

Clean Water 2020 Program

CONSENT DECREE QUARTERLY REPORT

October 1, 2019 – December 31, 2019

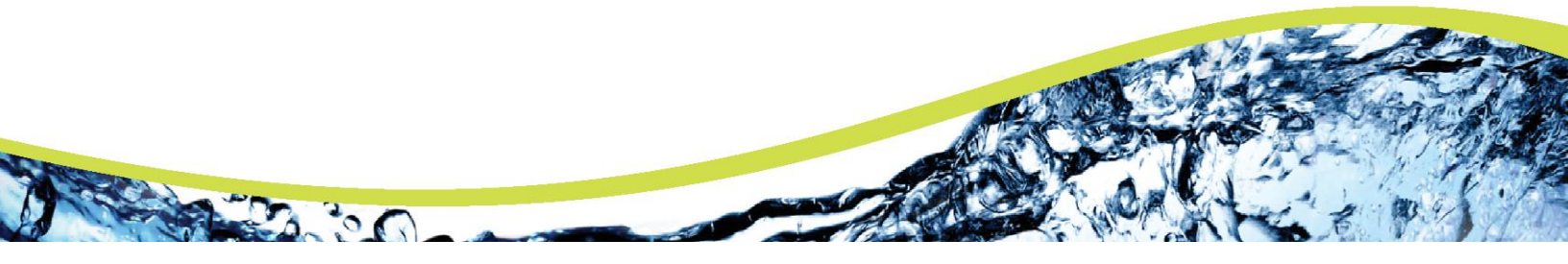


Table of Contents

Section 1	Introduction	3
1.1	Summary of Reporting Requirements	3
1.2	Report Organization.....	3
Section 2	Schedule of Projects and Activities	5
Section 3	Additional Information Demonstrating Implementation of Consent Decree Requirements ...	9
3.1	MOM Programs.....	9
3.1.1	Information Management System (IMS) Program.....	9
3.1.2	Sewer Mapping Program	9
3.1.3	Transmission System Operations and Maintenance Program (TSOMP)	10
3.1.4	Gravity Sewer System Operation and Maintenance Program (GSOMP)	10
3.2	Continuing Sewer Assessment Program (CSAP) for the WCTS	10
3.3	Infrastructure Rehabilitation Report (IRR) for the WCTS.....	10
3.4	Supplemental Environmental Project	12
Section 4	Quarterly SSO Report.....	13
Section 5	SEP Water Quality Monitoring Results	16
5.1	Sampling Conducted and Results.....	16

List of Tables

Table 1 - SSO Report, 4th Quarter 2019 13

Section 1 Introduction

1.1 Summary of Reporting Requirements

On May 21, 2014, the City of Columbia (City) entered into a Consent Decree (CD) with the United States Environmental Protection Agency (EPA), the United States Department of Justice (DOJ) and the South Carolina Department of Health and Environmental Control (SCDHEC). To fulfill the reporting requirements as defined in Section IX.39.a of the CD, the City has prepared this *Quarterly Report* that includes the following information (as excerpted from the CD):

1. A description of all projects and activities conducted during the most recently completed calendar quarter to comply with the requirements of this Consent Decree, in Gantt chart or similar format. This description shall include completion percentages of early action capital improvement projects under Paragraph 10, continuing sewer assessments under the CSAP, and the subsequent remedial actions under the IR Report;
2. The date, time, location, source, duration, estimated volume, receiving water (if any), cause, and actions taken to repair or otherwise resolve the cause of all SSOs for the most recently completed quarter in a tabulated electronic format;
3. The anticipated projects and activities that will be performed in the next quarter to comply with the requirements of this Consent Decree, in Gantt chart or similar format;
4. Any additional information that demonstrates that Columbia is implementing the remedial measures required in this Consent Decree; and
5. The results of water quality monitoring conducted during the previous Calendar Quarter as part of the SEP described in Appendix I of the Consent Decree.

1.2 Report Organization

This Quarterly Report is organized as follows:

Section 1 – Introduction

This section includes a summary of the reporting requirements and describes the report organization.

Section 2 – Schedule of Projects and Activities

This section addresses the requirements of Sections IX.39.a.(i) and IX.39.a.(iii) of the Consent Decree. The section includes the projects and activities conducted during the most recently completed calendar

quarter to comply with the requirements of the CD as well as the anticipated projects and activities that will be performed in the next quarter to comply with the requirements of the CD. A Gantt chart schedule of these activities is provided and includes completion percentages of continuing sewer assessments under the CSAP and the subsequent remedial actions under the IR Report, as applicable.

Section 3 – Additional Information Demonstrating Implementation of Consent Decree Requirements

This section addresses the requirements of Section IX.39.a.(iv) of the Consent Decree and includes additional information that demonstrates that Columbia is implementing the remedial measures required in the CD. Information supplemental to that which is provided in Section 2 is provided in this section.

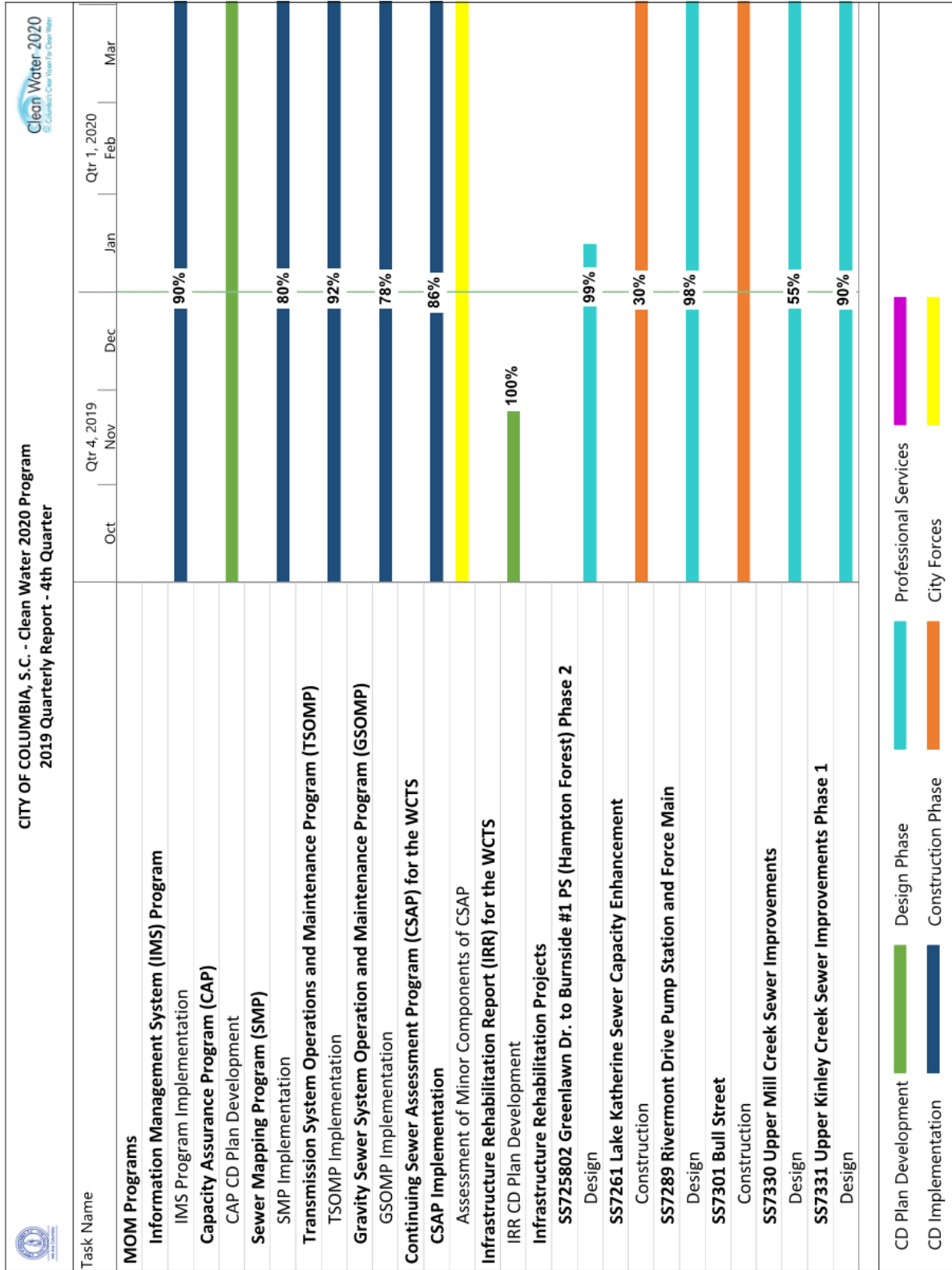
Section 4 – Quarterly SSO Report

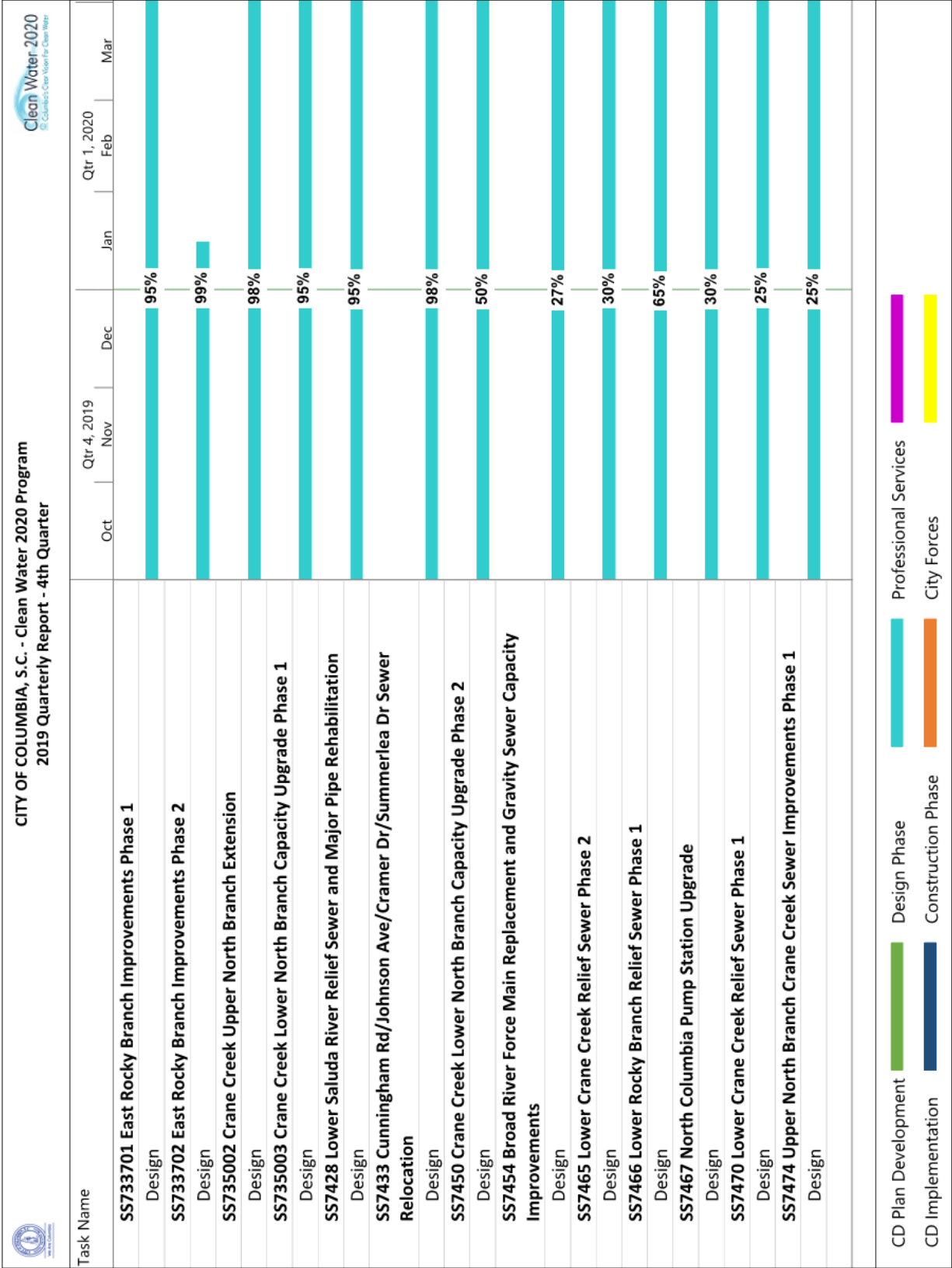
This section addresses the requirements of Section IX.39.a.(ii) of the Consent Decree and provides a tabular listing of sanitary sewer overflows (SSOs). The table includes the date, time, location, source, duration, estimated volume, receiving water (if any), cause, and actions taken to repair or otherwise resolve the cause of all SSOs that occurred during the most recently completed calendar quarter.

