

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

Operator: Red Willow Plains, LLC
Well Name/Number: Peterson 33-1H
Location: SW SW Section 33 T33N R49E
County: Daniels, MT; **Field (or Wildcat)** Wildcat

Air Quality

(possible concerns)

Long drilling time: No, 20-30 days drilling time.

Unusually deep drilling (high horsepower rig): No, small triple derrick drilling rig 900-1000 HP to drill a single lateral Bakken Formation horizontal well, 7,707'TVD/13,585'MD..

Possible H2S gas production: Yes possible.

In/near Class I air quality area: In a Class I air quality area, within the Fort Peck Indian Reservation.

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: Small triple derrick drilling rig. No concerns.

Water Quality

(possible concerns)

Salt/oil based mud: Yes, oil based drilling fluids for the main hole to casing point. Surface casing hole will be drilled with freshwater, and freshwater mud system. Horizontal hole will be drilled with brine water.

High water table: No high water table anticipated.

Surface drainage leads to live water: No, closest drainages are unnamed ephemeral tributary drainage to Popular River, about 1/8 of a mile to the southeast and about 1/4 of a mile to the northwest from this location.

Water well contamination No, closest water well is about 7/8 of a mile east of this location. Well depth is unknown. All other water wells are 1 mile or further from this location. Surface hole will be drilled with freshwater and steel casing set to 2000' and cemented back to surface.

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: 2000' surface casing well below freshwater zones in adjacent water wells. Also, covering Fox Hills and Judith River aquifer. Adequate surface casing and BOP equipment to prevent problems.

Soils/Vegetation/Land Use

(possible concerns)

Steam crossings: None anticipated.
High erosion potential: No, a small cut, up to 5.0' and small fill, up to 3.6', 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 300'X400'
Damage to improvements: Slight, current 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 Requires DEQ General Permit for Storm Water Discharge Associated with Construction Activity, under ARM 17.30.1102(28)

Comments: Existing access off county road. A short access from the existing county road into location will be constructed, about 200' of new access will be constructed. Cuttings will be buried in the lined reserve pit. Oil based drilling fluids will be recycled. Completion fluids will be hauled to a approved Class II disposal. Reserve pit will be allowed to dry and then solidified with fly ash..

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Residences about 1.125 of a mile to the northeast and 1.75 miles to the southeast of this location.
Possibility of H2S: Yes, possible.
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: None identified.
Creation of new access to wildlife habitat: No
Conflict with game range/refuge management: No
Threatened or endangered Species: Only species identified as threaten or endangered is the Whooping Crane.

Mitigation:

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

Comments: No concerns. Private cultivated surface lands.

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: No concerns. Private cultivated surface lands.

Social/Economic

(possible concerns)

Substantial effect on tax base

Create demand for new governmental services

Population increase or relocation

Comments: No concerns, wildcat well.

Remarks or Special Concerns for this site

Bakken formation single lateral horizontal test, 7,707'TVD/13,585'MD.

Summary: Evaluation of Impacts and Cumulative effects

No long term impact expected with the drilling of this well, 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): /s/ Steven Sasaki

(title): Chief Field Inspector

Date: May 20, 2010

Other Persons Contacted:

Montana Bureau of Mines and Geology, Groundwater Information Center website

(Name and Agency)

Daniels County water wells

(subject discussed)

May 20, 2010

(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA
COUNTIES, Daniels County
(subject discussed)

May 20, 2010
_____ (date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____