APPENDIX A

PRELIMINARY ENGINEERING REPORT

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DRAFT

Preliminary Engineering Report for Richland County Utilities

Eastover WWTP

Richland County

December 15, 2023

Delivering a better world

Revision History

Revision	Revision date	Details	Authorized	Name	Position

Distribution List

# Hard Copies	PDF Required	Association / Company Name

Prepared for:

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Irmo, SC 29063

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1. Introduction

Richland County is located in the center of South Carolina and is one of the fastest growing areas in the state. Richland County surrounds the City of Columbia, the state capital, and covers a total area of 756 square miles. Richland County was established in 1785 and is home to over 384,000 residents. Historically, the County has experienced continuous growth, with average annual population increases greater than 1%. Portions of the County have grown faster than others or have the potential to grow. The southeast portion of Richland County has begun to see increased interest in development, since there are large available tracts of land available in this portion of the county. As the population in the County increases, the need for access to sewer services also increases.

Richland County Utilities (RCU) has issued "Willingness to Serve" letters to developers in the Eastover Wastewater Treatment Plant (WWTP) service area that represent 1,400 additional residential equivalent units (REUs) that will be coming online once the new housing units have been completed. The committed REUs represent an additional flow that will bring the plant flow to just over 1.2 MGD. A concept plan developed by Richland County Planning officials estimate 22,000 new customers in potential growth for the Southeast Richland County area over the next 20 years with the need for an average daily wastewater flow of over 6 MGD. As a result of these projections, RCU is planning to upgrade the Eastover WWTP in phases with the first phase being an increase to 2.5 MGD.

Richland County owns and operates the Eastover WWTP. Currently the Eastover WWTP has a permitted capacity of 0.75 million gallons per day (MGD) under NPDES permit No. SC00047911 (Appendix A) and is authorized to discharge to the Wateree River. Improvements have been made at the Eastover WWTP to increase capacity to 1.2 MGD, and Richland County is awaiting the NPDES permit modification for the increase in capacity to 1.2 MGD. The purpose of this PER is to upgrade the treatment capacity from 1.2 MGD to 2.5 MGD. The proposed improvements will generally consist of the addition of a new treatment train.

The existing WWTP is classified as a Group III-B (Biological) facility requiring an operator with a Grade "B" wastewater operator's license. The WWTP is assigned a Reliability Classification of Class III and is subject to the requirements of R.61.67.400 with regards to standards for the reasonable reliability of treatment performance.

Owner:

Richland County Utilities
7525 Broad River Road
Irmo, SC 29063
Bill Davis, Utilities Director

2. Location of WWTP and Point of Discharge

The Eastover WWTP is located adjacent to Wateree River, 1.0 miles East of the intersection of US 601 & Reynolds Rd. (S-40-488). The WWTP address is 199 Wateree Station Road. A topographical location map (Figure 2.1) illustrates the location of the WWTP as well as the discharge point. The discharge into Wateree River is directly east the plant. The WWTP discharge point can be described by the following coordinates:

Latitude: **N 33º 50' 30.3"**

Longitude: **W 80º 37' 39.2"**

A general highway map showing the approximate location of the WWTP in Richland County, South Carolina is included as Figure 2.2. As shown in Figure 2.3, the facility area of the Eastover WWTP is located in Zone X which is an area of minimal flood hazard.

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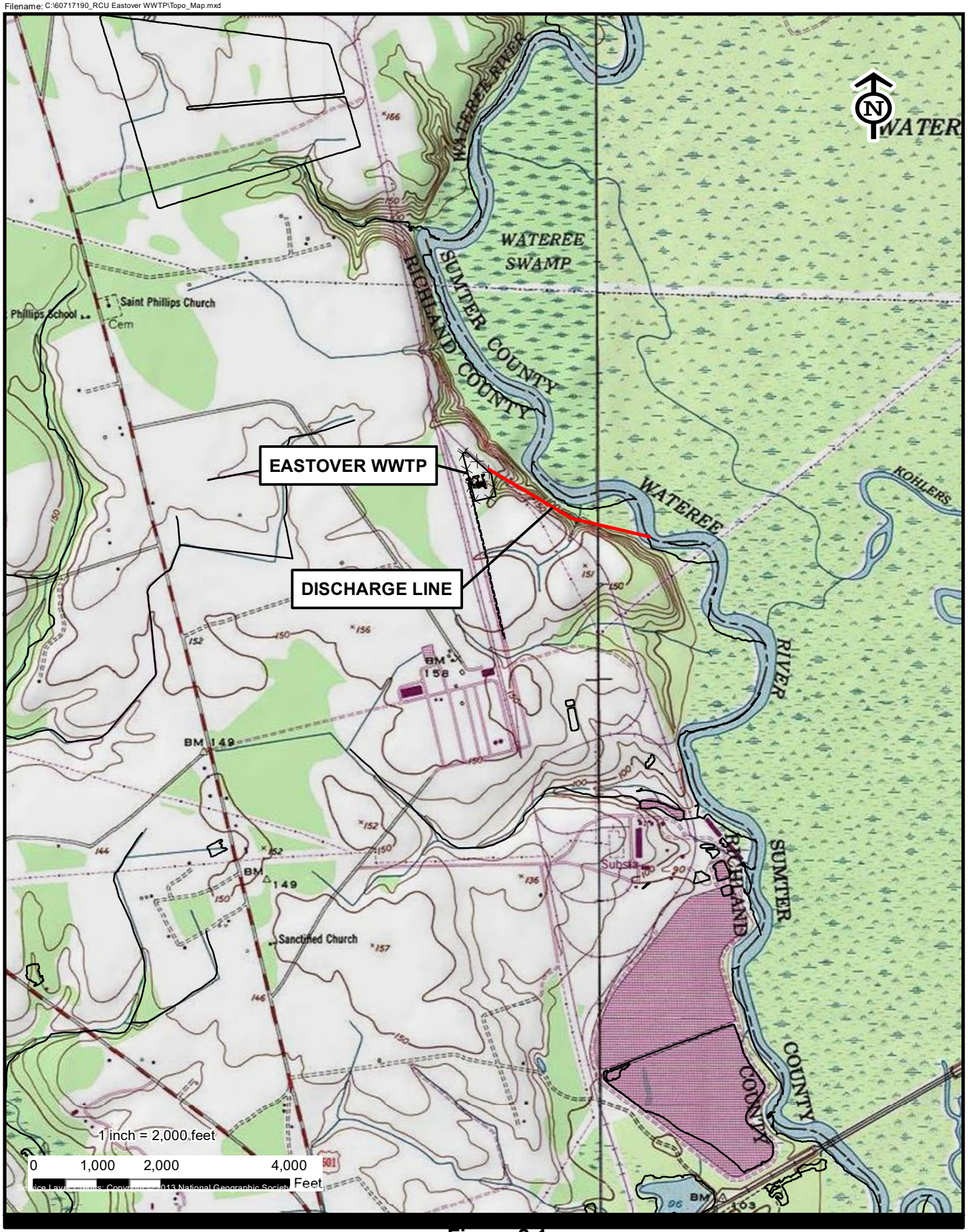

Figure 2.1
USGS Topographic Map
RCU Eastover WWTP

RCU, EASTOVER, SC
Project No.: 60717190 Date: 2023-10-18

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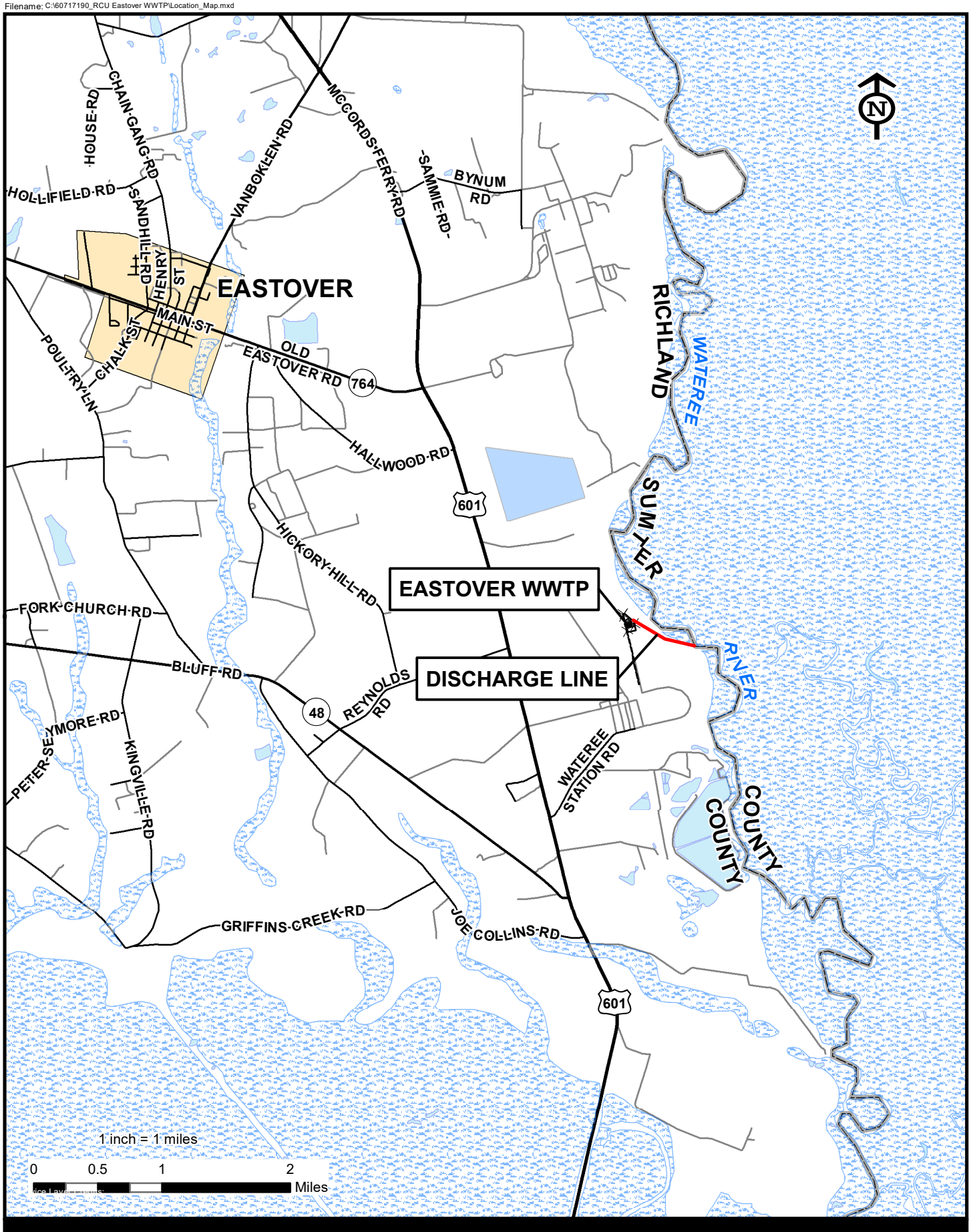

Figure 2.2
Location Map
RCU Eastover WWTP

RCU, EASTOVER, SC
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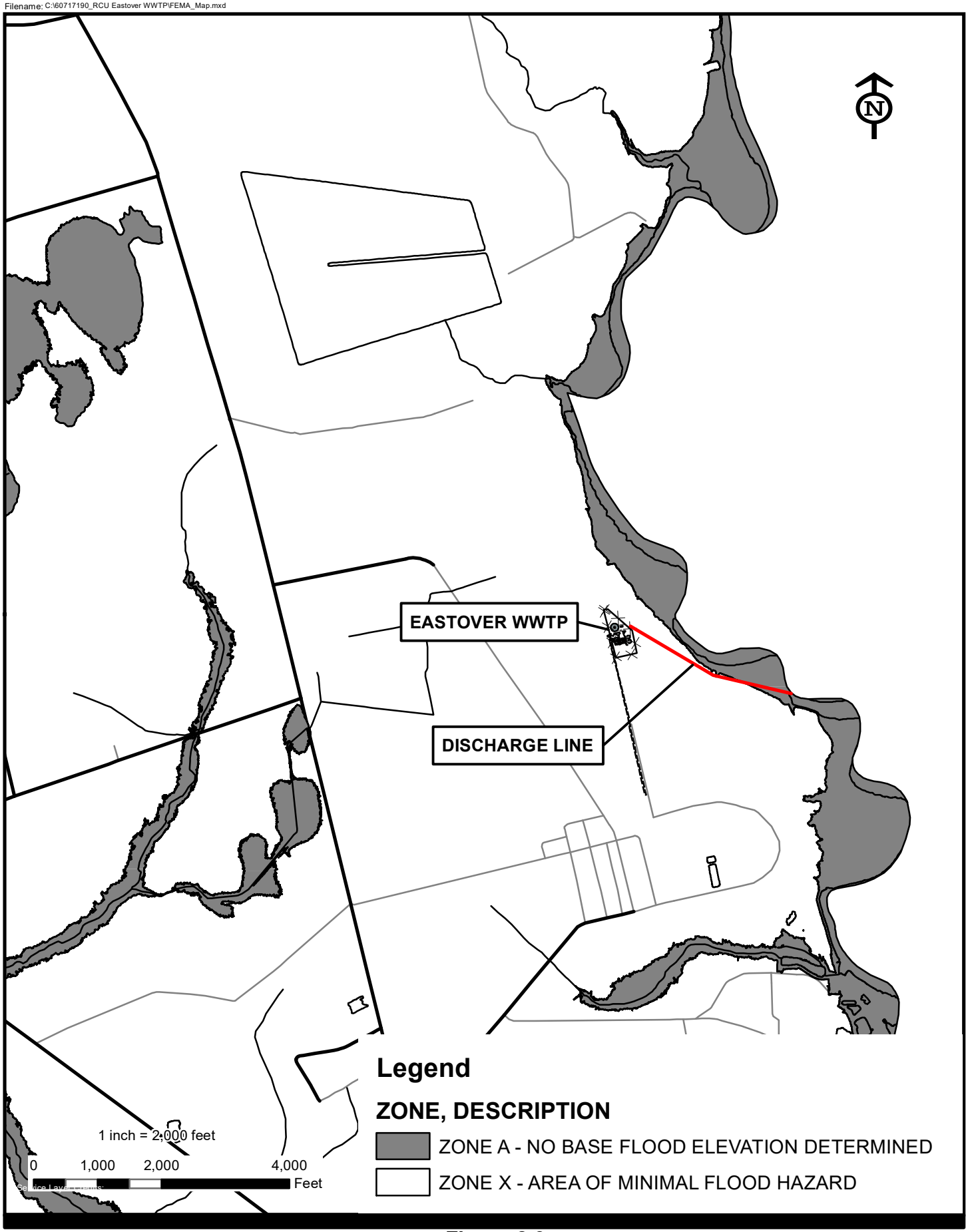

