

Sensitive Area Determination Checklist

WPX Energy Rocky Mountain, LLC (WPX)		
Person(s) Conducting Field Inspection	Jake Forsman <i>Environmental Scientist</i>	04/29/2013
Site Information		
Location:	DOE 2-W-27	Time: 1:00
Type of Facility:	Proposed Expansion of Existing Well Pad,	
Environmental Conditions	Sunny, mild, dry soil conditions	
Temperature (°F)	71°F	

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

☐ Yes ☒ No

SURFACE WATER

- 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: Two (2) unnamed USGS identified intermittent drainages; two (2) unnamed non-USGS ephemeral drainages which were identified during the site visit.

If yes, describe location relative to facility: One (1) USGS identified intermittent drainage is located approximately 267 feet to the northwest and the second USGS identified intermittent drainage is located approximately 1,148 feet to the southwest. One of the unnamed ephemeral drainages is located adjacent to the southeastern corner and the second unnamed ephemeral drainage is located adjacent to a portion of the western side of the existing facility.

- 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 of the southern side or western sides of the facility, would flow directly into the unnamed ephemeral drainages features to the south and west.

- Is the potential to impact surface water from a facility release high or low

☒ High to actual surface water features ☒ Low to actual live 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 Cuttings and fluids will be managed on the surface
 If yes, List the pit type(s):

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.

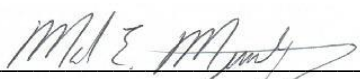
7. Is the potential to impact ground water from the facility in the event of a release high or low?
☒ High ☒ Low

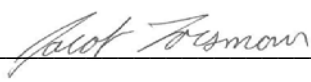
Additional Comments:

As stated in the surface water section of this sensitive area determination, there are two (2) unnamed USGS identified intermittent drainages and two (2) unnamed ephemeral drainages which were identified during the site visit. The facility, as it is proposed to be expanded, limits the direction of a potential release to the southern and a portion of the western side of the facility. A potential release, if it were to migrate off either of these sides, would flow directly into one of the two unnamed ephemeral drainage features. During facility expansion, it is recommended that Best management Practices (BMPs) be installed in the form of an earthen perimeter berm along the graded edge of any fill slope sides most notably on the southern and a portion of the western side. If feasible, a diversion ditch should be constructed along the toe of the same fill slope sides. 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 determined that there is one permitted monitoring well somewhere to the west of the existing facility. Based on information from the DWR the well is located at an elevation lower than that of the facility itself. The topographic and geologic setting and vegetative cover in the immediate vicinity of the facility (rabbit brush, greasewood, and sagebrush) does not suggest the presence of shallow groundwater.

Based on the information collected during the field investigation and desktop review, the greatest potential for impacts are to the two (2) unnamed ephemeral drainages which were identified during the site investigation. As noted above, both drainages are adjacent to the southern and a portion of the western sides of the facility. If a potential release were to impact these drainages flow would be to the west towards the USGS identified intermittent drainage located 1,148 feet to the west. However, it is not anticipated this drainage would be impacted due to the distance a potential release would have to migrate in order to reach it. In addition, the USGS identified intermittent drainage to the west flows into a very large man-made catchment basin approximately 1,274 to the south of the confluence of the ephemeral drainages and the intermittent drainage virtually eliminating the potential to impact any live flowing surface water. The unnamed intermittent drainage located to the northeast of the existing facility would not be impacted by a potential release as it is separated from the facility by the natural topography and a very large berm which directs flow into the unnamed ephemeral drainage adjacent to the southern side. As noted above, the potential to impact groundwater would be deemed to be low as the monitoring well in fairly close proximity to the facility is at an elevation lower than that of the facility itself and the fact the facility is constructed predominantly in bedrock (Wasatch Fm.) which has a very low potential for groundwater. Although the potential for impacts to surface water features has been determined to be high, the potential to impact any live flowing surface water has been deemed to be very low. With the potential for impacts to 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: 7/29/2013
Mark E. Mumby, *Project Manager/RPG*
HRL Compliance Solutions, Inc.

 Date: 04/30/2013
Jacob Forsman, *Environmental Scientist*
HRL Compliance Solutions, Inc.