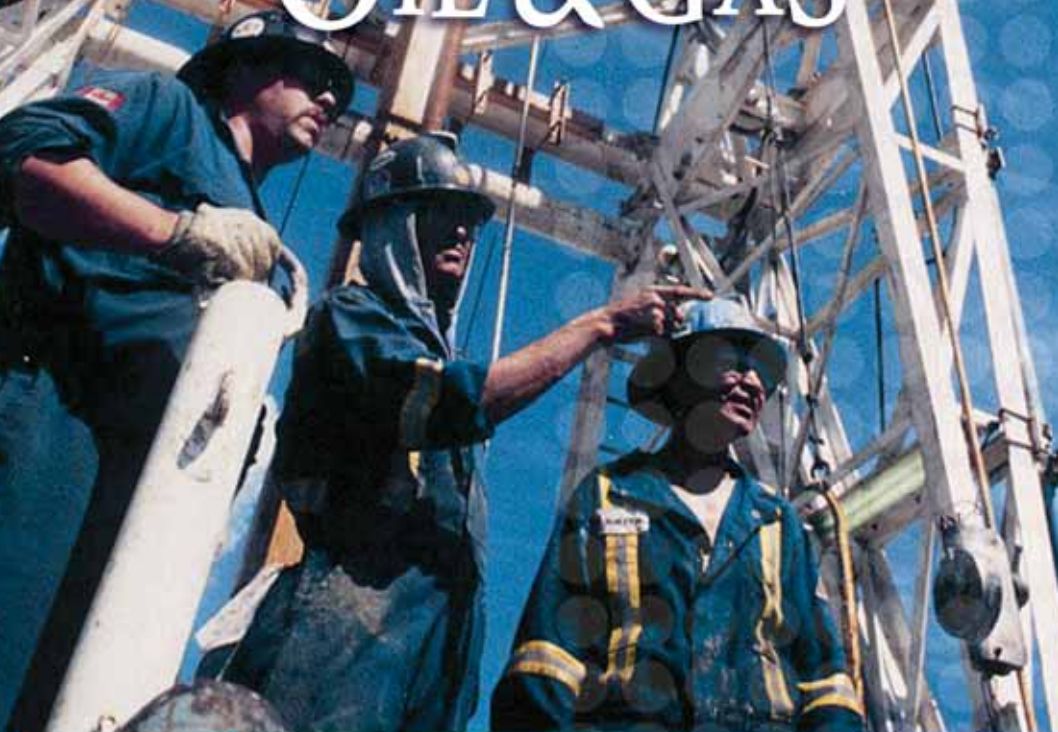


Jobs in

# OIL & GAS



career opportunities series



Cette publication peut aussi être disponible en français sous le titre:  
Série sur les possibilités de carrière  
Emplois dans l'industrie pétrolière et gazière

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# JOBS IN OIL AND GAS

## INTRODUCTION

The Northwest Territories has a long history in the oil and gas industry. Since the first oil well started production at Norman Wells in 1920, the industry has experienced dramatic cycles of high activity followed by times of very little work.

When rich oil and gas deposits were found in the Beaufort Delta, the industry turned its attention to finding a way to ship the products to southern markets. The Berger Inquiry studied the feasibility of a Mackenzie Valley pipeline more than 25 years ago and found that Aboriginal communities were not socially or economically ready to participate in and profit from such a project on their lands. Justice Thomas Berger decided that petroleum development should stop long enough to allow communities time to negotiate land claims. A quarter of a century later, oil and gas prices are high again and producers are eagerly seeking Aboriginal partners to help them build a pipeline.

Other oil and gas deposits in the Colville Hills, along the Mackenzie River and in the Deh Cho region have had significant economic benefits for the surrounding communities and have created work and training opportunities for many Northerners. Oil and gas development in the Northwest Territories promises jobs and opportunities in the industry for years to come. Partnerships between government, aboriginal people and industry could allow the NWT to develop into an important producer of petroleum resources for Canada into the future.

