GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

Richard E. Dunn, Director

Watershed Protection Branch
2 Martin Luther King, Jr. Drive
Suite 1152, East Tower
Atlanta, Georgia 30334
404-463-1511

January 20, 2022

Mr. Scott Hendricks
Manager, Water and Natural Resources Permitting
Georgia Power Company
241 Ralph McGill Blvd, NE, BIN 10221
Atlanta, Georgia 30308

RE: Ash Pond Dewatering Plan
Plant Mitchell
NPDES Permit GA0001465
Dougherty County, Flint River Basin

Dear Mr. Hendricks:

The Environmental Protection Division (EPD) hereby approves the revised Ash Pond Dewatering Plan (attached) dated December 2021 and received on December 30, 2021 for Georgia Power Company - Plant Mitchell.

If you have comments or questions concerning this approval letter, please contact Ian McDowell at 470.604.9483 or *ian.mcdowell@dnr.ga.gov.*

Sincerely,

Audra Dickson, Manager
Wastewater Regulatory Program

AD/IM
CC: EPD Watershed Compliance Program – Karen Sauler (*karen.sauler@dnr.ga.gov*)

Georgia Power Company
Plant Mitchell

NPDES Permit No. GA0001465

Ash Pond Dewatering Plan

Revised December 2021

Purpose

The W.E. Mitchell Steam-Electric Generating Plant (Plant Mitchell, Site) is located in Dougherty and Mitchell Counties near Albany, Georgia and ceased generating electricity in April 2015. Plant Mitchell was issued a National Pollutant Discharge Elimination System (NPDES) permit, NPDES Permit No. GA0001465, effective September 01, 2017. This Ash Pond Dewatering Plan (Plan) describes the additional procedures, safeguards, and enhanced wastewater treatment measures that Georgia Power Company (GPC) will implement to ensure the facility's NPDES permit effluent limitations continue to be met and the receiving waterbody continues to be protected during the ash pond dewatering process. This Plan provides an overview of the Wastewater Treatment System (Treatment System), describes the key processes, details the major process control measurements being performed, and explains the effluent monitoring to be conducted during dewatering.

Ash Pond A, Ash Pond 1, and Ash Pond 2 (ash ponds) are located on property owned by GPC. See Figure 3 for a site location map. The ash ponds will be closed by removing ash and sending the removed ash either to an offsite permitted landfill or to offsite ash beneficial reuse facilities. Ash Pond A, Ash Pond 1, and Ash Pond 2 are approximately 7, 44, and 53 acres, respectively. The ash ponds are mostly dry or contain negligible amounts of water due to wet weather events. BMP's will be utilized to minimize ash-contact stormwater, provide detention of collected water (to reduce sediment transport), and provide hydraulic control prior to treatment. BMPs employed will be varied and implemented as needed to support the ash pond closure activities. These BMPs may include systems for covering the ash, such as rain flaps, as well as systems to hydraulically control runoff, such as detention ponds.

This Plan will be implemented upon commencement of active ash pond closure activities. Following approval of the Plan by the Georgia Environmental Protection Division (EPD) and prior to commencement of dewatering, Georgia Power Company will provide EPD with notification of dewatering implementation. As explained below, in addition to the requirements implemented during the dewatering process, GPC will continue to meet the effluent limitations of the NPDES permit and comply with all requirements of the NPDES permit.

Wastewater Treatment System

The Treatment System for dewatering the ash ponds will consist of a physical-chemical treatment plant. This physical-chemical treatment plant will include sodium hypochlorite addition, an equalization tank, pH adjustment, solids separation by flocculation/clarification, treated water monitoring, and bag filtration. Sludge and solids from the clarifier will be pumped to the solids handling tank. The sludge may then be returned to the ash pond system or dewatered and disposed of at an approved offsite landfill. The Treatment System will operate on an as needed basis up to 24 hours per day. Under initial operation, the Treatment System will be capable of handling up to 500 gallons per minute (gpm); however, the Treatment System may be upgraded to treat a maximum of 1,000 gpm. In accordance with the NPDES permit, GPC will provide the EPD with advanced notice of any treatment system upgrades. A process schematic is depicted in Figure 1.

