

Nuova Saimar S.R.L



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Contact Nuova Saimar S.R.L now! **10** Products

With a twenty year experience in remediation and industrial maintenance, Nuova Saimar is one of the world leaders in innovative tank cleaning systems, by designing, manufacturing and selling the “Nuova Saimar S.R.S.” (Sludge Recovery System), a no-man entry tank cleaner based on the C.O.W. technology.

Combining the S.R.S. with the ATEX Robot JOX-I, conceived to work in dangerous or inaccessible places, Nuova Saimar offers to its Client the best available technologies on the industrial reclamation market, in terms of reliability, safety, health and eco-sustainability.

Nuova Saimar services ranges from engineering and consulting in oil & gas field to industrial cleanings, both traditional and innovative, industrial plants cleaning and revamping, site remediation (spills emergency containment and recovery, soil and groundwater remediation), demolitions, asbestos removal and decontamination, maintenance (chemical cleaning and pickling, hydrodynamic cleanings, plate heat exchangers recovery) and waste management.

PRODUCTS



S.R.S. Sludge Recovery System

Nuova Saimar designs, manufactures and sells the S.R.S. (Sludge Recovery System), an automated, mobile and modular, non-manned oil tank cleaning system. Conceiving an answer for the present and for the future, Nuova Saimar has left the past behind. Workers will no longer need to enter the tanks. Workers will no longer need to wear masks. Our system is safe, clean and cost-effective.

S.R.S. is based on the C.O.W. (Crude Oil Washing) method, that crumbles the sludge and dissolves the hydrocarbons contained in it, mixing the sludge with the same fluid that has generated it. It works continuously 24 hours a day, 7 days a week, and it is eco-friendly, as no chemicals are used and it works in a closed loop, with no dangerous emission in the external atmosphere.

It allows to recover up to the 98% of the hydrocarbon contained in the sludge, and the recovery value can be equal or even higher than the cost of the cleaning itself: at the end of fluidization all the hydrocarbon recovered are returned to the client.

S.R.S. has an high speed method, granting the minimum tank downtime: Nuova Saimar is able to fluidize from 150 to 180 cubic meter of sludge per day.

S.R.S. is the best way to clean tanks in terms of safety, cost and time saving.

It is a fully certified system, in compliance with the Directives on Machinery of the European Union and ATEX Certification.

<http://www.sludgerecoverysystem.com/SRSMulti/Index...>



ATEX Robot JOX-I

The JOX-I Robot has been designed and constructed to work in dangerous or inaccessible places. Thanks to JOX-I workers need no longer to enter tanks and can manage the cleaning operations from the outside.

The Robot includes:

- a mobile unit powered by a diesel engine conforming to ATEX zone 2 and zone 1 directives
- hydraulic power pack
- supporting framework
- AISI 304 stainless steel water and solvent tank
- four wheels with a four-wheel drive
- telescopic arm complete with quick coupling plate
- video camera system
- proportional radio control for all working operations and movements

JOX-I can be used after S.R.S. operations: with the combination of the two methods, Nuova Saimar offers to its Client the best available technologies on the industrial reclamation market, in terms of reliability, safety, health and eco-friendly.

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Asbestos Removal

Since the issue of the rules binding the asbestos removal operations (Decreto Legislativo n° 277 dated 15/08/91), Nuova Saimar operations are fully complying with the rules, has received the full approval of the controlling Authorities and full satisfaction from our Clients.

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We can perform:

- ☐ - preliminary site survey and samples collection to check asbestos presence
- ☐ - removal of asbestos cement asbestos, after incapsulation
- ☐ - removal of roof covers made out of cement asbestos, including cover replacement
- ☐ - removal of fibrous asbestos using different approved removal techniques (confined space, glove bag, etc.)

Nuova Saimar is registered asbestos operator (according to Italian Law - Albo Gestori Ambientali Cat. 10B class E), and we have all necessary equipment and instruments to perform this service, including the required air monitoring.

Our designers, project managers and workers, are certificated according to the Italian law no. 257 dated 25/07/2006.

