

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

**Operator:** Enerplus Resources (USA) Corporation  
**Well Name/Number:** Leghorn-Ann 31-15HLID3  
**Location:** SW SE Section 31 T23N R58E  
**County:** Richland, MT; Field (or Wildcat) Wildcat

**Air Quality**

(possible concerns)

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

Unusually deep drilling (high horsepower rig): Triple derrick rig 900 HP to drill a single lateral horizontal Bakken Formation well, 19,403' MD/10,324' TVD.

Possible H<sub>2</sub>S 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 rule 75-2-211.

Mitigation:

Air quality permit (AQB review)

Gas plants/pipelines available for sour gas

Special equipment/procedures requirements

Other: \_\_\_\_\_

Comments: Existing pipeline for gas in the area.

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**Water Quality**

(possible concerns)

Salt/oil based mud: Yes to long string oil based drilling fluids. Surface casing hole to be drilled with freshwater and freshwater mud.

High water table: No

Surface drainage leads to live water: No, closest drainage is an unnamed ephemeral tributary drainage to Lone Tree Creek, about 1/16 of a mile to the north of this location.

Water well contamination: No, all water wells close by are shallower than 1778'. Closest water wells are about 1/4 of a mile to the east, 131' domestic water well and 3/8 of a mile to the southwest, 90' domestic water well. All other water wells are about 1/2 mile to the northwest and are 160' in depth or less.

Porous/permeable soils: No, sandy clay soils.

Class I stream drainage: No, Class I stream drainages.

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: 1778'+ surface casing well below freshwater zones in adjacent water wells. Also, covering Fox Hills aquifer.

**Soils/Vegetation/Land Use**

(possible concerns)

Stream crossings: None

High erosion potential: No, moderate cut, of up to 12.2' and moderate to large fill, of up to 20.0', required.

Loss of soil productivity: None, location to be restored after drilling well, if nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: No, large well site 450'X310'

Damage to improvements: Slight, surface use is a cultivated field.

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: Access will be over existing county roads, #124. A short access road off the existing well location road into location will be constructed, about 369'. Oil based muds will be recycled. Completion fluids will be hauled and disposed of in a commercial disposal. Cuttings will be disposed of in the lined reserve pit. Pit will be solidified with subsoil in the lined pit and clean cover and top soil put over the solidified pit contents. No concerns.

### Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Residences, are about 1/4 of a mile to the east, 3/8 of a mile to the west and 1 mile to the north of this location.

Possibility of H2S: Slight

Size of rig/length of drilling time: Triple drilling rig 30 to 40 days drilling time.

Mitigation:

Proper BOP equipment

Topographic sound barriers

H2S contingency and/or evacuation plan

Special equipment/procedures requirements

Other: \_\_\_\_\_

Comments: Adequate surface casing cemented to surface with working BOP stack should mitigate any problems. Distance sufficient to mitigate noise.

### 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: 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: 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: No concerns. Third well in this 1280 acre spacing unit.

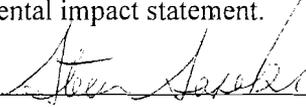
**Remarks or Special Concerns for this site**

No concerns. Third Bakken Formation single lateral horizontal well in this spacing unit, 19,403'MD/10,324'TVD.

**Summary: Evaluation of Impacts and Cumulative effects**

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

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): Steven Sasaki 

(title:) Chief Field Inspector

Date: December 19, 2007

Other Persons Contacted:

Montana Bureau of Mines and Geology, Groundwater Information Center website

(Name and Agency)

Richland County water wells

(subject discussed)

December 19, 2007

(date)

If location was inspected before permit approval:

Inspection date: \_\_\_\_\_

Inspector: \_\_\_\_\_

Others present during inspection: \_\_\_\_\_