



**Forest
Practices
Board**

Audit of Forest Planning and Practices

*Mackenzie Fibre Management Corporation
Forestry Licence to Cut A87345*

FPB/ARC/165

June 2014

Board Commentary

In September 2013, the Board conducted a full scope audit of forest planning and practices on Mackenzie Fibre Management Corporation's (MFMC) forestry licence to cut A87345 (FLTC A87345), near the town of Mackenzie, in the Mackenzie District.

The Board notes that, although MFMC complied in all significant respects with the requirements of the *Forest and Range Practices Act* and the *Wildfire Act*, the auditors identified an unsound practice related to soil disturbance and an area requiring improvement related to operational planning.

The Board is encouraged that, subsequent to the audit, a number of continuous improvement initiatives have been implemented by MFMC, including soil disturbance training for logging supervisors, development of a layout checklist and development of a stream classification field card.

Audit Results

Background

As part of the Forest Practices Board's 2013 compliance audit program, the Board selected the Mackenzie District as the location for a full scope compliance audit. Within the district, the Board selected Mackenzie Fibre Management Corporation's (MFMC) forestry licence to cut A87345 (FLTC A87345).

The audit area falls within the Mackenzie Timber Supply Area (TSA) and includes the community of Mackenzie (see map on page 3). The Mackenzie District lies within the Northern Interior Forest Region and covers approximately 6.1 million hectares. Williston Lake, covering approximately 1.5 million hectares, is the dominant geographic feature of the area.

The Mackenzie Land and Resource Management Plan (MLRMP)ⁱ was completed in 2000 and applies to the audit area. Higher level plan Orders defining sensitive areas and objectives, settlement reserve areas, landscape units and objectives, spatial land use objectives and non-spatial landscape biodiversity objectives have been established as a result of the MLRMP. Government objectives set out in the *Forest and Range Practices Act* (FRPA) and the *Forest Planning and Practices Regulation* (FPPR) also provide strategic and operational requirements that must be followed.

Under FLTC A87345, MFMC has been allocated 4 000 000 cubic metres over a 5-year term, with an annual harvest of 800 000 cubic metres. MFMC prepared operational plans and applied to the government for cutting and road permits, so it can legally develop and harvest timber within a defined area. This FLTC is a Section 47.3 – *Forest Act* direct award tenure (FLTC with Cutting Permits). The licensee must fulfill licence, permit and operational plan obligations, including timber harvesting, road work, silviculture and fire protection within cutblocks.

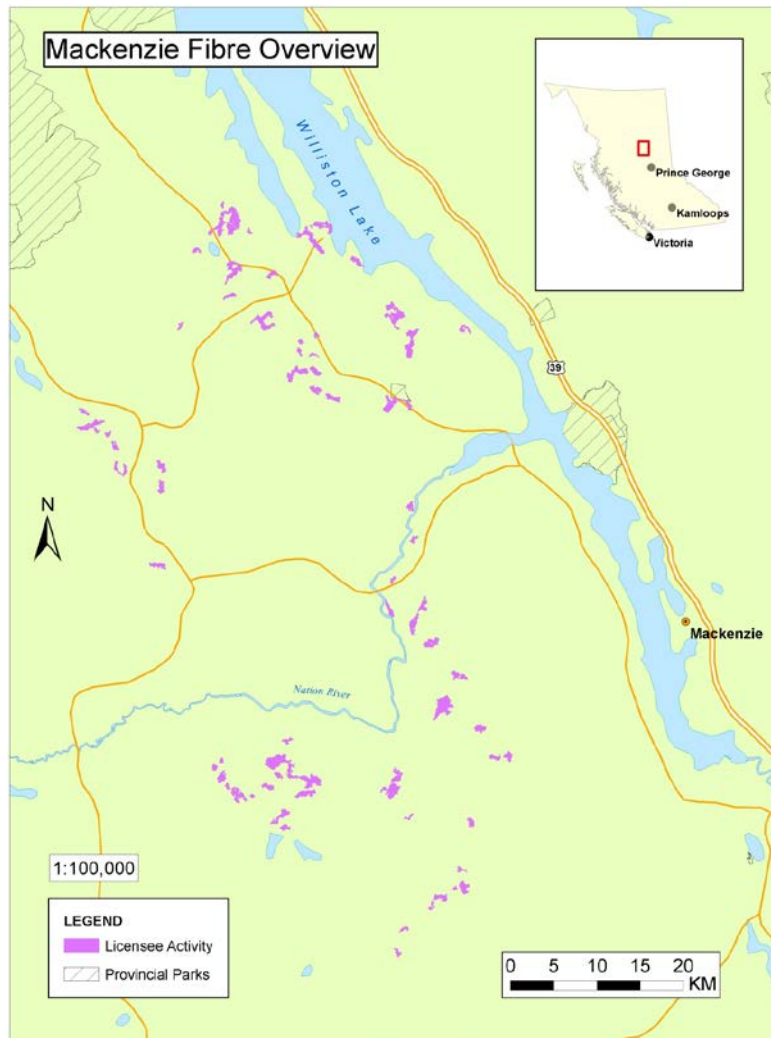
During the two-year audit period, MFMC harvested approximately 881 735 cubic metres of timber, primarily to salvage mountain pine beetle infested timber and rehabilitate forest values. There is a licence requirement to harvest stands with a minimum 70 percent pine component based on the gross volume of the stand.

