**PERMIT NO. CG0510000**

**ISSUE DATE:** JAN 30 2018

GEORGIA
DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL PROTECTION DIVISION

## PERMIT TO OPERATE A PUBLIC WATER SYSTEM

In compliance with the provisions of the **GEORGIA SAFE DRINKING WATER ACT of 1977, O.C.G.A. 12-5-170 et. seq.**, and the **RULES, CHAPTER 391-3-5**, adopted pursuant to the **ACT**

**City of Garden City**

is issued a **PERMIT TO OPERATE A PUBLIC COMMUNITY WATER SYSTEM** named

**Garden City Water System**

and located at

**Garden City, Chatham County, Georgia**

**THIS PERMIT** to operate the above public water system shall become effective on January 30, 2018 and shall have a fixed term of ten (10) years, absent any prior revocation or modification.

**THIS PERMIT** is issued subject to the terms, conditions and schedules of compliance as follows:

1. **THE PERMITTEE** shall at all times operate the public water system in full compliance with the **GEORGIA SAFE DRINKING WATER ACT of 1977**, and the **RULES, CHAPTER 391-3-5**, adopted under the **ACT**. **THE DIRECTOR** may modify, suspend or revoke this permit as provided therein.

2. **THIS PERMIT** is transferable only with a change of ownership. **THE PERMITTEE** shall notify the succeeding owner by letter of the existing permit and surrender the original permit to the Director. The succeeding owner shall apply to the Director for a permit transfer within 30 days of receiving title to the property.

3. **THIS PERMIT** is further subject to the terms, conditions and schedules of compliance specified on the attached pages.

STATE OF GEORGIA
CONSTITUTION
WISDOM JUSTICE MODERATION
1776

Richard E. Dunn, Director
Environmental Protection Division

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

OWNER: **City of Garden City** PERMIT NO.: **CG0510000**

SYSTEM: **Garden City Water System**

PERMIT CONDITIONS

4. **This permit is for the operation of a public water system using four (4) wells and purchased ground water as sources of water supply** as indicated on your application. Any additional sources must have written approval from the Director before use. **The total amount of water produced must not exceed the limits imposed by your groundwater withdrawal permit, #025-0007**. The approved sources of water are:

Well #1, Source 101, 73 Rommel Avenue
Well #2, Source 102, 61 Main Street
Well #3, Source 103, Augusta Road at Chatham City
Well #5, Source 105, 2406 Highway 80 W at Fire Station
City of Savannah Main (WSID# 0510003) (Source #106) (Emergency source)

5. The permittee must provide continuous disinfection by chlorinating all water distributed by the system to maintain a detectable residual of free chlorine in the recommended amount of 0.2 milligrams per liter in all parts of the distribution system, or as specified in Section 391-3-5-.14, as amended, of the Rules for Safe Drinking Water.

6. **The permittee shall analyze or have analyzed all microbiological and chemical samples required by the Rules for Safe Drinking Water, Chapter 391-3-5. Monitoring for each contaminant must be performed as scheduled by the Georgia Environmental Protection Division's (EPD) Watershed Compliance Program (WCP). The supplier must provide all test results to the WCP within the time frames established in the schedules.** The permittee may use the laboratory services of the EPD's certified laboratory or any other laboratory certified by the WCP to perform the specific analysis. If a laboratory other than the EPD's certified laboratory is used, the laboratory results must be submitted to the following address as specified in Section 391-3-5-.30:

Environmental Protection Division
Watershed Protection Branch Compliance Program
Drinking Water Compliance Unit
2 Martin Luther King, Jr. Drive, SE, Suite 1152 East
Atlanta, Georgia 30334

**The format used to report results must be approved by the WCP and must identify the system by the water system identification number, WSID# 0510000, and the laboratory performing the analysis. The laboratory's certification number must be included on the report. Results requiring immediate notification should be reported to the WCP by telephone at (404) 463-1511 or fax at (404) 651-9590.**

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

OWNER: **City of Garden City** PERMIT NO.: **CG0510000**

SYSTEM: **Garden City Water System**

PERMIT CONDITIONS

7. Reports must be maintained by the permittee on the premises of the water system and be available for inspection. **A true and correct copy of the operation records and other reports must be sent to the following address, by the tenth day of the month following the month being reported**, unless otherwise stated in Section 391-3-5-.30 or elsewhere in the Rules:

Environmental Protection Division
Coastal District Brunswick Office
400 Commerce Center Drive
Brunswick, GA 31523-8251
Phone: (912) 264-7284
Fax: (912) 262-3160

8. **The permittee shall ensure that this public water system is operated in compliance with the Georgia Certification of Water and Wastewater Treatment Plant Operators and Laboratory Analysts Act**, as amended, and the Rules adopted thereunder. The certification classification must be consistent with the public water system classification specified in Section 391-3-5-.39 of the Rules for Safe Drinking Water.

9. The permittee shall comply with O.C.G.A Sections 12-5-7 and 12-5-8 regarding limitations on outdoor irrigation, local variances from state restrictions on outdoor watering, and any rules and regulations related to drought management promulgated thereafter. This condition applies to any water system that holds a water withdrawal permit, or uses water provided by a system with a withdrawal permit.

10. Drinking water distributed by the permittee should not contain any impurity which will cause offense to the sense of sight, taste or smell and should not be excessively corrosive as to cause degradation of the water quality or deterioration of the distribution system, as specified in Section 391-3-5-.19 and .26 of the Rules for Safe Drinking Water.

11. The permittee is required to have a water conservation plan on file with the Division.

12. **The permittee is required to provide continuous fluoridation to all water distributed by the system,** as specified in Section 391-3-5-.16 of the Rules for Safe Drinking Water.

13. The permittee shall comply with Section 391-3-5-.40, Wellhead Protection and the approved Wellhead Protection Plan, which is incorporated herein by reference as a condition of this permit.

14. The permittee shall comply with Section 391-3-.5-.06 of the Rules for Safe Drinking Water and shall meter all water supply sources connected to the public water system and shall report the system's water usage to the EPD's Coastal District Brunswick Office.

15. The permittee shall comply with Section 391-3-5-.10 of the Rules for Safe Drinking Water and shall meter all new services connected to public water systems, unless specifically directed otherwise by the Director.

16. The permittee shall provide sanitary protection for each source of water supply, as specified in Section 391-3-5-.07 of the Rules for Safe Drinking Water.

17. This permit replaces all Permits to Operate a Public Water System previously issued for the operation of this public water system.

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

OWNER: **City of Garden City** PERMIT NO.: **CG0510000**

SYSTEM: **Garden City Water System**

SPECIAL COASTAL PERMIT CONDITIONS

A. The permittee shall administer a **water conservation education program** in accordance with the guidelines provided by the Georgia Environmental Protection Division. The program must be updated at intervals determined by the Director.

B. The permittee shall administer a conservation-oriented **water rate structure** for all of its customers, in accordance with the guidelines provided by the Georgia Environmental Protection Division. This program must be updated at intervals determined by the Director.

C. The permittee shall continue to evaluate **reuse feasibility** in accordance with the guidelines provided by the Georgia Environmental Protection.

D. The permittee shall continue to evaluate **alternate water sources** as a substitute for the groundwater used. This assessment shall be conducted in accordance with the guidelines provided by the Georgia Environmental Protection Division.

E. The permittee shall administer a **meter calibration, repair, and replacement program** that includes: (1) a schedule for installing meters for all water supply sources and service connections that are not currently metered; and, (2) annual calibration for meters for those users representing at least the top 10% of water users. This program must be updated at intervals determined by the Director.

F. The permittee, when operating a governmentally owned water system, shall administer the ordinances requiring all new developments served by public and private sewage services to install **purple pipe reuse lines**, where feasible, as demonstrated in their Reuse Feasibility Analysis. The Reuse Feasibility Analysis shall be developed in accordance with guidance provided by the Georgia Environmental Protection Division.

G. The permittee shall administer a **water loss control program** in accordance with the guidelines provided by the Georgia Environmental Protection Division. The permittee shall administer the minimum standards and best management practices for improving efficiency and effectiveness of water use, if subject to the provisions of O.C.G.A. Section 12-5-4.1, as amended.

H. The permittee shall **meter all fire hydrant flushing events**.

**PERMIT NO. CP0510280**

**ISSUE DATE:** FEB 2 8 2020

GEORGIA
DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL PROTECTION DIVISION

## PERMIT TO OPERATE A PUBLIC WATER SYSTEM

In compliance with the provisions of the **GEORGIA SAFE DRINKING WATER ACT of 1977, O.C.G.A. 12-5-170 et. seq.**, and the **RULES, CHAPTER 391-3-5**, adopted pursuant to the **ACT**

**City of Garden City**

is issued a **PERMIT TO OPERATE A PUBLIC COMMUNITY WATER SYSTEM** named

**Garden City - Town Center Water System**

and located at

**Garden City, Chatham County, Georgia**

**THIS PERMIT** to operate the above public water system shall become effective on August 15, 2017 and shall have a fixed term of ten (10) years, absent any prior revocation or modification.

**THIS PERMIT** is issued subject to the terms, conditions and schedules of compliance as follows:

1. **THE PERMITTEE** shall at all times operate the public water system in full compliance with the **GEORGIA SAFE DRINKING WATER ACT of 1977**, and the **RULES, CHAPTER 391-3-5**, adopted under the **ACT**. **THE DIRECTOR** may modify, suspend or revoke this permit as provided therein.

2. **THIS PERMIT** is transferable only with a change of ownership. **THE PERMITTEE** shall notify the succeeding owner by letter of the existing permit and surrender the original permit to the Director. The succeeding owner shall apply to the Director for a permit transfer within 30 days of receiving title to the property.

3. **THIS PERMIT** is further subject to the terms, conditions and schedules of compliance specified on the attached pages.

STATE OF GEORGIA — CONSTITUTION — WISDOM — JUSTICE — MODERATION — WISDOM — 1776

Richard E. Dunn, Director
Environmental Protection Division

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

OWNER: **City of Garden City** PERMIT NO.: **CP0510280**

SYSTEM: **Garden City - Town Center Water System**

PERMIT CONDITIONS

4. **This permit is for the operation of a public water system using purchased water as source of water supply** as indicated on your application. Any additional sources must have written approval from the Director before use. The approved source of water is:

City of Savannah - Savannah Quarters (WSID#0510259), Source 101

5. Disinfection treatment is not a requirement of this permit. However, the permittee is responsible for maintaining a detectable residual of free chlorine in the recommended amount of at least 0.2 parts per million in all parts of the distribution system, as specified in Section 391-2-5-.14, as amended, of the Rules for Safe Drinking Water.

6. **The permittee shall analyze or have analyzed all microbiological and chemical samples required by the Rules for Safe Drinking Water, Chapter 391-3-5. Monitoring for each contaminant must be performed as scheduled by the Georgia Environmental Protection Division's (EPD) Watershed Compliance Program (WCP). The supplier must provide all test results to the WCP within the time frames established in the schedules.** The permittee may use the laboratory services of the EPD's certified laboratory or any other laboratory certified by the WCP to perform the specific analysis. If a laboratory other than the EPD's certified laboratory is used, the laboratory results must be submitted to the following address as specified in Section 391-3-5-.30:

Environmental Protection Division
Watershed Protection Branch Compliance Program
Drinking Water Compliance Unit
2 Martin Luther King, Jr. Drive, SE, Suite 1152 East
Atlanta, Georgia 30334

**The format used to report results must be approved by the WCP and must identify the system by the water system identification number, WSID# 0510280, and the laboratory performing the analysis. The laboratory's certification number must be included on the report. Results requiring immediate notification should be reported to the WCP by telephone at (404) 463-1511 or fax at (404) 651-9590.**

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

OWNER: **City of Garden City** PERMIT NO.: **CP0510280**

SYSTEM: **Garden City - Town Center Water System**

PERMIT CONDITIONS

7. Reports must be maintained by the permittee on the premises of the water system and be available for inspection. **A true and correct copy of the operation records and other reports must be sent to the following address, by the tenth day of the month following the month being reported**, unless otherwise stated in Section 391-3-5-.30 or elsewhere in the Rules:

Environmental Protection Division
Coastal District Brunswick Office
400 Commerce Center Drive
Brunswick, GA 31523-8251
Phone: (912) 264-7284
Fax: (912) 262-3160

8. **The permittee shall ensure that this public water system is operated in compliance with the Georgia Certification of Water and Wastewater Treatment Plant Operators and Laboratory Analysts Act**, as amended, and the Rules adopted thereunder. The certification classification must be consistent with the public water system classification specified in Section 391-3-5-.39 of the Rules for Safe Drinking Water.

9. The permittee shall comply with O.C.G.A Sections 12-5-7 and 12-5-8 regarding limitations on outdoor irrigation, local variances from state restrictions on outdoor watering, and any rules and regulations related to drought management promulgated thereafter. This condition applies to any water system that holds a water withdrawal permit, or uses water provided by a system with a withdrawal permit.

10. Drinking water distributed by the permittee should not contain any impurity which will cause offense to the sense of sight, taste or smell and should not be excessively corrosive as to cause degradation of the water quality or deterioration of the distribution system, as specified in Section 391-3-5-.19 and .26 of the Rules for Safe Drinking Water.

