

# SITE PLAN CP 421 BLOCK 21 COOPER CREEK CEDAR LTD.

## A. TENURE IDENTIFICATION

LICENCE NO.: <b>FL A30171</b>	CP: <b>421</b>	BLOCK: <b>21</b>	TIMBER MARK: <b>FE5421</b>	UTM: <b>500083 E / 5570273 N</b>	LICENSEE NAME: <b>Cooper Creek Cedar Ltd.</b>
AREA UNDER TENURE (ha): <b>39.8</b>	MAPSHEET/OPENING #: <b>82K026/25</b>	ELEVATION: <b>810-1105 m</b>	LOCATION: <b>Greyhorse</b>		

## B. AREA SUMMARY

AREA OF NO PLANNED REFORESTATION (ha) (NPR)									
PERMANENT ACCESS	ROCK	WATER	SWAMP	OTHER NP	NC>4ha	WILDLIFE TREE RETENTION AREA (HA):	IMMATURE	OTHER (RESERVE)	TOTAL NPR AREA
5.0	-	-	-	-	-	1.5	-	-	6.5
NET AREA TO BE REFORESTED (ha)									
SU	SU AREA DESCRIPTION								NET AREA TO BE REFORESTED:
	This block is located on Greyhorse Ridge								
A	<p><b><u>ICHmw2 104<sup>8</sup>103<sup>2</sup></u></b></p> <p>Terrain is number of moderately steep to steep slopes and gentle benches. Aspect is generally west-southwest facing, slopes range from 35-65%. Site series complex where the majority of the SU is 104 with 103 occupying scattered areas such as ridge-crests, upper slopes and areas of shallower soil. Surface and subsoil texture is Silty loam. Soils are moderately-well drained. Coarse fragment content is moderate (33-65%). Moisture regime is submesic and nutrient regime is poor to medium. Humus form is a mor (4.0-6.0 cm thickness) and rooting depth is 36cm.</p> <p>Soils are <b>sensitive</b>.</p> <p>Reserve <b>20-25 stems per hectare</b> as per Section G (Silvicultural Systems).</p> <p><b>TU 1: (5.4 ha) Conventional ground based</b> harvest methods and a Clearcut with Reserves silviculture system.</p> <p><b>TU 2: (23.2 ha) Cable</b> harvest methods and a Clearcut with Reserves silviculture system.</p>								28.6
B	<p><b><u>ICHmw2 103</u></b></p> <p>Terrain is moderately steep to steep slopes with areas of exposed rock and shallower soils. Aspect is generally southwest facing, slopes range from 50-65%. Surface and subsoil texture is Silty loam. Soils are moderately-well drained. Coarse fragment content is moderate (45-55%). Moisture regime is submesic and nutrient regime is poor to medium. Humus form is a mor (6.0 cm thickness) and rooting depth is 31cm.</p> <p>Soils are <b>sensitive</b>.</p> <p>Reserve <b>20-25 stems per hectare</b> as per Section G (Silvicultural Systems).</p> <p><b>Cable</b> harvest methods and a Clearcut with Reserves silviculture system.</p>								4.7
TOTAL NET AREA TO BE REFORESTED:									33.3
TOTAL AREA UNDER THE PLAN:									39.8

## SOIL DISTURBANCE

SU	Max. Allowable Soil Disturbance (%)	Max. Amount TAS May Exceed MASD Prior to Rehab (%)	Max. Allowable Soil Disturbance For Roadside Work Areas (%)	Maximum Permanent Access Structures (%)
A	5.0	5.0	25%	12.6
B	5.0			

