

Sensitive Area Determination Checklist

WPX Energy Rocky Mountain, LLC		
Person(s) Conducting Field Inspection	Jennifer Belcastro	03/22/13
	<i>Environmental Scientist</i>	
Site Information		
Location:	SG 23-22	Time: 14:00
Type of Facility:	Proposed Well Pad	
Environmental Conditions	Sunny; melting conditions	
Temperature (°F)	49°	

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, one (1) identified ephemeral drainage, and Kelly Gulch, a USGS identified intermittent drainage.

If yes, describe location relative to facility: One (1) unnamed USGS identified intermittent drainage is located 328 feet to the west; one (1) unnamed USGS identified drainage is located 423 feet to the northeast; the unmanned ephemeral drainage feature is located adjacent to the southwestern corner, and Kelly Gulch is located approximately 1,270 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. If a potential release were to migrate off the southern, eastern and a portion of the western edges of the facility, flow would migrate directly towards the unnamed intermittent drainages..

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

☒ High to actual surface water features ☒ Moderate 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 and fluids will be managed on the surface.
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 are two (2) unnamed USGS identified intermittent drainages located 328 feet to the west and 423 feet to the northeast of the proposed facility. The drainage located 328 feet to the west of the proposed facility is tributary to Kelly Gulch. In addition, there is one unnamed ephemeral drainage feature, identified during the site visit, which is adjacent to the southwestern corner and is tributary to the unnamed intermittent drainage to the west. The facility, as it is currently proposed, limits the direction of a potential release to the southern, eastern, and a portion of the western sides. If a potential release were to migrate off the southern and western sides of the facility, flow would be directly towards the unnamed ephemeral drainage and the unnamed intermittent drainage which is tributary to Kelly Gulch. A potential release, if it were to migrate off the eastern side of the facility, would flow directly towards the unnamed intermittent drainage located to the northeast of the proposed facility. During facility construction, Best Management Practices (BMPs) in the form of an earthen perimeter berm should be constructed along the entire graded edge of the facility on the southern, eastern, and a portion of the western sides. If feasible, consideration should be given in regards to installing a diversion ditch along the fill slope sides of the facility as well. However with the steepness of the existing terrain this may not be possible. All newly 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 that would provide additional information pertaining to the depth of groundwater. The topographic setting and the vegetative cover in the immediate vicinity of the proposed facility (sage brush, rabbit brush, and scattered Juniper woodland) does not suggest the presence of shallow groundwater.

Based on the information collected during the site visit and desktop review, the potential to impact groundwater water has been deemed as being low. By COGCC decision the close proximity of the unnamed ephemeral and intermittent drainages would classify the facility as being in a sensitive area. If a potential release were to impact the ephemeral and intermittent drainages to the west of the proposed facility flow could potentially impact Kelly Gulch as the unnamed intermittent drainage is tributary to Kelly Gulch. Kelly Gulch is tributary to the Colorado River and flow, when it occurs, is uninhibited the entire distance to the river. If a potential release were to impact the unnamed intermittent drainage to the east flow, when it occurs, is also uninhibited the entire distance to the Colorado River. With the high potential for impacts to Kelly Gulch, the unnamed intermittent drainage to the east, and potentially the Colorado River, the facility should be designated as being in a sensitive area.

Inspector Signature(s): Mark E. Mumby Date: 5/21/2013

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

Jennifer Belcastro Date: 03/22/2013

Jennifer Belcastro, *Environmental Scientist*
HRL Compliance Solutions, Inc.