

# LAMOR

ENVIRONMENTAL  
SOLUTIONS

[WWW.LAMOR.COM](http://WWW.LAMOR.COM)







**LAMOR - ENVIRONMENTAL SOLUTIONS**

Lamor Corporation, headquartered in Finland with strategically located offices, hubs and partners worldwide, is an established market leader in oil spill response and environmental solutions for a wide range of scenarios and climatic conditions. Lamor is committed to oil spill response, recovery and clean-up operations worldwide. Moreover, the company provides soil and water treatment services globally. The extensive portfolio of products and services also includes industrial applications.



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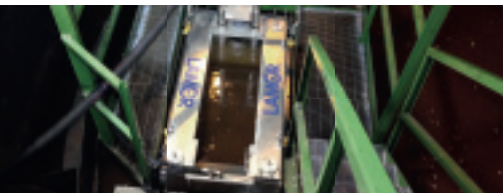
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FRED LARSEN, CEO

## LAMOR CORPORATION, AN ENVIRONMENTAL SOLUTION PROVIDER

- investing in people, production, equipment and research

AT LAMOR, OUR CONTINUOUS COMMITMENT TO ADVANCED RESEARCH AND DEVELOPMENT IS PARAMOUNT. AS A CUSTOMER-DRIVEN COMPANY WE HAVE IDENTIFIED THE SIGNIFICANT NEED FOR SOIL AND WATER TREATMENT, INDUSTRIAL & REFINERY WASTE TREATMENT AND INDUSTRIAL SKIMMING APPLICATIONS.

Today our portfolio of environmental solutions contains these solutions, in addition to our renowned oil spill response equipment and services.

The active participation in oil spill response exercises, equipment testing, conferences and exhibitions around the world provides us with the focus and knowledge to fuel constant growth. Our progressive expansion is also a result of working closely with government officials and organizations such as the European Maritime Safety Agency (EMSA), the Swedish Coast Guard, USCG, Russian Maritime Register, and the Chinese Maritime Safety Administration find environmental and condition specific solutions. An essential objective of Lamor is to provide educated and client specific solutions, backed by an arsenal of state-of-the-art tech and international experts, to all sectors of the oil and gas industry.

Within our established oil spill response division we continue to provide training and commissioning around the world and testing next generation equipment. Our newly formed Soil & Water Treatment division has seen some remarkable results

in field tests, and the first commercial projects, including the treatment of contaminated soil, drilling waste and tank bottom sludge.

I have said this before; it is not "if" an oil spill will occur but rather "when" it occurs. In the case where an incident does occur, Lamor is able to quickly provide efficient solutions that minimize the resulting environmental footprint and in many cases the ability to salvage the ecosystem.

Planning properly with an educated strategy, structured training, practicing the efficient application of effective equipment and having the resources to treat damaged areas allows us to be prepared with the proper tools to prevent, respond, contain, recover and remediate oil spills across the globe.

