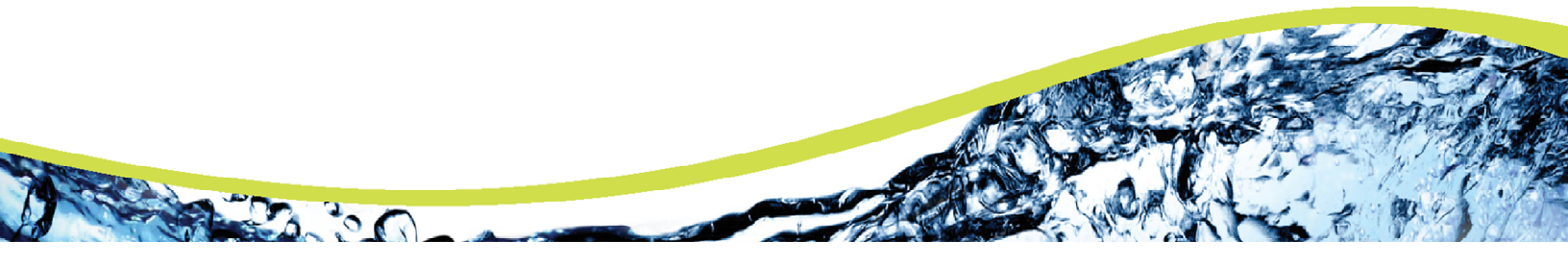


# Clean Water 2020 Program

## CONSENT DECREE QUARTERLY REPORT

January 1, 2021 – March 31, 2021



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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.

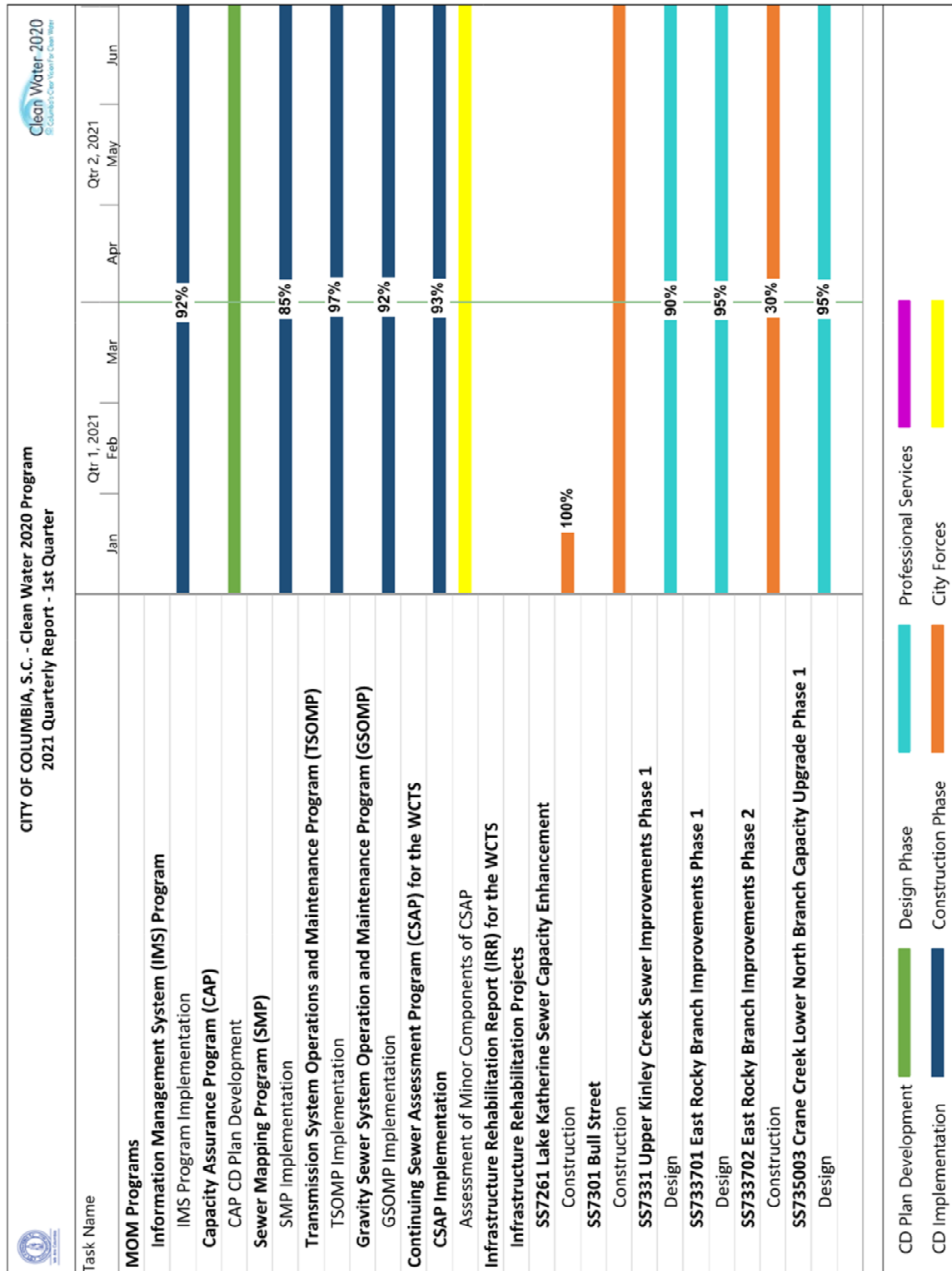
### **Section 4 – Quarterly SSO Report**

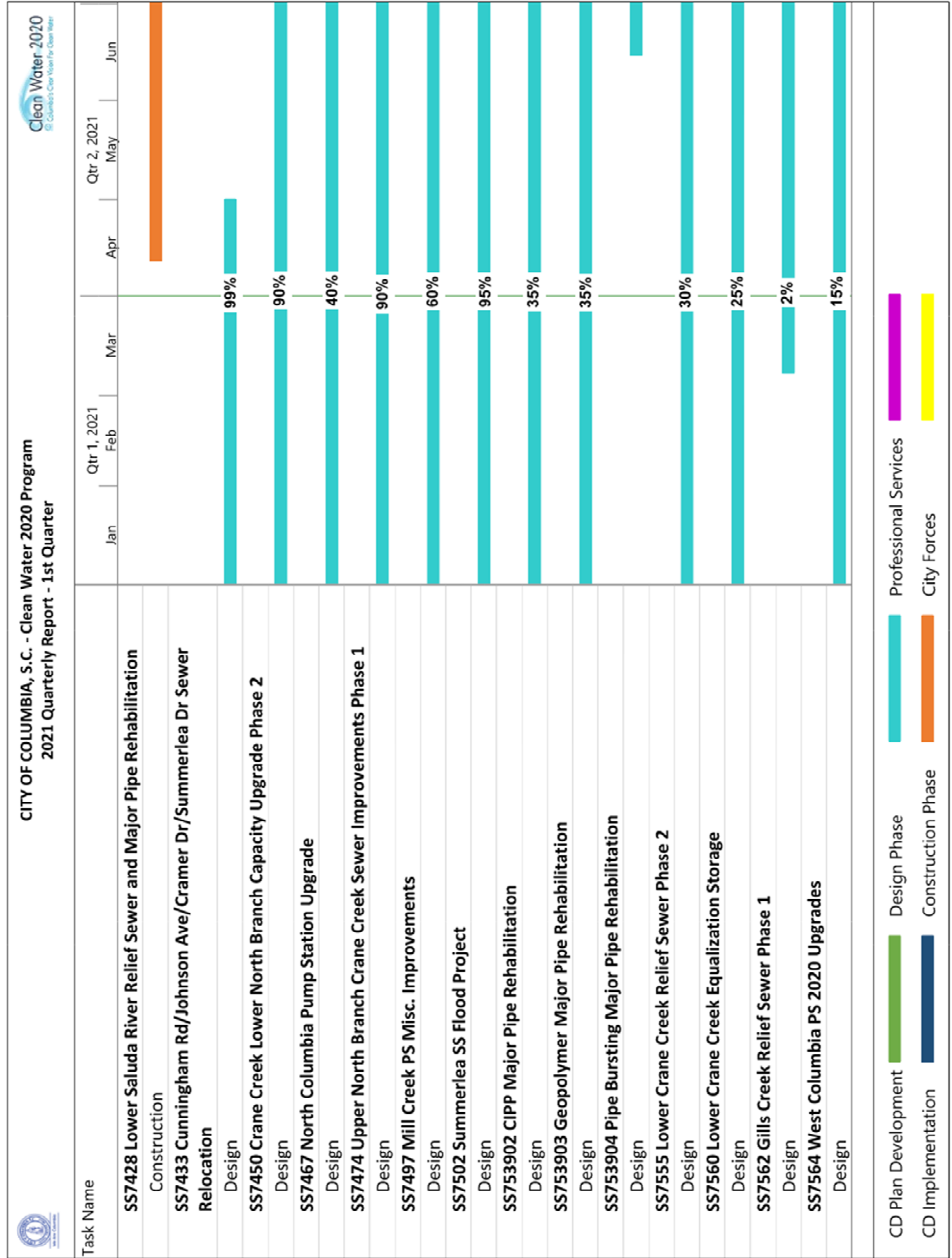
This section addresses the requirements of Section IX.39.a.(ii) of the Consent Decree and provides a tabular listing of sanitary sewer overflows (SSOs). The table includes the date, time, location, source, duration, estimated volume, receiving water (if any), cause, and actions taken to repair or otherwise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

