Montana Board of Oil and Gas Conservation
Environmental Assessment

Operator: Petroshale Energy LLC
Well Name/Number: Olsen Padre 1A
Location: NE SW NW Section 4 T14N R17E
County: Fergus **, MT; Field (or Wildcat)** Wildcat

Air Quality

(possible concerns)
Long drilling time: No short, 5 to10 days drilling time.
Unusually deep drilling (high horsepower rig): No, small single drilling rig to drill to a 2,650' TD, Otter Formation test.
Possible H2S gas production: None anticipated.
In/near Class I air quality area: Not in a Class I air quality area.
Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:
_X Air quality permit (AQB review)
___ Gas plants/pipelines available for sour gas
__ Special equipment/procedures requirements
__ Other:_____
Comments: Small single derrick drilling rig to drill to 2,650' TD.

_____
_____

Water Quality

(possible concerns)
Salt/oil based mud: No, air, freshwater and freshwater mud system to be used.___
High water table: No, high water table expected.___
Surface drainage leads to live water: Closest drainages are an unnamed ephemeral tributary drainage to Beaver Creek, about 1/4 of a mile to the southeast and an unnamed ephemeral tributary drainage to King Coulee another ephemeral drainage, about ¼ of a mile to the west from this location.__
Water well contamination: None, closest water wells are about 3/4 of a mile to the northeast and about 7/8 of a mile to the southwest from this location, depth of these water wells are from 8'and 1940'. Spring is shown on the topographic map about ¼ of a mile to the southeast from this location. Surface hole will be drilled with freshwater to 270'. Steel surface casing will be run and cemented to surface to protect ground waters.___
Porous/permeable soils: No, sandy bentonitic soils.
Class I stream drainage: No, Class I stream drainages nearby.

Mitigation:
__ 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: Adequate surface casing to be set to 27 0' to protect surface water and water wells._____

Soils/Vegetation/Land Use

(possible concerns)
Steam crossings: No, streams to be crossed; only crossing ephemeral drainages.___
High erosion potential: No, small cut up to 7.8' and moderate fill up to 10.5', required.__
Loss of soil productivity: _No, location will be restored after drilling, if nonproductive. If productive unused portion of drillsite will be reclaimed.
Unusually large wellsite: No, small drillsite, 200'X200'.
Damage to improvements: Slight, surface use is a prairie grazing land.___
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: Will utilize existing county, Crystal Lake Road and two track ranch trails. Short access off existing trail to be build into this location, about 145'. Unlined earthen pits will be utilized for drilling. Drilling fluids, mud solids and cuttings will be allowed to dry in the pits. When pits are dry they will be filled in with subsoil and topsoil spread.

Health Hazards/Noise

(possible concerns)
Proximity to public facilities/residences: Closest residences are about ¾ of a mile to the southeast, about 7/8 of a mile to the northeast, about 7/8 of a mile to the southeast and about 7/8 of a mile to the southwest from this location.
Possibility of H2S: None anticipated.
Size of rig/length of drilling time: Small single derrick drilling rig/Short drilling time 5 to 10 days.

Mitigation:
_X Proper BOP equipment
__ Topographic sound barriers
__ H2S contingency and/or evacuation plan
__ Special equipment/procedures requirements
__ Other:_____

Comments: Adequate amount of surface casing and operational BOP equipment should mitigate any problems.

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: None
Conflict with game range/refuge management: None
Threatened or endangered Species: Threatened or endangered species identified are the Pallid Sturgeon and Black-Footed Ferret. Species of concern is the Greater Sage Grouse and Sprague's Pipit. NH tracker website lists two (2) species of concern in T14N R17E, the Great Blue Heron and Sprague's Pipit.

Mitigation:
__ Avoidance (topographic tolerance/exception)
_X Other agency review (DFWP, federal agencies, DSL)
__ Screening/fencing of pits, drillsite
__ Other: _____
Comments: Surface use is a private prairie 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.

Historical/Cultural/Paleontological

(possible concerns)
Proximity to known sites None identified

Mitigation
__ avoidance (topographic tolerance, location exception)
_X other agency review (SHPO, DSL, federal agencies)
__ Other: _____
Comments: Surface use is a private prairie grazing 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: _No, impact expected from the drilling of this well.

Remarks or Special Concerns for this site

No special concerns about this wellsite. This is a Heath Formation test to be drilled to 2650' TD._____

Summary: Evaluation of Impacts and Cumulative effects

No significant or long term impacts expected from the drilling of this well. 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: September 28, 2011_____

Other Persons Contacted:

_____
_Montana Bureau of Mines and Geology, GWIC website_____
(Name and Agency)
__Fergus County water wells_____
(subject discussed)
__September 28, 2011_____
(date)

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

September 28, 2011_____
(date)

Montana Natural Heritage Program Website (FWP)

(Name and Agency)
Heritage State Rank= S1, S2, S3, T14N R17E
(subject discussed)

_September 28, 2011_____
(date)

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