

AER Bulletin 2014-32

October 9, 2014

Shallow Organic Soil Salvage Requirements at In Situ Oil Sands Processing Plants and Oil Production Sites

1 Introduction

The Alberta Energy Regulator is transforming how we conduct our business as we continue to strive to be a best-in-class regulator. This commitment involves seeking efficiencies in our processes, reducing duplication, and becoming more effective in ensuring the safe, environmentally responsible development of Alberta's energy resources.

Section 137(1) of the *Environmental Protection and Enhancement Act (EPEA)* sets out operators' duty to conserve and reclaim specified land. On in situ oil sands sites where soil disturbance will occur, salvaging and stockpiling of topsoil (including shallow organic soil less than 40 cm in depth) and subsoil is fundamental to successfully reclaiming and closing the site. Accordingly, all *EPEA* approvals for in situ oil sands projects currently include a standard condition for companies to salvage and stockpile shallow organic topsoil and subsoil unless otherwise authorized in writing.

It has become apparent that logistical difficulties exist under certain site situations. As a result, the Alberta Energy Regulator (AER) reviewed this condition and has developed this bulletin clarifying topsoil and subsoil salvage in shallow organic areas. Information is provided on the process for requesting authorization to leave the shallow organic soil in place under specific circumstances. Such requested authorization from AER with respect to salvage of soils are minor changes to an existing approval made pursuant to section 67(3)(e) of *EPEA* and do not constitute an approval as defined by section 1(1)(b) of the *Responsible Energy Development Act*.

2 Current Shallow Organic Topsoil and Subsoil Salvage Requirements

EPEA approvals for in situ oil sands projects require the approval holder to salvage topsoil from all land to be disturbed and conserve it for use in land reclamation unless otherwise authorized by the AER. This requirement includes salvage of mineral soils and shallow organic soils.

EPEA approvals for in situ oil sands projects also require the approval holder to salvage all subsoil separately from topsoil in shallow organic soil areas.

3 Changes and Clarifications to Shallow Organic Topsoil and Subsoil Salvage Requirements

inquiries 1-855-297-8311
24-hour
emergency 1-800-222-6514

Salvage and stockpiling of topsoil (including shallow organic soil) conserves reclamation materials to support future reclamation of disturbed land.

The conservation of shallow organic soil includes incorporating mineral material to create a peat-mineral mix. This can be achieved by salvaging shallow organic horizons together with underlying mineral material or by stockpiling shallow organic soil together with mineral topsoil that is salvaged from adjacent upland soil. Mixing the organic horizons of shallow organic soil with mineral material (e.g., the underlying Aeg horizon) creates a more suitable reclamation material that will have a greater longevity when stockpiled.

3.1 Exceptions to Topsoil Salvage Requirements

Some site conditions may preclude salvage of shallow organic topsoil. Under these circumstances, the approval holder can request authorization from the AER to leave the shallow organic soil in place.

Scenarios where an approval holder may request authorization to leave the shallow organic soil in place include

- areas where pads will be constructed over deep organic soil that may contain small pockets of shallow organic soil and where the approval holder has committed to remove the pad at the time of reclamation and
- areas where other extenuating circumstances exist, such as unstable subsoil, and where it is desirable to retain the geotechnical properties of the shallow organic topsoil to support pads constructed with fill over geotextile.

Such exceptions will typically not apply to sites where the shallow organic soil is grading or transitioning to upland mineral soil.

3.2 Exceptions to Subsoil Salvage Requirements

Salvage and stockpiling of subsoil from shallow organic soil areas is no longer required where the subsoil is generally wet or unstable and salvaging may result in significant addition of borrow material to backfill.

Operators are reminded that this exception only applies to shallow organic soil areas. Subsoil salvage of upland mineral soils is still required.

4 Authorization Process

In order to leave shallow organic soils in place, the *EPEA* approval holder must submit a written request to the AER and receive the AER's written response before beginning construction. The

request must be submitted separately from any other plan or submission, including the predisturbance assessment and conservation and reclamation plan.

inquiries 1-855-297-8311
24-hour
emergency 1-800-222-6514

The written request to the AER must include the following information:

- a map showing the proposed footprint of the development area in relation to surrounding biophysical and facility features;
- a summary of the proposed development and soil assessment information for the area including
 - extent (in hectares) and location of the proposed development,
 - spatial extent and location of the shallow organic soil area proposed to be left in place in relation to the pad and soil polygons,
 - soil map polygons, and
 - soil profile information for the proposed development area (horizon identification and depths, parent geological material, depth to water table in the shallow organic soil area);
- justification for leaving the shallow organic soil in place;
- a description of other alternatives that have been considered; and
- the reclamation strategy for the development area including details about how the strategy will be implemented, including
 - volume and depth of fill material that will be removed,
 - how fill material will be removed and what will be done with it (reused, disposed of, returned to a borrow area, etc.),
 - how the geotextile will be removed and disposed of,
 - how compression of the shallow organic soil will be addressed, and
 - the revegetation strategy for the site.

These requests must be submitted to EPEA.Authorizations@aer.ca.

<original signed by>

Kirk Bailey
Executive Vice President
Operations Division