

# National Pollutant Discharge Elimination System Wasteload Allocation Form

## Part I: Background Information

WLA Request Type: Reissuance ☒ Expansion ☐ Relocation ☐ New Discharge ☐  
 Facility Name: **Ray City WPCP** County: **Berrien** WQMU: **0904**  
 NPDES Permit No.: **GA0033553** Expiration Date: **6/30/2022** Outfall Number: **001**  
 Receiving Water: **Cat Creek** River Basin: **Suwannee** 10-Digit HUC: **0311020303**  
 Discharge Type: Domestic ☒ Industrial ☐ Both ☐ Proportion (D:I): Flow(s) Requested (MGD): **0.1**  
 Ecoregion: **L4 – 65h, Tifton Upland**  
 Industrial Contributions Type(s):  
 Treatment Process Description: **Influent bar screen, a three-celled aerated waste stabilization pond, chlorination and de-chlorination**  
 Additional Information: (history, special conditions, other facilities): **The City proposes to expand current capacity to 0.2 MGD.**  
 Requested by: **Benoit Causse** Program: **WRP** Date: **1/13/2022**

## Part II: Receiving Water Information

Receiving Water: **Cat Creek to the Withlacoochee River** Designated Use Classification: **Fishing**  
 Integrated 305(b)/303(d) List: Yes ☒ No ☐ Support: ☐ Not Support: ☒ Criteria: **Dissolved Oxygen**  
 Total Maximum Daily Load: Yes ☒ No ☐ Parameter(s): **DO** WLA Complies with TMDL Yes ☒ No ☐  
**Georgia EPD developed a DO TMDL in the Suwannee River Basin in 2001, which recommended 38% load reduction from nonpoint sources to meet natural water quality standard for Cat Creek. The TMDL only included point sources with permitted flows greater than 0.1 MGD; therefore, the Ray City WPCP was not identified as a point source contributing to impaired waterbodies in the basin.**

## Part III: Water Quality Model Review Information

Model Type: Uncalibrated ☐ Calibrated ☒ Verified ☐ Cannot be Modeled ☐ Model Length (mi): **8.3**  
 Field Data: None ☐ Fair ☒ Good ☐ Excellent ☐  
 Model and Field Data Description: **Steady-state dissolved oxygen Georgia DOSAG model**  
 Critical Water Temperature (°C): **28** Drainage Area (mi²): **42.8** Mean annual streamflow at discharge (cfs): **38**  
 7Q10 Yield (cfs/mi²): **0.002** Velocity (range fps): **0.33** 30Q3 streamflow at discharge (cfs): **0.43**  
 Effluent Flow Rate (cfs): **0.15** IWC (%): **64** 7Q10 streamflow at discharge (cfs): **0.09**  
 Slope (range - fpm): **4.7 - 6.0** K1: **0.15 / 0.02** K3: **0.4** K2: **3 - 4** 1Q10 streamflow at discharge (cfs): **0.05**  
 SOD: **1.0** Escape Coef. (ft⁻¹): **0.11** f-Ratio BOD<sub>u</sub>/BOD<sub>s</sub>: **3** \*Background Hardness (as CaCO<sub>3</sub>): **See L4-65h**  
**The receiving stream has naturally low DO of ~4.4 mg/L under critical conditions. The DOSAG model predicted an estimated minimum DO of 4 mg/L, approximately 7.2 miles downstream from the discharge. This DO is within the range of 90% of the natural DO applying the EPA alternative DO criteria for naturally low DO waters.**  
**\*Average hardness value is 18 mg/L at WQ station RV\_09\_16757, ~3.4 miles downstream from the discharge.**

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

Rationale: Same as current ☐ Revised ☒ New ☐  
 Location: **Cat Creek**

Effluent Flow Rate (MGD)	BOD <sub>5</sub>	NH <sub>3</sub> -N	DO (minimum)	TRC (daily max.)	Fecal Coliform (No./100ml)	pH (std. units)	Total Nitrogen	Total Phosphorus	Ortho-P, TKN Nitrite - Nitrate Organic Nitrogen
<b>0.1</b>	<b>15</b>	<b>5.2</b>	<b>6.0</b>	<b>0.02</b>	<b>200</b>	<b>6.0 – 8.5</b>	<b>25 (20)</b>	<b>5.0</b>	<b>Monitor</b>

Additional Comments:  
 • Priority pollutants permit limits, aquatic toxicity testing requirements, and other parameters required by categorical effluent guidelines or identified during review of permit application are to be determined by WRP.  
 • Revised BOD<sub>5</sub> and NH<sub>3</sub> limits, and a new DO limit are recommended to protect the instream DO criteria.  
 • The revised ammonia limit meets EPA's Aquatic Life Ambient Water Quality Criteria for Ammonia-Freshwater 2013 under 30Q3 streamflow and meets TN limits.  
 • When the instream wastewater concentration (IWC) is 50% or greater, the effluent pH permit limit range of 6.0 to 8.5 standard units is recommended in accordance with GA EPD's permitting guideline for effluent pH.  
 • Total nitrogen limit is necessary to meet Florida's TN instream criteria. The value in parentheses is an annual average limit.  
 • Total phosphorus limit meets Florida's TP instream criteria.  
 • Effluent monitoring for total phosphorus, Ortho P, TKN, nitrate-nitrite, and organic nitrogen is recommended. Nitrogen and phosphorus constituents should be analyzed from the same sample. Organic nitrogen should be calculated as TKN minus NH<sub>3</sub>.

Prepared by: **Lucy Sun** *LS* Date: **3/14/2022** Reviewed by: **Josh Welte** *JW* Date: **15.Mar.22**

## Part V: Program Manager Comment

*Elizabeth A. Booth*  
**Elizabeth Booth** Date: **03/17/2022**