

October 21, 2005

To: Pat Bryant, Canadian Forest Products Ltd.

From: Colin Mahony, Forest Ecosystem Solutions Ltd

**RE:** Addendum to TFL37 MP9 Timber Supply Analysis: Hembal-Heli Partition

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### **Title of Sensitivity Analysis**

Partition harvest of helicopter-operable stands with low economic viability (“hembal-heli”)

### **Rationale**

Canfor staff have indicated that some areas of the helicopter-accessible land base are unlikely to become merchantable in the foreseeable future, mostly due to dominance of lower value tree species (western hemlock and pacific silver fir). Operability of these areas is especially susceptible to changes in fibre markets, and their contribution to future harvest is uncertain. The risk associated with setting allowable harvest levels can be reduced by separating (“partitioning”) the harvest forecast of the hembal-heli stands from the land base currently accessible through conventional harvest systems. Partitioning the harvest could put downward pressures on timber supply by reducing harvest scheduling flexibility. The purpose of this analysis is to determine the timber supply impact of partitioning the hembal-heli land base.

This sensitivity analysis is closely related to and replaces Sensitivity Analysis 5.4.1 in the TFL37 MP9 Timber Supply Analysis Report (April 20, 2005).

### **Methods**

Hembal-heli stands were identified as helicopter-operable stands with a Douglas-fir/cedar/cypress component of less than 30% (5689 net ha). Helicopter-operable stands located greater than 1000 metres from current and proposed roads (786 net ha) were also included in the hembal-heli land base due to low economic viability.

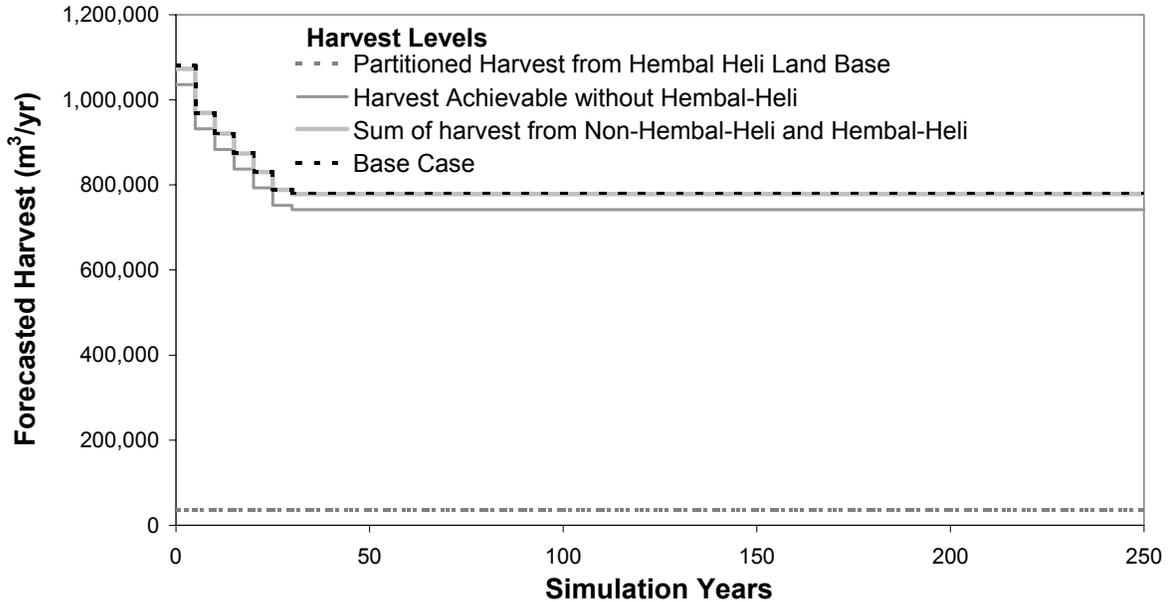
Separate timber supply runs were performed for the hembal-heli and non-hembal-heli land bases. First, the maximum even-flow harvest level was determined for the hembal-heli land base. Then this harvest rate was subtracted from the base case harvest level to determine the target harvest level for the residual non-hembal-heli portion of TFL37. The simulation for the non-hembal-heli run included the hembal-heli partition run as a “shadow” harvest to ensure that harvesting in the partitioned area was incorporated into the status of forest cover objectives. Harvest levels for the non-hembal-heli area were adjusted to achieve stable growing stock.

### **Results**

Harvest from Hembal-heli land base can be regulated at an even-flow harvest level of 37,000 m<sup>3</sup>/yr, which is approximately equal to the average long-term harvest of hembal-heli in the base case. The remainder of the land base can support a harvest of 932,000 m<sup>3</sup>/yr in 2006 followed by a decline of 5%/year to 742,000 m<sup>3</sup>/yr which can be maintained for the rest of the planning horizon. The sum of the partitioned harvest forecasts adds up to the non-partitioned harvest forecast (with a very minor shortfall of 0.1%) (Table 1 and Figure 1). This result indicates that there is no major timber supply impact associated with partition of hembal-heli, subject to the assumptions of the analysis.

