
A solution for cleaner future
cos64
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What is COS64 Solution

The Clean Oil Solutions (COS) additive COS64 is a non-toxic organic liquid additive which improves the flow performance of crude oil and liquefies oil sludge build-up in pipelines, storage tank and ships permanently. The product also significantly increases oil recovery in oil reserves with paraffin, sludge wax and Asphaltene problems.

Application of COS64 solution

- The COS64 solution extend in mobilizing

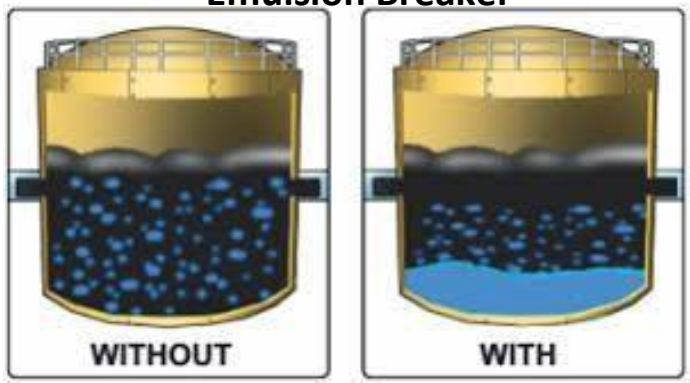
- Thick oil (sludge) and paraffin wax liquefaction
- Asphaltene liquefaction, pipeline flow assurance
- Pipeline cleaning, in-pipe oil refining
- API lifting, viscosity reduction,
- Enhanced oil recovery (EOR)
- Secondary oil recovery from storage and ship tanks bottom sludge and corrosion control

WHAT ARE THE BENEFITS OF COS64 SOLUTION

- Major cost saving for businesses in specific and developing market in the oil industry
- Low down time for the producer
- Allows for no man entry cleaning
- Can be used for soil and sand reclamation
- The product is organic and non-flammable
- Replaces current highly toxic chemical cleaners (Benzenes, Tolulenes and Xylenes)
- Liquefies oil sludge permanently
- Used for corrosion control
- Assists in the gasification in natural format and reproduces LNG, and more
- Emulsion breaker, separates water from oil

Corrosion Control

Emulsion Breaker



No-Man Entry

Major Cost Saving

Oil spills, sand decontamination and sludge pits clean up

This process involves using COS64 organic solution into contaminated sand and soil

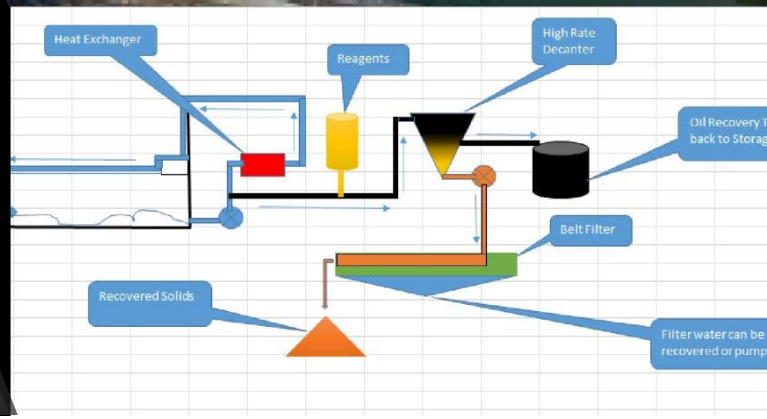
Ideal for sand contamination in petrol station, building sites or on large – scale outdoor environments

