# Montana Board of Oil and Gas Conservation
# Environmental Assessment

**Operator:** EOG Resources, Inc.
**Well Name/Number:** Highline 1-2833H
**Location:** NW NE Section 28 T29N R59E
**County:** Roosevelt**, MT; Field (or Wildcat)** Wildcat

## Air Quality

(possible concerns)
Long drilling time: No, 30 to 40 days drilling time.
Unusually deep drilling (high horsepower rig): No, triple derrick rig to drill a single lateral Bakken Formation horizontal well test, 19,796'MD/10,492'TVD.
Possible H2S gas production: Slight chance of H2S.
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)
X Gas plants/pipelines available for sour gas
__ Special equipment/procedures requirements
__ Other:_____
Comments: Gas pipeline system in the area to take associated gas.

## Water Quality

(possible concerns)
Salt/oil based mud: Yes to intermediate casing string hole to be drilled with oil based invert drilling fluids. Horizontal lateral will be drilled with oil based invert drilling fluid. Surface casing hole to be drilled with freshwater and freshwater mud.
High water table: No high water table anticipated at this location.
Surface drainage leads to live water: Yes, closest drainages are unnamed ephemeral tributary drainages to Little Muddy Creek, about ¼ of a mile to the southwest and about ¼ of a mile to the north from this location.
Water well contamination: No, closest water wells are about 1mile and further from this location. Surface casing will be drilled with freshwater, casing set to 2068' and cemented back to surface.
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: 2068' surface casing well below freshwater zones in adjacent water wells. Also, covering Base of the Fox Hills aquifer. Surface hole will be drilled with freshwater and freshwater muds to 2068'. Steel surface casing will be run and cemented to surface from 2068'.

## Soils/Vegetation/Land Use

(possible concerns)
Steam crossings: None anticipated, crossing only ephemeral drainages.

High erosion potential: Possible, location will require a small cut, up to 8.9' and moderate fill, up to 13.1', required.
Loss of soil productivity: Slight, location to be restored after drilling well if well is nonproductive. If productive unused portion of wellsite will be reclaimed.
Unusually large wellsite: No, location is a large wellsite, 330'X450' in size.
Damage to improvements: Slight, surface use appears to be CRP/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: Access will be over existing county gravel roads in North Dakota. About 3095'of new access road will be built off the existing county road into this location. 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 reserve pit. Completion pit fluids will be hauled to a permitted Class II saltwater disposal. Pit will be backfilled when dry. No concerns.

**Health Hazards/Noise**

(possible concerns)

Proximity to public facilities/residences: No residences in the surrounding area for at least 1 mile and further from this location. The town of Bainville, Montana is about 10.6 miles to the southwest from this location.
Possibility of H2S: Slight to none.
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. 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 in the area.
Proximity to recreation sites: None identified in the area.
Creation of new access to wildlife habitat: None
Conflict with game range/refuge management: None
Threatened or endangered Species: Threatened or endangered species listed in Roosevelt county by USFW service are Pallid Sturgeon, Piping Plover, Interior Lease Tern and Whooping Crane. Candidate species is the Sprague's Pipit. NH Tracker website list one(1) species of concern: Whooping Crane.

Mitigation:

__ Avoidance (topographic tolerance/exception)
__ Other agency review (DFWP, federal agencies, DSL)

__ Screening/fencing of pits, drillsite
__ Other:_____

Comments: Slight, surface use appears to be CRP/grassland. No live water nearby. 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 Slight, surface use appears to be CRP/grassland. 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, single lateral horizontal oil well test. No concerns.

_____
_____

**Remarks or Special Concerns for this site**

Drill a wildcat single lateral Bakken Formation horizontal well test, 19,796'MD/10,492'TVD.

_____
_____

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

No long term impacts expected, only 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: December 3, 2011

Other Persons Contacted:

_____
_____

(Name and Agency)
Montana Bureau of Mines and Geology, Groundwater Information Center website.
(subject discussed)
Water wells in Roosevelt County
(date)
December 3, 2011

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

December 3, 2011
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Heritage State Rank= S1, S2, S3, T29N R59E
(subject discussed)

December 3, 2011
(date)

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