

Appendix A: Example Site Plans

The example site plan reviewed and revised to include/ incorporate carbon management strategies and actions is a BC Timber Sales block in the Coast Mountains Natural Resource District, within the Kalum Timber Supply Area.

The site plan for TEsw049 has been revised to demonstrate three silviculture systems:

- Clearcut with carbon Objective Set by Government
- Continuous Cover (Single-tree Selection) with carbon Objective Set by Government
- Group Selection with carbon Objective Set by Government

Block TEsw049 (Timber Sale Licence A90581) was chosen because it is an example of a northwest BC block with high levels of felled waste, and is an example where carbon management actions can reduce that waste, thereby retaining carbon.

The statistics for the block are:

From cruise:	
Gross volume (m ³ /ha)	39,156
Net volume (m ³ /ha)	24,503
Species distribution	70% Hemlock, 25% Balsam, 5% Spruce
Number of stems per hectare	294.5
Average tree height (m)	32.6 (28.4 m merchantable height)
Average tree size (m ³)	2.4 (gross), 1.5 (net)
Scaled volume (m ³)	16,125 (7,072 m ³ sawlog)
Waste scale volume (m ³):	13,343 (6,084 m ³ sawlog)

The site plan revisions include wording changes in **red** that are specific to management of carbon at the site, or operational, level, as suggested within the Final Report for “Forest Carbon Stewardship at the Site Level”. Comments in **blue** are also provided to give some context to the changes made for carbon management. **Highlighted** items show where measureable/ quantifiable descriptions of carbon benefits can be included within a site plan.

Note that in digital versions of this report, the actual revised site plans are provided under separate cover.

This page intentionally left blank

**BC Timber Sales' site plan for TEsw049: revised to demonstrate
Clearcut
with carbon Objective Set by Government**

This page intentionally left blank



BCTS
BC Timber Sales

Skeena

SITE PLAN

CLEARCUT with CARBON OSBG

REVISED FROM ORIGINAL (Original SP date: 2013/02/20)

TENURE IDENTIFICATION

LICENCE #	CP	BLOCK	UBI	OPENING NUMBER	FDU	LOCATION	LATITUDE / LONGITUDE
A90581	-	TEsw049	BI3FE	1031079-	T Fiddler	10 km Fiddler Mainline	54 46 30 / 128 17 36

AREA UNDER THE PLAN

GROSS AREA (TAUP)	PAS	NP	WTRA / WTP	RESERVES	OTHER	NAR
63.2	2.8	1.5	5.5	0.0	0.0	53.4

ADDITIONAL COMMENTS

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 Structures (%)	Access
1	5.0	5%	25.0	7.0	
2	5.0	5%			
SU	CRITICAL SITE CONDITIONS THAT AFFECT THE TIMING OF OPERATIONS, AND HOW THEY AFFECT THE TIMING				
1	The 04 sites within this Standards Unit are moist so care must be taken to ensure site degradation limits are adhered to during harvest activities. Ground based harvesting should be restricted to the dry summer period or to the winter period when the ground is frozen and/or protected by a compressible snow layer.				
2	The 04 and 06 sites within this Standards Unit are moist so care must be taken to ensure site degradation limits are adhered to during harvest activities. Ground based harvesting should be restricted to the dry summer period or to the winter period when the ground is frozen and/or protected by a compressible snow layer. It will be difficult to achieve site degradation limits in all but the driest summers if skidders are used on this Standards Unit.				

RESULTS AND STRATEGIES

Biodiversity Objectives	
Result or Strategy Description	<p>A1-TSK-KA-02S For roads that fall under BCTS' responsibility (i.e. covered by Forest Service Road, or Timber Sale Licence), BCTS will:</p> <p>1a) Perform a risk assessment to determine and document an inspection frequency. Road maintenance inspections will be completed in accordance with the results of the assessment, or</p> <p>1b) If a risk assessment has not been completed, a minimum inspection* frequency of once per year will apply, and,</p> <p>1c) A road inspection under snow-free conditions will be conducted</p> <p>2) Actions for addressing items that are identified through road inspections, based on priorities set by BCTS, will be undertaken that reflect the results of the inspections.</p> <p>* Inspections may be carried out by personnel appointed by BCTS, or by the TSL Holder</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	The Licensee will regularly inspect, document, and prioritise for action roads that will be inactive for more than nine months. As a minimum, inactive roads will be checked annually (once per calendar year), under snow-free conditions.
Result or Strategy Description	<p>A1-TSK-KA-21R</p> <p>1) On blocks where layout activities have not yet started**, wildlife tree retention for a harvest unit* is consistent with Table 6 of the Kalum Sustainable Resource Management Plan (April 2006)</p> <p>a) Where a BEC subzone that exists within a Landscape Unit (LU) is not identified for that LU in Table 6, the closest similar BEC classification identified for that LU will be used for the purposes of this result.</p> <p>2) Wildlife tree retention on blocks where layout activities have started will conform to the approved FDP in effect immediately prior to approval of the FSP</p> <p>* Harvest unit: as defined in the Kalum SRMP (April 2006)</p>
Applies:	YES

How Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>TESw049 is located within the Skeena River Kalum Landscape Unit. 8.8% of the cutblock area has been designated as WTRA which exceeds the minimum wildlife tree retention requirements of 5% (CWH) for the Skeena River Kalum Landscape Unit listed in Table 6 of the Kalum SRM</p> <p>P. The extra WTRA over the 5% target contributes to biodiversity and wildlife objectives as well as to Carbon Objectives and represents XXX tCO₂e of retained carbon storage at 2030 and 2050. In addition, 100 stems per ha of Carbon Retention Stems will be retained scattered across the block. These trees represent XXX tCO₂e of retained carbon storage at 2030 and 2050. The Carbon Retention Stems also contribute to biodiversity and wildlife objectives. In addition, snags will be assessed for safety and where safe and practicable left standing.</p> <p><u>Comments:</u></p> <p><i>Carbon Retention Stocking Standards may require sympathetic administration of Danger Tree regulations in some regions. At a block level assessing all snags will be costly. Some form of incentive would be required to ensure buy-in from Licencees. Similar stands to this have shown that less than 50% of snags in tree class 3 to 7 will be assessed as safe for level 3 disturbance as defined in the Wildlife/Danger Tree Assessor's Course Workbook (2017). A portion of these trees would also be in locations where they obstruct the flow of wood to roadside and must be removed for operational efficiencies. Snags are important wildlife and biodiversity anchors and some research has suggested standing snags have slower decomposition rates than snags that are on the ground (Lewis and Harley, 2005).</i></p> <p><i>Actions with a carbon benefit, such as additional WTRA area and Carbon Retention Stems, could be quantified in the Site Plan. A guidance document for reporting carbon numbers should be developed to aid tracking of carbon initiatives.</i></p>
Result or Strategy Description	<p>A1-TSK-KA-35R No forest harvesting by the FSP Holder of old seral stage forest within the Old Growth Management Areas (OGMAs)* other than for insect or disease control measures that are necessary to mitigate severe damage to the habitat attributes in the OGMAs, or other forest values in the landscape, or in accordance with strategy TSK-KA-36</p> <p>* As shown on the FSP maps, which correspond to the OGMAs shown on Map 4 of the Kalum SRMP (April 2006).</p>
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not within an OGMA.
Result or Strategy Description	<p>A1-TSK-KA-36S</p> <ol style="list-style-type: none"> Allow up to 10 hectares or 10% of an individual Old Growth Management Area (OGMA) *, whichever is less, to be disturbed for one or more of the following purposes: <ol style="list-style-type: none"> allowing road development where no practicable alternative exist; to better reflect physical features that were intended to form the actual boundaries of the OGMA; to improve harvest boundary alignment in a way that will contribute to the maintenance of the OGMA; to address a compelling forest health issue; or, to shift the location of the contiguous area of the OGMA to improve the retention of old forest attributes as identified through field assessment. Any planned alteration of spatially defined OGMAs that does not meet the criteria in (1) above will be forwarded to the Agency responsible for the Kalum SRMP. A summary will be provided to the District Manager describing the reason for the disturbance of the OGMA, and identifying an alternative OGMA(s) within the same BEC variant within a landscape unit, provided the alternative OGMA: <ol style="list-style-type: none"> is of equal or greater extent in total than the area to be disturbed; and, will result in equal or greater retention of key old forest attributes that are understood to be important for biodiversity conservation. <p>* As shown on the FSP maps, which correspond to the OGMAs shown on Map 4 of the Kalum SRMP.</p>
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not within an OGMA.
Result or Strategy Description	<p>A1-TSK-KA-37R Within the Skeena Islands Area**:</p> <ol style="list-style-type: none"> On areas harvested or authorized by BCTS under this FSP: <ol style="list-style-type: none"> Harvest operations will be in accordance with guidance mutually agreed between representatives of BCTS and the MoE***, or Harvest operations will be conducted as follows: <ol style="list-style-type: none"> For forest types* identified as "High" conservation value**, no harvesting will occur, other than for road construction necessary to access other areas. For forest types* identified as "Medium" conservation value**, harvesting will be for deciduous trees only (other than incidental harvest of coniferous trees for road construction or safety purposes), employing small-patch harvesting (openings less than 5 ha). At least 70% of the area will be maintained at a mid-seral (or older) stage, and at least 30% of the areas will be at a mature or older seral stage. For forest types* identified as "Low" conservation value**, at least 30% of the area will be maintained at a mid-seral (or older) stage. <p>* Forest types are limited to CWHws1/07; CWHws1/08; CWHvm1/09; CWHvm1/10. ** As shown on the FSP maps. This information corresponds to the map provided with the Kalum SRMP (April 2006) *** MoE representative = Ecosystem Specialist or Ecosystem Biologist</p>
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not within the Skeena Islands.

Result or Strategy Description	A1-TSK-KA-38R No harvesting or road construction within the uncommon reticulated fens in the Miliglit Creek Sensitive Area* * As shown on the FSP maps
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not within the Miliglit Creek Sensitive Area.
Cultural Heritage Resources	
Result or Strategy Description	<p>A1-TSK-KA-27S</p> <ol style="list-style-type: none"> 1) Where site specific cultural heritage resource information for an area in a Forest Development Unit is not available, BCTS will make use of the Archaeological Overview Assessments for the Kalum TSA, TFL 41, and TFL 1: <ol style="list-style-type: none"> a) Any blocks within a "High" archaeological potential polygon will have an Archaeological Impact Assessment (AIA) done before harvesting commences. 2) For any potential cultural heritage resource sites identified by operational personnel (e.g. layout, road construction, or harvesting crews) which were not previously identified through cultural heritage resource information sharing as described in TSK-KA-26, and for which a process or policy that describes how to deal with that cultural heritage resource is not in place or has not been shared with the appropriate First Nation(s): <ol style="list-style-type: none"> a) A BCTS representative will be notified; b) A site visit will be conducted to determine the need for mitigative measures or for a Preliminary Field Reconnaissance or Archaeological Impact Assessment to be done 3) Any new cultural heritage resource information resulting from item (2) above will be shared with the appropriate First Nation(s) in accordance with item (5) below. 4) Any new cultural heritage resource information resulting from item (2) above and a description of any mitigative measures will be provided to the BC Timber Sales Manager in accordance with item (5) below. 5) Information noted in (3) and (4) above will be shared/provided as follows: <ol style="list-style-type: none"> a) Where a cultural heritage resource feature is discovered before a cutting authority is issued, at or before Timber Sale Licence issuance. a) Where a cultural heritage resource feature is discovered after a cutting authority is issued, the information will be shared/provided within two weeks of a BCTS representative being notified of the cultural heritage resource features' discovery.
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>Not within a high Archaeological Overview Assessment polygon. No CMTs or areas with high subsurface potential were identified within the area to harvest by field crews. CMTs were located within WTRA#2. The Cultural Heritage Resources pre-harvest evaluation noted the potential for several travel and resource trails within the block, despite extra attention looking for possible trails on the logical travel routes no indications of any trails were noted.</p> <p>In the event that operational personnel (road construction and or harvesting crews) identify a potential Cultural Heritage Resource within the block.</p> <ul style="list-style-type: none"> - Operations will be halted so that the site is protected from damage; - A BCTS representative will be notified; - A site visit will be conducted to evaluate the site and determine the need for mitigation measures or for a Preliminary Field Reconnaissance or Archaeological Impact Assessment to be done. - Where a CHR site is confirmed, the resulting information and mitigation measures will be provided to the Timber Sale Manager. - BCTS will share resulting information with potentially affected First Nations within 2 weeks of notification of the CHR sites discovery.
Result or Strategy Description	<p>TSK-KA-26S BCTS will meet regularly with local First Nation groups that have asserted claim area within the BCTS FDUs. As a minimum, meetings must occur annually.</p> <ul style="list-style-type: none"> - Request from both the Ministry of Forests and Range and the First Nations the opportunity to review and discuss cultural heritage resources of continuing importance (including but not limited to traditional use information, archaeological information, and traditional use studies where they are available), ideally in conjunction with first nation representatives. - Where traditional use information is made available, BCTS will hold any information received in confidence. It is only with the express written consent or direction of the holder of the Traditional Use information that BCTS will release any traditional use information to any other party (Including other First Nation groups, the Government of BC, or the BC Ministry of Forests and Range). - BCTS will review with respective First Nations the areas where forest development operations are planned, with the intent of describing and addressing the concerns of both parties. Specifically: <ul style="list-style-type: none"> • Determine areas of concern that may result from forest management activities when compared with First Nation interests or activities, or that may occur between First Nations groups as a result of different forest management approaches. • Attempt to resolve any conflicts through consensus. BCTS will prepare a short summary indicating whether there were any issues and how they were resolved. • If conflicts cannot be resolved, BC Timber Sales will prepare a summary of the concerns and how BCTS has attempted to address the concerns. <p>Summaries* of this process will be provided to the Skeena Business Area Timber Sales Manager (TSM), and copied to the First Nation representative.</p> <p>In the unlikely event that meetings have not occurred, documentation of the efforts made to meet and/or review information with First Nations will be provided to the TSM by BC Timber Sales. This will allow the TSM to assess if efforts were reasonable and consistent with the intent of this Strategy.</p> <p>* summaries will respect confidentiality</p>

Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	BCTS consultation and information sharing for TEsw049 is consistent with strategy TSK-KA-26 in the BCTS-Kalum Forest Stewardship Plan Extension 2011-2016 as reviewed by Gail Campbell, RPF on January 7, 2013. Potential concerns raised include: Block level: Gitxsan: No block specific interests have been communicated to BCTS Kitselas: No block specific interests have been communicated to BCTS General/Landscape Level: Gitxsan: Management of large diameter cedar trees; cedar conservation; management of cultural heritage resources Kitselas: Salmon habitat; management of cultural heritage resources
Result or Strategy Description	TSK-KA-28S For any block with Cedar or Cypress, removal of Cedar or Cypress from retention areas (including WTPs or Riparian Management Zones* (RMZs) for cultural purposes occurs as follows: <ul style="list-style-type: none"> - No more than 5% of the co-dominant/ dominant stems within a WTP are removed, with no more than 10% of the stems within a given hectare, unless the Site Plan describes how the WTP is able to retain its function; and - Removal of co-dominant/ dominant stems from within an RMZ area must be consistent with the RMZ retention described in result TSK-KA-17, unless the Site Plan describes how the RMZ is able to retain its function; and - When from within an area within an active cutting authority that is held by BCTS or one of its licensees, removal is authorized through a letter of agreement between a First Nation Council and BCTS, with a copy to the District Manager of the Kalum Forest District <p>* Removal of stems from within Riparian Reserve Zones will be as per the Forest Planning and Practices Regulation - currently, removal for cultural purposes is not an allowed activity within RRZs.</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	No more than 5% of the co-dominant/ dominant stems within a WTP are allowed to be removed, with no more than 10% of the stems being removed from within a given hectare. Removal must be authorized through a letter of agreement between a First Nation Council and BCTS, with a copy to the District Manager of the Kalum Forest District.
Soil Objectives	
Result or Strategy Description	A1-TSK-KA-AAS During the period of this FSP the TSM will undertake to comply with sections 35 and 36 of the FPPR. The TSM will notify each holder of a timber sale license or road permit to which the plan relates that FPPR sections 35 and 36 apply to the holder's primary forest activities carried out during the term of the plan.
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	This Site Plan is consistent with section 35 (Soil Disturbance Limits) and section 36 (Permanent Access Structure Limits) of the FPPR. All holders of a Timber Sale or Road Permit to which the plan relates are hereby notified that FPPR sections 35 and 36 apply to the holder's primary forest activities carried out during the term of the plan. Result A1-TSK-KA-AAS applies as described in the Soil Disturbance table on page 1 of this Site Plan. <u>Comments:</u> <i>Reducing Site Degradation has potential carbon benefits. Some research indicates that the rate of carbon decomposition may be increased for forest floor that is buried (i.e. like areas of site preparation or site degradation). The rate of carbon decomposition is unlikely to be increased by more than 1% on a block level but site degradation also potentially impacts carbon by reducing the productivity of the site (reducing the sites ability to sequester carbon).</i>
Result or Strategy Description	A1-TSK-KA-ABS During the period of this FSP, roads that are not required for silviculture or access to additional harvesting opportunities and are practicable to rehabilitate will be rehabilitated and reforested to the appropriate stocking standard. <u>Comments:</u> <i>Successful uptake of this strategy will require changes to the appraisal system to allow road rehabilitation as an allowable cost or for an agency such as FESBC to fund road rehabilitation.</i>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Stubs 2 and 4 are not required for silviculture access and do not access additional timber. Following completion of harvesting, Stubs 2 and 4 will be rehabilitated and reforested. Stubs 2 and 4 total 0.3ha, the 0.3ha of road reforested within 6 years represent approximately XXX tCO₂e of additional carbon sequestration at 2030 and XXX tCO₂e of additional carbon sequestration at 2050. <u>Comments:</u> <i>Carbon benefits could be adapted from 'Growing More Carbon and Habitat by Rehabilitating Roads Info Sheet, July 2018.'</i> <i>A guidance document for reporting carbon numbers should be developed to aid tracking of carbon initiatives.</i>

Recreation Resources	
Result or Strategy Description	<p>TSK-KA-29R On these established Recreation Trails or Sites with established objectives:</p> <ul style="list-style-type: none"> - Big Cedar Recreation Trail - Bonney Lake Portage Recreational Trails - Clearwater Lakes Recreation Site - Hai Lake Recreation Trail - Maroon Mountain Recreation Trail - Mt. Elizabeth Recreation Trail - Onion Lake Recreation Trail - Onion Lake Recreation Ski Trails - Pine Lake Recreation Trail - Robinson Ridge Recreation Trail - Sterling Mountain Recreation Trail - Thornhill Mountain Recreation Trail <p>No disturbance by harvesting, road construction, or silviculture activities to natural vegetation within 10 m of trail centerline other than for a required crossing.</p> <p>Development activities that occur within 50 m either side of trail centerline will only occur after the planned activity has been referred to the Ministry responsible for the trail.</p> <p>Timber Sale Licence, Road Permit, or Forest Service Road submission indicates that development is within 50 m of the trail and describes the results of the referral to the Ministry responsible for the trail.</p> <p>A crossing of the trail is permitted if the crossing is required to access productive forest land that would otherwise be isolated.</p> <p>The trail location is re-established if the crossing disturbs it. Alternatively, the trail can be relocated away from the crossing. The timing of the trail crossing, re-establishment, or trail relocation will require consultation with the Ministry responsible for the trail.</p> <p>A trail crossing is deactivated once it is no longer required.</p>
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not near an established Recreation Trail or Site.
Result or Strategy Description	<p>TSK-KA-30R On these established Recreation Sites with established objectives:</p> <ul style="list-style-type: none"> - Bonney Lake Recreation Site - Clearwater Lakes Recreation Site - Deception Lake Recreation Site - Glory Hole Recreation Site - Jigsaw Lake Recreation Site - Pine Lake Recreation Site - Red Sand Lake Interpretive Forest Site - West Lake Recreation Site <p>No disturbance* to areas within 10 m of lake shorelines, river-, stream-, or creek-banks, or marine foreshore. (This only applies to sites where an RRZ is not in existence). The remainder of the area within the recreation sites will be reserved from disturbance other than where BCTS and the Kalum District Manager agree the disturbance will be for the improvement of the recreation experience, or where action or access is required to prevent or address potential losses due to fire, wind, or forest health factors.</p> <p>* from activities related to BCTS' road construction, harvesting or silviculture activities</p>
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not near an established Recreation Site.
Result or Strategy Description	<p>TSK-KA-33R On all established recreation sites or trails with established objectives (excepting Deception Lake, which has had access cut-off):</p> <p>At least four-wheel drive status is maintained for roads under the control of BCTS that are the only access to the trail or site.</p>
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not near an established Recreation Trail or Site.

Riparian Management	
Result or Strategy Description	<p>A1-TSK-KA-17R</p> <ol style="list-style-type: none"> 1) On all streams*, wetlands* and lakes* within or directly adjacent to blocks where layout activities have started prior to January 1, 2008**, the provisions of FPPR s. 47, 48, 49, 50, and 51 will apply, as they were at the time layout commenced. 2) On streams, wetlands and lakes identified in (4) below: for those blocks where layout activities start after January 1, 2008, maintain the forest in a hydriparian zone*** in a mature or old state, and <ol style="list-style-type: none"> a) the width of the hydriparian zone in any one location may be increased or decreased by up to 0.5 tree heights to address site specific value b) Roads are only located in the hydriparian zone if <ol style="list-style-type: none"> i) The road is necessary to access timber beyond the hydriparian zone that otherwise would be isolated from harvest, ii) Terrain conditions such as slope, gradient or terrain stability constrain road locations and dictate that sections of road enter and leave "red listed" plant communities to access timber that otherwise would be isolated from harvest, iii) The area is being accessed for mineral development, or iv) No practicable alternative exists 3) On streams, wetlands and lakes other than those identified in (4) below: for those blocks where layout activities start after January 1, 2008, <ol style="list-style-type: none"> a) Riparian management areas, riparian reserve zones, and riparian management zones (RMZ) will be as described in FPPR s. 47, 48, and 49, and the provisions of FPPR s. 50, and 51 will apply, as they were at the time layout commenced. b) retain an amount of basal area within the RMZ as follows: <ol style="list-style-type: none"> i) On S1, S2, and S3 streams, retain a minimum of 20% of the basal area of the RMZ. ii) On S4 and S5 streams, retain a minimum of 10% of the basal area of the RMZ. iii) On S6 streams, no basal area retention is necessary. iv) On all Wetlands and Lakes, a minimum of 10 % of the basal area of the RMZ will be retained. 4) The streams, wetlands and lakes mentioned in (2) and (3) above are those <ol style="list-style-type: none"> a) Identified in MAP C1 in Appendix C, or b) Within cutblocks <ol style="list-style-type: none"> i) under the authority of BCTS on which layout has started after January 1, 2008: and ii) that have more than 50% of the block area within a Water Management Unit (WMU)*** or that overlap with the WMU by more than 200 m (horizontal distance) 5) Basal area retention in RMZs may be distributed in a non-uniform manner along the stream: that is, clumps of retention may be interspersed with portions of RMZ that have no retention. 6) The use of area retention will be considered a reasonable estimate of basal area retention as long as the forest type of the retained portion of the RMZ is similar to that of the original portion. * Stream, Wetland, and Lake and associated classification is as defined in FRPA <p>** The hydriparian zone, is defined as the area that extends to the edge of the influence of water on land, or land on water, as defined by plant communities (including high bench or dry flood plain communities) or land form (e.g. gullies, immediately adjacent steep unstable terrains), plus one and one-half tree heights (horizontal distance), Tree height is the average height of merchantable trees in a cutblock, based on cruise data, or if no cruise data available, forest inventory data.</p> <p>*** As shown in APPENDIX C until the Nass South SRMP is legally established; after the Nass South SRMP is legally established, as per the established SRMP.</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	The block retains greater than the minimum 0% of the basal area in the Riparian Management Zone for the S6 streams within the block, several stream reaches are protected within WTRAs. Additional basal area retention will occur via Carbon Retention Stems as defined in the FSP stocking standards.
Timber Objectives	
Result or Strategy Description	<p>TSK-KA-03R Harvested blocks are reforested to</p> <ul style="list-style-type: none"> - at least the minimum stocking with the species identified in the stocking standards that apply to this FSP; and - meet the regeneration delay, free growing heights, and free growing dates as described in the stocking standards that apply to this FSP
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Stocking standards will be consistent with the approved FSP. Stocking Standard ID#. SU1 - 2004723; SU2 – 2004726. These are Carbon Stocking Standards as noted in the FSP.

Carbon Objectives	<p>6.1 The objectives set by government for carbon are, without unduly reducing the supply of timber from British Columbia's forests, to</p> <p>(a) enhance carbon retention or sequestration on British Columbia's forests, and</p> <p>(b) develop, promote, or take advantage of opportunities for utilization of cut trees into products that provide carbon retention, sequestration or substitution benefits.</p>
Result or Strategy Description	<p>TSK-KA-AC(R)</p> <p>For each cutblock harvested within the FSP Holder's Forest Development Unit by the FSP Holder or its contractors, the FSP Holder will offer fibre that does not meet current utilization levels to local consumers of fibre. This offer will occur prior to the FSP Holder scheduling the fibre for disposal. (For the purposes of this Result, "local" means within XX hours haul time from the cutblock.)</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>This block is expected to result in significant logs and woody material that do not meet current utilization levels and under previous management regimes would have been left on site. This material has been offered for sale to the local pellet mill. No agreement to sell this material has been reached at this point, the block is approximately 45km from the facility and cycle time would be 2.9 hours. In anticipation of utilizing residual materials, non-merchantable logs will be decked roadside and only limbs, tops and material unsuitable for pellets will be piled.</p> <p><u>Comments:</u></p> <p><i>The block is on the edge of where it would be economical to transport material to a biofuel/pellet facility. Programs to encourage utilization of this material by subsidizing transportation of residuals to facilities will expand the area where it is economic to utilize residual materials.</i></p>
Result or Strategy Description	<p>TSK-KA-AD(S)</p> <p>When developing a cutblock, stems that are known to have limited timber value may be retained for carbon storage purposes. Carbon Retention Stems are to be preferentially located in WTRAs, in RMAs, in visual retention areas, and where safe to do so, may be dispersed throughout the stand. Site Plans will describe Carbon Retention Stem characteristics.</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	<ol style="list-style-type: none"> Information attached to this site plan will describe Carbon Retention Stem characteristics and location Stocking standards in the approved FSP include criteria for carbon retention and will be adhered to. Stocking Standard ID#. SU1 - 2004723; SU2 – 2004726. The prescription calls for 100 stems per ha of Carbon Retention Stems. A range of 50 to 150 Carbon Retention Stems is considered acceptable. Retention of 100 Carbon Retention Stems per ha will result in approximately XXX tCO₂e of additional carbon storage at 2030 and 2050.
Visual Objectives	
Result or Strategy Description	<p>A1-TSK-KA-23S</p> <ol style="list-style-type: none"> A visual impact assessment (VIA) will be carried out and attached or referred to in the Site Plan for blocks that are located within known scenic areas and that are identified with a Visual Quality Objective (VQO) of Preservation (P), Retention (R), Partial Retention (PR), or Modification (M), or a Visual Sensitivity Class (VSC) of 1, 2, 3, or 4. <ol style="list-style-type: none"> Visual Sensitivity Class will be treated as having VQOs as follows: <ol style="list-style-type: none"> VSC 1 = Retention VSC 2 = Partial Retention VSC 3 and 4 = Modification VSC 5 = Maximum Modification The visual impact assessment will <ol style="list-style-type: none"> review the visual landscape from selected viewpoints (see below for viewpoint selection and criteria) describe how the visual design is consistent with the VQO. The block configuration in the signed Site Plan will reflect the visual design as described in the visual assessment Viewpoints are identified as follows: <ol style="list-style-type: none"> As shown on the FSP maps (as amended from time to time), or if no viewpoints area identified on the FSP maps, through selection of points in the field that meet the viewpoint criteria* * Viewpoint criteria: for a visual landscape, a viewpoint must be: <ol style="list-style-type: none"> At a point along a travel corridor that allows for an extended viewing experience**, or At a place that persons can stop for an extended viewing experience*** <p>** Extended viewing experience = greater than 60 seconds uninterrupted view (at the posted/ normal speed limit)</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>A VIA was completed by Rick Brouwer of Northwest Timberlands on Nov.22, 2012 titled, 'Visual Impact Assessment for Blocks laid out under Contract SD13TIF200: Skeena West - Fiddler Creek Area: Blocks TEsw022, TEsw025, TEsw030, TEsw049, and TEsw050,' the VIA showed the block was consistent with the Visual Quality Objective for the area.</p>

Water Management Objectives	
Result or Strategy Description	<p>A1-TSK-KA-18R Within Identified Watersheds* where ECA thresholds*** have been established: before harvesting commences within an Identified Watershed under authority of this FSP:</p> <ol style="list-style-type: none"> 1) Clear-cut equivalency is calculated** for the Identified Watershed as a whole, and for individual sub-basins larger than 250 ha; or 2) An assessment** is conducted, and if <ol style="list-style-type: none"> a) the threshold for clear-cut equivalency that is determined as appropriate as a measure of maintenance of natural flow regimes is more than the ECA threshold for the Identified Watershed, then that threshold is used in 3) below b) a threshold for a parameter different from clear-cut equivalency is determined to be more appropriate as a measure of maintenance of natural flow regimes, then that parameter and threshold is used in 3) below then 3) 3) If there is a parameter and/or threshold that qualifies as described in 2(a) or 2(b) above, then that parameter and/or threshold will be used for the Identified Watershed instead, and the sub-basin size identified in 3. above will not necessarily apply. <p>* Identified watersheds are:</p> <ul style="list-style-type: none"> - Community watersheds as shown on the FSP maps. Community Watersheds that are within BCTS FDU's are Carlotta (Rosswood/ Clear) Creek; Deep Creek; Drake Creek; Eneeksagilaguaw Creek; (Kleanza) Singlehurst Creek; Skovens (Usk) Creek; Spring Creek; and Virginia Brook - Watersheds within the Nass FDU that are identified as having ECA limits through a legally established objective <p>** Consistent with the Watershed Assessment Guidebook (2nd Ed, version 2.1 April 1999), or with another process determined to be acceptable by a qualified professional *** ECA Thresholds are as follows:</p> <ul style="list-style-type: none"> - For Community Watersheds: for sub-basins larger than 250 ha, 20%; for sub-basins smaller than 250 ha, the threshold may exceed 20% only if the overall clear-cut equivalency for the community watershed basin is less than 20% - For non-community watersheds identified in the Nass FDU: as per ECA limits described in a legally established objective.
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not within an Identified Watershed.
Wildlife Objectives	
Result or Strategy Description	<p>A1-TSK-KA-07R For harvested blocks</p> <ol style="list-style-type: none"> 1) within Grizzly Bear Watershed Units*, or 2) outside of Grizzly Bear Watershed Units* but within Moose Ungulate Winter Range*, where a site plan identifies that this result is necessary to provide for or conserve Moose Winter Range habitat, the stocking and inter-tree spacing requirements for the site associations described in Table A2 of Appendix A (as discussed in Section 3.2 of this FSP) are met when free-growing is declared. <p>* As shown on the FSP maps</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	TESw049 is located within the Little Oliver-Skeena River East Grizzly Bear Identified Watershed (GBIW). The block does not contain a significant amount of identifiable and stratifiable Grizzly site series (06/11 ecosystems). Wildlife stocking standards will not apply.
Result or Strategy Description	<p>A1-TSK-KA-14S</p> <ol style="list-style-type: none"> 1) Areas harvested or authorised by BCTS will be of a size and distribution that emulates the historical temporal and spatial distribution of the Natural Disturbance Types (NDTs) for the forests within the FSP area. 2) Development within an FDU will move towards the patch size and seral stage distribution targets that are in place for NDTs, and will be calculated separately for each LU that overlaps the FDU, in accordance with items 3 and 4 below. 3) Temporal: Conduct Seral stage analysis by LU and natural disturbance type <ol style="list-style-type: none"> a) Determine proportional representation of the LUs within the BCTS FDU's b) Determine representation with respect to sensitive areas c) Determine need for actions to address seral stage imbalances, based on the applicable land use objective(s)* d) If necessary, prepare action plan(s) and implement 4) Spatial: Analyse patch size distribution by LU and natural disturbance type <ol style="list-style-type: none"> a) Determine proportional representation of existing patch sizes within the BCTS FDU's b) Determine target patch size distribution for the BCTS FDU c) Determine need for actions to address patch size imbalances, based on the applicable land use objective(s)* d) If necessary, prepare action plan(s) and implement e) Prepare a summary of the allowable patch size distribution. <p>* In the Terrace, Kitimat Valley and Douglas Gardner FDU's, the applicable land use objective is the Kalum SRMP (April 2006). In the Nass and Kowesas FDU's, the applicable land use objective is the Old Growth Order (June 2004), unless superseded by a new land use objective.</p>

Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	The Patch and Seral report for 2010-2015 shows the Skeena River - Kalum LU (CWHws1) to be within the target ranges for early, mature + old, and old seral stages. The Skeena River Kalum LU has been red-flagged for patch distributions in the small and mid-sized range; however, the small and mid-sized patches are shown to be moving towards the target range over the next five years for areas that have been included in the analysis. The large patch size distribution is within the target range. The block is primarily part of a large-sized patch (this is due to a missed block in the 2010-2015 Patch and Seral report, see Block TEsw049 Patch and Seral report for details.)
Result or Strategy Description	A1-TSK-KA-15R 1) The sizes of harvest openings under this FSP are within the limitations as described in an allowable patch size distribution. 2) If there are areas that are outside of target* levels for temporal and spatial distribution: a) Starting in 2007, by April 30 of each year a report summarizing the changes in the seral and patch distribution in those areas is provided to the District Manager. This report includes changes that have occurred in the previous year, plus projected changes (i.e. planned harvest) for at least the current year. Where this report indicates movement away from the target* levels, a rationale is provided that describes management strategies for moving towards the target* levels. b) Within a specified period after the approval of this FSP, harvest activities under this FSP are shown to be static or moving toward the target* levels for these areas. This specified period shall be five (5) years for each Landscape Unit, unless otherwise determined by mutual agreement between the BC Timber Sales Manager and the District Manager. * Target levels for Landscape Units and Special Resource Management Zones are from the Kalum SRMP; Target levels for FDU are as determined through the Strategy TSK-KA-14
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	The Patch and Seral report for 2010-2015 shows the Skeena River - Kalum LU (CWHws1) to be within the target ranges for early, mature + old, and old seral stages. The Skeena River Kalum LU has been red-flagged for patch distributions in the small and mid-sized range; however, the small and mid-sized patches are shown to be moving towards the target range over the next five years for areas that have been included in the analysis. The large patch size distribution is within the target range. The block is primarily part of a large-sized patch (this is due to a missed block in the 2010-2015 Patch and Seral report, see Block TEsw049 Patch and Seral report for details.)
Result or Strategy Description	A1-TSK-KA-12S 1) For areas within FDUs under this FSP, where Moose Ungulate Winter Range (UWR) areas have been designated through an Order under the Land Act, no further action is required. 2) Subject to (1) above, for areas within FDUs under this FSP, where Moose Ungulate Winter Range areas have not been designated through an Order under the Land Act, a) a) Harvesting operations within Proposed Moose UWR* may occur during a period other than between May 1 and November 30 (inclusive), if: i) A qualified professional (QP) evaluates the Moose UWR and determines that (1) all or a portion of the UWR is not suitable as UWR, or (2) the population of moose using the UWR will not be unduly disturbed or affected by operations, or (3) there are mitigative actions that can be taken to ensure that operations that will not unduly disturb ungulates within their winter range; ii) A report is prepared by a QP to indicate mitigative actions or a different timing for operations that will not unduly disturb ungulates within their winter range; iii) BCTS implements the mitigative actions in the report. * As shown on the FSP maps, which correlate with (1) the maps provided in support to the Moose Ungulate Winter Range notices for TFL 1; TFL 41; and the Kalum TSA (Dec 2004); and (2) the habitat amount in the FPPR s. 7 Notices for Moose.
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not within Moose UWR.
Result or Strategy Description	A1-TSK-KA-13R 1) For areas within FDUs under this FSP, where Moose Ungulate Winter Range (UWR) areas have been designated through an Order under the Land Act, no further action is required. 2) 2) Subject to (1) above, for areas within FDUs under this FSP, where Moose Ungulate Winter Range areas have not been designated through an Order under the Land Act, harvesting operations within Proposed Moose Ungulate Winter Range (UWR)* a) occur i) between May 1 and November 30 (inclusive), or ii) are consistent with a report prepared by a qualified professional that meets the requirements of strategy TSK-KA-12. b) include wildlife tree retention trees or patches that are no more than the distance prescribed in (3) below from other standing mature or old-growth trees. 3) The distance in (2)(b) above is a) 250 meters, horizontal distance * As shown on the FSP maps, which correlates with the (1) maps provided in support to the Moose Ungulate Winter Range notices for TFL 1; TFL 41; and the Kalum TSA (Dec 2004); and (2) the habitat amount in the FPPR s. 7 Notices for Moose
Applies:	NO

How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not within Moose UWR.
---	-----------------------

STOCKING REQUIREMENTS

SU	NAR	STANDARDS ID #	OTHER PERFORMANCE STANDARDS
1	29.3	2004723	(SS56); SS-Kalum forest district - spruce content restricted to < 20% well spaced and FG trees on a standards unit due to leader weevil. (99): Carbon Stocking Standard, Carbon Retention Stems can contribute a maximum of 200 stems per ha of preferred and acceptable trees. The target in this site plan is 60 stems per ha. MITD will be reduced to 1.6m on hygric, sub-hydric or mechanically prepared areas (other than mechanically mounded); 1.0m on mechanically mounded sites, 1.0m on colluvial sites as identified in the Site Plan.
2	23.8	2004726	(SXS56); SXS-Kalum forest district - spruce content restricted to < 20% well spaced and FG trees on a standards unit due to leader weevil. (99): Carbon Stocking Standard, Carbon Retention Stems can contribute a maximum of 200 stems per ha of preferred and acceptable trees. The target in this site plan is 60 stems per ha. MITD will be reduced to 1.6m on hygric, sub-hydric or mechanically prepared areas (other than mechanically mounded); 1.0m on mechanically mounded sites, 1.0m on colluvial sites as identified in the Site Plan.

ADMINISTRATION

Amendment number	Date Typed (Yr Mo Dy)	Map Required?
ORIGINAL	2013 02 20	YES

RPF PRINTED NAME	RPF'S SIGNATURE and SEAL
RICO JORIMANN	
DATE SIGNED	
2013/02/20	
I certify I personally completed the work described herein.	

Map attached forms an integral part of the site plan.

SUPPORT DOCUMENT

ORIGINAL

LICENCE #	CP	BLOCK	UBI	OPENING NUMBER	FDU	LOCATION	LATITUDE / LONGITUDE
A90581	-	TEsw049	BI3FE	103I079-	T Fiddler	10 km Fiddler Mainline	54 46 30 / 128 17 36

ASSESSMENTS

VISUAL IMPACT ASSESSMENT INFORMATION					
A VIA was completed by Rick Brouwer of Northwest Timberlands on Nov.22, 2012 titled, 'Visual Impact Assessment for Blocks laid out under Contract SD13TIF200: Skeena West - Fiddler Creek Area: Blocks TEsw022, TEsw025, TEsw030, TEsw049, and TEsw050,' the VIA showed the block was consistent with the Visual Quality Objective for the area.					
PEST INCIDENCE SURVEY INFORMATION					
Pest Specific Comments					
Forest Health Comments					
No Forest Health survey is required. Dwarf mistletoe is present in the stand. Slashing of all hemlock regen above 2.0 metres will reduce the threat of losses to this pathogen. Hw with obvious signs of mistletoe infection should not be selected as Carbon Retention Stems. There was significant damage from porcupine near the road in the adjacent stand. Managing the block to a mix of species will reduce the risk from this pest. The section of the boundary from FC27 to FC38 has a moderate windthrow hazard, the boundary is located in the logical location. No edge modification treatments are prescribed. Selection of Carbon Retention Stems should consider windthrow hazard. Preferentially select Carbon Retention Stems growing on well drained microsites and that have good live crown and height to diameter ratios (trees with lots of taper).					
ARCHAEOLOGICAL IMPACT ASSESSMENT INFORMATION					
Not within a high Archaeological potential polygon. No CMTs observed within the area to harvest, no areas of subsurface potential identified. No AIA required.					
TERRAIN STABILITY FIELD AND GULLY ASSESSMENTS INFORMATION					
Terrain Stability Comments					
This block is not located within Class IV or V Terrain or on flat over steep terrain. No signs of slope instability were observed within the block (or road) boundary. A terrain stability assessment is not required for this block.					
Gully Comments					
No gullies within the block.					
VEGETATION					
RIPARIAN ASSESSMENTS					
Management Strategies					
Streams 1, 3, 4, 6, 7, 8 and 9 are small S6 streams. No basal area retention is required along these small S6 streams. Fall and yard away. These streams require a 5m Machine Free Zone with machine crossings only at designated skid bridges. Skid bridges must be constructed with appropriate materials such as puncheon to minimize channel disturbance and maintain stream bank integrity. Wherever safe and practical non-merchantable trees less than 17.5cm, understory deciduous trees, shrubs, and herbaceous vegetation within 10m of the stream channel will be retained. Streams 2 and 5 are slightly larger S6 streams that may have the potential to mobilize debris. No basal area retention is required along these S6 streams. Fall and yard away. These streams require a 5m Machine Free Zone with machine crossings only at designated skid bridges. Skid bridges must be constructed with appropriate materials such as puncheon to minimize channel disturbance and maintain stream bank integrity. Wherever safe and practical non-merchantable trees less than 17.5cm, understory deciduous trees, shrubs, and herbaceous vegetation within 10m of the stream channel will be retained. Accumulations of slash or debris that do enter streams 2 or 5 above must be cleaned out concurrent with harvesting activities					
Riparian I.D. and Class	RMA	SU	WIDTH (m)	BA or SPH Retained	Comments (Indicate if in a Community Watershed)
Stream 1, 2,3,4,5,6,7, 8 &9 S6	MFZ		5.0		
	RMZ		20.0		

SOIL ASSESSMENT							
HAZARD RATINGS				SOIL CHARACTERISTICS			
SU	Soil Comp	Soil Erosion	Soil Disp	Depth to Unfavourable Subsoil		Type of Unfavourable Subsoil	Sediment Delivery Risk (Community Watersheds)
				Min(cm)	Max(cm)		
1	VH	H	M	20.0	80.0	R	
2	VH	H	H	20.0	80.0	SEEP	
COMMENTS							
In order to achieve the 5% soil disturbance limits for Standards Unit 1 and 2 established under FPPR 35(3)(a) it is recommended that ground-based harvesting be limited to the summer period or the winter period when the soils are frozen or protected by snow. It is recommended that hoe forwarding be utilized in conjunction with conventional skidding to limit site degradation and provide a safer work environment. Shut down logging during periods of saturated soils.							

RESERVE / RETENTION INFORMATION

WTRA / WTP (INSIDE OR ATTRIBUTED TO THE BLOCK)										
I.D.#	Area	Description								
WTRA	5.5	HB947								
GROUP WTRA / WTP AND SITE DEG. CALCULATION (to be retained on the first block of the Permit only), CARBON BENEFIT SUMMARY										
Block	Gross Cutblock Area	WTRA / WTP	%	BEC	Perm Access	%	Carbon Benefit from Carbon Results and Strategies at time of harvest 2020	Carbon Benefit from Carbon Results and Strategies 2030	Carbon Benefit from Carbon Results and Strategies 2050	Carbon Benefit from Carbon Results and Strategies at rotation 2110
TEsw049	63.2	5.5	8.8	CWH/ws/1	2.8	4.4	XXX tCO ₂ e <i>Note: numbers subject to information from CBM modelling outputs</i>	XXX tCO ₂ e <i>Note: numbers subject to information from CBM modelling outputs</i>	XXX tCO ₂ e <i>Note: numbers subject to information from CBM modelling outputs</i>	XXX tCO ₂ e <i>Note: numbers subject to information from CBM modelling outputs</i>
Total # of Blocks: 1	63.2	5.5	8.8		2.8	4.4	XXX tCO ₂ e	XXX tCO ₂ e	XXX tCO ₂ e	XXX tCO ₂ e

Comments:

Actions with a carbon benefit, such as additional WTRA area and Carbon Retention Stems, could be quantified in the Site Plan and summarized as shown in the above table. A guidance document for reporting carbon numbers should be developed to aid tracking of carbon initiatives.

SUPPORTING INFORMATION

HLP/FSP CONSIDERATIONS
Wildlife/Endangered Species Comments
This block is not located within a Moose UWR or Mountain Goat UWR. Wildlife species at risk designated under FPPR s. 7(2) (a) found within the Kalum Forest District are: Coastal Tailed Frog, Great Blue Heron, Grizzly Bear, Marbled Murrelet, Fisher and Wolverine. Evidence of tailed frogs was noted just outside of WTRA#1 in stream 5. The majority of suitable habitat for tailed frogs is outside of the area to harvest. No evidence of any other species at risk was noted during the field phase of development although there is suitable habitat for Grizzly Bear and Wolverine within the block. Habitat for Grizzly bears is addressed through Wildlife Habitat Areas and special stocking standards within high value site series. There is a Grizzly Bear Wildlife Habitat Area along the west boundary of the block. No special measures are prescribed for Wolverine or Fisher at this time.
Range Comments
Not within a range tenure area.
Fisheries Comments
There are no fisheries values within the block. The block has 9 S6 streams. Stream 2 has potential permanent habitat but was tested and found not to be fish bearing in the 1:20,000 Reconnaissance Fish and Fish Habitat Inventory: Middle Skeena River Tributaries 400 - Skeena West Planning Area by Triton Environmental Consultants in 2001. The remaining streams either do not have permanent habitat above downstream barriers to fish passage or are greater than 20% gradient.
Watersheds/Hydro Assessments Comments
Maintain water quality and quantity by ensuring that timber harvesting operations will be designed to prevent or minimize any negative impacts on the water resource. No community watersheds have been identified in this area.
Sensitive Areas Comments
Not within a designated sensitive area.
Recreation Comments
There are no Recreation Sites, Trails, Backcountry Recreation Sites or other recreation features identified within or directly adjacent to this block.

