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Hurley River Hydropower Project Northeast of Pemberton, British Columbia



Hurley River Hydro Limited Partnership (HRHLP) retained GES Geotech Inc. (as specialist consultant to Allnorth Consultants) to conduct a feasibility analysis and preliminary geotechnical engineering services for a proposed run-of-river project in the Pemberton area.

The Project is located northeast of Pemberton, approximately 350 km north of Vancouver, BC. The proposed run-of-river hydroelectric project (210 m static head) would divert some of the flow from the Hurley River by an intake structure, through a tunnel (about 3.6 km long and 4.5 m diameter) under Green Mountain, and then into a penstock (670 m long, 2700 mm dia.) and powerhouse (capacity of 37 MW), discharging into Downton Lake (upstream of La Joie Dam).

GES reviewed available geological maps and reports and completed a preliminary geological and geotechnical assessment of the intake site location, underground tunnel

alignment, high-pressure penstock alignment, and powerhouse site location. GES further carried out a preliminary geological and rock mechanics review of the conveyance tunnel, its stability, and impacts on tunnel support system.

Test pitting was completed at the intake structure and powerhouse locations, the results of which were summarized as geotechnical cross sections. We also prepared rock mass classification, strength parameters and tunnel support system for different parts of tunnel alignment. Geotechnical recommendations were provided regarding foundation design properties, seismic hazards, liquefaction potential, foundation bearing capacity, settlement potential, global slope stability assessment, lateral earth pressure assessment, tunnel construction methodology, excavation methodology, dewatering systems, and landslide hazard assessment. A 200-300 m deep borehole investigation program was proposed along the tunnel alignment.

GEOTECHNICAL SERVICES

- Geological mapping and literature review
- Site assessment & Geotechnical investigation
- Rock mechanics analysis
- Design of dam structure, upstream and downstream systems