11. The permittee is required to have a water conservation plan on file with the Division.

12. The permittee shall comply with Section 391-3-.5-.06 of the Rules for Safe Drinking Water and shall meter all water supply sources connected to the public water system and shall report the system's water usage to the EPD's Coastal District Brunswick Office.

13. The permittee shall comply with Section 391-3-5-.10 of the Rules for Safe Drinking Water and shall meter all new services connected to public water systems, unless specifically directed otherwise by the Director.

14. The permittee shall meter all water sources and all service connections connected to the public water supply system and shall report the system's water usage to the EPD's Coastal District Brunswick Office.

**15. The permittee is required to have a Business Plan on file with the Division to demonstrate the water system's managerial and financial capacity to comply with all drinking water regulations in effect, or likely to be in effect. The Business Plan must be updated at intervals determined by the Director.**

16. This permit replaces all Permits to Operate a Public Water System previously issued for the operation of this public water system.

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

OWNER: **City of Garden City** PERMIT NO.: **CP0510280**

SYSTEM: **Garden City - Town Center Water System**

SPECIAL COASTAL PERMIT CONDITIONS

A. The permittee shall administer a **water conservation education program** in accordance with the guidelines provided by the Georgia Environmental Protection Division. The program must be updated at intervals determined by the Director.

B. The permittee shall administer a conservation-oriented **water rate structure** for all of its customers, in accordance with the guidelines provided by the Georgia Environmental Protection Division.

C. The permittee shall continue to evaluate **reuse feasibility** in accordance with the guidelines provided by the Georgia Environmental Protection Division.

D. The permittee shall continue to **evaluate alternate water sources** as a substitute for the groundwater used. This assessment shall be conducted in accordance with the guidelines provided by the Georgia Environmental Protection Division.

E. The permittee shall administer a **meter calibration, repair, and replacement program** that includes: (1) a schedule for installing meters for all water supply sources and service connections that are not currently metered; and, (2) annual calibration for meters for those users representing at least the top 10% of water users. This program must be updated at intervals determined by the Director.

F. The permittee, when operating a governmentally owned water system, shall administer the ordinances requiring all new developments served by public and private sewage services to install **purple pipe reuse lines**, where feasible, as demonstrated in their Reuse Feasibility Analysis. The Reuse Feasibility Analysis shall be developed in accordance with guidance provided by the Georgia Environmental Protection Division.

G. The permittee shall administer a **water loss control program** in accordance with the guidelines provided by the Georgia Environmental Protection Division. The permittee shall administer the minimum standards and best management practices for improving efficiency and effectiveness of water use, if subject to the provisions of O.C.G.A. Section 12-5-4.1, as amended.

H. The permittee shall **meter all fire hydrant flushing events**.

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

# SUMMARY PAGE

**Name of Facility:** Garden City WPCP

**NPDES Permit No.:** GA0031038

This is a reissuance of the NPDES permit for the Garden City WPCP. Up to 2.0 MGD (monthly average) of treated domestic wastewater is discharged to the Savannah River in the Savannah River Basin.

The permit expired on September 8, 2010 and became administratively extended.

The permit was placed on public notice from March 1 to April 1, 2019.

**Please Note The Following Changes to the Proposed NPDES Permit From The Existing Permit:**

Part I.B – Effluent Limitations and Monitoring Requirements:

- Replaced Five-Day Biochemical Oxygen Demand effluent limitations with Five-Day Carbonaceous Biochemical Oxygen effluent limitations of 25 mg/L (monthly average) and 40 mg/L (weekly average) in accordance with requirements for EPD's Subcategory 5R Documentation for Point Source Dissolved Oxygen Impaired Water in the Savannah River Basin in Georgia and South Carolina (5R Plan)
- Added Ultimate Oxygen Demand effluent limitations from March – October of 3,500 lbs/day (monthly average) in accordance with EPD's 5R Plan
- Increased Ammonia monitoring frequency from one day/month to three days per week in accordance with EPD monitoring requirement guidelines
- Decreased Total Phosphorus monitoring from three days/week to one day per month for consistency with all nutrient monitoring
- Added orthophosphate, organic nitrogen, nitrate-nitrite and total kjeldahl nitrogen monitoring requirements to determine nutrient speciation and to quantify nutrient loadings in the Savannah River Basin.
- Added requirements for the facility to conduct annual Acute Whole Effluent Toxicity (WET) testing on marine organisms
- Added requirements for the facility to conduct one Long Term Biochemical Oxygen Demand test within the permit cycle

Part I.C – Monitoring and Reporting

- Updated Watershed Assessment and Protection Plan language to reflect that the City has obtained approval for a WPP
- Added special conditions for Savannah 5R Alternative Restoration Plan Annual Reporting in accordance with EPD's 5R Plan

**Standard Conditions and Boilerplate Modifications:**

The permit boilerplate includes modified language or added language consistent with current NPDES permits.

**Final Permit Determinations and Public Comments:**

- ☒ Final issued permit did not change from the draft permit placed on public notice.
- ☐ Public comments were received during public notice period.
- ☐ Public hearing was held on
- ☐ Final permit includes changes from the draft permit placed on public notice. See attached permit addendum and/or permit fact sheet addendum.

Permit No. GA0031038
Issuance Date: APR 17 2019

GEORGIA
DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL PROTECTION DIVISION

# NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

**In accordance with the provisions of the Georgia Water Quality Control Act (Georgia Laws 1964, p. 416, as amended), hereinafter called the State Act; the Federal Water Pollution Control Act, as amended (33 U.S. C. 1251 et seq.), hereinafter called the Federal Act; and the Rules and Regulations promulgated pursuant to each of these Acts,**

**Garden City**
**100 Central Avenue**
**Garden City, Georgia 31418**

**is authorized to discharge from a facility located at**

**Garden City Water Pollution Control Plant**
**1 Bud Brown Drive**
**Garden City, Georgia 31418**
**(Chatham County)**

**to receiving waters**

**Savannah River**
**(Savannah River Basin)**

**in accordance with effluent limitations, monitoring requirements and other conditions set forth in the permit.**

**This permit is issued in reliance upon the permit application signed on August 29, 2017, any other applications upon which this permit is based, supporting data entered therein or attached thereto, and any subsequent submittal of supporting data.**

**This permit shall become effective on May 1, 2019.**

**This permit and the authorization to discharge shall expire at midnight, April 30, 2024.**

STATE OF GEORGIA CONSTITUTION 1776

Richard E. Dunn

**Director,**
**Environmental Protection Division**

**PART I**

EPD is the Environmental Protection Division of the Department of Natural Resources.

The Federal Act referred to is The Clean Water Act.

The State Act referred to is The Water Quality Control Act (Act No. 870).

The State Rules referred to are The Rules and Regulations for Water Quality Control (Chapter 391-3-6).

A. SPECIAL CONDITIONS

1. MONITORING

The concentration of pollutants in the discharge will be limited as indicated by the table(s) labeled "Effluent Limitations and Monitoring Requirements."

a. The monthly average, other than for fecal coliform bacteria, is the arithmetic mean of values obtained for samples collected during a calendar month.

b. The weekly average, other than for fecal coliform bacteria, is the arithmetic mean of values obtained for samples collected during a 7-day period. The week begins 12:00 midnight Saturday and ends at 12:00 midnight the following Saturday. To define a different starting time for the sampling period, the permittee must notify the EPD in writing. For reporting required by Part I.D.1. of this permit, a week that starts in one month and ends in another month shall be considered part of the second month. The permittee may calculate and report the weekly average as a 7-day moving average.

c. Fecal coliform bacteria will be reported as the geometric mean of the values for the samples collected during the time periods in I.A.1.a. and I.A.1.b.

d. Untreated wastewater influent samples required by I.B. shall be collected before any return or recycle flows. These flows include returned activated sludge, supernatants, centrates, filtrates, and backwash.

e. Effluent samples required by I.B. of this permit shall be collected after the final treatment process and before discharge to receiving waters. Composite samples may be collected before disinfection with written EPD approval.

f. A composite sample shall consist of a minimum of 5 subsamples collected at least once every 2 hours for at least 8 hours and shall be composited proportionately to flow.

g. Flow measurements shall be conducted using the flow measuring device(s) in accordance with the approved design of the facility. If instantaneous measurements are required, then the permittee shall have a primary flow measuring device that is correctly installed and maintained. If continuous recording measurements are required, then flow measurements must be made using continuous recording equipment. Calibration shall be maintained of the continuous recording instrumentation to ± 10% of the actual flow.

Flow shall be measured manually to check the flow meter calibration at a frequency of once a month. If secondary flow instruments are in use and malfunction or fail to maintain calibration as required, the flow shall be computed from manual measurements or by other method(s) approved by EPD until such time as the secondary flow instrument is repaired. For facilities which utilize alternate technologies for measuring flow, the flow measurement device must be calibrated semi-annually by qualified personnel.

Records of the calibration checks shall be maintained.

h. If secondary flow instruments malfunction or fail to maintain calibration as required in I.A.1.g., the flow shall be computed from manual measurements taken at the times specified for the collection of composite samples.

i. Some parameters will be reported as "not detected" when they are below the detection limit and will then be considered in compliance with the effluent limit. The detection limit will also be reported.

2. SLUDGE DISPOSAL REQUIREMENTS

Sludge shall be disposed of according to the regulations and guidelines established by the EPD and the Federal Act section 405(d) and (e), and the Resource Conservation and Recovery Act (RCRA). In land applying nonhazardous municipal sewage sludge, the permittee shall comply with the general criteria outlined in the most current version of the EPD "Guidelines for Land Application of Sewage Sludge (Biosolids) at Agronomic Rates" and with the State Rules, Chapter 391-3-6-.17. Before disposing of municipal sewage sludge by land application or any method other than co-disposal in a permitted sanitary landfill, the permittee shall submit a sludge management plan to EPD for written approval. This plan will become a part of the NPDES Permit after approval and modification of the permit. The permittee shall notify the EPD of any changes planned in an approved sludge management plan.

If an applicable management practice or numerical limitation for pollutants in sewage sludge is promulgated under Section 405(d) of the Federal Act after approval of the plan, then the plan shall be modified to conform with the new regulations.

3. SLUDGE MONITORING REQUIREMENTS

The permittee shall develop and implement procedures to ensure adequate year-round sludge disposal. The permittee shall monitor and maintain records documenting the quantity of sludge removed from the facility. Records shall be maintained documenting that the quantity of solids removed from the facility equals the solids generated on an average day. The total quantity of sludge removed from the facility during the reporting period shall be reported each month with the Discharge Monitoring Reports as required under Part I.D.1. of this permit. The quantity shall be reported on a dry weight basis (dry tons).

4. INTRODUCTION OF POLLUTANTS INTO THE PUBLICLY OWNED TREATMENT WORKS (POTW)

The permittee must notify EPD of:

a. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to Sections 301 or 306 of the Federal Act if the pollutants were directly discharged to a receiving stream; and

b. Any substantial change in the volume or character of pollutants from a source that existed when the permit was issued.

This notice shall include information on the quality and quantity of the indirect discharge introduced and any anticipated impact on the quantity or quality of effluent to be discharged from the POTW.

5. EFFLUENT TOXICITY AND BIOMONITORING REQUIREMENTS

The permittee shall comply with effluent standards or prohibitions established by section 307(a) of the Federal Act and with Chapter 391-3-6-.03(5)(e) of the State Rules and may not discharge toxic pollutants in concentrations or combinations that are harmful to humans, animals, or aquatic life.

If toxicity is suspected in the effluent, the EPD may require the permittee to perform any of the following actions:

a. Acute biomonitoring tests;

b. Chronic biomonitoring tests;

c. Stream studies;

d. Priority pollutant analyses;

e. Toxicity reduction evaluations (TRE); or

f. Any other appropriate study.

The EPD will specify the requirements and methodologies for performing any of these tests or studies. Unless other concentrations are specified by the EPD, the critical concentration used to determine toxicity in biomonitoring tests will be the effluent instream wastewater concentration (IWC) based on the permitted monthly average flow of the facility and the critical low flow of the receiving stream (7Q10). The endpoints that will be reported are the effluent concentration that is lethal to 50% of the test organisms (LC50) if the test is for acute toxicity and the no observed effect concentration (NOEC) of effluent if the test is for chronic toxicity.

The permittee must eliminate effluent toxicity and supply the EPD with data and evidence to confirm toxicity elimination.

## B.1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Discharge to Savannah River - Outfall #001 (32.127560°, -81.138078°):

The discharge from the water pollution control plant shall be limited and monitored by the permittee as specified below:

| Parameters | Discharge limitations in mg/L (kg/day) unless otherwise specified | | Monitoring Requirements | | |
|---|---|---|---|---|---|
| | Monthly Average | Weekly Average | Measurement Frequency | Sample Type | Sample Location |
| Flow (MGD) | 2.0 | 2.5 | Seven Days/Week | Continuous Recording | Effluent |
| Five-Day Carbonaceous Biochemical Oxygen Demand (1) (2) | 25.0 (189.5) | 40.0 (236.9) | Three Days/Week | Composite | Influent & Effluent |
| Total Suspended Solids (1) | 30 (227) | 45 (284) | Three Days/Week | Composite | Influent & Effluent |
| Ammonia, as N (2) (3) | 17.4 (131.9) | 26.1 (164.9) | Three Days/Week | Composite | Effluent |
| Fecal Coliform Bacteria (#/100 mL) | 200 | 400 | Two Days/Week | Grab | Effluent |

(1) Numeric limits only apply to the effluent.