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Figure 2.3
FEMA Map
RCU Eastover WWTP

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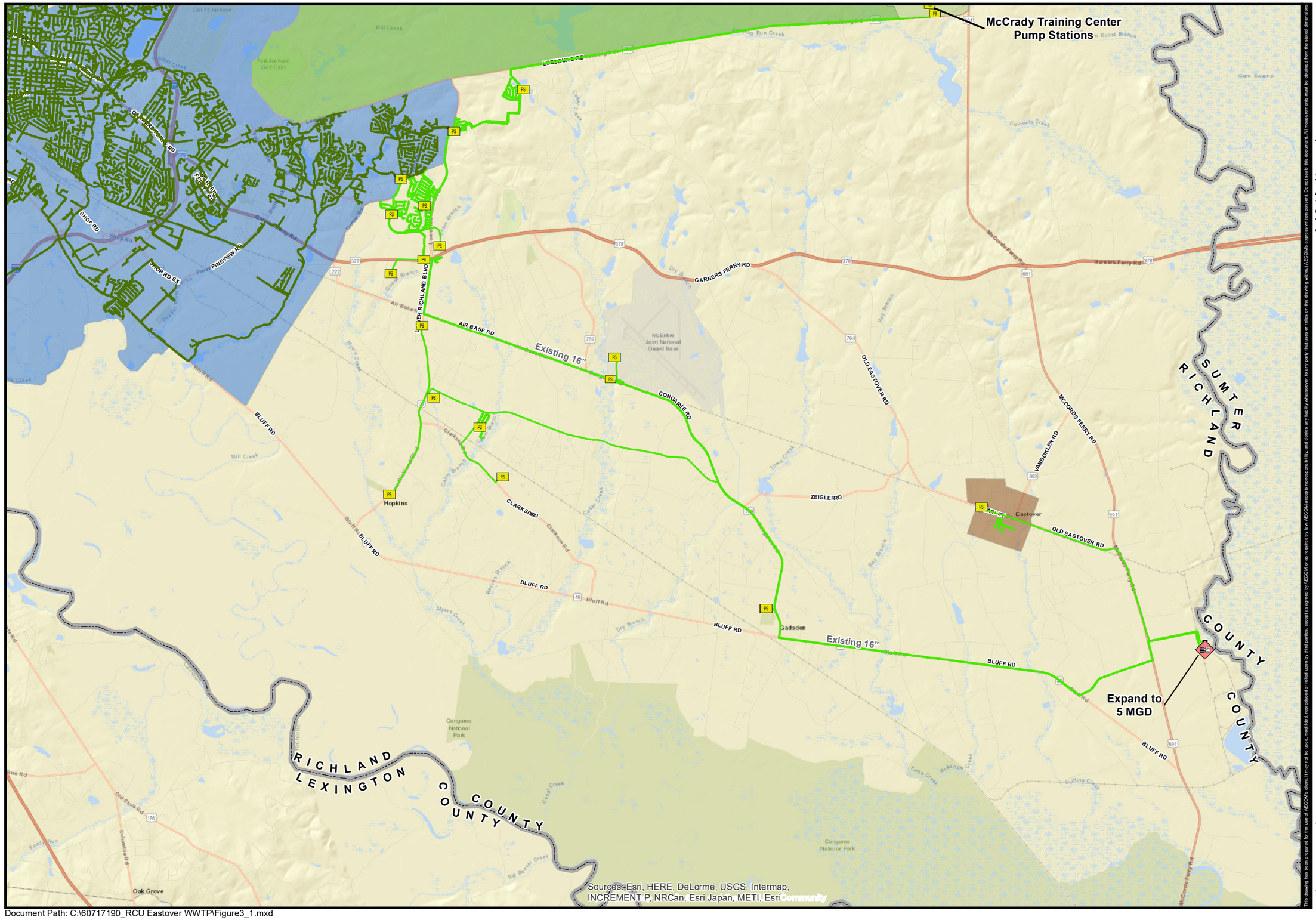
3. General Layout of Area to be Served

The general area to be served includes the southeastern portion of the Richland County service area including the communities of Gadsden, Hopkins, and Eastover. Due to the announcement of industrial facilities locating in this area, both residential and industrial expansion is expected in the near future.

In addition the Richland School District One's Gadsden Elementary School, Hopkins Elementary School, and Hopkins Middle School WWTPs have connected to the Eastover WWTP collection system. The McEntire Joint National Guard Base WWTP has also been taken offline and connected to the Eastover WWTP collection system. The Franklin and Hopkins Parks systems have connected to the Southeast Sewer System eliminating their failing treatment systems as well. Figure 3.1 illustrates the general layout of the service area for the Eastover WWTP. The RCU Eastover WWTP serves approximately 1,613 REUs by way of approximately 1,596 residential service connections, approximately 16 commercial service connections, and 1 industrial service connection. The Eastover WWTP also has a master meter connection that connects the Town of Eastover's collection system to the Eastover WWTP collection system for treatment.



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PROJECT

FIGURE 3.1
Service Area Map
RCU Eastover WWTP

CLIENT
Richland County

CONSULTANT

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Legend

- Existing WWTP
- Existing City of Columbia Sewer
- Existing Eastover Gravity Mains
- Existing Richland County Sewer

Sewer Service Areas

- Columbia
- Eastover
- Fort Jackson

KEY PLAN
1 in = 2 miles
N

PROJECT NUMBER
60717190
Date: 10/24/2023

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4. Wastewater Flow Projections

RCU does not have flow monitoring data for the influent, so effluent flow data was analyzed from January 2021 through April 2023. In 2022, monthly average flows ranged from 0.086 MGD to 0.287 MGD. Peaking factors can change over time due to changes in infiltration/inflow (I/I) and customer discharge rates. For instance, some industries can discharge over 24 hours with a low peaking factor. The Town of Eastover is in the process of finding sources of excessive I/I, so they can plan for the elimination of these sources which could greatly reduce the peak flow associated with rainfall induced inflow. For the expansion to 2.5 MGD, a peaking factor of 2.5 times the average daily flow of 2.5 MGD was utilized to obtain the peak daily flow of 6.25 MGD.

5. Wastewater Description

5.1 Introduction

The waste stream treated by the Eastover WWTP is domestic in nature, with typical contributions from commercial facilities and one industrial discharger. The Eastover WWTP has a formal Industrial Pretreatment Program with one permitted significant industrial user which is a categorical discharger. At this time, there are no significant industries known or planned which will discharge wastewater to the WWTP to significantly affect plant operation. From operational experience, the raw wastewater has proven to be very treatable.

5.2 Biochemical Oxygen Demand (BOD_5)

The Eastover WWTP has a design BOD_5 capacity of 200 milligrams/liter (mg/l) for 1.2 MGD of flow which relates to 2,002 lbs/day of BOD_5. For this report, influent BOD_5 data was analyzed from January 2021 through April 2023. The highest BOD_5 concentration occurred on October 18, 2021 with a concentration of 498 mg/l at a flow of 0.044 MGD. The present WWTP influent BOD_5 is 62.9% of the design BOD_5 concentration.

It is assumed that any future added wastewater will have a BOD_5 concentration of 300 mg/l. With these assumptions the influent BOD_5 concentration is projected to be 252 mg/l for 2.5 MGD as shown below.

Existing BOD_5 = 1.2 MGD @ 200 mg/l = 2,002 lbs/day

Future BOD_5 = 1.3 MGD @ 300 mg/l = 3,253 lbs/day

Total Pounds of Design BOD_5 = 5,255 lbs/day

Design BOD_5 = 252 mg/l

5.3 Total Suspended Solids (TSS)

Influent TSS data was analyzed from January 2021 through April 2023. The data was reviewed as a percent of the monthly average influent BOD_5. The average TSS for the period was 224 mg/l at an average flow of 0.208 MGD resulting in an average percentage of TSS to BOD_5 of 178%. The percentage of TSS to BOD_5 is high due to the low concentration of BOD_5 presently entering the WWTP.

The design TSS for future 1.3 MGD flow is assumed to be 300 mg/l. When combined existing design flow of 1.2 MGD, the design TSS concentration for 2.5 MGD will be established as 263 mg/l.

5.4 Total Kjeldahl Nitrogen (TKN)

Based on limited influent sampling, the average TKN concentration is 41.6 mg/l. The design TKN utilized in the previous WWTP upgrade was established as 40 mg/l and will be the same for the proposed upgrade.

5.5 Total Phosphorus (TP)

Based on limited influent sampling, the average TP concentration is 4.88 mg/l. The design TP was established as 6 mg/l.

5.6 Summary

A summary of key design parameters for the WWTP expansion are presented as follows:

Table 5-1 – Design Parameters

Constituent	Concentration
BOD_5 (mg/l)	252
TSS (mg/l)	263
TKN (mg/l)	40
TP (mg/L)	6

6. Existing Wastewater Treatment Plant

6.1 Introduction

The existing WWTP has a permitted capacity of 0.75 MGD, but it has been upgraded to 1.2 MGD and is awaiting NPDES permit modification. Figure 6.1 illustrates the process flow diagram for the existing Eastover WWTP. The following subsections outline the existing WWTP.

6.2 Influent Line

Wastewater is conveyed to the plant by regional pump stations pumping directly to the headworks. Gadsden Pump Station is the primary lift station that supplies influent to the WWTP.

Eastover WWTP - Influent Piping at Headworks

6.3 Headworks

The elevated headworks consists of one auger style sloped plated screen and one manual bar rack channel. If excessive flows are experienced, bypass of the screening is incorporated in the headworks. The headworks does not include grit removal. After screening, flow at the headworks is then split and conveyed to the two aeration treatment basins via two V-notch weirs.

Eastover WWTP - Headworks Screening

6.4 Aeration Basins

Eastover WWTP biological nutrient removal consists of two oxidation ditch style basins with anaerobic and anoxic stages prior to aeration (3-stage Biological Nutrient Removal (BNR)). Aeration is generated from two mixer aerators to achieve nitrification.

The anoxic basin is mixed by submersible mixing. A manual operated gate allows flow to return to the anoxic zone for denitrification.

Effluent from the aeration basins includes adjustable weirs to convey flow to secondary clarification.

Eastover WWTP - Aeration Basins

6.5 Secondary Clarifiers

The existing plant has two secondary clarifiers which receive flow from the splitter box. Both clarifiers are 50 feet in diameter with an overflow rate of 191 gpd/sf at the existing permitted flow rate of 0.75 MGD and 305 gpd/sf at 1.2 MGD.

Eastover WWTP - Secondary Clarifier

6.6 Return and Waste Activated Sludge (RAS/WAS) Pumping

The existing plant has a return activated pump station that contains two (2) RAS pumps. Wasting of sludge is throttled off the RAS discharge piping to aerobic digestion.

Eastover WWTP - RAS/WAS Pump Station

6.7 Chlorination

The existing plant liquid sodium hypochlorite for disinfection. Effluent from the clarifiers is discharged into the two-stage chlorine contact chamber for disinfection prior to dechlorination.

6.8 Dechlorination

The existing plant utilizes liquid sodium bisulfite for dechlorination prior to discharge.

Eastover WWTP - Chlorine Contact Chamber and Flow Measurement

6.9 Outfall

An 18-inch gravity outfall line transports the plant effluent to Wateree River where it discharges through a single port 5" orifice diffuser.