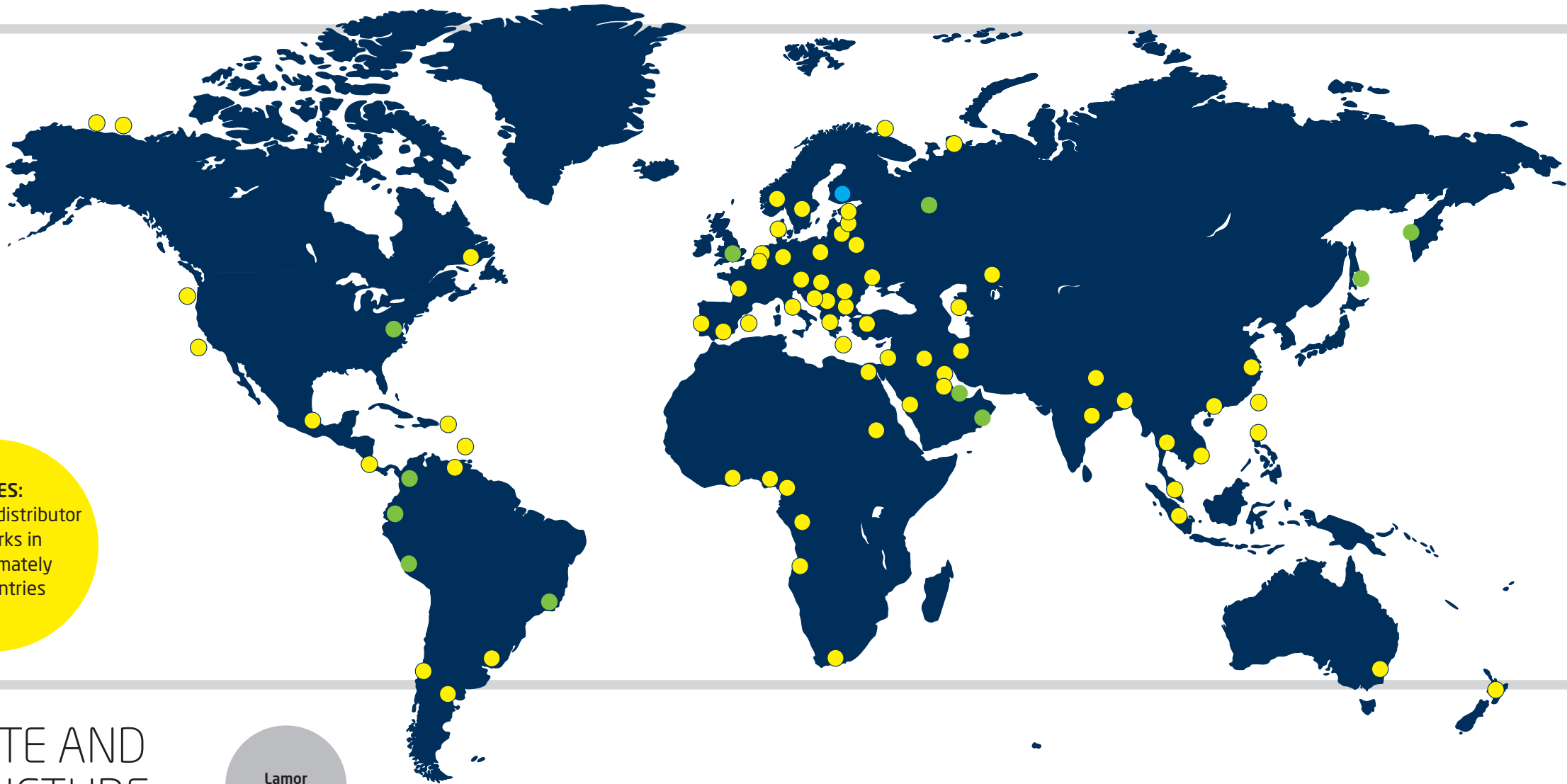
I would like to thank our customers, agents, distributors and staff for their contributions to protecting the earth. We at Lamor will continue our dedication to this endeavor through our global network and expanding solution portfolio.

## ENVIRONMENTAL SOLUTIONS

The Lamor brand is based on the delivery and reliability of high quality products and solutions that are both effective and efficient. The cornerstones of our brand are the performance in advanced technologies, our innovativeness and services. Working in partnership with our customers is a driving force for the success of maintaining Lamor's leading position in the market. The Lamor brand reflects the values of the company.



