

Chemical Analysis Report

CEN-DIST-2019-06-27-01

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

Event Description: **Lotta / Toho Drain / Downey X2**

Request ID: **RQ-2019-06-24-29**

Customer: **CEN-DIST**

Project ID: **SMP**

Send Reports to:

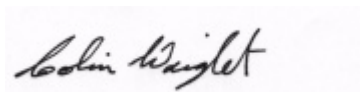
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Mike Linger

For additional information please contact

Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 23-JUL-2019 12:29



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 E of Center

Collection Date/Time: 06/26/2019 10:15

Field ID: G2CE0196

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2098838	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P366416	
	EPA 300.0 Rev. 2.1	Chloride	23	A	mg Cl/L	P366761	
		Sulfate	4.9	A	mg SO4/L	P366763	
		Color (true)	27		PCU	P366412	
	SM 2120 B	Total Alkalinity	11		mg CaCO3/L	P366736	
	SM 2540 C-97	TDS	73		mg/L	P366806	
	SM 2540 D-97	TSS	2	U	mg/L	P366567	
	SM 4500 F-C-97	Fluoride	0.040	I	mg F/L	P366743	
2098840	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P366782	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.56		mg N/L	P366470	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P366723	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P366466	
	SM 5310 B-00	Organic Carbon	9.2		mg C/L	P366519	
2098842	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P366456	
2098856	EPA 200.7 Rev. 4.4	Barium	7.9		ug/L	P366570	
		Calcium	5.60		mg/L	P366570	
		Iron	44	I	ug/L	P366570	
		Magnesium	1.42		mg/L	P366570	
		Potassium	1.2	I	mg/L	P366570	
		Sodium	16.6		mg/L	P366570	
		Zinc	5.0	U	ug/L	P366570	
	EPA 200.8 Rev. 5.4	Aluminum	37		ug/L	P366570	
		Antimony	0.069	I	ug/L	P366570	
		Arsenic	2.66		ug/L	P366570	
		Boron**	39.6		ug/L	P366570	
		Cadmium	0.020	U	ug/L	P366570	
		Chromium	0.40	U	ug/L	P366570	
		Copper	1.31		ug/L	P366570	
		Lead	0.20	U	ug/L	P367227	
		Nickel	0.50	U	ug/L	P366570	
		Selenium	0.20	U	ug/L	P366570	
		Silver	0.010	U	ug/L	P366570	
		Thallium	0.10	U	ug/L	P366570	

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 W of Center

Collection Date/Time: 06/26/2019 10:23

Field ID: G2CE0197

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2098839	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P366416	
	EPA 300.0 Rev. 2.1	Chloride	23		mg Cl/L	P366761	
		Sulfate	4.9		mg SO4/L	P366763	
		Color (true)	28		PCU	P366412	
	SM 2320 B-97	Total Alkalinity	11		mg CaCO3/L	P366736	
	SM 2540 C-97	TDS	71		mg/L	P366806	
	SM 2540 D-97	TSS	2	U	mg/L	P366567	
	SM 4500 F-C-97	Fluoride	0.041	I	mg F/L	P366743	
2098841	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P366782	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P366470	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P366723	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P366466	
	SM 5310 B-00	Organic Carbon	9.4		mg C/L	P366519	
2098843	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P366456	
2098857	EPA 200.7 Rev. 4.4	Barium	4.9		ug/L	P366570	
		Calcium	5.56		mg/L	P366570	
		Iron	47	I	ug/L	P366570	
		Magnesium	1.39		mg/L	P366570	
		Potassium	1.2	I	mg/L	P366570	
		Sodium	16.3		mg/L	P366570	
		Zinc	5.0	U	ug/L	P366570	
	EPA 200.8 Rev. 5.4	Aluminum	38		ug/L	P366570	
		Antimony	0.070	I	ug/L	P366570	
		Arsenic	2.58		ug/L	P366570	
		Boron**	37.8		ug/L	P366570	
		Cadmium	0.020	U	ug/L	P366570	
		Chromium	0.40	U	ug/L	P366570	
		Copper	0.90		ug/L	P366570	
		Lead	0.20	U	ug/L	P366570	
		Nickel	0.50	U	ug/L	P366570	
		Selenium	0.20	U	ug/L	P366570	
		Silver	0.010	U	ug/L	P366570	
		Thallium	0.10	U	ug/L	P366570	

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 Lotta @ Center of Southern Lobe