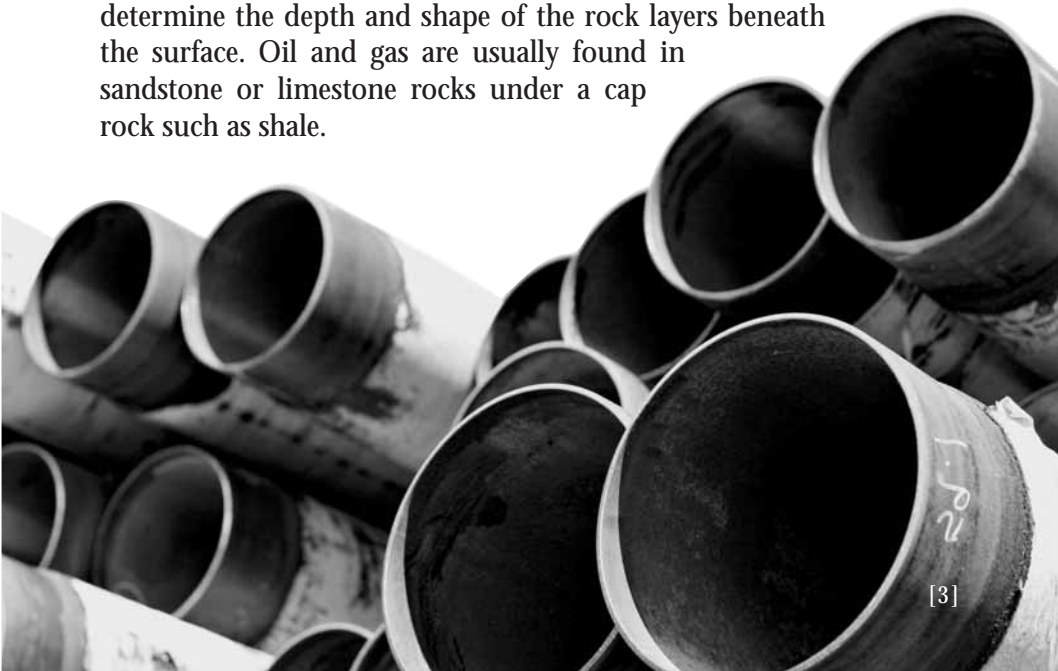
## WHAT IS THE OIL AND GAS INDUSTRY?

The oil and gas industry is characterized by upstream activities, which take place before oil and gas is extracted, and downstream activities, which take place after the oil and gas leave the ground. Upstream

activities include searching for and discovering petroleum deposits and then testing them to find out how valuable the deposits might be. Downstream activities include extracting the deposits, producing, shipping, refining and selling crude oil and natural gas found beneath the earth's surface. Manufacturers use these natural resources to make heating and motor oils, propane, gasoline, kerosene, butane, methane, benzene and tars. People around the world use these products to heat houses and to fuel vehicles and machinery. Oil and gas products are also used in petrochemicals such as detergents, insecticides, wax, asphalt, aerosols and refrigerators.

## FINDING THE OIL AND GAS

The search for oil and gas involves predicting the most likely places underground to find petroleum deposits. To decide where to look, geologists and geophysicists use their knowledge of rocks and ground formations. To assist them in their search, they use seismic surveys to produce an image of what they might find underground. Oil and gas exploration teams construct seismic lines across the land surface, sometimes for several kilometres. Crews arrange a line or several lines of sensitive receivers, called geophones or jugs. Next, crews set off explosives or use machines to create vibrations in the ground. The sound waves that follow bounce off hard rock layers below and return to the surface. The geophones record the sound waves to help determine the depth and shape of the rock layers beneath the surface. Oil and gas are usually found in sandstone or limestone rocks under a cap rock such as shale.



