

Aquifer Protection Permit #511700
 Place ID #148049, LTF #61952
 EPCOR Water Arizona, Inc.
 Luke 303 Water Reclamation Facility

The Arizona Department of Environmental Quality (ADEQ) proposes to issue an amendment to the 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. This document gives pertinent information concerning the issuance of the permit. 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 at the Point of Compliance (POC); and 2) demonstrate Best Available Demonstrated Control Technology (BADCT). The purpose of BADCT 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.

I. FACILITY INFORMATION

Name and Location

Name of Permittee:	EPCOR Water Arizona Inc.
Mailing Address:	2355 W. Pinnacle Peak Road, Suite 300 Phoenix, Arizona 85027
Facility Name and Location:	Luke 303 Water Reclamation Facility 5239 North Alsup Avenue, Litchfield Park, Arizona

Regulatory Status

This is a new facility; the application for an Aquifer Protection Permit was received by ADEQ on February 24, 2015.

Facility Description

EPCOR Water Arizona Inc. is authorized to operate the Luke 303 Water Reclamation Facility (WRF) with a maximum monthly average flow of 0.55 million gallons per day (mgd) upon completion of two phases (Phase A and Phase I) of plant construction. The maximum monthly average flow for Phase A is limited to 0.18 mgd. The maximum monthly average flow for Phase I is limited to 0.55 mgd.

Start-up: An influent pump station will be used to vault the influent flow up to 24,000 gpd to an approved facility. The permittee shall monitor the flow under Table IA during the start-up period.

Phase A WRF: The Phase A WRF will have a capacity to treat up to 0.18 mgd. The Phase A treatment system shall include an influent pump station, headworks with a mechanical bar screen and manual bar rack, a bioreactor with an anoxic zone and an aeration zone, two square clarifiers, two cloth media disc filters, a chlorine contact basin, and sludge dewatering roll-offs. A spray aeration system will be utilized for total trihalomethane (TTHM) reduction at the chlorine contact basin. Dechlorination will be utilized in the future for discharge of effluent under a valid AZPDES permit. The approved methods of disposal for Phase A are recharge and reuse. Phase A includes two (2) recharge basins (recharge basins hereafter referred to as recharge “facilities”); Recharge Facility 1 and Recharge Facility 2. Recharge Facility 2 is divided into two sections: Recharge Facility 2A and Recharge Facility 2B. Sludge, including screenings, grit, and scum, shall be hauled off-site to an approved landfill for disposal in accordance with state and federal regulations.

Phase 1: The Phase 1 WRF will have a capacity to treat up to 0.55 mgd. During Phase 1, the existing clarifiers will be converted and combined into the bioreactor. The Phase 1 treatment system shall include an influent pump station, headworks with a mechanical bar screen and manual bar rack, a new equalization tank, modified bioreactor with anoxic zone and aeration zones, a new circular clarifier, two cloth media disc filters, a new chlorine contact basin, a new sludge holding tank, and sludge dewatering roll-offs. The existing chlorine contact basin will be converted to an effluent discharge channel. The facility will utilize a spray aeration system for total trihalomethane (TTHM) reduction at the chlorine contact basin. Dechlorination will be utilized in the future for discharge of effluent under a valid AZPDES permit. The approved methods of disposal for Phase 1 are recharge and reuse. Phase 1 includes three (3) recharge facilities; Recharge Facility 1, Recharge Facility 2 (which includes Recharge Basins 2A and 2B), and Recharge Facility 3. Sludge, including screenings, grit, and scum, shall be hauled off-site to an approved landfill for disposal in accordance with state and federal regulations.

II. BEST AVAILABLE DEMONSTRATED CONTROL TECHNOLOGY

The facility will be designed, constructed, operated, and maintained to meet the treatment performance criteria for new facilities as specified in A.A.C. R18-9-B204.

III. COMPLIANCE WITH AQUIFER WATER QUALITY STANDARDS

Monitoring and Reporting Requirements

To ensure that site operations do not result in violation of Aquifer Water Quality Standards at the point of compliance under Phase A and Phase 1, representative samples of the effluent shall be collected at the effluent sampling point downstream of the chlorine contact basin. The permittee shall monitor the effluent daily for fecal coliform, monthly for total nitrogen,

quarterly for metals, and semi-annually for volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) as per Section 4.2, Tables IB and IC in the permit.

To ensure that site operations do not result in violation of Reclaimed Water Quality Standards for the beneficial use of Class A+ 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 daily for fecal coliform and turbidity, and monthly for total nitrogen as per Section 4.2, Table ID in the permit.

The permittee shall monitor the groundwater from the following two wells in order to determine ambient conditions: Monitor Well #1 (the downgradient point of compliance well); and Monitor Well #2, located upgradient from the treatment facility and the recharge basins. The wells shall be monitored for water level, total nitrogen, total coliform, and for the metals, VOCs, and SVOCs included in the Aquifer Water Quality Standards for Drinking Water under A.A.C. R18-11 406(B) and (C).

