

Chemical Analysis Report

NW-DIST-2020-10-02-01

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

Event Description: **ESC/BW BAY RUN**
Request ID: **RQ-2020-08-31-28**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 308
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

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

Date Certified: 20-OCT-2020 17:34



Case Narrative

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

Results for the following analytical groups are included in this report: Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Trout Bayou

Collection Date/Time: 10/01/2020 13:42

Field ID: G4NW0443

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2199549	EPA 180.1 Rev. 2.0	Turbidity	7.1	A	NTU	P388162	
	EPA 300.0 Rev. 2.1	Bromide	5.3		mg Br/L	P388434	
	SM 2320 B-2011	Total Alkalinity	28		mg CaCO3/L	P388248	
	SM 2540 D-2011	TSS	4	I	mg/L	P388618	
	SM 4500 F-C-2011	Fluoride	0.15		mg F/L	P388252	
2199551	EPA 350.1 Rev. 2.0	Ammonia-N	0.039		mg N/L	P388183	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P388543	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P388266	
	EPA 365.1 Rev. 2.0	Total-P	0.036		mg P/L	P388225	
	SM 5310 B-2011	Organic Carbon	9.8		mg C/L	P388299	
2199553	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P388169	
2199564	EPA 8321B	Acesulfame K**	1.0	U	ug/L	P388205	
		2,4-D	0.0020	U	ug/L	P388291	
		AMPA**	0.10	U	ug/L	P388205	
		Sucralose**	0.089		ug/L	P388205	
		Acetaminophen**	0.0080	U	ug/L	P388291	
		Endothall**	2.5	U	ug/L	P388205	
		Acetamiprid**	0.0020	U	ug/L	P388291	
		Glufosinate**	0.10	U	ug/L	P388205	
		Glyphosate**	0.10	U	ug/L	P388205	
		Afidopyropen**	0.0020	UJ	ug/L	P388291	MS
		Bentazon	8.0E-04	U	ug/L	P388291	
		Benzovindiflupyr**	0.0020	U	ug/L	P388291	
		Carbamazepine**	8.0E-04	U	ug/L	P388291	
		Clothianidin**	0.0020	U	ug/L	P388291	
		Dinotefuran**	0.0020	U	ug/L	P388291	
		Diuron	0.0020	U	ug/L	P388291	
		Fenuron	0.016	U	ug/L	P388291	
		Fluridone**	8.0E-04	U	ug/L	P388291	
		Imazapyr**	0.058		ug/L	P388291	
		Hydrocodone**	0.0020	U	ug/L	P388291	
		Ibuprofen**	0.020	U	ug/L	P388291	
		Imidacloprid	0.0033	I	ug/L	P388291	
		Linuron	0.0040	U	ug/L	P388291	
		Mandestrobin**	0.0020	U	ug/L	P388291	
		MCP	0.0020	U	ug/L	P388291	
		Naproxen**	0.0080	U	ug/L	P388291	
		Primidone**	0.0040	U	ug/L	P388291	
		Pyraclostrobin**	0.0020	U	ug/L	P388291	
		Thiamethoxam**	0.0020	U	ug/L	P388291	
		Tolfenpyrad**	0.0020	U	ug/L	P388291	
		Triclopyr**	0.0040	U	ug/L	P388291	

Field ID: G4NW0443

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
-----------	-------------	-----------	--------	------	-------	----------	----------

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: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Judges Bayou Mouth

