FACT SHEET
AND SUPPLEMENTARY INFORMATION
FOR GENERAL PERMIT ARG790000

For renewal of the General Permit for Groundwater and Surface Water Petroleum Remediation Facilities Located within the State of Arkansas, Permit Number ARG790000.

Information in this part is organized as follows:

1 Background

Under 40 C.F.R. § 122.28, general permits may be written to cover categories of point sources having common elements, such as facilities that involve the same or substantially similar types of operations, that discharge the same types of wastes, or that are more appropriately regulated by a general permit. Given the number of treated contaminated groundwater and surface water dischargers requiring NPDES permit coverage, DEQ has elected to renew the ARG790000 General Permit for Groundwater and Surface Water Petroleum Remediation Facilities located within the State of Arkansas.

The previous permit became effective on April 1, 2021, and will expire on March 31, 2026.

2 Significant Changes

2.1 Facilities that discharge to a lake or reservoir may now obtain coverage under the permit if the conditions in Item 1.3.4 are met.

2.2 “Discharging in violation of APC&EC Rule 2” has been removed from Item 1.3.6.

2.3 Item 1.3.7 does not list any exceptions to the exclusion of facilities not being eligible for coverage under the general permit if they are not in compliance with a previously issued permit and/or in violation of state water quality regulations.

2.4 Items 1.4 and 1.9 have been updated to require submittal of NOIs and terminations through the SEEK system.

2.5 Item 1.4 was updated to require submittal of the SIC and NAICS codes for the facility.

2.6 Item 1.5 – Waivers from Electronic Reporting has been added to the permit.

2.7 The Operational Plan condition was moved to Item 3.4, and the schedule of compliance for the Operational Plan was removed.

2.8 A condition forbidding the discharge from causing a visible sheen in the receiving stream has been added to Part 2.

2.9 "Other Conditions" have been moved from Part 7 to Part 3. Parts 3 through 6 in the previous permit have been moved back by one part.

2.10 Item 3.2 – Monitoring Frequency Reduction was updated with conditions regarding revocation and continuance of previously granted reductions.

2.11 The Acute WET testing language has been updated, including the number of replicates and organisms required for the test.

2.12 Several definitions in Part 8 were updated for clarity, or for consistency with Section 502 of the Clean Water Act, 40 C.F.R. § 122.2, or PC&EC rules including:

2.12.1 DEQ (corrected);
2.12.2 Director (corrected);
2.12.3 Quarterly;
2.12.4 Semi-annual (added);
2.12.5 Annual or yearly (added);
2.12.6 Polycyclic Aromatic Hydrocarbons or Polynuclear Aromatic Hydrocarbons (PAH) (added);
2.12.7 Permittee (added);
2.12.8 Pollutants of Concern (added);
2.12.9 Total Petroleum Hydrocarbons (TPH) (updated);
2.12.10 Waters of the State (added); and
2.12.11 Visible Sheen (added)

3 Permit Coverage

This general permit authorizes facilities to discharge treated contaminated groundwater and surface water to Waters of the State, except facilities that are excluded in Part 1.3 of the permit. The treatment system shall be constructed in accordance with Part 1.4.4 of the permit.

3.1 Notice of Intent (NOI)

Dischargers seeking to be covered by the general permit must submit a written Notice of Intent that meets the criteria in 40 C.F.R. § 122.21. All deadlines for submission have been established to provide staff with sufficient time to review and process all requests for coverage.

In accordance with the NPDES Electronic Reporting Rule, DEQ is now requiring electronic submission of permitting documents for this general permit. Permittees who are unable to submit documents electronically must apply for a waiver, as detailed in 40 C.F.R. §127.15 and Part 1.5 of the permit.

3.2 Construction Requirements

Any construction proposed under this general permit will require submission of DEQ Form 1, plans & specifications and design calculations signed and stamped by a Professional Engineer (P.E.) licensed in the State of Arkansas, and the construction permit fee specified by Rule 9.402(A).

Authorization to construct a treatment facility does not provide coverage for stormwater discharges related to construction activities subject to the requirements in 40 C.F.R. § 122.26. These activities must also meet the construction stormwater requirements referenced in Part 1.4.4.3 of the permit.

3.3 Water Quality Requirements

In accordance with 40 C.F.R. § 122.44(d) the permit is required to include any requirements necessary to achieve State Water Quality Standards as established under Section 303 of the Clean Water Act.

