

Montana Board of Oil and Gas Conservation Environmental Assessment

Operator: Slawson Exploration Company, Inc.

Well Name/Number: Hercules #3-2H

Location: SW SW Section 2 T23N R53E

County: Richland, MT; Field (or Wildcat) Wildcat

Air Quality

(possible concerns)

Long drilling time: No, 20-25 days drilling time.

Unusually deep drilling (high horsepower rig): Triple derrick rig to drill a single lateral horizontal Bakken Formation test, 14,590'MD/9,855TVD.

Possible H₂S gas production: Slight chance H₂S gas 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 75-2-211.

Mitigation:

Air quality permit (AQB review)

Gas plants/pipelines available for sour gas

Special equipment/procedures requirements

Other: _____

Comments: Triple derrick drilling rig to drill a single lateral horizontal Bakken Formation test, 14,590'MD/9,855TVD. If there is an existing pipeline for associated gas/H₂S gas in the area and gas can be gathered or if no gathering system nearby associated gas/H₂S gas can be flared under Board Rule 36.22.1220.

Water Quality

(possible concerns)

Salt/oil based mud: Yes to intermediate string hole to be drilled with oil based invert (80/20) drilling fluids. Horizontal lateral will be drilled with oil based invert (80/20) drilling fluids. Surface casing hole will use freshwater and freshwater mud system, Rule 36.22.1001.

High water table: No high water table anticipated.

Surface drainage leads to live water: Yes surface drainage leads to live water, closest drainage is an unnamed ephemeral tributary drainage to East Redwater Creek, about 1/8 of a mile to the northeast from this location. Within this unnamed ephemeral drainage, there is a stock pond, about 3/4 of a mile to the northwest from this location.

Water well contamination: None, closest water wells are about 5/8 of a mile to the northeast and all other water wells are 1 mile and further away from this location. Depth of this irrigation water well is 84'. This well will drill surface casing hole with freshwater and freshwater drilling fluids to 1550' (Rule 36.22.1001) and will run 1550' of steel surface casing and cement it to surface.

Porous/permeable soils: No, 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: Lined cuttings pit for cutting disposal on wellsite.

Comments: 1550' surface casing well below freshwater zones in adjacent water wells. Also, covering Fox Hills aquifer, Rule 36.22.1001. Adequate surface casing and BOP equipment to prevent any problems (BOP's 5,000 psig annular, pipe and blind rams) rule

36.22.1014.

Soils/Vegetation/Land Use

(possible concerns)

Steam crossings: None anticipated, crossing only ephemeral drainages.

High erosion potential: Yes this location has a potential to have a high erosion due to the moderately high cut and fill, location needs a moderate cut, up to 16.1' and a moderate fill, up to 15.7', 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, large well site 430'X350', dual well location Hercules 3-2H and Hercules 4-2H.

Damage to improvements: Slight, surface use is 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: 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 road, #317 and existing lease roads. Operator will construct about 300' of new access road into this location from the existing lease road. Oil based invert drilling fluids will be recycled. Completion fluids will be trucked to a Class II disposal. Operator will utilize a closed loop mud system. Cuttings and mud solids will be disposed of in the lined cuttings pit and solidified. No concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residences are about 1.25 miles to the south southeast and about 3.125 miles to the southeast from this location. The town of Richy, Montana is about 13.5 miles to the southwest and the town of Lambert, Montana is about 14.1 miles to the southeast from this location.

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

Size of rig/length of drilling time: Triple drilling rig 20 to 25 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 a working BOP stack should mitigate any problems, (BOP's 5,000psig annular, pipe and blind rams) rule 36.22.1014.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): Closest Game Management Area is Fox Lake State Game Management Area, about 11.7 miles to the southeast from this location.

Proximity to recreation sites: None identified.
Creation of new access to wildlife habitat: No, none.
Conflict with game range/refuge management: No, none.
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 Sprague's Pipit and the Greater Sage Grouse. NH tracker website indicates zero (0) species of concern in this area.

Mitigation:

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

Comments: This is private cultivated surface lands. 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 are discovered at this location.

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: This is private cultivated 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 wellsite.

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

Single lateral horizontal Bakken Formation test 14,590'MD/9,855TVD.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. 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: December 2, 2012

Other Persons Contacted:
Bureau of Mines and Geology, GWIC website

(Name and Agency)
Water wells in Richland County, Montana
(subject discussed)
December 2, 2012
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA
COUNTIES, Richland County
(subject discussed)

December 2, 2012
(date)

Montana Natural Heritage Program Website
(Name and Agency)
Heritage State Rank= S1, S2, S3 T23N R53E
(subject discussed)

December 2, 2012
(date)

If location was inspected before permit approval:
Inspection date: _____
Inspector: _____
Others present during inspection: _____