

## Sensitive Area Determination Checklist

WPX Energy Rocky Mountain, LLC (WPX)		
<b>Person(s) Conducting Field Inspection</b>	Alexander Nees <i>Environmental Scientist</i>	5-22-13
<b>Site Information</b>		
Location:	BCU 33-30-198	Time: 10:00AM
Type of Facility:	Proposed well pad	
<b>Environmental Conditions</b>	Sunny, clear, dry soil, very light breeze	
Temperature (°F)	70	

Has the proposed, new or existing location been designated as a sensitive area?

Yes       No

### SURFACE WATER

1. Are there any surface water features or SWSAs adjacent to or within ¼ mile of the proposed/new or existing facility?

Yes       No

If yes, list type of surface water feature(s), i.e. rivers, creeks, streams, seeps, springs, wetlands: There are two (2) USGS identified unnamed intermittent drainages

If yes, describe location relative to facility: one (1) USGS identified unnamed ephemeral drainage is located approximately 1,128 feet to the east and one (1) USGS identified unnamed ephemeral drainage is located 898 feet to the west of the proposed facility.

2. Could a potential release from the facility reach surface water features?

Yes       No

If yes, describe the pathway a release from the facility would likely follow to determine if the potential to impact surface water is high or low. A potential release, if it were to migrate off the eastern or western sides of the proposed facility, would tend to migrate towards the unnamed intermittent drainages located to the east and west.

3. Is the potential to impact surface water from a facility release high or low?

High       Low

**GROUNDWATER**

1. Will the proposed/new or existing facility have any pits which will contain hydrocarbons and chlorides or other E&P wastes?  
 Yes       No  
 If yes, List the pit type(s): Cuttings trench
  
2. Is the site of the proposed facility underlain by an unconfined aquifer or recharge zone?  
 Yes       No
  
3. Is the hydraulic conductivity of the underlying soil or geologic material  $\leq 1.0 \times 10^{-7}$  cm/sec?  
 Yes       No
  
4. Is the proposed facility located within 1/8 mile of a domestic water well or 1/4 mile of a public water supply well which would use the same aquifer?  
 Yes       No
  
5. Is the proposed facility located within a 100 year floodplain?  
 Yes (*Sensitive Area*)       No (*If no, proceed to question #6.*)
  
6. Is the depth to groundwater known?  
 Yes (*If yes, follow instructions provided in 6(a) of this section.*)  
 No (*If no, follow instructions provided in 6(b) of this section.*)
  - (a) If yes, could a potential release from the proposed facility reach groundwater?  
 Yes       No  
 If yes, explain:
  
  - (b) If no:
    - (i) Evaluate surrounding soils, topography, and vegetation which may suggest the presence of shallow groundwater.
    - (ii) Gather information from surrounding well data in order to determine a depth to groundwater, i.e. State Engineers Office.
  
7. Is the potential to impact ground water from the facility in the event of a release high or low?  
 High       Low

**Additional Comments:**

As stated in the surface water section of this sensitive area determination, there are two (2) USGS identified unnamed intermittent drainages. The first is located approximately 1,128 feet to the east and the second is located 898 feet to the west of the proposed facility. The facility, as it is currently proposed, limits the direction of a potential release to the eastern and western sides. If a potential release were to migrate off these sides of the facility flow would be directly towards the unmanned drainage features. During facility construction, it is recommended Best Management Practices (BMPs) be installed along the graded edge of the fill slope sides in the form of an earthen perimeter berm. In addition, a diversion ditch should be constructed along the toe of the fill slope sides. All installed BMPs should be monitored and maintained to ensure site containment in the event of a potential release.

The State engineers Office and USGS records were reviewed and no records were revealed which would provide additional information pertaining to the depth to groundwater in the immediate vicinity of the facility. The topographic setting (ridgeline) and vegetative cover in the immediate vicinity of the facility (Piñon juniper woodland, sagebrush, and scattered serviceberry) does not suggest the presence of shallow groundwater.

Based on the information collected during the site investigation and desktop review, the greatest potential for impacts would be to the unnamed drainage feature located to the west of the proposed facility. A potential release, if it were to migrate off the western side, would tend to flow towards the drainage following the natural contours of the area. However, due to the relatively thick vegetative cover, no defined drainage pathways, the moderate to high infiltration rates of the underlying soils, and the distance a release would have to migrate to reach the unnamed drainage feature, the potential for impacts to this drainage would be deemed to be low. It is not anticipated a potential release, if it were to migrate off the eastern side of the facility, would impact the unnamed drainage feature located to the east for the same reasons noted above. In addition, both intermittent drainage features to the east and west exhibit ephemeral characteristics such as no hydric soil development and only mild scouring which would be associated with occasional flow such as a prolonged or heavy precipitation event. Based on the topographical setting and vegetate cover in the immediate vicinity of the proposed facility, the potential to impact ground water has been deemed low as well. Therefore, the facility can be designated as being in a non-sensitive area.

Inspector Signature(s):  Date: 7/19/2013

Mark E. Mumby, *Project Manager/RPG*  
HRL Compliance Solutions, Inc.

 Date: 5/23/2013

Alexander Nees, *Environmental Scientist*  
HRL Compliance Solutions, Inc.