BCTS
BC Timber Sales
Kootenay

# SITE PLAN
# KOOTENAY
# BC TIMBER SALES

Report Date 2021/06/23

**ORIGINAL**

## TENURE IDENTIFICATION

| LICENCE # | CP | BLOCK | UBI | OPENING NUMBER | FDU | LOCATION | LATITUDE / LONGITUDE |
|---|---|---|---|---|---|---|---|
| TA0904 | - | 2 | BF78U | | | Lavington Fire 1 | 50 03 59 / 116 02 45 |

## AREA UNDER THE PLAN

| GROSS AREA (TAUP) | PAS | NP | WTRA / WTP | RESERVES | OTHER | NAR |
|---|---|---|---|---|---|---|
| 56.6 | 3.8 | 0.0 | 4.4 | 0.9 | 0.0 | 47.6 |

## ADDITIONAL COMMENTS

| CONSISTENCY STATEMENT |
|---|
| This site plan is consistent with the results and strategies identified in the BC Timber Sales Kootenay Business Area 2017-2022 Forest Stewardship Plan #601. This block is identified within Operating Plan 21-2. |
| **SAFETY** |
| This block has been impacted by wildfire. Due to fire damage, there is a high risk of sudden tree fall. Boulders also exist in the block that may present a rolling hazard to machinery and workers if dislodged. |

## 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 (%) |
|---|---|---|---|---|
| 1 | 10.0 | 5.0 | 25.0 | 7.0 |
| 2 | 5.0 | 5.0 | | |

| SU | CRITICAL SITE CONDITIONS THAT AFFECT THE TIMING OF OPERATIONS. AND HOW THEY AFFECT THE TIMING |
|---|---|
| 1 | For All SUs:<br>Avoid operating during periods of excessive soil moisture. Avoid operating during spring freshet or after periods of excessive rainfall.<br><br>-Ensure natural drainage patterns are maintained during and after completion of operations. Ensure roads are left in a hydrologically stable state. During operations, monitor for sediment entering streams and take mitigative action immediately if observed. |

## RESULTS AND STRATEGIES

| RESULT OR STRATEGY | | HOW THE STRATEGY OR RESULT APPLIES TO THE SITE or RATIONALE (IF NOT APPLIED) |
|---|---|---|
| Biodiversity Emphasis | | Harvest of this block is consistent with the result for Biodiversity emphasis as described in the BCTS Kootenay Business Area 2017-2022 FSP as applied through the results and strategies for old growth management and mature management areas.<br><br>This block does not overlap any mapped non legal old growth management area (OGMA) or mature management area. |
| Community Watersheds | | This block is not within a community or domestic watershed. |
| Consumptive Use Streams | | This block is not within close proximity (<1km) of any downstream intakes licensed for domestic use. Intakes for conservation and domestic use do occur further downstream on Lavington Creek, however due to the distance away from the TSL, it is anticipated that harvest will have no impact to water quality at these intakes. |