(2) $CBOD_5$ and ammonia samples shall be taken from the same effluent sample on the same day.

(3) Ammonia, organic nitrogen, nitrate-nitrite, and total kjeldahl nitrogen (TKN) must be analyzed or calculated from the same sample. Organic nitrogen, as N = TKN – ammonia, as N.

(Effluent limitations continued on the next page)

B.1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

Discharge to Savannah River - Outfall #001 (32.127560°, -81.138078°):

| Parameters | Discharge Limitations, mg/L unless otherwise specified | Monitoring Requirements | | |
|---|---|---|---|---|
| | | Measurement Frequency | Sample Type | Sample Location |
| Five-Day Carbonaceous Biochemical Oxygen Demand Removal, Minimum (%) (1) | 85 | See Below | See Below | See Below |
| Total Suspended Solids Removal, Minimum (%) (1) | 85 | See Below | See Below | See Below |
| pH, (Standard Unit), Daily Minimum – Daily Maximum | 6.0 – 9.0 | Seven Days/Week | Grab | Effluent |
| Total Residual Chlorine, Daily Maximum | 0.5 | Seven Days/Week | Grab | Effluent |
| Dissolved Oxygen, Daily Minimum | 2.0 | Seven Days/Week | Grab | Effluent |
| Ultimate Oxygen Demand (lb/day), Monthly Average (2) (3) | | | | |
| January – February | N/A | | | |
| March – October | 3,500 | Three Days/Week | Calculated | Effluent |
| November – December | N/A | | | |
| Total Phosphorus, as P (4) | Report | One Day/Month | Composite | Effluent |
| Orthophosphate, as P (4) | Report | One Day/Month | Composite | Effluent |
| Organic Nitrogen, as N (5) | Report | One Day/Month | Composite | Effluent |
| Nitrate-Nitrite, as N (5) | Report | One Day/Month | Composite | Effluent |
| Total Kjeldahl Nitrogen, as N (5) | Report | One Day/Month | Composite | Effluent |
| Long Term Biochemical Oxygen Demand (6) | Report | See Below | Composite | Effluent |
| Acute Whole Effluent Toxicity (%) (7) | Report LC50 | Annually | Composite | Effluent |

(1) Percent removal shall be calculated from monthly average influent and effluent concentrations. Influent and effluent samples shall be collected at approximately the same time.

(2) Ultimate Oxygen Demand (UOD) shall be calculated using the following equation:
UOD = Effluent Flow x [($CBOD_5$ x 5.52) + ($NH_3$-N x 4.57)] x 8.34; where $CBOD_5$ and $NH_3$ are in mg/L and effluent flow is in MGD. Furthermore, $CBOD_5$ and ammonia samples shall be taken from the same effluent sample on the same day.

(3) Refer to Part I.C.9. SPECIAL CONDITIONS.

(4) Total Phosphorus and Orthophosphate must be analyzed from the same sample.

(3) Ammonia, organic nitrogen, nitrate-nitrite, and total kjeldahl nitrogen (TKN) must be analyzed or calculated from the same sample. Organic nitrogen, as N = TKN – ammonia, as N.

(4) Refer to Part I.C.10. LONG TERM BIOCHEMICAL OXYGEN DEMAND.

(4) Refer to Part I.C.11. ACUTE WHOLE EFFLUENT TOXICITY.

C. MONITORING AND REPORTING

1. REPRESENTATIVE SAMPLING

Samples and measurements of the monitored waste shall represent the volume and nature of the waste stream. The permittee shall maintain a written sampling and monitoring schedule.

2. SAMPLING PERIOD

a. Unless otherwise specified in this permit, quarterly samples shall be taken during the periods January-March, April-June, July-September, and October-December.

b. Unless otherwise specified in this permit, semiannual samples shall be taken during the periods January-June and July-December.

c. Unless otherwise specified in this permit, annual samples shall be taken during the period of January-December.

3. MONITORING PROCEDURES

All analytical methods, sample containers, sample preservation techniques, and sample holding times must be consistent with the techniques and methods listed in 40 CFR Part 136. The analytical method used shall be sufficiently sensitive. EPA-approved methods must be applicable to the concentration ranges of the NPDES permit samples.

4. RECORDING OF RESULTS

For each required parameter analyzed, the permittee shall record:

a. The exact place, date, and time of sampling, and the person(s) collecting the sample. For flow proportioned composite samples, this shall include the instantaneous flow and the corresponding volume of each sample aliquot, and other information relevant to document flow proportioning of composite samples;

b. The dates and times the analyses were performed;

c. The person(s) who performed the analyses;

d. The analytical procedures or methods used; and

e. The results of all required analyses.

5. ADDITIONAL MONITORING BY PERMITTEE

If the permittee monitors required parameters at the locations designated in I.B. more frequently than required, the permittee shall analyze all samples using approved analytical methods specified in I.C.3. The results of this additional monitoring shall be included in calculating and reporting the values on the Discharge Monitoring Report forms. The permittee shall indicate the monitoring frequency on the report. The EPD may require in writing more frequent monitoring, or monitoring of other pollutants not specified in this permit.

6. RECORDS RETENTION

The permittee shall retain records of:

a. All laboratory analyses performed including sample data, quality control data, and standard curves;

b. Calibration and maintenance records of laboratory instruments;

c. Calibration and maintenance records and recordings from continuous recording instruments;

d. Process control monitoring records;

e. Facility operation and maintenance records;

f. Copies of all reports required by this permit;

g. All data and information used to complete the permit application; and

h. All monitoring data related to sludge use and disposal.

These records shall be kept for at least three years. Sludge handling records must be kept for at least five years. Either period may be extended by EPD written notification.

7. PENALTIES

Both the Federal and State Acts provide that any person who falsifies or tampers with any monitoring device or method required under this permit, or who makes any false statement, representation, or certification in any record submitted or required by this permit shall, if convicted, be punished by a fine or by imprisonment or by both. The Acts include procedures for imposing civil penalties for violations or for negligent or intentional failure or refusal to comply with any final or emergency order of the Director of the EPD.

8. WATERSHED PROTECTION PLAN

The permittee has a Watershed Protection Plan that has been approved by EPD. The permittee's approved Watershed Protection Plan shall be enforceable through this permit.

Each June 30th the permittee is to submit the following to EPD:

a. An annual certification statement documenting that the plan is being implemented as approved. The certification statement shall read as follows: "I certify, under penalty of law, that the Watershed Protection Plan is being implemented. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

b. All Watershed Plan data collected during the previous year in an electronic format. This data shall be archived using a digital format such as a spreadsheet developed in coordination with EPD. All archived records, data, and information pertaining to the Watershed Protection Plan shall be maintained permanently.

c. A progress report that provides a summary of the BMPs that have been implemented and documented water quality improvements. The progress report shall also include any necessary changes to the Watershed Protection Plan.

The report and other information shall be submitted to EPD at the address below:

Environmental Protection Division
Watershed Planning and Monitoring Program
2 Martin Luther King Jr. Drive SE
Suite 1152 East
Atlanta, Georgia 30334

9. SPECIAL CONDITIONS

Savannah 5R Alternative Restoration Plan Annual Reporting.

In order to confirm that the facility's discharge was appropriately represented in the Savannah River and Harbor DO Calculator Version 4.0 (June 2010), EPD is requiring annual reporting of the facility's effluent characteristics. The permittee shall submit an annual report which provides all available discharge data over the previous twelve (12) calendar months for the following parameters: discharge date, flow (MGD), 5-day biochemical oxygen demand (mg/L) and/or 5-day carbonaceous biochemical oxygen demand (mg/L), and ammonia, as N (mg/L). Additionally, the permittee shall calculate the arithmetic average, standard deviation, and coefficient of variation (CV) for ultimate oxygen demand (UOD) loading based on the daily discharge data for the critical period of March 1st – October 31st. The coefficient of variation (%) is calculated as the standard deviation divided by the arithmetic average, multiplied by 100. The annual report shall be submitted as a Microsoft Excel worksheet and provided in an electronic format on a compact disc (CD) or universal serial bus (USB).

The report is due no later than the 15th of November to the Georgia EPD Watershed Planning and Monitoring Program at the address below:

Environmental Protection Division
Watershed Planning and Monitoring Program
2 Martin Luther King Jr. Drive SE
Suite 1152 East
Atlanta, Georgia 30334

10. LONG-TERM BIOCHEMICAL OXYGEN DEMAND TESTING

The permittee shall perform a 120-day Long-Term BOD test once during the permit cycle. The test should be performed on an effluent sample collected during the critical period from June 1 through September 30. The results of this test shall be submitted to EPD at least 180 days prior to the permit expiration date to the following address:

Environmental Protection Division
Watershed Planning and Monitoring Program
2 Martin Luther King Jr. Drive SE
Suite 1152 East
Atlanta, Georgia 30334

11. ACUTE WHOLE EFFLUENT TOXICITY (WET)

The permittee must conduct annual acute Whole Effluent Toxicity (WET) tests. The testing is designed to provide dose-response information, expressed as the percent effluent concentration that is lethal to 50% of the test organisms ($LC_{50}$) within the prescribed period of time (24-96 h), or the highest effluent concentration in which survival is not statistically significantly different from the control. The testing must include the most current U.S. Environmental Protection Agency (EPA) acute marine toxicity testing manuals. The referenced document is entitled Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 5th Edition, U.S. EPA, 821-R-02-012, October 2002. Definitive tests must be run on the same samples concurrently using both an invertebrate species (i.e., *Mysidopsis bahia*) and a vertebrate species (i.e., *Menidia beryllina*).

EPD will evaluate the WET tests submitted to determine whether toxicity has been demonstrated. An effluent discharge will not be considered toxic if the Lethal Concentration 50% (LC50) is greater than or equal to 100% effluent. If the test results indicate effluent toxicity, the permittee may be required to perform additional WET tests, and/or to submit a toxicity reduction evaluation upon notification by the EPD and/or the permit may be reopened to incorporate a WET limit.

D. REPORTING REQUIREMENTS

1. The permittee must electronically report the DMR, OMR and additional monitoring data using the web based electronic NetDMR reporting system, unless a waiver is granted by EPD.

   a. The permittee must comply with the Federal National Pollutant Discharge Elimination System Electronic Reporting regulations in 40 CFR §127. The permittee must electronically report the DMR, OMR, and additional monitoring data using the web based electronic NetDMR reporting system online at: https://netdmr.epa.gov/netdmr/public/home.htm

   b. Monitoring results obtained during the calendar month shall be summarized for each month and reported on the DMR. The results of each sampling event shall be reported on the OMR and submitted as an attachment to the DMR.

   c. The permittee shall submit the DMR, OMR and additional monitoring data no later than 11:59 p.m. on the 15th day of the month following the sampling period.

   d. All other reports required herein, unless otherwise stated, shall be submitted to the EPD Office listed on the permit issuance letter signed by the Director of EPD.

2. **No later than December 21, 2020,** the permittee must electronically report the following compliance monitoring data and reports using the online web based electronic system approved by EPD, unless a waiver is granted by EPD:

   a. Sewage Sludge/Biosolids Annual Program Reports provided that the permittee has an approved Sewage Sludge (Biosolids) Plan;

   b. Pretreatment Program Reports provided that the permittee has an approved Industrial Pretreatment Program in this permit;

   c. Sewer Overflow/Bypass Event Reports;

   d. Noncompliance Notification;

   e. Other noncompliance; and

   f. Bypass

3. OTHER REPORTS

   All other reports required in this permit not listed above in Part I.D.2 or unless otherwise stated, shall be submitted to the EPD Office listed on the permit issuance letter signed by the Director of EPD.

4. OTHER NONCOMPLIANCE

All instances of noncompliance not reported under Part I.B. and Part II. A. shall be reported to EPD at the time the monitoring report is submitted.

5. SIGNATORY REQUIREMENTS

All reports, certifications, data or information submitted in compliance with this permit or requested by EPD must be signed and certified as follows:

a. Any State or NPDES Permit Application form submitted to the EPD shall be signed as follows in accordance with the Federal Regulations, 40 C.F.R. 122.22:

1. For a corporation, by a responsible corporate officer. A responsible corporate officer means:

i 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

ii. the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if 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 facility, by either a principal executive officer or ranking elected official.

b. All other reports or requests for information required by the permit issuing authority shall be signed by a person designated in (a) above or a duly authorized representative of such person, if:

1. The representative so authorized is responsible for the overall operation of the facility from which the discharge originates, e.g., a plant manager, superintendent or person of equivalent responsibility;

2. The authorization is made in writing by the person designated under (a) above; and

3. The written authorization is submitted to the Director.

c. Any changes in written authorization submitted to the permitting authority under (b) above which occur after the issuance of a permit shall be reported to the permitting authority by submitting a copy of a new written authorization which meets the requirements of (b) and (b.1) and (b.2) above.

d. Any person signing any document under (a) or (b) above 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."