## RESULTS AND STRATEGIES

<b>Biodiversity Objectives</b>	
Result or Strategy Description	<b>3.5.3 - Old and Mature Forest</b>
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>'KBHLP Objective 2 – Old &amp; Mature Forests'</p> <p><b>Landscape Unit K17</b></p> <p>This block falls within ICHmw2 (High Biodiversity emphasis).</p> <p>There are targets for Mature + Old. Analysis shows a surplus of Mature + Old in the Landscape Unit / BEC pairing as well as Connectivity Corridor.</p> <p>Requirement for Old Forest is considered to be met through spatially, non-legal Old Growth Management Areas (OGMAs). CP 421 does not include any harvest of Old Forest.</p>
Result or Strategy Description	<b>3.5.3 - Green-up</b>
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	'KBHLP Objective 4 – Green-up' – The proposed cutblock is consistent with FPPR Section 65(2).
Result or Strategy Description	<b>3.5.1 - Objectives set by Government for Wildlife and Biodiversity – Landscape Level</b>
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>'KBHLP Objective 4 – Green-up'.</p> <p>The proposed cutblock complies with Sections 64 and 65 of the FPPR.</p>
<b>Cultural Heritage Resources</b>	
Result or Strategy Description	<b>3.7 - Objectives set by Government for Cultural Heritage Resources</b>
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>A referral letter dated January 26, 2024 was sent to the appropriate individual(s) and/or group(s).</p> <p>The First Nations referral/engagement period is ongoing for CP 421.</p>
<b>Recreation Resources</b>	
Result or Strategy Description	<b>4.3 - Recreation Sites</b>
Applies:	NO
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	The proposed cutblock is not located within a designated Recreational Area or Trail with legal objectives; therefore, managing for Recreation Resources is not applicable.
<b>Riparian Management</b>	
Result or Strategy Description	<b>3.4.1 Objectives set by Government for Fish, Water, Wildlife &amp; Biodiversity in Riparian Areas</b>
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	<ol style="list-style-type: none"> <li>1) See Section E.1 for Riparian Management Strategies.</li> <li>2) See Section F for management strategies related to Temporary Access Structures and Soil Disturbance that should be used during and post-harvest in order to prevent/reduce soil disturbance and sediment delivery.</li> </ol>
<b>Soil Objectives</b>	
Result or Strategy Description	<b>3.1 - Objectives set by Government for Soils [FPPR Section 5 and 12.1(1)]</b>
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	<ol style="list-style-type: none"> <li>1) <b>SU A and B</b> contain sensitive soils and soil disturbance will not exceed <b>5%</b>. Specific measures for mitigating soil disturbance levels are addressed in Section F of this Site Plan.</li> <li>2) Areas of the block where temporary access structures are required will be rehabilitated. Specific rehabilitation measures are addressed under Section F of this Site Plan.</li> <li>3) PAS (Permanent Access Structure) exceeds the recommended limit of <b>7.0%</b> and is estimated at <b>12.6%</b>. This is due to roads required to access timber beyond as well as the long narrow shape of the block.</li> <li>4) Areas within the block assigned to roadside work areas will not exceed <b>25%</b>.</li> </ol>
<b>Visual Objectives</b>	
Result or Strategy Description	<b>3.6 – Visual Quality</b>
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>Portions of CP 421 fall within Modification (M) and Partial Retention (PR) visual landscape units. The remainder of the permit falls within an area that is not visually sensitive.</p> <p>A visual Impact Assessment was completed in 2023.</p> <p><b>The proposed CP 421 meets the established Visual Quality Objectives based on the FPPR section 1.1 definition of Modification and Partial Retention and the size, shape and design of proposed cutblocks.</b></p>

<b>Water Management Objectives</b>	
Result or Strategy Description	<b>3.4.4 - Consumptive Use Streams</b>
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>'KBHLP Objective 6' – <b>CP421 Block 21</b>.</p> <p>There are legal points of diversion (POD) downstream of CP 421.</p> <p>Referral letters dated February 20, 2024 were sent to POD licensees with a 30 day response period.</p> <p>See Section E.1 for Riparian Management Strategies.</p>
<b>Wildlife Objectives</b>	
Result or Strategy Description	<b>3.3.1 - Objectives set by Government for Wildlife - Species at Risk – Section 7 of the FPPR</b>
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>The block is not within a Wildlife Habitat Area.</p> <p>There were no sightings of Species at Risk during field development of this cutblock.</p> <p>No Wildlife Habitat Features were observed during development of this CP.</p>
Result or Strategy Description	<b>3.5.2 - Objectives set by Government for Wildlife and Biodiversity – Stand Level</b>
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>Three internal Wildlife Tree Retention Areas are planned for this block, totalling <b>1.5 ha</b>. Overall wildlife tree retention percentage for block 21 is approximately 3.8%. Total WTRA for CP 421 is <b>17.0 ha</b> which constitutes approximately 10.1 % of the gross area of the permit.</p> <p>Wildlife tree retention in CP 421 is consistent with FPPR section 66.</p>
Result or Strategy Description	<b>3.3.2 – Ungulates</b>
Applies:	YES
How the Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>CP 421 overlaps three Ungulate Winter Range management units with specific forest cover requirements which are applied as general wildlife measures.</p> <p>UWR was analyzed using the HLPO Reporting suite.</p> <p>Following harvest of CP 421 the UWR Management Units overlapping CP 421 will meet forest cover requirements for each General Wildlife Measure.</p>

## ADDITIONAL COMMENTS

<b>Consistency Statement</b>
<p>This block is consistent with the approved <b>2018 to 2023 Forest Stewardship Plan for Cooper Creek Cedar Ltd – Forest Licence A30171</b>.</p> <p>This Site Plan is prepared for <b>FL A30171 CP 421 Block 21</b>, in accordance with FRPA Section 10(1), (2) &amp; (3).</p>
<b>Community Watersheds</b>
<p>FSP Section <b>3.4.3</b></p> <p>Not applicable - The proposed block is not located within a Community Watershed.</p>
<b>Enhanced Resource Development Zones</b>
<p>FSP Section <b>3.2.1</b></p> <p>'KBHLP Objective 7 – Enhanced Resource Development Zones – Timber'</p> <p><b>Block 21</b> is not within an Enhanced Resource Development Zone.</p>
<b>Fire Maintained Ecosystems</b>
<p>FSP Section <b>3.5.3</b></p> <p>'KBHLP Objective 8 – Fire maintained Ecosystems'. There are no NDT 4 ecosystems in the FDUs under this FSP; therefore the requirement to create a Result/Strategy for this objective does not apply.</p>
<b>Fisheries Sensitive Watersheds</b>
<p>FSP Section <b>3.4.2</b></p> <p>At the time the FSP was developed there were no designated "Fisheries Sensitive Watersheds" in FDUs under this FSP, therefore the requirement to create a Result/Strategy for this objective does not apply.</p>

