

Chemical Analysis Report

NW-DIST-2018-09-13-01

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

Event Description: **Baker Run**
Request ID: **RQ-2018-09-17-18**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 03-OCT-2018 10:59



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 group are included in this report: 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 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: Ates Creek NE of Bryant Bridge Road above
 Blackwater River**

Collection Date/Time: 09/12/2018 10:50

Field ID: G4NW0332

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2025199	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P351649	
	EPA 300.0 Rev. 2.1	Chloride	3.6		mg Cl/L	P352241	
		Sulfate	0.90		mg SO4/L	P352244	
	SM 2120 B	Color (true)	28		PCU	P351593	
	SM 2320 B-97	Total Alkalinity	12		mg CaCO3/L	P351715	
	SM 2540 C-97	TDS	27		mg/L	P352188	
	SM 2540 D-97	TSS	2	I	mg/L	P351886	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P351719	
2025205	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P351823	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.21		mg N/L	P351811	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.022		mg N/L	P351832	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P351752	
	SM 5310 B-00	Organic Carbon	2.3		mg C/L	P351910	
2025211	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P351615	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: SWEETWATER CREEK OFF DIRT

Collection Date/Time: 09/12/2018 11:05

Field ID: G4NW0419

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2025200	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P351649	
	EPA 300.0 Rev. 2.1	Chloride	2.6		mg Cl/L	P352241	
		Sulfate	0.61		mg SO4/L	P352244	
	SM 2120 B	Color (true)	51		PCU	P351593	
	SM 2320 B-97	Total Alkalinity	0.82	I	mg CaCO3/L	P351715	
	SM 2540 C-97	TDS	17	I	mg/L	P352188	
	SM 2540 D-97	TSS	4	I	mg/L	P351886	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P351719	
2025206	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P351823	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.19	I	mg N/L	P351919	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.072		mg N/L	P351832	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P351752	
	SM 5310 B-00	Organic Carbon	4.8		mg C/L	P351910	
2025212	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P351616	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: BEAR CREEK @ FOREST RD 0.7

Collection Date/Time: 09/12/2018 11:25

Field ID: G4NW0380

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2025201	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P351649	
	EPA 300.0 Rev. 2.1	Chloride	2.4		mg Cl/L	P352241	
		Sulfate	0.28	I	mg SO4/L	P352244	
	SM 2120 B	Color (true)	55		PCU	P351593	
	SM 2320 B-97	Total Alkalinity	6.2		mg CaCO3/L	P351715	
	SM 2540 C-97	TDS	23	I	mg/L	P352188	
	SM 2540 D-97	TSS	2	I	mg/L	P351886	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P351719	
2025207	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P351823	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24		mg N/L	P351919	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.023		mg N/L	P351832	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P351752	
	SM 5310 B-00	Organic Carbon	4.0		mg C/L	P352091	
2025213	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P351616	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Bear Lake (Center)

Collection Date/Time: 09/12/2018 12:00

Field ID: G4NW0361

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2025202	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P351649	
	EPA 300.0 Rev. 2.1	Chloride	2.3		mg Cl/L	P352241	
		Sulfate	0.20	U	mg SO4/L	P352244	
	SM 2120 B	Color (true)	21		PCU	P351594	
	SM 2320 B-97	Total Alkalinity	5.2		mg CaCO3/L	P351715	
	SM 2540 C-97	TDS	21	I	mg/L	P352189	
	SM 2540 D-97	TSS	2	I	mg/L	P351886	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P351719	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P351823	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.39		mg N/L	P351919	
2025208	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P351832	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P351753	
	SM 5310 B-00	Organic Carbon	5.6		mg C/L	P352091	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P351616	
	dissolved						

