

Doina M. Priscu M.Eng, M.Sc, P.Eng, FEC

Principal Engineer - Mining Environment

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Education

University of Cambridge, Institute for Sustanability Leadership, UK, 2020 – Business Sustainability Management Course

Queen's University, Kingston, Ontario, Queen's School of Business and MCSC, Canada 2005 – Diploma in Strategic Planning & Leadership

McGill University, Montreal, Canada 1997 – M.Eng, Mining Engineering

Technical University of Civil Engineering, Bucharest, Romania 1991 – M.Sc, Civil Engineering

Professional registration

Professional Engineer – P.Eng, Engineers and Geoscientists BC, Canada (2011 – present)

Professional Engineer – P.Eng, Engineers Geoscientists Manitoba, Canada (2003 – 2018)

Fellow of the Engineers Canada – FEC (2011)

Languages

English and Romanian (fluent)

Spanish and French (technical level)

PriscuEngineers.com

Specialization

Mine closure planning and implementation; mine site reclamation; environmental assements; permitting; sustainable mining.

Expertise

Doina Priscu is a Co-Founder and Principal Engineer at Priscu and Associates Consulting Engineers Inc, based in West Vancouver, BC, Canada. She has over 25 years of experience in the mining industry in the operational, consulting, engineering, and regulatory aspects of the mining industry in several countries (Canada, Chile, Argentina, Peru, Brazil, Bolivia, and Romania). She gained her experience in areas related to design and expansion of mining projects, environmental impact assessments (EIA), permit submissions and regulatory approvals, mining operational due diligence and mine closure, technical and general assurance processes, health and safety, and other integral aspects of mining sustainability.

Doina provided strategic engineering planning, project management support, and reviews in a variety of mineral resource developments, from grassroots exploration to mine development and closure stages. She successfully led and coordinated multidisciplinary specialist teams for efficient worldwide project management, as technical lead, team manager, and consultant.

She managed implementation of rehabilitation activities and mine closure projects for numerous active, inactive, orphaned, and abandoned mine sites and delivered numerous Closure Plans at the conceptual to detailed level. She drafted and contributed to development and implementation of corporate and international standards focused on closure activities for mining and energy production companies, as well as health and safety aspects.

For several years, Doina has been part of the NOAMI - Canada (National Orphaned/Abandoned Mines Initiative) and MEND – Canada (Mine Effluent Neutral Drainage) program, as Steering Committee member and Provincial representative. In 2019, she represented Teck Resources on the ICMM Mine Closure Working Group.

Doina has organized workshops and conferences on Responsible Mining. While living in Santiago, Chile, she was the Technical Chair and Co-Chair of the Planning for Closure Conference 2016, and EnviroMine Conference 2017; and Technical Chair for the Planning for Closure International Conference 2018. She has taught courses in Mining Sustainability and Mine Closure at the Pontificia Universidad Católica de Valparaiso and Centro de la Minería, Chile.

In 2020, Doina joined the Technical Advisory Panel of the Landform Design Institute in Canada (<u>www.landformdesign.com</u>).



Priscu and Associates Consulting Engineers Inc. Co-Founder and Principal Engineer -Mining Environment (2020 -present)

Teck Resources Ltd. – Corporate, Canada

Acting Director, Regulatory Approvals and Closure (2018 – 2020)

Golder Associates, Chile

Senior Consultant / Regional Lead Mine Closure Latin America, (2016 – 2018)

Universidad Pontificia Católica de Valparaíso, (PUCV) Chile

Lecturer Mining Sustainability Course and Mine Closure Post Graduate Diploma (2016 – 2019)

Anglo American, Corporate, Chile

Technical Senior Audit Manager Operations and Projects, Anglo Business Assurance Services, Santiago, Chile (2014 – 2015)

AMEC, Canada and Chile

Associate Engineer / Senior Project Manager, Environment & Infrastructure (2011 – 2014)

Manitoba Government, Winnipeg, Manitoba, Canada, (2001 – 2011)

Chief Mining Engineer, Mines Branch, Mineral Resources Division (2007 – 2011)

