

## Sensitive Area Determination Checklist

WPX Energy Rocky Mountain, LLC (WPX)		
<b>Person(s) Conducting Field Inspection</b>	Jake Forsman <i>Environmental Scientist</i>	04/16/2013
<b>Site Information</b>		
Location:	GM 323-28	Time: 12:30
Type of Facility:	Existing Well Pad w/ Proposed Expansion	
<b>Environmental Conditions</b>	Rain and snow showers; saturated ground conditions	
Temperature (°F)	44°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: Parachute Creek, a USGS identified perennial stream; low cost ditch a USGS identified seasonal irrigation ditch; and one (1) USGS identified intermittent drainage.

If yes, describe location relative to facility: Parachute Creek is located 877 feet to the southwest, the low cost ditch transects the proposed portion of the facility expansion, and the USGS identified intermittent drainage is located 151 feet to the northwest of the existing/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. If a potential release were to migrate off the facility flow could enter the low cost ditch or the unnamed drainage feature to the northwest. See additional comments section for further detail

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

☒ High to actual surface water features      ☒ Low to actual flowing surface water

## 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 on the upper existing facility expansion
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 is one USGS identified intermittent drainage, the low cost ditch, and Parachute Creek located within a ¼ mile of the facility. The facility as it is proposed to be expanded limits the direction of a potential release to portions of the southeastern sides on both the upper and lower pads and the southwestern side of the lower facility pad. If a potential release were to migrate off the above mentioned sides flow to the southwest following the natural contours of the area. During facility expansion, it is recommended Best Management Practices (BMPs) be installed in the form of an earthen perimeter berm along the graded edge of all fill slope sides. In addition a diversion ditch should be constructed along the toe of the fill slope sides as well. All installed BMPs should be monitored and maintained to ensure site containment in the event of a potential release.

The State Engineer's office and USGS records were reviewed and it was revealed that there are no permitted water wells within a ¼ mile of the existing facility. The vegetative cover in the immediate vicinity of the facility (rabbit brush, greasewood, and sagebrush) does not suggest the presence of shallow groundwater. However there is one permitted well just outside the quarter mile buffer (permit number 278414) upgradient of the facility which indicates that the depth to groundwater is approximately 25 feet. The well is approximately at the same elevation as the facility. Therefore it could be assumed that the depth to groundwater in the immediate vicinity of the facility may less than 40 feet.

Based on the information collected during the site visit and desktop review, the greatest potential for impacts would be to the low cost ditch, which transects the lower pad and the unnamed USGS identified intermittent drainage located to the northwest of both the upper and lower pads. By COGCC decision the close proximity of both features would classify the facility as being in a sensitive area. However, the low cost ditch is no longer being utilized for irrigation in the immediate vicinity of the existing and proposed facility expansion. It is now diverted to the north of the existing facility. In addition, it has been obliterated in several areas both upstream and downstream of the existing facility and is no longer able to transmit water. A separate package outlining the low cost ditch status will be included with the permitting package. There is a slight potential for impacts to the unnamed intermittent drainage to the northwest. However the drainage feature becomes non-existent at the point where it intersects the remnants of the low cost ditch and is no longer present to the southwest of the low cost ditch due to man-made modifications to the land surface. It is not anticipated Parachute Creek would be impacted by a potential release. As noted above, if a potential release were to migrate off the southeastern sides of both pads and the southwestern side of the lower pad, flow would be out into a flat lying non-irrigated field where it would infiltrate into the underlying soils which have a moderate to high infiltration rate. Therefore, the potential to impact actual flowing surface water (Parachute Creek) would be deemed as low.

As noted above, there is the potential for shallow groundwater in the immediate vicinity of the facility. By COGCC decision, the potential for shallow groundwater (less than 40 feet) would classify the facility as being in a sensitive area. The facility will have a cuttings trench located in the northwestern corner of the upper pad. The cuttings trench should be closely monitored to ensure no other materials, especially liquids, are placed into the trench. This will ensure there are no impacts to groundwater.

Although the potential to impact surface water features has been deemed high, the potential for impacts to actual flowing surface water have been deemed as low. The potential for impacts to groundwater would be deemed low as well due to the fact all liquids will be managed on the surface. However by COGCC decision; if the depth to groundwater is less than 40 feet, the facility is considered to be in a sensitive area. Therefore by rule, the facility should be classified as being in a sensitive area.

Inspector Signature(s):  Date: 6/11/2014

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

 Date: 04/17/2013

Jacob Forsman, *Environmental Scientist*  
HRL Compliance Solutions, Inc.