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: PANTHER CREEK ABOVE SHER

Collection Date/Time: 09/12/2018 12:30

Field ID: G4NW0417

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2025203	EPA 180.1 Rev. 2.0	Turbidity	4.9		NTU	P351649	
	EPA 300.0 Rev. 2.1	Chloride	2.9		mg Cl/L	P352241	
		Sulfate	0.84		mg SO4/L	P352244	
	SM 2120 B	Color (true)	48		PCU	P351594	
	SM 2320 B-97	Total Alkalinity	1.2	I	mg CaCO3/L	P351715	
	SM 2540 C-97	TDS	23	I	mg/L	P352189	
	SM 2540 D-97	TSS	4	I	mg/L	P351886	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P351719	
2025209	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P351824	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.23		mg N/L	P351919	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P351832	
	EPA 365.1 Rev. 2.0	Total-P	0.008		mg P/L	P351753	
	SM 5310 B-00	Organic Carbon	4.6		mg C/L	P352091	
2025215	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P351616	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: BIG HORSE CREEK UPSTREAM

Collection Date/Time: 09/12/2018 13:00

Field ID: G4NW0298

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2025204	EPA 180.1 Rev. 2.0	Turbidity	5.6	A	NTU	P351649	
	EPA 300.0 Rev. 2.1	Chloride	3.4		mg Cl/L	P352242	
		Sulfate	0.85		mg SO4/L	P352245	
	SM 2120 B	Color (true)	45		PCU	P351594	
	SM 2320 B-97	Total Alkalinity	2.9		mg CaCO3/L	P351715	
	SM 2540 C-97	TDS	29		mg/L	P352189	
	SM 2540 D-97	TSS	8	I	mg/L	P351886	
	SM 4500 F-C-97	Fluoride	0.035	I	mg F/L	P351719	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P351824	
2025210	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.22		mg N/L	P352140	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.083		mg N/L	P351833	
	EPA 365.1 Rev. 2.0	Total-P	0.036		mg P/L	P351753	
	SM 5310 B-00	Organic Carbon	3.8		mg C/L	P352091	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.015		mg P/L	P351618	
2025216	SM 5310 B-00	Organic Carbon	3.8		mg C/L	P352091	

Ref. Method and Comment:

SM 2540 D-97: 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: P351649

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352241

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352242

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352244

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352245

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351823

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351824

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351811

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351919

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352140

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351832

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351833

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351752

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351753

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351615

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351616

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351618

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

Reference Method: SM 2120 B
Batch ID: P351593

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B
Batch ID: P351594

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P351715

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

Reference Method: SM 2540 C-97
Batch ID: P352188

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P352189

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P351886

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P351719

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P351910

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

Reference Method: SM 5310 B-00
Batch ID: P352091

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: P352241

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352242

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352244

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352245

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351823

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351824

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351811

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351919

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: P352140

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351832

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351833

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351752

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351753

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351615

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351616

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351618

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

Reference Method: SM 2120 B
Batch ID: P351593

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	96.6		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P351594

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	96.3		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P351715

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P351719

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.1		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P351910

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

Reference Method: SM 5310 B-00
Batch ID: P352091

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352241

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025038	Chloride	97.7		P	90 - 110
2025199	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352242

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025287	Chloride	95.6		P	90 - 110
2025344	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352244

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025038	Sulfate	98.2		P	90 - 110
2025199	Sulfate	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352245

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025287	Sulfate	98.0		P	90 - 110
2025344	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351823

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025139	Ammonia-N	102	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351824

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025209	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351811

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025107	Kjeldahl Nitrogen	103	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351919

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025207	Kjeldahl Nitrogen	107	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352140

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352140

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2026230	Kjeldahl Nitrogen	109	111	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351832

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025174	NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351833

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025210	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351752

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025179	Total-P	100	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351753

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025208	Total-P	96.8	97.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351615

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025042	O-Phosphate-P	96.9	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351616

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025212	O-Phosphate-P	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351618

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025216	O-Phosphate-P	98.7	99.4	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P351719

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025258	Fluoride	99.3	99.3	P/P	91 - 105

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P351910

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025040	Organic Carbon	102		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P352091

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025207	Organic Carbon	98.7	98.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P351649

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025204	Turbidity	6.46	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352241

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025038	Chloride	0.231	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352242

