

July 14, 2023

# Notice of Proceeding

**File EA#1213-02 Mackenzie Valley Highway, GNWT-Infrastructure**

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***RE: Retention of expert advisor Two Worlds Consulting***

## Retention of expert advisor(s)

The Review Board plans to retain an expert advisor<sup>1</sup> for the Mackenzie Valley Highway environmental assessment (EA). The expert advisor is Two Worlds Consulting. Its area of expertise is the human environment and social, cultural and economic impacts.

## Scope of participation in the proceeding

The expert advisor will help the Review Board evaluate and analyze evidence and carry out other specific activities as required throughout the Analysis phase of the environmental assessment, including the review of the Developer's Assessment Report. It may also help with further phases of the EA at the Review Board's discretion. Please see the expert advisor team's curriculum vitae (attached) for more information about qualifications and expertise.

## Addressing concerns about conflict of interest or apprehension of bias

Review Board staff have exercised due diligence to ensure that the expert advisor is free from potential bias and conflict(s) of interest for this project. This includes requiring that the expert advisor disclose any relationships (either personal, corporate or through a subsidiary) with the developer and other parties involved in this or any other Review Board proceeding.

If any party has questions or concerns about the qualifications of the expert, or the potential for conflict(s) of interest or apprehension of bias, please let Review Board staff know by July 28, 2023. The Review Board will consider any comments before making a final decision on retaining Two Worlds Consulting as an expert advisor.

## Contact Information

If you have any comments, questions, or need more information, please contact Catherine Fairbairn, Senior Environmental Advisor at 867-766-7054 or [cfairbairn@reviewboard.ca](mailto:cfairbairn@reviewboard.ca).

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<sup>1</sup> Expert advisor is used in this Notice of Proceeding in place of a "specialist", as referred to in Rule 16 of the Review Board's 2005 *Rules of Procedure*.



# Abigail Cruickshank, BSc, MES

SENIOR SOCIAL SCIENTIST

## PROFILE

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Abigail Cruickshank is a Senior Social Scientist at Two Worlds Consulting. She has 15 years of experience in impact assessments, environmental and social performance, and community engagement across several sectors including international development, urban and rural planning, renewal energy, conservation, and resource development.

She has managed and worked with interdisciplinary teams in nine countries for governments, private sector clients, not-for-profits, and bi-/multi-lateral funding agencies. Abigail has provided technical review of environmental and social impact assessments, and management and monitoring reports for adherence with the International Finance Corporation's Performance Standards for several mining and infrastructure projects internationally. Abigail gained experience with the environmental assessment process in the Yukon through work with Transparency International and has developed the socioeconomic baseline and effects assessment for a mining project in northern BC. She has provided plain language oral and written summaries for different audiences.

Between 2021 and 2023, Abigail was the programmatic lead and policy advisor for the Indigenous Advisory and Monitoring Committee for the Trans Mountain Expansion Project's socioeconomic subcommittee. In this capacity, she engaged directly with affected Indigenous communities across BC and Alberta on the social and economic effects associated with the project and existing pipeline, designed and supported research on various socioeconomic effects.

## KEY SKILLS

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- Organized, adaptable, empathetic, and passionate critical thinker and change maker
- Social, economic, and environmental impact assessments
- Socioeconomic and environmental management and monitoring for resources development
- Social and environmental performance assessments
- Enhanced qualitative and quantitative research, analysis, and technical and plain language writing
- Strong relationship building, engagement, and communication skills

## EDUCATION AND CERTIFICATIONS

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### York University

MASTERS IN ENVIRONMENTAL STUDIES (MES) | 2010

### Simon Fraser University

BACHELOR OF SCIENCE, GEOGRAPHY (BSC) | 2005

## PROJECT HISTORY

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### Natural Resources Canada

*Indigenous Advisory and Monitoring Committee*

POLICY ADVISOR / SOCIOECONOMIC  
SUBCOMMITTEE LEAD | 2021–2023

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Programmatic lead of the Indigenous Advisory and Monitoring Committee for the Trans Mountain Expansion Project's (IAMC-TMX) socioeconomic file for the Secretariat. Supported the Indigenous led Socioeconomic subcommittee formed to address the

socioeconomic concerns associated with the presence of work camps and influx of non-local workers. Co-development three regional community-grounded socio-economic effects monitoring initiatives, and supported design and implementation of socioeconomic research and knowledge mobilization.

Facilitated meetings with Indigenous partners and communities affected by the pipeline, other government departments, regulators, and Trans Mountain Corporation on increasing Indigenous participation in aspects of major project lifecycle, in



# Abigail Cruickshank, BSc, MES

SENIOR SOCIAL SCIENTIST

relation to assessment, oversight and monitoring of socioeconomic effects.

Provided policy advice to NRCan senior management on the operation of the IAMC-TMX and socioeconomic concerns raised including related to MMIWG with the presence of work camps and influx of non-local workers.

## **First Nation LNG Alliance (subcontracted to Palmyra Partners)**

*Impact Benefit Agreements (IBAs) in the LNG Sector*

RESEARCHER & AUTHOR | 2021

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Palmyra Partners were engaged to create a research report and virtual wayfinding guide for the First Nations LNG Alliance. The project goal was to support Indigenous communities to define their preferred approaches to scoping and implementing IBAs.

Supported research and drafting critical issue brief 'Linkages with Environmental and Social Impact Assessments.'

## **Transparency International Canada**

*Mining for Sustainable Development Project*

JURISDICTIONAL PROJECT MANAGER / RESEARCH LEAD (BC & THE YUKON) | 2019–2020

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Transparency International Canada's (TI Canada) Accountable Mining Program seeks to identify where mining awards process could be vulnerable to lack of transparency and accountability. In 2019, TI Canada engaged CIRDI to design and implement a study to assess transparency and accountability gaps in Canada mining license and permitting process with a particular focus on the Environmental Assessment process in British Columbia (BC) and the Yukon (YT).

Led the design and implementation of the research including coordinating and training the research team, completing interviews, and facilitating focus group discussions and a provincial- and territorial-level multi-stakeholder workshop. Research included 90 interviews across four areas of BC and the YT and six focus group discussions.

## **Canadian International Resources and Development Centre (CIRDI)**

*Supporting the Ministry of Mines' (SUMM) in Ethiopia Project*

TECHNICAL MANAGER | 2018–2021

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SUMM Ethiopia is a six-year Global Affairs Canada funded project, designed to strengthen the capacity and organizational management of Ethiopia's Minister of Mines to improve resources governance and sustainable long-term management of the Ethiopian mining sector.

Responsible for the development and delivery of the co-designed SUMM annual work plan including planning study missions, training programs, internal assessments, policy briefs, restructuring of policies and procedures, and review of legislative and policy revisions. Supported the review of the Environmental and Social Impact Assessment Policies and Practices and the Community Benefits Program.

Provided technical advice for a regulatory community health survey and assessment of the impacts associated with a large resource development project in Ethiopia.

## **BC Ministry of Transportation and Infrastructure / Translink**

*Pattullo Bridge Replacement Project*

SR. SPECIALIST & EA COORDINATOR | 2016-2018

Application for Environmental Assessment Certificate under BC Environmental Act for the construction of a new four lane bridge located upstream from the existing Pattullo bridge.

Supported defining the approach for the Social Determinants of Health and Community Cohesion components for the Application Information Requirements and Environmental Assessment Certificate. Coordinated revisions across disciplines after the first round of public comment on the EAC Application.

## **City of Vancouver [Subcontracted to WSP]**

*Health Impact Assessment for the Northeast False Creek (NEFC) Area Plan*



# Abigail Cruickshank, BSc, MES

SENIOR SOCIAL SCIENTIST

SR. SPECIALIST | 2017

Health Impact Assessment for the construction and post-construction area plan phase of the NEFC urban renewal project involving the removal of two viaducts and replacement with new, realigned, at-grade transportation infrastructure and facilities for vehicles, public transit, bicycles, and pedestrians.

Designed, implemented, and drafted the Health Impact Assessment, focused on the social determinants of health including aspects of the physical environment, build environment, livelihood factors, social and community factors, and lifestyle factors.

## Norconsult

*Environmental and Social Impact Assessment for proposed Hydropower Project in rural Lao PDR*

CO-PROJECT MANAGER AND SOCIAL TEAM LEAD | 2016-2017

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Environmental and Social Impact Assessment, Community Fisheries Assessment, Community and Stakeholder Engagement and Resettlement Action Plan, and Environmental and Social Management and Monitoring Plan for a 400 MW hydropower project proposed for a remote area of Lao PDR and directly affecting Indigenous communities.

Designed engagement and assessment methodology (including focus group discussions, interviews, household questionnaires), developed social impact assessment report, resettlement action plan, and material for community and stakeholder engagement including discussion documents, stakeholder engagement reports, and community management plan.

## IDM Mining Inc.

*Social-Economic Baseline and Impact Assessment and Management Plans for the Red Mountain Underground Gold Project*

SR. SPECIALIST | 2016-2017

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IDM Mining was preparing an Application for Environmental Assessment Certificate (BC EAO) and Environmental Impact Statement (CEAA).

