

Chemical Analysis Report

CEN-DIST-2016-06-10-01

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

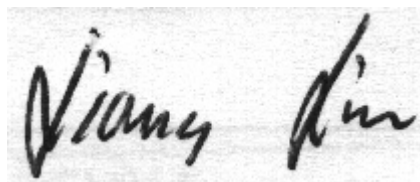
Event Description: **Lake Reams+D&B**
Request ID: **RQ-2016-06-06-48**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 06-JUL-2016 12:21

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored background.

Case Narrative

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

Results for the following analytical groups are included in this report: 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 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: Lake Reams @ NE of Center

Collection Date/Time: 06/09/2016 10:36

Field ID: G4CE0121

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1807297	EPA 180.1 Rev. 2.0	Turbidity	1.6	A	NTU	P306016	
	EPA 300.0 Rev. 2.1	Chloride	28		mg Cl/L	P306581	
		Sulfate	11		mg SO4/L	P306583	
	SM 2120 B	Color (true)	250		PCU	P305971	
	SM 2320 B-97	Total Alkalinity	5.7		mg CaCO3/L	P306170	
	SM 2540 C-97	TDS	118		mg/L	P306552	
	SM 2540 D-97	TSS	3	I	mg/L	P306464	
	SM 4500 F-C-97	Fluoride	0.062	I	mg F/L	P306174	
1807302	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P306274	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.79		mg N/L	P306107	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P306162	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P306227	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P306389	
1807307	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P305999	
1807317	EPA 200.7 Rev. 4.4	Calcium	4.89		mg/L	P306117	
		Iron	200		ug/L	P306117	
		Magnesium	4.20		mg/L	P306117	
		Potassium	6.7		mg/L	P306117	
		Sodium	14.4		mg/L	P306117	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P306117	
		Arsenic	0.33		ug/L	P306117	
		Cadmium	0.020	U	ug/L	P306117	
		Chromium	0.27		ug/L	P306117	
		Copper	0.58		ug/L	P306117	
		Lead	0.25		ug/L	P306117	
		Nickel	0.24		ug/L	P306117	
		Silver	0.0050	U	ug/L	P306117	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Lake Reams @ SW of Center

Collection Date/Time: 06/09/2016 10:46

Field ID: G4CE0124

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1807298	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P306017	
	EPA 300.0 Rev. 2.1	Chloride	28		mg Cl/L	P306581	
		Sulfate	11		mg SO4/L	P306583	
	SM 2120 B	Color (true)	250		PCU	P305971	
	SM 2320 B-97	Total Alkalinity	5.4		mg CaCO3/L	P306170	
	SM 2540 C-97	TDS	114		mg/L	P306552	
	SM 2540 D-97	TSS	3	I	mg/L	P306464	
	SM 4500 F-C-97	Fluoride	0.066	I	mg F/L	P306174	
1807303	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P306274	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.79		mg N/L	P306107	MS

Field ID: G4CE0124

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1807303	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P306162	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P306227	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P306389	
1807308	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P305999	
1807318	EPA 200.7 Rev. 4.4	Calcium	4.77		mg/L	P306117	
		Iron	190		ug/L	P306117	
		Magnesium	4.11		mg/L	P306117	
		Potassium	6.7		mg/L	P306117	
		Sodium	14.3		mg/L	P306117	
		Zinc	5.0	U	ug/L	P306117	
	EPA 200.8 Rev. 5.4	Arsenic	0.33		ug/L	P306117	
		Cadmium	0.020	U	ug/L	P306117	
		Chromium	0.27		ug/L	P306117	
		Copper	0.63		ug/L	P306117	
		Lead	0.24		ug/L	P306117	
		Nickel	0.23		ug/L	P306117	
		Silver	0.0050	U	ug/L	P306117	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Lake Reams @ NW of Center

