

Chemical Analysis Report

CEN-DIST-2022-08-23-01

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

Event Description: **Lakes Condel and Downey and Johns Lake Outlet**
Request ID: **RQ-2022-08-22-14**
Customer: **CEN-DIST**
Project ID: **SMP**

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Date Certified: 12-SEP-2022 10:24



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 and Nutrients.

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: Johns Lake @ conservation area dock

Collection Date/Time: 08/22/2022 11:35

Field ID: G1CE0111

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2351371	DEP SOP: NU-094-1	Color (true)	190		PCU	P418560	
	EPA 180.1 Rev. 2.0	Turbidity	2.6	A	NTU	P418573	
	EPA 300.0 Rev. 2.1	Chloride	28	A	mg Cl/L	P418970	
		Sulfate	6.2	A	mg SO4/L	P418973	
	SM 2320 B-2011	Total Alkalinity	41	A	mg CaCO3/L	P418856	
	SM 2540 C-2011	TDS	136		mg/L	P418979	
	SM 2540 D-2011	TSS	2	U	mg/L	P419042	
	SM 4500-F- C-2011	Fluoride	0.11		mg F/L	P418789	
2351372	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P418691	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.97		mg N/L	P418649	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P418753	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P418673	
	SM 5310 B-2011	Organic Carbon	17		mg C/L	P418825	
2351382	EPA 200.7 Rev. 4.4	Calcium	14.9		mg/L	P418720	
		Iron	190		ug/L	P418720	
		Magnesium	4.00		mg/L	P418720	
		Potassium	5.1		mg/L	P418720	
		Sodium	17.2		mg/L	P418720	
		Strontium	44.1		ug/L	P418720	
		Tin	3.0	U	ug/L	P418720	
		Titanium	0.80	I	ug/L	P418720	
	EPA 200.8 Rev. 5.4	Vanadium	2.0	U	ug/L	P418720	
		Zinc	5.0	U	ug/L	P418720	
		Aluminum	78		ug/L	P418720	
		Antimony	0.12	I	ug/L	P418720	
		Arsenic	0.99		ug/L	P418720	
		Barium	11.7		ug/L	P418720	
		Beryllium	0.010	U	ug/L	P418720	
		Boron	36.4		ug/L	P418720	
		Cadmium	0.020	U	ug/L	P418720	
		Chromium	0.49	I	ug/L	P418720	
		Cobalt	0.098		ug/L	P418720	
		Copper	1.18		ug/L	P418720	
		Lead	0.20	U	ug/L	P418720	
		Manganese	17.2		ug/L	P418720	
		Molybdenum	0.77		ug/L	P418720	
		Nickel	0.50	U	ug/L	P418720	
		Selenium	0.20	I	ug/L	P418720	
		Silver	0.010	U	ug/L	P418720	
		Thallium	0.10	U	ug/L	P418720	
	SM 2340 B-2011	Hardness	53.7		mg/L	P418720	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: Lake Condel @ Center

