

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

Operator: Cabot Oil & Gas Corporation
Well Name/Number: Garnet 1-27H
Location: SW SE Section 27 T12N R31E
County: Rosebud, MT; **Field (or Wildcat)** W/C

Air Quality

(possible concerns)

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

Unusually deep drilling (high horsepower rig): No, small triple/heavy double derrick drilling rig to drill to 6,500' TD vertical pilot hole Mission Canyon/Lodgepole Formation and 10,207'MD/5150'TVD Heath Formation horizontal.

Possible H₂S gas production: None.

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 a small triple/heavy double derrick drilling rig to drill to 6,500'TD pilot and plugging back to drill a 10,207'MD/5150'TVD Heath Formation horizontal.

Water Quality

(possible concerns)

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

High water table: No high water table anticipated.

Surface drainage leads to live water: No, closest drainage is an unnamed ephemeral tributary drainage to Musselshell River, just off the SW corner of this location.

Water well contamination: No, water wells within 1 mile in any direction from this well. Surface hole will be drilled with freshwater and freshwater muds. Steel 9 5/8" surface casing will be run and cemented to surface from 500'.

Porous/permeable soils: No, sandy silty clay soils.

Class I stream drainage: No, Class I stream drainage in the area.

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: 500' of surface casing cemented to surface adequate to protect freshwater zones. Also, fresh water mud system to be used. Reserve pit will be lined with a 12 mil liner.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: None, only ephemeral drainages will be crossed.

High erosion potential: No, moderate cut, up to 10.2' and small fill, up to 6.5', 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 of 255'X385' location size required.

Damage to improvements: No, slight, surface use is grazing land.

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 road, Wendel-Kincheloe Road and existing two track ranch trails. Will have to upgrade ranch trails and build about ¼ mile of new access road. Drilling fluids allowed to dry in the pits Drill cutting will be disposed of in the lined reserve pit, after being allowed to dry. Lined reserve pit will be backfilled when dry. No special concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: No residences within 1 mile of this location.

Possibility of H2S: None.

Size of rig/length of drilling time: Small triple/large double derrick drilling rig/length of drilling time, 20 to 30 days drilling time.

Mitigation:

Proper BOP equipment

Topographic sound barriers

H2S contingency and/or evacuation plan

Special equipment/procedures requirements

Other: _____

Comments: Adequate surface casing and operational BOP equipment 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: None identified.

Threatened or endangered Species: Threatened or endangered species listed are the Black-footed Ferret and the Interior Least Tern.

Mitigation:

Avoidance (topographic tolerance/exception)

Other agency review (DFWP, federal agencies, DSL)

Screening/fencing of pits, drillsite

Other: _____

Comments: Private surface lands. Utilizing existing roads and two track ranch trails for most of the access into this location. 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: On private 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. Wildcat well, until production is establish there should not be any social or economic impacts associated with the drilling of this well.

Remarks or Special Concerns for this site

Well is a 6,500' TD vertical pilot hole to the Mission Canyon/Lodgepole Formation and 10,207'MD/5150'TVD Heath Formation single lateral horizontal well test.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. Some short term impacts will occur with the drilling of this well.

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: March 17, 2010 _____

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website

(Name and Agency)

Rosebud County water wells

(subject discussed)

March 16, 2010

(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES

MONTANA COUNTIES, Rosebud County

March 16, 2010

(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____