



A solution for cleaner future

**COS64**

© Getty Images/U. Baumgarten

# 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

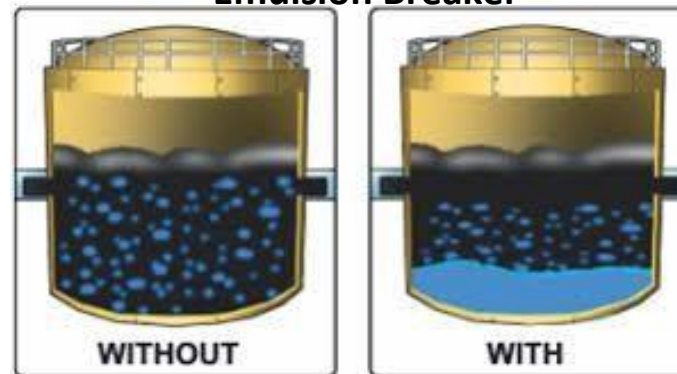
- Major cost saving for businesses in specific and developing market in the oil industry
- Low down time for the producer
- Allows for no man entry cleaning
- Can be used for soil and sand reclamation
- The product is organic and non-flammable
- Replaces current highly toxic chemical cleaners ( Benzenes, 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



## No-Man Entry

## Emulsion Breaker



## Major Cost Saving

# Oil spills, sand decontamination and sludge pits clean up

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

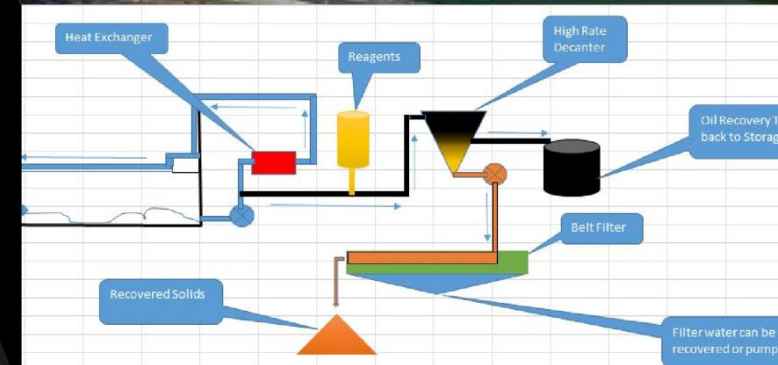
Ideal for sand contamination in petrol station, building sites or on large – scale outdoor environments