**Table 1: Summary of the sensitivity analysis— Partition hembal-heli areas.**

	Base Case	Non-Hembal-Heli	Hembal-Heli	Total	Change	% Change
Long-term harvest level (m <sup>3</sup> /yr)	780,000	742,000	37,000	<b>779,000</b>	-1,000	-0.1%
Medium-term harvest level (m <sup>3</sup> /yr)	780,000	742,000	37,000	<b>779,000</b>	-1,000	-0.1%
2006 harvest level (m <sup>3</sup> /yr)	970,000	932,000	37,000	<b>969,000</b>	-1,000	-0.1%
Total short/medium-term harvest (000's m <sup>3</sup> )	62,393	59,552	2,805	<b>62,357</b>	-35	-0.1%



**Figure 1: Total harvest forecast resulting from partition of hembal-heli areas.**

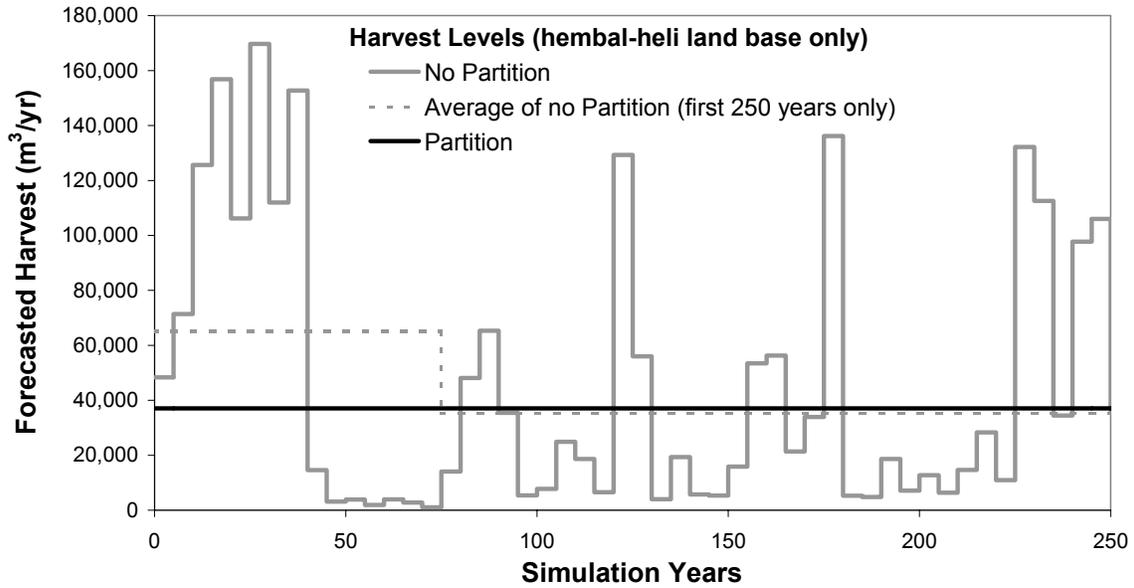
**Discussion**

Hembal-heli stands cover 7% of the THLB, contain 13% of the standing inventory of wood volume, and contribute only 4% to the Base Case long-term harvest level (Table 2). These results indicate that hembal-heli stands have higher-than-average mature volume and lower-than average site productivity. These attributes make hembal-heli stands disproportionately important in the short term. However, the even response of harvest levels in this sensitivity analysis suggests that the impacts of partitioning hembal-heli can be absorbed by the timber supply dynamics of TFL37.

**Table 2: Comparison of the contribution of the non-hembal-heli and hembal-heli land bases to TFL 37.**

	Non-hembal-heli	hembal-heli
Current THLB volume	87%	13%
THLB area	93%	7%
Contribution to the long-term harvest level	96%	4%

Figure 2 illustrates the role of the partition in regulating timber supply. In the absence of controls on how much volume can be harvested from hembal-heli areas, the harvest in these areas fluctuates considerably. Harvest is high in the first 40 years of the planning horizon, followed by very low harvest between years 40 and 80. In the long term, the average harvest is the same under unregulated (non-partitioned) and regulated (partitioned) harvest regimes. However, the average harvest over the short and medium terms (years 0-80 of the planning horizon) is 75% greater under non-partitioned harvesting than under partitioned harvesting. This surplus illustrates the overall timber supply benefits of taking a falldown.



**Figure 2: Harvest from the hembal-heli land base—partition vs. no partition**

**Conclusion**

The results of this sensitivity analysis suggest that there is no substantial timber supply impact associated with partitioning hembal-heli. This result is subject to the assumptions of the analysis, including the definition of hembal-heli.