

Clean Water 2020 Program

CONSENT DECREE QUARTERLY REPORT

July 1, 2016 – September 30, 2016

Corrected February 2018

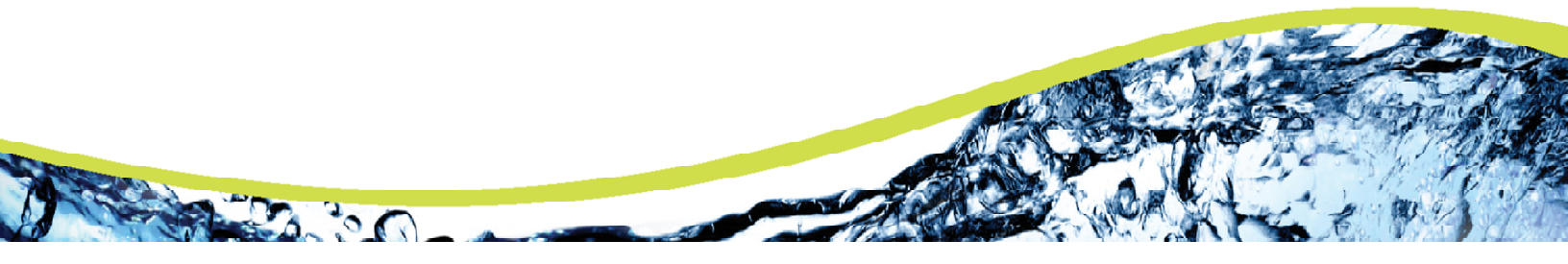


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Section 1 Introduction

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.

