



Slop Oil Processing & Water Tank Clean-out



Onsite technicians monitor solids consistency for dryness and adjust centrifuge parameters accordingly.



Alfa Laval Lynx 40 centrifuge and stand mobilized to remote client battery site for slop oil processing.



Lynx 40 package set up for the onsite production water settling tank clean-outs.

The company is a major crude oil and natural gas producer with extensive operations throughout the Western Canadian Sedimentary Basin and internationally. This producer agreed to trial a modified strip site to separate slop waste material collected from remote sites in northern Alberta. Additionally, the company wanted to trial the use of centrifuges to help clean out production water settling tanks. The customer's overriding goals are to reduce its costs, minimize environmental impact and enhance safety performance.

OPPORTUNITY

Newalta was contracted in late 2017 to provide onsite centrifuge processing of slop oil from an oilfield battery and surrounding sites for a trial period of 90 days. Previously the process for slop oil had been to stabilize the slop using wood pellets or sawdust, at a ratio of 1:1, requiring the purchase and hauling of stabilization material to site, mixing off and trucking of waste to landfill for disposal.

The producer also wanted to trial a centrifuge separation process to clean out production water settling tanks. There are two water tanks onsite to store and clarify waters recovered from their polymer injection process.

We defined the key drivers for the customer on this project:

- Reduce requirement for/use of stabilization material.
- Reduce internal trucking of wastes onsite and between sites.
- Reduce volumes sent to landfill for disposal.
- Separate and recover oil from solids.
- Reduce emulsion solids down to < 2% in order to allow for further processing and oil recovery through the producer's onsite treater.
- Remove solids fines, oil and water streams and oil from process waters.
- Improve quality of recycled water for re-use in the polymer injection process.

SOLUTION

Newalta set up a modified strip site at the producer's site, comprised of a Lynx 40 package, agitated feed tank and clean effluent storage tanks. The site operates 24 hours a day, 7 days a week with one operator per day and night shift.

The water tank clean-out set up was comprised of a Lynx 40 package with an agitated feed tank and injection system. Volumes pulled from tank bottoms were unloaded directly into the feed tank.

We addressed a number of unique project challenges:

- Newalta onsite technicians communicated with the producer's staff and truckers to coordinate feed loads and improve consistency.
- Newalta technicians monitored and adjusted centrifuge parameters in order to achieve optimal recovery and solids consistency. This included adjusting for dryness of solids generated and centrate fluid for adherence to the <2% solids content KPI.
- Newalta added night shift operators to enable 24 hour operations in order to improve the turn around time on the water tank cleaning.
- Newalta changed out equipment that was not meeting project requirements on the water tank clean-out package.



Newalta is a leading provider of innovative engineered environmental solutions that enable customers to reduce disposal, enhance recycling and recover valuable resources from oil and gas exploration and production waste streams. Using advanced technologies and processes, we work with customers to solve environmental, commercial and operational challenges that help reduce operating costs and achieve sustainability objectives.

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RESULTS - FIRST 90 DAYS OF PROJECT RUN TIME

Volumes Processed - Volumes processed in the first 88 days of project run time = 8,898m³, Recovered solids = 680m³, Recovered oil = 3,572m³

Recovered Value - Recovered oil volumes averaging 40m³/day and totaling 3,572m³ at an estimated value of \$9,500/day and \$839,000 project to date. This surpassed the client's estimated oil recovery expectations of 10m³/day.

Disposal-Related Costs - Newalta's centrifuge process removed and recovered free oil and liquids from the slop material, leaving behind a relatively solid waste requiring little to no stabilization for disposal. Solids waste volumes requiring stabilization and hauling to landfill have been reduced by 92%. Stabilization material requirement have been reduced from 100% (1:1 ratio) down to 15%, further reducing trucking and landfill disposal costs.

Enhanced Recovery - Emulsion solids were reduced to < 2%, allowing for processing and oil recovery using the producer's treater.

Tank clean-out benefits - The water tank clean-out process enabled us to recondition/recycle injection waters through the removal of fines and the recovery of residual skim oil. This also reduced the requirement for polymer additions.



Trucks from surrounding producer sites deliver slop volumes to feed tanks for consolidation prior to processing activity.

Metrics related to the tank clean-out:

- Total volumes processed = 7,864.5m³
- Total solids recovered = 564m³ or 90.9%
- Total recovered oil volumes = 3,172.7m³ ~\$745,585
- Total volumes trucked out = 6,529.0m³

Customer feedback - Oil recovery far exceeded the customer's expectations. The project has been extended and equipment has been winterized and tied directly into the producer's system. The producer was pleased with the results of water tank cleanout and the project was deemed a success.

