

Chemical Analysis Report

CEN-DIST-2019-02-15-01

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

Event Description: **Downey X2 / Drawdy / Theresa / Charm**
Request ID: **RQ-2019-02-11-72**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 05-MAR-2019 11:25

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

Case Narrative

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

Results for the following analytical groups are included in this report: 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: Lake Downey @ 110m W of Center

Collection Date/Time: 02/14/2019 10:30

Field ID: G2CE0197

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2063007	EPA 180.1 Rev. 2.0	Turbidity	0.50		NTU	P359009	
	EPA 300.0 Rev. 2.1	Chloride	23	A	mg Cl/L	P359573	
		Sulfate	4.6	A	mg SO4/L	P359575	
	SM 2120 B	Color (true)	33		PCU	P359014	
	SM 2320 B-97	Total Alkalinity	11		mg CaCO3/L	P359383	
	SM 2540 C-97	TDS	60		mg/L	P359533	
	SM 2540 D-97	TSS	2	U	mg/L	P359439	
	SM 4500 F-C-97	Fluoride	0.039	I	mg F/L	P359392	
2063009	EPA 350.1 Rev. 2.0	Ammonia-N	0.071		mg N/L	P359342	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.57		mg N/L	P359235	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.032		mg N/L	P359358	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P359092	
	SM 5310 B-00	Organic Carbon	9.3		mg C/L	P359418	
2063011	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P359025	
2063046	EPA 200.7 Rev. 4.4	Barium	7.0		ug/L	P359105	
		Calcium	5.53		mg/L	P359105	
		Iron	30	U	ug/L	P359105	
		Magnesium	1.38		mg/L	P359105	
		Potassium	1.2	I	mg/L	P359105	
		Sodium	15.1		mg/L	P359105	
		Zinc	5.0	U	ug/L	P359105	
	EPA 200.8 Rev. 5.4	Aluminum	40		ug/L	P359105	
		Antimony	0.075	I	ug/L	P359105	
		Arsenic	2.76		ug/L	P359105	
		Boron**	36.9		ug/L	P359105	
		Cadmium	0.020	U	ug/L	P359105	
		Chromium	0.40	U	ug/L	P359105	
		Copper	0.97		ug/L	P359105	
		Lead	0.20	U	ug/L	P359105	
		Nickel	0.50	U	ug/L	P359105	
		Selenium	0.20	U	ug/L	P359105	
		Silver	0.010	U	ug/L	P359105	
		Thallium	0.10	U	ug/L	P359105	

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: Lake Downey @ 110m E of Center

Collection Date/Time: 02/14/2019 10:21

Field ID: G2CE0196

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2063008	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P359009	
	EPA 300.0 Rev. 2.1	Chloride	23		mg Cl/L	P359573	
		Sulfate	4.6		mg SO4/L	P359575	
	SM 2120 B	Color (true)	32		PCU	P359014	
	SM 2320 B-97	Total Alkalinity	11		mg CaCO3/L	P359383	
	SM 2540 C-97	TDS	82		mg/L	P359533	
	SM 2540 D-97	TSS	2	I	mg/L	P359439	
	SM 4500 F-C-97	Fluoride	0.039	I	mg F/L	P359392	
2063010	EPA 350.1 Rev. 2.0	Ammonia-N	0.070		mg N/L	P359342	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.65		mg N/L	P359235	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.032		mg N/L	P359358	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P359092	
	SM 5310 B-00	Organic Carbon	9.1		mg C/L	P359418	
2063012	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P359025	
2063047	EPA 200.7 Rev. 4.4	Barium	7.0		ug/L	P359105	
		Calcium	5.38		mg/L	P359105	
		Iron	30	U	ug/L	P359105	
		Magnesium	1.34		mg/L	P359105	
		Potassium	1.1	I	mg/L	P359105	
		Sodium	14.7		mg/L	P359105	
		Zinc	5.0	U	ug/L	P359105	
		Aluminum	40		ug/L	P359105	
		Antimony	0.076	I	ug/L	P359105	
		Arsenic	2.74		ug/L	P359105	
	EPA 200.8 Rev. 5.4	Boron**	35.8		ug/L	P359105	
		Cadmium	0.020	U	ug/L	P359105	
		Chromium	0.40	U	ug/L	P359105	
		Copper	1.00		ug/L	P359105	
		Lead	0.20	U	ug/L	P359105	
		Nickel	0.50	U	ug/L	P359105	
		Selenium	0.20	U	ug/L	P359105	
		Silver	0.010	U	ug/L	P359105	
		Thallium	0.10	U	ug/L	P359105	

