

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

Operator: Whiting Oil and Gas Corporation
Well Name/Number: Kittleson Federal 24-7-1H
Location: SE SW Section 7 T26N R57E
County: Richland, **MT;** **Field (or Wildcat)** W/C (Bakken Horizontal)

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 single lateral Bakken Formation well test to 20,330'MD/10,206'TVD.

Possible H₂S gas production: H₂S gas production possibility is slight (Mississippian Formations).

In/near Class I air quality area: Class I air quality area in the area of review is the Fort Peck Indian Reservation, about 13 miles to the northwest from this location.

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: No special concerns – using triple derrick drilling rig to drill a single lateral Bakken Formation well test to 20,330'MD/10,206'TVD. If existing pipeline for gas in the area, gas can be gathered or if no gathering system nearby, gas can be flared under Board Rule 36.22.1220.

Water Quality

(possible concerns)

Salt/oil based mud: Yes, oil based invert drilling fluids will be used on the mainhole. The horizontal lateral will be drilled with brine water. The surface hole will be drilled with freshwater and freshwater drilling fluids.

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

Surface drainage leads to live water: No live water nearby, closest drainage is Cherry Creek, an ephemeral tributary drainage to the South Fork Cherry Creek, about 1/4 of a mile to the southwest from this location.

Water well contamination: None, closest water wells are about 3/8 of a mile to the south southwest, about 3/8 of a mile to the east, about 1/2 of a mile to the southeast, about 5/8 of a mile to the south southeast and about 7/8 of a mile to the west northwest from this location. All other water wells are 1 mile and further from this location in any direction. Depth of these domestic/stock water wells range from 99' to 700'. Surface casing hole will be drilled with freshwater and freshwater drilling fluids. Surface casing will be run and cemented to surface from 2000'.

Porous/permeable soils: No, sandy clay soils.

Class I stream drainage: No class I stream drainages in this area.

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: 2000' of surface casing cemented to surface adequate to protect freshwater zones and to cover the base of the Fox Hills Formation.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: No, stream crossings anticipated.

High erosion potential: Yes possible high erosion potential on cut and fill slopes. This location will require a moderate cut, up to 28.0' and moderate fill, up to 22.2', required.

Loss of soil productivity: None, location to be restored after drilling well, if well is nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: Yes, very large wellsite 425'X510'. This location size is required to accommodate 4 horizontal wells: Kittleson Federal 24-7-1H, Kittleson Federal 24-7-2H, Kittleson Federal 24-7-3H and Kittleson Federal 24-7-4H.

Damage to improvements: No surface use is a grazing 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 Vegetate cut and fill slopes as soon as possible to minimize slope erosion.

Comments: Access to location will be over existing county road, #146. A short access of 1980' will be built off county road #146 into this location. Oil based invert drilling fluids will be recycled. Completion fluids will be hauled to a Class II Disposal. Drilling cuttings and mud solids will be fly ashed in the lined cuttings pit and will have a minimum of 4' of soil cover over the top of the solidified cuttings. No special concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Nearest residences are about 1/2 of a mile to the southeast, 7/8 of a mile to the west northwest, about 1.125 miles to the southwest, about 1.25 miles to the south southwest and about 1.5 miles to the southeast mile from this location. The town of Bainville, Montana is about 12.4 miles to the northeast, the town of Culbertson, Montana is about 10.3 miles to the northwest and the town of Sidney, Montana is about 24 miles to the southeast from this location.

Possibility of H2S: H2S potential is slight (Mississippian Formations).

Size of rig/length of drilling time: Triple drilling rig/short 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 in the area of review.

Proximity to recreation sites: None in the area of review.

Creation of new access to wildlife habitat: No, surface use is grazing land.

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. MTFWP

Natural Heritage Tracker website lists one (1) species of concern: the Whooping Crane.

Mitigation:

Avoidance (topographic tolerance/exception)

Other agency review (DFWP, federal agencies, DSL) **BLM**

Screening/fencing of pits, drillsite

Other: _____

Comments: The surface ownership is private grazing 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. Federal minerals will be intersected by the horizontal lateral. BLM will require a Federal drilling permit and 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) **BLM**

Other: _____

Comments: On private grazing surface lands. 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. BLM will require a Federal drilling permit and EA.

Social/Economic

(possible concerns)

Substantial effect on tax base

Create demand for new governmental services

Population increase or relocation

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____