Collection Date/Time: 06/09/2016 10:54

Field ID: G4CE0122

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1807299	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P306017	
	EPA 300.0 Rev. 2.1	Chloride	28		mg Cl/L	P306581	
		Sulfate	11		mg SO4/L	P306583	
		Color (true)	250		PCU	P305973	
	SM 2320 B-97	Total Alkalinity	5.4		mg CaCO3/L	P306170	
	SM 2540 C-97	TDS	113		mg/L	P306552	
	SM 2540 D-97	TSS	3	I	mg/L	P306464	
	SM 4500 F-C-97	Fluoride	0.066	I	mg F/L	P306174	
1807304	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P306274	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P306107	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P306162	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P306227	
	SM 5310 B-00	Organic Carbon	21		mg C/L	P306389	
1807309	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P305999	
1807319	EPA 200.7 Rev. 4.4	Calcium	4.96		mg/L	P306117	
		Iron	200		ug/L	P306117	
		Magnesium	4.30		mg/L	P306117	
		Potassium	6.9		mg/L	P306117	
		Sodium	14.8		mg/L	P306117	
		Zinc	5.0	U	ug/L	P306117	
	EPA 200.8 Rev. 5.4	Arsenic	0.36		ug/L	P306117	

Field ID: G4CE0122

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1807319	EPA 200.8 Rev. 5.4	Cadmium	0.020	U	ug/L	P306117	
		Chromium	0.28		ug/L	P306117	
		Copper	0.62		ug/L	P306117	
		Lead	0.25		ug/L	P306117	
		Nickel	0.23		ug/L	P306117	
		Silver	0.0050	U	ug/L	P306117	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Lake Reams @ SE of Center

Collection Date/Time: 06/09/2016 11:03

Field ID: G4CE0125

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1807300	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P306017	
	EPA 300.0 Rev. 2.1	Chloride	28		mg Cl/L	P306581	
		Sulfate	11		mg SO4/L	P306583	
	SM 2120 B	Color (true)	250		PCU	P305972	
	SM 2320 B-97	Total Alkalinity	5.4		mg CaCO3/L	P306170	
	SM 2540 C-97	TDS	121	A	mg/L	P306552	
	SM 2540 D-97	TSS	3	I	mg/L	P306464	
	SM 4500 F-C-97	Fluoride	0.066	I	mg F/L	P306174	
1807305	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P306274	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P306107	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P306162	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P306295	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P306389	
1807310	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P305999	
1807320	EPA 200.7 Rev. 4.4	Calcium	4.92		mg/L	P306117	
		Iron	200		ug/L	P306117	
		Magnesium	4.21		mg/L	P306117	
		Potassium	6.8		mg/L	P306117	
		Sodium	14.8		mg/L	P306117	
		Zinc	5.0	U	ug/L	P306117	
	EPA 200.8 Rev. 5.4	Arsenic	0.35		ug/L	P306117	
		Cadmium	0.020	U	ug/L	P306117	
		Chromium	0.29		ug/L	P306117	
		Copper	0.61		ug/L	P306117	
		Lead	0.26		ug/L	P306117	
		Nickel	0.27		ug/L	P306117	
		Silver	0.0050	U	ug/L	P306117	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Field_Blank

Collection Date/Time: 06/09/2016 11:15

Field ID: Field_Blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1807301	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P306017	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P306581	
		Sulfate	0.20	U	mg SO4/L	P306583	
	SM 2120 B	Color (true)	2.5	U	PCU	P305973	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P306373	
	SM 2540 C-97	TDS	15	U	mg/L	P306552	
	SM 2540 D-97	TSS	2	U	mg/L	P306464	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P306174	
1807306	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P306274	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P306107	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P306162	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P306295	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P306389	
1807311	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P305999	
1807321	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P306117	
		Iron	30	U	ug/L	P306117	
		Magnesium	0.040	U	mg/L	P306117	
		Potassium	0.30	U	mg/L	P306117	
		Sodium	0.50	U	mg/L	P306117	
		Zinc	5.0	U	ug/L	P306117	
	EPA 200.8 Rev. 5.4	Arsenic	0.050	U	ug/L	P306117	
		Cadmium	0.020	U	ug/L	P306117	
		Chromium	0.050	U	ug/L	P306117	
		Copper	0.10	U	ug/L	P306117	
		Lead	0.050	U	ug/L	P306117	
		Nickel	0.050	U	ug/L	P306117	
		Silver	0.0050	U	ug/L	P306117	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P306016