## DRILLING A WELL

Seismic information can suggest whether or not underground deposits - called traps - will be found in the area. Traps can be filled with oil and gas or just with salt water. A company has to drill a test well to confirm whether or not the oil or gas is actually there. Drilling wells is very expensive and companies must decide if the prospect is worth the expense of drilling. Sometimes an exploration well finds a reservoir of oil and gas large enough that it will earn more money than it costs to drill and build a well. In that case, crews run steel casing from the well to allow production. But if they judge that a well's contents are worth less than the cost of production, workers plug the hole with cement.

## PREPARING THE SITE

To prepare a drilling site, crews first clear and level a tract of land to accommodate the drilling rig and a camp for the work crews. They build roads to these locations so that the rig and supplies can be trucked in. Often in remote areas, crews build an airstrip to enable the company to fly workers and supplies in and out. The company and its employees continue to use this well site area and road system throughout the producing life of the well to accommodate production equipment, storage tanks and the wellhead equipment.

## GETTING THE OIL & GAS OUT OF THE GROUND

Crews drill wells deep into the ground using a revolving steel bit suspended from a drilling rig. Drilling rigs can be mounted on trucks, on the ground, on a ship, or on a platform out in the ocean. While gas generally flows to the wellbore under its own pressure, most oil wells require additional pumping to help get the product to the surface.

## SHIPPING THE OIL & GAS

Almost all of Canada's raw oil and all of its gas resources are transported through pipelines, which run underneath the ground or above the earth's surface. Oil and gas flow in separate pipelines. The pipelines move the raw oil and gas to facilities in the south for further refining or processing. (If the site is near the ocean, large tankers may

transport oil in bulk.) Refining and processing remove impurities, turning crude oil into products such as gasoline and other types of fuel. People involved in many occupations build pipelines.

## PROTECTING THE ENVIRONMENT

Before any activity is carried out, companies must take care to follow environmental laws and corporate guidelines to make sure that the plants, animals and water surrounding the exploration and drilling sites are not disturbed too much. At the end of a project, companies must try to leave the site as close as possible to what it was before the work began. People trained in environmental management do this reclamation work. These people also help clean up if there has been an oil spill. There are very strict rules in place that try to protect the environment and limit negative effects on it.

## WILL THERE BE JOBS IN THE OIL & GAS INDUSTRY?

Although the oil and gas industry has high and low cycles of activity and times when there are many or few jobs, strong prices for oil and gas have helped keep this industry thriving. Technology plays an important part in helping to maintain oil and gas production and to minimize the effect on the environment. The NWT has a substantial portion of Canada's estimated potential petroleum. Residents may see long-term business opportunities and jobs in exploration activities, as well as opportunities in services that support the oil and gas industry.

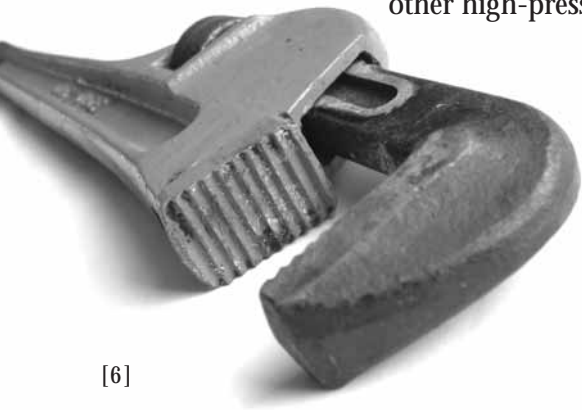
## WHAT JOBS WILL THERE BE IN OIL & GAS?

There are many different types of jobs associated with the oil and gas industry and they all have different requirements. It is important to remember that the more training and education you have, the higher the level of job you can get. Skills learned in the oil and gas industry are transferable to other industries or occupations.

