



Proposed Tapatio WWTP

5/23/19

1. Need

Why is a new plant needed?

The current WWTP is approaching 40 years old, and property lease expires in approximately 4 years

2. Benefits

Are there any additional benefits to the new proposed plant?

The proposed WWTP Water Quality is of the highest purity available. The Resort and Golf Course will benefit greatly from increased effluent discharge from future growth.

3. Design

a. What is the type of treatment system proposed?

The type of treatment system proposed is a Membrane Bioreactor system, or MBR.

b. Who is the design engineer for the wastewater treatment plant (WWTP)?

The design engineer for the treatment plant is Jamie Miller, P.E. from Integrated Water Services, Inc. (IWS) in Longmont, CO.

c. How many wastewater treatment plants has the design engineer designed?

IWS / Jamie Miller, P.E. has designed 30+ facilities during her career.

d. Who is the design engineer for the land application disposal unit?

We are not using land application as a part of this permit. Treated water will be permitted for reuse to irrigate the golf course at Tapatio Springs Hill Country Resort.

e. How many land application disposal units has the design engineer for the land application disposal units designed?

N/A

4. Influent Control

a. What procedures and protocols will the sewer utility have to prevent discharges of hazardous, industrial, or other wastes into the sewage collection system that could upset the treatment plant, contaminate the effluent, or both?

The sewer system to the facility is designed to handle the waste from the surrounding neighborhoods and community so hazardous and industrial waste is not anticipated.

5. Plant Integrity

a. Is the plant in a floodway or flood zone?

No, plant is not located in the floodplain.

b. What security measures will be in place to prevent intruders (human and animals)?

The plant perimeter will have an 8' tall fence; per TCEQ regulations.

6. Reliability

a. What will be the source of electrical power?

Our electric provider will be Bandera Electric Corp.

b. What backup power supply will be provided?

The plant will feature a backup generator with an automatic control switch that will provide power to the facility in the event of an outage.

7. Construction

a. What entity will be the construction firm?

IWS

b. What wastewater treatment plants (WWTPs) has the entity constructed previously?

Integrated Water Services has built 50+ plants, including plants in Texas, California, Colorado, New Mexico and Arizona.

8. Equipment Suppliers

a. What procedures will ensure that equipment purchased will meet design specifications?

Equipment will be specified by the engineer as stated on plans and specifications. Submittals to be approved by engineer. Construction oversight by the engineer and Kendall West to ensure construction meets plans and specifications.

b. What guaranties will suppliers be required to provide?

Suppliers will provide warranty information, as well as ensure that equipment will meet engineering specifications. Construction will include a one-year warranty.

9. Land Disposal Area

a. Is the land disposal area in a floodway or flood zone?

Land disposal will not be utilized for this facility. However, treated effluent will be used to irrigate the golf course at Tapatio Springs Hill Country Resort.

10. Impacts

a. Surface Water: What controls will be in place to prevent irrigated effluent from affecting surface water?

Wastewater characteristics will meet TCEQ limits prior to use in irrigation, our limits (treatment standards) are set based on allowance for discharging directly to surface water.

b. Groundwater:

i. What controls will be in place to prevent irrigated effluent from affecting surface water?

Provisions are in place to prevent land application to the golf course during rain events.

- ii. **What studies have been done to assess the effect of the irrigation of effluent on groundwater in the area?**

N/A

c. Endangered Species

- i. **What endangered species have been identified on or near the plant site and land disposal area?**

No endangered species have been identified near the plant location.

d. Humans, Plants, Animals:

- i. **What measures will be in place to protect humans, plants, and animals from:**

1. **Effluent application:** The effluent to be used for irrigation meets type I limits for reuse of treated effluent.
2. **Effluent that does not meet treatment standards:** Redundancy is included at all stages of treatment to ensure effluent meets TCEQ limits prior to discharge.
3. **Chlorine Releases:** Liquid chlorine will be stored in double containment system to ensure no spills.
4. **Noise:** The pumps and blowers used for the plant will be contained inside a building on site. Noise pollution will be minimal, in addition all pumps are being specified with low dB ratings.
5. **Odors:** There will be adequate odor control onsite for all treatment functions.
6. **Intrusion by security lighting:** Adequate screening will be used to minimize light pollution.