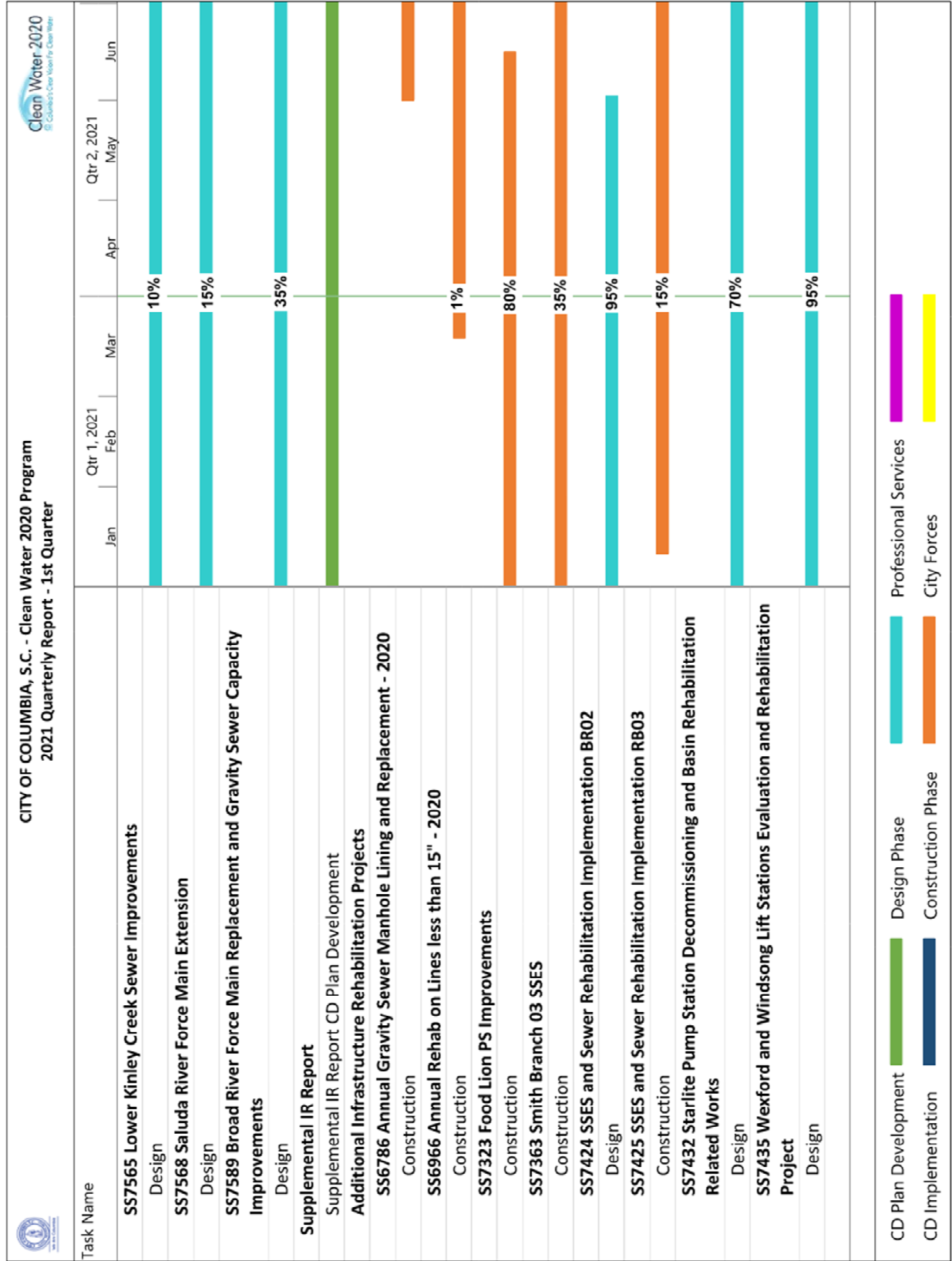
### **Section 5 – SEP Water Quality Monitoring Results**

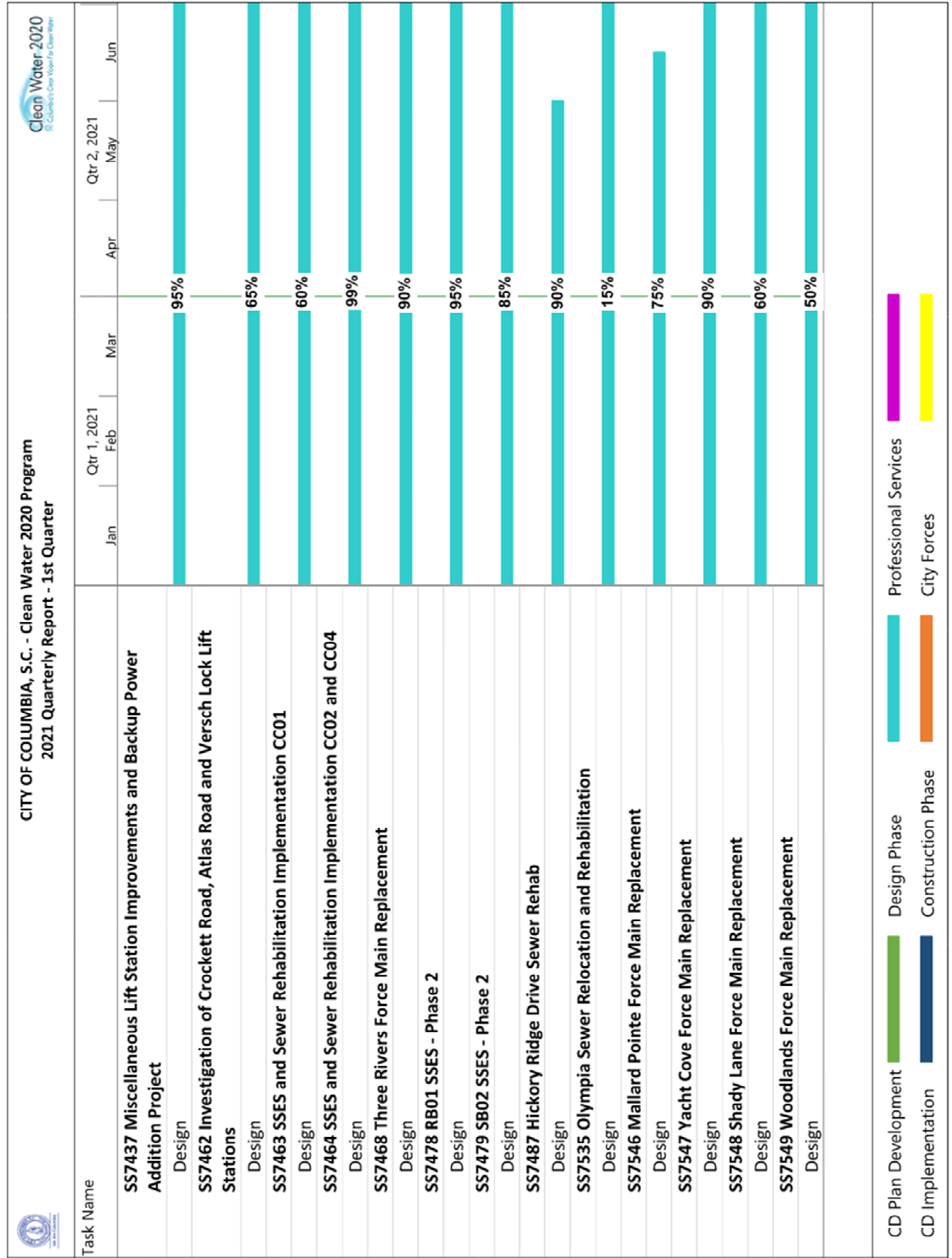
This section addresses the requirements of Section IX.39.a.(v) of the Consent Decree and provides the results of water quality monitoring conducted during the previous Calendar Quarter as part of the SEP described in Appendix I of the CD.


## Section 2 Schedule of Projects and Activities












CITY OF COLUMBIA, S.C. - Clean Water 2020 Program  
2021 Quarterly Report - 1st Quarter



Task Name	Jan	Feb	Mar	Apr	May	Jun
SS7554 Harbison #4 Pump Station Improvements and Force Main Replacement						
Design			30%			
SS7583 SR02 Engineer Led Find and Fix Rehabilitation						
Design			5%			

CD Plan Development

CD Implementation

Design Phase

Construction Phase

Professional Services

City Forces

## 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.

The City notified the U.S. Department of Justice, the U.S. Environmental Protection Agency, and the South Carolina Department of Health and Environmental Control of a *force majeure* event starting on March 13, 2020. On this date, the Governor of South Carolina declared a state of emergency based on a determination that COVID-19 posed an imminent public health emergency for the State, and on March 17, 2020 the Mayor and City Council declared a local state of emergency in the City. On April 7, 2020, the City submitted a written *force majeure* notice and requested to provide additional information required under Paragraph 56 of the Consent Decree once the COVID-19 pandemic is contained and the City is better able to fully assess the impacts on its performance of its Consent Decree obligations. On February 5, 2021, the City submitted an interim report on the impacts of the *force majeure* event. The interim report is provided in Appendix A.

### 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 – 85% 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 – 100% complete (Mapping complete as of June 9, 2020)
  - Smith Branch Basin – 90% complete
  - Saluda River Basin – 97% complete
  - Rocky Branch Basin – 82% complete
  - Mill Creek Basin – 28% complete
  - Gills Creek Basin – 69% complete
  - Crane Creek Basin – 71% complete
  - Broad River Basin – 47% 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) – 90% 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 – 75% 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 – 81% Complete
- Minor Pump Stations Condition Assessment – 81% Complete
- Minor Force Mains Field Assessment – 81% 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:

- SS7261 Lake Katherine Sewer Capacity Enhancement – Construction 100% 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.
- 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 – Construction 30% Complete
- SS735003 Crane Creek Lower North Branch Capacity Upgrade Phase 1 – Design 95% Complete
- SS7428 Lower Saluda River Relief Sewer and Major Pipe Rehabilitation – Construction 0% Complete
- SS7433 Cunningham Rd/Johnson Ave/Cramer Dr/Summerlea Dr Sewer Relocation – Design 99% Complete
- SS7450 Crane Creek Lower North Branch Capacity Upgrade Phase 2 – Design 90% Complete
- SS7467 North Columbia Pump Station Upgrade – Design 40% Complete
- SS7474 Upper North Branch Crane Creek Sewer Improvements Phase 1 – Design 90% Complete
- SS7497 Mill Creek Pump Station Miscellaneous Improvements – 60% Design Complete
- SS7502 Summerlea SS Flood Project – 95% Design Complete
- SS753902 CIPP Major Pipe Rehabilitation – 35% Design Complete
- SS753903 Geopolymer Major Pipe Rehabilitation – 35% Design Complete
- SS753904 Pipe Bursting Major Pipe Rehabilitation – 0% Design Complete
- SS7555 Lower Crane Creek Relief Sewer Phase 2 – Design 30% Complete
- SS7560 Lower Crane Creek Equalization Storage – 25% Design Complete
- SS7562 Gills Creek Relief Sewer Phase 1 – 2% Design Complete
- SS7564 West Columbia Pump Station Improvements – 15% Design Complete
- SS7565 Lower Kinley Creek Sewer Improvements – 10% Design Complete

- SS7568 Saluda River Force Main Extension – 15% Design Complete
- SS7589 Broad River Force Main Replacement and Gravity Sewer Capacity Improvements – Design 35% Complete; project is continuation of SS7454 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:

