

Chemical Analysis Report

TLH-ROC-2022-01-05-01

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

Event Description: **Run 13**
Request ID: **RQ-2022-01-10-36**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
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2600 Blair Stone Rd
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Certified by: Colin Wright, Program Administrator

Date Certified: 27-JAN-2022 08:38

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular background.

Case Narrative

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

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

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

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

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

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: Williford Spring

Collection Date/Time: 01/05/2022 10:20

Field ID: G3TLHR0009

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2297643	EPA 180.1 Rev. 2.0	Turbidity	0.40		NTU	P408197	
	EPA 300.0 Rev. 2.1	Chloride	2.7		mg Cl/L	P408944	
		Sulfate	1.3		mg SO4/L	P408947	
	SM 2120 B-2011	Color (true)**	2.5	U	PCU	P408178	
	SM 2320 B-2011	Total Alkalinity	68		mg CaCO3/L	P408233	
	SM 2540 C-2011	TDS	66		mg/L	P408444	
	SM 2540 D-2011	TSS	2	U	mg/L	P408435	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P408234	
2297645	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P408413	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P408324	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P408327	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P408119	MS
	SM 5310 B-2011	Organic Carbon	0.57	I	mg C/L	P408472	
2297647	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.012		mg P/L	P408172	

Ref. Method and Comment:

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

Sample Location: Merial Lake Center

Collection Date/Time: 01/05/2022 10:55

Field ID: G3TLHR0014

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2297644	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P408197	
	EPA 300.0 Rev. 2.1	Chloride	2.7		mg Cl/L	P408944	
		Sulfate	1.8		mg SO4/L	P408947	
	SM 2120 B-2011	Color (true)**	5.8	I	PCU	P408178	
	SM 2320 B-2011	Total Alkalinity	0.97	I	mg CaCO3/L	P408233	
	SM 2540 C-2011	TDS	15	U	mg/L	P408444	
	SM 2540 D-2011	TSS	2	I	mg/L	P408435	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P408234	
2297646	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P408413	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.18	I	mg N/L	P408326	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P408327	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P408119	MS
	SM 5310 B-2011	Organic Carbon	3.1		mg C/L	P408350	
2297648	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P408172	

Ref. Method and Comment:

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

Sample Location: Bayou George Creek at US231

Collection Date/Time: 01/05/2022 11:30

Field ID: G3TLHR0030

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2297649	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P408197	
	EPA 300.0 Rev. 2.1	Chloride	6.6		mg Cl/L	P408944	
		Sulfate	3.2		mg SO4/L	P408947	
	SM 2120 B-2011	Color (true)**	160		PCU	P408178	
	SM 2320 B-2011	Total Alkalinity	21		mg CaCO3/L	P408233	
	SM 2540 C-2011	TDS	50		mg/L	P408444	
	SM 2540 D-2011	TSS	4	I	mg/L	P408435	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P408234	
2297650	EPA 350.1 Rev. 2.0	Ammonia-N	0.16		mg N/L	P408413	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P408326	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.23		mg N/L	P408327	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P408119	MS
	SM 5310 B-2011	Organic Carbon	13		mg C/L	P408350	
2297651	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P408172	
2297657	EPA 8321B	2,4-D	0.0020	U	ug/L	P408154	
		Acesulfame K	0.10	U	ug/L	P408153	
		2,4,5-T	0.0040	U	ug/L	P408154	
		AMPA	0.10	U	ug/L	P408153	
		Acetaminophen	0.0080	U	ug/L	P408154	
		Acetamiprid	0.0020	U	ug/L	P408154	
		Endothall	0.25	U	ug/L	P408153	
		Glufosinate	0.10	U	ug/L	P408153	
		Glyphosate	0.10	U	ug/L	P408153	
		Afidopyropen	0.0020	U	ug/L	P408154	
		Bentazon	8.0E-04	U	ug/L	P408154	
		Sucralose	0.061		ug/L	P408153	
		Benzovindiflupyr	0.0020	U	ug/L	P408154	
		Carbamazepine	8.0E-04	U	ug/L	P408154	
		Clothianidin	0.0020	U	ug/L	P408154	
		Dinotefuran	0.0020	U	ug/L	P408154	
		Diuron	0.0020	U	ug/L	P408154	
		Fenuron	0.016	U	ug/L	P408154	
		Fluridone	8.0E-04	U	ug/L	P408154	
		Imazapyr	0.058		ug/L	P408154	
		Hydrocodone	0.0020	U	ug/L	P408154	
		Ibuprofen	0.020	U	ug/L	P408154	
		Imidacloprid	0.0020	U	ug/L	P408154	
		Linuron	0.0040	U	ug/L	P408154	
		Mandestrobin	0.0020	U	ug/L	P408154	
		MCP	0.0040	U	ug/L	P408154	
		Naproxen	0.0080	U	ug/L	P408154	
		Primidone	0.0040	U	ug/L	P408154	
		Pyraclostrobin	0.0020	U	ug/L	P408154	