## ENTRY LEVEL JOBS

*These jobs require little or no previous experience. Some companies provide on-the-job training and some jobs require that you have a grade 12 level of education.*

<b><i>Leasehand</i></b>	Cleans, moves and handles supplies on drilling rig.
<b><i>Cook's Helper</i></b>	Helps prepare and serve food.
<b><i>Slasher</i></b>	Cuts down trees and clears brush along seismic lines.
<b><i>Seismic Drill Crew Helper</i></b>	Helps place receivers, may drill shot holes.
<b><i>Trades Helper</i></b>	Assists journeypersons in their tasks, prepares and cleans work site.
<b><i>Janitor</i></b>	Keeps the camp clean.
<b><i>Equipment Operator</i></b>	Drives various machines and trucks.
<b><i>Swamper</i></b>	Helps truck drivers load and unload trucks.
<b><i>Utility Worker</i></b>	Undertakes general maintenance and housekeeping in pipeline pumping stations.
<b><i>Nozzleman/woman</i></b>	Handles nozzle for sandblasting in preparation of pipes for a pipeline; handles other high-pressure jet equipment.



## SKILLED JOBS

*For these jobs, you need some previous experience. Some require specialized training and/or certificates such as First Aid or H2S (hydrogen sulphide) Safety.*

<b><i>Blaster</i></b>	Packs explosives into holes and makes sure everything is safe before blasting.
<b><i>Seismic Worker/Observer</i></b>	Conducts tests to send sound waves or vibrations through the ground/electronically records and processes seismic data.
<b><i>Rig Manager</i></b>	Undertakes responsibility for the rig drilling crews and equipment at a location.
<b><i>Driller</i></b>	Runs rig drill works, motors and pumps; is the senior worker on a drilling crew.
<b><i>Derrickhand</i></b>	Guides and steadies pipes in and out of the hole and maintains drilling and mud system.
<b><i>Motorhand</i></b>	Operates and maintains engines that power drilling equipment.
<b><i>Floorhand</i></b>	Handles pipes on rigs and maintains equipment; cleans rigs.
<b><i>Power Tong Operator</i></b>	Operates hydraulic powered wrench-like equipment to connect casing joints of pipe.
<b><i>Field Production Operator</i></b>	Carries out the first treatments to remove impurities in oil and gas in the field before entering pipelines.
<b><i>Tank Farm Operator</i></b>	Works at pumping stations that receive and distribute oil in bulk.
<b><i>Gas Plant Operator</i></b>	Works in plants that convert raw gas into forms that can be used.

## APPRENTICESHIP TRADES & OCCUPATIONS

*These jobs require that you be a journeyperson, apprentice, or certified tradesperson.*

<b><i>Cook/Chef</i></b>	Prepares food and meals for workers.
<b><i>Heavy Duty Equipment Technician</i></b>	Repairs and maintains equipment and vehicles; installs and maintains station equipment for pipelines.
<b><i>Welder</i></b>	Joins and separates seams in metal components.
<b><i>Electrician</i></b>	Installs and maintains electrical systems and equipment; installs and maintains wiring and panels.
<b><i>Carpenter</i></b>	Builds and repairs buildings.
<b><i>Steamfitter/ Pipefitter</i></b>	Puts steam and oil & gas pipes together.

## ADMINISTRATIVE JOBS

*For these jobs, you must have some training or experience. Some jobs may require a grade 12 education or college certificate.*

<b><i>Office Clerk</i></b>	Keeps company records and time sheets.
<b><i>Accounts Clerk</i></b>	Works in payroll and accounts payable/receivable.
<b><i>Administrative Assistant</i></b>	Does word processing, records mail, files, makes appointments.
<b><i>Purchasing Agent</i></b>	Buys goods, materials and services for the company.

## TECHNICAL JOBS

*For these jobs, you need a technical college certificate or diploma. Generally, these are one or two-year programs.*

<b><i>Survey Technician</i></b>	Assists in field studies to record and interpret geographic data.
<b><i>Petroleum Engineering Technologist</i></b>	Undertakes various production operations technical tasks; may be involved with well operations, geology and reservoir studies.
<b><i>Mechanical Technician</i></b>	Makes drawings of machines, buildings and systems.
<b><i>Environmental Monitor</i></b>	Ensures that the company follows environmental rules.
<b><i>Geological and Geophysical Technologist</i></b>	Assists geologists and geophysicists or works alone; may work with geological and geophysical data; conducts various tests; may work in exploration, production or management.