- SS6786 Annual Gravity Sewer Manhole Lining and Replacement – 2020 Construction 0% Complete
- SS6966 Annual Rehab on Lines less than 15" – 2020 Construction 1% Complete
- SS7323 Food Lion PS Improvements – Construction 80% Complete
- SS7363 Smith Branch 03 SSES – Construction 35% Complete
- SS7424 SSES and Sewer Rehabilitation Implementation BR02 – Design 95% Complete
- SS7425 SSES and Sewer Rehabilitation Implementation RB03 – Construction 15% Complete
- SS7432 Starlite PS Decommissioning and Basin Rehabilitation Related Works – Design 70% 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 95% Complete
- SS7462 Investigation of Crockett Road, Atlas Road and Versch Lock Lift Stations – Design 65% Complete
- SS7463 SSES and Sewer Rehabilitation Implementation CC01 – Design 60% Complete
- SS7464 SSES and Sewer Rehabilitation Implementation CC02 and CC04 – Design 99% Complete
- SS7468 Three Rivers Force Main Replacement – Design 90% Complete
- SS7478 Rocky Branch 01 SSES Phase 2 – Design 95% Complete
- SS7479 Smith Branch 02 SSES Phase 2 – Design 85% Complete
- SS7487 Hickory Ridge Drive Sewer Rehab – Design 90% Complete
- SS7535 Olympia Sanitary Sewer Relocation and Rehabilitation – 15% Design Complete
- SS7546 Mallard Pointe Force Main Replacement – 75% Design Complete
- SS7547 Yacht Cove Force Main Replacement – 90% Design Complete
- SS7548 Shady Lane Force Main Replacement – 60% Design Complete
- SS7549 Woodlands Force Main Replacement – 50% Design Complete
- SS7554 Harbison #4 Pump Station Improvements and Force Main Replacement – Design 30% Complete
- SS7583 Saluda River 02 Engineer Led Find and Fix Rehabilitation – Design 5% Complete

### 3.4 Sewer System Hydraulic Model

The Hydraulic Model Report was submitted to EPA and SCDHEC on August 21, 2020. The City is awaiting EPA and SCDHEC review and approval of the Hydraulic Model Report.

## 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 2021**

City of Columbia, SC Quarterly SSO Listing 1st Quarter 2021									
Date	Time	Location	Source	Date of Corrective Action	Time of Corrective Action	Estimated Volume (gallons)	Receiving Water (if any)	Cause	Actions Taken
1/2/2021	13:45	831 Easter St, Columbia, Sc 29203	Cleanout	1/12/2021	14:30	1500	Storm Drain	Collapsed Line	Removed Blockage To Resume Normal Flow. Tap Renewal.
1/2/2021	13:56	5621 Bush River Rd, Columbia, Sc 29212	Manhole	N/A		21174		Wet Weather	Wet Weather - Evidence Only. CIP Engineering Project Currently In Design Phase.
1/3/2021	09:30	500 Wildlife Pkwy, Columbia, Sc 29210	Other	N/A		24150	Saluda River	Wet Weather	Wet Weather - Observation Only. CIP Engineering Project Currently In Design Phase.
1/3/2021	01:00	200 Candi Ln, Columbia, Sc 29210	Manhole	N/A		13600	Saluda River	Wet Weather	Wet Weather - Observation Only. CIP Engineering Project Currently In Design Phase.
1/3/2021	08:30	200 Candi Ln, Columbia, Sc 29210	Manhole	N/A		63875	Saluda River	Wet Weather	Wet Weather - Observation Only. CIP Engineering Project Currently In Design Phase.
1/3/2021	13:00	250 Sail Point Way, Columbia, Sc 29212	Manhole	1/2/2021	14:30	497	Lake Murray	Pump Station Failure	Manually Engaged Contacts To Start The Pump. Replaced Blown Fuse In Control Panel.
1/5/2021	14:17	5 Durango Cir, Columbia, Sc 29203	Cleanout	1/5/2021	14:30	4		Debris	Removed Stoppage To Resume Normal Flow. Washed Service Line.
1/7/2021	13:30	332 Hamilton Dr, Columbia, Sc 29203	Cleanout	1/8/2021	13:00	875		Debris	Washed Main Line To Remove Stoppage And Resume Normal Flow. Main Line Wash To Remove MH Ladder Rung.
1/11/2021	13:00	824 Fuller Ave, Columbia, Sc 29203	Manhole	1/28/2021	13:00	3555		Roots	Removed Blockage To Resume Normal Flow. Main Line Repair.
1/12/2021	16:45	133 Crossbow Ct, Columbia, Sc 29212	Manhole	1/25/2021	7:18	2489		Roots	Removed Stoppage To Resume Normal Flow. Main Line Repair.
1/12/2021	18:00	5006 Brickyard Rd, Columbia, Sc 29203	Manhole	1/12/2021	18:15	1371	Trib To Crane Creek	Roots	Washed Main Line To Remove Stoppage And Resume Normal Flow. Main Line Repair.
1/14/2021	14:30	1875 Bentley Dr, Columbia, Sc, 29210	Other	1/14/2021	14:30	150	Storm Drain To Broad River	Equipment Failure	Closed The Valve On Sludge Box.
1/14/2021	18:15	5303 Windy Run Dr, Columbia, Sc 29212	Line Segment	1/15/2021	14:00	1896	Lorick Branch	Collapsed Line	Removed Stoppage To Resume Normal Flow. Emergency Main Line Repair.
1/15/2021	13:00	413 Smiths Market Rd, Columbia, Sc 29212	Cleanout	1/17/2021	12:23	38	Rawls Creek	Collapsed Line	Removed Blockage To Resume Normal Flow. Service Line Repair.
1/18/2021	20:00	7701 Nightingale Dr, Columbia, Sc 29209	Forcemain	1/19/2021	00:00	672	Storm Water Ditch	Force Main	Turn Off Lift Station Pumps. Repaired Force Main.
1/20/2021	09:36	383 Hunters Blind Dr, Columbia, Sc 29212	Cleanout	2/24/2021	12:00	13		Collapsed Line	Removed Stoppage To Resume Normal Flow. Service Line Repair.
1/20/2021	19:00	785 Gardendale Dr, Columbia, Sc 29210	Cleanout	2/10/2021	13:52	18		Collapsed Line	Removed Blockage To Resume Normal Flow. Service Line Repair.
1/22/2021	16:00	2708 Rosewood Dr, Columbia, Sc 29205	Cleanout	1/25/2021	12:00	1006	Storm Drain	3rd Party Responsibility	Removed Blockage To Resume Normal Flow. Main Line Repair To Fix Bore Through.
1/25/2021	09:45	312 Hickory Ridge Rd, Columbia, Sc 29209	Manhole	3/4/2021	5:45	23	Storm Drain	Grease	Removed Blockage To Resume Normal Flow. Main Line Wash To Remove Grease Deposits.
1/26/2021	13:00	535 Romford Rd, Columbia, Sc 29203	Manhole	3/1/2021	12:00	9110	Trib To Crane Creek	Roots	Removed Blockage To Resume Normal Flow. Main Line Repair.
2/8/2021	08:22	7581 Irmo Dr, Columbia, Sc 29212	Pump Station	2/8/2021	09:00	153808	Storm Drain	Pump Station Failure	Manually Engaged The Low Level Relay And Started Both Pumps. Installed The Correct Voltage Relay In The Control Panel.
2/9/2021	15:50	369 Hunters Blind Dr, Columbia, Sc 29212	Manhole	2/9/2021	17:30	2731	Kinley Creek	Debris	Removed Stoppage To Resume Normal Flow. Main Line Wash.
2/10/2021	11:30	1604 Darnell Rd, Columbia, Sc 29212	Manhole	3/7/2021	12:00	300	Storm Drain	Roots	Removed Stoppage To Resume Normal Flow. Main Line Repair And Main Line Root Cut.
2/11/2021	15:55	5711 Ames Rd, Columbia, Sc 29203	Manhole	2/16/2021	16:05	2530	Storm Drain	Grease	Removed Blockage To Resume Normal Flow. Line Has Been Added To The Preventative Maintenance Wash List.
2/15/2021	22:28	1621 Stevenson Ave, Columbia, Sc 29203	Manhole	N/A	N/A	1075	Storm Drain	Wet Weather	Wet Weather; Observation Only.

