

## ATTACHMENT TWENTY-FIVE

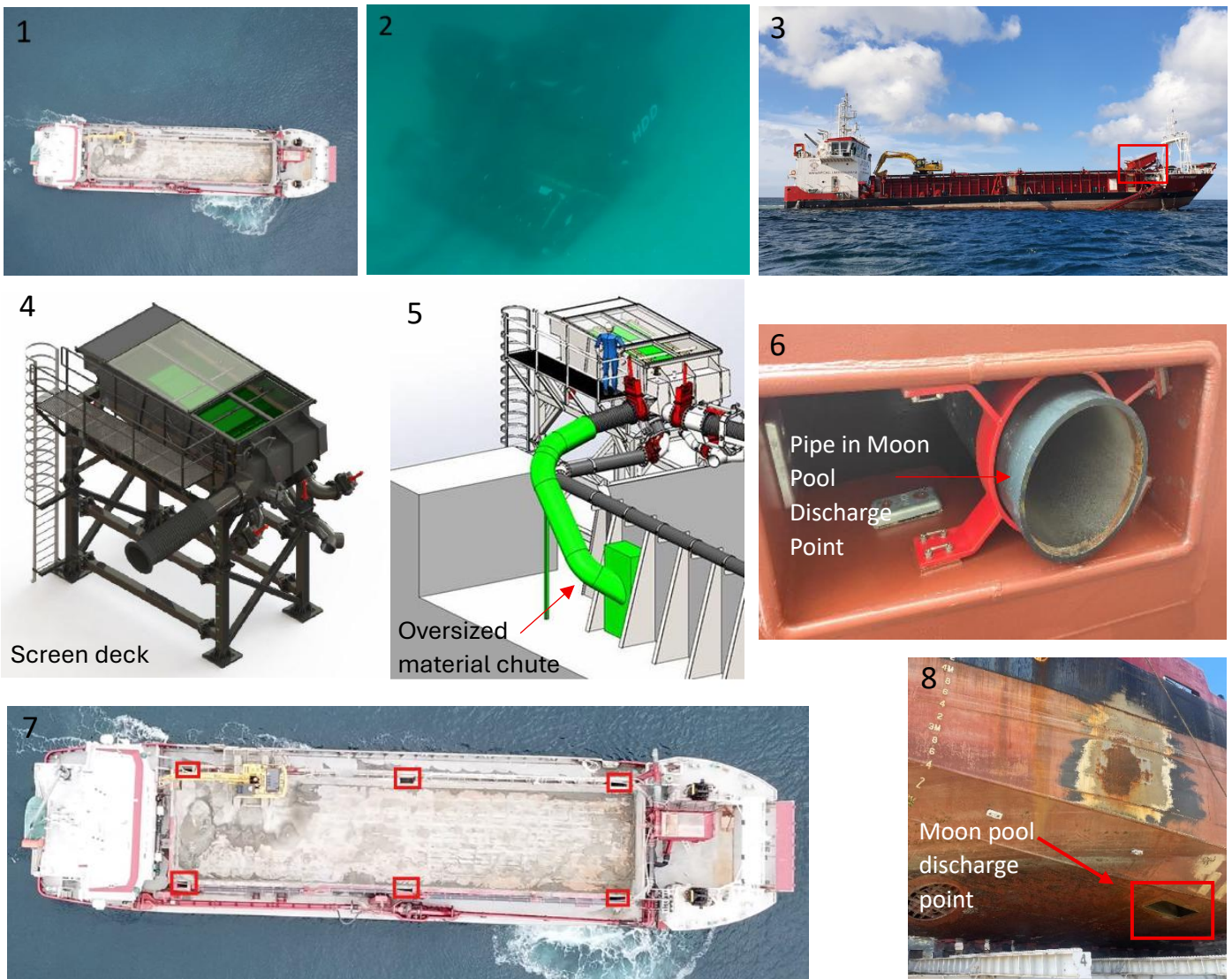
William Fraser Video Link

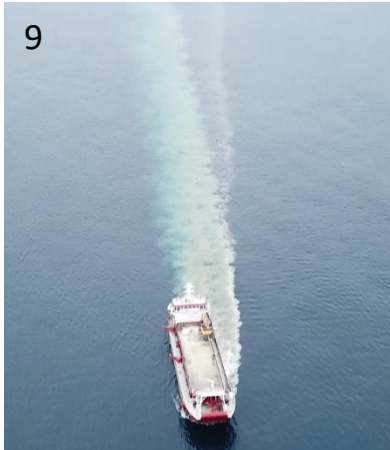




Link: [William Fraser Video 2.1.mp4](#)