Three forestry professionals and a chartered accountant made up the audit team. The Board's audit field work took place from September 23 to 27, 2013. Additional information about the Board's compliance audit process is provided in Appendix 1.



Road deactivation maintaining natural drainage patterns.

Map of Mackenzie Fibre Management Corporation FLTC A87345



Audit Approach and Scope

The audit examined MFMC's planning, field activities and obligations related to:

- operational planning (including site plans and associated maps)
- timber harvesting
- road construction, maintenance and deactivation
- silviculture activities and obligations
- fire fuel hazard management
- forest fire prevention practices

Auditors assessed these activities for compliance with FRPA and the *Wildfire Act* (WA), and related regulations, in particular, the FPPR. All activities, planning and obligations for the period September 1, 2011, to September 27, 2013, were included in the scope of this audit.

The Board's audit reference manual, *Compliance Audit Reference Manual, Version 7.0, September 2012*, sets out the standards and procedures that were used to carry out this audit.

Planning and Practices Examined

Operational Planning

MFMC planned activities in its 2010-2015 forest stewardship plan (FSP),ⁱⁱ Amendment 1. The FSP and stand-level plans were examined to ensure that they were consistent with legislated requirements. Stand-level plans were also evaluated to ensure that they accurately identified site conditions through harvesting, road and silviculture field sampling.

Timber Harvesting

Of the 62 cutblocks (covering 3791 hectares) that were harvested during the audit period, 23 cutblocks (totalling 1974 hectares) were sampled as part of the audit.

Road Construction, Maintenance, Deactivation

The road population included 173 kilometres of construction, 86 kilometres of deactivation and 87 kilometres of maintenance. The auditors examined 74 kilometres of construction, 33 kilometres of deactivation and 41 kilometres of maintenance activities.

MFMC constructed seven bridges during the audit period. The auditors examined construction activities on all seven bridges. There were no other bridges with maintenance obligations.

Silviculture Activities and Obligations

Silviculture activities during the audit period included planting in 36 cutblocks. Auditors examined planting activities in 6 of the blocks. As this is a relatively new licence and harvesting had only commenced in 2010, there were no regeneration due or free-growing obligations at the time of the audit.

Fire Protection

Auditors examined hazard assessment and abatement activities on 23 cutblocks, in conjunction with harvest auditing. Fire hazard was assessed at the completion of harvesting. Fire tool inspections were conducted on two active operations during the audit fieldwork.

Findings

The audit found that the planning and field activities undertaken by MFMC on FLTC A87345 complied in all significant respects with the requirements of FRPA, WA and related regulations, as of September 2013.

However, the audit identified an unsound forest practice relating to soil disturbance and an area requiring improvement around operational planning, as discussed in the Soil Disturbance and Operational Planning sections below.

Soil Disturbance

Soil disturbance is disturbance to the soil in the net area to be reforested, resulting from the construction of temporary access structures or from gouges, ruts, scalps or compacted areas created during forestry activities. Without rehabilitation, disturbed sites often have reduced soil productivity and may not provide optimum growing conditions for new trees. For that reason, maximum allowable amounts of soil disturbance are regulated. Auditors found several cutblocks with localized high soil disturbance on sensitive soils. As the areas impacted were small enough, relative to the sizes of the standard units (SUs) they were in, there were no compliance issues.

