

Sensitive Area Determination Checklist

WPX Energy Rocky Mountain, LLC		
Person(s) Conducting Field Inspection	Jennifer Belcastro <i>Environmental Scientist</i>	10/03/11
Site Information		
Location:	RGU 33-36-198	Time: 1400
Type of Facility:	Proposed Well Pad	
Environmental Conditions	Sunny; dry ground conditions	
Temperature (°F)	74°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: There is one unnamed USGS identified intermittent drainage and two unnamed ephemeral drainage features that were identified during the site visit. The two unnamed ephemeral drainage features (identified during the site visit) are tributary to the USGS identified intermittent drainage.

If yes, describe location relative to facility: The unnamed USGS identified intermittent drainage is located 836 feet to the southeast of the proposed facility. One of the two unnamed drainage features is located adjacent to the southeastern side of the proposed facility. The second unnamed drainage feature is located approximately 200 feet to the southwest of the proposed 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 the southeastern side of the proposed facility, would flow down the fill slope directly into the unnamed ephemeral drainage which is tributary to the USGS indentified intermittent drainage.

3. Is the potential to impact surface water from a facility release high or low?
- High to actual surface water features Low to any live 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): Drilling Pit and a Completions Pit

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 is one USGS identified unnamed intermittent drainage located 836 feet southeast of the proposed facility. In addition, the proposed facility is adjacent to one of the two unnamed ephemeral drainages identified during the site visit. The proposed facility will be constructed on a hill top, and based on the construction diagrams; flow from a potential release would be limited to the northwestern and southeastern sides. A potential release, if it were to migrate off the southeastern side would flow down the fill slope directly into or towards the unnamed ephemeral drainage feature. A potential release, if it were to migrate off the northwestern side would tend to congregate in the low lying area adjacent to County Road 31. By COGCC decision, the ephemeral drainage features located to the southeast of the proposed facility would classify the facility as being in a sensitive area. However, the drainage features identified are ephemeral and the USGS identified intermittent drainage exhibits more ephemeral characteristics, in the immediate vicinity of the proposed facility. Evidence of this includes no ordinary high water mark and a sparsely vegetated bottom which includes woody species indicating it does not flow a majority of the time. If a potential release were to impact the above mentioned surface water features, it is not anticipated the release would impact any live surface water. This would be due to the moderate to high infiltration rates of the soils in drainage bottom and the distance a potential release would have to flow to impact any live surface water. The closest flowing surface water feature is Piceance Creek which is located over two miles from the proposed facility. It would be recommended that Best Management Practices (BMPs) be installed along the top of all of the fill slope edges of the facility in the form of an earthen perimeter berm and any other areas where flow could potentially migrate off the facility. If feasible, diversion ditches should be constructed along the toe of any fill slopes to further ensure site containment and prevent water from reaching the above noted surface water features.

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. The vegetative cover in the immediate vicinity of the existing facility (Piñon-juniper woodland and sage brush flats) does not suggest the presence of shallow groundwater.

Based on the information collected during the site investigation and desktop review, the potential to impact actual surface water features has been deemed high. However the potential to impact any live surface water (Piceance Creek) or groundwater has been deemed low. Therefore, the facility should be designated as being in a non-sensitive area.

Inspector Signature(s): Mark E. Mumby Date: 1/5/2012
Mark E. Mumby, *Project Manager/RPG*
HRL Compliance Solutions, Inc.

Jennifer Belcastro Date: 10/03/2011
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