

1.0 INTRODUCTION

Land disturbances due to resource extraction and transport are intended to be only temporary disruptions to the normal use of land for food and fiber production or for recreation. Although no two sites are identical, many disturbances cause similar types of problems and concerns but in varying degrees of intensity. Assurance such disturbances are temporary is possible only if information concerning the site is well documented and an appropriate reclamation program planned prior to disturbance. Evaluation of the nature of materials at hand prior to disturbance and subsequent to reclamation, however, requires criteria by which to assess the quality of those materials. To this end a Soil Quality Criteria Subcommittee of the Alberta Soils Advisory Committee was formed in 1978 with the terms of reference being to develop criteria relative to:

1. soil mapping and sampling for baseline and post disturbance activity;
2. overburden sampling;
3. analytical requirements;
4. physical, chemical, and biological criteria for evaluating the suitability of soil materials for revegetation; and
5. utilization of soil as a medium for waste disposal including materials such as sewage sludge, animal wastes, and fly ash.

The following responsibilities became part of the purview of the subcommittee:

1. preparation of a glossary of soil terms and a bibliography relevant to the above subject matter;
2. delineation of the province into broad ecological zones so relevant guidelines
3. development of recommendations for future action and research.

A report was prepared, reviewed by the Alberta Soils Advisory Committee, and published in 1981 under the title "*Proposed Soil Quality Criteria in Relation to Disturbance and Reclamation*". During the intervening four years, it has received considerable attention and many constructive suggestions for revision. Where new information, or more complete interpretations of earlier data have been available, revisions have been made.

The report that follows deals with the first four terms of reference, and has benefited from consultation with many Soil Scientists, Pedologists, and others involved in reclamation. The subcommittee did not address the term of reference dealing with soil quality for waste utilization, as provincial guidelines governing wastewater and sludge application to soil presently exist. The subcommittee is aware that a number of government agencies are involved in regulating the selection and operation of landfill sites and other waste disposal emplacements.

The report is meant for use as a guide to assist people involved in a professional capacity in land reclamation. Reclamation technology and soils research are continually progressing. Consequently ongoing consultation, revision and updating of this publication are expected as more data become available. This is a scientific, technical manual for use by professionals. It therefore contains no reference to policies or regulations of any government agency nor does it address economic, social or political issues. Economic and political decisions must make use of quality criteria, but the criteria themselves are independent of such considerations.