



Northland Forest Products Ltd.
and
Alberta-Pacific Forest Industries
Inc.

Forest Harvest Plan

Forest Management Unit:

073124

Forest Harvest Plan- L01

Date Submitted: March 12, 2019

Forest Harvest Plan

Planning Unit 073124

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Appendix 2- FHP Overview Map

Appendix 3- Spatial Harvest Sequence Summary Table

Appendix 4- Spatial Harvest Sequence Summary Map

Report

1.0 Introduction

Alberta – Pacific Forest Industries Inc. (Alberta–Pacific) and Northland Forest Products Ltd. (Northland) have prepared a Forest Harvest Plan (FHP) for the harvest of deciduous and coniferous stands within Planning Unit 073124.

Planning Unit 073124 is located along the Logan River Road within Forest Management Unit (FMU) L01.

Copies of this Forest Harvest Plan are available on the Alberta–Pacific website, at www.alpac.ca and at northlandforestproducts.com

2.0 General Planning Unit Information /Design Considerations

This FHP has been validated by a Registered Forestry Professional from Alberta-Pacific and a representative of Northland.

This FHP includes maps and reports that clearly show and document the planned harvest area boundaries, roads and water crossings within the Planning Unit.

This plan is being submitted for appraisal, for a 5-year FHP approval under the 2018-2019 Alberta-Pacific and Northland Annual Operating Plan (AOP).

2.1 Operating Ground Rules

Planning Unit 073124 has been designed in accordance with the Northeast Alberta Operating Ground Rules (OGRs). Alberta – Pacific and Northland are requesting certain deviations from the OGRs, due to field verified factors. These requests, along with corresponding information are listed under the section “OGR Deviations”.

3.0 Maps

Individual block maps have been included in the submission package, outlining the information pertinent to these blocks. A Planning Unit overview map and a Spatial Harvest Sequence (SHS) Planning Unit map have been included in the submission package. These maps can be viewed in the *Appendices* of this document.

4.0 Block Information

A *Block Summary Table* has been included below outlining the expected volumes of the harvest area.

4.1 Utilization

Deciduous and coniferous stands will adhere to the 15/10 utilization standard.

4.2 Field verification

The proposed blocks were ground verified by a field layout team during the winter of 2019. The layout team provided planning support to assess timber quality, sensitive and historical sites, operability of the harvest area, and classification of water courses within the Planning Unit boundary. Where applicable, the findings of the layout team have been noted in the corresponding section of this report.

4.3 Understory Assessment

White Spruce understory within deciduous landbase will be protected utilizing high effort understory protection in stands identified as greater than 600 stems/ha by the Alberta Vegetation Inventory (AVI), as well as any potential areas found to have understory present that is not identified by the AVI. Any deciduous blocks found to have understory amounting to between 400 stems/ha and 600 stems/ha will be protected utilizing the avoidance method.

Blocks requiring understory protection or understory avoidance are noted within the *Block Summary Table*.

Block Summary Table

Table 1: Block Summary Table

This table provides a brief description of the proposed harvest blocks within the Planning Unit.

Deciduous Blocks						
<i>Source ID</i>	Opening Number	Harvest Season (Frozen/ Non-Frozen)	Area (ha)	Deciduous Volume (m³)	Incidental Conifer Volume (m³)	Total Volume (m³)
<i>FC07312401161*</i>	4120730116	Frozen	37.6	9280.2	996.9	10277.1
<i>FC07312402591*</i>	4120730259	Frozen	103.8	23785.1	3486.1	27271.2
<i>FC07312402801*</i>	4120730280	Frozen	12.0	2858.5	287.9	3146.4
<i>FC07312411891*</i>	4120731189	Frozen	10.5	1718.9	791.1	2510.0
<i>FC07312412081</i>	4120731208	Frozen	4.4	573.8	143.0	716.8

<i>FC07312412121*</i>	4120731212	Frozen	70.5	15887.8	2411.6	18299.4
<i>FC07312412461*</i>	4120731246	Frozen	16.7	3403.0	641.2	4044.2
<i>FC07312415701*</i>	4120731570	Frozen	32.6	6660.0	2093.9	8753.9
Total			288.10	64,167.30	10,851.70	75,019.00

*Understory Block: White Spruce understory within deciduous landbase will be protected utilizing high effort understory protection in stands identified as greater than 600 stems/ha.