Field ID: G3TLHR0030

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2297657	EPA 8321B	Silvex	0.0040	U	ug/L	P408154	
		Thiamethoxam	0.0020	U	ug/L	P408154	
		Tolfenpyrad	0.0020	U	ug/L	P408154	RPD
		Triclopyr	0.0040	U	ug/L	P408154	

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: P408197

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P408944

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P408947

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P408413

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P408324

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P408326

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408327

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408119

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P408172

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P408153

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: P408154

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

Reference Method: SM 2120 B-2011

Batch ID: P408178

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P408233

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: P408444

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P408435

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P408234

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P408350

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

Reference Method: SM 5310 B-2011
Batch ID: P408472

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: P408944

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P408947

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P408413

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P408324

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	94.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P408326

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: P408327

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	105		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408119

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P408172

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

Reference Method: EPA 8321B
Batch ID: P408153

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	95.5		P	40 - 150
AMPA	99.8		P	40 - 160
Endothall	85.4		P	40 - 150
Glufosinate	104		P	40 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P408153

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	104		P	40 - 160
Sucralose	86.3		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P408154

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	88.0		P	40 - 150
2,4,5-T	102		P	40 - 150
Acetaminophen	93.4		P	30 - 150
Acetamiprid	90.0		P	40 - 150
Afidopyropen	70.2		P	40 - 150
Bentazon	104		P	30 - 150
Benzovindiflupyr	82.0		P	40 - 150
Carbamazepine	93.8		P	40 - 150
Clothianidin	84.9		P	40 - 150
Dinotefuran	104		P	40 - 150
Diuron	83.3		P	40 - 150
Fenuron	102		P	40 - 150
Fluridone	91.6		P	40 - 150
Hydrocodone	97.4		P	40 - 150
Ibuprofen	108		P	40 - 150
Imazapyr	88.5		P	40 - 150
Imidacloprid	101		P	40 - 150
Linuron	81.2		P	40 - 150
Mandestrobin	93.2		P	40 - 150
MCPP	96.1		P	40 - 150
Naproxen	74.8		P	40 - 150
Primidone	85.9		P	40 - 150
Pyraclostrobin	81.2		P	40 - 150
Silvex	92.5		P	40 - 150
Thiamethoxam	106		P	40 - 150
Tolfenpyrad	58.2		P	30 - 150
Triclopyr	108		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P408178

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.1		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P408233

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.9		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P408234

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P408350

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.2		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P408472

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P408944

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297392	Chloride	99.7		P	90 - 110
2297606	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P408947

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297392	Sulfate	95.8		P	90 - 110
2297606	Sulfate	97.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P408413

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297645	Ammonia-N	99.0	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P408324

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297838	Kjeldahl Nitrogen	101	99.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P408326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297775	Kjeldahl Nitrogen	90.5	94.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408327

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297610	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408119

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297609	Total-P	111	109	F/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P408172

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297717	O-Phosphate-P	94.3	101	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P408153

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297068	Acesulfame K	70.8	69.6	P/P	40 - 150
2297068	AMPA	97.9	99.2	P/P	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P408153

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297068	Endothall	98.3	94.5	P/P	40 - 150
2297068	Glufosinate	106	105	P/P	40 - 160
2297068	Glyphosate	102	104	P/P	40 - 160
2297068	Sucralose	89.8	90.1	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P408154