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Site Remediation

Thanks to its well-established experience in site remediation, through its work for multinational companies (in the industrial chemical, ceramics and paint industries) and with the main Italian and multinational oil companies throughout Italy, as well as coordinating remediation projects with local controlling Public Agencies in different parts of Italy (as per Ministerial Decree 471 dated 25th October 1999 and then Legislative Decree 152 dated 3rd April 2006), Nuova Saimar S.r.l. offers a range of specific services for contaminated site management, conforming to current regulations and official procedures which are now almost universally recognized.

A project is generally divided into the following phases:

- ☐ Site assessments
- ☐ Designing a conceptual model and application of risk analysis. Modelling
- ☐ Drawing up and carrying out of pilot tests
- ☐ Design and installation of in situ containment or remediation systems
- ☐ Operation and maintenance (O&M) of the installations

1) Engineering and consulting

Site activities are supported by the followings technical services:

- ☐ Designing of in situ containment and/or remediation systems, and on site remediation systems
- ☐ Consultancy service for technical and regulations advice should Legislative Decree 152/06 come into force and assistance with Authorities Meetings
- ☐ Consultancy service for suitable remediation technology selection
- ☐ Field data processing and technical drawings processing such as stratigraphical drilling logs made by environmental geologists, contaminants mapping, groundwater gradient maps, etc.
- ☐ Pumping tests processing with dedicated software such as AQUIFER WIN 32
- ☐ Conceptual models processing
- ☐ Risk analysis processing to determine public health safety level and the specific risk threshold concentrations of the site, to assess the effective level of contamination. Analysis made with recognized software such as RISC, ROME and GIUDITTA
- ☐ two- and three-dimensional simulation models processing, using universally recognized software such as RAM (groundwater risk analysis), AQUIFER WIN 32 (two-dimensional simulation models of groundwater flow and contaminant transport) and GROUNDWATER VISTAS (three-dimensional simulation models of groundwater flow and contaminant transport).

- ☐ Monitoring programme developing to check the progress of the remediation process
- ☐ Drafting of technical reports including:
 - o Geological technical report for site assessments
 - o Risk analysis and simulation models
 - o Notification (upon the client's request) should Legislative Decree 152/06 come into force
 - o Characterization plans (Ministerial Decree 471/99 and Legislative Decree 152/06) or site assessment plans
 - o Preliminary and executive remediation projects (Ministerial Decree 471/99 and Legislative Decree 152/06)
 - o Final site inspections and direct tests as official final verification for the carried out remediation

2) Site assessments

- ☐ In situ site inspection to make a preliminary assessment of the site's environmental safety situation (checking for the presence of organic vapors, the impact on wells downgradient from the spill area, etc.). Collection of bibliographical material as to the geological and hydrogeological lay-out of the site. Geomorphological survey.
- ☐ Indirect, non-destructive assessment to define the structure of the ground and the distribution of the pollutants in the subsoil. These tests are carried out using geophysical surveys (geoelectric and georadar)
- ☐ Direct assessment, monitoring the interstitial gases in the subsoil (soil gas survey)
- ☐ Direct assessment using continuous core drilling to determine the stratigraphy of the ground or to identify the contaminated levels by collecting soil samples
- ☐ Head space analysis onto soil samples along the vertical drilling line, to determine the concentration of volatile organic compounds (VOC)
- ☐ Monitoring wells installation, groundwater table level monitoring and pumping tests on the aquifer to determine the hydrogeological parameters (hydraulic conductivity, transmissivity, gradient)
- ☐ Groundwater samples collection and chemical analysis
- ☐ Environmental assistance when underground storage tanks are removed from sites and/or sites are being dismantled/decommissioned
- ☐ Drawing up and carrying out of pilot tests to check the suitability of remediation technologies and to measure the containment and/or remediation systems (short- and long-term pumping tests, respirometric tests, etc.)

All site activities are directed by qualified site geologists in order to collect all data needed for the following engineering phases.

