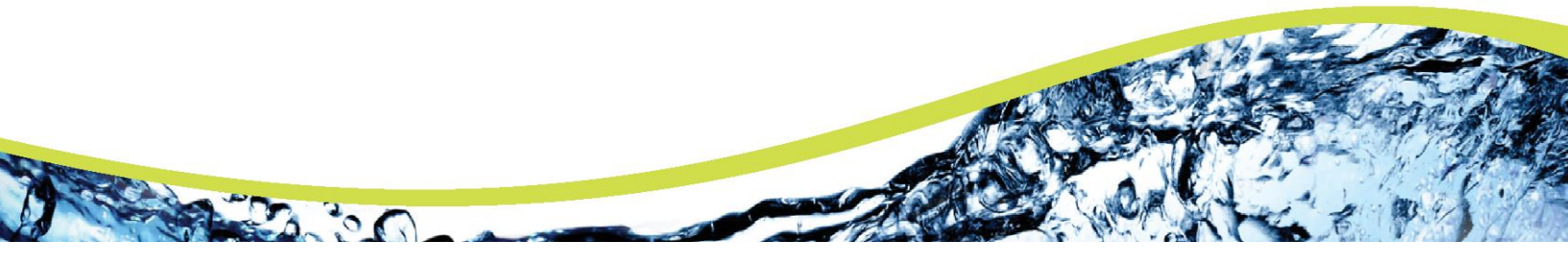


# Clean Water 2020 Program

## CONSENT DECREE QUARTERLY REPORT

January 1, 2020 – March 31, 2020



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## 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.

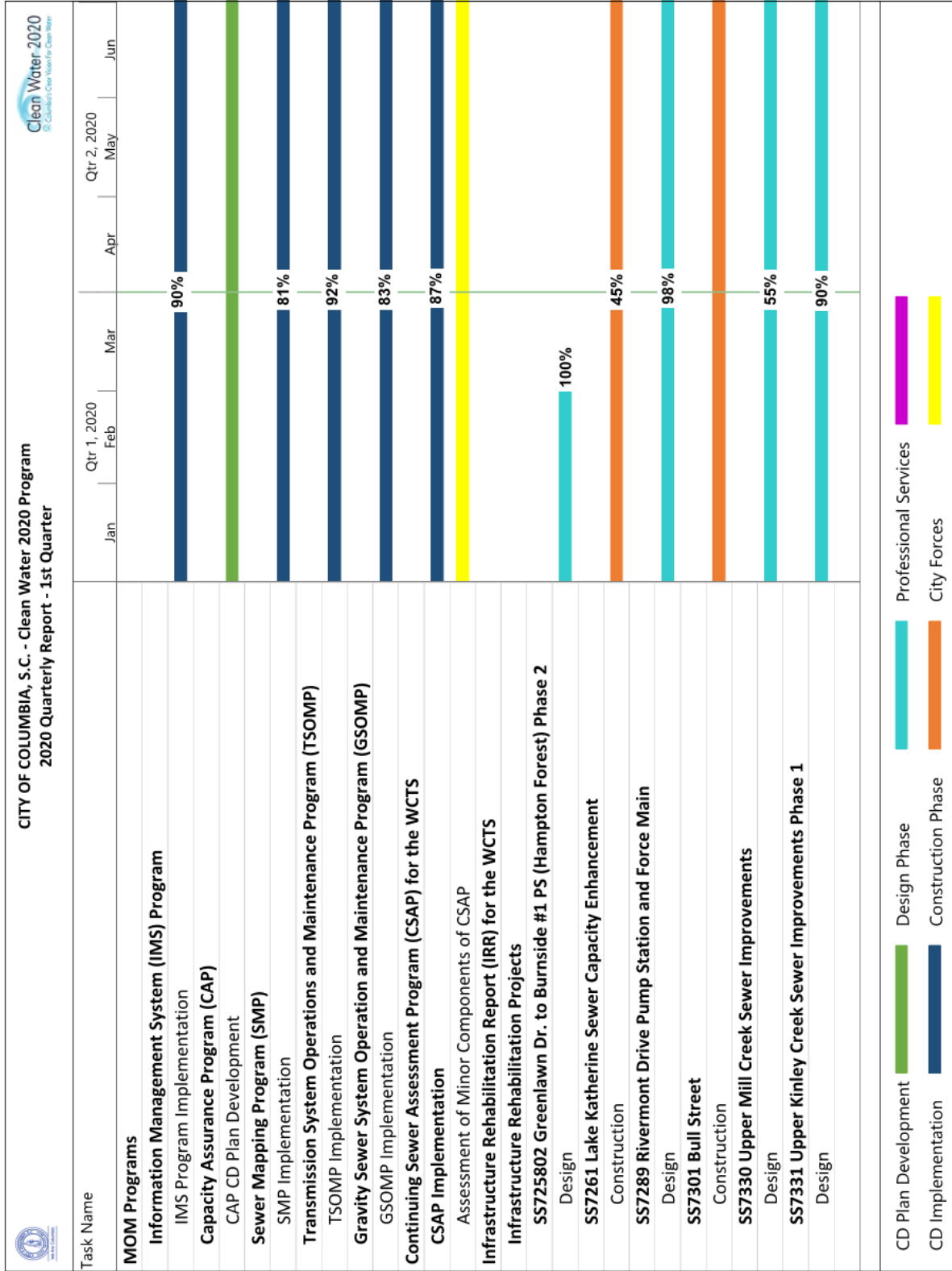
**Section 4 – Quarterly SSO Report**

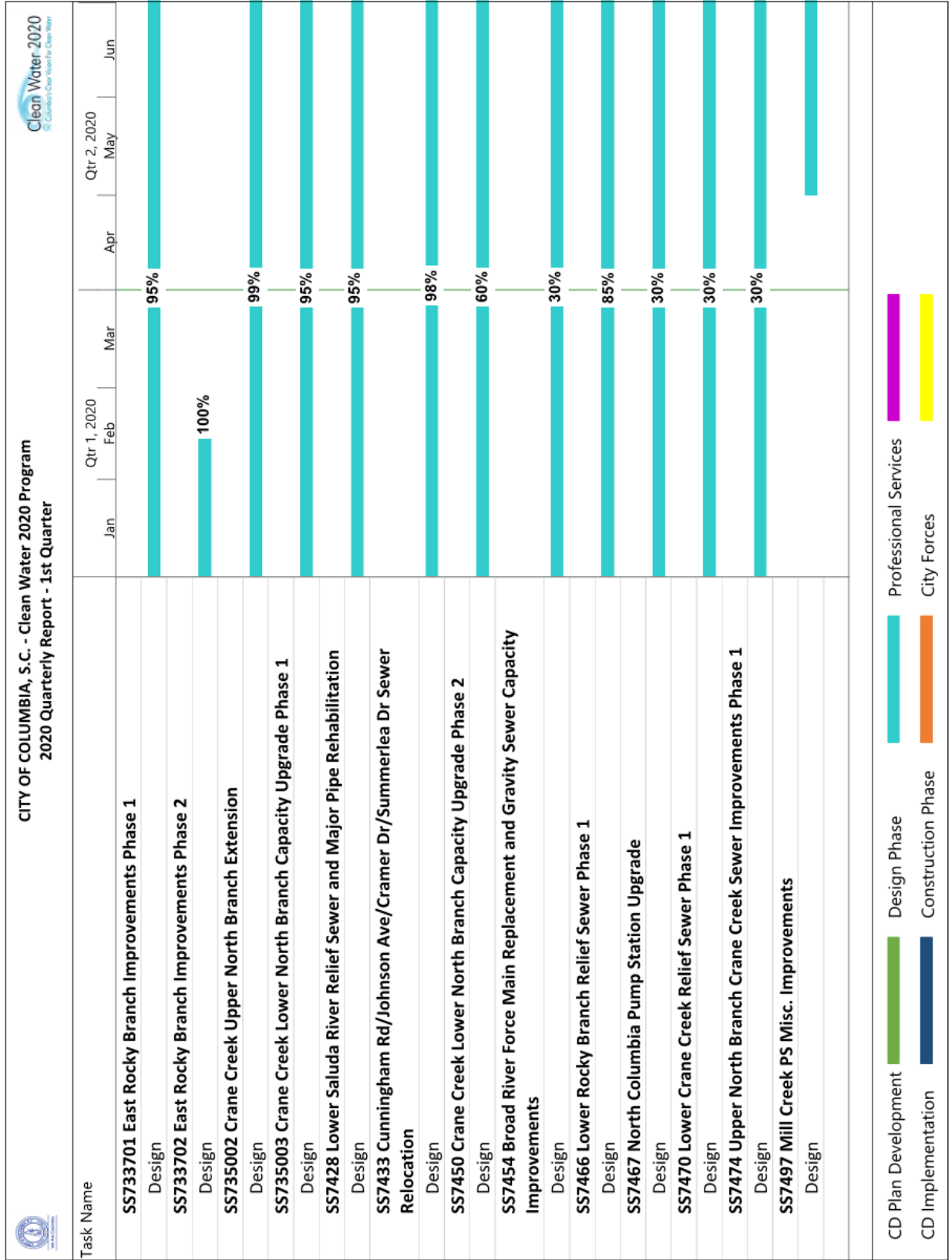
This section addresses the requirements of Section IX.39.a.(ii) of the Consent Decree and provides a tabular listing of sanitary sewer overflows (SSOs). The table includes the date, time, location, source, duration, estimated volume, receiving water (if any), cause, and actions taken to repair or otherwise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