| | | |
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| Cultural Heritage Resources | | This block has been referred to First Nations through Operating Plan #21-2. No new information regarding cultural heritage values have been identified for the block as result of referrals.<br><br>Small overlap with AOA polygon I12-27 occurs on the north end of the block. This AOA has been partially disturbed by harvest of an adjacent block as well as construction of the Bear West forest road. The polygon has been subject to wildfire so the duff and upper soil horizon have been impacted.<br><br>An Archaeological Impact assessment was originally completed in 2009 for AOA polygon I12-27 overlapping A86822-1 and now overlapping a small portion of TA0904-2. The overlapping portion is to be a landing location.<br><br>Findings of the AIA produced negative results with no archaeological materials or sites observed , recorded, or otherwise suspected within the defined harvest boundaries of A 86822-1. It was recommended that no further archaeological work was necessary so long as disturbance did not extend past established harvest boundaries.<br><br>As TA0904-2 was outside of these boundaries, a follow up was conducted by Pete Vandenbergh RPF of BCTS with the signing archaeologist. As per his email to Chris Lovesey RPF dated Dec 12, 2020, Pete stated that the archaeologist did not feel that any other assessments are necessary.<br><br>A copy of the AIA report and email are filed with the site plan package .<br><br>In the event that suspected cultural or archelogical resources are discovered during operations, activities are to cease immediately and the Timber Sales Manager (TSM) or their designate are to be notified immediately. The TSM is to take the following steps:<br><br>a) Record the location of the artifact/resource.<br>b)Evaluate the direct impact of the activities on the artifact/resource.<br>c) If the above evaluation determines it necessary, alter the design and/or prescription of the license, permit, or road to conserve, mitigate, or protect the artifact; and<br>d) Communicate the outcome of the evaluation to the First Nation whose artifact may be affected and offer to meet with the First Nation. |
| Enhanced Resource Development Zones | | TA0904 Block 2 is within an Enhanced Resource Development Zone for timber as described within the Kootenay Boundary Higher Level Plan.<br><br>As per sec 5.2.2. of the 2017-2022 BCTS Kootenay Business Area FSP (#601), the Timber Sales Manager (TSM) will enter into an agreement that authorizes timber harvesting only if consistent with the practice requirements set out in sec 65 of the FPPR (adjacency) except that green up height is reduced to 2.5m from 3m.<br><br>As per sec 65(4) of the FPPR, adjacency requirements do not apply in instances where timber is harvested to recover timber damaged by insects or fire. TA0904 Block 2 is being harvested to salvage fire damaged timber therefore adjacency requirements and patch size requirements do not apply. |
| Fire Maintained Ecosystems | | This block is not within a fire-maintained (NDT4) ecosystem. |
| Fisheries Sensitive Watersheds | | This block is not within a fisheries sensitive watershed. |
| Green-Up | | This block is planned for salvage of fire-damaged timber. As per sec 64 (2) of the FPPR, patch size requirements do not apply where timber harvesting is to recover timber damaged by wildfire. |
| Invasive Plants | | This block is susceptible to ingress of invasive plants as result of the wildfire.<br><br>The following measures to prevent spread of invasive plants will apply to agreement holders carrying out harvesting and road building activities:<br><br>1. Vehicles, mechanized equipment; and new infrustructure brought onto site such as culverts, bridges, and cattleguards must be inspected for the presence of soil and plant material , including documentation on inspection forms, prior to being transported to or from worksites. If present, soil and plant materials are to be removed.<br><br>2. In order to reduce seedbeds available for invasive plants, grass seed exposed mineral soils on: cut and fill slopes of new roads; all new trails and landings; and deactivated or rehabilitatated areas; during the first available spring or fall after completion of road construction and rehab/deactivation activities and not more than 12 months following mineral soil exposure. This is required as soil erosion hazard is also high.<br><br>3. Where grass seeding is undertaken, utiltize high quality seed (a mix recommended by a MFLNRO range specialist, if available; otherwise Canada Common #1 Forage mix or better grade) to ensure that the introduction of invasive plant seed is minimized. Obtain a certificate of analysis, providing a copy to the TSM upon request to confirm that invasive plant seeds are not present in the seed mixes being utilized.<br><br>4. If utilizing a dry grass seeding method, seed shall be applied at a rate of 30 to 50kg/ha. ,<br><br>5. Personnel completing post harvest surveys will be required to identify and report all new observed infestations. |
| Old and Mature Forests | | This block does not encroach on any mapped non-legal OGMA or MMA. |
| Other Resource Features | | This block does not contain any known resource features as identified under sec 5 of the Government Actions Regulation.<br><br>Coarse Woody Debris: A a result of harvesting within the MS biogeoclimatic subzone , for all SU's within the net area to be reforested retain a minimum of 1.24m3/ha of coarse woody debris from a minimum of 4 logs/ha each being a minimum 2 meters in length, but 5 meters greater in length if available, and with a minimum of 20cm diameter at one end. To reduce the potential for build-up of Douglas-Fir Beetle and Spruce Beetle , to the extent practicable: select dead and dry over green material, retain material from species other than Douglas-Fir and Spruce, and leave Douglas-Fir and Spruce Stumps as low to the ground as possible. |