## SEMI-PROFESSIONAL JOBS

*For these jobs, you need a college diploma. Technology programs are generally two to four years in length.*

<b><i>Warehouse Manager</i></b>	Keeps warehouse in order, keeps records of materials stocked.
<b><i>Camp Manager</i></b>	Coordinates all aspects of camp operations.
<b><i>Safety Officer</i></b>	Makes sure there are healthy working conditions; sets safety rules.
<b><i>Plant Foreman</i></b>	Supervises all operations; hires workers and oversees their training.
<b><i>Drilling Foreman</i></b>	Undertakes responsibility for all activity on drilling rig.

## PROFESSIONAL JOBS

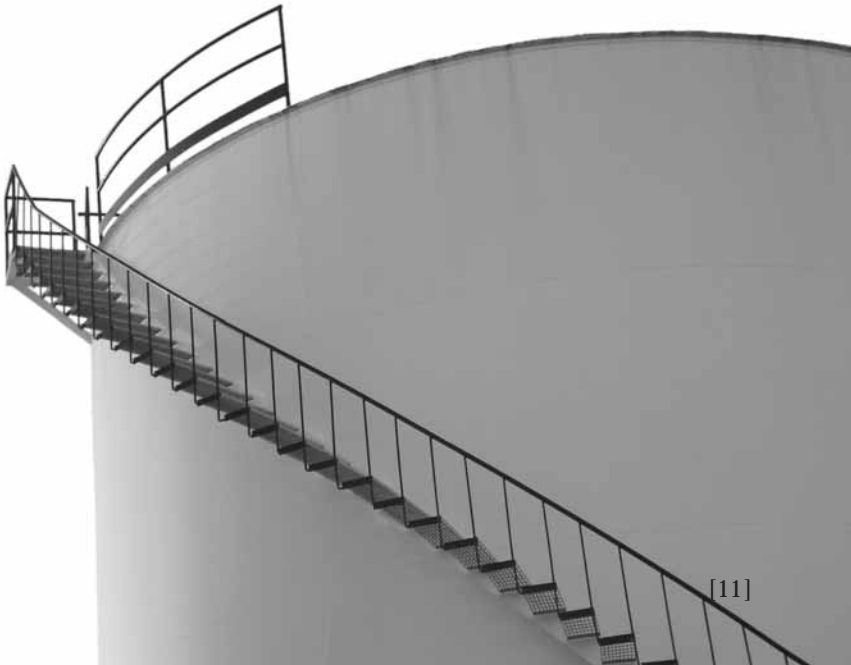
*For these jobs, you need a university degree.*

<b><i>Geologist</i></b>	Explores for oil and gas.
<b><i>Geophysicist</i></b>	Interprets seismic data to find oil and gas.
<b><i>Petroleum Engineer</i></b>	Uses geology, physics and engineering to recover, develop and process petroleum.
<b><i>Research Analyst</i></b>	Develops models that determine whether or not exploration and production is feasible.
<b><i>Land Surveyor</i></b>	Surveys land surfaces to determine boundaries, contours and other features.
<b><i>Accountant</i></b>	Produces financial reports and analyzes financial information used by managers to make business decisions.
<b><i>Registered Nurse</i></b>	Tends to injuries and ensures a safe, healthy work environment.
<b><i>Land Agent</i></b>	Administers surface and mineral rights for exploration and production.
<b><i>District Manager</i></b>	Schedules crews, hires workers, works with contractors and customers.