<p><b>Invasive Plants</b></p> <p>FSP Section 4.1 – Invasive Plants</p> <p>The iMapBC website was checked on November 8, 2023. The following invasive species were reported in nearby areas to CP 421 mainly at low elevations along Highway 31 and Deception FSR: Burdock, Canada thistle, Chicory, Common tansy, Oxeye daisy, Spotted knapweed, Diffuse knapweed, St. Johns wort, King devil hawkweed, Night-flowering catchfly and yellow hawkweed.</p> <p>Measures to prevent the introduction or spread of invasive plants noted in the FSP include:</p> <ul style="list-style-type: none"> <li>• Cleaning equipment before moving from a worksite with existing infestations to a new work site.</li> <li>• Minimizing soil disturbance during primary forest activities (PFA).</li> <li>• Reseed exposed mineral soil, resulting from a PFA in the first available fall or spring within 12 months following the soil disturbance. Plan planting of cutblocks as soon after harvesting as possible.</li> <li>• During PFAs minimize soil disturbance by: <ul style="list-style-type: none"> <li>• Harvest on a snowpack, when feasible</li> <li>• Random skid to designated skid trails to minimize skidder traffic on the ground</li> <li>• Utilize benches for skid trails to minimize side cuts</li> <li>• Utilize brush to construct skid trails to reduce contact with the ground</li> <li>• Use overhead cable harvesting systems on steep ground</li> </ul> </li> <li>• Where grass seeding is undertaken, CCC will use certified grass seed (Canada common #1 or better grade) from reputable suppliers to ensure premium quality free of invasive plant seed, or a seed mix recommended by a MFLNRO range specialist.</li> <li>• See FSP for additional strategies and practices regarding invasive plants.</li> </ul>
<p><b>Natural Range Barriers</b></p> <p>FSP Section – 4.2</p> <p>Not applicable. There are no range tenures located in the FDUs covered by this FSP.</p>
<p><b>Timber</b></p> <p>FSP Section 3.2 – Timber</p> <p>As per Sec 12(8) of the FPPR, results or strategies are not required for an objective set by government for timber.</p>
<p><b>Wildlife – Caribou</b></p> <p>FSP Section – 3.3 and 3.5.3</p> <p>‘KBHLP Objective 3 – Caribou’ was cancelled and replaced by <i>GAR Order #U-4-012 – Mountain Caribou – Southwest Kootenay Planning Unit</i>. This block falls within the Southern Mountain Caribou Matrix Range and Beneficial Management Practices (BMPs) for operating in woodland caribou habitat have been applied to CP 421. BMPs include:</p> <ul style="list-style-type: none"> <li>• Caribou Sign and Sightings - Staff and contractors are to report any sightings or sign to supervisor.</li> <li>• ‘Silviculture treatments will not result in the conversion of forest cover to pure spruce stands. The intent is to have silviculture practices result in a species composition that existed prior to forest harvest’. A mixed species composition will be planted.</li> </ul>
<p><b>Wildlife – Grizzly Bear Habitat – Connectivity</b></p> <p>FSP Section 3.3 and 3.5.3</p> <p>‘KBHLP Objective 5 – Grizzly Bear Habitat &amp; Connectivity Corridors’.</p> <p>CP 421 falls within Connectivity Corridor. Analysis shows a surplus of Mature + Old in the Landscape Unit / BEC pairing as well as Connectivity Corridor following harvest of CP 421.</p>

**STOCKING REQUIREMENTS**

SU	NAR (ha)	Standards ID #	Other Performance Standards
A	28.6	1057474	See Section H - Stocking Requirements
B	4.7	1057470	

