



# Global Leaders in Enhanced Oil Recovery

Get more out of your decreasing reserves.

We can manage your enhanced oil recovery project from end-to-end.

PREFEASIBILITY → LABORATORY STUDY → PILOT DESIGN → OPERATIONAL RISK ASSESSMENT → CHEMICALS SUPPLY

## The EOR Alliance

The EOR Alliance combines the expertise of EOR leaders around the world, encompassing all EOR technologies from chemical to thermal.

Our mission: to bring the latest EOR innovations to reservoirs around the world to increase recovery factor in the most efficient manner.

### Why We're Leaders:

- The top engineers with expertise in EOR
- Extensive, state-of-the-art lab, simulation and industrial capabilities
- Faster and more thorough experimentation
- More robust solutions and better risk control.

*Our expertise and state-of-the-art technologies solve even your most difficult reservoir challenges.*

### What's your reservoir challenge?



#### Depleted Fields

Once a field is depleted and waterflooding or gas injection have reached their limits, other solutions need to be considered to increase recovery further.



#### Heavy Oil Reservoirs

Heavy oil reservoirs are notoriously difficult to produce and primary recovery is often low even with CHOPS (Cold Heavy Oil Production with Sand).



#### Oil Wet Reservoirs

Oil wet reservoirs can pose specific challenges for recovery in particular when fractured. Carbonates in particular are often both oil wet and fractured.



#### Excess of CO<sub>2</sub>

CO<sub>2</sub> injection is a very successful tertiary recovery method which can however suffer from gravity override and early breakthrough due to thief zones. This leads to the need to recycle CO<sub>2</sub> which has a negative impact on the economics of the process.

### How we solve it:

- ✓ Polymer Flooding
- ✓ Surfactant Polymer Flooding
- ✓ Alkali Surfactant Polymer Flooding
- ✓ Gas Foams
- ✓ Steam Foams
- ✓ Polymer Flooding
- ✓ Surfactant Polymer for Heavy Oil
- ✓ Steam Foams
- ✓ Wettability Alteration
- ✓ Gas Foams

## The Alliance Partners Are World Experts

Each of The Alliance partners are leaders in their respective domains.



World-class energy and geosciences public sector research



Global leader in specialty chemicals and formulation



Leading independent E&P consulting and software editor



## Seamlessly Working Together

With a staff of over 60 senior reservoir engineers, chemical engineers, petrophysicists, geoscientists, simulation specialists, and engineering specialists, The EOR Alliance is one of the largest groups of experts dedicated to EOR.

## Success Stories

### ■ Indonesia

A surfactant polymer field test in a carbonate reservoir has been implemented in Indonesia. The pilot has exceeded its objectives and a large scale commercial deployment is currently under study.

### ■ Pelican Lake (Canada)

IFPEN (a member of the EOR Alliance) proposed the first polymer flood in a heavy oil reservoir in 1995 in the Pelican Lake field. This thin (5 m average) giant reservoir (6.4 billion barrels OOIP) contains high viscosity oil (over 1,000 cp) and has mostly been produced through primary depletion using horizontal wells. The first pilot failed because of operational issues but a second pilot in 2005 proved highly successful (Delamaide et al. 2013), with the production in the central producer going from less than 10 bopd to over 360 bopd. After almost 9 years of continuous injection the central well in the pilot is still producing over 150 bopd with a water-cut of less than 70%. Following that success the polymer flood has been extended to most of the field, making Pelican Lake the second largest polymer flood in the world after Daqing.

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