Director Engineering Branch, Workplace Safety & Health Division (2000 – 2007)

Natural Resources Canada, CANMET Experimental Mine, Val d'Or, Quebec, Canada

Rock Mechanics Research Scientist, underground mine operations (1996 – 1999)

AQUAPROIECT S.A., Consulting Engineers, Romania

Design Engineer, Water Resources Projects (1991 – 1993)

Experience Highlights

- Led the development of Teck Resources' mine closure global standard and associated suporting guidence while working cooperatively with different operations and projects in advancing mine closure projects and planning.
- Lectured in Mining Sustainability Course (Universidad Pontificia Católica de Valparaíso, (PUCV) Chile. Lectured and championed Module development as part of the Post-graudated Diploma in Mine Closure for the Centro de La Mineria Chile.
- Mine Closure Project Development Technical Lead for numerous closure plans: Chile (12 closure plans): CODELCO (two), Antofagasta Minerals (four), Freeport-McMoRan (El Abra), Teck Resources (CDA), Lumina (Casserones), La Ceniza, Ango American (Los Bronces UG), Pucobre (El Elespino), Peru: Rio Tinto (La Granja), Newmont (Yanachocea), Bolivia (San Cristobal)
- Project Manager of Environmental Assessments (EAs) and (EIAs) for greenfield & brownfield mining projects involving multi-disciplinary teams, Compliance Coal LTD; participation in Pucobre and Rio Tinto
- Qualified Professional (QP) for NI43-101complient reports and assurance/due-diligence (environmental, permitting and mine closure sections) for Mineria Guanaco (Chile), Capstone Mining Corp. (Chile), NGEx (Chile/Argentina)
- Technical Assurance Audits for Mining operations and processes, risk-based approach focused on critical controls design and adequacy, (Anglo American), Sustainability Audits (Goldcorp, Antofagasta Minerals)
- Technical regulatory approvals and permitting for mining projects, construction, operations, expansions, and closure, including Teck, INCO, Vale, HudBay Minerals, Crowflight Minerals, Tanco, San Gold, Lafarge, others.
- Technical Regional Lead for APAC Mine Closure Checklist for Governments Guidance Document (Asia Pacific).
- Project Management for mine closure and mine site rehabilitation of 55 Orphaned and Abandoned Mines (over US \$200M), mainly old gold and copper mines, pits and quarries (Manitoba, Canada).
- Technical inspections of about 200 workplaces in terms of safety and health engineering aspects for compliance with legislative requirements as well as recommend corrective actions. Delivery of expert technical reports for over 50 workplace fatality investigations and inquests, to prepare the technical assessments required for crown prosecutions. Participated in Legislative updates.
- Underground rock mechanics and mine planning; Placer Dome and Cambior, Canada
- Technical support in developing standards specifications with CSA (Canadian Standards Association)



Resume

Dec. 2020

Summary of Key Projects

Teck Resources Ltd. Corporate Mine Closure Standard Led development of the Corporate Mine Closure Standard and supporting guidance. Assisted operations and development projects closure planning related assignments. Contributed to initiative related to BC Mining security policy review and MABC committee.

Teck Resources Ltd. Corporate Special Tailings Review Participated in the project focusing on the interpretations of the various inundation studies available for operations and closed sites in relation to potential affected infrastructure and communities downstream.

Teck Resources Ltd. San Nicolas Project, Mexico Assisted and advised the project team on Closure planning global requirements and effective integration of the closure concepts into advancement of the project.

Goldcorp, Cerro Negro, Argentina: Technical Due Diligence Audit Lead responsible for following parts of the Goldcorp Suitability Excellence Management Systems (SEMS) Audit: Reclamation and Closure, Waste Rock and Ore Material Management, Tailings Stewardship, Environmental Monitoring, and Exploration Environmental Management. This assignment included site visits, review of technical documents, interviews with site personnel, and reporting.

