

Shadow Ridge Wastewater Treatment Plant
Aquifer Protection Permit No. P-105348
Place ID 19408, LTF No. 82370
SIGNIFICANT AMENDMENT

I. Introduction:

The Arizona Department of Environmental Quality (ADEQ) proposes to issue an Aquifer Protection Permit (APP) for the subject facility that covers the life of the facility, including operational, closure, and post-closure periods unless suspended or revoked pursuant to Arizona Administrative Code (A.A.C.) R18-9-A213. The requirements contained in this permit will allow the permittee to comply with the two key requirements of the Aquifer Protection Program: 1) meet Aquifer Water Quality Standards (AWQS) at the Point of Compliance (POC); and 2) demonstrate Best Available Demonstrated Control Technology (BADCT). BADCT's purpose is to employ engineering controls, processes, operating methods or other alternatives, including site-specific characteristics (i.e., the local subsurface geology), to reduce discharge of pollutants to the greatest degree achievable before they reach the aquifer or to prevent pollutants from reaching the aquifer.

II. Permittee & Facility Location:

Name of Permittee:	Beaver Dam Water Company
Facility Name and Location:	Shadow Ridge Wastewater Treatment Plant 475 East Red Hawk Road, Scenic, Arizona 86432 (Mohave County)

III. Facility Description:

Beaver Dam Water Company is authorized to operate the Shadow Ridge Wastewater Treatment Plant (WWTP) with capacity of 0.015 million gallons per day (mgd). The WWTP will be serving Shadow Ridge Subdivision with 71 lots. The wastewater from septic tanks located at each lot of Shadow Ridge Subdivision flows to a collection system and then this primary treated wastewater enters the WWTP. The septic tanks and sewer collection system are part of the WWTP component and do not require any additional permit to construct and operate. The WWTP treatment process consists of an AdvanTex Textile filter system manufactured by Orenco Systems, Inc. The WWTP includes an influent pump station, a 25,000 gallons recirculation tank, nine AdvanTex textile filter units (AX-100) for aeration and nitrification, an upflow filter for de-nitrification, an upflow filter recirculation tank, a textile filter unit for re-aeration, and a UV disinfection unit. The settled solids shall be hauled off-site for disposal in accordance with state and federal regulations. The effluent will be discharged through subsurface drip disposal system. The depth to groundwater is approximately 260 feet below ground surface and the direction of groundwater flow is to the northwest. The effluent may also be used for beneficial purposes under a valid reclaimed water permit. The WWTP is classified as producing Class B+ reclaimed water pursuant to A.A.C. R18-11, Article 3. The WWTP is designed and constructed according to plans approved by the ADEQ APP and Reuse Unit.

IV. Amendment Description:

The purpose of this amendment is to:

- Change the permittee from the Millennia Investment Corporation to Beaver Dam Water Company, Inc.,
- Update the closure cost and financial assurance mechanism,
- Remove indicator parameter monitoring requirements in Routine Discharge Monitoring Table
 - The monitoring for Indicator Parameters are not typically part of the current monitoring framework and ALs were never specified. The monitoring of Indicator Parameters was to collect data only.
- Reduce the monitoring frequency requirements for metals and VOCs.
 - The source of the influent is only domestic wastewater and there is no industrial waste anticipated in the influent and the WWTP is designed for low flow of 15,000 gpd, therefore the frequencies for metals and VOCs are reduced.
- Remove conditions from the current permit that require installation of a Point of Compliance monitoring well based on a specific number of discharge limit violations and installation of an upgradient monitoring well based on specific numbers of aquifer quality limit violations.
 - These site-specific requirements have been replaced by the a requirement that “The Director may require an amendment of this permit to install a monitoring well if there is a cause or concern that groundwater quality maybe impacted at the POC”, found in Section 2.4.

The permit category for this amendment was determined to be a “Significant Amendment” due to reduction in monitoring as per A.A.C. R18-9-A211(B)(4).

V. Regulatory Status:

The facility was found to be in compliance as of the last inspection conducted April 17, 2019.

VI. Best Available Demonstrated Control Technology (BADCT):

The WWTP is designed to meet the treatment performance criteria for new facilities with a design flow of less than 250,000 gpd as specified in R18-9-B204.

The septic tanks are designed, constructed, operated, and maintained to meet the treatment performance criteria specified in A.A.C. R18-9-A314 and Table 9 of this permit. The collection system is designed, operated, and maintained to meet the criteria specified in A.A.C. R18-9-E301 and Table 9 of this permit.

The WWTP will be provided with full noise and odor control. The WWTP meets the required setback distance of 25 feet. All of the WWTP units will be constructed of fiberglass or reinforced concrete.

The facility has provided 20,800 SF of disposal area for effluent disposal. The disposal area will be divided into four fields. A drip system will be provided to distribute the effluent evenly throughout the disposal system.

The permittee requested reduction in pathogen removal monitoring from once a day to once a week. As per A.A.C. R18-9-B204 (B)(4)(iii), ADEQ has approved the reduction in monitoring of fecal coliform from daily to weekly. The facility has been provided with an alarm system for the UV disinfection unit which will be activated when there is a lack of power. The discharge limit for fecal coliform will be 200 CFU/100 ml. If discharge limit (DL) for fecal coliform is exceeded, the permittee shall conduct verification sampling according to the contingency plan described in Section 2.6.2.2.2 of this permit. The permittee will be performing 6-month study to determine the UV transmittance, UV dose and fecal coliform levels as per Section 3.0. The purpose of this study is to determine the optimum UV transmittance and UV dosage to meet the discharge limit for fecal coliform.

VII. Compliance with Aquifer Water Quality Standards (AWQS):

To ensure that site operations do not violate Aquifer Water Quality Standards at the point of compliance, representative samples of the effluent shall be collected from the point of discharge from the downstream of UV disinfection unit. The permittee shall monitor the effluent daily for flow rate, weekly for fecal coliform, monthly for total nitrogen, continuous monitoring for UV transmittance and UV dosage, semi-annually for metals and annually for volatile organic compounds (see Section 4.2, Table 7 in the permit).

The facility is classified for Class B+ reclaimed water. Reclaimed water monitoring (under Table 8) shall be initiated upon commencement of the use of Class B+ reclaimed water for beneficial purposes under A.A.C. R 18-9, article 7, and shall be performed in addition to routine discharge monitoring required under section 4.2, Table 8. To ensure that site operations do not violate the Reclaimed Water Quality Standards for the beneficial use of Class B+ reclaimed water, the permittee shall monitor the reclaimed water at the same effluent sampling point as indicated above. The permittee shall monitor the reclaimed water monthly for total nitrogen and daily for fecal coliform.

Facility inspection and operational monitoring shall be performed on a routine basis (see Section 4.2, Table 9 in the permit).