Collection Date/Time: 06/26/2019 11:35

Field ID: G2CE0093

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2098844	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P366417	
	EPA 300.0 Rev. 2.1	Chloride	8.5		mg Cl/L	P366761	
		Sulfate	7.6		mg SO4/L	P366763	
	SM 2120 B	Color (true)	87	A	PCU	P366412	
	SM 2320 B-97	Total Alkalinity	50		mg CaCO3/L	P366736	
	SM 2540 C-97	TDS	98		mg/L	P366806	
	SM 2540 D-97	TSS	2	U	mg/L	P366567	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P366743	
2098846	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P366782	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.79		mg N/L	P366470	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P366723	
	EPA 365.1 Rev. 2.0	Total-P	0.086		mg P/L	P366466	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P366519	
2098848	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.036		mg P/L	P366456	

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: Boggy Creek @ 1100m South of Boggy Creek Rd

Collection Date/Time: 06/26/2019 12:35

Field ID: G4CE0127

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2098845	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P366417	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P366761	
		Sulfate	5.1		mg SO4/L	P366763	
	SM 2120 B	Color (true)	120		PCU	P366412	
	SM 2320 B-97	Total Alkalinity	47		mg CaCO3/L	P366736	
	SM 2540 C-97	TDS	122		mg/L	P366806	
	SM 2540 D-97	TSS	2	I	mg/L	P366567	
	SM 4500 F-C-97	Fluoride	0.087	I	mg F/L	P366743	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P366782	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.57		mg N/L	P366470	
2098847	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P366724	
	EPA 365.1 Rev. 2.0	Total-P	0.047		mg P/L	P366466	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P366519	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.026		mg P/L	P366458	
	dissolved						

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: P366416

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P366417

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P366570

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: P366570

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 200.8 Rev. 5.4
Batch ID: P367227

Component	Result	Code	Units
Lead	0.20	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366761

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366763

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366782

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366470

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366723

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366724

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366466

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366456

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366458

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

Reference Method: SM 2120 B
Batch ID: P366412

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P366736

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

Reference Method: SM 2540 C-97
Batch ID: P366806

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P366567

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P366743

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P366519

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: P366570

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	101		P	85 - 115
Calcium	101		P	85 - 115
Iron	103		P	85 - 115
Magnesium	102		P	85 - 115
Potassium	105		P	85 - 115
Sodium	101		P	85 - 115
Zinc	98.5		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P366570

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	103		P	85 - 115
Antimony	98.6		P	85 - 115
Arsenic	104		P	85 - 115
Boron	104		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	102		P	85 - 115
Copper	100		P	85 - 115
Lead	96.7		P	85 - 115
Nickel	102		P	85 - 115
Selenium	104		P	85 - 115
Silver	98.6		P	85 - 115
Thallium	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367227

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Lead	103		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366761

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366763

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366782

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366470

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.6		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366723

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: P366724

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: P366466

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366456

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366458

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

Reference Method: SM 2120 B
Batch ID: P366412

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.3		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P366736

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P366743

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P366519

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P366570

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099021	Barium	99.2	98.9	P/P	80 - 120
2099021	Calcium	101		P	80 - 120
2099021	Iron	103	103	P/P	80 - 120
2099021	Magnesium	102		P	80 - 120
2099021	Potassium	100	99.8	P/P	80 - 120
2099021	Sodium	100		P	80 - 120
2099021	Zinc	99.0	98.6	P/P	80 - 120
2099431	Barium	97.5		P	80 - 120
2099431	Calcium	99.9		P	80 - 120
2099431	Iron	104		P	80 - 120
2099431	Magnesium	103		P	80 - 120
2099431	Potassium	104		P	80 - 120
2099431	Sodium	102		P	80 - 120
2099431	Zinc	98.9		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P366570

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099021	Aluminum	101	101	P/P	80 - 120
2099021	Antimony	99.0	100	P/P	80 - 120
2099021	Arsenic	104	104	P/P	80 - 120
2099021	Boron	105	106	P/P	80 - 120
2099021	Cadmium	101	102	P/P	80 - 120
2099021	Chromium	101	102	P/P	80 - 120
2099021	Copper	97.0	95.9	P/P	80 - 120
2099021	Lead	97.5	97.3	P/P	80 - 120
2099021	Nickel	98.7	97.8	P/P	80 - 120
2099021	Selenium	101	101	P/P	80 - 120
2099021	Silver	97.1	97.3	P/P	80 - 120
2099021	Thallium	102	103	P/P	80 - 120
2099431	Aluminum	99.9		P	80 - 120
2099431	Antimony	99.7		P	80 - 120
2099431	Arsenic	104		P	80 - 120
2099431	Boron	103		P	80 - 120
2099431	Cadmium	100		P	80 - 120
2099431	Chromium	101		P	80 - 120
2099431	Copper	95.1		P	80 - 120
2099431	Lead	98.5		P	80 - 120
2099431	Nickel	101		P	80 - 120
2099431	Selenium	99.2		P	80 - 120
2099431	Silver	95.9		P	80 - 120
2099431	Thallium	102		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P367227