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025287	Chloride	0.110	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352244

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025038	Sulfate	0.0520	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P352245

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025287	Sulfate	0.0938	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351823

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025139	Ammonia-N	1.29	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351824

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025209	Ammonia-N	0.805	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351811

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025107	Kjeldahl Nitrogen	0.329	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351919

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025207	Kjeldahl Nitrogen	4.67	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352140

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026230	Kjeldahl Nitrogen	1.09	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351832

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025174	NO2NO3-N	0.264	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351833

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025210	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351752

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025179	Total-P	1.62	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351753

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025208	Total-P	0.567	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351615

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025042	O-Phosphate-P	0.720	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351616

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025212	O-Phosphate-P	0.686	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351618

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025216	O-Phosphate-P	0.614	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P351593

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025173	Color (true)	1.06	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P351594

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025258	Color (true)	1.15	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P351715

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025258	Total Alkalinity	0.538	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P352188

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025169	TDS	3.14	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P352189

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025340	TDS	0.343	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P351719

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025258	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P351910

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025040	Organic Carbon	0.610	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P352091

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025207	Organic Carbon	0.0841	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A86461

Included Lab Sample IDs: 2025199, 2025200, 2025201, 2025202, 2025203, 2025204

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.7	99.0	P/P	90 - 115
Color (true)	99.0	100	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A86464

Included Lab Sample IDs: 2025211, 2025212, 2025213, 2025214, 2025215, 2025216

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.5	97.3	P/P	90 - 110
O-Phosphate-P	97.5	97.5	P/P	90 - 110
O-Phosphate-P	98.5	98.6	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A86479

Included Lab Sample IDs: 2025199, 2025200, 2025201, 2025202, 2025203, 2025204

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	102	P/P	95 - 105

Reference Method: SM 2320 B-97

Run ID: A86512

Included Lab Sample IDs: 2025199, 2025200, 2025201, 2025202, 2025203, 2025204

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A86512

Included Lab Sample IDs: 2025199, 2025200, 2025201, 2025202, 2025203, 2025204

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86545

Included Lab Sample IDs: 2025205, 2025206, 2025207, 2025208, 2025209, 2025210

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.8	98.2	P/P	90 - 110
Total-P	98.2	97.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A86557

Included Lab Sample IDs: 2025205, 2025206, 2025207, 2025208, 2025209, 2025210

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	104	P/P	90 - 110
Ammonia-N	104	102	P/P	90 - 110
Ammonia-N	104	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A86558

Included Lab Sample IDs: 2025205, 2025206, 2025207, 2025208, 2025209, 2025210

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A86582

Included Lab Sample IDs: 2025205

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.6	102	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A86587

Included Lab Sample IDs: 2025205, 2025206

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.8	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A86619

Included Lab Sample IDs: 2025206, 2025207, 2025208, 2025209

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.3	103	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A86647

Included Lab Sample IDs: 2025207, 2025208, 2025209, 2025210

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	97.4	P/P	90 - 110
Organic Carbon	98.2	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A86698

Included Lab Sample IDs: 2025210

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.1	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A86718

Included Lab Sample IDs: 2025199, 2025200, 2025201, 2025202, 2025203, 2025204

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

Quality Assurance Report

Calibration Verification

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 180.1 Rev. 2.0	Turbidity				6.46	
EPA 300.0 Rev. 2.1	Chloride	101	97.7	102	0.231	
	Chloride	101	95.6	100	0.110	
	Sulfate	100	98.2	100	0.0520	
	Sulfate	101	98.0	100	0.0938	
EPA 350.1 Rev. 2.0	Ammonia-N	101	102	104		1.29
	Ammonia-N	103	102	101		0.805
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	103	102		0.329
	Kjeldahl Nitrogen	107	107	102		4.67
	Kjeldahl Nitrogen	103	109	111		1.09
EPA 353.2 Rev. 2.0	NO2NO3-N	102	99.5	100		0.264
	NO2NO3-N	102	102	102		0.0
EPA 365.1 Rev. 2.0	Total-P	98.0	100	98.2		1.62
	Total-P	101	96.8	97.4		0.567
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.2	96.9	97.6		0.720
	O-Phosphate-P	100	102	102		0.686
	O-Phosphate-P	98.4	98.7	99.4		0.614
SM 2120 B	Color (true)	96.6			1.06	
	Color (true)	96.3			1.15	
SM 2320 B-97	Total Alkalinity	103			0.538	
SM 2540 C-97	TDS				3.14	
	TDS				0.343	
SM 4500 F-C-97	Fluoride	99.1	99.3	99.3		0.0
SM 5310 B-00	Organic Carbon	101	102			0.610
	Organic Carbon	99.2	98.7	98.8		0.0841

