

Design of Pile Suction Head

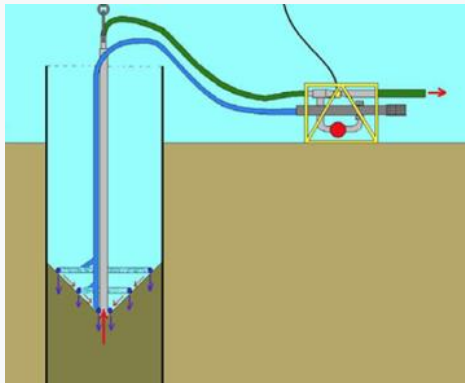
Valhall Field, North Sea

Challenge

The Valhall Water Injection Project required excavation inside 2.5 m diameter offshore piles installed in approximately 70 m water depth. Conventional excavation methods were unsuitable for the confined working space and hard seabed materials, creating the need for a reliable subsea excavation solution capable of operating efficiently inside foundation piles.



Pile Suction Head at Valhall Water Injection Project



Principle of the Pile Suction Head system

Solution

SediCon designed the Pile Suction Head (PSH) technology for GTO Subsea and Technip Offshore Norge. The system combines hydro suction with multiple jetting nozzles to disintegrate hard material while preventing blockage at the suction inlet.

Integrated into a standard GTO Subsea frame, the solution successfully excavated four offshore piles to depths exceeding 15 m below the seabed.



Project Location

Project facts

Client: Technip Offshore Norge AS
 Project: Valhall Water Injection
 Location: North Sea, Norway
 Water depth: 70 m
 Pile diameter: 2.5 m
 Excavation depth: >15 m below seabed

Results and benefits

- First of its kind
- Four offshore piles excavated
- Cohesive clay
- >15 m below seabed
- Confirmed SediCon's ability to design sediment removal equipment for challenging conditions

SediCon develops innovative sediment handling solutions for offshore and specialized subsea applications.

For more than 30 years, SediCon has developed and supplied proprietary sediment handling technologies from Trondheim, Norway. Our solutions for reservoirs, intakes, desanders and tunnels have been successfully implemented in hydropower projects in more than 20 countries across five continents.