

Sensitive Area Determination Checklist

WPX Energy Rocky Mountain, LLC		
Person(s) Conducting Field Inspection	Jennifer Belcastro	6/28/11
	<i>Environmental Scientist</i>	
Site Information		
Location:	RWF 11-35	Time: 1230
Type of Facility:	Proposed Well Pad	
Environmental Conditions	Sunny; soil conditions are dry.	
Temperature (°F)	85°	

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: Porcupine Creek, a USGS identified perennial stream, and one unnamed USGS identified intermittent drainage.

If yes, describe location relative to facility: Porcupine Creek is located 617 feet to the east and the unnamed intermittent drainage is located 243 feet to the east 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. If a potential release were to migrate off the northern and eastern edges of the proposed facility flow would be towards the adjacent Vaqueuro Energy, Inc. facility (well pad).

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

Moderate to actual surface water features Low to 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

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 unnamed intermittent drainage located 243 feet to the east of the proposed facility. The facility, as it is currently proposed, limits the direction of a potential release to primarily the northern and a small portion of the eastern edge. If a release were to migrate off the facility, flow would tend to be to the north following the natural contours of the area. The release would tend to be confined to the existing Vaquero Energy, Inc. (Vaquero) well pad which is adjacent to the northern side of the proposed facility. In the event a release was to migrate off the Vaquero pad it could potentially enter the unnamed intermittent drainage. However, due to man-made modifications to the northeast of the Vaquero pad, it appears a potential release would congregate and be contained in a catchment basin constructed to capture water from precipitation events. If the pond were to fill flow would be confined to an unnamed ephemeral drainage which flows to the northwest eventually becoming non-existent by the time it reaches Rifle Rulison Road. As noted above, the unnamed USGS identified intermittent drainage is located approximately 243 feet to the east of the location. By COGCC decision this would classify the facility as being in a sensitive area. However, the drainage in the immediate vicinity of the proposed facility exhibits more ephemeral characteristics. This includes a very poorly defined channel, no ordinary high water mark, and a vegetated bottom including several woody species. It is not anticipated Porcupine Creek would be impacted by a potential release due to the fact it is separated from the proposed facility by the unnamed intermittent drainage and a slight rise in the topography between the unnamed intermittent drainage and Porcupine Creek itself. It would be recommended that Best Management Practices (BMPs) be installed along the entire fill slope sides of the proposed facility. This would include the northern side as well as a portion of the eastern side of the proposed facility. The BMPs should be constructed in the form of an earthen perimeter berm along the graded edge and a diversion ditch along the toe of the fill slope sides. These 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 it was revealed there are a series of permitted domestic water wells just outside the ¼ mile buffer zone. The closest well is located approximately 1,593 feet to the west of the proposed facility and has a depth to groundwater of 171 feet. Due to the soil types in the area, consisting of clayey loams, it is not anticipated that ground water would be impacted by a potential release from the proposed facility. In addition, the vegetative type and cover in the immediate vicinity of the proposed, consisting pinion juniper woodland and sagebrush, 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 moderate. However, the potential to impact live surface and 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: 1/21/2012
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HRL Compliance Solutions, Inc. *Project Manager*

Jennifer Belcastro Date: 6/28/2011
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