

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

**Operator:** Orion Energy Partners, L.P.  
**Well Name/Number:** Ojo Caliente 17-31H  
**Location:** NW NE Section 17 T25N R59E  
**County:** Richland, MT; Field (or Wildcat) Wildcat

**Air Quality**

(possible concerns)

Long drilling time: No, 20-30 days drilling time.  
Unusually deep drilling (high horsepower rig): Triple derrick rig 900 HP  
Possible H<sub>2</sub>S gas production: Yes  
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:

**Water Quality**

(possible concerns)

Salt/oil based mud: Yes to long string invert oil based drilling fluids. Surface casing freshwater, and freshwater mud system to be used. Horizontal hole will be drilled with freshwater.  
High water table: No  
Surface drainage leads to live water: Yes, North Fork Fourmile Creek, about 1/8 of a mile to the north, east and a 1/4 of a mile to the south from this location.  
Water well contamination: None, surface hole will be drilled with freshwater to 1800'. Surface casing will be run and cemented to surface. Closest nearby water well, about 3/8 of a mile to the north and is 65' deep.  
Porous/permeable soils: No, silty 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: 1800' surface casing well below freshwater zones in adjacent water wells. Also, covering Fox Hills aquifer. Adequate surface casing and BOP equipment to prevent problems.

**Soils/Vegetation/Land Use**

(possible concerns)

Stream crossings: None  
High erosion potential: No, location requires a small cut, up to 9.6' and a small fill, up to 5.6', required.  
Loss of soil productivity: None, location to be restored after drilling well, if nonproductive. If productive, unused portion of the drilling pad will be reclaimed.  
Unusually large wellsite: No, large well site 300'X400'

Damage to improvements: Slight, surface use appears to be 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 gravel road, #140. A short access road into location will be built from county road, #140, about 350'. Cuttings will be buried in the lined reserve pit. Drilling fluids will be recycled to the next location. Completion fluids in the reserve pit will be hauled to a commercial Class II disposal site.

### Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Yes, residence about ¼ of a mile to the southwest of this location. The town of Dore, North Dakota is about 4 miles to the east and Fairview, Montana about 5.5 miles to the southeast of this location.

Possibility of H2S: Yes

Size of rig/length of drilling time: Triple drilling rig 20 to 30 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.

### Wildlife/recreation

(possible concerns)

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

Proximity to recreation sites: Missouri River is about 7 miles to the northeast.

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 lands. 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. No concerns.

**Social/Economic**

(possible concerns)

- Substantial effect on tax base
- Create demand for new governmental services
- Population increase or relocation

Comments: No concerns

**Remarks or Special Concerns for this site**

This will be a 12,999' MD/ 8,864' 'TVD Ratcliffe formation horizontal well.

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

No long term impacts expected from the drilling of this well. Some short term impacts will occur, but will 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: November 15, 2007

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website

(Name and Agency)

Water wells in Richland County

(subject discussed)

November 15, 2007

(date)

If location was inspected before permit approval:

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

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

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