Led the social and economic baseline study and social and health impact assessment as well as contributed to the Economic, Social, and Cultural Impact Assessment in adherence to the Nisga'a Final Agreement. Work included interviews with stakeholders and the development of four high level management plans including Social and Economic Management Plan, Health and Social Services Plan, Local Procurement Plan, and Skills, Training and Employment Plan.

## World Bank, Myanmar

*South-East Asian Disaster Risk Management Project for Myanmar*

GENDER ASSESSMENT LEAD | 2017

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The South-East Asia Disaster Risk Management Project aims to reduce the risk of flooding and enhance disaster risk financing capacity within the Lower Mekong region. For each infrastructure investment identified to reduce the risk of flooding, an Environmental, Social and Gender Assessment and Environmental and Social Management Framework (ESMF) were required to meet the World Bank safeguard policy.

Led the social and gender assessment for an infrastructure investment planned under the South-East Asia Disaster Risk Management Project in Yangon, Myanmar, and developed gender-sensitive safeguards for the ESMF.

## PT Runge Pincock Minarco, Jakarta, Indonesia

*Umbrella Contract for Environmental & Social Performance Evaluations*

PROJECT MANAGER AND TECHNICAL LEAD | 2013-2015

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Clients included Financial Institutions adhering to Equator Principles and IFC Performance Standards to independent assessments required for stock exchange listings.

Led due diligence assessments of the environmental and social risks associated with potential investment projects (primarily mines across Indonesia).



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SENIOR SOCIAL SCIENTIST

## **Millennium Challenge Corporation's (MCC) Green Prosperity Project**

*Programme Management and Environmental, Social,  
Health and Safety Services*

SR. SPECIALIST | 2014-2015

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MCC is an American federal corporation that aims to reduce poverty through sustainable economic growth in developing countries that demonstrate commitment to good governance.

Supported design and implementation of District Readiness Rapid Assessments to determine capacity of district governments to receive and use Project funding and adhere to MCC objectives and guidelines.

## **Jogja Magasa Iron, Indonesia**

*Environmental and Social Performance Assessment*

INTERNATIONAL SAFEGUARD SPECIALIST | 2014

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Jogja Magasa Iron requested environmental and social performance assessment and gap analysis to meet

International Finance Corporation's Performance Standards.

Led review of the Environmental and Social Impact Assessment and management and monitoring plans and the development of action plan to address environmental and social gaps.

## **Confidential**

*Social mapping and stakeholder analysis for large infrastructure project, Indonesia*

SR. SOCIAL ADVISOR | 2014

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Early engagement planning for proposed infrastructure project proposed for Kalimantan, Indonesia.

Provided direction and sr. review of social mapping and engagement planning across 8 districts and 14 villages including and identifying the social context, key contacts, leadership, early assessment of potential interests and concerns.

## **RELEVANT TRAINING**

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Gender Based Analysis +, Women And Gender Equality Canada | 2023

Indigenous Awareness Training, Indigenous Relations Academy | 2023

Trauma Informed Practices | 2023

WHMIS (GHS) Certification, Danatec | 2023

Cybersecurity Awareness Training, KnowBe4 | 2023

Respectful Workplace: Preventing Harassment and Violence Training, Danatec | 2023

Monitoring and Evaluation Essential Skills Series, Canadian Evaluation Society | 2018

I Know Gender: An introduction to gender equality, UN Women | 2017

Leadership in Project Management, PM4DEV | 2017

Results-based Project Management, PM4DEV | 2017

Responsible Investment Fundamentals, UN Principles of Responsible Investment | 2015

Monitoring and Evaluation, GRM International | 2014

Risk Assessment, University of Indonesia | 2014

## **PROFESSIONAL MEMBERSHIPS**

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# Abigail Cruickshank, BSc, MES

SENIOR SOCIAL SCIENTIST

International Association for Impact Assessment - Western and Northern Canada Member | since 2023

## **PUBLICATIONS**

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- Canada International Resources and Development Institute. 2021. *Accountable Mining: A Risk Assessment of the Environmental Assessment Process*. British Columbia Technical Report. Transparency International Canada.
- Canada International Resources and Development Institute. 2021. *Accountable Mining: A Risk Assessment of the Environmental Assessment Process*. The Yukon Technical Report. Transparency International Canada.
- Cruickshank, A and Grover, V.I. 2012. "Impact of Climate Change on Africa." In Grover, V.I. (ed) *Impact of Climate Change on Water and Health*. CRC Press, New Hampshire, USA.
- Cruickshank, A and Grover, V.I. 2012. "Integrated Water Resource Planning and Implementation." In Grover, V.I. and Krantzberg, G. (eds) *Great Lakes: Lessons in Participatory Governance*. Science Publishers Inc, New Hampshire, USA.
- Cruickshank, A. 2011. "These are our water pipes: Sand dams, women and donkeys – dealing with water scarcity in Kenya's arid and semi-arid lands." In Leal Filho, W. (ed) *Climate Change and the Sustainable Management of Water Resources*. Springer Verlag, Berlin.



# Aurora Van Buren, BSc

## HUMAN ENVIRONMENT MANAGER

### PROFILE

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Aurora Van Buren is TWC's Human Environment Manager. In this capacity, she leads and supports the performance of the Lands and Culture, Engagement, Social Impact and Reconciliation Teams. Aurora has had the privilege of collaborating with Indigenous Nations across Canada to document Indigenous Knowledge for use by Indigenous Governments, as well as in consultation and regulatory processes. Aurora has been a technical lead on both federally and provincially regulated impact assessments throughout Canada, providing expert testimony for review panels. The landscape of environmental management is rapidly changing, and Aurora has developed new assessment methods to address emerging project risks and respond to increased expectations of all parties. A proven public speaker, Aurora has also led public open houses and workshops for controversial projects.

### KEY SKILLS

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- Developing regulatory applications informed by both indigenous Knowledge and Western science
- Assessment of major project effects on Indigenous Interests
- Indigenous consultation and engagement in the context of federal and provincial environmental assessments
- Project management including the development of workplans, reports, and budgets
- Facilitation of public open houses and workshops for controversial projects
- Cross-cultural facilitation
- Socio-economic impact assessment

### EDUCATION AND CERTIFICATIONS

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#### University of Victoria

BACHELOR OF SCIENCE, BIOLOGY AND  
PSYCHOLOGY (BSC)

### PROJECT HISTORY

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#### Global Container Terminals (GCT)

*Deltaport Expansion Berth Four Project, BC*

INDIGENOUS INTERESTS ASSESSMENT LEAD |  
2020–PRESENT

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GCT is proposing to expand the existing Deltaport to include fourth berth on the east side of the Roberts Bank Causeway and to expand the intermodal rail yard.

As part of the environmental impact assessment for this project, TWC is supporting GCT with Indigenous Engagement and is responsible for the assessment of effects on Indigenous Interests. A key component in this project is the development and innovation of assessment methods which aligns with the new BC EAO and IAAC processes and guidelines for assessment.

#### Ministry of Environment and Climate Change Canada (ECCC)

*Target 1 Challenge Workshop Facilitation*

LEAD FACILITATOR | 2020–PRESENT

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TWC is supporting the coordination and facilitation of a series of twelve virtual workshops hosted by Environment and Climate Change Canada (ECCC) for participants within the Target 1 Challenge. The primary objective of the workshop series was to support Target 1 Challenge participants as they work to establish Indigenous Protected and Conserved Areas (IPACs) within their communities across Canada. A final report is being developed to summarize feedback gathered during the workshops.

Participate in the facilitation plan development and



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## HUMAN ENVIRONMENT MANAGER

lead facilitation for the virtual workshop sessions.

### **BC Ministry of Transportation and Infrastructure (MOTI)**

*LMD Stimulus Project, BC*

2020–PRESENT

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TWC is providing Indigenous Engagement services to MOTI as they develop initial designs for five project sites within the Lower Mainland, BC.

### **Apeiron Environmental Ltd.**

*Métis Nation Alberta Region 3 Traditional Land Use Study, AB*

2020–2021

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The Métis Nation Alberta Region 3 are looking to develop Traditional Land Use (TLU) Studies that consider sections of pipeline included in the NOVA Gas Transmissions Ltd. West Path Delivery Projects (2022 and 2023), TWC is supporting Apeiron in doing this work, by providing research, conducting community interviews, and producing TLU Studies.

### **Confidential Oil and Gas Client**

*Impact Assessment Project, BC*

INDIGENOUS INTERESTS ASSESSMENT LEAD |  
2020–PRESENT

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The client is proposing to expand the capacity for storage of liquefied natural gas (LNG) in British Columbia with the construction of a new storage tank and new liquefaction capacity. As part of the environmental impact assessment for this project, TWC is supporting the client with Indigenous Engagement and Socio-Economic Assessment.

