

CHECKLIST ENVIRONMENTAL ASSESSMENT

Proposed Action: Approve Drilling Permit (Form 22)

Project/Well Name: Butch Cassidy 1H

Operator: Prima Exploration, Inc.

Location: NW NE Section 18 T25N R59E

County: Richland MT; Field (or Wildcat): Wildcat

Proposed Project Date: 03/20/2020

I. DESCRIPTION OF ACTION

Prima Exploration, Inc. plans to drill a horizontal oil well in the Bakken Formation 20,779' MD, 10,231' TVD. Surface casing to be set at 2,200'.

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED

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

US Fish and Wildlife, Region 6 website

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

Montana Natural Heritage Program Website (FWP)

Heritage State Rank= S1, S2, S3, T25N R59E

Montana Cadastral Website

Surface Ownership and surface use Section 18 T25N R59E

Montana Department of Natural Resources MEPA Submittal

2. ALTERNATIVES CONSIDERED

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

Action Alternative: Prima Exploration, Inc. would have permission to drill the well.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

3. AIR QUALITY

Long drilling time: 5-7 days drilling time.

Unusually deep drilling (high horsepower rig): Triple derrick drilling rig to drill a single lateral horizontal Bakken Formation test, 20,779' MD, 10,231' TVD.

Possible H2S gas production: Yes, slight H2S possible from Mississippian Formations.

In/near Class I air quality area: No Class I air quality area nearby.

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 triple derrick rig to drill to 20,779' MD, 10,231' TVD. If there are no gas gathering systems nearby, associated gas can be flared under Board Rule 36.22.1220.

4. WATER QUALITY

Salt/oil based mud: Yes, will drill with oil based invert drilling fluids for the intermediate casing hole. Horizontal hole will be drilled with saltwater. Surface casing hole will be drilled with freshwater and freshwater mud system, Rule 36.22.1001.

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

Surface drainage leads to live water: Potentially, the closest drainage is Fourmile Creek 700' to the southwest from this drilling location.

Water well contamination: None, surface hole will be drilled with freshwater and freshwater drilling fluids to 2,200', steel surface casing will be run and cemented to surface from 2,200' to protect any ground and surface waters. GWIC shows that the closest water wells from this location are two stockwater wells 2/5 of a mile to the east with depths 50' and 200'.

Porous/permeable soils: No, sandy clay soils.

Class I stream drainage: Closest Class I stream drainage is the Missouri River, about 5.6 miles to the northeast from this location.

Groundwater vulnerability area: NA.

Mitigation:

Lined reserve pit

Adequate surface casing

Berms/dykes, re-routed drainage

Closed mud system

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

Other:

Comments: Steel surface casing will be run to 2,200' and cemented to surface to protect ground water. (Rule 36.22.1001).

5. SOILS/VEGETATION/LAND USE

Vegetation: Spring wheat.

Stream crossings: No stream crossings anticipated. Crossing only ephemeral drainages over existing county roads.

High erosion potential: No, a small cut of 3.5' and a moderate fill of 0.3', required.

Loss of soil productivity: No, location to be restored after drilling, if nonproductive. If productive, unused portion of this drillsite will be reclaimed.

Unusually large wellsite (Describe dimensions): A large well site 750' X 460' to accommodate four wells.

Damage to improvements: Slight surface use appears to for grazing / spring wheat.

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: Access will be over existing county road, #140. A new access of 104' will be built into location.

Drilling fluids/solids: A closed loop system will be used for this well. The cuttings will be hauled to a commercial disposal site and disposed.

6. HEALTH HAZARDS/NOISE

Proximity to public facilities/residences: No residences located within a 1/4 a mile from the location.

Possibility of H2S: Yes, slight from Mississippian Formations.

Size of rig/length of drilling time: Triple derrick rig. 5-7 days drilling time.

Mitigation:

Proper BOP equipment (Adequate surface casing cemented to surface, Rule 36.22.1001, with working BOP stack should mitigate any problems, (5,000 psig annular and double ram), Rule 36.22.1014.)

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

7. WILDLIFE/RECREATION

Sage Grouse: NA

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: No.

Conflict with game range/refuge management: No.

Threatened or endangered Species: Species identified as threatened or endangered are the Pallid Sturgeon, Interior Least Tern, Whooping Crane, Piping Plover, and the Northern Long-eared Bat. The Montana Natural Heritage Program lists three (3) species of concern: Whooping Crane, Northern Redbelly Dace, and Iowa Darter

Mitigation:

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

Comments: Private grazing 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 identified.

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.

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| EA Checklist Prepared By: | Name: John Gizicki | Date: 12/10/19 |
| | Title: Compliance Specialist | |