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	-	1	BF78R			Lavington Fire 1	50 04 41 / 116 03 23

AREA UNDER THE PLAN

GROSS AREA (TAUP)	PAS	NP	WTRA / WTP	RESERVES	OTHER	NAR
226.2	6.6	0.0	23.1	2.3	0.0	194.2

ADDITIONAL COMMENTS

CONSISTENCY STATEMENT
This site plan is consistent with the results and strategies identified in the BC Timber Sales Kootenay Business Area 's 2017-2022 Forest Stewardship Plan (FSP #601). This block has been referred through Operating Plan 21-2.

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	10.0	5.0		
3	10.0	5.0		

SU	CRITICAL SITE CONDITIONS THAT AFFECT THE TIMING OF OPERATIONS. AND HOW THEY AFFECT THE TIMING
1	For All SUs: Avoid operating during periods of excessive soil moisture. Avoid operating during spring freshet or after periods of excessive rainfall. -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. - No random crossing of streams is permitted. Only cross at designated crossings indicated on the HP/ SP map or alternatives determined by the harvesting supervisor. The number of crossing locations must be minimized. Crossings acceptable to BCTS must be used at all stream crossings.

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 and strategy 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 areas (OGMA) and mature management areas (MMA). Development of this block does not encroach on any mapped non-legal OGMA's or MMA's.
Community Watersheds		This block is not in a community or domestic watershed.
Consumptive Use Streams		Harvest of this block will not impact any known consumptive use stream. No intakes licensed for domestic use occur within 1km downstream of the block. One intake licensed for conservation uses is located downstream. Additional intakes occur further (3+km) downstream on Lavington Creek. Harvesting is not anticipated to have an impact on water quality to water licenses downstream of this TSL. Harvesting supervisors and operators must ensure natural drainage is maintained at all times and monitor for sediment entering any watercourse during operations.
Cultural Heritage Resources		This block has been referred to First Nations through Operating Plan 21-2. No new information regarding cultural heritage resources was received as result of referrals. This block does not overlap any mapped AOA polygons, therefore an archelogical impact assessment (AIA) is not required. 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: a) Record the location of the artifact/resource. b)Evaluate the direct impact of the activities on the artifact/resource. 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 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 1 is within an Enhanced Resource Development Zone for timber as described within the Kootenay Boundary Higher Level Plan. 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. 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 1 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 harvest to salvage fire-damaged timber. As per sec 64 (2) of the FPPR, patch size requirements do not apply where timber harvesting is to recover fire damaged timber.
Invasive Plants		This block is susceptible to ingress of invasive plants as result of the wildfire. The following measures to prevent spread of invasive plants will apply to agreement holders carrying out harvesting and road building activities: 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. 2. In order to reduce seedbeds available for invasive plants, grass seed exposed mineral soils on: cut and fill slopes of new roads; new trails and landings; and deactivated or rehabiltated areas; during the first available spring or fall after completion of road construction and deactivation/rehab activities and no longer than 12 months following mineral soil exposure as soil erosion hazard is high. 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 to ensure invasive plant seed is not contained within the mix. 4. Personnel completing post harvest surveys will be required to identify and report all new observed infestations.
Old and Mature Forests		Harvest of this block will not impact any mapped non-legal OGMA or MMA.
Other Resource Features		No resource features as identified within sec 5(a) of the Government Actions Regulation (GAR) are known to be present in the block. 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.
Range		No range development infrastructure occurs within the block. IMAP BC indicates that a natural range barrier (a moderate slope) is present within the block. No adverse impacts to this barrier are anticipated.
Recreation Sites & Trails		No legal recreation sites or trails will be directly impacted by harvest of this block.

Riparian		Several S6 reaches are present within the block. A steep slope downslope of the block acts as a topographic barrier to upstream fish movement (Masse Environmental 2013). As per the FSP, 20m Riparian Management Zones (RMZ's) maintaining >1% of pre-harvest stems are required 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. Completion of stream and RMZ assessments revealed that in the case of 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 root 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. 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. As per strategy 2f, all reaches have a 5m or wider Machine-Free Zone established (except where severe blowdown made flagging by crews not feasible (shown as Area of Concern on SP map). Felling and skidding of timber must be away from streams unless a safety hazard dictates otherwise or it is not practicable. All slash and debris introduced to stream channels must be carefully removed. Pre-existing course woody debris adjacent to streams should be left to the extent possible to provide protection against erosion and sedimentation. 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 togeather from stream channels. 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. 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). d) Place removed debris where it will not re-enter the stream as a result of downslope movement or stream peak flows. e) Do not remove pre-harvest embedded or natural woody debris. 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. 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 or the channel bed. C) Installation of sediment and erosion control measure. d) Use of proper deactivation practices.
Road Site Plan		Revegetation following Road Construction and Deactivation: 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 deactivated and rehabiltated areas are to be grass seeded. 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.