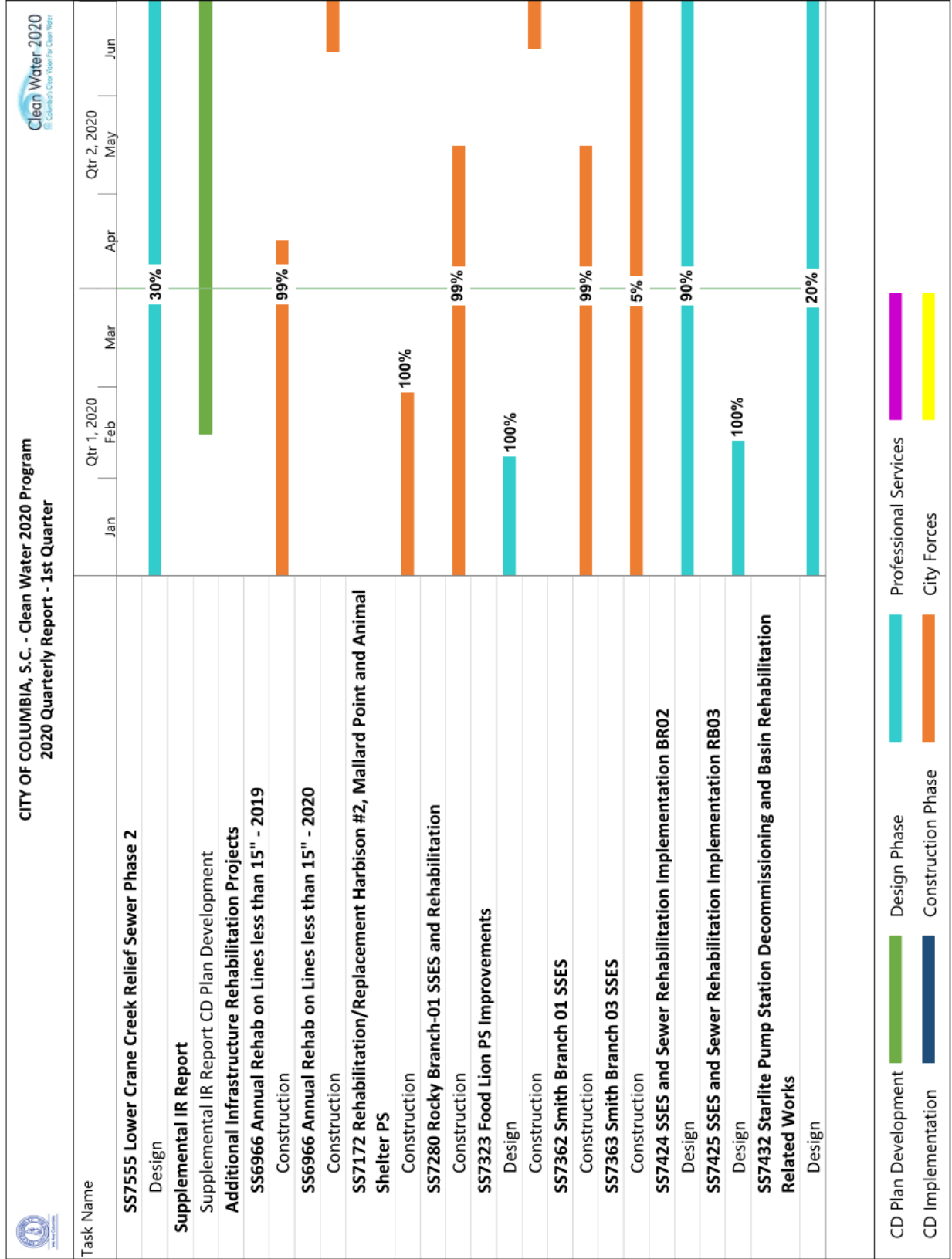
**Section 5 – SEP Water Quality Monitoring Results**

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









Task Name	CITY OF COLUMBIA, S.C. - Clean Water 2020 Program 2020 Quarterly Report - 1st Quarter					
	Jan	Feb	Mar	Apr	May	Jun
SS7435 Wexford and Windsong Lift Stations Evaluation and Rehabilitation Project						
Design						
SS7437 Miscellaneous Lift Station Improvements and Backup Power Addition Project						
Design						
SS7462 Investigation of Crockett Road, Atlas Road and Versch Lock Lift Stations						
Design						
SS7463 SSES and Sewer Rehabilitation Implementation CC01						
Design						
SS7464 SSES and Sewer Rehabilitation Implementation CC02 and CC04						
Design						
SS7468 Three Rivers Force Main Replacement						
Design						
SS7478 RB01 SSES - Phase 2						
Design						
SS7479 SB02 SSES - Phase 2						
Design						
SS7487 Hickory Ridge Drive Sewer Rehab						
Design						
SS7554 Harbison #4 Pump Station Improvements and Force Main Replacement						
Design						
Sewer System Hydraulic Model						
Model Report Development						



CITY OF COLUMBIA, S.C. - Clean Water 2020 Program  
2020 Quarterly Report - 1st Quarter



## 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 – 81% 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 – 89% complete
  - Saluda River Basin – 92% complete
  - Rocky Branch Basin – 80% complete
  - Mill Creek Basin – 28% complete
  - Gills Creek Basin – 37% complete
  - Crane Creek Basin – 71% 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:

- 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 – 50% 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 – 64% Complete
- Minor Pump Stations Condition Assessment – 64% Complete
- Minor Force Mains Field Assessment – 64% 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 was submitted to EPA and SCDHEC on November 22, 2019. The City is awaiting EPA and SCDHEC review and approval of the IRR.