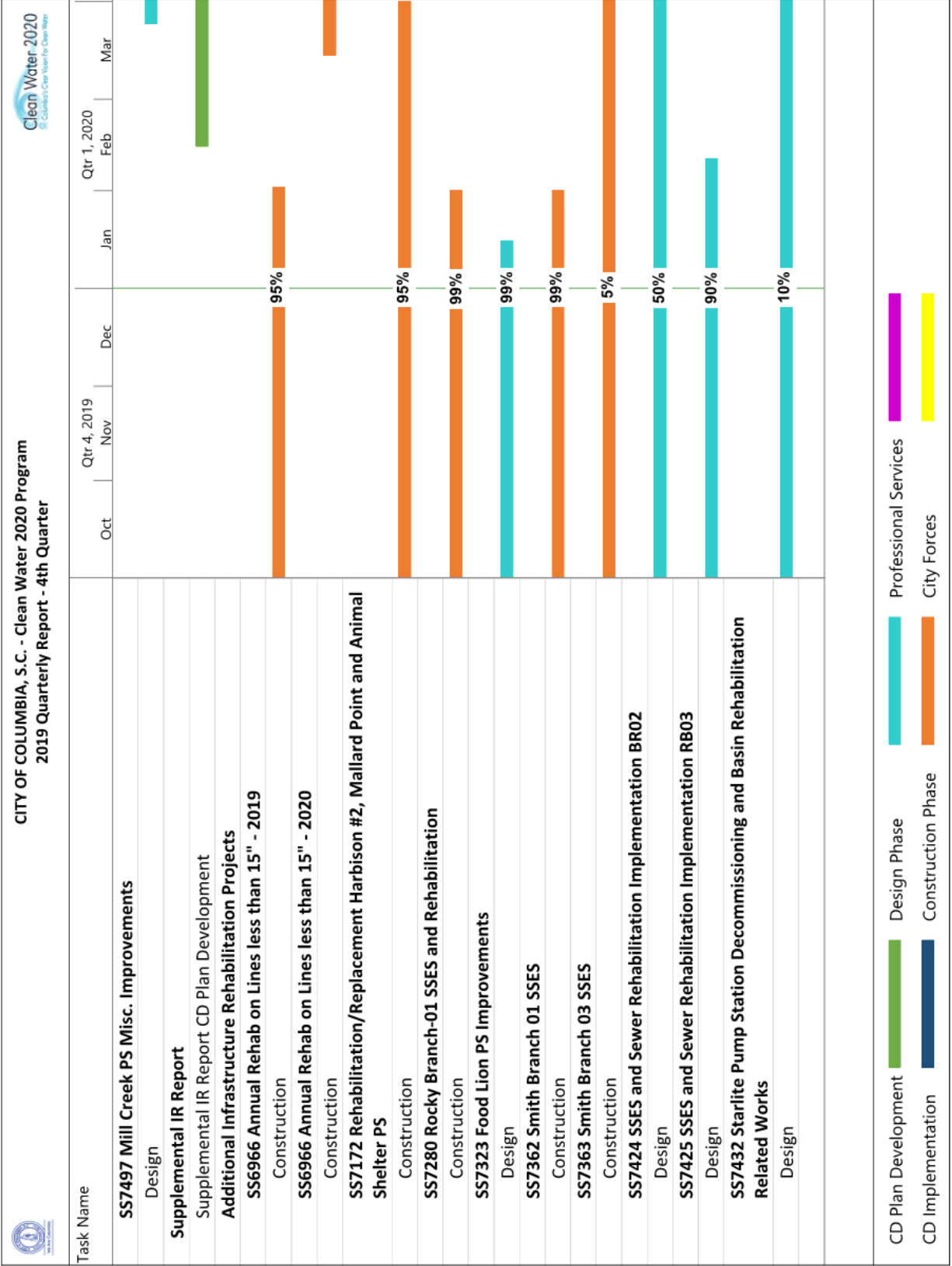
Section 5 – SEP Water Quality Monitoring Results

This section addresses the requirements of Section IX.39.a.(v) of the Consent Decree and provides the results of water quality monitoring conducted during the previous Calendar Quarter as part of the SEP described in Appendix I of the CD.

Section 2 Schedule of Projects and Activities







CITY OF COLUMBIA, S.C. - Clean Water 2020 Program 2019 Quarterly Report - 4th Quarter		Clean Water 2020 Consent Decree Quarterly Report											
Task Name		Oct	Nov	Dec	Jan	Feb	Mar	Qtr 4, 2019	Qtr 1, 2020				
SS7435 Wexford and Windsong Lift Stations Evaluation and Rehabilitation Project	Design												90%
SS7437 Miscellaneous Lift Station Improvements and Backup Power Addition Project	Design												80%
SS7462 Investigation of Crockett Road, Atlas Road and Versch Lock Lift Stations	Design												25%
SS7463 SSES and Sewer Rehabilitation Implementation CC01	Design												25%
SS7464 SSES and Sewer Rehabilitation Implementation CC02 and CC04	Design												35%
SS7468 Three Rivers Force Main Replacement	Design												10%
SS7478 RB01 SSES - Phase 2	Design												30%
SS7479 SB02 SSES - Phase 2	Design												25%
Sewer System Hydraulic Model	Model Report Development												



Section 3 Additional Information Demonstrating Implementation of Consent Decree Requirements

In accordance with Section IX.39.a.(iv) of the CD, the following section provides additional information that demonstrates that the City is implementing the remedial measures required in the CD.

3.1 MOM Programs

In accordance with Section V.12 of the CD, the City is developing and implementing specific Management, Operations, and Maintenance (MOM) programs. The Program elements addressed in this section provide information regarding activities involving the Metro WWTP as well as the City's Wastewater Collection and Transmission System (WCTS).

3.1.1 Information Management System (IMS) Program

The IMS Program was submitted to EPA and SCDHEC on January 4, 2016. The City received final approval of the IMS Program from EPA and SCDHEC on May 23, 2016.

The activities completed or in progress during the current reporting period are as follows:

- Sewer Mapping Program – 80% Complete

3.1.2 Sewer Mapping Program

In accordance with the requirements of the CD, the City was to develop and submit a Sewer Mapping Program (SMP) to EPA and SCDHEC within 60 days of the date of entry of the CD. The City received final approval of the SMP from EPA and SCDHEC on December 9, 2014.

Projects and significant activities completed during the current reporting period:

- The City continues to complete the electronic mapping of each Sewer Basin in accordance with the approved SMP implementation plan. Progress for each WCTS Minor Gravity Mapping basin is as follows:
 - West Columbia Basin – 98% complete
 - Smith Branch Basin – 88% complete
 - Saluda River Basin – 92% complete
 - Rocky Branch Basin – 67% complete
 - Mill Creek Basin – 28% complete
 - Gills Creek Basin – 37% complete
 - Crane Creek Basin – 67% complete
 - Broad River Basin – 27% complete

3.1.3 Transmission System Operations and Maintenance Program (TSOMP)

The TSOMP was submitted to EPA and SCDHEC on May 18, 2015. The City received final approval of the TSOMP from EPA and SCDHEC on September 2, 2016.

The activities completed or in progress during the current reporting period are as follows:

- SCADA System Enhancements – 100% Complete
- Force Main and Easement Maintenance (Easement survey and marking and initial clearing to the surveyed limits, where practical) – 75% Complete

3.1.4 Gravity Sewer System Operation and Maintenance Program (GSOMP)

The GSOMP was submitted to EPA and SCDHEC on November 20, 2015. The City received final approval of the GSOMP from EPA and SCDHEC on May 23, 2016. The GSOMP was revised and resubmitted to EPA and SCDHEC on May 8, 2019.

The activities completed or in progress during the current reporting period are as follows:

- Gravity Sewer Easement survey and marking and initial clearing to survey the limits, where practical – 35% Complete

3.2 Continuing Sewer Assessment Program (CSAP) for the WCTS

The CSAP was submitted to EPA and SCDHEC on June 9, 2015. The City received final approval of the CSAP from EPA and SCDHEC on May 23, 2016. The CSAP was revised and resubmitted to EPA and SCDHEC on October 3, 2018. The City received approval of the revised CSAP from EPA and SCDHEC on February 6, 2019.

The activities under the Minor Components of the CSAP completed or in progress during the current reporting period are as follows:

- Minor Gravity Sewer and Manholes Condition Assessment – 60% Complete
- Minor Pump Stations Condition Assessment – 60% Complete
- Minor Force Mains Field Assessment – 60% Complete

3.3 Infrastructure Rehabilitation Report (IRR) for the WCTS

In accordance with Section V.16 of the CD, the City shall submit an Infrastructure Rehabilitation Report (IRR) summarizing the results of the CSAP of the major components of the WCTS and a description of proposed rehabilitation projects. The IRR is to be submitted within six months after the City has assessed

the major components of the WCTS once pursuant to the CSAP. The deadline for submittal of the IRR to EPA and SCDHEC is November 23, 2019.

- The IRR was submitted to EPA and SCDHEC on November 22, 2019.