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: Lake Theresa @ Center

Collection Date/Time: 02/14/2019 09:42

Field ID: G4CE0151

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2063013	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P359009	
	EPA 300.0 Rev. 2.1	Chloride	10		mg Cl/L	P359573	
		Sulfate	2.0		mg SO4/L	P359575	
	SM 2120 B	Color (true)	28		PCU	P359014	
	SM 2320 B-97	Total Alkalinity	81		mg CaCO3/L	P359383	
	SM 2540 C-97	TDS	110		mg/L	P359533	
	SM 2540 D-97	TSS	6	I	mg/L	P359439	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P359392	
2063016	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P359344	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P359235	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P359358	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P359092	
	SM 5310 B-00	Organic Carbon	8.9		mg C/L	P359418	
2063019	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P359025	

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: Lake Drawdy @ 150m NNE of Center

Collection Date/Time: 02/14/2019 11:24

Field ID: G2CE0079

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2063014	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P359009	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P359573	
		Sulfate	9.2		mg SO4/L	P359575	
	SM 2120 B	Color (true)	190		PCU	P359014	
	SM 2320 B-97	Total Alkalinity	4.2		mg CaCO3/L	P359383	
	SM 2540 C-97	TDS	112		mg/L	P359533	
	SM 2540 D-97	TSS	2	U	mg/L	P359439	
	SM 4500 F-C-97	Fluoride	0.036	I	mg F/L	P359392	
2063017	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P359344	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P359235	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P359358	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P359141	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P359418	
2063020	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P359025	

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: Lake Charm @ Center

Collection Date/Time: 02/14/2019 12:04

Field ID: G2CE0080

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2063015	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P359009	
	EPA 300.0 Rev. 2.1	Chloride	41		mg Cl/L	P359573	
		Sulfate	15		mg SO4/L	P359575	
	SM 2120 B	Color (true)	22		PCU	P359014	
	SM 2320 B-97	Total Alkalinity	61		mg CaCO3/L	P359383	
	SM 2540 C-97	TDS	172	A	mg/L	P359534	
	SM 2540 D-97	TSS	2	UA	mg/L	P359440	
	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P359392	
2063018	EPA 350.1 Rev. 2.0	Ammonia-N	0.071		mg N/L	P359344	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.96		mg N/L	P359235	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P359358	
	EPA 365.1 Rev. 2.0	Total-P	0.038		mg P/L	P359141	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P359418	
2063021	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P359025	

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: P359009

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P359105

Component	Result	Code	Units
Barium	1.0	U	ug/L
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: P359105

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359573

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359575

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359342

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359344

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359235

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359358

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359092

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359141

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359025

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

Reference Method: SM 2120 B
Batch ID: P359014

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P359383

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

Reference Method: SM 2540 C-97
Batch ID: P359533

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P359534

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P359439

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P359440

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P359392

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P359418

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: P359105

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	98.4		P	85 - 115
Iron	105		P	85 - 115
Magnesium	108		P	85 - 115
Potassium	99.8		P	85 - 115
Sodium	97.6		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359105

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	103		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	107		P	85 - 115
Boron	109		P	85 - 115
Cadmium	107		P	85 - 115
Chromium	105		P	85 - 115
Copper	108		P	85 - 115
Lead	107		P	85 - 115
Nickel	105		P	85 - 115
Selenium	102		P	85 - 115
Silver	103		P	85 - 115
Thallium	107		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359573

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359575

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359342

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359344

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.4		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359235

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359358

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359092

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359141

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359025

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

Reference Method: SM 2120 B
Batch ID: P359014

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P359383

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P359392

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.4		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P359418

