

Chemical Analysis Report

NW-DIST-2022-09-28-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **98 Whaler Run**
Request ID: **RQ-2022-09-26-13**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 W Government Street
Suite 208
Pensacola, FL 32502-5794
Attn: Myranda Butler

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: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 20-OCT-2022 09:25

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line extending from the end of the 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: Joes Bayou

Collection Date/Time: 09/26/2022 11:15

Field ID: G3NW0182

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2359809	EPA 180.1 Rev. 2.0	Turbidity	1.7	A	NTU	P420263	
	SM 2320 B-2011	Total Alkalinity	91		mg CaCO3/L	P420429	
	SM 2540 D-2011	TSS	4	I	mg/L	P420675	
	SM 4500-F- C-2011	Fluoride	0.84		mg F/L	P420431	
2359810	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P420739	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33	I	mg N/L	P420269	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.026		mg N/L	P420445	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P420285	
	SM 5310 B-2011	Organic Carbon	4.7		mg C/L	P420681	
2359815	EPA 8321B	2,4-D	0.0042	I	ug/L	P420279	
		Acesulfame K	1.0	U	ug/L	P420170	
		2,4,5-T	0.0040	U	ug/L	P420279	
		AMPA	10	U	ug/L	P420170	
		Acetaminophen	0.0080	U	ug/L	P420279	
		Acetamiprid	0.0020	U	ug/L	P420279	
		Endothall	0.25	U	ug/L	P420170	MS
		Glufosinate	10	U	ug/L	P420170	
		Glyphosate	10	U	ug/L	P420170	
		Afidopyropen	0.0020	U	ug/L	P420279	
		Bentazon	8.0E-04	U	ug/L	P420279	
		Sucralose	0.50		ug/L	P420170	
		Benzovindiflupyr	0.0020	U	ug/L	P420279	
		Carbamazepine	8.0E-04	U	ug/L	P420279	
		Clothianidin	0.0020	U	ug/L	P420279	
		Dinotefuran	0.0020	U	ug/L	P420279	
		Diuron	0.0020	U	ug/L	P420279	
		Fenuron	0.032	U	ug/L	P420279	
		Fluridone	8.0E-04	U	ug/L	P420279	
		Imazapyr	0.0052	I	ug/L	P420279	
		Hydrocodone	0.0020	U	ug/L	P420279	
		Ibuprofen	0.020	U	ug/L	P420279	
		Imidacloprid	0.0032	I	ug/L	P420279	
		Linuron	0.0040	U	ug/L	P420279	
		Mandestrobin	0.0020	U	ug/L	P420279	
		MCP	0.0020	U	ug/L	P420279	
		Naproxen	0.0080	U	ug/L	P420279	
		Primidone	0.0040	U	ug/L	P420279	
		Pyraclostrobin	0.0020	U	ug/L	P420279	
		Silvex	0.0040	U	ug/L	P420279	
		Thiamethoxam	0.0020	U	ug/L	P420279	
		Tolfenpyrad	0.0020	U	ug/L	P420279	
		Triclopyr	0.0040	U	ug/L	P420279	

Field ID: G3NW0182

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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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: MS accuracy for bentazon could not be assessed due to a high concentration of parameters in the spiked sample.
EPA 8321B: Some MDLs are elevated due to required dilution of sample matrix.

