



CASE STUDY

SAGD Asset Integrity: The Race for Preservation



With system integrity insurance hanging in the balance for a SAGD Facility, bitumen emulsion removal and preservation were conducted on major vessels, equipment and piping.

Highlights:

- > Use of an Intrinsically safe water base chemistry capable of heavy bitumen removal
- > Met a tight schedule that could not be met when relying solely on traditional cleaning methods
- > Assets Integrity maintained for re-commissioning in the future



With the client's facility having been decommissioned for more than a year, residual emulsion on internals made for a very sticky situation that traditionally requires mechanical removal. The combination of piping and equipment necessitates methods such as hydromilling, vessel entry and steaming that would prove to be too costly and excessively time consuming.



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To meet deadlines, FQE expedited a rigorous large-scale cleaning regimen by using our in-house specialty FQE Solvent ME; a water-based solvent designed to tackle heavy hydrocarbon sludge. Over the course of three months, emulsion removal was accomplished using heated fluid circulation and gamma jetting for the following systems:

Start Up Circulation:

- > 2x Start Up Separators
- > 2x Start Up K.O. Drums
- > 6x Start Up pumps

SAGD Super Modules:

- > 5x Super Mod Building
- > 35+ Well Pairs (Injectors and producers)

Produced Emulsion System:

- > 1x Inlet Surge Vessel
- > 6x BFW Heat Exchangers
- > 6x Glycol Heat Exchangers
- > 3x Produced Emulsion Pumps
- > 2x Produced Emulsion Lines
- > 2x Produced Vapor Lines

Execution of work was completed over winter months where temperatures dropped as low as -35°C. Subzero temperatures greatly reduce the efficiency of methods like hydro milling. Cleaning would not have been possible without heated fluid circulations as severe freezing would have halted progress.

Upon completion of bitumen removal, systems were dried to a dew point temperature of -25°C and then purged with nitrogen to remove oxygen just in time to meet insurance requirements for asset integrity.



EDMONTON, AB

9304 39 Avenue Northwest
Edmonton, AB T6E 5T9
Office: +1 780-485-0690

CALGARY, AB

Suncor Energy Centre, West Tower
#5100, 150 6th Avenue, S.W.
Calgary, AB T2P 3Y7
Office: +1 403-538-2140

FORT MCMURRAY, AB

318 Macalpine Crescent
Fort McMurray, AB T9H 4A8
Office: +1 780-750-2829

FORT ST. JOHN, BC

Graywest Office Centre Ltd.
10704 97 Avenue
Fort St. John, BC V1J 6L7
Office: +1 250-785-1706



Connect with us:



fourquest.com