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P359105

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063032	Barium	99.8		P	80 - 120
2063032	Calcium	98.6		P	80 - 120
2063032	Iron	104		P	80 - 120
2063032	Magnesium	102		P	80 - 120
2063032	Potassium	94.6		P	80 - 120
2063032	Sodium	100		P	80 - 120
2063032	Zinc	101		P	80 - 120
2063047	Barium	104	105	P/P	80 - 120
2063047	Calcium	98.3		P	80 - 120
2063047	Iron	104	109	P/P	80 - 120
2063047	Magnesium	104	110	P/P	80 - 120
2063047	Potassium	97.8	103	P/P	80 - 120
2063047	Sodium	98.6		P	80 - 120
2063047	Zinc	107	107	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359105

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063032	Aluminum	100		P	80 - 120
2063032	Antimony	105		P	80 - 120
2063032	Arsenic	110		P	80 - 120
2063032	Boron	106		P	80 - 120
2063032	Cadmium	108		P	80 - 120
2063032	Chromium	105		P	80 - 120
2063032	Copper	108		P	80 - 120
2063032	Lead	108		P	80 - 120
2063032	Nickel	104		P	80 - 120
2063032	Selenium	102		P	80 - 120
2063032	Silver	103		P	80 - 120
2063032	Thallium	112		P	80 - 120
2063047	Aluminum	99.8	99.3	P/P	80 - 120
2063047	Antimony	103	103	P/P	80 - 120
2063047	Arsenic	107	107	P/P	80 - 120
2063047	Boron	106	104	P/P	80 - 120
2063047	Cadmium	106	107	P/P	80 - 120
2063047	Chromium	108	107	P/P	80 - 120
2063047	Copper	108	107	P/P	80 - 120
2063047	Lead	107	107	P/P	80 - 120
2063047	Nickel	104	105	P/P	80 - 120
2063047	Selenium	101	101	P/P	80 - 120
2063047	Silver	101	102	P/P	80 - 120
2063047	Thallium	111	110	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359573

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063007	Chloride	94.5		P	90 - 110
2063214	Chloride	99.4		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359575

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063007	Sulfate	99.0		P	90 - 110
2063214	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359342

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062945	Ammonia-N	98.6	99.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359344

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063016	Ammonia-N	98.0	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359235

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063009	Kjeldahl Nitrogen	99.3	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359358

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062969	NO2NO3-N	96.0	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359092

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062961	Total-P	104	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359141

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063110	Total-P	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359025

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063011	O-Phosphate-P	93.3	95.0	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P359392

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062967	Fluoride	97.6	97.6	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P359418

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2062970	Organic Carbon	96.9	97.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P359009

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063092	Turbidity	2.95	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P359105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063047	Barium	0.382	Spike	P	0 - 20
2063047	Calcium	3.81	Spike	P	0 - 20
2063047	Iron	4.67	Spike	P	0 - 20
2063047	Magnesium	4.09	Spike	P	0 - 20
2063047	Potassium	4.08	Spike	P	0 - 20
2063047	Sodium	4.65	Spike	P	0 - 20
2063047	Zinc	0.155	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063047	Aluminum	0.462	Spike	P	0 - 20
2063047	Antimony	0.683	Spike	P	0 - 20
2063047	Arsenic	0.489	Spike	P	0 - 20
2063047	Boron	1.24	Spike	P	0 - 20
2063047	Cadmium	0.609	Spike	P	0 - 20
2063047	Chromium	0.737	Spike	P	0 - 20
2063047	Copper	0.159	Spike	P	0 - 20
2063047	Lead	0.746	Spike	P	0 - 20
2063047	Nickel	0.418	Spike	P	0 - 20
2063047	Selenium	0.0360	Spike	P	0 - 20
2063047	Silver	0.379	Spike	P	0 - 20
2063047	Thallium	0.392	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359573

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063007	Chloride	0.254	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359575

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063007	Sulfate	0.544	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062945	Ammonia-N	1.14	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359344

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063016	Ammonia-N	0.935	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359235

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063009	Kjeldahl Nitrogen	0.758	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359358

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062969	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359092

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062961	Total-P	1.04	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359141

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063110	Total-P	0.228	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359025