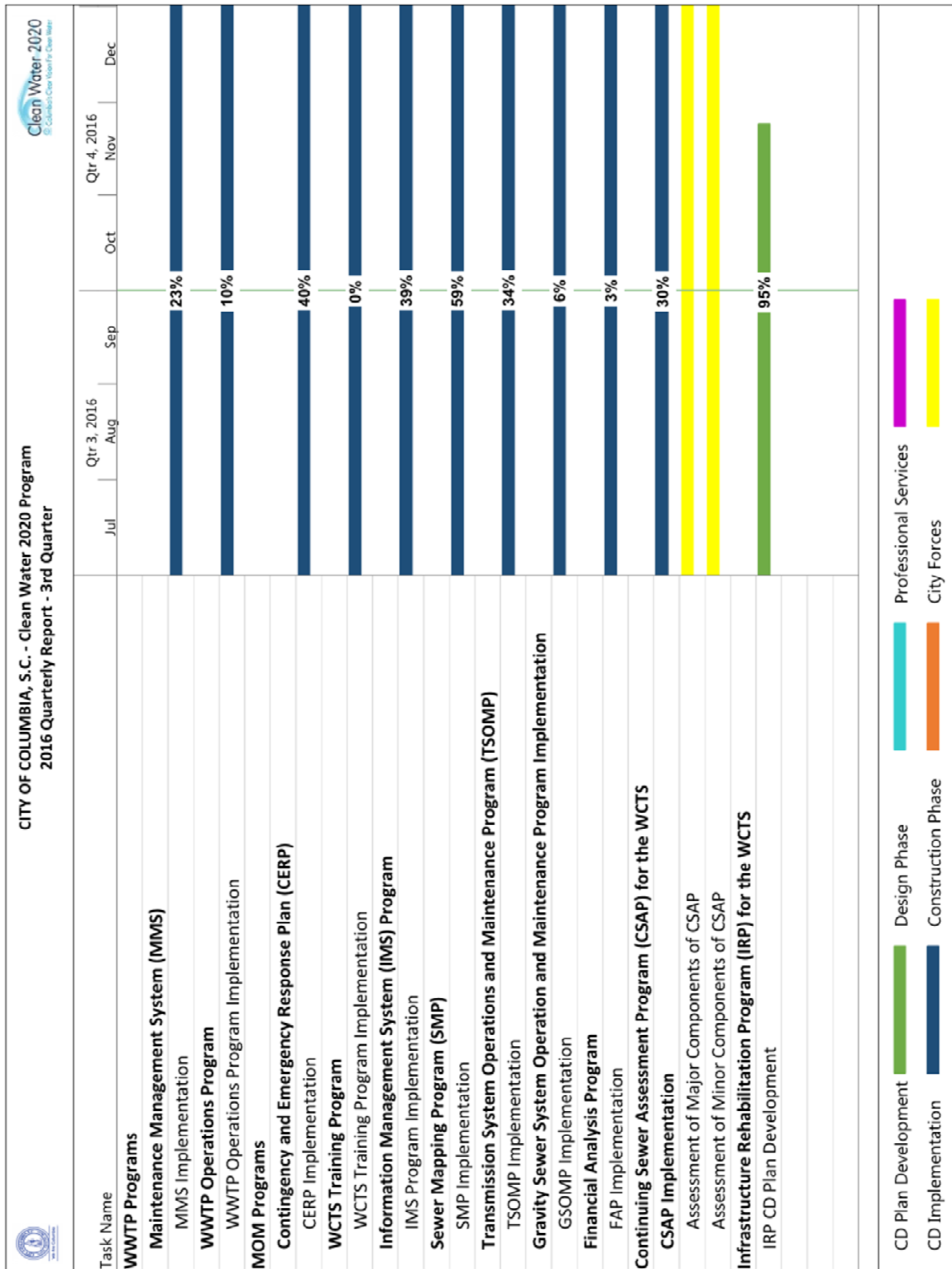
Section 4 – Quarterly SSO Report

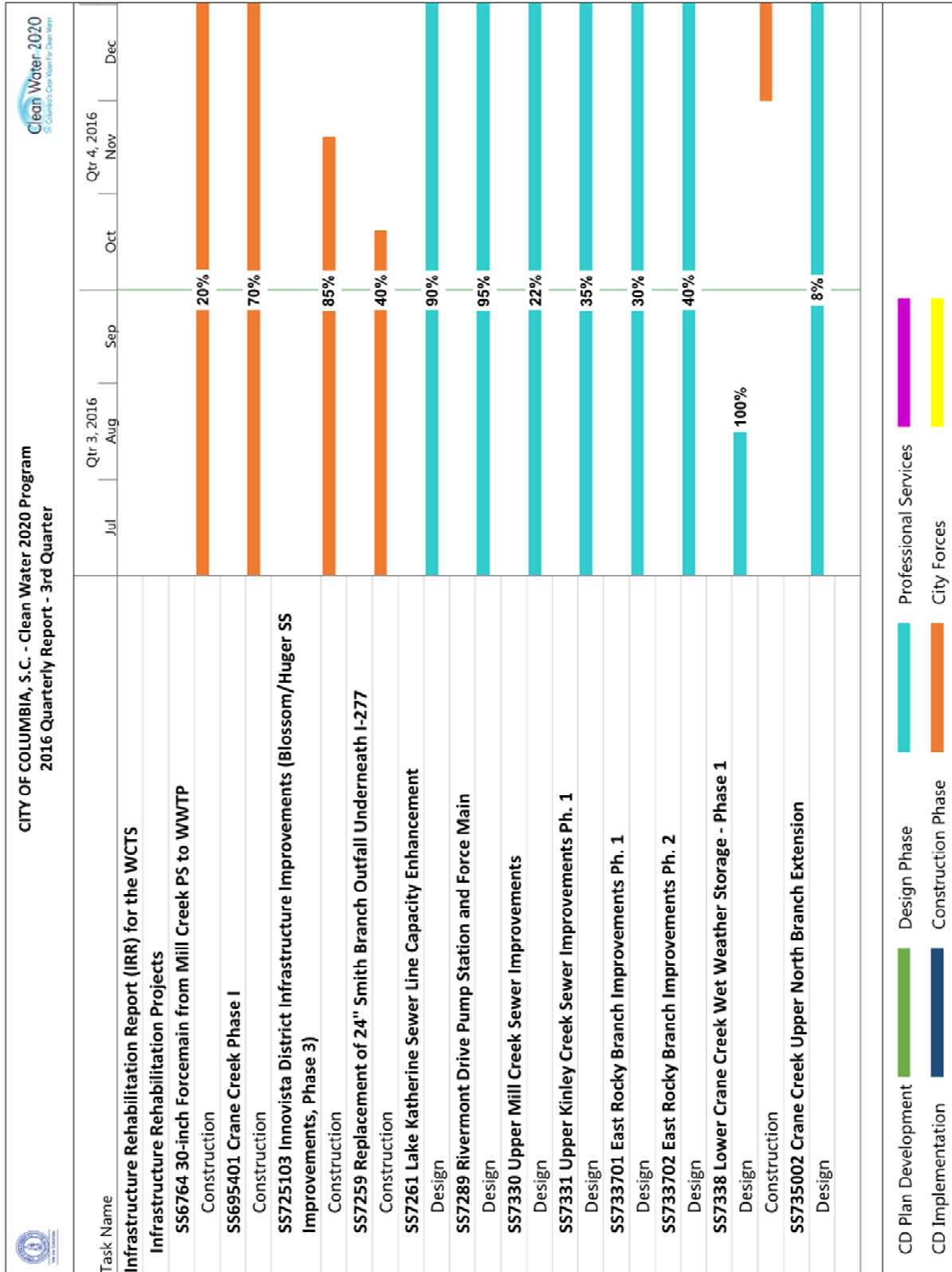
This section addresses the requirements of Section IX.39.a.(ii) of the Consent Decree and provides a tabular listing of sanitary sewer overflows (SSOs). The table includes the date, time, location, source, duration, estimated volume, receiving water (if any), cause, and actions taken to repair or otherwise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

