



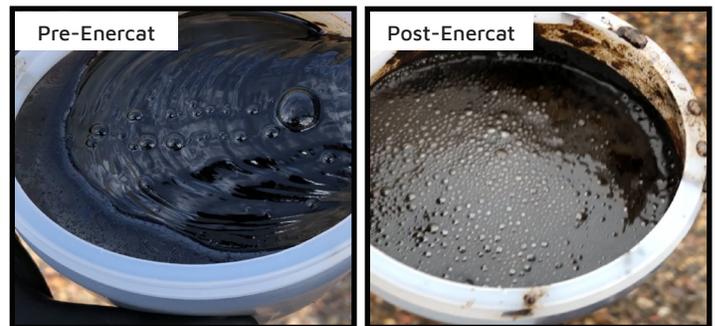
# HEAVY OIL SOLUTIONS

## VISCOSITY REDUCTION

Enercat's revolutionary technology is proven to lower the viscosity of heavy oil while increasing its API gravity, without the use of emulsion breaking chemicals, steam injection or diluents, resulting in **higher production, less downtime and lower operating costs.**

## Downhole Technology

Enercat Downhole Tool Technology emits a frequency that conditions the oil and water at the molecular level. This results in a reduction in viscosity, reductions in the interfacial tension of the fluids and lower pour point temperature at which deposition occurs in paraffinic/asphaltic oils.



Hardner Heavy Oilfield, Kansas

## Downhole Benefits

Most heavy oils are emulsified down hole in the well, resulting in pump stroke inefficiencies which cause premature pump failures, rod compression on the downstroke and severe overload on the upstroke. These result in high recurring maintenance costs and costly downtime. Reduced viscosity lowers well bore friction, pressure drops and increases pump electricity efficiency. Our clients have witnessed pump efficiency increases from 17% pre-tool to 76% post-tool.

Enercat breaks emulsion within hours of being installed, and many successful installations are supported by empirical laboratory evidence that demonstrate reductions in interfacial tension between the heavy oil and entrained water.



Emulsion Breaking — Enercat Separates the Oil and Water

# Flowline to Tank Battery – Benefits

Heavy oil viscosity causes high line pressures in the flowline to the tank battery, resulting in continuous costly maintenance. This is often compounded by paraffin and/or asphaltene deposition which Enercat also eliminates. Traditional solutions to flowline problems include chemicals, specialized equipment, hot oiling, pigs, diesel etc.

Enercat reduces flow line pressure, in some cases from 200 PSI to 30 PSI, which not only eliminates all the maintenance and downtime costs, but also reduces the carbon emitting energy requirements to deal with the problems caused by heavy oil.

Enercat can also be installed in the tank battery gun barrel to treat oil sourced by non-Enercat treated wells.



# Production & Transport – Benefits

When oil viscosity is lowered by Enercat, production rates always increase, usually by 20-40%, but often these increases are over 100%. This benefit alone offsets the cost of Enercat within weeks.

Prices paid by crude oil purchases are discounted in many areas for low gravity oil, so Enercat can often result in higher selling prices for the oil once gravity is increased.

In areas where heavy oil is constrained to transport by truck due to its high viscosity, Enercat can lower viscosity potentially enabling pipeline transportation.



**ENERCAT**

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