

Sensitive Area Determination Checklist

Williams Production RMT Company – Valley		
Person(s) conducting inspection	Ashlee Lane	6/24/10
	<i>Biologist</i>	
Site Information	Proposed	
Location:	RWF 43-23	Time: 1300
Type of Facility:	Well Pad	
Environmental Conditions	Clear and calm; soil conditions are dry.	
Temperature (°F)	95°	

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: Irrigation ditches and Colorado River.

If yes, describe location relative to facility: There are three (3) irrigation ditches throughout the field and the Colorado River is 1,242 feet northwest of the location.

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. The general topography in the vicinity of the proposed facility slopes gently to the north and northwest where it abruptly drops off towards the Colorado River. If a potential release were to migrate off the facility on the southern and eastern sides it would first impact the irrigation ditches. If a potential release were to migrate off of the northern and/or western sides it could lead to the Colorado River.

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

High During spring, summer and fall when irrigation water is flowing in the irrigation ditches and when irrigation is occurring in the adjacent field.

Low During the winter months or when no irrigation is taking place

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 (Cuttings Trench), Emergency Flare 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 5(a) of this section.*)
 No (*If no, follow instructions provided in 5(b) of this section.*)
 - (a) If yes, could a potential release from the proposed facility reach groundwater?
 Potentially if shallow groundwater is present
 No For the deeper domestic sources
If yes, explain: The potential for shallow groundwater, if present, is most likely due to irrigation in the adjacent fields. See the additional comments section for a more detailed discussion.
 - (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.
 - (iii) Drill a soil boring to determine depth to groundwater or
 - (iv) Model hydro geologic conditions to determine if the potential to impact groundwater is high or low.

7. Is the potential to impact ground water from the facility in the event of a release high or low?
- High (if shallow groundwater is present)
 - Low (for deeper domestic water sources)

Additional Comments:

As stated in the surface water section, potential impacts to surface water features would be high during periods when the adjacent fields are being irrigated. Potential releases off the northern, eastern, southern and western edges of the facility could have the potential to impact surface water and potentially the Colorado River. Potential impacts to the river bottom area northwest of the proposed facility are low. Although the slope is steep, any potential release would have to migrate over 1,000 feet on a heavily vegetated hillside in order to impact the Colorado River and its associated Riparian Zone. The only mitigating factor would be if a potential release were to migrate to an area where a seep may be present thus impacting the flow coming from the seep.

It was also stated in the groundwater section that the potential to reach shallow groundwater, if present, was high. This is due to the fact the proposed facility is situated within a portion of the field that is irrigated or is irrigated nearby. Seeps are known to occur along the north facing terrace slope in the area of the proposed facility. They most likely occur due to the influence of irrigation water. If a release were to migrate off the pad, it could potentially impact shallow groundwater which could eventually flow out of any seeps present and affect the vegetation in the vicinity of the seep and, if sufficient flow is present, impact the Colorado River. Potential leakage from the drilling pit could also have the potential to impact shallow groundwater as well. However, with current drilling practices, which limits the amount of fluids placed in the pit, the potential to impact shallow groundwater is lower. When the pad is constructed, very close attention should be paid to soil conditions at the bottom of the drilling pit. If any indications of shallow groundwater are noted the pit should be lined.

Deeper domestic water well data from the State Engineers Office indicates groundwater is present at a depth of 110 feet 764 feet south west of the location. This water source is upgradient from the proposed facility and potential impacts from a release affecting this well would not exist.

Adequate Best Management Practices (BMPs) should be installed on all edges of the facility in order to keep any potential releases contained on the facility itself. In addition, very close attention should be paid to making sure only cuttings are placed into the drilling pit (cuttings trench).

With the higher potential for mainly surface water impacts, the proposed location should be designated as being in a sensitive area.