WE have the capacity to decontaminate sand large then 1000m3 per day

Light duty machinery required

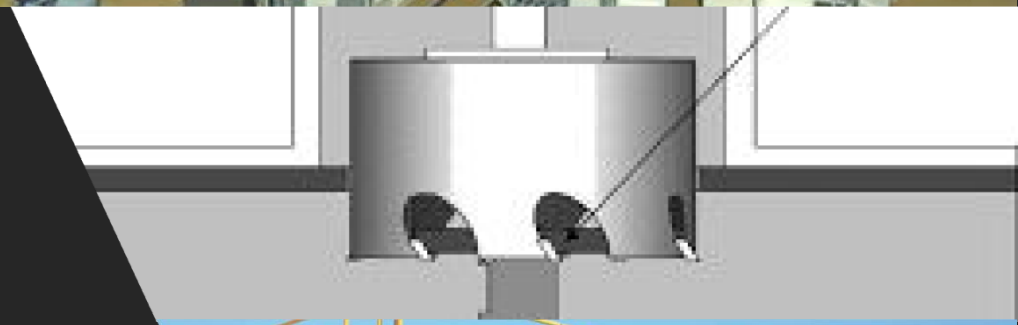
Environmentally friendly product and process

Our process leaves sand with only 0.05% of hydrocarbon

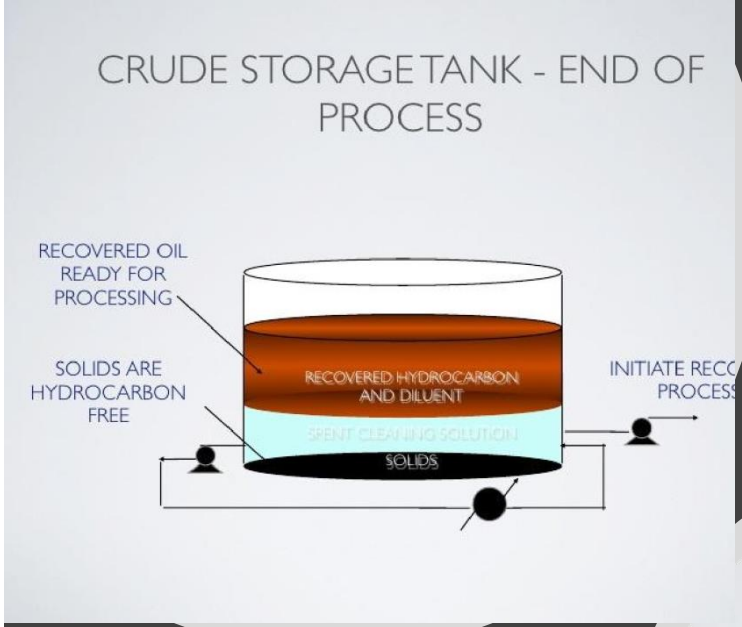


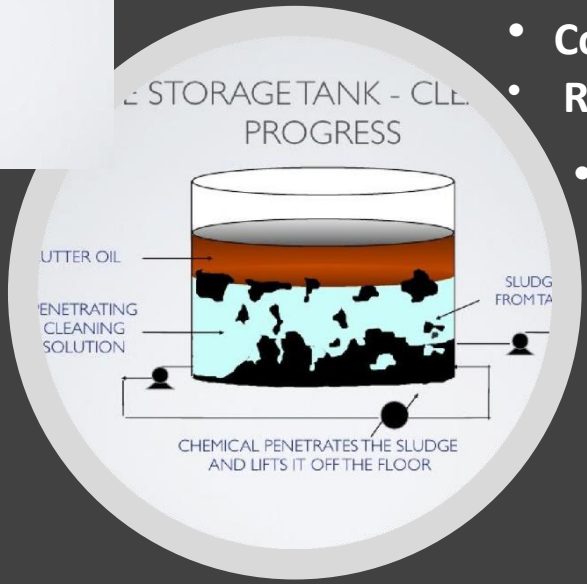
TRADITIONAL TANK CLEANING

- Taking storage tank off service for up to 2 – 3 months
- Revenue loss by not reclaiming crude oil from sludge and tank down time
- High unnecessary equipment and manpower cost
- Hot tapping storage tank, high risk toxic cleaning products, high risk procedures and in some cases oil spills
- Risky tank man entry to clean tank bottom sludge
- Sludge transportation to other facilities

