Montana Board of Oil and Gas Conservation
Environmental Assessment

Operator: Headington Oil, Limited Partnership.
Well Name/Number: State 11X-36RH
Location: NW NW Section 36 T23N R59E
County: Richland, **MT; Field (or Wildcat)** Wildcat

Air Quality

(possible concerns)
Long drilling time: No, 30-40 days drilling time.
Unusually deep drilling (high horsepower rig): Triple derrick rig 1000 HP to drill a single lateral horizontal Red River Formation well, 15,686'MD/12,287'TVD.
Possible H2S gas production: Slight
In/near Class I air quality area: No
Air quality permit for flaring/venting (if productive): Yes, if productive. DEQ air quality permit required.

Mitigation:
- X Air quality permit (AQB review)
- __ Gas plants/pipelines available for sour gas
- __ Special equipment/procedures requirements
- __ Other:

Comments: Existing gas pipelines in the area.

Water Quality

(possible concerns)
Salt/oil based mud: Yes to long string oil based invert drilling fluids. Horizontal hole to be drilled with brine water. Surface casing hole to be drilled with freshwater and freshwater mud.
High water table: Yes, Yellowstone River about ¼ of a mile to the east. Location is in the floodplain of the Yellowstone River.
Surface drainage leads to live water: Yes, closest live water is the Yellowstone River, about ¼ of a mile to the east of this location.
Water well contamination: No, all surrounding water wells are less than 1500' deep. Closest water well to this location is about 3/8 of a mile to the northwest in section 35T23N R59E. 1500' of surface casing will be set and cemented to surface.
Porous/permeable soils: Yes, sandy soils.
Class I stream drainage: No, Class I stream drainages.

Mitigation:
- __ Lined reserve pit
- X Adequate surface casing
- __ Berms/dykes, re-routed drainage
- X Closed mud system
- X Off-site disposal of solids/liquids (in approved facility)
- __ Other:

Comments: 1500' surface casing well below freshwater zones in adjacent water wells. Also, covering Fox Hills aquifer. Adequate surface casing and BOP equipment to prevent problems. Oil based drilling fluids will be recycled. Freshwater surface hole cuttings will be buried on site. Oil based drill cuttings will be hauled to an offsite disposal. Completion pit fluids will be hauled to a licensed saltwater disposal.

Soils/Vegetation/Land Use

(possible concerns)

Steam crossings: None, utilizing exiting roads and crossings.
High erosion potential: No, small cut up to 1.5' of cut and small fill up to 0.4', 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'X300'
Damage to improvements: Slight
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 will be over existing county road and existing two track trail. A short access will be built from the existing county road into this location, about 114' will be required. Oil based drilling fluids will be recycled. Freshwater surface hole cuttings will be buried on site. Oil based drill cuttings will be hauled to an offsite disposal. Completion pit fluids will be hauled to a licensed saltwater disposal. No concerns.

Health Hazards/Noise

(possible concerns)
Proximity to public facilities/residences: Yes, residences, about 1mile to the northwest from this location.
Possibility of H2S: Slight
Size of rig/length of drilling time: Triple drilling rig 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, 1500', cemented to surface with working BOP stack should mitigate any problems. Noise should not be a problems, sufficient distance from residence to rig should mitigate this.

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: None identified.

Mitigation:

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

Comments: Surface location on private surface. No concerns

(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. No concerns.

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

Single lateral horizontal Red River Formation well, 15,686'MD/12,287'TVD..

Summary: Evaluation of Impacts and Cumulative effects

No long term impact 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): Steven Sasaki
(title:) Chief Field Inspector
Date: April 21, 2008

Other Persons Contacted:

(Name and Agency)
Montana Bureau of Mines and Geology, Groundwater Information Center website.
(subject discussed)
Water wells in Richland County
(date)
April 21, 2008

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