Responsible for the assessment of effects on Indigenous Interests, development and innovation of methods which align with the new BC Environmental Assessment Office (EAO) and Impact Assessment Agency of Canada (IAAC) processes and guidelines for assessment. Collaboration with related valued components (VC) authorship teams such as Human and Community Well-Being and Client Engagement Team.

### **Vopak**

*Pacific Canada Project, BC*

INDIGENOUS INTERESTS TECHNICAL ADVISOR |  
2019–2020

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Vopak needed to determine impacts to Indigenous interests, address issues, identify mitigation and/or accommodation measure for a proposed construction and operation of a bulk liquids tank storage in BC.

Developed assessment framework and workplan which included an investigation of impacts on Indigenous health and socioeconomic conditions, indicators and residual effects and integration of Indigenous Knowledge (IK), perspectives, and traditional use information. Provided technical direction and senior review for the assessment of project effects on Indigenous Interests and incorporation of IK in the application.

### **Baffinland Iron Mines**

*Phase 2 Proposal, NU*

DISCIPLINE LEAD + EXPERT WITNESS | 2019–  
2020

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Supported Baffinland Iron Mines in establishing an Inuit Advisory Panel and culture resources & land use monitoring program in response to requests from the communities of the North Baffin and the Qikiqtani Inuit Association. Developed an Inuit Qaujimanituaqangit (IQ) Management Framework to provide guidance on the processes and mechanisms through which IQ informs decision-making in the Mary River Project.

Addressed information requests and acted as a witness during Nunavut Impact Review Board's technical sessions and public hearings.

### **Manitoba Infrastructure**

*Lake Manitoba and Lake St. Martin Outlet Channels, MB*

DISCIPLINE LEAD + PRIMARY AUTHOR | 2019–  
2020

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Developed and implemented a unique assessment approach which responded to the demands of a highly compressed and politically determined filing schedule. Responsible for leading a team of authors located





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## HUMAN ENVIRONMENT MANAGER

across western Canada to assess potential effects on the rights and interests of 38 Indigenous groups.

### **CN Rail**

*Milton Logistics Hub, ON*

EXPERT WITNESS | 2018–2020

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Supported CN Rail in the CEA Agency lead hearing as a primary witness and subject matter expert for incorporation of Traditional Knowledge and assessment of effects on Traditional land and resource use.

### **Grays Bay Road and Port**

*Environmental Assessment Project, NU*

TRADITIONAL KNOWLEDGE FACILITATOR | 2018–2020

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Responsible for facilitating an innovative approach for Traditional Knowledge to lead environmental assessment and project design rather than being incorporated into a process predominately lead by western science.

### **Alamos Gold Inc.**

*Lynn Lake Gold Project, MB*

EA COORDINATOR, ENGAGEMENT AND TRADITIONAL KNOWLEDGE (TK) | 2017–2020

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Provided technical direction and development of methodology for the assessment of effects on Indigenous rights and interests and the inclusion of TK from 13 Indigenous Nations throughout the Environmental Assessment.

### **Keystone XL Pipeline**

*Pre-Construction Traditional Knowledge Site Mitigation, AB*

TRADITIONAL KNOWLEDGE PROGRAM LEAD | 2018–2019

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Supported the Indigenous relations team in re-engaging with Indigenous Nations in preparation for pipeline construction. Responsible for conducting IK workshops and site revisits with Elders and Knowledge Holders to discuss the implementation of mitigation measures identified in the project environmental

protection plan. Developed and implemented an Indigenous construction monitoring program to reduce the risk of construction delays.

### **Two Lakes Sour Gas Processing Facility**

*Lake Aquatic Assessment Environmental Impact Assessment, AB*

TRADITIONAL KNOWLEDGE DISCIPLINE LEAD | 2018

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Worked with Indigenous knowledge holders and environmental assessment practitioners to share project specific information, collect Traditional Knowledge information, while accommodating the Indigenous group's limited availability and the project's tight timelines.

Incorporated Traditional Knowledge into the environmental assessment and focused the analysis to be responsive to the potential project effects identified by the Indigenous group.

### **Thompson Creek Metals Company Inc.**

*Mount Milligan, BC*

SENIOR ADVISOR | 2017–2019

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Provided guidance and regulatory advice to Thompson Creek Metals Company's Indigenous engagement team. Oversaw technical development of the assessment of Indigenous Interests for Environmental Assessment Certificate amendments related to surface and groundwater withdrawals required for continued mine operations.

### **Confidential Client**

*Sukunka Coal Mine, BC*

DISCIPLINE LEAD | 2017–2019

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Collaborated with First Nation Independent Third-party Review group to address key issues and identify future actions to be implemented through the collaboration agreement. Responded to CEA Agency information requests regarding Section 5(1)(c) requirements and provided guidance and regulatory advice.



# Aurora Van Buren, BSc

## HUMAN ENVIRONMENT MANAGER

### **Confidential Client**

*Strategic Environmental Assessment for the Baffin Bay and Davis Strait, NU*

ASSESSMENT AUTHOR | 2017–2018

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Authored the environmental assessment and supporting the integration of Traditional Knowledge throughout the strategic environmental assessment.

### **Lafarge Holcim, Inc**

*Texada Quarry, BC*

INDIGENOUS LAND USE RESEARCHER | 2017

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Developed Indigenous Nation profiles to support Lafarge's Indigenous engagement and consultation activities. The profiles were developed through desktop research and included information about asserted or established Indigenous and treaty rights, language, culture, governance and political affiliations, and land and resources use areas pertinent to Lafarge's developments.

### **Aurora LNG**

*Environmental Assessment Project, BC*

VC ASSESSMENT AUTHOR | 2016–2017

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Co-authored the environmental assessment application chapters that assessed project-related effects on Indigenous use and responded to information requests about the assessment.

### **Castle Provincial Park**

*Alberta Parks and Environment Castle Management Plan Information Sessions, AB*

PUBLIC PARTICIPATION CONSULTANT | 2017

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Facilitated information sessions on the draft management plan for Castle Provincial Park and Castle Wildlands Provincial Park. The draft Castle management plan was controversial, prompting media coverage and public demonstrations in the lead up to the information sessions. Despite the charged emotional state of public attending the information session, positive feedback was received on event facilitation.

### **Calgary Board of Education**

*Community Engagement K-12 Math Strategy, AB*

PUBLIC PARTICIPATION CONSULTANT | 2016

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Facilitated community engagement meetings on the development of the CBE's K-12 Math Strategy. The meetings focused on gathering feedback on guiding principles for the strategy and the tools and type of communication needed to support students.

### **Calgary Board of Education**

*Community Engagement New School Openings, AB*

PUBLIC PARTICIPATION CONSULTANT | 2016

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Led community engagement sessions on changes to educational program offerings due to new schools being opened in Calgary. Engagement sessions ranged in size from 20 to 200 people and focused on collecting feedback on proposed changes to inform decision making and planning processes for school changes.

### **Confidential Client**

*Hardrock Project, Greenstone Gold Mines, ON*

DISCIPLINE LEAD AND PRIMARY AUTHOR | 2015–2018

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Developed and implemented new assessment methods to address emerging project risks including CEA Agency's request for identification of differential impacts on individual Indigenous groups, assessment of effects on intangible values, and the assessment of Section 5(1)(c) components as standalone valued components.

### **Manitoba Hydro**

*Manitoba-Minnesota Transmission Project, MB*

SENIOR ADVISOR | 2015

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Provided technical support and guidance for the team involved in writing the Traditional Land Use section of the environmental assessment.



# Aurora Van Buren, BSc

## HUMAN ENVIRONMENT MANAGER

### **TransCanada**

*Energy East Pipeline Project, AB, SK, MB, ON, QC, NB*

FACILITATOR, TRADITIONAL KNOWLEDGE | 2013–2015

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Facilitated Traditional Land Use studies and supported capacity building with Indigenous Nations in Ontario and Saskatchewan. Provided training for Stantec's junior and intermediate Traditional Knowledge Facilitators through collaboration on project work and formal technical workshops.

### **TransCanada**

*Prince Rupert Gas Transmission (PRGT) Project, BC*

TRADITIONAL KNOWLEDGE DISCIPLINE LEAD | 2012–2014

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Coordinated all Traditional Land Use and Traditional Ecological Knowledge studies, overseeing completion of internal programs and third-party contractors. Led a team of ten authors in three provinces to prepare individual assessments of effects on Indigenous interests and concerns for 16 Indigenous groups. Facilitated the incorporation of Traditional Land Use and Traditional Ecological Knowledge information throughout the environmental assessment.

### **CEMA**

*Community-Specific Engagement Guidelines, Cumulative Environmental Management Association (CEMA), AB*

LEAD FACILITATOR | 2012–2013

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Facilitated multi-day focus-group meetings with 10 Indigenous Nations in the Regional Municipality of Wood Buffalo to establish each Indigenous Nation's guidelines for working with and in CEMA. Developed technical and plain language versions of the final

recommendations report.