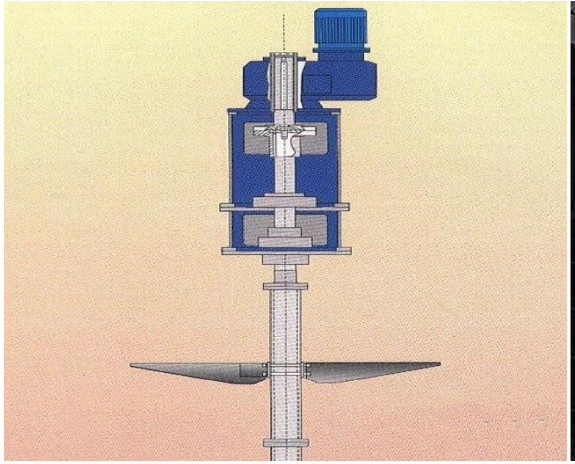


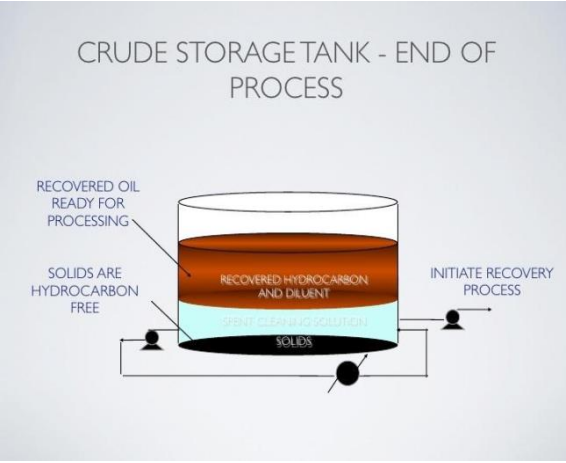
IN-LINE TANK CLEANING





- Our method does not require taking the tank off-line
- The in-line method offers clients a greater than 90% sludge clearance and return to full service within 2-3 weeks
- Cost effective in equipment and manpower
- Revenue return from sludge to oil liquefaction
- Environmentally friendly products & procedures
- No contamination to the crude oil
- No unnecessary modification of the storage tank
- Added benefits include low cap-ex, a low onsite footprint and much improved Health, Safety and Environmental standards
- Clean Oil Solutions (COS) is continuing to develop unique methods and techniques in utilizing the product





COS STORAGE TANK CLEANING METHOD

- Top or side tank entry depending on access to the sludge with full tank
  (No need to drain the storage tank for cleaning)
- Introducing COS64 solution when agitating the sludge
- Agitating the sludge for 4-5 days depending on sludge volume
- Separation time 3-4 days depending on tank volume
- After separation just drain the bottom of the tank and continue with daily production
  Detail work procedures and scope of work will be provided to the customer

PIPELINE INJECTION CLEANING VERSUS PIGGING

- Pigging the pipeline sludge is a very risky and costly business
- Up to 20 and more runs need to be preformed before smart pig is use

Not all T junctions are cleaned, pigs often get stuck in the pipeline causing more down time and cost.

USING THE COS64 SOLUTION

- Envier The most effective method with less risk during the production
- Injecting COS64 solution upstream all the wax, paraffin and sludge are liquefied in pipeline transit permanently
- No sludge, wax or paraffin is collected in pipeline or storage tank
- No heavy equipment and manpower need be used

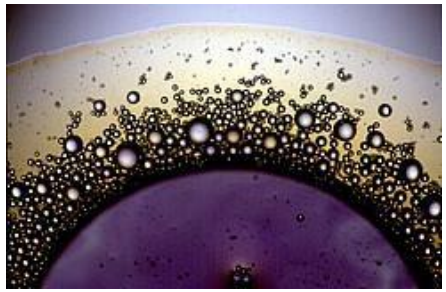
COS64 SOLUTION UPSTREAM INJECTION & SYSTEM

- Environmentally friendly approach for better results
- Upstream injection for thick oil, paraffin, asphaltene wax and sludge for permanent liquefaction
- No settlement in pipeline and storage tanks

