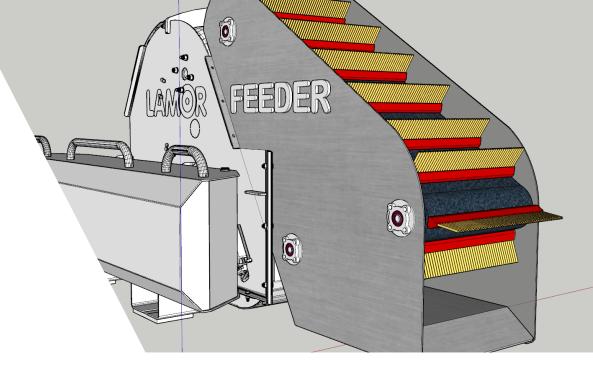


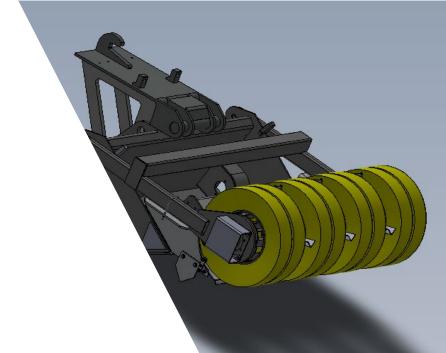
IMAROS 2 – Mechanical Recovery

Lamor participated in WP4 of the IMAROS 2 project with two different equipment sets.

- ◆ Brush Chain Skimmer LAM 50 & GTA pump
- Arctic Bucket Skimmer LRB 150 & GTA pump

The devices are based on existing products and technology with add-ons or modification for improved recovery and pumping capability of various quality and type of LSFO, VLSFO and ULSFO.





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THE CONCEPTS



Concept #1 – Feeder unit

Concept description, testing in Horten

- Brush Chain Technology base for skimmer concept
 - ◆ Add-on feeder module placed in front of brush chain
- Feeder conveyor pulls the oil and feeds brush chain
- Add-on heating of scraper and hopper
- Mechanical feeding of oil to the pump



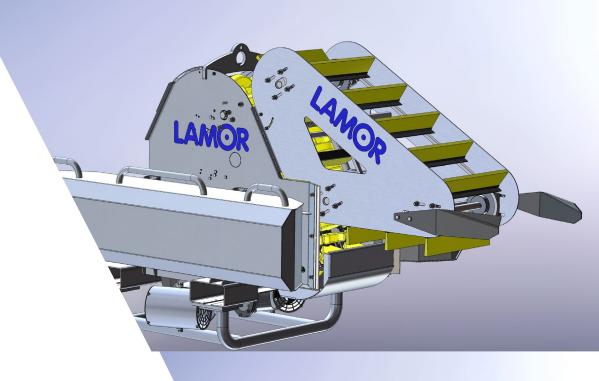
Testing

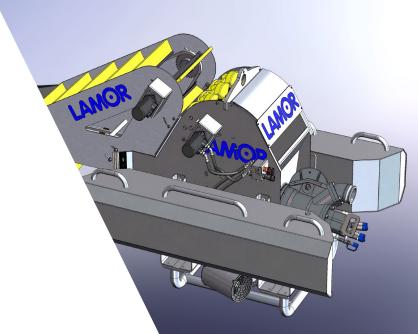
Findings during testing

- ♦ Static recovery challenging → Active maneuvering is key
- Oil starts breaking up when applying energy
- Oil flow to pump does not pose a problem in the tests
- Pockets with water in the oil slick
- Mechanical agitation of oil key for flow of oil

Modifications

- Adding thrusters
- Optional oil knives





Concept #2 – Bucket Skimmer

Concept description, testing in Kotka

- Brush wheel Technology
- Actively operating the skimmer within the oil slick
- Reverse rotation for downward sweep recovery
- Additional heating sling installed inside the hopper
- Auger screw ensuring continuous feed of oil to the transfer pump



Testing

Findings during testing

- IM-27 oil behaved in similar manner as HFO
- ♦ Heating is key in arctic recovery operations
- Active maneuvering is key
- Downward sweep expands usable oil type
- Improved pumping stability with heating + screw feed
- Can be used recovering LSFO's other than arctic conditions



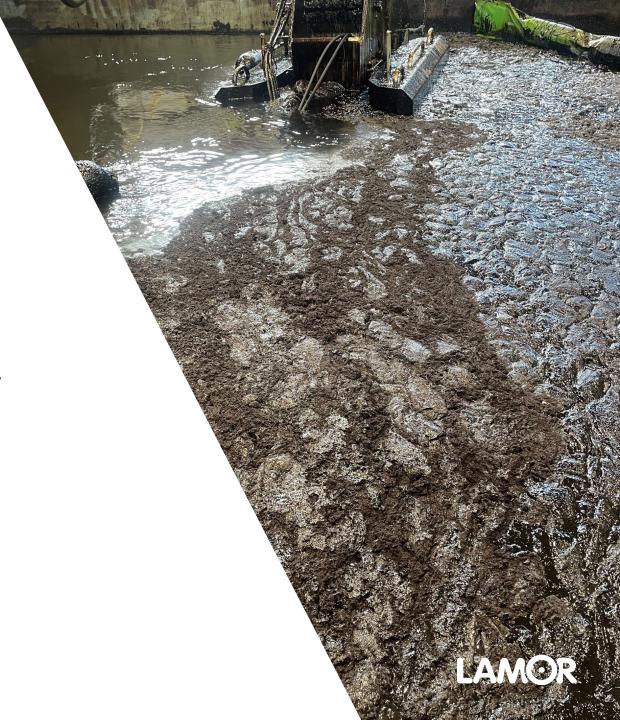
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LEARNINGS



Take Aways

- ◆ Tactics on encountering the oil is in an important role
- Big difference in LSFO's require wide tool box
- Heating is key in arctic recovery operations
- Active maneuvering improves efficiency
- More testing is needed with challenging oil types in low temperatures



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THANK YOU

P.S. Playing with oil is fun!