Location

The Treatment System will be located adjacent and to the west of the onsite aboveground storage tanks. The Treatment System will be placed on a prepared pad with a geomembrane liner system. The liner system will assure that in the unlikely event of an overflow or leak, water from the Treatment System will be returned to the ash pond and will not be discharged, except in compliance with this Plan and the NPDES permit.

Influent

As shown in the process flow diagram (Figure 2), wastewater will be pumped to the Treatment System from the ash ponds. Plant Mitchell is a closed facility, and the ash ponds remain mostly dry or contain a negligible amount of water mostly attributable to wet weather events. As the water level in the ash pond drops, influent to the treatment system may cease until the volume of water in the pond is adequate for

operations, or other measures may be implemented to provide sufficient water volume for pumping to the Treatment System. Water levels in the ash ponds fluctuate based upon stormwater inflows, ash pond management, and dewatering activities. As overall water volumes in the ash ponds decrease, operation of the Treatment System may be intermittent and on an "as needed" basis. However, continuous operation may be utilized in response to wet weather conditions.

The influent of the Treatment System will be monitored for pH and turbidity. These parameters will be used as a guide for the Treatment System's treatment requirements. Influent flow rates to the Treatment System will be managed to limit ash pond draw-down at a rate of no greater than one foot per week, or a rate to ensure structural integrity of the impoundment as determined by the Dam Safety Engineer.

Sodium Hypochlorite Addition

Depending on the quality of the influent water coming from the ash ponds, the influent water pumped to the Treatment System may be treated with sodium hypochlorite to control biological growth in the system. Treating the water for biological growth improves the Treatment System efficiency and reduces the amount of maintenance required. Based upon the demand for chlorine in the influent water, sodium hypochlorite addition will be adjusted. The dosage rate for sodium hypochlorite will depend upon the flow rate, sediment load, and water temperature.

Equalization Tank

Water pumped to the Treatment System will be sent to the equalization (EQ) tank after any needed sodium hypochlorite addition occurs. Residence time will be provided in the equalization tank. Solids that settle in this tank will be sent to the off-spec tank.

pH Adjustment & Flocculant/ Coagulant Addition

The pH of the water pumped to the Treatment System will be continuously tested prior to reaching the equalization tank. After the equalization tank, pH adjustment may be performed. Based upon the pH measurement, the pH can be adjusted to the optimal range for coagulation. Following pH adjustment, a coagulant and polymer may be injected to aid in flocculation. The dosage rates for all chemicals will depend upon the flow rates, sediment loads, and inlet pH. Dosage rates will be documented and kept onsite.

Clarifier

The treated water flows into a clarifier and the flocculated material gravity-settles to the bottom of the clarifier. A pump pulls the underflow at the bottom of the clarifier towards the underflow discharge point to be pumped to a solids handling tank. The solids from the solids handling tank may be returned to the ash pond system or dewatered through a filter press or solidified to meet moisture disposal requirements for disposal at an approved offsite landfill. Clarified water is sent to the treated water tank.

In the event any system issues are identified related to turbidity or pH at the clarifier, the effluent from the clarifier will be sent to the off-spec water tank. Effluent from the off-spec water tank will then be recirculated to the ash pond.

Treated Water Tank

The treated water is sent from the clarifier to the treated water tank. As water moves through the Treatment System, some of the free chlorine will be consumed and any remaining chlorine will be neutralized in the treated water tank. Sodium bisulfite will be maintained onsite, as a backup, to remove any residual chlorine.

