

**Alabaster Corp.**

**Tank Cleaning and Degassing  
General Process Overview**

# **Alabaster Corp. Bioremediation Products**

- **Alabaster Corp. Bioremediation and industrial cleaning products:**
  - Are non-flammable, non-toxic, non-pathogenic, non-carcinogenic.
  - Are biodegradable and designed for use in bio remediation with microbes.
  - Are cost effective, easy to use, faster, and more efficient solutions.
  - Can render volatile vapors inside tanks harmless.
  - Can render fuel spills non flammable.
  - Can drop LEL or lower explosive levels to zero quickly.
  - Can remediate waste water and contaminated soils.
  - Can reduce downtime and are less disruptive than other methods.
  - Are offered in powerful concentrates to reduces expenses.
  - Are environmentally friendly and do not contribute to pollution.

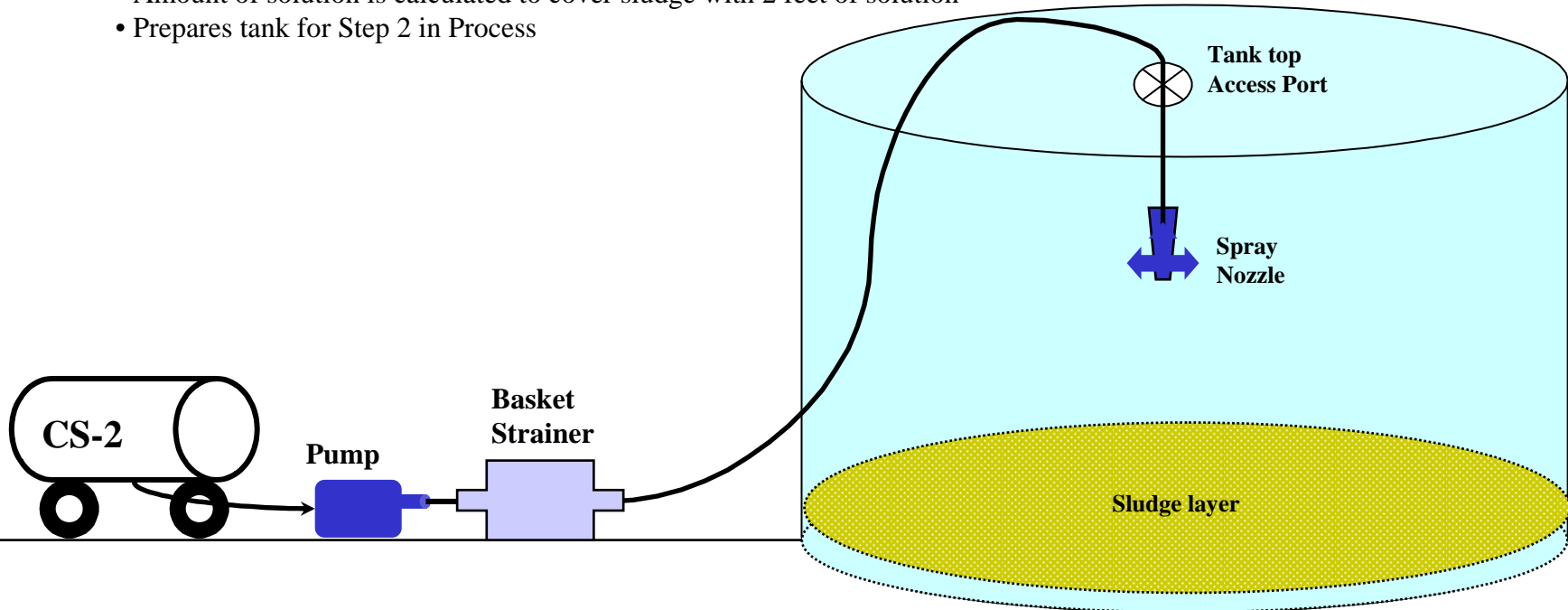
# Alabaster Corp. Specialized Industrial Cleaning Products

- **CS-1 Super Concentrate:** The best degassing agent. This is used effectively to cut down VOCs! It cleans and degreases well also. But the degassing and emulsification ability stands out. Very strong encapsulating, emulsifying, degreasing, and cleaning properties. However, it is biodegradable and also greatly promotes the bio remediation of waste. Forms a very tight emulsion which can last up to 20 days or more!
- **CS-2 Super Concentrate:** The best cleaner and degreaser. It also degasses very well. But the degreasing and cleaning ability stands out. Very powerful penetrating and solvent ability. However, it is biodegradable and also greatly promotes the bio remediation of waste.
- **Petro Clean:** Multipurpose in these applications and is very effective for degassing and degreasing. Designed to encapsulate and hold volatiles within fuel in a very tight emulsion. Used correctly it can render fuel spills Non-flammable!