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P306017

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P306117

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P306117

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
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P306117

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.050	U	ug/L
Copper	0.10	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.050	U	ug/L
Silver	0.0050	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306581

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306583

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P306274

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P306107

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306162

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306227

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306295

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305999

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

Reference Method: SM 2120 B
Batch ID: P305971

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P305972

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P305973

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P306170

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

Reference Method: SM 2320 B-97
Batch ID: P306373

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

Reference Method: SM 2540 C-97
Batch ID: P306552

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
 Batch ID: P306464

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
 Batch ID: P306174

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P306389

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P306117

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	105		P	85 - 115
Iron	107		P	85 - 115
Magnesium	105		P	85 - 115
Potassium	104		P	85 - 115
Sodium	103		P	85 - 115
Zinc	99.7		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P306117

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	98.7		P	85 - 115
Cadmium	97.5		P	85 - 115
Chromium	96.5		P	85 - 115
Copper	98.5		P	85 - 115
Lead	96.2		P	85 - 115
Nickel	99.3		P	85 - 115
Silver	98.8		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P306581

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P306583

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	90.8		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P306274

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P306107

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306162

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: P306227

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306295

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305999

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

Reference Method: SM 2320 B-97
Batch ID: P306170

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 105

Reference Method: SM 2320 B-97
Batch ID: P306373

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

Reference Method: SM 4500 F-C-97
Batch ID: P306174

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.0		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
 Batch ID: P306389

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P306117

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1807077	Calcium	110		P	80 - 120
1807077	Iron	110	109	P/P	80 - 120
1807077	Magnesium	108		P	80 - 120
1807077	Potassium	107		P	80 - 120
1807077	Sodium	110		P	80 - 120
1807077	Zinc	104	104	P/P	80 - 120
1807319	Calcium	109		P	80 - 120
1807319	Iron	112		P	80 - 120
1807319	Magnesium	109		P	80 - 120
1807319	Potassium	104		P	80 - 120
1807319	Sodium	104		P	80 - 120
1807319	Zinc	109		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P306117

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1807077	Arsenic	103	103	P/P	80 - 120
1807077	Cadmium	103	99.3	P/P	80 - 120
1807077	Chromium	98.3	99.4	P/P	80 - 120
1807077	Copper	99.5	99.0	P/P	80 - 120
1807077	Lead	99.1	98.8	P/P	80 - 120
1807077	Nickel	98.2	98.5	P/P	80 - 120
1807077	Silver	99.8	100	P/P	80 - 120
1807319	Arsenic	100		P	80 - 120
1807319	Cadmium	104		P	80 - 120
1807319	Chromium	99.9		P	80 - 120
1807319	Copper	98.5		P	80 - 120
1807319	Lead	99.0		P	80 - 120
1807319	Nickel	98.1		P	80 - 120
1807319	Silver	101		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P306581

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1807297	Chloride	96.2		P	90 - 110
1807327	Chloride	97.1		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306583

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1807297	Sulfate	97.2		P	90 - 110
1807327	Sulfate	96.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P306274

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1807250	Ammonia-N	100	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P306107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1807253	Kjeldahl Nitrogen	99.5	85.6	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306162

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1807305	NO2NO3-N	97.0	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306227

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1806762	Total-P	97.8	99.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306295

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1807347	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305999

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1807355	O-Phosphate-P	98.8	99.0	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P306174

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1807236	Fluoride	96.8	97.4	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P306389

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1807249	Organic Carbon	100	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P306016

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807297	Turbidity	4.26	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P306017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807327	Turbidity	9.63	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P306117