Filters

Following the treated water tank, water is then fed into the bag filtration system. The bag filtration system is comprised of two housings with six sock filters each. Each housing is rated for 100% of the design flowrate, which allows for sock replacement without interruption of operation. The sock filters are initially planned to be 100 microns, but the size can be adjusted during the ash pond closure process to optimize

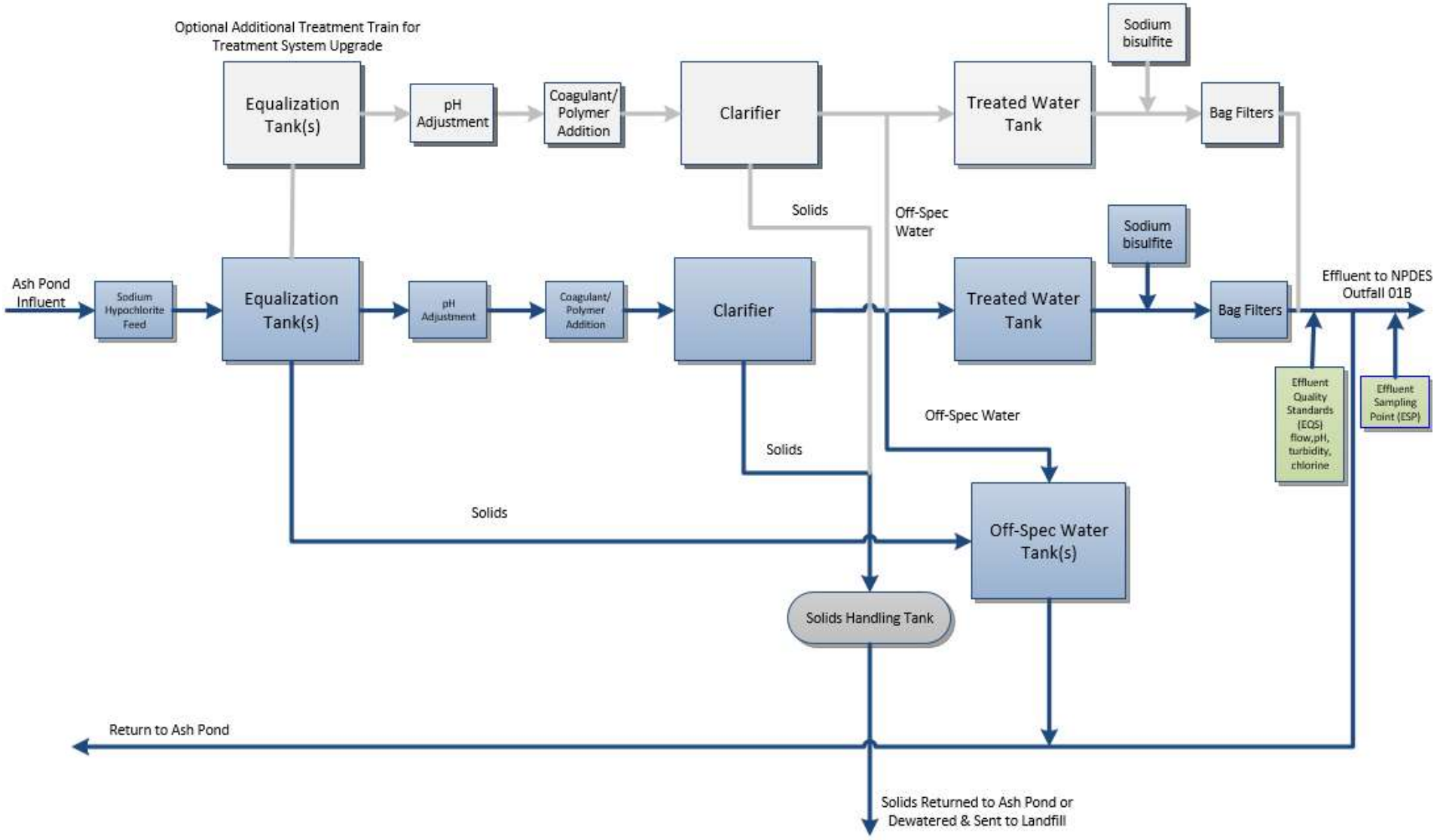
solids removal. The clarified water passes through the bag filter system as the final particulate removal step prior to discharge. The bag filter system has pressure differential gauges that require monitoring to determine when a change of the sock filters is required. The pressure differential gauges are monitored frequently by onsite personnel to ensure change-out of the bag filter when needed. The bag filtration system is the final treatment process prior to the discharge to Outfall 01B.