Cultural Heritage Comments
Not within a high Archaeological Overview Assessment polygon. CMTs were identified by field crews but removed from the area to harvest and placed within WTRA#2. The Cultural Heritage Resources pre-harvest evaluation noted the potential for travel and resource trails within the block, no indications of any trails were noted. The block has some blueberry and devils club but surrounding areas contain similar habitat for these cultural species.
Biodiversity Emphasis/L.U. Comments
TEsw049 is located within the Skeena River Kalum Landscape Unit. 8.8% of the cutblock area has been designated as WTRA which exceeds the minimum wildlife tree retention requirements of 5% (CWH) for the Skeena River Kalum Landscape Unit listed in the Table 6 of the Kalum SRMP. The extra WTRA over the 5% target contributes to biodiversity and wildlife objectives as well as to Carbon Objectives and represents XXX tCO ₂ e of additional carbon storage in 2030 and 2050. In addition, 100 stems per ha of Carbon Retention Stems will be retained scattered across the block. These trees represent XXX tCO ₂ e of additional carbon storage in 2030 and 2050. The Carbon Retention Stems also contribute to biodiversity and wildlife objectives. TEsw049 is located within the Little Oliver-Skeena River East Grizzly Bear Identified Watershed (GBIW). The block does not contain a significant amount of identifiable and stratifiable Grizzly site series (06/11 ecosystems).
Carbon Management Comments
Carbon Strategies employed on TEsw049 include additional WTRA, retention of 100 Carbon Retention Stems per ha, rehabilitation and reforestation of 0.3ha of road not required for future access, additional retention of non-merchantable understory stems within the RMA of streams and processing and piling residual material such that it can be utilized if a future market occurs.
Other Resources Comments
To address invasive plants: 1. Use certified seed only in erosion control and grass-seeding activities 2. In the course of their duties, BCTS field team personnel will make note of occurrences of invasive plants, and will report these occurrences to the Terrace Planning Forester within ten (10) working days of noting the occurrence. The Terrace Planning Forester will then collate and pass this information to a representative of the North West Invasive Plant Council within ten (10) working days of receiving a report from a BCTS field team member.
ADDITIONAL COMMENTS:

ADMINISTRATION

Amendment number	Date Typed (Yr Mo Dy)	Map Required?
ORIGINAL	2013 02 20	YES

HARVEST PLAN

ORIGINAL

LICENCE #	CP	BLOCK	UBI	OPENING NUMBER	FDU	LOCATION	LATITUDE / LONGITUDE
A90581	-	TEsw049	BI3FE	103IO79-	T Fiddler	10 km Fiddler Mainline	54 46 30 / 128 17 36

SILVICULTURE SYSTEMS

SU	SYSTEM	VARIANT	PHASE	RESERVE	Min BA (m2/ha)	Min Residual Density (sph)
1,2	CCRES			G		
Current Stand Structure/Site Conditions			Typical old growth HB age class 9.			
Silviculture Systems SU Comments			<p>SU-1: Clear cut with Reserves. There are a several creeks within the block, see Riparian Management Strategies for more information. Terrain is generally gentle, see Harvest Plan map for a general location of slopes >40%. Workers should be aware that there is scattered blowdown and some edge blowdown in the block as well as dispersed retention via Carbon Retention Stems. This block has been prescribed Carbon Stocking Standards. A target of 100 stems/ha of Carbon Retention Stems has been selected. A range of 50 to 150 Carbon Retention Stems is considered acceptable. Carbon Retention Stems must be Layer 1 or Layer 2 trees and must not exceed the damage criteria of Table A of the Free Growing Damage Criteria for Multi-Layered Stands in British Columbia (February 2007), except as noted. A maximum of one Porodaedalea pini conk per tree is allowed on layer 1 trees and frost cracks, rotten branches, forks and crooks are allowed. Selection of Carbon Retention Stems should consider windthrow hazard. Preferentially select Carbon Retention Stems growing on well drained microsites and that have good live crown and height to diameter ratios (trees with lots of taper). The 04 sites within this Standards Unit are moist so care must be taken to ensure site degradation limits are adhered to during harvest activities. Ground based harvesting should be restricted to the dry summer period or to the winter period when the ground is frozen and/or protected by a compressible snow layer.</p> <p>SU-2: Clear cut with Reserves. There are a several creeks within the block, see Riparian Management Strategies for more information. Terrain is generally gentle, see Harvest Plan map for a general location of slopes >40%. Workers should be aware there is scattered blowdown within the block and some edge blowdown as well as dispersed retention via Carbon Retention Stems. This block has been prescribed Carbon Stocking Standards. A target of 100 stems/ha of Carbon Retention Stems has been selected. A range of 50 to 150 Carbon Retention Stems is considered acceptable. Carbon Retention Stems must be Layer 1 or Layer 2 trees and must not exceed the damage criteria of Table A of the Free Growing Damage Criteria for Multi-Layered Stands in British Columbia (February 2007), except as noted. A maximum of one Porodaedalea pini conk per tree is allowed on layer 1 trees and frost cracks, rotten branches, forks and crooks are allowed. Selection of Carbon Retention Stems should consider windthrow hazard. Preferentially select Carbon Retention Stems growing on well drained microsites and that have good live crown and height to diameter ratios (trees with lots of taper). The 04 sites within this Standards Unit are moist so care must be taken to ensure site degradation limits are adhered to during harvest activities. Ground based harvesting should be restricted to the dry summer period or to the winter period when the ground is frozen and/or protected by a compressible snow layer.</p>			
Min. Characteristics of Leave Trees (Form, Health, Vigour)			<p>Retain preferred and acceptable conifers of good form and vigour as per stocking standards. Hw advanced regeneration greater than 2m is not considered acceptable due to the presence of Hw mistletoe in the stand.</p> <p>A target of 100 stems/ha of Carbon Retention Stems has been selected. A range of 50 to 150 Carbon Retention Stems is considered acceptable. Carbon Retention Stems must be Layer 1 or Layer 2 trees and must not exceed the damage criteria of Table A of the Free Growing Damage Criteria for Multi-Layered Stands in British Columbia (February 2007), except as noted. A maximum of one Porodaedalea pini conk per tree is allowed on layer 1 trees and frost cracks, rotten branches, forks and crooks are allowed. Selection of Carbon Retention Stems should consider windthrow hazard. Preferentially select Carbon Retention Stems growing on well drained microsites and that have good live crown and height to diameter ratios (trees with lots of taper).</p> <p>Retain all trees within the WTRAs except when leaving those trees presents a safety hazard.</p>			

Additional Comments

SOIL ASSESSMENT											
SU	HAZARD RATINGS			SOIL DISTURBANCE				SOIL CHARACTERISTICS			
	Soil Comp.	Soil Erosion	Soil Disp.	Max Allow Soil Dist %	Max Allow Max Amount TAS may exceed MASD prior	Max Allow Perm Access Structures %	MASD for Roadside work areas %	Depth to Unfavorable Subsoil		Type of Unfavorable Subsoil	Sediment Delivery Risk (Comm. Watershed)
								Min (cm)	Max (cm)		
1	VH	H	M	5.0		7.0	25.0	20.0	80.0	Bedrock	
2	VH	H	H	5.0				20.0	80.0	Seepage	
SU	Critical site conditions that affect the timing of operations and how they affect the timing										
1	The 04 sites within this Standards Unit are moist so care must be taken to ensure site degradation limits are adhered to during harvest activities. Ground based harvesting should be restricted to the dry summer period or to the winter period when the ground is frozen and/or protected by a compressible snow layer.										
2	The 04 and 06 sites within this Standards Unit are moist so care must be taken to ensure site degradation limits are adhered to during harvest activities. Ground based harvesting should be restricted to the dry summer period or to the winter period when the ground is frozen and/or protected by a compressible snow layer. It will be difficult to achieve site degradation limits in all but the driest summers if skidders are used on this Standards Unit.										
SU MANAGEMENT COMMENTS											
SU	SU Description										
1	This Standards Unit is dominated by the CWHws1 01 site but has a significant amount of 04 sites. The Standards Unit is transitional between the CWHws1 and the CWHws2 with ICHmc2 influences.										
2	This Standards Unit is dominated by the CWHws1 04 site series with a significant amount of 01 on drier sites and some 06 on seepage sites. It is transitional to the CWHws2 and has ICHmc2 influences.										

SOIL MANAGEMENT COMMENTS											
Soil Conservation											
In order to achieve the 5% soil disturbance limits for Standards Unit 1 and 2 established under FPPR 35(3)(a) it is recommended that ground-based harvesting be limited to the summer period or the winter period when the soils are frozen or protected by snow. It is recommended that hoe forwarding be utilized in conjunction with conventional skidding to limit site degradation and provide a safer work environment. Shut down logging during periods of saturated soils.											
Temporary Access											
N/A											
Slope Instability											
This block is not located within Class IV or V Terrain or on flat over steep terrain. No signs of slope instability were observed within the block (or road) boundary. A terrain stability assessment is not required for this block.											

RIPARIAN ASSESSMENTS					
Management Strategies					
Streams 1, 3, 4, 6, 7, 8 and 9 are small S6 streams. No basal area retention is required along these small S6 streams. Fall and yard away. These streams require a 5m Machine Free Zone with machine crossings only at designated skid bridges. Skid bridges must be constructed with appropriate materials such as puncheon to minimize channel disturbance and maintain stream bank integrity. Wherever safe and practical non-merchantable trees less than 17.5cm, understory deciduous trees, shrubs, and herbaceous vegetation within 10m of the stream channel will be retained.					
Streams 2 and 5 are slightly larger S6 streams that may have the potential to mobilize debris. No basal area retention is required along these S6 streams. Fall and yard away. These streams require a 5m Machine Free Zone with machine crossings only at designated skid bridges. Skid bridges must be constructed with appropriate materials such as puncheon to minimize channel disturbance and maintain stream bank integrity. Wherever safe and practical non-merchantable trees less than 17.5cm, understory deciduous trees, shrubs, and herbaceous vegetation within 10m of the stream channel will be retained. Accumulations of slash or debris that do enter streams 2 or 5 above must be cleaned out concurrent with harvesting activities					
Riparian I.D. and Class	RMA	SU	WIDTH (m)	BA or SPH Retained	Comments (Indicate if in a Community Watershed)
Stream 1, 2,3,4,5,6,7, 8 & 9 S6	MFZ		5.0		
	RMZ		20.0		
COARSE WOODY DEBRIS MANAGEMENT STRATEGY INFORMATION					
This block consists of a mature stand exhibiting high levels of decay, which will contribute an amount of coarse woody debris (CWD) that meets the objective stated in FPPR section 68 (1)(a). The nature of these forests means that a high level of non-merchantable material is typically left on site. During harvesting, additional breakage of trees occurs and is often left on a site, as most is non-merchantable. This block has Carbon Stocking Standards with a target of 100 Carbon Retention Stems per ha. These trees will provide additional CWD over time. Where site occupancy and fire hazard are not significant concerns, BCTS will attempt to avoid practices such as piling and burning (except for landings and roadside), and will not conduct broadcast burning within the FSP area. The block is located in an area that may allow economic utilization of some of this residual volume. To maximize the likelihood of this occurring, non-merchantable logs at roadside will be decked and only limbs, tops and logs unsuitable for pellets piled. Even with the removal of roadside residual volumes these actions will maintain high amounts of CWD on blocks following harvest, providing essential habitat for those organisms that are dependent on CWD.					
Performance Std. (%):		Block Target (%):		Coarse Woody Debris (m3/ha):	

DEFINITIONS

ADMINISTRATION

Amendment number	Date Typed (Yr Mo Dy)	Map Required?
ORIGINAL	2013 02 20	YES

Print off the PAS/TAS table located as an attachment on the Block Details Screen and attach to this prescription.

RPF PRINTED NAME	RPF'S SIGNATURE and SEAL
RICO JORIMANN	
DATE SIGNED	
2013/02/20	
I certify I personally completed the work described herein.	

SILVICULTURE PLAN

ORIGINAL

LICENCE #	CP	BLOCK	UBI	OPENING NUMBER	FDU	LOCATION	LATITUDE / LONGITUDE
A90581	-	TEsw049	BI3FE	103I079-	T Fiddler	10 km Fiddler Mainline	54 46 30 / 128 17 36

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	A	29.8	CWH	ws	1	01-80 04-20	460	30	V	Middle Slope	80	
2	B	24.0	CWH	ws	1	04-60 01-30 06-10	445	25	V	Lower Slope	80	

STOCKING REQUIREMENTS

ASSESSMENT DATES

Standard Unit	Standards ID	Regen Delay (yrs)	Freegrow Early (yrs)	Freegrow Late (yrs)
1	2004723	6		20
2	2004726	3		20
Min/Max Elevation Regime: 370 / 520				

SU: 1 REGENERATION LAYER

PREFRRERRED SPECIES				ACCEPTABLE SPECIES			POST SPACING DENSITY (sph)				MAX CONIFEROUS (sph)		
Species		Min Ht. (m)	Footnotes	Species		Min Ht. (m)	Footnotes	Min		Max			
								WELL SPACED TREES (sph)					
Ba	Amabilis Fir	1.4	99	Sxs Sitka x Unknown hybrid Spruce	2.0	56, 99	99	Target Pref/Acc	Minimum Pref/Acc	Minimum Pref	Min Horizontal Dist. Pref/Acc (m)		
Hw	Western Hemlock	2.0	99	Plc Lodgepole Pine - Coastal	2.0								
Cw	Western Red Cedar	1.4	99										
								900	500	400	2.0		
										Height Relative to Competition (%)			
									150				

56: Bulkley forest district - spruce content restricted to <20% well-spaced and free growing trees on a standards unit due to leader weevil

99: Carbon Stocking Standard, Carbon Retention Stems can contribute a maximum of 200 stems per ha of preferred and acceptable trees

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		Max			
								WELL SPACED TREES (sph)					
Ba	Amabilis Fir	1.4	99	Sxs Sitka x Unknown hybrid Spruce	2.0	56, 99		Target Pref/Acc	Minimum Pref/Acc	Minimum Pref		Min Horizontal Dist. Pref/Acc (m)	
Hw	Western Hemlock	2.0	99	Act Black Cottonwood	1.4	99							
Cw	Western Red Cedar	1.4	99					900	500	400	2.0		
										Height Relative to Competition (%)			
										150			

56: Bulkley forest district - spruce content restricted to <20% well-spaced and free growing trees on a standards unit due to leader weevil

99: Carbon Stocking Standard, Carbon Retention Stems can contribute a maximum of 200 stems per ha of preferred and acceptable trees

OTHER REQUIRED STOCKING INFORMATION

ACTIVITIES

SILVICULTURE ACTIVITY COMMENTS	
ACTIVITY	COMMENT
Brushing	Establishment brushing is not expected to be required on Standards 1. Portions of Standards Unit 2 may require establishment brushing if fill planting is required. The anticipated brush complex is fireweed and mixed fern. Deciduous removal brushing is not expected to be required on this block.
Site Preparation	Mechanical site preparation is not expected to be required for this block provided acceptable harvesting practices are followed.
Planting	This block has two standards units both of which are complexes. Standards Unit 1 is dominated by the 01 site series and Standards Unit 2 is dominated by the 04 site series. Both Standards Units have a significant amount of advanced regeneration and have good chances for achieving natural regeneration, however both standards units are also likely to have high brush competition and if stocking is not achieved fill plants will likely require establishment brushing. The preferred reforestation method for SU1 is natural but the retention of Carbon Retention Stems that are potentially infected with mistletoe makes the acceptability of Hw risky. An alternate reforestation method for Standards Unit 1 is planting at H+1 or H+2. Suggested species mix is 60%Ba, 20%Cw and 20%Sxs. Suitable stock would be PSB410 1+0 or bigger planted to a target of 1000 stems per ha. Because of higher brush hazard and the retention of Carbon Retention Stems potentially infected with mistletoe the preferred reforestation method for SU2 is planting at H+1 or H+2. Suggested species mix is 40%Ba, 30%Cw and 30%Sxs. Suitable stock would be PSB410 1+0 or bigger planted to a target of 1000 stems per ha. The rehabilitated road sections of Spurs 2 and 4 will likely require planting to achieve stocking within the required timeframes. Suggested species mix is 50%Cw, 30%Hw and 20%Ss planted to a target of 1000 stems per ha one year following completion of rehabilitation.
Surveys	Walkthrus should be conducted on Standards Unit 2 at H+1 and H+2 to assess brush and conifer regeneration. A regeneration delay/brushing survey should be conducted at H+3 on Standards Unit 1 and 2. This survey should make recommendations on the need for fill planting, brushing and the need for any additional treatments including additional surveys. A Free Growing survey should be scheduled for both Standards Units at H+11 unless the regeneration delay survey recommends rescheduling the survey.
COARSE WOODY DEBRIS MANAGEMENT STRATEGY INFORMATION	
This block consists of a mature stand exhibiting high levels of decay, which will contribute an amount of coarse woody debris (CWD) that meets the objective stated in FPPR section 68 (1)(a). The nature of these forests means that a high level of non-merchantable material is typically left on site. During harvesting, additional breakage of trees occurs and is often left on a site, as most is non-merchantable. This block has Carbon Stocking Standards with a target of 100 Carbon Retention Stems per ha. These trees will provide additional CWD over time. Where site occupancy and fire hazard are not significant concerns, BCTS will attempt to avoid practices such as piling and burning (except for landings and roadside), and will not conduct broadcast burning within the FSP area. The block is located in an area that may allow economic utilization of some of this residual volume. To maximize the likelihood of this occurring non-merchantable logs at roadside will be decked and only limbs, tops and logs unsuitable for pellets piled. Even with the removal of roadside residual volumes these actions will maintain high amounts of CWD on blocks following harvest, providing essential habitat for those organisms that are dependent on CWD.	
Performance Std. (%):	Block Target (%): Coarse Woody Debris (m3/ha):

ADMINISTRATION

Amendment number	Date Typed (Yr Mo Dy)	Map Required?
ORIGINAL	2013 02 20	YES
RPF PRINTED NAME		RPF'S SIGNATURE and SEAL
RICO JORIMANN		
DATE SIGNED		
2013/02/20		
I certify I personally completed the work described herein.		