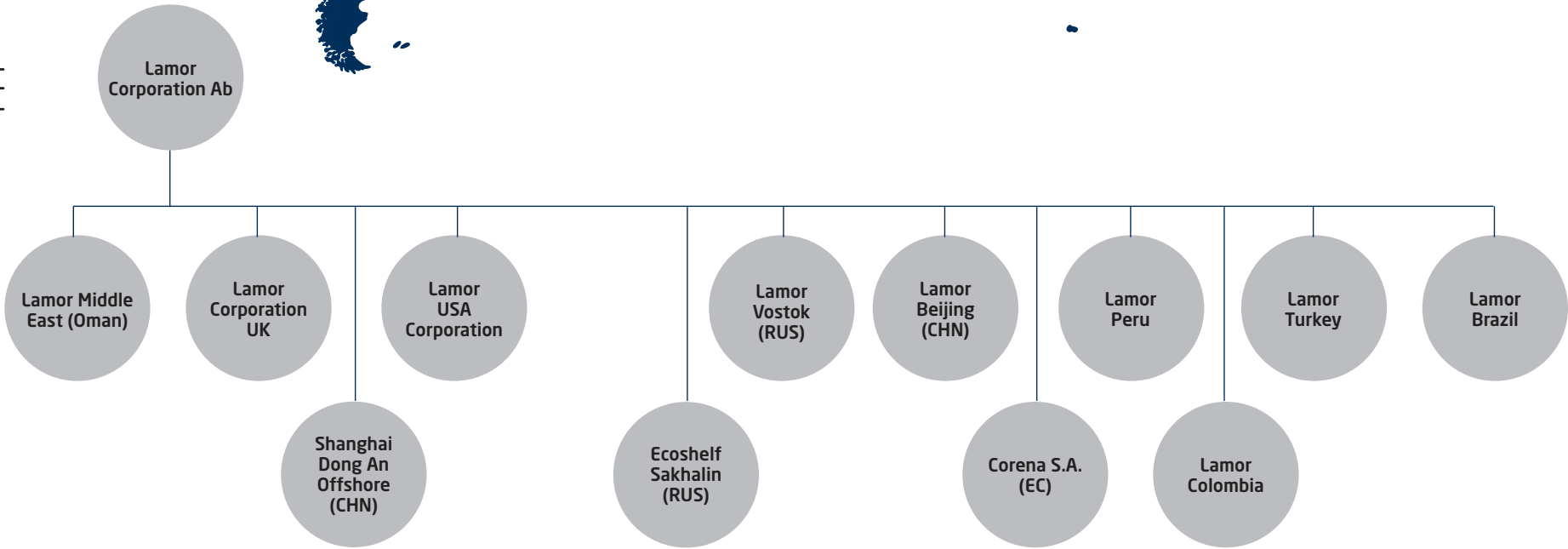
# LAMOR HUBS AND NETWORK



# LAMOR CORPORATE AND OWNERSHIP STRUCTURE

**FOUNDED**  
1982

**PERSONNEL**  
150 EMPLOYEES,  
400 PERSONNEL IN RESPONDER NETWORK AND  
450 PERSONNEL IN PRODUCTION NETWORK



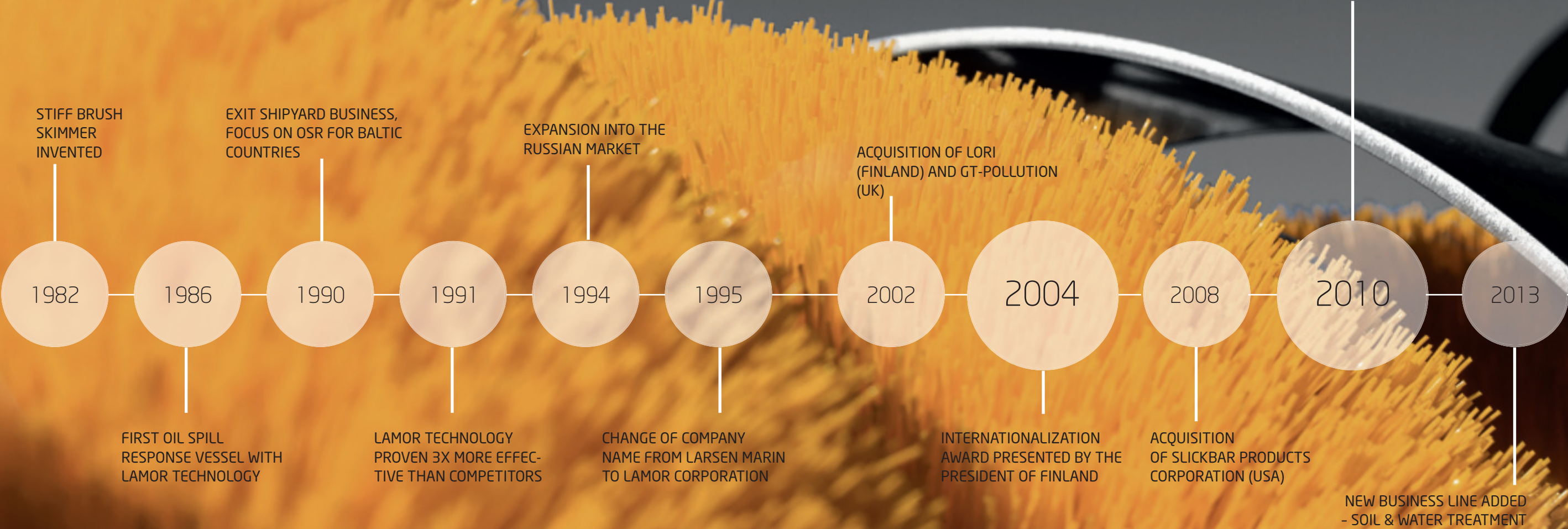


# LAMOR MILESTONES

Responded to the Gulf of Mexico spill and simultaneously to three other spills worldwide (China and US)

The largest offshore oil spill in history called for immediate external support, expertise, solutions and equipment to assist in the containment and recovery of this 4.9 million barrel spill. Lamor immediately engaged a plan of action and within 36 hours, through its global network, the company airlifted a massive inventory of equipment, the Lamor Response Team (LRT), and other key response personnel to the scene. Production was ramped-up in key locations around the world providing support during the incident. This resulted in tripling Lamor's capacity in a short period of time.

Lamor supported the Vessel of Opportunity (VoO) program, contracting and training the local fishermen and converting their fishing vessels into oil spill response vessels.





# MAIN BUSINESS LINES

When an incident does occur, Lamor quickly provides efficient solutions that minimize the environmental footprint of the incident and in many cases can salvage the ecosystem.

For our customers this means restoring the company's shareholder value in the shortest time possible.

## 1. OIL SPILL RESPONSE



## 2. TRAINING



## 3. SOIL & WATER TREATMENT



## 4. INDUSTRIAL & REFINERY WASTE TREATMENT



## 5. INDUSTRIAL APPLICATIONS





# 1. OIL SPILL RESPONSE

**LAMOR IS COMMITTED TO OIL SPILL RESPONSE, RECOVERY AND CLEAN-UP OPERATIONS WORLDWIDE. WE PROVIDE IMMEDIATE ON-SITE EXPERTISE TO EXECUTE SOLUTIONS THAT PROTECT THE ENVIRONMENT AND OUR ECOSYSTEMS.