Sample Location: Yellow River above Metts Creek

Collection Date/Time: 09/26/2022 13:00

Field ID: G4NW0370

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2359911	EPA 200.7 Rev. 4.4	Calcium	5.15		mg/L	P420372	
		Iron	380		ug/L	P420372	
		Magnesium	1.24		mg/L	P420372	
		Potassium	0.45	I	mg/L	P420372	
		Sodium	2.0		mg/L	P420372	
		Strontium	12.6		ug/L	P420372	
		Tin	3.0	U	ug/L	P420372	
		Titanium	0.75	U	ug/L	P420372	
		Vanadium	2.0	U	ug/L	P420372	
		Zinc	5.0	U	ug/L	P420372	
	EPA 200.8 Rev. 5.4	Aluminum	70		ug/L	P420372	
		Antimony	0.050	U	ug/L	P420372	
		Arsenic	0.23		ug/L	P420372	
		Barium	13.2		ug/L	P420372	
		Beryllium	0.017	I	ug/L	P420372	
		Boron	9.5		ug/L	P420372	
		Cadmium	0.020	U	ug/L	P420372	
		Chromium	0.40	U	ug/L	P420372	
		Cobalt	0.161		ug/L	P420372	
		Copper	0.40	U	ug/L	P420372	
		Lead	0.20	U	ug/L	P420372	
		Manganese	23.7		ug/L	P420372	
		Molybdenum	0.15	U	ug/L	P420372	
		Nickel	0.50	U	ug/L	P420372	
		Selenium	0.20	U	ug/L	P420372	
		Silver	0.010	U	ug/L	P420372	
		Thallium	0.10	U	ug/L	P420372	
	SM 2340 B-2011	Hardness	18.0		mg/L	P420372	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P420263

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P420372

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P420372

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	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
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420739

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420269

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420445

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P420285

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

Reference Method: EPA 8321B
Batch ID: P420170

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: P420279

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	0.032	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
Silvex	0.0040	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P420429

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

Reference Method: SM 2540 D-2011
Batch ID: P420675

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P420431

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P420681

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P420263

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

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P420372

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	110		P	85 - 115
Iron	110		P	85 - 115
Magnesium	111		P	85 - 115
Potassium	108		P	85 - 115
Sodium	110		P	85 - 115
Strontium	103		P	85 - 115
Tin	106		P	85 - 115
Titanium	104		P	85 - 115
Vanadium	104		P	85 - 115
Zinc	105		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P420372

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	96.3		P	85 - 115
Antimony	97.5		P	85 - 115
Arsenic	97.8		P	85 - 115
Barium	99.9		P	85 - 115
Beryllium	90.4		P	85 - 115
Boron	104		P	85 - 115
Cadmium	94.5		P	85 - 115
Chromium	97.2		P	85 - 115
Cobalt	97.7		P	85 - 115
Copper	96.8		P	85 - 115
Lead	92.6		P	85 - 115
Manganese	97.5		P	85 - 115
Molybdenum	95.2		P	85 - 115
Nickel	96.4		P	85 - 115
Selenium	96.4		P	85 - 115
Silver	112		P	85 - 115
Thallium	91.2		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P420739

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P420269

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	108		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420445

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P420285

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

Reference Method: EPA 8321B
Batch ID: P420170

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	106		P	40 - 150
AMPA	109		P	40 - 150
Endothall	97.8		P	40 - 150
Glufosinate	91.6		P	40 - 150
Glyphosate	103		P	40 - 150
Sucralose	105		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P420279

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	95.8		P	30 - 160
2,4,5-T	89.5		P	30 - 160
Acetaminophen	98.4		P	30 - 150
Acetamiprid	78.8		P	30 - 160
Afidopyropen	65.3		P	30 - 160
Bentazon	33.3		P	30 - 150
Benzovindiflupyr	82.6		P	30 - 160
Carbamazepine	75.3		P	30 - 160
Clothianidin	96.1		P	30 - 160
Dinotefuran	95.8		P	30 - 160
Diuron	76.3		P	30 - 160
Fenuron	103		P	30 - 160
Fluridone	97.7		P	30 - 160
Hydrocodone	93.6		P	30 - 160
Ibuprofen	79.3		P	30 - 160
Imazapyr	88.7		P	30 - 160
Imidacloprid	132		P	30 - 160
Linuron	76.2		P	30 - 160
Mandestrobin	86.9		P	30 - 160
MCPP	101		P	30 - 160
Naproxen	98.6		P	30 - 160
Primidone	90.9		P	30 - 160
Pyraclostrobin	91.1		P	30 - 160
Silvex	79.9		P	30 - 160
Thiamethoxam	91.8		P	30 - 160
Tolfenpyrad	44.2		P	30 - 160
Triclopyr	83.3		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P420429

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.7		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P420431

