



ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

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Implementation Guidelines for Drywells That Use Flow Control and / or Pretreatment Technologies Under the Aquifer Protection Program General Permit Types 2.01 and 2.04

This drywell guidance manual contains:

- **a summary of aquifer protection rules and other regulations that drywells may be subject to;**
- **clarifications of certain parts of both drywell general permit rules;**
- **an evaluation of certain stormwater pollution control devices**
- **general guidelines for design, installation, maintenance and inspection of all drywells.**

Implementation Guidelines for Drywells That Use Flow Control and/or Pretreatment Technologies Under the Aquifer Protection Program General Permit Types 2.01 and 2.04

INTRODUCTION

Purpose, Use and Organization of this Manual

This guidance manual is the product of several meetings held in 2001 and early 2002 with stakeholders who have drywells that are subject to the Arizona Department of Environmental Quality's (ADEQ) Aquifer Protection Program (APP), needing either a general APP permit or an individual permit. The purpose of the meetings was to gain consensus on a list of stormwater flow control and pretreatment technologies that ADEQ would approve for use with drywells that needed an APP permit.

ADEQ hired Brown and Caldwell to research and evaluate existing technologies that treat stormwater before it enters a drywell. The list that resulted became a pre-approved list of technologies incorporated into a second rule for drywells which ADEQ promulgated on September 15, 2002. This list is now published in this guidance manual for use when applying for authority to discharge under a Type 2.04 general permit (Drywells that Drain Areas at Motor Fuel Dispensing Facilities Where Motor Fuels Are Used, Stored, or Loaded (A.A.C. R18-9-C304)). Readers may find the guidance and the list of technologies in this manual useful when applying for an authorization to discharge under a Type 2.01 general APP permit (Drywells That Drain Areas Where Hazardous Substances Are Used, Stored, Loaded, or Treated (A.A.C. R18-9-C301)).

This manual is intended primarily as guidance to support the Type 2.04 general APP permit, described in A.A.C. R18-9-C304, Drywells that Drain Areas at Motor Fuel Dispensing Facilities Where Motor Fuels Are Used, Stored, or Loaded. However, much of the information contained herein is also applicable to the Type 2.01 permit for drywells that drain areas where hazardous substances are used, stored, loaded, or treated (A.A.C. R18-9-C301). This manual provides a synopsis of the various flow control and pretreatment devices that are suitable in preventing discharges of polluted stormwater to the aquifer and is subdivided into four sections:

- a summary of APP rules and other regulations that drywells may be subject to;
- clarifications of certain parts of both drywell general permit rules;
- an evaluation of pollution control technologies that are ADEQ-approved for use in a drywell that may discharge under a Type 2.04 general permit; a summary table of local jurisdictions' codes about stormwater retention are included at the end of this section; and
- general guidelines for design, installation, maintenance and inspection of all drywells.

SUMMARY OF AQUIFER PROTECTION RULES APPLICABLE TO DRYWELLS

The Purpose for Drywells

A drywell is a bored, drilled, or driven shaft or hole with a depth that is greater than its width and that is designed and constructed specifically for the disposal of stormwater (Arizona Revised Statutes (A.R.S.) § 49-331(3)). Stormwater flows over many surfaces that may hold other pollutants. Drywells that receive stormwater with pollutants can potentially render the aquifer useless as a drinking water source. Arizona's aquifer protection program is designed to protect groundwater for drinking use and federal primary drinking water maximum contaminant levels are adopted as numeric aquifer water quality standards (AWQS). An APP permit is needed if you own or operate a facility that discharges either directly to an aquifer or to the land surface or the vadose zone in such a manner that there is a reasonable probability that the pollutant will reach an aquifer.

Disposal of other wastewaters into a drywell, either solely or in conjunction with stormwater, is prohibited. If a drywell is used to dispose of anything other than stormwater, the well is classified as an injection well, and an individual APP is required for operation or closure. Furthermore, a drywell that receives discharges other than stormwater will be subject to federal underground injection control regulations. Two stage drywells are not designed for the continual discharge of water, but for sporadic discharges resulting from heavy precipitation events. Injection wells must be constructed to manage the continual discharge of water most efficiently.

Drywell Registration

Any person who owns a new or existing drywell is required to properly register it with ADEQ. The registration fee is \$100 per drywell. The registration is valid for the life of the drywell unless any changes are made, such as a change in ownership or a change in the drywell's design. If any registration information is no longer accurate, an updated registration form and new registration fee must be submitted to ADEQ.

Registration helps ADEQ maintain a statewide database / inventory of drywells. As part of the registration process, owners of registered drywells are notified of aquifer protection permitting requirements.

Any drywell constructed for the purpose of golf course maintenance is exempt from the registration requirements unless it receives stormwater mixed with reclaimed wastewater or groundwater or both, from manmade bodies of water associated with golf courses, parks and residential common areas.

General Permits for Drywells

General aquifer protection permits have technical standards and permit conditions stipulated in rule. A general permit is designed to expedite the permit process at a lower cost to the applicant for classes of discharging facilities that are substantially similar in nature. These permits are simpler and take fewer hours to process than an individual permit. These general permits rely on

clear technical standards to ensure that a discharging facility does not violate aquifer water quality standards and that the facility employs the best available demonstrated control technology (BADCT) or best management practices in its design, construction, operation and maintenance.