Collection Date/Time: 10/01/2020 14:13

Field ID: G4NW0441

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2199550	EPA 180.1 Rev. 2.0	Turbidity	13		NTU	P388162	
	EPA 300.0 Rev. 2.1	Bromide	0.30		mg Br/L	P388434	
	SM 2320 B-2011	Total Alkalinity	16		mg CaCO3/L	P388248	
	SM 2540 D-2011	TSS	6	I	mg/L	P388618	
	SM 4500 F-C-2011	Fluoride	0.039	I	mg F/L	P388252	
2199552	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P388179	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.69		mg N/L	P388544	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.046		mg N/L	P388216	
	EPA 365.1 Rev. 2.0	Total-P	0.054		mg P/L	P388345	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P388299	
2199554	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P388168	
2199565	EPA 8321B	2,4-D	0.0020	U	ug/L	P388291	
		Acesulfame K**	0.10	U	ug/L	P388205	
		AMPA**	0.10	U	ug/L	P388205	
		Sucralose**	0.069		ug/L	P388205	
		Acetaminophen**	0.0080	U	ug/L	P388291	
		Acetamiprid**	0.0020	U	ug/L	P388291	
		Endothall**	0.25	U	ug/L	P388205	
		Glufosinate**	0.10	U	ug/L	P388205	
		Glyphosate**	0.10	U	ug/L	P388205	
		Afidopyropen**	0.0020	U	ug/L	P388291	MS
		Bentazon	8.0E-04	U	ug/L	P388291	
		Benzovindiflupyr**	0.0020	U	ug/L	P388291	
		Carbamazepine**	8.0E-04	U	ug/L	P388291	
		Clothianidin**	0.0020	U	ug/L	P388291	
		Dinotefuran**	0.0020	U	ug/L	P388291	
		Diuron	0.0020	U	ug/L	P388291	
		Fenuron	0.016	U	ug/L	P388291	
		Fluridone**	8.0E-04	U	ug/L	P388291	
		Imazapyr**	0.068		ug/L	P388291	
		Hydrocodone**	0.0020	U	ug/L	P388291	
		Ibuprofen**	0.020	U	ug/L	P388291	
		Imidacloprid	0.0020	U	ug/L	P388291	
		Linuron	0.0040	U	ug/L	P388291	
		Mandestrobin**	0.0020	U	ug/L	P388291	
		MCPP	0.0020	U	ug/L	P388291	
		Naproxen**	0.0080	U	ug/L	P388291	
		Primidone**	0.0040	U	ug/L	P388291	
		Pyraclostrobin**	0.0020	U	ug/L	P388291	
		Thiamethoxam**	0.0020	U	ug/L	P388291	
		Tolfenpyrad**	0.0020	U	ug/L	P388291	
		Triclopyr**	0.0040	U	ug/L	P388291	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P388162

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388434

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388179

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388183

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388543

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388544

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388216

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388266

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388225

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
 Batch ID: P388345

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P388168

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P388169

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

Reference Method: EPA 8321B
 Batch ID: P388205

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: P388291

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P388291

Component	Result	Code	Units
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2320 B-2011
Batch ID: P388248

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

Reference Method: SM 2540 D-2011
Batch ID: P388618

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P388252

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P388299

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388434

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388179

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388183

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388543

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388544

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388216

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388266

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388225

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388345

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388168

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388169

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

Reference Method: EPA 8321B
Batch ID: P388205

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	144		P	40 - 150
AMPA	107		P	40 - 150
Endothall	84.3		P	40 - 150
Glufosinate	106		P	40 - 150
Glyphosate	103		P	40 - 140
Sucralose	109		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P388291

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	47.3		P	30 - 160
Acetaminophen	74.2		P	30 - 160
Acetamiprid	68.9		P	30 - 160
Afidopyropen	57.7		P	30 - 160
Bentazon	91.4		P	30 - 160
Benzovindiflupyr	74.9		P	30 - 160
Carbamazepine	52.3		P	30 - 160
Clothianidin	51.9		P	30 - 160
Dinotefuran	72.6		P	30 - 160
Diuron	30.6		P	30 - 160
Fenuron	90.5		P	30 - 160
Fluridone	89.7		P	30 - 160
Hydrocodone	75.7		P	30 - 160
Ibuprofen	124		P	30 - 160
Imazapyr	120		P	30 - 160
Imidacloprid	82.1		P	30 - 160
Linuron	73.1		P	30 - 160
Mandestrobin	93.6		P	30 - 160
MCPP	157		P	30 - 160
Naproxen	63.5		P	30 - 160
Primidone	71.8		P	30 - 160
Pyraclostrobin	90.0		P	30 - 160
Thiamethoxam	63.8		P	30 - 160
Tolfenpyrad	48.7		P	30 - 160
Triclopyr	134		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P388248