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297068	2,4-D	79.4	99.7	P/P	40 - 150
2297068	2,4,5-T	91.9	88.9	P/P	40 - 150
2297068	Acetaminophen	91.9	99.2	P/P	30 - 150
2297068	Acetamiprid	88.6	88.4	P/P	40 - 150
2297068	Afidopyropen	75.3	70.0	P/P	40 - 150
2297068	Bentazon	81.0	101	P/P	30 - 150
2297068	Benzovindiflupyr	80.2	85.0	P/P	40 - 150
2297068	Carbamazepine	87.2	96.0	P/P	40 - 150
2297068	Clothianidin	103	105	P/P	40 - 150
2297068	Dinotefuran	103	105	P/P	40 - 150
2297068	Diuron	73.3	81.4	P/P	40 - 150
2297068	Fenuron	98.2	103	P/P	40 - 150
2297068	Fluridone	87.6	87.0	P/P	40 - 150
2297068	Hydrocodone	89.3	94.8	P/P	40 - 150
2297068	Ibuprofen	80.0	81.2	P/P	40 - 150
2297068	Imazapyr	78.1	96.7	P/P	40 - 150
2297068	Imidacloprid	89.3	95.8	P/P	40 - 150
2297068	Linuron	95.0	91.0	P/P	40 - 150
2297068	Mandestrobin	91.0	101	P/P	40 - 150
2297068	MCP	95.2	99.5	P/P	40 - 150
2297068	Naproxen	92.7	82.5	P/P	40 - 150
2297068	Primidone	116	108	P/P	40 - 150
2297068	Pyraclostrobin	90.3	101	P/P	40 - 150
2297068	Silvex	99.0	101	P/P	40 - 150
2297068	Thiamethoxam	103	108	P/P	40 - 150
2297068	Tolfenpyrad	46.9	68.0	P/P	30 - 150
2297068	Triclopyr	91.5	101	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P408234

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297392	Fluoride	99.5	98.3	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P408350

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297650	Organic Carbon	97.4	98.8	P/P	85 - 115

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P408472

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297630	Organic Carbon	95.0	96.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P408197

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297671	Turbidity	4.06	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P408944

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297392	Chloride	1.70	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P408947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297392	Sulfate	0.0651	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P408413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297645	Ammonia-N	1.80	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P408324

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297838	Kjeldahl Nitrogen	1.30	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P408326

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297775	Kjeldahl Nitrogen	4.00	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408327

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297610	NO2NO3-N	0.489	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408119

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297609	Total-P	1.62	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P408172

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297717	O-Phosphate-P	4.67	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P408153

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297068	Acesulfame K	1.73	Spike	P	0 - 30
2297068	AMPA	1.36	Spike	P	0 - 30
2297068	Endothall	3.97	Spike	P	0 - 30
2297068	Glufosinate	1.28	Spike	P	0 - 30
2297068	Glyphosate	1.36	Spike	P	0 - 30
2297068	Sucralose	0.297	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P408154

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297068	2,4-D	22.7	Spike	P	0 - 30
2297068	2,4,5-T	3.35	Spike	P	0 - 30
2297068	Acetaminophen	7.61	Spike	P	0 - 30
2297068	Acetamiprid	0.168	Spike	P	0 - 30
2297068	Afidopyropen	7.22	Spike	P	0 - 30
2297068	Bentazon	21.7	Spike	P	0 - 30
2297068	Benzovindiflupyr	5.71	Spike	P	0 - 30
2297068	Carbamazepine	9.58	Spike	P	0 - 30
2297068	Clothianidin	2.11	Spike	P	0 - 30
2297068	Dinotefuran	1.82	Spike	P	0 - 30
2297068	Diuron	10.4	Spike	P	0 - 30
2297068	Fenuron	4.57	Spike	P	0 - 30
2297068	Fluridone	0.713	Spike	P	0 - 30
2297068	Hydrocodone	5.99	Spike	P	0 - 30
2297068	Ibuprofen	1.47	Spike	P	0 - 30
2297068	Imazapyr	21.3	Spike	P	0 - 30
2297068	Imidacloprid	6.99	Spike	P	0 - 30
2297068	Linuron	4.26	Spike	P	0 - 30
2297068	Mandestrobin	10.6	Spike	P	0 - 30
2297068	MCPP	4.45	Spike	P	0 - 30
2297068	Naproxen	11.6	Spike	P	0 - 30
2297068	Primidone	7.49	Spike	P	0 - 30
2297068	Pyraclostrobin	11.3	Spike	P	0 - 30
2297068	Silvex	2.44	Spike	P	0 - 30
2297068	Thiamethoxam	4.71	Spike	P	0 - 30
2297068	Tolfenpyrad	36.8	Spike	F	0 - 30
2297068	Triclopyr	10.1	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2120 B-2011
Batch ID: P408178

