



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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August 19, 2024

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 Arch Ray, LLC. for TPDES Permit No. WQ0005452000

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

1. **Background:** Arch Ray, LLC, 18727 West Farm-to-Market Road 580, Lometa, Texas 76853, which proposes to operate Arch Ray Resort, a winery including a wine tasting room, brewery, and hospitality services facility has applied to the Texas Commission on Environmental Quality (TCEQ) for a new permit, Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0005452000, to authorize the discharge of treated process wastewater, domestic wastewater, and non-process wash water at a daily average flow not to exceed 35,000 gallons per day via Outfall 001.

The facility will be located at 312 Schmidtzinsky Road, southeast of the City of Fredericksburg, Gillespie County, Texas 78624. The effluent will be discharged to an earthen ditch, thence to Pedernales River in Segment No. 1414 of the Colorado River Basin. The unclassified receiving water uses are minimal aquatic life use for the earthen ditch. The designated uses for Segment No. 1414 are primary contact recreation, public water supply, and high aquatic life use.

2. **Greater Edwards Aquifer Alliance (GEAA).** GEAA submits the following comments on behalf of our sixty member organizations and requests a contested case hearing regarding this permit application. GEAA also requests that our organization be 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 and Trinity Aquifers, its springs, watersheds, and the Texas Hill Country lands that sustain them. GEAA has multiple members who would be adversely affected by the proposed TPDES permit of Arch Ray, LLC.

GEAA's members have serious concerns regarding the application and draft permit, and regarding the degradation of the Pedernales River 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 to an earthen ditch, thence to Pedernales River in Segment No. 1414 of the Colorado River Basin.

A. Effluent Discharge Levels: The effluent discharge levels in the draft permit grant the Arch Ray Wastewater Treatment Facility (WWTF) an effluent discharge daily average limits of 10 mg/l carbonaceous biochemical oxygen demand (CBOD₅), 15mg/l total suspended solids (TSS), 3 mg/l ammonia-nitrogen (NH₃-N), a “N/A” mg/l amount of total phosphorus (TP), and 2 mg/l dissolved oxygen (DO). GEAA would request more stringent effluent treatment standards that are protective of the Pedernales River for the following reasons:

First, CBOD₅ is the amount of dissolved oxygen consumed in five days by biological processes breaking down organic matter, but in which the contribution from nitrogenous bacteria has been suppressed. Essentially, CBOD₅ is a marker of how much waste has been left untreated during the wastewater treatment process. This results in the untreated waste being treated in the stream itself, which is a process that consumes oxygen, including the dissolved oxygen in the water that's used by fish and other aquatic life. A high level of CBOD₅ threatens the health of the aquatic life of the receiving waterbody and raises the chance of fish kills.

Second, TSS are waterborne particles that are larger than 2 microns that float or “suspend” in water. Various suspended solids, including plankton, sand, and sediment, can be considered. Sometimes, algae and bacteria may also be considered total suspended solids. The impact total suspended solids have on water quality is associated with a waterbody's clarity. The higher the amount of total suspended solids present in a waterbody, the increased chance of lowering the waterbody's natural dissolved oxygen level and increasing its water temperature. Further, the increased levels of total suspended solids could block the needed sunlight that the Pedernales River utilizes for photosynthesis; decreasing the survival of plants and further decreasing the waterbody's oxygen levels.

Third, NH₃-N, nitrogen as ammonia, is a crucial nutrient in wastewater treatment as it is utilized by bacteria to make proteins needed to break down food as well as make energy. However, high concentrations of ammonia nitrogen present in wastewater can lead to adverse environmental impacts on a receiving waterbody's aquatic system. Impacts on the receiving waterbody could include toxicity to aquatic organisms by affecting metabolism and gill function, elevated risk of eutrophication, and unpleasant odor issues.

Fourth, 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 blooms in a waterbody.

Lastly, DO 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.

GEAA strongly encourages the adoption of a CBOD₅ limit of 5 mg/l, a TSS limit of 5 mg/l, an NH₃-N limit of 2 mg/l, a phosphorus limit of 0.5 mg/l, and a DO 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. Discrepancy in Draft Permit: As stated above, the draft permit grants the Arch Ray WWTF an effluent discharge daily average limits of 10 mg/l carbonaceous biochemical oxygen demand (CBOD₅), 15mg/l total suspended solids (TSS), 3 mg/l ammonia-nitrogen (NH₃-N), a “N/A” mg/l amount of total phosphorus (TP), and 2 mg/l dissolved oxygen (DO). While this daily average limitation indicates an “N/A” limit for Total Phosphorus, the daily maximum and single grab limits depict a 0.5 mg/l limitation for Total Phosphorus, raising confusion on what limit the applicant is expected to follow. GEAA requests clarification on the Total Phosphorus effluent limit and strongly encourages the adoption of Total Phosphorus limit of 0.5 mg/L across the board.