City of Columbia, SC Quarterly SSO Listing 1st Quarter 2021									
Date	Time	Location	Source	Date of Corrective Action	Time of Corrective Action	Estimated Volume (gallons)	Receiving Water (if any)	Cause	Actions Taken
2/15/2021	22:45	200 Candi Ln, Columbia, Sc 29210	Manhole	N/A	N/A	118200	Saluda River	Wet Weather	Wet Weather; Observation Only. CIP Engineering Project Currently In Design Phase.
2/16/2021	01:21	500 Wildlife Pkwy, Columbia, Sc 29210	Other	N/A	N/A	14188	Saluda River	Wet Weather	Wet Weather; Observation Only. CIP Engineering Project Currently In Design Phase.
2/17/2021	20:49	2000 Rolling Hills Rd, Columbia, Sc 29210	Cleanout	2/19/2021	10:00	2365	Unnamed Creek	Grease	Removed Blockage To Resume Normal Flow. Line Will Be Added To Preventative Maintenance Wash List.
2/18/2021	17:12	200 Candi Ln, Columbia, Sc 29210	Manhole	N/A	N/A	122288	Saluda River	Wet Weather	Wet Weather; Observation Only. CIP Engineering Project Currently In Design Phase.
2/18/2021	18:59	3823 Shaw St, Columbia, Sc 29203	Manhole	N/A	N/A	42445	Trib To Smith Branch	Wet Weather	Wet Weather; Observation Only. CIP Engineering Project Currently In Construction Phase.
2/19/2021	04:00	500 Wildlife Pkwy, Columbia, Sc 29210	Other	N/A	N/A	86250	Saluda River	Wet Weather	Wet Weather; Observation Only. CIP Engineering Project Currently In Design Phase.
2/19/2021	11:30	208 Lakeridge Pkwy, Columbia, Sc 29203	Cleanout	N/A	N/A	14323	Storm Drain	Wet Weather	Wet Weather; Observation Only. CIP Engineering Project Currently In Design Phase.
2/19/2021	13:30	3144 Grace Hill Rd, Columbia, Sc 29204	Manhole	N/A	N/A	659		Wet Weather	Wet Weather; Observation Only.
2/19/2021	07:53	1620 Stevenson Ave, Columbia, Sc 29203	Cleanout	N/A	N/A	6650	Storm Drain	Wet Weather	Wet Weather; Observation Only.
2/19/2021	08:30	5200 Bluff Rd, Columbia, Sc 29217	Manhole	N/A	N/A	249600	Reeder Point Branch	Wet Weather	Wet Weather; Observation Only. Continuing To Evaluate The Root Cause Of SSO And Need For Improvements To Address.
2/20/2021	09:45	3151 Forest Dr, Columbia, Sc 29204	Manhole	TBD	TBD	380	Storm Drain	Collapsed Line	Removed Blockage To Resume Normal Flow. Main Line Repair To Be Done By Contractor.
2/20/2021	19:00	5909 Mcmillan Cir, Columbia, Sc 29212	Manhole	2/20/2021	19:10	100	Storm Drain	Grease	Removed Stoppage To Resume Normal Flow. Washed Main Line To Remove Grease.
2/23/2021	21:50	1431 Fork Ave, Irmo, Sc 29063	Cleanout	2/23/2021	22:05	7497	Storm Drain	Grease	Removed Stoppage To Resume Normal Flow. Washed Main Line To Remove Grease.
2/23/2021	09:43	837 Tara Trl, Columbia, Sc 29210	Cleanout	2/23/2021	N/A	23		Debris	Removed Blockage To Resume Normal Flow. Washed Service Line 40 Feet To Remove Blockage.
2/24/2021	09:52	4467 Devine St, Columbia, Sc 29205	Cleanout	2/24/2021	09:52	130	Storm Drain	Debris	Removed Stoppage To Resume Normal Flow. Washed Service Line To Remove Debris.
2/25/2021	21:21	5001 Quail Ln, Columbia, Sc 29206	Cleanout	TBD	TBD	10		Roots	Removed Stoppage To Resume Normal Flow. Service Line Repair.
2/25/2021	13:44	61 Caleb Ct, Columbia, Sc 29203	Manhole	TBD	TBD	30		Collapsed Line	Removed Blockage To Resume Normal Flow. Main Line Repair.
2/26/2021	08:36	1300 Longcreek Dr, Columbia, Sc 29210	Manhole	2/26/2021	11:15	2550	Storm Drain	Debris	Removed Blockage To Resume Normal Flow. Removed Debris From Manhole Trough.
2/28/2021	14:00	400 Fountain Lake Rd, Columbia, Sc 29209	Manhole	3/2/2021	15:00	17184	Reeder Point Branch	Collapsed Line	Washed Main Line And Removed Blockage To Resume Normal Flow. Main Line Repair.
3/1/2021	14:30	400 Fountain Lake Rd, Columbia, Sc 29209	Line Segment	3/2/2021	15:00	1200	Reeder Point Branch	Collapsed Line	Set Up Bypass Pump. Main Line Repair.
3/3/2021	15:40	116 Fair Oaks Dr, Columbia, Sc 29203	Cleanout	TBD	TBD	11		Collapsed Line	Service Line Repair.
3/3/2021	15:40	912 N Highland Forest Dr, Columbia, Sc 29203	Other	3/4/2021	15:00	18	Unnamed Creek	Collapsed Line	Emergency Service Line Repair.
3/5/2021	09:28	39 Acme St, Columbia, Sc 29201	Cleanout	3/5/2021	11:48	730		Grease	Removed Stoppage To Resume Normal Flow. Main Line Wash.
3/6/2021	15:00	1114 Blanding St, Columbia, Sc 29201	Cleanout	3/6/2021	12:00	15	Storm Drain	Collapsed Line	Main Line Wash To Remove Blockage. Main Line Repair.
3/10/2021	19:20	9 Dayton St, Columbia, Sc 29203	Other	3/19/2021	12:00	73		Collapsed Line	Clean Out Install / Service Line Repair.
3/10/2021	13:14	1709 Tall Pines Cir, Columbia, Sc 29205	Other	3/24/2021	12:00	496		Collapsed Line	Service Line Wash To Remove Blockage. Service Line Repair.
3/11/2021	18:10	907 Senate St, Columbia, Sc 29201	Cleanout	3/11/2021	18:30	8	Storm Drain	Debris	Removed Stoppage To Resume Normal Flow. Washed Main Line.
3/15/2021	03:00	710 Wilkes Rd, Columbia, Sc 29203	Cleanout	3/15/2021	04:45	7		Grease	Removed Stoppage To Resume Normal Flow. Service Line Wash To Remove Grease.
3/15/2021	23:20	223 Killian Rd, Columbia, Sc 29203	Manhole	3/15/2021	23:45	2036	Roberts Branch	Debris	Removed Blockage To Resume Normal Flow. Main Line Wash And Removed Broken Manhole Lid.

City of Columbia, SC Quarterly SSO Listing 1st Quarter 2021									
Date	Time	Location	Source	Date of Corrective Action	Time of Corrective Action	Estimated Volume (gallons)	Receiving Water (if any)	Cause	Actions Taken
3/17/2021	07:51	524 Meadowlake Dr, Columbia, Sc 29203	Manhole	TBD	TBD	6		Collapsed Line	Main Line Wash. Main Line Repair.
3/19/2021	08:10	524 Meadowlake Dr, Columbia, Sc 29203	Manhole	TBD	TBD	8025	Trib To Crane Creek	Collapsed Line	Removed Blockage To Resume Normal Flow. Main Line Repair.
3/23/2021	19:00	1319 Hancock St, Columbia, Sc 29205	Manhole	3/30/2021	15:29	38		Collapsed Line	Washed Main Line To Remove Stoppage. Emergency Main Line Repair.
3/24/2021	16:00	215 W Campanella Dr, Columbia, Sc 29203	Cleanout	3/29/2021	00:00	12		Debris	Service Line Wash / Attempted To Remove Blockage. Service Line Repair.
3/29/2021	14:45	825 Forest Park Rd, Columbia, Sc 29209	Manhole	3/29/2021	16:34	465	Storm Drain	Roots	Removed Stoppage To Resume Normal Flow. Turned Over To Contractor For Root Control With Future Plans To Be Lined.

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 2021**

City of Columbia, SC Quarterly Building Backup Listing 1st Quarter 2021									
Date	Time	Location	Source	Date of Corrective Action	Time of Corrective Action	Estimated Volume (gallons)	Receiving Water (if any)	Cause	Actions Taken
3/24/2021	19:10	6015 Moss Springs Rd, Columbia, Sc 29209	City	3/28/2021	20:36	1		Collapsed Line	Emergency Tap Renewal.

## 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 2021 Q1 was completed on January 26, 2021, February 27, 2021, and March 25, 2021. 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:** 1/26/2021

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

Miranda S. Staples

Project Verifier/QA Manager

3/8/2021

Date

Miranda S. Staples

Printed Name

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

AJ Jessee

Project Manager/Project Validator

3/8/2021

Date

AJ Jessee

Printed Name



**Rogers & Callcott**  
ENVIRONMENTAL



*Laboratory Services*

## 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>	1011024
		<b>Received:</b>	01/21/2021 15:40

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 21, 2021. 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 [lhollister@rcenviro.com](mailto:lhollister@rcenviro.com), (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:** 1011024  
**Received:** 01/21/2021 15:40

Sample Number	Sample Description	Matrix	Sampled	Type
1011024-01	DHEC B-280 Smith Branch @ N. Main St	Wastewater	01/21/21 14:14	Grab
1011024-02	DHEC B-280 Smith Branch @ N. Main St	Wastewater	01/21/21 14:15	Grab
1011024-03	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	01/21/21 14:42	Grab
1011024-04	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	01/21/21 14:43	Grab
1011024-05	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	01/21/21 15:05	Grab
1011024-06	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	01/21/21 15:06	Grab



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

Project: Water Quality Testing  
Work Order: 1011024  
Reported: 01/26/21 12:21

## Sample Data

**Sample Number** 1011024-01  
**Sample Description** DHEC B-280 Smith Branch @ N. Main St collected on 01/21/21 14:14

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	01/21/21 14:14	SM 4500 OG-2011		MBW	B1A0937	RC-C
Grab	Complete				01/21/21 14:14	Grab		MBW	B1A0937	RC-C
Temperature	11.8	0.0	°C	1.00	01/21/21 14:14	SM 2550B-2010		MBW	B1A0937	RC-C

**Sample Number** 1011024-02  
**Sample Description** DHEC B-280 Smith Branch @ N. Main St collected on 01/21/21 14:15

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>Microbiological Parameters</b>										
E. Coli	126	20	MPN/100 mL	20.0	01/21/21 16:02	SM 9223B-2004		HBB	B1A1046	RC-C
<b>General Chemistry Parameters</b>										
Total Suspended Solids	1.8	1.0	mg/L	1.00	01/22/21 09:05	SM 2540D-2011		SMN	B1A0957	RC-C

**Sample Number** 1011024-03  
**Sample Description** DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 01/21/21 14:42

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	01/21/21 14:45	SM 4500 OG-2011		MBW	B1A0937	RC-C
Temperature	10.0	0.0	°C	1.00	01/21/21 14:45	SM 2550B-2010		MBW	B1A0937	RC-C

**Sample Number** 1011024-04  
**Sample Description** DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 01/21/21 14:43

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>Microbiological Parameters</b>										
E. Coli	104	20	MPN/100 mL	20.0	01/21/21 16:02	SM 9223B-2004		HBB	B1A1046	RC-C
<b>General Chemistry Parameters</b>										
Total Suspended Solids	7.7	1.7	mg/L	1.67	01/22/21 09:05	SM 2540D-2011		SMN	B1A0957	RC-C



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

Project: Water Quality Testing  
Work Order: 1011024  
Reported: 01/26/21 12:21

**Sample Number** 1011024-05  
**Sample Description** DHEC C-017 Gills Creek @ Bluff Road collected on 01/21/21 15:05

Parameter	Result	Reporting Limit	Units	DF	Analized	Method	Flag	Analyst	Batch	Lab
<b>Field Parameters</b>										
Dissolved Oxygen	8.2	0.1	mg/L	1.00	01/21/21 15:08	SM 4500 OG-2011		MBW	B1A0937	RC-C
Temperature	10.3	0.0	°C	1.00	01/21/21 15:08	SM 2550B-2010		MBW	B1A0937	RC-C

**Sample Number** 1011024-06  
**Sample Description** DHEC C-017 Gills Creek @ Bluff Road collected on 01/21/21 15:06

Parameter	Result	Reporting Limit	Units	DF	Analized	Method	Flag	Analyst	Batch	Lab
<b>Microbiological Parameters</b>										
E. Coli	126	20	MPN/100 mL	20.0	01/21/21 16:02	SM 9223B-2004		HBB	B1A1046	RC-C
<b>General Chemistry Parameters</b>										
Total Suspended Solids	5.6	1.0	mg/L	1.00	01/22/21 09:05	SM 2540D-2011		SMN	B1A0957	RC-C



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

Project: Water Quality Testing  
Work Order: 1011024  
Reported: 01/26/21 12:21

### 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



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

mbia  
uite 2200  
  
  
  
com  
  
Project # Water Quality Testing

## WORK ORDER

1011024

[illegible]

## CHAIN OF CUSTODY RECORD

## WORK ORDER

1011024

<b>Mailing Address:</b>	<b>PO Box 5555</b>	<b>Shipping Address:</b>	<b>426 Fairforest Way</b>	<b>215B Stoneridge Drive</b>
	Greenville, SC 29606		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
PQ #	Project # Water Quality Testing

PO #

[illegible]

SAMPLER - RELINQUISHED BY: 1. <i>Nide S. Wicks</i>	DATE/TIME: <i>1-21-21 1540</i>	RECEIVED BY: 2. <i>[Signature]</i>
RELINQUISHED BY: 3. <i>[Signature]</i>	DATE/TIME:	RECEIVED BY: 4.
RELINQUISHED BY: 5.	DATE/TIME:	RECEIVED BY: 6.
RELINQUISHED BY: 7.	DATE/TIME:	RECEIVED BY: 8.

