

Remediation of a former Manufacturing Plant for the Production of Softeners for the Plastic Industry at Leuna



BAUERUmweltgruppe

Client:	Mitteldeutsche Vermögensverwaltungsgesellschaft mbH, Germany
Funding:	Landesanstalt für Altlastenfreistellung des Landes Sachsen-Anhalt
Engineering Design and Supervision:	G.U.T. mbH Merseburg
Scope of Works:	Cover Tent with Suction and Cleaning of Exhausts, Excavation and Disposal of Contaminated Soil and Construction Waste, Backfilling of the Excavation Pit, Phase Separation, Dewatering and Water Treatment
Contract Period:	July 2004 until April 2005



Project

The building site was situated within the area of the Chemical Site Leuna, with manufacturing plants and office buildings in direct neighbourhood. In order to avoid emissions the construction measure took place under a tent. The explosion prevention-secured ventilation system was appropriate for a capacity of 90,000 m³/h.



The building site, with excavation and supply camp, comprises approximately 6,000 m² was completely enclosed with two cantilever tents (90 m x 40 m and 60 m x 40 m).

Remediation Site

At the location of the former softener plant the underground was contaminated with mineral oil, phenoles, paraffins, aromatic hydrocarbons and aether substances. In order to avoid environmental and safety hazards remediation of the source was executed via soil exchange.



In order to protect the excavation pit from entering groundwater, it was enclosed with a 13 m deep sheet pile wall.

Result

A 4,000 m² sheet pile wall was executed to prevent ground water from entering the excavation pit. A dewatering was carried out with phase separation, counter current scrubber and adsorption. The excavation depths of the contaminated soil were up to 8 m under the surface. For the separation of the soil material an intermediate storage in a separate tent with an

asphalted surface was built. In the tent a sewage disposal system as well as an off gas suction system was integrated. The special foundation engineering was accompanied continuously by an explosive ordnance clearing service.

The remediation covered the following services:

- Operation of a ventilation system with an air volume of approximately 90,000 m³/h
- Excavation, transport and disposal of 53,000 to contaminated soil and 500 to contaminated construction waste
- Backfilling of the excavation pit with non-contaminated material in observance of compression values of at least 80 MN/m²
- Dewatering and water treatment
- Continuous monitoring of the pollutant emissions
- Supply and employment of technical and personal protection equipment



Due to the pollutant-enriched and highly combustible atmosphere a high performance ventilation system had to be used. The cleaning equipment was appropriate for volumes of 90,000 m³/h for the off gas and 20 m³/h for the groundwater.