

Welder Killed in Tank Explosion

Incident Date: March 7, 2013 / Location: Grande Prairie, AB / Industry: Oilfield Services



AI Teaching Illustration. Red overlay represents hidden vapour risk, not visible smoke or measured liquid level. Tank layout and worker position are schematic.

What Happened

A glycol pump truck returned to the shop after its tank was over-pressured during fluid recovery at a wellsite. Two holes had formed, and the tank was drained into a tote. The recovered fluid showed two distinct layers.

The next morning, an unsuccessful attempt to ignite a small liquid sample did not establish that the tank was safe. A welder prepared the holes and welded the upper one. When welding began on the second hole, the tank exploded, fatally injuring the worker. Investigators later found low-flash-point condensate in samples from the wellsite where the truck had last worked.

Why This Became Fatal

A drained tank still presented an explosion hazard during hot work. Its service history included recovered well fluids. Trying to ignite a liquid sample was not a valid atmospheric test. Emptying the liquid did not establish that flammable vapours or residues were absent.

NEVER FORGET.

LET THEIR STORY PREVENT RECURRENCE.

What Safe Looks Like

A drained tank is not automatically safe to weld.



1 Establish the Contents

Review service history, contamination and cleaning needs.

2 Verify Hot-Work Conditions

Isolate, clean, ventilate and test under an approved plan.

3 Authorize Before Ignition

Verify the permit, required testing and fire watch. Stop if conditions change.

AI Teaching Illustration. Assessment in progress, not permission to weld or an isolation design. **LSR links:** Hot Work; Energy Isolation.

Investigation Outcome

On **December 18, 2015, Powerstroke Well Control was convicted** and fined **\$150,000 plus a \$22,500 surcharge**, with **two years of corporate probation**. OHS also issued two stop-work orders for hot work/welding and an order concerning pressure applied to the non-pressure-rated tank. The report records no supervisor conviction.

Talk It Through with Your Crew

- 1 Which tanks or containers may hold residues different from their original contents?
- 2 How do we establish safe hot-work conditions after a container has been drained?
- 3 Who verifies cleaning, isolation, atmospheric testing and the hot-work permit?
- 4 Would you stop or refuse hot work if the contents or atmosphere were uncertain?

SAFETY COMES FIRST.

Your Right to Refuse – Alberta. You may refuse work you reasonably believe presents an undue hazard: a serious and immediate threat. Promptly report the refusal and reasons to your employer or supervisor. They must investigate. Contact Alberta OHS if unresolved. Take reasonable care not to endanger others. You are protected from reprisal.

Sources: [Alberta OHS investigation Report F-OHS-038025-5D60D](#), pp. 2-9; summary completed June 2019. [Alberta refusal guidance](#). Prepared October 19, 2026. LSR links are learning associations, not findings of a breach.