Greater Edwards Aquifer Alliance

Member Organizations

Alamo, Austin, and Lone Star chapters of the Sierra Club
Bexar Audubon Society
Austin, Bexar and Travis Green Parties
Bexar Grotto
Boerne Together
Bulverde Neighborhood Alliance
Bulverde Neighbors for Clean Water
Cibolo Center for Conservation
Citizens for the Protection of Cibolo Creek
Comal County Conservation Alliance
Environment Texas
First Universalist Unitarian Church of SA
Friends of Canyon Lake
Friends of Dry Comal Creek
Friends of Government Canyon
Fuerza Unida
Green Society of UTSA
Guadalupe River Road Alliance
Guardians of Lick Creek
Headwaters at Incarnate Word
Helotes Heritage Association
Hill Country Alliance
Kendall County Well Owners Association
Kinney County Ground Zero
Leon Springs Business Association
Native Plant Society of Texas – SA
Northwest Interstate Coalition of Neighborhoods
Pedernales River Alliance – Gillespie Co.
Preserve Castroville
Preserve Lake Dunlop Association
Preserve Our Hill Country Environment
RiverAid San Antonio
San Antonio Audubon Society
San Antonio Conservation Society
San Geronimo Valley Alliance
San Marcos Greenbelt Alliance
San Marcos River Foundation
Save Barton Creek Association
Save Our Springs Alliance
Scenic Loop/Boerne Stage Alliance
Securing a Future Environment
SEED Coalition
Signal Hill Area Alliance
Sisters of the Divine Providence
Solar San Antonio
Texas Cave Management Association
Trinity Edwards Spring Protection Assoc.
Water Aid – Texas State University
Wildlife Rescue & Rehabilitation
Wimberley Valley Watershed Association

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January 12, 2023

Laurie Gharis, Chief Clerk
Office of the Chief Clerk, MC 105
Texas Commission on Environmental Quality
PO Box 13087
Austin, TX 78711-3087

Submitted electronically at https://www14.tceq.texas.gov/epic/eComment/

Re: Comments and Hearing Request Regarding the Application of Municipal Operations, LLC. for TPDES Permit No. WQ0016171001

Please accept the attached comments on behalf of the fifty-four member groups of the Greater Edwards Aquifer Alliance.

1. **Background:** Municipal Operations, LLC, P.O Box 1689, Spring, Texas 77383, has applied to the Texas Commission on Environmental Quality (TCEQ) for proposed Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0016171001 (EPA I.D. No. TX0142981) to authorize the discharge of treated wastewater at a volume not to exceed an annual average flow of 1,000,000 gallons per day.

The domestic wastewater treatment facility will be located approximately 1.75 miles west-southwest of the intersection of Babcock Road and Scenic Loop Road, in Bexar County, Texas 78023. The discharge route will be from the plant site via pipe to Helotes Creek; thence to impounded Helotes Creek; thence to Helotes Creek; thence to Culebra Creek; thence to Lower Leon Creek.

2. **Greater Edwards Aquifer Alliance (GEAA).** GEAA submits the following comments on behalf of our fifty-four member organizations and requests a contested case hearing regarding this permit application. GEAA also requests that our organization is recognized as an affected party with standing to represent our members who are adjacent landowners. GEAA is a 501(c)(3) nonprofit organization that promotes effective broad-based advocacy for the protection and preservation of the Edwards Aquifer, its springs, watersheds, and the Texas Hill Country that sustains it. GEAA has multiple members who would be adversely affected by the proposed amendment of Municipal Operations, LLC.

GEAA's members have serious concerns regarding the permit application and draft permit, and regarding the degradation of Helotes Creek and Lower Leon Creek that will likely occur with the increased discharge of treated sewage into these waterways. GEAA and its members' specific areas of concern are summarized in the following section of this letter.

3. **Comments on the application.** As noted in the Notice of Application and Intent to Obtain Water Quality Permit, the discharge route will be from the plant site via pipe to Helotes Creek; thence to impounded Helotes Creek; thence to Helotes Creek; thence to Culebra Creek; thence to Lower Leon Creek.

A. Effluent Discharge Levels: The effluent discharge levels in the application currently depict a phased approach for effluent discharge levels as the construction of the Guajolote Wastewater Treatment Facility (WWTF) occurs, with the applicant requesting effluent discharge level limits of 5 mg/l carbonaceous biochemical oxygen demand (CBOD5), 5 mg/l total suspended solids (TSS), 2 mg/l ammonia-nitrogen (NH3-N), 4 mg/l dissolved oxygen (DO), and 1 mg/l total phosphorus (TP).

