



Unlocking “Tight” Oil Plays

Tight oil—held in low-permeability, hard-to-access formations such as the Bakken, Viking, Lower Shaunavon and Cardium—is the new frontier of petroleum production in North America.

Thanks to horizontal drilling and multi-stage fracturing techniques, this resource is booming, but primary production declines rapidly.

SRC is applying its extensive expertise in waterflooding and enhanced oil recovery to the challenges posed by tight oil formations to recover the vast volumes of residual oil after primary production. Enhanced waterflooding is cost-effective and relatively simple to implement. New generations of surfactants offer the potential to overcome the reservoir’s extremely high capillary pressure that traps oil by either reducing oil/water interfacial tension or altering matrix wettability.

SRC’s work in this area focuses on reservoir characterization, wettability alteration, miscible and immiscible gas injection, screening and evaluating new surfactants alone and in tailored mixtures of surfactants or surfactants plus gas. We augment experimental studies—conducted in a setup especially designed for tight oil—with numerical simulation to understand and advance this promising approach to tight oil recovery.

SRC Tight Oil Services

- Tight core analysis (e.g., capillary pressure curves, wettability, injectivity)
- Corefloods using field samples

- Phase behaviour (PVT) studies, MMP measurements
- Computed tomography
- Surfactant screening/evaluation (absorption, interfacial tension, contact angle)
- X-ray diffraction, SEM
- Numerical simulation for performance prediction
- Geochemical modelling



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