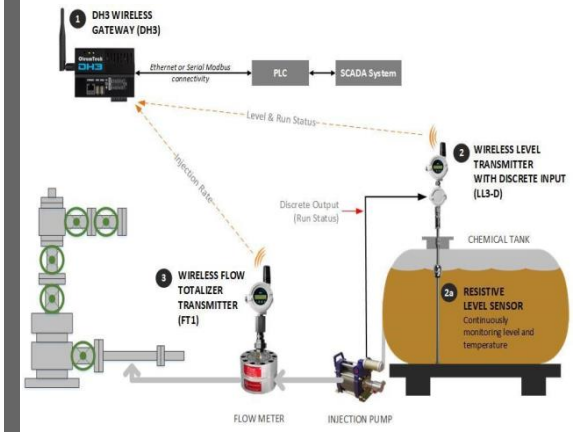
How does COS64 solution preform

- Emulsion breaker, separates water from oil in early stages when injected upstream
- Corrosion control, protects pipeline and storage tanks from corrosion in early stages if injected upstream
- Viscosity reduction, helps in heavy oil transit
- Reducing sludge into valuable crude oil during the transit
- Doesn't harm crude oil or its valuable properties

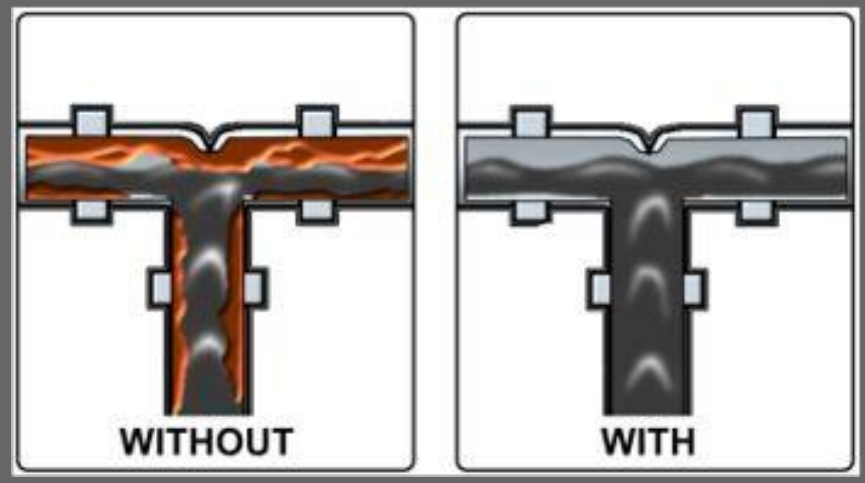
Emulsion Breaker



Solar Wireless Injection and Tank Level Monitoring system

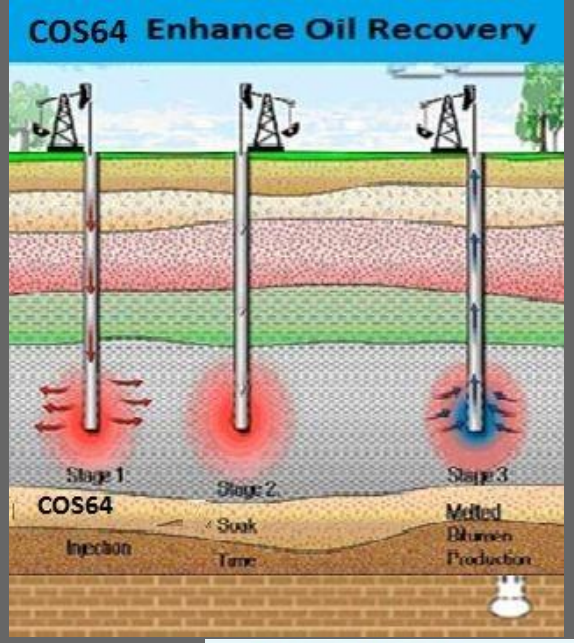


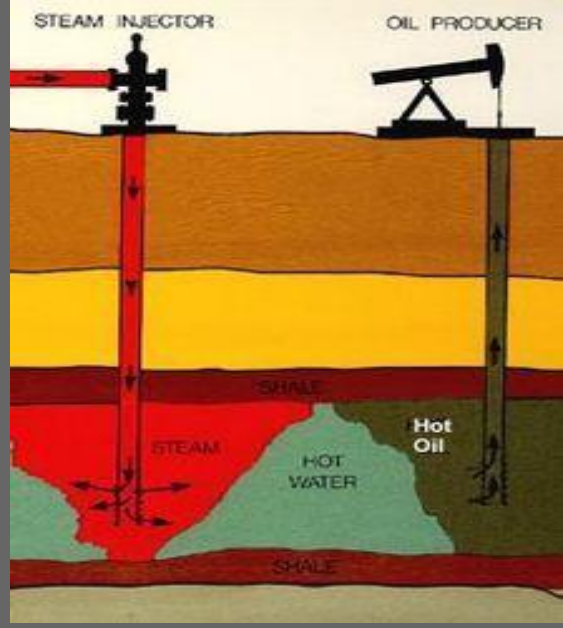
Corrosion Control (Inhibitor)

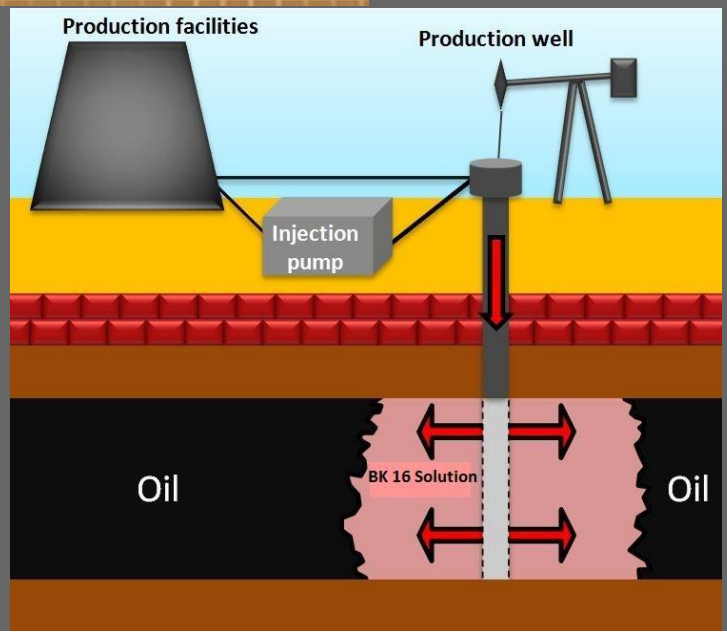


ENHANCES OIL RECOVERY

- The oil recovery programs utilizing the product offer a unique cleaning solution for liquefying asphaltene, sludge and waxes down hole or underground
- Important value-add to the product's EOR programs is reduced water cuts
- Reduction in water produced may be by as much as 50%
- Gasification. When introduced down well and upstream the product will assist in the gasification in natural format and reproduce LPG, and more
- No steam injection needed







COS64 PRIOR PEREFORMANCE TESTING &RESULTS

COS64 was used to clean holding tanks and pipes and following proper procedures and dosing the results were to specifications and thus to the Company expectations and the satisfaction of client

COS64 was also used in non-static commercial trials again with successful results

All results of testing and commercial applications were verified by corporate clients' independent engineers

The results and details of all applications are not for commercial or private release due to confidentiality agreements with the clients

COS is prepared to carryout field testing to verify its results in various commercial applications under strict contractual terms

Disclaimer

The above presentation slides and notes are a guide only and the results suggested are subject to all parameters of the procedures of Clean Oil Solutions (COS) being strictly followed and verified. Please be advised at this point in time we can safely suggest that use of COS64 should be considered for Oil related issues, only and not for any other application.

The COS64 product is not for human consumption. Whilst COS64 has a 'safe' product labelling as per its MSDS sheet (0,0,0,0) COS needs to be very aware of cross contamination of the dosed product and the current production line until such individual testing for each situation is done that addresses the matter of the commercial application that needs to be treated and the correct calibration of the product to be used and to understand the correct parameters of that particular application. Not all applications are the same and need to be properly considered and examined before any work is done on the application and all safeguards and safety equipment must be installed and all persons used in the application must be fully trained and qualified and under the supervision of COS engineers and staff.