## JOBS CONTRACTING TO THE OIL AND GAS INDUSTRY

There are many opportunities available for people who don't directly work in the oil and gas field. On a large petroleum project, the company often subcontracts jobs to businesses outside the industry. The company advertises tenders in the newspaper or on company websites, describing the contracts and requesting that interested businesses submit a bid to provide goods or services. The company then reviews the bids and offers the contract to the most appropriate bid. You can create your own opportunities by contracting to the industry. Some examples of jobs and services related to oil and gas are:

- Expediting
- Security
- Equipment Rental
- Cooking/Catering
- Painter/Drywall
- Labour Pool Coordinator
- Aircraft Charters
- Supplier of Explosives/Chemicals
- Vehicle Rentals
- Camp Construction/Management
- Truck Driver
- Fuel Supply and Haul
- Safety Equipment/Services
- Remote Communications
- Geophysical Surveying
- Supplying Building and Other Materials
- Office Services



## WORKING CONDITIONS

Much of the work in the oil and gas industry is physically demanding and workers must be in good shape. A lot of work is done outside in all weather conditions. Many oil and gas workers live in camps that vary in size from a few people to more than 100 during the exploration season and while drilling is taking place.

Camps located in remote areas fly workers in and out on a rotating schedule, typically for two weeks of 12-hour days, seven days a week. This is called fly-in, fly-out or rotational working.

Wages for jobs in this industry are very competitive. For more information on current wages and demand see NWT Job Futures available at the NWT Career Centres or online at [www.jobfutures.stats.gov.nt.ca](http://www.jobfutures.stats.gov.nt.ca) and talk to people at work in the field.

## WHERE TO GET TRAINING

### AURORA COLLEGE

Aurora College offers a variety of programs and courses that could help you to get a job in the oil and gas industry. Some of these courses are: Natural Resources Technology, Heavy Equipment Operator, Carpentry, Welding, Office Administration, Management Studies and Nursing. Aurora College also offers Pipeline and Production Operations Technical Training and Pipeline and Production Operations Apprenticeship.

Call your local campus or visit [www.auroracollege.nt.ca](http://www.auroracollege.nt.ca) to find out about current programs and courses being offered.



## ABORIGINAL FUTURES SOCIETY

Representatives from the oil and gas industry, aboriginal groups and government formed the Aboriginal Futures Society to coordinate oil and gas training in the NWT. The society funds programs to provide aboriginal workers with skills to work in the oil and gas industry. Often these skills will be transferable to other industries. To find out about programs and courses, contact:

### **Inuvialuit Regional Corporation**

Bag Service #21,  
Inuvik, NT X0E 0T0  
Tel: 867 777-2737

### **Sahtu Dene Council**

Box 155  
Deline, NT X0E 0G0  
Tel: 867 589-4519

### **Gwich'in Tribal Council**

Box 1509  
Inuvik, NT X0E 0T0  
Tel: 867 777-7900

### **Deh Cho First Nations**

Box 89  
Fort Simpson, NT X0E 0N0  
Tel: 867 695-2355

## ON-THE-JOB TRAINING

Industry has made commitments to provide courses and on-the-job training for the Northern workers it hires. The Petroleum Industry Training Service (PITS) offers programs for people already working in the industry. PITS' training is generally offered through the workplace and relates specifically to petroleum technology, safety, environment and career development within the industry.

## SOUTHERN COLLEGES

Other courses you could take at various colleges in the south are: Chemical Engineering Technology, Process Operations, Geological or Geophysical Technology, Electronics, Industrial Instrumentation, and Environmental Science. Check with your regional Career Centre for college information.

## UNIVERSITY PROGRAMS

For professional jobs in oil and gas, you need a university degree. There are many Canadian universities that offer courses applicable to the oil and gas industry. Fields of study include geology, geophysics,

chemistry, biology, and engineering. Business programs in areas of study such as human resources, industrial relations, business management and accounting could also lead you to employment in this industry. Check out the university calendars at regional Career Centres or look on the Internet for online calendars.

## APPRENTICESHIP TRAINING & OCCUPATIONAL CERTIFICATION

Apprenticeships are generally three to four year programs during which you take formal training for part of the year and get paid to train on the job with a certified journeyperson. When you're finished, you become certified in that trade. As a journeyperson, you can make more money, work on your own, train others and find jobs more easily.

To start an apprenticeship you must find an employer who is willing to train you in your chosen trade and you must pass the Trades Entrance Exam. The more education you have, the greater the chance you'll be successful at entering and completing an apprenticeship. Completion of pre-employment programs in some trades may give you the opportunity to start on an apprenticeship.

