Case Study

Treatment for NORM Waste from oil and gas industry for final disposal

econ industries
Schiffbauerweg 1 • 82319 Starnberg • Germany

Tel.: +49 8151 446377 - 0
Fax: +49 8151 446377 - 99
E-Mail: info@econindustries.com
Web: www.econindustries.com

Zero industrial waste … !

econ INDUSTRIES

NORM Waste Treatment

by econ industries' VacuDry® indirect vacuum thermal desorption

The VacuDry® process has been successfully used for the treatment of NORM wastes in Germany for many decades. Now econ industries' client is the first specialized company in the Middle East region for the treatment of NORM waste from oil and gas industry. The typical input material is oily sludge and soils containing Naturally Occurring Radioactive Material that is brought to surface by exploration and production of oil and gas.

econ industries has taken the responsibility of manufacturing a VacuDry® 1 500 for a client in Saudi Arabia, specially designed for the treatment of various oily NORM waste. The VacuDry® 1 500 plant is designed to treat ~ 5 t/day of oily soils and sludges contaminated with NORM. For NORM waste treatment, safety and environmental requirements are a priority. As the whole process runs under vacuum, emissions by leakages or overpressure can be safely avoided at all times.

The VacuDry® process recovers oil and water from the NORM waste, leaving the radioactivity in the solid residue. The recovered clean water and clean oil are free of any radioactivity and can be reused. As the remaining solids are free of hydrocarbons, the material can be immobilised using cement or geopolymer and is ready for safe long-term storage in dedicated landfills. Alternatively, the dry solid residue can be transferred into a suspension and pumped back into the wells.

Performance data

Plant type:	VacuDry® 1 500
Batch size:	1.5 m^2
Throughput capacity:	~ 5 t/day
Heating system:	400 ˚C thermal oil heating unit - operated by electricity
Operating pressure:	50 - 800 mbar(abs)
Design:	Evaporator, heater and power supply based on 40-ft skid

Commissioned VacuDry® 1 500 plant

VacuDry® 1 500 rendering

Design characteristics

- Mass & volume reduction of NORM waste
- Highest quality of clean water, clean oil and mercury
- Input flexibility: liquid, pasty, solid - no limitations
- Simplified feeding and discharge system - minimizes residues inside the plant
- Trough chain conveyor or mobile feeding hoppers for feeding of solids and sludges
- Highest safety level - due to vacuum process
- Lowest emissions and carbon footprint - due to no use of fossil fuels, vacuum system, and activated carbon filter