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297667	Color (true)	2.61	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P408233

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297392	Total Alkalinity	0.275	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P408444

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297056	TDS	2.52	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P408234

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297392	Fluoride	0.990	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P408350

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297650	Organic Carbon	0.838	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P408472

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297630	Organic Carbon	0.945	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2297657

Field Sample ID: G3TLHR0030

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	83.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	98.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	75.1	P	30 - 160
EPA 8321B	Diuron-d6	70.5	P	30 - 160
EPA 8321B	Endothall-d6	125	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	102	P	30 - 160
EPA 8321B	Ibuprofen-d3	69.9	P	30 - 160
EPA 8321B	Primidone-d5	85.8	P	30 - 160
EPA 8321B	Sucralose-d6	108	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A109704

Included Lab Sample IDs: 2297647, 2297648, 2297651

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.9	100	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A109708

Included Lab Sample IDs: 2297643, 2297644, 2297649

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A109721

Included Lab Sample IDs: 2297643, 2297644, 2297649

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

Reference Method: SM 2320 B-2011

Run ID: A109737

Included Lab Sample IDs: 2297643, 2297644, 2297649

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.6	98.8	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A109737

Included Lab Sample IDs: 2297643, 2297644, 2297649

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

Reference Method: EPA 8321B

Run ID: A109742

Included Lab Sample IDs: 2297657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	105	100	P/P	60 - 160
Glufosinate	108	105	P/P	60 - 160
Glyphosate	107	97.8	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A109772

Included Lab Sample IDs: 2297657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	88.7	98.5	P/P	50 - 150
2,4,5-T	101	84.5	P/P	50 - 150
Acetaminophen	88.7	104	P/P	60 - 160
Acetamiprid	94.8	109	P/P	50 - 150
Afidopyropen	127	101	P/P	50 - 150
Bentazon	105	113	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A109772
Included Lab Sample IDs: 2297657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Benzovindiflupyr	90.3	85.2	P/P	50 - 150
Carbamazepine	109	105	P/P	60 - 150
Clothianidin	108	114	P/P	60 - 150
Dinotefuran	109	108	P/P	50 - 150
Diuron	109	98.2	P/P	60 - 160
Fenuron	100	99.7	P/P	60 - 150
Fluridone	100	98.0	P/P	60 - 160
Hydrocodone	106	100	P/P	60 - 150
Ibuprofen	86.8	65.1	P/P	50 - 160
Imazapyr	95.5	93.6	P/P	50 - 150
Imidacloprid	104	96.8	P/P	60 - 150
Linuron	96.9	122	P/P	60 - 150
Mandestrobin	114	109	P/P	50 - 150
MCPP	93.8	101	P/P	50 - 150
Naproxen	140	86.0	P/P	50 - 160
Primidone	68.6	76.8	P/P	60 - 150
Pyraclostrobin	117	118	P/P	60 - 150
Silvex	93.5	120	P/P	50 - 150
Thiamethoxam	108	109	P/P	50 - 150
Tolfenpyrad	134	89.1	P/P	60 - 150
Triclopyr	113	87.2	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A109773
Included Lab Sample IDs: 2297657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	104	106	P/P	60 - 160
Endothall	95.4	98.5	P/P	60 - 160
Sucralose	88.6	89.8	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A109786
Included Lab Sample IDs: 2297645, 2297646, 2297650