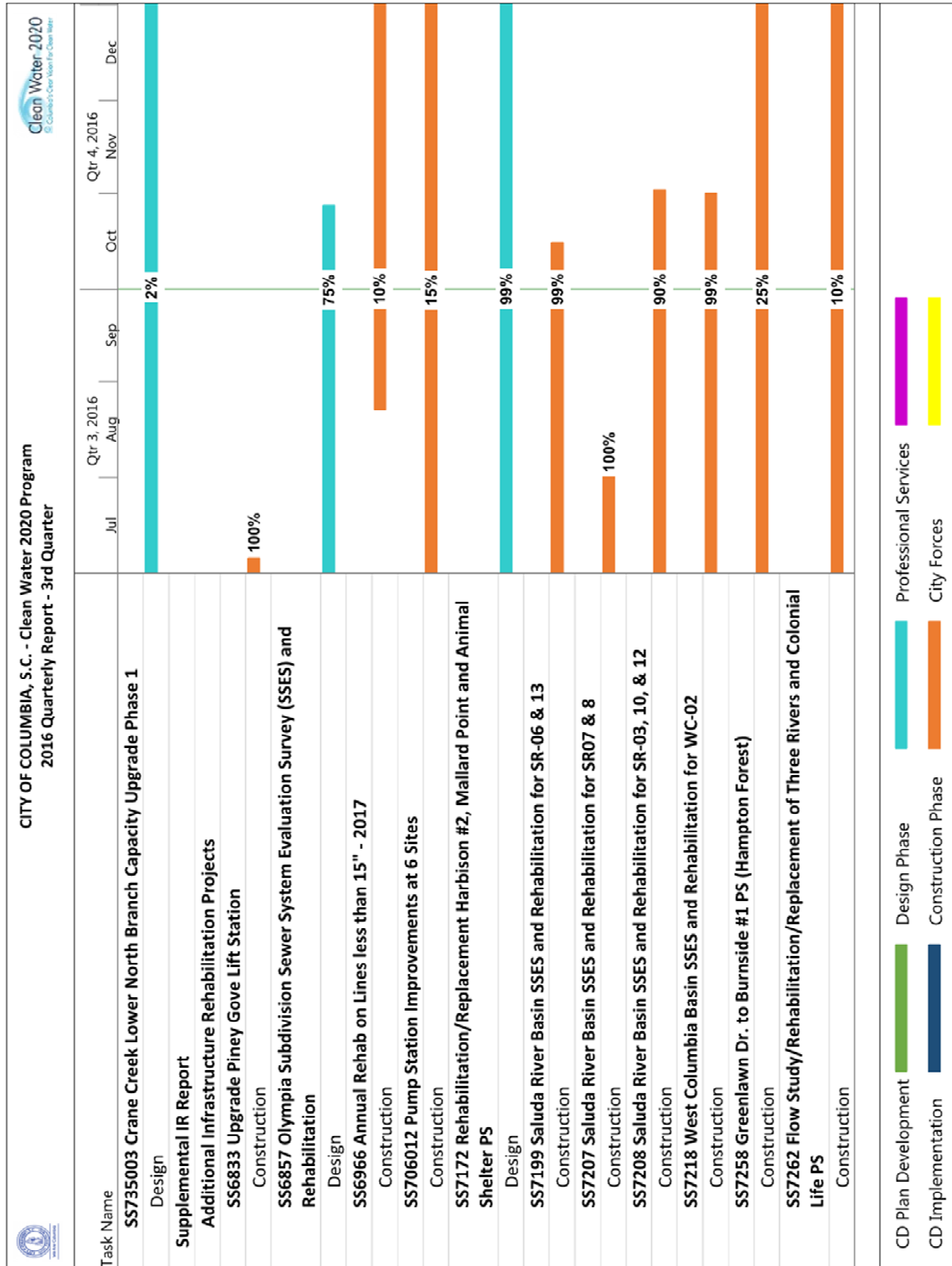
Section 5 – SEP Water Quality Monitoring Results

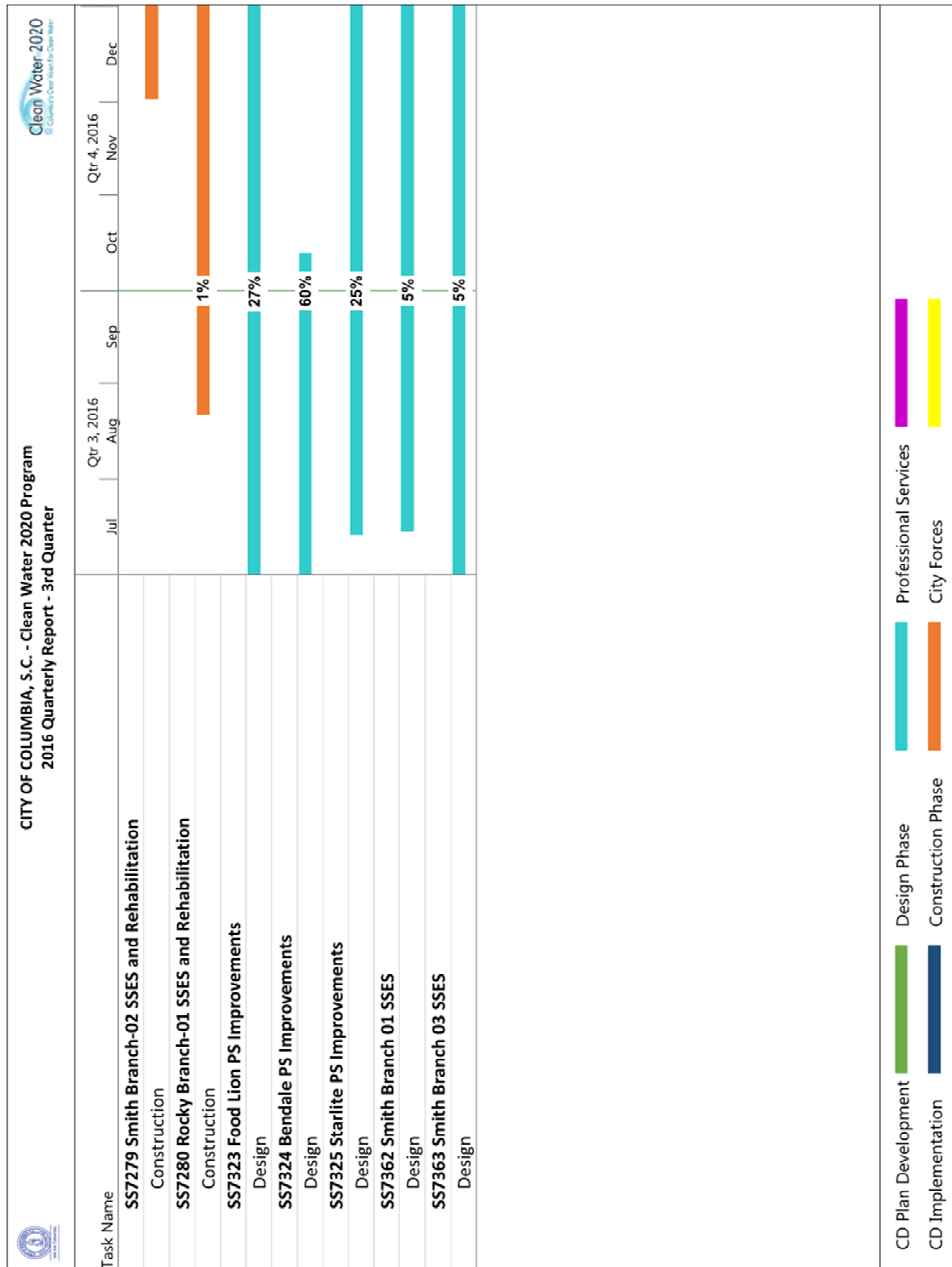
This section addresses the requirements of Section IX.39.a.(v) of the Consent Decree and provides the results of water quality monitoring conducted during the previous Calendar Quarter as part of the SEP described in Appendix I of the CD.