**

Our in-depth knowledge and experience coupled with investment in technologically advanced oil spill response equipment ensure efficient and effective clean-up operations in all scenarios and climatic conditions.

We sometimes encounter challenges which we eagerly and relentlessly tackle. A good example was the Vessel of Opportunity (VoO) program in the Gulf of Mexico which we supported. We realized that the numerous fishing and shrimping vessels could be transformed into oil spill response vessels and further developed our VoO concept by utilizing the already existing fittings on the fishing vessels. Moreover this gave the local fishermen an opportunity to utilize their vessels and actively get involved. Besides modifying the vessels, we also provided training. This Lamor VoO concept can now be implemented







We are ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007 compliant and we have efficiently established, implemented, maintained and operated the Quality, Health, Safety and Environment Management System (QHSE). The QHSE has been developed and continuously improved in accordance with regulations and standards of:



**ISO 9001:2008  
CERTIFICATION**  
Quality Management Systems



**OHSAS 18001: 2007**  
Occupational Health and  
Safety Management Systems



**ISO 14001: 2004**  
Environment Management  
Systems

worldwide transforming a challenge into an active and engaging experience. Lamor's vast product range, which is the most extensive on the market, includes everything from skimmers, powerpacks, pumps, oil containment booms to landing crafts, workboats and multipurpose oil recovery vessels.