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063011	O-Phosphate-P	1.81	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P359014

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062963	Color (true)	1.29	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P359383

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062967	Total Alkalinity	0.525	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P359533

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062960	TDS	4.14	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P359534

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063015	TDS	7.54	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P359392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062967	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P359418

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2062970	Organic Carbon	0.501	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: EPA 180.1 Rev. 2.0

Run ID: A89446

Included Lab Sample IDs: 2063007, 2063008, 2063013, 2063014, 2063015

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

Reference Method: SM 2120 B

Run ID: A89448

Included Lab Sample IDs: 2063007, 2063008, 2063013, 2063014, 2063015

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	100	P/P	90 - 115
Color (true)	100	99.8	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A89450

Included Lab Sample IDs: 2063011, 2063012, 2063019, 2063020, 2063021

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.4	97.5	P/P	90 - 110
O-Phosphate-P	99.6	99.9	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A89512

Included Lab Sample IDs: 2063046, 2063047

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	101	98.5	P/P	90 - 110
Calcium	96.8	97.9	P/P	90 - 110
Iron	102	101	P/P	90 - 110
Magnesium	101	101	P/P	90 - 110
Potassium	99.3	97.7	P/P	90 - 110
Sodium	97.8	98.7	P/P	90 - 110
Zinc	100	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89528

Included Lab Sample IDs: 2063016

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89532

Included Lab Sample IDs: 2063009, 2063010

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89567

Included Lab Sample IDs: 2063017, 2063018

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	99.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A89577

Included Lab Sample IDs: 2063009, 2063010, 2063016, 2063017, 2063018

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.1	P/P	90 - 110
Ammonia-N	100	99.7	P/P	90 - 110
Ammonia-N	99.7	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A89586

Included Lab Sample IDs: 2063009, 2063010, 2063016, 2063017, 2063018

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A89593

Included Lab Sample IDs: 2063007, 2063008, 2063013, 2063014, 2063015

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	108	99.8	P/P	90 - 110
Total Alkalinity	98.6	108	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A89593

Included Lab Sample IDs: 2063007, 2063008, 2063013, 2063014, 2063015

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	99.0	P/P	90 - 110
Fluoride	98.6	98.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A89603

Included Lab Sample IDs: 2063009, 2063010, 2063016, 2063017, 2063018

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.2	93.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A89640

Included Lab Sample IDs: 2063009, 2063010, 2063016, 2063017, 2063018

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	95.0	P/P	90 - 110
Kjeldahl Nitrogen	99.2	100	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89648

Included Lab Sample IDs: 2063046, 2063047

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.6	99.5	P/P	90 - 110
Antimony	98.6	98.4	P/P	90 - 110
Arsenic	102	103	P/P	90 - 110
Boron	105	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89648

Included Lab Sample IDs: 2063046, 2063047

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	101	101	P/P	90 - 110
Chromium	103	102	P/P	90 - 110
Copper	107	108	P/P	90 - 110
Lead	104	104	P/P	90 - 110
Nickel	103	103	P/P	90 - 110
Selenium	99.5	98.9	P/P	90 - 110
Silver	97.9	98.0	P/P	90 - 110
Thallium	102	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A89674