# Tank Cleaning Process

## Step 1 – Spraying and Degassing

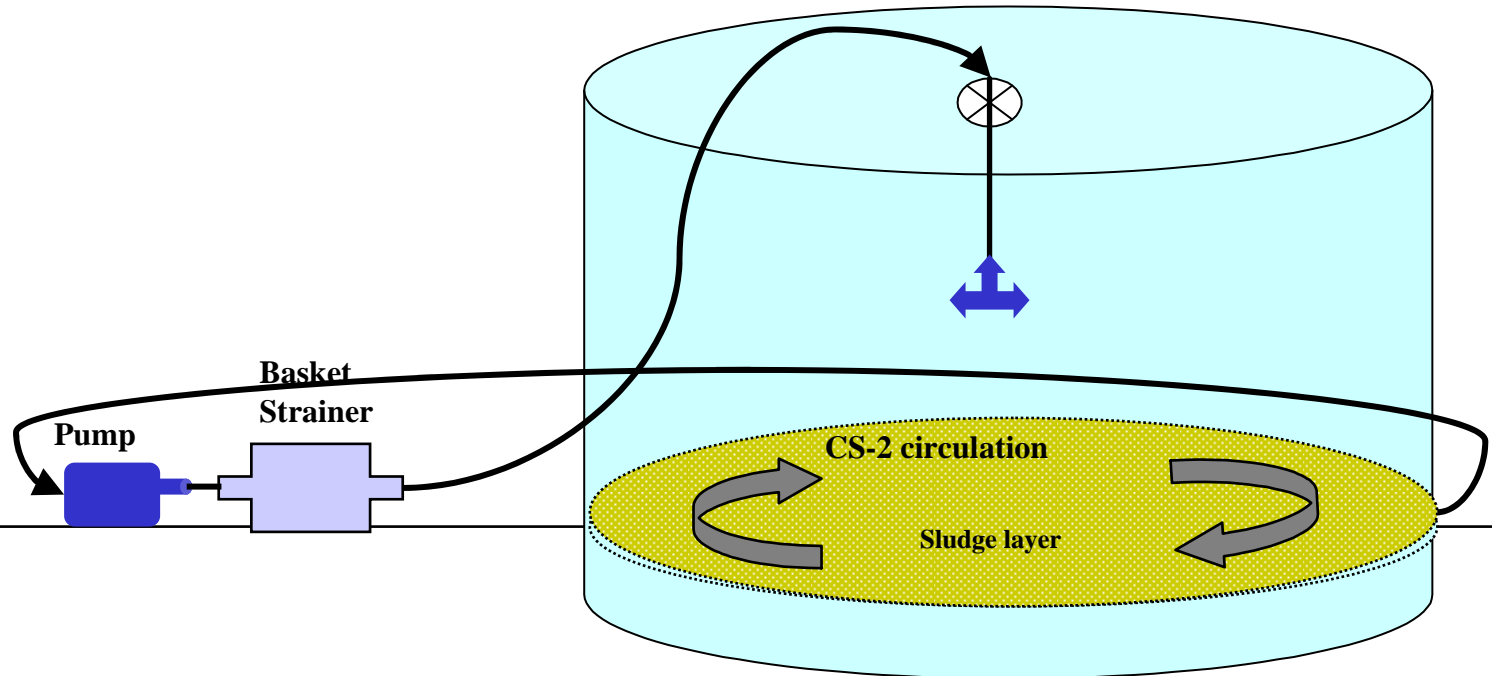
- Set-up and test circulation pumps
  - 1 pump (250-450 gpm) will be required for cleaning most tank sizes
  - Standard 2” to 3” circulation lines should be adequate
  - Consult with nozzle supplier to size spray nozzle with the size of existing tank and pump
- Place a basket strainer at output of pump
- Dilute and mix CS-1 or CS-2 as directed in material storage tank
- Pump solution into tank thru top side access port
  - Pressure and GPM as per nozzle specs
  - Airless, Sherwin Williams, Gamajet, Butterworth or Cloud nozzle (or similar) recommended
- Spraying process degasses tank and cleans top and side surfaces inside tank
- Solution settles on bottom of tank over the sludge layer (estimated to be 50-100 mm thick)
  - Amount of solution is calculated to cover sludge with 2 feet of solution
  - Prepares tank for Step 2 in Process