Customer satisfaction is the single most important factor in the development of the company's services and products as well as the hiring of personnel for our team. Our internal quality control standards are continuously updated and developed to exceed customer expectations.

The performance of Lamor oil spill response equipment is certified by Bureau Veritas. All skimmers and oil transfer pumps have been capacity tested. Oil recovery vessels, barges and workboats are classified depending on their end usage by Nordic Boat Building Standards, RINA, Russian Maritime and River Register, Lloyds Register of Shipping and other leading authorities.

The source of knowledge is experience, and over 30 years Lamor has developed its expertise in oil spill response equipment and operations. Our oil spill response equipment can be found in all climatic conditions and environments, from the Amazonian jungles in Amazonas to the Arctic Prirazlomnoye oil field in Russia. More than 1,800 vessel mounted systems have been delivered to customers worldwide.







AS A GLOBAL LEADER IN OIL SPILL RESPONSE, LAMOR'S EQUIPMENT CAN BE FOUND IN ALL CLIMATIC CONDITIONS AND ENVIRONMENTS. THE COMPANY HAS SOLD EQUIPMENT TO 120 COUNTRIES AND MORE THAN 1800 VESSEL MOUNTED SYSTEMS HAVE BEEN DELIVERED TO CUSTOMERS WORLDWIDE.





## 2. LAMOR TRAINING

**TO ENSURE SAFE, RAPID, AND EFFICIENT RESPONSE TO OIL OR CHEMICAL SPILLS, WE OFFER EQUIPMENT TRAINING, SPILL RESPONSE MANAGEMENT, AND CONTINGENCY PLANNING.**

Lamor is recognized as an accredited oil spill response training provider by the Nautical Institute in the UK and for several years has offered the International Maritime Organization (IMO) Oil Spill Responder training levels 1 – 3.

In its course portfolio, Lamor also offers hazardous material (HAZMAT) courses and refresher classes.

As part of any oil spill response plan, a good contingency and risk assessment plan forms the backbone of successfully tackling incidents quickly and efficiently. Within the Lamor team, our experts have a wealth of global experience in Oil Spill Response and Contingency Planning. As a result, Lamor has been called in to either implement or review plans and procedures and to provide expertise on the selection and use of best available technology (BAT) and a variety of solutions to incidents.





# 3.

## SUSTAINABLE SOIL AND WATER TREATMENT

**LAMOR OFFERS A WIDE RANGE OF SOIL AND WATER TREATMENT TECHNOLOGIES AND APPLICATIONS LOCALLY. THERE ARE TWO DISTINCT APPLICATION FIELDS LAMOR OFFERS; TREATMENT AND DISPOSAL OF CONTAMINATION AND RECOVERY.**

**ONE OF LAMOR'S MOST EFFECTIVE TREATMENT AND DISPOSAL SOLUTIONS IS THE PATENTED EKO/GRID™ TECHNOLOGY\* FOR THE IN-SITU TREATMENT OF POLLUTED AREAS. THE TECHNOLOGY CAN BE APPLIED TO A WIDE RANGE OF SOIL AND FLUID TYPES, RANGING FROM MILDLY POLLUTED INDUSTRIAL SITES TO TANK BOTTOM SLUDGE.**

Lamor used the technology for an in-situ remediation project at a railroad site in Santos, Brazil, where the contamination level decreased by 94 % during the 90-day treatment period and was well below the environmental limits set by the local authority.

Safety and sustainability is paramount at Lamor. Therefore, the utilization of low voltage and no chemicals with any harmful or hazardous effects on humans and wildlife is incorporated. The low energy demand for this innovative system offers possibilities to use alternative energy sources, i.e. wind or solar power. Lamor's soil and water remediation is highly cost effective and the technology can be applied both in-situ and ex-situ.

The possibility for in-situ treatment enables remarkable cost savings when the excavation and transportation of polluted land are not needed. Moreover, some other advantages include scalability for different waste volumes, fast and simple installation and low energy consumption which offers the possibility to use alternative energy sources. This process is also proven to be environmentally friendly, fast, stable and non-sensitive to external factors. Lamor normally uses also complementary remediation technologies in its in-situ projects such enhanced bioremediation, soil washing and aeration.