However, during the harvesting portion of the audit, auditors noted several areas with soil disturbance (mostly rutting) on wet sites in one SU in the northern portion of a cutblock. The site plan identified this SU as having a very high soil compaction hazard due to the presence of organic soils within a high water table; therefore, a five percent maximum allowable soil disturbance limit was applied to this area of the cutblock. The soil disturbance noted in this portion of the cutblock appeared to exceed this allowable standard.

As a result, localized damage to soil hydrology, disruption of natural drainage and reduced productivity has likely occurred on about 5.4 hectares within the SU. This finding is considered an unsound forest practice.ⁱⁱⁱ

Subsequent to the audit, MFMC informed the Board that it has implemented a continuous improvement initiative, including soil disturbance training for logging supervisors.

Operational Planning

The FSP was consistent with FRPA and other applicable legislated requirements. Planning at the landscape and stand levels was consistent with the FSP, the MLRMP and legal requirements.

The FPPR requires a person who prepares a site plan for an area referred to in section 29 (1) or (2) [free growing stands] of FRPA must ensure that the plan identifies (a) the standards units for the area and (b) the stocking standards and soil disturbance limits that apply to those standards units.

Site plans and site plan maps were provided for all harvest population blocks. The maps accurately identified wildlife tree patches and proposed permanent road locations.

However, there were instances where operational plans were inconsistent with features on the ground in several cutblocks. These inconsistencies related to:

- identification and classification of streams and non-classified drainages (NCDs)
- identification of ecological units
- identification of sensitive soils

The site plans for these specific cutblocks were not consistent with key features on the ground or with site characteristics. As there were no adverse impacts to streams, ecological units, or sensitive soils in any of the sampled harvested cutblocks, the inconsistency in operational planning is considered an area requiring improvement.^{iv}

Subsequent to the audit, MFMC informed the Board that it has implemented continuous improvement initiatives, including the development of a harvest layout checklist and stream classification field card.

Timber Harvesting

Harvesting practices were consistent with plans and licence requirements. Generally, natural drainage patterns were maintained and machine-free zones were established on streams. Wildlife tree retention consisted of patches or individual trees and retention was preserved as planned. Deciduous species were retained where possible to provide some green trees in the dead pine-dominated landscape.

Road Construction, Maintenance, Deactivation

No concerns were identified with road construction, maintenance or deactivation. Roads were stable and stream crossings were well-maintained and in good condition. Roads were deactivated immediately after harvesting depending on the season. Areas harvested over the winter (frozen

conditions) were deactivated during drier periods (late summer/early fall) and prior to the next winter season.

MFMC had bridge construction obligations during the audit period. Construction was in accordance with obligations and no concerns were identified. There were no maintenance obligations other than for the constructed bridges.

Silviculture Activities and Obligations

Silviculture activity in the audit period included planting. Seedlings used for reforestation met the *Chief Foresters Standards for Seed Use*,^v and there were no concerns noted with planting.

Fire Protection

No concerns were identified with respect to hazard assessment and abatement. Fire hazard was managed during operations and at the completion of harvesting. Unmerchantable wood waste was piled and burned, piled in preparation for further treatment or left for wildlife use on all blocks. Fire-fighting equipment requirements were audited and active operations were in compliance.

Audit Opinion

In my opinion, the operational planning, timber harvesting, road construction, deactivation and maintenance, silviculture and fire protection activities carried out by the Mackenzie Fibre Management Corporation on forestry licence to cut A87345 between September 1, 2011, and September 27, 2013, complied in all significant respects with the requirements of the *Forest and Range Practices Act*, the *Wildfire Act* and related regulations, as of September 2013.

In reference to compliance, the term “in all significant respects” recognizes that there may be minor instances of non-compliance that either may not be detected by the audit, or that are detected but not considered worthy of inclusion in this audit report.

Without qualifying my opinion, I draw attention to the Soil Disturbance section of the report that describes an unsound forest practice.

Also without qualifying my opinion, I draw attention to the Operational Planning section of this report that audit identifies as an area requiring improvement.

The Audit Approach and Scope and the Planning and Practices Examined sections of this report describe the basis of the audit work performed in reaching the above conclusion. The audit was conducted in accordance with the auditing standards of the Forest Practices Board. Such an audit includes examining sufficient forest planning and practices to support an overall evaluation of compliance with FRPA and WA.