Section 2 Schedule of Projects and Activities









Section 3 Additional Information Demonstrating Implementation of Consent Decree Requirements

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

3.1 WWTP Programs

In accordance with Section V.11 of the CD, the City is developing and implementing specific Wastewater Treatment Plant (WWTP) programs. The Program elements addressed in this section provide information regarding activities involving the Metro WWTP.

3.1.1 Maintenance Management System (MMS)

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

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

- Migration of Data and Maintenance Schedules into Cityworks – 38% Complete

3.1.2 WWTP Operations Program

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

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

- Written procedures describing the various operational controls at the WWTP – 10% Complete

3.1.3 WWTP Training Program

The WWTP Training Program was submitted to EPA and SCDHEC on May 20, 2016. The City is awaiting EPA and SCDHEC review and approval of the WWTP Training Program.

3.2 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).

3.2.1 Contingency and Emergency Response Plan (CERP)

The CERP was submitted to EPA and SCDHEC on November 20, 2015. The City received final approval of the CERP from EPA and SCDHEC on May 23, 2016.

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

- Training Staff on the Activation of the CERP – 40% Complete
- Emergency Operation Training and Activation Procedures – 40% Complete
- Develop and Train Staff to Scenarios – 40% Complete

3.2.2 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:

- Storeroom Component of Cityworks – 20% Complete
- Sewer Mapping Program – 59% Complete

3.2.3 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 – 80% complete
 - Smith Branch Basin – 67% complete
 - Saluda River Basin – 86% complete
 - Rocky Branch Basin – 31% complete
 - Mill Creek Basin – 26% complete
 - Gills Creek Basin – 27% complete
 - Crane Creek Basin – 65% complete
 - Broad River Basin – 27% complete
- Progress for each WCTS Major Gravity Mapping basin is as follows:
 - West Columbia Basin – 64% complete
 - Smith Branch Basin – 74% complete
 - Saluda River Basin – 65% complete
 - Rocky Branch Basin – 55% complete
 - Mill Creek Basin – 74% complete
 - Gills Creek Basin – 75% complete
 - Crane Creek Basin – 75% complete

- Broad River Basin – 65% complete

3.2.4 Transmission System Operations and Maintenance Program (TSOMP)

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

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

- SCADA System Enhancements – 30% Complete

3.2.5 Financial Analysis Program

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

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

- Budgeting Process – 10% Complete
- Budget and Customer Rate Setting Analysis – the first rate study update was completed prior to June 2016; a second rate study update has commenced.
- Capital Improvement Costs – 100% Complete

3.3 Satellite Sewer System Agreements (SSSA)

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

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

- Major Gravity Sewer Video Inspection or Multi-Sensor Inspection – 35% Complete
- Major Manhole Inspection – 70% Complete
- Major Pump Stations Condition Assessment – 10% Complete

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

- Initial Minor Gravity Sewer and Manholes Desktop Condition Assessment/Prioritization – 60% Complete

3.5 Infrastructure Rehabilitation Program (IRP) for the WCTS

In accordance with Section V.15 of the CD, the City shall submit an Infrastructure Rehabilitation Program (IRP) to EPA and SCDHEC for review, comment, and approval. The IRP is to be submitted within six months after the date of EPA and SCDHEC approval of the CSAP. The deadline for submittal of the IRP to EPA and SCDHEC is November 23, 2016.

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

- The 30-day EPA mandated public comment period for the IRP began on July 21, 2016.