The most suitable typology of site assessment to perform is identified after an adequate preliminary planning.

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Soil and Groundwater Remediation

A remediation or containment system is then designed and installed on the basis of the above tests and results. It is designed according to the nature and extent of the contamination, generally applying one or more of the following technologies:

- ☐ _ groundwater recovery and treatment systems (Pump & Treat systems, hydraulic barriers)
- ☐ _ recovery of free products floating onto groundwater (skimmers, scavengers, etc.)
- ☐ _ Soil Vapour Extraction systems with treatment of the extracted gas flows
- ☐ _ Soil Venting or Bioventing systems
- ☐ _ soil remediation systems with in situ biological treatment systems (land farming, phytoremediation) and on site pile treatment (biopiles, biocells, etc.)
- ☐ _ soil and groundwater remediation with Dual Phase High Vacuum Extraction Systems, Bioslurping Systems, etc.

- ☐ _ groundwater bio-remediation systems (Air Sparging, Biosparging, etc.)
- ☐ _ groundwater remediation systems (Permeable Reactive Barriers, Monitored Natural Attenuation, etc.)

The efficiency of the installations is guaranteed thanks to a maintenance programme which is scheduled to specific project needs.

Furthermore, if technically and economically applicable, Nuova Saimar performs site remediation with direct mechanical removal of the contaminated soil, to be transferred to authorized disposal.

All actions are identified after an adequate preliminary planning performed by our qualified personnel.

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Spills Emergency Containment and Recovery

Nuova Saimar S.r.l. provides an emergency environmental service able to contain and recover contaminants spilling directly or indirectly in the water (surface water and groundwater), in the soil or wherever they may accumulate, creating potential public health and environmental hazards. Services include:

- ☐ containment barriers (booms) installing
- ☐ suction or recovery of the spilt product with oil adsorbent powders, rugs and booms
- ☐ removal of the ground surface layer with contaminants adsorbed
- ☐ washing the areas affected by the spill (road surfaces, stonework, machinery, etc.) with water-based solutions and specific detergents, using high-pressure jets where necessary and collecting and disposing of the water used in the washing process
- ☐ installing forced ventilation systems should there be explosive vapors in basements and/or underground premises in general
- ☐ installing groundwater pumping and treating systems and floating product selective recovery system (scavengers, skimmers, etc.)

The efficiency of the installations is guaranteed thanks to a maintenance programme which is scheduled to specific project needs.

All actions are identified after an adequate preliminary planning performed by our qualified personnel.

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Digesters Cleaning

Our experience, grown up by working in severe environments, allows Nuova Saimar to perform the cleaning of digesters with no risk due to the presence of toxic gases (such as H₂S) or explosive gases (such as methane), that are generated by organic compounds decomposition.

Workers safety is ensured by using the most appropriate safety devices, proven and certified operation methods, and by monitoring the operating conditions with instruments totally complying with periodic test controls.

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Maintenance

Since its origin Nuova Saimar has been involved in the maintenance of plants or part of plants.

We are often called to take back to operation plants or equipment that have suddenly lost their operation capacity due to the presence of scale or residues inside heat exchangers, columns, piping, etc.

Thanks to the Company wide experience in the field of industrial plants, and the presence of skilled personnel that has grown up its experience together with the Company, we can offer maintenance turn key services from dismantling, opening of equipment, maintenance, closing of equipment, hydraulic test and return it back on service. For the above reasons, thanks to the contacts that we have with the company manufacturing pumps, heat exchangers, etc, we can take care of renewing entire plants, starting from design and taking care of supplying the equipment that need to be replaced.

1) CHEMICAL CLEANINGS AND PICKLING

After the operation design, that takes care of the chemical and physical properties of the material to be cleaned, by which we select the cleaning medium and the operating conditions, we can carry on the chemical cleaning of piping and equipment.

The lines, pumps and drums are suitable to handle the aggressive chemical media selected for our chemical cleaning services. The process is controlled by instruments periodically tested according to our quality procedure. Pickling procedures used by Nuova Saimar comply with ASTM standards.