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2101785	Lead	104		P	80 - 120
2101890	Lead	103	105	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366761

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098838	Chloride	103		P	90 - 110
2099095	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366763

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098838	Sulfate	103		P	90 - 110
2099095	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366782

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098840	Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366470

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098841	Kjeldahl Nitrogen	99.2	94.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366723

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098751	NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366724

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098847	NO2NO3-N	96.8	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366466

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098841	Total-P	103	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366456

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098752	O-Phosphate-P	95.2	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366458

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099102	O-Phosphate-P	93.3	94.2	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P366743

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2100171	Fluoride	99.1	99.1	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P366519

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098888	Organic Carbon	95.6	96.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P366416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098758	Turbidity	3.15	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P366417

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098894	Turbidity	2.31	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P366570

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099021	Barium	0.348	Spike	P	0 - 20
2099021	Calcium	0.429	Spike	P	0 - 20
2099021	Iron	0.360	Spike	P	0 - 20
2099021	Magnesium	0.0429	Spike	P	0 - 20
2099021	Potassium	0.250	Spike	P	0 - 20
2099021	Sodium	0.303	Spike	P	0 - 20
2099021	Zinc	0.423	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P366570

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099021	Aluminum	0.231	Spike	P	0 - 20
2099021	Antimony	1.01	Spike	P	0 - 20
2099021	Arsenic	0.00850	Spike	P	0 - 20
2099021	Boron	0.129	Spike	P	0 - 20
2099021	Cadmium	0.775	Spike	P	0 - 20
2099021	Chromium	0.477	Spike	P	0 - 20
2099021	Copper	1.09	Spike	P	0 - 20
2099021	Lead	0.201	Spike	P	0 - 20
2099021	Nickel	0.897	Spike	P	0 - 20
2099021	Selenium	0.0783	Spike	P	0 - 20
2099021	Silver	0.250	Spike	P	0 - 20
2099021	Thallium	0.351	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367227

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2101890	Lead	1.78	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366761

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098838	Chloride	0.0103	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366763

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098838	Sulfate	0.717	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366782

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098840	Ammonia-N	1.25	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366470

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098841	Kjeldahl Nitrogen	3.61	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366723

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098751	NO2NO3-N	0.512	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366724

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098847	NO2NO3-N	3.36	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366466

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098841	Total-P	4.62	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366456

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098752	O-Phosphate-P	0.628	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P366458

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099102	O-Phosphate-P	0.843	Spike	P	0 - 20

Reference Method: SM 2120 B
 Batch ID: P366412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098844	Color (true)	0.362	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P366736

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2100171	Total Alkalinity	0.458	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
 Batch ID: P366806

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098794	TDS	4.05	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P366743

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2100171	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P366519

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098888	Organic Carbon	0.304	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: A92404

Included Lab Sample IDs: 2098838, 2098839, 2098844, 2098845

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.5	99.4	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A92405

Included Lab Sample IDs: 2098838, 2098839, 2098844, 2098845

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	97.0	97.0	P/P	95 - 105
Turbidity	98.0	97.0	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A92421

Included Lab Sample IDs: 2098842, 2098843, 2098848, 2098849

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.2	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A92454

Included Lab Sample IDs: 2098840, 2098841, 2098846, 2098847

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.4	94.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92464

Included Lab Sample IDs: 2098846

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.7	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92467

Included Lab Sample IDs: 2098840, 2098841, 2098847

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A92512

Included Lab Sample IDs: 2098838, 2098839, 2098844, 2098845

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A92514

Included Lab Sample IDs: 2098840, 2098841, 2098846, 2098847

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.8	97.9	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A92516

Included Lab Sample IDs: 2098856, 2098857

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	101	100	P/P	95 - 105
Calcium	100	101	P/P	95 - 105
Iron	100	100	P/P	95 - 105
Magnesium	100	101	P/P	95 - 105
Potassium	99.3	99.3	P/P	95 - 105
Sodium	99.1	101	P/P	95 - 105
Zinc	101	100	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92556

Included Lab Sample IDs: 2098840, 2098841, 2098846, 2098847

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	101	P/P	90 - 110
NO2NO3-N	96.0	102	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A92563