3.6 Infrastructure Rehabilitation Report (IRR) for the WCTS

In accordance with Section V.16 of the CD, the City shall submit an Infrastructure Rehabilitation Report (IRR) summarizing the results of the CSAP of the major components of the WCTS and a description of proposed rehabilitation projects. The IRR is to be submitted within six months after the City has assessed the major components of the WCTS once pursuant to the CSAP. As rehabilitation projects are identified through the assessments described in Section 3.4 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:

- SS6764 30" Forcemain from Mill Creek PS to WWTP – Construction 20% Complete
- SS695401 Crane Creek Phase I – Construction 70% Complete
- SS725103 Innovista District Infrastructure Improvements – Construction 85% Complete
- SS7259 Replacement of 24" Smith Branch Outfall Underneath I-277 – Construction 40% Complete
- SS7261 Lake Katherine Sewer Line Capacity Enhancement – Design 90% Complete
- SS7289 Rivermont Drive Pump Station and Force Main – Design 95% Complete
- SS7330 Upper Mill Creek Sewer Improvements – Design 22% Complete
- SS7331 Upper Kinley Creek Sewer Improvements Ph. 1 – Design 35% Complete
- SS733701 East Rocky Branch Improvements Ph. 1 – Design 30% Complete
- SS733702 East Rocky Branch Improvements Ph. 2 – Design 40% Complete
- SS7338 Lower Crane Creek Wet Weather Storage - Phase 1 – Design 100% Complete
- SS735002 Crane Creek Upper North Branch Extension – Design 8% Complete
- SS735003 Crane Creek Lower North Branch Capacity Upgrade Phase 1 – Design 2% Complete

In accordance with Section V.16.c of the CD, the City shall submit a Supplemental Infrastructure Rehabilitation Report (SIRR) which shall update all portions of the IRR to reflect additional information developed by the City through completion of the CSAP of the minor components of the WCTS. The SIRR is to be submitted within six months after the City has assessed the remainder of the entire WCTS pursuant to the CSAP. As rehabilitation projects are identified through the assessments described in Section 3.4

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:

- SS6833 Upgrade Piney Gove Lift Station – Construction 100% Complete
- SS6857 Olympia Subdivision Sewer System Evaluation Survey (SSES) and Rehabilitation Design – Design 75% Complete
- SS6966 Annual Rehab on Manholes and Lines less than 15" – 2017 Construction 10% Complete
- SS706012 Pump Station Improvements at 6 Sites – Construction 15% Complete
- SS7172 Rehabilitation/Replacement Harbison #2, Mallard Point and Animal Shelter PS – Design 99% Complete
- SS7199 Saluda River Basin SSES and Rehabilitation for SR-06 & 13 – Construction 99% Complete
- SS7207 Saluda River Basin SSES and Rehabilitation for SR07 & 8 – Construction 100% Complete
- SS7208 Saluda River Basin SSES and Rehabilitation for SR-03, 10, & 12 – Construction 90% Complete
- SS7218 West Columbia Basin SSES and Rehabilitation for WC-02 – Construction 99% Complete
- SS7258 Greenlawn Dr. to Burnside #1 PS (Hampton Forest) – Construction 25% Complete
- SS7262 Flow Study/Rehabilitation/Replacement of Three Rivers and Colonial Life PS – Construction 10% Complete
- SS7279 Smith Branch-02 SSES and Rehabilitation – Construction 0% Complete
- SS7280 Rocky Branch-01 SSES and Rehabilitation – Construction 1% Complete
- SS7323 Food Lion PS Improvements – Design 27% Complete
- SS7324 Bendale PS Improvements – Design 60% Complete
- SS7325 Starlite PS Improvements – Design 25% Complete
- SS7362 Smith Branch 01 SSES – Design 5% Complete
- SS7363 Smith Branch 03 SSES – Design 5% Complete

3.7 Supplemental Environmental Project

In accordance with Section VIII and Appendix I of the CD, the City will perform a Supplemental Environmental Project (SEP). Within 24 months of the effective date of the CD, the City was to complete Phase I of the Rocky Branch, Smith Branch, and Gills Creek projects. On March 24, 2016, the City submitted a supplemental report related to the October 4, 2015 *force majeure* event and requested an additional six months to complete the Gills Creek Phase I project; this request was granted by EPA.

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

- Gills Creek Project Phase I
 - Project #4 – Install an erosion control BMP and outlet protection at the two major discharges entering the Gills Creek floodplain under Gills Creek Parkway – 100% Complete
 - Project #5 – Install a pocket wetland or other similar BMP at the end of Edmond Drive where the stormwater network drains to the Gills Creek floodplain – 100% Complete

- Project #6 – Install a pocket wetland or other similar BMP at the end of Hampton Trace Lane where the stormwater network drains to the Gills Creek floodplain – 100% Complete