- Any claims of success in the use of COS64 in an application is a mere representation and cannot be relied upon as each application is different and COS must understand each case on its own merits and how best to approach the work on the application to achieve the projected results.
- Note: to date the testing information for the product is based on historical testing and commercial applications performed on petroleum-based fuel oils only.
- COS makes no claim or representation that COS64 will achieve the projected results. However COS will carry out all investigations by its engineers and chemists to achieve with the best of its endeavours the best possible results.

All persons, companies or entities should always consult the relevant local and International standards to ensure full compliance with environmental laws and regulations are adhered to and COS takes no responsibility for any purchasing parties / end users of COS64 as to any claims or market statements.

COS64

Over the years, the company has developed an organic natural solvent called COS64. The solvent comprises of 64 natural organic compounds. It washes and separates oil From contaminated sand and, providing there is no cross contamination of any BTX's

(Benzene, Toluene and Xylene), will produce a sand that only contains 0.05% of

Hydrocarbons. With additional efforts, the sand can be purified to only contain 0.005%

Hydrocarbons. During the process of washing the sand, the separated oil is also

Reclaimed to its natural state and is extracted as crude oil making the separated oil a

Recoverable asset. Thus, our process using COS64 will deliver clean sand and reclaimed

Oil with paramount benefits to our environment.

In addition to cleaning the sand, our organic solvent cleans the sludge and oil

Contamination in sand or in water without adding any unfriendly chemicals or creating

Cross-contamination. In the process of washing and separating the hydrocarbon

Pollutants, the missing carbon elements in the hydrocarbon chains that has degraded is

Reinstated by our organic solvent. Our process of cleaning and reclaiming also does not

Require any additional bi-products, and therefore will save dumping costs.

- **Extreme Pressure Torque Reducer and Lubricant: Neogeene EP**

Neogreen EP is an ester-based lubricant derived from vegetable fats and oils. Entirely biodegradable, making its use safer for the personnel Can be used at any pH.

- **Oil Based H2S Scavenger**: **Neocat SQH**

The product was specifically designed to deliver extraordinary performance in low BSW oil production systems and in gas treating plants (1ppm of Neocat SQH to 3ppm of H2S).
Its innovative formula allows immediate reaction of the product with H2S. Unlike some other H2S scavengers in the market, the performance of Neocat SQH is not affected or reduced by the presence of CO2 in the system.

- **Water Based H2S Scavenger (non Triazine based): Neosulf EF**

This exclusive formulation has been developed with environmental concerns: it has no extreme pH (unlike other H2S scavengers), and the reaction with H2S is fast and irreversible.

The by-product of its reaction with H2S is an inert substance: atomic Sulphur, which is considered non-toxic.

- **Rig Wash Fluid**: **DEG-2150**

DEG-2150 is a mild liquid alkaline cleaner and degreaser, providing industrial strength detergency designed to provide the best and safe surface cleaning. Entirely biodegradable.
Free of any harsh alkali, it effectively mobilizes debris, dirt, and grease or oils from all hard surfaces.

- **Micro Emulsion Restoration Fluid: MRF-1101**

MRF-1101 is a restoration fluid for producing wells that exhibit formation damage. It has micro emulsion properties, with low interfacial tension between liquids, high capacity of solubilization of deposits with a tendency to change wettability.

- **Viscosity Reducer and Emulsion Breaker: VR-3060**

This product is a 100% water-soluble mixture of organic compounds and enzymes that forms a very effective viscosity reducing and antislugging solvent for both paraffin based and asphalthenes based Crude Oils.
It is nontoxic, nonhazardous, non-flammable and 100% biodegradable, thereby not requiring special handling.

pH CONTROLLER / NEUTRALIZING FOR ACIDS

aliphatic heterocyclic polyamine developed as a pH corrosion controller and inhibitor. Can be used with sea water

and fresh water.

APPLICATION

Dissolved acid gases and biological deposits can cause severe corrosion in oil well water management systems.

Corrosion by-products such as ferric sulfide, iron oxides and biological mass can cause clogs in well injection tubes.

Over time, corrosion in water systems will cause costly leaks and operational failures.

Effective in seawater and light brines, including CaCl 2 and CaBr2 brines. For ease of application, it can be diluted in

Low molecular weight alcohols or low hardness water.