	0.312	Spike	P	0 - 20
2230396	Iron	0.0780	Spike	P	0 - 20
2230396	Magnesium	1.20	Spike	P	0 - 20
2230396	Manganese	1.12	Spike	P	0 - 20
2230396	Potassium	0.453	Spike	P	0 - 20
2230396	Sodium	1.25	Spike	P	0 - 20
2230396	Zinc	3.74	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P394795

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230396	Aluminum	3.41	Spike	P	0 - 20
2230396	Antimony	0.179	Spike	P	0 - 20
2230396	Arsenic	0.835	Spike	P	0 - 20
2230396	Beryllium	2.41	Spike	P	0 - 20
2230396	Boron	1.62	Spike	P	0 - 20
2230396	Cadmium	0.0217	Spike	P	0 - 20
2230396	Chromium	0.909	Spike	P	0 - 20
2230396	Copper	1.16	Spike	P	0 - 20
2230396	Lead	0.727	Spike	P	0 - 20
2230396	Nickel	1.32	Spike	P	0 - 20
2230396	Selenium	2.03	Spike	P	0 - 20
2230396	Silver	0.970	Spike	P	0 - 20
2230396	Thallium	0.0472	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394951

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230044	Chloride	0.954	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394955

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230044	Sulfate	1.03	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394931

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230375	Ammonia-N	0.760	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395140

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230408	Kjeldahl Nitrogen	0.842	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231431	Kjeldahl Nitrogen	2.29	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394889

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230113	NO2NO3-N	0.509	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394890

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230301	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394988

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230288	Total-P	1.77	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394744

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230296	O-Phosphate-P	0.230	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P394766

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229932	2,4-D	14.6	Spike	P	0 - 30
2229932	2,4,5-T	2.72	Spike	P	0 - 30
2229932	Acetaminophen	5.69	Spike	P	0 - 30
2229932	Acetamiprid	5.98	Spike	P	0 - 30
2229932	Afidopyropen	14.3	Spike	P	0 - 30
2229932	Bentazon	8.06	Spike	P	0 - 30
2229932	Benzovindiflupyr	11.1	Spike	P	0 - 30
2229932	Carbamazepine	10.4	Spike	P	0 - 30
2229932	Clothianidin	13.1	Spike	P	0 - 30
2229932	Dinotefuran	13.5	Spike	P	0 - 30
2229932	Diuron	2.89	Spike	P	0 - 30
2229932	Fenuron	4.75	Spike	P	0 - 30
2229932	Fluridone	1.23	Spike	P	0 - 30
2229932	Hydrocodone	11.9	Spike	P	0 - 30
2229932	Ibuprofen	16.8	Spike	P	0 - 30
2229932	Imazapyr	12.9	Spike	P	0 - 30
2229932	Imidacloprid	6.71	Spike	P	0 - 30
2229932	Linuron	10.1	Spike	P	0 - 30
2229932	Mandestrobin	4.61	Spike	P	0 - 30
2229932	MCPP	13.3	Spike	P	0 - 30
2229932	Naproxen	10.7	Spike	P	0 - 30
2229932	Primidone	4.17	Spike	P	0 - 30
2229932	Pyraclostrobin	9.49	Spike	P	0 - 30
2229932	Thiamethoxam	3.02	Spike	P	0 - 30
2229932	Tolfenpyrad	6.95	Spike	P	0 - 30
2229932	Triclopyr	2.15	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P394775

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229932	Acesulfame K	9.72	Spike	P	0 - 30
2229932	AMPA	3.80	Spike	P	0 - 30
2229932	Endothall	14.7	Spike	P	0 - 30
2229932	Glufosinate	2.43	Spike	P	0 - 30
2229932	Glyphosate	15.9	Spike	P	0 - 30
2229932	Sucralose	0.905	Spike	P	0 - 30

Reference Method: SM 2120 B-2011

Batch ID: P394750

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230251	Color (true)	1.42	Sample	P	0 - 20

