

Case Study

Mercury waste treatment centre for the oil and gas industry



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Zero industrial waste ... !

Mercury waste treatment centre

Mercury containing waste from oil and gas industry - catalysts - sludges - residues - by-products

The mercury waste treatment centre has been set-up by an oil and gas service company following the high demand of major oil and gas companies for local waste management solutions. Prior to the establishment of the econ supplied waste treatment centre, waste had to be shipped to be finally disposed of 13 000 km from the waste source. This involved complicated and expensive waste notification and shipment procedures through a dozen countries, and the waste changing hands several times.

The established mercury waste treatment facility consists of the following units:

VacuDry® 3,000 (350 °C) - Vacuum distillation unit: Sludges and wastes with high water or hydrocarbon content are treated in this unit. With the 350 °C thermal oil heating unit, product temperatures of up to 330 °C can be achieved. Water, oil and mercury are recovered as separate output streams. This unit is also suitable for NORM waste treatment.

High Temperature Treatment Unit (HTTU 300): The HTTU is mostly used for the treatment of catalysts from mercury guard beds. At material temperatures of 700 – 800 °C the contained Mercursulfide (HgS) is removed. Mercury is recovered by condensation, Sulphur is oxidized and resulting SO₂ removed by an alkaline scrubber system. Mercury is removed from the waste water within the plant prior to disposal.

Mercury purification: Recovered mercury is reused in electrical and medical industry. Before the mercury can be used it is treated in the mercury purification unit to remove metals and mineral contaminations. The produced mercury purity is > 99.9999 %.



VacuDry® 3,000 Vacuum dryer



Mercury purification



HTTU 300 – High temperature treatment unit

Key facts

VacuDry®

- Throughput capacity: 250 - 550 kg/h (1750 - 3850 tons per year)
- Input material: Separator sludges, drill cuttings, oil sludges, cleaning residues
- Produced output: Pure mercury, clean solids, clean waste water

HTTU

- Throughput capacity: 300 kg/h (2100 tons per year)
- Input material: Spent Catalysts from mercury guard beds
- Produced output: Pure mercury, clean solids, waste water pre-treated within HTTU

Mercury purification

- Throughput capacity: 20 kg/ h (up to 140 tons per year)
- Input material clients: Recovered mercury e.g. from VacuDry® and HTTU process or from clients
- Mercury purity: 99.999 %