Collection Date/Time: 08/22/2022 13:55

Field ID: G4CE0177

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2351369	DEP SOP: NU-094-1	Color (true)	31		PCU	P418559	
	EPA 180.1 Rev. 2.0	Turbidity	6.5		NTU	P418572	
	EPA 300.0 Rev. 2.1	Chloride	8.7		mg Cl/L	P418970	
		Sulfate	5.3		mg SO4/L	P418973	
	SM 2320 B-2011	Total Alkalinity	29		mg CaCO3/L	P418856	
	SM 2540 C-2011	TDS	70		mg/L	P418979	
	SM 2540 D-2011	TSS	10	I	mg/L	P419042	
	SM 4500-F- C-2011	Fluoride	0.036	I	mg F/L	P418789	
2351370	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P418803	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P418650	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P418753	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P418673	
	SM 5310 B-2011	Organic Carbon	8.7		mg C/L	P418825	
2351381	EPA 200.7 Rev. 4.4	Calcium	11.9		mg/L	P418720	
		Iron	35	I	ug/L	P418720	
		Magnesium	1.44		mg/L	P418720	
		Potassium	1.9		mg/L	P418720	
		Sodium	6.1		mg/L	P418720	
		Strontium	30.1		ug/L	P418720	
		Tin	3.0	U	ug/L	P418720	
		Titanium	0.83	I	ug/L	P418720	
	EPA 200.8 Rev. 5.4	Vanadium	2.0	U	ug/L	P418720	
		Zinc	5.0	U	ug/L	P418720	
		Aluminum	51		ug/L	P418720	
		Antimony	0.11	I	ug/L	P418720	
		Arsenic	0.87		ug/L	P418720	
		Barium	6.86		ug/L	P418720	
		Beryllium	0.010	U	ug/L	P418720	
		Boron	40.3		ug/L	P418720	
		Cadmium	0.020	U	ug/L	P418720	
		Chromium	0.40	U	ug/L	P418720	
		Cobalt	0.029	I	ug/L	P418720	
		Copper	0.50	I	ug/L	P418720	
		Lead	0.35	I	ug/L	P418720	
		Manganese	13.7		ug/L	P418720	
		Molybdenum	0.20	I	ug/L	P418720	
		Nickel	0.50	U	ug/L	P418720	
		Selenium	0.21	I	ug/L	P418720	
		Silver	0.010	U	ug/L	P418720	
		Thallium	0.10	U	ug/L	P418720	
	SM 2340 B-2011	Hardness	35.6		mg/L	P418720	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: Lake Downey @ Center

Collection Date/Time: 08/22/2022 15:02

Field ID: G2CE0227

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2351373	DEP SOP: NU-094-1	Color (true)	22		PCU	P418560	
	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P418573	
	EPA 300.0 Rev. 2.1	Chloride	26		mg Cl/L	P418970	
		Sulfate	4.4		mg SO4/L	P418973	
	SM 2320 B-2011	Total Alkalinity	7.5		mg CaCO3/L	P418856	
	SM 2540 C-2011	TDS	69		mg/L	P418979	
	SM 2540 D-2011	TSS	2	I	mg/L	P419042	
	SM 4500-F- C-2011	Fluoride	0.039	I	mg F/L	P418789	
2351374	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P418691	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.62		mg N/L	P418650	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P418753	
	EPA 365.1 Rev. 2.0	Total-P	0.01		mg P/L	P418674	
	SM 5310 B-2011	Organic Carbon	9.5		mg C/L	P418825	

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P418559

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P418560

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P418572

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P418573

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P418720

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: P418720

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P418720

Component	Result	Code	Units
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418970

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418973

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418691

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418803

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418649

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418650

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P418753

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418673

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: P418674

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

Reference Method: SM 2320 B-2011
Batch ID: P418856

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

Reference Method: SM 2540 C-2011
Batch ID: P418979

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P419042

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P418789

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P418825

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P418559

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.4		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P418560

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P418572

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	97.3		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P418573

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	96.5		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P418720

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Iron	108		P	85 - 115
Magnesium	107		P	85 - 115
Potassium	100		P	85 - 115
Sodium	108		P	85 - 115
Strontium	105		P	85 - 115
Tin	106		P	85 - 115
Titanium	103		P	85 - 115
Vanadium	103		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P418720

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	100		P	85 - 115
Arsenic	101		P	85 - 115
Barium	102		P	85 - 115
Beryllium	94.6		P	85 - 115
Boron	100		P	85 - 115
Cadmium	96.1		P	85 - 115
Chromium	98.1		P	85 - 115
Cobalt	97.0		P	85 - 115
Copper	99.0		P	85 - 115
Lead	93.2		P	85 - 115
Manganese	98.5		P	85 - 115
Molybdenum	97.4		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P418720

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Nickel	99.6		P	85 - 115
Selenium	99.4		P	85 - 115
Silver	98.1		P	85 - 115
Thallium	98.6		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418970

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418973

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418691

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418803

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418649

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418650

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P418753

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	94.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418673