Included Lab Sample IDs: 2063007, 2063008, 2063013, 2063014, 2063015

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	101	P/P	90 - 110
Sulfate	101	102	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			Precision	MS
			LCS	SMP	MS		
EPA 180.1 Rev. 2.0	Turbidity					2.95	
EPA 200.7 Rev. 4.4	Barium	102	99.8	104	105		0.382
	Calcium	98.4	98.6	98.3			3.81
	Iron	105	104	104	109		4.67
	Magnesium	108	102	104	110		4.09
	Potassium	99.8	94.6	97.8	103		4.08
	Sodium	97.6	100	98.6			4.65
	Zinc	101	101	107	107		0.155
EPA 200.8 Rev. 5.4	Aluminum	103	100	99.8	99.3		0.462
	Antimony	102	105	103	103		0.683
	Arsenic	107	110	107	107		0.489
	Boron	109	106	106	104		1.24
	Cadmium	107	108	106	107		0.609
	Chromium	105	105	108	107		0.737
	Copper	108	108	108	107		0.159
	Lead	107	108	107	107		0.746
	Nickel	105	104	104	105		0.418
	Selenium	102	102	101	101		0.0360
	Silver	103	103	101	102		0.379
	Thallium	107	112	111	110		0.392
EPA 300.0 Rev. 2.1	Chloride	100	94.5	99.4		0.254	
	Sulfate	101	99.0	101		0.544	
EPA 350.1 Rev. 2.0	Ammonia-N	99.1	98.6	99.9			1.14
	Ammonia-N	99.4	98.0	99.0			0.935
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	99.3	100			0.758
EPA 353.2 Rev. 2.0	NO2NO3-N	98.0	96.0	96.0			0.0
EPA 365.1 Rev. 2.0	Total-P	106	104	105			1.04
	Total-P	105	102	102			0.228
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.3	93.3	95.0			1.81
SM 2120 B	Color (true)	100				1.29	
SM 2320 B-97	Total Alkalinity	102				0.525	
SM 2540 C-97	TDS					4.14	
	TDS					7.54	
SM 4500 F-C-97	Fluoride	96.4	97.6	97.6			0.0
SM 5310 B-00	Organic Carbon	95.8	96.9	97.5			0.501

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2063007, 2063008, 2063013, 2063014, 2063015
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2063046, 2063047
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2063046, 2063047
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2063007, 2063008, 2063013, 2063014, 2063015
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2063007, 2063008, 2063013, 2063014, 2063015
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2063009, 2063010, 2063016, 2063017, 2063018
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2063009, 2063010, 2063016, 2063017, 2063018
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2063009, 2063010, 2063016, 2063017, 2063018

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2063009, 2063010, 2063016, 2063017, 2063018
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2063011, 2063012, 2063019, 2063020, 2063021
SM 2120 B / E31780	True Color measured at 450 nm	2063007, 2063008, 2063013, 2063014, 2063015
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2063007, 2063008, 2063013, 2063014, 2063015
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2063007, 2063008, 2063013, 2063014, 2063015
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2063007, 2063008, 2063013, 2063014, 2063015
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2063007, 2063008, 2063013, 2063014, 2063015
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2063009, 2063010, 2063016, 2063017, 2063018

