



# USA DEBUSK GLOBAL OFFSHORE SOLUTIONS

Specialized Technologies to Improve Maintenance & Operations

- Vapor Blast Surface Preparation
- Painting & Coating Services
- Nitrogen Services

- Chemical Cleaning
- Tank Cleaning
- NDT Inspection



Offshore oil and gas operations present unique risks and challenges for protecting people and the environment. USA DeBusk meets these demanding requirements with stringent safety programs and processes, intensive training, and innovative systems and equipment.

Highlights of our industry-leading health, safety, and environmental program include:

- · Best-in-class training and Mentoring/SSE
- · "Stop Work Obligation" process intrinsic to all work
- · Senior leadership engagement, with Safety Scorecards documenting in-person site safety audits
- · Comprehensive auditing process
- · Advanced HSE Management System; allinclusive data availability for customers
- · Extensive statistical analyses with trending
- · Engineering/technology investments for risk reduction
- · Commitment to automation
- · Site-specific safety plans

#### **SMART SAFETY BADGING**

Each company badge includes a QR code that provides mobile, cloud-based, on-demand access to safety information via mobile devices. Scanning a badge allows users to view the employee's current training record, company phone directory, safety professional contact list, water cut cards, company handbooks, and much more.

#### **HSE MANAGEMENT SYSTEM**

Our EHS Management System is an all-inclusive source of safety information. Accessible from any mobile device, it includes standard operating procedures, training classes, incident reports, SDS, safety meeting sign-in sheets, recognition programs, and unlimited report options.

#### **SAFETY ORGANIZATIONS**

USA DeBusk is an active member of safety organizations. such as the Houston Business Roundtable, the National Association of Reciprocal Safety Councils, and Water Jet Technology Association, as well as a participant in auditor compliance groups.























# **TECHNOLOGIES TO TRANSFORM OPERATIONS**

USA DeBusk offers proven specialty technologies to improve the safety, speed, and cost-effectiveness of daily maintenance and operations activities. Each offers unique advantages to address the rugged conditions, extreme space limitations, and demanding environmental requirements of offshore oil and gas production.

#### **VAPOR BLASTING**

A patented low-pressure water/abrasive vapor technology for cleaning and surface preparation that is safe, dust-free, effective, and versatile.

#### **NITROGEN SERVICES**

On-site membrane nitrogen generation to ensure a ready supply of nitrogen for routine activities, as well as specialized nitrogen-based services for hydrate remediation and artificial lift.

#### **CHEMICAL CLEANING**

Custom-engineered, patented solutions with steam vapor phase and reactive chemistry technologies for faster, safer vessel entry.

#### **TANK CLEANING**

Turnkey services include advanced tank-cleaning robotics, material processing, waste minimization, and integrated emission control.

#### **NDT INSPECTION**

The latest, most advanced non-destructive testing (NDT) procedures, as well as a full range of conventional test methods.

#### **PAINTING AND COATING SERVICES**

A full scope of painting and coating techniques that can be integrated with surface preparation to streamline project timelines and ensure superior-quality work.



# **Advantages**

- 100% dust free, meets silica exposure limits
- Environmentally safe media not toxic to aquatic life
- · Small footprint; highly mobile
- Faster, more efficient than other methods
- Reduces volumes and costs of abrasive media
- · Achieves 3.5 or better profile
- One-pass polishing for IRIS and Eddy inspections
- Only light PPE required
- Limited containment requirements, reduces interruption to other contractor trades
- · Fast, economical cleanup
- Efficient integration with coating services

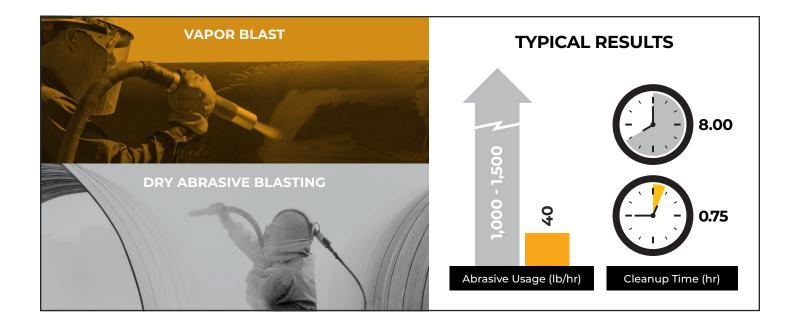
#### **VAPOR BLAST**

Vapor Blast is a patented\*, highly efficient cleaning and finishing process to prepare surfaces for recoating or to polish weld seams or other critical areas for inspection. Combining the effectiveness of both abrasive blasting and water washing, Vapor Blast yields equal or better results in a process that is safer, faster, more economical, and more practical than dry (sand) blasting, brushing, needle gunning, and grinding.