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P420681

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P420372

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358208	Calcium	100		P	80 - 120
2358208	Iron	114		P	80 - 120
2358208	Magnesium	114		P	80 - 120
2358208	Potassium	106		P	80 - 120
2358208	Sodium	98.7		P	80 - 120
2358208	Strontium	104		P	80 - 120
2358208	Tin	108		P	80 - 120
2358208	Titanium	106		P	80 - 120
2358208	Vanadium	107		P	80 - 120
2358208	Zinc	105		P	80 - 120
2359911	Calcium	107		P	80 - 120
2359911	Iron	105	109	P/P	80 - 120
2359911	Magnesium	105	109	P/P	80 - 120
2359911	Potassium	103	106	P/P	80 - 120
2359911	Sodium	104	108	P/P	80 - 120
2359911	Strontium	101	104	P/P	80 - 120
2359911	Tin	103	106	P/P	80 - 120
2359911	Titanium	103	107	P/P	80 - 120
2359911	Vanadium	102	105	P/P	80 - 120
2359911	Zinc	100	103	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P420372

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358208	Aluminum	98.6		P	80 - 120
2358208	Antimony	102		P	80 - 120
2358208	Arsenic	103		P	80 - 120
2358208	Barium	104		P	80 - 120
2358208	Beryllium	93.7		P	80 - 120
2358208	Boron	102		P	80 - 120
2358208	Cadmium	99.6		P	80 - 120
2358208	Chromium	102		P	80 - 120
2358208	Cobalt	102		P	80 - 120
2358208	Copper	101		P	80 - 120
2358208	Lead	96.0		P	80 - 120
2358208	Manganese	102		P	80 - 120
2358208	Molybdenum	98.9		P	80 - 120
2358208	Nickel	100		P	80 - 120
2358208	Selenium	99.4		P	80 - 120
2358208	Silver	113		P	80 - 120
2358208	Thallium	94.9		P	80 - 120
2359911	Aluminum	105	119	P/P	80 - 120
2359911	Antimony	97.9	97.2	P/P	80 - 120
2359911	Arsenic	98.4	98.1	P/P	80 - 120
2359911	Barium	100	102	P/P	80 - 120
2359911	Beryllium	90.4	90.9	P/P	80 - 120
2359911	Boron	103	105	P/P	80 - 120
2359911	Cadmium	97.4	96.8	P/P	80 - 120
2359911	Chromium	99.1	99.8	P/P	80 - 120
2359911	Cobalt	97.9	99.1	P/P	80 - 120
2359911	Copper	98.1	99.1	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P420372

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359911	Lead	93.8	95.5	P/P	80 - 120
2359911	Manganese	98.4	101	P/P	80 - 120
2359911	Molybdenum	96.2	96.1	P/P	80 - 120
2359911	Nickel	97.6	98.0	P/P	80 - 120
2359911	Selenium	96.5	96.9	P/P	80 - 120
2359911	Silver	112	112	P/P	80 - 120
2359911	Thallium	92.4	93.9	P/P	80 - 120

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P420739

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359719	Ammonia-N	97.4	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P420269

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359330	Kjeldahl Nitrogen	100	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P420445

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359810	NO2NO3-N	105	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P420285

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359328	Total-P	97.0	98.0	P/P	90 - 110

Reference Method: EPA 8321B

Batch ID: P420170

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359923	Acesulfame K	70.8	70.5	P/P	40 - 150
2359923	AMPA	91.7	90.6	P/P	40 - 150
2359923	Endothall	157	154	F/F	40 - 150
2359923	Glufosinate	86.0	83.4	P/P	40 - 150
2359923	Glyphosate	106	105	P/P	40 - 150
2359923	Sucralose	101	102	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P420279

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359530	2,4-D	106	108	P/P	30 - 160
2359530	2,4,5-T	98.9	97.1	P/P	30 - 160
2359530	Acetaminophen	114	118	P/P	30 - 150
2359530	Acetamiprid	71.5	71.3	P/P	30 - 160
2359530	Afidopyropen	80.4	79.9	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P420279