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 100% Complete
- SS7261 Lake Katherine Sewer Capacity Enhancement – Construction 45% 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 100% Complete
- SS735002 Crane Creek Upper North Branch Extension – Design 99% 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 98% Complete
- SS7450 Crane Creek Lower North Branch Capacity Upgrade Phase 2 – Design 60% Complete
- SS7454 Broad River Force Main Replacement and Gravity Sewer Capacity Improvements – Design 30% Complete
- SS7466 Lower Rocky Branch Relief Sewer Phase 1 – Design 85% Complete
- SS7467 North Columbia Pump Station Upgrade – Design 30% Complete
- SS7470 Lower Crane Creek Relief Sewer Phase 1 – Design 30% Complete
- SS7474 Upper North Branch Crane Creek Sewer Improvements Phase 1 – Design 30% Complete
- SS7497 Mill Creek Pump Station Miscellaneous Improvements – 0% Design Complete
- SS7555 Lower Crane Creek Relief Sewer Phase 2 – Design 30% Complete; project is continuation of SS7465 contract previously under design.

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 99% Complete, 2020 Construction 0% Complete
- SS7172 Rehabilitation/Replacement Harbison #2, Mallard Point and Animal Shelter PS – Construction 100% Complete

- SS7280 Rocky Branch-01 SSES and Rehabilitation – Construction 99% Complete
- SS7323 Food Lion PS Improvements – Design 100% 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 90% Complete
- SS7425 SSES and Sewer Rehabilitation Implementation RB03 – Design 100% Complete
- SS7432 Starlite PS Decommissioning and Basin Rehabilitation Related Works – Design 20% Complete
- SS7435 Wexford and Windsong Lift Stations Evaluation and Rehabilitation Project – Design 95% Complete
- SS7437 Miscellaneous Lift Station Improvements and Backup Power Addition Project – Design 90% Complete
- SS7462 Investigation of Crockett Road, Atlas Road and Versch Lock Lift Stations – Design 30% Complete
- SS7463 SSES and Sewer Rehabilitation Implementation CC01 – Design 27% Complete
- SS7464 SSES and Sewer Rehabilitation Implementation CC02 and CC04 – Design 60% Complete
- SS7468 Three Rivers Force Main Replacement – Design 30% Complete
- SS7478 Rocky Branch 01 SSES Phase 2 – Design 55% Complete
- SS7479 Smith Branch 02 SSES Phase 2 – Design 27% Complete
- SS7487 Hickory Ridge Drive Sewer Rehab – Design 75% Complete
- SS7554 Harbison #4 Pump Station Improvements and Force Main Replacement – Design 0% 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. The City received final approval of the SEP Completion Report from EPA and SCDHEC on September 16, 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, 1st Quarter 2020

City of Columbia, SC Quarterly SSO Listing 1st Quarter 2020									
Date	Time	Location	Source	Date of Corrective Action	Time of Corrective Action	Estimated Volume (gallons)	Receiving Water (if any)	Cause	Actions Taken
1/2/2020	09:30	4000 Plowden Rd, Columbia, Sc 29205	Manhole	1/2/2020	09:45	150		Grease	Removed Stoppage To Resume Normal Flow. Washed Main Line 40 Feet To Remove Stoppage.
1/2/2020	11:10	4825 Luvalie St, Columbia, Sc 29203	Cleanout	1/2/2020	11:17	90		Debris	Removed Blockage To Resume Normal Flow. Washed Service Line 20 Feet To Removed Broken Cleanout Cap That Was Causing Blockage.
1/3/2020	20:05	4645 Pine Grove Ct, Columbia, Sc 29206	Manhole	N/A		45	Lake Katherine	Wet Weather	Wet Weather; Observation Only. City Improvement Project To Increase Line Capacity In Progress.
1/6/2020	13:35	1823 Bristol Dr, Columbia, Sc 29204	Cleanout	TBD		100		Roots	Removed Stoppage To Resume Normal Flow. Service Line Repair.
1/6/2020	16:00	207 Rutledge Pl, Columbia, Sc 29212	Cleanout	1/6/2020	16:30	445		Roots	Removed Blockage To Resume Normal Flow. Washed Service Line 25 Feet Cutting Out Roots.
1/6/2020	17:00	774 Gardendale Dr, Columbia, Sc 29210	Cleanout	TBD		979		Roots	Removed Stoppage To Resume Normal Flow. Main Line Repair/Tap Renewal.
1/7/2020	17:19	2805 Millwood Ave, Columbia, Sc 29205	Cleanout	TBD		729	Storm Drain	3rd Party Responsibility	Removed Stoppage To Resume Normal Flow. Emergency Main Line Repair (Main Line Was Bored Through).
1/11/2020	17:10	921 Fuller Ave, Columbia, Sc 29203	Manhole	TBD		195		Debris	Removed Stoppage To Resume Normal Flow. Manhole Cleaning/Repair.
1/12/2020	17:30	4440 Bluff Rd, Columbia, Sc 29209	Pump Station	N/A		12675		Wet Weather	Wet Weather; Observation Only.
1/12/2020	12:50	7581 Irmo Dr, Columbia, Sc 29212	Pump Station	1/12/2020	12:50	474	Storm Drain	Pump Station Failure	Reset Pumps.
1/13/2020	16:12	4645 Pine Grove Ct, Columbia, Sc 29206	Manhole	TBD		60	Lake Katherine	Wet Weather	Wet Weather; Observation Only. City Improvement Project To Increase Line Capacity In Progress.
1/13/2020	16:40	3303 Margrave Rd, Columbia, Sc 29203	Manhole	TBD		37355	Tributary To Smith Branch	Collapsed Line	Main Line Wash / Set Up Bypass Pump. Main Line Repair.
1/13/2020	16:00	1228 Harden St, Columbia, Sc 29204	Manhole	1/16/2020	08:00	360	Storm Drain	3rd Party Responsibility	Removed Blockage To Resume Normal Flow. Main Line Repair (Bored Through).
1/14/2020	08:20	4116 Hileah Dr, Columbia, Sc 29209	Manhole	TBD		500	Storm Drain	Roots	Removed Blockage To Resume Normal Flow. Main Line Repair.
1/14/2020	11:30	3127 Forest Dr, Columbia, Sc 29204	Manhole	TBD		40		Roots	Removed Stoppage To Resume Normal Flow. Main Line Root Cut.
1/14/2020	09:32	4500 Bluff Rd, Columbia, Sc 29209	Manhole	N/A		749		Wet Weather	Wet Weather; Observation Only.
1/14/2020	12:10	1621 Stevenson Ave, Columbia, Sc 29203	Manhole	N/A		559		Wet Weather	Wet Weather; Observation Only.
1/15/2020	21:43	400 S Highland Forest Dr, Columbia, Sc 29203	Manhole	1/15/2020	22:00	130	Storm Drain	Debris	Pulled Debris From Manhole To Remove Stoppage. Manhole Cleaning/Repair.
1/15/2020	18:00	445 Mockernut Ln, Columbia, Sc 29209	Cleanout	TBD		48		Roots	Removed Blockage To Resume Normal Flow. Main Line Repair/Tap Renewal.
1/15/2020	23:11	154 Foxglove Cir, Irmo, Sc 29063	Cleanout	TBD		375		Roots	Removed Stoppage To Resume Normal Flow. Main Line Root Cut.