With Vapor Blast, abrasive media are mixed with water, direct-injected under hydraulic pressure into an airstream, and discharged through a hose and nozzle. A control system allows fine-tuning of flow rates and abrasive concentrations for optimum results. Atomized particles conveyed at low pressure produce controlled, uniform scrubbing action, even on hard-to-reach surfaces. A rust inhibitor can be added to the vapor stream to mitigate flash rust or corrosion in offshore environments.

#### **CAPABILITIES**

- Removes resins, rusts, chlorides, coatings, oils, stains, epoxy, mill scale and other contaminants, as well as scratches and grinding marks
- · Achieves 3.5 or better profile for paints and coatings
- · Performs one-pass polishing for IRIS and Eddy inspections
- · Cleans weld areas prior to API inspections
- · Removes CUI (Corrosion Under Insulation)
- Allows simultaneous cleaning and rust inhibitor application
- Extended reach, effectively cleaning up to 225 ft (even vertical) from the pumping unit



#### **PRODUCTIVITY & EFFICIENCY**

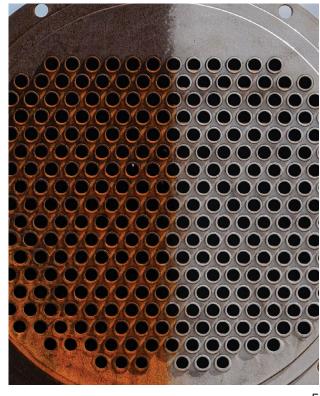
On average, Vapor Blast uses approximately 40 lb of media per hour, while sandblasting uses 1000-1,500 lb of media per hour. Reduced media requirements saves space, reduces consumables costs, and substantially reduces cleanup time and waste volume. With no dust cloud, Vapor Blasting can be performed within 10 ft of other work without interference.

A Vapor Blast project occupies a small footprint and requires limited containment. It also allows extended access without repositioning equipment. Hoses can be run up to 225 ft from the pumping unit (horizontal and vertical).



#### **SAFETY & ENVIRONMENTAL**

The environmentally safe abrasives used in Vapor Blast are the only media to pass the Fish and Shrimp Kill Test. They contain no detectable silica (<0.1%). Unlike dry blasting, Vapor Blasting produces no dust, complies with OSHA permissible airborne silica exposure levels, and prevents hot sparks from static electricity. With no dust cloud and only light PPE required for outside surface prep work, Vapor Blast improves safety and visibility for workers on crowded offshore platforms.





Nitrogen is a valuable resource offshore as an efficient, inert, and non-corrosive medium for a wide range of applications. USA DeBusk offers on-site nitrogen generation (membrane) to ensure an on-demand supply of nitrogen gas for well services, purging, pigging, inerting, blanketing, pressure testing, leak testing, and other routine activities on offshore installations.

USA DeBusk teams have more than a decade of experience conducting offshore operations for nitrogen pressure testing in new platform commissioning, line purging for safe repair and maintenance, and pressurizing stabilizer cans, as well as offshore vessel and barge purging.

# **Advantages**

- · Best-in-class safety
- Experience in offshore applications
- Patented Recirc & Dry-Pac units
- Conserves space with 30% smaller footprint
- N2 artificial lift uses less energy
- Nitrogen remediation of gas hydrates
- Highly qualified project planners, management, and field crews

## PATENTED EQUIPMENT

USA DeBusk brings a distinct competitive advantage for offshore operations with our patented Recirc Nitrogen Units and patented Dry-Pak Nitrogen Membrane Units.

These components address common offshore issues regarding lack of space on platforms and insufficient gas to produce wells and power the platform. Each unit has a 30% smaller footprint than other options, conserving space on crowded platforms.