**PART II**

A. MANAGEMENT REQUIREMENTS

1. PROPER OPERATION AND MAINTENANCE

The permittee shall properly maintain and operate efficiently all treatment or control facilities and related equipment installed or used by the permittee to achieve compliance with this permit. Efficient operation and maintenance include effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. Back-up or auxiliary facilities or similar systems shall be operated only when necessary to achieve permit compliance.

2. PLANNED CHANGE

Any anticipated facility expansions, or process modifications which will result in new, different, or increased discharges of pollutants requires the submission of a new NPDES permit application. If the changes will not violate the permit effluent limitations, the permittee may notify EPD without submitting an application. The permit may then be modified to specify and limit any pollutants not previously limited.

3. TWENTY-FOUR HOUR REPORTING

If, for any reason the permittee does not comply with, or will be unable to comply with any effluent limitations specified in the permittee's NPDES permit, the permittee shall provide EPD with an oral report within 24 hours from the time the permittee becomes aware of the circumstances followed by a written report within five (5) days of becoming aware of such condition. The written submission shall contain the following information:

a. A description of the noncompliance and its cause; and

b. The period of noncompliance, including the exact date and times; or, if not corrected, the anticipated time the noncompliance is expected to continue; and

c. The steps taken to reduce, eliminate, and prevent recurrence of the noncomplying discharge.

4. ANTICIPATED NONCOMPLIANCE NOTIFICATION

The permittee shall give written notice to the EPD at least 10 days before:

a. Any planned changes in the permitted facility; or

b. Any activity which may result in noncompliance with the permit.

5. OTHER NONCOMPLIANCE

The permittee must report all instances of noncompliance not reported under other specific reporting requirements, at the time monitoring reports are submitted. The reports shall contain the information required under conditions of twenty-four hour reporting.

6. OPERATOR CERTIFICATION REQUIREMENTS

The person responsible for the daily operation of the facility must be a Class II Certified Operator in compliance with the Georgia State Board of Examiners for Certification of Water and Wastewater Plant Operators and Laboratory Analysts Act, as amended, and as specified by Subparagraph 391-3-6-.12 of the Rules and Regulations for Water Quality Control. All other operators must have the minimum certification required by this Act.

7. LABORATORY ANALYST CERTIFICATION REQUIREMENTS

Laboratory Analysts must be certified in compliance with the Georgia State Board of Examiners for Certification of Water and Wastewater Treatment Plant Operators and Laboratory Analysts Act, as amended.

8. BYPASSING

Any diversion of wastewater from or bypassing of wastewater around the permitted treatment works is prohibited, except if:

a. Bypassing is unavoidable to prevent loss of life, personal injury, or severe property damage;

b. There are no feasible alternatives to bypassing; and

c. The permittee notifies the EPD at least 10 days before the date of the bypass.

Feasible alternatives to bypassing include use of auxiliary treatment facilities and retention of untreated waste. The permittee must take all possible measures to prevent bypassing during routine preventative maintenance by installing adequate back-up equipment.

The permittee shall operate the facility and the sewer system to minimize discharge of pollutants from combined sewer overflows or bypasses and may be required by the EPD to submit a plan and schedule to reduce bypasses, overflows, and infiltration.

Any unplanned bypass must be reported following the requirements for noncompliance notification specified in II.A.3. The permittee may be liable for any water quality violations that occur as a result of bypassing the facility.

9. POWER FAILURES

If the primary source of power to this water pollution control facility is reduced or lost, the permittee shall use an alternative source of power to reduce or control all discharges to maintain permit compliance.

10. DUTY TO MITIGATE

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge disposal which might adversely affect human health or the environment.

11. NOTICE CONCERNING ENDANGERING WATERS OF THE STATE

Whenever, because of an accident or otherwise, any toxic or taste and color producing substance, or any other substance which would endanger downstream users of the waters of the State or would damage property, is discharged into such waters, or is so placed that it might flow, be washed, or fall into them, it shall be the duty of the person in charge of such substances at the time to forthwith notify EPD in person or by telephone of the location and nature of the danger, and it shall be such person's further duty to immediately take all reasonable and necessary steps to prevent injury to property and downstream users of said water.

Spills and Major Spills:

A "spill" is any discharge of raw sewage by a Publicly Owned Treatment Works (POTW) to the waters of the State.

A "major spill" means:

1. The discharge of pollutants into waters of the State by a POTW that exceeds the weekly average permitted effluent limit for biochemical oxygen demand (5-day) or total suspended solids by 50 percent or greater in one day, provided that the effluent discharge concentration is equal to or greater than 25 mg/L for biochemical oxygen demand or total suspended solids.

2. Any discharge of raw sewage that 1) exceeds 10,000 gallons or 2) results in water quality violations in the waters of the State.

"Consistently exceeding effluent limitation" means a POTW exceeding the 30 day average limit for biochemical oxygen demand or total suspended solids for at least five days out of each seven day period during a total period of 180 consecutive days.

The following specific requirements shall apply to POTW's. If a spill or major spill occurs, the owner of a POTW shall immediately:

a. Notify EPD, in person or by telephone, when a spill or major spill occurs in the system.

b. Report the incident to the local health department(s) for the area affected by the incident. The report at a minimum shall include the following:

1. Date of the spill or major spill;
2. Location and cause of the spill or major spill;
3. Estimated volume discharged and name of receiving waters; and
4. Corrective action taken to mitigate or reduce the adverse effects of the spill or major spill.

c. Post a notice as close as possible to where the spill or major spill occurred and where the spill entered State waters and also post additional notices along portions of the waterway affected by the incident (i.e. bridge crossings, boat ramps, recreational areas, and other points of public access to the affected waterway). The notice at a minimum shall include the same information required in 11(b)(1-4) above. These notices shall remain in place for a minimum of seven days after the spill or major spill has ceased.

d. Within 24 hours of becoming aware of a spill or major spill, the owner of a POTW shall report the incident to the local media (television, radio, and print media). The report shall include the same information required in 11(b)(1-4) above.

e. Within 5 days (of the date of the spill or major spill), the owner of a POTW shall submit to EPD a written report which includes the same information required in 11(b)(1-4) above.

f. Within 7 days (after the date of a major spill), the owner of a POTW responsible for the major spill, shall publish a notice in the largest legal organ of the County where the incident occurred. The notice shall include the same information required in 11(b)(1-4) above.

g. The owner of a POTW shall immediately establish a monitoring program of the receiving waters affected by a major spill or by consistently exceeding an effluent limit, with such monitoring being at the expense of the POTW for at least one year. The monitoring program shall include an upstream sampling point as well as sufficient downstream locations to accurately characterize the impact of the major spill or the consistent exceedence of effluent limitations described in the definition of " Consistently exceeding effluent limitation" above. As a minimum, the following parameters shall be monitored in the receiving stream:

1. Dissolved Oxygen;
2. Fecal Coliform Bacteria;
3. pH;
4. Temperature; and
5. Other parameters required by the EPD.

The monitoring and reporting frequency as well as the need to monitor additional parameters, will be determined by EPD. The results of the monitoring will be provided by the POTW owner to EPD and all downstream public agencies using the affected waters as a source of a public water supply.

h. Within 24 hours of becoming aware of a major spill, the owner of a POTW shall provide notice of a major spill to every county, municipality, or other public agency whose public water supply is within a distance of 20 miles downstream and to any others which could be potentially affected by the major spill.

12. UPSET PROVISION

Provision under 40 CFR 122.41(n)(1)-(4), regarding "Upset" shall be applicable to any civil, criminal, or administrative proceeding brought to enforce this permit.

B. RESPONSIBILITIES

1. DUTY TO COMPLY

The permittee must comply with all conditions of this permit. Any permit noncompliance is a violation of the Federal Clean Water Act, State Act, and the State Rules, and is grounds for:

a. Enforcement action;

b. Permit termination, revocation and reissuance, or modification; or

c. Denial of a permit renewal application.

2. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE

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

3. INSPECTION AND ENTRY

The permittee shall allow the Director of the EPD, the Regional Administrator of EPA, and their authorized representatives, agents, or employees after they present credentials to:

a. Enter the permittee's premises where a regulated activity or facility is located, or where any records required by this permit are kept;

b. Review and copy any records required by this permit;

c. Inspect any facilities, equipment, practices, or operations regulated or required by this permit; and

d. Sample any substance or parameter at any location.

4. DUTY TO PROVIDE INFORMATION

The permittee shall furnish any information required by the EPD to determine whether cause exists to modify, revoke and reissue, or terminate this permit or to determine compliance with this permit. The permittee shall also furnish the EPD with requested copies of records required by this permit.

5. TRANSFER OF OWNERSHIP

A permit may be transferred to another person by a permittee if:

a. The permittee notifies the Director in writing at least 30 days in advance of the proposed transfer;

b. An agreement is written containing a specific date for transfer of permit responsibility including acknowledgment that the existing permittee is liable for violations up to that date, and that the new permittee is liable for violations from that date on. This agreement must be submitted to the Director at least 30 days in advance of the proposed transfer; and

c. The Director does not notify the current permittee and the new permittee within 30 days of EPD intent to modify, revoke and reissue, or terminate the permit. The Director may require that a new application be filed instead of agreeing to the transfer of the permit.

6. AVAILABILITY OF REPORTS

Except for data determined to be confidential by the Director of EPD under O.C.G.A. 12-5-26 or by the Regional Administrator of EPA under the Code of Federal Regulations, Title 40, Part 2, all reports prepared to comply with this permit shall be available for public inspection at an EPD office. Effluent data, permit applications, permittees' names and addresses, and permits shall not be considered confidential.

7. PERMIT ACTIONS

This permit may be modified, terminated, or revoked and reissued in whole or in part during its term for causes including, but not limited to:

a. Permit violations;

b. Obtaining this permit by misrepresentation or by failure to disclose all relevant facts;

c. Changing any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge;

d. Changes in effluent characteristics; and

e. Violations of water quality standards.

The filing of a request by the permittee for permit modification, termination, revocation and reissuance, or notification of planned changes or anticipated noncompliance does not negate any permit condition.

8. CIVIL AND CRIMINAL LIABILITY

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

9. PROPERTY RIGHTS

The issuance of this permit does not convey any property rights of either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, or any infringement of Federal, State or local laws or regulations.

10. DUTY TO REAPPLY

The permittee shall submit an application for permit reissuance at least 180 days before the expiration date of this permit. The permittee shall not discharge after the permit expiration date. To receive authorization to discharge beyond the expiration date, the permittee shall submit the information, forms, and fees required by the EPD no later than 180 days before the expiration date.

11. CONTESTED HEARINGS

Any person aggrieved or adversely affected by any action of the Director of the EPD shall petition the Director for a hearing within 30 days of notice of the action.

12. SEVERABILITY

The provisions of this permit are severable. If any permit provision or the application of any permit provision to any circumstance is held invalid, the provision does not affect other circumstances or the remainder of this permit.

13. 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 form to the Director, it shall promptly submit such facts or information.

14. PREVIOUS PERMITS

All previous State wastewater permits issued to this facility, whether for construction or operation, are hereby revoked on the effective date of this permit. This action is taken to assure compliance with the Georgia Water Quality Control Act, as amended, and the Federal Clean Water Act, as amended. Receipt of the permit constitutes notice of such action. The conditions, requirements, terms and provisions of this permit authorizing discharge under the National Pollutant Discharge Elimination System govern discharges from this facility.

**PART III**

INDUSTRIAL PRETREATMENT PROGRAM FOR PUBLICLY OWNED TREATMENT WORKS (POTW)

1. The permittee may establish and operate an approved industrial pretreatment program.

2. If the EPD determines that the permittee is required to develop a local industrial pretreatment program, the permittee will be notified in writing. The permittee shall immediately begin development of an industrial pretreatment program and shall submit it to the EPD for approval no later than one year after the notification.

3. During the interim period between determination that a program is needed and approval of the program, all industrial pretreatment permits shall be issued by the EPD.

4. The permittee shall notify the EPD of all industrial users connected to the system or proposing to connect to the system from the date of issuance of this permit.

5. Implementation of the Pretreatment Program developed by the State can be delegated to the permittee following the fulfillment of requirements detailed in 391-3-6-.09 of the Rules and Regulations for Water Quality Control.

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

The Georgia Environmental Protection Division proposes to issue an NPDES permit to the applicant identified below. The draft permit places conditions on the discharge of pollutants from the wastewater treatment plant to waters of the State.

**Technical Contact:**

Kelli-Ann Sottile, Environmental Engineer
*kelli-ann.sottile@dnr.ga.gov*
404-463-4945

**Draft permit:**

- ☐ First issuance
- ☐ Reissuance with no or minor modifications from previous permit
- ☒ Reissuance with substantial modifications from previous permit
- ☐ Modification of existing permit
- ☒ Requires EPA review

## 1. FACILITY INFORMATION

### 1.1 NPDES Permit No.: GA0031038

### 1.2 Name and Address of Owner/Applicant

Garden City
100 Central Avenue
Garden City, Georgia 31418

### 1.3 Name and Address of Facility

Garden City Water Pollution Control Plant
1 Bud Brown Drive
Garden City, Georgia 31408

### 1.4 Location and Description of the Discharge (as reported by applicant)

| Outfall # | Latitude (°) | Longitude (°) | Receiving Waterbody |
|---|---|---|---|
| 001 | 32.127560 | -81.138078 | Savannah River |

### 1.5 Permitted Design Capacity

2.0 MGD

### 1.6 SIC Code and Description

SIC Code 4952 – Sewerage systems: Establishments primarily engaged in the collection and disposal of wastes conducted through a sewer system, including such treatment processes as may be provided.