As rehabilitation projects are identified through the assessments described in Section 3.2 and in the normal course of operations and maintenance, the City is proceeding with design and construction of those projects. Completion percentages of projects currently in progress are as follows:

- SS725802 Greenlawn Dr. to Burnside #1 PS (Hampton Forest) Phase 2 – Design 99% Complete
- SS7261 Lake Katherine Sewer Capacity Enhancement – Construction 30% Complete
- SS7289 Rivermont Drive Pump Station and Force Main – Design 98% Complete
- SS7301 Bull Street – Construction in Progress; a completion percentage cannot be provided due to a varying scope of work and timeline for this project.
- SS7330 Upper Mill Creek Sewer Improvements – Design 55% Complete
- SS7331 Upper Kinley Creek Sewer Improvements Phase 1 – Design 90% Complete
- SS733701 East Rocky Branch Improvements Phase 1 – Design 95% Complete
- SS733702 East Rocky Branch Improvements Phase 2 – Design 99% Complete
- SS735002 Crane Creek Upper North Branch Extension – Design 98% Complete
- SS735003 Crane Creek Lower North Branch Capacity Upgrade Phase 1 – Design 95% Complete
- SS7428 Lower Saluda River Relief Sewer and Major Pipe Rehabilitation – Design 95% Complete
- SS7433 Cunningham Rd/Johnson Ave/Cramer Dr/Summerlea Dr Sewer Relocation – Design 95% Complete
- SS7450 Crane Creek Lower North Branch Capacity Upgrade Phase 2 – Design 50% Complete
- SS7454 Broad River Force Main Replacement and Gravity Sewer Capacity Improvements – Design 27% Complete
- SS7465 Lower Crane Creek Relief Sewer Phase 2 – Design 30% Complete
- SS7466 Lower Rocky Branch Relief Sewer Phase 1 – Design 65% Complete
- SS7467 North Columbia Pump Station Upgrade – Design 30% Complete
- SS7470 Lower Crane Creek Relief Sewer Phase 1 – Design 25% Complete
- SS7474 Upper North Branch Crane Creek Sewer Improvements Phase 1 – Design 25% Complete

In accordance with Section V.16.c of the CD, the City shall submit a Supplemental Infrastructure Rehabilitation Report (SIRR) which shall update all portions of the IRR to reflect additional information developed by the City through completion of the CSAP of the minor components of the WCTS. The SIRR is to be submitted within six months after the City has assessed the remainder of the entire WCTS pursuant to the CSAP. As rehabilitation projects are identified through the assessments described in Section 3.2 and in the normal course of operations and maintenance, the City is proceeding with design and construction of those projects. Completion percentages of projects currently in progress are as follows:

- SS6966 Annual Rehab on Lines less than 15" – 2019 Construction 95% Complete, 2020 Construction 0% Complete

- SS7172 Rehabilitation/Replacement Harbison #2, Mallard Point and Animal Shelter PS – Construction 95% Complete
- SS7280 Rocky Branch-01 SSES and Rehabilitation – Construction 99% Complete
- SS7323 Food Lion PS Improvements – Design 99% Complete
- SS7362 Smith Branch 01 SSES – Construction 99% Complete
- SS7363 Smith Branch 03 SSES – Construction 5% Complete
- SS7424 SSES and Sewer Rehabilitation Implementation BR02 – Design 50% Complete
- SS7425 SSES and Sewer Rehabilitation Implementation RB03 – Design 90% Complete
- SS7432 Starlite PS Decommissioning and Basin Rehabilitation Related Works – Design 10% Complete
- SS7435 Wexford and Windsong Lift Stations Evaluation and Rehabilitation Project – Design 90% Complete
- SS7437 Miscellaneous Lift Station Improvements and Backup Power Addition Project – Design 80% Complete
- SS7462 Investigation of Crockett Road, Atlas Road and Versch Lock Lift Stations – Design 25% Complete
- SS7463 SSES and Sewer Rehabilitation Implementation CC01 – Design 25% Complete
- SS7464 SSES and Sewer Rehabilitation Implementation CC02 and CC04 – Design 35% Complete
- SS7468 Three Rivers Force Main Replacement – Design 10% Complete
- SS7478 Rocky Branch 01 SSES Phase 2 – Design 30% Complete
- SS7479 Smith Branch 02 SSES Phase 2 – Design 25% Complete

3.4 Supplemental Environmental Project

In accordance with Section VIII and Appendix I of the CD, the City will perform a Supplemental Environmental Project (SEP). Within three years of the effective date of the CD, the City was to submit to EPA preliminary reports on the condition of Rocky Branch, Smith Branch, and Gills Creek and plans for Phase II for each of the SEP watersheds. On March 24, 2016, the City submitted a supplemental report related to the October 4, 2015 *force majeure* event and requested an additional six months to November 21, 2017 to complete the submittal of the preliminary reports and plans for improving the SEP areas. This request was granted by EPA. The SEP Preliminary Report and Phase II plan for Rocky Branch, Smith Branch, and Gills Creek was submitted to EPA on June 14, 2017. The SEP Completion Report was submitted to USDOJ and EPA on June 19, 2019.

Section 4 Quarterly SSO Report

In accordance with Section IX.39.a.(ii) of the CD, the City is to provide a list of all SSOs that occurred during the reporting period in a tabular format along with information on the date, time, location, source, duration, estimated volume, receiving water, cause, and actions taken to resolve the SSO.

Table 1 - SSO Report, 4th Quarter 2019

City of Columbia, SC Quarterly SSO Listing 4th Quarter 2019									
Date	Time	Location	Source	Date of Corrective Action	Time of Corrective Action	Estimated Volume (gallons)	Receiving Water (if any)	Cause	Actions Taken
10/2/2019	13:21	108 Bluff Oaks Rd, Columbia, SC 29209	Cleanout	TBD	TBD	58		Debris	Service Line Washed And Vacuumed Out. New Service Line Installation To Be Done By Contractor.
10/8/2019	10:15	125 Aldbury Rd, Columbia, SC 29212	Cleanout	10/8/2019	10:45	30		Debris	Removed Stoppage To Resume Normal Flow. Washed Service Line 30 Feet To Remove Stoppage.
10/12/2019	10:37	1329 Victory St, Columbia, SC 29204	Cleanout	10/12/2019	10:45	40		Roots	Removed Stoppage To Resume Normal Flow. Service Line Repair, Raised Cleanout.
10/21/2019	19:30	824 Old Oak Dr, Columbia, SC 29203	Manhole	10/21/2019	20:00	37		Roots	Removed Stoppage To Resume Normal Flow. Main Line Repair.
10/21/2019	12:15	2230 Chappelle St, Columbia, SC 29203	Line Segment	10/21/2019	20:00	377	Storm Ditch	Collapsed Line	Emergency Main Line Repair.
10/22/2019	13:50	820 Aaron Dr, Columbia, SC 29203	Manhole	TBD		600	Storm Ditch	Roots	Removed Stoppage To Resume Normal Flow. Main Line Root Cut.
10/23/2019	12:00	1200 Simmon Tree Ln, Columbia, SC 29201	Cleanout	10/23/2019	12:00	48		Collapsed Line	Line Isolated/Process Shut Down. DAF Train 2 Line Repair.
10/24/2019	10:30	2100 Waverly St, Columbia, SC 29204	Cleanout	10/24/2019	10:50	40	Storm Drain	Debris	Washed Service Line To Remove Blockage. Service Line Wash To Remove Debris.
10/26/2019	15:00	3036 Pine Shadow Trl, Columbia, SC 29210	Manhole	TBD		924		Roots	Removed Stoppage To Resume Normal Flow. Emergency Main Line Repair.
11/4/2019	18:50	1801 Wheat St, Columbia, SC 29205	Cleanout	11/7/2019	07:45	46		Collapsed Line	Service Line Washed To Remove Blockage. Service Line Repair.
11/7/2019	13:25	4464 Devine St, Columbia, SC 29205	Other	11/7/2019	14:00	241		3Rd Party Responsibility	Stopped Bypass Pump. Replaced Broken Hose.
11/7/2019	13:45	4464 Devine St, Columbia, SC 29205	Other	11/7/2019	13:45	15750	Gills Creek	3Rd Party Responsibility	Put Bypass Hose Back In Manhole. Resecured Bypass Discharge Hose Into Manhole.
11/7/2019	10:15	233 Burbank St, Columbia, SC 29210	Cleanout	11/7/2019	TBD	10		Grease	Removed Blockage To Resume Normal Flow. Washed Service Line 65 Feet.
11/11/2019	19:20	1318 Quail Valley W, Columbia, SC 29212	Cleanout	TBD		15		Roots	Removed Blockage To Resume Normal Flow. Service Line Repair.
11/12/2019	20:24	1311 Johnson Ave, Columbia, SC 29203	Manhole	11/12/2019	20:57	2456	Storm Drain	Grease	Removed Stoppage To Resume Normal Flow. Washed Main Line To Remove Stoppage.
11/13/2019	14:20	126 Community Rd, Blythewood, SC 29016	Manhole	11/13/2019	15:17	180		Debris	Removed Stoppage To Resume Normal Flow. Washed Main Line To Remove Stoppage.
11/14/2019	16:30	1401 Longcreek Dr, Columbia, SC 29210	Manhole	11/14/2019	17:20	500	Storm Drain	Roots	Removed Stoppage To Resume Normal Flow. Main Line Root Cut.
11/14/2019	13:45	100 Lorick Cir, Columbia, SC 29203	Manhole	11/14/2019	14:15	450	Storm Drain	Debris	Removed Blockage To Resume Normal Flow. Washed Main Line 290 Feet.