### **TransCanada**

*(NovaGas) Grande Prairie Mainline Loop (GMPL), AB*

FACILITATOR, TRADITIONAL KNOWLEDGE | 2010–2012

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Facilitated Traditional Ecological Knowledge surveys involving participants from 25 First Nation and Métis Nations and 4 biophysical disciplines. Conducted ten Traditional Knowledge and Traditional Land Use studies with First Nation and Métis communities, responsible for study scoping, facilitating interviews, field work, report review meetings and report writing.

### **AltaLink**

*Heartland Transmission Project, AB*

FACILITATOR, TRADITIONAL KNOWLEDGE | 2010

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Conducted field work for Traditional Knowledge studies in Alberta.

### **AltaLink**

*Western Alberta Transmission Line (WATL), AB*

FACILITATOR, TRADITIONAL KNOWLEDGE

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Conducted field work for Traditional Knowledge studies in Alberta.

### **Enbridge**

*Northern Gateway Pipeline Project, Western Canada*

FACILITATOR, TRADITIONAL KNOWLEDGE | 2009–2012

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Collaboratively conducted ten Traditional Land Use studies with Indigenous Nations, responsible for facilitating interviews, field work and report review meetings and for report writing.



# Deanna Higginson, MNRES, RPBio

TECHNICAL LEAD, LANDS AND CULTURE

## PROFILE

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Deanna Higginson is a Technical Lead, Lands and Culture, with demonstrated experience and expertise in socio-environmental, regulatory, and engagement-related services. As a Technical Lead, Deanna is responsible for fostering technical excellence and best practices to help support the successful delivery of projects, and the strategic growth of TWC's Lands and Culture service area. Deanna is passionate about working at the interface of Indigenous Knowledge and Western science and has successfully delivered numerous related projects. From designing community-based Indigenous Knowledge and Use studies for human health risk assessments to leading environmental assessments with Indigenous Nations, Deanna has acted as a technical lead and reviewer for several different types of cross-cultural projects. Deanna's experience spans a variety of sectors (e.g., mining, public, transportation, oil and gas, and renewable energy), regulatory jurisdictions (e.g., YESAB, IAAC, BC EAO, VFPA's PER) and areas (e.g., Northwest Territories, British Columbia, Yukon, Alberta, Ontario, Washington State).

## KEY SKILLS

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- Indigenous nation-specific environmental effects assessments
- Application of Indigenous Knowledge and Western Science
- Community-based Indigenous Knowledge and Use studies and engagement
- Cross-cultural facilitation and engagement
- Indigenous nation-specific environmental monitoring

## EDUCATION AND CERTIFICATIONS

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### University of Northern British Columbia

MASTER OF NATURAL RESOURCES AND ENVIRONMENTAL STUDIES (MNRES) | 2010

### College of Applied Biology

REGISTERED PROFESSIONAL BIOLOGIST (R.P.BIO.) | 2013

### University of British Columbia

BACHELOR OF SCIENCE, ECOLOGY AND ENVIRONMENTAL BIOLOGY (BSc) | 2004

## HIGHLIGHTS OF NORTHWEST TERRITORIES, YUKON AND ENVIRONMENTAL ASSESSMENT PROJECTS

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### Nihtat Gwich'in Council

*Inuvik Wind Design Basis and Performance Specification Project, NWT*

TRADITIONAL KNOWLEDGE AND TRADITIONAL LAND USE LEAD | 2017–2018

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Prepared all three Project approvals necessary to conduct Traditional Knowledge work in the Northwest Territories. These included the Gwich'in Tribal Council Research Agreement, the Aurora College Research Ethics Committee Approval, and the Aurora Research Institute Scientific Research Licence.

Deanna designed, developed, facilitated, and reported the Project's Traditional Knowledge and Traditional Land Use Workshop (Hunting, Trapping, Medicinal and Food Plant Harvesting) with Gwich'in and Inuvialuit land users. Mapped current and historical Indigenous Land Use and worked with land users to identify areas of culture significance.

### Conoco Phillips Canada

*Screening Level Ecological and Human Health Risk Assessment (SLEHHRA), NWT*

AUTHOR AND RESEARCHER | 2013

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# Deanna Higginson, MNRES, RPBio

## TECHNICAL LEAD, LANDS AND CULTURE

Researched and authored the “Traditional Land Use and Knowledge Gathering” component of a SLEHRA conducted for a lease site within the Inuvialuit Settlement Region of the Northwest Territories.

### **Yukon Environmental and Socio-economic Assessment Board (YESAB)**

*Faro Mine Remediation Socio-economic Support, Yukon*

TECHNICAL EXPERT, HUMAN ENVIRONMENT | 2021–2022

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Provided technical expertise and support to the Executive Committee of YESAB in reviewing the Faro Mine Remediation Project.

Reviewed proposal documents prepared by the proponent, comments and input received from First Nations. Attended technical sessions to provide advice and expertise on information requirements, scoping of assessment, valued component selection, potential effects, and mitigation measures.

### **Casino Mining Corporation**

*Casino Mine Project, YESAB Panel Support–Environment and Socio-economic Effects Statement, Yukon*

INDIGENOUS NATION-SPECIFIC EFFECTS ASSESSMENTS AND THE APPLICATION OF INDIGENOUS TRADITIONAL KNOWLEDGE, TECHNICAL LEAD | 2021–2022

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Designed a strategic approach to support the application of Traditional Knowledge (TK) from the five potentially affected First Nation’s in the project’s Environmental and Socio-economic Effects Statement being submitted to the Yukon Environmental and Socio-economic Assessment Board (YESAB).

Led the Project’s TK Team and the development of the five Indigenous Nation-specific effects assessments. Established internal protocols and developed a Project-specific TK framework to support the respectful and comprehensive application of TK.

### **Goldcorp Inc.**

*Coffee Project, Yukon*

SENIOR TECHNICAL SUPPORT | 2017–2018

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Provided senior technical socio-economic and Traditional Knowledge support to the Project. Lead author responsible for writing and developing the Coffee Gold Project’s Socio-economic Management Plan.

Provided senior technical socio-economic and Traditional Knowledge support to the Project as it advanced through the YESAB regulatory process.

### **Kaminak Gold Corporation**

*Coffee Project, Yukon*

SOCIO-ECONOMIC AND TRADITIONAL KNOWLEDGE AND USE DISCIPLINE LEAD | 2015–2016

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Managed the budget, schedule, and team. Designed, conducted, and reported on the Project’s socio-economic baseline, effects assessment, and cumulative effects assessment to meet the YESAB regulatory requirements.

Led the primary data collection for the socio-economic components of the Project, which involved such social science research methods as interviews, focus groups, and traditional territory mapping.

Traditional Knowledge Technical Lead for the Project responsible for the consideration and integration of Traditional Knowledge throughout the Coffee Project Proposal (including effects and cumulative effects assessment) to meet YESAB regulatory requirements.

Wrote the Project’s Traditional Knowledge Protocol, provided technical advice and guidance to all project disciplines, and facilitated the consideration and integration of Traditional Knowledge throughout the Proposal (via qualitative data analysis).

### **Casino Mining Corporation**

*Casino Project Socio-economic Effects Assessment Support, Traditional Knowledge, and Socio-economic Components, Yukon*

HUMAN ENVIRONMENT TECHNICAL SUPPORT | 2014–2016

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Provided technical support, conducted a literature review, and wrote responses for information requests related to Traditional Knowledge and various socio-economic components for the project undergoing review by the YESAB.



# Deanna Higginson, MNRES, RPBio

## TECHNICAL LEAD, LANDS AND CULTURE

### **Kluane First Nation (KFN)**

*KFN Resource Development Sustainability Toolkit, Yukon*

HUMAN ENVIRONMENT TECHNICAL SUPPORT | 2014–2015

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Designed and facilitated engagement with youth, Elders and the KFN community through the Project’s primary data program and engagement events, which included: interviews, focus groups and a community meeting with KFN citizens.

Contributed to developing the community-based framework, the project’s data analysis and writing components of the final report by providing technical guidance with respect to the development of community-based criteria and indicators.

### **Capstone Mining Corporation**

*Minto Mine Phase V/VI Expansion Traditional Knowledge Study, Yukon*

DISCIPLINE LEAD | 2010–2013

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Designed and developed study materials and activities (i.e., interviews, workshops, meetings), as well as led the study’s qualitative analysis and reporting. Wrote a community-oriented book to present study results to the First Nation’s citizens, in addition to a study report prepared for regulatory submission.

Worked with an interdisciplinary, cross-cultural team and Selkirk First Nation to prepare an effects assessment for YESAB, including: baseline, effects assessment, and cumulative effects assessment.

### **Global Container Terminals (GCT)**

*Deltaport Expansion Berth Four Project, BC*

INDIGENOUS KNOWLEDGE REGULATORY LEAD | 2022–PRESENT

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Provided regulatory advice and guidance related to the application of Indigenous Knowledge throughout the project’s Impact Statement. Also provided review and strategic support related to the development of Indigenous-nation specific effects assessments and ongoing Indigenous engagement.