### 1.7 Description of the Water Pollution Control Plant

*Wastewater treatment:*

The treatment process consists of screening, biological treatment (activated sludge with aeration basins for nutrients removal), secondary clarification, chlorination, and reaeration. Treated effluent is discharged into the Savannah River.

*Solids processing:*

Sludge is dewatered using a belt filter press than sent to a landfill for ultimate disposal.

### 1.8 Type of Wastewater Discharge

| | | | |
|---|---|---|---|
| ☐ | Process wastewater | ☐ | Stormwater |
| ☒ | Domestic wastewater | ☐ | Combined (Describe) |
| ☐ | Other (Describe) | | |

### 1.9 Characterization of Effluent Discharge (as reported by applicant)

| Effluent Characteristics (as Reported by Applicant) | Maximum Daily Value | Average Daily Value |
|---|---|---|
| Flow (MGD) | 2.50 | 1.04 |
| Five-Day Biochemical Oxygen Demand (mg/L) | 5.75 | 4.08 |
| Total Suspended Solids (mg/L) | 4.92 | 2.58 |
| Fecal Coliform Bacteria (#/100mL) | 79 | 16 |
| Ammonia, as N (mg/L) | 0.83 | 0.20 |
| Total Phosphorus, as P (mg/L) | 3.25 | 2.31 |

## 2. APPLICABLE REGULATIONS

### 2.1 State Regulations

Chapter 391-3-6 of the Georgia Rules and Regulations for Water Quality Control

### 2.2 Federal Regulations

| Source | Activity | Applicable Regulation |
|---|---|---|
| Municipal | Municipal Effluent Discharge | 40 CFR 122<br>40 CFR 125<br>40 CFR 133 |
| | Non-Process Water Discharges | 40 CFR 122<br>40 CFR 125 |
| | Municipal Sludge Use and Disposal | 40 CFR 122<br>40 CFR 257<br>40 CFR 501 & 503 |

## 3. WATER QUALITY STANDARDS & RECEIVING WATERBODY INFORMATION

Section 301(b)(1)(C) of the Clean Water Act (CWA) requires the development of limitations in permits necessary to meet water quality standards. Federal Regulations 40 CFR 122.4(d) require that conditions in NPDES permits ensure compliance with the water quality standards which are composed of use classifications, numeric and or narrative water quality criteria and an anti-degradation policy. The use classification system designates the beneficial uses that each waterbody is expected to achieve, such as drinking water, fishing, or recreation. The numeric and narrative water quality criteria are deemed necessary to support the beneficial use classification for each water body. The antidegradation policy represents an approach to maintain and to protect various levels of water quality and uses.

### 3.1 Receiving Waterbody Classification and Information – Savannah River:

**Specific Water Quality Criteria for Classified Water Usage [391-3-6-.03(6)]:**

***Fishing:*** Propagation of Fish, Shellfish, Game and Other Aquatic Life; secondary contact recreation in and on the water; or for any other use requiring water of a lower quality.

(i) Dissolved Oxygen: A daily average of 6.0 mg/L and no less than 5.0 mg/L at all times for water designated as trout streams by the Wildlife Resources Division. A daily average of 5.0 mg/L and no less than 4.0 mg/L at all times for waters supporting warm water species of fish.

(ii) pH: Within the range of 6.0 - 8.5.

(iii) Bacteria:

1. For the months of May through October, when water contact recreation activities are expected to occur, fecal coliform not to exceed a geometric mean of 200 per 100 mL based on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours. Should water quality and sanitary studies show fecal coliform levels from non-human sources exceed 200/100 mL (geometric mean) occasionally, then the allowable geometric mean fecal coliform shall not exceed 300 per 100 mL in lakes and reservoirs and 500 per 100 mL in free flowing freshwater streams. For the months of November through April, fecal coliform not to exceed a geometric

mean of 1,000 per 100 mL based on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours and not to exceed a maximum of 4,000 per 100 mL for any sample. The State does not encourage swimming in these surface waters since a number of factors which are beyond the control of any State regulatory agency contribute to elevated levels of bacteria.

2. For waters designated as shellfish growing areas by the Georgia DNR Coastal Resources Division, the requirements will be consistent with those established by the State and Federal agencies responsible for the National Shellfish Sanitation Program. The requirements are found in National Shellfish Sanitation Program Guide for the Control of Molluscan Shellfish, 2007 Revision (or most recent version), Interstate Shellfish Sanitation Conference, U.S. Food and Drug Administration.

(iv) Temperature: Not to exceed 90°F. At no time is the temperature of the receiving waters to be increased more than 5°F above intake temperature except that in estuarine waters the increase will not be more than 1.5°F. In streams designated as primary trout or smallmouth bass waters by the Wildlife Resources Division, there shall be no elevation of natural stream temperatures. In streams designated as secondary trout waters, there shall be no elevation exceeding 2°F natural stream temperatures.

***Coastal Fishing***: This classification will be applicable to specific sites when so designated by the Environmental Protection Division. For waters designated as "Coastal Fishing", site specific criteria for dissolved oxygen will be assigned. All other criteria and uses for the fishing use classification will apply for coastal fishing.

(i) Dissolved Oxygen: A daily average of 5.0 mg/L and no less than 4.0 mg/L at all times. If it is determined that the "natural condition" in the waterbody is less than the values stated above, then the criteria will revert to the "natural condition" and the water quality standard will allow for a 0.1 mg/L deficit from the "natural" dissolved oxygen value. Up to a 10% deficit will be allowed if it is demonstrated that resident aquatic species shall not be adversely affected.

### 3.2 Ambient Information

| Outfall ID | 7Q10 (cfs) | 1Q10 (cfs) | Annual Average Flow (cfs) | Hardness (mg $CaCO_3$/L) | Upstream Total Suspended Solids (mg/L) |
|---|---|---|---|---|---|
| 001 | Tidal | Tidal | Tidal | 25 [(1)] | 10 [(2)] |

[(1)] Not available. A conservative value of 25 mg/L will be used for the reasonable potential analysis calculations.

[(2)] Not available. A conservative value of 10 mg/L will be used for the reasonable potential analysis calculations.

## 3.3 Georgia 305(b)/303(d) List Documents

| | | | | | | |
|---|---|---|---|---|---|---|
| Savannah River | Ebenezer Creek to Tide Gate | Savannah | Supporting | | 25 | 1 |
| GA030601090309 | Effingham, Chatham | Drinking Water, Coastal Fishing | 20 | | Miles | |

The Savannah River is listed on the 2016 305(b)/303(d) list as supporting its designated use (coastal fishing).

The Savannah Harbor, which is directly downstream of the discharge, however, is listed as not supporting its designated use for dissolved oxygen. See Section 3.4 below for details regarding Total Maximum Daily Loads and 5R Plan.

## 3.4 5R Plan

In 2006 EPA established a TMDL for the Savannah Harbor from SR 25 (old US Hwy 17) to Elba Island Cut. This segment, R030601090318 (HUC12:03061090307), was identified as impaired for dissolved oxygen (DO) based on its failure to meet the State of Georgia's designated use of Coastal Fishing. The 2006 TMDL has since been superseded following the 2010 revision of Georgia's DO water quality criterion and the subsequent approval of the *Subcategory 5R Documentation For Point Source Dissolved Oxygen Impaired Water in the Savannah River Basin*; hereafter 5R Plan. Development of the documentation behind the 5R Plan was a result of extensive collaboration between the Georgia Environmental Protection Division (GA EPD), the South Carolina Department of Health and Environmental Control (SC DHEC), the Environmental Protection Agency (EPA), a Technical Modeling Advisory Group, and the Savannah River/Harbor Dischargers Group.

The portions of the Savannah River Basin included in the 5R Plan are the middle and lower watersheds encompassing the area from Thurmond Dam to the Atlantic Ocean. The hydrodynamic and water quality models used to analyze the oxygen-demanding pollutant loadings extend upstream on the Savannah River to River Mile 61.0 near Clyo, Georgia, at United States Geologic Survey (USGS) station 02198500. The downstream end of the models extends approximately 25 miles offshore from Oyster Island to cover the navigational channel of the Savannah Harbor. The models cover the Savannah River, the Front River, the Middle River, the Little Back River, the Back River, the South Channel, and the offshore portions in the Atlantic Ocean.

The process of developing this 5R Plan for the Savannah Harbor included developing three computer modeling tools: (1) the Savannah River Model, (2) the Savannah Harbor Model, and (3) the Savannah River and Harbor DO Calculator. Georgia EPD developed the Savannah River Model for the Savannah River from the Augusta Canal diversion dam to the USGS gaging station (02198760) above Hardeeville, South Carolina. The Savannah River Model used for this 5R Plan is the hydrodynamic and water quality model developed using GA RIV-1 for the 2006 TMDL. The Savannah River Model includes all major point sources to the River and simulates the effects municipal and industrial discharges have on both water quality and flow and was calibrated to available data. The output of the Savannah River Model is later used as the input for the Savannah Harbor Model. The Savannah Harbor Model used for the 5R Plan was built upon the Enhanced USACE Model that was finalized on January 30, 2006 and the 2006 Harbor TMDL Model developed by EPA Region 4 (Tetra Tech 2004, Tetra Tech 2006, EPA

2010). Combined, the Savannah River and Harbor models were used to develop the Savannah River and Harbor DO Calculator.

The Savannah River and Harbor DO Calculator was developed as an efficient method to calculate the effect various combinations of wastewater effluent dischargers have on the DO levels in the Savannah River and Harbor. In order to run the calculator, the 5R Plan identified 24 permitted facilities that discharge oxygen-demanding substances. Of these 24 facilities, eleven are considered to discharge to the harbor and thirteen are considered to discharge to the river. Using the calculator, wasteload allocations were developed for the 24 dischargers to establish limits for Ultimate Oxygen Demand (UOD) during the critical months of March – October.

The 5R plan established the following equation for calculating UOD:

$$UOD = CBODu + NBODu$$

$$CBODu = CBOD5 \times f_{ratio};\ NBODu = NH3\text{–}N \times 4.57\ (\text{conversion factor})$$

The Garden City WPCP was identified as an NPDES permitted facility that discharges oxygen demanding substances to the Savannah Harbor. The ultimate oxygen demand (UOD) allocated to the Garden City WPCP is 3500 lb/day for the critical months of March-October. The UOD shall be calculated using the following equation (using an $f_{ratio}$ for the Garden City WPCP of 5.52.):

$$UOD = Q_{Effluent} \times [(CBOD_5 \times 5.52) + (NH_3\text{-}N \times 4.57)] \times 8.34$$

The Savannah Harbor has been the subject of extensive study, including extensive data collection, and model development by various state and federal agencies. The modeling analysis used to develop the effluent limits for the point source discharges to the Savannah River and Harbor were based upon an abundance of data, a calibrated and verified three dimensional model, and conservative critical condition and permitting assumptions. For these reasons, based on the data and information available, once the effluent limitations and special conditions contained in all discharge permits for facilities in the Savannah River Basin are achieved, the discharge will not cause or contribute to exceedances of the Georgia and South Carolina water quality standards for dissolved oxygen. However, if it is determined that a dissolved oxygen deficit exits in the Savannah Harbor that contravenes the Georgia or South Carolina water quality standards for dissolved oxygen and is attributable to point source dischargers, then the regulatory agencies will work with all responsible parties to evaluate and implement viable options that will be incorporated into an updated 5R adaptive management plan and appropriate permits to ensure full attainment of the water quality standards.

## 3.5 Wasteload Allocation (WLA)

WLAs for reissuance was issued on October 23, 2017. Refer to *Appendix A* of the Fact Sheet for a copy of the WLAs.

## 4. EFFLUENT LIMITS AND PERMIT CONDITIONS

### 4.1 Reasonable Potential Analysis (RP)

Title 40 of the Federal Code of Regulations, 40 CFR 122.44(d) requires delegated States to develop procedures for determining whether a discharge causes, has the reasonable potential to cause, or contributes to an instream excursion above a narrative or numeric criteria within a State water. If such reasonable potential is determined to exist, the NPDES permit must contain pollutant effluent limits and/or effluent limits for whole effluent toxicity. Georgia's Reasonable Potential Procedures are based on Georgia's Rules and Regulations for Water Quality Control (Rules), Chapter 391-3-6-.06(4)(d)5. The chemical specific and biomonitoring data and other pertinent information in EPD's files will be considered in accordance with the review procedures specified in the Rules in the evaluation of a permit application and in the evaluation of the reasonable potential for an effluent to cause an exceedance in the numeric or narrative criteria.

Refer to Section 4.2 for reasonable potential analysis on effluent toxicity.

Refer to Section 4.6 for reasonable potential analysis on toxic and manmade pollutants.