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, 3rd Quarter 2016

City of Columbia, SC Quarterly SSO Listing 3rd Quarter 2016									
SSO Date	SSO Time	Location	Source	Date of Corrective Action	Time of Corrective Action	Estimated Volume (gallons)	Receiving Water (if any)	Cause	Actions Taken
7/5/2016	14:30	283 Woodwinds Dr, Columbia, SC 29212	Manhole	7/5/2016	14:30	900		Roots	Removed Stoppage To Resume Normal Flow. Washed Mainline 310 Feet To Remove Stoppage.
7/9/2016	12:00	3516 Randolph St, Columbia, SC 29203	Cleanout	TBD		19		Collapsed Line	Washed M/L 150 Ft To Resume Normal Flow. Mainline Is Collapsed. Mainline Repair Will Be Done By A Contractor.
7/13/2016	14:56	2805 Diane Dr, Columbia, SC 29210	Other	7/14/2016	08:00	1	Unidentified Creek On Property	Collapsed Line	Set Up Bypass Pump At 1900. Emergency Mainline Repair.
7/19/2016	10:29	300 Bosworth Field Ct, Columbia, SC 29212	Other	7/20/2016	10:00	68	Koon Branch	Collapsed Line	Mainline Repair Work Order Was Made To Repair Pipe Across Creek.
7/25/2016	15:00	498 Lawand Drive, Columbia, SC 29217	Pump Station	7/25/2016	17:45	700	Ditch Behind Pump Station	Pump Station Failure	Loss Prime, Primed Both Pumps To Restart. Used Vac Truck And Spread Lime On Affected Area.
7/29/2016	08:21	212 Walnut Lane, Columbia, SC 29212	Pump Station	7/29/2016	11:00	50	Storm Drain	Pump Station Failure	Turned On Pumps Manually. Repaired Float Switch Wire.
8/1/2016	11:07	412 Bosworth Field Ct, Columbia, SC 29212	Manhole	8/3/2016	15:30	1	Koon Branch Into Retention Pond	Collapsed Line	Plug Mainline And Set Up Bypass Pump. Emergency Manhole Repair. Setup Bypass.
8/2/2016	07:00	3101 Bluff Rd, Columbia, SC 29209	Manhole	8/2/2016	07:00	Unknown		Wet Weather	Ran Two Sets Of 50 Mgd Screw Pumps To Relieve Surcharged Line. Replacement Of Existing Forcemain Currently Under Construction.
8/1/2016	22:08	1806 Blossom St, Columbia, SC 29201	Manhole	TBD		34125	Rocky Branch	Wet Weather	Wet Weather Observation Only. CIP Engineering Project In Design Phase.
8/1/2016	22:48	4645 Pine Grove Ct, Columbia, SC 29206	Manhole	TBD		9750	Lake Katherine (Gills Creek)	Wet Weather	Wet Weather Observation Only. Engineering In Design Phase Of Line Replacement.
8/1/2016	22:55	1548 Kathwood Dr, Columbia, SC 29206	Manhole	TBD		6000	Lake Katherine (Gills Creek)	Wet Weather	Wet Weather Observation Only. Engineering In Design Phase Of Line Replacement.
8/1/2016	22:15	1941 Blossom St, Columbia, SC 29205	Cleanout	Unknown		Unknown	Rocky Branch	Wet Weather	Observation Only - Cleanout Submerged By Flash Flood Waters.
8/1/2016	22:30	3616 Edmond Dr, Columbia, SC 29205	Manhole	Unknown		Unknown	Unnamed Trib To Gills Creek	Wet Weather	Overflow Not Observed. Evidence Of Debris And Manhole Lid Was Off. CW2020 Hired Contractor Hydromax To Wash And Televis Lines 15 Feet And Above.
8/2/2016	12:46	3123 Harrison Rd, Columbia, SC 29204	Manhole	TBD		Unknown	Creek That Ties To Pen Branch	Wet Weather	Did Not Observe Overflowing. Capacity Enhancement Project Is Currently In Design Phase Around Lake Katherine (Downstream).
8/4/2016	02:43	5081 Brickyard Rd, Columbia, SC 29203	Manhole	TBD		6000	Crane Creek	Wet Weather	Wet Weather Observation Only. Project Under Construction For Line Replacement.
8/2/2016	12:15	1400 Peebles St, Columbia, SC 29203	Manhole	TBD		Unknown	Crane Creek	Wet Weather	Did Not Observe Active, Evidence Only. CIP Project Line Replacement, Project Is Under Construction.
8/7/2016	19:00	1512 Cedar Ter, Columbia, SC 29209	Manhole	8/7/2016	22:00	9000		Debris	Washed Mainline 150 Ft To Resume Normal Flow.
8/9/2016	18:00	2315 Pinehurst Rd, Columbia, SC 29204	Other	8/10/2016	15:00	750		Equipment Failure	Changed Out Bypass Hose. Mainline Repair Was Completed 8/10/2016.
8/22/2016	15:20	100 Bryton Trce, Columbia, SC 29210	Manhole	TBD		8000	Ditch Into Broad River	Roots	Washed Mainline 150 Ft To Resume To Normal Flow. Mainline Repair To Be Scheduled.
8/27/2016	11:30	1512 Cedar Terrace, Columbia, SC 29209	Manhole	8/27/2016	12:30	3000	Tributary To Wildcat Creek	Roots	Removed Stoppage To Resume Normal Flow. Washed Mainline 85 Feet.
9/2/2016	14:00	1721 W Buchanan Dr, Columbia, SC 29206	Manhole	9/2/2016	22:30	39750	Pen Branch	Wet Weather	Wet Weather Observation Only. Engineering In Design Phase Of Line Replacement.
9/2/2016	16:25	5081 Brickyard Rd, Columbia, SC 29203	Manhole	9/3/2016	01:25	78000	Crane Creek	Wet Weather	Wet Weather Observation Only. Line Replacement Currently Under Construction.
9/2/2016	16:30	22 Thistle Ct, Irmo, SC 29063	Cleanout	9/2/2016	21:00	12730	Ditch To Swygert Branch	Wet Weather	Wet Weather Observation Only. Further Investigation To Be Conducted.