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2025199, 2025200, 2025201, 2025202, 2025203, 2025204
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2025199, 2025200, 2025201, 2025202, 2025203, 2025204
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2025199, 2025200, 2025201, 2025202, 2025203, 2025204
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2025205, 2025206, 2025207, 2025208, 2025209, 2025210
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2025205, 2025206, 2025207, 2025208, 2025209, 2025210
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2025205, 2025206, 2025207, 2025208, 2025209, 2025210
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2025205, 2025206, 2025207, 2025208, 2025209, 2025210
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2025211, 2025212, 2025213, 2025214, 2025215, 2025216
SM 2120 B / E31780	True Color measured at 450 nm	2025199, 2025200, 2025201, 2025202, 2025203, 2025204
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2025199, 2025200, 2025201, 2025202, 2025203, 2025204
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2025199, 2025200, 2025201, 2025202, 2025203, 2025204
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2025199, 2025200, 2025201, 2025202, 2025203, 2025204
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2025199, 2025200, 2025201, 2025202, 2025203, 2025204

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2025205, 2025206, 2025207, 2025208, 2025209, 2025210

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	09/13/2018			09/13/2018 16:38	Megan Treadwell	2025199, 2025200, 2025201, 2025202, 2025203, 2025204
EPA 300.0 Rev. 2.1	09/13/2018			09/24/2018 19:47	Lipi Saha	2025199
	09/13/2018			09/24/2018 22:24	Lipi Saha	2025200
	09/13/2018			09/24/2018 22:36	Lipi Saha	2025201
	09/13/2018			09/24/2018 22:48	Lipi Saha	2025202
	09/13/2018			09/24/2018 23:00	Lipi Saha	2025203
	09/13/2018			09/25/2018 03:14	Lipi Saha	2025204
EPA 350.1 Rev. 2.0	09/13/2018			09/18/2018 13:07	Ping Hua	2025205
	09/13/2018			09/18/2018 13:15	Ping Hua	2025206
	09/13/2018			09/18/2018 13:16	Ping Hua	2025207
	09/13/2018			09/18/2018 13:18	Ping Hua	2025208
	09/13/2018			09/18/2018 13:24	Ping Hua	2025209
	09/13/2018			09/18/2018 13:34	Ping Hua	2025210
EPA 351.2 Rev. 2.0	09/13/2018	09/18/2018 14:10	Adrian Shelby	09/19/2018 13:53	Joseph Suarez	2025205
	09/13/2018	09/19/2018 15:55	Adrian Shelby	09/20/2018 15:24	Joseph Suarez	2025206
	09/13/2018	09/19/2018 15:55	Adrian Shelby	09/20/2018 15:26	Joseph Suarez	2025207
	09/13/2018	09/19/2018 15:55	Adrian Shelby	09/20/2018 15:30	Joseph Suarez	2025208
	09/13/2018	09/19/2018 15:55	Adrian Shelby	09/20/2018 15:32	Joseph Suarez	2025209
	09/13/2018	09/24/2018 11:40	Adrian Shelby	09/25/2018 08:54	Joseph Suarez	2025210
EPA 353.2 Rev. 2.0	09/13/2018			09/18/2018 14:41	Lauren Bottorf	2025205
	09/13/2018			09/18/2018 14:42	Lauren Bottorf	2025206
	09/13/2018			09/18/2018 14:43	Lauren Bottorf	2025207
	09/13/2018			09/18/2018 14:44	Lauren Bottorf	2025208
	09/13/2018			09/18/2018 14:45	Lauren Bottorf	2025209
	09/13/2018			09/18/2018 14:53	Lauren Bottorf	2025210
EPA 365.1 Rev. 2.0	09/13/2018	09/17/2018 13:00	Sima Feizi	09/18/2018 10:52	Beverly Y. Sanders	2025205
	09/13/2018	09/17/2018 13:00	Sima Feizi	09/18/2018 10:53	Beverly Y. Sanders	2025206
	09/13/2018	09/17/2018 13:00	Sima Feizi	09/18/2018 10:54	Beverly Y. Sanders	2025207
	09/13/2018	09/17/2018 13:00	Sima Feizi	09/18/2018 11:04	Beverly Y. Sanders	2025208
	09/13/2018	09/17/2018 13:00	Sima Feizi	09/18/2018 11:05	Beverly Y. Sanders	2025209, 2025210
EPA 365.1 Rev. 2.0 dissolved	09/13/2018			09/13/2018 15:23	Julia Storbeck	2025212
	09/13/2018			09/13/2018 16:12	Julia Storbeck	2025211
	09/13/2018			09/13/2018 16:13	Julia Storbeck	2025213, 2025214
	09/13/2018			09/13/2018 16:14	Julia Storbeck	2025215
	09/13/2018			09/13/2018 16:23	Julia Storbeck	2025216
SM 2120 B	09/13/2018			09/13/2018 14:24	DeAsia Armster	2025199
	09/13/2018			09/13/2018 14:25	DeAsia Armster	2025200
	09/13/2018			09/13/2018 14:26	DeAsia Armster	2025201
	09/13/2018			09/13/2018 14:29	DeAsia Armster	2025202