2) HYDRODINAMIC CLEANINGS

Thanks to the Company wide experience in the field of industrial plants, and the presence of skilled personnel that has grown up its experience together with the Company, we can clean every type of internal and external scale or plugging by using the proper nozzles and high pressure heads.

We can perform hydrodynamic cleaning up to 800 bar cold, or 250 bar hot.

Furthermore we can perform ecological sand blasting by using sodium bicarbonate (please refer to attachment 5).

- ☐ _ minimum environment impact as no powder is generated and the sodium bicarbonate is not dangerous
- ☐ _ high safety level for the workers for the absence of powders and sparks
- ☐ _ high compatibility with delicate surfaces

3) HEAT EXCHANGERS RECOVERY

Thanks to the Company wide experience in the field of industrial plants, and the presence of skilled personnel that has grown up its experience together with the Company, we can offer maintenance turn key services from dismantling, opening of equipment, cleaning, substitution of broken parts of shell and tube and plate heat exchangers.

The quality of our service is guaranteed by test certificates recording the heat exchanger tightening forces and the pressure test.

4) REVAMPING (DISUSED PLANTS RECOVERY)

Nuova Saimar is presently able to recover disused industrial plants by chemical and/or hydrodynamic cleaning, activating the operation of circuits and equipment that can be repaired.

Thanks to the contacts that we have with the company manufacturing pumps, heat exchanges, etc, we can take care of renewing entire plants, starting from design and taking care of supplying the equipment that need to be replaced.

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Demolitions

Aiming to provide a complete service to our Clients, that very often have to face problems on how to requalify their environment, in the most recent years Nuova Saimar has extended its activities in the branch of demolitions.

Thanks to our continuous investments we can now perform demolitions of industrial plants and civil buildings.

We have knowledge and equipment to perform:

- demolition of metal parts by hot cutting, using plasma cut, oxy-acetylenic or oxy-propanic cuts;
- demolition of metal parts by cold cutting, using hydraulic shearing machine, notching machine, 48V core hole driller with magnetic column support, hydrodynamic cutting;
- demolition of concrete walls and buildings with mechanics excavator with hammer or concrete pincher.

The combination of our cleaning and demolition technologies allow us to be one of the few service companies able to perform the demolition of equipment not yet cleaned, by cleaning and demolishing at the same time when safety conditions or the poor conservation state of the equipment do not allow the preliminary cleaning.

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Traditional Tank Cleaning

Since the very beginning of the brand "Saimar", we have supplied traditional cleaning services for both external and buried tanks. This type of operation is currently used only when other systems can not be used and allow us to operate in high risks environments where toxic, flammable and explosive substances are involved.

Working in the main refineries and tank farms in Italy and abroad, we have been performed cleanings of small, average and big size tanks (even more than 100.000 mc), both floating and cone roof type.

^r The Traditional Tank Cleaning system can be described as follows:

- ☐ Safety preparation of the tank to be cleaned by using forced ventilation systems, either pneumatic or electric, certified by ATEX;
- ☐ Suck up of fluid portion by vacuum truck, or by pneumatic or volumetric pumps, activated by hydraulic or electric ATEX certified motors;
- ☐ Manual taking out of solid sludge by people entering the tanks with the necessary protection devices, and other specific equipment, such as volumetric hydraulically activated pumps, and manual non-sparking tools;
- ☐ Final tank washing by using high pressure water, activated with solvents having high environment compatibility, and collection of the washing water;
- ☐ Issue of Gas Free Certificate by authorized external professionals.

In addition to the cleaning service, we can provide local treatments of the sludge taken out, with the aim of maximizing the product recovery for the Client, and to minimize the waste material. For instance, the oily waters can be treated through an oil separator, the sludge can be heated in small open tanks where the light phase is recovered, and, upon request, centrifuged and filtered.

Workers safety is ensured by using the most appropriate safety devices, by proven and certified operation methods, and by monitoring the operating conditions with totally complying periodic test controls instruments.

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