City of Columbia, SC Quarterly SSO Listing 3rd Quarter 2016									
SSO Date	SSO Time	Location	Source	Date of Corrective Action	Time of Corrective Action	Estimated Volume (gallons)	Receiving Water (if any)	Cause	Actions Taken
9/2/2016	17:00	900 Gracern Rd, Columbia, SC 29210	Forcemain	TBD		11400	Saluda River	Collapsed Line	Set Up Bypass. Replace Line Segment.
9/2/2016	17:00	1548 Kathwood Dr, Columbia, SC 29206	Manhole	9/2/2016	20:00	18000	Lake Katherine (Gills Creek)	Wet Weather	Wet Weather Observation Only. Engineering In Design Phase Of Line Replacement.
9/2/2016	17:30	4645 Pine Grove Ct, Columbia, SC 29206	Manhole	TBD		10789	Lake Katherine (Gills Creek)	Wet Weather	Wet Weather Observation Only. Engineering In Design Phase Of Line Replacement.
9/2/2016	18:00	337 E Lake Trl, Columbia, SC 29209	Manhole	TBD		204750	Reeder Point Branch	Collapsed Line	Restart Bypass Pumps. Contractor Arrived On Site And Reset Bypass.
9/2/2016	18:05	1400 Peebles St, Columbia, SC 29203	Manhole	TBD		Unknown	Crane Creek	Wet Weather	Wet Weather Observation Only. CIP Project Line Replacement. Project Is Under Construction.
9/4/2016	13:15	7701 Teague Rd, Columbia, SC 29209	Manhole	9/8/2016	13:30	3750		Collapsed Line	Washed Mainline 50 Ft To Resume Normal Flow. Washed Mainline 152 Ft.
9/9/2016	13:45	1837 W Buchanan Dr, Columbia, SC 29206	Manhole	TBD		838		Roots	Washed Mainline 60 Ft To Resume To Normal Flow. This Spill Was Not Observed Active. Roots Were Cut Out And Mainline Needs To Be Repaired.
9/12/2016	07:28	515 Sunset Dr, Columbia, SC 29203	Manhole	9/12/2016	13:00	7750	Smith Branch	Debris	Removed Stoppage To Resume Normal Flow. Washed Mainline 238 Feet. Removed Debris.
9/19/2016	07:49	5081 Brickyard Rd, Columbia, SC 29203	Bypass Forcemain	9/19/2016	11:24	1000		3rd Party Responsibility	Area Excavated To Allow Sewer To Be Pumped Into Sanitary Sewer Manhole; Repair Band Installed To Stop Leak. Crew Was Already On Site To Respond And Clean Up.
9/21/2016	07:00	153 Cottage Lake Way, Columbia, SC 29209	Manhole	9/21/2016	07:03	75	Reeder Point Branch	3rd Party Responsibility	Turned Bypass Pump On. Crew Was Already On Site To Respond And Clean Up.

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. Building backup claims are investigated by the City in order to determine whether the cause of the building backup is a condition within the City's system. If so, the City corrects the problem in the City's WCTS. Issues on private property are documented for the City by a third-party administrator. At this time, neither the City nor the third-party administrator have maintained records on volume, duration, or specific root causes of building backups.

Table 2 - Building Backup Report, 3rd Quarter 2016

City of Columbia, SC Quarterly Building Backup Listing 3rd Quarter 2016		
Date	Location	Claim Description
7/9/2016	3516 Randolph Street	The City Sewer Line Backed Up Into Claimant Yard And Under His Home. He Is Not Sure What They Did, And Is Unable To Stay At The Home Due To The Contamination. He Had Hired Three Plumbers To Come Out Before To See What The Problem Was, Then It Was Determined It Was The City's Line.
7/21/2016	1009 Walters Lane	Water Backed Up & Flooded The Downstairs Area Bathroom, Office & Living Room. City Water & Sewer Came On Site. Washing Clothes, Toilet Started Bubbling & Black Unknown Material Came Out Of The Water Line. City Wastewater Maintenance Came Out & Pushed Water Through The Line At The Road To Clear Out The Line. Claimant Is Hiring A Plumber To See If There Are Any Other Issues.
8/19/2016	4422 Devine St	City of Columbia Working Caused Sewer Backup At Tattoo Shop. Overflowed From Bathroom Into Work Area, Affected All Booths But One.
8/25/2016	3005 Devine St	Sewage Back Up In Basement Area.
8/31/2016	45 Monmouth Court	Sewer Blockage On City Side, Causing Back Up In Master Bathroom Resulting In Damage In Vinyl Flooring. Plumber Came To Site, Verified The Blockage On City Side. Third Party Company Came Out To Site For Observation. Will Need Permission For Clean Up Per Insured.

