

Policy for Determining Primary Product of Oil or Gas

The primary (main) product of a well event (UWI) determines the applicable regulatory and royalty considerations, such as well spacing and target area, production allowables, metering requirements, etc. In some cases a classification of oil vs gas well may not be obvious, especially in newly developed areas and pools resulting in unexpected, indeterminate production. Wet gas, retrograde condensates and volatile oil can also muddle the determination of the product. Well type is not defined by Act or Regulation. The Regulator uses the following criteria to determine the product type:

- gas/oil ratio (GOR), $> 1781 \text{ m}^3/\text{m}^3 = \text{gas}$ ($>10,000 \text{ scf/bbl} = \text{gas}$)
- liquid API gravity, $> 50 = \text{gas}$
- hydrocarbon liquid rate, $> \sim 10 \text{ m}^3/\text{d} = \text{oil}$
- C6+ relative molecular mass $> 150 = \text{oil}$ (C6+ is available from a Hydrocarbon liquid analysis.)
- stage of pool development – indication that the well has penetrated a pool gas/oil contact, etc.

If the primary product is not obvious these criteria are weighted, specific to the situation, to determine the product type. Final determination will be made by the Reservoir Engineering Department. A full PVT study may be requested.

At this time, further breakdown of the criteria into the categories of condensate, wet gas or volatile oil has not been necessary. However, Retrograde Condensate is defined in the Drilling and Production Regulation as: any hydrocarbon fluid which exhibits an increased liquid volume fraction at pressures below the dew point, yet will also begin to significantly re-vapourize on some further reduction of pressure.

Note: The producing GOR may alter over the life of a well. The Regulator will rarely switch the primary product of the well once production reporting has been established for a significant period of time.

Water or Gas Well?: A well drilled and produced with the primary intention of being a water source well may produce sufficient associated gas to require conservation. In such case the primary product is established as gas, with application of the regulatory and royalty considerations of a gas well.