# Consent Decree Quarterly Report | 2020 Q1

City of Columbia, SC Quarterly SSO Listing 1st Quarter 2020									
Date	Time	Location	Source	Date of Corrective Action	Time of Corrective Action	Estimated Volume (gallons)	Receiving Water (if any)	Cause	Actions Taken
1/16/2020	11:10	4815 Broad River Rd, Columbia, Sc 29210	Manhole	TBD		4680		Collapsed Line	Spill Leaking Through Joint Of Concrete Riser Intermittently. Manhole Repair.
1/21/2020	17:00	6169 Saint Andrews Rd, Columbia, Sc 29212	Manhole	1/22/2020	12:00	300	Storm Drain	Grease	Removed Stoppage To Resume Normal Flow. Washed Main Line 700 Feet.
1/21/2020	11:30	549 Regatta Rd, Columbia, Sc 29212	Forcemain	TBD		1		Force Main	Opened Force Main Valve.
1/23/2020	08:41	309 Pitney Rd, Columbia, Sc 29212	Cleanout	TBD		113		Collapsed Line	Washed From City CO 25 Feet And Main Line Wash 150 Feet. Main Line Repair.
1/25/2020	16:55	242 White Falls Dr, Columbia, Sc 29212	Cleanout	1/27/2020	10:00	477	Storm Drain	3rd Party Responsibility	Removed Stoppage To Resume Normal Flow. Emergency Service Line Repair (Bored Through).
1/27/2020	16:16	2001 Apple Valley Rd, Apt A, Columbia, Sc 29210	Cleanout	TBD		12		Collapsed Line	Removed Blockage To Resume Normal Flow. Service Line Repair.
1/27/2020	18:50	116 Crosscreek Dr, Columbia, Sc 29212	Other	1/29/2020	09:00	13	Storm Drain	3rd Party Responsibility	Capped Broken Line. Emergency Service Line Repair.
1/28/2020	15:30	39 Acme St, Columbia, Sc 29201	Manhole	1/28/2020	15:30	20		Grease	Removed Stoppage To Resume Normal Flow. Washed Main Line 95 Feet.
1/30/2020	14:45	5101 Randall Ave, Columbia, Sc 29203	Manhole	TBD		300	Storm Drain	Roots	Removed Stoppage To Resume Normal Flow. Main Line Repair.
2/1/2020	14:00	2208 Manse St, Columbia, Sc 20203	Cleanout	TBD		31		Collapsed Line	Removed Stoppage To Resume Normal Flow. Service Line Repair.
2/3/2020	13:43	175 Emerald Lake Rd, Columbia, Sc 29209	Manhole	2/4/2020	11:56	17360	Ulmers Pond (Trib To Mill Creek)	Debris	Set Up Bypass Pump. Washed Main Line To Remove Debris.
2/4/2020	06:00	1715 Emerald Lakes Rd, Columbia, Sc 29209	Manhole	2/4/2020	11:56	8556	Ulmers Pond (Trib To Mill Creek)	Debris	Hooked Up Bypass Pump And Diverted Flow From Station To A Manhole. Main Line Washed To Remove Debris.
2/4/2020	14:40	821 Old Oak Dr, Columbia, Sc 29203	Cleanout	2/4/2020	15:10	60		Debris	Removed Blockage To Resume Normal Flow. Washed Service Line 20 Feet To Remove Blockage.
2/4/2020	09:37	200 Montadale Dr, Columbia, Sc 29209	Cleanout	TBD		62		Roots	Service Line Wash. Main Line Repair.
2/6/2020	16:45	22 Thistle Ct, Irmo, Sc 29063	Cleanout	N/A		14520	Swygert Branch	Wet Weather	Wet Weather; Observation Only.
2/6/2020	17:53	517 Broken Hill Rd, Columbia, Sc 29212	Manhole	N/A		44450	Kinley Creek	Wet Weather	Wet Weather; Observation Only.
2/6/2020	18:30	1548 Kathwood Dr, Columbia, Sc 29206	Manhole	N/A		127800	Lake Katherine (Gills Creek)	Wet Weather	Wet Weather; Observation Only.
2/6/2020	20:59	500 Wildlife Pkwy, Columbia, Sc 29210	Manhole	N/A		84	Saluda River	Wet Weather	Wet Weather; Observation Only.
2/6/2020	21:00	4645 Pine Grove Ct, Columbia, Sc 29206	Manhole	N/A		44562	Lake Katherine (Gills Creek)	Wet Weather	Wet Weather; Observation Only.
2/6/2020	21:01	1400 Peebles St, Columbia, Sc 29203	Manhole	N/A		133	Crane Creek	Wet Weather	Wet Weather; Observation Only.
2/7/2020	09:00	2111 Marley Dr, Columbia, Sc 29210	Manhole	N/A		180	Broad River	Wet Weather	Wet Weather; Observation Only.
2/7/2020	13:18	5609 Bush River Rd, Columbia, Sc 29212	Manhole	N/A		62	Rawls Creek	Wet Weather	Wet Weather; Observation Only.

# Consent Decree Quarterly Report | 2020 Q1

City of Columbia, SC Quarterly SSO Listing 1st Quarter 2020									
Date	Time	Location	Source	Date of Corrective Action	Time of Corrective Action	Estimated Volume (gallons)	Receiving Water (if any)	Cause	Actions Taken
2/7/2020	20:55	500 Wildlife Pkwy, Columbia, Sc 29210	Manhole	N/A		26663	Saluda River	Wet Weather	Wet Weather; Observation Only.
2/8/2020	20:16	500 Wildlife Pkwy, Columbia, Sc 29210	Manhole	N/A		16295	Saluda River	Wet Weather	Wet Weather; Observation Only.
2/8/2020	14:50	1000 Garden Valley Ln, Columbia, Sc 29210	Other	2/8/2020	16:09	790		Equipment Failure	Tightened Up Bolts On The Bulkhead Until Leak Stopped.
2/9/2020	04:30	1200 Simmon Tree Ln, Columbia, Sc 29201	Other	2/9/2020	09:30	1000000	Congaree River	Treatment Plant	In Response To The Historic River Levels Caused By Heavy Rainfall In The Preceding Days, Which Prevented Normal Discharge From The WWTP, Influent Flow Set Points Were Decreased Temporarily To Regain Hydraulic Control Of The Secondary Clarifiers. Train 1 Aeration Was Shut Down, RAS Was Shut Down. Influent Flow Set Points Were Increased To Limit The Volume Of Wastewater Sent To Storage. Lime Was Applied To The Area Around The Train 1 Disinfection Splitter.
2/9/2020	14:50	500 Wildlife Pkwy, Columbia, Sc 29210	Manhole	N/A		174	Saluda River	Wet Weather	Wet Weather; Observation Only.
2/11/2020	08:49	100 Catawba St, Columbia, Sc 29201	Other	2/11/2020	10:00	1075	Trib To Congaree River	Force Main	Shut Off ARV. Replaced ARV.
2/12/2020	12:00	503 Denmark St, Columbia, Sc 29201	Cleanout	2/12/2020	13:30	40		Grease	Removed Stoppage To Resume Normal Flow. Service Line Wash To Remove Grease.
2/12/2020	21:00	1208 Crane Church Rd, Columbia, Sc 29203	Cleanout	2/12/2020	21:15	72		Debris	Removed Blockage To Resume Normal Flow. Washed Service Line 15 Feet To Main Line.
2/12/2020	15:10	1228 Harden St, Columbia, Sc 29204	Cleanout	2/12/2020	15:45	70		Debris	Removed Stoppage To Resume Normal Flow. Washed Service Line To Remove Stoppage.
2/14/2020	12:30	1321 Haviland Cir, Columbia, Sc 29210	Cleanout	2/14/2020	13:30	50		Roots	Removed Root Blockage To Resume Normal Flow. Washed Service Line Cutting Out Roots.
2/17/2020	16:20	194 Waterford Dr, Columbia, Sc 29203	Manhole	TBD		5091	Trib To Crane Creek	Collapsed Line	Set Up Bypass Pump. Emergency Main Line Repair.
2/18/2020	17:00	171 Banbury Rd, Columbia, Sc 29210	Manhole	2/18/2020	18:00	180		Debris	Removed Stoppage To Resume Normal Flow. Washed Main Line 100 Feet.
2/20/2020	18:35	22 Thistle Ct, Irmo, Sc 29063	Cleanout	N/A		499		Wet Weather	Wet Weather; Observation Only.
2/24/2020	10:30	400 Brookshire Dr, Columbia, Sc 29210	Cleanout	2/26/2020	09:00	374	Storm Drain	Collapsed Line	Removed Stoppage To Resume Normal Flow. Emergency Service Line Repair.
2/24/2020	13:20	6208 Easter St, Columbia, Sc 29203	Cleanout, Manhole	2/24/2020	13:40	860	Storm Drain	Debris	Removed Stoppage To Resume Normal Flow. Main Line Wash.
2/24/2020	23:56	2477 Gervais St, Columbia, Sc 29204	Cleanout	TBD		19		Collapsed Line	Service Line Wash/Dammed Spill In Yard. Service Line Repair.
2/25/2020	14:50	1601 Sunset Dr, Columbia, Sc 29203	Other	2/25/2020	15:00	15	Trib To Smith Branch	Equipment Failure	Turned Off Bypass Pump. Repaired Clamp On Bypass Pump Hose And Restarted Pump.
2/27/2020	19:30	9531 Farrow Rd, Columbia, Sc 29203	Manhole	TBD		780	Storm Water Ditch	Roots	Removed Stoppage To Resume Normal Flow. Main Line Repair.
2/29/2020	18:13	7639 Burdell Dr, Columbia, Sc 29209	Manhole	TBD		962	Storm Water Ditch	Roots	Removed Stoppage To Resume Normal Flow. Manhole Repair.
3/1/2020	12:15	133 Piney Grove Rd, Columbia, Sc 29210	Cleanout	TBD		16		Roots	Removed Blockage To Resume Normal Flow. Service Line Repair/Raised.
3/1/2020	15:30	3528 Truman St, Columbia, Sc 29204	Cleanout	3/1/2020	15:35	93		Roots	Removed Stoppage To Resume Normal Flow. Service Line Repair.
3/2/2020	11:30	4909 James St, Columbia, Sc 29203	Cleanout	3/2/2020	12:00	30		Debris	Removed Blockage To Resume Normal Flow. Washed Service Line To Remove Blockage.
3/4/2020	12:00	2420 Broad River Rd, Columbia, Sc 29210	Cleanout	3/4/2020	12:30	30		Debris	Removed Stoppage To Resume Normal Flow. Washed Service Line 15 Feet To Remove Stoppage.