Dissolved oxygen refers to the amount of oxygen that is readily available in a waterbody, and is a direct indicator of an aquatic system's ability to support aquatic life. While fish and crustaceans rely on dissolved oxygen for respiration through their gills, plant life and phytoplankton require dissolved oxygen for respiration when there is no light for photosynthesis. Promoting low levels of oxygen (hypoxia) threatens the survival of waterbodies' aquatic organisms. Further, utilizing low levels of dissolved oxygen in the wastewater treatment process threatens the biomass (a blend of beneficial microscopic organisms, bacteria, and solids) used to treat organic wastes entering a wastewater treatment facility. Lastly, Phosphorus is a "limiting nutrient" in ecosystems, meaning the quantity of this nutrient controls the pace of algal and aquatic plant production. However, excess quantities of phosphorus, even in small amounts, can lead to eutrophication and harmful algal growth in a waterbody.

GEAA strongly encourages the adoption of a phosphorus limit of 0.5 mg/l and a dissolved oxygen limit of 5 mg/l; **bringing the effluent discharge level to a 5mg/l CBOD5, 5mg/l TSS, 2 mg/l NH3-N .50 mg/l TP, and a 5 mg/l DO maximum effluent discharge limit.**

B. Implementation of Beneficial Reuse: As it stands today, the Guajolote Ranch Wastewater Treatment Facility application does not include any capacity to conduct beneficial reuse, promoting environmental harm to Helotes Creek, Lower Leon Creek, and the surrounding watershed areas. Accordingly, GEAA urges Municipal Operations, LLC to utilize a "One Water" approach for their wastewater treatment system, incorporating beneficial reuse of effluent, thereby eliminating the need to discharge effluent into Helotes Creek. In the event Municipal Operations, LLC is unable to reuse all the wastewater generated, it is GEAA's recommendation that the remaining amounts be land applied, with Municipal Operations, LLC purchasing the necessary land for such and obtaining the requisite Texas Land Application Permit (TLAP) permit from TCEQ.

C. Disinfectant Method: The application indicates that South Central Texas Water Company will be utilizing chlorine contact chambers as a means of disinfectant to further treat the effluent from the Diamante Ranch Wastewater Treatment Facility. We urge the disinfectant method to be changed to an ultraviolet light disinfectant. Ultraviolet light disinfectant treatment requires less space and is a physical process (rather than a chemical process) that has no residual effect that could harm humans or aquatic life.

All forms of chlorine are highly corrosive and toxic, and chlorine residuals could cause negative impacts on aquatic life. Further, chlorine residuals are unstable in the presence of high concentrations of chlorine-demanding materials (BOD). This would require wastewater with high BOD concentrations to be treated with high chlorine doses for adequate disinfection, increasing the likelihood of hazardous compounds such as trihalomethanes.

D. Impacts to Surrounding Wells: According to the Texas Water Development Board (TWDB), 60 water wells were found to be within a 1.5-mile distance of the Guajolote Ranch WWTF's discharge point, with eight wells found to be within a mile distance of the Guajolote Ranch WWTF's discharge point (Figure 1). Water well data was pulled from three TWDB groundwater databases; TWDB Groundwater Database (GWDB) reporting six wells in the 1.5-mile distance area, Submitted Drillers Reports (SDR) Database reporting 53 wells in the 1.5-mile distance area, and Brackish Resources Aquifer Characterization System (BRACS) Database reporting one well in the 1.5-mile distance area[1].

Further examining the stated water well data, 55 out of the 60 wells were noted to be used for domestic (household) purposes. The volume of wells located in this close proximity to the discharge point and route poses a serious concern of cross-contamination with the local groundwater supply that these well owners rely on to meet their needs. Further, many of these wells are not required to regularly test the water quality of their wells, subjecting them to potential public health concerns that result from the cross-contamination of the Guajolote Ranch WWTF's effluent and local groundwater supply.