Consent Decree Quarterly Report | 2019 Q4

City of Columbia, SC Quarterly SSO Listing 4th Quarter 2019									
Date	Time	Location	Source	Date of Corrective Action	Time of Corrective Action	Estimated Volume (gallons)	Receiving Water (if any)	Cause	Actions Taken
11/15/2019	11:03	724 Tara Ln, Columbia, SC 29210	Cleanout	TBD		7		Collapsed Line	Removed Blockage To Resume Normal Flow. Service Line Repair.
11/15/2019	12:45	2085 Watermark Pl, Columbia, SC 29210	Cleanout	11/15/2019	12:55	10		Debris	Removed Stoppage To Resume Normal Flow. Washed Service Line 10 Feet.
11/20/2019	13:20	700 Sky Lane Dr, Hopkins, SC 29061	Cleanout	11/20/2019	13:35	6		Roots	Removed Stoppage To Resume Normal Flow. Washed Service Line 25 Feet To Remove Roots.
11/22/2019	16:00	518 Whaley St, Columbia, SC 29201	Cleanout	TBD		539		Collapsed Line	Removed Stoppage To Resume Flow. Emergency Service Line Repair.
11/25/2019	16:00	4601 Devine St, Columbia, SC 29205	Manhole	N/A		436		3Rd Party Responsibility	Removed Stoppage To Resume Normal Flow. Contractor Will Repair Main Line.
11/25/2019	20:00	1200 Simmon Tree Ln, Columbia, SC 29201	Other	11/25/2019	20:45	469	Storm Drain	Equipment Failure	Shut Off Bypass Pump. Called Mbahn To Reattach Bypass Pump Hose.
12/2/2019	09:00	2350 Rolling Hills Rd, Columbia, SC 29210	Cleanout	12/2/2019	09:15	30		Grease	Removed Blockage To Resume Normal Flow. Washed Main Line 300 Feet To Remove Blockage.
12/3/2019	13:10	722 Tara Ln, Columbia, SC 29210	Cleanout	TBD		10	Storm Drain	Collapsed Line	Removed Blockage To Resume Normal Flow. Service Line Repair.
12/8/2019	14:15	2238 S Partridge Cir, Columbia, SC 29061	Cleanout	12/19/2019	TBD	90		Roots	Removed Stoppage To Resume Normal Flow. Tap Renewal.
12/9/2019	17:30	520 Wild Hickory Ln, Blythewood, SC 29016	Cleanout	12/11/2019	14:00	18		Collapsed Line	Service Line Repair.
12/13/2019	10:00	4440 Bluff Rd, Columbia, SC 29209	Manhole	12/13/2019	11:00	7370		Pump Station Failure	Used Vacuum Truck To Contain Spill. Pulled Pump #2 And Cleared Debris, Reconnected And Restarted Pump #2.
12/13/2019	12:41	22 Thistle Ct, Irmo, SC 29063	Cleanout	N/A		5520	Swygert Branch	Wet Weather	Wet Weather; Observation Only. Project In Design To Increase Wet Well Capacity.
12/13/2019	14:00	1600 Garner Ln, Columbia, SC 29210 2119 Marley Dr, Columbia, SC 29210	Manhole	N/A		26063	Broad River	Pump Station Failure	Reset VFDs And The Station's Breaker That Tripped Out. Will Have Outside Contractor To Investigate The Electrical Issue That Is Tripping Out The Station's Breaker And VFDs.
12/13/2019	14:59	1548 Kathwood Dr, Columbia, SC 29206	Manhole	N/A		185	Lake Katherine	Wet Weather	Wet Weather. City Improvement Project To Increase Line Capacity In Progress.
12/13/2019	15:05	4645 Pine Grove Ct, Columbia, SC 29206	Manhole	N/A		83	Lake Katherine	Wet Weather	Wet Weather. City Improvement Project To Increase Line Capacity In Progress.
12/13/2019	21:00	5605 Bush River Rd, Columbia, SC 29212	Manhole	N/A		37403	Rawls Creek	Wet Weather	Wet Weather. Project To Increase Line Capacity In Design.
12/13/2019	16:25	907 Senate St, Columbia, SC 29201	Manhole	12/13/2019	17:00	115	Storm Drain	Grease	Removed Stoppage To Resume Normal Flow. Washed Main Line 15 Feet.
12/16/2019	15:30	500 Wildlife Pkwy, Columbia, SC 29210	Manhole	N/A		150		Collapsed Line	Observation Only; Not Observed Active.
12/17/2019	12:00	1200 Simmon Tree Ln, Columbia, SC 29201	Manhole	N/A		1		Treatment Plant	Spill Not Active Upon Discovery. Cause Of Spill Under Investigation.
12/18/2019	15:40	7102 Cornelius Dr, Columbia, SC 29203	Manhole	12/18/2019	16:00	105	Storm Drain	Grease	Removed Stoppage To Resume Normal Flow. Washed Main Line 130 Feet.
12/18/2019	17:10	609 Broken Hill Rd, Columbia, SC 29212	Manhole	N/A		105	Kinley Creek	Wet Weather	Wet Weather; Observation Only.
12/18/2019	09:10	3045 Howell Ave, Columbia, SC 29203	Line Segment	TBD		30	Storm Drain	Collapsed Line	Removed Stoppage To Resume Normal Flow. Main Line Repair.
12/19/2019	14:22	1300 Botanical Pkwy, West Columbia, SC 29169	Line Segment	TBD		6300	Saluda River	Collapsed Line	Contained Spill With Earthen Dams. Punctured Pipe Downstream Of Blockage To Recollect Flow. Emergency Contract For Repair And Bypass.

City of Columbia, SC Quarterly SSO Listing 4th Quarter 2019									
Date	Time	Location	Source	Date of Corrective Action	Time of Corrective Action	Estimated Volume (gallons)	Receiving Water (if any)	Cause	Actions Taken
12/19/2019	08:30	109 Torbay Dr, Columbia, SC 29212	Manhole	12/19/2019	09:30	600		Roots	Removed Stoppage To Resume Normal Flow. Main Line Root Cut And Tap Renewal.
12/18/2019	09:30	2025 Atlas Rd, Columbia, SC 29209	Cleanout	12/18/2019	09:40	8		Debris	Removed Stoppage To Resume Normal Flow. Washed Service Line 25 Feet.
12/23/2019	16:30	22 Thistle Ct, Irmo, SC 29063	Cleanout	N/A		300		Wet Weather	Wet Weather; Observation Only. Project In Design To Increase Wet Well Capacity.
12/23/2019	17:15	5605 Bush River Rd, Columbia, SC 29212	Manhole	N/A		200	Saluda River	Wet Weather	Wet Weather; Observation Only. Project To Increase Line Capacity In Design.
12/23/2019	18:05	109 Glen Green Dr, Columbia, SC 29203	Manhole	12/27/2019	12:00	76		Roots	Removed Blockage To Resume Normal Flow. Washed Main Line 200 Feet To Remove Blockage.
12/23/2019	18:50	500 Wildlife Pkwy, Columbia, SC 29210	Manhole	N/A		1878	Saluda River	Wet Weather	Adjusted Pump Rates At Pump Station To Decrease Flow Volume. Main Line Was Already Under Bypass For Repairs.
12/23/2019	18:54	1621 Stevenson Ave, Columbia, SC 29203	Manhole	N/A		1500		Wet Weather	Wet Weather; Observation Only.
12/24/2019	14:24	2212 Manse St, Columbia, SC 29203	Cleanout	12/24/2019	17:00	3298	Trib To Smith Branch	Grease	Removed Stoppage To Resume Normal Flow. Washed Main Line 30 Feet.
12/26/2019	18:40	1004 Craven St, Columbia, SC 29203	Manhole	12/26/2019	20:00	975	Storm Drain	Collapsed Line	Removed Stoppage To Resume Normal Flow. Washed Main Line 300 Feet.
12/27/2019	22:30	5501 Broad River Rd, Columbia, SC 29212	Manhole	TBD		674	Stoop Creek	Grease	Removed Stoppage To Resume Normal Flow. Main Line Wash And Manhole Cleaning To Remove Grease.
12/27/2019	12:30	209 Wilkes Rd, Columbia, SC 29203	Cleanout	12/30/2019	15:00	20		Collapsed Line	Removed Blockage To Resume Normal Flow. Repaired Service Line That Was Bored Through.
12/28/2019	16:10	3500 Lee Hills Dr, Columbia, SC 29209	Cleanout	TBD		106		Roots	Removed Stoppage To Resume Normal Flow. Main Line Root Cut And Tap Renewal.
12/30/2019	18:37	500 Wildlife Pkwy, Columbia, SC 29210	Forcemain	12/30/2019	19:00	778	Saluda River	Equipment Failure	Shut Pumps Off For Backflush To Clear Pump. Replaced ARV Bracket, Spread Lime To Sanitize The Ground.
12/23/2019	22:30	2537 Partridge Cir, Hopkins, SC 29061	Pump Station	N/A		31		Wet Weather	All Pumps Running To Include The Godwin. Wet Weather; Observation Only.

As noted in Section IV.8.a of the CD, a Building Backup is defined as a release of wastewater into a building or onto private property that is caused by blockages, flow conditions, or other malfunctions in the WCTS.

No building backups were identified within the City’s system for the current reporting period.

Section 5 SEP Water Quality Monitoring Results

In accordance with Section IX.39.a.(v) of the CD, the following section provides a summary of the results of water quality monitoring conducted during the previous calendar quarter as part of the Supplemental Environmental Project (SEP) described in Appendix I of the CD.

5.1 Sampling Conducted and Results

As a part of the SEP requirements established in Section VIII and Appendix I of the CD, the City is to conduct water quality monitoring at three locations to assist in evaluation of the environmental benefits of the SEP in improving water quality in Smith Branch and Gills Creek. The City is to implement a program for ambient monitoring of dissolved oxygen (DO), total suspended solids (TSS), temperature, and E. coli at the following monitoring sites:

- Gills Creek at Garner's Ferry Road
- Smith Branch at North Main Street
- Gills Creek at Bluff Road

In accordance with the requirements of the CD, the City was to submit a Quality Assurance Project Plan (QAPP) to SCDHEC within 60 days of the date of entry of the CD. The City originally submitted the QAPP to SCDHEC on July 18, 2014 in advance of the deliverable deadline. The City subsequently received comments from SCDHEC and resubmitted the QAPP to SCDHEC on January 13, 2015. The City received final approval of the QAPP from EPA and SCDHEC on January 15, 2016. The QAPP was revised and resubmitted to SCDHEC on May 31, 2017 and on December 19, 2018 to reflect changes in City personnel. The revised QAPP was approved on January 9, 2019. The QAPP was subsequently revised and resubmitted to SCDHEC on January 22, 2019 to reflect a change in the testing laboratory. Following comments from SCDHEC and additional resubmittals, the City received approval of the revised QAPP from EPA and SCDHEC on April 2, 2019.

The City monitored quarterly for the first three years under the CD (through January 15, 2019) and will monitor monthly (or every other month at the Gills Creek at Bluff Road site) from years four through six under the CD.

Water quality monitoring for 2019 Q3 was completed on October 31, 2019, November 27, 2019, and December 27, 2019. Monitoring results are provided below for the following samples:

- C-001: Gills Creek at Garner's Ferry Road
- B-280: Smith Branch at North Main Street
- C-017: Gills Creek at Bluff Road

City of Columbia Quality Assurance Project Plan (QAPP) Data

Verification and Validation Form

City of Columbia Supplemental Environmental Projects QAPP

November 2015, Revised May 2017, Revised December 2018, Revised January 2019

Laboratory Report Date: 10/31/19

The undersigned verifies the data in the above referenced report, per the QAPP requirements.

Miranda Staples

Project Verifier/QA Manager

11/11/19

Date

Miranda Staples

Printed Name

The undersigned validates the data in the above referenced report, per the QAPP requirements.

AJ Jesse

Project Manager/Project Validator

11/11/19

Date

AJ Jesse

Printed Name



Laboratory Report

Client	Woolpert Inc. - City of Columbia Michael Long 2000 Center Point Road Ste 2200 Columbia, SC 29210	Project:	Water Quality Testing
		Work Order:	9101227
		Received:	10/21/2019 12:20

Dear Client:

Rogers and Callcott appreciates the opportunity to be of service to you. The attached laboratory services report includes analytical results and chain of custody for samples that were received on October 21, 2019. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements for the TNi standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty is available upon request.

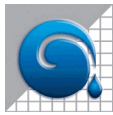
Privileged / Confidential information may be contained in this report and is intended only for the use of the addressee. If you are not the addressee, or the person responsible for delivering to the person addressed, you may not copy or deliver this message to anyone else. If you receive this message by mistake, please notify Rogers and Callcott immediately.

We strive to provide excellent service to our clients. Please contact Lauren Woodrum Hollister, your Project Manager, at lauren.woodrum.hollister@rogersandcallcott.com or (864)-232-1556 if you have any questions about this report.