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| Range | | No range infrastructure has been impacted by development of this block. No natural range barriers will be impacted by development of this block. |
| Recreation Sites & Trails | | There is no overlap of this block with recreational sites, intrepretive sites, trails, or other recreational features. |
| Riparian | | Six reaches have been identified during development of block 2. All reaches have been identified as either an S6 or non-classified drainage (see support doc for details). A steep slope exceeding 50% gradient downslope of the block acts as a topographic barrier to upstream fish passage.<br><br>As per the FSP, 20m Riparian Management Zones (RMZ's) maintaining >1% of pre-harvest stems are required on S6 streams except where a QRP deems different retention levels are appropriate based on assessment of factors as described within strategy #2 of section 5.3.1.5 of the 2017-2022 FSP.<br><br>For all identified reaches, timber within RMZs is damaged by wildfire. Severity of damage is variable, however in all cases, both safety and blowdown concerns were noted. Throughout the block, many trees have damaged roots systems resulting in poor stability and high risk of windthrow. Safety of workers is of concern as trees may fall suddenly. Windthrow resulting from fire damage was noted by layout crews throughout the block.<br><br>To mitigate the hazard to workers and the possibility of damage to stream channels as result of adjacent trees being windthrown, minimal retention within the RMZ's of all identified reaches is prescribed. All damaged overstory trees within the RMZ's are to be removed. Where roots are embedded into the stream channel, trees are to be stubbed to reduce the risk of windthrow. Where possible all green windfirm trees(Lw and Fd) are to be retained in proximity to streams if their root systems are >50% intact and they are structurally sound.<br><br>As per strategy 2f, all reaches have a minimum 5m or wider Machine-Free Zone established. Machinery must not enter these zones except where designated crossings are established.<br><br>Felling and skidding of timber must be away from streams unless a safety hazard dictates otherwise or it is not practicable.<br><br>Pre-existing course woody debris adjacent to streams should be left to the extent possible to provide protection against erosion and sedimentation.<br><br>Stream Cleanout: All slash and debris introduced to stream channels as a result of forestry operations must be removed from all stream channels under the following requirements: a) Remove all introduced debris (tree stems, branches, and other woody debris) greater than 1 meter in length and shorter lengths if accumulated together from stream channels.<br>b)Remove all introduced segments of tree stems/logs, or log ends of any length resulting from landing and timber processing activities from stream channels.<br>c)Removal of harvesting debris is to be concurrent with logging (either prior to spring freshet or demobilization of skidding/yarding equipment, whichever is earlier).<br>d) Place removed debris where it will not re-enter the stream as a result of downslope movement or stream peak flows.<br>e) Do not remove pre-harvest embedded or natural woody debris.<br>f) Do not use heavy machinery to remove fine harvest debris in areas where stream banks, natural woody debris, or riparian vegetation will be disturbed.<br><br>Designated Stream Crossings: Designated crossings will be required to access some timber within the block. Approximate locations are shown on the HP/SP map. The Harvesting Supervisor is to ensure that indicated crossings remain viable at time of operations and select new appropriate locations if necessary. Designated crossings are to incorporate the following: a) crossing perpendicular to the stream channel and at a location having the narrowest width, a straight section (not meandering or braided) and with a stable, solid stream bank, bed, and approaches; b) use of structures and/or materials that will not obstruct stream flow (if present) and placement techniques (eg lifting into place) that will avoid destabilizing stream banks; c) Installation of sediment and erosion control measures at start of work, d) use of good deactivation/rehab practices. |
| Road Site Plan | | Revegetation following Road Construction and Deactivation:<br><br>As soil hazard assessments for this block indicate a high risk of soil erosion, exposed mineral soils on cut and fill slopes of new roads; landings; and newly deactivated and rehabiltated areas are to be grass seeded.<br><br>Seeding is to be completed during the first spring or fall after the completion of road construction, and rehabiltation/deactivation activities and no later than 12 months following mineral soil exposure. If using a dry seeding method, seed shall be applied at a rate of 30-50 kg/ha and grass seeding will utilize high quality seed (a mix recommended by a MFLNRORD range specialist, otherwise Canada Common #1 Forage mix or better). A certificate of Analysis is to be obtained, providing a copy to the TSM upon request. |

