

Land Reclamation Specialists - Update

Niche Profile

**Prepared for the Northern Labour Market
Information Clearinghouse**

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Introduction

The Clearinghouse first looked at Land Reclamation Specialists in June, 1996. At the time, the specialty was in demand, though the training needed was not well-defined. Land reclamation specialists are technicians and technologists whose job it is to assess ground surface disturbances, such as oil and gas wells, then plan and supervise the remediation of those sites.

A subsequent (January, 1997) report looked at the related topic of Environmental Training for Heavy Machinery Operators. That report found that there was a need for training in soil types and environmental regulations for those doing the “grunt work” of land reclamation, but that there was not much actual demand for this training. The Clearinghouse partners recently requested an update on Land reclamation specialists.

This report will identify changes affecting land reclamation specialists and will also comment briefly on environmental training for heavy equipment operators. The recent slow-down in the oil and gas industry has had some effect on the number of well-site reclamations being done (this is the mainstay of land reclamation in northern Alberta) but there is still plenty of work available. What has changed is that there is now a set of competencies identified to define the requirements of a land reclamation specialist.

Methods

Research for this report has three main components:

- Review of earlier material
- Internet search
- Interviews with people involved in land reclamation, regulation and education

Highlights of Earlier Research

Land Reclamation Specialists

The Alberta Environmental Protection and Enhancement act requires every surface disturbance to be reclaimed to its previous productive condition. In our region the vast majority of surface disturbances are oil and gas wells, some 2500 of which are abandoned each year.

Oil and gas companies hire environmental service companies to assess the sites, then plan and oversee the reclamation. Land reclamation specialists typically work for these service companies, sometimes working under university-trained environmental professionals. The earth moving is

done by general contractors. Alberta Environmental Protection has about 20 inspectors throughout northern Alberta to see that the reclamations are carried out correctly.

The number of people employed in this field was impossible to determine. Environmental service companies hire anywhere from two to 25 people at any given time, many of whom are students. Still, demand was seen to be high.

Land reclamation specialists were usually technicians or technologists with backgrounds in soils. Other important training subjects include: chemistry, botany, biology, agriculture, wildlife management, agronomy, biostabilization and ecological principles. A background in earth-moving was considered useful. Experience in the field generally was seen to be crucial.

Training for land reclamation specialists was available from the University of Alberta, Lakeland College, NAIT, several other colleges, the Petroleum Industry Training Service (PITS) and Sharp Environmental. The training options available have not changed since the original report, with the additional information that the Environmental Services Association of Alberta does offer some courses for those already in the industry. Information can be found at their website: <http://www.esaa.org> .

Student demand for training in this area is quite high. Lakeland College had about 50 applications for the 20 spaces in their Environmental Conservation and Reclamation Program and NAIT receives three times as many applicants as they have space for in their Biological Sciences Technology Program, one stream of which is Environmental Sciences. PITS offers short courses in Decommissioning and Reclamation of Small Oil and Gas Sites and Reclamation Criteria for Wellsites and Associated Facilities several times a year. These courses always have enough students for the class to run but rarely reach their maximum capacity.

Environmental Training for Heavy Machinery Operators

Most of the people who operate heavy equipment in land reclamation have no training in soils, regulations or other environmental issues. This lack of training can, and often does, prove expensive as errors made in the course of this work are expensive to repair. Experts in the field agreed that accidents would be reduced if the people doing the “ground-level” work in reclamation knew some of the theory behind what they were doing. At the time of the 1997 report, only 20% or so of equipment operators had any such training. There is no indication that this has changed.

In this area, upgrading training for current equipment operators is favoured over pre-employment training. Experience is more important than training according to most contractors. Training was, and still is, available from Sharp Environmental, PITS and NAIT.

Current Industry Conditions

Activity in wellsite reclamation has grown over the past three years. The recent downturn in the price of oil and the accompanying slowdown in activity mean that oil companies have less money available to spend on site remediation. There appears to be a six-month to one-year lag time between a major change in the oil and gas industry and a resulting change in the reclamation industry. There is no shortage of sites to reclaim but there is a shortage of money to pay for the work. This will likely cause reclamation activity to plateau this coming year, though it is not expected to drop.

