

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

**Operator:** Apache Corporation  
**Well Name/Number:** Haworth 17-8H-T  
**Location:** SE NE Section 18 T36N R48E  
**County:** Daniels, **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 drilling rig to drill a Bakken Formation single lateral horizontal well test, 12,211' MD/7,172' TVD.

Possible H<sub>2</sub>S gas production: Possible 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 17 miles to the south 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: No special concerns – using a rig to drill a Bakken Formation single lateral horizontal well test, 12,211' MD/7,172' TVD. If there are existing pipelines for natural gas in the area then associated gas must be tied into gathering system or if no gathering system nearby associated gas can be flared under Board Rule 36.22.1220.

**Water Quality**

(possible concerns)

Salt/oil based mud: Yes, freshwater and freshwater gel polymer mud system on surface hole. Mainhole and horizontal lateral will be drilled with a saltwater saturated mud system.

High water table: No high water table anticipated at this location.

Surface drainage leads to live water: No, closest drainage is an unnamed ephemeral tributary drainage to the Middle Fork Poplar River, about 3/8 of a mile to the southwest from this location. Middle Fork Poplar River is about 5/8 mile to the southwest from this location.

Water well contamination: No, closest water wells are about 1/2 of a mile to the northeast and about 5/8 of a mile to the west northwest from this location. Depth of these stock and domestic water wells range from 14' to 336'. Surface hole will be drilled with freshwater and surface casing set and cemented to surface at 1550'. (Rule 36.22.1001)

Porous/permeable soils: No, sandy clay soils.

Class I stream drainage: Yes, Class I stream drainage is the Middle Fork Poplar River 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: 1550' of surface casing cemented to surface adequate to protect freshwater zones. Also, fresh water mud systems to be used. (Rule 36.22.1001)

### Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: None

High erosion potential: No, small cut, up to 7.0' and small fill, up to 7.0', required.

Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If productive unused portion of drillsite will be restored.

Unusually large wellsite: No, a large well site, 400X500' location size required for two well locations, Haworth 17-8H-T and the Haworth 18-7H-B.

Damage to improvements: Slight, surface use is a cultivated field.

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: Will use existing county road, Danelson Road. A short access will be built, about 2452' will be built into this location. Cuttings will be buried on site in the lined cuttings pit. Drilling fluids and completion fluids will be hauled to commercial Class II saltwater disposal facility. Solids will be allowed to dry in the lined cuttings pit. Pit will be back filled when dry with clay subsoils and then topped with topsoil. No special concerns.

### Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residences are about 5/8 of a mile to the west northwest, about 5/8 of a mile to the northeast, about 3/4 of a mile to the northwest, about 1 mile to the east and about 1.125 miles to the east northeast from his location.

Possibility of H2S: Possible H2S gas 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 and operational BOP should mitigate any problems. (BOP's 5,000 psig annular, pipe and blind rams) rule 36.22.1014. No concerns.

### 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 Whooping Crane. Candidate species is the Sprague's Pipit. NH tracker website indicates one (2) species of concern: the Northern Redbelly Dace and the Iowa Darter.

Mitigation:

Avoidance (topographic tolerance/exception)

Other agency review (DFWP, federal agencies, DSL)

Screening/fencing of pits, drillsite

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

Comments: Private surface land, cultivated. 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. State of Montana Trust Lands minerals, Trust Lands will do a surface EA.

### 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 cultivated surface 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. State of Montana Trust Lands mineral. Trust Lands will do a surface EA.

### Social/Economic

(possible concerns)

Substantial effect on tax base

Create demand for new governmental services

Population increase or relocation

Comments: Wildcat well. No concerns

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Remarks or Special Concerns for this site

Well is a wildcat exploratory to drill a Bakken Formation single lateral horizontal well test, 12.211'MD/7,172' TVD.

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

No, long term impacts expected. Some short term impacts will occur.

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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: September 21, 2012

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website

(Name and Agency)  
Daniels County water wells  
(subject discussed)  
September 21, 2012  
(date)

US Fish and Wildlife, Region 6 website  
(Name and Agency)  
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA  
COUNTIES, Daniels County, Montana  
(subject discussed)  
July 5, 2012

Montana Natural Heritage Program Website  
(Name and Agency)  
Heritage State Rank= S1, S2, S3, Location T36N R48E  
(subject discussed)

September 21, 2012  
(date)

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