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

Reference Method: SM 5310 B-2011
Run ID: A109789
Included Lab Sample IDs: 2297646, 2297650

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	97.8	P/P	90 - 110
Organic Carbon	98.6	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A109813
Included Lab Sample IDs: 2297645, 2297646, 2297650

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A109813

Included Lab Sample IDs: 2297645, 2297646, 2297650

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.2	97.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A109818

Included Lab Sample IDs: 2297645, 2297646, 2297650

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.2	102	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A109838

Included Lab Sample IDs: 2297645

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A109845

Included Lab Sample IDs: 2297645, 2297646, 2297650

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.0	94.6	P/P	90 - 110
Kjeldahl Nitrogen	94.1	96.9	P/P	90 - 110
Kjeldahl Nitrogen	95.6	92.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A110040

Included Lab Sample IDs: 2297643, 2297644, 2297649

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Sulfate	99.7	100	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					4.06	
EPA 300.0 Rev. 2.1	Chloride	98.8	99.7	100		1.70	
	Sulfate	96.8	95.8	97.5		0.0651	
EPA 350.1 Rev. 2.0	Ammonia-N	98.8	99.0	101			1.80
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	94.8	101	99.1			1.30
	Kjeldahl Nitrogen	101	90.5	94.2			4.00
EPA 353.2 Rev. 2.0	NO2NO3-N	105	102	102			0.489
EPA 365.1 Rev. 2.0	Total-P	109	111	109			1.62
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.9	94.3	101			4.67
EPA 8321B	2,4-D	88.0	79.4	99.7			22.7
	2,4,5-T	102	91.9	88.9			3.35
	Acesulfame K	95.5	70.8	69.6			1.73
	Acetaminophen	93.4	91.9	99.2			7.61
	Acetamiprid	90.0	88.6	88.4			0.168
	Afidopyropen	70.2	75.3	70.0			7.22
	AMPA	99.8	97.9	99.2			1.36
	Bentazon	104	81.0	101			21.7
	Benzovindiflupyr	82.0	80.2	85.0			5.71
	Carbamazepine	93.8	87.2	96.0			9.58
	Clothianidin	84.9	103	105			2.11
	Dinotefuran	104	103	105			1.82
	Diuron	83.3	73.3	81.4			10.4
	Endothall	85.4	98.3	94.5			3.97
	Fenuron	102	98.2	103			4.57
	Fluridone	91.6	87.6	87.0			0.713
	Glufosinate	104	106	105			1.28
	Glyphosate	104	102	104			1.36
	Hydrocodone	97.4	89.3	94.8			5.99
	Ibuprofen	108	80.0	81.2			1.47
	Imazapyr	88.5	78.1	96.7			21.3
	Imidacloprid	101	89.3	95.8			6.99
	Linuron	81.2	95.0	91.0			4.26
	Mandestrobin	93.2	91.0	101			10.6
	MCPP	96.1	95.2	99.5			4.45
	Naproxen	74.8	92.7	82.5			11.6
	Primidone	85.9	116	108			7.49
	Pyraclostrobin	81.2	90.3	101			11.3
	Silvex	92.5	99.0	101			2.44
	Sucralose	86.3	89.8	90.1			0.297
	Thiamethoxam	106	103	108			4.71
	Tolfenpyrad	58.2	46.9	68.0			36.8
	Triclopyr	108	91.5	101			10.1
SM 2120 B-2011	Color (true)	99.1				2.61	
SM 2320 B-2011	Total Alkalinity	99.9				0.275	
SM 2540 C-2011	TDS					2.52	
SM 4500 F-C-2011	Fluoride	98.7	99.5	98.3			0.990
SM 5310 B-2011	Organic Carbon	95.2	97.4	98.8			0.838
	Organic Carbon	97.5	95.0	96.0			0.945

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2297643, 2297644, 2297649

Reference Method Descriptions

Method	Description	Associated Samples
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2297643, 2297644, 2297649
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2297643, 2297644, 2297649
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2297645, 2297646, 2297650
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2297645, 2297646, 2297650
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2297645, 2297646, 2297650
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2297645, 2297646, 2297650
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2297647, 2297648, 2297651
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2297657
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2297643, 2297644, 2297649
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2297643, 2297644, 2297649
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2297643, 2297644, 2297649
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2297643, 2297644, 2297649
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2297643, 2297644, 2297649
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2297645, 2297646, 2297650