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2120 B	09/13/2018			09/13/2018 14:30	DeAsia Armster	2025203
	09/13/2018			09/13/2018 14:31	DeAsia Armster	2025204
SM 2320 B-97	09/13/2018			09/15/2018 09:19	Dale L. Simmons	2025199
	09/13/2018			09/15/2018 09:28	Dale L. Simmons	2025200
	09/13/2018			09/15/2018 09:40	Dale L. Simmons	2025201
	09/13/2018			09/15/2018 09:51	Dale L. Simmons	2025202
	09/13/2018			09/15/2018 10:02	Dale L. Simmons	2025203
	09/13/2018			09/15/2018 10:12	Dale L. Simmons	2025204
	09/13/2018			09/17/2018 11:30	DeAsia Armster	2025199, 2025200, 2025201, 2025202, 2025203, 2025204
SM 2540 C-97	09/13/2018					
SM 2540 D-97	09/13/2018			09/17/2018 11:30	DeAsia Armster	2025199, 2025200, 2025201, 2025202, 2025203, 2025204
SM 4500 F-C-97	09/13/2018			09/15/2018 09:19	Dale L. Simmons	2025199
	09/13/2018			09/15/2018 09:28	Dale L. Simmons	2025200
	09/13/2018			09/15/2018 09:40	Dale L. Simmons	2025201
	09/13/2018			09/15/2018 09:51	Dale L. Simmons	2025202
	09/13/2018			09/15/2018 10:02	Dale L. Simmons	2025203
	09/13/2018			09/15/2018 10:12	Dale L. Simmons	2025204
	09/13/2018			09/19/2018 11:58	Megan Treadwell	2025205
SM 5310 B-00	09/13/2018			09/19/2018 12:10	Megan Treadwell	2025206
	09/13/2018			09/20/2018 06:49	Megan Treadwell	2025207
	09/13/2018			09/20/2018 07:41	Megan Treadwell	2025208
	09/13/2018			09/20/2018 09:20	Megan Treadwell	2025209
	09/13/2018			09/20/2018 09:32	Megan Treadwell	2025210