CC: Trevor Gauron

Report Approved By:

Lauren Woodrum Hollister
Project Manager



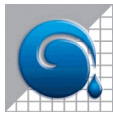
Certificate of Analysis

*South Carolina Greenville Laboratory Identification 23105
 South Carolina Columbia Laboratory Identification 40572
 North Carolina Laboratory Certification Number 27
 North Carolina Drinking Water Lab Number 45710
 NELAP Utah Certificate Number SC000042014-1
 Georgia Drinking Water Lab ID 880*

Client Woolpert Inc. - City of Columbia
 Michael Long
 2000 Center Point Road Ste 2200
 Columbia, SC 29210

Project: Water Quality Testing
Work Order: 9101227
Received: 10/21/2019 12:20

Sample Number	Sample Description	Matrix	Sampled	Type
9101227-01	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	10/21/19 11:04	Grab
9101227-02	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	10/21/19 11:05	Grab
9101227-03	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	10/21/19 11:34	Grab
9101227-04	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	10/21/19 11:35	Grab
9101227-05	DHEC B-280 Smith Branch @ N. Main St	Wastewater	10/21/19 12:04	Grab
9101227-06	DHEC B-280 Smith Branch @ N. Main St	Wastewater	10/21/19 12:05	Grab



Woolpert Inc. - City of Columbia
2000 Center Point Road Ste 2200
Columbia, SC 29210

Project: Water Quality Testing
Work Order: 9101227
Reported: 10/31/19 12:15

Sample Data

Sample Number 9101227-01
Sample Description DHEC C-017 Gills Creek @ Bluff Road collected on 10/21/19 11:04

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Field Parameters										
Dissolved Oxygen	7.1	0.1	mg/L	1.00	10/21/19 11:04	SM 4500 OG-2011		MBW	B9J1072	RC-C
Grab	Complete				10/21/19 11:04	Grab		MBW	B9J1072	RC-C
Temperature	20.4	0.0	°C	1.00	10/21/19 11:04	SM 2550B-2010		MBW	B9J1072	RC-C

Sample Number 9101227-02
Sample Description DHEC C-017 Gills Creek @ Bluff Road collected on 10/21/19 11:05

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Microbiological Parameters										
E. Coli	456	20	MPN/100 mL	20.0	10/21/19 15:14	SM 9223B-2004		MBW	B9J1137	RC-C
General Chemistry Parameters										
Total Suspended Solids	10.5	1.7	mg/L	1.67	10/22/19 08:30	SM 2540D-2011		RAM	B9J1093	RC-C

Sample Number 9101227-03
Sample Description DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 10/21/19 11:34

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Field Parameters										
Dissolved Oxygen	8.4	0.1	mg/L	1.00	10/21/19 11:34	SM 4500 OG-2011		MBW	B9J1072	RC-C
Temperature	20.7	0.0	°C	1.00	10/21/19 11:34	SM 2550B-2010		MBW	B9J1072	RC-C

Sample Number 9101227-04
Sample Description DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 10/21/19 11:35

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Microbiological Parameters										
E. Coli	662	20	MPN/100 mL	20.0	10/21/19 15:14	SM 9223B-2004		MBW	B9J1137	RC-C
General Chemistry Parameters										
Total Suspended Solids	24.0	4.0	mg/L	4.00	10/22/19 08:30	SM 2540D-2011		RAM	B9J1093	RC-C



Woolpert Inc. - City of Columbia
2000 Center Point Road Ste 2200
Columbia, SC 29210

Project: Water Quality Testing
Work Order: 9101227
Reported: 10/31/19 12:15

Sample Number 9101227-05
Sample Description DHEC B-280 Smith Branch @ N. Main St collected on 10/21/19 12:04

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Field Parameters										
Dissolved Oxygen	8.4	0.1	mg/L	1.00	10/21/19 12:04	SM 4500 OG-2011		MBW	B9J1072	RC-C
Temperature	20.0	0.0	°C	1.00	10/21/19 12:04	SM 2550B-2010		MBW	B9J1072	RC-C

Sample Number 9101227-06
Sample Description DHEC B-280 Smith Branch @ N. Main St collected on 10/21/19 12:05

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Microbiological Parameters										
E. Coli	656	20	MPN/100 mL	20.0	10/21/19 15:14	SM 9223B-2004		MBW	B9J1137	RC-C
General Chemistry Parameters										
Total Suspended Solids	4.6	1.0	mg/L	1.00	10/22/19 08:30	SM 2540D-2011		RAM	B9J1093	RC-C



Woolpert Inc. - City of Columbia
2000 Center Point Road Ste 2200
Columbia, SC 29210

Project: Water Quality Testing
Work Order: 9101227
Reported: 10/31/19 12:15

Data Qualifiers and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

NR Not reported

Laboratory Reference:

RC-G = Rogers and Callcott, 426 Fairforest Way, Greenville, SC 29607 / SC Lab ID 23105

RC-C = Rogers and Callcott, 215B Stoneridge Drive, Columbia, SC 29210 / SC Lab ID 40572

Mailing PO Box 5655 Shipping 426 Fairforest Way 215B Stoneridge Drive
 Greenville, SC 29606 Address: Greenville, SC 29607 Columbia, SC 29210
 Phone (864) 232-1556 Fax (864) 232-6140 Phone (803) 509-8999

Client Name Woolpert - City of Columbia
 Address 2000 Center Point Road Suite 2200
Columbia, SC 29210
 Report To: Michael Long
 Email Address Michael.long@woolpert.com
 Telephone # 803-214-5936

PO # _____ Project # Water Quality Testing

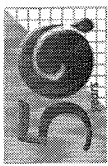
R & C WORK ORDER	YR DATE	TIME	SAMPLE DESCRIPTION
-02	10-21	1105	DHEC C-017 (Gills Creek @ Bluff Road)
-02	10-21	1105	DHEC C-017 (Gills Creek @ Bluff Road)

CHAIN OF CUSTODY RECORD

WORK ORDER 9101227

Parameter(s) ↓	Total Number of Containers	N	Y	N	Y	Filtered (Yes/No)	Cooled (Yes/No)	Container Type (Plastic/Glass)	Container Volume (mL)	Sample Type (Grab/Composite)	Sample Source (WW, GW, DW, SW, S, Other)	Preservation Code(s)	COMMENTS
TSS	1											A - None E - HCl B - HNO ₃ F - Na ₂ S ₂ O ₃ C - H ₂ SO ₄ G - Boric Acid D - NaOH H - Ascorbic Acid I - Zn Acetate J - H ₃ PO ₄ K - NaH ₂ PO ₄ L - NH ₄ Cl	
	1												D.O.- 7.12 mg/L
	1												Temp- 20.4 °C
													Collected @ 1104
													Analyzed @ 1104
													Weather- 73° F / Partly cloudy

SAMPLER - RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
1. <u>Nindi B. Wright</u>	10-21-19 1220	<u>[Signature]</u>	DATE/TIME: <u>10-21-20</u>
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
3.		4.	
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
5.		6.	
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
7.		8.	



Rogers & Callcott
ENVIRONMENTAL
Half a century of commitment and quality

Mailing Address: PO Box 5655
Greenville, SC 29606
Phone (864) 232-1556

Shipping Address: 426 Fairforest Way
Greenville, SC 29607
Phone (864) 232-6140

215B Stoneridge Drive
Columbia, SC 29210
Phone (803) 509-8999

Client Name: Woolpert - City of Columbia

Address: 2000 Center Point Road Suite 2200
Columbia, SC 29210

Report To: Michael Long

Email Address: Michael.long@woolpert.com

Telephone #: 803-214-5936

PO # _____ **Project #** Water Quality Testing

R & C WORK ORDER	YR 19	DATE	TIME	SAMPLE DESCRIPTION
-04	10-21	1135		DHEC C-001 (Gills Creek @ Garners Ferry Rd)
-04	10-21	1135		DHEC C-001 (Gills Creek @ Garners Ferry Rd)

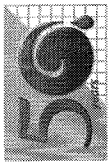
SAMPLER - RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:
<u>Michael B. Wolf</u>	<u>10-21-19 1220</u>	<u>[Signature]</u>
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:
3.		4.
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:
5.		6.
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:
7.		8.

CHAIN OF CUSTODY RECORD

WORK ORDER 9101227

Filtered (Yes/No)											
Cooled (Yes/No)											
Container Type (Plastic/Glass)											
Container Volume (mL)											
Sample Type (Grab/Composite)											
Sample Source (WW, GW, DW, SW, S, Other)											
Preservation Code(s)											
A - None											
E - HCl											
I - Zn Acetate											
B - HNO ₃											
F - Na ₂ S ₂ O ₃											
J - H ₃ PO ₄											
C - H ₂ SO ₄											
G - Boric Acid											
K - NaH ₂ PO ₄											
D - NaOH											
H - Ascorbic Acid											
L - NH ₄ Cl											
COMMENTS											

DATE/TIME:	Composite Start Date/Time:	
	<u>10-21-19 1220</u>	
DATE/TIME:	Composite End Date/Time:	
DATE/TIME:	Time or Flow (Circle one)	Initials:
DATE/TIME:	Temperature of blank or representative sample	
	At time of collection _____ °C	
	At time of lab receipt <u>0.2</u> °C	



Rogers & Callcott
ENVIRONMENTAL
Half a century of commitment and quality

Mailing Address: PO Box 5655 Greenville, SC 29606
Phone (864) 232-1556

Shipping Address: 426 Fairforest Way Greenville, SC 29607
Phone (864) 232-6140

215B Stoneridge Drive Columbia, SC 29210
Phone (803) 509-8999

Client Name Woolpert - City of Columbia
Address 2000 Center Point Road Suite 2200 Columbia, SC 29210
Report To: Michael Long
Email Address Michael.long@woolpert.com
Telephone # 803-214-5936
PO # _____ **Project #** Water Quality Testing

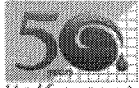
CHAIN OF CUSTODY RECORD

WORK ORDER 9101227

R & C WORK ORDER	YR DATE	TIME	SAMPLE DESCRIPTION	Total Number of Containers	Parameter(s) ↓	N	N	Filtered (Yes/No)	Cooled (Yes/No)	Container Type (Plastic/Glass)	Container Volume (mL)	Sample Type (Grab/Composite)	Sample Source (WW, GW, DW, SW, S, Other)	Preservation Code(s)	COMMENTS
-06	10-21	1205	DHEC B-280 (Smith Branch @ N. Main St)	1	TSS	1	F. Col							A - None B - HNO ₃ C - H ₂ SO ₄ D - NaOH E - HCl F - Na ₂ S ₂ O ₃ G - Boric Acid H - Ascorbic Acid I - Zn Acetate J - H ₃ PO ₄ K - NaH ₂ PO ₄ L - NH ₄ Cl	D.O. - 8.39 mg/L Temp - 20.0 °C Collected @ 1204 Analyzed @ 1204
-06	10-21	1205	DHEC B-280 (Smith Branch @ N. Main St)	1											Weather - 72°F / Partly Cloudy 10-21-19 MBAN

SAMPLER - RELINQUISHED BY: <u>Nindi B. Wright</u>	DATE/TIME: <u>10-21-19 1220</u>	RECEIVED BY: <u>[Signature]</u>	DATE/TIME: <u>10-21-19 1220</u>
RELINQUISHED BY: _____	DATE/TIME: _____	RECEIVED BY: _____	DATE/TIME: _____
RELINQUISHED BY: _____	DATE/TIME: _____	RECEIVED BY: _____	DATE/TIME: _____
RELINQUISHED BY: _____	DATE/TIME: _____	RECEIVED BY: _____	DATE/TIME: _____