# Tank Cleaning Process

## Step 2 – Circulation and Degreasing of Sludge

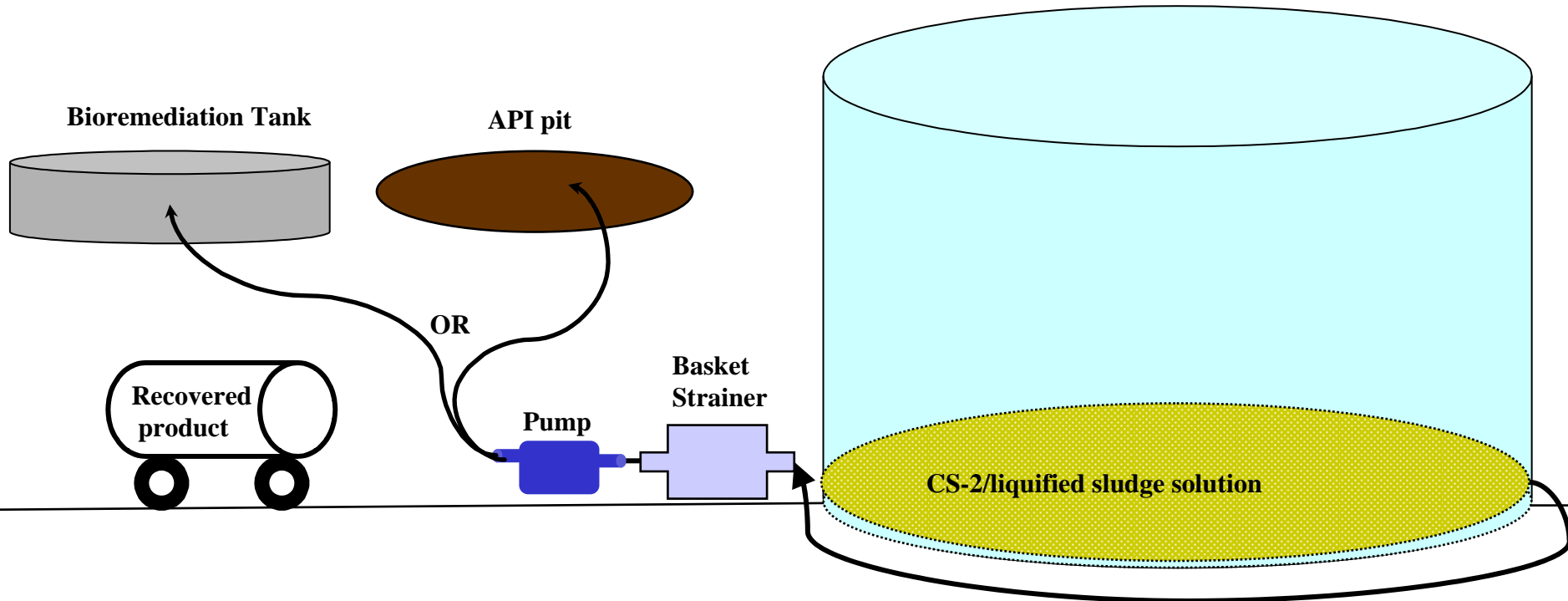
- Using circulation pump, circulate CS-1 or CS-2 solution throughout tank
  - Pump solution out of tank thru lowest access port - a floor sump is typically used
  - Suction line returns to pump and solution is re-sprayed back into tank after passing through the basket strainer
  - Basket strainer will capture all the freed solids from the sludge layer in the tank
  - Monitor pressure gage. If pressure drops, empty basket strainer and resume pumping.
- Circulate CS-1 or CS-2 for 24 –36 hours
  - Dissolves sludge into solution
  - Separates solids from hydrocarbons which will float on top of the solution
  - If product recovery is desired, this can be done by skimming product from top layer of liquid before the evacuation stage in Step 3
    - Although, for the tanks with minimal sludge, product recovery unlikely to be practical.
- Prepares tank for Step 3 in Process



# Tank Cleaning Process

## Step 3 – Solution Evacuation and Liquefied Sludge Removal

- After 24-36 hours, solids in sludge will have been liquefied and pumped from tank
- Hydrocarbons will be separated from solids in sludge and emulsified into CS-1 or CS-2 solution
- Solids will have been recovered from basket strainer and will be ready for removal from site
- Reconfigure pump to evacuate wastewater from tank
- Pump wastewater from tank
  - Oily wastewater can be pumped to API pit
  - Alternately, this wastewater can easily be bioremediated using microbial additives, if desired
- In cases where product recovery is desired, the wastewater can be left to stratify and product can be skimmed from the surface



# Tank Cleaning Process

## Step 4 – Second Cleaning (if necessary)

- Repeat steps 1 and 2 with second batch of CS-2 solution
  - Inner tank surfaces should be very clean
  - Remaining CS-2 solution should be fairly clean
  - Remove spray nozzle from tank
  - Pump CS-2 out into storage tank for re-use as first wash on next tank
- 
- If second cleaning is not needed, spray water through nozzle for 3-4 hours
  - Remove nozzle
  - Pump out tank, send wastewater to API pit
  - If maintenance requirements dictate, an air mover (such as a COPUS blower) can be introduced into the tank to dry tank and promote air circulation

