

## Sensitive Area Determination Checklist

WPX Energy Rocky Mountain, LLC (WPX)		
<b>Person(s) Conducting Field Inspection</b>	None Conducted	
<b>Site Information</b>		
Location:	GM 42-11 Frac Pad	Time: 1345
Type of Facility:	Existing well pad w/proposed expansion	
<b>Environmental Conditions</b>	N/A	
Temperature (°F)	N/A	

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: There are two (2) USGS identified intermittent drainages.

If yes, describe location relative to facility: One (1) USGS identified drainage is located 242 feet to the southwest and one (1) USGS identified drainage is located 916 feet to the south 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 eastern side of the facility, flow would be towards the unnamed drainage to the south.

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

☒ High to actual surface water feature      ☒ 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?
2. ☐ Yes      ☒ No  
If yes, List the pit type(s):
3. Is the site of the proposed facility underlain by an unconfined aquifer or recharge zone?  
☐ Yes      ☒ No
4. Is the hydraulic conductivity of the underlying soil or geologic material  $\leq 1.0 \times 10^{-7}$  cm/sec?  
☒ Yes in unweathered bedrock      ☒ No in the thin veneer of soil if present
5. 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
6. Is the proposed facility located within a 100 year floodplain?  
☐ Yes (*Sensitive Area*)      ☒ No (*If no, proceed to question #6.*)
7. 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.
8. 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 located within one quarter mile of the existing facility. The facility, as it is currently constructed and proposed to be expanded, limits flow directions of a potential release to the eastern side as the facility is cut down into the ridgeline on the other three sides. If a potential release were to migrate off the facility, flow would be to the southeast towards the intermittent drainage located 264 feet to the south. By COGCC decision, the close proximity of the unnamed intermittent drainage would classify the facility as being in a sensitive area. However, the site visit to evaluate the GM 23-11V revealed the drainage feature exhibits more ephemeral characteristics such as a very poorly defined channel, no ordinary high water mark, and heavily vegetated bottoms including woody species of pinion and juniper. In addition, a potential release if it were to migrate into above mentioned drainage would have to flow a substantial distance (>2,600 feet) to impact any flowing surface water. The USGS identified drainage located 916 feet south of the facility would not be impacted by any potential releases due to the fact it is separated from the facility by a pronounced ridgeline. During facility expansion, it would be recommended Best Management Practices (BMPs) be installed in the form of an earthen perimeter berm be installed along the graded edge of all fill slope sides. It would also be recommended that, if feasible, a diversion ditch be installed along the bottom of the fill slope edges of the facility especially on the eastern side. These BMPs should be monitored and maintained to ensure site containment in the event of a release thus preventing flow from reaching the above mentioned drainage feature.

The State Engineer's Office and USGS records were reviewed and no records were revealed that would provide additional information pertaining to the depth to groundwater in the immediate vicinity of the existing facility. The vegetative cover (pinion/juniper woodland) and the geologic setting of the facility do not suggest the presence of shallow groundwater. Therefore it could be assumed that the depth to ground water, if present, would be greater than 40 feet.

Based on the information collected during this desk top review, the potential to impact actual surface water features has been deemed high. However the potential to impact groundwater or any live flowing surface water has been deemed low as noted above. With the potential for impacts to groundwater and actual flowing surface being deemed as low, the facility can be designated as being in a non-sensitive area.

Inspector Signature(s):  Date: 7/16/2014

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