An APP is required whenever a drywell is installed in areas where toxic or hazardous materials, including motor fuels, are used, handled, stored, loaded or treated, or where a spill of such materials could drain into the drywell system. Design and operational restrictions may apply to a drywell that is located in such areas. These drywells require either one of two general APP permits (Type 2.01 or 2.04) or an individual APP permit to ensure that the drywell and any aquifer beneath it is protected. Such areas may include loading docks, fuel pumps, waste and product storage areas, etc. ADEQ recommends against installation of drywells in such areas. However, if installation is necessary, then a permit is required.

The drywell may be eligible for a general APP, if an engineered design which utilizes interceptors, sumps or other devices to remove, intercept and collect pollutants is installed as BADCT. If a drywell is used for any other discharges, it is classified as an injection well, and an individual APP is required for operation or closure. This type of operation may also trigger regulation under the federal Underground Injection Control program.

A Type 2.01 General Permit is available for drywells that drain areas where hazardous substances are used, stored, loaded or treated. Such drywells are common for stormwater disposal at facilities with potential for spills of pollutants into those drywells. A Type 2.04 General Permit is available for drywells that drain areas at motor fuel dispensing facilities where motor fuels are used, stored, or loaded.

The Type 2.04 general permit was written for fuel dispensing facilities (including commercial gasoline stations with an underground storage tank) where motor fuels are the only hazardous substances used, stored, or loaded within the drainage area of the drywell. The purpose of both general permits is to ensure that: (1) drywells do not receive discharges other than stormwater, (2) the aquifer is protected from pollutants that may be discharged into it, and (3) to expedite the permitting process for qualifying facilities.

To obtain a drywell general permit, you must file a notice of intent (NOI) to discharge and a supplemental form with ADEQ before a discharge is allowed. The department will send the permittee an acknowledgment of the notice with a facility registration number. The permittee need only agree to comply with the terms of the general permit (either Type 2.01 or 2.04) including any applicable design, operational, record keeping and reporting requirements specified in rule. Drywell general permits must be renewed by the permittee every five years.

The two general permits only allow for disposal of stormwater. BADCT for Type 2.01 and 2.04 general permits restrict a drywell's location and requires that it's design include a flow control and/or pretreatment device. Existing drywells require certification that past discharges have not impacted groundwater quality. The permittee is responsible for control of detrimental practices, recordkeeping, reporting of spills, maintenance, inspections, employee training, sampling. Submittal of a Best Management Practices Plan (BMPP) is required for a 2.01 general permit,

whereas prescriptive BMPPs are contained in the 2.04 permit. Applicants have more latitude in design, maintenance, operations and BMPPs in the 2.01 permit.

In conclusion, drywells that drain areas where hazardous substances, including motor fuels, are used, stored, loaded or treated are required to obtain either an individual or a general aquifer protection permit (APP). The general permit that applies is dependent on the substances and their potential to reach the drywell and whether a flow control device is required. The Type 2.04 general permit for motor fuel dispensing facilities requires the design to include a flow control or pretreatment device (A.A.C. R18-9-C304(C)(1)(a)); however, the Type 2.01 general permit only requires a method to remove, intercept or collect pollutants that have the potential to reach the drywell (A.A.C. R19-9-C301(C)(4)) that may include a flow control or pretreatment device. A flow control device may be a normally closed manual or automatic valve, a raised drywell inlet, or a magnetic mat or cap, in combination with the use of best management practices to prevent spills from reaching the drywell. Regardless of the permitting status, all drywells must be registered.

The reader can find regulations governing drywell operation, etc. in A.R.S. § 49-245.02 (general permit for certain discharges associated with man-made bodies of water), 49-331 through 49-336 (laws regulating drywells); A.R.S. § 49-250(23) (APP discharge exemptions); A.R.S. § 49-201(5) (clean closure definition); and A.R.S. § 49-241 (permit required to discharge). The reader is also urged to consult the general provisions in the rules that apply to all general permits (Arizona Administrative Code (A.A.C.), Article 3, Part A) and the rules governing the drywell general permits in A.A.C. R18-9-C301 and R18-9-C304.

A Word About Exemptions from the Aquifer Protection Program

A site could be designed to be exempt from the aquifer protection program by modifying it to prevent drainage, spills of motor fuel and other hazardous substances from leaving the drainage area and entering the drywell. This modification can be accomplished in a number of ways, such as installing concrete curbs or altering the surface grading patterns of the site so that drainage from affected areas cannot reach the drywell. A site plan should show surface grading details designed to prevent drainage and spills from leaving the drainage area and entering the drywell. The site plan should include the location of floor drains, water supply, monitor wells, underground storage tanks, chemical and waste usage, storage, loading, and treatment areas and places where motor fuels and other hazardous substances are used, stored or loaded.

Drywell Closure

Clean closure in the aquifer protection program is available to drywells that can be demonstrated that there will be no further discharge and that Aquifer Water Quality Standards will continue to be met at the point of compliance. Clean closure means no post-closure monitoring and maintenance are necessary. To protect groundwater, closure of a drywell should conform with ADEQ's Drywell Decommissioning Guidelines or provide equivalent protection. Drywells must be registered prior to closure and a closure APP may be required. APP fees will apply if an individual APP, Type 2.01 or 2.04 general APP or clean closure is needed.