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807077	Calcium	1.02	Spike	P	0 - 20
1807077	Iron	0.488	Spike	P	0 - 20
1807077	Magnesium	1.14	Spike	P	0 - 20
1807077	Potassium	0.721	Spike	P	0 - 20
1807077	Sodium	0.874	Spike	P	0 - 20
1807077	Zinc	0.398	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P306117

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807077	Arsenic	0.139	Spike	P	0 - 20
1807077	Cadmium	3.93	Spike	P	0 - 20
1807077	Chromium	1.04	Spike	P	0 - 20
1807077	Copper	0.564	Spike	P	0 - 20
1807077	Lead	0.262	Spike	P	0 - 20
1807077	Nickel	0.310	Spike	P	0 - 20
1807077	Silver	0.344	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306581

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807327	Chloride	0.257	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306583

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807327	Sulfate	0.961	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P306274

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807250	Ammonia-N	1.02	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P306107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807253	Kjeldahl Nitrogen	15.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306162

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807305	NO2NO3-N	2.48	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306227

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1806762	Total-P	1.42	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306295

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807347	Total-P	0.154	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305999

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807355	O-Phosphate-P	0.202	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P305971

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807437	Color (true)	0.894	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P305972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807343	Color (true)	2.31	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P305973

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807410	Color (true)	0.403	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P306170

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807236	Total Alkalinity	0.311	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P306373

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1808201	Total Alkalinity	0.169	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P306552

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807300	TDS	4.96	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P306174

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807236	Fluoride	0.479	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P306389

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1807249	Organic Carbon	1.49	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: A69967
Included Lab Sample IDs: 1807297, 1807298, 1807299, 1807300, 1807301

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	99.2	P/P	90 - 115
Color (true)	100	100	P/P	90 - 115

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A69967

Included Lab Sample IDs: 1807297, 1807298, 1807299, 1807300, 1807301

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.5	102	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A69977

Included Lab Sample IDs: 1807307, 1807308, 1807309, 1807310, 1807311

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	99.9	P/P	90 - 110
O-Phosphate-P	99.9	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A69982

Included Lab Sample IDs: 1807297, 1807298, 1807299, 1807300, 1807301

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	98.5	P/P	95 - 105
Turbidity	99.5	99.5	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A70020

Included Lab Sample IDs: 1807302, 1807303, 1807304, 1807305, 1807306

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

Reference Method: SM 2320 B-97

Run ID: A70028

Included Lab Sample IDs: 1807297, 1807298, 1807299, 1807300

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

Reference Method: SM 4500 F-C-97

Run ID: A70028

Included Lab Sample IDs: 1807297, 1807298, 1807299, 1807300, 1807301

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	99.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A70045

Included Lab Sample IDs: 1807297, 1807298, 1807299, 1807300, 1807301

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.6	P/P	90 - 110
Chloride	100	99.9	P/P	90 - 110
Chloride	99.6	100	P/P	90 - 110
Sulfate	94.8	97.8	P/P	90 - 110
Sulfate	95.2	97.8	P/P	90 - 110
Sulfate	97.8	94.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A70068

Included Lab Sample IDs: 1807302, 1807303, 1807304, 1807305, 1807306

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A70072

Included Lab Sample IDs: 1807317, 1807318, 1807319, 1807320, 1807321

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	103	P/P	90 - 110
Calcium	102	101	P/P	90 - 110
Iron	103	102	P/P	90 - 110
Iron	103	104	P/P	90 - 110
Magnesium	104	105	P/P	90 - 110
Magnesium	104	101	P/P	90 - 110
Potassium	100	99.8	P/P	90 - 110
Potassium	101	101	P/P	90 - 110
Sodium	100	100	P/P	90 - 110
Sodium	101	101	P/P	90 - 110
Zinc	101	99.7	P/P	90 - 110
Zinc	102	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A70076

Included Lab Sample IDs: 1807302, 1807303, 1807304, 1807305, 1807306

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.6	94.9	P/P	90 - 110
Kjeldahl Nitrogen	98.8	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A70093