### NEW DIVISION WITH STRATEGIC INVESTMENTS

Lamor established its new business division, Lamor Soil & Water Treatment, in combination with a significant investment in Ecuadorian environmental service company, Corporación para los Recursos Naturales Corena S.A. (Corena).

### STRENGTHENING REMEDIATION SERVICES WORLDWIDE

Corena has a solid foundation to perform remediation service projects locally and worldwide. Ecuador will also be an excellent location for a new Lamor hub in Latin America increasing Lamor's global capabilities while providing support to recently established service operations in Peru.

Ecuador has very strict environmental legislation due to vast expanses of environmentally sensitive areas and its historical burden of environmental disasters. Corena and Ecuador will provide optimal conditions to improve our progressive soil and water treatment technologies such as the non-additive Lamor Eko/Grid methodology.

Land remediation demonstration projects have shown highly successful results not only in Ecuador but also in Brazil, China, Colombia, Peru and Turkey. Established and future remediation projects in Ecuador can easily be replicated and implemented globally as they meet the highest remediation standards.



**THE APPLICATION OF SOIL AND WATER REMEDIATION AFTER EFFECTIVE OIL SPILL RESPONSE OPERATIONS RESTORES AFFECTED ECOSYSTEMS BACK TO HEALTH.**

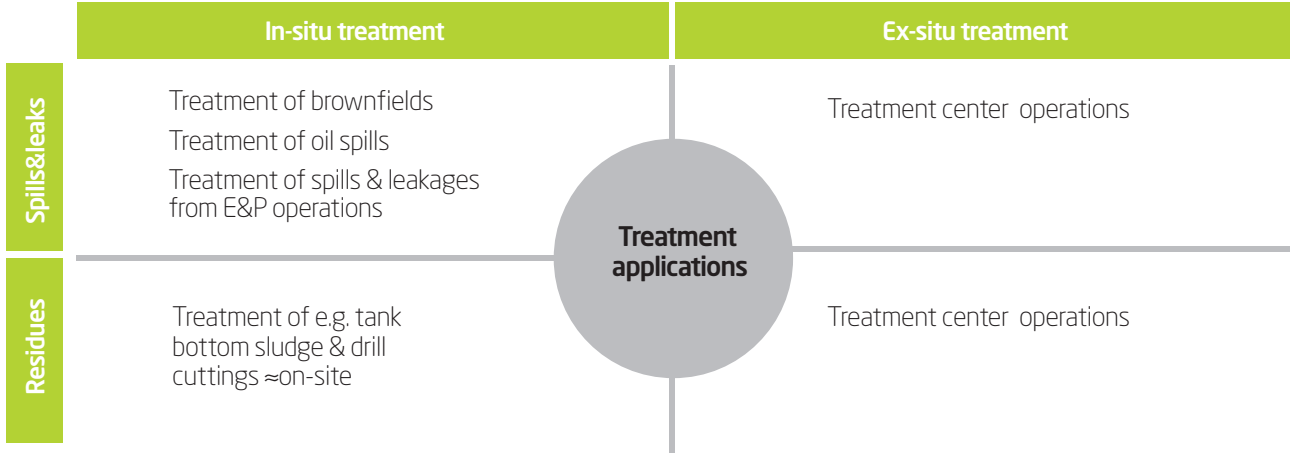


\*EKO/GRID™ Technology is patented by Eko Harden Technologies Oy



EKO/GRID™TECHNOLOGY

Lamor’s soil and water remediation solution is the patented EKO/GRID™ technology\* for the treatment of polluted areas. The technology can be applied to a wide range of soil/fluid types, ranging from mildly polluted industrial sites to tank bottom sludge. The cleaning effect is based on 100% eco-friendly oxidation process initiated by electro-kinetic and electro-osmotic principles.



