



IDENTIFICATION

Department	Position Title	
Industry, Tourism and Investment	Mineral and Petroleum Geomatics Officer	
Position Number	Community	Division/Region
63-14368	Inuvik	Mineral and Petroleum Resources

PURPOSE OF THE POSITION

The Mineral and Petroleum Geomatics Officer develops and implements Geographic Information System (GIS) related projects. Performs geospatial analysis provides decision support, recommendations and assistance to the staff of the Mineral and Petroleum Resources Division (MPR). The incumbent creates digital databases, hardcopy maps, graphics products and digital backups, in accordance with the previously mentioned divisions mandates for the management of land rights associated with petroleum and mineral exploration and development.

The Mineral and Petroleum Geomatics Officer also has a dotted line relationship to the Northwest Territories (NWT) Centre for Geomatics, within the Information System Shared Service Office (ISSSO), Department of Finance and will participate in corporate activities including collaboration on initiatives to improve the results of the Geomatics community of practice within the Government of the Northwest Territories (GNWT). This includes participation processes supporting overall management of the geospatial sector such as results reporting and the implementation and maintenance of GNWT Geospatial standards and practices to support data management, publishing, discovery, sharing and integration. This also includes collaborating with the ISSSO and other key partners on activities and initiatives that contribute to and enhance Geomatics as a professional discipline within the GNWT such as training, coaching and presenting on various aspects of geospatial services, technology and processes.

SCOPE

The Inuvik Office of the MPR addresses all matters relating to the management of petroleum exploration, development and production in the context of effective resource management

and NWT economic and political development. The Yellowknife MPR office addresses all matters relating to the management of mineral exploration, development and production in the context of effective resource management and NWT economic and political development. The Mineral and Petroleum Geomatics Officer reports to the Manager, Oil and Gas Rights and supports the issuance and management of rights for oil and gas development, but liaises with other managers within MPR provide geospatial decision support.

The incumbent will work independently on many projects, which are taken or assigned with the decisions made by this position affecting the quality and effectiveness of project products. The incumbent will work on one or more projects (not all GIS related) at a time, and must determine the methods and procedures to be followed without specific direction from the Manager, who is not a geomatics or GIS expert.

The Mineral and Petroleum Geomatics Officer has regular contact with other geomatics and GIS specialists in the NWT Geological Survey and the Shared Service Centre - Informatics and can use this community of practice as a sounding board when necessary.

The Mineral and Petroleum Geomatics Officer is responsible for handling varying requests from experienced and in-experienced people throughout the GNWT, other government and non-governmental organizations and the public. To do so the incumbent must be able to intuitively respond to the user in a language related to their experience. As the subject matter expert the incumbent will be expected to assist the user in defining their desired end product and clarify for them the steps required to accomplish the deliverable and how this will affect time and costs. Associated with this is the responsibility of handling different projects with many different data sources. The incumbent will need to be experienced and creative in the manipulation of digital data to allow its importation into the divisions and other geographic or non-geographic related database systems.

RESPONSIBILITIES

1. Prepare, develop and implement GIS projects and products to support the management of land rights associated with petroleum and mineral exploration and development by:

- Preparing draft and final maps for Expressions of Interest and Call for Bids processes.
- Publishing Expressions of Interest and Call for Bids maps on the website.
- Mapping coordinates for nominated parcels as part of quality control efforts.
- Posting text and maps for winning bids on the website.
- Updating disposition maps, digital files, GIS data and metadata in various formats on the divisions website(s) and the land administration registry in response to the issuance of an exploration license.
- Acting as deputy-registrar for oil and gas rights issuance and administration, including: doing data entry, queries on various companies, generating reports from within the database, entering legal land descriptions, providing information to the companies holding oil and gas interests in the territory as well as responses from within the government and the public.