4 Monitoring Requirements

The requirements for sample type and sampling frequency have been based on the previous permit.

For the first three (3) months, the permittee shall monitor Benzene, Total BTEX, BaP, Total PAH, and TPH at a frequency of once/week. If no violations are reported during three consecutive months of testing, the required monitoring frequency may be reduced to

once/quarter upon request and receipt of written permission from DEQ. The monitoring reduction will be valid until the effective date of the next renewal permit, unless revoked by the DEQ.

For WET testing, the permittee may apply for a testing frequency reduction upon the successful completion of the six consecutive months of testing for a test species, with no lethal effects demonstrated at or below the limit. If granted, the monitoring frequency may be reduced to not less than once per six months. If a WET failure occurs after a frequency reduction has been granted, the monitoring frequency reverts to monthly.

5 Other Conditions

5.1 Geographic Area and Covered Facilities

The general permit, when issued, will authorize discharges from groundwater and surface water petroleum remediation facilities throughout the State of Arkansas. The permit will be applicable only to facilities which discharge to waters of the State and are, therefore, subject to the requirements of Section 301 and 402 of the Clean Water Act.

5.2 Timing of Requests

Requests for coverage shall be submitted as follows:

5.2.1 For new dischargers, at least 90 days prior to the first proposed discharge; or
5.2.2 For existing dischargers covered under ARG790000, no later than 30 days prior to the effective date of this permit.

5.3 Expiration Date

In accordance with 40 C.F.R. § 122.46(a), the general permit will expire five (5) years from the effective date of the permit. An expired permit will continue in effect until such time that the permit is renewed or a new permit is issued.

5.4 Individual Permits

The Director of DEQ may require the issuance of individual permits according to the criteria in 40 C.F.R. § 122.28(b)(3).

6 Development and Basis for Permit Conditions

Conditions in Parts 2 through 7 are incorporated in the permit based on 40 C.F.R. § 122.41, 40 C.F.R. § 122.43, 40 C.F.R. § 122.62, 40 C.F.R. § 124.5, 40 C.F.R. § 136, 40 C.F.R. § 122.44(d), 40 C.F.R. § 122.44(l), Appendix D of the Continuing Planning Process (CPP), PC&EC Rule

2, PC&EC Rule 3, and PC&EC Rule 6 in order to provide and ensure compliance with all applicable requirements of the CWA, rules, and regulations.

The following is an explanation of the derivation of the conditions of the permit and the reasons for them.

6.1 Justification for Limitations and Conditions of the Permit

Effluent Characteristics	**Discharge Limitations**		**Monitoring Requirements**	
	Concentration (mg/l, unless otherwise specified)		Frequency[1]	Sample Type
	Monthly Avg.	Daily Max.		
Flow	Report MGD	Report MGD	twice/week	instantaneous
Total Suspended Solids (TSS)	35.0	52.5	once/week	grab
Benzene	3.3 µg/l	5.0 µg/l	once/week	grab
Benzo(a)pyrene (BaP)	0.13 µg/l	0.20 µg/l	once/week	grab
Total BTEX	67 µg/l	100 µg/l	once/week	grab
Total Petroleum Hydrocarbons (TPH)	3.3	5.0	once/week	grab
Polynuclear Aromatic Hydrocarbons (PAH)	6.7 µg/l	10.0 µg/l	once/week	grab
pH	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/month	grab
Acute Whole Effluent Toxicity (WET)[2]	48-Hour Minimum Not < 100%		once/month	grab
***Pimephales promelas* (Acute)[2]**	48-Hour Minimum			
Pass/Fail Lethality (48-Hr Pass/Fail) TEM6C	Report (Pass=0/Fail=1)		once/month	grab
Survival (48-Hr Pass/Fail) TOM6C	Report %		once/month	grab
Coefficient of Variation (48-Hr Pass/Fail) TQM6C	Report %		once/month	grab
***Daphnia pulex* (Acute)[2]**	Report (Pass=0/Fail=1)		once/month	grab
Pass/Fail Lethality (48-Hr Pass/Fail) TEM3D	Report %		once/month	grab
Survival (48-Hr Pass/Fail) TOM3D	Report %		once/month	grab
Coefficient of Variation (48-Hr Pass/Fail) TQM3D				

[1] See monitoring frequency reduction conditions in Part 3.2.
[2] See Part 3.3 (WET Requirements)

6.1.1 Total Petroleum Hydrocarbons (TPH)

The EPA has incorporated TPH as a parameter at many petroleum related site remediation projects nationwide. Historically, "oil & grease" was the primary petroleum related parameter limited in many individual NPDES permits, and "oil & grease" is listed as a common parameter in many of EPA's promulgated industrial

effluent guidelines. However, the hydrocarbon fraction of the oil and grease parameter, or TPH, is the most appropriate parameter for setting effluent limits in this permit. A total oil and grease analysis would include other non-petroleum fats and greases in the result, which would not be relevant to the activities covered by this General Permit.

