

## Sensitive Area Determination Checklist

Williams Production RMT Company		
<b>Person(s) Conducting Field Inspection</b>	Jennifer Belcastro	6/28/11
	<i>Environmental Scientist</i>	
<b>Site Information</b>		
Location:	RWF 14-29	Time: 1400
Type of Facility:	Proposed Well Pad	
<b>Environmental Conditions</b>	Sunny; soil conditions are dry.	
Temperature (°F)	89°	

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: The Colorado River, Cache Creek, a USGS indentified perennial stream, and one unnamed USGS identified intermittent drainage.

If yes, describe location relative to facility: The Colorado River is located 644 feet to the north, Cache Creek is located 990 feet to the southwest, and the unnamed intermittent drainage is located 1,178 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.

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, The Colorado River is located approximately 644 feet to the north of the proposed facility. The facility, as it currently is proposed, limits the direction of a potential release to the northeastern side of the facility. Flow off the facility would tend to flow to the northeast following the natural contours of the area. This in turn would increase the distance a potential release would have to migrate in order to impact the Colorado River. A potential release, if it were to migrate off the facility, would flow into a relatively flat lying, heavily vegetated area to the northeast where it would most likely infiltrate into the ground due to the high infiltration rates of the surrounding soils. Cache Creek would not be impacted by a release from the facility due to the fact the cut slope portion of the pad will be constructed into the hillside with the top of the hillside being higher than that of the proposed facility. It is not anticipated that the unnamed USGS identified drainage to the southeast of the proposed facility would be impacted by a potential release since the flow from a release would be parallel to the drainage feature. It is highly recommended, due to the fairly close proximity of the Colorado River, that Best management Practices (BMPs) be installed on the fill slope portions of the facility. This would include portions of the northwestern and southeastern sides and the entire northeastern side of the proposed facility. These should be in the form of an earthen perimeter berm along the edge of the facility and a diversion ditch along the toe of the fill slope portions of the proposed facility. These should be monitored and maintained to ensure site containment in the event of a release.

The State engineer's office and the USGS records were reviewed and it was revealed that there is one permitted water well located 491 feet to the southwest of the proposed facility. The depth to groundwater, as noted in the well records, indicate that the depth to water in the well is approximately 240 feet. There were no indications of any seeps along the hillside to the north of the proposed facility most likely due to the fact there is no irrigation occurring upgradient of the facility. In addition, the vegetative cover in the immediate vicinity of the proposed facility does not suggest the presence of shallow groundwater.

Based on the information collected during the site investigation and desktop review, the potential to impact both surface water and groundwater is deemed low. Therefore the facility should be designated as being in a non-sensitive area.

Inspector Signature(s): Mark E. Mumby Date: 4/2/2012

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

Jennifer Belcastro Date: 6/28/2011

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