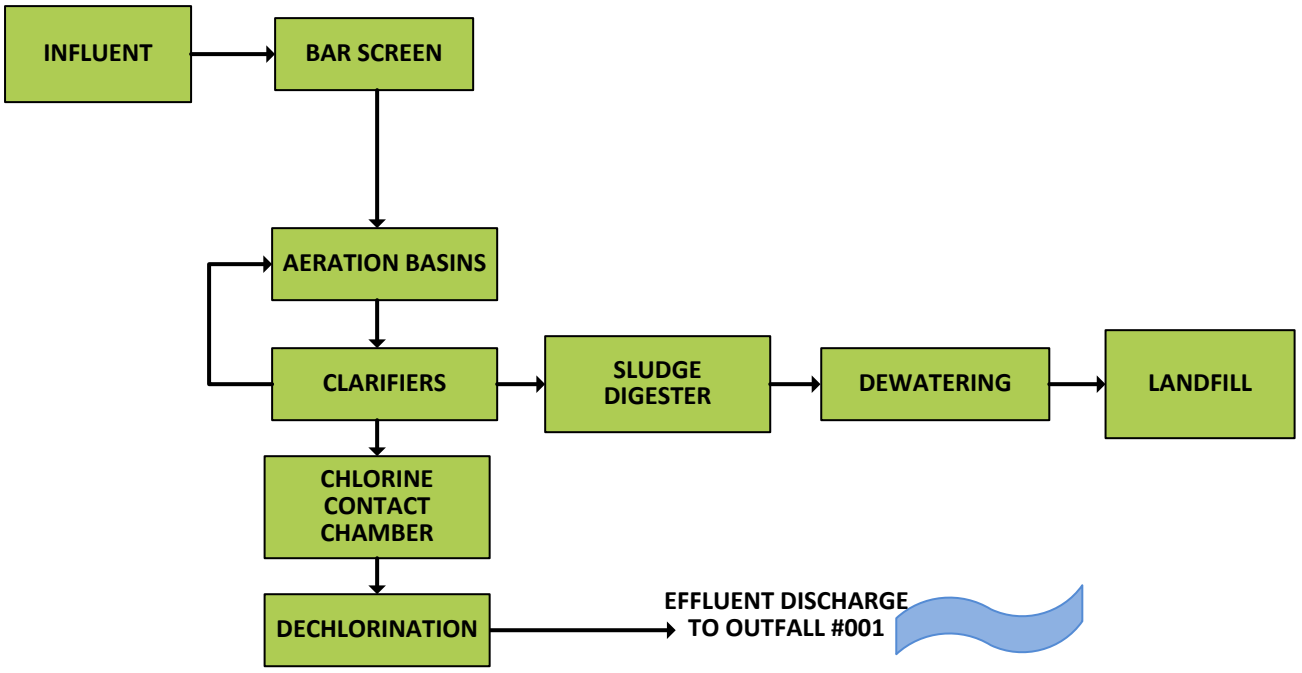
6.10 Emergency Power

The existing plant has an emergency generator that provides power to screenings removal, clarification, and digestion during a power outage. The generator is an 80 kW with 40-gallon base fuel tank.

6.11 Aerobic Digestion

The aerobic digester provides thickening and has fine bubble diffusers for aeration and mixing. The digester has a maximum volume of 161,568 gallons. The digester is able to thicken the sludge to a concentration of 2%.

Eastover WWTP - Aerobic Digestor



RCU, EASTOVER, SC
Project No.: 60717190 Date: 2023-10-24

Figure 6-1
RCU Eastover WWTP Existing Process Flow Schematic

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7. Comprehensive Description of the Project

7.1 Introduction

Figure 7.1 illustrates the process flow diagram for the expanded Eastover WWTP with a design capacity of 2.5 MGD. Design parameters and calculations are included in Appendix B.

7.2 Influent Line

Wastewater is conveyed to the plant by regional pump stations pumping directly to the headworks. The Gadsden Pump Station is the primary lift station that supplies influent to the WWTP. Additional flows to the WWTP are from Town of Eastover Pump Station, Kemira Chemicals, Inc. Pump Station and WWTP drain pump station.

7.3 Headworks

A new headworks with screenings removal will be provided and designed to 2.5 MGD average daily flow with a 2.5 peaking factor. Headworks will incorporate a flow surge holding basin that is designed to dampen flow to screenings when regional pump stations are providing influent to the Eastover WWTP. The basin will have a downstream flow control to control the rate of flow to screenings removal.

Screenings removal will consist of one duty and one standby coarse continuous rake bar screen. Each screen will handle peak instantaneous flows from the plant influent. Additionally, there will be a screenings overflow/bypass channel with a manual trash rack. Control of the screening will be done by upstream level detection to activate the screen to remove debris. Screenings will be washed and compacted and disposed to dumpsters for landfill disposal.

Provisions for grit removal and grit washing will be provided. A vortex grit removal system with a bypass will be designed and included as an alternate in the bid documents. At a minimum, provisions for future incorporation of the grit removal system will be incorporated for the process flow. Screenings and grit will be disposed at local landfill.

7.4 Aeration Basins

Two new three-stage biological nutrient removal (BNR) basins will be constructed. Treatment will be a AAO process (Anaerobic, Anoxic, Oxic (Aerobic)) for nitrogen and phosphorus removal. Effluent from the basins will include adjustable weirs to convey flow to secondary clarification. Online instrumentation will be provided for process monitoring and control adjustment. Dissolved Oxygen (DO) monitoring will be provided. Other parameters may include nitrite, nitrate, pH, and ORP (oxygen reduction potential).

7.5 Secondary Clarifiers

Two additional secondary clarifiers will be constructed to receive effluent from the new BNR basins. Both clarifiers will be size to not exceed a peak hour overflow rate of 1000 gpd/sf for the additional 1.3 MGD. Scum pump station will pump floating scum to aerobic digestion.

7.6 Effluent Filters

Provisional effluent filters will be designed into the process flow scheme to treat the 2.5 MGD of flow, but the filters will not be constructed until effluent flows reach the point that the concentration of TP requires the use of filtration to meet the NPDES permit limits.

7.7 Return and Waste Activated Sludge (RAS/WAS) Pumping

New RAS/WAS pumping will be added for the two new clarifiers. Flow measurement devices will be installed, and the pumps will feed off the sludge draw off line from the clarifiers. WAS will be throttled from the pump discharge to aerobic digestion.

7.8 Chlorination and Dechlorination

Chlorination and dechlorination will be designed for the 2.5 MGD flow. The County plans to continue to utilize sodium hypochlorite for disinfection and sodium bisulfite for dechlorination although during detailed design, the County is open to considering the feasibility of other disinfection alternatives such as UV disinfection and peracetic acid.

7.9 Outfall

Outfall gravity discharge piping will be upsized to 30” and designed to handle future peak flows (12.5 mgd) and flushing velocity at design peak (6.25 mgd). A reducer and duckbill valve will be added to the end of the existing 18” flange to provide mixing for the 2.5 MGD flow at the 2.5 peaking factor hydraulic rate.

7.10 Electrical Equipment

The existing equipment at the Eastover WWTP will be upgraded for the 2.5 MGD design capacity.

7.11 Emergency Power

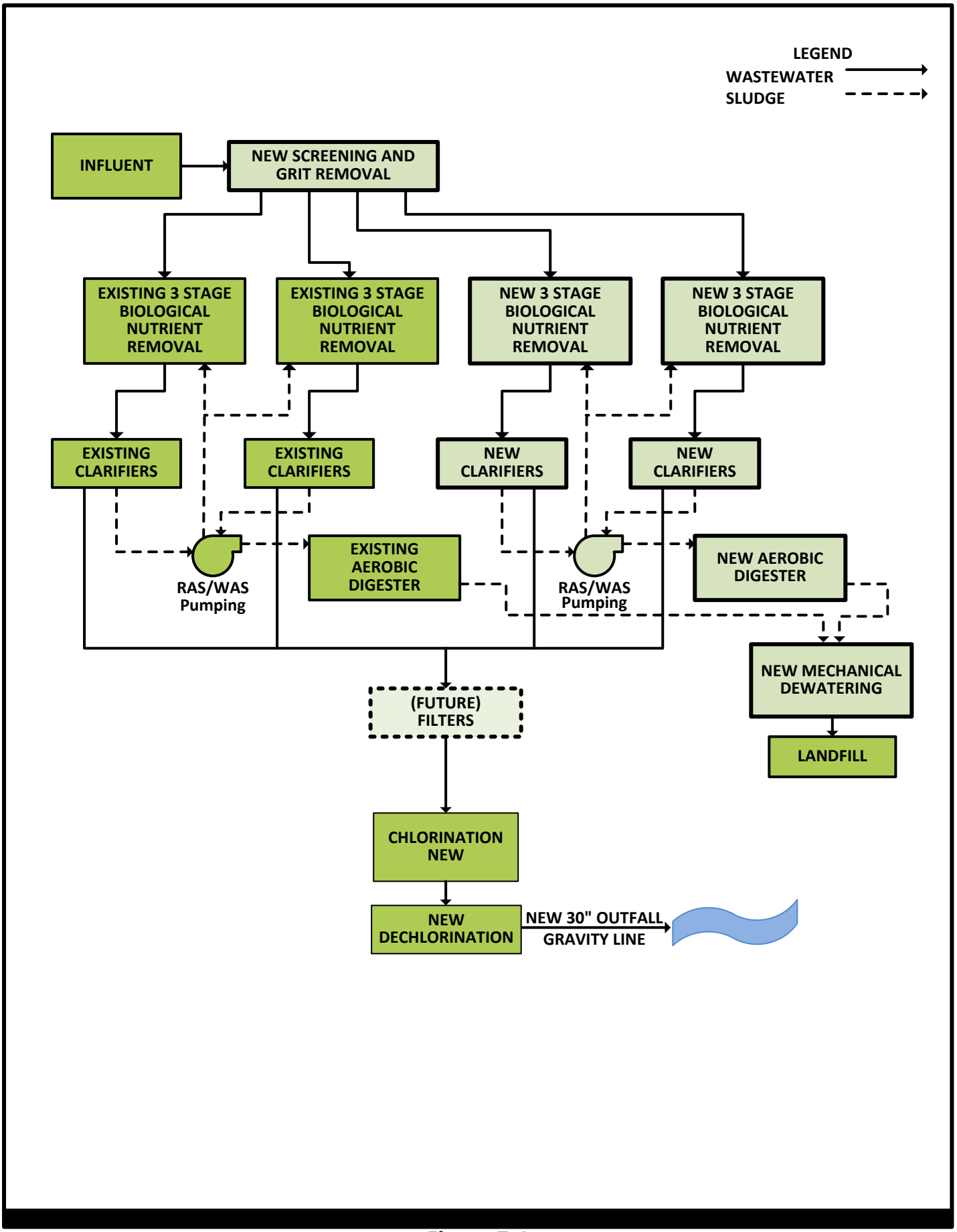
The existing backup generator will continue to provide backup power for screenings removal, clarification and digestion during a power outage. An additional emergency generator will be installed to provide power to operate the main wastewater pumps, additional clarification, disinfection as well as additional digestion during peak wastewater flow conditions in addition to providing power for critical lighting.

7.12 Aerobic Digestion

An additional aerobic digester that provides thickening and has diffusers for aeration and mixing will be provided. The digester will be sized to handle wasting for processing of design BOD loading for the 1.3 mgd plant expansion. The digester will be able to thicken the sludge to a concentration of at least 1.5%.

7.13 Dewatering

Dewatering will consist of processing thickened sludge by mechanical means to 14-18% solids. Solids will be collected in a dumpster, transported, and disposed at local permitted landfill.



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Project No.: 60717190 Date: 2023-11-16

Figure 7-1
RCU Eastover WWTP
Proposed Process Flow Schematic

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8. Treatability of the Waste

The waste stream currently received by the Eastover WWTP is readily treatable by the existing and proposed treatment processes. No significant changes to the nature of the waste stream are expected in the foreseeable future.

The upgrade to 2.5 MGD is based on the wasteload allocation provided by SCDHEC, which is included in Appendix C. The following table outlines those projected NDPES permit limits.

Table 8-1 – Projected NPDES Permit Limits

Parameter	Concentration Limits (mg/L)	
	Mo Avg	Wkly Avg
BOD_5	30	45
TSS	30	45
NH_3-N	20	30
TRC	0.5	1.0
DO	2.0 mg/L minimum at all times	
Total Phosphorus (TP)	3.0	MR

The mass limits for TP are based on the wasteload allocation of 7.09 lbs/d.

9. Physical Characteristics of WWTP

The project does not include waste handling units or procedures which may be directly influenced by local soil/groundwater characteristics. These projects include, but are not limited to, spray irrigation, absorption trench disposal, earthen containment and infiltration basins, composting, drip irrigation, and land application of sludge sites. Therefore, this section is not applicable.

10. Receiving Waters

The location of the existing WWTP and Outfall #001, with respect to the receiving stream and surrounding water bodies, is identified in Figure 2.1. The Eastover WWTP currently discharges to the Wateree River at a permitted capacity of 0.75 MGD per NPDES Permit No. SC0047911. The outfall is in the Catawba-Santee Watershed.

The discharge is outside the state-approved source water protection area for a surface water drinking water intake. The 7Q10 at the discharge point is 1,201 cfs. The average annual flow at the discharge point is 5,954 cfs.

11. Impact of Discharge on Receiving Waters

11.1 Flow Rate

The proposed project increases the volume of flow to be discharged to the Wateree River by 1.3 MGD.

11.2 Total Phosphorus

The total phosphorus loading available for the Eastover WWTP NPDES permit for the increased discharge capacity should increase due to the elimination of four (4) NPDES permits that are now discharging to the Eastover WWTP which include Richland School District One's Gadsden Elementary School, Hopkins Elementary School, and Hopkins Middle School WWTPs as well as the McEntire Joint National Guard Base WWTP. Richland County Utilities will also be requesting phosphorus sharing with their Broad River WWTP for their NPDES permit with the 2.5 MGD permit limits. This will allow flexibility in the treatment process at the Eastover WWTP with the Broad River WWTP currently having a total phosphorus loading of 69 lbs/day.

11.3 Toxicity

The Eastover WWTP utilizes a diffuser to minimize the potential for the treated effluent to adversely impact the environment. The CORMIX model has been evaluated for the increase in flow to 2.5 MGD. The CORMIX data will be provided with the NPDES permit application package.

