



Benefits of Mulching

CAGC INFORMATION ALERT

First Published 04 - 2011

Canadian Association of Geophysical Contractors
1045, 1015 - 4th Street SW Phone: 403 265 0045
Calgary, Alberta Fax: 403 265 0025
T2R 1J4 E-mail: info@cagc.ca

Information Alert

Mulching

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The seismic industry has made great strides in reducing the footprint associated with line clearing operations. Historically, seismic exploration involved heavy land disturbance due to clearing of wide, straight lines (7-10 metres), and soil compaction by bulldozers and trucks. Low Impact Seismic (LIS) techniques were introduced to minimize the disturbance of land due to seismic exploration - in particular these techniques narrowed seismic line widths, reduced the loss of merchantable forest, and minimized disturbance of the soil and ground cover.

Characterized by much narrower seismic cut lines, LIS techniques have led to continuous footprint reduction by following a meandering course between shot points to avoid valuable features and merchantable timber stands. The more typical 8 meter lines in the past have been progressively reduced over time to 5 m, to as low as 2.5 m for source lines and 1.75 m for receiver lines today.

Mulching operations have become a common technique used in the clearing of seismic lines through areas of brush and trees. These lines are cleared for transportation of personnel, vehicle access, and deployment of equipment used in the various processes and phases of geophysical data acquisition.

Clearing lines with mulchers has several benefits as compared to conventional heavy equipment such as bulldozers. These benefits include:

Narrower Lines

- With narrower lines only the trees that need to be removed are taken down, thus avoiding incurring timber damage fees;
- Less tree removal means less effect on the environment, a reduced footprint on the land and faster re-growth;
- Minimal linear disturbance.

Smooth and Clear Lines

- With no debris left over from bulldozing and no windrow to act as a hazard to personnel or wildlife, all available space on the line needed to move equipment can be utilized;
- Wood chips from mulched trees are evenly distributed on the ground to support wheeled access and prevent rutting (mulch depths are kept to less than 5 cm in order to satisfy the Alberta Provincial Mulching Directive). Wood chips also create a path on the ground which allows easy movement of equipment and personnel on site;
- Reduced risk of worker injury due to safer walking surfaces.

BENEFITS OF MULCHING

No Burning Required

- With mulching there is no windrow to act as a potential fire ladder, meaning burning is unnecessary;
- Aerial pollution is eliminated (particularly on road widening projects and land clearing) as debris does not have to be burned.

Tree Root and Soil Infrastructure Remain Intact

- By allowing the tree root structure to remain and the soil left undisturbed, faster re-growth is possible, erosion is controlled and seeding may not be required;
- Mulched wood chips decompose faster than windrowed tree parts;
- Rough mulching - a technique that only buzzes the branches off and leaves the bole of the tree, sometimes in a couple of pieces - is a very new and useful technique for leaving more coarse woody debris;
- Potential reduction of timber damage assessment and less visual disturbance;
- Minimal or no disturbance of surface ground cover;

Smaller Drill Access

- Smaller LIS drills have access to areas through mulched lines because the root system is left intact and wood chips form a smooth path on which these smaller drills can move more easily;

Efficiency

- Projects can be completed faster with mulchers that clear land more effectively than conventional methods such as bulldozing and hand cutting;
- Reduced chainsaw activity;
- Replacing traditional chainsaw crews with mulchers (production rate typically equals one mulcher with operator replacing up to 4 – 2 man crews) reduces the risk of injury and improves industry operational safety performances;

Wildlife

- Mulching, as opposed to bulldozing, removes barriers to wildlife as there is no slash pile to cross;
- Eliminating line of sight along LIS lines reduces the occurrence of hunters having the ability to use high velocity weaponry on animals crossing cut lines;
- LIS lines limit the effectiveness of predators to rapidly move through areas searching for prey species.

The seismic industry has been a leader in the energy sector with developing and implementing strategies to reduce the environmental impact of their operations. Continual reduction in width of seismic lines and movement to adoption of geophysical techniques with zero impact to the land will further enable our industries to demonstrate to stakeholders that the integrity of the boreal forest can be maintained.