**C. MANAGEMENT OBJECTIVES & STRATEGIES**

<p><b>C.1 MANAGEMENT OBJECTIVES</b></p> <ul style="list-style-type: none"> <li>• Objectives for CP 421 Block 21 include protecting domestic water sources, and maintaining biodiversity, visual and wildlife values.</li> <li>• Harvest this mature stand of <b>Cw Fd Hw (Lw Ep)</b> for sawlogs, chips and value-added products and manage for a healthy, free growing stand of planted and natural <b>CwFdLwPwHw (Pl Pl Sx)</b> for similar end products.</li> <li>• <b>Wildlife Tree Retention Area (WTRA):</b> WTRA’s are planned for retention, totalling <b>1.5 ha</b> in size (3.8% of the block). The reserves shelter mature stand values, wildlife values, and portions of stand structure that are similar to the harvest area.</li> <li>• <b>Kootenay Boundary Land Use Plan – Implementation Strategy (June 1997):</b> This block is located within the designated <b>Landscape Unit K17– High BEO</b> Assignment.</li> </ul>
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<p><b>C.2 CONDITIONS THAT MUST EXIST AFTER HARVEST OR TREATMENT TO ACCOMMODATE KNOWN FOREST RESOURCES</b></p> <p><b>C.2a WILDLIFE</b></p> <p><b>Stand Level attributes/ concerns identified:</b></p> <p><b>Ungulate Winter Range:</b> See RESULTS AND STRATEGIES section 3.3.2 - Ungulates</p> <p><b>Migratory Bird Habitat Assessment:</b> Block 21 is within Migratory Bird Risk Rating 4 polygon. CCCs adopted Migratory Bird Management Strategy’s matrix therefore requires:</p> <p>1) The entire Site must be scheduled for harvest outside Restricted Period 2 (May 15 – July 20), OR</p> <p>2) One or more BMP’s with DoP rank 2 (moderate) must be selected from the list of BMPs and applied to the Site.</p> <p>In the event harvesting takes place within the nesting period BMP PL1 has been implemented on site to reduce the likelihood of incidental take and to conform to CCC’s adopted management strategy. PL1 refers to Patch/edge retention designed around "biodiversity anchors". WTRA has been established in areas of more complex structure suitable to nesting including more dense shrub and deciduous cover.</p> <p>BMP PL3 and SO4 have been implemented as well. PL3 refers to the appropriate training of forest planners, layout personnel, and forest workers. SO4 refers to operation specific recommended practices when chance encounters of active nests occur.</p> <p><b>Wildlife Management Actions Prescribed:</b></p>
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Total Area specified for the retention of wildlife trees: <b>1.5 ha</b> (4.6% of gross area)
<b>Wildlife Tree Retention Area (WTRA):</b> Fd 9 Ep1 (Lw)– 90 years – 31.0m – 50%cc –Areas containing, fir snags. Complex vertical structure with clumps of juvenile stands, tall shrubs and deciduous and areas similar to the harvest area. Moderate cover of browse noted: maple, birch and Saskatoon berry. Game trails noted. WTRA also provides structure values for wildlife, perching and cover values, riparian values and visual values. WTRAs have been established in part, as a best management practice for the reduction of migratory bird incidental take.
<b>C.2c FISHERIES</b>
There are no fish streams within the block. See Section E.1 for Riparian Management Strategies. Drainage from the the cutblock area flows down slope toward the Meadow Creek.
<b>C.2d WATERSHEDS</b>
See section 3.4.4 (Consumptive Use Streams)
<b>C.2e RECREATION</b>
Not applicable. The proposed cutblock is not located within a designated Recreational Area or Trail with legal objectives.
<b>C.2f BIOLOGICAL DIVERSITY</b>
<b>Landscape Unit - K17 (Goat Range):</b> High BEO Assignment.
<b>C.2g VISUAL RESOURCE MANAGEMENT</b>
See RESULTS AND STRATEGIES section 3.6 (Visual Quality)
<b>C.2h CULTURAL HERITAGE</b>
See RESULTS AND STRATEGIES section 3.7 (Objectives set by Government for Cultural Heritage Resources). See section E.5 for Archaeological information.
<b>C.2i RANGE</b>
Not applicable. There are no range tenures located in the FDU covered by this FSP.
<b>C.2j OTHER RESOURCES</b>
<b>Trapping / Guiding:</b> Trappers or guiding license holders in the area will be identified and notified through the Forest Stewardship Planning process. <b>Windthrow:</b> Windthrow hazard is <b>Moderate</b> for adjacent mature stands. Mature stands surrounding the harvest area are similar to the block with moderately well drained soils. Adjacent stands have been exposed to wind impacts by past openings. Soils are fine to moderate with 29-36 cm rooting depth.
<b>CONDITIONS NOT APPLICABLE TO THIS SITE PLAN</b>
THE FOLLOWING CONDITIONS WERE CONSIDERED, AND FOUND NOT TO BE APPLICABLE TO THIS SITE PLAN: None identified.

## E. MANAGEMENT STRATEGIES

E.1 RIPARIAN MANAGEMENT STRATEGIES				
RIPARIAN RESERVE ZONE (RRZ)				
RIPARIAN/ LAKE ID	RIPARIAN/ LAKE CLASS	HARVESTING Y/N	SU XREF	DESCRIPTION OF THE PURPOSE AND EXTENT OF REMOVAL OR MODIFICATION OF TREES AND ANY RELATED FOREST PRACTICES IN RIPARIAN RESERVE ZONE(S)
Meadow Creek	S2	N	N/A	30m RRZ: Block 21 is located >500m from the stream.
RIPARIAN MANAGEMENT ZONE (RMZ)				
RIPARIAN/ LAKE ID	HARVESTIN G Y/N	SU XREF	MANAGEMENT STRATEGIES FOR RIPARIAN OR LAKESHORE MANAGEMENT AREAS INCLUDING PROTECTING STREAM BANKS (if there is no RRZ), MAINTAINING SHADE, AND DEBRIS MANAGEMENT. IF FELLING AND/OR YARDING ACROSS STREAMS. INCLUDE EITHER THE RESIDUAL BASAL AREA <u>OR</u> DENSITY FOR RMZ (S) AND LMZ (S).	
Meadow Creek S2	N	N/A	<b>20m RMZ:</b> Block 21 is located >500m from the stream.	
NON-CLASSIFIED (NC) RIPARIAN AREAS				
RIPARIAN/ LAKE ID	SU XREF	MANAGEMENT STRATEGIES		
-	-	-		
<b>Section E.1 continued</b>				
<ol style="list-style-type: none"> <li>1) <b>Fall and skid timber away from riparian features</b> (streams, NCD's, wetland) where practicable. Any debris entering a riparian feature as a result of harvesting will be removed upon completion of harvesting activities unless it does not obstruct water flow or its removal would cause further damage to the riparian feature. <b>Minimize crossings on watercourse channels</b> to the extent possible.</li> <li>2) Where <b>watercourses</b> are crossed more than once, it is recommended to place a temporary skid bridge (e.g.: logs placed in draw) in order to prevent a potential diversion of flow.</li> <li>3) All <b>machine trails</b> and <b>crossings</b> (NCD) should be fully rehabilitated upon the completion of harvesting or prior to the next freshet. Excess material that could cause redirection of natural drainage patterns should not be left at crossing locations.</li> <li>4) <b>All surface drainage patterns</b> should be maintained and any that are disrupted as a result of harvesting operations should be restored immediately.</li> <li>5) <b>A post-harvest inspection</b> should be completed to assess the amount of logging debris/excess soil within the wetted perimeter of all subtle drainage features. All natural drainage patterns should be maintained and left free of excess debris (slash or soil) that could result in a redirection of seasonal surface runoff/drainage diversion.</li> <li>6) <b>Basal area retention</b> levels for the in-block RMZ (within the NAR) are based on windthrow, windfirmness, wildlife habitat, water quality, and operational constraints.</li> </ol>				