12. Equipment and Service Failure/Shutdown

As identified in Part V.G.2 of the current NPDES Permit, included as Appendix A, the Eastover WWTP is assigned a reliability classification of Class III. The proposed expansion is not expected to necessitate a change to this classification. To protect surface waters and their usage, as well as provide for a reasonable reliability of treatment performance, the Reliability Classification III requirements identified in R.61-67.400 will be satisfied through the design considerations of the proposed expansion.

In addition, the proposed WWTP expansion will be designed to allow for expansion with consideration given to minimizing interference with day-to-day operation of the existing WWTP. Multiple treatment units are provided within the plant to provide process reliability in the event of equipment failure or routine maintenance. The WWTP has an emergency generator to provide power to key process components during a power outage.

13. Alternatives Analysis

Several discharge alternatives were evaluated for the increase of 1.3 MGD. The following subsections address the alternatives as required in 61-67.200.

13.1 Water Recycle or Reuse

Water reuse is not a viable option at this time due to a lack of demand for reclaimed water. Additionally, the cost for a separate transmission system and lack of clearly identifiable demand makes reuse economically unfeasible at this time.

13.2 Other Discharge Locations/Connections to Other WWTPs

The current outfall discharge into the Wateree River is the most economically feasible discharge point for this facility. There is not another receiving stream in close proximity.

The City of Columbia has transferred a portion of their service area to Richland County to be treated at the Eastover WWTP. In addition four (4) smaller WWTPs have been eliminated with their wastewater be transferred to the Richland County collection system for treatment at the Eastover WWTP. Therefore, the Eastover WWTP is the regional wastewater provider in Southeast Richland County. There are not any other WWTPs in the area that have the capacity or ability to treat the additional flow from the Eastover WWTP, therefore, connection to other WWTPs is not considered to be a viable option.

13.3 Land Application

Based on an assumed application rate of 1-inch per week, the Eastover WWTP will require approximately 374 acres (including buffers and storage lagoon) for a land application spray field. For the Eastover WWTP to discharge the additional 1.3 MGD of flow, there are some modifications required to the effluent discharge line and to the effluent diffuser. These costs are minimal when compared to the cost for land and equipment for land application. The upgrades to be completed at the WWTP are for the treatment process and will be incurred regardless of effluent disposal method. Therefore, land application compared to a continued discharge into the Wateree River will require greater capital expenditure for land application due to the cost of land, pumps, piping to the land application site, spray irrigation equipment as well as the additional cost for operation and maintenance of the land application site. Calculations for the potential land required are included in Appendix D.

13.4 Product or Raw Material Substitution

This project only involves the Eastover WWTP; therefore, “product or raw material substitution” does not apply.

14. Preliminary Opinion of Probable Costs

A preliminary opinion of probable costs for construction is presented in Appendix A.5. The preliminary cost estimate was developed by others for the RCU SCIIP Application.

Appendix A Document copies

A.1 Existing Eastover WWTP NPDES Permit

A.2 Design Calculations

A.3 Wasteload Allocation

A.4 Land Application Calculations

A.5 Preliminary Cost Estimate

A.1 Existing Eastover WWTP NPDES Permit

National Pollutant Discharge Elimination System Permit

(for Discharge to Surface Waters)

This NPDES Permit Authorizes

Richland County/Eastover Regional WWTP

to discharge from a facility located at

off US Hwy 601 at the Water River, 5 miles SE of the Town of Eastover in Richland County

to receiving waters named

Wateree River

in accordance with limitations, monitoring requirements and other conditions set forth herein. This permit is issued in accordance with the provisions of the Pollution Control Act of South Carolina (S.C. Code Sections 48-1-10 *et seq.*, 1976), Regulation 61-9 and with the provisions of the Federal Clean Water Act (PL 92-500), as amended, 33 U.S.C. 1251 *et seq.*, the "Act."

Shawn M. Clarke, P.E., Director
Water Facilities Permitting Division
Bureau of Water

Issue Date: November 15, 2021
Effective Date: December 1, 2021
Modification Date: June 22, 2023

Expiration Date[1]: November 30, 2026
Permit No.: SC0047911

[1] This permit will continue to be in effect beyond the expiration date if a complete timely re-application is received pursuant to Regulation 61-9.122.6 and signed per Regulation 61-9.122.22.

dhec

S.C. Department of Health and Environmental Control

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PART I. Definitions

Any term not defined in this Part has the definition stated in the South Carolina Pollution Control Act (PCA) or in "Water Pollution Control Permits", R.61-9 or its normal meaning.

A. The "Act", or CWA shall refer to the Clean Water Act (Formerly referred to as the Federal Water Pollution Control Act) Public Law 92-500, as amended means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub. L. 92-500, as amended by Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, and Pub. L. 97-117, 33 U.S.C. 1251 et seq. Specific references to sections within the CWA will be according to Pub. L. 92-500 notation.

B. The "arithmetic mean" of any set of values is the summation of the individual values divided by the number of individual values.

C. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

D. A "composite sample" shall be defined as one of the following four types:

1. An influent or effluent portion collected continuously over a specified period of time at a rate proportional to the flow.

2. A combination of not less than 8 influent or effluent grab samples collected at regular (equal) intervals over a specified period of time and composited by increasing the volume of each aliquot in proportion to flow. If continuous flow measurement is not used to composite in proportion to flow, the following method will be used: An instantaneous flow measurement should be taken each time a grab sample is collected. At the end of the sampling period, the instantaneous flow measurements should be summed to obtain a total flow. The instantaneous flow measurement can then be divided by the total flow to determine the percentage of each grab sample to be combined. These combined samples form the composite sample.

3. A combination of not less than 8 influent or effluent grab samples of equal volume but at variable time intervals that are inversely proportional to the volume of the flow. In other words, the time interval between aliquots is reduced as the volume of flow increases.

4. If the effluent flow varies by less than 15 percent, a combination of not less than 8 influent or effluent grab samples of constant (equal) volume collected at regular (equal) time intervals over a specified period of time. (This method maybe used with prior Department approval.)

   All samples shall be properly preserved in accordance with Part II.J.4. Continuous flow or the sum of instantaneous flows measured and averaged for the specified compositing time period shall be used with composite results to calculate mass.

E. "Daily discharge" means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over the day.

F. "Daily maximum" other than for bacterial indicators (i.e. fecal coliform, E. coli and enterococci) is the highest average value recorded of samples collected on any single day during the calendar month. Daily average for bacterial indicators means the highest arithmetic average of bacterial samples collected for each bacterial indicator species (i.e. fecal coliform, E. coli and/or enterococci) in any 24 hour period during a calendar month.

G. "Daily minimum" is the lowest average value recorded of samples collected on any single day during the calendar month.

H. The "Department" or "DHEC" shall refer to the South Carolina Department of Health and Environmental Control.

I. The "geometric mean" of any set of values is the N^{th} root of the product of the individual values where N is equal to the number of individual values. The geometric mean is equivalent to the antilog of the arithmetic mean of the logarithms of the individual values. For purposes of calculating the geometric mean, values of zero (0) shall be considered to be one (1).

J. A "grab sample" is an individual, discrete or single influent or effluent portion of at least 100 milliliters collected at a time representative of the discharge and over a period not exceeding 15 minutes and retained separately for analysis.

K. The "instantaneous maximum or minimum" is the highest or lowest value recorded of all samples collected during the calendar month.

L. The "monthly average", other than for fecal coliform, E. coli and enterococci, is the arithmetic mean of all samples collected in a calendar month period. Monthly average (for bacterial indicators only) means the calendar month (i.e., 28 days, 29 days, 30 days, or 31 days) geometric mean of all bacterial samples collected [for each of the bacterial indicator species (i.e., E. coli, enterococcus, and/or fecal coliform)] during that calendar month. The monthly average loading is the arithmetic average of all daily discharges made during the month.

M. "POTW" means a treatment works as defined by section 212 of the Clean Water Act, which is owned by a state or municipality (as defined by section 502[4] of the CWA). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature or a regional entity composed of two (2) or more municipalities or parts thereof. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality, as defined in section 502(4) of the CWA, which has jurisdiction over the Indirect Discharges to and the discharge from such a treatment works.

N. "Practical Quantitation Limit (PQL)" is the concentration at which the entire analytical system must give a ~~recognizable signal and acceptable calibration point. It is the concentration in a sample that is equivalent~~ to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method-specific sample weights, volumes, and processing steps have been followed. It is also referred to as the reporting limit.

O. "Privately owned treatment works" means any device or system which both is used to treat wastes from any facility whose operator is not the operator of the treatment works and is not a POTW.

P. "Quarter" is defined as the first three calendar months beginning with the month that this permit becomes effective (unless otherwise specified in this permit) and each group of three calendar months thereafter.

Q. "Quarterly average" is the arithmetic mean of all samples collected in a quarter.

R. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

S. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

T. "Weekly average", is the arithmetic mean of all the samples collected during a one-week period. For self-monitoring purposes, weekly periods in a calendar month are defined as three (3) consecutive seven-day intervals starting with the first day of the calendar month and a fourth interval containing seven (7) days plus those days beyond the 28th day in a calendar month. The value to be reported is the single highest of the four (4) weekly averages computed during a calendar month. The weekly average loading is the arithmetic average of all daily discharges made during the week.

U. "Ultimate Oxygen Demand" (UOD) is the oxygen consumed by aquatic microbes in metabolizing the remaining organic and nitrogenous matter in the effluent from the permittee's wastewater treatment plant. This demand is expressed in pounds per day and is calculated by multiplying the effluent biochemical oxygen demand (BOD_5) concentration by the F-ratio and adding that to 4.57 times the effluent ammonia (NH_3-N) concentration and multiplying the sum by the flow and the constant 8.34. The UOD loading is the arithmetic average of all individual loading determinations made during the sampling period.

$$U.O.D.(lbs./day) = [\{BOD_5(mg/l) * F\text{-}ratio\} + \{NH_3\text{-}N(mg/l) * 4.57\}] * Flow(MGD) * 8.34$$
$$F\text{-}ratio = 1.5$$

Legend (See Effluent Limitations and Monitoring Requirements)

Abbreviation	Meaning/Definition	Abbreviation	Meaning/Definition
BOD_5	5-Day Biochemical Oxygen Demand	24 Hr. C	24 Hour Composite
TSS	Total Suspended Solids	Cont.	Continuous
DO	Dissolved Oxygen	Cal	Calculated
TRC	Total Residual Chlorine	Eff.	Effluent
NH_3-N	Ammonia Nitrogen	Inst	Instantaneous

PART II. Standard Conditions

A. Duty to comply

The permittee must comply with all conditions of the permit. Any permit noncompliance constitutes a violation of the Clean Water Act and the Pollution Control Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. The Department's approval of wastewater facility Plans, and Specifications does not relieve the permittee of responsibility to meet permit limits.

1. a. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

   b. It is the responsibility of the permittee to have a treatment facility that will meet the final effluent limitations of this permit. The approval of plans and specifications by the Department does not relieve the permittee of responsibility for compliance.

2. Failure to comply with permit conditions or the provisions of this permit may subject the permittee to civil penalties under S.C. Code Section 48-1-330 or criminal sanctions under S.C. Code Section 48-1-320. Sanctions for violations of the Federal Clean Water Act may be imposed in accordance with the provisions of 40 CFR Part 122.41(a)(2) and (3).

3. A person who violates any provision of this permit, a term, condition, or schedule of compliance contained within a valid NPDES permit, or the State law is subject to the actions defined in the State law.

B. Duty to reapply

1. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. Any POTW with a current effective permit shall submit a new application at least 180 days before the expiration date of the existing permit unless permission for a later date has been granted by the Department. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit)

2. If a privately owned treatment works as defined in Part I.N, wishes to continue an activity regulated by this permit after the expiration date of this permit, the privately owned treatment works must apply for and obtain a new permit. A privately owned treatment works with a currently effective permit shall submit a new application 180 days before the existing permit expires unless permission for a later date has been granted by the Department. The Department may not grant permission for applications to be submitted later than the expiration date of the existing permit.

C. Need to halt or reduce activity not a defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

E. Proper operation and maintenance

1. The permittee shall at all times properly operate and maintain in good working order and operate as efficiently as possible all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes effective performance based on design facility removals, adequate funding, adequate operator staffing and training and also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Power Failures.

   In order to maintain compliance with effluent limitations and prohibitions of this permit, the permittee shall either:

   a. provide an alternative power source sufficient to operate the wastewater control facilities;

   b. or have a plan of operation which will halt, reduce, or otherwise control production and/or all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.

3. The permittee shall develop and maintain at the facility a complete Operations and Maintenance Manual for the waste treatment facilities and/or land application system. The manual shall be made available for on-site review during normal working hours. The manual shall contain operation and maintenance instructions for all equipment and appurtenances associated with the waste treatment facilities and land application system. The manual shall contain a general description of: the treatment process(es), the operational procedures to meet the requirements of (E)(1) above, and the corrective action to be taken should operating difficulties be encountered.

4. The permittee shall provide for the performance of daily treatment facility inspections by a certified operator of the appropriate grade as defined in Part V.E of this permit. The Department may make exceptions to the daily operator requirement in accordance with R.61-9.122.41(e)(3)(ii). The inspections shall include, but should not necessarily be limited to, areas which require visual observation to determine efficient operation and for which immediate corrective measures can be taken using the O & M manual as a guide. All inspections shall be recorded and shall include the date, time, and name of the person making the inspection, corrective measures taken, and routine equipment maintenance, repair, or replacement performed. The permittee shall maintain all records of inspections at the permitted facility as required by the permit, and the records shall be made available for on-site review during normal working hours.

5. A roster of operators associated with the facility's operation and their certification grades shall be maintained onsite and be made available to the Department upon request.