### 4.2 Whole Effluent Toxicity (WET)

Acute WET tests are required for facilities with an IWC less than or equal to 1% and without a diffuser at the outfall. Acute WET tests measure the effect of wastewater on test organism survival. The tests are designed to provide dose-response information, expressed as the percent effluent concentration that is lethal to 50% of the test organisms ($LC_{50}$) within the prescribed period of time (24-96 h), or the highest effluent concentration in which survival is not statistically significantly different from the control. Guidelines for acute marine WET testing can be found in EPA's *Methods for Measuring Acute Toxicity of Effluent and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, October 2002, EPA-821-R-02-012.*

The permittee submitted the results of four WET tests with the application. For all tests, the survival of *Ceriodaphnia dubia* and *Pimephales promelas* was 100% at 100% effluent; therefore, effluent is not considered toxic. Refer to WET Test results summary in the table below.

| Test | Sample Date | At 100% Effluent | |
|---|---|---|---|
| | | Ceriodaphnia dubia Survival (%) | Pimephales promelas Survival (%) |
| 1 | Dec 2013 | 100 | 100 |
| 2 | Oct 2015 | 100 | 100 |
| 3 | May 2016 | 100 | 100 |
| 4 | July 2016 | 100 | 100 |

EPD is including annual WET monitoring for all facilities with a permitted discharge of 1.0 MGD or greater; therefore, annual WET testing has been included in the draft permit. For all facilities with an IWC less than or equal to 1% and without an outfall equipped with a diffuser, acute testing is required; therefore, acute testing requirements are identified in the draft permit. Additionally, since the Savannah River has a designated use of Coastal Fishing, the permit specifies that marine organisms shall be used in all WET testing.

For acute testing, the results will not be considered toxic is the Lethal Concentration 50% (LC50) is greater than or equal to 100% effluent. EPD will evaluate the WET tests submitted to determine whether toxicity has been demonstrated. If the test results indicate effluent toxicity, the permittee may be required to perform additional WET tests in accordance with Part I.C.5 of the permit and/or the permit may be modified to include an acute WET limit.

## 4.3 Applicable Water Quality Based Effluent Limitations (WQBELs)

When drafting a National Pollutant Discharge Elimination System (NPDES) permit, a permit writer must consider the impact of the proposed discharge on the quality of the receiving water. Water quality goals for a waterbody are defined by state water quality standards. By analyzing the effect of a discharge on the receiving water, a permit writer could find that technology-based effluent limitations (TBELs) alone will not achieve the applicable water quality standards. In such cases, the Clean Water Act (CWA) and its implementing regulations require development of water quality-based effluent limitations (WQBELs). WQBELs help meet the CWA objective of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters and the goal of water quality that provides for the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water (*fishable/swimmable*).

WQBELs are designed to protect water quality by ensuring that water quality standards are met in the receiving water and downstream uses are protected. On the basis of the requirements of Title 40 of the *Code of Federal Regulations* (CFR) 125.3(a), additional or more stringent effluent limitations and conditions, such as WQBELs, are imposed when TBELs are not sufficient to protect water quality.

The term *pollutant* is defined in CWA section 502(6) and § 122.2. Pollutants are grouped into three categories under the NPDES program: conventional, toxic, and nonconventional. Conventional pollutants are those defined in CWA section 304(a)(4) and § 401.16 ($BOD_5$, TSS, fecal coliform, pH, and oil and grease). Toxic (priority) pollutants are those defined in CWA section 307(a)(1) and include 126 metals and manmade organic compounds. Nonconventional pollutants are those that do not fall under either of the above categories (conventional or toxic pollutants) and include parameters such as chlorine, ammonia, nitrogen, phosphorus, chemical oxygen demand (COD), and whole effluent toxicity (WET).

## 4.4 Conventional Pollutants

| Pollutants of Concern | Basis |
|---|---|
| pH | The Savannah River is tidally influenced; therefore, the Instream Wastewater Concentration (IWC) cannot be calculated using low flow conditions. The IWC of 0.2% has been calculated assuming a dilution factor of 600:1.<br><br>When the IWC is less than 50%, there is no reasonable potential to cause or contribute to violation of the instream Georgia Water Quality Standard; therefore, pH limits of 6.0-9.0 SU (daily minimum-daily maximum) were included in the draft permit. |
| Five-Day Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) | The Garden City WPCP was identified in the 5R Plan as an NPDES permitted facility that discharges oxygen demanding substances to the Savannah Harbor.<br><br>In order to calculate the ultimate oxygen demand (UOD), the facility will be required to monitor $CBOD_5$ instead of $BOD_5$. 40 CFR 133.102 states that when $CBOD_5$ is substituted for $BOD_5$, the $CBOD_5$ limit shall not exceed 25 mg/L (monthly average) and 40 mg/L (weekly average).<br><br>In accordance with the 5R Plan, a reduction in loading during the months of November – February is not required. The monthly average $CBOD_5$ limit of 25 mg/L, when combined with the proposed $NH_3$ limit, is protective of the instream Water Quality Standard for dissolved oxygen described in Section 3.1 above.<br><br>In accordance with the 5R Plan, a reduction in loading during the months of March – October is required. Although a monthly average $CBOD_5$ limit of 25 mg/L has been maintained in the draft permit, a monthly average Ultimate Oxygen Demand (UOD) limit has also been included to meet the 5R requirements (refer to Section 4.5). |
| Total Suspended Solids (TSS) | A review of the DMR indicates that the plant is able to consistently meet the monthly average TSS limit of 30 mg/L; therefore this technology-based limit has been maintained in the draft permit. |

| | |
|---|---|
| Fecal Coliform Bacteria (FCB) | The monthly average FCB limit of 200 #/100mL is in accordance with the instream Water Quality Standards in Section 3.1 above. |

## 4.5 Nonconventional Pollutants

| Pollutants of Concern | Basis |
|---|---|
| Total Residual Chlorine (TRC) | Chlorine is used for disinfection. A daily maximum TRC limit of 0.5 mg/L has been determined using the US EPA's chronic TRC criterion of 11 µg/L in the receiving stream after dilution. Refer to Section 4.7.6 below for calculations. |
| Dissolved Oxygen (DO) | The daily minimum DO limit of 2.0 mg/L in the current permit was developed using the 2006 Savannah Harbor TMDL, which is based on water quality models for the Savannah River and Harbor and is protective of the instream Water Quality Standards for dissolved oxygen described in Section 3.1 above. |
| Ammonia ($NH_3$) | The Garden City WPCP was identified in the 5R Plan as an NPDES permitted facility that discharges oxygen demanding substances to the Savannah Harbor.<br><br>In accordance with the 5R Plan, a reduction in loading during November – February is not required. The monthly average $NH_3$ limit of 17.4 mg/L, when combined with the proposed $CBOD_5$ limit, is protective of the instream Water Quality Standard for dissolved oxygen as described in Section 3.1.<br><br>In accordance with the 5R Plan, a reduction in loading during March – October is required. Although a monthly average $NH_3$ limit of 17.4 mg/L has been maintained in the draft permit, a monthly average Ultimate Oxygen Demand (UOD) limit has also been included to meet the 5R requirements (refer to UOD below).<br><br>Using a dilution ratio of 600:1 and ammonia limit of 17.4 mg/L (monthly average), the calculated instream ammonia concentration is less than the instream chronic criterion (refer to *Appendix C*); therefore, the proposed $NH_3$ limit also meets EPD's permitting strategy to address Ammonia toxicity in State waters. |

| | |
|---|---|
| Ultimate Oxygen Demand (UOD) | The Garden City WPCP was identified in the 5R Plan as an NPDES permitted facility that discharges oxygen demanding substances to the Savannah Harbor.<br><br>In accordance with the 5R Plan, a reduction in loading during March – October is required; therefore, a UOD limit of 3,500 lb/day (monthly average) for the critical months has been included in the permit. UOD shall be calculated as follows:<br><br>$UOD = Q_{Effluent} \times [(CBOD_5 \times 5.52) + (NH_3\text{-}N \times 4.57)] \times 8.34$<br><br>A review of Discharge Monitoring Reports (DMRs) from the last 24 months show that the facility can meet the proposed limitation without process modification; therefore, a compliance schedule to meet the new limitation has not been included in the permit. |
| Total Phosphorus (TP) | Total phosphorus monitoring has been included in the draft permit in accordance with EPD's Strategy for Addressing Phosphorus in NPDES Permitting. |
| Orthophosphate, Total Kjeldahl Nitrogen (TKN), Organic Nitrogen, Nitrate-Nitrite | Orthophosphate, TKN, organic nitrogen, and nitrate-nitrite monitoring has been included in the draft permit. The data will be used to determine nutrient speciation and to quantify nutrient loadings in the Savannah River Basin. |

### 4.6 Toxics & Manmade Organic Compounds

The permittee submitted the results of four Priority Pollutant Scans (PPS) with the permit application. All pollutants were "non-detect" except for the following:

| Pollutants of Concern | Basis |
|---|---|
| Total Recoverable Chromium | This parameter was evaluated and its instream concentration was found to be less than 50% of the acute and chronic instream water quality standards. Refer to *Appendix B* of the Fact Sheet for reasonable potential evaluations.<br><br>In accordance with EPD reasonable potential procedures, chromium is not considered a pollutant of concern and additional monitoring is not required. |

| | |
|---|---|
| Total Recoverable Copper | This parameter was evaluated and its instream concentration was found to be less than 50% of the acute and chronic instream water quality standards. Refer to *Appendix B* of the Fact Sheet for reasonable potential evaluations.<br><br>In accordance with EPD reasonable potential procedures, copper is not considered a pollutant of concern and additional monitoring is not required. |
| Total Recoverable Mercury | This parameter was evaluated and its instream concentration was found to be less than 50% of the acute and chronic instream water quality standards. Refer to *Appendix B* of the Fact Sheet for reasonable potential evaluations.<br><br>In accordance with EPD reasonable potential procedures, mercury is not considered a pollutant of concern and additional monitoring is not required. |
| Total Recoverable Nickel | This parameter was evaluated and its instream concentration was found to be less than 50% of the acute and chronic instream water quality standards. Refer to *Appendix B* of the Fact Sheet for reasonable potential evaluations.<br><br>In accordance with EPD reasonable potential procedures, nickel is not considered a pollutant of concern and additional monitoring is not required. |
| Total Recoverable Zinc | This parameter was evaluated and its instream concentration was found to be less than 50% of the acute and chronic instream water quality standards. Refer to *Appendix B* of the Fact Sheet for reasonable potential evaluations.<br><br>In accordance with EPD reasonable potential procedures, zinc is not considered a pollutant of concern and additional monitoring is not required. |
| Cyanide | This parameter was evaluated and its instream concentration was found to be less than 50% of the instream water quality standards. Refer to *Appendix B* of the Fact Sheet for reasonable potential evaluations.<br><br>In accordance with EPD reasonable potential procedures, cyanide is not considered a pollutant of concern and additional monitoring is not required. |

| | |
|---|---|
| Acetone | Georgia Rules and Regulations do not have an instream criteria concentration for acetone. Instead, according to Section 391-3-6-.06(4)(d)5(iii), whole effluent biomonitoring is used to develop either a site-specific criteria or a whole effluent toxicity limit if toxicity is found to be present.<br><br>The effluent did not exhibit any toxicity (Refer to Section 4.2 above); therefore, acetone is not considered to be present at levels of concern and additional monitoring is not required. |
| Bromodichloromethane | This parameter was evaluated and its instream concentration was found to be less than 50% of the instream water quality standards. Refer to *Appendix B* of the Fact Sheet for reasonable potential evaluations.<br><br>In accordance with EPD reasonable potential procedures, bromodichloromethane is not considered a pollutant of concern and additional monitoring is not required. |
| Chloroform | This parameter was evaluated and its instream concentration was found to be less than 50% of the instream water quality standards. Refer to *Appendix B* of the Fact Sheet for reasonable potential evaluations.<br><br>In accordance with EPD reasonable potential procedures, chloroform is not considered a pollutant of concern and additional monitoring is not required. |
| Dibromochloromethane | This parameter was evaluated and its instream concentration was found to be less than 50% of the instream water quality standards. Refer to *Appendix B* of the Fact Sheet for reasonable potential evaluations.<br><br>In accordance with EPD reasonable potential procedures, dibromochloromethane is not considered a pollutant of concern and additional monitoring is not required. |