E.2 FOREST HEALTH MANAGEMENT STRATEGIES					
SU	Code	Nelson Region DRA Risk Factors	Points	Relative Risk	Comments
A	DRA	Site factors Host factors Inoculum potential Disease factors	8 4 0 10	H M L M	<ul style="list-style-type: none"> <li>• Armillaria is present at low levels within the stand.</li> <li>• The Nomographic Zones in Section 3.0 of the <u>"Armillaria Root Disease Management Guidelines for the Nelson Forest Region" (June 1998)</u> indicate that Alternative or Intensive deferred treatments for root disease management are appropriate for this site, should Armillaria become a problem.</li> <li>• Alternative treatments will include planting a species mixture that includes species tolerant and /or moderately susceptible to Armillaria (e.g.: Cw, Lw, Pw). Fd (highly susceptible) may be included but should be limited to a maximum of 50% of the mix in SU A. Microsite selection should reflect buffer zones around infected stumps, if they can be identified.</li> <li>• Hand-pulling (preferred) or pop-up spacing (alternative) should be considered in the future should Armillaria become a limiting factor in meeting regeneration or free growing requirements (see section H).</li> </ul>
		<b>Total</b>	<b>22</b>	<b>M</b>	
Other Forest Health Factors					
SU	Code	%	Comments		Current risk to inventory
A	IBD	<5	Symptoms of fir bark beetle attack were noted in the stand. IBD infected fir should be excluded from leave tree selection.		Low
A	DSB	0	Pw is absent or present in minor amounts in the current stand. Plant only rust resistant stock. Expect high incidence of white pine blister rust on any naturally regenerated Pw.		nil
A	DML	<1	Lw mistletoe was noted throughout the block where Lw is present. DML infected trees should be excluded from leave tree selection.		Low
E.3 VEGETATION MANAGEMENT STRATEGIES					
LIVESTOCK TO BE USED FOR VEGETATION MANAGEMENT: YES: <input type="checkbox"/> NO: <input checked="" type="checkbox"/>					
See Section H5: BRUSHING / STAND TENDING					
E.4 COARSE WOODY DEBRIS (CWD) MANAGEMENT STRATEGIES					
<p>CWD levels are low (10-12% ground cover). CWD is predominantly composed of 15-40cm diameter stems. Fd Ep Hw Cw are the dominant CWD species.</p> <p>Manage for <b>minimum</b> CWD levels post-harvest in accordance with wildfire mitigation strategies. Post-harvest CWD will consist of non-merchantable existing levels and snags, along with residue and breakage.</p> <p>(FPPR Section 68): <b>Manage for the minimum of 4 logs per hectare</b>, each being at least <b>2 metres</b> in length and at least <b>7.5cm</b> in diameter at one end.</p> <p>See the SITE PREP section (H3) for additional CWD management strategies.</p>					
E.5 ARCHAEOLOGICAL IMPACT ASSESSMENT					
<p>Archaeological Overview Mapping was not completed over the CP 421 area.</p> <p>Fraser Bonner of Ursus Heritage Consulting Ltd reviewed the CP and determined that portions of CP 421 contain Archaeological potential. Block 21 was not in an area determined to have Archaeological Potential.</p> <p>A preliminary field review was completed November 2023.</p>					

## F. SOIL CONSERVATION

F.1 SITE DISTURBANCE						
SU	HAZARD RATINGS			SOIL CHARACTERISTICS		
	SOIL COMPACTION	SOIL DISPLACEMENT	SURFACE SOIL EROSION	DEPTH TO UNFAVOURABLE SUBSOIL (cm)		TYPE OF UNFAVOURABLE SUBSOIL
				MIN(cm)	MAX(cm)	
A	High	Very High	High	48	60	Fragmental (>70% CF)
	High	Very High	High	50	50	Bedrock

  