2. Assist divisional staff with their projects by:

- Consulting with staff to establish and define project conditions, requirements and action plans.
- Providing recommendations and advice on projects.
- Providing technical advice, recommendations and assistance.
- Translating digital data to the format of their request.
- Locating and restoring digital data.
- Digitizing and data manipulation.
- Plotting, printing, photocopying, cutting maps and laminating.
- Providing direction and assistance to casual employees on occasion.
- Coaching and training others on the use of technical software, including GIS and databases, and on interpretation and analysis,

3. Administer or assist with non-GIS divisional, departmental or other projects by:

- Initiating and completing, upon the Manager's request and direction, projects as they arise.
- Assisting departmental staff, other organizations and private industry with their requests.
- Creating or updating digital databases for the division.
- Performing encrypted backups of the division's GIS data to backup drives.
- Perform various procurement activities with the assistance of and through Procurement Shared Services and Information Technology groups, such as creating sole source contracts for contractors, procurement of computer hardware and software, goods and services in support of division requirements as needed

4. Administrative duties:

- Ensuring supplies of plotting paper, ink cartridges, CD's, tapes, etc. are maintained by placing and tracing orders.
- Answering public inquiries, filing, etc.

WORKING CONDITIONS

Physical Demands

Occasionally will have to lift heavy items such as computers, monitors, office equipment, 44 inch wide plotter and laminator rolls (up to 30 lbs.), and display cases.

Trimming large format maps, banners and posters using scissors or large format paper trimmers.

Prolonged interaction with computer monitors in a sitting position on a daily basis as well as occasional long periods of time performing very small but repetitive finger and hand motions while interacting with a video monitor and keyboard may lead to eye strain, back discomfort and keyboard/mouse or digitizing induced and repetitive strain injury.

- Assisting in the entry and maintenance of oil and gas registry records and information in the land administration database as well as for working with the developer to provide technical maintenance and updates to the system to meet future troubleshooting and feature updates.
- Assisting with the creation of drilling maps and updating maps to reflect drilled wells, termination of title, etc.
- Updating maps, digital files and the on-line registry in response to Significant Discovery Declarations and Significant Discovery Licenses.
- Creating maps for Commercial Discovery Declarations and Production Licenses as part of quality control efforts.
- Updating maps, digital files and the on-line registry in response to Commercial Discovery Declarations and Production Licenses.
- Updating maps, digital files and the on-line registry in response to the consolidation, transfer / assignment or amendment of any licenses.
- Managing, conducting and coordinating analysis and research.
- Creating project specific GIS study areas to import, store and manipulate data in.
- Inputting and manipulating data to or from a GIS, image analysis system and/or other database management systems.
- Performing spatial analysis and queries using SQL in GIS software applications on a daily basis.
- Performing feature analysis and extract, image analysis and classification in remote sensing software programs when necessary.
- Creating and running Geoprocessing models in GIS and remote sensing applications, or other such automated model based or scripting environments.
- Designing communications tools preparing and printing map-based products, graphics and posters (e.g. paper maps, reports, annual reports, documents, banners etc., and correspondence) for use by the department, other agencies and the public in support of the Petroleum and Mineral Resources Divisions.
- Providing interpretation and advice related to geomatics data and reports.
- Performing numerical and statistical calculations using spreadsheet or other software programs.
- On-screen digitizing of geospatial data for the department, other agencies and private enterprise.
- Documenting procedures involved in projects and related datasets, ensuring and noting their backup locations.
- Assisting departmental staff with GIS projects, requests and inquiries.
- Conveying technical issues to management and developing and recommending solutions.
- Supervising summer, co-op students as well as less experienced GIS staff if required and available within the division.
- Responsible in keeping up to date through professional self-directed training on a regular basis in computer hardware and software technologies related to geomatics, database systems, computer networks and high quality graphic design and publishing.
- Attending conferences and workshops and professional development training in the geomatics field related to the position.

Environmental Conditions

Normal office environment.