Similarly, due to the number of chemicals contained in refined petroleum products, measurement of all of the component chemicals is not practical, cost effective, or needed for adequate attainment of water quality standards. An aggregate measurement of the hydrocarbon compounds serves as an indicator of overall relative pollutant concentration, and as an indicator for assessing water quality impacts.

Individual compounds of TPH, such as benzene, which is also included in this permit, provide additional chemical-specific controls on the discharge.

In establishing the effluent limit for TPH, DEQ reviewed a number of sources including monitoring data being submitted pursuant to approved site remediation projects, and other EPA and state issued general permits. In general, ground water cleanup permits have consistently required an effluent limit maximum value for TPH of 5.0 mg/l. Review of monitoring information indicates that this limit is readily attainable with standard treatment technology and facilities discharging TPH rarely exceed 3.0 mg/l in the effluent results reported. Therefore, the limits in the previous permit have been continued.

There is currently no approved method in 40 C.F.R. Part 136 for measuring TPH. TPH was previously defined and measured by EPA Method 418.1 as fluorocarbon-113 extractable petroleum hydrocarbons. Method 418.1 was discontinued because it used a fluorocarbon for extraction. The definition of TPH in the permit was updated to provide clarification on acceptable methods. Silica-gel Treated n-Hexane Extractable Material (as defined by EPA Method 1664A) may be reported as TPH for the purposes of effluent limitations in this permit. Alternatively, EPA hazardous waste (SW-846) methods 8015 or 8440, ASTM International Method D7066-04, or other equivalent methods may be used to measure TPH.

Petroleum hydrocarbons that volatilize below 85°C may be partially lost by Method 1664A or 8440, but the PAH and BTEX limits in this permit are expected to provide adequate control of volatile petroleum hydrocarbons.

6.1.2 Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)

The four alkyl benzene volatile organic compounds (benzene, toluene, ethylbenzene, and the ortho, para, and meta xylenes) are common constituents of petroleum fuels. This parameter has been adapted for use by EPA and state agencies to serve as a measure of effluent quality and an “indicator” parameter representing the wide variety

of chemical compounds that may be found in petroleum products (see EPA's *Model NPDES Permit for Discharges Resulting from the Cleanup of Gasoline Released from Underground Storage Tanks*, June 1989). Since air stripping and carbon adsorption are the most widely used treatment technologies for control of volatile, semi-volatile, or non-volatile organic compounds in water, the evaluation of the chemical characteristics of the organic compounds will allow for a subsequent evaluation of the potential ease of their removal by these common treatment technologies. In general, the more soluble a substance is in water, the more difficult it is to remove by air stripping and carbon treatment. Rather than attempt to establish effluent limits for every compound found in a petroleum release, the selection of those compounds that would be most difficult to remove to low levels, coupled with an evaluation of the degree of toxicity of the compound, provides an adequate indicator of the potential removal of the other compounds in the contaminated water being treated with the common technologies mentioned here. Benzene has commonly been selected as a primary indicator of effluent quality for these reasons. EPA's June 1989 *Model NPDES Permit for Cleanup of Gasoline Released from Underground Storage Tanks* discusses the rationale for selection of Benzene and BTEX as appropriate parameters for discharge permits.

BTEX Limits

Most of the existing EPA and state issued permits for petroleum-contaminated groundwater remediation discharges limit BTEX as a secondary parameter. All of the BTEX compounds have closely related chemical characteristics to benzene. However, the composition of gasoline is highly variable and for some gasoline products, any one of the four BTEX compounds could be the dominant constituent. Therefore, regulating the total of the four, rather than individually, provides a useful secondary indicator for control of water discharges containing volatile petroleum contaminants. EPA's June 1989 *Model NPDES Permit* recommends a total maximum BTEX limit of 100 ug/l. This limit is based on the typical removal efficiency of 99.5% or better for BTEX using a commercially available air stripper unit. Based on EPA's 1989 *Model NPDES Permit* and the observed performance of control equipment at historical or existing cleanup sites submitting DMRs, DEQ is retaining the technology-based daily maximum limit of 100 µg/l from the 2016 permit.