Included Lab Sample IDs: 2098838, 2098839, 2098844, 2098845

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: A92563

Included Lab Sample IDs: 2098838, 2098839, 2098844, 2098845

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	99.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A92579

Included Lab Sample IDs: 2098840, 2098841, 2098846, 2098847

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	102	P/P	90 - 110
Ammonia-N	102	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A92586

Included Lab Sample IDs: 2098856, 2098857

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A92586

Included Lab Sample IDs: 2098856, 2098857

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	98.2	97.0	P/P	90 - 110
Arsenic	101	99.6	P/P	90 - 110
Boron	102	103	P/P	90 - 110
Cadmium	99.6	99.0	P/P	90 - 110
Chromium	99.8	99.9	P/P	90 - 110
Copper	99.5	98.3	P/P	90 - 110
Lead	96.4	96.3	P/P	90 - 110
Nickel	99.9	98.7	P/P	90 - 110
Selenium	102	102	P/P	90 - 110
Silver	94.9	94.4	P/P	90 - 110
Thallium	93.8	94.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A92928

Included Lab Sample IDs: 2098856

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

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision	MS
							SMP	
EPA 180.1 Rev. 2.0	Turbidity						3.15	
	Turbidity						2.31	
EPA 200.7 Rev. 4.4	Barium	101	99.2	98.9	97.5			0.348
	Calcium	101	101	99.9				0.429
	Iron	103	103	103	104			0.360
	Magnesium	102	102	103				0.0429
	Potassium	105	100	99.8	104			0.250
	Sodium	101	100	102				0.303
	Zinc	98.5	99.0	98.6	98.9			0.423
EPA 200.8 Rev. 5.4	Aluminum	103	101	101	99.9			0.231
	Antimony	98.6	99.0	100	99.7			1.01
	Arsenic	104	104	104	104			0.0085
	Boron	104	105	106	103			0.129
	Cadmium	101	101	102	100			0.775
	Chromium	102	101	102	101			0.477
	Copper	100	97.0	95.9	95.1			1.09
	Lead	96.7	97.5	97.3	98.5			0.201
	Lead	103	103	105	104			1.78
	Nickel	102	98.7	97.8	101			0.897
	Selenium	104	101	101	99.2			0.0783
	Silver	98.6	97.1	97.3	95.9			0.250
	Thallium	100	102	103	102			0.351
EPA 300.0 Rev. 2.1	Chloride	101	103	101			0.0103	
	Sulfate	101	103	102			0.717	
EPA 350.1 Rev. 2.0	Ammonia-N	99.5	101	102				1.25
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.6	99.2	94.0				3.61
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	99.5	100				0.512
	NO ₂ NO ₃ -N	102	96.8	100				3.36
EPA 365.1 Rev. 2.0	Total-P	102	103	98.0				4.62
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.9	95.2	95.8				0.628
	O-Phosphate-P	98.8	93.3	94.2				0.843
SM 2120 B	Color (true)	98.3					0.362	
SM 2320 B-97	Total Alkalinity	103					0.458	
SM 2540 C-97	TDS						4.05	
SM 4500 F-C-97	Fluoride	100	99.1	99.1				0.0
SM 5310 B-00	Organic Carbon	95.6	95.6	96.0				0.304

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2098838, 2098839, 2098844, 2098845
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2098856, 2098857
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2098856, 2098857
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2098838, 2098839, 2098844, 2098845
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2098838, 2098839, 2098844, 2098845
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2098840, 2098841, 2098846, 2098847
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2098840, 2098841, 2098846, 2098847

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2098840, 2098841, 2098846, 2098847
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2098840, 2098841, 2098846, 2098847
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2098842, 2098843, 2098848, 2098849
SM 2120 B / E31780	True Color measured at 450 nm	2098838, 2098839, 2098844, 2098845
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2098838, 2098839, 2098844, 2098845
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2098838, 2098839, 2098844, 2098845
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2098838, 2098839, 2098844, 2098845
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2098838, 2098839, 2098844, 2098845
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2098840, 2098841, 2098846, 2098847