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

Reference Method: SM 4500 F-C-2011
Batch ID: P388252

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.8		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P388299

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	100		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388434

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199550	Bromide	103	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388179

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199326	Ammonia-N	102	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388183

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199649	Ammonia-N	103	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388543

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199551	Kjeldahl Nitrogen	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388544

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199552	Kjeldahl Nitrogen	107	95.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388216

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199552	NO2NO3-N	98.7	99.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388266

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199551	NO2NO3-N	96.4	95.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388225

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199449	Total-P	104	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388345

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199464	Total-P	104	106	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P388168

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199723	O-Phosphate-P	94.6	94.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P388169

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199553	O-Phosphate-P	98.4	98.8	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P388205

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199640	Acesulfame K	138	137	P/P	40 - 150
2199640	AMPA	105	99.3	P/P	40 - 150
2199640	Endothall	102	116	P/P	40 - 150
2199640	Glufosinate	95.3	93.1	P/P	40 - 150
2199640	Glyphosate	77.4	81.1	P/P	40 - 140
2199640	Sucralose	106	108	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P388291

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199564	2,4-D	49.5	50.0	P/P	30 - 160
2199564	Acetaminophen	80.5	83.7	P/P	30 - 160
2199564	Acetamiprid	66.2	59.1	P/P	30 - 160
2199564	Afidopyropen	32.5	28.4	P/F	30 - 160
2199564	Bentazon	34.8	36.3	P/P	30 - 160
2199564	Benzovindiflupyr	56.7	63.0	P/P	30 - 160
2199564	Carbamazepine	44.5	46.2	P/P	30 - 160
2199564	Clothianidin	63.8	59.5	P/P	30 - 160
2199564	Dinotefuran	78.5	80.9	P/P	30 - 160
2199564	Diuron	37.7	37.0	P/P	30 - 160
2199564	Fenuron	57.5	59.0	P/P	30 - 160
2199564	Fluridone	66.2	63.7	P/P	30 - 160
2199564	Hydrocodone	56.1	60.7	P/P	30 - 160
2199564	Ibuprofen	57.7	51.2	P/P	30 - 160
2199564	Imazapyr	49.9	55.0	P/P	30 - 160
2199564	Imidacloprid	112	112	P/P	30 - 160
2199564	Linuron	76.7	81.3	P/P	30 - 160
2199564	Mandestrobin	60.6	67.1	P/P	30 - 160
2199564	MCCP	55.0	57.5	P/P	30 - 160
2199564	Naproxen	40.5	46.4	P/P	30 - 160
2199564	Primidone	75.6	73.4	P/P	30 - 160
2199564	Pyraclostrobin	69.1	70.8	P/P	30 - 160
2199564	Thiamethoxam	68.6	68.8	P/P	30 - 160
2199564	Tolfenpyrad	41.8	40.5	P/P	30 - 160
2199564	Triclopyr	49.8	58.5	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P388252

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199690	Fluoride	98.6	98.6	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P388299

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199317	Organic Carbon	101		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P388162

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199549	Turbidity	1.98	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388434

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199550	Bromide	1.69	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388179

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199326	Ammonia-N	3.12	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388183

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199649	Ammonia-N	1.02	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199551	Kjeldahl Nitrogen	0.590	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388544

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199552	Kjeldahl Nitrogen	8.79	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388216

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199552	NO2NO3-N	0.411	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199551	NO2NO3-N	0.490	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388225

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199449	Total-P	1.00	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388345

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199464	Total-P	1.89	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388168

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199723	O-Phosphate-P	0.106	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388169

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199553	O-Phosphate-P	0.406	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P388205

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199640	Acesulfame K	0.656	Spike	P	0 - 30
2199640	AMPA	5.12	Spike	P	0 - 30
2199640	Endothall	12.6	Spike	P	0 - 30
2199640	Glufosinate	2.34	Spike	P	0 - 30
2199640	Glyphosate	4.67	Spike	P	0 - 30
2199640	Sucralose	2.00	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P388291

