

CHECKLIST ENVIRONMENTAL ASSESMENT

Proposed Action: Approve Drilling Permit (Form 22)

Project/Well Name: Unit MC 14-29H

Operator: Denbury Onshore, LLC

Location: SW SW Section 29 T7N R60E

County: Fallon MT; **Field (or Wildcat):** Pennel

Proposed Project Date: 09/01/2017

I. DESCRIPTION OF ACTION

Denbury plans to drill a horizontal oil well in the Mission Canyon formation, 12,367' MD / 7,212' TVD. Surface casing to be set at 2,000' and cemented back to surface.

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED

Montana Bureau of Mines and Geology, GWIC website (Fallon County Wells).

US Fish and Wildlife, Region 6 website

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA COUNTIES, Fallon County

Montana Natural Heritage Program Website (FWP)

Heritage State Rank= S1, S2, S3, T7N R60E

Montana Cadastral Website

Surface Ownership and surface use Section 29 T7N R60E

Montana Department of Natural Resources MEPA Submittal

2. ALTERNATIVES CONSIDERED

No Action Alternative: The proposed well would not be drilled.

Action Alternative: Denbury Onshore, LLC would have permission to drill the well.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

3. AIR QUALITY

Long drilling time: No, 15-20 days drilling time.

Unusually deep drilling (high horsepower rig): No, triple drilling rig for a 12,367' MD / 7,212' TVD, directional well. The objective formation is Mission Canyon.

Possible H₂S gas production: Yes, possible H₂S gas from the Mississippian formations.

In/near Class I air quality area: No.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211. AQB review.

Comments: No special concerns – using rig to drill to 12,367' MD / 7,212' TVD. If there are not any gas gathering systems nearby, associated gas can be flared under Board Rule 36.22.1220.

4. WATER QUALITY

Salt/oil based mud: Use freshwater and freshwater mud system for drilling surface hole (Rule 36.22.1001) and main hole will utilize oil based invert mud to TD.

High water table: No high-water table anticipated at this location.

Surface drainage leads to live water: No, closest drainage is Red Butte Creek ¼ of a mile to the southwest, and an unnamed ephemeral drainage 2/5 of a mile to the northeast. A stock pond exists 1/5 of a mile to the south.

Water well contamination: No, closest water well is ¼ of a mile to the southwest and 3/5 of a mile to the southwest. Depth of these stockwater wells are 150' and 160'.

Porous/permeable soils: No, sandy clay soils.

Class I stream drainage: No.

Groundwater vulnerability area: No.

Mitigation:

Lined reserve pit

Adequate surface casing

Berms/dykes, re-routed drainage

Closed mud system

Off-site disposal of **solids**/liquids (in approved facility)

Comments: Steel surface casing will be run and cemented to surface to protect ground water. (Rule 36.22.1001).

5. SOILS/VEGETATION/LAND USE

Vegetation: Grassland.

Stream crossings: None anticipated.

High erosion potential: Slight, a small cut of 7.1' and a small fill of 4.7' is required.

Loss of soil productivity: None, location to be restored after drilling well, if well is nonproductive.

Unusually large wellsite (Describe dimensions): No, a large location will be used, 442' X 296'.

Damage to improvements: Slight, surface use is grazing land.

Conflict with existing land use/values: Slight

Mitigation

- Avoid improvements (topographic tolerance)
- Exception location requested
- Stockpile topsoil
- Stream Crossing Permit (other agency review)
- Reclaim unused part of wellsite if productive
- Special construction methods to enhance reclamation

Access Road: A new access of 134' will be built off existing access road.

Drilling fluids/solids: This is a closed loop system. All cuttings will be collected in temporary metal pits and then hauled to a licensed disposal facility.

6. HEALTH HAZARDS/NOISE

Proximity to public facilities/residences: No residences within ½ mile radius.

Possibility of H2S: Yes, possible H2S gas from the Mississippian formations.

In/near Class I air quality area:

Size of rig/length of drilling time: 15-20 days drilling time.

Mitigation:

- Proper BOP equipment
- Topographic sound barriers
- H2S contingency and/or evacuation plan
- Special equipment/procedures requirements
- Other:

7. WILDLIFE/RECREATION

Sage Grouse: In core area. Program received 8-10-17.

Proximity to sensitive wildlife areas (DFWP identified): in Sage grouse core habitat.

Proximity to recreation sites: None.

Creation of new access to wildlife habitat: None.

Conflict with game range/refuge management: None.

Threatened or endangered Species: Species identified as threatened or endangered are the Whooping Crane, Northern Long-eared Bat, and Piping Plover. MTFWP Natural Heritage Tracker website lists two (2) species of concern. They are the Baird's Sparrow and Chestnut-collared Longspur.

Mitigation:

- Avoidance (topographic tolerance/exception)
- Other agency review (DFWP, federal agencies, DNRC Trust Lands)
- Screening/fencing of pits, drillsite
- Other:

Comments: Private cultivated surface lands. There may be species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands. No concerns.

IV. IMPACTS ON THE HUMAN POPULATION

8. HISTORICAL/CULTURAL/PALEONTOLOGICAL

Proximity to known sites: None.

Mitigation

- avoidance (topographic tolerance, location exception)
- other agency review (SHPO, DNRC Trust Lands, federal agencies)

Other:

9. SOCIAL/ECONOMIC

Substantial effect on tax base

- Create demand for new governmental services
- Population increase or relocation

Comments: No concerns.

IV. SUMMARY

No long term impacts expected. Some short term impacts will occur, but can be mitigated.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

EA Checklist
Prepared By:

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Date: 08/11/17