

Chemical Analysis Report

NW-DIST-2018-08-01-01

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

Event Description: **BIOASSESSMENT**
Request ID: **RQ-2018-07-09-58**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 W Government St
Suite 208A
Pensacola, FL 32502-5794
Attn: Michael King

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: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 17-AUG-2018 12:52

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

Case Narrative

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

Results for the following analytical group are included in this report: Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Choctawhatchee River upstream Hwy 90 boat ramp **Collection Date/Time: 07/31/2018 11:50**

Field ID: G3NW0052

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2012309	EPA 180.1 Rev. 2.0	Turbidity	17	A	NTU	P349510	
	EPA 300.0 Rev. 2.1	Chloride	4.9		mg Cl/L	P349624	
		Sulfate	2.2		mg SO4/L	P349627	
	SM 2120 B	Color (true)	14	A	PCU	P349507	
	SM 2320 B-97	Total Alkalinity	40		mg CaCO3/L	P349653	
	SM 2540 C-97	TDS	62		mg/L	P349798	
	SM 2540 D-97	TSS	19		mg/L	P349953	
	SM 4500 F-C-97	Fluoride	0.049	I	mg F/L	P349656	
2012310	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P349686	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34		mg N/L	P349662	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.58		mg N/L	P349550	
	EPA 365.1 Rev. 2.0	Total-P	0.052		mg P/L	P349564	
	SM 5310 B-00	Organic Carbon	3.9		mg C/L	P349734	
2012311	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.016		mg P/L	P349502	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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: P349510

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349624

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349627

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349686

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349662

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349550

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349564

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349502

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

Reference Method: SM 2120 B
Batch ID: P349507

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P349653

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

Reference Method: SM 2540 C-97
Batch ID: P349798

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P349953

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P349656

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P349734

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349624

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349627

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349686

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349662

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	94.6		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349550

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349564

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349502

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

Reference Method: SM 2120 B
Batch ID: P349507

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.2		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P349653

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 107

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P349656

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.2		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P349734

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349624

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2012260	Chloride	105		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349627

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2012179	Sulfate	110		P	90 - 110
2012260	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349686

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2012287	Ammonia-N	100	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349662

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2012287	Kjeldahl Nitrogen	95.7	95.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349550

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2012287	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349564

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2012287	Total-P	100	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349502

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2012311	O-Phosphate-P	96.2	98.0	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P349656

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2012216	Fluoride	97.1	97.7	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P349734

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2012252	Organic Carbon	95.8	99.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P349510

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2012309	Turbidity	9.06	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349624

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2012179	Chloride	7.23	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349627

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2012179	Sulfate	8.04	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349686

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2012287	Ammonia-N	0.710	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2012287	Kjeldahl Nitrogen	0.211	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349550

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2012287	NO2NO3-N	0.482	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349564

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2012287	Total-P	0.432	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349502

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2012311	O-Phosphate-P	1.58	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
 Batch ID: P349507

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2012309	Color (true)	2.26	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P349653

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2012216	Total Alkalinity	0.170	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
 Batch ID: P349798

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2012210	TDS	2.30	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P349656

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2012216	Fluoride	0.476	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
 Batch ID: P349734

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2012252	Organic Carbon	2.22	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 300.0 Rev. 2.1

Run ID: A85560

Included Lab Sample IDs: 2012309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	104	P/P	90 - 110
Sulfate	105	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A85616

Included Lab Sample IDs: 2012311

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.6	99.5	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A85617

Included Lab Sample IDs: 2012309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	103	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A85618

Included Lab Sample IDs: 2012309

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A85640

Included Lab Sample IDs: 2012310

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.5	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A85668

Included Lab Sample IDs: 2012310

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

Reference Method: SM 2320 B-97

Run ID: A85692

Included Lab Sample IDs: 2012309

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

Reference Method: SM 4500 F-C-97

Run ID: A85692

Included Lab Sample IDs: 2012309

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A85703

Included Lab Sample IDs: 2012310

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A85727

Included Lab Sample IDs: 2012310

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.7	98.2	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A85729

Included Lab Sample IDs: 2012310

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	99.7	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	
					LCS	MS
EPA 180.1 Rev. 2.0	Turbidity				9.06	
EPA 300.0 Rev. 2.1	Chloride	107	105		7.23	
	Sulfate	106	110 102		8.04	
EPA 350.1 Rev. 2.0	Ammonia-N	104	100 99.6			0.710
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	94.6	95.7 95.4			0.211
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	103	104 104			0.482
EPA 365.1 Rev. 2.0	Total-P	98.4	100 99.8			0.432
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	96.2 98.0			1.58
SM 2120 B	Color (true)	99.2			2.26	
SM 2320 B-97	Total Alkalinity	104			0.170	
SM 2540 C-97	TDS				2.30	
SM 4500 F-C-97	Fluoride	99.2	97.1 97.7			0.476
SM 5310 B-00	Organic Carbon	97.8	95.8 99.4			2.22

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2012309
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2012309
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2012309
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2012310
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2012310
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2012310
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2012310
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2012311
SM 2120 B / E31780	True Color measured at 450 nm	2012309
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2012309
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2012309
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2012309
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2012309
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2012310

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	08/01/2018			08/01/2018 14:45	William L. Brown IV	2012309
EPA 300.0 Rev. 2.1	08/01/2018			08/03/2018 22:07	Lipi Saha	2012309
EPA 350.1 Rev. 2.0	08/01/2018			08/06/2018 14:57	Julia Storbeck	2012310
EPA 351.2 Rev. 2.0	08/01/2018	08/06/2018 15:40	Adrian Shelby	08/07/2018 10:46	Joseph Suarez	2012310
EPA 353.2 Rev. 2.0	08/01/2018			08/02/2018 11:50	Lauren Bottorf	2012310
EPA 365.1 Rev. 2.0	08/01/2018	08/02/2018 11:50	Sima Feizi	08/03/2018 11:30	Beverly Y. Sanders	2012310
EPA 365.1 Rev. 2.0 dissolved	08/01/2018			08/01/2018 14:59	Julia Storbeck	2012311
SM 2120 B	08/01/2018			08/01/2018 17:02	Tanya Welborn	2012309
SM 2320 B-97	08/01/2018			08/03/2018 08:34	Dale L. Simmons	2012309
SM 2540 C-97	08/01/2018			08/03/2018 16:45	Yijie Li	2012309
SM 2540 D-97	08/01/2018			08/03/2018 16:45	Yijie Li	2012309
SM 4500 F-C-97	08/01/2018			08/03/2018 08:34	Dale L. Simmons	2012309
SM 5310 B-00	08/01/2018			08/07/2018 02:31	Megan Treadwell	2012310