

TRANSPORTABLE
SOIL
WASHING
PLANT



REMOVING

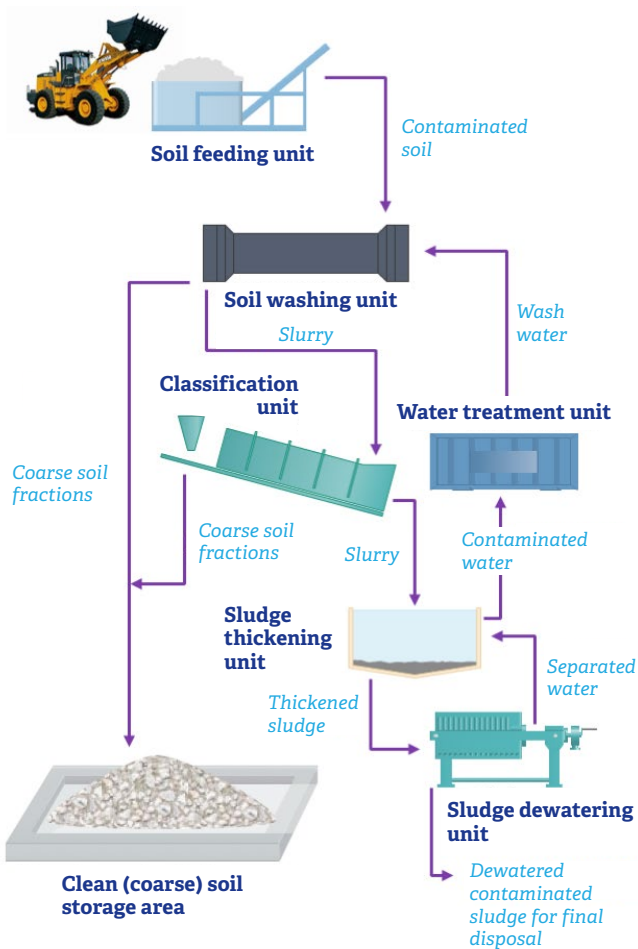
CONTAMINANTS FROM SOIL

FLUSHING

**CONTAMINANTS OUT OF WASTE
MATERIALS**

*/ Coarse-grained soil
/ Coarse-grained waste
materials*

PROCESS FLOW DIAGRAM



SOIL WASHING PROCESS

Soil washing (or soil scrubbing) is a technology using liquids (usually simply water or water with chemical additives, like detergents) to remove contaminants from soil (or other waste) by washing them out from solid matrix and/or by suspending and separating fine solid particles which usually bind majority of inorganic and organic contaminants (either physically or chemically). As a result of the separation process, the volume of contaminated material requiring further treatment or disposal is significantly reduced.

Thus the most important factor affecting the applicability of soil washing method is the percentage of fines (particles with a diameter less than 0,063 mm) in the soil. If the percentage of fines is high then there will only be a small volume reduction in the amount of treated material and the efficiency of the soil washing process will be low. Generally it is considered that if the fine content of the soil is above 25% then soil washing process will not be effective.

The soil washing technology comprises the following main stages:

- Soil scrubbing
- Separation of contaminated fines from the clean coarse soil fractions (using various types of mechanical screens and hydraulic classifiers)
- Thickening, dewatering and final disposal of contaminated sludge
- Wash water treatment and reuse



PLANT DESCRIPTION

DEKONTA's SWP-20 soil washing plant is designed as a transportable modular equipment which consists of the following main parts:

- **Soil feeding unit** comprising a soil feeder bin (5 m³), a scalping vibrating screen, a belt weight feeder and a belt conveyer
- **Soil washing unit** comprising a drum washer (diameter 2,3 m, length 5,5 m) and a trommel screen (size 5 mm)
- **Classification unit** comprising a spiral classifier (diameter 0,5 m, length 4,0 m), two hydrocyclones (diameter 150 mm), a slurry tank and a slurry pump
- **Sludge thickening unit** comprising a sedimentation tank (20" container), a bottom sludge scrapper, sludge removal system and two pumps
- **Sludge dewatering unit** comprising a filter press, equipment for chemicals preparation and dosing, filter cake discharging and collecting equipment (the unit comes in two 20" containers)
- **Water treatment unit** (20" container)
- **Control room** with electric switchboard (20" container)



TECHNICAL PARAMETERS

- Capacity: up to 20 tons of treated soil per hour
- Dimensions:
 - ◆ SWP-20 soil washing plant consists of seven 20" containers
 - ◆ minimum area necessary for the plant installation is 20 x 30 m
- Total electrical input power: 70 kW
- Operational temperature: 0 - 50 °C

Client support services

- Laboratory testing (particle size distribution analyses, chemical analyses, treatability tests)
- Pilot-scale verification trials
- Designing and permitting
- Erection and start-up operation of soil washing plants
- Staff training
- Maintenance



Services and equipment for a better environment

SERVICES

- # Site investigation & monitoring
- # Drilling
- # Soil & groundwater remediation
- # Waste treatment & disposal
- # Environmental emergency response
- # Technological cleaning
- # Demolition & decommissioning
- # Environmental laboratory
- # Air emission monitoring
- # Research & development
- # Pilot scale testing
- # Environmental consulting

EQUIPMENT

- # Thermal desorption plants
- # Stabilization / solidification plants
- # Soil washing plants
- # Oil sludge extraction & processing equipment
- # Bioremediation plants
- # Soil vapor extraction plants
- # Pelletizers
- # Homogenizers
- # Air scrubbers
- # Biofilters
- # Catalytic oxidizers
- # Groundwater and wastewater treatment plants
- # Constructed wetlands



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