Compliance Coal Corporation, BC, Canada: Project Manager and Technical Lead for the development of Environment Assessment Application and EIS for Raven Underground Coal Project, BC, Canada. Project included the development of underground mining facilities and infrastructure, major upgrades to the existing Port Alberni facilities to accommodate a bulk coal terminal. Managed and coordinated the development of the multidisciplinary application (over 30 personnel), working with discipline leads to prepare regulatory compliant baseline and effects analyses. Acted as a liaison between regulatory agencies (BC-EAO/CEAA), working groups, and Indigenous groups.

NGEx, Chile: *Technical Lead and QP* for the Environmental and Community and Closure Plan Section of the Preliminary Economic Evaluation and Technical Report NI43-101 Report for the Los Helados Project, in conformance with the Standards of Disclosure for Mineral Projects (under Canadian Securities Authority).

Capstone Mining Corp., Chile: Senior Technical Reviewer for the Environmental, Permitting and Social Community section of the NI 43-101 report for the Santo Domingo Copper Project, for conformance with the Canadian Standards of Disclosure for Mineral Projects (under Canadian Securities Authority).

Guanaco Compañía Minera SpA, Chile: *Technical Lead* for the Environmental and Permitting Section of NI 43-101 Report, Environmental, Permitting, and Social Community Impact sections of the NI 43-101 Report and certified as QP conform to the Standard Guideline.

Antofagasta Minerals, 4 Operations, Chile: Project Manager and Technical Lead role responsible for the Update of Closure Plans compliant with local legislation in regime general. Delivered four closure plans including risk workshops and evaluation, and cost estimates for closure and post closure.

Imperial Metals, Mount Polley, BC, Canada: *Technical Lead* responsible for the Mt. Polley Underground Closure Plan 2017 update. Developed closure measures and interpretation of relevant studies for inclusion in the closure planning.

Asia Pacific Economic Cooperation, Canada: Regional Technical Lead for development the Asia Pacific Economic Cooperation (APEC) Mine Closure Checklist for the signatory countries. Responsible for consultation and engagement of mining companies and governments in North America and South America that were participated in project. Developed some sections of the checklist.

Teck Resources Ltd, Chile: Project Manager and Technical Lead for the developed the update of Closure Plan Carmen de Andacollo Operation (CDA) in general regime, including closure risk assessment and estimate of closure and post closure cost.

Minera La Ceniza – Cubildo Operation, Chile: *Technical Lead* responsible for the site assessment and closure design of the Quebrada Honda and Los Maquis tailings facilities.



Manitoba Government, Mines Branch, Canada: *Project Manager and Technical Lead responsible for Orphan and Abandoned Mine Rehabilitation Program.* Administered control of over 40 consulting, engineering, and construction firms, for the mine closures and rehabilitations required for a total of 55 distinct mine sites. Responsible for the implementation of the closure construction and environmental approvals.

CODELCO (2 operations), Chile: Senior Reviewer and Technical Lead responsible for technical quality and delivery of closure plans, conducted/led technical gap analysis, proposed initiative for improvements and comprehensive studies.

Pucobre Compañía Minera, Chile: Technical Lead developed the Closure Plan El Espino Project Coquimbo Region (Feasibility Study) for the open pit, waste rock dumps, processing facilities, and tailings facilities. Closure plan also covered cost estimates for the implementation and post closure monitoring, while aligning to the Chilean legislation.

Freeport- McMoRan, El Abra Operation, Chile: *Technical Lead* for the closure plan project. Provided strategic assessment of the operation for streamline closure planning and liability decrease.

Anglo American – Los Bronces UG, Chile: *Technical Lead* for conceptual closure plan project, applying best practices in underground closure designs to minimize impacts long term. Analyzed and identifying risks and opportunities to inform the engineering design and project changes.

Lumina Copper Chile S.A. – Caserones Operation: *Technical Lead* for closure plan project compliant with Chilean legislation. This included risk assessments, closure, and post closure mitigation and costing.

Mineria Sulliden, Shahuindo S.A.C, Peru: Senior Reviewer that oversaw the closure plan, providing guidance to the multidisciplinary team. Ensured technical quality. Project included closure costs estimates.

