

Sensitive Area Determination Checklist

WPX Energy Rocky Mountain, LLC (WPX)		
Person(s) Conducting Field Inspection	Mark Mumby	
	RPG/Env. Program Manager	
Site Information		
Location:	RGU 13-36-198	Time: 10:30
Type of Facility:	Existing well pad w/proposed expansion	
Environmental Conditions	Partly cloudy, mild, dry soil conditions	
Temperature (°F)	75	

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: Two (2) unnamed USGS identified intermittent drainages tributary to Ryan Gulch and one (1) non-USGS ephemeral drainage identified during the site visit

If yes, describe location relative to facility: One (1) unnamed USGS identified intermittent drainage is located 811 feet to the southeast, one (1) unnamed USGS identified intermittent drainage is located 990 feet to the west, and the unnamed non-USGS identified ephemeral drainage is located adjacent to the northeast corner 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. A potential release, if it were to migrate off facility, would flow to the east towards the unnamed ephemeral drainage feature.

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

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 two (2) unnamed USGS identified intermittent drainages and one (1) unnamed non-USGS identified ephemeral drainage located within ¼ mile of the existing facility. The facility, as it is currently proposed to be expanded, limits the direction of a potential release to the eastern side. A potential release, if it were to migrate off the eastern side, would flow to the east directly towards and potentially into the unnamed ephemeral drainage identified during the site visit.

There are currently excellent Best Management Practices (BMP's) installed on the facility. They are in the form of an earthen perimeter berm and diversion ditch constructed on the graded edge and toe of the fill slope sides which include the eastern and a portion of the southern sides of the facility. These BMPs are able to contain any fluids which may migrate out onto the pad or any fluids which may migrate off the pad. During facility expansion, it is recommended that the same (BMPs) be re-installed on the fill slope sides of the facility. All newly 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 no records were revealed which would provide any additional information pertaining to the depth to groundwater within a ¼ mile of the proposed facility expansion. The closest permitted water wells are located approximately 6,347 feet (1.2 miles) to the northwest of the proposed facility. The wells are utilized to monitor resource water quality for the Natural Soda facility. A series of wells are also planned to be drilled in the immediate vicinity of the existing facility and are targeting zones of water greater than 500 feet. Therefore it could be assumed that the depth to groundwater in the immediate vicinity of the existing facility is in excess of 500 feet. In addition, the vegetative cover surrounding the proposed facility is dominated by sage, juniper, and bunch grasses typical of the upland xeric environment and no seeps or springs were identified during the site visit which would suggest the presence of shallow groundwater.

Based on the information collected during the site visit and desktop review, there is a slight potential for impacts to the unnamed non-USGS identified ephemeral drainage located adjacent to the northwest corner of the existing facility. As noted above; if a potential release were to migrate onto or off the facility, as it is currently constructed, it would 100 percent contained by the BMPs currently in place. If these same BMPs are re-installed during the facility expansion, chances are the unnamed ephemeral drainage would not be impacted by a potential release. If a potential release were large enough to breach the installed BMPs and impact the above noted drainage, it is not anticipated that it would reach Ryan Gulch. The ephemeral drainage as well as the unnamed intermittent drainage exhibit characteristics of infrequent and low volume flow which is evident as the drainage bottom contains abundant woody debris, vegetation and Chryptogamic soils which would not be present if the drainage had intermittent flow. In addition, it is not anticipated a release would migrate any great distance in these drainages due to the high infiltration rates of the channel bottom soils and the distance it would have to flow (>1.5 miles)

to reach Ryan Gulch. It is not anticipated that the USGS identified intermittent drainage located 900 feet to the west would be impacted by a potential release due to the construction of the facility and the fact it is separated from the facility by natural topographic highs. It is not anticipated groundwater would be impacted by the facility due to the fact groundwater is most likely in excess of 500 feet. With the potential to impact 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: 9/30/2014

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