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418674

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

Reference Method: SM 2320 B-2011
Batch ID: P418856

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P418789

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P418825

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P418720

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2352235	Calcium	99.0		P	80 - 120
2352235	Iron	106	103	P/P	80 - 120
2352235	Magnesium	104	99.9	P/P	80 - 120
2352235	Potassium	101		P	80 - 120
2352235	Sodium	105	102	P/P	80 - 120
2352235	Strontium	105	102	P/P	80 - 120
2352235	Tin	104	101	P/P	80 - 120
2352235	Titanium	102	100	P/P	80 - 120
2352235	Vanadium	102	100	P/P	80 - 120
2352235	Zinc	102	100	P/P	80 - 120
2352236	Iron	104		P	80 - 120
2352236	Magnesium	104		P	80 - 120
2352236	Potassium	104		P	80 - 120
2352236	Strontium	104		P	80 - 120
2352236	Tin	103		P	80 - 120
2352236	Titanium	103		P	80 - 120
2352236	Vanadium	104		P	80 - 120
2352236	Zinc	102		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P418720

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2352235	Aluminum	98.7	98.4	P/P	80 - 120
2352235	Antimony	104	103	P/P	80 - 120
2352235	Arsenic	103	101	P/P	80 - 120
2352235	Barium	103	102	P/P	80 - 120
2352235	Beryllium	93.4	89.3	P/P	80 - 120
2352235	Boron	97.4	95.1	P/P	80 - 120
2352235	Cadmium	101	101	P/P	80 - 120
2352235	Chromium	101	101	P/P	80 - 120
2352235	Cobalt	97.8	96.2	P/P	80 - 120
2352235	Copper	98.3	96.4	P/P	80 - 120
2352235	Lead	93.5	93.7	P/P	80 - 120
2352235	Manganese	101	102	P/P	80 - 120
2352235	Molybdenum	102	101	P/P	80 - 120
2352235	Nickel	101	99.1	P/P	80 - 120
2352235	Selenium	100	99.9	P/P	80 - 120
2352235	Silver	98.2	98.6	P/P	80 - 120
2352235	Thallium	100	101	P/P	80 - 120
2352236	Aluminum	97.9		P	80 - 120
2352236	Antimony	104		P	80 - 120
2352236	Arsenic	99.9		P	80 - 120
2352236	Barium	104		P	80 - 120
2352236	Beryllium	91.3		P	80 - 120
2352236	Boron	96.0		P	80 - 120
2352236	Cadmium	98.6		P	80 - 120
2352236	Chromium	102		P	80 - 120
2352236	Cobalt	93.2		P	80 - 120
2352236	Copper	93.9		P	80 - 120
2352236	Lead	94.0		P	80 - 120
2352236	Manganese	102		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P418720

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2352236	Molybdenum	100		P	80 - 120
2352236	Nickel	96.2		P	80 - 120
2352236	Selenium	97.6		P	80 - 120
2352236	Silver	97.7		P	80 - 120
2352236	Thallium	100		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418970

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2351371	Chloride	96.3		P	90 - 110
2351423	Chloride	97.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418973

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2351371	Sulfate	96.0		P	90 - 110
2351423	Sulfate	98.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418691

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2351374	Ammonia-N	96.8	97.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418803

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2351370	Ammonia-N	96.6	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418649

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2351525	Kjeldahl Nitrogen	91.2	95.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418650

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2351344	Kjeldahl Nitrogen	100	96.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P418753

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2351370	NO2NO3-N	94.1	94.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418673

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2351254	Total-P	105	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418674

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2351397	Total-P	104	107	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P418789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2351424	Fluoride	99.5	99.5	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P418825

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2351255	Organic Carbon	98.1	98.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P418559

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2351356	Color (true)	0.0118	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P418560

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2351458	Color (true)	0.745	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P418572

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2351247	Turbidity	2.28	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P418573

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2351371	Turbidity	9.71	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P418720

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2352235	Calcium	1.33	Spike	P	0 - 20
2352235	Iron	3.50	Spike	P	0 - 20
2352235	Magnesium	3.40	Spike	P	0 - 20
2352235	Potassium	1.68	Spike	P	0 - 20
2352235	Sodium	1.86	Spike	P	0 - 20
2352235	Strontium	2.63	Spike	P	0 - 20
2352235	Tin	2.22	Spike	P	0 - 20
2352235	Titanium	1.27	Spike	P	0 - 20
2352235	Vanadium	1.46	Spike	P	0 - 20
2352235	Zinc	1.77	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P418720