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359530	Benzovindiflupyr	73.6	74.9	P/P	30 - 160
2359530	Carbamazepine	68.8	68.8	P/P	30 - 160
2359530	Clothianidin	111	115	P/P	30 - 160
2359530	Dinotefuran	106	111	P/P	30 - 160
2359530	Diuron	71.9	67.1	P/P	30 - 160
2359530	Fenuron	85.9	88.1	P/P	30 - 160
2359530	Fluridone	87.6	89.3	P/P	30 - 160
2359530	Hydrocodone	93.6	94.2	P/P	30 - 160
2359530	Ibuprofen	74.2	62.6	P/P	30 - 160
2359530	Imazapyr	99.6	99.4	P/P	30 - 160
2359530	Imidacloprid	117	114	P/P	30 - 160
2359530	Linuron	72.2	69.8	P/P	30 - 160
2359530	Mandestrobin	84.7	83.3	P/P	30 - 160
2359530	MCP	119	116	P/P	30 - 160
2359530	Naproxen	95.4	110	P/P	30 - 160
2359530	Primidone	92.2	97.1	P/P	30 - 160
2359530	Pyraclostrobin	90.8	91.8	P/P	30 - 160
2359530	Silvex	91.9	97.4	P/P	30 - 160
2359530	Thiamethoxam	122	125	P/P	30 - 160
2359530	Tolfenpyrad	47.2	49.1	P/P	30 - 160
2359530	Triclopyr	93.7	95.3	P/P	30 - 160

Reference Method: SM 4500-F- C-2011

Batch ID: P420431

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358778	Fluoride	96.6	97.4	P/P	94 - 104

Reference Method: SM 5310 B-2011

Batch ID: P420681

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359845	Organic Carbon	92.9	96.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P420263

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359809	Turbidity	4.82	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P420372

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359911	Calcium	1.82	Spike	P	0 - 20
2359911	Iron	3.48	Spike	P	0 - 20
2359911	Magnesium	3.04	Spike	P	0 - 20
2359911	Potassium	2.53	Spike	P	0 - 20
2359911	Sodium	2.26	Spike	P	0 - 20
2359911	Strontium	2.58	Spike	P	0 - 20
2359911	Tin	2.63	Spike	P	0 - 20
2359911	Titanium	3.45	Spike	P	0 - 20
2359911	Vanadium	3.00	Spike	P	0 - 20
2359911	Zinc	2.87	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P420372

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359911	Aluminum	11.9	Spike	P	0 - 20
2359911	Antimony	0.745	Spike	P	0 - 20
2359911	Arsenic	0.336	Spike	P	0 - 20
2359911	Barium	1.04	Spike	P	0 - 20
2359911	Beryllium	0.496	Spike	P	0 - 20
2359911	Boron	1.38	Spike	P	0 - 20
2359911	Cadmium	0.627	Spike	P	0 - 20
2359911	Chromium	0.752	Spike	P	0 - 20
2359911	Cobalt	1.18	Spike	P	0 - 20
2359911	Copper	1.01	Spike	P	0 - 20
2359911	Lead	1.83	Spike	P	0 - 20
2359911	Manganese	1.92	Spike	P	0 - 20
2359911	Molybdenum	0.0811	Spike	P	0 - 20
2359911	Nickel	0.363	Spike	P	0 - 20
2359911	Selenium	0.416	Spike	P	0 - 20
2359911	Silver	0.317	Spike	P	0 - 20
2359911	Thallium	1.67	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P420739

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359719	Ammonia-N	1.97	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P420269

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359330	Kjeldahl Nitrogen	4.01	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P420445

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359810	NO2NO3-N	0.421	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P420285

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359328	Total-P	1.10	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P420170

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359923	Acesulfame K	0.369	Spike	P	0 - 30
2359923	AMPA	0.607	Spike	P	0 - 30
2359923	Endothall	1.52	Spike	P	0 - 30
2359923	Glufosinate	3.09	Spike	P	0 - 30
2359923	Glyphosate	0.631	Spike	P	0 - 30
2359923	Sucralose	0.550	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P420279

