

## Sensitive Area Determination Checklist

WPX Energy Rocky Mountain, LLC (WPX)		
<b>Person(s) Conducting Field Inspection</b>	None conducted	
<b>Site Information</b>		
Location:	CMU 22-33	Time: N/A
Type of Facility:	Proposed Well Pad	
<b>Environmental Conditions</b>	No site visit was conducted due to winter conditions	
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: Garfield Creek a USGS identified Perennial Stream; one (1) USGS identified unnamed intermittent drainage which is tributary to Garfield Creek.

If yes, describe location relative to facility: Garfield Creek is located approximately 1,150 feet to the southwest and the unnamed intermittent drainage is located 245 feet to the southeast 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 site, would tend to flow to the southeast and southwest following the natural contours of the area.

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

High       No

**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 is one USGS identified intermittent drainage located 245 feet to the east of the proposed facility. This drainage is also tributary to Garfield Creek which is a USGS identified perennial stream. The facility, as it is currently proposed, limits the direction of a potential release to the eastern and a portion of the southwestern sides. If a potential release were to migrate off the facility, flow would be directly towards the unnamed intermittent drainage. During construction, it is recommended Best Management Practices (BMPs) be installed on the southeastern, and a portion of the southwestern sides of the proposed facility. The BMPs should be in the form of an earthen perimeter berm along the graded edge of the facility and a diversion ditch, if feasible, along the base of the fill slope portions of the facility. In addition to the above mentioned BMPs, site conditions near the intermittent drainage should be carefully evaluated during facility construction to further reduce any potential impacts to the drainage such as additional storm water controls. Consideration might also be given in regards to installing a temporary head gate such as those currently installed in the Wheeler Gulch and Beaver Creek areas. Such a device could greatly aid in preventing a potential release from impacting Garfield Creek. The device could be installed where the intermittent drainage flows under Garfield Creek Road. All 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 to groundwater. Based on the topographical setting of the proposed facility, it is not anticipated that groundwater would be impacted by a potential release, due to the fact there will be no pit on the location. In addition, the proposed facility is located in the Wasatch Fm. which is composed primarily shale and tight sandstone which exhibit very low hydraulic conductivities. Although some seeps may present in the general area; it appears from the aerial photography review, that none are present near the proposed facility based on the somewhat sparse vegetative cover.

Based on the information collected during the desktop review, the greatest potential for impacts would be to the intermittent drainage feature located to the southeast of the proposed facility. A release, if it migrated into the unnamed drainage, would not have to flow any great distance to potentially impact Garfield Creek. In addition, by COGCC decision, the close proximity of the drainage feature would classify the facility as being in a sensitive area. As stated above, it is not anticipated a release would impact groundwater based on the topographic setting (Wasatch Fm.) of the proposed facility, the fact all cuttings and fluids will be managed on the surface, and there will not be any pits. Therefore, the potential to impact groundwater would be deemed low. However, with the high potential for impacts to surface water features and actual flowing surface water, the proposed facility should be designed as being in a sensitive area.

