

SCOPE

Substrates: sediments
Pollution: very heavy
Pollutant: fluid to slightly viscous
Sea: with or without tides



EQUIPMENT NEEDED

Basic equipment:

- Front loader
- Power shovel
- Bulldozer

Extra equipment:

- Skips and trucks (waste disposal)

DESCRIPTION/PRINCIPLE

Sediment withdrawal consists of excavating polluted sediments saturated with pollutant for definitive removal. It requires earthmoving equipment which will operate either directly on the beach or from the upper beach (telescopic arm).

It is an extreme solution which should only ever be considered if all other techniques have shown their limitations and if the remaining pollution is clearly harmful in the long term. It should only apply to limited volumes.

An operation to replace the removed sediments with other sediments should be examined.

CONDITIONS OF USE

Pollution: only in the case of major pollution by a fluid to slightly viscous pollutant; very heavily contaminated substrate several centimetres deep.

Substrate: very fine to relatively coarse sediments.

Site: accessible to earthmoving equipment (suitable in terms of the load-bearing capacity of the ground).

IMPACT ON THE ENVIRONMENT

Physical: if extraction concerns a large volume = very high level of disturbance to the local and surrounding area: alteration to the balance of the beach and the hydrological conditions; instability and erosion of the shoreline

Biological: very long lasting effect (several years): risk of the beach becoming sterilised; very slow return to normal functioning with a change in initial populations of flora and fauna.

PERFORMANCE

Yield: variable according to the site and the machinery used.

Minimum workforce required: 1 to 2 people per machine (1 driver + 1 assistant).

Waste: large volumes of heavily polluted sediments and diverse debris.

OBSERVATIONS

- Sediment withdrawal should not be confused with the temporary removal of sediments to reveal buried pollutant.
- Definitive withdrawal can only be very localised and should be a last resort.
- Take advice from experts beforehand.
- Only remove the necessary thickness. Very serious direct and indirect impacts: major long-lasting effects beyond the site itself.
- The sediment removed should subsequently be replaced with a similar volume of an equivalent type of sediment (very delicate operation).
- Ensure safety on the worksite.
- The consequences in terms of waste management are significant.