#### **N2 ARTIFICIAL LIFTING**

Nitrogen lifting is used to increase the production of wells that are declining due to diminishing gas for gas lifting. It is also used to increase oil and gas production as part of enhanced oil recovery techniques.

USA DeBusk developed a process for lifting wells that uses less horsepower, making the procedure a low-cost method with a good return on investment.

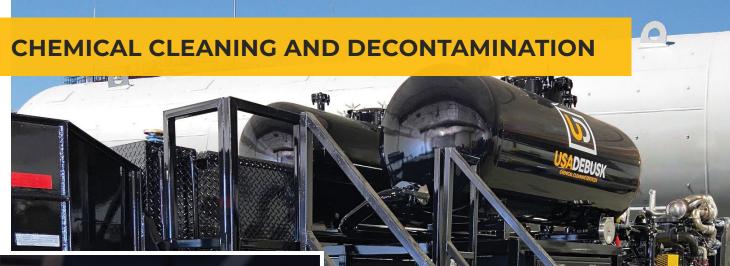
The process was first demonstrated in 2012, successfully lifting a dead well with nitrogen and turning a well that was slated for plugging and abandonment back into a successful producer.



#### **HYDRATE REMEDIATION**

Gas hydrates can form blockages in subsurface flowlines and pipelines. USA DeBusk conducts offshore operations for hydrate remediation, restoring flow and increasing safety.







USA DeBusk offers the industry's most comprehensive suite of technologies and resources for decontamination and chemical cleaning. Our elite teams of experts partner with you to plan and execute custom-engineered solutions for your specific needs.

We help you carry out safer, faster, more predictable maintenance projects by using patented processes and chemistries to remove hydrocarbon deposits and clear LEL, H2S, benzene, and other noxious gases from equipment and systems.

#### **EXPERTISE**

With USA DeBusk, your decontamination and chemical cleaning projects are managed by industry veterans who understand your operations and project requirements.

#### **MECHANICAL RESOURCES**

USA DeBusk has an extensive fleet of purposebuilt equipment to support your de-inventory and decontamination requirements. We arrive on site with everything needed to clean and decontaminate your equipment while effectively managing effluent.

#### **PATENTED CHEMISTRY**

Patented KixSolv® chemistry for steam vapor phase cleaning removes noxious gases, gums, tars, resins, asphaltenes, and other tough hydrocarbon-based contaminants. High solvency strength gives KixSolv® the power to clean faster and decontaminate more completely than any other chemistry. Low waste volumes make KixSolv® the responsible choice for environmental sustainability in offshore applications.

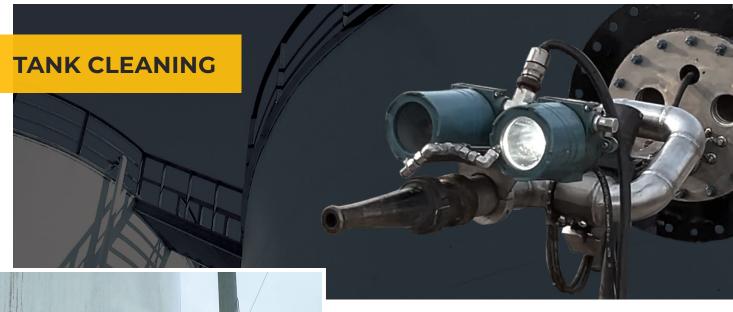
# **Advantages**

- Elite and proven safety culture
- Unique and scalable solutions
- Extensive supervisory and decon project experience
- Patented chemistries and processes
- Multi-service savings opportunities
- · Custom engineering
- Turnkey planning, equipment, mechanical, and execution

#### **TECHNIQUES**

- · Circulation
- · Cascading
- $\cdot \, \mathsf{Foaming}$

- · Steam blows
- · Liquid fills
- · Vapor phase cleaning



USA DeBusk provides turnkey services for safe, effective cleaning of storage tanks, API separators, cooling towers, and other vessels.

We have extensive experience with a wide range of tank designs and applications, including tanks with crude, wastewater, sour water, and other challenging materials.

Service options include circulation and chemical treatment, water washing, material processing, waste minimization, emission controls, hydro cutting, vacuuming, and other solution-based services.

