

Montana Board of Oil and Gas Conservation

Environmental Assessment

Operator: EOG Resources, Inc.
Well Name/Number: Star Coulee 1-1720H
Location: NW NW Section 17 T27N R58E
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, 20,156'MD/10,179'TVD.

Possible H₂S gas production: Slight chance of H₂S, from the Mississippian Formations.

In/near Class I air quality area: No Class I air quality area, in the area of review.

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: If there are existing pipelines for natural gas in the area then gas must be tied into a gathering system or if there isn't a gathering system nearby, associated gas can be flared under Board Rule 36.22.1220. This is a single lateral, 20,156'MD/10,179'TVD, Bakken Formation horizontal well.

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 will be drilled with freshwater and freshwater drilling mud system.

High water table: No high water table anticipated at this location, but possible saline seeps from the cultivated fields to the north of this location

Surface drainage leads to live water: Yes drainage leads to live water, closest drainages are unnamed ephemeral tributary drainages to the Missouri River, about 1/8 of a mile to the east and west from this location. Within this drainage is a large stock pond.

Water well contamination: No, closest water wells are about 3/4 of a mile to the southeast and further than 1 mile in any direction from this location. Surface casing will be drilled with freshwater, casing set to 1800' and cemented back to surface.

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

Class I stream drainage Yes, Class I drainage is the Missouri River.

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: 1800' 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 mud to 1800'. Steel surface casing will be run and cemented to surface from 1800'.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: None anticipated, crossing only ephemeral drainages.

High erosion potential: Yes possible high erosion potential on cut and fill slopes, location will require a moderate cut, up to 16.5 and moderate fill, up to 17.8', 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 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: 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, #2064 and existing well access road to the Browning 11-17. About 949' of new access road will be built off the existing well access 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 cuttings 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: Closest residence in the surrounding area is about 1.635 miles to the southeast from this location. The town of Bainville, Montana is about 3.6 miles to the northeast from this location.

Possibility of H2S: Slight possibility of H2S from Mississippian Formations.

Size of rig/length of drilling time: Triple drilling rig 30 to 40 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 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.

Proximity to recreation sites: None identified.

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 six (6) species of concern: Great Blue Heron, Piping Plover, Bobolink, Whooping Crane, Least Tern and Northern Hawk Owl.

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 grazing 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 Slight, surface use appears to be grazing 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, 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, 20,156'MD/10,179'TVD.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected, only some short term impacts will occur.

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: May 23, 2012

Other Persons Contacted:

(Name and Agency)

Montana Bureau of Mines and Geology, Groundwater Information Center
website.

(subject discussed)

Water wells in Roosevelt County

(date)

May 23, 2012

US Fish and Wildlife, Region 6 website

(Name and Agency)

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

(subject discussed)

May 23, 2012

(date)

Montana Natural Heritage Program Website (FWP)

(Name and Agency)

Heritage State Rank= S1, S2, S3, T27N R58E

(subject discussed)

May 23, 2012

(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____