

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

**Operator:** Sinclair Oil and Gas Company  
**Well Name/Number:** Chisholm 1-31TFH  
**Location:** (NW) Lot 4 Section 3 T32N R56E  
**County:** Sheridan, 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 drilling rig, to drill to 19,982' MD/8,742' TVD single lateral Three Forks Formation test well.

Possible H<sub>2</sub>S gas production: Yes, slight chance of H<sub>2</sub>S gas from Mississippian Formations.

In/near Class I air quality area: Yes closest Class I air quality area is the Fort Peck Indian Reservation, about 3 miles to the west from this location.

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: Drill to 19,982' MD/8,742' TVD single lateral Three Forks Formation test well. If there is an existing gathering system for natural gas in the area, then associated gas can be gathered or if no gathering system nearby gas can be flared under Board Rule 36.22.1220. No concerns.

**Water Quality**

(possible concerns)

Salt/oil based mud: Yes to intermediate casing string casing hole will be drilled with oil based invert drilling fluids, (70/30 and 80/20). Horizontal lateral will be drilled with brine water. Surface casing hole will be drilled with freshwater and freshwater mud system, Rule 36.22.1001.

High water table: No high water table anticipated, in the area of review.

Surface drainage leads to live water: No, closest drainage is Neiser Creek, about 1/4 of a mile to the north from this location.

Water well contamination: None, closest waters wells are about 1/4 of a mile to the southeast and about 1 mile to the southwest from this location. All other water wells are 1 mile and further from this location. Surface hole will be drilled with freshwater to 2100'. Surface casing will be run and cemented to surface, Rule 36.22.1001.

Porous/permeable soils: No, silty 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: Oil based invert drilling fluids will be recycled. Cuttings will be mixed with fly ash and buried in the lined cuttings pit.

Comments: 2100' of surface casing will be necessary to cover the base of the Fox Hills aquifer, Rule 36.22.1001.

### Soils/Vegetation/Land Use

(possible concerns)

Steam crossings: None anticipated.

High erosion potential: No, location requires a small cut, up to 8.6' and a small fill, up to 0.8', required for a two (2) wellsites, Chisholm 1-31TFH and existing Chisholm 1-3H oil well.

Loss of soil productivity: Slight.

Unusually large wellsite: No, a very large well site 400'X675', multiple well location pad.

Damage to improvements: No, location to be restored after drilling, if nonproductive. If productive unused portion of the drilling pad will be reclaimed.

Conflict with existing land use/values: Slight, surface use is cultivated land.

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 over existing county gravel road, Rose Hill Road and two track trail. The two track trail access off the existing county road will be upgrade to handle heavy truck traffic, about 4,473', into this location. Estimated new road length is about 1,938' of new access will be built into the location. Cuttings will be mixed with fly ash and dumped in the lined cuttings pit. Cuttings pit will be backfilled when drilling is completed. Oil based invert drilling fluids will be recycled or hauled to a Class II disposal. Completion fluids will be hauled to a commercial Class II disposal. No concerns.

### Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residences are about 5/8 of a mile to the north, about 3/4 of a mile to the north northeast, about 1 mile to the southwest and about 1 mile to the east from this location. The town of Medicine Lake, Montana lies about 5.3 miles to the southwest and Reserve, Montana lies 3.75 miles to the northwest from this location.

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

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 working BOP stack should mitigate any problems (BOP's 5,000 psig annular, pipe and blind rams), Rule 36.22.1014.

### **Wildlife/recreation**

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): Medicine Lake National Wildlife Refuge is about 5 miles to the south from this location.

Proximity to recreation sites: Medicine Lake National Wildlife Refuge is about 5 miles to the south from this location.

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Threatened or endangered species listed on the Region 6 USFW website are the Piping Plover and Whooping Crane. Candidate species is the Sprague's Pipit. NH Tracker website lists lists twenty seven (27) species of concern as follows: Clark's Grebe, Baird's Sparrow, Nelson's Sparrow, Sprague's Pipit, Great Blue Herron, Burrowing Owl, American Bittern, Ferruginous Hawk, Chest-nut Collared Longspur, Piping Plover, Black Tern, Sedge Wren, Yellow Rail, Bobolink, Whooping Crane, Caspian Tern, Franklin Gull, Long-billed Curlew, Black-crowned Night Heron, American White Pelican, Foster's Tern, Common Tern, Western Hog-nosed Snake, Smooth Greensnake, Plains Spadefoot, Northern Redbelly Dace and Pearl Dace . NH Tracker website lists one (1) Potential species of concern as follows: the Eastern Screech Owl.

Mitigation:

Avoidance (topographic tolerance/exception)

Other agency review (DFWP, federal agencies, DSL)

Screening/fencing of pits, drillsite

Other: \_\_\_\_\_

Comments: Private surface cultivated land. There may be 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 land. There may be 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 well. No concerns

**Remarks or Special Concerns for this site**

This will be an 19,982’MD/8,742’TVD single lateral Three Forks Formation test well.

**Summary: Evaluation of Impacts and Cumulative effects**

No long term impacts expected from the drilling of this well. Some short term impacts will occur, but will be mitigated in time.

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: February 27, 2013  
Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website  
(Name and Agency)  
Water wells in Sheridan County  
(subject discussed)  
February 27, 2013  
(date)

US Fish and Wildlife, Region 6 website  
(Name and Agency)  
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA COUNTIES, Sheridan County, Montana  
(subject discussed)  
February 27, 2013

Montana Natural Heritage Program Website  
(Name and Agency)  
Heritage State Rank= S1, S2, S3, Location T32N R56E  
(subject discussed)  
February 27, 2013  
(date)

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