# Montana Board of Oil and Gas Conservation
# Environmental Assessment

**Operator:** XTO Energy, Inc.
**Well Name/Number:** Smith 13X-2
**Location:** NW SW 2 T27N R57E
**County:** Roosevelt**, 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 19,043'MD/10,006' TVD, single lateral Bakken Formation horizontal well test.
Possible H2S gas production: Slight chance of H2S gas production.
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 75-2-211.

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

Comments: Associated gas to be flared or if a pipeline is run to a gathering facility then it can be hooked up. _____
_____

## Water Quality

(possible concerns)
Salt/oil based mud: Yes to intermediate casing string hole, oil based invert drilling fluids. Horizontal lateral will be drilled with brine fluids. Surface casing will be drilled with freshwater and freshwater mud system.
High water table: Possible high water table.
Surface drainage leads to live water: No, closest drainage is Clover Creek 1 ½ miles to the northwest from this location, across a low swampy wet looking area.
Water well contamination: None, closest water wells in the area are about 3/16 of a mile to the southwest, ½ of a mile to the southwest, ¾ of a mile to the northwest, ¾ of a mile to the northwest, 5/8 of a mile to the northeast and ¾ of a mile to the northeast from this location. Depth of these wells range from 3' to 135'. Two freshwater springs show up on the topographic map: one is about 5/8 of a mile to the east and the other spring is Significantly shallower than the surface casing setting depth of 1730'.
Porous/permeable soils: Yes, sandy silty soils.
Class I stream drainage: No, Class I stream drainages nearby.

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: 1730' surface casing well below freshwater zones in adjacent water wells. Also, covering Fox Hills aquifer. Adequate surface casing and BOP equipment to prevent problems in and around freshwater drainage.

## Soils/Vegetation/Land Use

(possible concerns)
Steam crossings: None anticipated.
High erosion potential: No, location will require a small cut of up to 6.5' and small fill, up to 2.4', required.
Loss of soil productivity: None, location to be restored after drilling well, if nonproductive. If productive unused portion of wellsite will be reclaimed.
Unusually large wellsite: No, very large well site 550'X350'.
Damage to improvements: Slight, surface use is a cultivated field.
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: Will use existing highway #2 and county road, Star Coulee Road. About 407' of new access road will be built into this location from Star Coulee Road. Freshwater cuttings will be buried on wellsite. Oil base invert drill cuttings will be buried in a lined pit on the wellsite. Oil based drilling fluids will be recycled. Completion fluids will be removed and hauled to commercial Class II Disposal. The lined pit will be buried with the liner intact with subsoil if well is productive. If well is not productive subsoil will be spread and topsoil will be spread on top of the subsoil over the pit and location. No concerns.

**Health Hazards/Noise**

(possible concerns)
Proximity to public facilities/residences: Residences about 1/2 of a mile to the southeast, about 5/8 of a mile to the north northwest, about 3/4 of a miles to the northeast from this location. Town of Culbertson, Montana is about 9.85 miles to the west northwest and the town of Bainville, Montana is about 5.125 miles to the northeast 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 cemented to surface with working BOP stack should mitigate any problems. Sufficient distance between location and buildings noise should not be a problem.

**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 endangered are the Pallid Sturgeon, Interior Lease Tern, Whooping Crane and Piping Plover. Candidate species is the Sprague's

Pipit. MTFWP Natural Heritage Tracker website lists three (3) species of concern, the Piping Plover, Whooping Crane and the Red-headed Woodpecker.

Mitigation:

__ Avoidance (topographic tolerance/exception)

__ Other agency review (DFWP, federal agencies, DSL)

__ Screening/fencing of pits, drillsite

__ Other:_____

Comments: Private surface cultivated land. There maybe 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 private 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)

__ Other:_____

Comments: Surface location is private cultivated land. There maybe 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 private surface lands.

**Social/Economic**

(possible concerns)

__ Substantial effect on tax base

__ Create demand for new governmental services

__ Population increase or relocation

Comments: Wildcat Bakken Formation horizontal well. No concerns._____

_____

_____

**Remarks or Special Concerns for this site**

Drill a 19,043'MD/10,006' TVD Bakken Formation single lateral horizontal well test.
No concerns._____

_____

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

Short term impacts expected, no long term impacts anticipated.

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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: October 31, 2011

Other Persons Contacted:

Montana Bureau of Mines and Geology, Groundwater Information Center GWIC website_____
(Name and Agency)
Roosevelt County water wells

_____
(subject discussed)
October 25, 2011_____
(date)

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

October 25, 2011_____
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Heritage State Rank= S1, S2, S3, T27N R57E
(subject discussed)

_October 25, 2011_____
(date)

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