Monitoring

A set of instrumentation that checks the quality of the treated water will be located after the filters. During operation, effluent from the filters will be continuously measured for flow and monitored for pH, turbidity and chlorine. This information will be used to monitor the Treatment System operation. If an inline instrument detects a reading above an effluent quality standard (EQS) set-point, the effluent will not be discharged and instead will be diverted to the ash pond.

Operation

The operational oversight of the Treatment System will be performed by a certified wastewater treatment plant operator in accordance with the certification requirements of the Georgia Water and Wastewater Treatment Plant Operators and Laboratory Analysts Rule.


Optional Additional Treatment Train for Treatment System Upgrade
Equalization Tank(s)
pH Adjustment
Coagulant/ Polymer Addition
Clarifier
Treated Water Tank
Sodium bisulfite
Bag Filters
Solids
Off-Spec Water
Ash Pond Influent
Sodium Hypochlorite Feed
Equalization Tank(s)
pH Adjustment
Coagulant/ Polymer Addition
Clarifier
Treated Water Tank
Sodium bisulfite
Bag Filters
Effluent to NPDES Outfall 01B
Effluent Quality Standards (EQS) flow,pH, turbidity, chlorine
Effluent Sampling Point (ESP)
Off-Spec Water
Solids
Solids
Off-Spec Water Tank(s)
Solids Handling Tank
Return to Ash Pond
Solids Returned to Ash Pond or Dewatered & Sent to Landfill