### **Lower Nicola Indian Band (LNIB)**

*HVC 2040 Project, BC*

TECHNICAL EXPERT, HUMAN ENVIRONMENT | 2021–2022

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Worked for LNIB to prepare their respective community based Indigenous-led Nlaka’pamux cultural effects assessment to submit as part of the HVC 2040 regulatory submission.

Worked closely with LNIB to collaboratively implement a community-based approach to engaging LNIB members in this work. Worked with LNIB to design and implement an approach to reflect the consideration and application of their Indigenous Knowledge throughout the HVC 2040 regulatory submission.

### **Taseko Mining Corporation**

*Yellowhead Project, BC*

TECHNICAL LEAD, INDIGENOUS-NATION SPECIFIC EFFECTS ASSESSMENTS AND THE APPLICATION OF INDIGENOUS KNOWLEDGE AND USE | 2020–2022

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Assessed the Indigenous Nation-specific interests for potentially affected Indigenous nations and supported related technical engagement required to meet or exceed regulatory requirements.

Ensured that Indigenous Knowledge was appropriately considered and applied throughout the Yellowhead Project’s regulatory submission to meet the expectations of regulators and Indigenous Nations.

### **Canadian Pacific**

*Vancouver Logistic Park, BC*

TECHNICAL LEAD, INDIGENOUS NATION EFFECTS ASSESSMENTS | 2019–2021

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Led the regulatory scope of work related to working with potentially affected Indigenous Nations to assess their respective Indigenous interests (e.g., current use, Indigenous Knowledge, etc.).

Prepared Indigenous nation-specific effects assessments to determine potential project related effects. Designed a regulatory framework with met regulatory and Indigenous Nation related



# Deanna Higginson, MNRES, RPBio

## TECHNICAL LEAD, LANDS AND CULTURE

requirements.

### **BHP Billiton Canada Inc.**

*Potash Export Facility at Fraser Surrey Docks,  
Current Traditional Land Use Effects Assessment, BC*  
SENIOR TECHNICAL SPECIALIST | 2017–2020

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Led the authorship and related Indigenous engagement for three First Nation-specific current use effects assessment (inclusive of current and

historical Indigenous knowledge and use) was prepared to support the Project’s application under the Vancouver Fraser Port Authority Project and Environmental Review process.

Engaged with the client and respective First Nations regarding the approach and development of the assessment; wrote various sections of the assessment; and provided technical guidance and senior review.

### **ADDITIONAL RELEVANT PROJECT HISTORY**

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#### **Transport Canada (TC)**

*Victoria Harbour Floor Project, BC*  
TECHNICAL LEAD | 2018–PRESENT

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Led the development, design, facilitation, and reporting of the Project’s Indigenous engagement program, including two Traditional Knowledge and Traditional Use studies, with the Esquimalt and Songhees Nations to help inform the development of the Victoria Harbour human health risk assessment.

Conducted numerous community-based workshops, interviews, and working groups, which provided valued Traditional Knowledge and cultural resource information to help support related human health risk assessment objectives, strengthened client relations and meaningful Indigenous engagement.

#### **Department of National Defence (DND) and Public Services and Procurement Canada (PSPC)**

*Ləkʷəŋən Habitat Offsetting Project, BC*  
TECHNICAL LEAD | 2021–PRESENT

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Led the development, design, and execution of Phase I and Phase II of the Ləkʷəŋən Habitat Offsetting Project with the Esquimalt and Songhees Nations, on behalf of DND and PSPC. Developed the materials, presentations, social science research methods, and communications to successfully conduct a two-day virtual workshop, a half day in-person workshop, and several meetings with representatives from the Songhees and Esquimalt Nations.

Mentored and supported the Project Team and helped to ensure that technical objectives and project

deliverables were successfully delivered.

#### **Public Services and Procurement Canada (PSPC)**

*Esquimalt Graving Dock Redevelopment Project, BC*  
TECHNICAL LEAD | 2021–2022

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Led the Indigenous engagement program. Established the Indigenous engagement approach, plans, materials, communications, and engagement activities with potentially affected Indigenous Nations and groups.

#### **Department of National Defence (DND)**

*Esquimalt Harbour Projects, Indigenous Engagement, BC*  
TECHNICAL LEAD | 2019–2022

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Project Lead for responsible for supporting the projects Indigenous engagement program and fostering the meaningful and respectful engagement of potentially affected First Nations.

#### **BHP Billiton Canada Inc.**

*Confidential Potash Export Facility, USA*  
SENIOR TECHNICAL LEAD | 2019–2020

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Designed and led the engagement with the potential affected Indigenous group in the United States of America, whose Usual and Accustomed Treaty Rights had the potential to be affected by the proposed BHP project.

Managed the project team, conducted related Indigenous engagement, and facilitated a workshop with the Nation’s commercial fishers to help support



# Deanna Higginson, MNRES, RPBio

## TECHNICAL LEAD, LANDS AND CULTURE

BHP's interests as the project progressed.

### **BHP Billiton Canada Inc.**

*Canadian Closed Sites, Indigenous Desktop Research*

LEAD RESEARCHER | 2018

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Provided technical guidance, support, and senior review related to traditional territory mapping, current and historical Indigenous land use, and areas of cultural significance for each of BHP's four Canadian closed sites.

### **John Prince Research Forest**

*Tl'azt'en Nation Community-Based Environmental Monitoring, BC*

LEAD | 2009

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Designed, developed, and produced Indigenous environmental monitoring protocols for implementation to support the assessment of the environmental health of animal and plant species in accordance with Tl'azt'enne Indigenous Knowledge and use.

## **PUBLICATIONS**

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Yim, Deanna, and Debra Lamash. 2011. "Engaging with Aboriginal Communities in the Mining Industry Through Community-Based Methods". *Mining and the Environment International Conference*, Sudbury, Ontario, June 25–30, 2011.

Yim, Deanna, Chris Johnson, and Erin Sherry. 2009. "Aboriginal environmental measures: Connecting First Nation communities and co-management through community-based environmental monitoring". Submitted to the *Journal of Environmental Management*.

Yim, Deanna, Erin Sherry, and Chris Johnson. 2009. "Evaluating the process of developing Aboriginal environmental measures for a co-managed forest". Submitted to the *Journal of Environmental Communication*.

Fondahl, Gail, Pamela Wright, Deanna Yim, Erin Sherry, Beverly Leon, Wayne Bulmer, Sue Grainger, and Jane Young. "Co-Managing Research: Building and Sustaining a First Nation-University Partnership. Community Development Institute Publications". University of Northern British Columbia, Peer-reviewed.

Tl'azt'en Nation, and Deanna Yim. 2008. "Tl'azt'en Nation Community-Based Environmental Monitoring, Science and Tradition: Respect for our Elders, Respect for our People, Respect for our Land". Prince George: UNBC Copy Services.

## **PRESENTATIONS**

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"Shaping the Victoria Harbour Floor Project with Indigenous Traditional Knowledge and Use, a Case Study" (BEST Conference, Virtual, October 2020).

"The Ripple Effect" (EMA of BC Presents Series, Vancouver, February 2020).

"Traditional Knowledge and Western Science: A Powerful Combination" (AME Roundup 2019, Gathering Place Panel, Vancouver, January 2019).

"Social Innovation in Mineral Exploration Panel" (AME Roundup 2019, Vancouver, January 2019).

"Raising the Methodological Bar: The Application and Use of Traditional Knowledge and Genomic Approaches to Project Monitoring and Adaptive Management" (CIM Conference, Vancouver, April 2018).





# Heidi Klein, MES

SENIOR CONSULTANT

## PROFILE

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Heidi Klein is a Senior Consultant with over 30 years experience in all matters related to environmental assessment and management including project assessment, human and community well-being related evaluations, legislation and policy advisor, Indigenous Knowledge collection and inclusion in decision-making, and Indigenous and stakeholder relations. Heidi has a technical foundation in wildlife biology, land use planning, environmental assessment, and facilitation/mediation. She is currently focused on project technical reviews, legislation and policy advice, socio-economic effects of projects, poverty evaluations including programs and measures intended to improve economic opportunities, and Indigenous Knowledge inclusion in decision-making relying on her experience in Indigenous Knowledge collection. Heidi has extensive experience preparing policy documents incorporating Indigenous Knowledge in British Columbia, Ontario, Quebec, Northwest Territories, Nunavut, and Saskatchewan.

