

# CALFLO™ CLEANING FLUID

## CHALLENGE:

EFFICIENTLY CLEANING PROCESS TANKS AND VESSELS

## RESULTS:

IMPROVED WORKER SAFETY, REDUCED ENVIRONMENTAL IMPACT, LESS DOWNTIME AND LOWER COSTS WHEN USED TO CLEAN PROCESS TANKS AND VESSELS



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**PETRO-CANADA LUBRICANTS CALFLO™ CLEANING FLUID** is a heat transfer cleaning fluid designed to help clean systems, including heavily carbonized systems, that become dirty as a result of the thermal and oxidative degradation of heat transfer fluids. Specially formulated to work with systems that contain aromatic-based or mineral-oil based heat transfer fluids, CALFLO Cleaning Fluid helps improve thermal efficiency by removing harmful sludge and degradation deposits.

Conventionally, CALFLO Cleaning Fluid has been recommended for use in closed heat transfer systems that suffer from carbon and sludge formation often found in industrial settings such as asphalt plants, forestry kilns, food processing plants and other similar systems.

**That was until one day, an individual thinking outside the box requested support from Petro-Canada Lubricants to clean an unconventional process tank**—a skim oil tank. Having noticed that off-the-shelf products could effectively dissolve carbon deposits from small equipment, the individual sought out our expertise to find a suitable cleaning fluid solution. The challenge involved finding a fluid that could not only improve worker safety, minimize waste and simplify the time-intensive cleaning process—but also would be available in a large enough quantity to clean a very large tank.

After completing extensive trials, **Petro-Canada Lubricants has proven that CALFLO Cleaning Fluid can effectively clean process tanks and vessels such as crude oil tanks, skim oil tanks, bunker C tanks, railcars, pipelines and treaters.**

## THE CHALLENGE

Typically, process tanks require thorough cleaning with appropriate fluids to allow for mandatory inspections that ensure the tank's welds are secure and the tank is suitable for use.

A Spec 1 clean, required by most authorities, involves physically examining the bottom of the tank and its welds to assess durability. Tanks have traditionally been cleaned manually, which is an extremely time-consuming and labor-intensive process that often involves degassing and debulking the tank and manually cleaning it with shovels and high-pressured water. This method also requires maintenance staff to be exposed to high-risk confined space entry, enclosed in the large vessel for prolonged periods of time, putting workers at risk.

This traditional method can cost a business significant time and money and often generates large amounts of wastewater that has to be disposed of using environmental waste companies. With process tanks requiring inspection of bare metal every eight years, the importance of thoroughly cleaning a tank safely and cost effectively while minimizing environmental impact is a critical challenge.

## THE SOLUTION

### NON-CONVENTIONAL USE OF A CONVENTIONAL FLUID

Having been requested with finding a cleaning fluid solution to dissolve the deposits from a large skim oil tank, the Petro-Canada Lubricants team identified CALFLO Cleaning Fluid.

The unique formulation of CALFLO Cleaning Fluid made it an ideal solution to dissolve hydrocarbons and clean the very large skim oil tank. Using state-of-the-art high-pressure pumps and robotic cannons, the fluid was circulated throughout the tank, causing the deposits to break up and

gradually dissolve over a period of time. Once the deposits were gone, a first time Spec 1 cleaning of the tank was achieved so that a full inspection of the tank could be completed, meeting regulatory requirements.

Tasked with a challenge from a large oil sands customer, Petro-Canada Lubricants provided a safe and effective product solution for the cleaning of process tanks.

# CASE STUDY RESULTS

Upon immediate success cleaning various small to mid-sized process tanks, CALFLO™ Cleaning Fluid was put to its biggest test—a 30,000m<sup>3</sup> skim oil tank.

In this project, the benefits of using CALFLO Cleaning Fluid were extraordinary: increased worker safety, reduced environmental impact, less downtime and a lower project cost.

Compared to the cleaning of the same tank two years prior, which was carried out using traditional methods, notable benefits were realized.

Worker safety significantly improved due to a 38% reduction in exposure hours for confined space entry

and a 73% decrease in the amount of degassing chemicals used. Water usage also decreased by 62%, resulting in an equal decrease of disposal costs and a reduction in the use of fresh water.

**In total, the skim oil tank was cleaned in 19.5 days—4.5 days ahead of schedule and \$578,000 CAD under the estimated budget—with first time Spec 1 cleaning of the tank achieved.** The impressive results demonstrate that CALFLO Cleaning Fluid can effectively clean large process tanks, providing significant benefits to users.

**38%**  
reduction in  
worker-confined space  
entry exposure

**73%**  
decrease in  
degassing  
chemicals used

**62%**  
decrease in water  
usage and  
disposal cost

**4.5**  
days ahead  
of schedule

**35%**  
reduction in  
cleaning duration

**\$578K**  
CAD  
under budget

\*Depending on the process environment, CALFLO Cleaning Fluid may also be reclaimed as crude oil production or used oil disposal.

## THE BENEFITS



INCREASED SAFETY



REDUCED  
ENVIRONMENTAL  
IMPACT



LESS DOWNTIME



LOWER COST

## AUTHORIZED DISTRIBUTORS

Petro-Canada Lubricants has an extensive network of trusted and authorized distributors that support delivery of best practice, innovative solutions and outstanding value for customers. Driven by a collective ambition to help grow our customers' businesses, distributors play a key role in matching fundamental lubricant knowledge and the suite of services to the needs of a business.





# OUR NO-NONSENSE LUBRICANTS WARRANTY

We will repair equipment or replace equipment parts that are damaged due to defects of a Petro-Canada Lubricants product, as long as the lubricant is used in accordance with your equipment manufacturer's and our recommendations.

**IT'S MORE THAN JUST A WARRANTY. IT'S A COMMITMENT.**

To learn more about how Petro-Canada Lubricants products can help your business visit: [petrocanadalubricants.com](https://petrocanadalubricants.com) or contact us at [lubecsr@hfsinclair.com](mailto:lubecsr@hfsinclair.com)

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