

DEPARTMENT OF ENVIRONMENTAL QUALITY
Environmental Assessment

Water Quality Division
Water Protection Bureau

Name of Project: Produced Water General Permit Renewal - Montana Pollutant Discharge Elimination System (MPDES), MTG310000

Description of Project: Produced water is separated process wastewater generated from oil or natural gas production. The raw product pumped from oil and gas production wells contains water and crude oil or entrained natural gas. Various methods can be used to separate the oil and gas from the produced water including heat treatment, gravity separation, emulsion breaking chemicals, and skim ponds. After the petroleum is separated from the raw product, the produced water is ready for disposal.

Federal regulations allow discharge of produced water from onshore oil and gas operation if the quality is good enough to be used for wildlife or livestock watering or other agricultural uses. DEQ does not consider produced water to be suitable for irrigation because waters high in salinity can impact soil structure and cause detriment to crops. Therefore, this General Permit has been developed in consideration of livestock and wildlife, which tolerate saline waters if concentrations are not too high. Because there are no other beneficial uses, this General Permit does not allow direct discharge to intermittent or perennial streams or discharge leading to the runoff of produced water into intermittent or perennial streams.

Location of Project: Statewide ephemeral waters (Except A-1, A-Closed waterbodies, Indian Reservations, National Parks, and state waters in Rosebud Creek, Tongue, Powder, and Little Powder River watersheds)

Agency Action and Applicable Regulations: The proposed action is to reissue the General Permit. The actions in this EA will fall under:

- Montana Water Quality Act 75-5-101, *et seq.*
- Administrative Rules of Montana (ARM) Chapter 17:
 - Subchapter 2 – Fees
 - Subchapter 5 - Mixing Zones in Surface and Ground Water
 - Subchapter 6 - Montana Surface Water Quality Standards and Procedures
 - Subchapter 7 - Nondegradation of Water Quality
 - Subchapter 12 and 13 - Montana Pollutant Discharge Elimination System

For the purpose of this environmental assessment (EA), the Department will only be analyzing impacts from the proposed project, discharge of produced water contained in ephemeral drainages. A Statewide Oil and Gas Environmental Impact Statement (EIS) has been developed by the Bureau of Land Management with the assistance of the US Environmental Protection Agency (EPA), Department of Energy, Bureau of Indian Affairs and Crow Tribe of Indians in January 2003 (MT-FEIS). Impacts to the environment and human population, mitigation measures and general goal of this EA will be drawn from the 2003 FEIS.

Summary of Issues: Issues of concern for this renewal and for discharges of produced water include: impacts to air quality, cultural resources, ground and surface water quality and quantity, soil, sensitive wildlife species, and impacts to the human environment.

Benefits and Purpose of Action: This PWGP will ensure compliance with the Montana Water Quality Act. This PWGP will ensure that all discharges of produced water for beneficial uses will meet the water quality requirements for those uses and that discharges of produced water will only be to ephemeral drainages, and no impacts to other state waters (perennial or intermittent streams) occur. Lastly, the General Permit ensures that water is used for the beneficial use of wildlife or livestock watering.

Affected Environment & Impacts of the Proposed Project:

Y = Impacts may occur (explain under Potential Impacts).

N = Not present or No Impact will likely occur.

Impacts on the Physical Environment	
Resource	[Y/N] Potential Impacts and Mitigation Measures
<p>1. Geology and Soil Quality, Stability and Moisture: Are soils present which are fragile, erosive, susceptible to compaction, or unstable? Are there unusual or unstable geologic features? Are there special reclamation considerations?</p>	<p>[N] Produced water can contain high concentrations of oil and grease and total dissolved solids (salinity), which is primarily composed of minerals (salts) dissolved in water. Water high in salinity can cause soils to become dispersed and develop undesirable soil structure with less permeability, making the soil prone to erosion.</p> <p>Consequently, this PWGP does not authorize the use of produced water for irrigation. Instead, only the discharge of produced water to ephemeral drainages for use in wildlife or livestock watering is authorized under this PWGP. Possible impacts to geology and soil quality are restricted to the ephemeral drainage bottoms to which produced water is discharged. The PWGP contains effluent limits and water quality requirements which will protect the receiving ephemeral water, and likely the soil or geology conditions as well. Average produced water discharge is 19 gal/min (0.04 cfs), which is likely to have very low erosion power.</p>
<p>2. Water Quality, Quantity and Distribution: Are important surface or groundwater resources present? Is there potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality?</p>	<p>[N] Ground Water: The PWGP does not authorize the pumping or use of ground water resources, only the discharge of produced water contained in oil and gas formations after the oil and gas is pumped to the surface. Discharge is allowed into ephemeral drainages and/or impoundments constructed in ephemeral drainages, which are perched above the local ground water table. Considering the semi-arid location of many oil and gas operations, where the evaporation rate is often above 45 inches annually, and an average discharge rate from permitted facilities of 19 gal/min (0.04 cfs), it is unlikely that significant volumes of produced water discharge is infiltrating to ground water aquifers.</p> <p>[N] Surface Water: This PWGP has effluent limits and monitoring requirements which protect receiving water quality. Intermittent and perennial water quality is protected, because discharge is not allowed to these drainages. Coverage under this permit does not constitute a water right, and does not relieve the permittee from obeying any applicable water rights laws.</p>
<p>3. Air Quality: Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (Class I airshed)?</p>	<p>[N] Coverage under the Produced Water General Permit does not relieve the permittee from obeying any applicable air quality standards or obtaining any necessary air quality permits. Therefore, no significant impact to air quality is anticipated.</p>
<p>4. Vegetation Cover, Quantity and Quality: Will vegetative communities be significantly impacted? Are any rare plants or cover types present?</p>	<p>[N] Because the produced water discharge to ephemeral drainages is generally small in scale, it is not expected to have substantial impact on the habitat of sensitive plant species. No significant impact is anticipated.</p>
<p>5. Terrestrial, Avian and Aquatic Life and Habitats: Is there substantial use of the area by important wildlife, birds or fish?</p>	<p>[N] Significant impacts to aquatic life and habitat is not anticipated because discharges under this PWGP are restricted to ephemeral drainages, which are dry most of the year. Significant impact to terrestrial or avian life and habitat is not anticipated, as the discharge is required to be of high enough quality to be used for wildlife or livestock watering. Discharge generally occurs in semiarid areas where year-round water is scarce, so there may be some benefit to terrestrial and avian species.</p>

