

Superstition Mountains Community Facilities District No. 1 Wastewater Treatment Plant
Aquifer Protection Permit No. P-102873
Place ID 400, LTF No. 73525
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. Facility Location:

5661 South Ironwood Drive
Apache Junction, Arizona 85120

III. Facility Description:

The Superstition Mountains Community Facilities District #1 (SMCFD) is authorized to operate the SMCFD Wastewater Treatment Plant (WWTP) with a maximum average monthly flow of 3.0 million gallons per day (mgd). The WWTP will be rerated from 2.1 mgd to 3.0 mgd in three phases.

Existing WWTP:

The 2.1 mgd treatment process consists of a headworks with screens and two (2) grit removal systems, two (2) Biolac treatment systems for extended aeration /activated sludge processing with nitrogen removal, two (2) clarifiers, chlorination and de-chlorination. The Biolac Basins are lined with 60-mil HDPE liners. Sludge is placed in two (2) asphalt lined sludge thickening lagoons, dried in two (2) asphalt lined sludge drying beds and six (6) concrete rapid sludge drying beds. The permittee may also use the biosolid storage area for composting the sludge before disposal off site.

Phase II - 2.6 mgd:

The WWTP may increase the design flows to 2.6 mgd upon completing upgrades at the plant and submitting the Engineer's Certificate of Completion (ECOC) per Section 3.0, Compliance Schedule, Item 3.1. The treatment process consists of a headworks with screens and two (2) grit removal systems, two (2) Biolac treatment systems for extended aeration/activated sludge processes with nitrogen removal, new aeration blowers, six (6) clarifiers, one new disk filter unit, chlorination and de-chlorination. The facility may install an additional disk filter unit for future use when needed.

The Existing Biolac Basins and Sludge handling facilities will remain in use. The Biolac Basins are lined with 60-mil HDPE liners. Sludge is placed in two asphalt lined sludge thickening lagoons, then dried in two asphalt lined sludge drying beds and six concrete rapid sludge drying beds. The permittee may also use the biosolid storage area for composting the sludge before disposal off site.

Phase III - 3 mgd:

The WWTP may increase the design flow to 3 mgd upon installation of the additional diffusers in the Biolac Basins per Section 3.0, Compliance Schedule Item 3.5. The treatment process consists of a headworks with screens and two (2) grit removal systems, two (2) Biolac treatment systems for extended aeration /activated sludge processes with nitrogen removal, new additional diffusers, aeration blowers, six (6) clarifiers, one new disk filter unit, one future disk filter unit, chlorination and de-chlorination. The facility may install an additional disk filter unit for future use when needed.

The Existing Biolac Basins and Sludge handling facilities will remain in use. The Biolac Basins are lined with 60-mil HDPE liners. Sludge is placed in two asphalt lined sludge thickening lagoons, then dried in two asphalt lined sludge drying beds and six concrete rapid sludge drying beds. The permittee may also use the biosolid storage area for composting the sludge before disposal off site.

Effluent may be discharged to Weeks Wash under AZPDES permit #AZ0023931 and/or recharged through the seven (7) existing recharge basins and the five (5) new recharge basins, the 36 vadose zone wells and/or reused under a valid Reclaimed Water Permit for beneficial purposes. The vadose zone wells are constructed in the existing recharge basins #1 through #7 to enhance the recharge activity. The five (5) new recharge basins will be constructed as needed. The facility may construct up to 50 boreholes within the each of the new recharge basins to increase the recharge rates. The boreholes will be constructed four (4) feet in diameter and 80 ft deep and consist of only rock material.

IV. Amendment Description:

ADEQ reviewed and approved the following changes:

- Re-rating of the existing treatment train from 2.1 mgd to 3 mgd contingent upon all the upgrades at the plant in phases;
- The addition of new tertiary disk filter units, one unit will be added as part of this amendment and the second unit will be added in the future when needed. Each unit can treat up to 3 mgd flow;
- Replacement of the existing blowers with new blowers to accommodate the increased flow;
- The addition of aeration diffusers;
- Replacing POC well MW-1 with MW-1A. POC well MW-1 was improperly screened due to declining water levels;
- Update the Closure Cost from \$1,273,000.00 to \$1,380,000.00.
- The addition of five (5) new recharge basins which will be added as needed; and
- The addition of a new sodium hypochlorite pump for chlorination.

V. Regulatory Status:

The latest inspection dated March 8, 2016 indicates that the facility was found to be in compliance with the APP and Arizona rules and statutes.

The permit category for this amendment was determined to be a “Significant Amendment” in accordance with A.A.C. R18-9-A211(B)(2)(b), due to an increase in design flow greater than 10 percent for facilities with a permitted design flow of 500,000 mgd or less.

VI. Best Available Demonstrated Control Technology (BADCT):

The SMCFD WWTP is an existing facility defined in A.R.S. § 49-201(16). The facility meets the BADCT requirements for existing facility as per A.A.C.R18-9-B205.

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 the effluent pump station. The permittee will monitor the effluent every day for flow rate, daily for fecal coliform, monthly for total nitrogen, quarterly for metals and semi-annually for organic compounds (see Section 4.2, Tables IA-1A, IA-1B and IA-1C, in the permit).

To ensure that site operations do not violate the Reclaimed Water Quality Standards for the beneficial use of Class B+ reclaimed water, the permittee will monitor the reclaimed water at the sampling point located downstream of the effluent pump station. The permittee will monitor the reclaimed water daily for fecal coliform, and turbidity, and monthly for total nitrogen (see Section 4.2, Table IB, in the permit).

Groundwater monitoring is required under this permit per Section 4.2, Table II for Fecal Coliform, nitrogen species, metals and organic compounds.

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