Temperature of blank or representative sample _____ °C
At time of collection _____ °C
At time of lab receipt D.2 °C



Sample Receipt Verification

Client: Woolpert - City of Columbia Date Received: 10-21-19 Work Order: 9101227

Carrier Name: (to Columbia)	Client	FedEx	UPS	US Mail	Courier	<u>Field Services</u>	Other: _____
Tracking Number: _____							

Carrier Name: (to Greenville)	Client	FedEx	UPS	US Mail	Courier	Field Services	Other: _____
Tracking Number: <u>NA</u>							

Receipt Criteria	Y e s	No	N A	Comments
Shipping container / cooler intact?	<input checked="" type="checkbox"/>			Damaged Leaking Other: _____
Custody seals intact?			<input checked="" type="checkbox"/>	
COC included with samples?	<input checked="" type="checkbox"/>			
COC signed when relinquished and received?	<input checked="" type="checkbox"/>			
Sample bottles intact?	<input checked="" type="checkbox"/>			Damaged Leaking Other: _____
Sample ID on COC agree with label on bottle(s)?	<input checked="" type="checkbox"/>			
Date / time on COC agree with label on bottle(s)?	<input checked="" type="checkbox"/>			
Number of bottles on COC agrees with number of bottles received?	<input checked="" type="checkbox"/>			
Samples received within holding time?	<input checked="" type="checkbox"/>			
Sample volume sufficient for analysis?	<input checked="" type="checkbox"/>			
VOA vials free of headspace (<6mm bubble)?			<input checked="" type="checkbox"/>	
Samples requiring pH preservation at proper pH? <small>Note: Samples for metals analysis may be preserved upon receipt in the lab. Note: Samples for O&G and VOA analysis – preservation checked at bench.</small>			<input checked="" type="checkbox"/>	
Samples dechlorinated for parameters requiring chlorine removal at the time of sample collection? <small>Note: Chlorine checked at bench for samples requiring Bacterial, VOA, and HAA analysis.</small>	<input checked="" type="checkbox"/>			
Samples cooled when received in Columbia ?	Temp at time of receipt	<u>0.2</u> °C	<input checked="" type="checkbox"/>	<u>Ice</u> Cold Packs Dry Ice None
	Temp measured with IR SN: 36301069WS			
Samples cooled when received in Greenville ?	Temp at time of receipt	<u>NA</u> °C		Ice Cold Packs Dry Ice None
	Temp measured with IR SN: 97050067			

If in-house preservation used – record Lot #			
HCL		H ₃ PO ₄	
H ₂ SO ₄		NaOH	
HNO ₃		Other	

Comments: _____

Were non-conformance issues noted at initial sample receipt? Yes or No

Non-Conformance issue other than noted above: _____

Note: Samples received initially in Columbia Facility. Sample preservation checks performed at Columbia Facility. Revised March 2019

Completed by: MST

City of Columbia Quality Assurance Project Plan (QAPP) Data

Verification and Validation Form

City of Columbia Supplemental Environmental Projects QAPP

November 2015, Revised May 2017, Revised December 2018

Laboratory Report Date: 11/27/19

The undersigned verifies the data in the above referenced report, per the QAPP requirements.

Miranda Staples

Project Verifier/QA Manager

12/30/19

Date

Miranda Staples

Printed Name

The undersigned validates the data in the above referenced report, per the QAPP requirements.

Andrea Bolling

Project Manager/Project Validator

12/30/19

Date

Andrea Bolling

Printed Name



Laboratory Report

Client	Woolpert Inc. - City of Columbia Michael Long 2000 Center Point Road Ste 2200 Columbia, SC 29210	Project:	Water Quality Testing
		Work Order:	9111017
		Received:	11/20/2019 14:52

Dear Client:

Rogers and Callcott appreciates the opportunity to be of service to you. The attached laboratory services report includes analytical results and chain of custody for samples that were received on November 20, 2019. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements for the TNI standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty is available upon request.

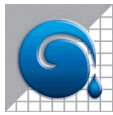
Privileged / Confidential information may be contained in this report and is intended only for the use of the addressee. If you are not the addressee, or the person responsible for delivering to the person addressed, you may not copy or deliver this message to anyone else. If you receive this message by mistake, please notify Rogers and Callcott immediately.

We strive to provide excellent service to our clients. Please contact Lauren Woodrum Hollister, your Project Manager, at lauren.woodrum.hollister@rogersandcallcott.com or (864)-232-1556 if you have any questions about this report.

CC: Trevor Gauron

Report Approved By:

Lauren Woodrum Hollister
Project Manager



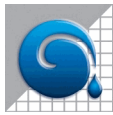
Certificate of Analysis

*South Carolina Greenville Laboratory Identification 23105
 South Carolina Columbia Laboratory Identification 40572
 North Carolina Laboratory Certification Number 27
 North Carolina Drinking Water Lab Number 45710
 NELAP Utah Certificate Number SC000042014-1
 Georgia Drinking Water Lab ID 880*

Client Woolpert Inc. - City of Columbia
 Michael Long
 2000 Center Point Road Ste 2200
 Columbia, SC 29210

Project: Water Quality Testing
Work Order: 9111017
Received: 11/20/2019 14:52

Sample Number	Sample Description	Matrix	Sampled	Type
9111017-01	DHEC B-280 Smith Branch @ N. Main St	Wastewater	11/20/19 13:15	Grab
9111017-02	DHEC B-280 Smith Branch @ N. Main St	Wastewater	11/20/19 13:18	Grab
9111017-03	DHEC B-280 Smith Branch @ N. Main St	Wastewater	11/20/19 13:20	Grab
9111017-04	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	11/20/19 14:05	Grab
9111017-05	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	11/20/19 14:00	Grab
9111017-06	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	11/20/19 14:03	Grab
9111017-07	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	11/20/19 14:31	Grab
9111017-08	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	11/20/19 14:25	Grab
9111017-09	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	11/20/19 14:28	Grab



Woolpert Inc. - City of Columbia
2000 Center Point Road Ste 2200
Columbia, SC 29210

Project: Water Quality Testing
Work Order: 9111017
Reported: 11/27/19 12:11

Sample Data

Sample Number 9111017-01
Sample Description DHEC B-280 Smith Branch @ N. Main St collected on 11/20/19 13:15

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Field Parameters										
Dissolved Oxygen	10.5	0.1	mg/L	1.00	11/20/19 13:15	SM 4500 OG-2011		CDT	B9K0972	RC-C
Grab	Complete				11/20/19 13:15	Grab		CDT	B9K0972	RC-C
Temperature	20.8	0.0	°C	1.00	11/20/19 13:15	SM 2550B-2010		CDT	B9K0972	RC-C

Sample Number 9111017-02
Sample Description DHEC B-280 Smith Branch @ N. Main St collected on 11/20/19 13:18

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
General Chemistry Parameters										
Total Suspended Solids	1.4	1.0	mg/L	1.00	11/21/19 08:20	SM 2540D-2011		RAM	B9K0962	RC-C

Sample Number 9111017-03
Sample Description DHEC B-280 Smith Branch @ N. Main St collected on 11/20/19 13:20

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Microbiological Parameters										
E. Coli	62	20	MPN/100 mL	20.0	11/20/19 15:12	SM 9223B-2004		MBW	B9K1052	RC-C

Sample Number 9111017-04
Sample Description DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 11/20/19 14:05

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Field Parameters										
Dissolved Oxygen	12.4	0.1	mg/L	1.00	11/20/19 14:05	SM 4500 OG-2011		CDT	B9K0972	RC-C
Temperature	21.8	0.0	°C	1.00	11/20/19 14:05	SM 2550B-2010		CDT	B9K0972	RC-C



Woolpert Inc. - City of Columbia
2000 Center Point Road Ste 2200
Columbia, SC 29210

Project: Water Quality Testing
Work Order: 9111017
Reported: 11/27/19 12:11

Sample Number 9111017-05
Sample Description DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 11/20/19 14:00

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
General Chemistry Parameters										
Total Suspended Solids	40.3	2.9	mg/L	2.86	11/21/19 08:20	SM 2540D-2011		RAM	B9K0962	RC-C

Sample Number 9111017-06
Sample Description DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 11/20/19 14:03

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Microbiological Parameters										
E. Coli	596	20	MPN/100 mL	20.0	11/20/19 15:12	SM 9223B-2004		MBW	B9K1052	RC-C

Sample Number 9111017-07
Sample Description DHEC C-017 Gills Creek @ Bluff Road collected on 11/20/19 14:31

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Field Parameters										
Dissolved Oxygen	11.2	0.1	mg/L	1.00	11/20/19 14:31	SM 4500 OG-2011		CDT	B9K0972	RC-C
Temperature	22.6	0.0	°C	1.00	11/20/19 14:31	SM 2550B-2010		CDT	B9K0972	RC-C

Sample Number 9111017-08
Sample Description DHEC C-017 Gills Creek @ Bluff Road collected on 11/20/19 14:25

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
General Chemistry Parameters										
Total Suspended Solids	6.8	1.0	mg/L	1.00	11/21/19 08:20	SM 2540D-2011		RAM	B9K0962	RC-C

Sample Number 9111017-09
Sample Description DHEC C-017 Gills Creek @ Bluff Road collected on 11/20/19 14:28

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Microbiological Parameters										
E. Coli	482	20	MPN/100 mL	20.0	11/20/19 15:12	SM 9223B-2004		MBW	B9K1052	RC-C



Woolpert Inc. - City of Columbia
2000 Center Point Road Ste 2200
Columbia, SC 29210

Project: Water Quality Testing
Work Order: 9111017
Reported: 11/27/19 12:11

Data Qualifiers and Definitions

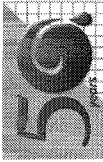
ND Analyte NOT DETECTED at or above the reporting limit

NR Not reported

Laboratory Reference:

RC-G = Rogers and Callcott, 426 Fairforest Way, Greenville, SC 29607 / SC Lab ID 23105

RC-C = Rogers and Callcott, 215B Stoneridge Drive, Columbia, SC 29210 / SC Lab ID 40572



Rogers & Callcott
ENVIRONMENTAL
Half a century of commitment and quality

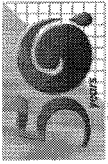
Mailing PO Box 5655 Shipping 426 Fairforest Way 215B Stoneridge Drive
Address: Greenville, SC 29606 Address: Greenville, SC 29607 Columbia, SC 29210
Phone (864) 232-1556 Fax (864) 232-6140 Phone (803) 509-8999

Client Name Woolpert - City of Columbia
Address 2000 Center Point Road Suite 2200
Columbia, SC 29210
Report To: Michael Long
Email Address Michael.long@woolpert.com
Telephone # 803-214-5936
PO # _____ Project # Water Quality Testing