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2352235	Aluminum	0.272	Spike	P	0 - 20
2352235	Antimony	1.55	Spike	P	0 - 20
2352235	Arsenic	2.90	Spike	P	0 - 20
2352235	Barium	0.371	Spike	P	0 - 20
2352235	Beryllium	4.46	Spike	P	0 - 20
2352235	Boron	2.20	Spike	P	0 - 20
2352235	Cadmium	0.359	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P418720

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2352235	Chromium	0.211	Spike	P	0 - 20
2352235	Cobalt	1.64	Spike	P	0 - 20
2352235	Copper	1.95	Spike	P	0 - 20
2352235	Lead	0.230	Spike	P	0 - 20
2352235	Manganese	0.367	Spike	P	0 - 20
2352235	Molybdenum	0.511	Spike	P	0 - 20
2352235	Nickel	2.14	Spike	P	0 - 20
2352235	Selenium	0.527	Spike	P	0 - 20
2352235	Silver	0.415	Spike	P	0 - 20
2352235	Thallium	0.728	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P418970

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2351371	Chloride	0.0828	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P418973

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2351371	Sulfate	0.349	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P418691

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2351374	Ammonia-N	0.948	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P418803

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2351370	Ammonia-N	3.72	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P418649

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2351525	Kjeldahl Nitrogen	3.39	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P418650

Replicated

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418650

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2351344	Kjeldahl Nitrogen	2.01	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P418753

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2351370	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418673

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2351254	Total-P	2.04	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418674

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2351397	Total-P	2.37	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P418856

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2351371	Total Alkalinity	0.618	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P418979

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2351325	TDS	3.06	Sample	P	0 - 10

Reference Method: SM 2540 D-2011
Batch ID: P419042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2351325	TSS	7.06	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P418789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2351424	Fluoride	0.0	Spike	P	0 - 1.6

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P418825

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2351255	Organic Carbon	0.0271	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A114285

Included Lab Sample IDs: 2351369, 2351371, 2351373

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	102	P/P	90 - 110
Color (true)	101	103	P/P	90 - 110
Color (true)	102	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A114288

Included Lab Sample IDs: 2351369, 2351371, 2351373

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A114346

Included Lab Sample IDs: 2351372, 2351374

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	98.8	P/P	90 - 110
Ammonia-N	98.4	98.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A114378

Included Lab Sample IDs: 2351370, 2351372, 2351374

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	95.0	93.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A114390

Included Lab Sample IDs: 2351381, 2351382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.7	98.0	P/P	90 - 110
Antimony	98.3	98.5	P/P	90 - 110
Arsenic	101	98.4	P/P	90 - 110
Barium	98.0	97.3	P/P	90 - 110
Beryllium	93.3	93.2	P/P	90 - 110
Cadmium	101	102	P/P	90 - 110
Chromium	100	101	P/P	90 - 110
Cobalt	95.3	92.4	P/P	90 - 110
Copper	98.6	95.6	P/P	90 - 110
Lead	91.7	91.3	P/P	90 - 110
Manganese	101	101	P/P	90 - 110
Molybdenum	96.4	96.0	P/P	90 - 110
Nickel	97.1	95.0	P/P	90 - 110
Selenium	102	99.5	P/P	90 - 110
Silver	95.9	96.1	P/P	90 - 110
Thallium	102	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A114393

Included Lab Sample IDs: 2351370, 2351372, 2351374

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	101	P/P	90 - 110
Kjeldahl Nitrogen	101	98.1	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A114396

Included Lab Sample IDs: 2351369, 2351371, 2351373

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A114401

Included Lab Sample IDs: 2351370, 2351372

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A114404

Included Lab Sample IDs: 2351374

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A114406

Included Lab Sample IDs: 2351370

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	98.7	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A114412

Included Lab Sample IDs: 2351370, 2351372, 2351374

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.2	96.1	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A114426

Included Lab Sample IDs: 2351369, 2351371, 2351373

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.8	99.4	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A114446

Included Lab Sample IDs: 2351369, 2351371, 2351373

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A114446

Included Lab Sample IDs: 2351369, 2351371, 2351373

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.6	100	P/P	90 - 110
Sulfate	99.1	99.6	P/P	90 - 110
Sulfate	99.6	99.7	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A114451

