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## Mobile soil wash plant



## The Soil Washing Process

Soil washing is an effective technique to clean contaminated soils, removing a wide range of both organic and inorganic contaminants.

The principle of the method utilizes the difference in grain-size and density of the materials and separates the different fractions. Pollutants in the input material are separated and transferred from the sand and gravel fractions to a filter-cake residue; thereby minimizing the volume of the contaminated soil needing to be disposed of in a suitably licensed landfill.



In essence, the process involves the following stages:

### **Preliminary Treatment**

Separation of metal parts by magnetic overhead belts. Separation of gravels by size via vibrating and wet-screening.

### **Sand Decontamination**

Separation of the fine clay and silt particles from the coarser sand fraction using hydrocyclones and upstream classification. After dewatering, the clean sand can be reused. Possible applications may be as raw materials for construction purposes.

### **Gravel Washing Unit**

The stone and gravel-fraction is cleaned in the gravel-washer module by scrubbing and counter flow washing. This fraction can be reused as a secondary construction material.

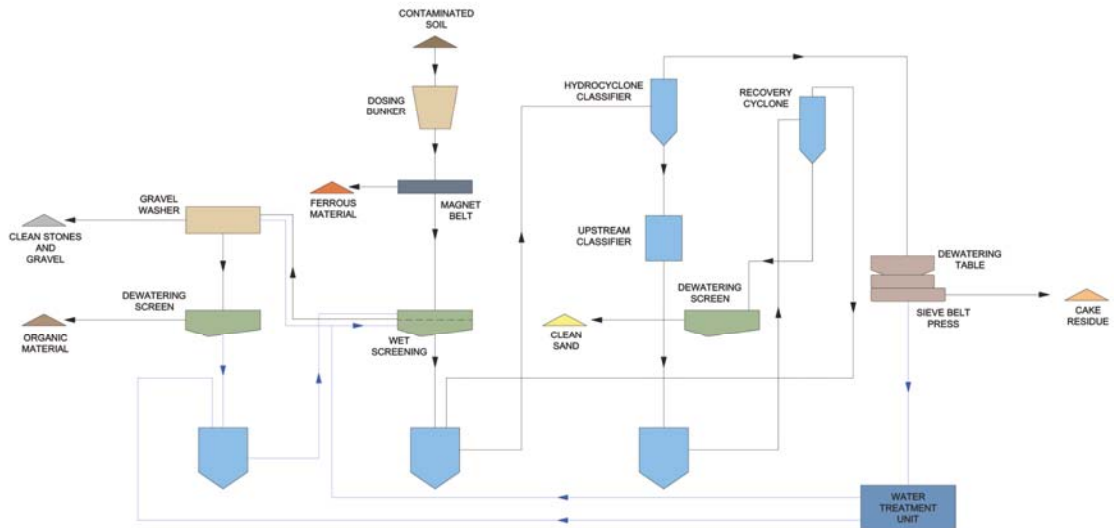
### **Sludge Treatment**

The sludge-fraction, separated out during the soil-washing process, is further dewatered in a filter press by the addition of chemical agents to generate a 'filter cake' that is easily manageable for transportation and disposal to landfill.

### **Process Water Treatment**

The mobile plant incorporates on-site water treatment and recirculation.

FLWSHEET OF THE MOBILE PHYSICOCHEMICAL SOIL WASHING PLANT



### Technical data

- Capacity: 50-100 tons/hr.
- Treatment Efficiencies:  
PAH: 80-90%  
Mineral Oil: > 90%  
Cyanides: 65-75%  
Heavy metals: 65-75%
- Working space: 650m<sup>2</sup> (excluding stock piles).
- Fully automated processing system with online measurements of inputs and outputs.
- Modular approach allows:  
Quick mobilisation / demobilization  
Process to be tailored on-site.

### Applicability

- Soil-washing can be applied to the treatment of contaminated soils, sandy sediments, sewer sediments and construction debris.
- The process is ideal for soils with a high granular content.
- Soil washing can remove a wide range of chemical contaminants, including most organic and inorganic contaminants.

## Commercial & Environmental Benefits

- Soil-washing can provide a cost effective alternative to disposal at landfill.
- Soil washing tackles a broader range of contaminants compared to bioremediation.
- Soil washing can be undertaken on relatively small sites and is an economically viable option for comparatively small volumes of materials in areas with high disposal costs.
- Soil washing can be undertaken with reasonably strict programme schedules, irrespective of weather conditions, thus reducing potential delay to site redevelopment.
- Soil washing is suitable for use in sensitive housing areas, i.e. residential areas and can often reduce the overall environmental impact associated with site remediation (for example potential problems with noise and dust pollution associated with transport).