#### **SAFETY FIRST**

USA DeBusk has the management expertise, training and technology to safely operate in the most hazardous environments, including tanks with pyrophoric products, Immediately Dangerous To Life or Health (IDLH) atmospheres, and structural damage.

#### **TECHNOLOGY & PRODUCTIVITY**

We use the latest automated equipment and techniques to minimize in-tank man hours, improve performance and reduce turnaround times.

- · Remote-controlled manway cannons, cameras, and lights
- · Track-drive ROVs
- · Tank sweep with continuous slurry and removal
- · Manually operated manway jetting
- · Online options to keep tanks in service during cleaning
- · Simultaneous cleaning and degassing

Our teams are highly skilled at recovering valuable hydrocarbons and minimizing waste. We can provide complete emissions control, as well as liquid/solid waste disposal assistance if needed.

# Advantages

- Industry-leading technical talent
- Advanced robotics for safety and productivity
- Circulation and chemical treatment options
- Material processing and waste minimization
- Integrated emission controls



USA DeBusk Inspection Services provides a full suite of NDT services for critical equipment used in offshore applications.

Our highly qualified crews include API 510, 570, and 653, CWI, and VT certified inspectors, as well as AWS certified welding inspectors.

We offer rope-access inspections for safe, timely, costeffective service for hard-to-reach equipment such as plant boilers or offshore platforms.

We collaborate closely with your inspection, maintenance, and engineering teams to obtain quantitative and qualitative results you can depend on for critical decisions.

# **Advantages**

- Highly qualified, experienced teams
- Advanced and conventional methods
- Corrosion mapping
- In-house evaluation expertise
- · Rope-access inspections
- Decision-making support to improve safety, reduce downtime, enhance quality control, and mitigate environmental and compliance risks
- Integrated NDT with complementary USA DeBusk services

#### **ADVANCED TECHNIQUES**

- · Guided Wave Ultrasonics (GUL-MSS)
- · Digital Radiography (DR) and Real Time Radiography (RTR)
- Phased Array UT (PAUT)
- · Time of Flight Diffraction (TOFD)
- · Automated UT Corrosion Mapping (AUT)
- Eddy Current: Pulsed Eddy Current (PEC) and Surfaced Eddy Current
- Tube Inspections (EC, RFT, IRIS, and NFT)

# **CONVENTIONAL TECHNIQUES**

- Radiography
- · Ultrasonic Thickness
- · Shearwave
- · Magnetic Particle (MT)
- Penetrant Testing (PT)
- Visual Inspection (VT)
- · Material Verification (PMI) and Hardness Testing (HT)



USA DeBusk offers integrated surface preparation and coating services for offshore applications. Our single-source solutions save time, ensure quality results, and provide one point of contact and responsibility to streamline project management.

### **Coating Application**

We offer a full range of application methods to meet your coating requirements while operating safely and productively in your environment. Our NACE-certified technicians and state-of-the-art equipment enable us to handle both small and large projects effectively.

#### **Airless Spray Coating**

- · Up to five times faster than brushing and rolling
- · Produces an even coat on all surfaces
- · Can be used for a wide range of coatings

#### Plural Component Pump Coating

- · Applies more millage in a single coat
- · Shorter cure times
- · Faster application time

#### **Brush & Roll Painting**

- Avoids overspray
- · Full containment not necessary
- · Ideal method when spray applications are not allowed

We have Level 2 and 3 NACE-certified inspectors with expert knowledge to assist with coating specifications, non-destructive inspections, assessments, and recommendations.

We can develop maintenance coatings plans prioritized by severity, as well as detailed, long-term corrosion mitigation programs to keep assets in peak condition.

# **Advantages**

- Saves time
- Enhances safety
- Reduces costs
- Improves coating quality and durability
- Provides a single point of contact
- Reduces equipment footprint
- Offers a variety of coating methods
- Assists in developing maintenance coating programs

#### **MULTI-SERVICE VALUE**

USA DeBusk offers a full portfolio of industrial services that can be combined to improve project coordination, save time, reduce costs, and enable a unified commitment to safety. Contact us today to learn how our advanced technologies can increase safety and savings for you.





#### **ADVANCED TECHNOLOGIES FOR SAFETY & SAVINGS**

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