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359530	2,4-D	1.63	Spike	P	0 - 30
2359530	2,4,5-T	1.77	Spike	P	0 - 30
2359530	Acetaminophen	3.80	Spike	P	0 - 30
2359530	Acetamiprid	0.288	Spike	P	0 - 30
2359530	Afidopyropen	0.562	Spike	P	0 - 30
2359530	Bentazon	3.73	Spike	P	0 - 30
2359530	Benzovindiflupyr	1.66	Spike	P	0 - 30
2359530	Carbamazepine	0.00701	Spike	P	0 - 30
2359530	Clothianidin	3.93	Spike	P	0 - 30
2359530	Dinotefuran	5.04	Spike	P	0 - 30
2359530	Diuron	5.39	Spike	P	0 - 30
2359530	Fenuron	2.52	Spike	P	0 - 30
2359530	Fluridone	1.39	Spike	P	0 - 30
2359530	Hydrocodone	0.654	Spike	P	0 - 30
2359530	Ibuprofen	16.9	Spike	P	0 - 30
2359530	Imazapyr	0.222	Spike	P	0 - 30
2359530	Imidacloprid	1.73	Spike	P	0 - 30
2359530	Linuron	3.31	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P420279

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359530	Mandestrobin	1.74	Spike	P	0 - 30
2359530	MCCP	2.75	Spike	P	0 - 30
2359530	Naproxen	14.1	Spike	P	0 - 30
2359530	Primidone	4.77	Spike	P	0 - 30
2359530	Pyraclostrobin	1.04	Spike	P	0 - 30
2359530	Silvex	5.89	Spike	P	0 - 30
2359530	Thiamethoxam	2.54	Spike	P	0 - 30
2359530	Tolfenpyrad	3.86	Spike	P	0 - 30
2359530	Triclopyr	1.68	Spike	P	0 - 30

Reference Method: SM 2320 B-2011

Batch ID: P420429

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358778	Total Alkalinity	0.243	Sample	P	0 - 3.8

Reference Method: SM 4500-F- C-2011

Batch ID: P420431

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358778	Fluoride	0.513	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011

Batch ID: P420681

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359845	Organic Carbon	2.27	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2359815

Field Sample ID: G3NW0182

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	125	P	30 - 160
EPA 8321B	Acetaminophen-d4	107	P	30 - 160
EPA 8321B	Carbamazepine-d10	88.8	P	30 - 160
EPA 8321B	Diuron-d6	77.0	P	30 - 160
EPA 8321B	Endothall-d6	61.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	77.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	75.5	P	30 - 160
EPA 8321B	Primidone-d5	98.1	P	30 - 160
EPA 8321B	Sucralose-d6	93.0	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A115001

Included Lab Sample IDs: 2359809

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

Reference Method: EPA 8321B

Run ID: A115068

Included Lab Sample IDs: 2359815

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	109	110	P/P	60 - 160
Endothall	95.6	86.1	P/P	60 - 160
Glufosinate	90.7	87.0	P/P	60 - 160
Glyphosate	108	109	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A115071

Included Lab Sample IDs: 2359815

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	106	106	P/P	60 - 160
Sucralose	108	105	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A115078

Included Lab Sample IDs: 2359815

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	94.5	89.1	P/P	50 - 150
2,4,5-T	95.7	93.0	P/P	50 - 150
Acetaminophen	103	103	P/P	60 - 160
Acetamiprid	100	100	P/P	50 - 150
Afidopyropen	96.5	91.9	P/P	50 - 150
Bentazon	101	103	P/P	50 - 160
Benzovindiflupyr	94.8	100	P/P	50 - 150
Carbamazepine	94.1	103	P/P	60 - 150
Clothianidin	97.0	101	P/P	60 - 150
Dinotefuran	103	104	P/P	50 - 150
Diuron	106	112	P/P	60 - 160
Fenuron	98.6	98.9	P/P	60 - 150
Fluridone	111	111	P/P	60 - 160
Hydrocodone	98.1	94.5	P/P	60 - 150
Ibuprofen	139	120	P/P	50 - 160
Imazapyr	83.5	73.4	P/P	50 - 150
Imidacloprid	93.3	94.0	P/P	60 - 150
Linuron	102	103	P/P	60 - 150
Mandestrobin	93.4	101	P/P	50 - 150
MCPP	92.5	92.9	P/P	50 - 150
Naproxen	78.3	72.7	P/P	50 - 160
Primidone	101	97.9	P/P	60 - 150
Pyraclostrobin	109	109	P/P	60 - 150
Silvex	94.1	93.1	P/P	50 - 150
Thiamethoxam	94.4	93.1	P/P	50 - 150
Tolfenpyrad	94.8	96.9	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A115078
Included Lab Sample IDs: 2359815