Included Lab Sample IDs: 1807302, 1807303, 1807304

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A70096

Included Lab Sample IDs: 1807317, 1807318, 1807319, 1807320, 1807321

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	101	99.9	P/P	90 - 110
Arsenic	98.7	96.9	P/P	90 - 110
Arsenic	99.9	98.7	P/P	90 - 110
Cadmium	96.6	98.0	P/P	90 - 110
Cadmium	98.0	98.4	P/P	90 - 110
Cadmium	98.4	98.6	P/P	90 - 110
Chromium	97.1	97.5	P/P	90 - 110
Chromium	97.5	98.0	P/P	90 - 110
Chromium	98.0	98.6	P/P	90 - 110
Copper	100	99.4	P/P	90 - 110
Copper	102	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A70096

Included Lab Sample IDs: 1807317, 1807318, 1807319, 1807320, 1807321

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	99.4	96.1	P/P	90 - 110
Lead	94.2	95.3	P/P	90 - 110
Lead	94.9	93.8	P/P	90 - 110
Lead	95.3	94.9	P/P	90 - 110
Nickel	101	99.4	P/P	90 - 110
Nickel	98.8	96.6	P/P	90 - 110
Nickel	99.4	98.8	P/P	90 - 110
Silver	97.0	98.9	P/P	90 - 110
Silver	97.8	97.3	P/P	90 - 110
Silver	98.9	97.8	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A70097

Included Lab Sample IDs: 1807301

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

Reference Method: SM 5310 B-00

Run ID: A70101

Included Lab Sample IDs: 1807302, 1807303, 1807304, 1807305, 1807306

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	98.1	P/P	90 - 110
Organic Carbon	98.1	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A70120

Included Lab Sample IDs: 1807305, 1807306

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.8	P/P	90 - 110
Total-P	99.8	99.5	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				4.26	
	Turbidity				9.63	
EPA 200.7 Rev. 4.4	Calcium	105	110	109		1.02
	Iron	107	110	109	112	0.488
	Magnesium	105	108	109		1.14
	Potassium	104	107	104		0.721
	Sodium	103	110	104		0.874

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision	MS
			LCS	SMP	MS		
EPA 200.7 Rev. 4.4	Zinc	99.7	104	104	109		0.398
EPA 200.8 Rev. 5.4	Arsenic	98.7	103	103	100		0.139
	Cadmium	97.5	103	99.3	104		3.93
	Chromium	96.5	98.3	99.4	99.9		1.04
	Copper	98.5	99.5	99.0	98.5		0.564
	Lead	96.2	99.1	98.8	99.0		0.262
	Nickel	99.3	98.2	98.5	98.1		0.310
	Silver	98.8	99.8	100	101		0.344
EPA 300.0 Rev. 2.1	Chloride	97.7	97.1	96.2		0.257	
	Sulfate	90.8	96.6	97.2		0.961	
EPA 350.1 Rev. 2.0	Ammonia-N	99.5	100	99.2			1.02
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	99.5	85.6			15.0
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	97.0	99.5			2.48
EPA 365.1 Rev. 2.0	Total-P	99.6	97.8	99.3			1.42
	Total-P	103	104	104			0.154
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	98.8	99.0			0.202
SM 2120 B	Color (true)					0.894	
	Color (true)					2.31	
	Color (true)					0.403	
SM 2320 B-97	Total Alkalinity	104				0.311	
	Total Alkalinity	102				0.169	
SM 2540 C-97	TDS					4.96	
SM 4500 F-C-97	Fluoride	97.0	96.8	97.4			0.479
SM 5310 B-00	Organic Carbon	101	100	102			1.49