## 4.7 Calculations for Effluent Limits

### *4.7.1 Instream Waste Concentration (IWC):*

$$\text{IWC} = \frac{1}{\textit{Dilution Factor}} \%$$

$$= \frac{1}{600}$$

$$= 0.2\ \%$$

### *4.7.2 Flow:*

- *Weekly Average Flow:*

$Q_{Weekly}$ = $Q_{Monthly}$ (MGD) x 1.25

= 2.0 x 1.25

= 2.5 MGD

Q = Flow
C = Concentration
M = Mass

### *4.7.3 Five-Day Carbonaceous Biochemical Oxygen Demand:*

- *Monthly Average Mass Loading:*

$$M_{Monthly} = \frac{Q_{Monthly}\,(MGD) \times [C]_{Monthly}\,(mg/L \text{ or } ppm) \times 8.34\,(lbs/gal)}{2.2\,(lbs/Kg)}$$

$$= \frac{2.0 \times 25.0 \times 8.34}{2.2}$$

= 189.5 kg/day

- *Weekly Average Mass Loading:*

$$M_{Weekly} = \frac{Q_{Weekly}\,(MGD) \times [C]_{Monthly}\,(mg/L \text{ or } ppm) \times 8.34\,(lbs/gal)}{2.2\,(lbs/Kg)}$$

$$= \frac{2.5 \times 25.0 \times 8.34}{2.2}$$

= 236.9 kg/day

### *4.7.4 Total Suspended Solids:*

- *Weekly Average Concentration:*

$[C]_{Weekly} = [C]_{Monthly}\ (mg/L) \times 1.5$

$= 30 \times 1.5$

$= 45\ mg/L$

- *Monthly Average Mass Loading:*

$$M_{Monthly} = \frac{Q_{Monthly}\ (MGD) \times [C]_{Monthly}\ (mg/L \text{ or } ppm) \times 8.34\ (lbs/gal)}{2.2\ (lbs/Kg)}$$

$$= \frac{2.0 \times 30 \times 8.34}{2.2}$$

$= 227\ kg/day$

- *Weekly Average Mass Loading:*

$$M_{Weekly} = \frac{Q_{Weekly}\ (MGD) \times [C]_{Monthly}\ (mg/L \text{ or } ppm) \times 8.34\ (lbs/gal)}{2.2\ (lbs/Kg)}$$

$$= \frac{2.5 \times 30 \times 8.34}{2.2}$$

$= 284\ kg/day$

### *4.7.5 Fecal Coliform Bacteria:*

- *Weekly Average Concentration:*

$C_{Weekly} = C_{Monthly}\ (\#/100\ mL) \times 2$

$= 200 \times 2$

$= 400\ \#/100\ mL$

### *4.7.6. Total Residual Chlorine (TRC):*

- *Daily Maximum Concentration:*

$$[TRC]_{Effluent} = \frac{1}{IWC} \times [TRC]_{Stream}$$

$$= \frac{1}{0.002} \times 0.011$$

$$= 5.5 \text{ mg/L}$$

In accordance with the EPD permitting strategy for Total Residual Chlorine, a daily maximum effluent limitation of 0.5 mg/L has been included in the permit.

### *4.7.7 Ammonia:*

- *Toxicity Analysis:*

The chronic criterion based on Villosa iris (rainbow mussel) is determined as follows:

$$\text{CCC} = 0.8876 \times \left(\frac{0.0278}{1+10^{7.688-\text{pH}}} + \frac{1.1994}{1+10^{\text{pH}-7.688}}\right) \times 2.126 \times 10^{0.028 \times (20-\text{MAX}(T,7))} \text{ mg/L}$$

Where: pH : pH of receiving stream and discharge
T : Temperature of receiving stream
CCC : Chronic Continuous Concentration

The ammonia effluent limit (monthly average) is then calculated as follows:

$$[NH_3]_{\text{Effluent}} = \frac{\left(Q_{\text{Effluent}}(\text{ft}^3/\text{sec}) + 7Q10(\text{ft}^3/\text{sec})\right) \times \text{CCC}(\text{mg/L}) - 7Q10(\text{ft}^3/\text{sec}) \times [NH_3]_{\text{Stream Background}}(\text{mg/L})}{Q_{\text{Effluent}}(\text{ft}^3/\text{sec})}$$

Refer to *Appendix C* for detailed calculations.

- *Weekly Average Concentration:*

$$[C]_{\text{Weekly}} = [C]_{\text{Monthly}} (\text{mg/L}) \times 1.5$$

$$= 17.4 \times 1.5$$

$$= 26.1 \text{ mg/L}$$

- *Monthly Average Mass Loading:*

$$M_{\text{Monthly}} = \frac{Q_{\text{Monthly}}(\text{MGD}) \times [C]_{\text{Monthly}}(\text{mg/L or ppm}) \times 8.34(\text{lbs/gal})}{2.2(\text{lbs/Kg})}$$

$$= \frac{2.0 \times 17.4 \times 8.34}{2.2}$$

$$= 131.9 \text{ kg/day}$$

- *Weekly Average Mass Loading:*

$$M_{Weekly} = \frac{Q_{Weekly}\,(MGD) \times [C]_{Monthly}\,(mg/L \text{ or } ppm) \times 8.34\,(lbs/gal)}{2.2\,(lbs/Kg)}$$

$$= \frac{2.5 \times 17.4 \times 8.34}{2.2}$$

$$= 164.9 \text{ kg/day}$$

### *4.7.8 Metals*

Refer to *Appendix B* for metal calculations.

## 4.8 Applicable Technology Based Effluent Limits (TBELS)

Technology-based effluent limitations aim to prevent pollution by requiring a minimum level of effluent quality that is attainable using demonstrated technologies for reducing discharges of pollutants or pollution into the waters of the United States. TBELs are developed independently of the potential impact of a discharge on the receiving water, which is addressed through water quality standards and water quality-based effluent limitations. The NPDES regulations at Title 40 of the Code of Federal Regulations 125.3(a) require NPDES permit writers to develop technology-based treatment requirements, consistent with CWA section 301(b), that represent the minimum level of control that must be imposed in a permit. The regulation also indicates that permit writers must include in permits additional or more stringent effluent limitations and conditions, including those necessary to protect water quality.

For pollutants not specifically regulated by Federal Effluent Limit Guidelines, the permit writer must identify any needed Technology-based effluent limitations and utilizes best professional judgment to establish technology-based limits or determine other appropriate means to control its discharge.

40 CFR Part §122.44(a)(1) requires that NPDES permits include applicable technology-based limitations and standards, while regulations at § 125.3(a)(1) state that TBELs for publicly owned treatment works must be based on secondary treatment standards and the "equivalent to secondary treatment standards" (40 CFR Part 133). The regulation applies to all POTWs and identifies the technology-based performance standards achievable based on secondary treatment for five-day biochemical oxygen demand ($BOD_5$), total suspended solids (TSS), and pH.

| **Parameter** | **Secondary Treatment Standards** | |
|---|---|---|
| | *30-day Average* | *7-day Average* |
| $CBOD_5$ | 25 mg/L | 40 mg/L |
| TSS | 30 mg/L | 45 mg/L |
| $BOD_5$ and TSS removal (concentration) | ≥ 85% | -- |
| pH (Daily Minimum – Daily Maximum) | 6.0-9.0 S.U. | |

### 4.9 Comparison & Summary of Water Quality vs. Technology Based Effluent Limits

After determining applicable technology-based effluent limitations and water quality-based effluent limitations, the most stringent limits are applied in the permit:

| Parameter | WQBELS [1] | TBELS [1] |
|---|---|---|
| | *Monthly Average* | *Monthly Average* |
| Five-Day Carbonaceous Biochemical Oxygen Demand (mg/L) | **25.0** | 25.0 |
| Total Suspended Solids (mg/L) | None | **30** |
| Ammonia (mg/L) | **17.4** | None |
| Ultimate Oxygen Demand (lbs/day) | **3500 (Mar-Oct)** | None |
| Fecal Coliform Bacteria (#/100 mL) | **200** | None |
| Dissolved Oxygen (mg/L), Daily Minimum | **2.0** | None |
| Total Residual Chlorine (mg/L), Daily Maximum | **0.5** | None |
| pH (S.U.) Daily Minimum – Daily Maximum | **6.0 – 9.0** | 6.0 – 9.0 |

[1] Effluent limits in bold were included in the permit. Refer to Sections 4.4, 4.5, 4.7, and 4.8 above for more information.

## 5. OTHER PERMIT REQUIREMENTS AND CONSIDERATIONS

### 5.1 5R Plan Annual Reporting

In order to confirm the facility's discharge was appropriately represented in the Savannah River and Harbor DO Calculator Version 4.0 (June 2010), EPD is requiring annual reporting of the facility's effluent characteristics. The permittee shall submit an annual report which provides all available discharge data over the previous twelve (12) calendar months for the parameters listed in Part I.C.9 of the permit.

### 5.2 Long-Term BOD (LTBOD) Test

For facilities with a capacity of 1.0 MGD or greater, a 120-day long-term BOD test should be performed on an effluent sample collected during the critical period from June 1 through September 30; therefore, the requirement to conduct one long term BOD test has been included in the draft permit.

### 5.3 Industrial Pre-treatment Program (IPP)

Garden City does not have an approved IPP; therefore, language for establishing an IPP, if necessary, has been included in the draft permit.

### 5.4 Sludge Management Plan (SMP)

Sludge is disposed of in a landfill; therefore, a SMP is not required.

### 5.5 Watershed Protection Plan (WPP)

The City has an approved WPP; therefore language has been included in the draft permit to reflect the approved plan.

### 5.6 Service Delivery Strategy

Garden City is in compliance with the Department of Community Affairs approved Service Delivery Strategy for Chatham County.

### 5.7 Compliance Schedules

Effluent limitations are applicable immediately upon the effective date of the permit.

### 5.8 Anti-Backsliding

The limits in this permit are in compliance with the 40 C.F.R. 122.44(l), which requires a reissued permit to be as stringent as the previous permit.

## 6. REPORTING

### 6.1 Compliance office

The facility has been assigned to the following EPD office for reporting, compliance and enforcement:

Georgia Environmental Protection Division
Coastal District – Brunswick Office
400 Commerce Center Drive
Brunswick, Georgia 31523

### 6.2 E-Reporting

The permittee is required to electronically submit documents in accordance with 40 CFR Part 127.

## 7. REQUESTED VARIANCES OR ALTERNATIVES TO REQUIRED STANDARDS

Not applicable

## 8. PERMIT EXPIRATION

The permit will expire five years from the effective date.

# 9. PROCEDURES FOR THE FORMULATION OF FINAL DETERMINATIONS

## 9.1 Comment Period

The Georgia Environmental Protection Division (EPD) proposes to issue a permit to this applicant subject to the effluent limitations and special conditions outlined above. These determinations are tentative.

The permit application, draft permit, and other information are available for review at 2 Martin Luther King Jr. Drive, Suite 1152 East, Atlanta, Georgia 30334, between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday. For additional information, you can contact 404-463-1511.

## 9.2 Public Comments

Persons wishing to comment upon or object to the proposed determinations are invited to submit same in writing to the EPD address above, or via e-mail at *EPDcomments@dnr.ga.gov* within 30 days of the initiation of the public comment period. All comments received prior to that date will be considered in the formulation of final determinations regarding the application. The permit number should be placed on the top of the first page of comments to ensure that your comments will be forwarded to the appropriate staff.

## 9.3 Public Hearing

Any applicant, affected state or interstate agency, the Regional Administrator of the U.S. Environmental Protection Agency (EPA) or any other interested agency, person or group of persons may request a public hearing with respect to an NPDES permit application if such request is filed within thirty (30) days following the date of the public notice for such application. Such request must indicate the interest of the party filing the request, the reasons why a hearing is requested, and those specific portions of the application or other NPDES form or information to be considered at the public hearing.

The Director shall hold a hearing if he determines that there is sufficient public interest in holding such a hearing. If a public hearing is held, notice of same shall be provided at least thirty (30) days in advance of the hearing date.

In the event that a public hearing is held, both oral and written comments will be accepted; however, for the accuracy of the record, written comments are encouraged. The Director or a designee reserves the right to fix reasonable limits on the time allowed for oral statements and such other procedural requirements, as deemed appropriate.

Following a public hearing, the Director, unless it is decided to deny the permit, may make such modifications in the terms and conditions of the proposed permit as may be appropriate and shall issue the permit.

If no public hearing is held, and, after review of the written comments received, the Director determines that a permit should be issued and that the determinations as set forth in the proposed permit are substantially unchanged, the permit will be issued and will become final in the absence of a request for a contested hearing. Notice of issuance or denial will be made available to all interested persons and those persons that submitted written comments to the Director on the proposed permit.

If no public hearing is held, but the Director determines, after a review of the written comments received, that a permit should be issued but that substantial changes in the proposed permit are warranted, public notice of the revised determinations will be given and written comments accepted in the same manner as the initial notice of application was given and written comments accepted pursuant to EPD Rules, Water Quality Control, subparagraph 391-3-6-.06(7)(b). The Director shall provide an opportunity for public hearing on the revised determinations. Such opportunity for public hearing and the issuance or denial of a permit thereafter shall be in accordance with the procedures as are set forth above.

## 9.4 Final Determination

At the time that any final permit decision is made, the Director shall issue a response to comments. The issued permit and responses to comments can be found at the following address:

*http://epd.georgia.gov/watershed-protection-branch-permit-and-public-comments-clearinghouse-0*

## 9.5 Contested Hearings

Any person who is aggrieved or adversely affected by the issuance or denial of a permit by the Director of EPD may petition the Director for a hearing if such petition is filed in the office of the Director within thirty (30) days from the date of notice of such permit issuance or denial. Such hearing shall be held in accordance with the EPD Rules, Water Quality Control, subparagraph 391-3-6-.01.

Petitions for a contested hearing must include the following:

1. The name and address of the petitioner;
2. The grounds under which petitioner alleges to be aggrieved or adversely affected by the issuance or denial of a permit;
3. The reason or reasons why petitioner takes issue with the action of the Director;
4. All other matters asserted by petitioner which are relevant to the action in question.