Sensory Demands

Creating map compositions requires the ability to differentiate accurately between colors and create compositions of data that differentiate the data with discernible and aesthetically pleasing color combinations.

For efficient digitizing the ability to differentiate between different tones of beeps (hearing) and screen colors (sight) is necessary.

Mental Demands

Normal office environment. The ability to handle multiple priorities and projects at the same time. Occasional overtime may be required as project and urgent deliverables require. The ability to deal with people of with various backgrounds that have differing levels of understanding of technical, computer and geomatics and remote sensing as fields.

KNOWLEDGE, SKILLS AND ABILITIES

Microcomputers and associated software:

- Working knowledge of at least one of the following Geographic Information Systems and related software applications: Esri, MapInfo, Caris, Manifold, QGIS, etc.
- Geospatial Database storage systems: Esri SDE, File and Personal Geodatabases.
- Working knowledge of Extraction Translate Load (ETL) software: FME
- PC operating systems
- Basic familiarity with scripting one or more scripting environments: python, java, iron python, VB Script, etc.
- Basic Unix operating system familiarity
- On-screen and table digitizing systems
- Relational Database Management Systems (RDMS), at least one of: MS Access, MS SQL Server, Oracle, Postgre SQL, MySQL Lite, etc.
- Understanding of the hardware and software requirements of high performance GIS, remote sensing and graphics workstations, RAID systems and backup software systems
- MS Office product suite
- Computer graphics software, i.e. vector graphics and raster graphics (photo editing) using various industry standard software suites: Adobe CC, Adobe Acrobat Pro, Corel Graphics Suite, PaintShop Pro, Canvas, etc.
- All current internet web browsers
- File Transfer Protocol (FTP) and secure FTP technologies
- Computer Aided Drafting / Design (CAD) programs: AutoCAD, Microstation, etc.

- CD creation, optical disk, computer disk and tape backup and associated software programs
- Working knowledge of at least one of the following remote Sensing Software applications: ERDAS Imagine, Envi, PCI Geomatica, etc.
- Working knowledge of large format scanning hardware and software
- Professional OCR Software: Omnipage Ulitimate, ABBYY Finereader, etc.

Creative / Artistic:

- Advanced knowledge of GIS, remote sensing, geography, cartographic design and graphic design principals for effective communication of thematic content.
- Advanced knowledge of GIS and remote sensing analysis principals, including computer modeling /automation within those environments.
- Page layout and design skills for posters and banners
- Photo editing / raster graphics skills

Plotting/Printing Devices:

- Ink jet printers (HP, Epson, Canon)
- Laser jet printers (HP, Xerox)
- Ribbon printers
- Large format plotters (HP, Epson, Canon)

Office Equipment:

- Large format GBC thermal laminator
- Some maintenance experience will be required with printing and laminating devices.
- Photocopies, fax machines, phones, etc.

Other Requirements:

- Strong project management skills and the ability to work under minimal supervision.
- Demonstrated analytic, cognitive and problem solving skills, and the ability to work with complex information.
- Proven interpersonal skills in working with individuals at all levels of Government and private industry.
- Proven communication and organizational skills.
- Effective report and letter writing abilities.
- Knowledgeable of and able to work and deal with people effectively in a cross-cultural setting.
- The ability to use multi-media technology for the management of projects and development of presentations.
- The ability to quickly learn new computer hardware and software technologies and incorporate them into the work place.
- Ability to handle small tools (e.g. X-Acto knives and tapes) with physical dexterity for creating maps or to do other manual jobs.

Typically, the above qualifications would be attained by:

An undergraduate degree in GIS and/or a technical diploma in GIS with five years' technical experience in GIS or equivalent or a university degree in a science related field with three years technical experience in and work experience in GIS as well as in database support, cartography, remote sensing, graphics, and computer hardware and software technology. A demonstrated knowledge of earth science as it applies to oil and gas and mineral exploration would be an asset.

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