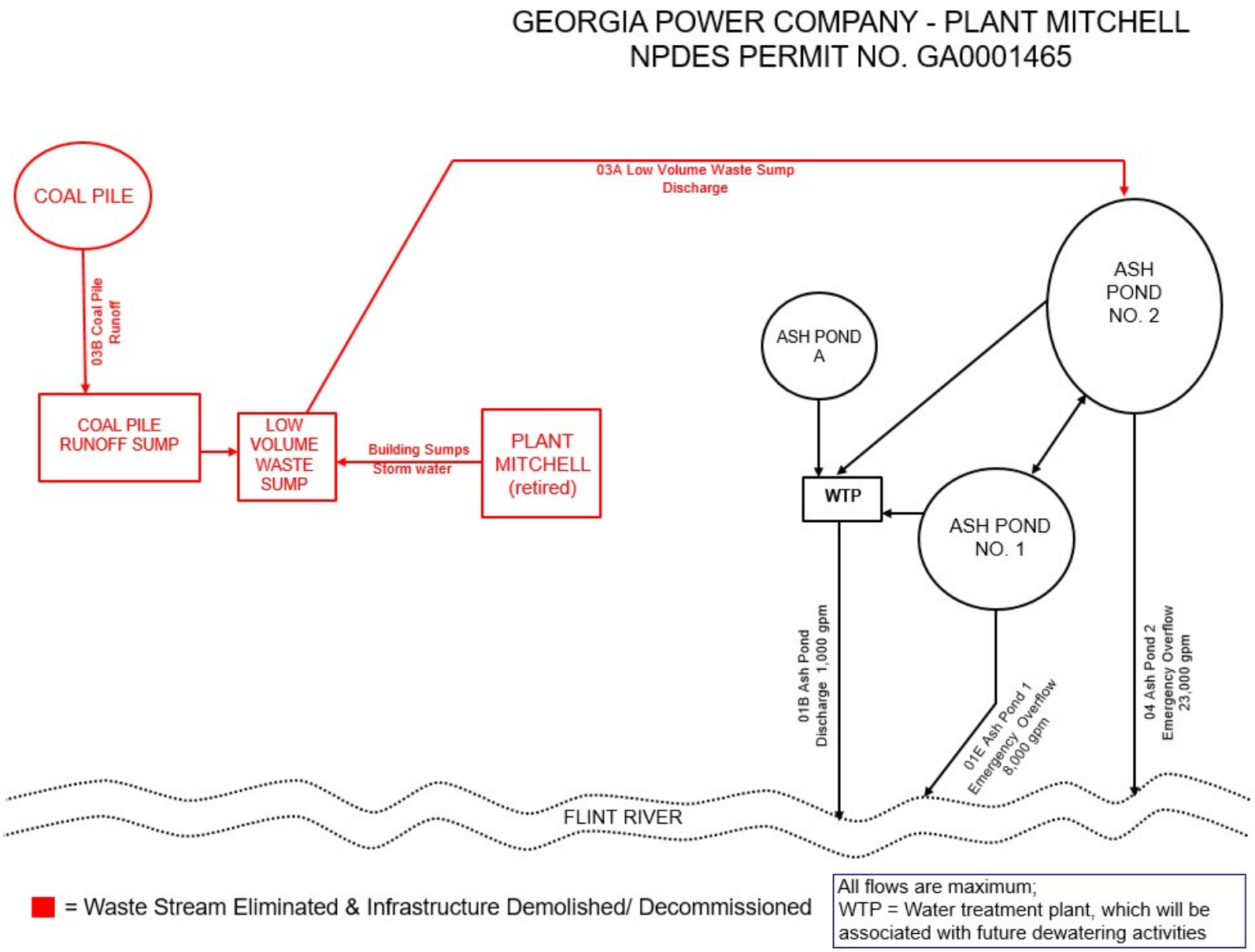

GEORGIA POWER COMPANY - PLANT MITCHELL
NPDES PERMIT NO. GA0001465
COAL PILE
03B Coal Pile Runoff
COAL PILE RUNOFF SUMP
LOW VOLUME WASTE SUMP
Building Sumps Storm water
PLANT MITCHELL (retired)
03A Low Volume Waste Sump Discharge
ASH POND A
ASH POND NO. 2
WTP
ASH POND NO. 1
01B Ash Pond Discharge 1,000 gpm
01E Ash Pond 1 Emergency Overflow 8,000 gpm
04 Ash Pond 2 Emergency Overflow 23,000 gpm
FLINT RIVER
= Waste Stream Eliminated & Infrastructure Demolished/ Decommissioned
All flows are maximum;
WTP = Water treatment plant, which will be associated with future dewatering activities

Figure 3
Site Location Map

Image Source: Google Earth, 2019

Legend:

- Approximate Ash Pond Boundary
- Approximate Location of Wastewater Treatment System
- Approximate Location of Outfall 01B
- Approximate Location of Upstream Sampling Point
- Approximate Location of Downstream Sampling Point

Site Location Map
Plant Mitchell
5200 Radium Springs Road, Albany, GA

Process Control Monitoring

Each day following Treatment System startup, pH and turbidity of the influent and effluent of the Treatment System will be verified prior to discharge of treated water to the permitted outfall. Upon verification that the Treatment System performs as expected, the discharge will be routed to Outfall 01B.

During discharge operations, pH, chlorine, and turbidity are continuously measured at the Effluent Quality Standards sampling point and the discharge will be visually inspected, to ensure Effluent Quality Standards (EQSs) listed below are met. If the treated effluent does not meet the pH, chlorine, and turbidity EQSs during operations, the discharge to the permitted outfall will be automatically diverted and the treated water will be returned to the ash ponds while adjustments are made. After any issues are resolved, the Treatment System will be returned to normal operation with discharge to Outfall 01B, following verification that the system performs as expected.