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

Light duty machinery required

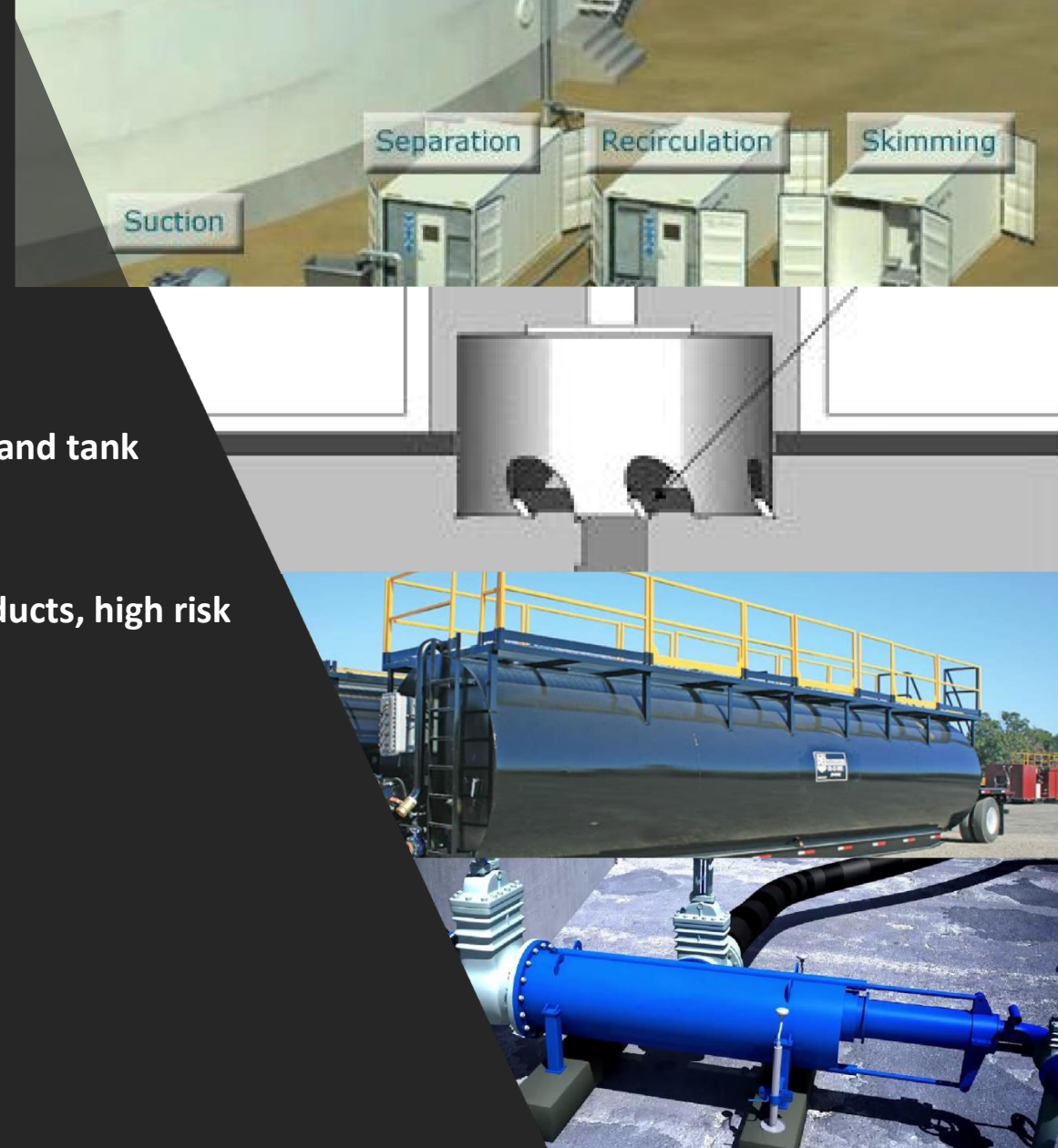
Environmentally friendly product and process