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 Gill's 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:

- Gill's Creek at Garner's Ferry Road
- Smith Branch at North Main Street
- Gill's 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 City will monitor quarterly for the first three years under the CD and 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 2016 Q3 was completed on August 3, 2016. Monitoring results are provided below for the following samples:

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

Laboratory Report Date: 8/03/2016

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

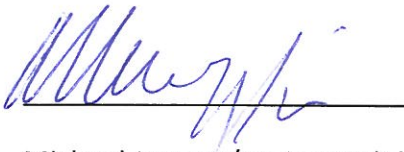


Andrew T. Stroud/QA Manager

08/04/2016

Date

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



Michael Jaspers/Project Validator

8/4/2016

Date



DATE: 08/03/2016

SCDHEC #32571

CLIENT: City of Columbia
Attn: Andrew Stroud
1136 Washington Street
Columbia SC 29201

PROJECT: WATER QUALITY MONITORING

ID#: 156218 Sample Name: C-017 Sampled on 07/28/2016 at 1255 Received on 07/28/2016 at 1500

Parameter	Method#	Value	Units	Anal. on/	at/	by
TSS (SM)	SM 2540 D-2011	11	mg/L	07/29/2016	0930	RA
E. Coli MPN	SM 9223 B-2004	61.7	MPN	07/28/2016	1630	MML

ID#: 156219 Sample Name: C-017 Sampled on 07/28/2016 at 1254 Received on 07/28/2016 at 1500

Parameter	Method#	Value	Units	Anal. on/	at/	by
Dissolved Oxygen (SM)	SM45000G-2011	4.5	mg/L	07/28/2016	1254	RC
Temperature (SM)	SM 2550 B-2010	29	Deg. C	07/28/2016	1254	RC

ID#: 156220 Sample Name: C-001 Sampled on 07/28/2016 at 1320 Received on 07/28/2016 at 1500

Parameter	Method#	Value	Units	Anal. on/	at/	by
TSS (SM)	SM 2540 D-2011	10	mg/L	07/29/2016	0930	RA
E. Coli MPN	SM 9223 B-2004	69.7	MPN	07/28/2016	1630	MML

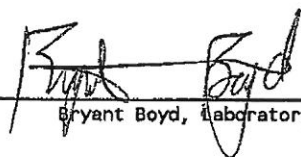
ID#: 156221 Sample Name: C-001 Sampled on 07/28/2016 at 1325 Received on 07/28/2016 at 1500

Parameter	Method#	Value	Units	Anal. on/	at/	by
Dissolved Oxygen (SM)	SM45000G-2011	3.8	mg/L	07/28/2016	1325	RC
Temperature (SM)	SM 2550 B-2010	35	Deg. C	07/28/2016	1325	RC

ID#: 156222 Sample Name: B-280 Sampled on 07/28/2016 at 1400 Received on 07/28/2016 at 1500

Parameter	Method#	Value	Units	Anal. on/	at/	by
TSS (SM)	SM 2540 D-2011	4.4	mg/L	07/29/2016	0930	RA
E. Coli MPN	SM 9223 B-2004	613.1	MPN	07/28/2016	1630	MML
Dissolved Oxygen (SM)	SM45000G-2011	7.5	mg/L	07/28/2016	1400	RC
Temperature (SM)	SM 2550 B-2010	28	Deg. C	07/28/2016	1400	RC

Report Released by: _____

A handwritten signature in black ink, appearing to read 'Bryant Boyd', is written over a horizontal line.

Bryant Boyd, Laboratory Director

ON LINE ENVIRONMENTAL, INC

Chain of Custody Record

SCDHEC LAB ID# 32571/25003

Client: **City of Columbia**

Attn: **Andrew Stroud**

Address: **1136 Washington Street**

Phone: **803-545-4001**

City, State, Zip: **Columbia, SC 29201**

Email: **atstroud@columbiasc.net**

Prog. Area	Sample ID# (FOR LAB USE ONLY)	Sample Name	Date/Time of Sample	Sample Type (G or C)	Preservation/Boottle Type	# of Bot-tles	Parameter(s)
WW	150218	C-017	7-28-16 11255	G	A/P	1	TSS
WW	1	C-017	11255	G	GF/P	1	E. Coli MPN
WW	219	C-017	11254	G	Field An.	NA	D.O. (mg/L) = 4.5 Temp. (°C) = 29.0
WW	220	C-001	7-28-16 11320	G	A/P	1	TSS
WW	2	C-001	11320	G	GF/P	1	E. Coli MPN
WW	221	C-001	11325	G	Field An.	NA	D.O. (mg/L) = 3.8 Temp. (°C) = 35.0
WW	222	B-280	7-28-16 11400	G	A/P	1	TSS
WW	3	B-280	11400	G	GF/P	1	E. Coli MPN
WW	4	B-280	11400	G	Field An.	NA	D.O. (mg/L) = 7.5 Temp. (°C) = 28.0

G=grab C=composite

Prog. Area: WW=wastewater DW=drinking water MW=monitoring well SS=semi solid SL=soil SD=solid

Samplers signature: *Robert Charles*

Special Instructions: 0

Received in lab @ 1 °C

Auto Sampler Data

Date/Time Set On: 1

by whom: 1

Date/Time Off: 1

by whom: 1

Meter Reading After: 1

Meter Reading Before: 1

Difference: 1

x (factor): 1

Project: **Water Quality Monitoring**

(Sample Jan, April, July, Oct)

Relinquished by	Date	Time	Received by	Date	Time

Preservation Codes: A=36°C, B=H₂SO₄, C=HNO₃, D=HCl, E=NaOH, F=Na₂S₂O₃, G= ≤10°C, O=Other (describe) Bottle Type: Glass = G, Plastic = P

Received in lab by: *Robert Charles*

Date: 7-28-16

Time: 1500

Sample Rod. On Ice: Yes No