

Sensitive Area Determination Checklist

Williams Production RMT Company		
Person(s) Conducting Field Inspection	N/A	12/22/10
	<i>Desk top review completed due to snow pack.</i>	
Site Information		
Location:	SP 13-13	Time: N/A
Type of Facility:	Proposed Well Pad	
Environmental Conditions	2+ feet of snow covering the ground.	
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 is one USGS indentified unnamed intermittent drainage.

If yes, describe location relative to facility: The unnamed intermittent drainage is located 698 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.

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

High Low

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 indentified intermittent drainage located 698 feet from the center of the proposed facility. The drainage has a fairly well defined channel, based on aerial photograph review, which flows to the north approximately 1/8 of a mile. Further to the north it becomes very hard to distinguish due to the very thick vegetative cover. The facility as it is currently proposed would limit flow primarily to the northeast towards the more defined portion of the unnamed intermittent drainage. However it is not anticipated that a release, if it were to migrate off the facility, would impact the unnamed intermittent drainage due to the very thick vegetative cover consisting of thick stands of service berry, oak brush, sage brush, and grasses and, although not very thick, the moderate to high infiltration rates of the underlying soil. In order to further mitigate any potential release from migrating off site, it is highly recommended that Best Management Practices (BMPs) be installed along the fill slopes of the proposed facility (northeastern and portions of the northwestern and southeastern edges) in the form of a perimeter berm and a diversion ditch along the base of the fill slope of the proposed facility along the same sides. These BMPs should be monitored and maintained to ensure site containment in the event of a potential 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. The proposed facility lies within the lower portion of the Green River Formation. The lower Green River Formation is comprised mainly of thinly bedded shale and is known to be fractured both vertically and horizontally which allows for potential fluid migration over large distances. It is not anticipated that an overland release would impact groundwater due to the short duration of time involved and the fact it would spread out over a large area. The greatest potential for impacts to groundwater would be from a release that occurred over a longer period of time such as a leaking pit. The topographical setting of the proposed facility could potentially impact groundwater in the event of a release. The well defined channel east of the proposed facility could potentially be fed by seeps emanating from the hillside. There are also two depressions on the hillside northeast of the proposed facility that could potentially be seeps or small springs. Therefore the greatest potential for impacts to groundwater will be from the drilling pit. When the facility is constructed, it would be recommended that the pit be lined. If not, drilling and completion, personnel on site will have to ensure that no materials, especially fluids, other than cuttings are placed into the pit.

Based on the information collected during desktop review, due to high snow pack in the area, the potential to impact surface water has been deemed low. Based on the topographical setting of the proposed facility and the geologic conditions present the potential to impact groundwater and any nearby seeps or springs, if present, would be deemed to be high. Therefore the facility should be designated as being in a sensitive area unless site conditions after construction of the facility can definitively prove otherwise.



Inspector Signature(s): Mark E. Mumby Date: 12/22/2010

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