Reference Method: SM 2120 B-2011

Batch ID: P394751

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: SM 2120 B-2011
Batch ID: P394751

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230373	Color (true)	1.99	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P394943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230287	Total Alkalinity	0.513	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P395160

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230006	TDS	2.63	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P395161

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230509	TDS	2.68	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P394947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230287	Fluoride	0.454	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P395228

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230293	Organic Carbon	0.735	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2230323

Field Sample ID: G1SE0024

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	96.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	111	P	30 - 160
EPA 8321B	Carbamazepine-d10	63.5	P	30 - 160
EPA 8321B	Diuron-d6	55.2	P	30 - 160
EPA 8321B	Endothall-d6	115	P	40 - 160
EPA 8321B	Endothall-d6	115	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	78.4	P	30 - 160
EPA 8321B	Primidone-d5	71.2	P	30 - 160
EPA 8321B	Sucralose-d6	91.9	P	30 - 160
EPA 8321B	Sucralose-d6	91.9	P	30 - 160

Lab Sample ID: 2230324

Field Sample ID: G4SE0131

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	105	P	30 - 160
EPA 8321B	Acetaminophen-d4	96.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	69.9	P	30 - 160
EPA 8321B	Diuron-d6	64.1	P	30 - 160
EPA 8321B	Endothall-d6	88.4	P	40 - 160
EPA 8321B	Endothall-d6	88.4	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	72.1	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	72.1	P	40 - 160
EPA 8321B	Ibuprofen-d3	85.9	P	30 - 160
EPA 8321B	Primidone-d5	76.2	P	30 - 160
EPA 8321B	Sucralose-d6	85.6	P	30 - 160
EPA 8321B	Sucralose-d6	85.6	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A103990

Included Lab Sample IDs: 2230295, 2230296, 2230299, 2230302, 2230305

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.3	99.2	P/P	90 - 110
O-Phosphate-P	99.7	98.8	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A103991

Included Lab Sample IDs: 2230291, 2230292, 2230297, 2230300, 2230303

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	104	P/P	85 - 115
Color (true)	103	102	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A103994

Included Lab Sample IDs: 2230291, 2230292, 2230297, 2230300, 2230303

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A104033

Included Lab Sample IDs: 2230293, 2230294, 2230298, 2230301, 2230304

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	98.0	P/P	90 - 110
NO2NO3-N	99.0	98.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A104047

Included Lab Sample IDs: 2230293, 2230294, 2230298, 2230301, 2230304

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	98.9	P/P	90 - 110
Ammonia-N	99.8	100	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A104052

Included Lab Sample IDs: 2230291, 2230292, 2230297, 2230300, 2230303

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	98.9	P/P	90 - 110
Total Alkalinity	97.6	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A104052

Included Lab Sample IDs: 2230291, 2230292, 2230297, 2230300, 2230303

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	100	P/P	90 - 110
Fluoride	99.1	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A104057

Included Lab Sample IDs: 2230291, 2230292, 2230297, 2230300, 2230303

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Chloride	102	102	P/P	90 - 110
Sulfate	101	103	P/P	90 - 110
Sulfate	103	103	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A104070

Included Lab Sample IDs: 2230325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	99.9	100	P/P	90 - 110
Calcium	101	101	P/P	90 - 110
Iron	99.6	98.6	P/P	90 - 110
Magnesium	98.5	97.2	P/P	90 - 110
Manganese	99.4	100	P/P	90 - 110
Potassium	98.3	97.1	P/P	90 - 110
Sodium	98.9	98.6	P/P	90 - 110
Zinc	95.5	95.2	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A104071

Included Lab Sample IDs: 2230323, 2230324

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	110	101	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A104104

Included Lab Sample IDs: 2230293, 2230294, 2230298, 2230301, 2230304

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	106	P/P	90 - 110
Total-P	106	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A104125