# FACT SHEET

## Appendix A

## Garden City Water Pollution Control Plant
## NPDES Permit No. GA0031038

Waste Load Allocation (WLA)

# National Pollutant Discharge Elimination System
## Wasteload Allocation Form

### Part I: Background Information

WLA Request Type: Reissuance ☒ Modification ☐ Relocation ☐ New Discharge ☐ Expansion ☐

Facility Name: Garden City WPCP | County: Chatham | WQMU: 0192

NPDES Permit No.: GA0031038 | Expiration Date: Extended | Outfall Number: 001

Receiving Water: Savannah River | River Basin: Savannah | 10-Digit HUC: 0306010906

Discharge Type: Domestic ☐ Industrial ☐ Both ☒ | Proportion (D:I): | Flow(s) Requested (MGD): 2.0

Industrial Contributions Type(s):

Treatment Process Description: Influent screening, extended aeration, clarification, & chlorination. Sludge is dewatered & landfilled.

Additional Information: (history, special conditions, other facilities): Effluent from this facility is combined with that of the Savannah – Travis Field WPCP and discharged to the Savannah River.

Requested by: Kim Hembree | Title: ES | Program: WRP

Telephone: | Date: 5.Sep.17

### Part II: Receiving Water Information

Receiving Water: Savannah River/Harbor | Designated Use Classification: Coastal Fishing

Integrated 305(b)/303(d) List: Yes ☒ No ☐ Support: ☐ Not Support: ☒ Criteria: Dissolved Oxygen (DO)

Total Maximum Daily Load: Yes ☐ No ☒ Parameter(s) | WLA Complies with TMDL Yes ☐ No ☐

The WLA and recommended permit limits comply with the Subcategory 5R Documentation for Point Source Dissolved Oxygen Impaired Water in the Savannah River Basin, Georgia and South Carolina (5R Plan).

### Part III: Water Quality Model Review Information

Model Type: Uncalibrated ☐ Calibrated ☐ Verified ☐ Cannot be Modeled ☐ Model Length (mi):

Field Data: None ☐ Fair ☐ Good ☐ Excellent ☐

Model and Field Data Description: The WLA was developed using the Savannah Harbor TMDL calculator version 4, which is based on results from water quality models for the Savannah River and Harbor. WLAs for facilities included in the 5R Plan were developed by the discharger group using the TMDL calculator.

| | | | |
|---|---|---|---|
| Critical Water Temperature:(°C): | Drainage Area ($mi^2$): | Mean annual streamflow at discharge (cfs): | Tidal |
| 7Q10 Yield ($cfs/mi^2$): | Velocity (range fps): | 30Q3 streamflow at discharge (cfs): | Tidal |
| Effluent Flow Rate (cfs): 3.1 | Dilution Factor: 6002) WPM | 7Q10 streamflow at discharge (cfs): | Tidal |
| Slope (range - fpm): K1: | K3: | K2: 1Q10 streamflow at discharge (cfs): | Tidal |
| SOD: Escape Coef. ($ft^{-1}$): | f-Ratio $BOD_u/BOD_5$): 5.52 | Background Hardness (as $CaCO_3$)(mg/L): | 25 |

### Part IV: Recommended Permit Limitations and Conditions (mg/L as a monthly average except as noted)

Rationale: Same as current ☐ Revised ☒ New ☐

Location: Savannah River

| Period | Effluent Flow Rate (MGD) | UOD (lbs/day) | $BOD_5$ | TSS | $NH_3$-N | DO (min) | TRC (daily max.) | Fecal Coliform (No./100ml) | pH (std. units) | Total-P | Ortho-P | TKN | Org-N | $NO_x$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mar - Oct | 2.0 | 3600 | 30 | 30 | 17.4 | 2.0 | 0.5 | 200 | 6.0 – 9.0 | Mon | Mon | Mon | Mon | Mon |
| Nov - Feb | 2.0 | — | 30 | 30 | 17.4 | 2.0 | 0.5 | 200 | 6.0 – 9.0 | Mon | Mon | Mon | Mon | Mon |

Additional Comments:

- Priority pollutants permit limits, aquatic toxicity testing requirements, and other parameters required by categorical effluent guidelines are to be determined by WRP.
- The Ultimate Oxygen Demand (UOD) shall be computed according to the following equation:

$$UOD = Q_{effluent} * (CBOD_5 * 5.52 + NH_3\text{-}N * 4.57) * 8.34$$

- Effluent monitoring for total phosphorus, ortho-phosphorus, TKN, nitrate-nitrite, and organic nitrogen is recommended. Total phosphorus and ortho-phosphorus should be analyzed from the same effluent sample; TKN, nitrate-nitrite, ammonia, and organic nitrogen should be analyzed from the same effluent sample.

Mon = Monitor

Prepared by: Josh Welte JW | Date: 19.Oct.17 | Reviewed by: | Date:

### Part V: Program Manager Comments

Elizabeth A Booth

Elizabeth Booth | Date: 10/23/17

# Appendix B
## Reasonable Potential Analysis for Coastal and Marine Estuarine Waters

Permit Name: Garden City WPCP

NPDES Permit No.: GA0031038

**Stream Data:**

Receiving Stream Hardness: 25 mg/L

Upstream TSS: 10 mg/L

**Effluent Data:**

Design Flow 2,000,000 gal/day

TSS 30.00 mg/L

Instream TSS: 10.05 mg/L

Acute Dilution factor: --

Chronic Dilution factor: --

**Water Quality Criteria:**

Mean Annual Streamflow at Discharge: -- $ft^3/s$

-- gal/day

Dilution factor: 600.0

IWC: 0.2 %

### Acute Water Quality Criteria ($WQC_{Acute}$)

| Metal | $K_{PO}$ | α | $f_D$ | Maximum effluent $C_T$ (µg/L) | Instream $C_D$ (µg/L) | $WQC_{Acute}$ (µg/L) | Action needed? |
|---|---|---|---|---|---|---|---|
| Arsenic | 4.80.E+05 | -0.729 | 0.00 | 0.00 | 0.00 | 69.00 | no |
| Cadmium | 4.00.E+06 | -1.131 | 0.000 | 0.00 | 0.00 | 40.00 | no |
| Chromium VI | 3.36.E+06 | -0.930 | 0.20 | 1.00 | 0.00 | 1100.00 | no |
| Copper | 1.04.E+06 | -0.744 | 0.35 | 3.00 | 0.00 | 4.80 | no |
| Lead | 3.10.E+05 | -0.186 | 0.00 | 0.00 | 0.00 | 210.00 | no |
| Mercury | NA | NA | NA | 0.00 | 0.0000 | 1.800 | no |
| Nickel | 4.90.E+05 | -0.572 | 0.43 | 4.67 | 0.00 | 74.00 | no |
| Selenium | NA | NA | 0.998 | 0.00 | 0.00 | 290.000 | no |
| Zinc | 1.25.E+06 | -0.704 | 0.29 | 50.00 | 0.02 | 90.00 | no |

### Chronic Water Quality Criteria ($WQC_{Chronic}$)

| Metal | $K_{PO}$ | α | $f_D$ | Average effluent $C_T$ (µg/L) | Instream $C_D$ (µg/L) | $WQC_{Chronic}$ (µg/L) | Action needed? |
|---|---|---|---|---|---|---|---|
| Arsenic | 4.80.E+05 | -0.729 | 0.00 | 0.00 | 0.00 | 36.00 | no |
| Cadmium | 4.00.E+06 | -1.131 | 0.000 | 0.00 | 0.00 | 8.80 | no |
| Chromium VI | 3.36.E+06 | -0.930 | 0.20 | 0.33 | 0.00 | 50.00 | no |
| Copper | 1.04.E+06 | -0.744 | 0.35 | 2.40 | 0.00 | 3.10 | no |
| Lead | 3.10.E+05 | -0.186 | 0.00 | 0.00 | 0.00 | 8.10 | no |
| Mercury | NA | NA | NA | 0.00 | 0.0000 | 0.025 | no |
| Nickel | 4.90.E+05 | -0.572 | 0.43 | 2.89 | 0.00 | 8.20 | no |
| Selenium | NA | NA | 0.998 | 0.00 | 0.00 | 71.00 | no |
| Zinc | 1.25.E+06 | -0.704 | 0.29 | 39.53 | 0.02 | 81.00 | no |

### Water Quality Criteria (WQC)

**NOTES:**

*Water Quality Criteria (WQC) from State of Georgia Rules and Regulations 391-3-6-.03.

*If the calculated instream concentration is less than 50% of the instream water quality criteria, then the constituent will be considered not to be present at levels of concern in the effluent and it will not be included in the permit.

*If the calculated instream concentration is 50% or more of the instream water quality criteria, then a permit limit for that constituent will be placed in the permit.

**Appendix B (continued)**
**Reasonable Potential Analysis for Coastal Marine and Estuarine Waters**
**Garden City WPCP**
**NPDES Permit No. GA0031038**

**Stream Data:**

| | | |
|---|---|---|
| Receiving Stream Hardness: | 25 | mg/L |
| Upstream TSS: | 10 | mg/L |

**Effluent Data:**

| | | |
|---|---|---|
| Design Flow | 2,000,000 | gal/day |
| TSS | 30.00 | mg/L |

| | | |
|---|---|---|
| Instream TSS: | 10.05 | mg/L |
| Acute Dilution factor: | – | |
| Chronic Dilution factor: | – | |

**Water Quality Criteria:**

| | | |
|---|---|---|
| Mean Annual Streamflow at Discharge: | – | $ft^3/s$ |
| | – | gal/day |
| IWC: | 0.2 | % |
| Dilution Factor: | 600 | |

**Water Quality Criteria (WQC)**

| Nonmetal | Maximum Effluent $C_T$ (ug/L) | Instream Concentration (ug/L) | WQC (ug/L) | WQC/2 (ug/L) | Action Needed? |
|---|---|---|---|---|---|
| Cyanide | 11.10 | 0.019 | 1.00 | 0.50 | no |
| Acetone | 7.57 | 0.013 | N/A | N/A | no |
| Bromodichloromethane | 6.17 | 0.010 | 17.00 | 8.50 | no |
| Chloroform | 3.33 | 0.006 | 470.00 | 235.00 | no |
| Dibromochloromethane | 2.14 | 0.004 | 13.00 | 6.50 | no |

*Georgia Rules and Regulations do not have an instream criteria concentration for delta-BHC. The permittee submitted the results of four whole effluent biomonitoring tests and the permittee's effluent did not exhibit toxicity. Therefore, delta-BHC is not considered to be present at levels of concern. Refer to Section 4.6 of the Fact Sheet for more details.

# Appendix C
# Ammonia Toxicity Analysis
# for
# Waste Load Allocation Development (Updated 2013)

Date: 10.Oct.17
Facility: Garden City
NPDES Permit Number: GA0031038
Receiving Stream: Savannah River
Engineer: Welte
Comments:

**Stream and Facility Data:**

Background Stream pH (standard units): 7.0
Effluent pH (standard units): 9.0
Final Stream pH (standard units): 7.00
Stream Temperature (Celsius): 28.0
30Q3 Streamflow (cfs): 1400
Stream background concentration (Total NH3-N, mg/L): 0.14
Facility Discharge (MGD/cfs): 2 3.10
Total Combined Flow (cfs): 1403.10

Effluent concentration (Total NH3-N, mg/L) = 447.2

If 447.2 is greater than 17.4 mg/L, use 17.4 mg/L in WLA modeling.

**Chronic Criterion based on Villosa Iris (Rainbow mussel):**

Instream CCC = criterion continuous concentration (chronic criterion):

$$CCC = 0.8876 \times (0.0278 / (1 + 10^{(7.688 - pH)}) + 1.1994 / (1 + 10^{(pH - 7.688)})) \times (2.126 \times 10^{0.028 \times (20 - MAX(T,7))})$$

Allowable instream concentration CCC (Total NH3-N, mg/l) = 1.13

**Acute Criterion when Oncorhynchus salmonid species are present:**

Instream Criterion Maximum Concentration (CMC) = same as acute criterion:

$$\text{Instream CMC} = \text{Min}((0.275 / (1 + 10^{(7.204 - pH)})) + (39.0 / (1 + 10^{(pH - 7.204)})), 0.7249 \times (0.0114/(1 + 10^{(7.204 - pH)}) + 1.6181 / (1 + 10^{(pH - 7.204)})) \times (23.12 \times 10^{(0.036 \times (20 - T))})$$

Allowable instream concentration CMC, (Total NH3-N mg/l) = 8.63

**Acute Criterion when Oncorhynchus salmonid species are absent:**

$$\text{Instream CMC} = 0.7249 \times (0.0114/(1 + 10^{(7.204 - pH)}) + 1.6181 / (1 + 10^{(pH - 7.204)})) \times \text{MIN}(51.93, 23.12 \times 10^{(0.036 \times (20 - T))})$$

Allowable instream concentration CMC, (Total NH3-N mg/l) = 8.63

Based on National Criterion For Ammonia In Fresh Water As Revised In Year 2013

Source: Aquatic Life Ambient Water Quality Criteria for Ammonia - Freshwater 2013, U.S. Environmental Protection Agency, Office of Water, Office of Science and Technology, EPA-822-R-13-001. April 2013. Washington, D.C.