Maintenance

Instrumentation for use on the site will be maintained to ensure optimal performance and provide accurate results. Each piece of technical equipment will be calibrated at the manufacturer's recommended intervals and more often if deemed necessary by onsite personnel. Instrumentation equipment includes turbidity meters, pH meters, flow meters, and chemical feed pumps.

Testing

Samples are collected from both the influent and the Treatment System Effluent Sampling Point (ESP) to guide system operation and compare against the Effluent Quality Standards (EQSs) listed below. The results will be used to verify that the Treatment System is performing optimally, as well as to obtain data to establish and update the correlation between the total suspended solids (TSS) and turbidity of the Treatment System effluent. TSS/turbidity control is an indicator of a Treatment System's efficient operation and is correlated to metal removal efficiencies, as further confirmed by weekly monitoring results. The initial TSS and turbidity correlation curve and EQS results will be provided to the EPD prior to commencement of dewatering activities and updated quarterly or more frequently on an as needed basis. Furthermore, the TSS/turbidity correlation will be updated if the EQS for TSS is exceeded. EQS results, including TSS/turbidity correlation curves, will be available onsite for EPD review. TSS correlation to turbidity will be used to establish a turbidity set-point for the effluent. Effluent reaching this set-point will be recycled back to the ash ponds for additional treatment.

Effluent Quality Standards (EQSs)

- **pH**: 6.4 to 8.6 operational limits
- **Turbidity**: Determined by TSS correlation
- **Flow rate**: <500 gpm initial (<1,000 gpm upgrade max)
- **TSS**: <26 mg/L; determined by turbidity correlation
- **Oil & Grease**: <15 mg/L daily average with <20 mg/L daily maximum over a monthly period
- **Total Residual Chlorine:** Zero

Analytical Instrument Description

The following instrumentation (or equivalent) will be used:

- **pH**: Hach DPD1P1, pH probe with a Hach SC200 transmitter
- **Turbidity**: Hach LXG324.99 with a Hach SC200 transmitter
- **Chlorine**: Hach CL17 with personal transmitter
- **Flow rate**: Siemens Sitrans F M Mag 6000 10" magnetic flow meter

Monitoring and Reporting

Stream Monitoring

Constituent (mg/L or Unit)	Requirement	Measurement Frequency	Sample Type	Sample Location
pH (S.U.)	Report	2/Month	Grab	Upstream & Downstream*
TSS	Report	2/Month	Grab	Upstream & Downstream*
TRC	Report	2/Month	Grab	Upstream & Downstream*
$BOD_{5\text{-day}}$	Report	2/Month	Grab	Upstream & Downstream*
Oil & Grease	Report	2/Month	Grab	Upstream & Downstream*
Turbidity (NTU)	Report	2/Month	Grab	Upstream & Downstream*
TDS	Report	2/Month	Grab	Upstream & Downstream*
Copper, total	Report	2/Month	Grab	Upstream & Downstream*
Selenium, total	Report	2/Month	Grab	Upstream & Downstream*
Arsenic, total	Report	2/Month	Grab	Upstream & Downstream*
Mercury, total	Report	2/Month	Grab	Upstream & Downstream*
Chromium, total	Report	2/Month	Grab	Upstream & Downstream*
Lead, total	Report	2/Month	Grab	Upstream & Downstream*
Cadmium, total	Report	2/Month	Grab	Upstream & Downstream*
Zinc, total	Report	2/Month	Grab	Upstream & Downstream*
Nickel, total	Report	2/Month	Grab	Upstream & Downstream*
Antimony, total	Report	2/Month	Grab	Upstream & Downstream*
Thallium, total	Report	2/Month	Grab	Upstream & Downstream*
Ammonia-N	Report	2/Month	Grab	Upstream & Downstream*
TKN	Report	2/Month	Grab	Upstream & Downstream*
Organic Nitrogen	Report	2/Month	Grab	Upstream & Downstream*
Nitrate/Nitrite	Report	2/Month	Grab	Upstream & Downstream*
Phosphorus, total	Report	2/Month	Grab	Upstream & Downstream*
Orthophosphate-P	Report	2/Month	Grab	Upstream & Downstream*
Hardness	Report	2/Month	Grab	Upstream & Downstream*