Benzene Limits:

Benzene is a toxic constituent (listed as a carcinogen in EPA's national primary drinking water regulations), and is the risk driver at most petroleum contaminated sites. Therefore, an effluent limitation on benzene is needed to meet Rule 2.409, and will ensure adequate control of the majority of the many other volatile gasoline constituents.

The most commonly used technology based limit for benzene is 5.0 µg/l, which is also the current Maximum Contaminant Level (MCL) set limiting benzene in drinking water. Review of monitoring information indicates that this limit is readily attainable with standard treatment technology. Therefore, the limits in the previous permit have been continued.

6.1.3 Polycyclic Aromatic Hydrocarbons or Polynuclear Aromatic Hydrocarbons (PAH)

PAHs include a large group of organic compounds that have similar chemical structures and chemical characteristics. They are found in fuels, oil, coal, wood, and natural gas, and are often associated with releases of petroleum products, resin coatings, dyes, pharmaceuticals, insecticides, and many other products. PAH compounds are also reported at many contaminated construction dewatering sites. EPA has listed 16 PAH compounds as priority pollutants under the CWA, seven of which have been identified as probable carcinogens. Accordingly, the PAH have been divided into two separate groups:

Group I: Carcinogenic PAH: Benzo(a)Anthracene, Benzo(a)Pyrene, Benzo(b)Fluoranthene, Benzo(k)Fluoranthene, Chrysene, Dibenzo(a,h)Anthracene, Indeno(1,2,3-cd) Pyrene, and

Group II: Non Carcinogenic PAH: Acenaphthene, Acenaphthylene, Anthracene, Benzo(ghi)-Perylene, Fluoranthene, Fluorene, Phenanthrene, and Pyrene.

The daily maximum limit for Total PAHs in the previous permit was 10 µg/l, which was based on equivalent general permits in other states, including Louisiana, Texas, New Hampshire, and Massachusetts. The 16 PAHs that make up the parameter Total PAH are from the list of priority pollutants of the Clean Water Act, which can be found in Appendix A to 40 C.F.R. Part 423. Review of monitoring information indicates that this limit is readily attainable with standard treatment technology. Therefore, the limits in the previous permit have been continued.

6.1.4 Benzo(a)pyrene:

Benzo(a)pyrene is one of the PAHs. It is not produced or used commercially but is commonly found because it is formed as a result of incomplete combustion of organic materials.

The daily maximum limit is based on the MCL for benzo(a)pyrene of 0.20 µg/l (40 C.F.R. § 141.61(c)). Review of monitoring information indicates that this limit is readily attainable with standard treatment technology. Therefore, the limits in the previous permit have been continued.

6.1.5 Total Suspended Solids (TSS)

Suspended solids are considered a "conventional pollutant" (as opposed to toxic). Suspended materials in water can cause turbidity, discoloration, interruption of light passage for aquatic growth, coating of fish gills, and sedimentation on stream bottoms interfering with egg laying and feeding. They can also act as carriers (through sorption) of toxic materials and cause interference with proper operation and maintenance of the typical treatment systems used for the pollutant control in this permit (e.g. air stripping, carbon adsorption, ion exchange, etc.). Groundwater is typically low in TSS. However, TSS is often a problem in construction operations where soils and organic materials are being disturbed and mixed with groundwater or stormwater.

The monthly average limit in the previous permit was 35 mg/l. Review of monitoring information indicates that this limit is readily attainable with standard treatment technology. Therefore, the monthly average limit in the previous permit has been continued.

6.1.6 pH

The water quality-based limits for pH have been based on the Arkansas Water Quality Standards (AWQS), Rule No. 2, Section 2.504. This limit has been continued from the previous permit.

6.1.7 Acute Whole Effluent Toxicity (WET) Limit:

WET tests are used to measure the acute and chronic toxicity of an effluent on the receiving water. Acute toxicity tests are used to determine the concentration of the effluent that results in mortality within a group of test organisms, during a 24, 48, or 96-hour exposure. The permit contains 48-hour acute WET testing requirements and a limit. The requirements specify testing frequency and methods, quality assurance responsibilities, and reporting protocols.