## KEY SKILLS

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- Preparing policy documents incorporating Indigenous knowledge
- Preparing effects assessment reports for resource development projects, specifically focusing on weaving in Indigenous knowledge and Indigenous laws
- Program review and strategic recommendations for changes and updates
- Legislative and policy advisor
- Indigenous consultation and engagement
- Indigenous Knowledge and science interweaving
- Socio-economic impact assessment
- Environmental assessment and regulatory guidance

## EDUCATION AND CERTIFICATIONS

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### York University

MASTER OF ENVIRONMENTAL STUDIES (MES) | 1992

### University of Guelph

BACHELOR OF SCIENCE, HONOURS (BSC) | 1985

### Justice Institute of British Columbia

NEGOTIATION AND MEDIATION CERTIFICATE,  
THIRD-PARTY CONFLICT RESOLUTION | 2015

## PROJECT HISTORY

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### Métis Nation-Saskatchewan (MN-S)

*Various mining projects, SK*

SENIOR TECHNICAL ADVISOR | 2021–PRESENT

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TWC is supporting MN-S in its technical review of and input into uranium mining related projects in Saskatchewan. Supported technical reviews and presentations for CNSC hearings, Métis Knowledge studies, MN-S-proponent engagement efforts and facilitating technical reviews.

### Tłı̨chǫ Government

*Terra, Indore, and Hottah Mines – Tłı̨chǫ Knowledge Documentation, NWT*

LEAD RESEARCHER 2023–PRESENT

Lead researcher of a multidisciplinary team for Indigenous consulting services to support the Tłı̨chǫ Government in this project. TWC is leading, collecting, and documenting Tłı̨chǫ Elder experiences and stories, before, during, and after mining operations.



# Heidi Klein, MES

## SENIOR CONSULTANT

### **Tłıchq Government**

*Giant Mine Remediation Traditional Knowledge and Socio-economic Studies, NWT*

LEAD, 2021–PRESENT

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Team Lead responsible for planning, organizing and supporting a multidisciplinary team in documenting Tłıchq knowledge in relation to the Tłıchq history with Giant Mine and how this relates to socio-economics of the region. Long-term relationship holder, Heidi led communications with the Tłıchq Government, Government of Northwest Territories, and federal government representatives.

### **Inuit Tapiriit Kanatami**

*Cost of Living and Poverty Study, ON*

SENIOR TECHNICAL ADVISOR | 2020–PRESENT

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TWC, in collaboration with Impact Economics, is studying Guaranteed Livable Incomes along with other income support measures for Inuit Nunangat, as well as poverty markers and market basket indicators.

Final report will feature poverty reduction measures to discuss with relevant jurisdictional governments.

### **Inuvialuit Joint Secretariat, NWT**

*Ongoing Support*

SENIOR ADVISOR | 2020–PRESENT

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Reviewed proposed legislation, programs and policy including climate change policy on behalf on Joint Secretariat. Prepared legislation review training program for Inuvialuit staff.

### **BC Ministry of Forests, Lands, Natural Resource Operations, and Rural Development (FLNRORD)**

*Process Management and Facilitation Support for the Fort St John LRMP, BC*

SENIOR FACILITATOR | 2020–2021

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TWC facilitated meetings of the Technical Planning Team (TPT) towards consensus when making the operational decisions needed to complete the Fort St John Land and Resource Management Plan.

Communicated with the TPT members, maintained the

work plan, and facilitated meeting sessions.

### **Grand Council of Cree**

*Technical review of Indigenous engagement policy proposed by Impact Assessment Agency of Canada*

TECHNICAL LEAD AND PROJECT MANAGER | 2021

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Led a review of the proposed policy: interviewed Cree leadership and members for experience with Indigenous knowledge collection and translated the knowledge into recommendations. Prepared report for submission to the Impact Assessment Agency of Canada (IAAC).

### **Confidential Oil and Gas Client**

*Impact Assessment Project, BC*

HUMAN AND COMMUNITY WELL-BEING LEAD | 2020–2021

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Managed the preparation of the socio-economic impact assessment including working planning, field research, interviews, responding to Information Requests and preparing all assessment documentation from baseline collection through to effects analysis.

### **Métis Nation British Columbia**

*Impact Assessment Technical Review, BC*

TECHNICAL LEAD AND PROJECT MANAGER | 2020

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TWC completed for the Métis Nation BC (MNBC) a review of the engagement and consultation guideline proposed by the IAAC. The review included consideration of MNBC engagement objectives and a comparison against the IAAC guideline. The report was submitted to the IAAC.

### **Impact Assessment Agency of Canada**

*Indigenous Knowledge and Science in Impact Assessments*

PROJECT LEAD | 2020

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TWC executed a report on bridging Indigenous Knowledge and Western science in impact assessments for the Impact Assessment Agency of Canada. To develop the report, TWC conducted a detailed literature review; conducted interviews with Indigenous practitioners, Western science



# Heidi Klein, MES

## SENIOR CONSULTANT

practitioners, regulators, and academics and, analyzed four environmental assessment case studies.

Prepared a case study report and recommendations. Reference materials on IK and science provided by IAA were first reviewed, followed by a wider desktop research process to identify themes within current literature. Identified themes were factored into interview participant and case study selection.

### **Indigenous Services Canada**

*Inuit Economic Sufficiency Research and Knowledge Keeper Interviews, ON*

TECHNICAL LEAD | 2019–2020

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The Economic and Business Opportunities Branch of Indigenous Services Canada is undertaking an analysis of how to most efficiently use economic development funds to support economic development for communities. This project covered the Inuit communities in Nunavik and Nunatsiavut. Responsible for designing and conducting interviews with Inuit organizations and community representatives, and technical lead for writing the final report with recommendations.

### **Government of the Northwest Territories (GNWT)**

*Transboundary Water Quality; Status and Trends Water Quality Report: Metals, NWT*

TECHNICAL LEAD | 2017–2018, 2020

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The GNWT sought a summary report on metal levels and causes in four transboundary river watersheds.

Responsible for the development of the report, which included research on causes for metal loading in suspended sediments, and an evaluation of data. The report also included an annotated bibliography of metal levels in other river systems.

### **Baffinland Iron Mines Corporation**

*Mary River Phase II, NU*

CULTURE, RESOURCES AND LAND USE STUDY

TECHNICAL LEAD AND AUTHOR | 2019

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Co-author and methodology designer on the Culture, Resources and Land Use environmental assessment

chapter-redrafting.

The chapter was prepared around Inuit identified five key site-specific project interaction values: marine hunting, terrestrial hunting and trapping, fishing and freshwater, travels, trails and habitation and cultural continuity.

### **Qikiqtani Inuit Association (QIA)**

*Baffin Bay and Davis Strait Oil and Gas Strategic Environmental Assessment (SEA), NU*

PROJECT TECHNICAL LEAD, AUTHOR, AND PROJECT MANAGER | 2017–2019

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The QIA sought to complete an SEA exclusively from the perspective of Qikiqtani Inuit. Responsible for the preparation of an Inuit Qaujimagatuqangit report, a food security report and an SEA built on the principles of Inuit traditional laws.

### **Kivalliq Inuit Association**

*Indigenous & Scientific Knowledge Water Quality Monitoring Indicator Project, Nunavut*

INDIGENOUS KNOWLEDGE ADVISOR | 2017

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Indigenous knowledge advisor and author on the “One Voice” Indigenous and scientific knowledge water quality monitoring indicator project

[http://www.barbau.ca/sites/www.barbau.ca/files/0-662-24661-6-bw\\_0.pdf](http://www.barbau.ca/sites/www.barbau.ca/files/0-662-24661-6-bw_0.pdf)

### **Environmental Impact Assessment Capacity Development Strengthening Extractive Sector Management in Mongolia (SESMIM)**

*Impact Assessment Practices*

TECHNICAL LEAD | 2015–2016

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Led team of Mongolians in efforts to strengthen impact assessment practices in relation to Mongolian mining projects.

Reviewed current practices and prepared training plan.



# Heidi Klein, MES

SENIOR CONSULTANT

## **NexGen Energy Ltd.**

*Proposed Uranium Mine Project, SK*

TRADITIONAL KNOWLEDGE RESEARCHER AND  
COMMUNITY ENGAGEMENT LEAD AND PROJECT  
MANAGER | 2016

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Responsible for cultural and historical baseline research and a preliminary Indigenous Knowledge report for the proposed uranium mine in northwest Saskatchewan including annotated bibliography of previously documented Indigenous knowledge for the region.

## **Minerals and Metals Group**

*Izok Corridor Project, NU*

TECHNICAL LEAD AND STAKEHOLDER RELATIONS  
LEAD | 2012–2014, 2018

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The proponent proposed the development of a base metal mine in western Nunavut. Responsible for traditional knowledge collection and inclusion in the environmental impact statement, socio-economic evaluation, mitigation recommendation and implementation plans, and community and Indigenous engagement. Engagement included community meetings, interviews, and focus groups. Prepared chapters of environmental assessment for filing with the Nunavut Impact Review Board.

## **Nunavut Impact Review Board**

*Technical Advisor and Training on Inuit  
Qaujimaqatuqangit in the Environmental Impact  
Assessment Process*

TECHNICAL LEAD AND FACILITATOR | 2010

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Led a workshop for the Nunavut Impact Review Board (NIRB) on how to bring in and enhance the use of Inuit Indigenous Knowledge in the NIRB impact assessment process.

Prepared a report with recommendations with procedural changes.