Colbun S.A., Chile (power generation): *Technical Lead* for the development of a Corporate Closure and Remediation Standard for Electrical Generation Facilities (hydro, thermal, renewable). The project was part of the company sustainability program, and leadership due diligence.

Mineria San Cristobal, Bolivia: Senior Engineer In charge of developing the San Cristobal Tailings Facility Conceptual Closure Plan for the expansion of the tailings facility. Developed technical options and cost estimates, as well as recommended risk-based approach to construction and closure.

Manitoba Mines Branch, Canada: Technical Engineering Lead responsible for the Fox Mine Closure and Rehabilitation - Technical Assessment and closure/rehabilitation options review. Assembled and managed a multidisciplinary team to assess environmental liability and a comprehensive site review, including old mine workings (surface and underground), surface facilities, infrastructure, tailings, and waste rock dumps. Prepared and coordinated cost estimates for assessment and rehabilitation and oversaw completion of the final report.

Rio Tinto, Peru: Senior Technical Lead responsible for the development of the La Granja Mine Closure Plan in Peru, working with multidisciplinary team of professionals in order to integrate the proposed expansion in the existing Closure Plan. Conducted a comprehensive review of the mine closure plan prior to submission to the client and Peruvian regulators.

Antofagasta Minerals: Technical Lead – Sustainability Audit Water Management, Air Quality, Climate Change, and Biodiversity) developed process risk control register for audit protocols for the above mentioned sustainability areas. Aligned the protocol with internal AMSA standards, ICMM, and GR4 Reporting standards.

Anglo American: Technical Lead and Project Manager responsible for development, management, and completion/delivery of Operational Risk Assurance Audits focused on Critical Controls to address Critical Risks. Provided innovative and concrete recommendations for operational improvements and efficacies for the Los Bronces and Mantos Blancos operations. Presented the Audit findings to the Executive Board and established agreements with the operations on the technical action plans. Additional sites audited were: Barro Alto (Brazil), Collahuasi (Chile), and Quellaveco Project (Peru).



Manitoba Government, Canada: *Chief Mining Engineer* responsible for the management of an 80 person technical team to receive, review, and approve the technical regulatory submissions and permit applications, thereby assuring that the mining projects (INCO, Vale, HudBay Minerals, Crowflight Minerals, Tanco, San Gold, Lafarge, among others) met technical, regulatory, and safety requirements.

Responsible for the technical reviews and approval of mine closure plans for the province of Manitoba, coupled with subsequent administration of the financial resources for these closures and decommissioning activities for both active mines and private quarries.

Manitoba Government, Workplace Safety & Health Division, Canada: Director of the Engineering Branch responsible for the inspections of 200 workplaces in terms of safety and health engineering aspects. Ensured compliance with legislative requirements as well as suggested and controlled implementation of corrective actions. Delivered expert technical reports for over 50 workplace fatality investigations and inquests, preparing the technical assessments required for crown prosecutions. Participated in the development of different CSA Technical Standards. Designed and conducted workshops and training courses for industry focus groups (25-150 participants), providing technical expertise to promote safe workplace conditions and reduce work injury occurrences. Participated in Legislative reviews and amendments.

NRC, CANMET Experimental Mine, Canada: Rock Mechanics Research Scientist (underground operation) responsible for leading and coordinating applied induced seismicity rock mechanics research for underground ground control monitoring, data management, and field assignments in underground operations with direct implications to mine planning (Placer Dome – Sigma Mine Operation, Cambior – Chimo Mine Operation, QC, Canada).

Water Resource Ministry, Romania: *Design Engineer* in charge of the coordination of design and technical specifications for an additional top section erection of a 55 m high rockfill dam. This included structural assessment of the water intake structure, adjacent slope stability, and stabilization methods under dynamic loading. Managed revision of the pre-feasibility study for the Dobrogea District Hydroelectric Development Master Plan including 13 dams and 2 hydropower plants, over nearly 30,000 km² of land, providing input to be used in the country's Hydroelectric Master Plan.