Page 7 of 9

possible Hazards associated with samples:

☐ Non-Hazard      ☐ Flammable

☐ Skin Irritant

**O** Poison

Unknown

☐ Other:

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Form Revised March, 2019

Page \_\_\_\_\_ of \_\_\_\_\_

1

Total Number of Containers	Parameter(s) ↓	N	N							Filtered (Yes/No)
		Y	Y							Cooled (Yes/No)
		P	P							Container Type (Plastic/Glass)
		0.5G	120							Container Volume (mL)
		G	G							Sample Type (Grab/Composite)
		WW	WW							Sample Source (WW, GW, DW, SW, S, Other)
		A	F							
		TSS	E. Coli							
1		1								D.O.- 8.4l mg/L
1			1							Temp- 16.0 °C
										Collected @ 1442
										Analyzed @ 1445
										Weather- 53°F / Cloudy

DATE/TIME: 12/21/2010 Composite Start Date/Time: \_\_\_\_\_  
 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 0.5 \_\_\_\_\_ °C

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

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

## Project # Water Quality Testing

[illegible]

SAMPLER – RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:
1. <i>N. Lindi B. Digh</i>	1-21-21 1540	2. <i>[Signature]</i>
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:
3.		4.
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:
5.		6.
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:
7.		8.

Page 8 of 9

Possible Hazards associated with samples:

☐ Non-Hazard    ☐ Flammable

☐ Skin Irritant      ☐ Poison

Unknown

☐ Other

1

Form Revised March, 2019

Page \_\_\_\_\_ of \_\_\_\_\_

[illegible]



### Sample Receipt Verification

Client: Woolpert

Date Received: 1-21-21

Work Order: 1011024

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	Yes	No	NA	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? 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.			<input checked="" type="checkbox"/>	
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.	<input checked="" type="checkbox"/>			
Samples cooled when received in <b>Columbia</b> ?	Temp at time of receipt <u>10.5</u> °C Temp measured with IR SN: 36301069WS	<input checked="" type="checkbox"/>		<u>Ice</u> Cold Packs Dry Ice None
Samples cooled when received in <b>Greenville</b> ?	Temp at time of receipt <u>NA</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: ABB

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:** 2/27/2021

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

Miranda S. Staples

Project Verifier/QA Manager

3/8/2021

Date

Miranda S. Staples

Printed Name

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

AJ Jessee

Project Manager/Project Validator

3/8/2021

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>	1021131
		<b>Received:</b>	02/22/2021 11:30

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 22, 2021. 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 Karen Upshur, your Project Manager, at [kupshur@rcenviro.com](mailto:kupshur@rcenviro.com), (864)-232-1556 if you have any questions about this report.

CC: Trevor Gauron

Report Approved By:

Karen Upshur  
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:** 1021131  
**Received:** 02/22/2021 11:30

Sample Number	Sample Description	Matrix	Sampled	Type
1021131-01	DHEC B-280 Smith Branch @ N. Main St	Wastewater	02/22/21 09:32	Grab
1021131-02	DHEC B-280 Smith Branch @ N. Main St	Wastewater	02/22/21 09:26	Grab
1021131-03	DHEC B-280 Smith Branch @ N. Main St	Wastewater	02/22/21 09:30	Grab
1021131-04	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	02/22/21 10:05	Grab
1021131-05	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	02/22/21 10:00	Grab
1021131-06	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	02/22/21 10:03	Grab
1021131-07	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	02/22/21 10:45	Grab
1021131-08	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	02/22/21 10:40	Grab
1021131-09	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	02/22/21 10:42	Grab



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

Project: Water Quality Testing  
Work Order: 1021131  
Reported: 02/27/21 20:22

## Sample Data

**Sample Number** 1021131-01  
**Sample Description** DHEC B-280 Smith Branch @ N. Main St collected on 02/22/21 09:32

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>Field Parameters</b>										
Dissolved Oxygen	10.1	0.1	mg/L	1.00	02/22/21 09:32	SM 4500 OG-2011		CDT	B1B1009	RC-C
Grab	Complete				02/22/21 09:32	Grab		CDT	B1B1009	RC-C
Temperature	11.0	0.0	°C	1.00	02/22/21 09:32	SM 2550B-2010		CDT	B1B1009	RC-C

**Sample Number** 1021131-02  
**Sample Description** DHEC B-280 Smith Branch @ N. Main St collected on 02/22/21 09:26

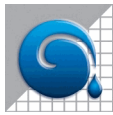
Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>General Chemistry Parameters</b>										
Total Suspended Solids	1.5	1.0	mg/L	1.00	02/23/21 09:10	SM 2540D-2011		SMN	B1B1042	RC-C

**Sample Number** 1021131-03  
**Sample Description** DHEC B-280 Smith Branch @ N. Main St collected on 02/22/21 09:30

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>Microbiological Parameters</b>										
E. Coli	104	20	MPN/100 mL	20.0	02/22/21 14:26	SM 9223B-2004		SMN	B1B1095	RC-C

**Sample Number** 1021131-04  
**Sample Description** DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 02/22/21 10:05

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>Field Parameters</b>										
Dissolved Oxygen	10.5	0.1	mg/L	1.00	02/22/21 10:05	SM 4500 OG-2011		CDT	B1B1009	RC-C
Temperature	10.3	0.0	°C	1.00	02/22/21 10:05	SM 2550B-2010		CDT	B1B1009	RC-C



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

Project: Water Quality Testing  
Work Order: 1021131  
Reported: 02/27/21 20:22

**Sample Number** 1021131-05  
**Sample Description** DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 02/22/21 10:00

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>General Chemistry Parameters</b>										
Total Suspended Solids	16.9	1.3	mg/L	1.33	02/23/21 09:10	SM 2540D-2011		SMN	B1B1042	RC-C

**Sample Number** 1021131-06  
**Sample Description** DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 02/22/21 10:03

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	02/22/21 14:26	SM 9223B-2004		SMN	B1B1095	RC-C

**Sample Number** 1021131-07  
**Sample Description** DHEC C-017 Gills Creek @ Bluff Road collected on 02/22/21 10:45

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>Field Parameters</b>										
Dissolved Oxygen	9.8	0.1	mg/L	1.00	02/22/21 10:45	SM 4500 OG-2011		CDT	B1B1009	RC-C
Temperature	10.4	0.0	°C	1.00	02/22/21 10:45	SM 2550B-2010		CDT	B1B1009	RC-C

**Sample Number** 1021131-08  
**Sample Description** DHEC C-017 Gills Creek @ Bluff Road collected on 02/22/21 10:40

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>General Chemistry Parameters</b>										
Total Suspended Solids	11.2	1.0	mg/L	1.00	02/23/21 09:10	SM 2540D-2011		SMN	B1B1042	RC-C

**Sample Number** 1021131-09  
**Sample Description** DHEC C-017 Gills Creek @ Bluff Road collected on 02/22/21 10:42

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	02/22/21 14:26	SM 9223B-2004		SMN	B1B1095	RC-C



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

Project: Water Quality Testing  
Work Order: 1021131  
Reported: 02/27/21 20:22

### 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



## WORK ORDER

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
PQ #	Project # Water Quality Testing

## Project # Water Quality Testing

[illegible][illegible]

SAMPLER - RELINQUISHED BY: 1. <i>Cr. Jm</i>	DATE/TIME: <i>2/22/21 1130</i>	RECEIVED BY: <i>[Signature]</i>	DATE/TIME: <i>2/22/21 1130</i>	Composite Start Date/Time: _____ Composite End Date/Time: _____ Time or Flow (Circle one) _____ Initials: _____
RELINQUISHED BY: 3. _____	DATE/TIME: _____	RECEIVED BY: 4. _____	DATE/TIME: _____	Temperature of blank or representative sample At time of collection <i>33</i> At time of lab receipt <i>2/22/21</i>
RELINQUISHED BY: 5. _____	DATE/TIME: _____	RECEIVED BY: 6. _____	DATE/TIME: _____	
RELINQUISHED BY: 7. _____	DATE/TIME: _____	RECEIVED BY: 8. _____	DATE/TIME: _____	



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



# CHAIN OF CUSTODY RECORD

## WORK ORDER

1081120

## Project # Water Quality Testing

[illegible][illegible]

SAMPLER	RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:	COMPOSITE START DATE/TIME:
1.		2/22/21 1130		2/22/21 1130	_____
3.	RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:	Composite End Date/Time: _____
5.	RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:	Time or Flow (Circle one) Initials: _____
7.	RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:	Temperature of blank or representative sample _____ °C
9.	RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:	At time of collection _____ °C
11.	RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:	At time of lab receipt _____

Page 7 of 9

**Possible Hazards associated with samples:**

☐ Non-Hazard      ☐ Flammable

☐ Skin Irritant ☐ Poison

Unknown

Other:

1

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



WORK ORDER 0815

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

Woolpert – City of Columbia  
2000 Center Point Road Suite 2200  
Columbia, SC 29210

Michael Long  
Michael.long@woolpert.com  
803-214-5936

## Project # Water Quality Testing.

[illegible]

SAMPLER RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:
1. <i>[Signature]</i>	2/02/21 1130	<i>[Signature]</i>
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:
3.		4.
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:
5.		6.
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:
7.		8.