Any blocks found to have understory amounting to between 400 stems/ha and 600 stems/ha will be protected utilizing the avoidance method.

4.4 Structure Retention

Alberta- Pacific will leave an average of 5% merchantable volume and Northland will leave an average of 3% merchantable volume for structure retention throughout the FMU. Structure retention will be left in the following methods:

- Laid out patches
- Individual trees
- Small clumps left at the operators' discretion

4.5 Debris Management

Planning Unit 073124 is situated within Alberta's Fire Control Zone number 42 as identified by Alberta Agriculture and Forestry (AAF).

Debris management of the Planning Unit will be accomplished in a manner consistent with Section 7.3 of the OGRs.

4.6 Camp Location

The companies have identified a camp location for logging operations within this Planning Unit. The campsite will be reclaimed as indicated in Section 11.3.4.4 of the Northeast Alberta Timber Harvesting Planning and Operating Ground Rules (OGRs).

5.0 Watercourse Protection

During the preliminary planning of Planning Unit 073124, potential watercourses were identified using wet areas mapping, LiDAR data, aerial imagery, as well as the available AVI data.

Where harvest blocks are in proximity to any potential watercourses, the field layout team conducted field assessments utilizing the methodology and classification standards outlined in Section 6.0 of the OGRs. Any confirmed watercourses have been buffered in accordance with the OGRs Section 6.0.

Any deviations from the OGRs in relation to the watercourse buffers are noted in this report; please refer to the *OGR Deviations* section of the report for further information.

Watercourse Crossing Summary Table

Table 2: Watercourse Crossing Summary

A list of road crossings over field verified watercourses within the Planning Unit.

<i>Road ID</i>	<i>Watercourse Classification</i>	<i>Crossing ID (Road Crossing Number)</i>
RC07312415701	Ephemeral	1089
RC07312415701	Ephemeral	1076
RC07312415701	Ephemeral	1059

6.0 Road Information

Overview maps have been attached showing roads in accordance with Section 3.4.7. of the OGRs; all spatial data requirements have also been included with this submission.

Roads will be constructed, maintained, and reclaimed in a manner consistent with Section 11.3 of the OGRs.

When new access is necessary, reclamation processes will adhere to Section 11.3.4, Section 11.3.4.3 and Section 11.3.4.4 of the OGRs. To enable for silviculture activities, all-terrain vehicle (ATV) access may be left throughout the harvest area.

Road Attributes Table

Table 3: Road Attributes

Summary of the proposed in-block roads of the Planning Unit.

<i>Road ID</i>	<i>Road Classification</i>	<i>Haul Season</i>	<i>Length, m</i>
RC07312402591	Temporary	Frozen	3992.7
RC07312411891	Temporary	Frozen	405.5
RC07312412081	Temporary	Frozen	220.6
RC07312412121	Temporary	Frozen	2745.9
RC07312412461	Temporary	Frozen	207.2
RC07312415701	Temporary	Frozen	520.4

7.0 Land Use Information

A search of the Geographic Land Information Management and Planning System (GLIMPS) and Digital Integrated Dispositions (DIDs) yielded active dispositions within the FHP. Any necessary agreements with the disposition holder will be in place prior to the commencement of harvest operations. None of the dispositions within the FHP will restrict harvest operations in the FHP.

Land Use Summary Table

Table 4: Land Use Summary Table
Active dispositions in the Planning Unit

Disposition Number	Disposition Holder	Disposition Type
LOC800011	Canadian Natural Resources Ltd.	License of Occupation
DLO5197	SITE EQUIPMENT LTD.	License of Occupation

The FHP design incorporates pipeline crossings, for temporary roads. The agreements will be in place prior to the construction of these crossings.

8.0 Integration with Other Forest Users

8.1 Integration with Other Harvest Operators

This is an integrated plan between the FMA holder and CTL holder; both companies have validated the plan.

8.2 Registered Fur Management Areas (RFMAs)

There are 2 RFMAs within the FHP who will be affected by operations. Notification letters were sent to the respective RFMA holders, any requests from any RFMA holder have been considered, and, where possible, the harvest design has been planned to accommodate the request.