Included Lab Sample IDs: 2230325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	101	P/P	90 - 110
Antimony	99.9	99.0	P/P	90 - 110
Arsenic	99.6	98.6	P/P	90 - 110
Beryllium	99.5	97.1	P/P	90 - 110
Boron	103	104	P/P	90 - 110
Cadmium	99.9	100	P/P	90 - 110
Chromium	99.7	97.7	P/P	90 - 110
Copper	99.5	96.7	P/P	90 - 110
Lead	108	110	P/P	90 - 110
Nickel	98.9	96.9	P/P	90 - 110
Selenium	100	100	P/P	90 - 110
Silver	103	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A104125

Included Lab Sample IDs: 2230325

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

Reference Method: EPA 8321B

Run ID: A104157

Included Lab Sample IDs: 2230323, 2230324

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	85.4	96.2	P/P	50 - 150
2,4-D	96.2	105	P/P	50 - 150
2,4,5-T	113	102	P/P	50 - 150
2,4,5-T	96.6	113	P/P	50 - 150
Acetaminophen	103	92.6	P/P	60 - 160
Acetaminophen	92.6	111	P/P	60 - 160
Acetamiprid	106	106	P/P	50 - 150
Acetamiprid	108	106	P/P	50 - 150
Afidopyropen	103	102	P/P	50 - 150
Afidopyropen	95.3	103	P/P	50 - 150
Bentazon	101	102	P/P	50 - 160
Bentazon	102	103	P/P	50 - 160
Benzovindiflupyr	105	105	P/P	50 - 160
Benzovindiflupyr	105	104	P/P	50 - 160
Carbamazepine	102	110	P/P	60 - 150
Carbamazepine	110	105	P/P	60 - 150
Clothianidin	105	99.5	P/P	60 - 150
Clothianidin	99.5	95.2	P/P	60 - 150
Dinotefuran	107	105	P/P	50 - 150
Dinotefuran	111	107	P/P	50 - 150
Diuron	119	122	P/P	60 - 160
Diuron	122	118	P/P	60 - 160
Fenuron	103	95.1	P/P	60 - 150
Fenuron	95.1	109	P/P	60 - 150
Fluridone	104	109	P/P	60 - 160
Fluridone	109	116	P/P	60 - 160
Hydrocodone	101	105	P/P	60 - 150
Hydrocodone	105	105	P/P	60 - 150
Ibuprofen	126	110	P/P	50 - 160
Ibuprofen	80.8	126	P/P	50 - 160
Imazapyr	82.9	98.7	P/P	50 - 160
Imazapyr	92.2	82.9	P/P	50 - 160
Imidacloprid	94.5	96.6	P/P	60 - 150
Imidacloprid	96.6	96.2	P/P	60 - 150
Linuron	102	99.5	P/P	60 - 150
Linuron	93.7	102	P/P	60 - 150
Mandestrobin	114	116	P/P	50 - 150
Mandestrobin	116	116	P/P	50 - 150
MCPP	105	105	P/P	50 - 150
MCPP	105	101	P/P	50 - 150
Naproxen	103	98.4	P/P	50 - 160
Naproxen	98.4	69.7	P/P	50 - 160
Primidone	105	108	P/P	60 - 150
Primidone	108	94.6	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A104157

Included Lab Sample IDs: 2230323, 2230324

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Pyraclostrobin	105	103	P/P	60 - 150
Pyraclostrobin	106	105	P/P	60 - 150
Thiamethoxam	105	102	P/P	50 - 150
Thiamethoxam	92.8	105	P/P	50 - 150
Tolfenpyrad	103	106	P/P	60 - 150
Tolfenpyrad	106	106	P/P	60 - 150
Triclopyr	88.9	109	P/P	50 - 150
Triclopyr	98.2	88.9	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A104164

Included Lab Sample IDs: 2230323, 2230324

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	108	86.6	P/P	60 - 160
AMPA	115	113	P/P	60 - 160
Endothall	92.9	87.9	P/P	60 - 160
Glufosinate	131	114	P/P	60 - 160
Glyphosate	152	153	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A104170

Included Lab Sample IDs: 2230294, 2230298

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	99.2	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A104174

