IDENTIFICATION

Department	Position Title	
Environment and Climate Change	Geotechnical Advisor	
Position Number	**Community**	**Division/Region**
23-16391	Yellowknife	Lands Management and Administration/HQ

PURPOSE OF THE POSITION

The Geotechnical Advisor is responsible for providing technical support, governance, and advice on the management on geotechnical risks.

SCOPE

The Geotechnical Advisor (Advisor) is located in Yellowknife and reports directly to the Manager, Major Projects (Manager). The Advisor is also co-located with geo-scientific peers in the Northwest Territories (NWT) Geological Survey (NTGS) and functionally participates in the Environmental/Permafrost Science programming of the NTGS.

The mandate of the Department of Environment and Climate Change (Department) is to manage, administer and plan the sustainable use of public land in the NWT in a fair and transparent manner that reflects the interests of the people of the NWT. The management and administration of land in the NWT occurs in a unique context and is influenced by distinct social, economic and cultural factors and complex regulatory considerations. Under the Department of Environment and Climate Change mandate, the Department is guided by the principle, among others, that scientific knowledge should be brought to bear in the effective and efficient management of land in the NWT.

The Department has a role as an enforcement, compliance, and monitoring agency, and provides technical advice to public boards which are responsible for regulatory obligations regarding land and water use in the Mackenzie Valley. In the Inuvialuit Settlement Region, the Department also is responsible for regulatory obligations.

The Department is accountable for the effective operation and discharge of responsibilities under legislative frameworks for administration of public land in the NWT under the *Commissioner's Land Act*, the *Northwest Territories Lands Act*, the *Area Development Act* and regulations; the *Mackenzie Valley Resource Management Act* (MVRMA) the *Waters Act* as well as the settled Lands, Resources and Self-government Agreements within the NWT. The Department also works within a Cabinet approved framework which includes the Departments Compliance and Enforcement Ministerial Policy, the Recreational Leasing Management Framework, and the Northwest Territories Geological Survey Strategic Plan.

The Advisor supports sound land management/regulatory decisions and the negotiation of land claim and self-government agreements by contributing scientific and technical expertise on a variety of geotechnical properties and considerations, including geohazard risks. These considerations may include riverbank and slope stability and erosion, permafrost degradation, flood plain, and climate change implications on the landscape from a long and short term perspective, as well as man-made risks such as stability of waste rock piles or quarry pit slopes.

The Advisor is responsible to undertake risk management assessments, including mitigation, preparedness, early warning, response, and recovery of the full life-cycle of proposed resource and infrastructure development projects to reduce the number and scale of natural and human caused impacts on communities and physical infrastructure of the NWT.

The Advisor is responsible to provide scientific and technical advice and guidance that may be relevant to Land and Water, or other regulatory Boards, and to the GNWT Responsible Ministers under the MVRMA, where appropriate and required by legislation, in order to inform policy makers, decision makers and society in general about the characteristics of the land in order to support regulatory decisions, land use planning and community planning decisions.

The Advisor is responsible to provide outreach, engagement and expertise to connect geotechnical and geohazard experts to end users and mandated agencies (e.g., Department of Municipal and Community Affairs) for regulatory decisions and disaster management. Through its networking and outreach efforts, the Advisor is also accountable for identifying science gaps in land management and providing advice and recommendations to the Manager and Director on opportunities to build and develop the Departments capacity around scientific and technical expertise, in order to achieve the principles laid out in the Department's Establishment Policy.

The Advisor must maintain professional qualifications in technical, administration, project management, and managerial areas by successfully completing all seminars courses and other training as assigned.

The Advisor builds and maintains effective working relationships with northern researchers, federal, territorial and Indigenous governments, project proponents, regulatory boards and committees established under land claim agreements. The Advisor supports Inspectors and other Regional staff to evaluate impacts on the environment arising out of compliance monitoring activities associated with permitted resource and infrastructure development projects.

