

## DESILTING OF RINGLET RESERVOIR, CAMERON HIGHLANDS, MALAYSIA

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Ringlet Reservoir is used to regulate flow, provide storage and flood control in a hydroelectric scheme. Increased deforestation coupled with agricultural and residential development activities around the reservoir have accelerated siltation of Ringlet Reservoir. This will cause eventual loss of live storage within the next 2 to 3 years if effective countermeasures are not undertaken causing a loss of peaking capability of two power stations. The reservoir's current deposition rate is about 300,000 m<sup>3</sup>/year. Besides threatening the lives of people living downstream of the reservoir, dam spilling operations can cause crop damage and inundation. To overcome the problem, desilting works at Ringlet Reservoir is done using a cutter suction dredger. Dredged sediments shall be pumped to a sediment treatment area for dewatering. Placement of the dewatered sediments is then conducted at the disposal area. Operations are performed in an environmentally conducive manner. The choice of sediment transportation and disposal area was made after considering various engineering and environmental factors. Categorisation of dredged material as contaminated was done based on an internationally recognised standard.

Desilting of Ringlet Reservoir needs to be done for the safety of the downstream communities. The works shall restore the reservoir's full storage capacity (live storage) and its flood mitigation function. Dewatered dredged sediments (grain size of 0.05 mm or coarser) are transported by land, placed and compacted at the disposal area. Proper traffic management system and safety procedure is performed during the transportation process. The Sg. Jasin/Jasik area is found to be the most suitable site for the disposal area based on its size and distance from the Ringlet Reservoir. Based on the geotechnical analysis, it is found that the placement of the dewatered material at the disposal area is stable with a degree of compaction of 90 to 95% of the laboratory Proctor test. Ensuring that the processes involved in this project creates minimal disturbance to the surroundings by complying with air, water and noise quality requirements is a prerogative of the project

proponent. Sediments removed from Ringlet Reservoir containing concentration of substances beyond the specified levels based on an internationally recognised standard shall be disposed at a designated area equipped with a composite liner system in accordance with the Department of Environment (DOE) requirements. An Environmental Management Plan (EMP) was prepared. Its implementation provides a measure of the Project Proponent's compliance with the relevant environmental requirements. The objectives will be achieved by means of in-place operational controls, environmental monitoring, inspections and auditing activities. The project proponent's prerogative in ensuring works is conducted in an environmentally responsible manner should be commended.