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	02/15/2019			02/15/2019 16:26	Adrian Shelby	2063007, 2063008, 2063013, 2063014, 2063015
EPA 200.7 Rev. 4.4	02/15/2019	02/18/2019 17:15	Elliott D. Healy	02/19/2019 15:43	Betina Topolski	2063046
	02/15/2019	02/18/2019 17:15	Elliott D. Healy	02/19/2019 15:50	Betina Topolski	2063047
EPA 200.8 Rev. 5.4	02/15/2019	02/18/2019 17:15	Elliott D. Healy	02/25/2019 18:43	Allison Taylor	2063046
	02/15/2019	02/18/2019 17:15	Elliott D. Healy	02/25/2019 18:52	Allison Taylor	2063047
EPA 300.0 Rev. 2.1	02/15/2019			02/26/2019 21:42	Lipi Saha	2063007
	02/15/2019			02/26/2019 22:41	Lipi Saha	2063008
	02/15/2019			02/26/2019 22:56	Lipi Saha	2063013
	02/15/2019			02/26/2019 23:10	Lipi Saha	2063014
	02/15/2019			02/26/2019 23:25	Lipi Saha	2063015
EPA 350.1 Rev. 2.0	02/15/2019			02/21/2019 11:02	Ping Hua	2063009
	02/15/2019			02/21/2019 11:03	Ping Hua	2063010
	02/15/2019			02/21/2019 11:42	Ping Hua	2063016
	02/15/2019			02/21/2019 11:47	Ping Hua	2063017
	02/15/2019			02/21/2019 11:54	Ping Hua	2063018
EPA 351.2 Rev. 2.0	02/15/2019	02/19/2019 11:30	Adrian Shelby	02/22/2019 13:12	Joseph Suarez	2063009
	02/15/2019	02/19/2019 11:30	Adrian Shelby	02/22/2019 13:20	Joseph Suarez	2063010
	02/15/2019	02/19/2019 11:30	Adrian Shelby	02/22/2019 13:22	Joseph Suarez	2063016
	02/15/2019	02/19/2019 11:30	Adrian Shelby	02/22/2019 13:23	Joseph Suarez	2063017
	02/15/2019	02/19/2019 11:30	Adrian Shelby	02/22/2019 13:25	Joseph Suarez	2063018
EPA 353.2 Rev. 2.0	02/15/2019			02/22/2019 10:48	Beverly Y. Sanders	2063009
	02/15/2019			02/22/2019 10:49	Beverly Y. Sanders	2063010
	02/15/2019			02/22/2019 10:50	Beverly Y. Sanders	2063016
	02/15/2019			02/22/2019 10:51	Beverly Y. Sanders	2063017
	02/15/2019			02/22/2019 10:52	Beverly Y. Sanders	2063018
EPA 365.1 Rev. 2.0	02/15/2019	02/18/2019 13:35	Sima Feizi	02/20/2019 12:27	Rosalyn Ballman	2063016
	02/15/2019	02/18/2019 13:35	Sima Feizi	02/20/2019 14:36	Rosalyn Ballman	2063009
	02/15/2019	02/18/2019 13:35	Sima Feizi	02/20/2019 14:37	Rosalyn Ballman	2063010
	02/15/2019	02/19/2019 11:45	Sima Feizi	02/21/2019 18:21	Rosalyn Ballman	2063017
	02/15/2019	02/19/2019 11:45	Sima Feizi	02/21/2019 18:22	Rosalyn Ballman	2063018
EPA 365.1 Rev. 2.0 dissolved	02/15/2019			02/15/2019 17:15	Jhamieka S. Greenwood	2063011
	02/15/2019			02/15/2019 17:54	Jhamieka S. Greenwood	2063021
	02/15/2019			02/15/2019 17:55	Jhamieka S. Greenwood	2063012
	02/15/2019			02/15/2019 17:56	Jhamieka S. Greenwood	2063019
	02/15/2019			02/15/2019 17:57	Jhamieka S. Greenwood	2063020
SM 2120 B	02/15/2019			02/15/2019 16:30	Chelsea Hernandez	2063007
	02/15/2019			02/15/2019 16:31	Chelsea Hernandez	2063008
	02/15/2019			02/15/2019 16:32	Chelsea Hernandez	2063013
	02/15/2019			02/15/2019 16:33	Chelsea Hernandez	2063015

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2120 B	02/15/2019			02/15/2019 16:53	Chelsea Hernandez	2063014
SM 2320 B-97	02/15/2019			02/21/2019 05:00	Dale L. Simmons	2063007
	02/15/2019			02/21/2019 05:11	Dale L. Simmons	2063008
	02/15/2019			02/21/2019 05:23	Dale L. Simmons	2063013
	02/15/2019			02/21/2019 05:35	Dale L. Simmons	2063014
	02/15/2019			02/21/2019 06:15	Dale L. Simmons	2063015
SM 2540 C-97	02/15/2019			02/20/2019 16:21	Yijie Li	2063007, 2063008, 2063013, 2063014, 2063015
SM 2540 D-97	02/15/2019			02/20/2019 16:21	Yijie Li	2063007, 2063008, 2063013, 2063014, 2063015
SM 4500 F-C-97	02/15/2019			02/21/2019 05:00	Dale L. Simmons	2063007
	02/15/2019			02/21/2019 05:11	Dale L. Simmons	2063008
	02/15/2019			02/21/2019 05:23	Dale L. Simmons	2063013
	02/15/2019			02/21/2019 05:35	Dale L. Simmons	2063014
	02/15/2019			02/21/2019 06:15	Dale L. Simmons	2063015
SM 5310 B-00	02/15/2019			02/24/2019 03:30	Julia Storbeck	2063009
	02/15/2019			02/24/2019 03:43	Julia Storbeck	2063010
	02/15/2019			02/24/2019 03:57	Julia Storbeck	2063016
	02/15/2019			02/24/2019 04:10	Julia Storbeck	2063017
	02/15/2019			02/24/2019 04:24	Julia Storbeck	2063018