City of Columbia, SC Quarterly SSO Listing 1st Quarter 2020									
Date	Time	Location	Source	Date of Corrective Action	Time of Corrective Action	Estimated Volume (gallons)	Receiving Water (if any)	Cause	Actions Taken
3/5/2020	13:00	1917 Harden St, Columbia, Sc 29204	Cleanout	TBD		187		Debris	Removed Stoppage To Resume Normal Flow. Cleanout Repair/Raise.
3/5/2020	22:00	22 Thistle Ct, Irmo, Sc 29063	Cleanout	N/A		425		Wet Weather	Wet Weather; Observation Only.
3/8/2020	09:00	248 Savannah Dr, Columbia, Sc 29203	Cleanout	3/8/2020	09:50	50		Debris	Removed Stoppage To Resume Normal Flow. Washed Service Line 50 Feet To Remove Stoppage.
3/8/2020	15:00	102 Alabama St, Columbia, Sc 29201	Manhole	3/8/2020	15:40	200		Roots	Removed Blockage To Resume Normal Flow. Main Line Root Cut.
3/11/2020	19:45	209 Montadale Dr, Columbia, Sc 29209	Manhole	TBD		695	Storm Drain	Collapsed Line	Removed Blockage To Resume Normal Flow. Main Line Repair.
3/13/2020	17:00	101 Leeward Loop, Columbia, Sc 29209	Manhole	3/13/2020	17:15	288	Storm Drain	Debris	Removed Stoppage To Resume Normal Flow. Cleaned Out Manhole And Removed Stick Lodged In Invert.
3/16/2020	16:35	206 Stamford Bridge Rd, Columbia, Sc 29212	Cleanout	3/16/2020	16:45	4		Roots	Removed Stoppage To Resume Normal Flow. Manhole Cleaned And Mainline Root Cut.
3/17/2020	10:45	124 Whitwood Cir, Columbia, Sc 29212	Cleanout	3/22/2020	10:00	15		Collapsed Line	Removed Stoppage To Resume Normal Flow. Emergency Service Line Repair.
3/17/2020	19:35	629 Carty Dr, Columbia, Sc 29203	Cleanout	TBD		12		Roots	Removed Blockage To Resume Normal Flow. Service Line Repair.
3/21/2020	18:40	10 Carty Ct, Columbia, Sc 29203	Cleanout	TBD		47	Trib To Crane Creek	Roots	Removed Stoppage To Resume Normal Flow. Main Line Repair.
3/24/2020	08:50	101 S Waccamaw Ave, Columbia, Sc 29205	Cleanout	3/24/2020	09:10	20	Storm Drain	Debris	Removed Stoppage To Resume Normal Flow. Washed Service Line To Remove Stoppage.
3/24/2020	16:49	22 Thistle Ct, Irmo, Sc 29063	Cleanout	N/A		1358		Wet Weather	Wet Weather; Observation Only. Project In Design To Increase Wet Well Capacity.

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.

Separate from the SSO listing provided in Table 1 above, the following table identifies building backups within the City’s system for the current reporting period.

**Table 2 – Building Backup Report, 1st Quarter 2020**

City of Columbia, SC Quarterly Building Backup Listing 1st Quarter 2020									
Date	Time	Location	Source	Date of Corrective Action	Time of Corrective Action	Estimated Volume (gallons)	Receiving Water (if any)	Cause	Actions Taken
8/30/2019	12:00	2630 Magnolia St, Columbia, Sc 29204	Inside Property	8/30/2019	12:00	5		Roots	Homeowner Cleaned Up The Spill. Emergency Service Line Repair.
9/23/2019	16:47	2107 Sumter St, Columbia, Sc 29201	City	9/25/2019	17:00	9		Collapsed Line	Homeowner Ceased Water Usage / No Access To Service Line. Main Line Repair / Clean Out Install.
2/24/2020		6132 Yorkshire Dr, Columbia, Sc 29209	Private Sewer Lateral Issue	2/25/2020	13:31	1		Collapsed Line	Emergency Service Line Repair.
3/30/2020	17:00	3817 Ardincaple Dr, Columbia, Sc 29203	City	TBD		86		Roots	Removed Stoppage To Resume Normal Flow. Service Line Repair.

## 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 2020 Q1 was completed on January 31, 2020, February 28, 2020, and March 26, 2020. 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: 1/31/2020

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

Miranda Staples

Project Verifier/QA Manager

2/10/2020

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

2/10/2020

Date

AJ Jesse

Printed Name



## Laboratory Report

<b>Client</b>	Woolpert Inc. - City of Columbia Michael Long 2000 Center Point Road Ste 2200 Columbia, SC 29210	<b>Project:</b>	Water Quality Testing
		<b>Work Order:</b>	0011064
		<b>Received:</b>	01/20/2020 12:45

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 January 20, 2020. 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 Bailey Branham, your Project Manager, at [bailey.branham@rogersandcallcott.com](mailto:bailey.branham@rogersandcallcott.com) or (864)-232-1556 if you have any questions about this report.