The Schools North Apprenticeship Program (SNAP) allows a student to begin an apprenticeship while continuing high school courses. By the time the student graduates from high school, he or she will be started on an apprenticeship.

Nearly 20 occupations are certifiable in the NWT. Several of these may be applicable to the oil and gas industry or its service industries, such as Security Guard, Environmental Monitor or Warehouse Technician. Certification is administered through the Department of Education, Culture and Employment and is recognized across the NWT. It requires a minimum number of work hours, on-the-job training, an examination and a demonstration of skills.

Your regional Career Centre can give you more information or help you start an apprenticeship or occupational certification.

## FINANCIAL ASSISTANCE

To find out if you qualify for financial help while you study, contact:

### **NWT Student Financial Assistance**

Department of Education Culture and Employment, GNWT

P.O. Box 1320 Yellowknife, NT X1A 2L9

24-Hour Information Line - Tel: (867) 873-7190

24-Hour Toll-Free Line - Tel: 1-800-661-0793

[www.nwtsfa.gov.nt.ca](http://www.nwtsfa.gov.nt.ca)

## HOW TO APPLY FOR A JOB IN OIL AND GAS

Send your resume and a cover letter to all of the companies or organizations where you would like to work. Make sure to indicate which job or jobs you are interested in and why you think you are qualified for those jobs. The oil and gas companies that are active in exploration or production can give you a list of all the subcontractors that work for them. The Career Centres can help you to prepare for your job search.

If you are interested in a job in the oil and gas industry, or in finding out about training courses and programs, there are many sources of information. Look for jobs in the newspapers, on company websites or on [www.jobsnorth.ca](http://www.jobsnorth.ca). Talk to people who work in the industry or contact the companies directly.

## WORKPLACE RIGHTS AND RESPONSIBILITIES

Employers and workers have responsibilities to each other. The *Labour Standards Act* sets out the general rules, minimum requirements, and principles of employment standards in the Northwest Territories. The *Act* covers such areas as hours of work, minimum wage, termination of employment, annual vacation and general holidays, and pregnancy and parental leave. It is up to you to know what rights you have as an employee and also your responsibilities.

For more information, contact Labour Services at 1(867) 873-7486 or toll free at 1 (888) 700-5707.

## CAREER PLANNING

Career planning is an ongoing process that starts in your youth and extends throughout adulthood. When you think about affecting change in your working life, you should try to make decisions based on your personality, passions, aptitudes and skills. You should also consider what training and education you want to pursue and what opportunities are available to you. By finding the best fit between your interests, skills and values and available jobs, you'll have more control over your life and you'll find greater satisfaction in your work.

For more information or assistance with career planning and decision-making, contact your local Career Centre, adult educator, or school counsellor.

You'll need to put a lot of effort into your career today in order to make the most of your work and to continue creating new opportunities for yourself in the future.

### NWT CAREER CENTRES

Your regional Career Centre will be able to help you learn about:

- Your skills, interests and values
- Where to find information
- How to search for jobs
- How to write resumes
- How to apply for jobs
- How to do a job interview
- How to do your own career planning

The six regional career centres are located at:

Fort Simpson	Deh Cho Hall	(867) 695-7335
Fort Smith	Sweetgrass Building	(867) 872-7425
Hay River	Courthouse Building	(867) 874-9200
Inuvik	Perry Building	(867) 777-7365
Norman Wells	Town Square	(867) 587-7120
Yellowknife	Greenstone Building	(867) 766-5100

Other booklets in the Career Opportunities Series include:

- Jobs in Mining
- Jobs in Construction
- Jobs in Tourism
- Jobs in Health Services
- Jobs in Aviation
- Jobs in Community Government
- Jobs in Diamond Manufacturing
- Jobs in Social Sciences
- Jobs in the Service Sector
- Jobs in Information Technology
- Jobs in Arts, Culture and Heritage

