Sensitive Area Determination Checklist

WPX Energy Rocky Mountain, LLC (WPX)			
Person(s) Conducting Field Inspection		Matthew Fought	11/26/2014
		Environmental Scientist	
Site Information			
Location:	RMV 95-21		Time: 10:20
Type of Facility:	Existing Well Pad With Proposed Expansion		
Environmental Conditions	Sunny, dry ground conditions.		
Temperature (°F)	~35°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: One (1) unnamed USGS identified ephemeral drainage, and one (1) unnamed manmade stock pond.

   If yes, describe location relative to facility: The unnamed USGS identified ephemeral drainage is located approximately 279 feet to the Southwest and the unnamed stock pond is located approximately 1,320 to the southwest of the existing 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 Southwestern or southeastern sides, flow would be to the Southwest following the natural topography of the area towards the unnamed USGS identified ephemeral drainage.

3. Is the potential to impact surface water from a facility release high or low?
   ☒ Moderate to actual surface water features ☒ Low to actual flowing surface water

WPXENERGY

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 $\leq 1.0x10^{-7}$ 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 (1) unnamed USGS identified ephemeral drainage and one (1) unnamed stock pond located within ¼ mile of the existing facility center. The facility expansion, as it is proposed, limits the direction of a potential release to the southeastern and southwestern sides. If a potential release were to migrate off of the facility, flow would be to the Southwest following the natural topography of the area towards the unnamed ephemeral drainage approximately 279 feet to the west. It is not anticipated that the stock pond would be impacted by a potential release as it is isolated from any potential fluid source, from the facility, by natural topography and the RMV 96-28 well pad.

During facility expansion, it is recommended that Best Management Practices (BMPs) be installed in the form of an earthen perimeter berm on the graded edge of the fills slope sides (southeastern, southwestern sides). If feasible, a diversion ditch should also 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 release.

The State Engineer's Office and USGS records were reviewed and no records were revealed which would provide any additional information pertaining to the depth to groundwater within ¼ mile of the existing facility. The closest permitted well (permit # 50470) is located 3,782 feet north northwest of the existing facility. The depth to groundwater in the well is noted to be 88 feet. Although the facility is approximately 134 feet lower in elevation than that of the closest permitted well, it is located in similar geologic conditions and is approximately 100 feet higher in elevation than the Colorado River. Therefore it could be assumed that the depth to groundwater in the immediate vicinity of the facility would be approximately 80 feet. In addition, the vegetative cover in the immediate vicinity of the facility, sage, juniper, rabbit brush, and bunch grass, does not suggest the presence of shallow groundwater. The ephemeral drainage to the southwest of the facility contains woody sage, and upland grasses in the channel bottom which confirms both the ephemeral nature of the stream as well as the lack 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 ephemeral drainage. As noted above, the unnamed drainage is located approximately 279 feet to the west of the facility. If a large sustained release were to migrate off the facility, it could potentially reach and impact the unnamed ephemeral drainage the Southwest. If a potential release were to impact the drainage; it would flow to the southwest for approximately 400 feet where it becomes non-existent, due to man-made modifications to the land surface, and would infiltrate into the underlying soils north of the RMV 96-28 well pad. Although the potential for a release to impact the ephemeral drainage is moderate, the potential to impact any live flowing surface water (i.e. the Colorado River) would be deemed to be low as there is no hydraulic connection to it. With the potential for

impacts to 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: 12/9/2014

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

_____ Date: 12/1/2014

Matthew Fought, *Environmental Scientist*
HRL Compliance Solutions, Inc.