

EDUCATION

M. Sc. in Civil Engineering
University of Alberta, 1981

B. A. Sc. in Geological Engineering
University of British Columbia, 1974

PROFESSIONAL REGISTRATIONS

Registered Professional Engineer in British
Columbia and Alberta.

Registered Professional Geoscientist in British
Columbia

PROFESSIONAL AFFILIATIONS

Canadian Geotechnical Society (Past President)

Fellow, Engineering Institute of Canada

Canadian Dam Association

American Society of Civil Engineers

PROFESSIONAL HISTORY

Klohn Crippen Berger Ltd.

Chief Executive Officer

Jan 2014-present

President and Chief Executive Officer

Apr 2006-2013

Klohn Crippen Consultants Ltd.

Chief Operating Officer

Sep 2005 – Apr 2006

Vice President, Mining Environmental Group

1998-Sep 2005

Vice President, Engineering

1997-2003

Manager, Geotechnical Division

1989-1998

Klohn Leonoff Ltd.

Geotechnical Engineer

1980-1989

Bryan has 35 years of experience in geotechnical engineering in tailings and water dam design and construction, and foundation design for large industrial facilities, offshore structures and transportation projects. Bryan's professional background includes construction monitoring, field investigations, design engineering, project management, third party reviews, and participation on review boards for a wide variety of projects. Bryan's work experience spans throughout Canada, USA, PNG, Peru, Spain, Jamaica, Guyana, Chile, Honduras and Brazil. Bryan holds the R.M. Quigley Award from the Canadian Geotechnical Society and the Best Published Paper Award from the Canadian Dam Association.

HIGHLIGHTS OF EXPERIENCE

- Design and assessment of tailings and water dams
- Wide experience with residual soils
- Risk/decision analysis
- Seismic vulnerability Assessments
- Foundation design for large industrial projects

KEY PROJECT EXPERIENCE**Red Chris Tailings Dam Review**

British Columbia, Canada

External review of the Imperial Metals Red Chris Mine future tailings impoundment. Review included geotechnical, hydrogeological, hydrological, and geochemistry aspects of the design. Review was commissioned by the Tahltan Central Council after failure of the Imperial Metals Mount Polley tailings dam in central British Columbia.

CNRL Dyke 10 DSR

Alberta, Canada

External review of the performance of the external tailings facility for the CNRL oilsands mine near Ft. McMurray. Dyke 10 is the only tailings retention dyke constructed only of waste material. The dyke is entirely founded on Clearwater clay shale.

Rose Creek Tailings Seismic Review*Faro, Yukon*

Review of seismic vulnerability of the Intermediate and Secondary retention dams for the tailings in the Rose Creek valley at the closed Anvil Range Mine. The liquefaction potential of the recent and the coarse glaciofluvial soils was assessed using the Becker penetration test.

Dam Safety Assessments*Various Locations*

Bennett Dam (600 ft high earthfill), Stave Falls Dam (concrete), Coquitlam Dam (hydraulic fill), Tinajones (Peru), Mica Dam (800 ft high earthfill), Terzaghi Dam, Wreck Cove Dams (Nova Scotia), Barriere Dam (Alberta), Skookumchuck Dam (Washington State), Pocaterra Dam (Alberta), Interlakes Dam (Alberta), A-Area Dam (Inco-Ontario), Interlakes Dam (Alberta), Goldstream Dam, Lequille Dam (Nova Scotia), Travers Dam (Alberta), Intermediate/Cross Valley Dams (Faro, Yukon), and Brazeau Dam (Alberta).

Tailings Impoundment Design and Operation*Various Locations*

Design, construction and operation for tailings impoundments at Albion, Syncrude, Shell, Suncor, Lornex, Equity, Kennecott, Gibraltar, Hemlo, Dome No. 6, Escondida (Chile), Quebec Cartier Mining, Porgera, El Mochito (Honduras), El Toqui (Chile), Mt. Rosser (Jamaica), and Battersea (Jamaica). Review of Omai tailings dam failure in Guyana and the Los Frailes tailings dam failure in Spain.

Risk/Decision Analysis*British Columbia, Canada*

Risk analysis for Terzaghi Dam (BC Hydro), Goldstream Dam (Greater Victoria Water District), Jump Creek Dam (Greater Nanaimo Water District), Crofton mill chemical handling systems, Golden Sunlight Mine tailings dams, Kelian wetlands construction (Indonesia), Alcan International and Breakwater Resources tailings dams. Project Manager for decision analysis of the liquefaction ground improvement at the Annacis/Lulu Island Wastewater Treatment Plants and the Vancouver

International Airport Parallel Runway, and the Deltaport Container terminal and intermodal yards.

Wreck Cove Dam Safety Review*Cape Breton, Nova Scotia, Canada*

Dam safety review of 20 earthfill dams up to 52 m high for a 200 MW peaking hydroelectric power plant. Review included assessment of seepage, uplift pressures, surveillance and operating program.

Quebec Cartier Mining*Mount Wright, Quebec, Canada*

Embankment design, preparation of contract documents, construction supervision, tailings deposition planning, grouting of rock abutment and ongoing consulting on tailings disposal works. Rock mapping, slope design and blast monitoring for decant channel throughout gneissic bedrock.

Ice-Structure Interaction*Beaufort Sea*

Analysis of the effects of dynamic ice loading on the response of the Single Steel Drilling Caisson (SSDC) and Molikpaq artificial island drilling platforms, Beaufort Sea.

Design/Review of Structures on Residual Soils*Various Locations*

Design and construction of structures, dams and foundations, on and using residual soils for projects in Guyana (2), Panama, Ecuador, Papua New Guinea(2), New Caledonia (2), Madagascar, Peru, Honduras, Philippines, Indonesia, Laos, and Chile.