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possible Hazards associated with samples: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poisonous

[illegible]

Page 8 of 9

**Sample Receipt Verification**

Client: Woolpert-Columbia Date Received: 2/22/21 Work Order: 1021131

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	Yes	No	NA	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? 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.			<input checked="" type="checkbox"/>	
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.	<input checked="" type="checkbox"/>			
Samples cooled when received in <b>Columbia</b> ?	Temp at time of receipt <u>3.3</u> °C Temp measured with IR SN: 36301069WS	<input checked="" type="checkbox"/>		<u>Ice</u> Cold Packs Dry Ice None
Samples cooled when received in <b>Greenville</b> ?	Temp at time of receipt <u>NA</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: TJB

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: 3/25/21

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

  
Project Verifier/QA Manager

4/8/21  
Date

Andrea Bolling  
Printed Name

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

  
Project Manager/Project Validator

4/8/21  
Date

AJ Jesse  
Printed Name



**Rogers & Callcott**  
ENVIRONMENTAL



*Laboratory Services*

## 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>	1031056
		<b>Received:</b>	03/22/2021 13:26

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 22, 2021. 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 [lhollister@rcenviro.com](mailto:lhollister@rcenviro.com), (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:** 1031056  
**Received:** 03/22/2021 13:26

Sample Number	Sample Description	Matrix	Sampled	Type
1031056-01	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	03/22/21 12:35	Grab
1031056-02	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	03/22/21 12:30	Grab
1031056-03	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	03/22/21 12:32	Grab
1031056-04	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	03/22/21 12:05	Grab
1031056-05	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	03/22/21 12:00	Grab
1031056-06	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	03/22/21 12:02	Grab
1031056-07	DHEC B-280 Smith Branch @ N. Main St	Wastewater	03/22/21 10:10	Grab
1031056-08	DHEC B-280 Smith Branch @ N. Main St	Wastewater	03/22/21 10:05	Grab
1031056-09	DHEC B-280 Smith Branch @ N. Main St	Wastewater	03/22/21 10:07	Grab



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

Project: Water Quality Testing  
Work Order: 1031056  
Reported: 03/25/21 16:23

## Sample Data

**Sample Number** 1031056-01  
**Sample Description** DHEC C-017 Gills Creek @ Bluff Road collected on 03/22/21 12:35

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>Field Parameters</b>										
Dissolved Oxygen	10.1	0.1	mg/L	1.00	03/22/21 12:35	SM 4500 OG-2011		CDT	B1C1029	RC-C
Grab	Complete				03/22/21 12:35	Grab		CDT	B1C1029	RC-C
Temperature	15.5	0.0	°C	1.00	03/22/21 12:35	SM 2550B-2010		CDT	B1C1029	RC-C

**Sample Number** 1031056-02  
**Sample Description** DHEC C-017 Gills Creek @ Bluff Road collected on 03/22/21 12:30

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>General Chemistry Parameters</b>										
Total Suspended Solids	3.6	1.0	mg/L	1.00	03/23/21 08:47	SM 2540D-2011		SMN	B1C1059	RC-C

**Sample Number** 1031056-03  
**Sample Description** DHEC C-017 Gills Creek @ Bluff Road collected on 03/22/21 12:32

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>Microbiological Parameters</b>										
E. Coli	ND	20	MPN/100 mL	20.0	03/22/21 15:10	SM 9223B-2004		MBW	B1C1167	RC-C

**Sample Number** 1031056-04  
**Sample Description** DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 03/22/21 12:05

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>Field Parameters</b>										
Dissolved Oxygen	10.3	0.1	mg/L	1.00	03/22/21 12:05	SM 4500 OG-2011		CDT	B1C1029	RC-C
Temperature	15.4	0.0	°C	1.00	03/22/21 12:05	SM 2550B-2010		CDT	B1C1029	RC-C



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

Project: Water Quality Testing  
Work Order: 1031056  
Reported: 03/25/21 16:23

**Sample Number** 1031056-05  
**Sample Description** DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 03/22/21 12:00

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>General Chemistry Parameters</b>										
Total Suspended Solids	3.2	1.0	mg/L	1.00	03/23/21 08:47	SM 2540D-2011		SMN	B1C1059	RC-C

**Sample Number** 1031056-06  
**Sample Description** DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 03/22/21 12:02

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>Microbiological Parameters</b>										
E. Coli	ND	20	MPN/100 mL	20.0	03/22/21 15:10	SM 9223B-2004		MBW	B1C1167	RC-C

**Sample Number** 1031056-07  
**Sample Description** DHEC B-280 Smith Branch @ N. Main St collected on 03/22/21 10:10

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	03/22/21 10:10	SM 4500 OG-2011		CDT	B1C1029	RC-C
Temperature	13.7	0.0	°C	1.00	03/22/21 10:10	SM 2550B-2010		CDT	B1C1029	RC-C

**Sample Number** 1031056-08  
**Sample Description** DHEC B-280 Smith Branch @ N. Main St collected on 03/22/21 10:05

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>General Chemistry Parameters</b>										
Total Suspended Solids	6.0	1.0	mg/L	1.00	03/23/21 08:47	SM 2540D-2011		SMN	B1C1059	RC-C

**Sample Number** 1031056-09  
**Sample Description** DHEC B-280 Smith Branch @ N. Main St collected on 03/22/21 10:07

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
<b>Microbiological Parameters</b>										
E. Coli	654	20	MPN/100 mL	20.0	03/22/21 15:10	SM 9223B-2004		MBW	B1C1167	RC-C



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

Project: Water Quality Testing  
Work Order: 1031056  
Reported: 03/25/21 16:23

### 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



WORK ORDER 1031056

PO #	Project #	Water Quality Testing

R & C	VR	
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[illegible]

1.	SAMPLER - RELINQUISHED BY: 	DATE/TIME: 3/24/21 1326	RECEIVED BY: 2.  am
3.	RELINQUISHED BY:	DATE/TIME:	RECEIVED BY: 4.
5.	RELINQUISHED BY:	DATE/TIME:	RECEIVED BY: 6.
7.	RELINQUISHED BY:	DATE/TIME:	RECEIVED BY: 8.

Page 6 of 9

possible Hazards associated with samples: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐

Total Number of Containers	N	N						Filtered (Yes/No)
Parameter(s) ↓	Y	Y						Cooled (Yes/No)
	P	P						Container Type (Plastic/Glass)
	0.5G	120						Container Volume (mL)
	G	G						Sample Type (Grab/Composite)
	WW	WW						Sample Source (WW, GW, DW, SW, S, Other)
	A	F						
	TSS	E. Coli						
	1	1						-01 COMMENTS
	1	1						D.O.- /0.10 mg/L
								Temp- 15.5 °C
								Collected @ 1235 3/22/21
								Analyzed @ 1235 3/22/21
								Weather- 66° Sunny
Mel								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 °C

Form Revised March, 2019 Page of



# CHAIN OF CUSTODY RECORD

## WORK ORDER



**Mailing Address:** PO Box 5555  
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	<u>Woolpert – City of Columbia</u>
Address	<u>2000 Center Point Road Suite 2200</u> Columbia, SC 29210

Report To:	Michael Long
Email Address	Michael.long@woolpert.com
Telephone #	803-214-5936

PO #	Project #	Water Quality Testing
------	-----------	-----------------------

[illegible]

SAMPLER – RELINQUISHED BY: 1. 	DATE/TIME: 3/22/21 1326	RECEIVED BY: 2.  m.
RELINQUISHED BY: 3.	DATE/TIME:	RECEIVED BY: 4.
RELINQUISHED BY: 5.	DATE/TIME:	RECEIVED BY: 6.
RELINQUISHED BY: 7.	DATE/TIME:	RECEIVED BY: 8.

Page 7 of 9

possible Hazards associated with samples: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐

[illegible]

Form Revised March, 2019 Page of



# CHAIN OF CUSTODY RECORD

WORK ORDER 10310586

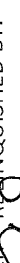

Mailing Address:	PO Box 5655 Greenville, SC 29606	Shipping Address:	426 Fairforest Way Greenville, SC 29607	215B Stoneridge Drive Columbia, SC 29210
	Phone (864) 232-1556 Fax (864) 232-6140		Phone (803) 509-8999 Fax (803) 509-8999	

Client Name	<u>Woolpert – City of Columbia</u>
Address	<u>2000 Center Point Road Suite 2200</u> Columbia, SC 29210

Report To:	<u>Michael Long</u>
Email Address	<u>Michael.long@woolpert.com</u>
Telephone #	803-214-5936

PO #	Project #	Water Quality Testing

[illegible][illegible]

SAMPLER RELINQUISHED BY: 1. 	DATE/TIME: 3/22/21 1326	RECEIVED BY: 2. 	DATE/TIME: 3.22.21 1326	Composite Start Date/Time: _____
RELINQUISHED BY: 3. _____	DATE/TIME:	RECEIVED BY: 4. _____	DATE/TIME:	Composite End Date/Time: _____
RELINQUISHED BY: 5. _____	DATE/TIME:	RECEIVED BY: 6. _____	DATE/TIME:	Time or Flow (Circle one) Initials: _____
RELINQUISHED BY: 7. _____	DATE/TIME:	RECEIVED BY: 8. _____	DATE/TIME:	Temperature of blank or representative sample At time of collection _____ °C At time of lab receipt <u>28</u> °C

## Sample Receipt Verification

Client: Wolpert - City of Columbia

Date Received: 3.22.21

Work Order: 1031056

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?	<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? 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.			<input checked="" type="checkbox"/>	
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.	<input checked="" type="checkbox"/>			
Samples cooled when received in <b>Columbia</b> ?	Temp at time of receipt <u>2.8</u> °C Temp measured with IR SN: 36301069WS	<input checked="" type="checkbox"/>		<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: SMN

## Appendix A

### Interim Report on Force Majeure Event



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We Are Columbia

---

February 2, 2021

**BY U.S. MAIL TO:**

Chief, Water Programs Enforcement Branch  
Water Protection Division  
U.S Environmental Protection Agency, Region 4  
61 Forsyth Street, S.W.  
Atlanta, GA 30303

Mr. Randy Stewart  
SCDHEC-Bureau of Water  
Water Pollution Control Division  
2600 Bull Street  
Columbia, SC 29201

William Weinischke, Esquire  
Environmental Enforcement Section  
U.S. Department of Justice  
Box 7611 Ben Franklin Station  
Washington, DC 20044-7611  
Re: DOJ No. 90-5-1-1-09954