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	06/27/2019			06/27/2019 16:49	Julia Storbeck	2098838, 2098839, 2098844, 2098845
EPA 200.7 Rev. 4.4	06/27/2019	07/01/2019 14:35	Elliott D. Healy	07/02/2019 12:47	Betina Topolski	2098856
	06/27/2019	07/01/2019 14:35	Elliott D. Healy	07/02/2019 12:54	Betina Topolski	2098857
EPA 200.8 Rev. 5.4	06/27/2019	07/01/2019 14:35	Elliott D. Healy	07/03/2019 17:13	Robert K Palmer	2098856
	06/27/2019	07/01/2019 14:35	Elliott D. Healy	07/03/2019 17:22	Robert K Palmer	2098857
	06/27/2019	07/15/2019 15:00	Elliott D. Healy	07/19/2019 22:31	Martin Acosta	2098856
EPA 300.0 Rev. 2.1	06/27/2019			07/05/2019 14:58	Jhamieka S. Greenwood	2098838
	06/27/2019			07/05/2019 17:48	Jhamieka S. Greenwood	2098839
	06/27/2019			07/05/2019 18:00	Jhamieka S. Greenwood	2098844
	06/27/2019			07/05/2019 18:12	Jhamieka S. Greenwood	2098845
EPA 350.1 Rev. 2.0	06/27/2019			07/05/2019 11:26	Ping Hua	2098840
	06/27/2019			07/05/2019 11:30	Ping Hua	2098841
	06/27/2019			07/05/2019 11:38	Ping Hua	2098846
	06/27/2019			07/05/2019 11:39	Ping Hua	2098847
EPA 351.2 Rev. 2.0	06/27/2019	06/28/2019 11:25	Sima Feizi	07/02/2019 12:27	Joseph Suarez	2098840
	06/27/2019	06/28/2019 11:25	Sima Feizi	07/02/2019 12:29	Joseph Suarez	2098841
	06/27/2019	06/28/2019 11:25	Sima Feizi	07/02/2019 12:33	Joseph Suarez	2098846
	06/27/2019	06/28/2019 11:25	Sima Feizi	07/02/2019 12:35	Joseph Suarez	2098847
EPA 353.2 Rev. 2.0	06/27/2019			07/03/2019 15:28	Lauren Lees	2098840
	06/27/2019			07/03/2019 15:29	Lauren Lees	2098841
	06/27/2019			07/03/2019 15:30	Lauren Lees	2098846
	06/27/2019			07/03/2019 15:38	Lauren Lees	2098847
EPA 365.1 Rev. 2.0	06/27/2019	06/28/2019 12:40	Sima Feizi	07/01/2019 09:29	Beverly Y. Sanders	2098846
	06/27/2019	06/28/2019 12:40	Sima Feizi	07/01/2019 12:10	Beverly Y. Sanders	2098840
	06/27/2019	06/28/2019 12:40	Sima Feizi	07/01/2019 12:18	Beverly Y. Sanders	2098841
	06/27/2019	06/28/2019 12:40	Sima Feizi	07/01/2019 12:19	Beverly Y. Sanders	2098847
EPA 365.1 Rev. 2.0 dissolved	06/27/2019			06/27/2019 15:41	Jhamieka S. Greenwood	2098842
	06/27/2019			06/27/2019 15:42	Jhamieka S. Greenwood	2098843
	06/27/2019			06/27/2019 15:43	Jhamieka S. Greenwood	2098848
	06/27/2019			06/27/2019 15:44	Jhamieka S. Greenwood	2098849
SM 2120 B	06/27/2019			06/27/2019 16:21	Madeline Funaro	2098838
	06/27/2019			06/27/2019 16:22	Madeline Funaro	2098839
	06/27/2019			06/27/2019 16:24	Madeline Funaro	2098844, 2098845
SM 2320 B-97	06/27/2019			07/04/2019 04:43	Dale L. Simmons	2098838
	06/27/2019			07/04/2019 04:55	Dale L. Simmons	2098839
	06/27/2019			07/04/2019 05:07	Dale L. Simmons	2098844
	06/27/2019			07/04/2019 05:19	Dale L. Simmons	2098845
SM 2540 C-97	06/27/2019			06/28/2019 16:45	Rosalyn Ballman	2098838, 2098839, 2098844, 2098845
SM 2540 D-97	06/27/2019			06/28/2019 16:45	Rosalyn Ballman	2098838, 2098839, 2098844, 2098845
SM 4500 F-C-97	06/27/2019			07/04/2019 04:43	Dale L. Simmons	2098838

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-97	06/27/2019			07/04/2019 04:55	Dale L. Simmons	2098839
	06/27/2019			07/04/2019 05:07	Dale L. Simmons	2098844
	06/27/2019			07/04/2019 05:19	Dale L. Simmons	2098845
SM 5310 B-00	06/27/2019			06/28/2019 05:57	Madeline Funaro	2098840
	06/27/2019			06/28/2019 06:12	Madeline Funaro	2098841
	06/27/2019			06/28/2019 06:25	Madeline Funaro	2098846
	06/27/2019			06/28/2019 06:39	Madeline Funaro	2098847