

Montana Board of Oil and Gas Conservation Environmental Assessment

Operator: EOG Resources, Inc.
Well Name/Number: Snake Creek No. 1-2128H
Location: NE NW Section 21 T29N R58E
County: Roosevelt, MT; Field (or Wildcat) Wildcat

Air Quality

(possible concerns)

Long drilling time: No, 30-40 days drilling time.

Unusually deep drilling (high horsepower rig): Triple derrick drilling rig to drill a single lateral horizontal Bakken Formation well, 20,120' MD/10,277' TVD.

Possible H₂S gas production: Slight possibility of H₂S from 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 associated 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, 20,120' MD/10,277' TVD, Bakken Formation horizontal well.

Water Quality

(possible concerns)

Salt/oil based mud: Yes to long string hole will be drilled with oil based invert drilling fluids. Horizontal section to be drilled with oil based invert drilling fluids. Surface casing hole will be drilled with freshwater and freshwater mud (rule 36.22.1001).

High water table: No high water table anticipated.

Surface drainage leads to live water: No surface drainage does not leads to live water, closest drainages are Snake Creek, about 1.25 miles to the southeast and an unnamed ephemeral tributary drainage to East Shotgun Creek, about 3/4 of a mile to the southwest from this well location.

Water well contamination: No, closest water wells are about 5/8 of a mile to the southwest, about 3/4 of a mile to the east northeast, about 1 mile to the southwest, and about 1 mile to the northwest from this location. Depth of these stock and domestic water wells range from 230' to 300'. Surface casing will be drilled to and steel surface casing set and cemented from 1998' to surface.

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

Class I stream drainage No, Class I stream drainages in the area of review.

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: 1,998' surface casing well below freshwater zones in adjacent water wells, also, covering the Fox Hills aquifer. Surface hole will be drilled with freshwater and freshwater drilling fluids. Surface casing will be cemented to surface from 1998'(rule 36.22.1001).

Soils/Vegetation/Land Use

(possible concerns)

Steam crossings: None anticipated.

High erosion potential: Possible high erosion potential on cut and fill surfaces, moderate cut, up to 18.7' and moderate fill, up to 17.1' 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, large well site 450' X 330' for a single well location.

Damage to improvements: Slight, surface use appears to be cultivated 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 off existing state highway 405. About 1275' of new road will be constructed from the state highway 405 into this location. Closed loop mud system will be used in conjunction with a lined cuttings pit. Oil based drilling fluids will be recycled. Completion fluids will be trucked to a Class II SWD. Cuttings pit solids will mixed with flyash, allowed to dry and then backfilled with a minimum of 4' of cover over the top of the cuttings. No concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Nearest residence are about 5/8 of a mile to the southwest, about 3/4 of a mile to the southwest, about 3/4 of a mile to the northwest, about 1.325 miles to the northeast and about 1.325 miles to the southeast from this location.

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

Size of rig/length of drilling time: Triple derrick 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 (1998') (rule 36.22.1001) with working BOP stack(5,000 psig double ram and annular, rule 36.22.1014) 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: No.

Conflict with game range/refuge management: No.

Threatened or endangered Species: Species identified as threatened or endangered are the Pallid Sturgeon, Interior Least Tern, Whooping Crane and Piping Plover. Candidate species are the Greater Sage Grouse and the Sprague's Pipit. NH tracker website lists one (1) species of concern in this Township and

Range: Whooping Crane.

Mitigation:

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

Comments: No concerns on private surface cultivated 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: Private surface cultivated 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 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: No concerns

Remarks or Special Concerns for this site

20,196' MD/10,292' TVD single lateral horizontal Bakken formation test.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected with the drilling of this well. 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: August 22, 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)

August 22, 2012

US Fish and Wildlife, Region 6 website

(Name and Agency)

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

(subject discussed)

August 22, 2012

(date)

Montana Natural Heritage Program Website (FWP)

(Name and Agency)

Heritage State Rank= S1, S2, S3, T30N R59E

(subject discussed)

August 22, 2012

(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____