

## CHECKLIST ENVIRONMENTAL ASSESMENT

**Proposed Action:** Approve Drilling Permit (Form 22)

**Project/Well Name:** Baird Federal 2-34H

**Operator:** Continental Resources Inc.

**Location:** NE NW Section 34 T27N R53E

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

**Proposed Project Date:** 10/15/2018

### I. DESCRIPTION OF ACTION

Continental Resources Inc. plans to drill a horizontal oil well in the Bakken formation, 19,058' MD / 9,052' TVD. Surface casing to be set at 1,200' and cemented back to surface.

### 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, T27N R53E

Montana Cadastral Website

Surface Ownership and surface use Section 34 T27N R53E

Montana Department of Natural Resources MEPA Submittal

#### 2. ALTERNATIVES CONSIDERED

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

Action Alternative: Continental Resources Inc. 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 19,058' MD / 9,052' TVD., directional well. The objective formation is the Bakken.

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 19,058' MD / 9,052' 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: Use freshwater and freshwater mud system for drilling surface hole (Rule 36.22.1001) and intermediate hole will utilize oil based invert mud, drilling across the production interval will utilize a brine system.

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

Surface drainage leads to live water: No, location sits near an unnamed ephemeral drainage. West Charlie Creek is located 1.3 miles to the west and Charlie Creek is located 1.8 miles to the northeast. A stock pond exists 4/5 of a mile to the northeast.

Water well contamination: No, closest water wells are a 426' deep stockwater well 2/5 of a mile to the west, and 4 domestic wells 7/10 of a mile to the east with depths of 60', 10', 30', and 48'. Another domestic water well exists 7/10 of a mile to the southeast and has a depth of 240'.

Porous/permeable soils: No, 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: Potentially, a medium cut of 17.7' and a large fill of 20.5' 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, 375' X 450'.

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: Access will be off Road 148. A new access of 0.4 miles will be built into location.

Drilling fluids/solids: Cuttings will be solidified with fly ash and buried onsite in lined cuttings pit.

Drilling fluids will be recycled and used on future wells.

## 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: No.

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

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 Species identified as threatened or endangered are the Pallid Sturgeon, Piping Plover, Interior Least

Tern, Whooping Crane, and Northern Long-eared Bat. MTFWP Natural Heritage Tracker website lists seventeen (17) species of concern. They are the Hoary Bat, Sprague's Pipit, Piping Plover, Black-billed Cuckoo, Bobolink, Red-headed Woodpecker, Least Tern, Northern Redbelly Dace, Blue Sucker, Iowa Darter, Shortnose Gar, Sturgeon Chub, Sicklefin Chub, Northern Pearl Dace, Paddlefish, Sauger, and Pallid Sturgeon.

Mitigation:

Avoidance (topographic tolerance/exception)

Other agency review (DFWP, federal agencies, DNRC Trust Lands, Sage Grouse Habitat Conservation Program)

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:**

**Name:** John Gizicki

**Date:** 10/09/18

**Title:** Compliance Specialist

