

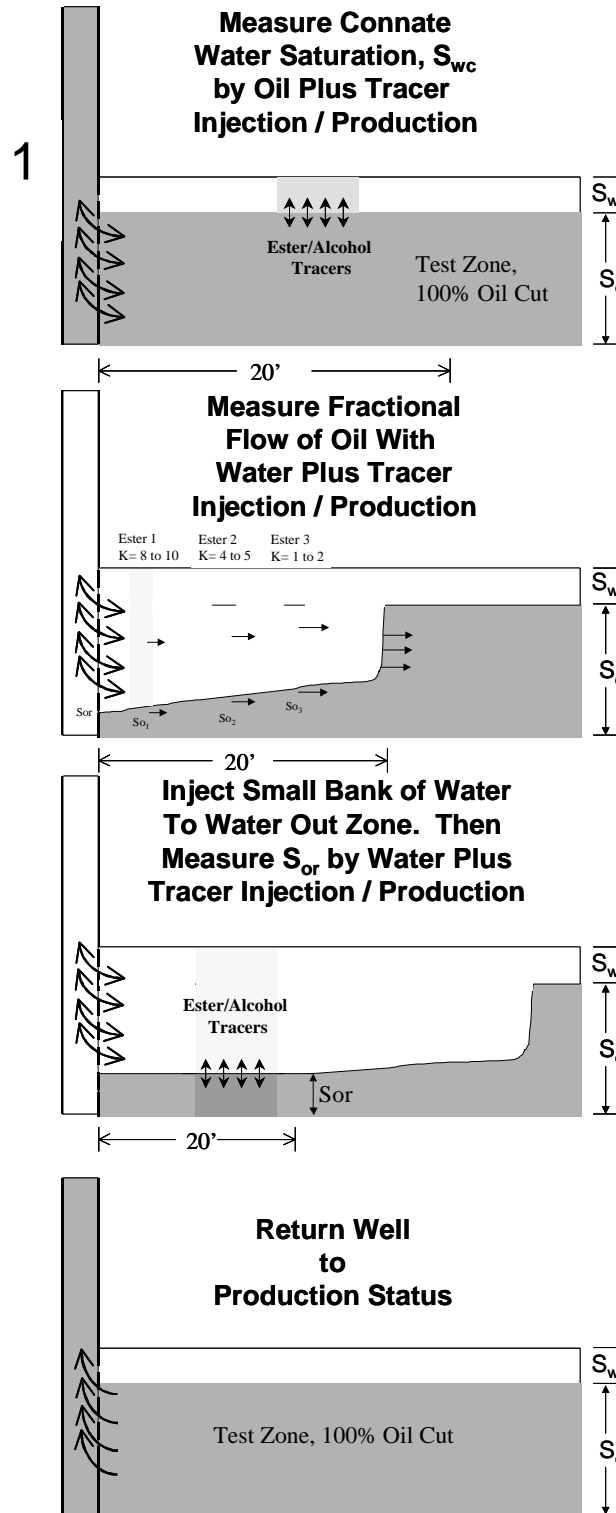
Operational Steps For Single-Well In-Situ Reservoir Characterization

1. Measure connate water saturation by injection and production of oil plus tracers.

2. Inject a small volume of water plus tracers to displace oil and measure fractional flow.

3. Water out zone and measure residual oil saturation by tracer method.

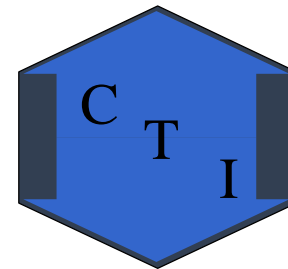
4. Return well to oil production status.



IN-SITU RESERVOIR CHARACTERIZATION

| | |
|----------|----------|
| S_{WC} | S_{OR} |
| f_o | k_{ro} |

By the
Single-Well
Chemical
Tracer
Test Method



CHEMICAL TRACERS INC.
1814 STEELE
Laramie, WY 82070
(307) 742-0418

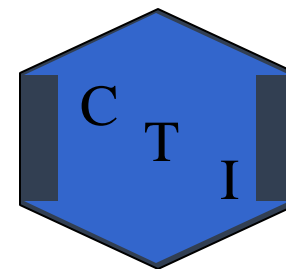
www.chemtracers.com

If You Had Accurate In-Situ Measurements of Connate Water Saturation, Residual Oil Saturation, Two Oil Fractional Flow Points, and Oil-Water Relative Permeability, Could You Do a Better Job of Characterizing Your Reservoir?

In-Situ Single-Well Reservoir Characterization is Proven and Available Now.

- **Quick answers.** Each test sequence is completed in about two weeks.
- **Proven Method.** Single Well Tracer methods have been used for over 30 years to help reservoir engineers do a better job.
- **Large sample.** The single-well test investigates several hundred barrels of reservoir pore space.
- **Non-destructive.** Test-Well oil production rate not affected.

- **Measurements made at native state conditions.** The tracers operate in native-state wettability pore space contacting live crude oil, live water at reservoir temperature. The problems that make laboratory measurement of these parameters difficult are easily overcome by carrying out the measurement in-situ.
- **Low cost.** Typical field study cost is comparable to laboratory study costs.



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