Our process leaves sand with only 0.05% of hydrocarbon



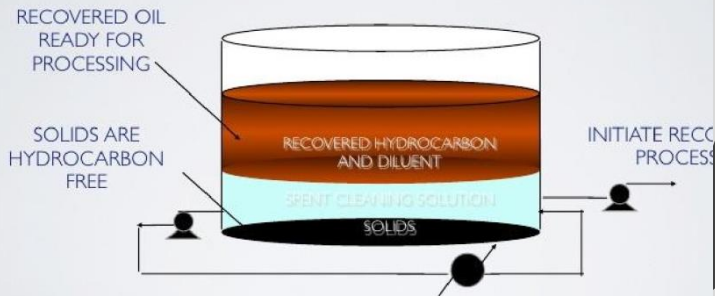
# TRADITIONAL TANK CLEANING

- 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





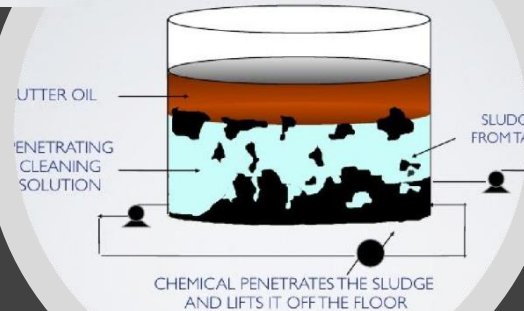
## CRUDE STORAGE TANK - END OF PROCESS



# IN-LINE TANK CLEANING

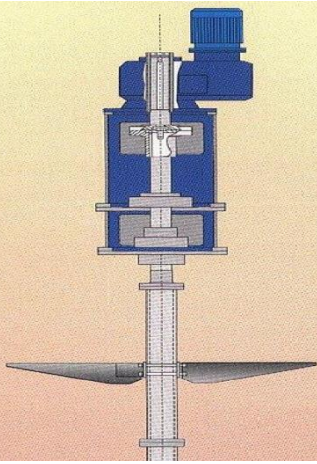
- Our method does not require taking the tank off-line
- The in-line method offers clients a greater than 90% sludge clearance and return to full service within 2-3 weeks

## CRUDE STORAGE TANK - CLEANING IN PROGRESS

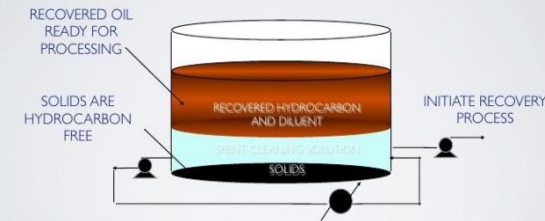


- Cost effective in equipment and manpower
- Revenue return from sludge to oil liquefaction
- Environmentally friendly products & procedures
- No contamination to the crude oil
- No unnecessary modification of the storage tank
- Added benefits include low cap-ex, a low onsite footprint and much improved Health, Safety and Environmental standards
- Clean Oil Solutions (COS) is continuing to develop unique methods and techniques in utilizing the product





CRUDE STORAGE TANK - END OF PROCESS



## 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 performed before smart pig is used
- Not all T junctions are cleaned, pigs often get stuck in the pipeline causing more down time and cost.



## USING THE COS64 SOLUTION

- Environmentally friendly: 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



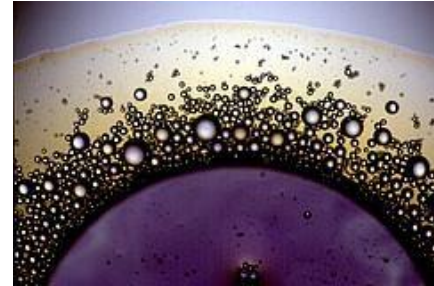
# COS64 SOLUTION UPSTREAM INJECTION & SYSTEM