Included Lab Sample IDs: 2351381, 2351382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	92.4	92.4	P/P	90 - 110
Boron	92.9	92.4	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A114588

Included Lab Sample IDs: 2351381, 2351382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	102	P/P	90 - 110
Iron	103	101	P/P	90 - 110
Magnesium	102	101	P/P	90 - 110
Potassium	103	102	P/P	90 - 110
Sodium	102	102	P/P	90 - 110
Strontium	101	101	P/P	90 - 110
Tin	101	101	P/P	90 - 110
Titanium	98.1	97.4	P/P	90 - 110
Vanadium	96.2	97.8	P/P	90 - 110
Zinc	99.4	99.4	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	
DEP SOP: NU-094-1	Color (true)	99.4					0.0118	
	Color (true)	101					0.745	
EPA 180.1 Rev. 2.0	Turbidity	97.3					2.28	
	Turbidity	96.5					9.71	
EPA 200.7 Rev. 4.4	Calcium	101	99.0					1.33
	Iron	108	106	103	104			3.50
	Magnesium	107	104	99.9	104			3.40
	Potassium	100	101	104				1.68
	Sodium	108	105	102				1.86
	Strontium	105	105	102	104			2.63
	Tin	106	104	101	103			2.22
	Titanium	103	102	100	103			1.27
	Vanadium	103	102	100	104			1.46
	Zinc	104	102	100	102			1.77
EPA 200.8 Rev. 5.4	Aluminum	101	98.7	98.4	97.9			0.272
	Antimony	100	104	103	104			1.55
	Arsenic	101	103	101	99.9			2.90
	Barium	102	103	102	104			0.371
	Beryllium	94.6	93.4	89.3	91.3			4.46
	Boron	100	97.4	95.1	96.0			2.20
	Cadmium	96.1	101	101	98.6			0.359
	Chromium	98.1	101	101	102			0.211
	Cobalt	97.0	97.8	96.2	93.2			1.64
	Copper	99.0	98.3	96.4	93.9			1.95
	Lead	93.2	93.5	93.7	94.0			0.230
	Manganese	98.5	101	102	102			0.367
	Molybdenum	97.4	102	101	100			0.511
	Nickel	99.6	101	99.1	96.2			2.14
	Selenium	99.4	100	99.9	97.6			0.527
	Silver	98.1	98.2	98.6	97.7			0.415
	Thallium	98.6	100	101	100			0.728
EPA 300.0 Rev. 2.1	Chloride	98.3	96.3	97.7			0.0828	
	Sulfate	97.9	96.0	98.5			0.349	
EPA 350.1 Rev. 2.0	Ammonia-N	98.2	96.8	97.8				0.948
	Ammonia-N	101	96.6	101				3.72
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	91.2	95.6				3.39
	Kjeldahl Nitrogen	102	100	96.9				2.01
EPA 353.2 Rev. 2.0	NO2NO3-N	94.5	94.1	94.1				0.0
EPA 365.1 Rev. 2.0	Total-P	104	105	102				2.04
	Total-P	103	104	107				2.37
SM 2320 B-2011	Total Alkalinity	101					0.618	
SM 2540 C-2011	TDS						3.06	
SM 2540 D-2011	TSS						7.06	
SM 4500-F- C-2011	Fluoride	101	99.5	99.5				0.0
SM 5310 B-2011	Organic Carbon	97.2	98.1	98.2				0.0271

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2351369, 2351371, 2351373
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2351369, 2351371, 2351373
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2351381, 2351382

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2351381, 2351382
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2351369, 2351371, 2351373
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2351369, 2351371, 2351373
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2351370, 2351372, 2351374
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2351370, 2351372, 2351374
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2351370, 2351372, 2351374
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2351370, 2351372, 2351374
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2351369, 2351371, 2351373
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2351381, 2351382
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2351369, 2351371, 2351373
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2351369, 2351371, 2351373
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2351369, 2351371, 2351373
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2351370, 2351372, 2351374

