

ECI's proprietary, off-the-shelf **Recover** product is a refinable blend of liquid chemicals. It was specifically designed to liquefy the paraffin and asphaltene residue that builds up over time on tank bottoms (from soupy to hardpan consistency).

### KEY BENEFITS

- Dissolves and recovers previously unrecoverable product on the bottom and surfaces of storage tanks.
- Does not contaminate, denigrate, or otherwise alter the solubilized crude oil – does **not** require removal before refining.
- Restores tanks to their original storage capacity.

### TYPICAL SCENARIO

- Crude oil transport and storage tanks containing volumes of up to 1 million BBL of crude oil
- Between cleanings, solids build up on tank bottoms over time (bottom sludge):
  - Can vary from soupy to hardpan consistency, usually distributed unevenly on the bottom.
  - Typically 1 meter in depth, representing volumes of 2,000 to 20,000 BBL of previously unrecoverable crude oil (product).
  - Reduces tank capacity over time.
- Contents of storage tank are emptied until the volume of crude oil equals 2 times the volume of the sludge (as measured at the bottom of the tank) to facilitate mixing.
- Recover is added into the tank – the specific amount depends on the amount and consistency of the bottom sludge.
- Liquid in the tank is agitated 3 times daily for at least 30 minutes – from 2 to 3 weeks depending on the amount of **Recover** used and the amount and consistency of the bottom sludge.
- After confirming that the bottom sludge has completely dissolved, similar product can be added into the storage tank to “top if off”, or the recovered product can be removed and refined.
- Storage tank can now be returned to service, or further cleaned for code inspections.

### CONSIDERATIONS

- **Recover** is an “off-the-shelf”, liquid product.
- **Recover** is blended by Univar Solutions, so it is available locally in most markets.
- The specific amount of **Recover** necessary depends on the depth and consistency of the bottom sludge in a storage tank.
- **Recover** does not need to be removed before re-filling the tank – it can be mixed with new product without impact.