Montana Board of Oil and Gas Conservation
Environmental Assessment

Operator: Whiting Oil and Gas Corporation
Well Name/Number: Olson 21-28TFH
Location: NE NW Section 28 T30N R56E
County: Roosevelt **, MT; Field (or Wildcat)** W/C (Three Forks 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 Three Forks Formation well test to 19,067'MD/9,650'TVD.
Possible H2S gas production: H2S gas production possibility is slight.
In/near Class I air quality area: No Class I air quality area nearby.
Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under rule 75-2-211.

Mitigation:
X 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 Three Forks Formation well, 19,067'MD/9,650'TVD. If existing pipeline for H2S gas in the area, gas can be gathered or if no gathering system nearby, H2S 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, nearest drainage is an unnamed ephemeral drainage to Sheep Creek, about 1/4 of a mile to the northwest from this location.
Water well contamination: None, closest water well is about 5/8 of a mile to the southeast from this location. All other water wells are 1 mile and further from this location in any direction. Depth of this domestic water well is 239'. There are a number of MSCA shallow surface monitoring wells to the southeast and east of this location. All of these monitoring wells are less than 50' in depth. 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:
X Lined reserve pit
X 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)
Steam crossings: No, stream crossings anticipated.
High erosion potential: No, small cut, up to 7.1' and small fill, up to 5.5', 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: No, a large wellsite 400'X440' location size required.
Damage to improvements: No surface use is a cultivated field.
Conflict with existing land use/values: Slight

Mitigation
__ Avoid improvements (topographic tolerance)
__ Exception location requested
_X_ Stockpile topsoil
__ Stream Crossing Permit (other agency review)
_X_ Reclaim unused part of wellsite if productive
__ Special construction methods to enhance reclamation
__ Other _____

Comments: Access to location will be over existing county road, #2046. A short access of 325' will be built off county road into 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 pit and buried with subsoil cover. No special concerns.

Health Hazards/Noise

(possible concerns)
Proximity to public facilities/residences: Nearest residences are about ¼ of a mile to the northwest, about 5/8 of a mile to the southwest and southeast, about ¾ of a mile to the west and about 1 mile to the east from the location. The town of Froid, Montana is about 2 miles to the west from this location.
Possibility of H2S: H2S potential is slight.
Size of rig/length of drilling time: Triple drilling rig/short 30 to 40 days drilling time.

Mitigation:
_X_ 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. No concerns.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): Medicine Lake National Wildlife Refuge and Medicine Lake Wilderness boundary is about 7 miles to the north from this location.
Proximity to recreation sites: Medicine Lake National Wildlife Refuge is about 7 miles to the north from this location.
Creation of new access to wildlife habitat: No, surface use is a cultivated field.
Conflict with game range/refuge management: No
Threatened or endangered Species: Species identified as threatened or endangered are the Pallid Sturgeon, Interior Lease Tern, Whooping Crane and Piping Plover. Candidate species is the Sprague's Pipit. MTFWP Natural Heritage Tracker website lists ten (10) species of concerns. They are Grasshopper Sparrow, Sprague's Pipit, Great Blue Heron, Burrowing Owl, Ferruginous Hawk, Chestnut-collared Longspur, Sedge Wen, Yellow Rail, Boblink and Whooping Crane. MTFWP Natural Heritage Tracker website lists one (1) potential species of concern. It is the Eastern-Screech Owl.

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

Comments: The drilling of this well should have no effect on the Medicine Lake National Wildlife Refuge. The surface ownership is private land and surface use is cultivated surface lands. 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: On private cultivated 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.

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

_19,067'MD/9,650'TVD Three Forks Formation horizontal well test. No concerns.

Summary: Evaluation of Impacts and Cumulative effects

No significant 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: January 14, 2012

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website
(Name and Agency)
Water wells in Roosevelt County
(subject discussed)
January 14, 2012
(date)

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

January 14, 2012
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Heritage State Rank= S1, S2, S3, T30N R56E
(subject discussed)

January 14, 2012
(date)

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