

Sensitive Area Determination Checklist

Williams Production RMT Company – Valley		
Person(s) conducting inspection	Ashlee Lane	03/30/10
Site Information	Proposed	
Location:	RWF 33-23	Time: 1130
Type of Facility:	Well Pad	
Environmental Conditions	Partly cloudy, strong winds, soil conditions are dry.	
Temperature (°F)	66°	

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: Beaver Creek, Irrigation Ditches, Colorado River and associated wetlands.

If yes, describe location relative to facility: Beaver Creek is 690 feet south of the proposed facility. The irrigation ditches run through the field in close proximity too and adjacent to the proposed facility on the east, north, and western edges of disturbance. The Colorado River is approximately 1.060 feet north of the proposed location. The wetlands are approximately 1,020 feet to the northeast of the proposed facility. This wetland area is not within the 100 year floodplain.

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 northern and eastern sides it would first impact the irrigation ditches and potentially the slope to the northeast. A potential release if it were to migrate off the

western edge of the proposed facility would impact one irrigation ditch and the irrigated field itself.

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?
X Yes (Shallow) X No (Deeper Domestic Sources)
If yes, explain: If shallow groundwater is present due to irrigation of the adjacent field, there is the potential for shallow groundwater impacts. There are no domestic sources within 1/8 mile of the proposed facility. The closest permitted water well which lies in a similar topographic setting with accurate data is located approximately 1,500 feet east of the proposed facility.
 - (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 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, and western edges of the facility could have the greatest potential to impact surface water and potentially the Colorado River. Beaver Creek is south of the proposed facility and is topographically higher. Therefore Beaver Creek would not be impacted by any potential release from the proposed facility. Potential impacts to the river bottom area northeast of the proposed facility are low. Although the slope is steep any potential release would have to migrate over 1,000 feet to impact the noted wetland area. 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.

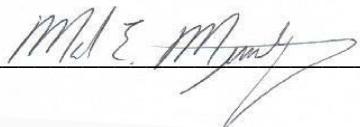
It was also stated in the groundwater section that the potential to reach shallow groundwater, if present, was high. This is due to the fact the proposed facility is situated within a portion of the field that is irrigated or is irrigated nearby. There are known seeps which are present along the north 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 have the potential to impact shallow groundwater as well. However based on its proposed location and current drilling practices, which limits the amount of fluids placed in the pit, the potential to impact shallow groundwater is low. When the pad is constructed 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 depths ranging from 95 to 100 feet. Both these water sources are upgradient from the proposed facility and potential impacts from a release affecting these wells would not exist.



Adequate BMPs need to be installed on the northern, eastern, and western 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.

Inspector Signature(s):  Date: 4/5/2010

 Date: 4/02/2010