C. Implementation of Beneficial Reuse: As it stands today, the Arch Ray WWTF’s application and draft permit do not include any capacity to conduct beneficial reuse to mitigate environmental harm to the Pedernales River, and the surrounding watershed areas. Accordingly, GEAA urges Arch Ray, 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 the Pedernales River. In the event Arch Ray, LLC is unable to reuse all the wastewater generated, GEAA recommends that any amounts that would not be beneficially reused on or off site should be land applied, with the applicant purchasing or setting aside land within their site for land application as needed and obtaining the requisite Texas Land Application Permit (TLAP) permit from TCEQ.

D. Impacts on Surrounding Wells: According to the Texas Water Development Board (TWDB), 99 water wells were found to be within a 1.5-mile distance of the Arch Ray WWTF’s discharge point, with 40 wells found to be within a mile distance of the Arch Ray WWTF’s discharge point (Figure 1). Water well data was pulled from three TWDB groundwater databases; TWDB Groundwater Database (GWDB) reporting 36 wells in the 1.5-mile distance area, Submitted Drillers Reports (SDR) Database reporting 43 wells in the 1.5-mile distance area, and Brackish Resources Aquifer Characterization System (BRACS) Database reporting 20 well in the 1.5-mile distance area¹.

Further examining the stated water well data, 71 out of the 99 wells were noted to be used for domestic (household), irrigation, withdrawal of water, or public supply purposes. The volume of wells located in this 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 Arch Ray WWTF’s effluent and local groundwater supply.

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

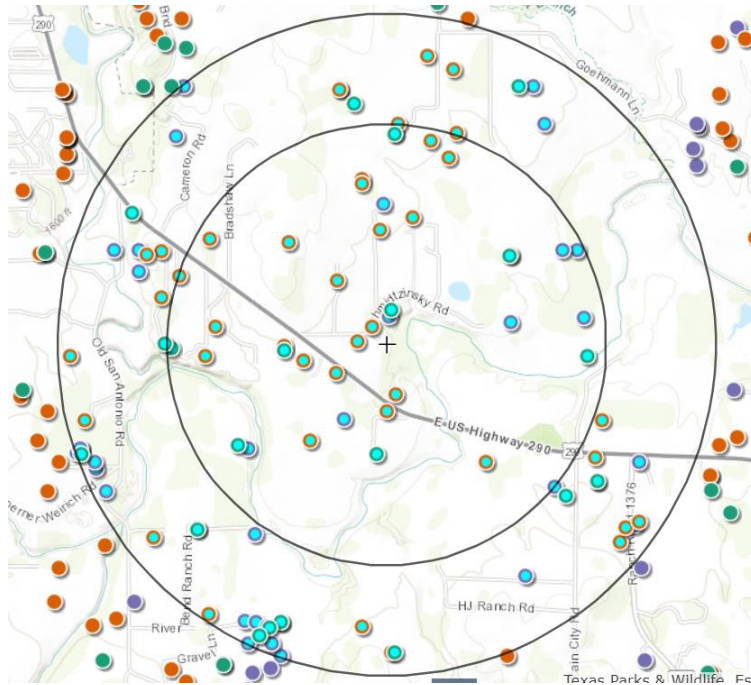


Figure 1: Location of Groundwater Wells from Proposed Arch Ray WWTF Discharge Point.
Note: Inner Circle: One-mile distance, Outer Circle: 1.5-mile distance.
All impacted wells are highlighted in Light Blue
Orange Circle: SDR Wells, Purple Circle: TWDB GWDB Well, Green Circle: BRACS Well

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 implementing the Arch Ray TPDES application and will adopt standards that are in line with preserving the pre-permit characteristics of the receiving waterbody and its historic uses.

Thank you for the opportunity to submit these comments.

Sincerely,

Annalisa Peace
 Executive Director
 Greater Edwards Aquifer Alliance

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 Technical Director
 Greater Edwards Aquifer Alliance