Rather than including limits for all toxic substances listed in Rule 2.508, which would be expensive and require additional treatment systems, the acute WET limit was continued as not less than 100% in order to meet Rule 2.409 and Rule 2.508 (No toxics in toxic amounts).

The WET requirements were updated to be more consistent with individual NPDES permits, using language that was developed in coordination with EPA Region VI. This permit continues the use of single concentration Pass/Fail testing rather than No Observed Effect Concentration (NOEC) testing because it is a screening assay using 100% effluent concentration.

The number of replicates and number of organisms per replicate was updated as part of

the WET requirements revision.

6.2 Anti-backsliding

This permit is consistent with the requirements to meet Anti-backsliding provisions of the Clean Water Act (CWA), Section 402(o) [40 C.F.R. § 122.44(l)]. The final effluent limitations for reissuance permits must be as stringent as those in the previous permit, unless the less stringent limitations can be justified using exceptions listed in CWA § 402(o)(2), CWA § 303(d)(4), or 40 C.F.R. § 122.44(l)(2)(i).

The permit meets or exceeds the requirements of the previous permit.

6.3 Limits Calculations

The daily maximum limit for TSS and the monthly average limits for TPH, Benzene, PAH, BaP, and Total BTEX are based on Section 5.4.2 of the Technical Support Document for Water Quality-based Toxics Control:

daily maximum limits = monthly average limits × 1.5

7 Wastewater Operator Requirements

A wastewater operator is required for any facility using a treatment system, if that treatment system meets the definition of a "wastewater treatment plant" in PC&EC Rule 3. Such facilities require an operator with a Basic Industrial license at minimum.

8 Public Notice

The public notice of the draft general permit was published for public comment on March 9, 2025. The last day of the comment period was thirty (30) days after the publication date. No comments on the draft permit were received.

A copy of the permit and public notice was sent via email to the Corps of Engineers, the Regional Director of the U.S. Fish and Wildlife Service, the Arkansas Department of Parks, Heritage, and Tourism, the EPA, and the Arkansas Department of Health.

9 Economic Impact

This permit does not place any additional undue burden on any private business entity, large or small. It does not restrict any opportunities that are available to any small businesses. The inspection and control requirements are set at a level to protect water quality while minimizing the resources required for compliance.

The permit fee of $500 is allowed by PC&EC Rule 9. If a construction authorization is also required under this permit, then an additional $500 fee will be required based on PC&EC Rule 9.402(A). This permit incorporates construction requirements into the ARG790000. The construction requirements listed in Part 1.4.4 are consistent with the minimum requirements for a state construction permit and will not have any additional economic impact.

There may be minimal additional cost for commercial facilities to obtain a Certificate of Good Standing from the Secretary of State of any State other than Arkansas.

No significant changes were made to this permit that would cause additional economic impact to the facility.

10 Contact Information

For additional information regarding this permit, please contact the NPDES Permits Branch of the Office of Water Quality:

via mail at:

NPDES Permits Branch
Office of Water Quality
5301 Northshore Drive
North Little Rock, AR 72218-5317

via phone at: (501) 683-0962; or

via email at EE.Water.Enforcement.Report@arkansas.gov

11 Sources

11.1 40 C.F.R. § 122
11.2 40 C.F.R. § 124
11.3 40 C.F.R. § 136
11.4 PC&EC Rule 2, now codified at 8 CAR Part 21.
11.5 PC&EC Rule 3, now codified at 8 CAR Part 22.
11.6 PC&EC Rule 6, which incorporates by reference certain federal regulations included in Title 40 of the Code of Federal Regulations at Rule 6.104, and is now codified at 8 CAR Part 25.
11.7 PC&EC Rule 8, now codified at 8 CAR Part 11.
11.8 PC&EC Rule 9, now codified at 8 CAR Part 12.
11.9 ARG790000 existing permit
11.10 Discharge Monitoring Reports (DMRs) submitted by the facilities covered by the existing ARG790000 Permit.
11.11 Ark. Code Ann. § 8-4-203(m)

11.12 Clean Water Act
11.13 Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 *et seq*.).
11.14 Continuing Planning Process (CPP)
11.15 2014 Edition of Recommended Standards for Wastewater Facilities (10 States Standards).
11.16 Technical Support Document for Water Quality-based Toxic Control.
11.17 NPDES Electronic Reporting Rule (80 FR 64063).