6. Wastewater Sewer Systems

a. Purpose. This section establishes rules for governing the operation and maintenance of wastewater sewer systems, including gravity or pressure interceptor sewers. It is the purpose of this section to establish standards for the management of sewer systems to prevent and/or minimize system failures that would lead to public health or environmental impacts.

b. Applicability. This section applies to all sewer systems that have been or would be subject to a DHEC construction permit under Regulation 61-67 and whose owner owns or operates the wastewater treatment system to which the sewer discharges.

c. General requirements. The permittee must:

(1) Properly manage, operate, and maintain at all times all parts of its sewer system(s), to include maintaining contractual operation agreements to provide services, if appropriate;

(2) Provide adequate capacity to convey base flows and peak flows for all parts of the sewer system or, if capital improvements are necessary to meet this standard, develop a schedule of short and long term improvements;

(3) Take all reasonable steps to stop and mitigate the impact of releases of wastewater to the environment; and

(4) Notify the Department within 30 days of a proposed change in ownership of a sewer system.

F. Permit actions

This permit may be modified, revoked, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

G. Property rights

This permit does not convey any property rights of any sort, or any exclusive privilege nor does it authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

H. Duty to provide information

The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking, and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.

I. Inspection and entry

The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the Department), upon presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where

records must be kept under the conditions of this permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act and Pollution Control Act, any substances or parameters at any location.

J. Monitoring and records

1. a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

   b. Flow Measurements

   Where primary flow meters are required, appropriate flow measurement devices and methods consistent with accepted scientific practices shall be present and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to ensure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of not greater than 10 percent from the true discharge rates throughout the range of expected discharge volumes. The primary flow device, where required, must be accessible to the use of a continuous flow recorder.

   c. The permittee shall maintain all records of inspections at the permitted facility as required by the permit, and the records shall be made available for on-site review during normal working hours.

2. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by R.61-9.503 or R.61-9.504), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

3. Records of monitoring information shall include:

   a. The date, exact place, and time of sampling or measurements;
   b. The individual(s) who performed the sampling or measurements;
   c. The date(s) analyses were performed;
   d. The individual(s) who performed the analyses;
   e. The analytical techniques or methods used; and
   f. The results of such analyses.

4. a. Analyses for required monitoring must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal specified in R.61-9.503, unless other test procedures have been specified in the permit

   b. Unless addressed elsewhere in this permit, the permittee shall use a sufficiently sensitive analytical method for each sample that achieves a value below the derived permit limit stated in Part III. For the purposes of reporting analytical data on the Discharge Monitoring Report (DMR):

      (1) Analytical results below the PQL from methods available in 40 CFR 136 or otherwise specified in the permit shall be reported as zero (0), provided the PQL is below the value specified in Part V.G.5 and the result is also below the PQL. Zero (0) shall also be used to average results which are below the PQL. When zero (0) is reported or used to average results, the permittee shall report, in the 'General Report Comments' section of the DMR, the analytical method used, the PQL achieved, and the number of times results below the PQL were reported as zero (0).

      (2) Analytical results above the PQL from methods available in 40 CFR 136 or otherwise specified in the permit shall be reported as the value achieved, even if the PQL is below the value specified in Part V.G.5. When averaging results using a value containing a < the average shall be calculated using the value and reported as < the average of all results collected.

      3. (a) Mass value for a pollutant collected using a grab sample shall be calculated using the 24-hour totalized flow for the day the sample was collected (if available) or the instantaneous flow at the time of the sample and either the concentration value actually achieved or the value as determined from the procedures in (1) or (2) above, as appropriate. Grab samples should be collected at a time representative of the discharge.

         (b) Mass value for a pollutant collected using a composite sample shall be calculated using the 24-hour totalized flow measured for the day the sample was collected and either the concentration value actually achieved or the value as determined from the procedures in (1) or (2) above, as appropriate.

5. The PCA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $25,000 or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment provided by the Clean Water Act is also by imprisonment of not more than 4 years.

K. Signatory requirement

1. All applications, reports, or information submitted to the Department shall be signed and certified.

   a. Applications. All permit applications shall be signed as follows:

      (1) For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

         (a) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or

(b) The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

(3) For a municipality, State, Federal, or other public agency or public facility: By either a principal executive officer, mayor, or other duly authorized employee or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(a) The chief executive officer of the agency, or

(b) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator, Region IV, EPA).

b. All reports required by permits, and other information requested by the Department, shall be signed by a person described in Part II.K.1.a of this section, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

(1) The authorization is made in writing by a person described in Part II.K.1.a of this section;

(2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) and,

(3) The written authorization is submitted to the Department.

c. Changes to authorization. If an authorization under Part II.K.1.b of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Part II.K.1.b of this section must be submitted to the Department prior to or together with any reports, information, or applications to be signed by an authorized representative.

d. Certification. Any person signing a document under Part II.K.1.a or b of this section shall make the following certification: "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information,

including the possibility of fine and imprisonment for knowing violations."

2. The PCA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $25,000 per violation, or by imprisonment for not more than two years per violation, or by both.

L. Reporting requirements

1. Planned changes

The permittee shall give written notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in R 61-9.122.29(b); or

b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under Part II.L.8 of this section.

c. The alteration or addition results in a significant change in the permittee's sewage sludge or industrial sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan (included in the NPDES permit directly or by reference);

2. Anticipated noncompliance

The permittee shall give advance notice to DHEC/Bureau of Water/Water Pollution Control Division of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

3. Transfers

This permit is not transferable to any person except after notice to DHEC/Bureau of Water/NPDES Administration Section. The Department may require modification or revocation and reissuance of the permit to change the name of permittee and incorporate such other requirements as may be necessary under the Pollution Control Act and the Clean Water Act. (See section 122.61; in some cases, modification or revocation and reissuance is mandatory.)

a. Transfers by modification. Except as provided in paragraph b of this section, a permit may be transferred by the permittee to a new owner or operator only if the permit has been modified or revoked and reissued (under R.61-9.122.62(e)(2)), or a minor modification made (under R.61-9.122.63(d)), to identify the new permittee and incorporate such other requirements as may be necessary under CWA.
b. Other transfers. As an alternative to transfers under paragraph a of this section, any NPDES permit may be transferred to a new permittee if:

(1) The current permittee notifies the Department at least 30 days in advance of the proposed transfer date in Part II.L.3.b(2) of this section;

(2) The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and

(3) Permits are non-transferable except with prior consent of the Department. A modification under this subparagraph may also be a minor modification under section 122.63.

4. Monitoring reports

Monitoring results shall be reported at the intervals specified in the permit. Monitoring periods are calculated beginning with the permit effective date, unless otherwise stated elsewhere in this permit. If the permit is modified, the effective date of the modification is used to begin calculation of the monitoring period for those items that are part of the modification unless otherwise stated elsewhere in this permit.

a. Monitoring results must be reported online through an electronic Discharge Monitoring Report (DMR) or schedule specified by the Department for reporting results of monitoring of groundwater or sludge use or disposal practices including the following:

(1) Effluent Monitoring:

Effluent monitoring results obtained at the required frequency shall be reported on a Discharge Monitoring Report. The completed DMR must be submitted through ePermitting no later than 11:59 PM on the 28th day of the month following the end of the monitoring period.

The permittee shall use the DMR system through ePermitting. If the permittee encounters technical difficulties using the DMR system, contact DHEC at epermittinghelp@dhec.sc.gov for technical assistance. Please contact the Compliance Manager for your permit to obtain approval to submit paper DMRs until the technical issue is resolved.

(2) Groundwater Monitoring:

Groundwater monitoring results obtained at the required frequency shall be reported on a Groundwater Monitoring Report (GMR). The GMR must be submitted through ePermitting no later than 11:59 PM on the 28th day of the month following the end of the monitoring period.

The permittee shall use the GMR schedule in ePermitting. If the permittee encounters technical difficulties using the GMR schedule, contact DHEC at epermittinghelp@dhec.sc.gov for technical assistance. Please contact the Compliance Manager for your permit to obtain approval to submit paper GMRs until the technical issue is resolved.

(3) Sludge, Biosolids and/or Soil Monitoring:

Sludge, biosolids and/or soil monitoring results obtained at the required frequency shall be reported in a laboratory format on a schedule submitted through ePermitting no later than 11:59 PM on the 28th day of the month following the end of the monitoring period.
The permittee shall submit reports through ePermitting. If the permittee encounters technical difficulties using the report schedule, contact DHEC at epermittinghelp@dhec.sc.gov for technical

assistance. Please contact the Compliance Manager for your permit to obtain approval to submit paper reports until the technical issue is resolved.

(4) All other reports and submissions required by this permit shall be submitted through ePermitting no later than 11:59 PM on the 28th day of the month following the end of the monitoring period unless otherwise specified in this permit.

The permittee shall submit reports through ePermitting. If the permittee encounters technical difficulties using the report schedule, contact DHEC for technical assistance at epermittinghelp@dhec.sc.gov. Please contact the Compliance Manager for your permit to obtain approval to submit paper reports until the technical issue is resolved.

b. If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in R.61-9.503 or R.61-9.504, or as specified in the permit, all valid results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge report specified by the Department. The permittee has sole responsibility for scheduling analyses, other than for the sample date specified in Part V, so as to ensure there is sufficient opportunity to complete and report the required number of valid results for each monitoring period.

c. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Department in the permit.

5. Twenty-four-hour reporting

a. The permittee/system owner (or applicable representative) (hereafter permittee/system owner) shall report any non-compliance that meets the criteria in Part II.L.5.b. Any information shall be provided orally or electronically to the local DHEC office as soon as possible but no later than 24 hours from the time the permittee/system owner becomes aware of the circumstances. During normal working hours (8:30 AM - 5:00 PM Eastern Standard Time) call the appropriate regional office in the table below.

County	DHEC Region	Phone No.
Fairfield, Lexington, Newberry, Richland	Midlands Region BEHS Columbia	803-896-0620

* After hour reporting should be made to the 24-hour Emergency Response telephone number 1-888-481-0125.

A follow-up report shall also be provided to DHEC within 5 days of the time the permittee/system owner becomes aware of the circumstances. For sanitary sewer overflows (SSOs), the 'WW Sewer System Overflow or Pump Station Failure Reporting' schedule in ePermitting should be used. For all other non-compliance meeting the criteria of II.L.5.b, the '5-Day Reporting' schedule in ePermitting should be used. If the permittee encounters technical difficulties using the reporting schedules in ePermitting, a written submission using DHEC Form 3685 (or submission with equivalent information) should be submitted to the address below. For ePermitting technical assistance, contact DHEC at epermittinghelp@dhec.sc.gov. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

S.C. Department of Health and Environmental Control
Bureau of Water/Water Pollution Control Division
Data and Records Management Section
2600 Bull Street
Columbia, South Carolina 29201

b. The following shall be included as information which must be reported within 24 hours under this paragraph.

(1) Any unanticipated bypass which exceeds any effluent limitation in the permit. (See R.61-9.122.44(g)).

(2) Any upset which exceeds any effluent limitation in the permit.

(3) Violation of a maximum daily discharge limitation for any of the pollutants listed below (See R 61-9.122.44(g)):

(i) TRC

(4) Any non-compliance which may endanger human health or the environment.

(5) Any spill or release that reaches the surface waters of the State.

(6) Any spill or release that exceeds an estimated 500 gallons.

[Note: When investigating a potential release due to a problem with a pump station, the investigation should include an evaluation of upstream manholes.]

c. The Department may waive the written report on a case-by-case basis for reports under Part II.L.5.b of this section if the oral report has been received within 24 hours.

6. Other noncompliance.

The permittee shall report all instances of noncompliance not reported under Part II.L.4 and 5 of this section and Part IV at the time monitoring reports are submitted. The reports shall contain the information listed in Part II.L.5 of this section.

7. Other information.

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.

8. Domestic treatment works

~~All POTWs must provide adequate notice to the Department of the following:~~

(1) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to sections 301 or 306 of CWA if it were directly discharging those pollutants; and

(2) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

(3) For purposes of this paragraph, adequate notice shall include information on:

(i) The quality and quantity of effluent introduced into the POTW, and

(ii) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

M. Bypass

1. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Part II.M.2 and 3 of this section.

2. Notice.

a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible, at least ten days before the date of the bypass to DHEC/Bureau of Water/Water Facilities Permitting Division.

b. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Part II(L)(5) of this permit (24-hour reporting).

3. Prohibition of bypass

a. Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:

(1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

(3) The permittee submitted notices as required under Part II.M.2 of this section.

b. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three conditions listed above in Part II.M.3.a of this section.

N. Upset

1. ~~Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance~~ with such technology-based permit effluent limitations if the requirements of Part II.N.2 of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
2. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

a. An upset occurred, and that the permittee can identify the cause(s) of the upset;
b. The permitted facility was at the time being properly operated; and
c. The permittee submitted notice of the upset as required in Part II.L.5.b(2) of this section.
d. The permittee complied with any remedial measures required under Part II.D of this section.

3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

O. Misrepresentation of Information

1. Any person making application for a NPDES discharge permit or filing any record, report, or other document pursuant to a regulation of the Department, shall certify that all information contained in such document is true. All application facts certified to by the applicant shall be considered valid conditions of the permit issued pursuant to the application.

2. Any person who knowingly makes any false statement, representation, or certification in any application, record, report, or other documents filed with the Department pursuant to the State law, and the rules and regulations pursuant to that law, shall be deemed to have violated a permit condition and shall be subject to the penalties provided for pursuant to 48-1-320 or 48-1-330.

