

**Montana Board of Oil and Gas Conservation
Environmental Assessment**

Operator: Continental Resources, Inc.
Well Name/Number: Stoney Butte #4 and #5-17H
Location: SE SW Section 17 T23N R56E
County: Richland, MT; **Field (or Wildcat)** W/C (Bakken Horizontal)

Air Quality

(possible concerns)

Long drilling time: No, 30 to 40 days drilling time.

Unusually deep drilling (high horsepower rig): No, a triple derrick drilling rig, 900 HP - 1000HP (Estimated) to drill two single lateral horizontal Bakken Formation well from same pad about 20,000'MD/10,300' TVD.

Possible H2S gas production: Slight

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.

Mitigation:

Air quality permit (AQB review)

Gas plants/pipelines available for sour gas

Special equipment/procedures requirements

Other: _____

Comments: No special concerns – using triple rig.

Water Quality

(possible concerns)

Salt/oil based mud: Yes, freshwater and freshwater mud system on surface hole and oil based saltwater mud system on mainhole. Brine water for horizontal lateral.

High water table: No

Surface drainage leads to live water: Yes, closest drainage is an unnamed ephemeral tributary drainage to Three Buttes Creek. The location in relation to the unnamed ephemeral drainage is about 1/2 of a mile to the east and southeast of this location.

Water well contamination: No, there are no water wells in section 17 and 2 stockwater wells in section 20 –both much shallower than surface casing setting depth. Surface hole will be drilled with freshwater and steel surface casing will be cemented from 1990' to surface.

Porous/permeable soils: No, sandy clay soils.

Class I stream drainage: 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)

Other: _____

Comments: 1990' of surface casing cemented to surface adequate to protect freshwater zones. This will cover the Base of the Fox Hills Formation.

Soils/Vegetation/Land Use

(possible concerns)
Steam crossings: No, crossings.
High erosion potential: No, small cut, up to 10' and moderate fill, up to 17'
' , required.
Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If
productive unused portion of drillsite will be reclaimed.
Unusually large wellsite: No, large location, 450'X400' location size required for two
wells
Damage to improvements: Slight
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
 Other _____
Comments: About 864' of new road into location will be built off existing well access
road. Drill cuttings will be disposed of in the lined reserve pit. Oil based drilling fluids
will be recycled. Completion fluids will be trucked to a commercial Class II disposal. Pit
will be backfilled after remaining fluids have evaporated. No special concerns

Health Hazards/Noise

(possible concerns)
Proximity to public facilities/residences: Closest building is 1/2 of a mile to the southeast
from this location.
Possibility of H2S: Slight
Size of rig/length of drilling time: Triple drilling rig/moderate 30 to 40 days drilling time
per well.
Mitigation:
 Proper BOP equipment
 Topographic sound barriers
 H2S contingency and/or evacuation plan
 Special equipment/procedures requirements
 Other: _____
Comments: Operational BOP and adequate surface casing should mitigate
most problems. No concerns.

Wildlife/recreation

(possible concerns)
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: None identified.
Mitigation:
 Avoidance (topographic tolerance/exception)
 Other agency review (DFWP, federal agencies, DSL)

Screening/fencing of pits, drillsite
 Other: _____
Comments: Private surface land. No concerns.

Historical/Cultural/Paleontological

(possible concerns)
Proximity to known sites None identified
Mitigation
 avoidance (topographic tolerance, location exception)
 other agency review (SHPO, DSL, federal agencies)
 Other: _____
Comments: On private surface lands. No concerns.

Social/Economic

(possible concerns)
 Substantial effect on tax base
 Create demand for new governmental services
 Population increase or relocation
Comments: two development wells in this existing spacing unit. No concerns.

Remarks or Special Concerns for this site

Wells are Bakken Formation single lateral horizontal development well in Richland County.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected, some short term impacts are expected.

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.

Prepared by (BOGC): Thomas Richmond
(title:) Administrator
Date: October 31, 2013

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website
(Name and Agency)

Richland County water wells
(subject discussed)
October 31, 2013
(date)

Montana Cadastral Website
(Name and Agency)
Ownership, Aerial Photo
(subject discussed)
Date: October 30, 2013

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____