Included Lab Sample IDs: 2230293, 2230294, 2230298, 2230301, 2230304

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.0	95.1	P/P	90 - 110
Organic Carbon	95.1	95.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A104201

Included Lab Sample IDs: 2230301, 2230304

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A104257

Included Lab Sample IDs: 2230293

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.8	100	P/P	90 - 110

Quality Assurance Report

Calibration Verification

* 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								1.96	
	Turbidity								0.873	
EPA 200.7 Rev. 4.4	Barium	98.1			98.7	97.4	102			4.00
	Calcium	106			106	101				0.312
	Iron	98.1			101	107	107			0.0780
	Magnesium	97.2			99.9	107	105			1.20
	Manganese	99.8			100	101	103			1.12
	Potassium	97.8			97.7	102	102			0.453
	Sodium	100			101	103	104			1.25
	Zinc	93.5			94.3	92.8	96.3			3.74
EPA 200.8 Rev. 5.4	Aluminum	97.7			94.9	99.8	101			3.41
	Antimony	101			99.2	99.1	100			0.179
	Arsenic	99.2			97.2	98.1	96.0			0.835
	Beryllium	96.8			87.5	89.9	94.0			2.41
	Boron	95.7			97.4	99.2	99.4			1.62
	Cadmium	102			99.8	99.8	102			0.0217
	Chromium	96.6			96.5	97.5	96.8			0.909
	Copper	99.7			98.8	99.9	95.3			1.16
	Lead	106			107	106	107			0.727
	Nickel	98.1			96.6	97.9	93.4			1.32
	Selenium	100			94.3	96.3	94.8			2.03
	Silver	106			106	105	106			0.970
	Thallium	103			106	106	106			0.0472
EPA 300.0 Rev. 2.1	Chloride	103			103	102			0.954	
	Sulfate	102			102	100			1.03	
EPA 350.1 Rev. 2.0	Ammonia-N	99.4			96.4	97.4				0.760
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106								
	Kjeldahl Nitrogen	98.9			97.2	98.1				0.842
	Kjeldahl Nitrogen	101			98.4	96.0				2.29
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	97.5			98.5	98.0				0.509
	NO ₂ NO ₃ -N	98.0			92.8					0.0
EPA 365.1 Rev. 2.0	Total-P	104			102	104				1.77
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.7			98.3	98.6				0.230
EPA 8321B	2,4-D	119			101	119				14.6
	2,4,5-T	115			103	106				2.72
	Acesulfame K	85.5			126	114				9.72
	Acetaminophen	144			93.0	98.4				5.69
	Acetamiprid	88.1			84.4	89.6				5.98
	Afidopyropen	64.2			67.3	77.7				14.3
	AMPA	102			120	116				3.80
	Bentazon	80.8			60.1	65.2				8.06
	Benzovindiflupyr	98.0			88.7	99.1				11.1
	Carbamazepine	102			93.9	104				10.4
	Clothianidin	70.1			69.2	78.9				13.1
	Dinotefuran	94.7			94.4	108				13.5
	Diuron	84.1			70.2	72.2				2.89
	Endothall	84.9			86.4	100				14.7
	Fenuron	106			93.4	97.9				4.75
	Fluridone	84.2			77.5	78.4				1.23
	Glufosinate	110			117	120				2.43
	Glyphosate	136			109	128				15.9
	Hydrocodone	100			96.6	109				11.9
	Ibuprofen	99.4			72.5	85.8				16.8
	Imazapyr	90.4			76.1	86.5				12.9

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Imidacloprid	99.3	119	127		6.71
	Linuron	80.7	65.3	72.2		10.1
	Mandestrobin	96.0	94.4	98.9		4.61
	MCP	133	119	136		13.3
	Naproxen	63.5	64.5	58.0		10.7
	Primidone	93.8	101	105		4.17
	Pyraclostrobin	84.4	83.4	91.7		9.49
	Sucralose	105	115	116		0.905
	Thiamethoxam	101	118	122		3.02
	Tolfenpyrad	56.5	55.5	59.4		6.95
	Triclopyr	121	108	110		2.15
SM 2120 B-2011	Color (true)	99.1			1.42	
	Color (true)	102			1.99	
SM 2320 B-2011	Total Alkalinity	100			0.513	
SM 2540 C-2011	TDS				2.63	
	TDS				2.68	
SM 4500 F-C-2011	Fluoride	97.3				0.454
SM 5310 B-2011	Organic Carbon	94.3	101			0.735