**BC Timber Sales' site plan for TEsw049: revised to demonstrate
Continuous Cover (Single-tree Selection)
with carbon Objective Set by Government**

This page intentionally left blank

SITE PLAN

SINGLE TREE SELECTION, with CARBON OSBG

REVISED FROM ORIGINAL (Original SP date: 2013/02/20)

TENURE IDENTIFICATION

LICENCE #	CP	BLOCK	UBI	OPENING NUMBER	FDU	LOCATION	LATITUDE / LONGITUDE
A90581	-	TEsw049	BI3FE	1031079-	T Fiddler	10 km Fiddler Mainline	54 46 30 / 128 17 36

AREA UNDER THE PLAN

GROSS AREA (TAUP)	PAS	NP	WTRA / WTP	RESERVES	OTHER	NAR
63.2	3.1	1.5	5.5	0.0	0.0	53.1

ADDITIONAL COMMENTS

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 Structures (%)	Access
1	5.0		25.0	7.0	
2	5.0				
SU	CRITICAL SITE CONDITIONS THAT AFFECT THE TIMING OF OPERATIONS, AND HOW THEY AFFECT THE TIMING				
1	The 04 sites within this Standards Unit are moist so care must be taken to ensure site degradation limits are adhered to during harvest activities. Ground based harvesting should be restricted to the dry summer period or to the winter period when the ground is frozen and/or protected by a compressible snow layer. The tenure holder has elected to utilize a single tree selection system for the creation of an uneven aged-stand structure, thereby allowing for management of a suite of other resource uses (including carbon).				
2	The 04 and 06 sites within this Standards Unit are moist so care must be taken to ensure site degradation limits are adhered to during harvest activities. Ground based harvesting should be restricted to the dry summer period or to the winter period when the ground is frozen and/or protected by a compressible snow layer. It will be difficult to achieve site degradation limits in all but the driest summers if skidders are used on this Standards Unit. The tenure holder has elected to utilize a single tree selection system for the creation of an uneven aged-stand structure, thereby allowing for management of a suite of other resource uses (including carbon).				

RESULTS AND STRATEGIES

Biodiversity Objectives	
Result or Strategy Description	<p>A1-TSK-KA-02S For roads that fall under BCTS' responsibility (i.e. covered by Forest Service Road, or Timber Sale Licence), BCTS will:</p> <p>1a) Perform a risk assessment to determine and document an inspection frequency. Road maintenance inspections will be completed in accordance with the results of the assessment, or</p> <p>1b) If a risk assessment has not been completed, a minimum inspection* frequency of once per year will apply, and,</p> <p>1c) A road inspection under snow-free conditions will be conducted</p> <p>2) Actions for addressing items that are identified through road inspections, based on priorities set by BCTS, will be undertaken that reflect the results of the inspections.</p> <p>* Inspections may be carried out by personnel appointed by BCTS, or by the TSL Holder</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	The Licensee will regularly inspect, document, and prioritize for action roads that will be inactive for more than nine months. As a minimum, inactive roads will be checked annually (once per calendar year), under snow-free conditions.
Result or Strategy Description	<p>A1-TSK-KA-21R</p> <p>1) On blocks where layout activities have not yet started**, wildlife tree retention for a harvest unit* is consistent with Table 6 of the Kalum Sustainable Resource Management Plan (April 2006)</p> <p>a) Where a BEC subzone that exists within a Landscape Unit (LU) is not identified for that LU in Table 6, the closest similar BEC classification identified for that LU will be used for the purposes of this result.</p> <p>2) Wildlife tree retention on blocks where layout activities have started will conform to the approved FDP in effect immediately prior to approval of the FSP</p> <p>* Harvest unit: as defined in the Kalum SRMP (April 2006)</p>

	** As listed in Table B7 of Appendix B to this FSP
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>TESw049 is located within the Skeena River Kalum Landscape Unit. Although the majority of the block will not be impacted by harvesting, 8.8% of the cutblock area has been designated as WTRA which exceeds the minimum wildlife tree retention requirements of 5% (CWH) for the Skeena River Kalum Landscape Unit listed in Table 6 of the Kalum SRMP. The extra WTRA over the 5% target contributes biodiversity and wildlife objectives as well as to Carbon Objectives and represents XXX tCO₂e of additional carbon storage at 2030 and 2050. In addition, 60 stems per ha of Carbon Retention Stems will be retained scattered across the area to harvest of the block. These trees represent XXX tCO₂e of additional carbon storage at 2030 and 2050. The Carbon Retention Stems also contribute to biodiversity and wildlife objectives. In addition, snags will be assessed for safety and where safe and practicable left standing.</p> <p><u>Comments:</u> <i>Carbon Retention Stocking Standards may require close review of Danger Tree regulations in some regions. At a block level assessing all snags will be costly. Some form of incentive would be required to ensure buy-in from Licencees. Similar stands to this have shown that less than 50% of snags in tree class 3 to 7 will be assessed as safe for level 3 disturbance as defined in the Wildlife/Danger Tree Assessor's Course Workbook (2017). A portion of these trees would also be in locations where they obstruct the flow of wood to roadside and must be removed for operational efficiencies. Snags are important wildlife and biodiversity anchors and some research has suggested standing snags have slower decomposition rates than snags that are on the ground (Lewis and Harley, 2005). Actions with a carbon benefit, such as additional WTRA area and Carbon Retention Stems, could be quantified in the Site Plan. A guidance document for reporting carbon numbers should be developed to aid tracking of carbon initiatives.</i></p>
Result or Strategy Description	<p>A1-TSK-KA-35R No forest harvesting by the FSP Holder of old seral stage forest within the Old Growth Management Areas (OGMAs)* other than for insect or disease control measures that are necessary to mitigate severe damage to the habitat attributes in the OGMAs, or other forest values in the landscape, or in accordance with strategy TSK-KA-36</p> <p>* As shown on the FSP maps, which correspond to the OGMAs shown on Map 4 of the Kalum SRMP (April 2006).</p>
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not within an OGMA.
Result or Strategy Description	<p>A1-TSK-KA-36S</p> <ol style="list-style-type: none"> 1) Allow up to 10 hectares or 10% of an individual Old Growth Management Area (OGMA) *, whichever is less, to be disturbed for one or more of the following purposes: <ol style="list-style-type: none"> 1) allowing road development where no practicable alternative exist; 2) to better reflect physical features that were intended to form the actual boundaries of the OGMA; 3) to improve harvest boundary alignment in a way that will contribute to the maintenance of the OGMA; 4) OGMA; 5) to address a compelling forest health issue; or, 6) to shift the location of the contiguous area of the OGMA to improve the retention of old forest attributes as identified through field assessment. 2) Any planned alteration of spatially defined OGMAs that does not meet the criteria in (1) above will be forwarded to the Agency responsible for the Kalum SRMP. 3) A summary will be provided to the District Manager describing the reason for the disturbance of the OGMA, and identifying an alternative OGMA(s) within the same BEC variant within a landscape unit, provided the alternative OGMA: <ol style="list-style-type: none"> a) is of equal or greater extent in total than the area to be disturbed; and, b) will result in equal or greater retention of key old forest attributes that are understood to be important for biodiversity conservation. <p>* As shown on the FSP maps, which correspond to the OGMAs shown on Map 4 of the Kalum SRMP.</p>
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not within an OGMA.
Result or Strategy Description	<p>A1-TSK-KA-37R Within the Skeena Islands Area**:</p> <ol style="list-style-type: none"> 1) On areas harvested or authorized by BCTS under this FSP: <ol style="list-style-type: none"> a) Harvest operations will be in accordance with guidance mutually agreed between representatives of BCTS and the MoE***, or b) Harvest operations will be conducted as follows: <ol style="list-style-type: none"> i) For forest types* identified as "High" conservation value**, no harvesting will occur, other than for road construction necessary to access other areas. ii) For forest types* identified as "Medium" conservation value**, harvesting will be for deciduous trees only (other than incidental harvest of coniferous trees for road construction or safety purposes), employing small-patch harvesting (openings less than 5 ha). At least 70% of the area will be maintained at a mid-seral (or older) stage, and at least 30% of the areas will be at a mature or older seral stage. iii) For forest types* identified as "Low" conservation value**, at least 30% of the area will be maintained at a mid-seral (or older) stage. <p>* Forest types are limited to CWHws1/07; CWHws1/08; CWHvm1/09; CWHvm1/10. ** As shown on the FSP maps. This information corresponds to the map provided with the Kalum SRMP (April 2006) *** MoE representative = Ecosystem Specialist or Ecosystem Biologist</p>

Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not within the Skeena Islands.
Result or Strategy Description	A1-TSK-KA-38R No harvesting or road construction within the uncommon reticulated fens in the Miligit Creek Sensitive Area* * As shown on the FSP maps
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not within the Miligit Creek Sensitive Area.
Cultural Heritage Resources	
Result or Strategy Description	<p>A1-TSK-KA-27S</p> <ol style="list-style-type: none"> 1) Where site specific cultural heritage resource information for an area in a Forest Development Unit is not available, BCTS will make use of the Archaeological Overview Assessments for the Kalum TSA, TFL 41, and TFL 1: <ol style="list-style-type: none"> a) Any blocks within a "High" archaeological potential polygon will have an Archaeological Impact Assessment (AIA) done before harvesting commences. 2) For any potential cultural heritage resource sites identified by operational personnel (e.g. layout, road construction, or harvesting crews) which were not previously identified through cultural heritage resource information sharing as described in TSK-KA-26, and for which a process or policy that describes how to deal with that cultural heritage resource is not in place or has not been shared with the appropriate First Nation(s): <ol style="list-style-type: none"> a) A BCTS representative will be notified; b) A site visit will be conducted to determine the need for mitigative measures or for a Preliminary Field Reconnaissance or Archaeological Impact Assessment to be done 3) Any new cultural heritage resource information resulting from item (2) above will be shared with the appropriate First Nation(s) in accordance with item (5) below. 4) Any new cultural heritage resource information resulting from item (2) above and a description of any mitigative measures will be provided to the BC Timber Sales Manager in accordance with item (5) below. 5) Information noted in (3) and (4) above will be shared/provided as follows: <ol style="list-style-type: none"> a) Where a cultural heritage resource feature is discovered before a cutting authority is issued, at or before Timber Sale Licence issuance. b) Where a cultural heritage resource feature is discovered after a cutting authority is issued, the information will be shared/provided within two weeks of a BCTS representative being notified of the cultural heritage resource features' discovery.
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>Not within a high Archaeological Overview Assessment polygon. No CMTs or areas with high subsurface potential were identified within the area to harvest by field crews. CMTs were located within WTRA#2. The Cultural Heritage Resources pre-harvest evaluation noted the potential for several travel and resource trails within the block, despite extra attention looking for possible trails on the logical travel routes no indications of any trails were noted.</p> <p>In the event that operational personnel (road construction and or harvesting crews) identify a potential Cultural Heritage Resource within the block.</p> <ul style="list-style-type: none"> - Operations will be halted so that the site is protected from damage; - A BCTS representative will be notified; - A site visit will be conducted to evaluate the site and determine the need for mitigation measures or for a Preliminary Field Reconnaissance or Archaeological Impact Assessment to be done. - Where a CHR site is confirmed, the resulting information and mitigation measures will be provided to the Timber Sale Manager. - BCTS will share resulting information with potentially affected First Nations within 2 weeks of notification of the CHR sites discovery.

Result or Strategy Description	<p>TSK-KA-26S BCTS will meet regularly with local First Nation groups that have asserted claim area within the BCTS FDUs. As a minimum, meetings must occur annually.</p> <ul style="list-style-type: none"> - Request from both the Ministry of Forests and Range and the First Nations the opportunity to review and discuss cultural heritage resources of continuing importance (including but not limited to traditional use information, archaeological information, and traditional use studies where they are available), ideally in conjunction with first nation representatives. - Where traditional use information is made available, BCTS will hold any information received in confidence. It is only with the express written consent or direction of the holder of the Traditional Use information that BCTS will release any traditional use information to any other party (Including other First Nation groups, the Government of BC, or the BC Ministry of Forests and Range). - BCTS will review with respective First Nations the areas where forest development operations are planned, with the intent of describing and addressing the concerns of both parties. Specifically: <ul style="list-style-type: none"> • Determine areas of concern that may result from forest management activities when compared with First Nation interests or activities, or that may occur between First Nations groups as a result of different forest management approaches. • Attempt to resolve any conflicts through consensus. BCTS will prepare a short summary indicating whether there were any issues and how they were resolved. • If conflicts cannot be resolved, BC Timber Sales will prepare a summary of the concerns and how BCTS has attempted to address the concerns. <p>Summaries* of this process will be provided to the Skeena Business Area Timber Sales Manager (TSM), and copied to the First Nation representative.</p> <p>In the unlikely event that meetings have not occurred, documentation of the efforts made to meet and/or review information with First Nations will be provided to the TSM by BC Timber Sales. This will allow the TSM to assess if efforts were reasonable and consistent with the intent of this Strategy.</p> <p>* summaries will respect confidentiality</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>BCTS consultation and information sharing for TEsw049 is consistent with strategy TSK-KA-26 in the BCTS-Kalum Forest Stewardship Plan Extension 2011-2016 as reviewed by Gail Campbell, RPF on January 7, 2013. Potential concerns raised include:</p> <p>Block level:</p> <p>Gitxsan: No block specific interests have been communicated to BCTS</p> <p>Kitselas: No block specific interests have been communicated to BCTS</p> <p>General/Landscape Level:</p> <p>Gitxsan: Management of large diameter cedar trees; cedar conservation; management of cultural heritage resources</p> <p>Kitselas: Salmon habitat; management of cultural heritage resources</p>
Result or Strategy Description	<p>TSK-KA-28S For any block with Cedar or Cypress, removal of Cedar or Cypress from retention areas (including WTPs or Riparian Management Zones* (RMZs) for cultural purposes occurs as follows:</p> <ul style="list-style-type: none"> - No more than 5% of the co-dominant/ dominant stems within a WTP are removed, with no more than 10% of the stems within a given hectare, unless the Site Plan describes how the WTP is able to retain its function; and - Removal of co-dominant/ dominant stems from within an RMZ area must be consistent with the RMZ retention described in result TSK-KA-17, unless the Site Plan describes how the RMZ is able to retain its function; and - When from within an area within an active cutting authority that is held by BCTS or one of its licensees, removal is authorized through a letter of agreement between a First Nation Council and BCTS, with a copy to the District Manager of the Kalum Forest District <p>* Removal of stems from within Riparian Reserve Zones will be as per the Forest Planning and Practices Regulation - currently, removal for cultural purposes is not an allowed activity within RRZs.</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	No more than 5% of the co-dominant/ dominant stems within a WTP are allowed to be removed, with no more than 10% of the stems being removed from within a given hectare. Removal must be authorized through a letter of agreement between a First Nation Council and BCTS, with a copy to the District Manager of the Kalum Forest District.
Soil Objectives	
Result or Strategy Description	<p>A1-TSK-KA-AAS During the period of this FSP the TSM will undertake to comply with sections 35 and 36 of the FPPR. The TSM will notify each holder of a timber sale license or road permit to which the plan relates that FPPR sections 35 and 36 apply to the holder's primary forest activities carried out during the term of the plan.</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>This Site Plan is consistent with section 35 (Soil Disturbance Limits) and section 36 (Permanent Access Structure Limits) of the FPPR. All holders of a Timber Sale or Road Permit to which the plan relates are hereby notified that FPPR sections 35 and 36 apply to the holder's primary forest activities carried out during the term of the plan. Result A1-TSK-KA-AAS applies as described in the Soil Disturbance table on page 1 of this Site Plan.</p> <p><u>Comments:</u></p> <p><i>Reducing Site Degradation has potential carbon benefits. Some research indicates that the rate of carbon decomposition may be increased for forest floor that is buried (i.e. like areas of site preparation or site degradation). The rate of carbon decomposition is unlikely to be increased by more than 1% on a block level but site degradation also potentially impacts carbon by reducing the productivity of the site (reducing the sites ability to sequester carbon).</i></p>