Part III. Limitations and Monitoring Requirements

A. Effluent Limitations and Monitoring Requirements

1. During the period beginning on the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge from outfall serial number 001. Such discharge shall be limited and monitored by the permittee as specified below:

Following limits are based on the average design flow of:0.750 MGD									
EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS		
	Pounds per Day			Other Units					
	Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Point
Flow	---	---	---	MR MGD	MR MGD	---	Daily	Cont.	Eff.
BOD_5	188	282	---	30 mg/l	45 mg/l	---	1/Week	24 Hr. C	Eff.
TSS	188	282	---	30 mg/l	45 mg/l	---	1/Week	24 Hr. C	Eff.
NH_3-N	125	188	---	20 mg/l	30 mg/l	---	1/Week	24 Hr. C	Eff.
TRC	3.13	---	6.26	0.5 mg/l	---	1.0 mg/l	1/Week	Grab	Eff.
DO	---	---	---	2.0 mg/l Minimum at all times			Weekdays	Grab	Eff.
pH	---	---	---	6.0 - 8.5 Standard Units			Weekdays	Grab	Eff.
BOD_5 (% Removal) *	---	---	---	85% (Minimum)	---	---	1/Month	Calc.	---
TSS (% Removal) *	---	---	---	85% (Minimum)	---	---	1/Month	Calc.	---
Total Phosphorus	7.09	MR	---	1.13 mg/l	MR mg/l	---	1/Month	24 Hr. C	Eff.
Total Nitrogen §	MR	MR	---	MR mg/l	MR mg/l	---	1/Month	Calc.	Eff.

* See Part V.H.

§ This should be reported as a sum of TKN and Nitrate/Nitrite Nitrogen sampling. See Part V.G.5.

2. During the period beginning on the first of the month following the date an approval to place into operation at 1.200 MGD expansion is issued and lasting through the expiration date, the permittee is authorized to discharge from outfall serial number 001. Such discharge shall be limited and monitored by the permittee as specified below:

Following limits are based on the average design flow of: 1.200 MGD									
EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS		
	Pounds per Day			Other Units					
	Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Point
Flow	---	---	---	MR MGD	MR MGD	---	Daily	Cont.	Eff.
BOD_5	300	450	---	30 mg/l	45 mg/l	---	1/Week	24 Hr. C	Eff.
TSS	300	450	---	30 mg/l	45 mg/l	---	1/Week	24 Hr. C	Eff.
NH_3-N (Mar-Oct)	200	300	---	20 mg/l	30 mg/l	---	1/Week	24 Hr. C	Eff.
TRC	5.00	---	10.01	0.5 mg/l	---	1.0 mg/l	1/Week	Grab	Eff.
DO	---	---	---	2.0 mg/l Minimum at all times			Weekdays	Grab	Eff.
pH	---	---	---	6.0 - 8.5 Standard Units			Weekdays	Grab	Eff.
BOD_5 (% Removal) *	---	---	---	85% (Minimum)	---	---	1/Month	Calc.	---
TSS (% Removal) *	---	---	---	85% (Minimum)	---	---	1/Month	Calc.	---
Total Phosphorus	8.23	MR	---	0.82 mg/l	MR mg/l	---	1/Month	24 Hr. C	Eff.
Total Nitrogen §	MR	MR	---	MR mg/l	MR mg/l	---	1/Month	Calc.	Eff.
Total Cadmium (Cd)	MR	---	MR	MR mg/l	---	MR mg/l	1/Month	24 Hr. C	Eff.
Total Copper (Cu)	MR	---	MR	MR mg/l	---	MR mg/l	1/Month	24 Hr. C	Eff.
Total Lead (Pb)	MR	---	MR	MR mg/l	---	MR mg/l	1/Month	24 Hr. C	Eff.
Total Zinc (Zn)	MR	---	MR	MR mg/l	---	MR mg/l	1/Month	24 Hr. C	Eff.

* See Part V.H.

§ This should be reported as a sum of TKN and Nitrate/Nitrite Nitrogen sampling. See Part V.G.5.

3. FINAL LIMITS: During the period beginning on the effective date of this permit, and lasting until the expiration date, the permittee is authorized to discharge from outfall serial number 001. Such discharge shall be limited and monitored by the permittee as specified below:

If each E. coli daily maximum (as defined by R.61-68.B.29) during a calendar month reporting period is less than or equal to 349 MPN/100 ml or the provisions of R.61-68.E.14(c)(12), included as "Bacteria Supplemental Data Sheet" at the end of Part V of this permit, were not met, then the following limits apply:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Point
E. coli (MPN/100ml)	126	349	1/week	Grab	Effluent

Otherwise, report "Conditional Monitoring-Not Required" on the Discharge Monitoring Report (DMR) form for this portion (Part III.A.3) of the permit and report all E. coli data for this monitoring period in 4 below.

4. FINAL LIMITS: During the period beginning on the effective date of this permit, and lasting until the expiration date, the permittee is authorized to discharge from outfall serial number 001. Such discharge shall be limited and monitored by the permittee as specified below:

If any E. coli daily maximum (as defined by R.61-68.B.29) during a calendar month reporting period is greater than 349 MPN/100 ml and in each instance the provisions of R.61-68.E.14(c)(12), included as "Bacteria Supplemental Data Sheet" at the end of Part V of this permit, were met, then the following limits apply:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	Monthly Average	Individual Sample Maximum	Measurement Frequency	Sample Type	Sample Point
E. coli (MPN/100ml)	126	800*	1/week	Grab	Effluent

* For this reporting period only.

Otherwise, report "Conditional Monitoring-Not Required" on the Discharge Monitoring Report (DMR) form for this portion (Part III.A.4) of the permit, and report all E. coli data for this monitoring period in 3 above. In addition, if data is reported in item 4, the "Bacteria Supplemental Data Sheet" contained in Part V of this permit must be attached to the Discharge Monitoring Report (DMR) and signed by the authorized DMR representative, documenting compliance with the provisions of R.61-68.E.14(c)(12). If this attachment is not included with the DMR submittal, the permittee may not use this portion (Part III.A.4) for reporting E. coli data.

Note for 3 and 4 above: Sample results reported should include all data collected for this monitoring period including any additional E. coli samples that might be collected under the provisions of R.61-68.E.14(c)(12).

B. Whole Effluent Toxicity Limitations and Monitoring Requirements

During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge from outfall 001. Such discharge shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS			MONITORING REQUIREMENTS	
	Daily Minimum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Ceriodaphnia dubia Chronic Whole Effluent Toxicity @ CTC= 100%	---	25 %	40 %	1/year	24-hour composite
Ceriodaphnia dubia LC_{50} – 48-hour Acute[2]	MR	---	---	1/year	Calculated
Ceriodaphnia dubia IC_{25} – 7day Chronic	MR	---	---	1/year	Calculated

See Part V.B. for additional toxicity reporting requirements.
MR = Monitor and Report.
[1]The permittee shall report the LC_{50} at 48-hours from the chronic WET test.

The following notes apply only to valid tests. For invalid tests see Part V.B.

Note 1: The overall % effect is defined as the larger of the % survival effect or the % reproduction effect.
Note 2: If only one test is conducted during a month, the monthly average and daily maximum are each equal to the overall % effect.
Note 3: If more than one test is conducted during a month, the monthly average is the arithmetic mean of the overall % effect values of all tests conducted during the month.
Note 4: The monthly average to be reported on the DMR is the highest monthly average for any month during the monitoring period. There is no averaging of data from tests from one month to another.
Note 5: The daily maximum to be reported on the DMR is the highest of the % survival effect or % reproduction effect of all tests conducted during the monitoring period.
Note 6: When a sample is collected in one month and the test is completed in the next month, the overall % effect applies to the month in which the sample was collected.
Note 7: Tests must be separated by at least 7 days (from the time the first sample is collected to start one test until the time the first sample is collected to start a different test). There is no restriction on when a new test may begin following a failed or invalid test.
Note 8: For any split sample:
  a. Determine the % survival effect and % reproduction effect values separately for each test.
  b. Determine the arithmetic mean of the % survival effects and of the % reproduction effects for all tests.
  c. The monthly average and daily maximum shall be the higher of the % effect values from (b) above.
  d. For the IC_{25} and LC_{50}, the daily minimum is the lowest average value recorded of samples collected on any single day during the calendar month.
  e. For the purposes of reporting, split samples are reported as an individual sample regardless of the number of times it is split. All laboratories used shall be identified on the DMR, and each test shall be reported individually on DMR Attachment for Whole Effluent Toxicity Results (in ePermitting).

a. Samples used to demonstrate compliance with the discharge limitations and monitoring requirements specified above shall be taken at or near the final point-of-discharge but prior to mixing with the receiving waters or other waste streams.

C. Groundwater Requirements

Not applicable to this permit.

D. Sludge Disposal Requirements

1. Sludge Transportation and Disposal

Sludge solids will be removed from this facility and transported to the Broad River Wastewater Treatment Facility - (SC0046621) under the following conditions:

a. All containers for sludge collection and transportation shall be structurally sound in every respect and shall be so constructed as to prevent leakage or spillage of any kind while in the process of pumping, storage, or transit.

b. The total volume of waste transported shall not exceed the agreed upon amount with the WWTF per year.

c. The hauling of sludge may be revoked or suspended after notice and opportunity for a hearing when, in the opinion of the South Carolina Department of Health and Environmental Control, the Permittee has failed to comply with the permitting, hauling, transportation, or disposal requirements.

d. To the extent provided under Federal and State law, the Permittee is responsible for the handling, transportation, and disposal of all sludge from the various source(s) transported to the approved disposal site. This responsibility includes, but is not limited to spills, accidents, unauthorized leaks, or other hazards which may occur.

E. Land Application Requirements

Not applicable to this permit.

F. Instream Biological Assessment

Not applicable to this permit.

Part IV. Schedule of Compliance

A. Schedule(s)

1. The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedules:

   Not applicable to this permit.

2. The permittee shall achieve compliance with the Whole Effluent Toxicity limitations specified for discharges in accordance with the following schedules:

   Not applicable to this permit.

3. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted through ePermitting no later than 11:59 PM on the 14th day following each scheduled date.

Part V. Other Requirements

A. Effluent Limitations and Monitoring Requirements

1. There shall be no discharge of floating solids or visible foam in other than trace amounts, nor shall the effluent cause a visible sheen on the receiving waters.

2. a. Effluent samples taken in compliance with the monitoring requirements specified in Part III, shall be taken at the following location(s): nearest accessible point after final treatment but prior to actual discharge or mixing with the receiving waters.

   b. Influent samples taken in compliance with the monitoring requirements specified in Part III, shall be taken at the following location(s): nearest accessible point prior to any primary treatment unit (e.g. after the bar screen and before primary treatment).

3. Samples shall be collected in accordance with Part I.

4. MR = Monitor and Report only.

B. Effluent Toxicity Limitations and Monitoring Requirements

1. Chronic Toxicity (For the requirements identified in Part III.B):

   a. A *Ceriodaphnia dubia* three brood chronic toxicity test shall be conducted at the frequency stated in Part III.B, Effluent Toxicity Limitations and Monitoring Requirements, using the chronic test concentration (CTC) of 100% and the following test concentrations: 0% (control), 0.5%, 1.2%, 2.8%, 6.4% and 15% effluent The permittee may add additional test concentrations without prior authorization from the Department provided that the test begins with at least 10 replicates in each concentration and all data is used to determine permit compliance.

   b. The test shall be conducted using EPA Method 1002.0 in accordance with "Short-Term Methods for Estimating Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms," EPA/821/R-02/013 (October 2002).

   c. The permittee shall use the linear interpolation method described in "Short-Term Methods for Estimating Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms," EPA/821/R-02/013 (October 2002), Appendix M to estimate the percent effect at the CTC according to the equations in d below.

   d. The linear interpolation estimate of percent effect is $\left(1 - \frac{M_{CTC}}{M_1}\right) * 100$ if the CTC is a tested concentration. Otherwise, it is $\left(1 - \frac{M_J - \frac{M_{J+1} - M_J}{C_{J+1} - C_J} * C_J + \frac{M_{J+1} - M_J}{C_{J+1} - C_J} * CTC}{M_1}\right) * 100$.

   c. A test shall be invalidated if any part of Method 1002.0 is not followed or if the laboratory is not certified at the time the test is conducted.

   e. All valid toxicity test results shall be submitted using the DMR Attachment for Whole Effluent Toxicity

Results through ePermitting, and in accordance with Part II.L.4. In addition, results from all invalid tests must be included with this DMR Attachment, including lab control data. The permittee has sole responsibility for scheduling toxicity tests so as to ensure there is sufficient opportunity to complete and report the required number of valid test results for each monitoring period.

f. The permittee is responsible for reporting a valid test during each monitoring period. However, the Department acknowledges that invalid tests may occur. All of the following conditions must be satisfied for the permittee to be in compliance with Whole Effluent Toxicity (WET) testing requirements for a particular monitoring period when a valid test was not obtained.

(1) A minimum of three (3) tests have been conducted which were invalid in accordance with Part V.B.1.e above;

(2) The data and results of all invalid tests are to be submitted using the DMR Attachment for Whole Effluent Toxicity Results through ePermitting.

(3) At least one additional State-certified laboratory was used after two (2) consecutive invalid tests were determined by the first laboratory. The laboratory ID number(s) of the additional lab(s) shall be reported using the DMR Attachment for Whole Effluent Toxicity Results in ePermitting; and

(4) A valid test was reported during each of the previous three reporting periods.

If these conditions are satisfied, the permittee may enter "*3" in the appropriate boxes on the toxicity DMR and add the statement to the Comment Section of the DMR that "*3 indicates invalid tests."

h. This permit may be modified based on new information that supports a modification in accordance with Regulation 61-9.122.62 and Regulation 61-68.D.