This video (GoPro Hero 8 footage captured in 2020) shows the *William Fraser*, the Trailing Suction Hopper Dredge (TSHD), firstly in position getting ready to extract sand and then actively extracting sand offshore in the Mangawhai-Pākiri embayment (Image 1). The *William Fraser* is equipped with advanced Dutch dredging technology, including a California-style draghead (Image 2) designed specifically to minimise seabed disturbance and optimise extraction of sand. The video shows the draghead in operation, demonstrating how the extraction process creates a shallow (100mm), temporary track on the seafloor. At the draghead, the sand is fluidised by the pumps suction capability and moves up through the draghead and into the drag arm. From there, the sand is piped on to a 2.0mm screen deck (Images 3 & 4). Material larger than 2.0mm is made up of sand, shell and biological material which immediately passes into an oversized material chute (Image 5) and discharge pipe (Image 6) that discharges out of the forward Port ‘moon pool’ below keel height (Images 6-9). All sand and water passing through the 2.0mm screen settles into the hopper where the suspended sediments and water are released through 6 moon pools (Images 6-9) arranged either side of the front, middle and rear of the hopper (Image 6-9). To help with your understanding of the vessel’s operational components, please refer to the visual diagram and schematic drawings of the *William Fraser* (Pages 4-7).

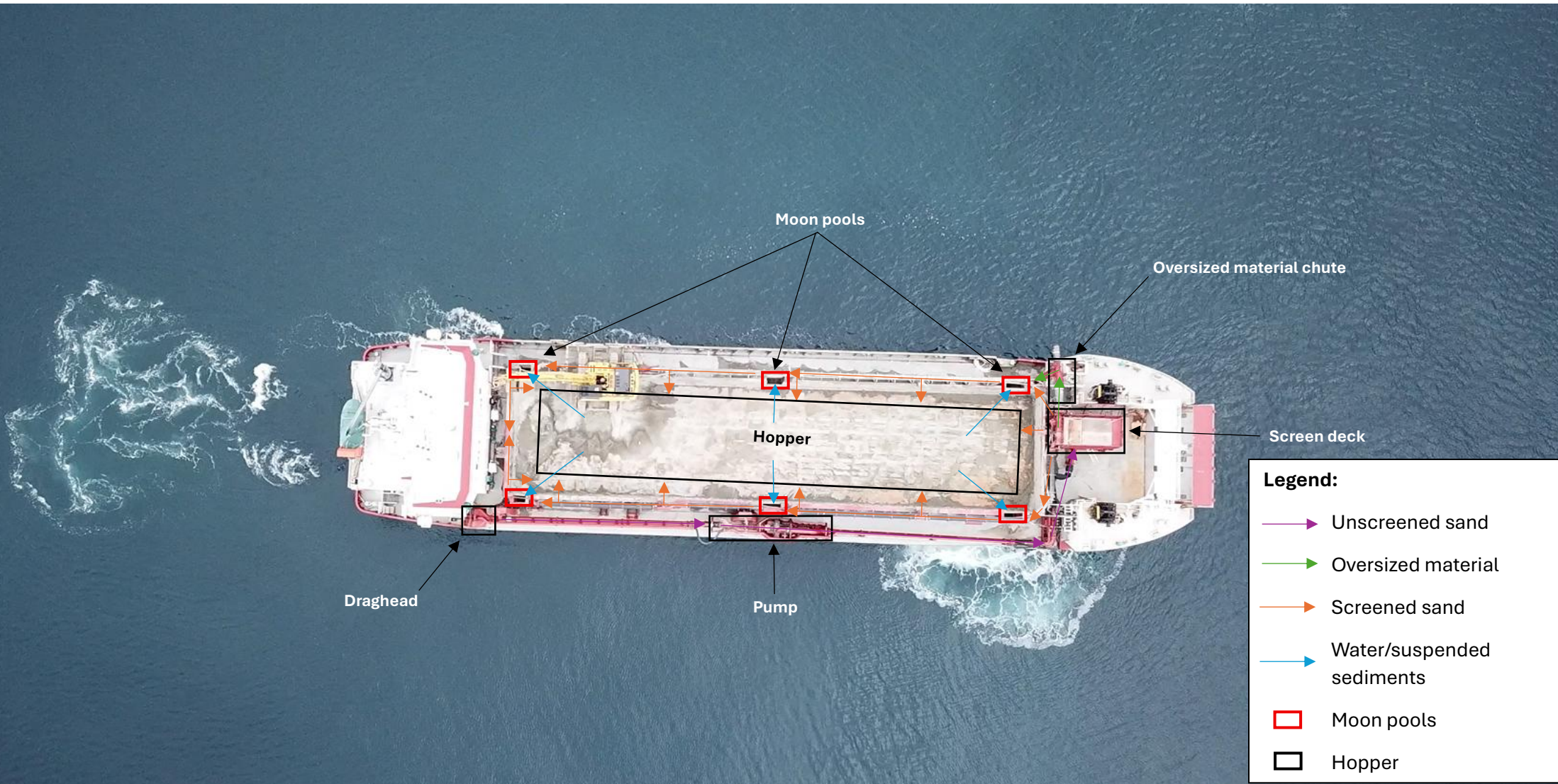




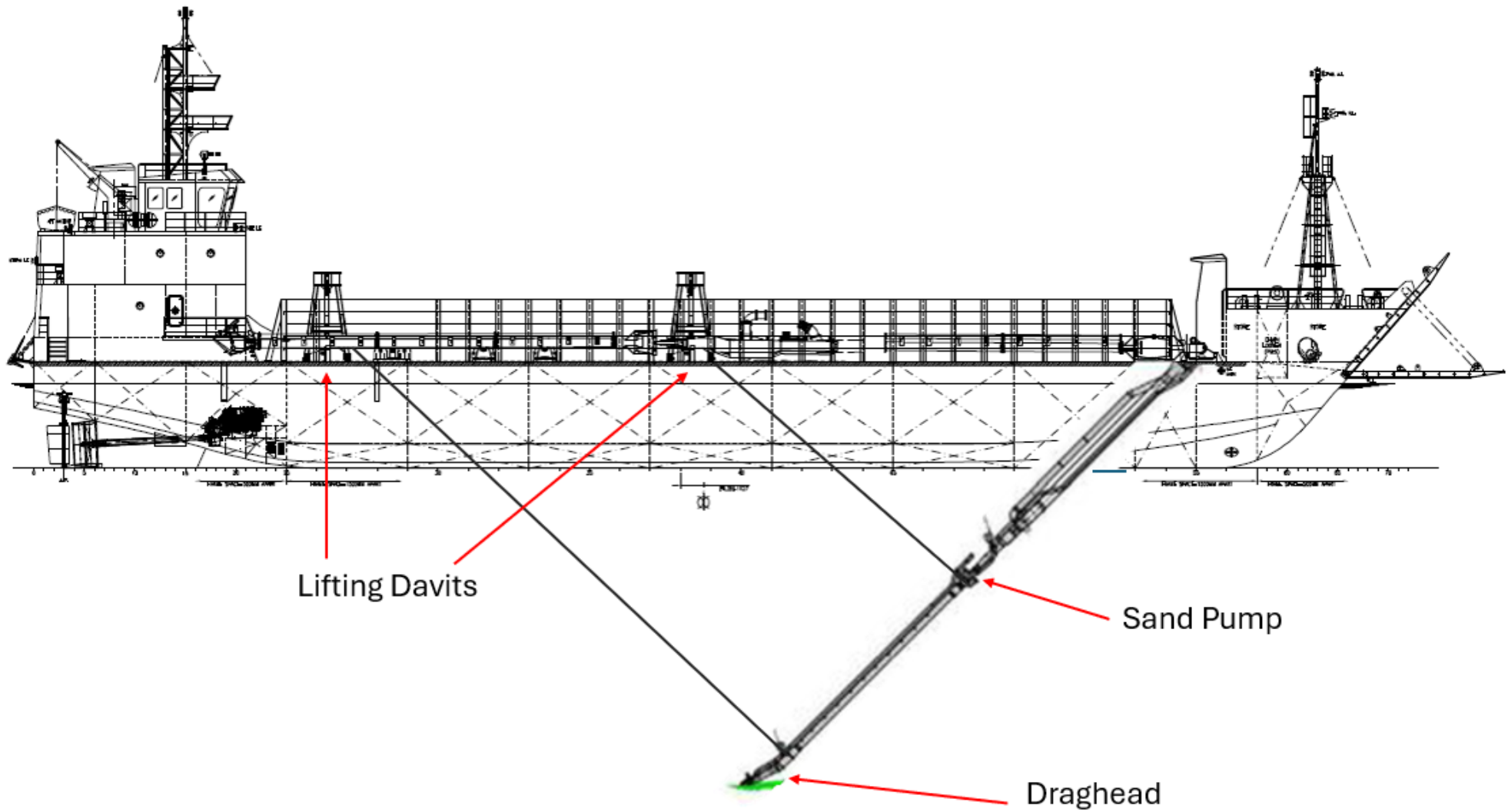
The video is followed by footage of the extraction track left behind after sand extraction (Image 10). The first track shown is 5 minutes post an extraction event, the same day as the video of the draghead shown earlier. The second video shows a separate track in the offshore Mangawhai-Pākiri area, that video was taken 12 hours post extraction. Further footage shows a measured staff gauge (Image 11) and the narrow extraction track, averaging 100 mm deep and 1.6 m wide. Finally, the video shows a panoramic of the track and the surrounding seafloor in the offshore Mangawhai-Pākiri area. The extraction track is evident in the video, as it appears lighter than the area of surrounding seafloor characteristics.