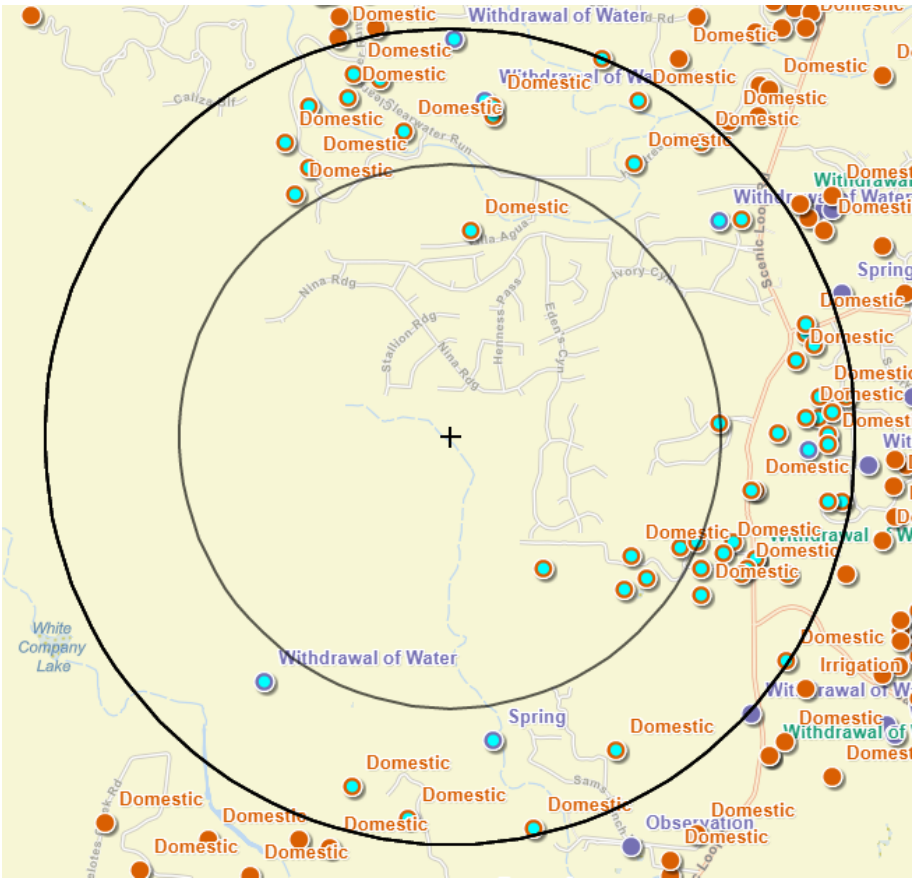

Figure 1: Location of Groundwater Wells from Proposed Guajolote Ranch WWTF Discharge Point.
Note: Inner Circle: One-mile distance, Outer Circle: 1.5-mile distance.
All impacted wells are highlighted in Light Blue
Orange Circle: SDR Wells, Purple Circle: TWDB GWDB Well, Green Circle: BRACS Well

[1] Texas Water Development Board. *Groundwater Data Viewer*, 2022, https://www3.twdb.texas.gov/apps/WaterDataInteractive/GroundwaterDataViewer/?map=sdr. Accessed 1 Nov. 2022.

E. Cumulative Impacts: According to a report developed by Southwest Research Institute (SWRI)[2], wastewater disposal practices across the Helotes Creek watershed, the watershed area where the Guajolote Ranch WWTF facility is located, must be taken seriously due to the aquifer recharge capacity this area has on the water quality entering the Edwards Aquifer. The report states that the wastewater disposal method for this community is solely on-site septic facilities (OSSFs). No TPDES permit currently exists for this area, meaning Guajolote Ranch WWTF would be the first facility of its kind if this TPDES permit is ultimately granted.

Reviewing the SWRI report, multiple scenarios were developed to evaluate different wastewater disposal impacts across the Helotes Creek Watershed. A TPDES scenario was modeled for this report, having the facility discharging effluent at an 800,000 gallons/day rate (200,000 gallons less than the requested Guajolote Ranch WWTF's effluent limit). Results of the report concluded that if a TPDES facility were to be installed in the Helotes Creek watershed, substantially increasing the cumulative amount of wastewater disposal in the area, Helotes Creek's trophic state would be severely implicated and likely classifying the creek as fully eutrophic. This severe degradation would ultimately lead to implications for the water quality and quantity of the Edwards Aquifer, the main water source for the City of San Antonio

The TCEQ has previously stated that in evaluating wastewater permits, they consider baseline conditions in the receiving stream, the physical and hydrological characteristics of the stream, waterbody uses, and the associated water quality standards that protect those uses. We trust that the TCEQ will consider the stated factors when ultimately deciding on the Municipal Operations, LLC TPDES application and will adopt standards that are in line with others in Central Texas.

Thank you for the opportunity to submit these comments.

Sincerely,

Annalisa Peace
Executive Director
Greater Edwards Aquifer Alliance

Nathan Glavy
Technical Director
Greater Edwards Aquifer Alliance

[2] Flores, Mauricio E, et al. Southwest Research Institute, San Antonio, TX, 2020, pp. 1–127, *Comparative Evaluation of Wastewater Disposal Practices in the Contributing Zone of the Edwards Aquifer*.