## **De Beers Canada Inc.**

*Gahcho Kué Project, NWT*

SENIOR SOCIO-ECONOMIC LEAD | 2005–2007,  
2010–2011

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Prepared the socio-economic assessment chapter for the environmental impact statement and public engagement chapter for the Gahcho Kué Diamond Mine.

Work included socio-economic evaluation, mitigation planning and implementation plans.

## **Grand Council of Cree**

*Report on Harmonization of Land Claim  
Environmental Assessment Process with the Provincial  
and Federal Environment Assessment Processes*

TECHNICAL LEAD AND PROJECT MANAGER | 2011

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Reviewed land claim provisions against federal and provincial provisions and wrote a report to address harmonization issues between the processes. Work included interviewing Cree EA practitioners, provincial government EA leaders, and federal EA leaders.

## **Indian and Northern Affairs Canada**

*Beaufort Sea and Mackenzie Delta: Decision Support  
Tool Report & Web-Based Decision Tool*

TECHNICAL LEAD AND PROJECT MANAGER | 2008

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Led a team developing a model that could be used to determine which offshore areas could be opened for oil and gas exploration where Inuvialuit cultural interests were among the critical parameters. Prepared a supporting report summarizing the Inuvialuit cultural wildlife interests.

## **Mackenzie Gas Project (MGP)**

*Report on Legal Framework for Involvement by the  
Mackenzie Valley Impact Review Board (Review  
Board) & Technical Lead on Negotiations for the  
Process.*

TECHNICAL LEAD AND PROJECT MANAGER | 2001–  
2005

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Completed for the Review Board an evaluation of the three environmental assessment processes involved in the Mackenzie Gas Project.

Prepared recommendations for the Review Board role which was adopted by the MGP technical table. Represented the Review Board throughout the negotiations for the impact assessment process.



# Heidi Klein, MES

SENIOR CONSULTANT

## RELEVANT TRAINING

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Negotiation and Mediation Certification, Third-Party Conflict Resolution, Justice Institute of British Columbia | 2015  
Certificate in Integrated Water Resource Management, McGill University | 2017

## PROFESSIONAL MEMBERSHIPS

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International Association of Public Participation (IAP2) | since 2015

## PUBLICATIONS

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Impact Assessment Agency of Canada. 2021. Case studies of Indigenous knowledge and science in impact assessments. <https://www.canada.ca/content/dam/iaac-acei/documents/research/Two-Worlds-Report-Indigenous-Knowledge-and-Science.pdf>.

Qikiqtani Inuit Association, Nu, 2019. Davis Strait Strategic Environmental Assessment in Baffin Bay/Davis Strait. [https://www.nirb.ca/portal/dms/script/dms\\_download.php?fileid=323712&applicationid=125087&sessionid=0435stha4l72lopfq5i097qvj2](https://www.nirb.ca/portal/dms/script/dms_download.php?fileid=323712&applicationid=125087&sessionid=0435stha4l72lopfq5i097qvj2).

Qikiqtani Inuit Association, Nu, 2019. Qikiqtaaluk Inuit Qaujimagatuqangit and Inuit Qaujimagangit Iliqqusingitigut for the Baffin Bay and Davis Strait Marine Environment. <https://www.nirb.ca/publications/strategic%20environmental%20assessment/190125-17SN034-QIA%20Final%20IQ%20Baseline%20Report%20for%20Baffin%20Bay%20and%20Davis%20Strait-IEDE.pdf>.

Qikiqtani Inuit Association, Nu, 2019. Evaluating the role of marine-based harvesting in food security in the Eastern Arctic. <https://www.nirb.ca/publications/strategic%20environmental%20assessment/190125-17SN034-QIA%20Report%20Re%20Marine%20Based%20Harvesting-IEDE.pdf>.

Polar Knowledge: Aqhaliat Report. N.D. The "One Voice" Method: Connecting Inuit Qaujimagatuqangit with western science to monitor Northern Canada's freshwater aquatic environment. <https://www.canada.ca/en/polar-knowledge/publications/aqhaliat/volume-1/indigenous-knowledge.html>.

Indian and Northern Affairs Canada, NWT, 2008. "Beaufort Sea and Mackenzie Delta: Decision support tool report and web-based decision tool." <https://pubs.aina.ucalgary.ca/misc/73583.pdf>.



# Nina Barton, MRM, BSc, EP

## TECHNICAL LEAD, SOCIAL IMPACT ASSESSMENT

### PROFILE

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Nina Barton is the Technical Lead for Social Impact Assessment at Two Worlds Consulting and brings more than 17 years of diverse experience in socio-economic and environmental assessment, permit review processes and environmental planning and management. She has led socio-economic assessments for projects in northern BC, Yukon and other regions in Canada including transportation infrastructure, mines, oil and gas pipelines, wind energy and hydroelectric projects and port developments. Nina is experienced with the complex issues and concerns associated with major projects in remote and northern areas of Canada, working closely with Indigenous Nations, industry and government to support the responsible development of major projects. Nina's passion is to do high quality work that helps improve socio-economic, cultural, and environmental conditions for people and communities.

### KEY SKILLS

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- Social impact assessment (including economy, land and resource use, marine use, community infrastructure and services and community health and well-being)
- Assessing effects on Indigenous cultures and northern communities
- Socio-economic research programs and follow-up strategies
- Environmental assessment and planning
- Land use planning and management

### EDUCATION AND CERTIFICATIONS

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#### Simon Fraser University

MASTER OF RESOURCE MANAGEMENT,  
QUANTITATIVE FISHERIES RESEARCH (MRM) |  
2006

#### University of Victoria

BACHELOR OF SCIENCE IN GEOGRAPHY, WITH  
DISTINCTION (BSC) | 1995

#### ECO Canada

ENVIRONMENTAL PROFESSIONAL (EP) | 2020

### SELECT PROJECT HISTORY

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#### Confidential Oil and Gas Client

*Operations Expansion, BC*

SOCIAL IMPACT ASSESSMENT LEAD AND SENIOR  
ADVISOR | 2021–PRESENT

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Social impact assessment lead responsible for all socio-economic Valued Components of the provincial Effects Assessment for a proposed project to expand current operations. Senior advisor for assessment of potential effects on Indigenous interests.

#### Fort McKay First Nation

*Suncor Base Mine Expansion Project, AB*

TECHNICAL LEAD | 2021–PRESENT

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Responsible for technical quality and senior review of community profile report for Fort McKay First Nation, to meet IAAC regulatory requirements and Fort McKay First Nation requirements related to the Suncor Base Mine Extension (BMX) Project.



# Nina Barton, MRM, BSc, EP

## TECHNICAL LEAD, SOCIAL IMPACT ASSESSMENT

### Teck Resources

*Highland Valley Copper 2040, BC*

INDIGENOUS ENGAGEMENT ADVISOR AND  
TECHNICAL REVIEW | 2021–PRESENT

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Indigenous Engagement advisor for engagement and related environmental assessment planning activities for the preparation of the Environmental Assessment Certificate (EAC) application for a proposed expansion of the Highland Valley Copper Mine under the 2018 BC *Environmental Assessment Act* (EAA). Senior reviewer and technical advisor for Indigenous Interests and Culture components of the EAC Application.

### St'at'imc Government Services

*Bridge River Transmission Project, BC*

SENIOR REVIEWER | 2021–PRESENT

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Responsible for quality review of deliverables to support St'at'imc Government Services in co-development of BC Hydro's Bridge River Transmission Project.

### Transport Canada

*Victoria Harbour Floor Project, BC*

FACILITATOR OF TRADITIONAL KNOWLEDGE AND  
USE STUDIES | 2018–2021

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Provided senior review and Indigenous engagement support for the federal government in engagement activities with potentially affected Indigenous nations in risk management of Victoria Harbour. Facilitated Traditional Knowledge and Traditional Use field studies and community-based workshops, conducted qualitative interviews with Indigenous participants including Elders and youth. Provided senior review of project reporting including plain language documents.

### Newmont

*Coffee Gold Mine Project, Yukon*

SOCIO-ECONOMIC EFFECTS ASSESSMENT LEAD |  
2016–2021

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Co-authored the economic and community health and well-being components of the socio-economic baseline and effects assessment to meet YESAB regulatory requirements. Participated in the early development of

the socio-economic effects management plan and socio-economic effects monitoring plan.

Provided detailed socio-economic assessments specific to Yukon First Nations and responded to socio-economic information requests on behalf of the client as part of the YESAB review process.

### BC Ministry of Energy Mines & Petroleum Resources

*Review of Government Best Practices to Ensure Community Well-Being in the Mining Sector*

SENIOR ADVISOR | 2019–2020

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Provided senior review for the project to identify best practices to address socio-economic impacts of mining development on the health and well-being of communities, with a focus on remote, northern and Indigenous communities. The objective was to support the Province in identifying, characterizing, and mitigating potential adverse effects of mining activities on affected communities, with a focus on applying a GBA+ approach to assessing differential effects on vulnerable populations.