- 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

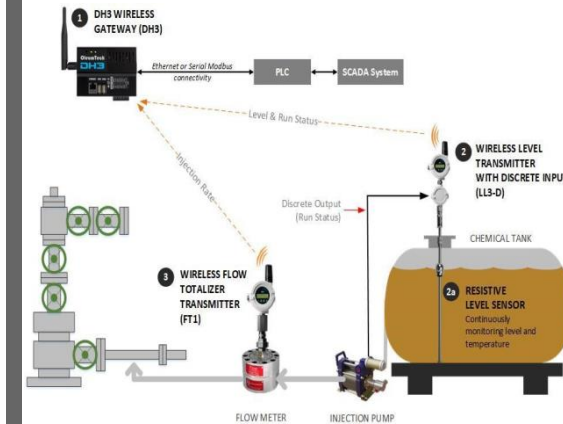
## How does COS64 solution preform

- 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

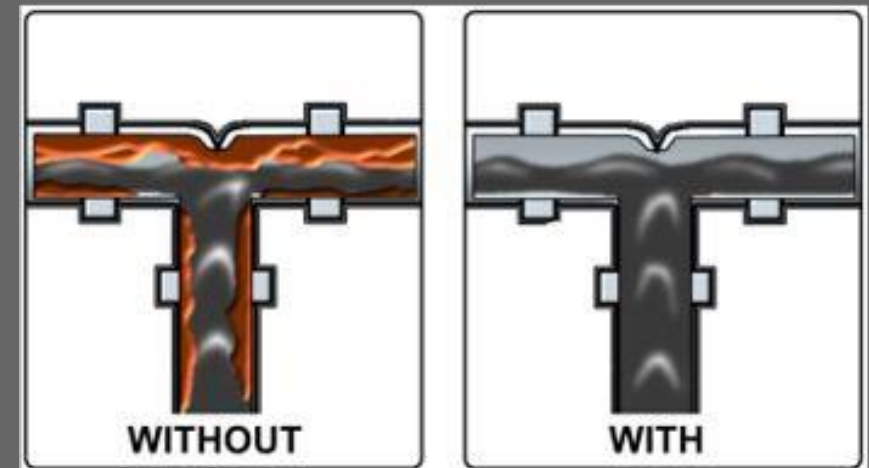
## Emulsion Breaker



## Solar Wireless Injection and Tank Level Monitoring system

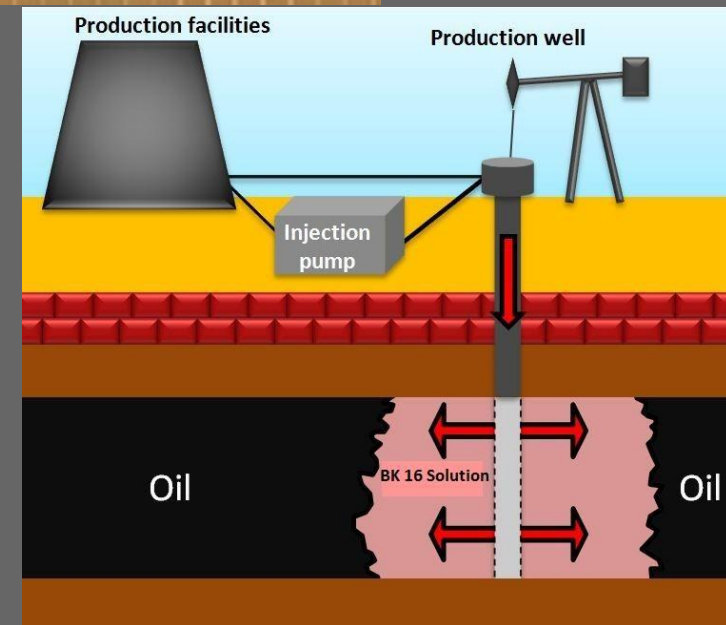
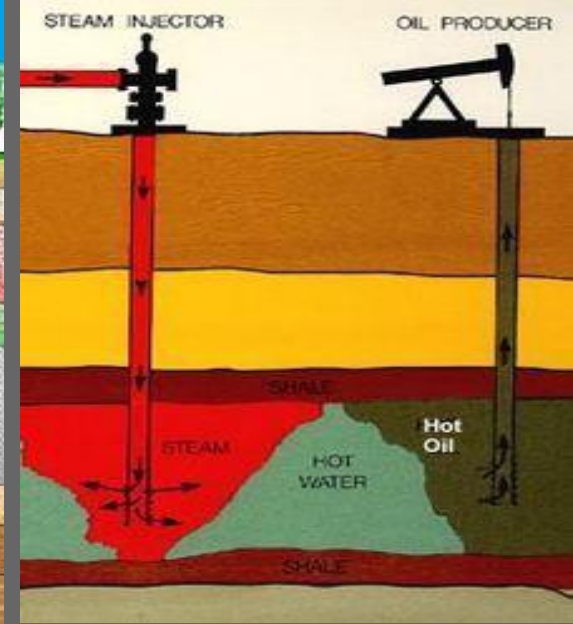
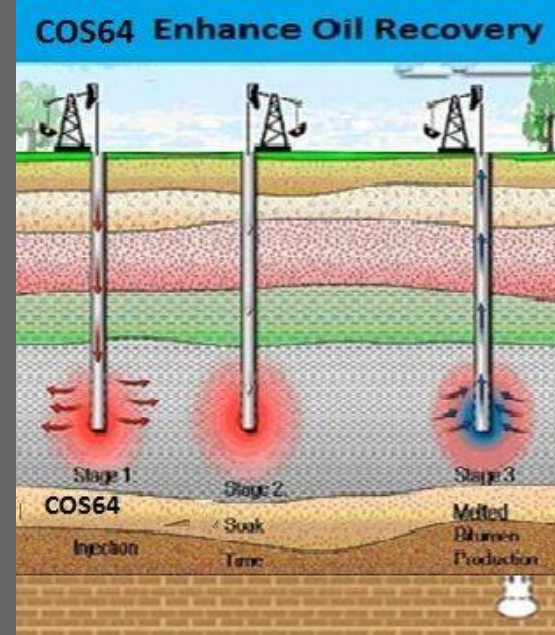


