

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

Operator: Anschutz Exploration Corporation
Well Name/Number: SW Browning 1-8H
Location: SW NE Section 8 T32N R11W
County: Glacier, MT; **Field (or Wildcat)** W/C

Air Quality

(possible concerns)

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

Unusually deep drilling (high horsepower rig): Yes, triple derrick drilling rig for a 12,552'MD/6,508'TD horizontal hole. Formation at total depth is the Bow Island.

Possible H2S gas production: No, H2S anticipated.

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: Triple derrick drilling rig to drill a horizontal hole to 12,552'MD/6,508'TD. Drilling from a surface location in the SW NE section 8 T32N R11W to a bottom hole location in the SE NE section 17 T32N R11W.

Water Quality

(possible concerns)

Salt/oil based mud: Yes, will use an oil based invert drilling fluids from under surface casing to total depth. Freshwater and freshwater mud system will be used on drilling surface hole.

High water table: No high water table anticipated.

Surface drainage leads to live water: Closest surface drainage is to an unnamed ephemeral drainage between two pothole lakes, about 1/16 of a mile to the south and about 1/8 of a mile to the east is an unnamed pothole lake and about 1/4 of a mile from an unnamed pothole lake to the southwest from this location.

Water well contamination: No water well contamination. Closest water wells are about 3/8 of a mile to 5/8 of a mile to the north from this location in section 5 T32N R11W.

Depth of these domestic and irrigation water wells are about 30'. Surface casing hole will be drilled with freshwater to 1000'. Steel surface casing will be run and cemented to surface from 1000' to protect ground waters.

Porous/permeable soils: Yes, sandy silty clay soils.

Class I stream drainage: Closest Class I stream drainage is Willow Creek, about 3/8 of a mile to the northwest from 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: 1000' of surface casing cemented to surface adequate to protect freshwater. Also, fresh water mud systems to be used on surface hole.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: None anticipated. Operator will utilize existing access road.

High erosion potential: No, small cut, up to 3.4' and small fill required up to 3.2', 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, 400'X400' location size required.

Damage to improvements: Slight, surface use is grassland close to an unused RV campground.

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: Using existing state highway, #89. Access off existing state highway on to a private road, may require upgrading to handle heavy trucks, a small amount of new road will be constructed into this location. Freshwater drilling fluids and cuttings will be allowed to dry in the pit. A closed loop drilling mud system will be used with the oil based drilling fluids from under surface casing to total depth. Oil based drilling fluids will be recycled back to the drilling fluid company. Oil based drill cuttings will be solidified with a Soli-Bond Process and buried in a separate lined pit from the water based cuttings. Pits will be backfilled when dry. No special concerns

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: There are 6 residences within a 3/4 mile radius of this wellsite. Closest residences are about 1/8 of a mile to the northwest and north from this location. The town of Browning, Montana is about 2 miles to the east of this location. Location of Browning High School is about 1 mile to the east and 4 grades schools are about 2 to 2.25 miles to the east in Browning. Willow Creek Cemetery is about 2 miles to the east southeast from this location. Rodeo grounds are about 1.75 miles to the northeast from this location.

Possibility of H₂S: No H₂S anticipated, Cretaceous formations are non-H₂S gas producing formations.

Size of rig/length of drilling time: Triple derrick drilling rig to drill for about 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: No concerns, General wind directions are from the north, northwest and west. Since this well will not drill known H2S bearing formations, H2S contingency and evacuation plan are not required. Formations in this area are not anticipated to be over pressured, surface casing and BOP configurations should be able to control any problems that could occur.

Wildlife/recreation

(possible concerns)

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

Proximity to recreation sites: Glacier National Park boundary is about 13 miles to the west from this location.

Creation of new access to wildlife habitat: No, private surface lands.

Conflict with game range/refuge management: No, private surface lands.

Threatened or endangered Species: Species identified as threatened or endanger in Glacier County are Grizzly Bear, Gray Wolf, Canada Lynx and Bull Trout. FWP species identified as species of concern are the Swift Fox, Long-billed Curlew and the Sharp Tailed Grouse west of the Rocky Mountain Divide. According to the website Sharp Tailed Grouse east of the Rocky Mountain Divide are not a species of concern. Since this location is east of the divide Sharp Tailed Grouse are not a species of concern.

Mitigation:

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

Comments: Private surface grassland in a semi-developed area. Drilling of this well should not impact any of species listed above. Other mammals are mobile and should not be impacted by the drilling of this well. 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 grassland. No concerns.

Social/Economic

(possible concerns)

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

Comments: Rank wildcat well. Social and economic impacts are unknown at this time.

Remarks or Special Concerns for this site

Well is a horizontal Cretaceous Bow Island Formation test hole to 12,552'MD/6,508'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: February 12, 2011

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website
(Name and Agency)
Glacier County water wells
(subject discussed)
February 11, 2011
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES
MONTANA COUNTIES, Glacier County
(subject discussed)
February 11, 2011
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Heritage State Rank= S1, S2, S3 T32N R11W
(subject discussed)
February 11, 2011
(date)

If location was inspected before permit approval:
Inspection date: February 18, 2011
Inspector: Klotz

Others present during inspection: Willow Creek Construction personnel