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|---|---|---|
| Soils | | Harvesting operations are to avoid periods of excessive soil moisture such as spring freshet and periods of heavy rainfall.<br><br>All temporary trails and temporary roads are to be rehabiltated where soil conditions permit. If trails/ roads cannot be fully rehabiltated due to unfavorable soil conditions, they must be left in a hydrologically stable state. Where rehabiltation occurs, scatter large woody debris and/or logging slash on rehabbed corridors to reduce soil erosion.<br><br>For safety reasons, soil information from adjacent blocks were used to infer conditions within this block. Soil information from A86822 indicates a dominant soil texture of silt loams with an average of 30-50% coarse fragments.<br><br>Completion of soil hazard assessments indicate sensitive soils in SU1. The hazard of soil displacement is very high as result of steep slopes. No sensitive soils were identified for SU2. As result the maximum allowable soil disturbance limit within each SU is as follows:<br><br>SU1: 5% of the net area reforested (NAR) for the SU.<br><br>SU2: 10% of the NAR for the SU.<br><br>Roadside work areas: Soil disturbance must not exceed 25% of the area covered by roadside work areas.<br>Temporary Access Structures: The maximum soil disturbance limit within each productive SU may be temporarily exceeded by 5% for the purpose of constructing temporary access structures, excluding the area covered by a roadside work area. Temporary access structures must be rehabiltated by the completion of harvest to a level not exceeding the maximum allowable soil disturbance limit for each SU.<br><br>Permanent Access Structures: Maximum allowable PAS for this cutblock is 7% of the gross cutblock area 3.8ha. PAS for this block is 3.8ha and therefore consistent with the allowable maximum. This is result of existing access structures that overlap the block.<br><br>No bladed trails are to be placed on slopes>60% unless shown on the HP/ SP map. A terrain stability assessment has been completed on the block and no significant concerns were noted. Landslide risk as result of forestry operations is considered very low to low assuming use of good practices for managing drainage and that recommendations concerning drainage structures are implemented. |
| Visual Quality | | This block is not subject to a visual quality objective (VQO). |
| Wildife - Species at Risk | | WHAs: This block does not overlap any wildlife habitat area (WHA).<br><br>Wildlife Habitat Features: No wildlife habitat features as specified under Ministerial Order M213 "Wildlife Habitat Features in the Kootenay Boundary Region" are known to be present in this block based on observations at time of layout or based on current available BCTS mapping.<br><br>Conservation Data Center (CDC): Publically available mapping by the BC Conservation Data Center (CDC) does not indicate any overlap with the known habitat of any regionally important species or species of management concern.<br><br>Williamson Sapsucker: This block is outside of the East Kootenay Area of Occupation for Williamson Sapsucker as identified in "Best Management Practices for Timber Harvesting, Roads, and Silviculture for Williamson Sapsucker in British Columbia- East Kootenay Area of Occupancy". BMP's for Williamson Sapsucker do not apply to this block.<br><br>Species of Management Concern: No species of Management Concern or their habitat as identified in "Species of Management Concern in the Kootenay Business Area" (VAST 2014) were observed or readily identified within this block at time of layout.<br><br>Fish Species: Fish are present downstream of the TSL. Operations must be monitored for the presence/occurrence of sedimentation resulting from road construction and if necessary corrective actions taken to ensure that sediment is not transported downstream to fish bearing waters.<br><br>In the event that a known species of risk or species of management concern is identified in the field during harvesting or road building activities: stop all primary forest activities and report the wildlife habitat feature to the project supervisor and the BCTS representative. Determine a course of action considering existing management stategies, BMPs, professional guidance documents and/or recommendations from a QRP; and document decisions made with rationale through an updated or amended project plan before proceding with any primary forest activities in accordance with the updated or amended project plan. |
| Wildlife - Caribou | | This block does not overlap established no-harvest or modified harvest areas for caribou.<br><br>Blocks and road sections forming this TSL are within area designated as provincial Caribou "Matrix" habitat. The document "Interim Guidance for Operating in Southern Caribou Core and Matrix Habitat- BCTS Kootenay Business Area" provides guidance for when working in matrix habitat. Suggested practices include block aggregation, creating larger blocks, and increasing the frequency of larger patches. As this TSL is to salvage timber damaged by wildfire, larger blocks are planned creating large areas of early seral habitat with reduced cover for elk, moose, and deer consistent with these guidelines. No specific management practices in addition to what is stated in this site plan are required. |
| Wildlife - Grizzly Bear Habitat | | This block is not within the Yahk Grizzly Bear habitat area (4-180) or other area specified for grizzly bears.<br><br>Despite this, for the entirety of the TSL, where possible, hedging of green vegetation such as alder and advanced natural regen >1.3m tall is to be left along permanent road sections to provide visual screening into harvested areas. The exception is on landing locations.<br><br>Course woody debris is to be left in all SU's to provide habitat for insects and possible foraging for grizzly bears. Operators are to leave large diameter (>20cm dbh at one end and min 2m in length) non-merchantable logs onsite. Minimum target is 4 pieces/ha). |