## Corrosion Control ( Inhibitor )



# 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 PERFORMANCE 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.

To Whom It May Concern,

(COS) is a company that is passionate about cleaning the environment and enhancing the quality of natural materials across the globe. The company has been experimenting, developing and testing different organic compounds since 1983 under the financial support of Chit Chat Communications Pty Ltd.

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.

COS64 is a cost-effective solution treating paraffin wax and asphaltene build-ups. The product's application and use extend to treating and recovering oil from sludge pits, storage tanks and cargo tanks without leaving or adding any further chemicals residue or cross-contamination. Our COS64 solvent lowers the viscosity level of the solidified oil and is extremely effective in treating heavy crude and high paraffin oils.

(COS) has had previous experience cleaning contaminated soil from upgraded petrol stations and small oil seeps on building sites throughout NSW Australia. After realising the real magnitude in the value of our organic solvent, we decided to direct our efforts towards solving larger oil contamination issues in the Middle East.

After thoroughly studying the markets, products and services of many large companies worldwide, we believe that no other product exists that is as efficient, effective and clean as our solvent. Therefore, on the 8<sup>th</sup> of November 2019, we registered for the purpose of expansion.

In 2021, we undertook a test case from BAPCO to break down a sludge sample from BAPCO'S oil storage tank 134 which was heavily contaminated with aromatics, water, sand and asphalt. After dosing and going through our treatment process, we successfully sent back the extracted oil completely separated from foreign contaminants. The sample was independently tested by BAPCO with a result of Spec Oil – not sludge. The oil



reclaimed from the sludge was identical in its composition to the oil that was part of the contaminated sludge sent to us from BAPCO.

BAPCO provided us with a copy of their independent analysis report number B1297 that was strictly assigned to our product. Attached EB1 is a Copy of Correspondence and Analysis Report number B1297.

On a case-by-case basis our solvent has the capacity to reclaim oil spill leaving organic land fill material contaminate-free. In addition, our reclamation process (being oil spill containment or sludge reclamation), is 100% organic and safe. It can be applied in environments where most of its competitors' products cannot be applied. This includes separation and oil recovery in locations such as:

- Oily sludge pits
- Tank bottom sludge
- Cargo holds and oil tanks cleaning in crude oil tankers
- Paraffin wax built-up in pipelines and plant equipment
- Enhanced oil recovery of wells
- Hydrocarbon ground contamination
- Soil reclamation and decontamination

Our confidence in the IP of our product ensures that we have the capacity to deliver a revolutionary solution for the Kuwait's Environmental Remediation Program. Thus, we kindly request from you to allow us to conduct a test case of your contaminated sample provided by you to be treated and to be independently tested by you for its end result. We will provide you with a video demonstrating the capacity and quality of our product in refining and separating oil from sand and water for your assessment.