Montana Board of Oil and Gas Conservation
Environmental Assessment

Operator: XTO Energy, Inc.
Well Name/Number: Vaira 31X-17
Location: NW NE Section 17 T24N R55E
County: Richland **, MT; Field (or Wildcat)** Wildcat

Air Quality

(possible concerns)
Long drilling time: No, 30-40 days drilling time.
Unusually deep drilling (high horsepower rig): Triple derrick rig 1000 HP to drill a single lateral horizontal Bakken Formation well, 19,300'MD/9,951'TVD.
Possible H2S gas production: Slight
In/near Class I air quality area: No, 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:
X Air quality permit (AQB review)
__ Gas plants/pipelines available for sour gas
__ Special equipment/procedures requirements
__ Other:_____
Comments: Existing gas pipelines in the area.

Water Quality

(possible concerns)
Salt/oil based mud: Yes, to intermediate casing hole will use oil based invert drilling fluids. Horizontal hole to be drilled with brine water. Surface casing hole to be drilled with freshwater and freshwater mud.
High water table: No, high water table expected.
Surface drainage leads to live water: Yes, closest drainage is an unnamed ephemeral tributary drainage to the East Charlie Creek, about 1/4 mile to the northwest and southeast of this location. Within these ephemeral drainage are stock ponds.
Water well contamination: No, closest water wells are about 5/8 of a mile to the southeast and 1 mile to the southeast of this location. These wells are stock and domestic water wells, all less than 100' in deep. 1600' of surface casing will be set and cemented to surface to protect groundwater.
Porous/permeable soils: No, sandy silty clay soils.
Class I stream drainage: No, Class I stream drainages.

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

Comments: 1600' surface casing well below freshwater zones in adjacent water wells. Also, covering Fox Hills aquifer. Adequate surface casing and BOP equipment to prevent problems.

Soils/Vegetation/Land Use

(possible concerns)
Steam crossings: None, utilizing exiting roads and crossings.

High erosion potential: No, moderate cut up to 13.1' of cut and moderate fill up to 10.8', 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 430'X330'
Damage to improvements: Slight, surface use appears to be cultivated land.
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: Access will be over existing county roads, #324 and an existing section line farm road. An access will be built from the existing section line farm road into this location, about 0.7 miles of new access will be required. Oil based drilling fluids will be recycled. Freshwater surface hole cuttings will be buried on site. Oil based drill cuttings will be buried in the lined pit. Completion pit fluids will be hauled to a permitted saltwater disposal. Pit will be backfilled when dry. No concerns.

Health Hazards/Noise

(possible concerns)
Proximity to public facilities/residences: Yes, residence, about 1 mile to the northwest and southeast from this location.
Possibility of H2S: Slight
Size of rig/length of drilling time: Triple drilling rig 30 to 40 days drilling time.

Mitigation:
_X Proper BOP equipment
__ Topographic sound barriers
__ H2S contingency and/or evacuation plan
__ Special equipment/procedures requirements
__ Other:_____

Comments: Adequate surface casing, 1600', cemented to surface with working BOP stack should mitigate any problems. Noise should not be a problems, sufficient distance from residence to rig should mitigate this.

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: Threatened or endangered species listed in Richland county by USFW service are Pallid Sturgeon, Piping Plover, Interior Lease Tern and Whooping Crane.

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

Comments: Surface location on private lands. Surface use is cultivated land. 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: No concerns

Remarks or Special Concerns for this site

Single lateral horizontal Bakken Formation development well, 19,300'MD/9,951'TVD.

Summary: Evaluation of Impacts and Cumulative effects

No long term impact 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: June 28, 2010

Other Persons Contacted:

(Name and Agency)

Montana Bureau of Mines and Geology, Groundwater Information Center website.

(subject discussed)

Water wells in Richland County

(date)

June 28, 2010

US Fish and Wildlife, Region 6 website

(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA COUNTIES, Richland County
(subject discussed)

June 28, 2010
(date)

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