# 4. INDUSTRIAL & REFINERY WASTE TREATMENT

LAMOR’S INDUSTRIAL AND REFINERY WASTE TREATMENT APPLICATIONS ALLOW THE CLIENT TO UTILIZE THE RECOVERABLE HYDROCARBONS FROM THE CURRENT WASTE STREAMS. THIS ENABLES THE CLIENT TO TRANSFORM THEIR CURRENT LIABILITIES INTO ASSETS.

For refinery waste such as oily slops and sludge Lamor uses a chemically-assisted mechanical separation solution. The patented micro emulsion allows for better separation of the oil, water and solids providing the client with better-quality recovered oil and less contaminated solid and water phases.

With our recent experiments in Ecuador, Lamor has been able to combine two waste streams, tank bottom sludge and waste oil, and recover valuable oil fractions in the process. This type of approach enables huge savings in the treatment cost and created additional cash flow from the sale of the recovered product.

In addition, Lamor has experimented with automated tank-cleaning solutions combined with the use of the patented micro emulsion technology and the preliminary results are extremely encouraging. Using the automated tank-cleaning application allows the refineries to significantly reduce the use of manual labour in the cleaning process and minimize the work-related safety hazards. As a result, the improved cleaning process allows for better extraction of the oil fractions than the traditional methods.





# 5.

## INDUSTRIAL APPLICATIONS

- Specialized equipment and systems

**LAMOR HAS DESIGNED INNOVATIVE OIL RECOVERY AND CONTAINMENT EQUIPMENT TO ADDRESS INDUSTRIAL PROCESSES WHERE OIL MAY ENCOUNTER WATER BECOMING A DEBILITATING FACTOR TO THE SYSTEM AND WHERE PROTECTIVE CONTAINMENT BARRIERS MAY BE NECESSARY.**

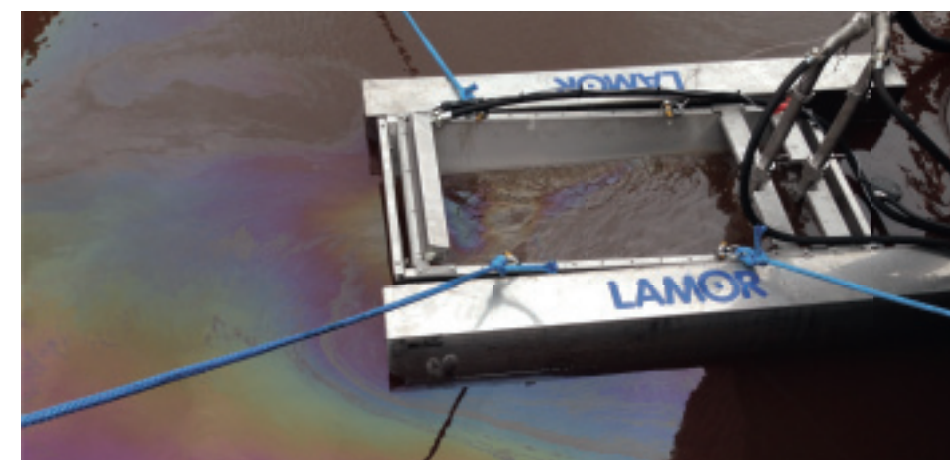
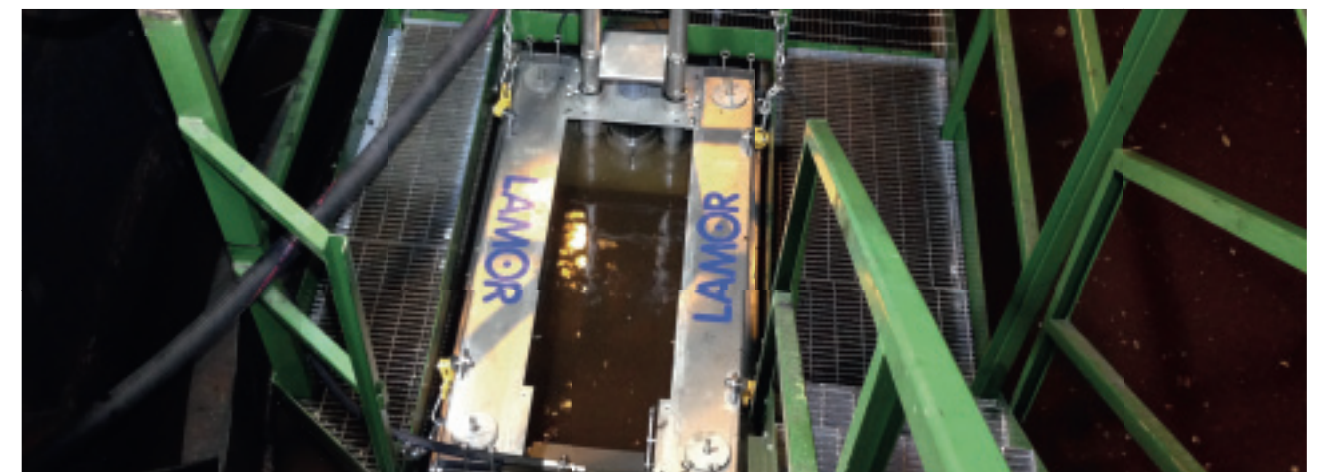
Removing detrimental oil is essential in retaining unadulterated performance especially in systems where the process and regulations require clean water. The removal and/or containment of contaminants can reduce costs dramatically and effectively reduce the need to replace expensive components. Oil contaminating Industrial water reservoirs and water holding areas can pose a large problem in plants and factories, resulting in compromised functionality of the system and/or a loss of revenue due to temporary solutions. The Industrial Process Skimmer (IPS) was developed as the long-term solution to this dilemma. Oil contaminating the water reservoir is continuously collected and confined to the skimmer head where it is recovered with close to no water content. The system is designed so that no oil escapes ensuring that all oil wastage is eliminated.