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2230291, 2230292, 2230297, 2230300, 2230303
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2230325
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2230325
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2230291, 2230292, 2230297, 2230300, 2230303
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2230291, 2230292, 2230297, 2230300, 2230303
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2230293, 2230294, 2230298, 2230301, 2230304
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2230293, 2230294, 2230298, 2230301, 2230304
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2230293, 2230294, 2230298, 2230301, 2230304
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2230293, 2230294, 2230298, 2230301, 2230304
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2230295, 2230296, 2230299, 2230302, 2230305
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2230323, 2230324
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2230323, 2230324
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2230291, 2230292, 2230297, 2230300, 2230303
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2230291, 2230292, 2230297, 2230300, 2230303
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2230325
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2230291, 2230292, 2230297, 2230300, 2230303
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2230291, 2230292, 2230297, 2230300, 2230303
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2230291, 2230292, 2230297, 2230300, 2230303

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2230293, 2230294, 2230298, 2230301, 2230304

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	03/10/2021			03/10/2021 15:21	Yen Ta	2230291, 2230292, 2230297, 2230300, 2230303
EPA 200.7 Rev. 4.4	03/10/2021	03/11/2021 13:10	Elliott D. Healy	03/15/2021 12:12	Betina Topolski	2230325
EPA 200.8 Rev. 5.4	03/10/2021	03/11/2021 13:10	Elliott D. Healy	03/17/2021 16:36	McKinley C Carter	2230325
EPA 300.0 Rev. 2.1	03/10/2021			03/12/2021 23:14	Lipi Saha	2230291
	03/10/2021			03/12/2021 23:26	Lipi Saha	2230292
	03/10/2021			03/13/2021 00:02	Lipi Saha	2230297
	03/10/2021			03/13/2021 00:14	Lipi Saha	2230300
	03/10/2021			03/13/2021 00:26	Lipi Saha	2230303
EPA 350.1 Rev. 2.0	03/10/2021			03/13/2021 18:11	Ping Hua	2230298
	03/10/2021			03/13/2021 18:12	Ping Hua	2230301
	03/10/2021			03/13/2021 18:13	Ping Hua	2230304
	03/10/2021			03/13/2021 18:56	Ping Hua	2230293
	03/10/2021			03/13/2021 18:57	Ping Hua	2230294
EPA 351.2 Rev. 2.0	03/10/2021	03/16/2021 12:00	Benjamin T. Nordmann	03/19/2021 13:22	Julia Storbeck	2230294
	03/10/2021	03/16/2021 12:00	Benjamin T. Nordmann	03/19/2021 13:24	Julia Storbeck	2230298
	03/10/2021	03/18/2021 12:47	Benjamin T. Nordmann	03/22/2021 14:32	Julia Storbeck	2230301
	03/10/2021	03/18/2021 12:47	Benjamin T. Nordmann	03/22/2021 14:34	Julia Storbeck	2230304
	03/10/2021	03/23/2021 13:04	Benjamin T. Nordmann	03/24/2021 15:56	Julia Storbeck	2230293
EPA 353.2 Rev. 2.0	03/10/2021			03/12/2021 09:09	Beverly Y. Sanders	2230293
	03/10/2021			03/12/2021 09:11	Beverly Y. Sanders	2230294
	03/10/2021			03/12/2021 09:12	Beverly Y. Sanders	2230298
	03/10/2021			03/12/2021 09:19	Beverly Y. Sanders	2230301
	03/10/2021			03/12/2021 09:25	Beverly Y. Sanders	2230304
EPA 365.1 Rev. 2.0	03/10/2021	03/15/2021 13:12	Yen Ta	03/17/2021 11:26	Shengyu Ding	2230293
	03/10/2021	03/15/2021 13:12	Yen Ta	03/17/2021 11:27	Shengyu Ding	2230294
	03/10/2021	03/15/2021 13:12	Yen Ta	03/17/2021 11:28	Shengyu Ding	2230298
	03/10/2021	03/15/2021 13:12	Yen Ta	03/17/2021 11:31	Shengyu Ding	2230301
	03/10/2021	03/15/2021 13:12	Yen Ta	03/17/2021 11:32	Shengyu Ding	2230304
EPA 365.1 Rev. 2.0 dissolved	03/10/2021			03/10/2021 14:45	Patrick M. Roche	2230296
	03/10/2021			03/10/2021 14:49	Patrick M. Roche	2230299
	03/10/2021			03/10/2021 14:50	Patrick M. Roche	2230302, 2230305
	03/10/2021			03/10/2021 15:29	Patrick M. Roche	2230295
EPA 8321B	03/10/2021	03/11/2021 10:00	Rebecca Ware	03/11/2021 12:19	Rebecca Ware	2230323
	03/10/2021	03/11/2021 10:00	Rebecca Ware	03/11/2021 12:33	Rebecca Ware	2230324
	03/10/2021	03/11/2021 10:00	Rebecca Ware	03/13/2021 00:01	Rebecca Ware	2230323
	03/10/2021	03/11/2021 10:00	Rebecca Ware	03/13/2021 00:12	Rebecca Ware	2230324
	03/10/2021	03/12/2021 14:30	Hoor Shaik	03/12/2021 23:21	Juyoung Kim	2230323
	03/10/2021	03/12/2021 14:30	Hoor Shaik	03/13/2021 00:31	Juyoung Kim	2230324
SM 2120 B-2011	03/10/2021			03/10/2021 16:13	Benjamin T. Nordmann	2230291