Soils		Avoid harvesting operations during periods of excessive moisture such as spring freshet or after periods of heavy rainfall. 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 rehabilitation occurs, scatter large woody debris and/or logging slash on rehabbed corridors to reduce soil erosion. Soil information from adjacent areas was used to infer soil characteristics for this block as result of safety concerns. Adjacent blocks (82256-2) was found to consist of silt loam to sandy loam with a high % of coarse fragments (>50%). Soils disturbance limits for Standard Units within this block are as follows based on soil hazard determinations: SU1: 10% of the Net Area to be reforested (NAR) of the SU. SU2: 10% of the Net Area to be reforested (NAR) of the SU. SU3: 10% of the Net Area to be reforested (NAR) of the SU. No sensitive soils are anticipated. Roadside Work Areas: Soil disturbance must not exceed 25% of the area covered by roadside work areas. 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. Permanent Access Structures: Maximum allowable PAS is 7% of the gross cutblock area (15.8ha). Planned PAS is 6.6ha. No roads or bladed trails are planned on slopes >60% or within areas where soil conservation may be at risk for this block.
Visual Quality		This block is not subject to Visual Quality Objectives (VQO's).
Wildife - Species at Risk		Wildlife Habitat Areas (WHA's): This block does not overlap any established wildlife habitat area. 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. 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. 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. 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. 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. 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 strategies, BMPs, professional guidance documents and/or recommendations from a QRP; and document decisions made with rationale through an updated or amended project plan before proceeding with any primary forest activities in accordance with the updated or amended project plan.
Wildlife - Caribou		This block is not within legally established no-harvest or conditional harvest areas established for mountain caribou. 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. 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. Coarse 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, 5+ meters in length if available) non-merchantable logs onsite. Minimum target is 4 pieces/ha.
Wildlife - Ungulate Winter Range		TA0904 block 1 does not overlap Ungulate Winter Range as established under UWR order U-4-008.
Wildlife - Wildlife Tree Retention		Seven WTRAs are identified for block 1. They are described in the support document of the TSL package. Total WTRA Retention for this block is 23.0 ha. This is equivalent to 10.2% of the gross cutblock area and therefore exceeds the minimum cutblock level retention requirement of 3.5% identified within the 2017-2022 FSP.

STOCKING REQUIREMENTS

SU	NAR	STANDARDS ID #	OTHER PERFORMANCE STANDARDS
1	89.4	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	84.5	1062261	BL #208- refer to specific advance regeneration requirements; PLI #200 -PI 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% PI in the pre-harvest stand, PI can be moved to preferred; ??a??A? where there is 25-50% PI in the pre-harvest stand, PI can be moved to preferred to a maximum of 50% well-spaced stems. For areas with less than 25% PI in the pre-harvest stand, or where risk of damage from forest health factors is moderate or high, PI 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).
3	20.3	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).

ADMINISTRATION

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

RPF PRINTED NAME	RPF'S SIGNATURE and SEAL
Chris Lovesey	REGISTERED PROFESSIONAL FORESTER PROVINCE OF CHRISTOPHER LOVESEY BRITISH COLUMBIA NO. 4803
DATE SIGNED	
Jun 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	-	1	BF78R			Lavington Fire 1	50 04 41 / 116 03 23

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	89.36	MS	dw		104-100	1,420	18	NE	Middle Slope	40	SIL
2	2	84.49	MS	dw		101-100	1,493	20	NE	Middle Slope	40	SIL
3	3	20.33	MS	dw		104-100	1,478	30	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
3	1062265	7	0	20

Min/Max Elevation Regime: 1340 / 1630

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	

SU : 3 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	

OTHER REQUIRED STOCKING INFORMATION

ACTIVITIES

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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		

RPF PRINTED NAME	RPF'S SIGNATURE and SEAL
Chris Lovesey.	REGISTERED PROFESSIONAL FORESTER PROVINCE OF CHRISTOPHER LOVESEY BRITISH COLUMBIA NO. 4803
DATE SIGNED	Chris Lovesey
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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