### Alberta Transportation

*McLean Creek Option, AB*

DISCIPLINE LEAD | 2016–2020

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Led the land use, infrastructure, and socio-economic components of an Environmental Impact Assessment for a project alternative to a flood protection project under *CEAA, 2012* and the Alberta *Environmental Protection and Enhancement Act*. Tasks include scoping, data collection and analysis and assessment of potential residual and cumulative effects, and ongoing responses to Information Requests.

Provided critical support for the client in the environmental review process, including responses to information requests and completion of assessments of Project effects specific to Indigenous nations.

### BHP

*Closed Sites Social Impact and Opportunities Assessment and Indigenous Desktop Research, BC, ON, QB, NS*



# Nina Barton, MRM, BSc, EP

## TECHNICAL LEAD, SOCIAL IMPACT ASSESSMENT

### ASSESSMENT LEAD | 2018

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Co-authored detailed social impact and opportunity assessments (SIOA) and Indigenous desktop research to assist BHP in achieving a better understanding of the Indigenous and non-Indigenous host communities surrounding four closed mine sites located in British Columbia (Island Copper mine), Ontario (Elliot Lake mines), Quebec (Selbaie and Poirier mines) and Nova Scotia (East Kemptville mine).

Provided community profiles of host communities, community and stakeholder lists, information on traditional territory and use mapping, historic and current Indigenous use, and areas of cultural significance. The results of this research support's BHP's strategic approach to community engagement that aligns with community needs, strengthens relationships, and demonstrates BHP as a good corporate neighbour.

#### **Natural Resources Canada**

*Research on Indigenous Advisory and Monitoring Committees*

### LEAD RESEARCHER | 2017

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Researched advisory and monitoring committees in various jurisdictions intended to support the development of committees to oversee the construction and operation of the Trans Mountain Expansion Project and Enbridge Line 3 Project. The analysis was informed by interviews with representatives of Indigenous Nations, resource companies and regulatory agencies.

#### **Kinder Morgan Canada, Inc.**

*Trans Mountain Expansion Project, AB, BC*

### DISCIPLINE LEAD | 2013–2016

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Authored the marine socio-economic assessment for and produced a fishery resources survey submitted as part of the application to Transport Canada's Technical Review Process of Marine Terminal Systems and Transshipment Sites Review Committee. Lead technical discussions with marine user groups. Wrote the marine socio-economic assessment and technical report. Key writer of socio-economic and

environmental plans to address NEB Conditions, including reclamation plans for four BC provincial parks, a weed and vegetation management plan, riparian habitat management plan, and pipeline reclamation plan.

#### **FortisBC Energy Inc.**

*Eagle Mountain-Woodfibre Gas Pipeline Project, BC*

### SOCIO-ECONOMIC ASSESSMENT LEAD | 2013–2016

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Led the socio-economic, marine use and health impact assessments for a natural gas transmission pipeline in the south coast region of British Columbia, now approved. Responsible for baseline reporting and assessments of social, economic and health effects, including a qualitative human health risk assessment and a visual assessment for a participating Indigenous Nation. Developed and carried out the socio-economic field verification program. Managed a team of writers and spatial analysts. Wrote and conducted senior review of the socio-economic baseline report and assessment. Produced multiple addenda, technical reports and public consultation reports to BC EAO. Gave oral presentation and defense of key findings to regulators; and responded to information requests from regulators and the public.

#### **Spectra Energy Inc.**

*West Coast Connector Gas Transmission Project*

### DISCIPLINE LEAD | 2013–2014

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Produced the marine socio-economic component of the impact assessment for a natural gas pipeline project across northern BC, which was subsequently approved under the BC *Environmental Assessment Act*. Analyzed spatial information on fisheries and marine vessel traffic patterns; designed and executed a socio-economic field program; facilitated a technical workshop with commercial fishers and other key marine stakeholders; designed mapping of local knowledge information from marine users; produced a socio-economic assessment specific to Nisga'a Nation; and orally defended findings to regulators.





# Paleah Moher, PhD, RP Bio

SENIOR ASSOCIATE

## PROFILE

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Dr. Paleah Moher is a Senior Associate at Two Worlds Consulting (TWC). She has a more than 10 years of experience creating science-based evidence on the topic of human and environmental health and using knowledge translation approaches to make the information accessible and actionable. Paleah holds a PhD in Chemical and Environmental Toxicology, with expertise in mercury, developmental toxicity, biological hazards, carcinogens and other chemical hazards. She has demonstrated professional experience executing large multi-stakeholder projects, and chairing and participating in several advisory committees, including a minister-appointed position to advise the Federal Government on their pesticide management policies. Paleah has detailed first-hand knowledge of conducting human health risk assessments in multiple routes of exposures and is skilled in knowledge translation and exchange include the creation of highly tailored, audience appropriate, reporting techniques that range from peer-reviewed academic papers, briefing notes, article commentaries, youth comic books, educational workshops, and conference presentations. She has a sincere appreciation and skill in community engagement through involvement in several environmental health projects with First Nations and Inuit communities.

## KEY SKILLS

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- Technical expert in exposure science, toxicology, and risk assessment
- Experience in First Nation, Métis, and Inuit perspectives and engagement
- Science communication
- Knowledge integration

## EDUCATION AND CERTIFICATIONS

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### University of Victoria

POSTDOCTORAL FELLOWSHIP, GENDER, WORK & HEALTH | 2013

### University of Ottawa

DOCTOR OF PHILOSOPHY, CHEMICAL & ENVIRONMENTAL TOXICOLOGY (PHD)| 2011

### University of Ottawa

BACHELOR OF SCIENCE, BIOPHARMECEUTICAL SCIENCE | 2006

## PROJECT HISTORY

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### Health Canada

*Pest Management and Advisory Council*

SCIENTIFIC ADVISOR | 2019–PRESENT

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Participating as a toxicology expert on the federal scientific advisory group for pesticide regulation in Canada. Recently reappointed for another three-year term by the Honorable Jean-Yves Duclos. M.P. Provide expert advice on the toxicology and risk of particular pesticides with respect to pesticide management in Canada.

### The Land Conservancy of BC

*Strategic Plan and Vision*

BOARD MEMBER | 2021–PRESENT

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Serving as an elected board member to assist in the strategic plan and vision for the organization's mandate. Providing insight on contaminated sites with respect to their ecological value and risk to humans, wildlife, and environment. Mediating diverging perspectives on land acquisitions. Chairing monthly meetings as required.



# Paleah Moher, PhD, RP Bio

SENIOR ASSOCIATE

## **Global Network on Artisanal and Small-scale Gold Mining**

*Needs Assessment*

ORGANIZATIONAL ADVISOR | 2018–2019

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Provided a practical implementation plan with a series of actionable recommendations on organizational growth and program development. Interviewed a series of internationally renowned subject matter experts to map the global network. Utilized knowledge of International treaties and local legislation to craft an execution plan for incoming leadership. Provided ongoing support and training for existing and new staff, including project managers and executives.

## **CAREX Canada**

ENVIRONMENTAL LEAD | 2015–2018

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Provided collaborative leadership for the environmental specialists and researchers in providing robust exposure science and risk communication on Canadian’s exposures to carcinogens. Conducted exposure and risk estimates for carcinogens in soil, air, drinking water, surface water, and food. Knowledge mobilization with partners via websites, media engagement, reports, conference proceedings, and forums. Established and co-chaired a pesticide exposure estimate scientific advisory group, to improve standards of practice.

## **CAREX Canada**

*Aamjiwnaang First Nation Air Quality Cancer Risk Assessment Project: Braiding Information Together to understand a community’s cancer journey*

HUMAN HEALTH LEAD | 2017–2018

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Provided leadership and subject expertise on the cancer risk assessment and systematic review portions of this project. Participated with extensive community

engagement, the development of an audiovisual multimedia knowledge sharing product, and provided subject training for a First Nations health representative into a permanent community-based position. Prepared and was lead author on a series of documents outlining our results Including a community targeted report and audiovisual journey of the results, a technical report, and 2 peer-reviewed publications (in review).

## **CAREX Canada**

*Improving the way we measure pesticide exposures: Best Practices in Science and Policy*

LEAD | 2017–2018

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Recognizing the challenges of accurately measuring pesticide exposures, I formed and co-chaired a pesticide advisory committee (PAC) of the leading subject scientists from Harvard, Health Canada, UBC, etc. The PAC was formally active for 1 year (2017-2018), which resulted in a grey paper on best practices and knowledge gaps. The positive feedback was generous and the PAC continues informally as a professional support resource.

## **CAREX Canada**

*Assessment and mobilizing information on the Environmental Exposure of Canadians*

LEAD | 2015–2018

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Lead all project activities related to environmental exposures including exposure and risk assessments for various carcinogens in Canadian air, water, food, and soils; First Nations community engagement and directed research; formed and co-chaired a scientific advisory committee on pesticide exposure; monitored emerging issues and responded to media requests; engaged with our knowledge-users such as policy-makers and community leaders.

## **PUBLICATIONS**

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Please see my list at ORCID ID: 0000-0001-5400-8997