2. Biological Assessment

Not applicable to this permit.

C. Groundwater Requirements

Not applicable to this permit.

D. Sludge Disposal Requirements

1. Class I sludge management facilities (includes but is not limited to all facilities with pretreatment programs, Publicly Owned Treatment Works (Facility) with a design flow rate equal to or greater than 1 Million gallons per day, and Facility's that serve 10,000 people or more) shall submit the following to EPA Region 7 (Attn: Water Enforcement Branch, EPA Region 7, 11201 Renner Boulevard, Lenexa, KS 66219, and a copy submitted through ePermitting to the Department:

a. The information in 40 CFR Part 503.17(a) except the information in 503.17(a)(3)(ii), 503.17(a)(4)(ii) and 503.17(a)(5)(ii), for the appropriate requirements on February 19 of each year.

b. The information in 40 CFR Part 503.17(a)(5)(ii)(A) through (a)(5)(ii)(G) on February 19 of each year when ninety (90) percent or more of any of the cumulative pollutant loading rates in Table 2 of 503.13 is reached at a site.

The requirements to send information to EPA Region 7 will remain in effect until the State of South Carolina is delegated the sludge program under 40 CFR Part 123 or 40 CFR Part 501. The permittee is also required to send a copy of the information to the Department under the requirements of R.61-9.503.

c. Until such time as a specific federal sludge disposal permit is issued under the provisions of 40 CFR Part 503, the direct enforceability (§ 503.3(b)) of the sludge standards requires that the permittee shall not use or dispose of sewage sludge through practice for which requirements are established in 40 CFR Part 503, except in accordance with those requirements. If the Department includes State sludge permit requirements under R.61-9.503, the conditions of that permit shall apply in addition to any requirements under 40 CFR Part 503.

2. a. The permittee must obtain prior Departmental approval of planned changes in the facility when the alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use of disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

   b. The sludge disposal permit may be modified or revoked and reissued if there are material and substantial alterations or additions to the permitted facility or activity (including a change or changes in the permittee's sludge use or disposal practice) which occurred after the permit issuance which justify the application of permit conditions which are different from or absent in the existing permit.

3. The sludge disposal permit may be terminated if there is a change in any condition that requires either a temporary or permanent reduction or elimination of any discharge or sludge use or disposal practice controlled by the permit.

4. Periodic inspections will be conducted by Department authorized representatives to ensure compliance with State regulations and permit stipulations. Any necessary modification to this permit may be based upon these evaluations.

5. Records of monitoring required by the permits related to sludge use and disposal activities must be kept at least five (5) years (or longer as required by 40 CFR Part 503 or R.61-9.503).

6. Sludge monitoring procedures shall be those specified in 1) R.61-9.503; 2) 40 CFR Part 503; 3) 40 CFR Part 136; or 4) other procedures specified in the sludge permit (in that order of "preference" depending on the availability and applicability of a particular method at the time the sludge permit is issued).

7. The permittee shall submit the results of all sludge monitoring if done more frequently than required by the sludge permit. The permittee may be required to maintain specific records at the facility and on request may also be required to furnish them to the Department.

8. Odor Control Requirements

   The permittee shall use best management practices normally associated with the proper operation and maintenance of a sludge wastewater treatment site, any sludge storage or lagoon areas, transportation of sludges, and all individual activities permitted under R.61-9.503 to ensure that an undesirable level of odor does not exist.

   a. The permittee is required to prepare an odor abatement plan for the sewage sludge treatment sites, any sludge storage or lagoon areas, and land application or surface disposal sites. It must be noted this state regulation that went into effect on June 27, 2003, and continues in effect, required permittees

that land-apply sludge to prepare the plan by December 24, 2003. Otherwise, the permittee had until June 27, 2004 to prepare the plan and this requirement remains in effect. The plan must have included the following topics:

(1) Operation and maintenance practices which are used to eliminate or minimize undesirable odor levels in the form of best management practices for odor control.

(2) Use of treatment processes for the reduction of undesirable odors;

(3) Use of setbacks.

(4) Contingency plans and methods to address odor problems for the different type of disposal/application methods used.

b. Unless otherwise requested, prior to issuance of a new or expanded land application disposal permit (either NPDES or ND), the Department may review the odor abatement plan for compliance with this Part (503.50). The Department may require changes to the plan as appropriate.

c. No permittee may cause, allow, or permit emission into the ambient air of any substance or combinations of substances in quantities that an undesirable level of odor is determined to result unless preventative measures of the type set out below are taken to abate or control the emission to the satisfaction of the Department. When an odor problem comes to the attention of the Department through field surveillance or specific complaints, the Department may determine, in accordance with section 48-1-120 of the Pollution Control Act, if the odor is at an undesirable level by considering the character and degree of injury or interference to:

(1) The health or welfare of the people;
(2) Plant, animal, freshwater aquatic, or marine life;
(3) Property; or
(4) Enjoyment of life or use of affected property.

d. After determining that an undesirable level of odor exists, the Department may require:

(1) the permittee to submit a corrective action plan to address the odor problem,
(2) remediation of the undesirable level of odor within a reasonable timeframe, and
(3) in an order, specific methods to address the problem.

e. In accordance with R.61-9.503.50(e), if the permittee fails to control or abate the odor problems addressed in this section within the specified timeframe, the Department may revoke disposal/application activities associated with the site or the specific aspect of the sludge management program.

E. Land Application

Not applicable to this permit.

F. Pretreatment

1. Pretreatment Regulations and Program Requirements

a. The permittee's Pretreatment Program was originally approved on April 25, 2023.

b. In addition to the discharge monitoring reports submitted in accordance with Part II.L.4., the Permittee shall also submit through ePermitting using the 'Pretreatment Performance Summary' schedule, copies of the following with the discharge monitoring reports on or before the 28th of January and July.

- Any Permits to Discharge issued to, or Contracts entered into with, non-domestic dischargers during the previous quarter if said dischargers must be regulated.

- The names of any non-domestic dischargers that are in violation of any limits, either specific or general, imposed as part of the Pretreatment Program and an explanation of the action(s) being carried out to bring them into compliance.

- Any schedules of compliance agreed to by or imposed on a non-domestic discharger for the purpose of bringing said discharger into compliance with the established discharge limits.

- A report showing the number of regulated non-domestic dischargers; the number monitored and/or inspected during the calendar year; the cumulative number monitored and/or inspected during the year to date; the number in compliance and non-compliance during the calendar year and the number in compliance or non-compliance during the calendar year.

c. Permittee shall require all non-domestic dischargers into Permittee's system to comply with pretreatment provisions of the Clean Water Act (Public Law 95-217), as set forth in the General Pretreatment Regulations, 40 CFR Part 403, promulgated thereunder, and with the Permittee's State Approved Pretreatment Program (R.61-9.403).

2. Prohibited Discharges

In accordance with 24 S.C. Reg. Ann. §61-9.403, the Permittee shall prohibit in its sewer use ordinance and pretreatment program regulations (if a pretreatment program is approved by the Department) the discharge of pollutant(s) into its treatment works by any non-domestic source(s), if such pollutant(s) may inhibit or interfere with the operation or performance of the works. Further, the Permittee shall prohibit in its sewer use ordinance and pretreatment program regulations (if a pretreatment program is approved by the Department) the introduction of the following pollutants into its treatment works:

a. Pollutant(s) which create a fire or explosion hazard in the POTW, including, but not limited to, waste streams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test methods specified in 40 CFR 261.21.

b. Pollutant(s) which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0, unless the works is specifically designed to accommodate such discharges.

c. Solid or viscous pollutant(s) in amounts which will cause obstruction to the flow in the POTW resulting in interference.

d. Any pollutant, including oxygen demanding pollutants, (BOD, etc.), released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the POTW.

e. Heat in amounts which will inhibit biological activity in the POTW resulting in Interference, but in no case heat in such quantities that the temperature at the POTW Treatment Plant exceeds 40°C (104°F) unless the Department, upon request of the POTW, approves alternate temperature limits.

f. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through.

g. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems.

h. Any trucked or hauled pollutants, except at discharge points designated by the POTW.

Upon development of specific limits for these pollutant categories, either in an approved POTW Pretreatment Program or otherwise, such limits shall be deemed prohibitions for the purpose of Section 307(d) of the Act and shall be enforceable in lieu of the general prohibitions set forth above.

G. Additional Operational Requirements

1. The wastewater treatment plant is assigned a classification of Group III-B (Biological) in the Permit to Construct which is issued by the Department. This classification corresponds to an operator with a grade of B.

2. The wastewater treatment plant is assigned a Reliability Classification of Class III, in accordance with Section 67.400 "Reliability Classifications" of the Standards for Wastewater Facility Construction: R.61-67.

3. For parameters with a sample frequency of once per month or greater, the Permittee shall monitor (at least one sample) consistent with conditions established by this Permit on the first (1st) Tuesday of every calendar month, unless otherwise approved by the Department. (For example; with a once per week (01/07) sampling frequency, the permittee shall monitor one weekly sample on the day of the week noted during the monthly DMR reporting period.)

   For parameters with a sampling frequency of less than once per month (if any), the permittee shall monitor these parameters on specific date noted above on any of the months during the appropriate reporting period unless otherwise approved by the Department. (For example, with a once per quarter (1/90) sampling frequency, the permittee may monitor on the day of the week noted in either the first, second or third month in the quarterly reporting period.)

   For parameters requiring multiple samples for a single test the Permittee may collect the samples on any date during the reporting period, unless otherwise approved by the Department. The permittee must notify the Department of the planned sampling dates upon request.

   In accordance with R.61-9.122.41(j)(1)(iii), the Department may waive compliance with the permit requirement for a specific sampling event for extenuating circumstances. Additional monitoring, as necessary to meet the frequency requirements of this Permit (Part III.A., III.B., and III.C., if applicable) shall be performed by the Permittee.

4. [Reserved]

5. For purposes of reporting, the Permittee shall use the reporting threshold equivalent to the PQL listed below and conduct analyses in accordance with the method specified below:

Parameter	Analytical Method	PQL
Total Residual Chlorine	①	0.050 mg/l
Nitrate-Nitrite as N §	①	0.020 mg/l
Total Kjeldahl Nitrogen*	①	0.10 mg/l

Total Phosphorus	①	0.050 mg/l

§ Since there is no EPA accepted method to directly measure total nitrogen, total nitrogen should be reported as a sum of the values of TKN and Nitrate-Nitrite Nitrogen sampling.

① The Permittee must use a suitable analytical method (40 CFR Part 136 approved) from a SCDHEC certified laboratory with a PQL equal to or lower than the PQL listed above. If the permittee is using a PQL below the PQL listed above, then for purposes of reporting, the lower PQL shall be used in accordance with Part II.J.4.b.

H. Secondary Treatment - Percent Removal (BOD_5, $CBOD_5$ and TSS)

1. In accordance with R.61-9.133.102,103 and 105, the 30-day average percent removal for BOD_5, $CBOD_5$ (if applicable) and TSS have been identified in Part III.A, "Effluent Limitations and Monitoring Requirements". For purposes of reporting the 30-day average percent removal for BOD_5, $CBOD_5$ (if applicable) and TSS across the treatment plant, the permittee shall conduct influent and effluent sampling for BOD_5, $CBOD_5$ (if applicable) and TSS during a 30-day reporting as follows:

   Influent Sampling:
   - At a minimum during any 30-day reporting period, collect grab or composite influent sample(s) at a frequency identified in Part III.A. The procedure to collect a composite sample shall be in accordance with Part I.D and a grab sample shall be in accordance with Part I.I.
   - If only one influent sample is collected during any 30-day reporting period (provided this meets the minimum frequency specified in Part III.A), then that sample shall be considered as the 30-day average influent concentration for a given parameter.
   - If more than one influent samples are collected during the 30-day reporting period, then all individual values for a given parameter shall be averaged to determine the 30-day average influent concentration.

   Effluent Sampling:
   - Effluent data collected for permit compliance can be used, provided sufficient samples are collected to meet the frequency specified in Part III.A.
   - If more than one effluent samples are collected during the 30-day reporting period, then all individual values for a given parameter shall be averaged to determine the 30-day average effluent concentration.

   Percent Removal Determination:
   - Determine the 30-day average percent removal for a given parameter using the formula below:

$$30\text{-day average percent removal} = \frac{C_{\text{influent}} - C_{effluent}}{C_{\text{influent}}} \times 100$$

   where:

   $C_{influent}$ = Average of all influent samples collected during the 30-day reporting period in (mg/l).
   $C_{effluent}$ = Average of all effluent samples collected during the 30-day reporting period in (mg/l).

2. The Department may substitute either a lower percent removal requirement or a mass loading limit for the percent removal requirements set forth in section 133.102(a)(3), section 133.102(a)(4)(iii), section 133.102(b)(3), section 133.105(a)(3), section 133.105(b)(3) and section 133.105(e)(1)(iii) provided that the permittee satisfactorily demonstrates that:

(a) The treatment works is consistently meeting, or will consistently meet, its permit effluent concentration limits but its percent removal requirements cannot be met due to less concentrated influent wastewater,

(b) To meet the percent removal requirements, the treatment works would have to achieve significantly more stringent limitations than would otherwise be required by the concentration-based standard. In accordance with R.61-9.133.101(j), "Significantly more stringent limitation" means BOD_5 and TSS limitations necessary to meet the percent removal requirements of at least 5 mg/l more stringent than the otherwise applicable concentration-based limitations (e.g., less than 25 mg/l in the case of the secondary treatment limits for BOD5 and TSS), or the percent removal limitations in section 133.102 and section 133.105, if such limits would, by themselves, force significant construction or other significant capital expenditure.