Notes:

Sampling and monitoring to be performed using standard methods specified in U.S. EPA 40 CFR Part 136, which will be a "sufficiently sensitive analytical method".

* Instream sampling shall occur at approximately 500 ft upstream and downstream of the final discharge (Outfall 01B) to the Flint River and as depicted on Figure 3.

Effluent Monitoring

Constituent (mg/L or Unit)	Monthly Average	Daily Maximum	Measure Frequency	Sample Type	Sample Location
Flow (MGD)	Report	Report	Daily	Continuous	Effluent Quality Standard (EQS)
pH (S.U.)	Report	Report	Daily	Continuous	EQS
TRC	Report	Report	Daily	Continuous	EQS
Turbidity (NTU)	Report	Report	Daily	Continuous	EQS
TSS	Report	Report	Weekly	Grab	Effluent Sampling Point (ESP)
$BOD_{5\text{-day}}$	Report	Report	Weekly	Grab	ESP
Oil & Grease	Report	Report	Weekly	Grab	ESP
TDS	Report	Report	Weekly	Grab	ESP
Copper, total	Report	Report	Weekly	Grab	ESP
Selenium, total	Report	Report	Weekly	Grab	ESP
Arsenic, total	Report	Report	Weekly	Grab	ESP
Mercury, total	Report	Report	Weekly	Grab	ESP
Chromium, total	Report	Report	Weekly	Grab	ESP
Lead, total	Report	Report	Weekly	Grab	ESP
Cadmium, total	Report	Report	Weekly	Grab	ESP
Zinc, total	Report	Report	Weekly	Grab	ESP
Nickel, total	Report	Report	Weekly	Grab	ESP
Antimony, total	Report	Report	Weekly	Grab	ESP
Thallium, total	Report	Report	Weekly	Grab	ESP
Ammonia-N	Report	Report	Weekly	Grab	ESP
TKN	Report	Report	Weekly	Grab	ESP
Organic Nitrogen	Report	Report	Weekly	Grab	ESP
Nitrate/Nitrite	Report	Report	Weekly	Grab	ESP
Phosphorus, total	Report	Report	Weekly	Grab	ESP
Orthophosphate-P	Report	Report	Weekly	Grab	ESP
Hardness	Report	Report	Weekly	Grab	ESP

Notes:

Sampling and monitoring to be performed using standard methods specified in U.S. EPA 40 CFR Part 136, which will be a "sufficiently sensitive analytical method". ESP is the discharge from the Treatment System prior to Outfall 01B and prior to mixing with other waste-streams.

Reporting and Notification

Effluent and instream monitoring results will be submitted to the EPD via e-mail by the 15th day of the month following the sampling period. Results shall be submitted in an Excel spreadsheet to both the EPD Compliance Office and the Industrial Permitting Unit. Laboratory analysis and data sheets shall be retained onsite. The first report will be submitted the month following system startup. In addition, quarterly updates of the TSS vs. Turbidity correlation curve and other updates based on an exceedance of the EQS for TSS, will also be submitted to EPD via e-mail by the 15th of the month following the end of the quarter or the month after the EQS exceedance.

Immediate (within 24 hours) notification to both the EPD Compliance Office and Industrial Permitting Unit will occur if any of the EQSs for pH, total residual chlorine, or turbidity are not achieved and the automatic recirculation system fails or if there is visible foam other than trace amounts discharged to waters of the State of Georgia.