Trapper Areas Table

Table 5: Trapper Areas Table
RFMA holders affected by harvest operations.

RFMA ID	Notification Method	Contact Method
1639	Letter	Mail
2252	Letter	Mail

8.3 Wildlife Management Unit(s) (WMU)

Planning Unit 073124 is located within WMU 515. The Guides and Outfitters operating within this unit have been sent notification, via registered mail, on the FHP design, as well as a timeline for the commencement of harvest operations. Any requests from Guides and Outfitters have been considered, and, where possible, the harvest design has been planned to accommodate the request.

Guide and Outfitters Table

Table 6: Guide and Outfitters
List of Guide and Outfitters active in WMU 515.

Guide and Outfitter Number	Date	Contact Method
1243G	Oct 02, 2018.	Letter
1271G	Oct 02, 2018.	Letter
1230 G	Oct 02, 2018.	Letter
753 GW	Oct 02, 2018.	Letter
1160 G	Oct 02, 2018.	Letter
25G	Oct 02, 2018.	Letter
1034G	Oct 02, 2018.	Letter
447 G	Oct 02, 2018.	Letter
446 G	Oct 02, 2018.	Letter
960 G	Oct 02, 2018.	Letter
1006G	Oct 02, 2018.	Letter
431 G	Oct 02, 2018.	Letter
740G	Oct 02, 2018.	Letter
453 GW	Oct 02, 2018.	Letter
753 G	Oct 02, 2018.	Letter
913 G	Oct 02, 2018.	Letter

8.4 Indigenous Groups

During the General Development Plan (GDP) process, Alberta – Pacific and Northland conduct consultations with indigenous groups every year. There have not been any issues identified for the Planning Unit 073124 FHP submission.

8.5 Other Forest Users

There are no other forest user groups operating within the Planning Unit area.

8.6 Forest Aesthetics

As outlined in Section 5.5. of the OGRs, Alberta – Pacific and Northland follow the objective to mitigate the impact of timber operations on the visual quality of the forest landscape. This FHP is not adjacent to any park or recreational areas, and no other aesthetics concerns have been noted to date by other forest users.

9.0 Species and Areas of Concern

9.1 Woodland Caribou

Planning Unit 073124 is located within caribou range and will adhere to section 7.7.2 of the OGRs

9.2 Key Wildlife and Biodiversity Zone (KWBZ)

Planning Unit 073124 is not located within a Key Wildlife and Biodiversity Zone; all operations will be consistent with Section 7.7.5 of the OGRs

9.3 Other Species

All known sensitive wildlife sites have been buffered in accordance with Section 7.7.6.2 of the OGRs.

9.4 Sensitive Sites

A review of the block design and landscape of the FHP was completed by professional archaeologists. Any sites identified as being of high historical significance (historical resource sites) have been removed from the harvest design.

Upon completion of cutblock and road layout, a second review of the harvest blocks, and temporary roads is completed to identify potential conflicts, and to determine if any further changes are required to the Planning Unit.

There were no signs of rare plants, including signs of terrestrial lichen found within the Planning Unit.

If any sites are identified post submission, Alberta – Pacific and Northland will take the appropriate action to protect these sites.

9.5 Forest Health

During the field verification, a team evaluated the current state of the forest health in the FHP area, as outlined in Section 10.1 of the OGRs.

If any sites are identified post submission, Alberta – Pacific will take the appropriate action to protect these sites as per Section 10.1.2 of the OGRs.

10.0 SHS Information / Variance Summary

Variances from the Spatial Harvest Sequence (SHS) within the Planning Unit boundary are shown in Appendix 3 - *Spatial Harvest Sequence Summary Table*.

11.0 OGR Deviations

Table 7: Road Percent Deviations Table

Road deviations which contain blocks that are greater than 7 hectares, with potentially more than 5% road disturbance.

Source ID	Opening Number	Road Percentage	Reasoning
FC07312415701	4120731570	5	Narrow/irregular block
FC07312402801	4120730280	5.51	Narrow/irregular block

12.0 Validation by Registered Forest Practitioner

This plan is being prepared and submitted on behalf of Northland Forest Products Ltd and Alberta-Pacific Forest Industries Inc.