(c) The less concentrated influent wastewater is not the result of excessive I/I. The determination of whether the less concentrated wastewater is the result of excessive I/I will use the definition of excessive I/I in 40 CFR 35.2005(b)(16) plus the additional criterion that inflow is non-excessive if the total flow to the POTW (i.e., wastewater plus inflow plus infiltration) is less than 275 gallons per capita per day.

I. Wastewater Design Flow

a. For the purposes of identification of the treatment capacity (under R.61-67.300.A.8) and for a determination of whether or not a POTW is required to develop a pretreatment program (under R.61-9.403.a), the design flow(s) is 0.75 MGD and 1.200 MGD.

b. For NPDES billing (under R.61-30.B(2)(b)), the "actual flow" limit for this wastewater treatment facility shall be identified as the design flow of 1.200 MGD.

J. Water Treatment Plant Notification

The permittee shall notify the following downstream water treatment plants of any emergency condition, plant upset, bypass or other system failure, which has the potential to affect the quality of water withdrawn for drinking purposes:

(1) Lake Marion Regional System (Intake #S38102)

This notification should be made as soon as possible and in anticipation of such event, if feasible, without taking away any response time necessary to attempt to alleviate this situation.

BACTERIA WORKSHEET

MONITORING PERIOD

YEAR MO DAY			YEAR MO DAY
FROM		TO	

Select the current daily maximum limit	☐ 349 MPN/100 ml (E.coli) ☐ 104 MPN/100 ml (Enterococci) ☐ 43 MPN/100 ml (Fecal coliform)

1. Report data and sample time for daily maximum bacteria value greater than the permitted limitation.

Sample Result (MPN/100 ml) §	Sample Date (mm/dd/yyyy)	Sample Time (24 Hr. Format)	Parameter
	/ /	: hrs	☐ E.coli ☐ Enterococci ☐ Fecal coliform

§ Sample result above must be less than or equal to 800 MPN/100 ml for E. coli and Enterococci or less than or equal to 200 MPN/100 ml for Fecal Coliform.

2. Two additional bacterial samples collected within 48 hours of the original sample result (of item #1) that exceeded the daily maximum limitation.

Sample Number	Sample Result (MPN/100 ml)	Sample Date (mm/dd/yyyy)	Sample Time (24 Hr. Format)	Parameter
1.		/ /	: hrs	☐ E.coli ☐ Enterococci ☐ Fecal coliform
2.		/ /	: hrs	☐ E.coli ☐ Enterococci ☐ Fecal coliform

The two additional sample results in item #2, do not exceed the daily maximum bacteria limits in the permit and were collected within 48-hours of the original sample result of item #1.

☐ Yes ☐ No*

3. Report the total number of bacterial samples collected in the previous twelve months: _____
(If requested, this data must be provided to the Department to verify this information)

4. Choose one of the following:
   a. ☐ The number from item #3 above is less than 120; and no more than one (1) bacterial sample ~~exceeded the daily maximum limit in the previous twelve (12) months, and that value is~~ identifed in item #1 above.

b. ☐ The number in item #3 above is 120 samples or more, and no more than four (4) individual bacterial samples exceeded the daily maximum limit in the previous twelve (12) months, and those values were:

Sample Number	Sample Result (MPN/100 ml)	Sample Date (mm/dd/yyyy)	Parameter
1.	Same as Item #1 above	Same as Item #1 above	Same as Item #1 above
2.		/ /	☐ E.coli ☐ Enterococci ☐ Fecal coliform
3.		/ /	☐ E.coli ☐ Enterococci ☐ Fecal coliform
4.		/ /	☐ E.coli ☐ Enterococci ☐ Fecal coliform

c. ☐ Neither (a) nor (b) above is true*.

5. The following statements are true:
   a. The disinfection equipment and wastewater solids handling system were fully functional and operating during this monitoring period.
   b. There is neither an existing Consent Order nor Adminstrative Order is associated with the facility's operation of this disinfection system.
   c. The laboratory data included with this report is sufficiently sensitive to accurately represent the effluent bacteria concentrations. No values for the monitoring period were reported as ">" greater than.

* If you check any of the starred boxes or if statements 5(a), (b) or (c) are not true, then the provisions of R.61-68.E.14(c)(12) are not met, and limits in Part III. A.3 apply.

* If you did not check any of the starred boxes, and if statements 5(a), (b) and (c) are true, then the provisions of R.61-68.E.14(c)(12) are met, and limits in Part III. A.4 apply.

A.2 Design Calculations

A.3 Wasteload Allocation

Healthy People. Healthy Communities.

June 15, 2023

Bill Davis, PE, Utilities Director
Richland County Government
7525 Broad River road
Irmo, SC 29603

RE: Wasteload Allocation Revision Request Letter – (Expansion)
Richland County / Eastover Regional WWTP
NPDES Permit No. SC0047911
Richland County

Dear Mr. Bill Davis,

At your request, an updated wasteload allocation has been obtained for Richland County/Eastover's proposed 2.5 MGD discharge to the Wateree River. This letter will supersede the information pertaining to 2.5 MGD within the Speculative WLA letter dated September 2, 2020. No new WLA was created for 1.2 MGD, therefore the information with respect to 1.2 MGD from the previous WLA is expected to remain as is.

Based on the Wasteload allocation the NPDES limits can be expected to be as follows (these are generally monthly average values unless, noted, additional limits with weekly average and daily maximum concentrations may also be included):

Effluent Characteristics	**Existing Discharge**		**Proposed Limits**	
	0.75 MGD		**2.5 MGD**	
	Mo. Avg	**Weekly/Avg.**	**Mo./Avg.**	**Weekly/Avg.**
Flow, MGD	MR	MR	MR	MR
BOD_5, mg/l	30	45	30	45
TSS, mg/l	30	45	30	45
NH3-N, mg/l	20	30	20	30
TRC, mg/l	0.5	1.0	0.5	1.0
DO	2.0 mg/l Minimum	at all times	2.0 mg/l Minimum	at all times
Ph	6.0 – 8.5	Standard Units	6.0 – 8.5	Standard Units
BOD_5 (% Removal)	85% (Minimum)	---	85% (Minimum)	---
TSS (% Removal)	85% (Minimum)	---	85% (Minimum)	---
Total Phosphorus① mg/l	1.13	MR	3.0 mg/l	MR
Total Nitrogen (N), mg/l	---	---	MR	MR
Total Cadmium (Cd), mg/l	---	---	MR	MR
Total Copper (Cu), mg/l	---	---	MR	MR
Total Lead (Pb), mg/l	---	---	MR	MR
Total Zinc (Zn), mg/l	---	---	MR	MR

① There is no net increase in the Phosphorus loading allowed due to the TP impairment in Lake Marion. The mass limits for TP will be based upon the WLA, which is 7.09 lbs./day. See note in the WLA.

The following conditions should be noted. The wasteload is informational/speculative only until the following occur:

1. The selected wasteload allocation is subject to EPA Region IV certification since this is a major facility.

2. Additional metals testing and/or requirements may be necessary subject to information provided with the NPDES application and/or PER. Submission of available effluent metals data may result in specific pollutants to be added or deleted from the limits. Additional analysis of the pollutants listed on the over page would be helpful in this assessment.

3. A construction schedule must be sent to the permitting engineer, so that the schedule for construction can be added to the modified permit. The schedule of construction shall address the schedule for implementing the 1.2 MGD design flow at the facility, as well as the 2.5 MGD design flow.

If you have any questions, please do not hesitate to contact Tyra N. Foulks of my staff at (803) -898-1904 or email at Name@dhec.sc.gov.

Sincerely,

SM Clarke

Shawn M. Clarke, Director
Waste Facilities Permitting Division
Bureau of Water

CC via email: EPA Region IV
Brenda A. Green, Manager, BOW
Samuel Jones, Regional Engineer, BEHS Columbia Office
Wade Cantrell, Manager, 303(d), WQ Modeling Permitting Section
Susan Waldner, Title, 303(d), WQ Modeling Permitting Section
Tyra N. Foulks, Permitting Engineer II, Domestic Wastewater Permitting Section

(**Attachments:** WLA, Speculative WLA Letter from September 2, 2020)

A.4 Land Application Calculations

Land Application Land Requirements

1,300,000	gal/day	7.481	gal/cf
7	d/wk	1	inch/wk
9,100,000	gal/wk	0.083	ft/wk
1,216,415	cf/wk	43,560	sf/acre
14,596,979	sf		
335	acres		

100 foot buffer zone around land application site
Assume square parcel

3,820.6	ft	side

Add 200 feet per side

4,021	ft

16,165,219	sf
371	acres

Lagoon
Hold 7 day supply of effluent

1,300,000	gal/day
7	days
9,100,000	gal
1,216,493	cf

Length:	350	ft	
Width bottom:	200	ft	1,446,667 cf
Depth:	20	ft	1,216,493 cf required
Width Top:	213	ft	
Final Depth:	25	ft	
Final Width Top:	217	ft	
Side Slope:	3	:1	

5 feet of freeboard

Required Land

75,833	sf
1.7	acres

Additional 30 foot buffer around the lagoon is required

410	ft
277	ft
113,433	sf
2.6	acres

Total land required

373.7	**acres**

A.5 Preliminary Cost Estimate

Richland County Utilities

Opinion of Probable Cost - For Budgetary Purposes Only

1.25 MGD WWTP Expansion	
ITEM OF WORK	TOTAL
GENERAL CONDITIONS	
Subtotal for GENERAL CONDITIONS	$ 554,632
SITE WORK	
Subtotal for SITE WORK	$ 515,300
PLANT PIPING & VALVES	
Subtotal for PLANT PIPING & VALVES	$ 1,043,980
CONTROL/LAB BUILDING	
Subtotal for Control/Lab Building	$ 357,500
HEADWORKS	
Subtotal for Headworks	$ 1,482,659
A^2O BNR Process Trains	
Subtotal for A^2O BNR Process Trains	$ 3,120,000
CLARIFIERS & RAS/WAS PS	
Subtotal for CLARIFIERS & RAS/WAS PS	$ 1,508,160
SCUM PUMP STATION	
Subtotal for SCUM PUMP STATION	$ 153,890
EFFLUENT JUNCTION BOX	
Subtotal for EFFLUENT JUNCTION BOX	$ 117,853
DISINFECTION & CHEMICAL SYSTEMS	
Subtotal for DISINFECTION & CHEMICAL SYSTEMS	$ 736,050
POST AERATION	
Subtotal for POST AERATION	$ 365,750
AEROBIC DIGESTERS	
Subtotal for AEROBIC DIGESTERS	$ 383,905
SLUDGE DEWATERING FACILITY	
Subtotal for SLUDGE DEWATERING FACILITY	$ 1,307,600
ELECTRICAL & SWITCHGEAR	$ 878,538
GENERATOR	
Subtotal for GENERATOR	$ 525,150
SCADA SYSTEM, MISC. INSTRUMENTATION & CONTROLS	$ 131,781
WASTEWATER TREATMENT PLANT CONSTRUCTION TOTAL	$ 13,405,297

Notes:

* This opinion of probable cost is based on a preliminary design and the estimated quantities for the project only. Since it is impossible to control the parameters of the final design, market forces, cost of labor, materials, and means and methods, this estimate is not a guarantee of the project cost, and the actual project cost may vary from this estimate.

APPENDIX B

SCIIP GRANT AWARD

RIA South Carolina Rural Infrastructure Authority

Grant Award

SC Infrastructure Investment Program

Grantee:	**Richland County**	Date of Award:	**April 24, 2023**
Grant Title:	**Eastover Wastewater Treatment Plant Expansion**	SCIIP Award Amount:	**$10,000,000**
Grant Period:	**April 24, 2023 – June 1, 2026**	SCIIP Grant Number:	**A-23-C168**

The South Carolina Rural Infrastructure Authority ("RIA") hereby awards to the above-named Grantee, in the amount shown above, for the activities specified in the application which is incorporated by reference and for the purposes authorized. The acceptance of this award creates a contract between RIA and the Grantee legally binding the Grantee to carry out the activities set forth in the approved grant application in accordance with the terms and conditions of the Grant Agreement for which this is the signature page. Please note that the grant is also subject to the **Special Conditions** which are attached to and made a part of this Grant Award.

This contract shall become effective, as of the date of award, upon return of one copy of this grant award which has been signed in the space provided below. The copy must have original signatures and must be returned within forty-five (45) days from the date of award.

Bonnie Ammons, Executive Director
SC Rural Infrastructure Authority

Acceptance for the Grantee:

Signature of Executive Official (with authority to execute contract)

5/25/2023
Date

Leonardo Brown, MBA, CPM
Richland County Administrator

Name and Title of Chief Executive Official

Attest:

Signature of Authorized Official

Assistant County Administrator
Title of Authorized Official

Grantee:	**Richland County**	Date of Award:	**April 24, 2023**
Grant Title:	**Eastover Wastewater Treatment Plant Expansion**	SCIIP Award Amount:	**$10,000,000**
Grant Period:	**April 24, 2023 – June 1, 2026**	SCIIP Grant Number:	**A-23-C168**

Special Conditions

1. Grantee must submit a revised application and funding commitment letter with original signatures. Contact RIA for more information.
2. Grantee must submit the proposed bid package for RIA review before advertising the project.
3. Grantee (or its designated representative) must attend the planned SCIIP Implementation Workshop. More information will be provided as soon as it is available.
4. Grantee is required to participate in a start-up technical assistance meeting with RIA staff.
5. Grantee must comply with the SCIIP Project Management Procedures.