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	01/05/2022			01/06/2022 16:50	Khloe J Berg	2297643, 2297644, 2297649
EPA 300.0 Rev. 2.1	01/05/2022			01/25/2022 17:50	Roberta Tatti	2297643
	01/05/2022			01/25/2022 18:02	Roberta Tatti	2297644
	01/05/2022			01/25/2022 18:14	Roberta Tatti	2297649
EPA 350.1 Rev. 2.0	01/05/2022			01/12/2022 11:00	Ping Hua	2297645
	01/05/2022			01/12/2022 11:09	Ping Hua	2297646
	01/05/2022			01/12/2022 11:11	Ping Hua	2297650
EPA 351.2 Rev. 2.0	01/05/2022	01/12/2022 10:53	Samantha L Bates	01/13/2022 09:23	Alexandra J Mattheus	2297645
	01/05/2022	01/12/2022 10:53	Samantha L Bates	01/13/2022 10:09	Alexandra J Mattheus	2297646
	01/05/2022	01/12/2022 10:53	Samantha L Bates	01/13/2022 10:14	Alexandra J Mattheus	2297650
EPA 353.2 Rev. 2.0	01/05/2022			01/11/2022 10:09	Beverly Y. Sanders	2297645
	01/05/2022			01/11/2022 10:10	Beverly Y. Sanders	2297646
	01/05/2022			01/11/2022 10:11	Beverly Y. Sanders	2297650
EPA 365.1 Rev. 2.0	01/05/2022	01/06/2022 16:50	Simonne.V. Calhoun	01/07/2022 16:05	Shengyu Ding	2297645
	01/05/2022	01/06/2022 16:50	Simonne.V. Calhoun	01/07/2022 16:06	Shengyu Ding	2297646
	01/05/2022	01/06/2022 16:50	Simonne.V. Calhoun	01/07/2022 16:07	Shengyu Ding	2297650
EPA 365.1 Rev. 2.0 dissolved	01/05/2022			01/06/2022 11:53	James L Waggeberby	2297647, 2297648
	01/05/2022			01/06/2022 11:54	James L Waggeberby	2297651
EPA 8321B	01/05/2022	01/07/2022 10:00	Juyoung Kim	01/07/2022 13:15	Juyoung Kim	2297657
	01/05/2022	01/07/2022 10:00	Juyoung Kim	01/07/2022 14:58	Juyoung Kim	2297657
	01/05/2022	01/07/2022 13:00	Hoor Shaik	01/08/2022 14:02	Juyoung Kim	2297657
SM 2120 B-2011	01/05/2022			01/06/2022 15:32	Sarah A Nixon	2297643
	01/05/2022			01/06/2022 15:33	Sarah A Nixon	2297644
	01/05/2022			01/06/2022 16:07	Sarah A Nixon	2297649
SM 2320 B-2011	01/05/2022			01/06/2022 19:51	Dale L. Simmons	2297643
	01/05/2022			01/06/2022 20:00	Dale L. Simmons	2297644
	01/05/2022			01/06/2022 20:12	Dale L. Simmons	2297649
SM 2540 C-2011	01/05/2022			01/07/2022 14:36	Yijie Li	2297643, 2297644, 2297649
SM 2540 D-2011	01/05/2022			01/07/2022 14:36	Yijie Li	2297643, 2297644, 2297649
SM 4500 F-C-2011	01/05/2022			01/06/2022 19:51	Dale L. Simmons	2297643
	01/05/2022			01/06/2022 20:00	Dale L. Simmons	2297644
	01/05/2022			01/06/2022 20:12	Dale L. Simmons	2297649
SM 5310 B-2011	01/05/2022			01/09/2022 20:22	Touraj Touran	2297650
	01/05/2022			01/10/2022 01:19	Touraj Touran	2297646
	01/05/2022			01/12/2022 09:00	Nathaniel J Jones	2297645