Impacts on the Physical Environment	
Resource	[Y/N] Potential Impacts and Mitigation Measures
6. Unique, Endangered, Fragile or Limited Environmental Resources: Are any federally listed threatened or endangered species or identified habitat present? Any wetlands? Species of special concern?	[N] Authorizations do not waive the responsibility for operations to comply with the federal Endangered Species Act. Additionally, new applicants seeking coverage under this PWGP must contact the Montana Natural Heritage Program (MNHP) and include their analysis on any impacts to unique ecological resources or species of special concern as part of the NOI package.
7. Sage Grouse Executive Order No. 12-2015	[N] Projects within designated sage grouse habitat will be addressed through the Montana Sage Grouse Habitat Conservation Program. The program has a role of consultation, recommendation, and facilitation, and has no authority to approve or deny a project. Certain limits or conditions may apply to a project within designated sage grouse habitat. Any recommendations or mitigations determined by the program are provided to the project proponent in a consultation letter. The resulting consultation letter is required with the submitted Notice of Intent form to DEQ before authorization can occur.
8. Historical and Archaeological Sites: Are any historical, archaeological or paleontological resources present?	[N] For permittees renewing coverage under this PWGP, the oil and gas facilities and produced water discharge is already occurring, and no significant impacts are anticipated. Operators and/or owners of new or proposed oil and gas facilities must adhere to any applicable state or federal laws and regulations. Additionally, new applicants seeking coverage under this PWGP must contact the Montana State Historic Preservation Office (SHIPO) and include any analysis on any historical, cultural, or archeological resources as part of the NOI package. Therefore, no significant impacts are anticipated. However, should structures need to be altered or if cultural materials be inadvertently discovered during this project the SHPO should be contacted.
9. Aesthetics: Is the project on a prominent topographic feature? Will it be visible from populated or scenic areas? Will there be excessive noise or light?	[N] Oil and gas production facilities occupy relatively small physical areas. The Montana Board of Oil and Gas Council (BOGC) regulates the distribution of oil and gas development to maximize recovery while minimizing surface impact. The oil and gas facilities are required to use environmentally compatible colors to reduce the visual impact on the landscape. Noise and light from each individual facility is expected to be minimal. No significant impact is anticipated.
10. Demands on Environmental Resources of Land, Water, Air or Energy: Will the project use resources that are limited in the area? Are there other activities nearby that will affect the project? Will new or upgraded powerline or other energy source be needed)	[N] During facility development or operation, no significant increase in resource use is expected. Development activities (drill and construction) are temporary and energy demand is minimal during well production. The discharge of produced water is to ephemeral drainages and is of small enough volume that other land or resource uses will not be diminished.
11. Impacts on Other Environmental Resources: Are there other activities nearby that will affect the project?	[N] No significant impacts on other environmental resources have been identified.

Impacts on the Human Environment	
Resource	[Y/N] Potential Impacts and Mitigation Measures
12. Human Health and Safety: Will this project add to health and safety risks in the area?	[N] This PWGP contains effluent limits and water quality requirements which meet applicable guidelines. This PWGP also prohibits the discharge of any other wastes associated with oil and gas, such as garbage or chemicals. Authorizations do not waive the responsibility for operations to follow engineering and building codes. No significant impacts are anticipated.

