

## PEBBLE CLEANUP IN A CONCRETE MIXER

### PRINCIPLE

Left: Loading a concrete mixer

Right: Oiled pebbles before loading



### CONDITIONS OF USE

- ✓ **Pollution:** all types, preferably fresh or slightly weathered oil.
- ✓ **Substrate:** pebbles, polluted to a greater or lesser extent.
- ✓ **Site:** can be at the same beach, or else offsite, and always with an effluent recovery system.

Recovery system after cleanup



### EQUIPMENT

#### Basic equipment:

- ✓ Concrete mixer
- ✓ Non-toxic washing agents (possibly)
- ✓ Hot water pressure washers (hot water + rinsing)
- ✓ Wire mesh tanks (rinsing)

#### Extra equipment:

- ✓ Shovels, pitchforks, wheelbarrows (stone collection)
- ✓ Water supply (pump)
- ✓ Skimming/effluent absorption means
- ✓ Effluent recovery system

- ✓ **PPE:** Hearing protection (ear plugs/ear muffs), gloves, safety shoes, overalls, oilskins (at least trousers)

## PEBBLE CLEANUP IN A CONCRETE MIXER



- ✓ Take the pebbles from the polluted sites (using forks, shovels, wheelbarrows)
- ✓ Pour them into the concrete mixer
- ✓ Fill the concrete mixer (up to 1/3 of its capacity) with water (sea water if this is clean enough)
- ✓ Let it work for 15 to 20 minutes
- ✓ If the result is not satisfactory, add a few handfuls of sand and start a new washing cycle
- ✓ Another way to improve the efficiency of the operations is to use a non-toxic washing agent
- ✓ Alternatively, use lukewarm water from a pressure washer
- ✓ When using a washing agent (non-toxic), pre-mix the sediment with the undiluted solvent (petroleum fraction) for 3 to 5 minutes
- ✓ At the end of the cycle, fill the concrete mixer with water in order to skim floating oil off using an overflow which is channelled into a designated tank. Alternatively, the entire contents of the mixer can be poured into a wire mesh tank. The washing water is skimmed, filtered, and then reused after settling. The stones are rinsed in hot water on the grid over the tank, and then returned to the beach
- ✓ Organise operations (turnover, supply, storage, evacuation of sediments)
- ✓ Put the pebbles back into place once they are clean
- ✓ Repeat washing operation on heavily polluted sediments when necessary
- ✓ Scrape extremely heavily polluted sediments beforehand.



- ✓ Don't let polluted water enter the environment
- ✓ Don't use a washing agent which is not approved.
- ✓ Don't remove massive quantities of pebbles



### IMPACT

- ✓ No physical impact if pebbles are returned clean to their original location
- ✓ Possible risk connected to the residual presence of pollutant and washing agents or the destruction of vegetation on stones at the top of the shingle bar.



### PERFORMANCE

**Waste:** water, oil, oiled fine sediment (+ possibly non-toxic washing agent).

Cleanup station on a beach

