

## Montana Board of Oil and Gas Conservation Environmental Assessment

**Operator:** Slawson Exploration Company, Inc.  
**Well Name/Number:** Sentinel #1-22H  
**Location:** NE NE Section 22 T24N R52E  
**County:** Richland, MT; Field (or Wildcat) Wildcat

### Air Quality

(possible concerns)

Long drilling time: No, 25-35 days drilling time.

Unusually deep drilling (high horsepower rig): Triple derrick rig to drill a single lateral horizontal Middle Bakken Formation test, 13,008'MD/8,973'TVD.

Possible H2S gas production: Possible H2S slight.

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: Triple derrick drilling rig to drill a single lateral horizontal Middle Bakken Formation test, 13,008'MD/8,973'TVD.

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### Water Quality

(possible concerns)

Salt/oil based mud: Yes to intermediate string hole to be drilled with oil based invert drilling fluids.

Horizontal lateral will be drilled with oil based invert drilling fluids. Surface casing hole will use freshwater and freshwater mud system.

High water table: No high water table anticipated.

Surface drainage leads to live water: No, closest drainages are unnamed ephemeral tributary drainages to East Redwater Creek, about ¼ of a mile to the southwest and ¼ of a mile to the east from this location.

Water well contamination: None, closest water wells are about ¾ of a mile to the northwest and all other wells are 1 mile and further from this location. Depth of these stockwater wells range from 30' to 97'.

This permitted well will drill surface hole with freshwater to 1550'. 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.

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: 1550' surface casing well below freshwater zones in adjacent water wells. Also, covering Fox Hills aquifer. Adequate surface casing and BOP equipment to prevent.

### Soils/Vegetation/Land Use

(possible concerns)

Steam crossings: None anticipated.

High erosion potential: Yes, location needs a small cut, up to 7.4' and a small fill, up to 7.7', 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 400'X450'

Damage to improvements: Slight, surface use is grassland.

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, #133. Operator will construct about 408' of new access road into this location off the existing county. Oil based invert drilling fluids will be recycled.

Completion fluids will be trucked to a Class II disposal. Operator will utilize a closed mud system.

Cuttings and mud solids will be disposed of in the lined cuttings pit. Cuttings pit will be allowed to dry and then backfilled with subsoil clays. No concerns.

### Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residences are more than 1 mile in any direction from this location.

Possibility of H2S: Possible H2S.

Size of rig/length of drilling time: Triple drilling rig 25 to 35 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.

### 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, none.

Conflict with game range/refuge management: No, none.

Threatened or endangered Species: Species identified as threatened or endangered are the Pallid Sturgeon, Interior Lease Tern, Whooping Crane and Piping Plover. Candidate species are the Sprague's Pipit and the Greater Sage Grouse. NH tracker website indicates no 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: Private surface grassland, adjacent to cultivated fields. 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: Private surface grassland adjacent to cultivated 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.

**Social/Economic**

(possible concerns)

Substantial effect on tax base

Create demand for new governmental services

Population increase or relocation

Comments: No concerns.

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**Remarks or Special Concerns for this site**

Single lateral horizontal Middle Bakken Formation test, 13,008' MD/8,973' TVD.

**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: October 16, 2011

Other Persons Contacted:

Bureau of Mines and Geology, GWIC website

(Name and Agency)

Water wells in Richland County, Montana

(subject discussed)

October 16, 2011 \_\_\_\_\_  
(date)

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

October 16, 2011 \_\_\_\_\_  
(date)

Montana Natural Heritage Program Website  
(Name and Agency)  
Heritage State Rank= S1, S2, S3 T24N R52E  
(subject discussed)

October 16, 2011 \_\_\_\_\_  
(date)

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