**AND BY ELECTRONIC MAIL TO:**

Nathan M. Haber, Esquire (habernm@dhec.sc.gov)  
William Weinischke, Esquire (bill.weinischke@usdoj.gov)  
Paul Schwartz, Esquire (Schwartz.paul@epa.gov)  
Beth Drake, Esquire (beth.drake@usdoj.gov)  
Carol DeMarco King, Esquire (King.carol@epa.gov)  
Richard Elliott (Elliott.richard@epa.gov)

Re: Interim Report on Force Majeure Event due to COVID-19  
*The United States of America and State of South Carolina by and  
through the Department of Health and Environmental Control vs.  
The City of Columbia; Civil Action No. 3:13-2429-TLW  
DOJ Case Number 90-5-1-1-00954*

---

Teresa Wilson • City Manager  
1737 Main Street • P.O. Box 147 • Columbia, South Carolina 29217  
Office: 803.545.3480 • Fax: 803.401.8800 • Email: [Teresa.Wilson@columbiasc.gov](mailto:Teresa.Wilson@columbiasc.gov)

Dear Sirs and Madams:

On April 7, 2020, the City of Columbia notified the U.S. Department of Justice, the U.S. Environmental Protection Agency, and the South Carolina Department of Health and Environmental Control of a *force majeure* event which is expected to delay the City's performance of certain obligations under the Consent Decree. Specifically, the City provided notice that the impacts of the COVID-19 pandemic were expected to result in delays in the City's ability to meet certain deadlines for the performance of its obligations under the Consent Decree. Since the COVID-19 pandemic has not yet been contained in South Carolina, the City cannot provide a final report with details regarding the expected delays in meeting Consent Decree deadlines or the duration of such delays. To date, the City has been able to meet the deadlines in the Consent Decree and the deadlines in the approved programs under the Consent Decree. However, even though the City is working to mitigate the impacts of the pandemic, there is no doubt that this unprecedented crisis will result in delays in the City's performance of its long-term obligations under the Consent Decree. The City is providing this interim report to further explain the conditions which will likely result in such delays and to generally identify those programs which might be affected.

Since mid-March 2020, the State has remained under a state of emergency due to the COVID-19 pandemic. COVID-19 infections and deaths increased rapidly throughout South Carolina in June and July, and after a brief decline in late July and August, have steadily increased in recent months with the highest level of confirmed cases in the last month. As of January 24, 2021, the South Carolina Department of Health and Environmental Control reports more than 381,000 confirmed cases of COVID-19 with 5,944 confirmed COVID deaths in South Carolina. In Richland County, there have been more than 31,000 confirmed positive cases, with a positive rate of 8,257 per 100,000 persons tested as of January 24, 2021. Since early December, the State has experienced a significant spike in cases which have exceeded the previous high level of cases in early summer with more than 125,000 confirmed cases reported in the last month.

Both the State and the City have implemented measures to minimize the spread of the COVID-19 disease, including closures and restrictions on operation of restaurants and bars, retail establishments, public recreational area, fitness facilities, entertainment venues, and other non-essential services. The financial impacts of COVID-19 on the businesses and residents of the City have been significant. In the six-month period prior to the imposition of the first COVID-related business closures in March 2020, the unemployment rate in Richland County was consistently below 3 percent with a 2.0% unemployment rate in September 2019 being the lowest in that six-month period. Unemployment in Richland County rose to 9.0% in April 2020 and has remained substantially higher than pre-COVID rates: 10.1% in May; 8.7% in

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Teresa Wilson • City Manager  
1737 Main Street • P.O. Box 147 • Columbia, South Carolina 29217  
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June; 8.7% in July; 6.9% in August; 5.1% in September; 4.3% in October; 4.4% in November; and 4.8% in December. The recent increase in COVID cases could result in the imposition of additional restrictions on business operations which might be expected to negatively impact employment in the coming months. For small businesses in the City, the closures or restricted operations have threatened the continuing viability of many businesses. For those businesses which survived the business closures and restrictions in the spring, the ongoing nature of the pandemic and the possibility of new shutdowns to address the recent spike in cases may present challenges which result in permanent closure. As discussed below, the City has committed resources to addressing some of the economic hardship on its citizens and small businesses. However, the City's response to address this unprecedented crisis has necessitated the reallocation of resources which are also limited by the COVID-19 impacts to the City's revenue sources. As such, the demands on the City's resources have increased while the availability of resources are decreasing and the City's ability to incur further debt is also negatively impacted by the pandemic.

As discussed more fully below, the ongoing COVID-19 pandemic has had a direct impact on the City's day-to-day operations as employee absenteeism is higher than usual due to COVID illnesses or other COVID-related reasons. Additionally, the direct financial impact on the City has been significant with substantial decreases in revenue, increased expenditures for COVID-related goods and services provided to citizens, and re-allocation of these more limited resources. As noted above, the City has thus far been able to meet all of the deadlines in the Consent Decree as well as the deadlines established in the programs previously submitted and approved under the Consent Decree. However, as the COVID-19 pandemic continues, the impacts on the City's resources and its citizens are expected to increase exponentially and therefore prolong the period required to recover from those impacts. While the full impact and expected recovery period cannot be assessed until the pandemic is contained and a comprehensive recovery plan is developed and implemented, the impacts of the pandemic will undoubtedly delay the City's performance of some of its long-term obligations under the Consent Decree.

#### **A. Impact on City Management and Staff**

The COVID-19 pandemic has impacted the staffing levels for the Wastewater Maintenance Division and Metro WWTP Division (collectively, the Wastewater Division) and other City departments, such as Engineering and Procurement, which are essential to the work of the Wastewater Division. To date, twenty-four Wastewater Division employees have tested positive for COVID-19. Additionally, in accordance with CDC guidelines, the City implemented a policy on COVID testing and quarantine for employees who may have tested positive or been in contact with someone who has tested positive for coronavirus. To date, more than 100 employees have quarantined in accordance with this policy. For employees who travel outside

the State, the City has in many instances requested the employee obtain a negative COVID test prior to returning to work. Since March, employees of the Wastewater Division alone have been absent 550 workdays due to COVID illness and quarantine policy requirements.

In addition to the employee absences due to coronavirus and the City's quarantine recommendations, COVID-19 has resulted in higher levels of absenteeism for many other employees affected by measures implemented to slow the spread of the disease. In mid-March, the City implemented a number of human resources policies in response to the pandemic. By order of the Governor, all South Carolina public schools were closed effective March 16, 2020, and remained closed for the remainder of the 2019/2020 school year. In response, the City allowed telecommuting and extended leaves of absence for employees with children who were home because of daycare or school closures. Similarly, the City also provided these options to City employees who have underlying health issues or are over the age of sixty. For all of these COVID-related absences, the City has provided employees with paid leave in excess of that required under the federal Emergency Paid Sick Leave Act and Emergency Family and Medical Leave Expansion Act.

While the COVID-related absences have impacted almost every City department, the absences are substantially higher for the Wastewater Division because a large majority of the staff cannot work remotely. For example, the Wastewater Maintenance Division (WMD) has been operating with approximately 50 percent of its full-time field employees. The impact of COVID-19 on smaller crews illustrates the staffing challenges for the WMD and other divisions in the Department of Utility Operations. The City normally operates three sewer pipe cleaning crews. However, two employees have taken extended leaves of absence due to COVID-19. One employee is remaining at home to care for children because his wife is a nurse. Another employee is on leave due to underlying health issues. With these absences, the City was down to one cleaning crew. In order to address the need to operate additional cleaning crews, the City halted normal operation of its CCTV crews to train the employees to operate the Vactor trucks utilized for pipe cleaning. Similar reallocations of resources have been essential to maintaining operations in the Wastewater Division as City management addresses the unique challenges of the COVID pandemic. This higher rate of absenteeism was also exacerbated by the implementation of a temporary hiring freeze in the early weeks of the pandemic. While the City has modified its COVID-19 hiring freeze to allow hiring to fill positions vacated by resignations and terminations, this policy continues to impact all departments of the City.

Since the City management team has greater capacity to work remotely, the COVID-19 pandemic has not resulted in the levels of absenteeism experienced among the Wastewater Division staff. However, COVID-19 has substantially increased the

demands on City management in terms of allocation of limited resources (human and financial) and strategic planning and problem-solving required to maintain normal operations during the pandemic. Accordingly, the time devoted to COVID-related issues and planning has reduced the availability of City management to provide necessary oversight and decision-making for the development and implementation of the programs required by the Consent Decree. As such, even for programs and projects which are being developed by third-party contractors, there have been delays in the progress for these programs and projects where the input of City management is required at various stages of development. For example, the City's contractor has made substantial progress in developing the Capacity Assurance Program (CAP) required under the Consent Decree; however, the development of the CAP requires extensive input and coordination with the City management and staff and has thus been delayed due to their limited availability since March. One of the key features of the CAP is the CAP tool, an information management system which will be used to track the available capacity in the City's wastewater collection and treatment system. This CAP tool will be used to perform the threshold analysis of capacity on an application for a new sewer connection or an increase in the discharge of an existing sewer customer. While the City's contractor is responsible for creating the basic operating system for this interactive web-based tool, the development of the CAP tool has required numerous meetings and consultation with the City management and staff. Additionally, as the development of the CAP tool progresses, the contractor must rely on the City to establish the processes for interface of the CAP tool with the sewer mapping program and other databases maintained by the City. The limited availability of the City management and staff during the COVID-19 crisis has therefore slowed the progress on the development of the CAP. While the CAP development and other similarly-affected programs were on schedule prior to the COVID pandemic, the limited availability of City management and staff to assist and advise consultants could result in delays in the completion of these programs as the COVID pandemic continues to impose additional demands on their time.

## **B. Financial Impact**

Following the Governor's declaration of a state of emergency on March 13, 2020, the State implemented a series of state-wide measures to slow the spread of COVID. In addition to the closure of public schools discussed above, the Governor issued a series of executive orders, prohibiting on-premises consumption at restaurants and bars, limiting the size of public gatherings, and closing recreational facilities, entertainment venues, hair and nail salons, and other non-essential businesses. City Council also declared a state of emergency in the City on March 17, 2020, and implemented additional measures to limit the spread of infection in the City, including a "Stay Home Stay Safe" Ordinance which restricted business operations and non-essential travel within the City and a mask ordinance.

