



TAC Tunnelling Association of Canada

ACT Association Canadienne Des Tunnels

Date: September 26, 2005
Project: Seymour Capilano Twin Tunnels
Location: Vancouver, British Columbia, Canada
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Construction Update:

Construction of the Seymour Capilano Twin tunnels project began in January 2005 by Bilfinger Berger Canada (BBC) with excavation of the 11.5 m diameter, 180 m deep Seymour shaft.

The top 30 m of the shaft was excavated in 1.5 m lifts through dense glacial overburden materials. The overburden portion of the shaft was supported by a combination of lattice girders, mesh and shotcrete as an alternative design by BBC. No groundwater inflows were encountered at the overburden bedrock contact which allowed excavation to proceed without grouting. The rock portion of the shaft is being excavated typically in 2 x 2 m lifts (4.0 m drilling rounds) through quartz diorite and metavolcanic bedrock and is being supported by a combination of rock bolts, mesh and shotcrete. Production drilling typically comprises 240 holes completed using 2 Atlas Copco AC Roc3 crawler drill rigs. Excavation uses a CAT 308 excavator with 2-6 m³ buckets and a Liebherr 150 T crawler crane. As of the end of September 2005 excavation advanced to a depth of 150 m and shaft bottom is expected to be completed in November 2005.

Upon completion of the Seymour shaft a shaftbase chamber including a back chamber, back tunnel and starter tunnels will be excavated for the launching of two Robbins 3.8 m diameter, high powered (1260 kW) TBMs fitted with 19" cutters. Excavation of the shaftbase works is expected to be completed in 3 months to allow TBM launching in the first quarter of 2006.

From the shaftbase the TBM tunnels will advance 7.2 km westwards below Lynn Canyon, Grouse Mountain to the Capilano end of the project near the Cleveland Dam. TBM excavation is expected to require 8 months which will be followed by 2 – 275 m raisebore shafts at Capilano.

Pacific Liaicon & Associates/SNC Lavalin are responsible for construction management, Hatch Mott MacDonald are providing Resident Engineering Services, and Golder Associates are providing geotechnical services.

