

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

Operator: Rosetta Resources Operating LP
Well Name/Number: Brandvold 3509-25-04
Location: C NW/4 Section 25 T35N R9W
County: Glacier, **MT;** **Field (or Wildcat)** W/C

Air Quality

(possible concerns)

Long drilling time: 15 to 20 days drilling time.

Unusually deep drilling (high horsepower rig): No, super single or small triple derrick drilling rig for a 7253' TD vertical hole, Souris River Formation test well.

Possible H2S gas production: Yes, H2S gas production possible.

In/near Class I air quality area: Yes, Class I air quality area, Blackfeet 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: Super single or triple derrick drilling rig to drill a vertical test hole to 7253' TD, a Souris River Formation test well.

Water Quality

(possible concerns)

Salt/oil based mud: Use freshwater and freshwater mud system on surface and main hole.

High water table: None anticipated.

Surface drainage leads to live water: No, closest drainage is an unnamed ephemeral tributary drainage to Powell Coulee, about 3/16 of a mile to the east from this location.

Within this unnamed ephemeral drainage are stock ponds. Powell Coulee eventually drains into Cut Bank Creek is about 7.5 miles to the south of this location.

Water well contamination: No, closest water well is about 5/8 of a mile to the northwest from this location. Depth of this stockwater well is 175'. Surface casing hole will be drilled with freshwater and freshwater muds to 500' and steel surface casing run and cemented to surface to protect ground water. Recommend surface casing be set 10% of total depth or 700' of surface casing.

Porous/permeable soils: Yes, sandy clay soils.

Class I stream drainage: Class I stream drainage is Cut Bank Creek, about 7.5 miles to the south of this location.

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: 500' of surface casing cemented to surface not sufficient, recommend 700' of surface casing to protect freshwater zones. Also, fresh water mud systems to be used on surface hole.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: None anticipated.

High erosion potential: No, moderate cut, up to 10.8' and small fill required up to 5.6', 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, 350'X300' location size required.

Damage to improvements: Slight, surface use is an 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: Using existing county road, Brandvold Road. Rosetta will construct about 3/4 of a mile of new access road into this location from the county road. Cuttings will buried in the lined reserve pit. Drilling fluids and completion fluids will be trucked to a Class II disposal well. Pit will be allowed to dry then backfilled when dry. No special concerns

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residences are about 1mile to the southeast from this wellsite.

Possibility of H2S: Yes possible H2S.

Size of rig/length of drilling time: Super Single or triple derrick drilling rig 15 to 20 days drilling time.

Mitigation:

Proper BOP equipment

Topographic sound barriers

H2S contingency and/or evacuation plan

Special equipment/procedures requirements

Other: _____

Comments: No concerns, proper BOP stack and surface casing should be able to control any problems that occur.

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: Species identified as threatened or endanger in Glacier County are Grizzly Bear, Canada Lynx, Gray Wolf and Bull Trout.

Mitigation:

- Avoidance (topographic tolerance/exception)
- Other agency review (DFWP, federal agencies, DSL)
- Screening/fencing of pits, drillsite
- Other: Remove garbage daily. All empty mud sacks need to be stored in an enclosed trailer.

Comments: Private cultivated surface lands. Drilling of this well should not impact any of species listed above. Bull Trout do not exist in Cut Bank Creek drainage. Grizzly Bears, Gray Wolf and Canada Lynx are not established in this area. 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 cultivated surface lands. No concerns.

Social/Economic

(possible concerns)

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

Comments: Wildcat well. If production is established then these issues will be addressed based on the size of the discovery. If a dryhole no social/economic impact will occur. No concerns

Remarks or Special Concerns for this site

Well is a vertical Souris River Formation test hole to 7253' TD.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. Some short term impacts will occur.

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: September 8, 2010

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website
(Name and Agency)
Glacier County water wells
(subject discussed)
September 7, 2010
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES
MONTANA COUNTIES, Glacier County
(subject discussed)
September 7, 2010
(date)

Montana Natural Heritage Program Website
(Name and Agency)
Heritage State Rank= S1, S2, S3
(subject discussed)
September 7, 2010
(date)

If location was inspected before permit approval:
Inspection date: _____
Inspector: _____
Others present during inspection: _____