Christopher R. Mosher CA, EP(CEA)
Director, Audits

Victoria, British Columbia
April 30, 2014

Appendix 1:

Forest Practices Board Compliance Audit Process

Background

The Forest Practices Board conducts audits of government and agreement-holders under the *Forest and Range Practices Act* (FRPA), section 122 and the *Wildfire Act* (WA). Compliance audits examine forest or range planning and practices to determine whether or not they meet FRPA and/or WA requirements.

Selection of Auditees

The Board conducts about eight or nine compliance audits annually. Most of these are audits of agreement holders. The Board also audits the government's BC Timber Sales Program (BCTS). This section describes the process for selecting agreement holders to audit.

To begin with, auditors randomly select an area of the Province, such as a district. Then the auditors review the forest resources, geographic features, operating conditions and other factors in the area selected. These are considered in conjunction with Board strategic priorities (updated annually), and the type of audit is determined. At this stage, we choose the auditee(s) that best suits the selected risk and priorities. The audit selections are not based on past performance.

For example, in 2010, the Board randomly selected the Mackenzie district as a location for an audit. After assessing the activities within that area, we discovered that a large licensee had recently closed operations due to financial problems. As the Board has expressed concern in the past about financially strapped companies failing to meet outstanding obligations, such as reforestation and road maintenance, and we knew that some of the licence area is very remote, the new licence holder was selected for audit.

For BCTS audits, a district within 1 of the 12 business areas within the province is selected randomly for audit.

Audit Standards

Audits by the Board are conducted in accordance with the auditing standards developed by the Board. These standards are consistent with Canadian generally accepted auditing standards. The standards for compliance audits are described in the Board's *Compliance Audit Reference Manual*.

Audit Process

Conducting the Audit

Once the Board randomly selects an area or district and determines the scope of audit to be conducted and the licensee(s) to be audited, all activities carried out during the period subject to audit are identified (such as harvesting or replanting, and road construction or deactivation activities). Items that make up each forest activity are referred to as a population. For example, all sites harvested form the timber harvesting population and all road sections constructed form the road construction population.

A separate sample is then selected for each population (e.g., the cutblocks selected for auditing timber harvesting). Within each population, more audit effort (i.e., more audit sampling) is allocated to areas where the risk of non-compliance is greater.

Audit fieldwork includes assessments of features using helicopters and ground procedures, such as measuring specific features like riparian reserve zone width. The audit teams generally spend one week in the field.

Evaluating the Results

The Board recognizes that compliance with the many requirements of FRPA and WA is more a matter of degree than absolute adherence. Determining compliance, and assessing the significance of non-compliance, requires the exercise of professional judgment within the direction provided by the Board.

The audit team, composed of professionals and technical experts, first determines whether forest practices comply with legislated requirements. For those practices considered to not be in compliance, the audit team then evaluates the significance of the non-compliance, based on a number of criteria, including the magnitude of the event, the frequency of its occurrence and the severity of the consequences.

Auditors categorize their findings into the following levels of compliance:

Compliance – where the auditor finds that practices meet FRPA and WA requirements.

Not significant non-compliance – where the auditor, upon reaching a non-compliance conclusion, determines that one or more non-compliance event(s) is not significant and not generally worthy of reporting. However, in certain circumstances, events that are considered not significant non-compliance may be reported as an area requiring improvement.

Significant non-compliance – where the auditor determines a non-compliance event(s) or condition(s) is or has the potential to be significant, and is considered worthy of reporting.

Significant breach – where the auditor finds that significant harm has occurred, or is beginning to occur, to persons or the environment as a result of one or many non-compliance events.

If it is determined that a significant breach has occurred, the auditor is required by the *Forest Practices Board Regulation* to immediately advise the Board, the party being audited, and the Minister of Forests, Lands and Natural Resource Operations.

Reporting

Based on the above evaluation, the auditor then prepares a draft audit report. The party being audited is given a draft of the report for review and comment before it is submitted to the Board.

Once the auditor submits the draft report, the Board reviews it and determines if the audit findings may adversely affect any party or person. If so, the party or person must be given an opportunity to make representations before the Board decides the matter and issues a final report. The representations allow parties that may potentially be adversely affected to present their views to the Board.

The Board then reviews the draft report from the auditor and the representations from parties that may potentially be adversely affected before preparing its final report. Once the representations have been completed, the report is finalized and released: first to the auditee and then to the public and government.