Lamor Floating Baffle Systems and Permanent Fence Booms are designed and installed to control and/or direct the

flow of water in a wastewater lagoons and industrial reservoirs.

A problem common to many plants and factories is water reservoirs that become contaminated by thin sheens of oil. To resolve that problem, the Lamor Air Unit is a reliable system with only one moving part that concentrates the oil in to a thick layer.

The industrial use of lubricants, hydraulics or heavy machinery increases the risk for contamination; it is inevitable that small amounts of contaminants will end up in the cooling water even in normal day-to-day operations. Additionally, occasional system failure may cause oil leaks creating the need for quick response and an emergency removal system to avoid unnecessary and expensive shutdowns or high fines for pollutants in the discharge. The Lamor Polymer Unit, which utilizes a polymer that is released in to the contaminated water, is designed to refloat substances that are mixed in the water column for ease of removal.



**THE EFFECTIVENESS OF CONTAINMENT Baffles AND LOW WATER CONTENT COLLECTION SKIMMERS MAKES THEM IDEAL FOR PERMANENT INDUSTRIAL APPLICATIONS.**



**SLUDGE REMOVERS**



**SLUDGE THICKENERS**



Lamor also offers equipment and turn-key solutions for industrial and municipal waste water treatment centers. Among the products and solutions offered are e.g. sludge removers and thickeners as

well as peroxide treatment applications for the disinfection and removal of odors for a wide range of operators in the water industry.

**SLUDGE REMOVERS**

- For round, or square tanks, with central or peripheral drive;
- For oblong tanks, overhead crane or chain type, with scraping blades;
- Sludge removal is also available by suction pump, siphon or air-lift;
- Available with or without surface foam removal.

**SLUDGE THICKENERS**

- For round tanks, with central drive;
- For oblong tanks, overhead crane or chain type, with scraping blades;
- Available with or without surface foam removal;
- Scraping arms lifting devices by over-bolting are available for round tanks;
- Gravity conveyor belt type



**LAMOR WELCOMES YOU TO VISIT  
THE COMPANY'S NEW HQ AT THE GATE  
OF THE OLD TOWN IN PORVOO, FINLAND**





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