Facility inspection and operational monitoring shall be performed on a routine basis as per Section 4.2, Table III in the permit.

Point of Compliance

The Point of Compliance (POC) has been designated at the following location:

POC #	POC Location	Latitude	Longitude
1	Monitor Well #1 located at the northwest corner of the WRF	33° 30' 55.37" N	112° 23' 46.45" W

In order to determine upgradient ambient groundwater conditions, groundwater monitoring shall also take place at the following location:

Upgradient Groundwater Monitoring Location	Latitude	Longitude
Monitor Well #2, located at the southeast boundary of the property	33° 30' 45.47" N	112° 23' 33.81" W

IV. HYDROGEOLOGIC SETTING

The principal underlying aquifers below the site are the alluvial units UAU, MAU, and LAU. The underlying bedrock is considered to be impermeable. Recharge to the alluvial aquifers occurs at mountain fronts, perennial and ephemeral stream beds, and where there is a high concentration of agricultural or urban irrigation. There are eight (8) registered wells within ½ mile of the WRF. None of these eight registered wells are used for drinking water, but are

for irrigation use. Based on data obtained from the ADWR Groundwater Site Inventory, the average static groundwater level measured in wells near the WRF is 218.2 ft below ground surface (bgs). The regional direction of groundwater flow is to the west. The saturated aquifer thickness underlying the WRF is estimated to be 1,582 feet.

Hydrogeologic conditions underlying the WRF are suitable for recharging 8.0 mgd based on the mounding analysis. This mounding analysis was performed based on a simulated recharge rate of 8.0 mgd that spread out through all of the recharge facilities. The results of the mounding analysis indicate that the shallowest water level beneath the WRF is predicted to be 128 feet bgs over 40 years of continuous operation.

V. SURFACE WATER CONSIDERATIONS

The facility lies outside the 100-year floodplain. There are no perennial streams within one mile of the facility. The facility is located approximately four miles west of the Agua Fria River floodplain.

VI. COMPLIANCE SCHEDULE

A compliance schedule is included in the permit which requires the following: submittal of Engineer's Certificates of Completion following construction of Phases A and 1; notifications of the cessations of vault and haul and Phase A; submittal of a total trihalomethane (TTHM) summary report; installation of POC Monitoring Well #1 and upgradient Monitoring Well #2 and submittal of the well driller's logs; ambient groundwater sampling from the wells; amendment of the permit to establish Alert Levels (ALs) and Aquifer Quality Limits (AQLs); the commencement of routine compliance groundwater monitoring; and amendment of the permit to update the facility closure and post-closure costs and update the financial assurance mechanism every six (6) years following permit issuance.

VII. OTHER REQUIREMENTS FOR ISSUING THIS PERMIT

Technical Capability

EPCOR Water Arizona, Inc. has demonstrated the technical competence necessary to carry out the terms and conditions of the permit in accordance with A.R.S. § 49-243(N) and A.A.C. R18-9-A202(B).

The permit requires that appropriate documents be sealed by an Arizona-registered Geologist or Professional Engineer. This requirement is a part of an on-going demonstration of technical capability. The permittee is expected to maintain technical capability throughout the life of the facility.

Financial Capability

EPCOR Water Arizona Inc. has demonstrated financial capability under A.R.S. § 49-243(N) and A.A.C. R18-9-A203. The estimated dollar amount for facility closure and post-closure costs is \$330,000. The financial capability was demonstrated through A.A.C. R18-9-A203(C)(2). The permittee is expected to maintain financial capability throughout the life of the facility.

Zoning Requirements

The Luke 303 WRF has been properly zoned for the permitted use and the permittee has complied with applicable zoning ordinances in accordance with A.R.S. § 49-243(O) and A.A.C. R18-9-A201(B)(3).

VIII. ADMINISTRATIVE INFORMATION

Public Notice (A.A.C. R18-9-108(A))

The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a draft permit or other significant action with respect to a permit or application. The aquifer protection program rules require that permits be public noticed in a newspaper of general circulation within the area affected by the facility or activity and provide a minimum of 30 calendar days for interested parties to respond in writing to ADEQ. The basic intent of this requirement is to ensure that all interested parties have an opportunity to comment on significant actions of the permitting agency with respect to a permit application or permit.

Public Comment Period (A.A.C. R18-9-109(A))

The Department shall accept written comments from the public prior to granting the significant amendment. The written public comment period begins on the publication date of the public notice and extends for 30 calendar days. After the closing of the public comment period, ADEQ is required to respond to all significant comments at the time a final permit decision is reached or at the same time a final permit is actually issued.

Public Hearing (A.A.C. R18-9-109(B))

A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held if the Director determines there is a significant amount of interest expressed during the 30-day public comment period, or if significant new issues arise that were not considered during the permitting process.

IX. ADDITIONAL INFORMATION

Additional information relating to this permit may be obtained from:

Arizona Department of Environmental Quality
Water Quality Division - APP Unit
Attn: Marcy Mullins
1110 W. Washington Street, Mail Code 5415B-3
Phoenix, Arizona 85007
Phone: (602) 771-4464