

HydroSuction Dredge

Sakuma Reservoir, Japan

Challenge

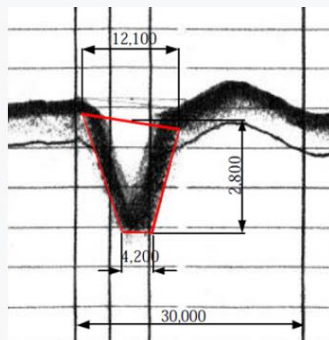
By 2001, Sakuma Reservoir, serving the 400 MW Sakuma Hydropower Plant, had accumulated approximately 112 million m³ of sediments despite years of conventional dredging and land transport. Large deposits of gravel and sand had formed in the upstream delta areas, creating the need for a more efficient sediment management solution for one of Japan's largest reservoirs.



12x30m barge in Sakuma Reservoir



Hydro-J suction head & Sonar measurement



Solution

SediCon, together with its Japanese partner Khowa Engineering Co., designed, manufactured and demonstrated a custom HydroSuction Dredge for internal sediment relocation within the reservoir.

The system combined hydro suction, jetting and debris cutting, utilizing a differential-head pumping concept that separated coarse material before transporting finer sediments to the designated deposition area. The successful full-scale demonstration validated the HydroSuction Dredge concept for efficient sediment management in large reservoirs.



Project Location

Project facts

Client: EPDC (J-Power)
Project: Sakuma Reservoir
Demonstration
Location: Japan
Commissioned:
Hydropower capacity: 400 MW
Reservoir volume: 326 millions m³
Implementation: 2001–2002

Results and benefits

- Successful full-scale demonstration
- Internal sediment relocation
- HydroSuction with jetting
- Debris cutting capability
- Removes compacted sediments
- Validated dredging concept

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.