



## 2017 AWARDS FOR ENGINEERING EXCELLENCE

### Award of Merit

### Box Canyon Hydroelectric Project



#### Consultant

Knight Piésold Ltd.

#### Client

Box Canyon Hydro Corp.

#### Owner

Elemental Energy Inc.

#### Category

Energy & Industry

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The Box Canyon Hydroelectric Project is a 16 megawatt facility located in the McNab Creek watershed in Howe Sound, BC. Knight Piésold Ltd. was engaged to assist with concept development, optimization, environmental assessment, and permitting; detailed design; and operational monitoring of the facility.

Commissioned in early 2016, the project includes multiple intakes—each designed to address the unique hydrology, river morphology, and distribution of fish species along the creek and its tributaries—introducing challenges not typical in a run-of-river hydroelectric project with a single intake. There are intake structures on three of the tributaries to McNab Creek (Box Canyon, Marty, and Cascara Creeks) as well as on six minor tributary diversions, all of which feed into a single, high-pressure penstock to direct water to the powerhouse, where water is then returned to McNab Creek.

Other achievements include: continued plant operations while maintaining unique minimum instream flow; maximum diversion, and ramping criteria at each of the three main intakes; construction of over 8 kilometres of inter-connected low- and high-pressure penstock in steep and remote terrain; flow prevention from Marty Creek to Box Canyon Creek using a backflow valve; and the Alliance contracting model where owner, contractor, project manager, and engineer all shared the risks and rewards of the project.