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1807297, 1807298, 1807299, 1807300, 1807301
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1807317, 1807318, 1807319, 1807320, 1807321
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1807317, 1807318, 1807319, 1807320, 1807321
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1807297, 1807298, 1807299, 1807300, 1807301
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1807297, 1807298, 1807299, 1807300, 1807301
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1807302, 1807303, 1807304, 1807305, 1807306
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1807302, 1807303, 1807304, 1807305, 1807306
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1807302, 1807303, 1807304, 1807305, 1807306
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1807302, 1807303, 1807304, 1807305, 1807306
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1807307, 1807308, 1807309, 1807310, 1807311
SM 2120 B / E31780	True Color measured at 450 nm	1807297, 1807298, 1807299, 1807300, 1807301
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1807297, 1807298, 1807299, 1807300, 1807301
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1807297, 1807298, 1807299, 1807300, 1807301
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1807297, 1807298, 1807299, 1807300, 1807301

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1807297, 1807298, 1807299, 1807300, 1807301
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1807302, 1807303, 1807304, 1807305, 1807306

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	06/10/2016			06/10/2016 15:18	Rochelle Y Jackson	1807297, 1807298, 1807299, 1807300, 1807301
EPA 200.7 Rev. 4.4	06/10/2016	06/14/2016	Elliott D. Healy	06/15/2016	Joshua Ayres	1807317, 1807318, 1807319, 1807320, 1807321
EPA 200.8 Rev. 5.4	06/10/2016	06/14/2016	Elliott D. Healy	06/16/2016	Charles J. Peterson	1807317, 1807318, 1807319, 1807320, 1807321
EPA 300.0 Rev. 2.1	06/10/2016			06/16/2016	Elisa J Lutz	1807297, 1807298, 1807299, 1807300, 1807301
EPA 350.1 Rev. 2.0	06/10/2016			06/15/2016	Diana M. Turner	1807302, 1807303, 1807304, 1807305, 1807306
EPA 351.2 Rev. 2.0	06/10/2016	06/14/2016	Sofia Elnemr	06/16/2016	Christopher Armour	1807302, 1807303, 1807304, 1807305, 1807306
EPA 353.2 Rev. 2.0	06/10/2016			06/13/2016	Beverly Y. Sanders	1807302, 1807303, 1807304, 1807305, 1807306
EPA 365.1 Rev. 2.0	06/10/2016	06/15/2016	Vijayalakshmi Reddy	06/16/2016	Lipi Saha	1807302, 1807303, 1807304
	06/10/2016	06/16/2016	Vijayalakshmi Reddy	06/17/2016	Lipi Saha	1807305, 1807306
EPA 365.1 Rev. 2.0 dissolved	06/10/2016			06/10/2016 15:06	Julia Storbeck	1807311
	06/10/2016			06/10/2016 15:07	Julia Storbeck	1807307
	06/10/2016			06/10/2016 15:16	Julia Storbeck	1807308
	06/10/2016			06/10/2016 15:17	Julia Storbeck	1807309, 1807310
SM 2120 B	06/10/2016			06/10/2016 11:55	Rochelle Y Jackson	1807297
	06/10/2016			06/10/2016 11:56	Rochelle Y Jackson	1807298
	06/10/2016			06/10/2016 12:03	Rochelle Y Jackson	1807301
	06/10/2016			06/10/2016 12:22	Rochelle Y Jackson	1807300
	06/10/2016			06/10/2016 12:23	Rochelle Y Jackson	1807299
SM 2320 B-97	06/10/2016			06/14/2016	Dale L. Simmons	1807297, 1807298, 1807299, 1807300
	06/10/2016			06/15/2016	Dale L. Simmons	1807301
SM 2540 C-97	06/10/2016			06/14/2016	Yijie Li	1807297, 1807298, 1807299, 1807300, 1807301
SM 2540 D-97	06/10/2016			06/14/2016	Yijie Li	1807297, 1807298, 1807299, 1807300, 1807301
SM 4500 F-C-97	06/10/2016			06/14/2016	Dale L. Simmons	1807297, 1807298, 1807299, 1807300, 1807301
SM 5310 B-00	06/10/2016			06/16/2016	Diana M. Turner	1807302, 1807303, 1807304, 1807305, 1807306