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|---|---|---|
| Wildlife - Ungulate Winter Range | | This block is not within ungulate winter range as established under UWR order U-4-008. |
| Wildlife - Wildlife Tree Retention | | Five WTRAs have been identified for this cutblock. The total area retained is 4.4 ha. This is equivalent to 7.8% of the gross area of the cutblock, thus exceeding the cutblock-level retention requirement of 3.5%.<br><br>Three additional reserves not contributing to WTRA have also been identified .<br><br>Details of each WTRA and Reserve-Others are included in the supporting documentation of TSL TA0904. |

## STOCKING REQUIREMENTS

| SU | NAR | STANDARDS ID # | OTHER PERFORMANCE STANDARDS |
|---|---|---|---|
| 1 | 41.0 | 1062265 | SX #201- Max 50% of pref & acc WS trees; BL #208- refer to specific advance regeneration requirements. **Additional information or requirements are contained in the text of the latest version of the approved Rocky Mountain Natural Resource District Stocking Standards and is the complete standard (more footnotes apply). |
| 2 | 6.6 | 1062261 | BL #208- refer to specific advance regeneration requirements; PLI #200 -Pl can be moved from Acceptable to Preferred, to the extent specified below, only on sites where there is a low risk of damage from forest health factors: ??a??A? where there is > 50% Pl in the pre-harvest stand, Pl can be moved to preferred; ??a??A? where there is 25-50% Pl in the pre-harvest stand, Pl can be moved to preferred to a maximum of 50% well-spaced stems. For areas with less than 25% Pl in the pre-harvest stand, or where risk of damage from forest health factors is moderate or high, Pl remains acceptable. **Additional information or requirements are contained in the text of the latest version of the approved Rocky Mountain Natural Resource District Stocking Standards and is the complete standard (more footnotes apply). |
| | | | |

## ADMINISTRATION

| Amendment number | Date Typed (Yr Mo Dy) | Map Required? |
|---|---|---|
| ORIGINAL | | |

| RPF PRINTED NAME | RPF'S SIGNATURE and SEAL |
|---|---|
| Chris Lovesey | |
| DATE SIGNED | |
| June 24, 2021 | |

I certify that the work described herein fulfils standards expected of a member of the Association of British Columbia Forest Professionals, and that I did personally supervise the work.



Map attached forms an integral part of the site plan.