Result or Strategy Description	A1-TSK-KA-ABS During the period of this FSP roads that are not required for silviculture or access to additional harvesting opportunities and are practicable to rehabilitate will be rehabilitated and reforested to the appropriate stocking standard. <i>Comments:</i> Successful uptake of this strategy will require changes to the appraisal system to allow road rehabilitation as an allowable cost or for an agency such as FESBC to fund road rehabilitation.
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	All roads are required for future harvesting opportunities and will not be rehabilitated.
Recreation Resources	
Result or Strategy Description	TSK-KA-29R On these established Recreation Trails or Sites with established objectives: <ul style="list-style-type: none"> - Big Cedar Recreation Trail - Bonney Lake Portage Recreational Trails - Clearwater Lakes Recreation Site - Hai Lake Recreation Trail - Maroon Mountain Recreation Trail - Mt. Elizabeth Recreation Trail - Onion Lake Recreation Trail - Onion Lake Recreation Ski Trails - Pine Lake Recreation Trail - Robinson Ridge Recreation Trail - Sterling Mountain Recreation Trail - Thornhill Mountain Recreation Trail No disturbance by harvesting, road construction, or silviculture activities to natural vegetation within 10 m of trail centerline other than for a required crossing. Development activities that occur within 50 m either side of trail centerline will only occur after the planned activity has been referred to the Ministry responsible for the trail. Timber Sale Licence, Road Permit, or Forest Service Road submission indicates that development is within 50 m of the trail and describes the results of the referral to the Ministry responsible for the trail. A crossing of the trail is permitted if the crossing is required to access productive forest land that would otherwise be isolated. The trail location is re-established if the crossing disturbs it. Alternatively, the trail can be relocated away from the crossing. The timing of the trail crossing, re-establishment, or trail relocation will require consultation with the Ministry responsible for the trail. A trail crossing is deactivated once it is no longer required.
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not near an established Recreation Trail or Site.
Result or Strategy Description	TSK-KA-30R On these established Recreation Sites with established objectives: <ul style="list-style-type: none"> - Bonney Lake Recreation Site - Clearwater Lakes Recreation Site - Deception Lake Recreation Site - Glory Hole Recreation Site - Jigsaw Lake Recreation Site - Pine Lake Recreation Site - Red Sand Lake Interpretive Forest Site - West Lake Recreation Site No disturbance* to areas within 10 m of lake shorelines, river-, stream-, or creek-banks, or marine foreshore. (This only applies to sites where an RRZ is not in existence). The remainder of the area within the recreation sites will be reserved from disturbance other than where BCTS and the Kalum District Manager agree the disturbance will be for the improvement of the recreation experience, or where action or access is required to prevent or address potential losses due to fire, wind, or forest health factors. * from activities related to BCTS' road construction, harvesting or silviculture activities
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not near an established Recreation Site.
Result or Strategy Description	TSK-KA-33R On all established recreation sites or trails with established objectives (excepting Deception Lake, which has had access cut-off): At least four-wheel drive status is maintained for roads under the control of BCTS that are the only access to the trail or site.
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not near an established Recreation Trail or Site.

Riparian Management	
Result or Strategy Description	<p>A1-TSK-KA-17R</p> <ol style="list-style-type: none"> 1) On all streams*, wetlands* and lakes* within or directly adjacent to blocks where layout activities have started prior to January 1, 2008**, the provisions of FPPR s. 47, 48, 49, 50, and 51 will apply, as they were at the time layout commenced. 2) On streams, wetlands and lakes identified in (4) below: for those blocks where layout activities start after January 1, 2008, maintain the forest in a hydriparian zone** in a mature or old state, and <ol style="list-style-type: none"> a) the width of the hydriparian zone in any one location may be increased or decreased by up to 0.5 tree heights to address site specific value b) Roads are only located in the hydriparian zone if <ol style="list-style-type: none"> i) The road is necessary to access timber beyond the hydriparian zone that otherwise would be isolated from harvest, ii) Terrain conditions such as slope, gradient or terrain stability constrain road locations and dictate that sections of road enter and leave "red listed" plant communities to access timber that otherwise would be isolated from harvest, iii) The area is being accessed for mineral development, or iv) No practicable alternative exists 3) On streams, wetlands and lakes other than those identified in (4) below: for those blocks where layout activities start after January 1, 2008, <ol style="list-style-type: none"> a) Riparian management areas, riparian reserve zones, and riparian management zones (RMZ) will be as described in FPPR s. 47, 48, and 49, and the provisions of FPPR s. 50, and 51 will apply, as they were at the time layout commenced. b) retain an amount of basal area within the RMZ as follows: <ol style="list-style-type: none"> i) On S1, S2, and S3 streams, retain a minimum of 20% of the basal area of the RMZ. ii) On S4 and S5 streams, retain a minimum of 10% of the basal area of the RMZ. iii) On S6 streams, no basal area retention is necessary. iv) On all Wetlands and Lakes, a minimum of 10 % of the basal area of the RMZ will be retained. 4) The streams, wetlands and lakes mentioned in (2) and (3) above are those <ol style="list-style-type: none"> a) Identified in MAP C1 in Appendix C, or b) Within cutblocks <ol style="list-style-type: none"> i) under the authority of BCTS on which layout has started after January 1, 2008: and ii) that have more than 50% of the block area within a Water Management Unit (WMU)*** or that overlap with the WMU by more than 200 m (horizontal distance) 5) Basal area retention in RMZs may be distributed in a non-uniform manner along the stream: that is, clumps of retention may be interspersed with portions of RMZ that have no retention. 6) The use of area retention will be considered a reasonable estimate of basal area retention as long as the forest type of the retained portion of the RMZ is similar to that of the original portion. * Stream, Wetland, and Lake and associated classification is as defined in FRPA <p>** The hydriparian zone, is defined as the area that extends to the edge of the influence of water on land, or land on water, as defined by plant communities (including high bench or dry flood plain communities) or land form (e.g. gullies, immediately adjacent steep unstable terrains), plus one and one-half tree heights (horizontal distance), Tree height is the average height of merchantable trees in a cutblock, based on cruise data, or if no cruise data available, forest inventory data.</p> <p>*** As shown in APPENDIX C until the Nass South SRMP is legally established; after the Nass South SRMP is legally established, as per the established SRMP.</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	The block retains greater than the minimum 0% of the basal area in the Riparian Management Zone for the S6 streams within the block, several stream reaches are protected within WTRAs. The planned single tree selection silviculture system will result in significant basal area retention within the Riparian Management Zones of all streams.
Timber Objectives	
Result or Strategy Description	<p>TSK-KA-03R Harvested blocks are reforested to</p> <ul style="list-style-type: none"> - at least the minimum stocking with the species identified in the stocking standards that apply to this FSP; and - meet the regeneration delay, free growing heights, and free growing dates as described in the stocking standards that apply to this FSP
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Stocking standards will be consistent with the approved FSP. Stocking Standard ID#. SU1 - 2004879; SU2 – 2004879. These are Carbon Stocking Standards as noted in the FSP.

Carbon Objectives	<p>6.1 The objectives set by government for carbon are, without unduly reducing the supply of timber from British Columbia's forests, to</p> <p>(a) enhance carbon retention or sequestration on British Columbia's forests, and</p> <p>(b) develop, promote, or take advantage of opportunities for utilization of cut trees into products that provide carbon retention, sequestration or substitution benefits.</p>
Result or Strategy Description	<p>TSK-KA-AC(R)</p> <p>For each cutblock harvested within the FSP Holder's Forest Development Unit by the FSP Holder or its contractors, the FSP Holder will offer fibre that does not meet current utilization levels to local consumers of fibre. This offer will occur prior to the FSP Holder scheduling the fibre for disposal. (For the purposes of this Result, "local" means within 5 hours haul time from the cutblock.)</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>This block is expected to result in significant logs and woody material that do not meet current utilization levels and under previous management regimes would have been left on site. This material has been offered for sale to the local pellet mill. No agreement to sell this material has been reached at this point, the block is approximately 45km from the facility and cycle time would be 2.9 hours. In anticipation of utilizing residual materials, non-merchantable logs will be decked roadside and only limbs, tops and material unsuitable for pellets will be piled.</p> <p><u>Comments:</u></p> <p><i>The block is on the edge of where it would be economical to transport material to a biofuel/pellet facility. Programs to encourage utilization of this material by subsidizing transportation of residuals to facilities will expand the area where it is economic to utilize residual materials.</i></p>
Result or Strategy Description	<p>TSK-KA-AD(S)</p> <p>When developing a cutblock, stems that are known to have limited timber value may be retained for carbon storage purposes. Carbon retention stems are to be preferentially located in WTRAs, in RMAs, in visual retention areas, and where safe to do so, may be dispersed throughout the stand. Site Plans will describe Carbon Retention Stem characteristics.</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>1) Information attached to this site plan will describe Carbon Retention Stem characteristics and location</p> <p>2) Stocking standards in the approved FSP include criteria for carbon retention and will be adhered to. Stocking Standard ID# SU1 - 2004879; SU2 – 2004879. The prescription calls for 60 stems per ha of Carbon Retention Stems across the area to harvest. A range of 50 to 100 Carbon Retention Stems is considered acceptable. Retention of 60 Carbon Retention Stems per ha on the area to be harvested will result in approximately XXX tCO₂e of additional carbon storage at 2030 and 2050.</p>
Visual Objectives	
Result or Strategy Description	<p>A1-TSK-KA-23S</p> <p>1) A visual impact assessment (VIA) will be carried out and attached or referred to in the</p> <p>2) Site Plan for blocks that are located within known scenic areas and that are identified with a Visual Quality Objective (VQO) of Preservation (P), Retention (R), Partial Retention (PR), or Modification (M), or a Visual Sensitivity Class (VSC) of 1, 2, 3, or 4.</p> <p>a) Visual Sensitivity Class will be treated as having VQOs as follows:</p> <p>i) VSC 1 = Retention</p> <p>ii) VSC 2 = Partial Retention</p> <p>iii) VSC 3 and 4 = Modification</p> <p>iv) VSC 5 = Maximum Modification</p> <p>3) The visual impact assessment will</p> <p>a) review the visual landscape from selected viewpoints (see below for viewpoint selection and criteria)</p> <p>b) describe how the visual design is consistent with the VQO.</p> <p>4) The block configuration in the signed Site Plan will reflect the visual design as described in the visual assessment</p> <p>5) Viewpoints are identified as follows:</p> <p>a) As shown on the FSP maps (as amended from time to time), or if no viewpoints area identified on the FSP maps, through selection of points in the field that meet the viewpoint criteria* * Viewpoint criteria: for a visual landscape, a viewpoint must be:</p> <p>i) At a point along a travel corridor that allows for an extended viewing experience**, or</p> <p>ii) At a place that persons can stop for an extended viewing experience***</p> <p>** Extended viewing experience = greater than 60 seconds uninterrupted view (at the posted/ normal speed limit)</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>A VIA was completed by Rick Brouwer of Northwest Timberlands on Nov.22, 2012 titled, 'Visual Impact Assessment for Blocks laid out under Contract SD13TIF200: Skeena West - Fiddler Creek Area: Blocks TEsw022, TEsw025, TEsw030, TEsw049, and TEsw050,' the VIA showed the block was consistent with the Visual Quality Objective for the area. The choice of a single tree silviculture system means the block is very difficult to see from the selected viewpoints.</p>

Water Management Objectives	
Result or Strategy Description	<p>A1-TSK-KA-18R Within Identified Watersheds* where ECA thresholds*** have been established: before harvesting commences within an Identified Watershed under authority of this FSP:</p> <ol style="list-style-type: none"> 1) Clear-cut equivalency is calculated** for the Identified Watershed as a whole, and for individual sub-basins larger than 250 ha; or 2) An assessment** is conducted, and if <ol style="list-style-type: none"> a) the threshold for clear-cut equivalency that is determined as appropriate as a measure of maintenance of natural flow regimes is more than the ECA threshold for the Identified Watershed, then that threshold is used in 3) below b) a threshold for a parameter different from clear-cut equivalency is determined to be more appropriate as a measure of maintenance of natural flow regimes, then that parameter and threshold is used in 3) below then 3) 3) If there is a parameter and/or threshold that qualifies as described in 2(a) or 2(b) above, then that parameter and/or threshold will be used for the Identified Watershed instead, and the sub-basin size identified in 3. above will not necessarily apply. <p>* Identified watersheds are:</p> <ul style="list-style-type: none"> - Community watersheds as shown on the FSP maps. Community Watersheds that are within BCTS FDU are Carlotta (Rosswood/ Clear) Creek; Deep Creek; Drake Creek; Eneeksagilaguaw Creek; (Kleanza) Singlehurst Creek; Skovens (Usk) Creek; Spring Creek; and Virginia Brook - Watersheds within the Nass FDU that are identified as having ECA limits through a legally established objective <p>** Consistent with the Watershed Assessment Guidebook (2nd Ed, version 2.1 April 1999), or with another process determined to be acceptable by a qualified professional *** ECA Thresholds are as follows:</p> <ul style="list-style-type: none"> - For Community Watersheds: for sub-basins larger than 250 ha, 20%; for sub-basins smaller than 250 ha, the threshold may exceed 20% only if the overall clear-cut equivalency for the community watershed basin is less than 20% - For non-community watersheds identified in the Nass FDU: as per ECA limits described in a legally established objective.
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not within an Identified Watershed.
Wildlife Objectives	
Result or Strategy Description	<p>A1-TSK-KA-07R For harvested blocks</p> <ol style="list-style-type: none"> 1) within Grizzly Bear Watershed Units*, or 2) outside of Grizzly Bear Watershed Units* but within Moose Ungulate Winter Range*, where a site plan identifies that this result is necessary to provide for or conserve Moose Winter Range habitat, the stocking and inter-tree spacing requirements for the site associations described in Table A2 of Appendix A (as discussed in Section 3.2 of this FSP) are met when free-growing is declared. <p>* As shown on the FSP maps</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	TESW049 is not located within Moose Ungulate Winter Range. It is located within the Little Oliver-Skeena River East Grizzly Bear Identified Watershed (GBIW). The block does not contain a significant amount of identifiable and stratifiable Grizzly site series (06/11 ecosystems). Wildlife stocking standards will not apply.
Result or Strategy Description	<p>A1-TSK-KA-14S</p> <ol style="list-style-type: none"> 1) Areas harvested or authorised by BCTS will be of a size and distribution that emulates the historical temporal and spatial distribution of the Natural Disturbance Types (NDTs) for the forests within the FSP area. 2) Development within an FDU will move towards the patch size and seral stage distribution targets that are in place for NDTs, and will be calculated separately for each LU that overlaps the FDU, in accordance with items 3 and 4 below. 3) Temporal: Conduct Seral stage analysis by LU and natural disturbance type <ol style="list-style-type: none"> a) Determine proportional representation of the LUs within the BCTS FDU b) Determine representation with respect to sensitive areas c) Determine need for actions to address seral stage imbalances, based on the applicable land use objective(s)* d) If necessary, prepare action plan(s) and implement 4) Spatial: Analyse patch size distribution by LU and natural disturbance type <ol style="list-style-type: none"> a) Determine proportional representation of existing patch sizes within the BCTS FDU b) Determine target patch size distribution for the BCTS FDU c) Determine need for actions to address patch size imbalances, based on the applicable land use objective(s)* d) If necessary, prepare action plan(s) and implement e) Prepare a summary of the allowable patch size distribution. <p>* In the Terrace, Kitimat Valley and Douglas Gardner FDU, the applicable land use objective is the Kalum SRMP (April 2006). In the Nass and Kowesas FDU, the applicable land use objective is the Old Growth Order (June 2004), unless superseded by a new land use objective.</p>
Applies:	YES