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199564	2,4-D	1.00	Spike	P	0 - 30
2199564	Acetaminophen	3.87	Spike	P	0 - 30
2199564	Acetamiprid	11.4	Spike	P	0 - 30
2199564	Afidopyropen	13.2	Spike	P	0 - 30
2199564	Bentazon	4.28	Spike	P	0 - 30
2199564	Benzovindiflupyr	10.5	Spike	P	0 - 30
2199564	Carbamazepine	3.82	Spike	P	0 - 30
2199564	Clothianidin	7.01	Spike	P	0 - 30
2199564	Dinotefuran	3.07	Spike	P	0 - 30
2199564	Diuron	2.06	Spike	P	0 - 30
2199564	Fenuron	2.56	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P388291

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199564	Fluridone	3.77	Spike	P	0 - 30
2199564	Hydrocodone	7.94	Spike	P	0 - 30
2199564	Ibuprofen	11.9	Spike	P	0 - 30
2199564	Imazapyr	4.09	Spike	P	0 - 30
2199564	Imidacloprid	0.0777	Spike	P	0 - 30
2199564	Linuron	5.86	Spike	P	0 - 30
2199564	Mandestrobin	10.3	Spike	P	0 - 30
2199564	MCP	4.33	Spike	P	0 - 30
2199564	Naproxen	13.5	Spike	P	0 - 30
2199564	Primidone	2.98	Spike	P	0 - 30
2199564	Pyraclostrobin	2.47	Spike	P	0 - 30
2199564	Thiamethoxam	0.231	Spike	P	0 - 30
2199564	Tolfenpyrad	3.27	Spike	P	0 - 30
2199564	Triclopyr	16.1	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P388248

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199690	Total Alkalinity	0.418	Sample	P	0 - 8.1

Reference Method: SM 4500 F-C-2011
Batch ID: P388252

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199690	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P388299

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199317	Organic Carbon	2.56	Sample	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2199564
Field Sample ID: G4NW0443

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	68.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	78.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	43.0	P	30 - 160
EPA 8321B	Diuron-d6	35.4	P	30 - 160
EPA 8321B	Endothall-d6	107	P	30 - 160
EPA 8321B	Endothall-d6	107	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	53.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	53.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	68.7	P	30 - 160
EPA 8321B	Primidone-d5	70.8	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	30 - 160

Lab Sample ID: 2199565
Field Sample ID: G4NW0441

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	73.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	79.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	46.3	P	30 - 160
EPA 8321B	Diuron-d6	36.2	P	30 - 160
EPA 8321B	Endothall-d6	103	P	30 - 160
EPA 8321B	Endothall-d6	103	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	103	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	103	P	30 - 160
EPA 8321B	Ibuprofen-d3	74.9	P	30 - 160
EPA 8321B	Primidone-d5	72.8	P	30 - 160
EPA 8321B	Sucralose-d6	108	P	30 - 160
EPA 8321B	Sucralose-d6	108	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A101339

Included Lab Sample IDs: 2199549, 2199550

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A101341

Included Lab Sample IDs: 2199553, 2199554

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A101344

Included Lab Sample IDs: 2199551, 2199552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	92.4	P/P	90 - 110
Ammonia-N	103	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A101362

Included Lab Sample IDs: 2199552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A101371

Included Lab Sample IDs: 2199564, 2199565

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	101	108	P/P	60 - 160
AMPA	111	101	P/P	60 - 160
Glufosinate	104	99.3	P/P	60 - 160
Glufosinate	99.3	99.1	P/P	60 - 160
Glyphosate	95.6	98.6	P/P	60 - 160
Glyphosate	100	95.6	P/P	60 - 160

Reference Method: SM 2320 B-2011

Run ID: A101373

Included Lab Sample IDs: 2199549, 2199550

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A101373

Included Lab Sample IDs: 2199549, 2199550

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A101378

Included Lab Sample IDs: 2199551

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

Reference Method: EPA 8321B

Run ID: A101387

Included Lab Sample IDs: 2199564, 2199565

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	101	114	P/P	60 - 160
Endothall	109	109	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A101391

Included Lab Sample IDs: 2199549, 2199550

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

Reference Method: SM 5310 B-2011

Run ID: A101393

Included Lab Sample IDs: 2199551, 2199552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	97.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101406