CHAIN OF CUSTODY RECORD

WORK ORDER 911017

R & C WORK ORDER	YR DATE	TIME	SAMPLE DESCRIPTION	Parameter(s) ↓	Total Number of Containers	N	N	Filtered (Yes/No)	Cooled (Yes/No)	Container Type (Plastic/Glass)	Container Volume (mL)	Sample Type (Grab/Composite)	Sample Source (WW, GW, DW, SW, S, Other)	Preservation Code(s)	COMMENTS
-02	11/20	1318	DHEC B-280 (Smith Branch @ N. Main St)		1									A - None E - HCl I - Zn Acetate B - HNO ₃ F - Na ₂ S ₂ O ₃ J - H ₃ PO ₄ C - H ₂ SO ₄ G - Boric Acid K - NaH ₂ PO ₄ D - NaOH H - Ascorbic Acid L - NH ₄ Cl	
-03	11/20	1320	DHEC B-280 (Smith Branch @ N. Main St)		1										D.O. - 10.49 mg/L Temp - 20.8 °C Collected @ 1315 Analyzed @ 1315 Weather - 60° Sunny
<p>SAMPLER RELINQUISHED BY: <u>[Signature]</u> DATE/TIME: <u>11/20/19 1452</u> RECEIVED BY: <u>[Signature]</u> DATE/TIME: <u>11-20-19 1452</u></p> <p>RELINQUISHED BY: _____ DATE/TIME: _____ RECEIVED BY: _____ DATE/TIME: _____</p> <p>RELINQUISHED BY: _____ DATE/TIME: _____ RECEIVED BY: _____ DATE/TIME: _____</p> <p>RELINQUISHED BY: _____ DATE/TIME: _____ RECEIVED BY: _____ DATE/TIME: _____</p>															



Rogers & Callcott
 ENVIRONMENTAL
Half a century of commitment and quality

Mailing Address: PO Box 5655 Greenville, SC 29606
 Shipping Address: 426 Fairforest Way Greenville, SC 29607
 Phone: (864) 232-1556 Fax: (864) 232-6140
 215B Stoneridge Drive Columbia, SC 29210
 Phone: (803) 509-8999

Client Name: Woolpert - City of Columbia
Address: 2000 Center Point Road Suite 2200 Columbia, SC 29210
Report To: Michael Long
Email Address: Michael.long@woolpert.com
Telephone #: 803-214-5936
PO #: _____ **Project # Water Quality Testing**

CHAIN OF CUSTODY RECORD

WORK ORDER 9111017

R & C WORK ORDER	YR DATE	TIME	SAMPLE DESCRIPTION	Parameter(s) ↓	Total Number of Containers	N	N	Filtered (Yes/No)	Cooled (Yes/No)	Container Type (Plastic/Glass)	Container Volume (mL)	Sample Type (Grab/Composite)	Sample Source (WW, GW, DW, SW, S, Other)	Preservation Code(s)	COMMENTS
-05	11/20	1400	DHEC C-001 (Gills Creek @ Garners Ferry Rd)		1									A - None E - HCl B - HNO ₃ F - Na ₂ S ₂ O ₃ C - H ₂ SO ₄ G - Boric Acid D - NaOH H - Ascorbic Acid I - Zn Acetate J - H ₃ PO ₄ K - NaH ₂ PO ₄ L - NH ₄ Cl	D.O. - 12.91 mg/L
-06	1	1403	DHEC C-001 (Gills Creek @ Garners Ferry Rd)		1										Temp - 21.8 °C
															Collected @ 1405
															Analyzed @ 1405
															Weather - 65 Sunny

SAMPLER - RELINQUISHED BY: [Signature] **DATE/TIME:** 11/20/19 1452 **RECEIVED BY:** [Signature] **DATE/TIME:** 11-20-19 1452

RELINQUISHED BY: _____ **DATE/TIME:** _____ **RECEIVED BY:** _____ **DATE/TIME:** _____

RELINQUISHED BY: _____ **DATE/TIME:** _____ **RECEIVED BY:** _____ **DATE/TIME:** _____

RELINQUISHED BY: _____ **DATE/TIME:** _____ **RECEIVED BY:** _____ **DATE/TIME:** _____

Composite Start Date/Time: _____
 Composite End Date/Time: _____
 Time or Flow (Circle one) Initials: _____

Temperature of blank or representative sample
 At time of collection _____ °C
 At time of lab receipt 6.3 °C



Rogers & Callcott

ENVIRONMENTAL
Half a century of commitment and quality

Mailing Address: PO Box 5655 Greenville, SC 29606
Phone (864) 232-1556

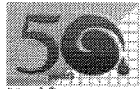
Shipping Address: 215B Stoneridge Drive Columbia, SC 29210
Phone (803) 509-8999

Client Name Woolpert - City of Columbia
Address 2000 Center Point Road Suite 2200 Columbia, SC 29210
Report To: Michael Long
Email Address Michael.long@woolpert.com
Telephone # 803-214-5936
PO # _____ **Project #** Water Quality Testing

CHAIN OF CUSTODY RECORD

WORK ORDER 9111017

R & C WORK ORDER	YR DATE	TIME	SAMPLE DESCRIPTION	Total Number of Containers	Parameter(s) ↓	N	Y	P	0.5G	G	ww	A	F	Filtered (Yes/No)	Cooled (Yes/No)	Container Type (Plastic/Glass)	Container Volume (mL)	Sample Type (Grab/Composite)	Sample Source (WW, GW, DW, SW, S, Other)	Preservation Code(s)	COMMENTS		
-08	1/20	1425	DHEC C-017 (Gills Creek @ Bluff Road)	1		1																	
-09	1	1428	DHEC C-017 (Gills Creek @ Bluff Road)	1																			
SAMPLER - RELINQUISHED BY:			DATE/TIME:	RECEIVED BY:	DATE/TIME:																		
1. <i>[Signature]</i>			1/20/19 1452	2. <i>[Signature]</i>	11-20-19 1452																		
RELINQUISHED BY:			DATE/TIME:	RECEIVED BY:	DATE/TIME:																		
3. _____				4. _____																			
RELINQUISHED BY:			DATE/TIME:	RECEIVED BY:	DATE/TIME:																		
5. _____				6. _____																			
RELINQUISHED BY:			DATE/TIME:	RECEIVED BY:	DATE/TIME:																		
8. _____				8. _____																			



Sample Receipt Verification

Client: Woolpert Cola Date Received: 11-20-19 Work Order: 9111017

Carrier Name: (to Columbia)	Client	FedEx	UPS	US Mail	Courier	<u>Field Services</u>	Other: _____
Tracking Number: _____							

Carrier Name: (to Greenville)	Client	FedEx	UPS	US Mail	Courier	Field Services	Other: _____
Tracking Number: <u>N/A</u>							

Receipt Criteria	Y e s	No	N A	Comments
Shipping container / cooler intact?	X			Damaged Leaking Other:
Custody seals intact?			X	
COC included with samples?	X			
COC signed when relinquished and received?	X			
Sample bottles intact?	X			Damaged Leaking Other:
Sample ID on COC agree with label on bottle(s)?	X			
Date / time on COC agree with label on bottle(s)?	X			
Number of bottles on COC agrees with number of bottles received?	X			
Samples received within holding time?	X			
Sample volume sufficient for analysis?	X			
VOA vials free of headspace (<6mm bubble)?			X	
Samples requiring pH preservation at proper pH? <small>Note: Samples for metals analysis may be preserved upon receipt in the lab. Note: Samples for O&G and VOA analysis – preservation checked at bench.</small>			X	
Samples dechlorinated for parameters requiring chlorine removal at the time of sample collection? <small>Note: Chlorine checked at bench for samples requiring Bacterial, VOA, and HAA analysis.</small>	X			
Samples cooled when received in Columbia ?	X			<u>Ice</u> Cold Packs Dry Ice None
Temp at time of receipt <u>1.3</u> °C				
Samples cooled when received in Greenville ?				Ice Cold Packs Dry Ice None
Temp at time of receipt <u>N/A</u> °C				
Temp measured with IR SN: 36301069WS				
Temp measured with IR SN: 97050067				

If in-house preservation used – record Lot #			
HCL		H ₃ PO ₄	
H ₂ SO ₄		NaOH	
HNO ₃		Other	

Comments:

Were non-conformance issues noted at initial sample receipt? Yes or No

Non-Conformance issue other than noted above:

City of Columbia Quality Assurance Project Plan (QAPP) Data

Verification and Validation Form

City of Columbia Supplemental Environmental Projects QAPP

November 2015, Revised May 2017, Revised December 2018, Revised January 2019

Laboratory Report Date: 12/27/19

The undersigned verifies the data in the above referenced report, per the QAPP requirements.

Miranda Staples

Project Verifier/QA Manager

12/30/19

Date

Miranda Staples

Printed Name

The undersigned validates the data in the above referenced report, per the QAPP requirements.

Andrea Bolling

Project Manager/Project Validator

12/30/19

Date

Andrea Bolling

Printed Name



Laboratory Report

Client	Woolpert Inc. - City of Columbia Michael Long 2000 Center Point Road Ste 2200 Columbia, SC 29210	Project:	Water Quality Testing
		Work Order:	9121167
		Received:	12/20/2019 13:48

Dear Client:

Rogers and Callcott appreciates the opportunity to be of service to you. The attached laboratory services report includes analytical results and chain of custody for samples that were received on December 20, 2019. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements for the TNI standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty is available upon request.

Privileged / Confidential information may be contained in this report and is intended only for the use of the addressee. If you are not the addressee, or the person responsible for delivering to the person addressed, you may not copy or deliver this message to anyone else. If you receive this message by mistake, please notify Rogers and Callcott immediately.

We strive to provide excellent service to our clients. Please contact Sarah Baker, your Project Manager, at sarah.baker@rogersandcallcott.com or (864)-232-1556 if you have any questions about this report.