How Result or Strategy Applies to the Site (or Rationale if it does not apply)	The single tree silviculture system within the planned harvest area means that this block does not impact the historical and spatial distribution of the NDTs for the forests within the FSP area.
Result or Strategy Description	<p>A1-TSK-KA-15R</p> <ol style="list-style-type: none"> 1) The sizes of harvest openings under this FSP are within the limitations as described in an allowable patch size distribution. 2) If there are areas that are outside of target* levels for temporal and spatial distribution: <ol style="list-style-type: none"> a) Starting in 2007, by April 30 of each year a report summarizing the changes in the seral and patch distribution in those areas is provided to the District Manager. This report includes changes that have occurred in the previous year, plus projected changes (i.e. planned harvest) for at least the current year. Where this report indicates movement away from the target* levels, a rationale is provided that describes management strategies for moving towards the target* levels. b) Within a specified period after the approval of this FSP, harvest activities under this FSP are shown to be static or moving toward the target* levels for these areas. This specified period shall be five (5) years for each Landscape Unit, unless otherwise determined by mutual agreement between the BC Timber Sales Manager and the District Manager. <p>* Target levels for Landscape Units and Special Resource Management Zones are from the Kalum SRMP; Target levels for FDUs are as determined through the Strategy TSK-KA-14</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	The single tree silviculture system within the planned harvest area means that this block does not impact the historical and spatial distribution of the NDTs for the forests within the FSP area.
Result or Strategy Description	<p>A1-TSK-KA-12S</p> <ol style="list-style-type: none"> 1) For areas within FDUs under this FSP, where Moose Ungulate Winter Range (UWR) areas have been designated through an Order under the Land Act, no further action is required. 2) Subject to (1) above, for areas within FDUs under this FSP, where Moose Ungulate Winter Range areas have not been designated through an Order under the Land Act, <ol style="list-style-type: none"> a) a) Harvesting operations within Proposed Moose UWR* may occur during a period other than between May 1 and November 30 (inclusive), if: <ol style="list-style-type: none"> i) A qualified professional (QP) evaluates the Moose UWR and determines that <ol style="list-style-type: none"> (1) all or a portion of the UWR is not suitable as UWR, or (2) the population of moose using the UWR will not be unduly disturbed or affected by operations, or (3) there are mitigative actions that can be taken to ensure that operations that will not unduly disturb ungulates within their winter range; ii) A report is prepared by a QP to indicate mitigative actions or a different timing for operations that will not unduly disturb ungulates within their winter range; iii) BCTS implements the mitigative actions in the report. <p>* As shown on the FSP maps, which correlate with (1) the maps provided in support to the Moose Ungulate Winter Range notices for TFL 1; TFL 41; and the Kalum TSA (Dec 2004); and (2) the habitat amount in the FPPR s. 7 Notices for Moose.</p>
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not within Moose UWR.
Result or Strategy Description	<p>A1-TSK-KA-13R</p> <ol style="list-style-type: none"> 1) For areas within FDUs under this FSP, where Moose Ungulate Winter Range (UWR) areas have been designated through an Order under the Land Act, no further action is required. 2) 2) Subject to (1) above, for areas within FDUs under this FSP, where Moose Ungulate Winter Range areas have not been designated through an Order under the Land Act, harvesting operations within Proposed Moose Ungulate Winter Range (UWR)* <ol style="list-style-type: none"> a) occur <ol style="list-style-type: none"> i) between May 1 and November 30 (inclusive), or ii) are consistent with a report prepared by a qualified professional that meets the requirements of strategy TSK-KA-12. b) include wildlife tree retention trees or patches that are no more than the distance prescribed in (3) below from other standing mature or old-growth trees. 3) The distance in (2)(b) above is <ol style="list-style-type: none"> a) 250 meters, horizontal distance <p>* As shown on the FSP maps, which correlates with the (1) maps provided in support to the Moose Ungulate Winter Range notices for TFL 1; TFL 41; and the Kalum TSA (Dec 2004); and (2) the habitat amount in the FPPR s. 7 Notices for Moose</p>
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not within Moose UWR.

STOCKING REQUIREMENTS

SU	NAR	STANDARDS ID #	OTHER PERFORMANCE STANDARDS
1	29.3	2004879	(SS56): SS-Kalum forest district - spruce content restricted to < 20% well spaced and FG trees on a standards unit due to leader weevil. (99): Carbon Stocking Standard, Carbon Retention Stems can contribute a maximum of 200 stems per ha of preferred and acceptable trees. The target in this site plan is 60 stems per ha. MITD will be reduced to 1.6m on hygric, sub-hydric or mechanically prepared areas (other than mechanically mounded); 1.0 metres for Layer 4 of multi-layer stands where planting has occurred to allow stump planting; 1.0m on mechanically mounded sites; 1.0m on colluvial sites; 0.0m between Layer 1 trees in multi-storey stands.
2	23.8	2004879	(SXS56): SXS-Kalum forest district - spruce content restricted to < 20% well spaced and FG trees on a standards unit due to leader weevil. (99): Carbon Stocking Standard, Carbon Retention Stems can contribute a maximum of 200 stems per ha of preferred and acceptable trees. The target in this site plan is 60 stems per ha. MITD will be reduced to 1.6m on hygric, sub-hydric or mechanically prepared areas (other than mechanically mounded); 1.0 metres for Layer 4 of multi-layer stands where planting has occurred to allow stump planting; 1.0m on mechanically mounded sites; 1.0m on colluvial sites; 0.0m between Layer 1 trees in multi-storey stands.

ADMINISTRATION

Amendment number	Date Typed (Yr Mo Dy)	Map Required?
ORIGINAL	2013 02 20	YES

RPF PRINTED NAME	RPF'S SIGNATURE and SEAL
RICO JORIMANN	
DATE SIGNED	
2013/02/20	
I certify I personally completed the work described herein.	

Map attached forms an integral part of the site plan.

SUPPORT DOCUMENT

ORIGINAL

LICENCE #	CP	BLOCK	UBI	OPENING NUMBER	FDU	LOCATION	LATITUDE / LONGITUDE
A90581	-	TEsw049	BI3FE	103I079-	T Fiddler	10 km Fiddler Mainline	54 46 30 / 128 17 36

ASSESSMENTS

VISUAL IMPACT ASSESSMENT INFORMATION					
A VIA was completed by Rick Brouwer of Northwest Timberlands on Nov.22, 2012 titled, 'Visual Impact Assessment for Blocks laid out under Contract SD13TIF200: Skeena West - Fiddler Creek Area: Blocks TEsw022, TEsw025, TEsw030, TEsw049, and TEsw050,' the VIA showed the block was consistent with the Visual Quality Objective for the area.					
PEST INCIDENCE SURVEY INFORMATION					
Pest Specific Comments					
Forest Health Comments					
No Forest Health survey is required. Dwarf mistletoe is present in the stand. Slashing of all hemlock regen above 2.0 metres will reduce the threat of losses to this pathogen. Hw with obvious signs of mistletoe infection should not be selected as Carbon Retention Stems. There was significant damage from porcupine near the road in the adjacent stand. Managing the block to a mix of species will reduce the risk from this pest. The blocks will be harvested using a single tree selection system – 35% removal across all size ranges. This results in a moderate treatment hazard risk and low windthrow risk.					
ARCHAEOLOGICAL IMPACT ASSESSMENT INFORMATION					
Not within a high Archaeological potential polygon. No CMTs observed within the area to harvest (CMTs were removed from the area to harvest and placed within WTRA #2), no areas of subsurface potential identified. No AIA required.					
TERRAIN STABILITY FIELD AND GULLY ASSESSMENTS INFORMATION					
Terrain Stability Comments					
This block is not located within Class IV or V Terrain or on flat over steep terrain. No signs of slope instability were observed within the block (or road) boundary. A terrain stability assessment is not required for this block.					
Gully Comments					
No gullies within the block.					
VEGETATION					
RIPARIAN ASSESSMENTS					
Management Strategies					
Streams 1, 3, 4, 6, 7, 8 and 9 are small S6 streams. No basal area retention is required along these small S6 streams but the planned single tree selection silviculture system will result in significant basal area retention within the Riparian Management Zones of all streams. Fall and yard away. These streams require a 5m Machine Free Zone with machine crossings only at designated skid bridges. Skid bridges must be constructed with appropriate materials such as puncheon to minimize channel disturbance and maintain stream bank integrity. Wherever safe and practical non-merchantable trees less than 17.5cm, understory deciduous trees, shrubs, and herbaceous vegetation within 5m of the stream channel will be retained. Streams 2 and 5 are slightly larger S6 streams that may have the potential to mobilize debris. No basal area retention is required along these S6 streams but the planned single tree selection silviculture system will result in significant basal area retention within the Riparian Management Zones of all streams. Fall and yard away. These streams require a 5m Machine Free Zone with machine crossings only at designated skid bridges. Skid bridges must be constructed with appropriate materials such as puncheon to minimize channel disturbance and maintain stream bank integrity. Wherever safe and practical non-merchantable trees less than 17.5cm, understory deciduous trees, shrubs, and herbaceous vegetation within 5m of the stream channel will be retained. Accumulations of slash or debris that do enter streams 2 or 5 above must be cleaned out concurrent with harvesting activities					
Riparian I.D. and Class	RMA	SU	WIDTH (m)	BA or SPH Retained	Comments (Indicate if in a Community Watershed)
	MFZ		5.0		

Stream 1, 2,3,4,5,6,7, 8 &9 S6	RMZ		20.0				
SOIL ASSESSMENT							
HAZARD RATINGS				SOIL CHARACTERISTICS			
SU	Soil Comp	Soil Erosion	Soil Disp	Depth To Unfavourable Subsoil		Type of Unfavourable Subsoil	Sediment Delivery Risk (Community Watersheds)
				Min(cm)	Max(cm)		
1	VH	H	M	20.0	80.0	R	
2	VH	H	H	20.0	80.0	SEEP	
COMMENTS							
In order to achieve the 5% soil disturbance limits for Standards Unit 1 and 2 established under FPPR 35(3)(a) it is recommended that ground-based harvesting be limited to the summer period or the winter period when the soils are frozen or protected by snow. It is recommended that hoe forwarding be utilized in conjunction with conventional skidding to limit site degradation and provide a safer work environment. Shut down logging during periods of saturated soils.							

RESERVE / RETENTION INFORMATION

WTRA / WTP (INSIDE OR ATTRIBUTED TO THE BLOCK)										
I.D.#	Area	Description								
WTRA	5.5	HB947								
GROUP WTRA / WTP AND SITE DEG. CALCULATION (to be retained on the first block of the Permit only), CARBON BENEFIT SUMMARY										
Block	Gross Cutblock Area	WTRA / WTP	%	BEC	Perm Access	%	Carbon Benefit from Carbon Results and Strategies at harvest 2020	Carbon Benefit from Carbon Results and Strategies 2030	Carbon Benefit from Carbon Results and Strategies 2050	Carbon Benefit from Carbon Results and Strategies 2110
TEsw049	63.2	5.5	8.8	CWH/ws/1	3.1	4.8	XXX tCO ₂ e <i>Note: numbers subject to information from CBM modelling outputs</i>	XXX tCO ₂ e <i>Note: numbers subject to information from CBM modelling outputs</i>	XXX tCO ₂ e <i>Note: numbers subject to information from CBM modelling outputs</i>	XXX tCO ₂ e <i>Note: numbers subject to information from CBM modelling outputs</i>
Total # of Blocks: 1	63.2	5.5	8.8		3.1	4.8	XXX tCO ₂ e	XXX tCO ₂ e	XXX tCO ₂ e	XXX tCO ₂ e

Comments:

Actions with a carbon benefit, such as additional WTRA area and Carbon Retention Stems, could be quantified in the Site Plan and summarized as shown in the above table. A guidance document for reporting carbon numbers should be developed to aid tracking of carbon initiatives.

