

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

**Operator:** Energy Corporation of America  
**Well Name/Number:** ECA Holman Morse1-H  
**Location:** SE SE Section 12 T5S R16E  
**County:** Stillwater, MT; **Field (or Wildcat)** Wildcat

**Air Quality**

(possible concerns)

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

Unusually deep drilling (high horsepower rig): No, medium depth drilling with a double derrick or a small triple derrick drilling rig. Will drill a single lateral horizontal well to 6200' MD/2995' TVD, Lakota Formation.

Possible H<sub>2</sub>S gas production: No H<sub>2</sub>S anticipated.

In/near Class I air quality area: Near to a Class I air quality area, the Custer National Forest, about 1.1 miles to the south from this location.

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: No special concerns – using a small triple or double derrick drilling rig. Will drill a single lateral horizontal well to Lakota Formation. Limited quantities of associated gas can be flared under Board Rule 36.22.1220.

**Water Quality**

(possible concerns)

Salt/oil based mud: No, freshwater and freshwater mud system.

High water table: No high water table anticipated.

Surface drainage leads to live water: Yes, closest drainage is Meadow Creek, about 1000' to the south.

Water well contamination: No, no water wells in section 12 closest water well is about ¼ mile to the south. Depth of the freshwater wells to south are up to 220'. Surface casing hole will be drilled with freshwater/freshwater drilling fluids to 450'. Steel surface casing will be run and cemented to surface from 450'. Main hole will be drilled with freshwater and freshwater mud.

Porous/permeable soils: Yes, gravelly rocky clay soils.

Class I stream drainage: Meadow Creek may be a Class I stream.

Mitigation:

- Lined reserve pit
- Adequate surface casing
- Berms/dykes, re-routed drainage
- Closed mud system
- Off-site disposal of liquids (in approved facility) Oilfield Disposal Services in Wyoming.**

Other: Cuttings pit liner will be a 20 mil thickness impermeable liner.

Comments: 450' of steel surface casing cemented to surface adequate will adequately protect freshwater zones. Also, fresh water mud system to be used to drill surface hole, rule 36.22.1001. Production casing will be cemented. Reserve pit is proposed to be lined with a 20 mil synthetic liner. Cuttings will be buried in the lined pit after drying.

### Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: Yes, will cross Meadow Creek at existing crossing. No other streams to be crossed.

High erosion potential: Yes, possible high erosion potential on cut and fill slopes required moderate cut up to 13' and moderate fill, up to 14.5', 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, a large wellsite, 300'X375' location size required.

Damage to improvements: Slight, surface use appears to be grazing

Conflict with existing land use/values: None.

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: \_\_\_\_\_

Comments: Access will be over existing county road and existing ranch/well access road. Cuttings will be disposed of in the lined reserve pit. Drilling fluids will either be evaporated or trucked to a commercial SWD in Wyoming. Pit will be backfilled when dry. No special concerns.

### Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residences about 1/4 miles to the south from this location. The town of Dean, Montana is about 1/4miles to the southwest from this location.

Possibility of H<sub>2</sub>S: None, Cretaceous Greybull Formation at total depth.

Size of rig/length of drilling time: Double derrick or small triple derrick drilling rig/short amount of drilling time, estimate 20 to 30 days drilling time.

Mitigation:

- Proper BOP equipment
- Topographic sound barriers
- H<sub>2</sub>S contingency and/or evacuation plan
- Special equipment/procedures requirements
- Other: \_\_\_\_\_

Comments: Operational BOP (3,000 psig Annular or Double Ram) rule 36.22.1014 and adequate surface casing should mitigate any problems. Formations to be drilled are characteristically non H<sub>2</sub>S bearing. No concerns.

### Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: none in immediate area

Creation of new access to wildlife habitat: No, all surface access is private land controlled.

Conflict with game range/refuge management: None. No game range/refuge nearby.

Threatened or endangered Species: Threatened or endangered species listed are the Canada Lynx, Black-footed Ferret and Grizzly Bear. Species of Concern are the Greater Sage Grouse, Sprague's Pipit, Wolverine and White-bark Pine for Stillwater and Carbon Counties on the Region 6 USFWS website. NH Tracker website lists six ( 6) species of concern: Wolverine, Hoary Bat, Canada Lynx, Fringed Myostis, Grizzly Bear and Yellowstone Cutthroat Trout.

Mitigation:

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

Comments: Private surface lands. There maybe species of concern that maybe impacted by this well site. 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: Drilling location is on private surface lands. 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 well site. 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: No concerns, wildcat well.

### Remarks or Special Concerns for this site

Well is a single lateral horizontal well to be drilled to the Cretaceous Lakota Sandstone Formation.

## Summary: Evaluation of Impacts and Cumulative effects

No significant impacts or cumulative effects are expected from the drilling of this test well. No long term impacts expected, since the drilling of this well would take a maximum of 30 days and the completion and testing phase if productive another 20 days. Some short term impacts will occur, but can be mitigated in a short time.

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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/Thomas Richmond  
(title:) Administrator  
Date: October 30, 2013

Other Persons Contacted:

Montana Bureau of Mines and Geology, Groundwater Information Center  
(Name and Agency)  
Stillwater and Carbon County water wells.  
(subject discussed)  
October 30, 2013  
(date)

Natural Resources Tracker Website  
(Name and Agency)  
Species of concern  
(subject discussed)  
October 30, 2013  
(date)

Montana Cadastral Website  
(Name and Agency)  
Surface Ownership and surface use Section 14 T6S R17E  
(subject discussed)

October 30, 2013  
(date)

If location was inspected before permit approval:

Inspection date: \_\_\_\_\_

Inspector: \_\_\_\_\_

Others present during inspection: \_\_\_\_\_