

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

Operator: XTO Energy, Inc.
Well Name/Number: Marker 34X-20
Location: Lot 6 Section 20 T22N R59E
County: Richland, MT; Field (or Wildcat) Wildcat

Air Quality

(possible concerns)

Long drilling time: No, 25-35 days drilling time.
Unusually deep drilling (high horsepower rig): A triple derrick rig, estimated 900-1000 HP to drill a single lateral Bakken Formation Horizontal Lateral, 19,711' MD/10,382' TVD.
Possible H2S gas production: Slight chance H2S gas production. If any very low gas concentration of H2S.
In/near Class I air quality area: No, not in a Class I air quality area.
Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under rule 75-2-211.

Mitigation:

- Air quality permit (AQB review)
- Gas plants/pipelines available for sour gas
- Special equipment/procedures requirements
- Other: _____

Comments: Existing pipeline for H2S gas and sweet gas in the area. _____

Water Quality

(possible concerns)

Salt/oil based mud: Yes to intermediate casing string hole, will be drilled with oil based invert drilling fluids. Saltwater for the horizontal openhole lateral. Surface casing hole to be drilled with freshwater and freshwater mud.
High water table: Yes possible high water table. Location is in an irrigated field.
Surface drainage leads to live water: No direct drainage to the Yellowstone River.
Water well contamination: None, surface hole will be drilled with freshwater to 1,460'+, steel surface casing will be run and cemented to surface to protect any ground waters. Closest well is about 3/8 of a mile to the east and 1/2 of a mile to the northeast from this location. Depth of these stock and domestic water wells are from 12' to 1277'.
Porous/permeable soils: Yes, sandy silty soils.
Class I stream drainage: Yes, Class I stream drainage, Yellowstone River.

Mitigation:

- Lined reserve pit
- Adequate surface casing
- Berms/dykes, re-routed drainage
- Closed mud system
- Off-site disposal of liquids (in approved facility)
- Other: _____

Comments: Recommend a minimum of 1452' of surface casing be set. I believe the 800' of surface casing as listed on the permit is not enough surface casing to cover Base Fox Hills Formation. Require setting 1452' to be set to cover any freshwater zones in adjacent water wells and base of the Fox Hills Formation aquifer. Surface hole will be drilled with freshwater and freshwater drilling muds to 1460'. Steel surface casing will be run to 1452' and cemented to surface. Pitless drilling system required per Rule 36.22.1005 and offsite disposal of cuttings and mud solids. Oilbased invert drilling fluids will be recycled. After the well has been completed, completions fluids will go to a commercial Class II disposal.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: None, anticipated.

High erosion potential: None, no cut, 0.0' and small fill, up to 3.2', required.

Loss of soil productivity: None, location to be restored after drilling well, if well is nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: No, large well site 430'X330'.

Damage to improvements: Slight, surface use is irrigated 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: Access will be over existing county road, #350. A short new access road will be built into this location, about 0.2 of a mile. Oil based drilling fluids will be recycled. Completion fluids will be hauled to a Class II commercial disposal. Drill cuttings will be buried in an approve offsite lined pit. No concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residences about 1/2 mile to the northeast of this location.

Possibility of H2S: Slight

Size of rig/length of drilling time: Triple derrick drilling rig, 25 to 35 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, no game range/refuge in the area.

Threatened or endangered Species: Threatened or endangered species identified by USFWS in Richland County are the Pallid Sturgeon, Whooping Crane, Interior Lease Tern and Piping Plover.

Mitigation:

Avoidance (topographic tolerance/exception)

Other agency review (DFWP, federal agencies, DSL)

Screening/fencing of pits, drillsite

Other: _____

Comments: Private irrigated 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 irrigated surface lands. No concerns.

Social/Economic

(possible concerns)

Substantial effect on tax base

Create demand for new governmental services

Population increase or relocation

Comments: Horizontal Bakken Formation development oil well to an existing spacing unit. No concerns.

Remarks or Special Concerns for this site

Single lateral Bakken Formation development horizontal oil well 19,711' MD/10,382' TVD.

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: March 3, 2010

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website

(Name and Agency)

Richland County water wells

(subject discussed)

March 3, 2010

(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA
COUNTIES, Richland County

March 3, 2010 _____
(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____