# Tank decontamination with manual and/or automated systems

1<sup>°</sup> phase: reduction in fumes inside tanks

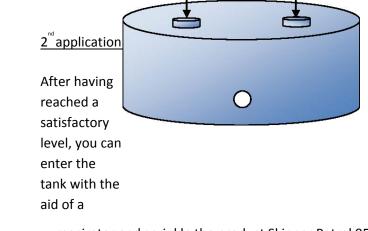
Sprinkling of the product  $\underline{1}^{\mathfrak{s}}$  application

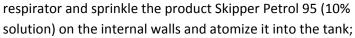
Skipper Petrol 95 Sprinkling of the product

Skipper Petrol 95 (10% solution) from the passageways above the tank.

- Sprinkling time: 2-3 hours
- Amount of sprinkled solution: 110 120 l

H<sub>2</sub>S before the treatment: 43-44 ppm H<sub>2</sub>S after the treatment: 28 ppm





 $H_2S$  after the second treatment: < 10 ppm

Sprinkling times and amounts, as well as H<sub>2</sub>S concentrations, may vary according to tank size, nozzle diameter and internal temperature if not insulated.

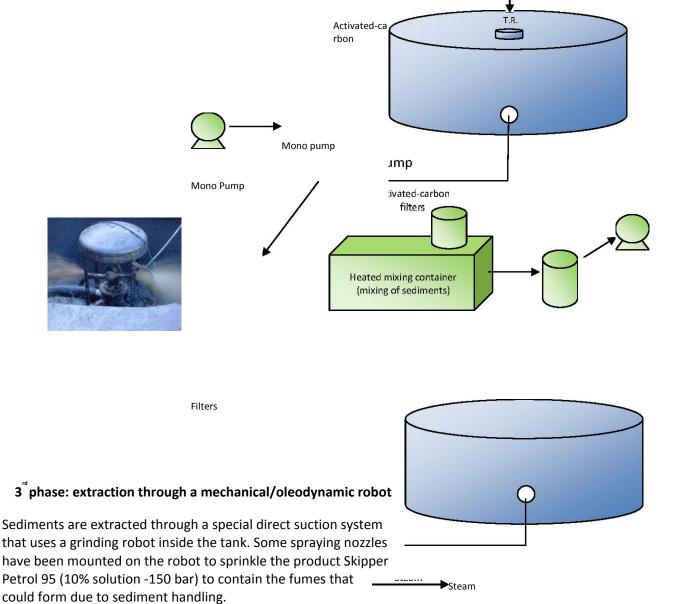
Our closed-circuit extraction system does not imply any sediment handling, but rather a direct suction that prevents other gases from being released.



## 2<sup>nd</sup> phase: fluidization of sediments

The fluidization of sediments takes place as follows:

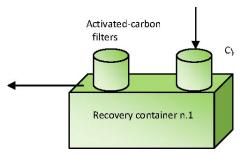
- 1 Injection of oil into the tank through one or more rotating heads to promote fluidization;
- 2 Suction of movable sediments;
- 3 Mixing in a heated container;
- 4 Passage through filters;
- 5 Transfer to the rotating head through a centrifugal pump



Rotatinghead(T.R.)



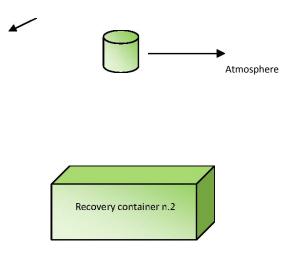




pump

Activated-carbon Activated-carbon filters filters and Denister Cyclone

Atmosphere









Here are the advantages of this technology:

- 1. The degrading action of the product MPCD Petrol allows to speed up the extraction phase and create less problems;
- 2. The fluidifying action of the product Skipper Petrol 95 allows to reduce clogging due to sediments;
- 3. This automated technology for extraction allows: More users at the same time;

Reduction of decontamination times;

The extraction of quite large sediments; To work even in areas that can be hardly reached; More safety for operators;

## Grinding robot

## Detail of a tank before decontamination operations





## This technology allows to extract even quite large sediments

Preparationfordippingwork s









## 4<sup>"</sup> phase: final washing (gas-free)

Skipper Petrol 95 (10% solution) replaces all those products that are traditionally used for the final washing of tanks, thus allowing to spare time and water:

- • Pressure: 200 atm max.
- • Temperature: a. CRUDE OIL: 40 °C
- b. OCD: 70-80 °C
- • Volume: 25 l/min.
- • CRUDE OIL: up to 60% less time;
- • OCD: up to 30-35% less time;

## **GAS-FREE** tanks





#### 5





# Hydrodynamic washing

Modern hydrodynamic technologies and equipment, associated with the expertise and competence of our technicians, allow to intervene in several situations with rapid and safe solutions in:

## THERMAL POWER PLANTS

- Condensers
- Coolants
- Electrofilters (electrostatic precipitators)
- GGH
- Boilers and ovens with hoppers
- Demisters
- OCD tanks
- Conveyor belts
- Sludge treatment plants
- Ash suction

#### REFINERIES

- Exchangers
- Columns
- Tanks
- Pipes
- Air coolers

## **STEEL PLANTS**

- Oleodynamic booths
- Lamellar packs
- Air coolers
- Exchangers
- Ducts
- Tanks
- Pipes
- Galleries
- Presses
- Cranes and runways
- Continuous casting plants
- Blast furnaces
- Cold rolling mills
- Plate mills