ENDNOTES

ⁱ The Mackenzie Land and Resource Management Plan (MLRMP) is a long-term plan for land use and resource development on Crown land within the Mackenzie Forest District. This plan is based on the principles of integrated resource management and sustainability. For more information see the MLRMP web site at:

<http://www.ilmb.gov.bc.ca/slrp/lrmp/princegeorge/mackenzie/index.html>

ⁱⁱ A forest stewardship plan (FSP) is a key planning element in the FRPA framework and the only plan subject to public review and comment and government approval. In FSPs licensees are required to identify results and/or strategies consistent with government objectives for values such as water, wildlife and soils. These results and strategies must be measurable and once approved are subject to government enforcement. FSPs identify areas within which road construction and harvesting will occur but are not required to show the specific locations of future roads and cut blocks. FSPs can have a term of up to five years.

ⁱⁱⁱ Unsound forest or range practices are significant identified practices that, although they are found to be in compliance with FRPA or WA, are considered to not be sound management. In these cases, the Board may wish to not only report the practices, but may also make a recommendation, either to mitigate potential harm or as a deterrent to continuing the practice in future. These items could include a compliant forest or range activity, or activities, that is not considered sound management, and that, if repeated by the auditee, is likely to cause harm to personal safety or the environment.

- For example, where a non-professional amends a professionally developed plan in a substantial manner, without a documented, sound rationale and without consulting a qualified registered professional — such as changing the harvest system or side-casting road building material where full bench end-haul was prescribed.
- For example, where the auditee has harvested a 60-hectare cutblock and has caused extensive soil disturbance on a 5-hectare patch of the cutblock. Although the auditee is allowed under legislation to cause 6 hectares (10 percent) of soil disturbance across the cutblock, the fact that the disturbance is focussed in one area is not considered sound forest management and has caused harm to the environment.

^{iv} Areas requiring improvement are identified practices that are not considered significant, and may or may not be in non-compliance with legislation, but are also not considered to be sound management. In these cases, the Board may wish to highlight the practice as requiring improvement, but is not likely to make a recommendation.

These items could include:

- a non compliant forest or range activity, or activities, that does not meet the test of significance, but is considered an unsound practice and should not be repeated by the auditee.

For example, where the auditee has constructed 30 kilometres of new road during the audit period, of which 28 kilometres are constructed well but on a 2-kilometre section there are four crossings that did not maintain the natural surface drainage patterns and which were not removed at the end of construction or prior to spring freshet – contrary to legislation. While minimal harm may have occurred, this practice should not be repeated; therefore this could be considered an area requiring improvement.

- a compliant forest or range activity or activities that is not reflective of sound forest or range management and should not be repeated by the auditee.

For example, where the auditors identified some small landslides that did not have a material adverse impact on forest values, but it was determined that the auditee's system of road monitoring and maintenance practices were somewhat deficient. This could be considered an area requiring improvement.

^v The Chief Forester's Standards for Seed Use can be found at:

<http://www.for.gov.bc.ca/code/cfstandards/CFstds03Jun2010.pdf>



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Mackenzie Fibre Management Corporation passes audit

VICTORIA – An audit of Mackenzie Fibre Management Corporation in the Mackenzie District found that silviculture, fire protection, harvesting and road activities complied with forest practices legislation, but found two practices that could be improved according to a report released today.

“While the majority of Mackenzie Fibre Management’s forest practices were sound, auditors did find that some improvements were required related to soil disturbance and operational planning,” said board chair, Tim Ryan. “We are pleased that since the audit, the company has implemented soil disturbance training for logging supervisors, and developed a checklist and a stream classification field card to prevent these types of problems in the future.”

During the two-year audit period, MFMC harvested approximately 881,735 cubic metres of timber, primarily to salvage mountain pine beetle (MPB) infested timber. The audit fieldwork took place from September 23 to 27, 2013.

The Mackenzie District lies within the Northern Interior Forest Region and includes Williston Lake, a reservoir created by the W. A. C. Bennett Dam. The audit area is subject to the 2000 Mackenzie Land and Resource Management Plan, which defines sensitive areas and objectives for their management.

The Forest Practices Board is B.C.’s independent watchdog for sound forest and range practices, reporting its findings and recommendations directly to the public and government. The board audits forest and range practices on public lands and appropriateness of government enforcement. It can also make recommendations for improvement to practices and legislation.

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More information can be obtained by contacting:

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