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Triclopyr	93.7	100	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A115084
Included Lab Sample IDs: 2359810

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	99.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A115099
Included Lab Sample IDs: 2359911

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.6	98.2	P/P	90 - 110
Antimony	95.0	95.2	P/P	90 - 110
Arsenic	96.8	97.4	P/P	90 - 110
Barium	96.8	96.7	P/P	90 - 110
Beryllium	93.6	94.5	P/P	90 - 110
Boron	102	99.0	P/P	90 - 110
Cadmium	97.1	97.0	P/P	90 - 110
Chromium	94.9	95.5	P/P	90 - 110
Cobalt	96.0	96.6	P/P	90 - 110
Copper	95.4	96.4	P/P	90 - 110
Lead	92.3	92.3	P/P	90 - 110
Manganese	96.2	96.1	P/P	90 - 110
Molybdenum	96.4	96.0	P/P	90 - 110
Nickel	95.9	95.9	P/P	90 - 110
Selenium	96.6	98.0	P/P	90 - 110
Silver	96.9	96.4	P/P	90 - 110
Thallium	91.0	93.2	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A115100
Included Lab Sample IDs: 2359809

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.3	100	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A115100
Included Lab Sample IDs: 2359809

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A115113
Included Lab Sample IDs: 2359810

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A115113

Included Lab Sample IDs: 2359810

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A115115

Included Lab Sample IDs: 2359810

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A115131

Included Lab Sample IDs: 2359911

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	102	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Magnesium	99.9	99.2	P/P	90 - 110
Potassium	98.4	99.0	P/P	90 - 110
Sodium	99.7	100	P/P	90 - 110
Strontium	96.7	95.2	P/P	90 - 110
Tin	98.5	95.8	P/P	90 - 110
Titanium	97.0	97.1	P/P	90 - 110
Vanadium	97.9	97.3	P/P	90 - 110
Zinc	98.9	96.1	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A115210

Included Lab Sample IDs: 2359810

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.8	98.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A115220

Included Lab Sample IDs: 2359810

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.3	98.2	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity	101					4.82	
EPA 200.7 Rev. 4.4	Calcium	110	100	107				1.82
	Iron	110	114	105	109			3.48
	Magnesium	111	114	105	109			3.04
	Potassium	108	106	103	106			2.53
	Sodium	110	98.7	104	108			2.26
	Strontium	103	104	101	104			2.58
	Tin	106	108	103	106			2.63
	Titanium	104	106	103	107			3.45
	Vanadium	104	107	102	105			3.00
	Zinc	105	105	100	103			2.87
EPA 200.8 Rev. 5.4	Aluminum	96.3	105	119	98.6			11.9
	Antimony	97.5	97.9	97.2	102			0.745
	Arsenic	97.8	98.4	98.1	103			0.336
	Barium	99.9	100	102	104			1.04
	Beryllium	90.4	90.4	90.9	93.7			0.496
	Boron	104	103	105	102			1.38
	Cadmium	94.5	97.4	96.8	99.6			0.627
	Chromium	97.2	99.1	99.8	102			0.752
	Cobalt	97.7	97.9	99.1	102			1.18
	Copper	96.8	98.1	99.1	101			1.01
	Lead	92.6	93.8	95.5	96.0			1.83
	Manganese	97.5	98.4	101	102			1.92
	Molybdenum	95.2	96.2	96.1	98.9			0.0811
	Nickel	96.4	97.6	98.0	100			0.363
	Selenium	96.4	96.5	96.9	99.4			0.416
	Silver	112	112	112	113			0.317
	Thallium	91.2	92.4	93.9	94.9			1.67
EPA 350.1 Rev. 2.0	Ammonia-N	96.2	97.4	99.6				1.97
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	100	105				4.01
EPA 353.2 Rev. 2.0	NO2NO3-N	103	105	106				0.421
EPA 365.1 Rev. 2.0	Total-P	105	97.0	98.0				1.10
EPA 8321B	2,4-D	95.8	106	108				1.63
	2,4,5-T	89.5	98.9	97.1				1.77
	Acesulfame K	106	70.8	70.5				0.369
	Acetaminophen	98.4	114	118				3.80
	Acetamiprid	78.8	71.5	71.3				0.288
	Afidopyropen	65.3	80.4	79.9				0.562
	AMPA	109	91.7	90.6				0.607
	Bentazon	33.3						3.73
	Benzovindiflupyr	82.6	73.6	74.9				1.66
	Carbamazepine	75.3	68.8	68.8				0.0070
	Clothianidin	96.1	111	115				3.93
	Dinotefuran	95.8	106	111				5.04
	Diuron	76.3	71.9	67.1				5.39
	Endothall	97.8	157	154				1.52
	Fenuron	103	85.9	88.1				2.52
	Fluridone	97.7	87.6	89.3				1.39
	Glufosinate	91.6	86.0	83.4				3.09
	Glyphosate	103	106	105				0.631
	Hydrocodone	93.6	93.6	94.2				0.654
	Ibuprofen	79.3	74.2	62.6				16.9
	Imazapyr	88.7	99.6	99.4				0.222
	Imidacloprid	132	117	114				1.73