...AND MUCH MORE











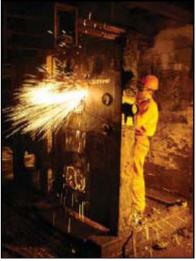




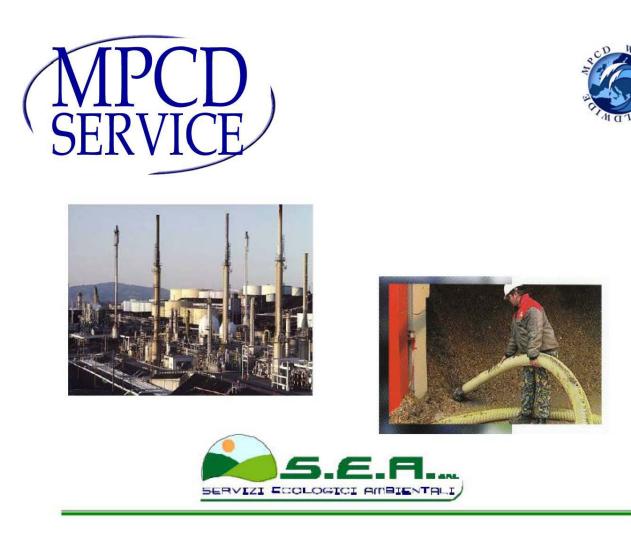








SLUDGE TREATMENT AND DEMOLITIONS



S.E.A. s.rl. ...A highly qualified partner...









# **Company profile**

• **s.r.l.** was established to study, develop and market technologies and products for environmental restoration, tank decontamination, contaminated areas and safety issues in order to<sup>s</sup> replace the obsolete reference techniques with more modern and eco-friendly systems. The experience gained over many years by S.E.A. technicians, the symbiotic and combined action of the most <sup>s</sup>, modern hydrodynamic techniques in association with the product "MPCD Skipper Petrol 95", a water-based cleansing and degreasing product that is fully biodegradable, allow to solve the problem of high-pressure hydrodynamic washing in a rapid and radical way. The versatility of our technologies, associated with our expertise, allow us to face several situations, even the most complex ones, in conditions of absolute safety.

• **s.r.l.** offers a wide range of high-tech services to reduce the environmental impact of industrial activities. These services mainly address the following sectors: oil, energy, refineries and steel plants.





Staff and equipment

The current staff is made up by 45 people including technicians, operators, as well as professional and qualified employees.

## Here is a list of some of S.E.A. s.r.l. equipment:

- High-pressure motor pumps (up to 2,500 bar);
- Combined vacuum trucks;
- Combined vacuum trucks ADR;
- Movable UMAP (mobile unit for dust suction)
- Motor washing machines
- Robot for high-pressure external washing of tube bundles;
- Robot for high-pressure internal washing of tube bundles;
- Lifting trucks;
- Skid loaders;
- Excavators;
- Light trucks;
- Truck cranes up to 80 quintals;
- Movable trucks;
- 100 kW motor generators;
- Automated plant for tank decontamination;
- Lobe pumps;
- Sandblasting machines;
- 11,000 l engine compressors;
- ACCUSTRIP system;
- Volumetric oil-pressure motor pump "Moro 3000";

We also manage an equipped workshop to better customize our machines according to our clients' needs.





# Certifications

**S.E.A. s.r.l.** has obtained the following certifications for the integrated management system for quality, environment and safety, as well as the OIMS-SARPOM qualification:

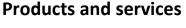
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• Marketing and/or application of the product Skipper Petrol 95, that is fully eco-friendly and biodegradable (degreasing and cleansing action);

- Tank decontamination with manual and/or automated systems;
- Industrial cleaning;
- High-pressure hydrodynamic washing;
- Vacuum truck and dust suction;
- Hydrodemolition;
- Sandblasting with Acustrip system;
- Painting and paint removing;
- Scarification;



Internal washing of an exchanger with an operator

Internal washing of a pipe

External washing of a tube bundle with a robot

## **Main clients**

- ILVA s.p.a. ACCIAIERIE TARANTO
- SASOL s.p.a.
- QUADRATO COSTRUZIONI s.r.l.
- TECNOMEC ENGINEERING s.r.l.
- NUBILE s.r.l.
- M.T.A. s.p.a.
- S.T.E. s.r.l.









Internalwashingofapipe

 $\label{eq:linear} Internal washing of an exchanger with an operator$ 

Cleaning of a façade in Carparo stone



- ALSTOM, ENI refinery Taranto
- PITRELLI s.r.l.
- ALFALAVAL s.p.a.





# **MPCD Skipper Petrol 95**

S.E.A. SKIPPER-Petrol is a specific product to

deeply degrease repair shops, hard surfaces,

tools, machinery, industrial equipment in general

and production areas. The simple yet effective

physical-chemical characteristics and the high

biodegradability make it a very *eco-friendly* 

product that is particularly indicated for working environments:

## • REPAIR SHOPS

Soiling, oil stains, etc.

• MACHINERY

Lathes, cutters, drills, cappers, etc.

## • PROCESSING MATERIALS

Iron, steel, polycarbonates, etc.

## • WORKING TOOLS

Tools, instruments, etc.

## • SURFACES

Plates, panels, rolled metal sections, etc.

## • PROCESSING ENVIRONMENTS

Floors, walls, etc.

## • HEAVY-DUTY TRUCKS

Trucks, vans, body cleaning, etc.

- CHEMICAL AND PRINTING PETROL
- PRECISION ENGINEERING
- THERMAL POWER PLANTS
- STEEL PLANTS
- PETROCHEMICAL FIELDS
- REFINERIES
- PLANTS MAINTENANCE AND CLEANING
- RECLAMATION OF POLLUTED SITES

#### • CONTAINER CLEANING AND WASHING

Tanks, etc.

- DECONTAMINATION OF WATER POLLUTED BY OIL SPILLS
- OIL PIPELINES
- BITUMEN SPRINKLERS

## Some exemplifying applications of the product Skipper Petrol 95

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