F.2 SOIL DISTURBANCE LIMITS	
<p><b>SU A, B:</b> ARE THERE SENSITIVE SOILS? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>MAX. PROPORTION OF TOTAL AREA UNDER THE PRESCRIPTION ALLOWED FOR PERMANENT ACCESS STRUCTURES (PAS): <b>12.6%</b></p> <p><b>Roadside harvesting or temporary landings will be used.</b></p> <p><b>DEACTIVATION OF PERMANENT ACCESS STRUCTURES:</b> Any landings will be deactivated – debris will be piled &amp; burned, water control will be installed around all landings.</p>	
SU	MAXIMUM ALLOWABLE SOIL DISTURBANCE WITHIN THE NET AREA TO REFOREST (%)
A,B	5%
MAXIMUM EXTENT SOIL DISTURBANCE LIMITS MAY BE TEMPORARILY EXCEEDED TO CONSTRUCT TEMPORARY ACCESS STRUCTURES OR EXCAVATED OR BLADED TRAILS (%)	
5%	
<p><b>MASD for Roadside Work Areas: 25%</b></p> <p>Maximum soil disturbance levels may be exceeded for short periods of time; however any temporary access structures or excavated or bladed trails will be rehabilitated to the extent necessary to bring the SU net area back into compliance with the specified soil disturbance limits.</p> <p>See <b>Section F.4</b> below for description of temporary access structures or excavated or bladed trails, if any.</p> <p>Avoid harvesting during spring freshet/breakup conditions when soils are moist to reduce soil displacement and compaction.</p> <p>Steep slopes &gt;35% are present within SU A &amp; B, see <b>Harvest Plan Map</b>. Cable and ground based harvest methods will be used.</p>	
F.3 REHABILITATION TIME FOR TEMPORARY ACCESS STRUCTURES	
<p>MAXIMUM ALLOWABLE TIME TO COMPLETE REHAB (MEASURED FROM COMPLETION OF HARVEST): <b>1 YEAR</b></p>	



F.4 MANAGEMENT STRATEGIES FOR TEMPORARY ACCESS STRUCTURES				
SU	GENERAL LOCATION:	MAX ALLOWABLE HEIGHT OF CUTBANKS (m)	AVERAGE HEIGHT OF CUTBANKS (m)	EQUIPMENT TO BE USED (IF OTHER THAN EXCAVATOR)
A	Blading or excavating is expected to occur in parts of the unit with moderate to steep slopes.	0.8	0.3	Skidder, cat.
<ul style="list-style-type: none"> <li>• <b>SU A</b> : Logging Method: <ul style="list-style-type: none"> <li>○ TU 1: <b>Ground based</b>. Adverse and favorable skidding to roadsides and landings.</li> <li>○ TU 2: <b>Cable</b>. Downhill and uphill yarding to roadside and landings, or winch-assist harvesting.</li> </ul> </li> <li>• <b>SU B</b>: Logging Method: <b>Cable</b>. Uphill yarding.</li> </ul> <p><b>See Section E.1 for stream management strategies.</b></p> <p><b>The following will apply for any excavated/bladed trails that are required:</b></p> <ul style="list-style-type: none"> <li>• Maximum trail width is 4m.</li> <li>• Actual dimensions of bladed trails may vary depending on topography.</li> <li>• The amount of bladed trail constructed will be kept to a minimum.</li> </ul> <p>Short sections that become bladed trails where a non-bladed trail crosses a hump or ridge will be exempt from rehabilitation requirements provided that the soil disturbance limits in this SP are not exceeded.</p> <p><b>Rehabilitation for bladed or excavated trails:</b> Any bladed or excavated trails will be rehabilitated as follows:</p> <ul style="list-style-type: none"> <li>• De-compact the trail, including removing woody debris that is conducting subsurface moisture</li> <li>• Place fill material that was sidecast on the excavated portion of the trail</li> <li>• Re-contour the slope</li> <li>• Re-establish natural surface drainage</li> <li>• Place some woody debris over exposed mineral soil</li> </ul>				

#### G. SILVICULTURAL SYSTEMS

SILVICULTURAL SYSTEMS	
SU	SYSTEM / VARIANT / PHASE
All	Clearcut with reserves silviculture system.
SU	STAND STRUCTURE AND SITE CONDITION - COMMENTS
All	<p>Post-harvest stand structure will be even-aged with one age class.</p> <p>Planted trees and natural regeneration will include <b>CwFdLwPwHw (PyPISx)</b></p> <p><b>Wildlife Tree Group Reserve Area (WTRA):</b> totalling 1.5 ha</p> <p><b>Leave Trees</b></p> <p>Retain <b>20-25 stems per hectare of Fd and Lw ≥55cm DBH</b>. Retention will provide stand structure, biodiversity, visual and wildlife values. Trees will be left in clumps or individual stems.</p> <p>Retain all Western white pine, deciduous and large diameter vets where operationally feasible.</p>