CC: Trevor Gauron

Report Approved By:

Sarah Baker
Project Manager



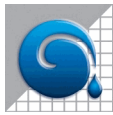
Certificate of Analysis

*South Carolina Greenville Laboratory Identification 23105
 South Carolina Columbia Laboratory Identification 40572
 North Carolina Laboratory Certification Number 27
 North Carolina Drinking Water Lab Number 45710
 NELAP Utah Certificate Number SC000042014-1
 Georgia Drinking Water Lab ID 880*

Client Woolpert Inc. - City of Columbia
 Michael Long
 2000 Center Point Road Ste 2200
 Columbia, SC 29210

Project: Water Quality Testing
Work Order: 9121167
Received: 12/20/2019 13:48

Sample Number	Sample Description	Matrix	Sampled	Type
9121167-01	DHEC B-280 Smith Branch @ N. Main St	Wastewater	12/20/19 11:52	Grab
9121167-02	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	12/20/19 12:39	Grab
9121167-03	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	12/20/19 13:17	Grab



Woolpert Inc. - City of Columbia
2000 Center Point Road Ste 2200
Columbia, SC 29210

Project: Water Quality Testing
Work Order: 9121167
Reported: 12/27/19 09:50

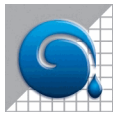
Sample Data

Sample Number 9121167-01
Sample Description DHEC B-280 Smith Branch @ N. Main St collected on 12/20/19 11:52

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Field Parameters										
Dissolved Oxygen	11.4	0.1	mg/L	1.00	12/20/19 11:52	SM 4500 OG-2011		MJT	B9L1030	RC-C
Grab	Complete				12/20/19 11:52	Grab		MJT	B9L1030	RC-C
Temperature	8.9	0.0	°C	1.00	12/20/19 11:52	SM 2550B-2010		MJT	B9L1030	RC-C
Microbiological Parameters										
E. Coli	168	20	MPN/100 mL	20.0	12/20/19 14:42	SM 9223B-2004		BNE	B9L1086	RC-C
General Chemistry Parameters										
Total Suspended Solids	6.8	1.0	mg/L	1.00	12/23/19 09:42	SM 2540D-2011		RAM	B9L1052	RC-C

Sample Number 9121167-02
Sample Description DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 12/20/19 12:39

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Field Parameters										
Dissolved Oxygen	11.3	0.1	mg/L	1.00	12/20/19 12:39	SM 4500 OG-2011		MJT	B9L1030	RC-C
Temperature	10.7	0.0	°C	1.00	12/20/19 12:39	SM 2550B-2010		MJT	B9L1030	RC-C
Microbiological Parameters										
E. Coli	220	20	MPN/100 mL	20.0	12/20/19 14:42	SM 9223B-2004		BNE	B9L1086	RC-C
General Chemistry Parameters										
Total Suspended Solids	36.0	3.3	mg/L	3.34	12/23/19 09:42	SM 2540D-2011		RAM	B9L1052	RC-C



Woolpert Inc. - City of Columbia
2000 Center Point Road Ste 2200
Columbia, SC 29210

Project: Water Quality Testing
Work Order: 9121167
Reported: 12/27/19 09:50

Sample Number 9121167-03
Sample Description DHEC C-017 Gills Creek @ Bluff Road collected on 12/20/19 13:17

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Field Parameters										
Dissolved Oxygen	10.7	0.1	mg/L	1.00	12/20/19 13:17	SM 4500 OG-2011		MJT	B9L1030	RC-C
Temperature	8.2	0.0	°C	1.00	12/20/19 13:17	SM 2550B-2010		MJT	B9L1030	RC-C
Microbiological Parameters										
E. Coli	218	20	MPN/100 mL	20.0	12/20/19 14:42	SM 9223B-2004		BNE	B9L1086	RC-C
General Chemistry Parameters										
Total Suspended Solids	8.6	1.0	mg/L	1.00	12/23/19 09:42	SM 2540D-2011		RAM	B9L1052	RC-C



Woolpert Inc. - City of Columbia
2000 Center Point Road Ste 2200
Columbia, SC 29210

Project: Water Quality Testing
Work Order: 9121167
Reported: 12/27/19 09:50

Data Qualifiers and Definitions

ND Analyte NOT DETECTED at or above the reporting limit
NR Not reported

Laboratory Reference:

RC-G = Rogers and Callcott, 426 Fairforest Way, Greenville, SC 29607 / SC Lab ID 23105
RC-C = Rogers and Callcott, 215B Stoneridge Drive, Columbia, SC 29210 / SC Lab ID 40572



Mailing PO Box 5655 Shipping 426 Fairforest Way 215B Stoneridge Drive
Address: Greenville, SC 29606 Address: Greenville, SC 29607 Columbia, SC 29210
Phone (864) 232-1556 Fax (864) 232-6140 Phone (803) 509-8999

Client Name Woolpert - City of Columbia
Address 2000 Center Point Road Suite 2200
Columbia, SC 29210
Report To: Michael Long
Email Address Michael.long@woolpert.com
Telephone # 803-214-5936

PO # _____ Project # Water Quality Testing

R & C WORK ORDER	YR / DATE	TIME	SAMPLE DESCRIPTION
-01	12-20	1152	DHEC B-280 (Smith Branch @ N. Main St)
-01	1	1	DHEC B-280 (Smith Branch @ N. Main St)

CHAIN OF CUSTODY RECORD

WORK ORDER

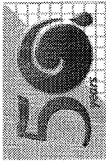
9121167

Parameter(s) ↑	Total Number of Containers	N	N	Filtered (Yes/No)	Cooled (Yes/No)	Container Type (Plastic/Glass)	Container Volume (mL)	Sample Type (Grab/Composite)	Sample Source (WW, GW, DW, SW, S, Other)	Preservation Code(s)	COMMENTS
TSS	1	A	F	Y	Y	P	0.5G	G	WW	A - None E - HCl B - HNO ₃ F - Na ₂ S ₂ O ₃ G - Boric Acid D - NaOH I - Zn Acetate J - H ₃ PO ₄ K - NaH ₂ PO ₄ L - NH ₄ Cl	D.O.- 11.4 mg/L
F. Coli	1										Temp- 8.9 °C
											Collected @ 1152
											Analyzed @ 1152
											Weather- 54°F
											Sunny

DATE/TIME: 12-20-11 13:48 RECEIVED BY: [Signature]
DATE/TIME: 12-20-11 13:48 RECEIVED BY: [Signature]
DATE/TIME: _____ RECEIVED BY: _____
DATE/TIME: _____ RECEIVED BY: _____
DATE/TIME: _____ RECEIVED BY: _____
DATE/TIME: _____ RECEIVED BY: _____

COMPOSITE START DATE/TIME: _____
COMPOSITE END DATE/TIME: _____
Time or Flow (Circle one) _____ Initials: _____

Temperature of blank or representative sample _____ °C
At time of collection _____ °C
At time of lab receipt 1.7 °C



Rogers & Callcott

ENVIRONMENTAL
Half a century of commitment and quality

Mailing: PO Box 5655 Shipping 426 Fairforest Way 215B Stoneridge Drive
 Address: Greenville, SC 29606 Address: Greenville, SC 29607 Columbia, SC 29210
 Phone (864) 232-1556 Fax (864) 232-6140 Phone (803) 509-8999

Client Name: Woolpert - City of Columbia

Address: 2000 Center Point Road Suite 2200

Columbia, SC 29210

Report To: Michael Long

Email Address: Michael.long@woolpert.com

Telephone # 803-214-5936

PO # _____ Project # Water Quality Testing

R & C WORK ORDER	YR DATE	TIME	SAMPLE DESCRIPTION
-02	12-20	1239	DHEC C-001 (Gills Creek @ Garners Ferry Rd)
-02	1	1	DHEC C-001 (Gills Creek @ Garners Ferry Rd)

CHAIN OF CUSTODY RECORD

WORK ORDER

9121167

Parameter(s) ↓	Total Number of Containers	N	N	Filtered (Yes/No)
TSS	1	Y	N	
F. Coll	1	P		
		0.5G		
		G		
		ww		
		A		

Sample Type (Grab/Composite)	Container Type (Plastic/Glass)	Sample Source (WW, GW, DW, SW, S, Other)	Container Volume (mL)	Cooled (Yes/No)	Filtered (Yes/No)
G	Plastic	WW	120		

Preservation Code(s)	COMMENTS
A - None	D.O.- 11.3 mg/L
E - HCl	Temp- 10.7 °C
I - Zn Acetate	Collected @ 1239
F - Na ₂ S ₂ O ₃	Analyzed @ 1239
J - H ₃ PO ₄	
G - Boric Acid	Weather- 54°F
K - NaH ₂ PO ₄	Sunny
D - NaOH	
H - Ascorbic Acid	
L - NH ₄ Cl	

SAMPLER - RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
1. <u>mgf</u>	12-20-19 1348	2. <u>[Signature]</u>	12-20-19 1348
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
3.		4.	
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
5.		6.	
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
7.		8.	

Temperature of blank or representative sample
At time of collection _____ °C
At time of lab receipt <u>17</u> °C

Mailing PO Box 5655 Shipping 426 Fairforest Way 215B Stoneridge Drive
 Address: Greenville, SC 29606 Address: Greenville, SC 29210 Columbia, SC 29210
 Phone (864) 232-1556 Fax (864) 232-6140 Phone (803) 509-8999

Client Name Woolpert - City of Columbia
 Address 2000 Center Point Road Suite 2200
Columbia, SC 29210
 Report To: Michael Long
 Email Address Michael.long@woolpert.com
 Telephone # 803-214-5936
 PO # _____ Project # Water Quality Testing

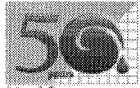
CHAIN OF CUSTODY RECORD

WORK ORDER 9121167

R & C WORK ORDER	YR / DATE	TIME	SAMPLE DESCRIPTION	Parameter(s) ↓	N	N	Filtered (Yes/No)	Cooled (Yes/No)	Container Type (Plastic/Glass)	Container Volume (mL)	Sample Type (Grab/Composite)	Sample Source (WW, GW, DW, SW, S, Other)	Preservation Code(s)	COMMENTS
-03	12-20	1317	DHEC C-017 (Gills Creek @ Bluff Road)	TSS	1									D.O.- 10.7 mg/L
-03	↓	↓	DHEC C-017 (Gills Creek @ Bluff Road)		1									Temp- 8.2 °C
														Collected @ 1317
														Analyzed @ 1317
														Weather- 54°F
														Sunny

SAMPLER - RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
1. [Signature]	12-20-19 1348	[Signature]	12-20-19 1348
3. [Signature]		4.	
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
5.		6.	
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
7.		8.	

Temperature of blank or representative sample _____ °C
 At time of collection _____ °C
 At time of lab receipt 117 _____ °C



Sample Receipt Verification

Client: Woolpert Colq Date Received: 12-20-19 Work Order: 9121167

Carrier Name: Client FedEx UPS US Mail Courier Field Services Other: _____
Tracking Number: _____

Carrier Name: Client FedEx UPS US Mail Courier Field Services Other: _____
Tracking Number: N/A

Receipt Criteria	Y e s	No	N A	Comments
Shipping container / cooler intact?	X			Damaged Leaking Other:
Custody seals intact?			X	
COC included with samples?	X			
COC signed when relinquished and received?	X			
Sample bottles intact?	X			Damaged Leaking Other:
Sample ID on COC agree with label on bottle(s)?	X			
Date / time on COC agree with label on bottle(s)?	X			
Number of bottles on COC agrees with number of bottles received?	X			
Samples received within holding time?	X			
Sample volume sufficient for analysis?	X			
VOA vials free of headspace (<6mm bubble)?			X	
Samples requiring pH preservation at proper pH? Note: Samples for metals analysis may be preserved upon receipt in the lab. Note: Samples for O&G and VOA analysis – preservation checked at bench.			X	
Samples dechlorinated for parameters requiring chlorine removal at the time of sample collection? Note: Chlorine checked at bench for samples requiring Bacterial, VOA, and HAA analysis.	X			
Samples cooled when received in Columbia ?	Temp at time of receipt <u>1.7</u> °C Temp measured with IR SN: 36301069WS	X		<u>Ice</u> Cold Packs Dry Ice None
Samples cooled when received in Greenville ?	Temp at time of receipt <u>N/A</u> °C Temp measured with IR SN: 97050067			Ice Cold Packs Dry Ice None

If in-house preservation used – record Lot #			
HCL		H ₃ PO ₄	
H ₂ SO ₄		NaOH	
HNO ₃		Other	

Comments:

Were non-conformance issues noted at initial sample receipt? Yes or No
Non-Conformance issue other than noted above:

Note: Samples received initially in Columbia Facility. Sample preservation checks performed at Columbia Facility. Revised March 2019

Completed by: MST