

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

**Operator:** Devon Energy Production Company, L.P.

**Well Name/Number:** Crowe-DIR 15-16

**Location:** NW SE Section 15 T31N R15E

**County:** Hill, MT; **Field (or Wildcat)** Tiger Ridge

**Air Quality**

(possible concerns)

Long drilling time: No, 3 to 4 days drilling time.

Unusually deep drilling (high horsepower rig): No, small single derrick drilling rig to drill to 2500' TVD/2750'TMD.

Possible H2S gas production: No H2S gas, formation at TD.

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:

Air quality permit (AQB review)

Gas plants/pipelines available for sour gas

Special equipment/procedures requirements

Other: \_\_\_\_\_

Comments: No special concerns – using small rig to drill to 2500' TVD/2750'TMD.

**Water Quality**

(possible concerns)

Salt/oil based mud: No, freshwater, and freshwater mud system to be used only.

High water table: No high water table anticipated in this area.

Surface drainage leads to live water: No, closest drainages are unnamed ephemeral tributary drainages to Beaver Creek, about 1/32 of a mile to the south and 1/16 of a mile to the north from this location.

Water well contamination: None, closest water well is about 1 mile and further in any direction from this wellsite. Surface hole will be drilled with freshwater and freshwater mud, steel surface casing will be set to 150' and cemented to surface from 150'. If productive 4 1/2" casing will be run and cemented to surface to protect ground waters.

Porous/permeable soils: No, sandy bentonitic soils.

Class I stream drainage: Class I stream drainage is Beaver Creek.

Mitigation:

Lined reserve pit

Adequate surface casing

Berms/dykes, re-routed drainage

Closed mud system

Off-site disposal of solids/liquids (in approved facility)

Other: \_\_\_\_\_

Comments: 150' surface casing well below freshwater zones in nearby water wells. If productive 4 1/2" casing will be cemented to surface. Adequate surface casing and operational BOP equipment will be set and used.

**Soils/Vegetation/Land Use**

(possible concerns)

Stream crossings: No stream crossings required, only crossing ephemeral drainages.

High erosion potential : No, moderate cut, up to 11.0' and moderate fill, up to 12.0', 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, small well site 250' X 215'.

Damage to improvements: Slight, surface use appears to be grassland adjacent to a cultivated 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 \_\_\_\_\_

Comments: Access will be from existing county gravel road and existing ranch trails. About 3/8 of a mile of new access will be built to access this location from an existing ranch trail. Drilling fluids will be freshwater and freshwater mud system. Cutting will be buried in the unlined pits. Drilling fluids will be offsite disposed of in a stock pond for sealant, with surface owner approval. Pits will be allowed to dry before being backfilled. No special concerns.

### Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residence is about 1/2 mile to the southeast from this drilling location.

Possibility of H2S: None anticipated.

Size of rig/length of drilling time: Small single derrick drilling rig. Short drilling time 3 to 4 days drilling.

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

Threatened or endangered Species: Black-footed Ferret (Listed in Hill County by US Fish & Wildlife website). Candidate species listed is the Greater Sage Grouse.

Mitigation:

Avoidance (topographic tolerance/exception)

Other agency review (DFWP, federal agencies, DSL)

Fencing of pits, drillsite

Other: \_\_\_\_\_

Comments: Surface is private grassland adjacent to a cultivated field. Ms. Windy Davis indicated no Greater Sage Grouse in the Hill County area. 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: Surface is private grassland. No concerns.

**Social/Economic**

(possible concerns)

Substantial effect on tax base

Create demand for new governmental services

Population increase or relocation

Comments: No concerns at this time, development well within the Tiger Ridge Gas Field delineation.

**Remarks or Special Concerns for this site**

Well is a 2500' TVD/2750'TMD. Eagle Formation test northwest side of Bear Paw Mountains.

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

No long term impacts expected. Some short term impacts will occur, but can be mitigated in a short time.

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: August 30, 2010

Other Persons Contacted:

Montana Bureau of Mines and Geology, Groundwater Information Center website

(Name and Agency)

Hill County water wells

(subject discussed)

August 30, 2010

(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

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

(subject discussed)

June 9, 2010

(date)

Ms. Windy Davis, Montana FWP

(Name and Agency)

Greater Sage Grouse Leks in Hill County, Montana an E-Mail concerning Hegle 22-7 location in Section 22 T31N R15E, Hill County, MT

(subject discussed)

June 9, 2010

(date)

If location was inspected before permit approval:

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

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

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