CC: Trevor Gauron

Report Approved By:

---

Bailey Branham  
Project Manager



*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*

# Certificate of Analysis

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

**Project:** Water Quality Testing  
**Work Order:** 0011064  
**Received:** 01/20/2020 12:45

Sample Number	Sample Description	Matrix	Sampled	Type
0011064-01	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	01/20/20 11:11	Grab
0011064-02	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	01/20/20 11:10	Grab
0011064-03	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	01/20/20 11:53	Grab
0011064-04	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	01/20/20 11:52	Grab
0011064-05	DHEC B-280 Smith Branch @ N. Main St	Wastewater	01/20/20 12:26	Grab
0011064-06	DHEC B-280 Smith Branch @ N. Main St	Wastewater	01/20/20 12:25	Grab



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

Project: Water Quality Testing  
Work Order: 0011064  
Reported: 01/31/20 16:34

**Sample Data**

**Sample Number** 0011064-01  
**Sample Description** DHEC C-017 Gills Creek @ Bluff Road collected on 01/20/20 11:11

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>Field Parameters</b>										
Grab	Complete				01/20/20 11:11	Grab		MBW	B0A0929	RC-C
<b>Microbiological Parameters</b>										
E. Coli	144	20	MPN/100 mL	20.0	01/20/20 15:41	SM 9223B-2004		BNE	B0A1009	RC-C
<b>General Chemistry Parameters</b>										
Total Suspended Solids	6.1	1.0	mg/L	1.00	01/21/20 08:43	SM 2540D-2011		RAM	B0A0935	RC-C

**Sample Number** 0011064-02  
**Sample Description** DHEC C-017 Gills Creek @ Bluff Road collected on 01/20/20 11:10

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>Field Parameters</b>										
Dissolved Oxygen	10.0	0.1	mg/L	1.00	01/20/20 11:13	SM 4500 OG-2011		MBW	B0A0929	RC-C
Temperature	9.8	0.0	°C	1.00	01/20/20 11:13	SM 2550B-2010		MBW	B0A0929	RC-C

**Sample Number** 0011064-03  
**Sample Description** DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 01/20/20 11:53

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>Microbiological Parameters</b>										
E. Coli	524	20	MPN/100 mL	20.0	01/20/20 15:41	SM 9223B-2004		BNE	B0A1009	RC-C
<b>General Chemistry Parameters</b>										
Total Suspended Solids	35.0	3.3	mg/L	3.34	01/21/20 08:43	SM 2540D-2011		RAM	B0A0935	RC-C



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

Project: Water Quality Testing  
Work Order: 0011064  
Reported: 01/31/20 16:34

**Sample Number** 0011064-04  
**Sample Description** DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 01/20/20 11:52

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>Field Parameters</b>										
Dissolved Oxygen	10.7	0.1	mg/L	1.00	01/20/20 11:58	SM 4500 OG-2011		MBW	B0A0929	RC-C
Temperature	11.5	0.0	°C	1.00	01/20/20 11:58	SM 2550B-2010		MBW	B0A0929	RC-C

**Sample Number** 0011064-05  
**Sample Description** DHEC B-280 Smith Branch @ N. Main St collected on 01/20/20 12:26

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>Microbiological Parameters</b>										
E. Coli	62	20	MPN/100 mL	20.0	01/20/20 15:41	SM 9223B-2004		BNE	B0A1009	RC-C
<b>General Chemistry Parameters</b>										
Total Suspended Solids	ND	1.0	mg/L	1.00	01/21/20 08:43	SM 2540D-2011		RAM	B0A0935	RC-C

**Sample Number** 0011064-06  
**Sample Description** DHEC B-280 Smith Branch @ N. Main St collected on 01/20/20 12:25

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>Field Parameters</b>										
Dissolved Oxygen	11.8	0.1	mg/L	1.00	01/20/20 12:28	SM 4500 OG-2011		MBW	B0A0929	RC-C
Temperature	9.7	0.0	°C	1.00	01/20/20 12:28	SM 2550B-2010		MBW	B0A0929	RC-C



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

Project: Water Quality Testing  
Work Order: 0011064  
Reported: 01/31/20 16:34

### 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 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

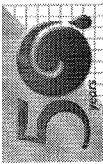
## CHAIN OF CUSTODY RECORD

WORK ORDER 0011064

R & C WORK ORDER	YR 20 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
-01	1-20	1111	DHEC C-017 (Gills Creek @ Bluff Road)	1	TSS	Y	N							A - None E - HCl I - Zn Acetate B - HNO <sub>3</sub> F - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> J - H <sub>3</sub> PO <sub>4</sub> C - H <sub>2</sub> SO <sub>4</sub> G - Boric Acid K - NH <sub>2</sub> PO <sub>4</sub> D - NaOH H - Ascorbic Acid L - NH <sub>4</sub> Cl	D.O. - 10.04 mg/L
-01	1-20	1111	DHEC C-017 (Gills Creek @ Bluff Road)	1			1								Temp - 9.8 °C
															Collected @ 1110
															Analyzed @ 1113
															Weather - 38°F
															mostly sunny

SAMPLER - RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
1. <i>Nindi B. Wright</i>	1-20-20 1245	2. <i>[Signature]</i>	1-20-20 1245
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.	

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 0.4 °C



# Rogers & Callcott

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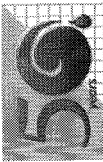
Mailing Address: PO Box 5655 Greenville, SC 29606  
 Shipping Address: 426 Fairforest Way Greenville, SC 29607  
 Phone: (864) 232-1556 Fax: (864) 232-6140  
 Phone: (803) 509-8999

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 0011064

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
-03	1-20	1153	DHEC C-001 (Gills Creek @ Garners Ferry Rd)	1	TSS	Y	N							A - None E - HCl B - HNO <sub>3</sub> F - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> C - H <sub>2</sub> SO <sub>4</sub> G - Boric Acid D - NaOH H - Ascorbic Acid I - Zn Acetate J - H <sub>3</sub> PO <sub>4</sub> K - NaH <sub>2</sub> PO <sub>4</sub> L - NH <sub>4</sub> Cl	D.O.- 10.68 mg/L
-03	1-20	1153	DHEC C-001 (Gills Creek @ Garners Ferry Rd)	1	E. Coli	Y	N								Temp- 11.5 °C
															Collected @ 1152
															Analyzed @ 1158
															Weather- 39 °F
															SUNNY
<p>DATE/TIME: 1-20-20 12:45 RECEIVED BY: 2. <i>[Signature]</i></p> <p>DATE/TIME: 1-20-20 12:45 RECEIVED BY: 4. <i>[Signature]</i></p> <p>DATE/TIME: RECEIVED BY: 6. <i>[Signature]</i></p> <p>DATE/TIME: RECEIVED BY: 8. <i>[Signature]</i></p>															



**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 (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

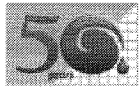
**CHAIN OF CUSTODY RECORD**

WORK ORDER 0011064

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
-05	1-20	1224	DHEC B-280 (Smith Branch @ N. Main St)	1	TSS	Y	N							A - None E - HCl I - Zn Acetate B - HNO <sub>3</sub> F - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> J - H <sub>3</sub> PO <sub>4</sub> C - H <sub>2</sub> SO <sub>4</sub> G - Boric Acid K - NaH <sub>2</sub> PO <sub>4</sub> D - NaOH H - Ascorbic Acid L - NH <sub>4</sub> Cl	D.O.- 11.75 mg/L
-05	1-20	1224	DHEC B-280 (Smith Branch @ N. Main St)	1	E. Coli	Y	N								Temp- 9.7 °C Collected @ 1-20-20 1225 Analyzed @ 1228
															Weather- 40° F Sunny

SAMPLER - RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
1. <u>Nikki B. Wright</u>	1-20-20 1245	2. <u>[Signature]</u>	1-20-20 1245
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. _____	_____

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 0.9 °C



**Sample Receipt Verification**

Client: Woolpert - Columbia Date Received: 1-20-20 Work Order: 0011064

Carrier Name: (to Columbia)	Client	FedEx	UPS	US Mail	Courier	<b>Field Services</b>	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? 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 <b>Columbia</b> ?	X			<b>Ice</b> Cold Packs Dry Ice None
Temp at time of receipt <u>0.4</u> °C				
Samples cooled when received in <b>Greenville</b> ?				Ice Cold Packs Dry Ice None
Temp at time of receipt <u>N/A</u> °C				

If in-house preservation used – record Lot #			
HCL		H <sub>3</sub> PO <sub>4</sub>	
H <sub>2</sub> SO <sub>4</sub>		NaOH	
HNO <sub>3</sub>		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: MJT

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: 2/28/20

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

Miranda Staples

Project Verifier/QA Manager

3/10/2020

Date

Miranda Staples

Printed Name

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

AJ Jesser

Project Manager/Project Validator

3/10/2020

Date

AJ Jesser

Printed Name



## Laboratory Report

<b>Client</b>	Woolpert Inc. - City of Columbia Michael Long 2000 Center Point Road Ste 2200 Columbia, SC 29210	<b>Project:</b>	Water Quality Testing
		<b>Work Order:</b>	0021033
		<b>Received:</b>	02/20/2020 09:38

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 February 20, 2020. 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.