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	08/22/2022			08/23/2022 15:41	Blanca Fach	2351369
	08/22/2022			08/23/2022 15:47	Blanca Fach	2351373
	08/22/2022			08/23/2022 16:14	Blanca Fach	2351371
EPA 180.1 Rev. 2.0	08/22/2022			08/23/2022 14:17	Chandler E Cox	2351369
	08/22/2022			08/23/2022 14:24	Chandler E Cox	2351371
	08/22/2022			08/23/2022 14:28	Chandler E Cox	2351373
EPA 200.7 Rev. 4.4	08/22/2022	08/26/2022 10:10	Megan Whitefoot	09/07/2022 23:38	McKinley C Carter	2351381
	08/22/2022	08/26/2022 10:10	Megan Whitefoot	09/07/2022 23:46	McKinley C Carter	2351382
EPA 200.8 Rev. 5.4	08/22/2022	08/26/2022 10:10	Megan Whitefoot	08/28/2022 21:04	Emily M Philpot	2351381
	08/22/2022	08/26/2022 10:10	Megan Whitefoot	08/28/2022 21:13	Emily M Philpot	2351382
	08/22/2022	08/26/2022 10:10	Megan Whitefoot	08/31/2022 04:37	Emily M Philpot	2351381
	08/22/2022	08/26/2022 10:10	Megan Whitefoot	08/31/2022 05:25	Emily M Philpot	2351382
	08/22/2022			08/31/2022 21:02	Anna M. Plaviak	2351371
EPA 300.0 Rev. 2.1	08/22/2022			09/01/2022 01:16	Anna M. Plaviak	2351369
	08/22/2022			09/01/2022 01:30	Anna M. Plaviak	2351373
	08/22/2022			08/25/2022 13:22	Ping Hua	2351374
EPA 350.1 Rev. 2.0	08/22/2022			08/25/2022 14:16	Ping Hua	2351372
	08/22/2022			08/29/2022 11:30	Ping Hua	2351370
	08/22/2022	08/25/2022 14:20	Alexandra J Mattheus	08/26/2022 14:48	Alexandra J Mattheus	2351372
EPA 351.2 Rev. 2.0	08/22/2022	08/25/2022 14:20	Alexandra J Mattheus	08/26/2022 15:14	Alexandra J Mattheus	2351370
	08/22/2022	08/25/2022 14:20	Alexandra J Mattheus	08/26/2022 15:16	Alexandra J Mattheus	2351374
	08/22/2022			08/26/2022 11:21	Beverly Y. Sanders	2351370
EPA 353.2 Rev. 2.0	08/22/2022			08/26/2022 11:31	Beverly Y. Sanders	2351372
	08/22/2022			08/26/2022 11:32	Beverly Y. Sanders	2351374
	08/22/2022	08/25/2022 15:50	Simonne.V. Calhoun	08/29/2022 10:31	James L Waggeberby	2351370
EPA 365.1 Rev. 2.0	08/22/2022	08/25/2022 15:50	Simonne.V. Calhoun	08/29/2022 10:32	James L Waggeberby	2351372
	08/22/2022	08/25/2022 15:50	Simonne.V. Calhoun	08/29/2022 15:01	James L Waggeberby	2351374
SM 2320 B-2011	08/22/2022			08/30/2022 06:36	Adam P Silver	2351371
	08/22/2022			08/30/2022 06:46	Adam P Silver	2351369
	08/22/2022			08/30/2022 06:55	Adam P Silver	2351373
SM 2340 B-2011	08/22/2022			09/07/2022 23:38	McKinley C Carter	2351381
	08/22/2022			09/07/2022 23:46	McKinley C Carter	2351382
SM 2540 C-2011	08/22/2022			08/25/2022 13:46	Yijie Li	2351369, 2351371, 2351373
SM 2540 D-2011	08/22/2022			08/25/2022 13:46	Yijie Li	2351369, 2351371, 2351373
SM 4500-F- C-2011	08/22/2022			08/27/2022 00:48	Adam P Silver	2351369
	08/22/2022			08/27/2022 01:01	Adam P Silver	2351371
	08/22/2022			08/27/2022 01:13	Adam P Silver	2351373
SM 5310 B-2011	08/22/2022			08/30/2022 03:33	Khloe J Berg	2351370
	08/22/2022			08/30/2022 03:47	Khloe J Berg	2351372
	08/22/2022			08/30/2022 04:01	Khloe J Berg	2351374