Impacts on the Human Environment	
Resource	[Y/N] Potential Impacts and Mitigation Measures
<p>13. Industrial, Commercial and Agricultural Activities and Production: Will the project add to or alter these activities?</p>	<p>[N] New continued oil and gas operations will increase or maintain industrial activities in the local area. New facilities may impact agriculture activities, reducing the acreage of land available for planting or grazing. However, the discharge of the produced water under this General Permit is for beneficial use, therefore livestock activity and production may benefit from new discharges.</p>
<p>14. Quantity and Distribution of Employment: Will the project create, move or eliminate jobs? If so, estimated number.</p>	<p>[N] Significant changes in the long-term workforce are not anticipated. While development, construction, and continued operation provides some employment, the impact will be minor.</p>
<p>15. Local and State Tax Base and Tax Revenues: Will the project create or eliminate tax revenue?</p>	<p>[N] Development of oil and gas resources may increase the revenue to federal, state, and local entities. Mineral right leasing will initially increase revenue, and oil and gas production will add long-term royalties and taxes. Furthermore, development and continued operation will contribute to a stable local tax base.</p>
<p>16. Demand for Government Services: Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc.) be needed?</p>	<p>[N] Traffic increases are expected to be short-term and minor, only increasing during the development and construction phase. Individual facilities are scattered through the state, because of oil and gas formation separation and BOGC distribution requirements. Therefore, increased demand for local government services is not anticipated. Generally, any increases in workforce are temporary and services are supplied in nearby towns. No significant impacts are anticipated.</p>
<p>17. Locally Adopted Environmental Plans and Goals: Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?</p>	<p>[N] This PWGP does not exempt permittees from any local management plans or regulations, and all covered facilities must obtain any applicable approvals or permits. No significant impacts are anticipated.</p>
<p>18. Access to and quality of Recreational and Wilderness Activities: Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational potential within the tract?</p>	<p>[N] This PWGP does not exempt permittees from any local, state, or federal regulations regarding public access or right of way. Generally, facilities are constructed in remote locations, off of roads, and access to recreation or wilderness activities is not restricted. Also, this PWGP does not exempt permittees from any state or federal wilderness or recreation area rules and regulations, and all covered facilities must obtain any applicable approvals or permits to operate in these areas. No significant impacts are anticipated.</p>
<p>19. Density and Distribution of Population and Housing: Will the project add to the population and require additional housing?</p>	<p>[N] Continued operation and development of PWGP covered facilities will not increase the population substantially as most facilities are distributed throughout the state. No significant impacts are anticipated.</p>
<p>20. Social Structures and Mores: Is some disruption of native or traditional lifestyles or communities possible?</p>	<p>[N] No significant impacts are anticipated.</p>
<p>21. Cultural Uniqueness and Diversity: Will the action cause a shift in some unique quality of the area?</p>	<p>[N] No significant impacts are anticipated.</p>
<p>22. Other Appropriate Social and Economic Circumstances:</p>	<p>[N] No significant impacts are anticipated.</p>
<p>23(a). Private Property Impacts: Are we regulating the use of private property under a regulatory statute adopted pursuant to the police power of the state? (Property management, grants of financial assistance, and the exercise of the power of eminent domain are not within this category.) If not, no further analysis is required.</p>	<p>[N]</p>

Impacts on the Human Environment	
Resource	[Y/N] Potential Impacts and Mitigation Measures
<p>23(b). Private Property Impacts: Is the agency proposing to deny the application or condition the approval in a way that restricts the use of the regulated person's private property? If not, no further analysis is required.</p>	[N]
<p>23(c). Private Property Impacts: If the answer to 21(b) is affirmative, does the agency have legal discretion to impose or not impose the proposed restriction or discretion as to how the restriction will be imposed? If not, no further analysis is required. If so, the agency must determine if there are alternatives that would reduce, minimize or eliminate the restriction on the use of private property, and analyze such alternatives. The agency must disclose the potential costs of identified restrictions.</p>	[N/A]

24. **Description of and Impacts of other Alternatives Considered:** None

25. **Summary of Magnitude and Significance of Potential Impacts:** Renewal of the Produced Water General Permit ensures that produced water discharge authorized under this permit meets any applicable water quality standards and is of high enough quality for use in livestock or wildlife watering. Furthermore, this PWGP ensures that discharges are contained in ephemeral drainages, protecting water quality of perennial and intermittent drainages. Therefore, no significant impacts are expected from this action.

26. **Cumulative Effects:** None.

27. **Preferred Action Alternative and Rationale:** Issue the General Permit because it provides the regulatory mechanism for protecting water quality by enforcing the Montana Water Quality Act and rules.

Recommendation for Further Environmental Analysis:

EIS More Detailed EA No Further Analysis

Rationale for Recommendation: There will be no significant adverse impacts on the physical, biological or social portion of the human and natural environment.

28. **Public Involvement:** A public comment period and public hearing will be held.

29. **Persons and agencies consulted in the preparation of this analysis:** None.

EA Checklist Prepared By: Joanna McLaughlin September 10, 2020

Approved By:

 DRAFT
 Jon Kenning, Chief
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 Date