

## Produce Water, Oil Field Production

The oil industry has been developing production technologies from oil and gas well drilling and Coal Bed Methane extraction processes. These processes require water as a means of well drilling, oil extraction and well production. A newer technology is to extract oil and natural gas from tar sands which requires up to 16 barrels (42 gallons) of water per barrel of oil produced. This “produce water” has residual oil, suspended solids, organics (some hazardous), heavy metals, and high levels of TDS. This has generated billions of gallons of produce water that has been difficult and expensive to treat for discharge or reuse.

There is simple and cost effective method for treating this water using the Floccin products for removal of heavy metals, oil and other hydrocarbons (organics) as a pretreatment step and then followed by filtration to 5 microns, ultrafiltration (UF) and reverse osmosis (R/O). The concentrated brine (about 20% of the total flow) is then pumped downhole in an EPA approved deep well injection well or hauled offsite for disposal. The treated water is then reused for additional oil production or used for irrigation.



The jars shown above are produce water that has been treated with Floccin 1105 (left) and untreated (right). The suspended solids decreased from 120 ppm to less than 5 ppm. Floccin dosage in further testing was measured to be 0.1 gram/100 grams or 8.34 lbs/1,000 gallons. Traditional pretreatment chemistries are not as effective in contaminants removal.