Like many other municipalities throughout the country, the City took immediate action to provide relief to mitigate the economic hardship to residents and small businesses affected by these measures. For residents with financial hardships, City has a number of long-standing programs to assist these residents. For example, low-income residential customers are eligible for the City's Change-Up Program which provides payment of up to 75% of a water or sewer bill, including past-due balances or fees. In response to COVID, the City implemented additional programs to assist residents and small businesses. In April, the City increased funding for grants to non-profit organizations which serve seniors, the homeless, and other vulnerable individuals impacted by the COVID-19 pandemic. For businesses, the City extended the deadline for payment of annual business license renewal fees and waived late fees on payment of hospitality and accommodation taxes. The City also allocated \$2 million dollars to establish a Small Business & Non-Profit Stabilization Package, which included grants to small business owners through the City's Small Business Stabilization Forgivable Loan Program. These grants were structured as a loan with the loan forgiven if used in accordance with established criteria. The City's allocation of funds to this program was later increased and supplemented with a federal grant. City Council also increased funding for law enforcement and first responders to ensure preparedness to meet public safety needs during the pandemic. The additional funding for these programs required adjustments to the FY 2019/2020 budget, including the transfer of \$6.25 million from the water and sewer operating budget to the general fund.

At the same time that COVID-19 pandemic required the re-allocation of funds within the City's operating budget, the City experienced an immediate and continuing decrease in City revenues. On March 12, 2020, the City suspended disconnection of water and sewer service for non-payment in an attempt to be compassionate to our citizens. On March 14, 2020, the Governor subsequently issued a request that utilities refrain from suspending or disconnecting essential services for non-payment during the state of emergency. As of mid-December, the past due amount on water/sewer services had increased by more than \$7.5 million over pre-pandemic amounts. Water and sewer revenues also decreased due to reduction in usage by some of the City's largest customers. On March 19, 2020, the University of South Carolina announced remote learning for the 35,000 students at its Columbia campus, closure of residence halls, and telecommuting for non-essential employees. Benedict College, Allen University, Columbia College, and Columbia International University also transitioned to remote learning and closed residence halls. Although hotels were deemed an essential business and could remain open, government-imposed restrictions on travel, a decline in business travel, and the stay-at-home orders resulted in a sharp decline in hotel occupancies which remain lower than normal. Water/sewer usage in the City was also reduced for private and governmental offices which allowed non-essential workers to telecommute. While some of these

customers have increased usage since the early months of the COVID shutdown, the water/sewage usage has not yet returned to pre-COVID levels.

In addition to the reduction in revenue for the Utilities Department, the City also experienced a reduction in revenues from other sources. As noted above, on March 26, 2020, the City enacted the Stay Home Stay Safe Ordinance which drastically reduced business operations within the City. In addition to the reduction in water and sewer revenues, the restrictions of retail businesses also resulted in a loss of revenue from local option sales tax. Travel restrictions and a state-wide ban on indoor dining significantly reduced the revenue from local hospitality and accommodation taxes. The City also experienced substantial reductions in other revenue sources, such as service fees, parking fees, and court fines. The pandemic is also expected to result in an increase in the delinquencies in property tax payments. As noted above, the City was able to manage this decrease in revenue and increasing COVID-related demands by transferring funds within the FY 2019/2020 budget; however, the most significant impact of the known and projected reductions in revenue was seen in the budgeting process for FY 2020/2021.

As described more fully in the approved Financial Analysis Program required under the Consent Decree, the City's fiscal year runs from July 1<sup>st</sup> through June 30<sup>th</sup> with the budget planning for the upcoming fiscal year beginning in January each year. A proposed budget is typically developed in the first quarter of the calendar year with approval by City Council before the June 30<sup>th</sup> deadline. As such, City Council had been working to meet the demands of the COVID-19 pandemic for approximately three months when the budget for FY 2020/2021 was finalized and approved. As discussed above, during that time, City Council had already re-allocated funds in the FY 2019/2020 budget to meet the COVID-related needs of small businesses, citizens, and City operations. These continuing COVID-related demands and the projected decrease in revenues were taken into consideration in developing the budget for FY 2020/2021 and resulted in a substantial reduction in total approved budget compared to the FY 2019/2020 budget. Additionally, as the COVID-19 pandemic continues and the economic impacts continue to affect the City's residents and businesses, this approved budget for FY 2020/2021 may require further revision. As the City prepares to begin the planning process for the FY 2021/2022 budget, these conditions are expected to continue to impact the City's financial resources, and accordingly, the City's revenues would not be expected to return to the FY 2019/2020 budget level without significant aid from the federal and state governments.

The financial impacts of COVID have also affected the City's CIP budget for the sewer system. Based on the projected 10-year CIP budget for the sewer system, which includes capacity-enhancing and rehabilitation projects identified in programs required under the Consent Decree, the proposed CIP budget for FY 2020/2021 was \$80 million. Among the unavoidable reductions in the budget for FY 2020/2021, the

allocation for sewer system CIPs was reduced to \$25 million. This reduced CIP budget required the City to adjust the schedules for completion of capacity-enhancing and rehabilitation projects. This reduction alone is not expected to immediately result in the City's failure to meet the deadlines under the Consent Decree because many of these projects had been scheduled for completion prior to the deadline. However, as discussed below, any future reductions in CIP funding will almost certainly result in project scheduling adjustments that will have cascading impacts and push project completions beyond current schedules developed to meet the long-term CIP requirements under the Consent Decree programs.

The reduction in the sewer CIP budget for FY 2020/2021 will require a proposed CIP budget of \$135 million in FY 2021/2022 in order to keep the capacity-enhancing and rehabilitation sewer projects on schedule. Given the recent resurgence in COVID-19 infections, the City is not likely to have the resources to increase the sewer CIP to this level. Indeed, the ongoing economic impacts of the continuing COVID crisis are likely to keep the budget for FY 2021/2022 at a level comparable to the current fiscal year budget (i.e., below the FY 2019/2020 budget). Moreover, as discussed below, the COVID pandemic has also disrupted the City's plan for water/sewer rate increases. These rate increases are necessary to demonstrate adequate revenue to service new debt to fund CIP for the sewer system. Moreover, in establishing the 10-year CIP budget for the sewer improvements needed to meet the Consent Decree requirements, the City considered the availability of qualified contractors to design and construct these improvements and proposed an approximately \$80 million per year CIP budget. As this work is pushed forward, the contracting industry may not have the capacity to support the compression of the work on these projects into a shorter timeframe. Therefore, the reduction of the annual CIP budget for two years could result in a delay in completion of the capacity-enhancing and rehabilitation projects even if the City can substantially increase the CIP budget thereafter to include the shortfall in FY 2020/2021 and FY 2021/2022.

In addition to the substantial reduction in the FY 2020/2021 budget, the pandemic also necessitated deferral of the proposed water/sewer rate increase for FY 2020/2021. Additionally, given the current surge of COVID cases and the projected long-term financial impact on residents and business, any proposed rate increase for FY 2021/2022 may also be deferred or significantly adjusted downward from the recommendation of the most recent rate study. In accordance with the approved Financial Analysis Program, the City has conducted a rate study annually to evaluate and recommend rate adjustments needed to meet budget obligations for operation of the City's water and wastewater systems and to fund capital improvement projects required under the Consent Decree programs. With the exception of 2016 (the year following the historic October 2015 flood), City Council has approved substantial annual rate increases since the Consent Decree was entered in 2014:

June 16, 2015 (FY 2015/2016)	- 9.50%
June 20, 2017 (FY 2017/2018)	- 4.75%
June 19, 2018 (FY 2018/2019)	- 9.76%
June 18, 2019 (FY 2019/2020)	- 7.06%

On February 4, 2020, the City's consultant presented a preliminary analysis of the projections for the 2020 Water and Wastewater Rate Study to City Council. The presentation summarized the preliminary analysis of proposed future rate increases as follows:

FY 2020/2021	- 9.15%
FY 2021/2022	- 8.96%
FY 2023/2023	- 7.82%
FY 2023/2024	- 5.98%

When Council met in May to begin the budget approval process, the proposed rate increase for FY2020/2021 was not considered for approval due to the economic impact of COVID-19. On May 19, 2020, the City's consultant advised Council that a projected increase to 10.15% would be needed in FY2021/2022 in order to continue to meet the financial planning requirements for the operation of the City utilities and to fund the additional obligations of the Consent Decree. With the continuing spread of COVID-19 and the resulting economic impacts to the City's residents and businesses, a rate increase may not be possible in June 2021. Even if economic conditions improve by the end of 2021 or early 2022, a two-year gap in water/sewer rate increases will substantially impair the City's ability to incur new debt for the capital improvement projects through the issuance of bonds, and as discussed above, would likely be expected to result in a delay in the scheduled completion for projects required under the Consent Decree.

### **III. Potential Delays**

Like every other local and state government, the City has faced the difficult decisions to implement measures to safeguard its citizens against the coronavirus threat even though such measures directly impact local businesses and their employees. The City has committed resources to assist businesses and residents who are negatively impacted by these measures and the economic downturn triggered by the COVID-19 pandemic. The City management and staff have worked diligently to maintain basic services despite the numerous challenges created by the COVID-19 crisis. To date, the City has been able to meet all of the deadlines in the Consent Decree and in the programs required by the Consent Decree. However, as the COVID-19 crisis continues into 2021, the strains on the City's resources will be cumulative and the City's performance under the Consent Decree will undoubtedly be affected. According to current projections from the federal government, the public health crisis will

continue at least through the second quarter of 2021 and the economic impacts from COVID-19 may continue long after the COVID-19 pandemic is contained.

Based on the City's current understanding of the known and potential COVID-related impacts on its operations and financial resources, the City expects possible delays in the current deadlines for completion of capacity-enhancing and rehabilitation capital improvement projects identified to meet the requirements of the Consent Decree. The City also expects potential delays in the completion of upcoming Consent Decree program requirements, such as Sewer Mapping deadlines, deadlines related to the Capacity Assurance Program, deadlines in the Continuing Sewer Assessment Program, and deadlines in the Gravity Sewer Operation and Maintenance Program. The City is not yet able to identify the specific deadlines which will be delayed or determine the duration of any such delays. The City will supplement this report with the information required under Paragraph 56 of the Consent Decree as the City's performance under specific programs is unavoidably delayed. The City does not believe any such delays in the performance of its obligations under the Consent Decree will endanger public health, welfare or the environment, and the City will continue to take steps to minimize any delays and to mitigate the effect of any delays.

The City appreciates the agencies' continuing cooperation as the City addresses the extraordinary needs of its citizens during this unprecedented crisis. If additional information is needed regarding the circumstances described in this interim report, please feel free to contact me or Clint Shealy, Assistant City Manager for Columbia Water at (803) 733-8682 or [clint.shealy@columbiasc.gov](mailto:clint.shealy@columbiasc.gov).

Sincerely,



Teresa B. Wilson  
City Manager

APPROVED AS TO FORM



2/3/2021