Included Lab Sample IDs: 2199551

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.5	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101433

Included Lab Sample IDs: 2199552

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

Reference Method: EPA 8321B

Run ID: A101479

Included Lab Sample IDs: 2199564, 2199565

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	110	109	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A101490

Included Lab Sample IDs: 2199551, 2199552

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A101490

Included Lab Sample IDs: 2199551, 2199552

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

Reference Method: EPA 8321B

Run ID: A101563

Included Lab Sample IDs: 2199564, 2199565

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	93.5	91.9	P/P	50 - 150
Acetaminophen	102	101	P/P	60 - 160
Acetamiprid	102	102	P/P	50 - 150
Afidopyropen	83.3	82.9	P/P	50 - 150
Bentazon	99.4	140	P/P	50 - 160
Benzovindiflupyr	93.3	101	P/P	50 - 150
Carbamazepine	102	104	P/P	60 - 150
Clothianidin	86.0	88.6	P/P	60 - 150
Dinotefuran	91.2	88.2	P/P	50 - 150
Diuron	103	95.8	P/P	60 - 160
Fenuron	94.2	92.2	P/P	60 - 150
Fluridone	96.6	101	P/P	60 - 160
Hydrocodone	102	101	P/P	60 - 150
Ibuprofen	86.8	109	P/P	50 - 160
Imazapyr	83.9	72.4	P/P	50 - 160
Imidacloprid	104	101	P/P	60 - 150
Linuron	104	121	P/P	60 - 150
Mandestrobin	99.9	101	P/P	50 - 150
MCPP	105	96.9	P/P	50 - 150
Naproxen	100	73.8	P/P	50 - 160
Primidone	89.3	87.6	P/P	60 - 150
Pyraclostrobin	99.0	94.8	P/P	60 - 150
Thiamethoxam	96.9	95.3	P/P	50 - 150
Tolfenpyrad	86.2	84.3	P/P	60 - 150
Triclopyr	98.0	111	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					1.98	
EPA 300.0 Rev. 2.1	Bromide	107	103	101			1.69
EPA 350.1 Rev. 2.0	Ammonia-N	98.8	102	105			3.12
	Ammonia-N	102	103	101			1.02
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	102	101			0.590
	Kjeldahl Nitrogen	103	107	95.5			8.79
EPA 353.2 Rev. 2.0	NO2NO3-N	100	98.7	99.2			0.411
	NO2NO3-N	101	96.4	95.9			0.490
EPA 365.1 Rev. 2.0	Total-P	104	104	105			1.00
	Total-P	105	104	106			1.89
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.6	94.6	94.7			0.106
	O-Phosphate-P	99.6	98.4	98.8			0.406
EPA 8321B	2,4-D	47.3	49.5	50.0			1.00
	Acesulfame K	144	138	137			0.656
	Acetaminophen	74.2	80.5	83.7			3.87
	Acetamiprid	68.9	66.2	59.1			11.4
	Afidopyropen	57.7	32.5	28.4			13.2
	AMPA	107	105	99.3			5.12
	Bentazon	91.4	34.8	36.3			4.28
	Benzovindiflupyr	74.9	56.7	63.0			10.5
	Carbamazepine	52.3	44.5	46.2			3.82
	Clothianidin	51.9	63.8	59.5			7.01
	Dinotefuran	72.6	78.5	80.9			3.07
	Diuron	30.6	37.7	37.0			2.06
	Endothall	84.3	102	116			12.6
	Fenuron	90.5	57.5	59.0			2.56
	Fluridone	89.7	66.2	63.7			3.77
	Glufosinate	106	95.3	93.1			2.34
	Glyphosate	103	77.4	81.1			4.67
	Hydrocodone	75.7	56.1	60.7			7.94
	Ibuprofen	124	57.7	51.2			11.9
	Imazapyr	120	49.9	55.0			4.09
	Imidacloprid	82.1	112	112			0.0777
	Linuron	73.1	76.7	81.3			5.86
	Mandestrobin	93.6	60.6	67.1			10.3
	MCPP	157	55.0	57.5			4.33
	Naproxen	63.5	40.5	46.4			13.5
	Primidone	71.8	75.6	73.4			2.98
	Pyraclostrobin	90.0	69.1	70.8			2.47
	Sucralose	109	106	108			2.00
	Thiamethoxam	63.8	68.6	68.8			0.231
	Tolfenpyrad	48.7	41.8	40.5			3.27
	Triclopyr	134	49.8	58.5			16.1
SM 2320 B-2011	Total Alkalinity	103				0.418	
SM 4500 F-C-2011	Fluoride	99.8	98.6	98.6			0.0
SM 5310 B-2011	Organic Carbon	100	101			2.56	