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	MS
					LCS	SMP
EPA 8321B	Linuron	76.2	72.2	69.8		3.31
	Mandestrobin	86.9	84.7	83.3		1.74
	MCP	101	119	116		2.75
	Naproxen	98.6	95.4	110		14.1
	Primidone	90.9	92.2	97.1		4.77
	Pyraclostrobin	91.1	90.8	91.8		1.04
	Silvex	79.9	91.9	97.4		5.89
	Sucralose	105	101	102		0.550
	Thiamethoxam	91.8	122	125		2.54
	Tolfenpyrad	44.2	47.2	49.1		3.86
	Triclopyr	83.3	93.7	95.3		1.68
SM 2320 B-2011	Total Alkalinity	98.7			0.243	
SM 4500-F- C-2011	Fluoride	102	96.6	97.4		0.513
SM 5310 B-2011	Organic Carbon	96.8	92.9	96.4		2.27

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2359809
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2359911
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2359911
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2359810
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2359810
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2359810
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2359810
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2359815
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2359809
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2359911
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2359809
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2359809
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2359810

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	09/28/2022			09/28/2022 11:00	Chandler E Cox	2359809
EPA 200.7 Rev. 4.4	09/28/2022	10/03/2022 09:55	Megan Whitefoot	10/04/2022 20:17	McKinley C Carter	2359911
EPA 200.8 Rev. 5.4	09/28/2022	10/03/2022 09:55	Megan Whitefoot	10/03/2022 18:55	Emily M Philpot	2359911
EPA 350.1 Rev. 2.0	09/28/2022			10/11/2022 15:51	Judith K. Clark	2359810
EPA 351.2 Rev. 2.0	09/28/2022	09/29/2022 11:15	Simonne.V. Calhoun	10/04/2022 12:03	Samantha L Bates	2359810
EPA 353.2 Rev. 2.0	09/28/2022			10/04/2022 13:21	Judith K. Clark	2359810
EPA 365.1 Rev. 2.0	09/28/2022	09/30/2022 12:23	Adam P Silver	10/03/2022 11:55	James L Waggerby	2359810
EPA 8321B	09/28/2022	09/30/2022 09:00	Umesh Chiluwal	09/30/2022 12:48	Umesh Chiluwal	2359815
	09/28/2022	09/30/2022 09:00	Umesh Chiluwal	09/30/2022 13:53	Umesh Chiluwal	2359815
	09/28/2022	09/30/2022 09:00	Umesh Chiluwal	09/30/2022 20:04	Umesh Chiluwal	2359815
	09/28/2022	09/30/2022 09:30	June Rhew	09/30/2022 22:14	Juyoung Kim	2359815
SM 2320 B-2011	09/28/2022			10/04/2022 07:55	Dale L. Simmons	2359809
SM 2340 B-2011	09/28/2022			10/04/2022 20:17	McKinley C Carter	2359911
SM 2540 D-2011	09/28/2022			09/30/2022 16:11	Yijie Li	2359809
SM 4500-F- C-2011	09/28/2022			10/04/2022 03:07	Dale L. Simmons	2359809
SM 5310 B-2011	09/28/2022			10/07/2022 04:24	Touraj Touran	2359810