

## Sensitive Area Determination Checklist

WPX Energy Rocky Mountain, LLC (WPX)		
<b>Person(s) Conducting Field Inspection</b>	Finn Whiting	
	<i>Geologist</i>	
<b>Site Information</b>		
Location:	RU 21-8	Time: 12:00
Type of Facility:	Proposed well pad	
<b>Environmental Conditions</b>	Sunny, dry ground conditions.	
Temperature (°F)	85 °F	

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:

If yes, describe location relative to 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.

3. Is the potential to impact surface water features 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 portion of this sensitive area determination, there are no surface water features located within a ¼ mile of the proposed facility. The facility, as it is currently proposed to be constructed, limits the direction of a potential release to the northwestern side. If a potential release were to migrate off the facility, flow would be to the northwest along the gently sloping mesa where it would infiltrate into the underlying soils. However, to minimize any potential impacts from a spill or release it is recommended that: during facility construction, Best Management Practices (BMPs) be installed in the form of an earthen perimeter berm on the graded edge of all fill slope sides. If feasible, a diversion ditch should be constructed along the toe of any fill slope sides of the facility as well along with an elevated pad entrance. 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 revealed there are no water wells located within a ¼ mile of the proposed facility which provide additional information pertaining to the depth to ground water. The vegetation in the immediate vicinity of the facility is dominated by typical upland xeric species and does not suggest the presence of shallow groundwater. There were no occurrences of hydrophytic species, seeps, or springs identified during the site visit. Therefore it could be assumed that the depth to groundwater, if present, would be in excess of 40 feet if not greater.

Based on the information collected during the site visit and desktop review, there is very little potential for impacts to any surface water features in the vicinity of the proposed facility. As noted above; if a potential release were to migrate off the facility, it would tend to infiltrate into underlying soils on the gently sloping topography prior to reaching and potentially impacting any surface water features. It is not anticipated groundwater would be impacted by the facility due to the fact groundwater is most likely in excess of 40 feet. With the potential to impact surface water features, actual flowing surface water, and groundwater being deemed as low, the facility can be designated as being in a non-sensitive area.

Inspector Signature(s):  Date: 8/12/2014

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

 Date: 8/11/2014

Finn Whiting, *Geologist*  
HRL Compliance Solutions, Inc.