ALBERTA-PACIFIC FOREST INDUSTRIES INC.



NORTHLAND FOREST PRODUCTS LTD

Darcy Sulz, RPF 854

Planning Forester

SHS Variance Summary

Operator: Al-Pac

SR SHS Tracking between 2015 and 2025 (timber year)
PD 1, Year 1-10

03/11/2019

Harvest Profile				Planned for Harvest (ha)										Asbuilts						Combined As-Built & Planned						Unplanned					
				Variance					Harvested (ha)					SHS Assessment (Excluding Slivers)			Variance			SHS Assessment (Excluding Slivers)											
Compartment	Company Specific Yield Strata	Provincial Yield Strata	Approved DFA 10 Year SHS	Operator Approved FMP 10 Year SHS	SHS 1-10yr	SHS 11-20yr	Contributing Landbase Outside SHS	Non-Contributing Landbase	Total	Additions	Deletions	Deferrals	Total	Additions	Deletions & Deferrals	Total	SHS 1-10yr	SHS 11-20yr	Contributing Landbase Outside SHS	Non-Contributing Landbase	Total	SHS Variance (Additions %)	Difference in Area (Subst. Add. - D&D)	Difference in Area Total Harvested - 10yr FMP SHS	Additions	Deletions	Deferrals	SHS Variance (Additions %)	Difference in Area (Subst. Add. - D&D)	Remaining Available Area (SHS & Non-SHS)	Unplanned SHS in Compartment
L01-A	All	All	9,268	6,446	2,214	-	315	15	2,543	329	220	179	400	223	229	452	-	-	-	-	-	5.11%	(71)	(6,446)	329	220	179	5.11%	(71)	3,903	3,603
	Aw/AwU	D	6,327	6,327	2,151.59	-	311.89	7.03	2,470.51	318.9	217.9	168.7	386.6	64.2	218.4	282.6	-	-	-	-	-	5.04%	(68)	(6,327)	319	218	169	5.04%	(68)	3,857	3,570
	PjMX	DC-P	101	-	-	-	-	2.29	2.29	2.3	-	-	-	2.8	-	2.8	-	-	-	-	-	0.00%	2	-	2	-	-	0.00%	2	(2)	-
	AwSx	DC-S	119	119	62.74	-	-	-	62.74	-	2.5	10.6	13.2	9.7	10.6	20.2	-	-	-	-	-	0.00%	(13)	(119)	-	3	11	0.00%	(13)	56	33
	SxAw	CD-SW	148	-	-	-	-	-	-	-	-	-	-	4.3	-	4.3	-	-	-	-	-	0.00%	-	-	-	-	-	0.00%	-	-	-
	PjMx	CD-P	172	-	-	-	-	-	-	-	-	-	-	5.2	-	5.2	-	-	-	-	-	0.00%	-	-	-	-	-	0.00%	-	-	-
	SxAw	CD-SB	22	-	-	-	2.06	2.06	-	2.1	-	-	-	0.2	-	0.2	-	-	-	-	-	0.00%	2	-	2	-	-	0.00%	2	(2)	-
	Sw	C-SW	386	-	-	-	-	-	-	-	-	-	-	18.3	-	18.3	-	-	-	-	-	0.00%	-	-	-	-	-	0.00%	-	-	-
	Pj	C-P	1,849	-	-	-	2.65	2.65	-	2.6	-	-	-	34.5	-	34.5	-	-	-	-	-	0.00%	3	-	3	-	-	0.00%	3	(3)	-
	SbG	C-SB	144	-	-	-	3.18	3.18	-	3.2	-	-	-	60.6	-	60.6	-	-	-	-	-	0.00%	3	-	3	-	-	0.00%	3	(3)	-
	SBFM	C-SBFM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00%	-	-	-	-	-	0.00%	-	-	-
	X	NoStrata	-	-	-	-	-	-	-	-	-	-	-	23.6	-	23.6	-	-	-	-	-	0.00%	-	-	-	-	-	0.00%	-	-	-

Note: * Deletions and Deferrals to be provided in shapefile format for next FMP
Values may be affected by rounding

Planning Units Submitted with this Variance Calculation in order of latest to Oldest: 073124, 070134, 070134a, 071134, 072124, 071124