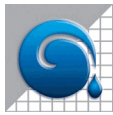
We strive to provide excellent service to our clients. Please contact Sarah Baker, your Project Manager, at [sarah.baker@rogersandcallcott.com](mailto:sarah.baker@rogersandcallcott.com) or (864)-232-1556 if you have any questions about this report.

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:** 0021033  
**Received:** 02/20/2020 09:38

Sample Number	Sample Description	Matrix	Sampled	Type
0021033-01	DHEC B-280 Smith Branch @ N. Main St	Wastewater	02/20/20 08:14	Grab
0021033-02	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	02/20/20 08:43	Grab
0021033-03	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	02/20/20 09:09	Grab



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

Project: Water Quality Testing  
Work Order: 0021033  
Reported: 02/28/20 09:40

**Sample Data**

**Sample Number** 0021033-01  
**Sample Description** DHEC B-280 Smith Branch @ N. Main St collected on 02/20/20 08:14

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>Field Parameters</b>										
Dissolved Oxygen	9.5	0.1	mg/L	1.00	02/20/20 08:14	SM 4500 OG-2011		MJT	B0B0935	RC-C
Grab	Complete				02/20/20 08:14	Grab		MJT	B0B0935	RC-C
Temperature	12.3	0.0	°C	1.00	02/20/20 08:14	SM 2550B-2010		MJT	B0B0935	RC-C
<b>Microbiological Parameters</b>										
E. Coli	270	20	MPN/100 mL	20.0	02/20/20 14:24	SM 9223B-2004		MBW	B0B1032	RC-C
<b>General Chemistry Parameters</b>										
Total Suspended Solids	17.4	1.2	mg/L	1.25	02/25/20 08:28	SM 2540D-2011		RAM	B0B1102	RC-C

**Sample Number** 0021033-02  
**Sample Description** DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 02/20/20 08:43

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>Field Parameters</b>										
Dissolved Oxygen	9.7	0.1	mg/L	1.00	02/20/20 08:43	SM 4500 OG-2011		MJT	B0B0935	RC-C
Temperature	12.3	0.0	°C	1.00	02/20/20 08:43	SM 2550B-2010		MJT	B0B0935	RC-C
<b>Microbiological Parameters</b>										
E. Coli	346	20	MPN/100 mL	20.0	02/20/20 14:24	SM 9223B-2004		MBW	B0B1032	RC-C
<b>General Chemistry Parameters</b>										
Total Suspended Solids	26.3	2.9	mg/L	2.86	02/25/20 08:28	SM 2540D-2011		RAM	B0B1102	RC-C





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

Project: Water Quality Testing  
Work Order: 0021033  
Reported: 02/28/20 09:40

**Sample Number** 0021033-03  
**Sample Description** DHEC C-017 Gills Creek @ Bluff Road collected on 02/20/20 09:09

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>Field Parameters</b>										
Dissolved Oxygen	8.4	0.1	mg/L	1.00	02/20/20 09:09	SM 4500 OG-2011		MJT	B0B0935	RC-C
Temperature	11.7	0.0	°C	1.00	02/20/20 09:09	SM 2550B-2010		MJT	B0B0935	RC-C
<b>Microbiological Parameters</b>										
E. Coli	122	20	MPN/100 mL	20.0	02/20/20 14:24	SM 9223B-2004		MBW	B0B1032	RC-C
<b>General Chemistry Parameters</b>										
Total Suspended Solids	6.0	1.0	mg/L	1.00	02/25/20 08:28	SM 2540D-2011		RAM	B0B1102	RC-C



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

Project: Water Quality Testing  
Work Order: 0021033  
Reported: 02/28/20 09:40

### 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









**Sample Receipt Verification**

Client: Woolpert Columbia Date Received: 2-20-20 Work Order: 0021033

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? <small>Note: Samples for metals analysis may be preserved upon receipt in the lab. Note: Samples for O&amp;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 <b>Columbia</b> ?	Temp at time of receipt <u>1.8</u> °C Temp measured with IR SN: 36301069WS	X		<u>Ice</u> Cold Packs Dry Ice None
Samples cooled when received in <b>Greenville</b> ?	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 <sub>3</sub> PO <sub>4</sub>	
H <sub>2</sub> SO <sub>4</sub>		NaOH	
HNO <sub>3</sub>		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, Revised January 2019

Laboratory Report Date: 3/26/2020

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



Project Verifier/QA Manager

3/30/2020

Date

Miranda Staples

Printed Name

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



Project Manager/Project Validator

3/30/2020

Date

AJ Jessee

Printed Name



## Laboratory Report

<b>Client</b>	Woolpert Inc. - City of Columbia Michael Long 2000 Center Point Road Ste 2200 Columbia, SC 29210	<b>Project:</b>	Water Quality Testing
		<b>Work Order:</b>	0031063
		<b>Received:</b>	03/20/2020 11:10

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 March 20, 2020. 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 Hollister, your Project Manager, at [lauren.hollister@rogersandcallcott.com](mailto:lauren.hollister@rogersandcallcott.com) or (864)-232-1556 if you have any questions about this report.

CC: Trevor Gauron

Report Approved By:

---

Lauren Hollister  
Project Manager





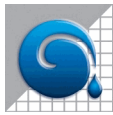
# Certificate of Analysis

*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:** 0031063  
**Received:** 03/20/2020 11:10

Sample Number	Sample Description	Matrix	Sampled	Type
0031063-01	DHEC B-280 Smith Branch @ N. Main St	Wastewater	03/20/20 09:34	Grab
0031063-02	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	03/20/20 10:06	Grab
0031063-03	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	03/20/20 10:31	Grab



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

Project: Water Quality Testing  
Work Order: 0031063  
Reported: 03/26/20 11:04

**Sample Data**

**Sample Number** 0031063-01  
**Sample Description** DHEC B-280 Smith Branch @ N. Main St collected on 03/20/20 09:34

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>Field Parameters</b>										
Dissolved Oxygen	8.4	0.1	mg/L	1.00	03/20/20 09:34	SM 4500 OG-2011		MJT	B0C0925	RC-C
Grab	Complete				03/20/20 09:34	Grab		MJT	B0C0925	RC-C
Temperature	17.8	0.0	°C	1.00	03/20/20 09:34	SM 2550B-2010		MJT	B0C0925	RC-C
<b>Microbiological Parameters</b>										
E. Coli	290	20	MPN/100 mL	20.0	03/20/20 12:13	SM 9223B-2004		BNE	B0C0973	RC-C
<b>General Chemistry Parameters</b>										
Total Suspended Solids	3.0	1.0	mg/L	1.00	03/24/20 08:44	SM 2540D-2011		RAM	B0C1002	RC-C

