

Agua Nueva Water Reclamation Facility
Aquifer Protection Permit No. P-100655
Place ID 1033, LTF No. 85980
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:

Pima County Regional Wastewater Reclamation Department
7101 N. Casa Grande Highway
Tucson, Arizona 85743

III. Facility Description:

The Agua Nueva WRF, is a wastewater treatment facility with a rated flow of 35.2 million gallon per day (mgd). The facility consists of an influent pump station, headworks, dissolved air flotation units, grit removal/flocculation system, four aeration basins with anoxic and aerobic zones for 5-stage Bardenpho process, four clarifiers, seven disk filters and two chlorine contact basins, de-chlorination and thickened sludge tanks. The effluent will be discharged to the Santa Cruz River under AZPDES permit no. AZ0026107. The facility is also classified to produce Class B+ reclaimed water, with the option to change to A+ water using additional monitoring. The reclaimed water will be delivered to the City of Tucson's reclaimed water system, and may be used for other beneficial purposes under a valid reclaimed water permit. The materials removed at the headworks are dewatered and transported to a state-approved facility for disposal. The sludge will be thickened and pumped to the Tres Rios WRF (APP #100630) for treatment and disposal.

IV. Amendment Description:

The purpose of the amendment is to terminate odor monitoring for Hydrogen Sulfide (H₂S) at the secondary clarifiers. Specifically, this means deleting the following from the permit:

- Reference to H₂S monitoring near the secondary clarifiers discussed in Section 2.2 Best Available Demonstrated Control Technology (BADCT)
- 2.6.1.1 Contingency Requirements for Odor Control
- 2.7.4.1 H₂S Monitoring Exceedance and Compliance Report

- Requirement for maintenance of odor monitoring as designed in Table 13:
FACILITY INSPECTION AND OPERATIONAL MONITORING

Because the new Agua Nueva WRF did not meet the required 350 ft. setback, PCRWRD received a setback waiver in 2012 from the City of Tucson, owner of land adjacent to and within 350 feet of the WRF. H₂S monitoring was added to the permit to demonstrate that secondary clarifiers would not be a source of odors. Future voluntary odor monitoring will continue throughout the treatment facility and adherence to the Pima County Air Permit Odor Limiting Standard.

Based on monitoring results between January 2014 and June 2020, the daily average H₂S levels exceeded the 24 ppb permit limit on a total of 2 days, indicating that the plant met the compliance criteria 99.9 percent of the time, thereby demonstrating that the secondary clarifiers are not a routine source of hydrogen sulfide at the water reclamation facility. Accordingly, PCRWRD requested to remove the permit condition for H₂S odor monitoring.

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

V. Regulatory Status:

The latest inspection dated November 7, 2019, indicates that the facility was found to be in compliance with the APP and Arizona rules and statutes.

VI. Best Available Demonstrated Control Technology (BADCT):

The Agua Nueva WRF was designed, constructed, operated, and maintained to meet the treatment performance criteria for new facilities as specified in A.A.C. R18-9-B204. The new WRF shall meet the performance requirement for industrial pre-treatment as per A.A.C. R18-9-B204(B)(6)(b).

The treatment facility shall not exceed a maximum seepage rate of 550 gallons per day per acre for all containment structures within the treatment works.

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

To ensure that site operations do not result in violation of Aquifer Water Quality Standards at the point of compliance, representative samples of the effluent will be collected downstream of chlorine contact chamber (see Section 4.2, Table 1: ROUTINE DISCHARGE MONITORING, in the permit). Reclaimed water will be monitored for Class B+ under Table 2: RECLAIMED WATER MONITORING - Class B+ or Class A+ under Table 10: RECLAIMED WATER MONITORING - Class A+.

Groundwater monitoring is required under this permit per Section 4.2, Table 3: GROUNDWATER MONITORING at POC Well #1 and Table 4: GROUNDWATER MONITORING at POC Well #2 for *E. Coli*, nitrogen species, metals and organic compounds.

Facility inspection and operational monitoring will be performed on a routine basis (see Section 4.2, Table 5: FACILITY INSPECTION AND OPERATIONAL MONITORING, in the permit).