City of Goodyear – SAT and VIP Recharge Facility
Aquifer Protection Permit No. P-511440
Place ID 145828, LTF No. 69122
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:

15500 West Yuma Road
Goodyear, Arizona 85338

III. Facility Description:

The City of Goodyear is authorized to operate the City of Goodyear – Vadose Injection Project (VIP) a 6.0 million gallons per day (mgd) groundwater recharge facility. The VIP receives Class A+ Reclaimed water conveyed via an underground pipeline from the City of Goodyear's 157th Avenue Water Reclamation Facility (157th WRF) which is permitted under APP P-101324. The permittee additionally has an underground Storage Facility and Water Storage Permits issued by Arizona Department of Water Resources (ADWR) for this facility. The VIP consists of two recharge sites – Vadose Injection Project Site (VIP) and the Soil Aquifer Treatment (SAT) Site. The SAT site is located approximately 0.7 miles from the VIP site. The SAT site can recharge up to 5.87 mgd and VIP site can recharge up to 0.13 mgd (total combined flow not to exceed 6.0 mgd).

Vadose Injection Project (VIP) Site:

The VIP site consists of four (4) vadose injection wells located within the city right of way, in a pattern proceeding to the south of the intersection of West Van Buren Road along South Estrella Parkway. Discharge to the VIP wells will be as needed, but no more than 0.13 mgd. The facility will not be constructing the future phase injection wells as the recharge rate through the existing injection wells were not operated as anticipated. At the Permittee's request, the future phase II, III, IV and contingency injection wells are being removed from the permit.

Soil Aquifer Treatment (SAT) Site:

The SAT Site consists of five (5) recharge basins with a total area of 15.4 acres. Recharge will be accomplished through earthen basins operated with alternating wet and dry cycles, which will

achieve additional denitrification and optimize the recharge performance of the basins. These recharge basins can recharge up to an annual average flow of 5.87 mgd.

IV. Amendment Description:

ADEQ reviewed and approved the following changes to the permit as listed below:

- Revise the permitted average annual recharge flow rate from 7.4 mgd to 6.0 mgd total combined between SAT and VIP.;
- Add recharge Basin (#5) at the SAT site;
- Remove the vadose zone recharge wells for Phases 2, 3 and 4 and all contingency wells from the permit (none of which were installed); and
- Reallocate the allowable discharge quantity between the VIP injection wells and the SAT Site basins, so that SAT is the primary recharge location, permitted for up to 5.87 mgd annual average, with discharge to the VIP wells as needed but not more than 0.13 mgd annual.

The permit category for this amendment was determined to be an "Significant Amendment" as per A.A.C. R18-9-A211(B)(4) and (7).

V. Regulatory Status

The latest inspection dated February 14, 2019 indicates that the facility was found to not be in compliance with the APP and Arizona rules and statutes, for exceeding the permitted Daily Limit of 4.0 mgd and vegetation growing at the SAT Site recharge basins. The facility was issued a Notice of Opportunity to Correct Deficiencies (Case No. 181136) on March 1, 2019 and closed on April 1, 2019.

VI. Best Available Demonstrated Control Technology (BADCT):

The Class A+ reclaimed water being injected and recharged at the SAT and VIP is conveyed from the 157th WRF. The 157th 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 per APP P-101324.

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

To ensure that site operations do not result in a violation of Aquifer Water Quality Standards at the point of compliance, groundwater monitoring is required under this permit per Section 4.2, Table II for Fecal Coliform, nitrogen species, metals and organic compounds.

Facility inspections and operational monitoring will be performed on a routine basis (see Section 4.2, Table III, in the permit).