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2199549, 2199550
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2199549, 2199550
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2199551, 2199552

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2199551, 2199552
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2199551, 2199552
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2199551, 2199552
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2199553, 2199554
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2199564, 2199565
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2199564, 2199565
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2199549, 2199550
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2199549, 2199550
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2199549, 2199550
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2199551, 2199552

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	10/02/2020			10/02/2020 15:55	Yen Ta	2199549, 2199550
EPA 300.0 Rev. 2.1	10/02/2020			10/09/2020 04:15	Lipi Saha	2199550
	10/02/2020			10/09/2020 05:24	Lipi Saha	2199549
EPA 350.1 Rev. 2.0	10/02/2020			10/04/2020 11:18	Ping Hua	2199552
	10/02/2020			10/04/2020 14:28	Ping Hua	2199551
EPA 351.2 Rev. 2.0	10/02/2020	10/12/2020 13:40	David Boose	10/13/2020 08:57	Elliott Rodriguez	2199551
	10/02/2020	10/12/2020 13:40	David Boose	10/13/2020 09:23	Elliott Rodriguez	2199552
EPA 353.2 Rev. 2.0	10/02/2020			10/05/2020 10:36	Beverly Y. Sanders	2199552
	10/02/2020			10/06/2020 09:32	Beverly Y. Sanders	2199551
EPA 365.1 Rev. 2.0	10/02/2020	10/05/2020 12:59	Yen Ta	10/07/2020 11:09	Lipi Saha	2199551
	10/02/2020	10/07/2020 14:16	Yen Ta	10/08/2020 13:15	Benjamin T. Nordmann	2199552
EPA 365.1 Rev. 2.0 dissolved	10/02/2020			10/02/2020 16:13	Blanca Fach	2199553
	10/02/2020			10/02/2020 16:15	Blanca Fach	2199554
EPA 8321B	10/02/2020	10/05/2020 12:45	Rebecca Ware	10/05/2020 14:40	Rebecca Ware	2199564
	10/02/2020	10/05/2020 12:45	Rebecca Ware	10/05/2020 15:05	Rebecca Ware	2199565
	10/02/2020	10/05/2020 12:45	Rebecca Ware	10/06/2020 12:34	Rebecca Ware	2199565
	10/02/2020	10/05/2020 12:45	Rebecca Ware	10/06/2020 13:29	Rebecca Ware	2199564
	10/02/2020	10/05/2020 12:45	Rebecca Ware	10/12/2020 18:28	Rebecca Ware	2199564
	10/02/2020	10/05/2020 12:45	Rebecca Ware	10/12/2020 18:40	Rebecca Ware	2199565
	10/02/2020	10/07/2020 13:00	Hoor Shaik	10/10/2020 00:04	Juyoung Kim	2199564
	10/02/2020	10/07/2020 13:00	Hoor Shaik	10/10/2020 00:39	Juyoung Kim	2199565
SM 2320 B-2011	10/02/2020			10/05/2020 23:56	Dale L. Simmons	2199550
	10/02/2020			10/06/2020 01:31	Dale L. Simmons	2199549
SM 2540 D-2011	10/02/2020			10/06/2020 13:14	Yijie Li	2199549, 2199550
SM 4500 F-C-2011	10/02/2020			10/05/2020 23:56	Dale L. Simmons	2199550
	10/02/2020			10/06/2020 01:31	Dale L. Simmons	2199549
SM 5310 B-2011	10/02/2020			10/07/2020 00:50	Madeline Gruver	2199551
	10/02/2020			10/07/2020 01:01	Madeline Gruver	2199552