The Advisor has synergies with geoscientific capacity at the Northwest Territories Geological Survey (NTGS), a research-focused division of the Department of Industry, Tourism, and Investment (ITI). This linkage is envisioned to enhance and improve ECC's geotechnical expertise by facilitating access to knowledge resources, technical support, and analytical services of the NTGS while deepening and broadening NTGS functions, particularly those related to permafrost geoscience. A collaborative relationship creates a number of benefits including support of ITI in implementing their NTGS Strategic Plan, opportunities to work on research programs and with multi-disciplinary research teams, and developing the practical, hands-on solutions to addressing and mitigating climate change impacts while considering regulatory systems and tools.

A variety of duties are assigned to the Advisor and the Advisor must effectively assess and prioritize projects in order to achieve a successful outcome.

RESPONSIBILITIES

1. **Conducts professional scientific research on geotechnical issues and geohazards through office and field based activities.**
   - Develops project proposals, budgets and timelines.
   - Plans and implements research projects that can vary from small independent studies to large, collaborative multidisciplinary programs.
   - Initiates and leads research projects that can intersect a range of topics including riverbank and slope instability, geology, glacial landforms and processes, borrow potential, permafrost, hydrology, ecology, and infrastructure planning.
   - Arranges for the timely acquisition of permits and licenses for field-based projects and consults with land managers and communities to share information and obtain required clearances.
   - Organizes and oversees field logistics.
   - Supervises project personnel including employees, summer students, contractors and research partners.
   - Ensures cost-effective, efficient, and safe work practices in the field and office.

2. **Provides technical and advisory services to assist in decision-making.**
   - Participates in the provision of advisory services and briefing notes to assist

Management on geotechnical issues.
- Provides scientific and technical services to assist other departments and parties in Claim negotiations in developing their cases and effectively participating in the Claims negotiation processes.
- Drafts recommendations and advice on departmental policies, legislation, and other regulatory interpretations and requirements to the Manager in regards to geotechnical topics.
- Develops and maintains a consultative network with managers within the GNWT, other levels of government, Indigenous organizations, northern and indigenous communities, and other clients, partners, and stakeholders.
- Assists in the preparation of reports, briefing materials, and Ministerial correspondence for senior management.

3. **Provides outreach, engagement, and expertise on geotechnical topics through:**
   - Provides information and advice on the ways and means to promote and facilitate community, Aboriginal involvement in program decisions and activities.
   - Provides advice to parties involved in disputes regarding geotechnical issues to help them reach an understanding of the issues and if possible an agreement.
   - Provides advice to senior officials of industry and their consultants, to senior officials of GNWT, the Minister's office, agencies including co-management boards, Aboriginal organizations and municipalities on policy, legislative, regulatory, scientific and technical information and requirements to assist them in their decision making.
   - Develops and cultivates positive and productive relationships with academia, Governments, and the private sector.
   - Participates in GNWT working groups and committees and federal/provincial/territorial working groups and committees.

4. **Oversees the effective project management of scientific and technical contracts and services through:**
   - Works with counterparts within the GNWT to ensure that key planning and decision documents are technically sound and meet the requirements of the funding and approval authorities.
   - Provides updates and direction on the Department's Environmental Liabilities.
   - Prepares request for proposals, reviewing proposals, and awarding contracts.
   - Provides project management of contracts and services.
   - Maintains ongoing and clear communication among team members and with their counterparts, as well as with Indigenous government and organizations, consultants, contractors, regulators, third party rights holders and other stakeholders.

WORKING CONDITIONS

Physical Demands

The incumbent work in a normal office environment from September to April and two to three weeks of winter field work. From May to August this is a field-based position. In the summer field season, the incumbent will hiking over rough terrain with a backpack and collected samples (up to 50 pounds) for 8 hours per day, up to 3 weeks per year; will be travelling in small aircraft and helicopters for up to 4 hours per day, up to 3 weeks per year; will be travelling in small water craft for up to 1 hour per day, up to 3 weeks per year. In the winter field season, work involves travelling by snowmobile, work at extreme cold temperatures, operation of two-person and working alongside industrial diamond/sonic drills.

Environmental Conditions

The incumbent is expected to perform some of his or her duties in remote field locations, often in very hot summer, or cold winter conditions. (This includes conditions in the work environment that have potential for negative physical impact on the incumbent.)

Sensory Demands

Normal office environment outside of field season.