**H. STOCKING REQUIREMENTS (As per DSE South Columbia Default Stocking Standards Version 1.0, April 1, 2018)**

LICENCE #	CP	BLOCK #	OPENING NUMBER	LOCATION
A30171	421	21	082K026/25	Greyhorse

H1 ECOLOGICAL INFORMATION										
SU	Net Area (ha)	Zone	Subzone	Variant/Phase	Site Series (complex - %)	Elevation			Slope position	Soil Texture (0-30cm)
						Min	Max	Avg		
A	28.6	ICH	mw	2	104 <sup>9</sup> 103 <sup>1</sup>	810	1105	958	Mid	SiL
B	4.7	ICH	mw	2	103	810	910	860	Mid-Lower	SiL

RATIONALE FOR STOCKING STANDARD FSP ID SELECTION		
STANDARDS UNIT FSP ID #	CHANGE FROM STANDARD PRACTICE	COMMENT: (For example: Forest health (DRA) or Rocky site)
A: 1057474	N/A	-
B: 1057470	N/A	-

H2 STOCKING REQUIREMENTS FOR SILVICULTURAL SYSTEMS OTHER THAN SINGLE TREE SELECTION										
Standard unit	Standards ID	Regen Delay (years)		Free Growing Early (yrs)			Free Growing Late (years)			
A	1057474	7		12			20			
Preferred Species		Acceptable Species		Post Spacing Density (sph)				Max Coniferous (sph)		
Species	Min FG ht (m)	Species	Min FG ht (m)	Min	700	Max	1800	10,000		
Cw <sup>10,201</sup> Fd <sup>58</sup> Lw Pw <sup>31</sup>	Fd-1.4, Lw Pw-2.0 Cw- 1.0	Pl Hw Py <sup>9,14,203</sup> Sx <sup>10,13</sup>	Pl-2.0, Py,Hw,Sx – 1.0	Well Spaced Trees (stems/ha)						
				Target	Minimum pref&acc	Minimum preferred	Min Horizontal Inter-tree distance (m)			
				1200	700	600	2.0*			
				Height Relative to Competition (%)						
				150						

Standard unit	Standards ID	Regen Delay (years)		Free Growing Early (yrs)			Free Growing Late (years)		
B	1057470	7		12			20		
Preferred Species		Acceptable Species		Post Spacing Density (sph)				Max Coniferous (sph)	
Species	Min FG ht (m)	Species	Min FG ht (m)	Min	700	Max	1800	10,000	
Fd Lw	Fd-1.4, Lw -2.0	Pl Pw <sup>31</sup> Cw <sup>10,201</sup> Py <sup>9,14,203</sup>	Pl,Pw-2.0, Py,,Cw – 1.0	Well Spaced Trees (stems/ha)					
				Target	Minimum pref&acc	Minimum preferred	Min Horizontal Inter-tree distance (m)		
				1000	500	400	2.0*		
				Height Relative to Competition (%)					
				150					

\*\* Early Free Growing has been left in for information purposes only. In RESULTS it is in the comments section only and does not preclude making FG declarations early.

**Other Required Stocking Information/Footnotes :**

9- suitable on warm aspects  
 10 – suitable on cool aspects  
 13- suitable at upper elevations  
 14 –suitable at lower elevations  
 31 - must use of blister rust resistant stock. See BC Journal of Ecosystems and Management 10(1): 97-100 for supplementary information.  
 58 – South Area – Fd limited to a max 50% of preferred and acceptable well-spaced stems in the IDFmw and all subzones of the ICH due to root rot. See Root Rot Handbook (2017, in press).  
 201 – Maximum 50% of preferred and acceptable well-spaced trees  
 203- Recommended on sites for climate change adaptation

\* - a reduced MITD of 1.7m may be used to facilitate planting superior microsites, when sites have: mechanical site preparation (mounding and disk trenching), been previously fill planted, or conditions where obstacle planting for snow creep is necessary. Reduced MITD applies to PLANTED TREES ONLY

H3 SITE PREPARATION	
TECHNIQUE (S) / LIMITING FACTORS	
<ul style="list-style-type: none"> <li>Broadcast burn or Spot burn if needed within the NAR to reduce excessive slash cover. Low to Moderate intensity burn, impact rank 2 to 3. Steep slopes may limit mechanical site prep options in many areas.</li> <li>Pile, or pile and burn, slash accumulations on roadsides and landings, or within the NAR.</li> <li>Piling treatment during dry weather conditions or when soils not saturated.</li> <li>Burn piles in the spring or fall.</li> <li>Mechanical bunching (pile and burn) where feasible.</li> <li>Piles in the NAR may be left unburned in order to contribute to wildlife habitat and coarse woody debris values.</li> <li>Mechanical site preparation (e.g.: mounding, scarification) where necessary and feasible, combined with brush/slash piling, utilizing an excavator.</li> </ul>	