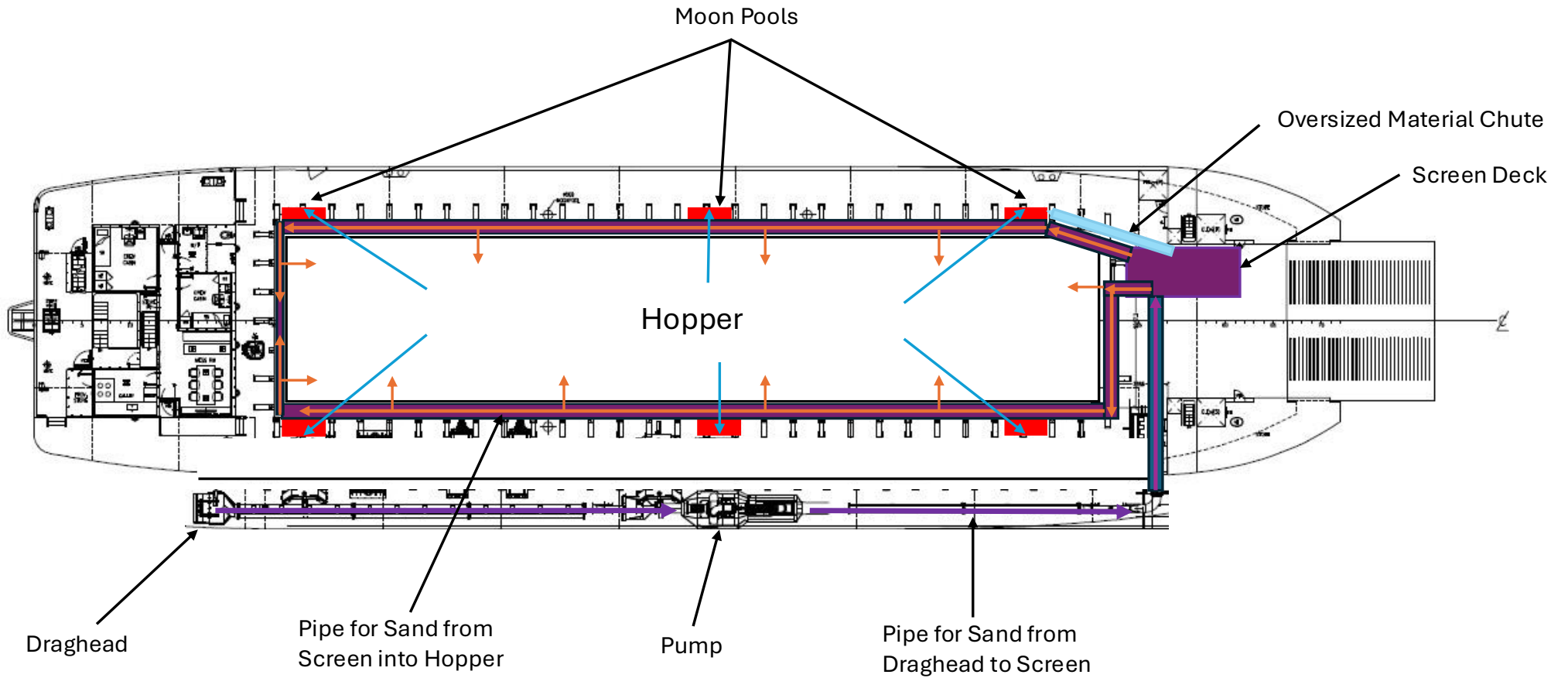


Visual Diagram of the *William Fraser* (not to scale)



Schematic Drawings of the *William Fraser* (not to scale)





Schematic of the William Fraser's Draghead

