

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

**Operator:** Anschutz Exploration Corporation  
**Well Name/Number:** Flat Iron 1-35-32-12  
**Location:** NW SW Section 35 T32N R12W  
**County:** Glacier, **MT;** **Field (or Wildcat)** W/C

**Air Quality**

(possible concerns)

Long drilling time: No 20 to 30 days drilling time.

Unusually deep drilling (high horsepower rig): Yes, triple derrick drilling rig for a 8,000' TD vertical hole. Formation at total depth is the Cretaceous Kootenai.

Possible H2S gas production: No, H2S anticipated unless thrust faults are cut.

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 vertical hole to 8,000' TD. If there are existing pipeline for gas in the area then gas must be tied into gathering system or if no gathering system nearby associated gas can be flared under Board Rule 36.22.1220.

**Water Quality**

(possible concerns)

Salt/oil based mud: Yes, will use oil based invert drilling fluids (OptiPhase Mud System) from under surface casing to total depth. Freshwater and freshwater mud system will be used on drilling surface hole. (Rule 36.22.1001)

High water table: Possible high water table in the area of review. The location has shallow pothole lakes to the east and south from this location.

Surface drainage leads to live water: Closest surface drainage is an unnamed ephemeral tributary drainage to the Willow Creek, about 3/8 of a mile to the northwest southwest from this location.

Water well contamination: No water well contamination. No listed water wells within a 1 mile radius from this location. Surface casing hole will be drilled with freshwater to 1000'.(Rule 36.22.1001) Steel surface casing will be run and cemented to surface from 1000' to protect ground waters. (Rule 36.22.1001)

Porous/permeable soils: No, sandy gravelly 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. (Rule 36.22.1001)Also, fresh water mud systems to be used on surface hole. Oil based drilling fluids will be drilled with a closed loop mud system. Surface hole will be drilled with freshwater drilling fluids utilizing a lined surface pit. (Rule 36.22.1001)

### Soils/Vegetation/Land Use

(possible concerns)

Steam crossings: None anticipated.

High erosion potential: No, small cut, up to 3.1' and small fill required up to 4.5', 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, 450'X350' location size required.

Damage to improvements: Slight, surface use is grassland.

Conflict with existing land use/values: Slight

Mitigation

\_\_\_ Avoid improvements (topographic tolerance)

\_\_\_ Exception location requested

X Stockpile topsoil

\_\_\_ Stream Crossing Permit (other agency review)

X Reclaim unused part of wellsite if productive

\_\_\_ Special construction methods to enhance reclamation

X Other: Requires DEQ General Permit for Storm Water Discharge Associated with Construction Activity, under ARM 17.30.1102(28)

Comments: Using existing state highway, #2. Access off existing state highway on to tribal surface lands, will have to constructed, about 539' of new road 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 no residences within a 1 mile radius and further from this location. The town of Browning, Montana is about 7.1 miles to the northeast and the town of East Glacier, Montana is about 5 miles to the southwest from this location.

Possibility of H<sub>2</sub>S: No H<sub>2</sub>S anticipated, Cretaceous formations are typically non-H<sub>2</sub>S gas producing formations.

Size of rig/length of drilling time: Triple derrick drilling rig to drill for about 20 to 30 days drilling time.

Mitigation:

X 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 (5,000 psi double ram and annular preventer stack) should be able to control any problems that could occur.

### Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): Glacier National Park boundary is about 6 miles to the west from this location.

Proximity to recreation sites: Glacier National Park boundary is about 7.25 miles to the west from this location.

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 and Bull Trout. Species listed as "Species of Concern" are the Meltwater Lednian Stonefly, Sprague's Pipit, Wolverine and the Whitebark Pine. NH Tracker website (FWP) species identified three(3) species of concern are the Grizzly Bear, Black Tern and Long-billed Curlew.,.

Mitigation:

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

Comments: Blackfeet Tribal surface grassland. Requires a BLM permit to drill, BLM will do surface EA. There may be species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over Blackfeet Tribal 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 BLM**)
- Other: \_\_\_\_\_

Comments: Blackfeet Tribal surface grassland. Requires a BLM permit to drill, BLM will do surface EA. There may be possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over Blackfeet Tribal surface lands.

### Social/Economic

(possible concerns)

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

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

### Remarks or Special Concerns for this site

Well is a vertical Cretaceous Flood Formation test hole to 8,000'TD.

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

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

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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: November 14, 2012

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website  
(Name and Agency)  
Glacier County water wells  
(subject discussed)  
November 14, 2012  
(date)

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

November 14, 2012  
(date)

Montana Natural Heritage Program Website (FWP)  
(Name and Agency)  
Heritage State Rank= S1, S2, S3 T32N R12W  
(subject discussed)

November 14, 2012  
(date)

If location was inspected before permit approval:

Inspection date: September 17, 2012

Inspector: Mr. Gary Klotz

Others present during inspection: None