**Sample Number** 0031063-02  
**Sample Description** DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 03/20/20 10:06

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>Field Parameters</b>										
Dissolved Oxygen	8.3	0.1	mg/L	1.00	03/20/20 10:06	SM 4500 OG-2011		MJT	B0C0925	RC-C
Temperature	19.2	0.0	°C	1.00	03/20/20 10:06	SM 2550B-2010		MJT	B0C0925	RC-C
<b>Microbiological Parameters</b>										
E. Coli	316	20	MPN/100 mL	20.0	03/20/20 12:13	SM 9223B-2004		BNE	B0C0973	RC-C
<b>General Chemistry Parameters</b>										
Total Suspended Solids	16.4	2.0	mg/L	2.00	03/24/20 08:44	SM 2540D-2011		RAM	B0C1002	RC-C



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

Project: Water Quality Testing  
Work Order: 0031063  
Reported: 03/26/20 11:04

**Sample Number** 0031063-03  
**Sample Description** DHEC C-017 Gills Creek @ Bluff Road collected on 03/20/20 10:31

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>Field Parameters</b>										
Dissolved Oxygen	6.6	0.1	mg/L	1.00	03/20/20 10:31	SM 4500 OG-2011		MJT	B0C0925	RC-C
Temperature	20.5	0.0	°C	1.00	03/20/20 10:31	SM 2550B-2010		MJT	B0C0925	RC-C
<b>Microbiological Parameters</b>										
E. Coli	20	20	MPN/100 mL	20.0	03/20/20 12:13	SM 9223B-2004		BNE	B0C0973	RC-C
<b>General Chemistry Parameters</b>										
Total Suspended Solids	7.2	1.0	mg/L	1.05	03/24/20 08:44	SM 2540D-2011		RAM	B0C1002	RC-C



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

Project: Water Quality Testing  
Work Order: 0031063  
Reported: 03/26/20 11:04

### 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 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 0031063

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
-01	3/20	0934	DHEC B-280 (Smith Branch @ N. Main St)	1	TSS	Y	N							A - None E - HCl B - HNO <sub>3</sub> F - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> J - H <sub>3</sub> PO <sub>4</sub> C - H <sub>2</sub> SO <sub>4</sub> G - Boric Acid K - NaH <sub>2</sub> PO <sub>4</sub> D - NaOH H - Ascorbic Acid L - NH <sub>4</sub> Cl	D.O.- 8.44 mg/L
-01			DHEC B-280 (Smith Branch @ N. Main St)	1			1								Temp- 17.8 °C
															Collected @ 0934
															Analyzed @ 0934
															Weather- 70°F
															Sunny
<p>SAMPLER - RELINQUISHED BY: <u>[Signature]</u> DATE/TIME: <u>3-20-20 11:10</u> RECEIVED BY: <u>[Signature]</u> DATE/TIME: <u>3/20/20 11:10</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>															
<p>Composite Start Date/Time: _____</p> <p>Composite End Date/Time: _____</p> <p>Time or Flow (Circle one) Initials: _____</p> <p>Temperature of blank or representative sample</p> <p>At time of collection _____ °C</p> <p>At time of lab receipt <u>4, 2</u> °C</p>															

# CHAIN OF CUSTODY RECORD

WORK ORDER

0031063



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 TO DATE	TIME	SAMPLE DESCRIPTION	RECEIVED BY:	DATE/TIME:
-02	3-20	1006	DHEC C-001 (Gillis Creek @ Garners Ferry Rd)	<i>[Signature]</i>	3-20-20 1110
-02	-	1006	DHEC C-001 (Gillis Creek @ Garners Ferry Rd)		

Parameter(s) ↑	Total Number of Containers	N	Y	P	0.5G	G	WW	A	F	F. Coll	TSS
	1										1
	1										1

<input type="checkbox"/>	Filtered (Yes/No)
<input type="checkbox"/>	Cooled (Yes/No)
<input type="checkbox"/>	Container Type (Plastic/Glass)
<input type="checkbox"/>	Container Volume (mL)
<input type="checkbox"/>	Sample Type (Grab/Composite)
<input type="checkbox"/>	Sample Source (WW, GW, DW, SW, S, Other)
<input type="checkbox"/>	Preservation Code(s)

<input type="checkbox"/>	A - None	<input type="checkbox"/>
<input type="checkbox"/>	E - HCl	<input type="checkbox"/>
<input type="checkbox"/>	F - Na2S2O3	<input type="checkbox"/>
<input type="checkbox"/>	G - Boric Acid	<input type="checkbox"/>
<input type="checkbox"/>	H - Ascorbic Acid	<input type="checkbox"/>
<input type="checkbox"/>	I - Zn Acetate	<input type="checkbox"/>
<input type="checkbox"/>	J - H3PO4	<input type="checkbox"/>
<input type="checkbox"/>	K - NaH2PO4	<input type="checkbox"/>
<input type="checkbox"/>	L - NH4Cl	<input type="checkbox"/>

COMMENTS

D.O.- 8.26 mg/L

Temp- 19.2 °C

Collected @ 1006

Analyzed @ 1006

Weather- 70°F

Sunny

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 4.2 °C

RECEIVED BY: *[Signature]* DATE/TIME: 3-20-20 1110

RECEIVED BY: 4. DATE/TIME:

RECEIVED BY: 6. DATE/TIME:

RECEIVED BY: 8. DATE/TIME:

RELINQUISHED BY: 1. *[Signature]* DATE/TIME:

RELINQUISHED BY: 3. DATE/TIME:

RELINQUISHED BY: 5. DATE/TIME:

RELINQUISHED BY: 7. DATE/TIME:



**Rogers & Callcott**  
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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

0031063

R & C WORK ORDER	YR 20 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	
-03	3/20	1031	DHEC C-017 (Gills Creek @ Bluff Road)	1	TSS	Y	N							A - None E - HCl I - Zn Acetate B - HNO <sub>3</sub> F - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> J - H <sub>3</sub> PO <sub>4</sub> C - H <sub>2</sub> SO <sub>4</sub> G - Boric Acid K - NaH <sub>2</sub> PO <sub>4</sub> D - NaOH H - Ascorbic Acid L - NH <sub>4</sub> Cl		
-03	3/20	1031	DHEC C-017 (Gills Creek @ Bluff Road)	1	E. Coli	P	P									D.O.- 6.56 mg/L Temp- 20.5 °C Collected @ 1031 Analyzed @ 1031 Weather- 70°F Sunny

RECEIVED BY: [Signature] DATE/TIME: 3/20/20 1110  
 RECEIVED BY: \_\_\_\_\_ DATE/TIME: \_\_\_\_\_  
 RECEIVED BY: \_\_\_\_\_ DATE/TIME: \_\_\_\_\_  
 RECEIVED 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 4.2 °C

Form Revised March, 2019 Page \_\_\_\_\_ of \_\_\_\_\_



**Sample Receipt Verification**

Client: Woolpett Colca Date Received: 3-20-20 Work Order: 0031063

Carrier Name: (to Columbia)	Client	FedEx	UPS	US Mail	Courier	<b>Field Services</b>	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&amp;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 <b>Columbia</b> ?	X			<b>Ice</b> Cold Packs Dry Ice None
Temp at time of receipt <u>4.2</u> °C				
Temp measured with IR SN: 36301069WS				
Samples cooled when received in <b>Greenville</b> ?	X			Ice Cold Packs Dry Ice None
Temp at time of receipt <u>N/A</u> °C				
Temp measured with IR SN: 97050067				

If in-house preservation used – record Lot #			
HCL		H <sub>3</sub> PO <sub>4</sub>	
H <sub>2</sub> SO <sub>4</sub>		NaOH	
HNO <sub>3</sub>		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