There have been no significant changes in regulations governing land reclamation over the past three years but contacts identified two possible future changes that are being discussed. The first is a time limit on site reclamation. This would mean that companies would have to reclaim wellsites within a specified number of years of ending production from the well. The second rules change would be from the present inspection of sites to a more thorough audit of the site, looking at soils up to two metres deep. Both of these changes, if they happen, would increase the work available to land reclamation specialists. Overall, the demand for land reclamation specialists is likely to remain at least steady in the foreseeable future. This is still a developing field.

Looking beyond northern Alberta, the Canadian Council for Human Resources in the Environment Industry (CCHREI) has collected data on environmental jobs advertized in Canadian newspapers since 1993 (not including ads for equipment operators for general contractors). These data show that the volume of hiring in the broad environmental industry tends to follow national economic trends.

In addition, CCHREI data show that:

- 92% of environmental jobs advertized in Canada are full-time, permanent positions
- Jobs advertized in Alberta are less likely than those across Canada to require university education (57% in Alberta, 71% nationally require degrees). This may be due to strong environmental technology programs in Alberta and to the work of the Alberta Society of Engineering Technologists, according to CCHREI
- Jobs in “Land Quality Protection” accounted for 18% of the environmental job ads in the Calgary Herald over the past several years. This was the highest concentration of jobs in any one aspect of the environment industry.
- The industry has been male-dominated in the past, but men and women are entering CCHREI’s Youth Internship Program on a roughly equal basis.

(All points from CCHREI, Environmental Labour Market Reports, Summer and December, 1998)

Environmental training for heavy equipment operators remains a significant need, with demand still subject to market forces. The more clients ask for trained personnel, the more likely contractors are to have their operators take some environmental training. Until such requests

become widespread however, contractors and operators are not likely to make the investment in training. Any training in this field must emphasize hands-on experience.

Educational Developments

At the time of the earlier report on land reclamation specialists CCHREI was in the process of putting together lists of competencies for various technical occupations in the environment industry. This process is now complete and CCHREI is working on a similar document for occupations requiring university education.

These lists, known as National Occupational Standards (NOS) are developed through a consultation process with professionals currently working in the field. As a result, they are up-to-date reflections of the competencies needed to work in the industry today. It should be noted that the NOS reflect the “competencies, skills and knowledge expected of EXPERIENCED technicians and technologists...” (CCHREI Brochure, emphasis theirs).

These standards are to serve as:

- a basis for a program of certification of technologists and technicians in the field
- a tool for employee recruitment
- a guide for curriculum development and review
- eventually, a possible tool for accrediting training programs.

Land reclamation specialists fall under “Subsector #4 - Land Quality Protection; Group A - competencies related to the environmental assessment and remediation or decommissioning of existing sites.” The specific competencies established for this group fall under these general descriptions:

- Perform thorough site investigations including land use records, topographical surveys, air photos, geophysical survey and soil and water sampling.
- Determine the best way to bring the site to its original condition.
- Execute the plan, including directing contractors.
- Test the final results.

For more information on the NOS, please contact Patricia Miller at (403) 233-0748 #226.

Implications for Employment and Training

Land Reclamation Specialists

Land Reclamation remains a growing field, though the rate of growth may slow over the next couple of years. The demand for skilled new people is strong but is subject to the vagaries of the general economy. Colleges looking to develop or expand programs in this field would do well to try to attract female students as they seem to be a growing segment of those working in the environment industry.

The standards established by the CCHREI may be very useful as curriculum guides for any college considering establishing courses in this area. Possible future accreditation of programs and of graduates based on these standards would likely add value to a college program.

Environmental Training for Heavy Equipment Operators

The predicted slowdown in the rate of growth in this industry may provide an opportunity to promote environmental training for heavy equipment operators. Those firms with trained personnel who specialize in site remediation will likely fare better than other general contractors at a time when drilling activity is low in the region.

Sources

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Petroleum Industry Training Service, <http://www.pits.ca>

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