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2120 B-2011	03/10/2021			03/10/2021 16:14	Benjamin T. Nordmann	2230292, 2230297
	03/10/2021			03/10/2021 16:15	Benjamin T. Nordmann	2230300
	03/10/2021			03/10/2021 16:30	Benjamin T. Nordmann	2230303
SM 2320 B-2011	03/10/2021			03/11/2021 16:50	Dale L. Simmons	2230291
	03/10/2021			03/11/2021 17:04	Dale L. Simmons	2230292
	03/10/2021			03/11/2021 17:19	Dale L. Simmons	2230300
	03/10/2021			03/11/2021 19:14	Dale L. Simmons	2230297
	03/10/2021			03/11/2021 20:19	Dale L. Simmons	2230303
SM 2340B	03/10/2021			03/15/2021 12:12	Betina Topolski	2230325
SM 2540 C-2011	03/10/2021			03/12/2021 14:32	Yijie Li	2230291, 2230292, 2230297, 2230300, 2230303
SM 2540 D-2011	03/10/2021			03/12/2021 14:32	Yijie Li	2230291, 2230292, 2230297, 2230300, 2230303
SM 4500 F-C-2011	03/10/2021			03/11/2021 16:50	Dale L. Simmons	2230291
	03/10/2021			03/11/2021 17:04	Dale L. Simmons	2230292
	03/10/2021			03/11/2021 17:19	Dale L. Simmons	2230300
	03/10/2021			03/11/2021 19:14	Dale L. Simmons	2230297
	03/10/2021			03/11/2021 20:19	Dale L. Simmons	2230303
SM 5310 B-2011	03/10/2021			03/18/2021 22:01	Madeline Gruver	2230293
	03/10/2021			03/19/2021 00:49	Madeline Gruver	2230294
	03/10/2021			03/19/2021 01:07	Madeline Gruver	2230298
	03/10/2021			03/19/2021 01:17	Madeline Gruver	2230301
	03/10/2021			03/19/2021 01:28	Madeline Gruver	2230304