H4 PLANTING								
SU	Area (ha)	Regen. Method	Species	Age	Stock Type	Season	Stems/Ha	Total Stems
A	28.6	Plant	Cw Fd Lw Pw (SxPIPy)	1+0	PSB 412A	Spring	1400-1600	40,040-45,760
B	4.7	Plant	Fd Lw (Pl Pw Cw Py)	1+0	PSB 412A	Spring	1400-1600	6580-7520
LIMITING FACTORS / COMMENTS: <ul style="list-style-type: none"> <li>Fd limited to a maximum of 50% of preferred and acceptable well-spaced stems in SU A.</li> <li>Hw is an acceptable species in SU A, and moderate amounts of Hw natural regen exist within certain areas the block. Expect additional natural regeneration.</li> <li>Manage for a high diversity of planted trees as a climate change adaptation strategy. Increasing species diversity may help buffer the negative impacts of climate change, and make forests more resilient when faced with extreme weather events. This strategy is meant to reduce the forest health risks to future timber supply by providing a diversity of species should one or more become susceptible to pests or other damaging agents. Replanting these stands with a higher diversity of species, including species that are more adapted to hotter and drier growing conditions like Lw and Fd (Py), will promote a stand that is more likely to tolerate a warming climate.</li> <li>Microsite selection for Lw, and Fd (Py) should be concentrated to dry sites, with Cw(Sx) populating draws and cold air exposures.</li> <li>Limiting factors include high snowpack persisting late in the season relative to the elevation.</li> <li>Plant as soon as possible following harvesting or site prep operations. <b>Note:</b> a post-harvest assessment should be completed to assess the necessity of site preparation prior to planting. If site prep is needed, the person completing the assessment will generate a prescription surrounding the areas that are required and the methods to be employed.</li> <li>Anticipated Timing/Constraints: Treatment needs will be assessed through periodic walkthroughs and silviculture surveys.</li> </ul>								
H5 BRUSHING / STAND TENDING								
TECHNIQUE (S) / LIMITING FACTORS								
<p><b>Current Brush Hazard:</b> Moderate existing dry brush hazard. In canopy openings created by forest health issues competitive species of brush have established such as maple and birch as well as herbaceous species such as bracken and thimbleberry.</p> <p><b>Future Brush Hazard:</b> Moderate overall with potential for higher hazards. Timely crop establishment will be crucial in managing for brush hazard. Deciduous was noted as a component of nearby juvenile stands.</p> <p><b>Brushing Methods:</b> Should brushing become necessary, manual treatments are the preferred methods.</p> <p><b>Risks and Considerations:</b> Woody brushing or stand tending treatments must be carefully assessed due to pathogen ability to colonize wounds on stocking.</p> <p><b>Anticipated Timing:</b> Treatment needs will be assessed through periodic walkthroughs and silviculture surveys. Treatment timing will be prescribed at the time of brush assessment.</p>								

**I. ADMINISTRATION**

<b>RPF SIGNATURE AND SEAL:</b>	
<p>_____</p> <p>RPF Name (Printed)  <i>I certify that I have reviewed this document and, while I did not personally supervise the work described, I have determined that this work has been done to the standards expected of a member of the Association of British Columbia Forest Professionals.</i></p> <p>Date: _____ RPF #: _____</p>	<p>_____</p> <p>RPF Signature and Seal</p>
<p><b>SITE PLAN PREPARED BY:</b>  Tom Haukaas, RFT</p>	<p><b>MAJOR LICENSEE SIGNING AUTHORITY:</b></p>
<p><b>SITE PLAN ATTACHMENTS:</b></p> <p><input checked="" type="checkbox"/> SP MAP(S)</p>	<p>_____</p> <p>Licence Holder Signing Authority Signature</p> <p>_____</p> <p>Licence Holder Signing Authority Name (Printed)</p> <p>Date: _____</p>

Area Calculations	Standards Units					TOTAL HA	%
	A	B					
<b>HAZARD RATINGS:</b>						39.8	
Compaction	High	High					
Soil Displacement	Very High (34)	Very High (28)					
Surface Erosion	High (30-31)	High (31)					
Forest Floor Displacement	High (22)	High (22)					
Mass Wasting	High (41)	High (41)					
<b>Harvest System</b>	Ground based: 5.4 ha Cable: 23.0 ha	Cable					
<b>TOTAL AREA</b>	35.1	4.7				39.8	
							% WTP/RES
WTRA	1.5	-				1.5	3.8
NP	-					-	-
OTHER Reserve	-					-	-
							% Disturbance
Proposed roads	5.0	-				5.0	12.6
Existing roads							
Landings							
<b>Total disturbance permanent access structures</b>	<b>5.0</b>	<b>-</b>				<b>5.0</b>	<b>12.6</b>
<b>NET AREA TO BE REFORESTED</b>	<b>28.6</b>	<b>4.7</b>				<b>33.3</b>	
Sensitive Soils (Y/N)	Yes	Yes					
<b>Temporary Access Structures:</b> Road, landing, excavated or bladed trails that will be rehabilitated (% of NAR).	5% (excavated/bladed trails)	5% (excavated/bladed trails)					
<b>Max. Allowable dispersed Soil Disturbance</b> (% of NAR by Standards Unit) as a result of harvesting, mechanical site preparation, or hazard abatement activities.	5%	5%					
<b>Rehabilitation/Deactivation measures:</b> All landings and trails within the NAR are temporary and will be rehabilitated by decompacting, re-contouring, surface restoration, followed by planting.							
<b>Proposed Roads</b> (permanent): Greyhorse South = 962m x 20m = 1.92 ha Greyhorse Spur 2 = 992m x 20m = 1.98 ha Spur 21-1 = 536m x 20m = 1.07							
<b>Existing Roads</b> (permanent): N/A							
See <b>Section F.4</b> for discussion of rehabilitation of excavated/bladed trails.							