Field work requires a state of heightened alertness to ensure a safe working environment.

Mental Demands

Multiple concurrent and conflicting tasks, leading to conflicting work priorities and time pressures. Field activities can include periods of prolonged isolation with one or more individuals, which may lead to minor or moderate psychological discomfort.

KNOWLEDGE, SKILLS AND ABILITIES

- Knowledge of sound and responsible land management practices and legislation.
- Knowledge of the theories, principles and philosophy of integrated resource planning, policy development, geohazards, land claim process, mining, oil and gas exploration, development and production and economics.
- Knowledge of the engineering and physical sciences affecting the natural landscape and the application of knowledge in a range of physical science disciplines including hydrogeology, geology, geochemistry, and biochemistry.
- Knowledge of ecosystem management for reviewing project descriptions of proposed infrastructure and resource development projects.
- Knowledge of methods of physical-chemical properties analysis, scientific information and data analysis and interpretation, in order to write authoritative

reports on environmental assessment, project evaluation, compliance advice or recommendations with respect to regulatory and environmental compliance.

- Knowledge of data acquisition, analysis, processing and testing methodologies, science- based information and data aggregation/manipulation methods and instrumentation operations.
- Knowledge of infrastructure and resource development project planning, construction, operation and closure phases to identify potential and/or occurring environmental impacts and to make recommendations to prevent or minimize environmental impacts.
- Knowledge of safety procedures and operations around industrial development sites.
- Writing, presentation and public speaking skills needed to present written and verbal reports, findings, conclusions and recommendations.
- Listening, speaking and reading skills, tact and judgment skills are required to explain highly technical terms in laymen's language.
- Reading and interpretation skills are required for acts, regulation, policies, scientific and technical publications, legal precedents to conduct research.
- Analytical and research skills are required to organize and conduct studies, assess and adapt methods, techniques, practices and to generate independent research results and/or validate the research findings generated by team members, contractors or partners.
- Ability to work effectively both independently and in collaboration with other professionals in a team situation.
- Ability to develop new interpretations and test hypotheses by compiling, synthesizing and integrating diverse geoscience datasets.
- Ability to conceptualize, design, carry out, and report on surficial geoscience research.
- Ability to complete projects on time and within budget, often in conjunction with the performance of other duties.
- Ability to produce scientific reports of high technical quality suitable for publishing in external journals or through the NTGO publication process.
- Ability to efficiently use computer hardware and software for data collection, research, and presentation purposes (e.g. Microsoft Word, Excel, PowerPoint, ArcGIS, specialized modelling software).
- Ability to communicate scientific information clearly and effectively in visual, oral, and written formats and at an appropriate level.
- Ability to listen and to exercise tact and diplomacy that are appropriate to the situation.
- Ability to make sound judgments related to compliance and enforcement activities.
- Ability to commit to actively upholding and consistently practicing personal diversity, inclusion, and cultural awareness, as well as safety and sensitivity approaches in the workplace.

Typically, the above qualifications would be attained by:

Completion of a Bachelor of Science or Engineering Degree in the natural sciences, Completion of a Master of Science or Engineering degree and three years' work experience in industry, academia, or a government geoscience agency.

The incumbent must be eligible for registration in the NWT and Nunavut Association of Professional Engineers and Geoscientists (NAPEG) as a Professional Geologist or Professional Engineer.

Equivalent combinations of education and experience will be considered.

ADDITIONAL REQUIREMENTS

Position Security (check one)

- ☒ No criminal records check required.
- ☐ Position of Trust – criminal records check required.
- ☐ Highly sensitive position – requires verification of identity and a criminal records check.

French language (check one if applicable)

- ☐ French required (must identify required level below)

  Level required for this Designated Position is:

  ORAL EXPRESSION AND COMPREHENSION
  Basic (B) ☐ Intermediate (I) ☐ Advanced (A) ☐

  READING COMPREHENSION:
  Basic (B) ☐ Intermediate (I) ☐ Advanced (A) ☐

  WRITING SKILLS:
  Basic (B) ☐ Intermediate (I) ☐ Advanced (A) ☐
- ☐ French preferred

Indigenous language: Select language

☐ Required ☐ Preferred