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THE FOLLOWING INFORMATION IS ATTACHED FOR INFORMATION ONLY AND DOES NOT FORM PART OF THE SITE PLAN

# SILVICULTURE PLAN

**ORIGINAL**

| LICENCE # | CP | BLOCK | UBI | OPENING NUMBER | FDU | LOCATION | LATITUDE / LONGITUDE |
|---|---|---|---|---|---|---|---|
| TA0904 | - | 2 | BF78U | | | Lavington Fire 1 | 50 03 59 / 116 02 45 |

## ECOLOGICAL INFORMATION

| SU | Ecology Unit | Area | Zone | Subzone | Variant / Phase | Site Series (series - %) | Elevation Avg (m) | Slope Avg (%) | Aspect | Slope Position | Rooting Depth (cm) | Soil Texture |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 41.00 | MS | dw | | 104-100 | 1,490 | 30 | NE | Middle Slope | 40 | SIL |
| 2 | 2 | 6.56 | MS | dw | | 101-100 | 1,505 | 48 | NE | Middle Slope | 40 | SiL |

## STOCKING REQUIREMENTS

### ASSESSMENT DATES

| Standard Unit | Standards ID | Regen Delay (yrs) | Freegrow Early (yrs) | Freegrow Late (yrs) |
|---|---|---|---|---|
| 1 | 1062265 | 7 | 0 | 20 |
| 2 | 1062261 | 7 | 0 | 20 |

**Min/Max Elevation Regime:** 1405 / 1600

### SU : 1 REGENERATION LAYER

| PREFERRED SPECIES | | | ACCEPTABLE SPECIES | | | POST SPACING DENSITY(sph) | | | | MAX CONIFEROUS (sph) | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Species | Min Ht. (m) | Footnotes | Species | Min Ht. (m) | Footnotes | Min | 3000 | Max | 4000 | | |
| | | | | | | WELL SPACED TREES (sph) | | | | | |
| Fdi Douglas Fir - Interior | 0.8 | | Sx Hybrid Spruce (SE x SW) | 0.8 | | Target Pref/Acc | | Minimum Pref/Acc | | Minimum Pref | Min Horizontal Dist. Pref/Acc (m) |
| Pli Lodgepole Pine - Interior | 1.4 | | Bl Subalpine Fir | 0.8 | | 1200 | | 700 | | 600 | 2.0 |
| Lw Western Larch | 1.4 | | | | | | | | | Height Relative to Competition (%) | |
| | | | | | | | | | | 125 | |

### SU : 2 REGENERATION LAYER

| PREFERRED SPECIES | | | ACCEPTABLE SPECIES | | | POST SPACING DENSITY(sph) | | | | MAX CONIFEROUS (sph) | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Species | Min Ht. (m) | Footnotes | Species | Min Ht. (m) | Footnotes | Min | 3000 | Max | 4000 | | |
| | | | | | | WELL SPACED TREES (sph) | | | | | |
| Fdi Douglas Fir - Interior | 0.8 | | Pli Lodgepole Pine - Interior | 1.4 | | Target Pref/Acc | | Minimum Pref/Acc | | Minimum Pref | Min Horizontal Dist. Pref/Acc (m) |
| Sx Hybrid Spruce (SE x SW) | 0.8 | | Bl Subalpine Fir | 0.8 | | 1200 | | 700 | | 600 | 2.0 |
| Lw Western Larch | 1.4 | | | | | | | | | Height Relative to Competition (%) | |
| | | | | | | | | | | 125 | |

## OTHER REQUIRED STOCKING INFORMATION

## ACTIVITIES

### SILVICULTURE ACTIVITY COMMENTS

| ACTIVITY | COMMENT |
|---|---|
| | |

## MANAGEMENT STRATEGY

### COARSE WOODY DEBRIS MANAGEMENT STRATEGY INFORMATION

| Performance Std. (%): | Block Target (%): | Coarse Woody Debris (m3/ha): |
|---|---|---|

## ADMINISTRATION

| Amendment number | Date Typed (Yr Mo Dy) | Map Required? |
|---|---|---|
| ORIGINAL | | |





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| RPF PRINTED NAME | RPF'S SIGNATURE and SEAL |
| --- | --- |
| Chris Lovesey | |
| DATE SIGNED | |
| June 25/2021 | |
| I certify that the work described herein fulfils standards expected of a member of the Association of British Columbia Forest Professionals, and that I did personally supervise the work. | |





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