

Chino Valley Water Reclamation Facility
Aquifer Protection Permit No. P-104236
Place ID 17668, LTF No. 82359
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:

2190 Rodeo Dr
Chino Valley AZ, 86323

III. Facility Description:

The water reclamation facility (WRF) treatment process consists of an influent lift station, influent fine screening and grit removal, nitrification-denitrification using anoxic and aerobic reactors, solid-liquid separation using membrane bioreactors, and ultraviolet (UV) disinfection. The sludge handling train consists of two aerated sludge storage tanks, waste activated sludge (WAS) transfer pumps, and two dewatering screw presses. Influent equalization is provided by two aerated equalization basins, preceded by influent coarse screening with each equalization (EQ) basin equipped with a floating mechanical surface aerator. Equalized influent is returned to the main process area using the EQ pump station, which discharges into the influent fine screens. All effluent produced at the Chino Valley WRF is discharged to rapid infiltration basins (RIBs) for disposal. The RIBs are located away from the WRF treatment site approximately 1.0 mile east of the WRF.

IV. Amendment Description:

The purpose of this amendment is to expand the facility to handle the peak flows better. This includes adding two equalization basin, new coarse screen and screw press. The groundwater standards for Point of Compliance well 2 have been set in this permit as well.

The facility improvements to handle permitted flow makes this a significant amendment as per A.A.C. R18-9-A211(B)(9).

V. Best Available Demonstrated Control Technology (BADCT):

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

The WRF shall be designed, constructed, operated, and maintained to meet the treatment performance criteria for new facilities as specified in A.A.C. R18-9-B204. The permittee requested reduction in pathogen removal monitoring from daily to weekly. According to A.A.C. R18-9-B204 (B)(4)(b)(iii), ADEQ has approved the reduction in monitoring of Fecal Coliform from daily to weekly. The permittee has provided the UV disinfection unit which will have continuous monitoring for UV transmittance and UV dose. The UV system is designed to deliver a UV dose of 30 mJ/cm². The manufacturer of UV system has performed tests which show that the non-detect limits for Fecal Coliform can be achieved with the UV dose lower than 30 mJ/cm² and with UV transmittance of 65%. The permittee should be monitored continuously for UV transmittance and UV dose. The alert level for UV transmittance will be 65% and alert level for UV dose will be 30 mJ/cm². If the UV dose or transmittance falls below alert levels, the permittee shall conduct verification sampling according to contingency plan described in Section 2.6.2.2.2. In addition, the permittee shall also conduct monitoring under Section 4.2, Table 11 for a period of 60 days to determine the UV transmittance and UV dosage that will reduce Fecal Coliform levels to non-detect levels.

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

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

The project hydrogeologist requested that the applicant provide the maps for the existing PMA and DIA. The applicant indicated that these documents were unavailable. The Arizona Department of Environmental Quality (ADEQ) hydrogeologist visited the ADEQ records center and reviewed documents dating back to 2004; however, the existing PMA and DIA maps were not in the file. The hydrogeologist has reached out to ADWR to determine if they possess the model or any related documents for the DIA or PMA. Obtaining these records will help determine whether a new DIA and PMA must be requested to confirm that the facility's operations remain consistent with the documentation submitted in the original Chino Valley Underground Storage Facility (USF) permit application.

ADEQ Internal Decision: Per A.A.C. R18-9-A202(A)(8), the applicant stated that they do not have records of the previously approved PMA and DIA boundary maps on file. The applicant submitted a technical letter verifying that no changes have occurred to the DIA and PMA since 2004¹.

¹ Chino Valley WRF Response to IRSS Comments, Taylor B. Pierce, P.E, 70097 (Registered Professional Engineer - Civil), July 17, 2026.

Section 3.311 of Appendix M indicates that because treatment volumes and effluent quality will not change, the existing PMA and DIA will not be reassessed. Based on the existing Hydro Memo, two pollutant management areas have been defined for the Chino Valley WRF and recharge facilities as follows:

PMA	Description of PMA
Wastewater Reclamation Facility (WRF)	Line circumscribing all portions of the WRF.
Recharge facility	Line circumscribing all recharge basins to be constructed at the site.

Discharge Impact Area (DIA)

The Maximum Area of Impact (AOI) represents the projected geographic footprint where the unlined basins directly affect the local water table, specifically defined as the boundary where groundwater mounding creates a 1-foot rise in water levels. This area is established to define the critical zone for evaluating any potential unreasonable harm to neighboring land or regional facilities.

To precisely isolate and calculate this boundary, the engineered groundwater model simulates the facility's full 20-year permit renewal recharge rate of 1,120 acre-feet per year (AF/yr). Analysts then map the final projected groundwater elevations from this active simulation and subtract the projected water levels from a baseline model run conducted entirely without the Old Home Manor (OHM) facility's recharge. The resulting 1-foot difference (rise) contour between these two distinct projected surfaces strictly maps out the maximum AOI. This boundary is visually delineated in Figure 15, of the AOI.

Based on the existing hydrogeology memo from 2004, the DIA is essentially the same as the PMA because the facilities are designed to be non-discharging, except because of an accident or spill as defined by the mounding analysis prepared for the ADWR Recharge Permit. According to this analysis, the DIA will extend predominantly north-northwest but will be present throughout the basin in 10 years. Discharge of treated effluent to the aquifer via Del Rio Springs is predicted to occur in approximately 5 years.

Groundwater is believed to flow north-northwesterly based on the results of a groundwater model simulation performed by ADWR in 2019. The discharge impact area is reasonably considered to be the area around the infiltration basins and the monitoring wells located near them, but it does not extend to the WRF site since no discharge occurs on that property. The effluent is designed to meet Class A+ water quality standards based on the current Arizona Administrative Code.

The nearest permanent surface water body is Granite Creek, a perennial tributary to the Verde River, located approximately 5 miles from the point of discharge. Granite Creek joins the Verde River approximately 6 miles from the point of discharge. These surface water bodies are downgradient from the RIBs; however, the surface water quality will not be impacted by the WRF effluent, which infiltrates directly into the subsurface.