

ProTech™ Mobile Tank Car Cleaning: Safe, Sustainable, Versatile, On-Site



Executive Summary

ProTech™ is a patented mobile tank car cleaning technology engineered to dramatically improve fleet productivity by eliminating confined space entry into hazardous product, minimizing downtime, and enabling safe, on-site cleaning. By reducing empty freight moves, expediting turnaround, and conserving resources, ProTech delivers a faster, more efficient alternative to traditional fixed-location cleaning facilities.

The Hidden Cost of Traditional Tank Car Cleaning

Traditional tank car cleaning is slow, hazardous, and resource-intensive. One of the greatest risks is confined space entry, where technicians descend into dark, sealed tank interiors through narrow manways. These spaces may

contain toxic fumes, residual chemicals, or extreme heat—posing serious safety threats such as chemical exposure, oxygen deficiency, and physical injury. Even with modern protocols, confined space entry remains one of the most dangerous aspects of tank car maintenance.

Beyond safety risks, conventional cleaning creates major inefficiencies. Tank cars must be taken out of service and transported to centralized off-site facilities, incurring empty freight costs, delayed asset utilization, and lost revenue. Backlogs and limited availability can keep cars out of service for weeks.



Environmental impact is another concern. Traditional cleaning methods consume large volumes of water and chemicals, and many mobile systems must halt operations to offload effluent or resupply—adding delay, waste, and cost.

What Makes ProTech Different

ProTech brings advanced tank car cleaning directly to the railyard—reducing downtime, eliminating empty freight moves, and improving overall fleet utilization. Built around four key pillars—**Safety, Sustainability, On-Site Capability, and Versatility**—it delivers a high-efficiency, mobile solution built for today's rail environment.

Each pillar supports measurable gains in safety, cost reduction, and operational performance:

- **Safety:** Our autonomous, remotely operated system eliminates the most dangerous aspect of tank car cleaning—human entry into the tank while hazardous residue is present. ProTech minimizes exposure to harmful substances and reduces the risk of injury while maintaining compliance with all safety and environmental standards.
- **Sustainability:** A proprietary closed-loop filtration system allows ProTech to reuse both water and detergent, minimizing resource consumption and waste. Teams can work longer without stopping to refill or discharge effluent, reducing environmental impact and maximizing throughput.

- **On-Site Capability:** ProTech's fully equipped mobile systems come directly to the site, eliminating delays, risks, and the high cost of off-site logistics. By cleaning where tank cars are staged, ProTech eliminates empty freight moves and reduces time out of service—minimizing lost revenue and improving overall fleet utilization. Its compact footprint and high-throughput capability ensure reliable cleaning without disrupting railyard operations.

- **Versatility:** ProTech features three distinct, purpose-built cleaning systems—Water Filtration, Steam Injection, and Automated Cannon—each engineered for precise cleaning across commodity types, from light fuels to hardened petroleum heels. This enables customized cleaning strategies that optimize effectiveness and reduce unnecessary downtime. Capable of cleaning multiple tank cars per day, ProTech's high-throughput design reduces bottlenecks and turnaround time. Our automated processes align with the pace of modern rail logistics—all without compromising quality or safety.

Technical Systems Overview

ProTech's patented mobile platform features three integrated cleaning systems—each engineered for specific commodities and cleaning intensities. Together, they deliver consistent, safe, and high-throughput performance across all use cases.



3D Rotary Orbital Sprayer – Fastened in the manway, the sprayer rotates a full 360 degrees and sprays down the tank car in 20 minutes



Three part water filtration system and holding tanks for tank car cleaning



Automated Cannon System

Water Filtration System – Efficient Cleaning for Light Residues

Ideal for light liquid residual products like AV fuel, diesel, and gasoline, this compact and fully mobile system offers a self-contained cleaning process that reduces waste and minimizes setup time. It is particularly well suited for locations with space constraints or limited access to utilities.

HOW IT WORKS:

A 3D rotary orbital sprayer rotates 360 degrees to clean the interior in just 20 minutes. The system is fastened into the manway and eliminates the need for manual tank entry. Once cleaning begins, pressurized water is sprayed in preset cycles across all interior surfaces. Effluent is then pumped from the tank bottom through a proprietary multi-stage filtration system that removes contaminants and purifies the water. The resulting clean water is stored and reused for additional cleanings—enabling efficient, continuous operation with minimal environmental impact.

Steam Injection System – Precision Cleaning for Midgrade Commodities

Designed for midgrade distillates like corn oil, condensates, and lube oils, this method uses high-temperature steam to dissolve and remove residues without abrasive tools or harsh chemical exposure. The system supports high-throughput cleaning cycles and is capable of cleaning two tank cars simultaneously.

HOW IT WORKS:

A steam hose enters through the manway while a second hose is connected to the tank's bottom outlet valve for effluent extraction. Steam is injected at temperatures reaching up to 350°F (typically 180°F) to loosen and dislodge buildup on the tank interior. If needed, a chemical injection can be added to address difficult residues. After steam cleaning, a water flush is performed to remove remaining contaminants. All cleanings meet rigorous sanitary standards, with Kosher certification available when required.

Automated Cannon System – High-Impact Cleaning for Hardened Residues

Engineered for hardened residues and heavy commodities such as asphalt, bitumen, bunker oil, and slurry oil, this advanced system combines high-pressure water jets with environmentally responsible solvents to break down solidified tank car heels. Designed for remote operation by personnel on the ground, it enhances worker safety and allows for highly efficient cleaning cycles.

HOW IT WORKS:

The cannon is mounted on a 60-foot integrated knuckle boom crane for precise positioning. Once inserted into the tank car manway, the cannon delivers a powerful stream of water, biodegradable solvent, and detergent. This stream can reach over 200 feet, allowing thorough coverage of all surfaces. An integrated camera and lighting system enables remote visual monitoring and control. Effluent is extracted and passed through a multi-stage filtration system that separates reusable water, solvent, and waste materials. A final rinse ensures tanks are left clean, dry, and inspection-ready. The entire system fits within a 53-foot trailer, enabling transport and setup at any railyard or customer site.

Delivering the New Standard in Tank Car Cleaning

ProTecht integrates three distinct systems—Water Filtration, Steam Injection, and Automated Cannon—each designed for mobility and tailored to commodity-specific cleaning. By eliminating confined space entry into hazardous product and reducing reliance on off-site cleaning, ProTecht enables safer, more efficient, and environmentally sustainable operations directly at the railyard.

This is not just an evolution in cleaning technology—it is a shift in operational strategy. ProTecht redefines what is possible for tank car cleaning by combining safety, speed, cost savings, and environmental responsibility in one integrated solution. For rail operators looking to streamline operations, reduce risk, and gain a competitive edge, ProTecht delivers the standard of tomorrow, today.

Next Steps: Contact Transco Rail Services to explore how ProTecht can deliver cost-effective, on-site tank car cleaning tailored to your operational needs.

Visit TranscoRailway.com/ProTecht to learn more.



Automated Cannon System



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