

Sensitive Area Determination Checklist

WPX Energy Rocky Mountain, LLC (WPX)		
Person(s) Conducting Field Inspection	Finn Whiting	
	Geologist	
Site Information		
Location:	GM 14-27	Time: 9:00
Type of Facility:	Existing production facility w/proposed expansion	
Environmental Conditions	Sunny, dry ground conditions.	
Temperature (°F)	72	

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 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):

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.

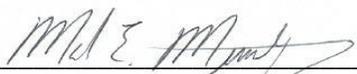
7. Is the potential to impact ground water from the facility in the event of a release high or low?
 High Low

Additional Comments:

As stated in the surface water portion of this sensitive area determination, there are no USGS identified drainages located within a ¼ mile of the existing facility. The facility as it is currently constructed and proposed to be expanded will limit the direction of a potential release to the southern side. If a potential release were to migrate off the facility on the southern side, flow would be to the south where it would be contained on the GM 11-34 well pad. During facility expansion, Best Management Practices (BMPs) should be installed in the form of an earthen perimeter berm along the graded edge of all fill slope sides of the facility. It is also recommended that an elevated pad entrance be constructed to prevent flow from migrating off the southern side. In addition, the existing BMPs, especially the diversion ditches on the cut slope sides, be re-constructed to encompass the new facility footprint. All existing and 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 any additional information pertaining to the depth to groundwater. The vegetative cover, which is dominated by typical upland xeric species, does not suggest the presence of shallow groundwater. There are no occurrences of hydrophytic species which would indicate the presence of any seeps or springs. In addition, the facility is constructed in bedrock (Wasatch Fm.) which is comprised mainly of shale in the immediate vicinity and is most likely devoid of any potential groundwater. Therefore it could be assumed that groundwater, if present, would be in excess of forty feet.

Based on the information collected during the site visit and desktop review, the potential to impact groundwater, surface water features, or actual flowing surface water has been deemed to be low. As noted above, any potential release off the facility would be contained on the lower GM 11-34 well pad. Even if flow were to migrate off this facility, it would tend to infiltrate into the hillside below the GM 11-34 pad. With the potential for impacts to groundwater, surface water features, and actual flowing surface water being deemed as low the facility can be designated as being in a non-sensitive area.

Inspector Signature(s):  Date: 7/5/2014

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

 Date: 06/25/2014

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