- ii. **What warning systems will be provided to notify the public of malfunctions at the WWTP and at the land disposal area?**

The plant will contain flow alarms to communicate to the operator a plant malfunction. In addition, a visual red blinking light can also be utilized in the event of a plant malfunction.

11. Other Wastes:

- a. **How will solids and sludge be handled?**

Solids and sludge will be transported away from the site by a truck to a permitted landfill. At full build out, it is anticipated to have one dumpster truck approximately every two weeks to transport waste from the site.

- b. **How will waste chlorine be handled?**

There will be no waste chlorine. The liquid chlorine will be stored in a double container system.

12. Wastewater Treatment

- a. **Is the chosen means of wastewater treatment a proven method?**

Yes, MBRs have been used all over the world to treat water to the highest limits prescribed by regulatory officials. They are considered to be the best available technology.

- b. **What are the levels of nutrients in the effluent?**

Levels of nutrients following MBR technology generally meet:

- i. BOD: < 5 mg/L

- ii. NH3: < 2 mg/L
- iii. Total Phosphorous: < 0.5 mg/L

c. Are the effluent limitations in the permit drafted by the staff of TCEQ sufficient to protect:

- i. **Public health:** Yes, the limits prescribed by TCEQ are sufficient to protect human contact.
- ii. **Drinking water:** Yes, the limits prescribed by TCEQ are sufficient to protect drinking water.
- iii. **Wildlife:** Yes, TCEQ effluent limit are sufficient to protect wildlife.
- iv. **Plants:** Yes, TCEQ effluent limits are sufficient to protect plant life.

13. Who owns:

a. The plant site and in what type of legal title?

Kendall West Utility

b. The land disposal area and in what type of legal title?

Reuse water will be used to irrigate Tapatio Springs Hill Country Resort.

14. Who will own the plant site and the land disposal area after the facilities are constructed?

Kendall West Utility (KWU)

15. Who will own the WWTP facilities?

KWU

16. Does the Applicant have any plans to change ownership to the plant site, and the land disposal area in the future?

No, will be the owner of KWU

17. Operations:

a. What is proposed to be the minimal level of certification for the operator(s) of the WWTP?

Operator holds a class C license.

b. What is proposed to be the minimal level of experience, training, and certification for the land disposal application operations?

N/A

c. Who will be the operators?

Henry Ackey, Walter Hanna

d. What qualifications do those operators possess that are relevant to the operation of the WWTP and the land disposal operations?

TCEQ Licensed and many years of experience.

18. Permit drafted by the staff of TCEQ:

a. What laboratory will the Applicant submit the samples that the draft permit requires it to take?

UGRA Kerrville Texas

b. How will the Applicant comply with the flow requirements in the draft permit?

Per TCEQ approved method.

- c. What means and how often will the Applicant calibrate its flow measuring devices/equipment?**
Flowmeter will be calibrated according to manufacturer's specifications, and at TCEQ required intervals.
- d. What plans does the Applicant have for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources, standby generators, and/or retention of inadequately treated wastewater?**
The facility will employ a standby generator sized to operate the facility in the event of a power outage. Equipment will also be redundant, to ensure plant is capable of treatment in the event of an equipment failure.
- e. How does this application encourage, promote, and support area-wide waste collection, treatment, and disposal systems?**
Plant is designed to accept and treat waste in the KWU service area.
- f. What plans does the Applicant have for complying with Special Provisions of the draft permit? And, how will the Applicant implement those plans?**
No special provisions stated as of yet. KWU will ensure that they meet all special provisions that may be incorporated into the permit.