SUPPORTING INFORMATION

HLP/FSP CONSIDERATIONS
Wildlife/Endangered Species Comments
<p>This block is not located within a Moose UWR or Mountain Goat UWR.</p> <p>Wildlife species at risk designated under FPPR s. 7(2) (a) found within the Kalum Forest District are: Coastal Tailed Frog, Great Blue Heron, Grizzly Bear, Marbled Murrelet, Fisher and Wolverine. Evidence of tailed frogs was noted just outside of WTRA#1 in stream 5. The majority of suitable habitat for tailed frogs is outside of the area to harvest. No evidence of any other species at risk was noted during the field phase of development although there is suitable habitat for Grizzly Bear and Wolverine within the block. Habitat for Grizzly bears is addressed through Wildlife Habitat Areas and special stocking standards within high value site series. There is a Grizzly Bear Wildlife Habitat Area along the west boundary of the block. No special measures are prescribed for Wolverine or Fisher at this time.</p>
Range Comments
Not within a range tenure area.
Fisheries Comments
<p>There are no fisheries values within the block. The block has 9 S6 streams. Stream 2 has potential permanent habitat but was tested and found not to be fish bearing in the 1:20,000 Reconnaissance Fish and Fish Habitat Inventory: Middle Skeena River Tributaries 400 - Skeena West Planning Area by Triton Environmental Consultants in 2001. The remaining streams either do not have permanent habitat above downstream barriers to fish passage or are greater than 20% gradient.</p>
Watersheds/Hydro Assessments Comments
<p>Maintain water quality and quantity by ensuring that timber harvesting operations will be designed to prevent or minimize any negative impacts on the water resource. No community watersheds have been identified in this area.</p>
Sensitive Areas Comments
Not within a designated sensitive area.
Recreation Comments
There are no Recreation Sites, Trails, Backcountry Recreation Sites or other recreation features identified within or directly adjacent to this block.
Cultural Heritage Comments
<p>Not within a high Archaeological Overview Assessment polygon. CMTs were identified by field crews but removed from the area to harvest and placed within WTRA#2. The Cultural Heritage Resources pre-harvest evaluation noted the potential for travel and resource trails within the block, no indications of any trails were noted. The block has some blueberry and devils club but surrounding areas contain similar habitat for these cultural species.</p>
Biodiversity Emphasis/L.U. Comments
<p>TEsw049 is located within the Skeena River Kalum Landscape Unit. 8.8% of the cutblock area has been designated as WTRA which exceeds the minimum wildlife tree retention requirements of 5% (CWH) for the Skeena River Kalum Landscape Unit listed in the Table 6 of the Kalum SRMP. The extra WTRA over the 5% target contributes to biodiversity and wildlife objectives as well as to Carbon Objectives and represents XXX tCO₂e of additional carbon storage in 2030 and 2050. In addition, 60 stems per ha of Carbon Retention Stems will be retained scattered across the block. These trees represent XXX tCO₂e of additional carbon storage in 2030 and 2050. The Carbon Retention Stems also contribute to biodiversity and wildlife objectives. TEsw049 is located within the Little Oliver-Skeena River East Grizzly Bear Identified Watershed (GBIW). The block does not contain a significant amount of identifiable and stratifiable Grizzly site series (06/11 ecosystems).</p>
Carbon Management Comments
<p>Carbon Strategies employed on TEsw049 include additional WTRA, retention of 60 Carbon Retention Stems per ha, use of a single tree silviculture system resulting in less requirement for piling and burning, additional retention of non-merchantable understory stems within the RMA of streams and processing and piling residual material such that it can be utilized if a future market occurs.</p>
Other Resources Comments
<p>To address invasive plants:</p> <ol style="list-style-type: none"> 1) Use certified seed only in erosion control and grass-seeding activities 2) In the course of their duties, BCTS field team personnel will make note of occurrences of invasive plants, and will report these occurrences to the Terrace Planning Forester within ten (10) working days of noting the occurrence. The Terrace Planning Forester will then collate and pass this information to a representative of the North West Invasive Plant Council within ten (10) working days of receiving a report from a BCTS field team member.
ADDITIONAL COMMENTS:

ADMINISTRATION

Amendment number	Date Typed (Yr Mo Dy)	Map Required?
ORIGINAL	2013 02 20	YES

HARVEST PLAN

ORIGINAL

LICENCE #	CP	BLOCK	UBI	OPENING NUMBER	FDU	LOCATION	LATITUDE / LONGITUDE
A90581	-	TEsw049	BI3FE	103I079-	T Fiddler	10 km Fiddler Mainline	54 46 30 / 128 17 36

SILVICULTURE SYSTEMS

SU	SYSTEM	VARIANT	PHASE	RESERVE	Min BA (m2/ha)	Min Residual Density (sph)
1,2	Single Tree			G		
Current Stand Structure/Site Conditions			Typical old growth HB age class 9.			
Silviculture Systems SU Comments			<p>SU-1: Single Tree Selection. A single tree selection harvesting method will be used. Target retention will be 65% across all diameter classes, however this is a guideline and retention between 50-75% will be acceptable due to the long-term management objective of creating a multi-age/ multi-story stand with multiple regular entries.</p> <p>Openings will not be any wider than two tree-lengths. Opening size will not be greater than 0.2ha. Retain all Cw of good form and vigour within harvest units wherever safe and practicable.</p> <p>There are a several creeks within the block, see Riparian Management Strategies for more information. Terrain is generally gentle, see Harvest Plan map for a general location of slopes >40%. Workers should be aware that there is scattered blowdown as well as dispersed retention via Carbon Retention Stems. This block has been prescribed Carbon Stocking Standards. A target of 60 stems/ha of Carbon Retention Stems in the harvest area has been selected. A range of 50 to 100 Carbon Retention Stems is considered acceptable. Carbon Retention Stems must be Layer 1 or Layer 2 trees and must not exceed the damage criteria of Table A of the Free Growing Damage Criteria for Multi-Layered Stands in British Columbia (February 2007), except as noted. A maximum of one Porodaedalea pini conk per tree is allowed on layer 1 trees and frost cracks, rotten branches, forks and crooks are allowed. Selection of Carbon Retention Stems should consider windthrow hazard. Preferentially select Carbon Storage Trees growing on well drained microsites and that have good live crown and height to diameter ratios (trees with lots of taper). The 04 sites within this Standards Unit are moist so care must be taken to ensure site degradation limits are adhered to during harvest activities. Ground based harvesting should be restricted to the dry summer period or to the winter period when the ground is frozen and/or protected by a compressible snow layer.</p> <p>SU-2: Single Tree Selection. A single tree selection harvesting method will be used. Target retention will be 65% across all diameter classes, however this is a guideline and retention between 50-75% will be acceptable due to the long-term management objective of creating a multi-age/ multi-story stand with multiple regular entries.</p> <p>Openings will not be any wider than two tree-lengths. Opening size will not be greater than 0.2ha. Retain all Cw of good form and vigour within harvest units wherever safe and practicable.</p> <p>There are a several creeks within the block, see Riparian Management Strategies for more information. Terrain is generally gentle, see Harvest Plan map for a general location of slopes >40%. Workers should be aware that there is scattered blowdown as well as dispersed retention via Carbon Retention Stems. This block has been prescribed Carbon Stocking Standards. A target of 60 stems/ha of Carbon Retention Stems in the harvest area has been selected. A range of 50 to 100 Carbon Retention Stems is considered acceptable. Carbon Storage Trees must be Layer 1 or Layer 2 trees and must not exceed the damage criteria of Table A of the Free Growing Damage Criteria for Multi-Layered Stands in British Columbia (February 2007), except as noted. A maximum of one Porodaedalea pini conk per tree is allowed on layer 1 trees and frost cracks, rotten branches, forks and crooks are allowed. Selection of Carbon Retention Stems should consider windthrow hazard. Preferentially select Carbon Storage Trees growing on well drained microsites and that have good live crown and height to diameter ratios (trees with lots of taper). The 04 sites within this Standards Unit are moist so care must be taken to ensure site degradation limits are adhered to during harvest activities. Ground based harvesting should be restricted to the dry summer period or to the winter period when the ground is frozen and/or protected by a compressible snow layer.</p>			
Min. Characteristics of Leave Trees (Form, Health, Vigour)			<p>Retain preferred and acceptable conifers of good form and vigour as per stocking standards. Hw advanced regeneration greater than 2m is not considered acceptable within harvested units due to the presence of Hw mistletoe in the stand.</p> <p>A target of 60 stems/ha of Carbon Retention Stems for the area to harvest has been selected. A range of 50 to 100 Carbon Retention Stems is considered acceptable. Carbon Retention Stems must be Layer 1 or Layer 2 trees and must not exceed the damage criteria of Table A of the Free Growing Damage Criteria for Multi-Layered Stands in British Columbia (February 2007), except as noted. A maximum of one Porodaedalea pini conk per tree is allowed on layer 1 trees and frost cracks, rotten branches, forks and crooks are allowed. Selection of Carbon Retention Stems should consider windthrow hazard. Preferentially select Carbon Storage Trees growing on well drained microsites and that have good live crown and height to diameter ratios (trees with lots of taper).</p> <p>Retain all trees within the WTRAs except when leaving those trees presents a safety hazard.</p>			

	dbh class (cm)	Stems per ha			Basal Area (m2/ha)		
		Original	Cut*	Leave*	Original	Cut*	Leave*
SU 1 and 2	20	56	20	36	1.5	0.5	1.0
	25	23	8	15	1.5	0.5	1.0
	30	17	6	11	0.8	0.3	0.5
	35	21	7	14	2.3	0.8	1.5
	40	30	11	19	6.1	2.1	4.0
	45	33	12	21	3.8	1.3	2.5
	50	19	7	12	2.3	0.8	1.5
	55	33	12	21	5.3	1.9	3.4
	60	5	2	3	2.3	0.8	1.5
	65	16	6	10	5.3	1.9	3.4
	70	13	5	8	4.6	1.6	3.0
	75	8	3	5	3.0	1.1	1.9
	80	6	2	4	2.3	0.8	1.5
	85	7	2	5	5.3	1.9	3.4
	90	2	1	1	1.5	0.5	1.0
	95	3	1	2	2.3	0.8	1.5
	>100	10	3	7	10.6	3.7	6.9
	All	299	105	194	63.4	22.2	41.2
			35%	65%		35%	65%

Additional Comments

It may not be possible or feasible to achieve absolute compliance by diameter limit class. Some diameter classes will have greater percentages of unacceptable or danger trees. Compliance will be determined by total basal area retained.

SOIL ASSESSMENT											
SU	HAZARD RATINGS			SOIL DISTURBANCE				SOIL CHARACTERISTICS			
	Soil Comp.	Soil Erosion	Soil Disp.	Max Allow Soil Dist %	Max Amount TAS may exceed MASD prior	Max Allow Perm Access Structures %	MASD for Roadside work areas %	Depth to Unfavorable Subsoil		Type of Unfavorable Subsoil	Sediment Delivery Risk (Comm. Watershed)
								Min (cm)	Max (cm)		
1	VH	H	M	5.0		7.0	25.0	20.0	80.0	Bedrock	
2	VH	H	H	5.0				20.0	80.0	Seepage	
SU	Critical site conditions that affect the timing of operations and how they affect the timing										
1	The 04 sites within this Standards Unit are moist so care must be taken to ensure site degradation limits are adhered to during harvest activities. Ground based harvesting should be restricted to the dry summer period or to the winter period when the ground is frozen and/or protected by a compressible snow layer. The tenure holder has elected to utilise a single tree harvest system for the creation of an uneven aged-stand structure, thereby allowing for management of a suite of other resource uses.										
2	The 04 and 06 sites within this Standards Unit are moist so care must be taken to ensure site degradation limits are adhered to during harvest activities. Ground based harvesting should be restricted to the dry summer period or to the winter period when the ground is frozen and/or protected by a compressible snow layer. It will be difficult to achieve site degradation limits in all but the driest summers if skidders are used on this Standards Unit. The tenure holder has elected to utilise a single tree harvest system for the creation of an uneven aged-stand structure, thereby allowing for management of a suite of other resource uses.										
SU MANAGEMENT COMMENTS											
SU	SU Description										
1	This Standards Unit is dominated by the CWHws1 01 site but has a significant amount of 04 sites. The Standards Unit is transitional between the CWHws1 and the CWHws2 with ICHmc2 influences. This Standards Unit will be managed using a single tree harvesting system managed to multi-layer stocking standards.										
2	This Standards Unit is dominated by the CWHws1 04 site series with a significant amount of 01 on drier sites and some 06 on seepage sites. It is transitional to the CWHws2 and has ICHmc2 influences. This Standards Unit will be managed using a single tree harvesting system managed to multi-layer stocking standards.										

SOIL MANAGEMENT COMMENTS					
Soil Conservation					
In order to achieve the 5% soil disturbance limits for Standards Unit 1 and 2 established under FPPR 35(3)(a) it is recommended that ground-based harvesting be limited to the summer period or the winter period when the soils are frozen or protected by snow. It is recommended that hoe forwarding be utilized in conjunction with conventional skidding to limit site degradation and provide a safer work environment. Shut down logging during periods of saturated soils.					
Temporary Access					
N/A					
Slope Instability					
This block is not located within Class IV or V Terrain or on flat over steep terrain. No signs of slope instability were observed within the block (or road) boundary. A terrain stability assessment is not required for this block.					
RIPARIAN ASSESSMENTS					
Management Strategies					
Streams 1, 3, 4, 6, 7, 8 and 9 are small S6 streams. No basal area retention is required along these small S6 streams but the planned single tree silviculture system will result in significant basal area retention within the Riparian Management Zones of all streams. Fall and yard away. These streams require a 5m Machine Free Zone with machine crossings only at designated skid bridges. Skid bridges must be constructed with appropriate materials such as puncheon to minimize channel disturbance and maintain stream bank integrity. Wherever safe and practical non-merchantable trees less than 17.5cm, understory deciduous trees, shrubs, and herbaceous vegetation within 5m of the stream channel will be retained.					
Streams 2 and 5 are slightly larger S6 streams that may have the potential to mobilize debris. No basal area retention is required along these small S6 streams but the planned single tree silviculture system will result in significant basal area retention within the Riparian Management Zones of all streams. Fall and yard away. These streams require a 5m Machine Free Zone with machine crossings only at designated skid bridges. Skid bridges must be constructed with appropriate materials such as puncheon to minimize channel disturbance and maintain stream bank integrity. Wherever safe and practical non-merchantable trees less than 17.5cm, understory deciduous trees, shrubs, and herbaceous vegetation within 5m of the stream channel will be retained. Accumulations of slash or debris that do enter streams 2 or 5 above must be cleaned out concurrent with harvesting activities					
Riparian I.D. and Class	RMA	SU	WIDTH (m)	BA or SPH Retained	Comments (Indicate if in a Community Watershed)
Stream 1, 2,3,4,5,6,7, 8 &9 S6	MFZ		5.0		
	RMZ		20.0		
COARSE WOODY DEBRIS MANAGEMENT STRATEGY INFORMATION					
This block consists of a mature stand exhibiting high levels of decay, which will contribute an amount of coarse woody debris (CWD) that meets the objective stated in FPPR section 68 (1)(a). The nature of these forests means that a high level of non-merchantable material is typically left on site. During harvesting, additional breakage of trees occurs and is often left on a site, as most is non-merchantable. This block has Carbon Stocking Standards with a target of 60 Carbon Retention Stems per ha. These trees will provide additional CWD over time. Where site occupancy and fire hazard are not significant concerns, BCTS will attempt to avoid practices such as piling and burning (except for landings and roadside), and will not conduct broadcast burning within the FSP area. The block is located in an area that may allow economic utilization of some of this residual volume. To maximize the likelihood of this occurring, non-merchantable logs at roadside will be decked and only limbs, tops and logs unsuitable for pellets piled. Even with the removal of roadside residual volumes these actions will maintain high amounts of CWD on blocks following harvest, providing essential habitat for those organisms that are dependent on CWD.					
Performance Std. (%):		Block Target (%):		Coarse Woody Debris (m3/ha):	

DEFINITIONS

ADMINISTRATION

Amendment number	Date Typed (Yr Mo Dy)	Map Required?
ORIGINAL	2013 02 20	YES

Print off the PAS/TAS table located as an attachment on the Block Details Screen and attach to this prescription.

RPF PRINTED NAME	RPF'S SIGNATURE and SEAL
RICO JORIMANN	
DATE SIGNED	
2013/02/20	
I certify I personally completed the work described herein.	

SILVICULTURE PLAN

ORIGINAL

LICENCE #	CP	BLOCK	UBI	OPENING NUMBER	FDU	LOCATION	LATITUDE / LONGITUDE
A90581	-	TEsw049	BI3FE	1031079-	T Fiddler	10 km Fiddler Mainline	54 46 30 / 128 17 36

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	A	29.6	CWH	ws	1	01-80 04-20	460	30	V	Middle Slope	80	
2	B	23.9	CWH	ws	1	04-60 01-30 06-10	445	25	V	Lower Slope	80	

STOCKING REQUIREMENTS

ASSESSMENT DATES

Standard Unit	Standards ID	Regen Delay (yrs)	Freegrow Early (yrs)	Freegrow Late (yrs)
1	2004879	7		20
2	2004879	7		20
Min/Max Elevation Regime: 370 / 520				

SU: 1											MATURE LAYER											
PREFERRED SPECIES						ACCEPTABLE SPECIES						POST SPACING DENSITY (sph)				MAX CONIFEROUS (sph)						
Species		Characteristic	Footnotes	Species		Characteristic	Footnotes	Min		Max												
								WELL SPACED TREES (sph)														
Ba	Amabilis Fir	>=12.5 cm DBH (all)	99	Sxs	Sitka x Unknown	>=12.5 cm DBH (all)	56, 99	Target Pref/Acc		Minimum Pref/Acc		Minimum Pref		Min Horizontal Dist. Pref/Acc (m)								
Hw	Western Hemlock		99	hybrid Spruce	99																	
Cw	Western Red Cedar		99	Plc	Lodgepole Pine - Coastal																	
															400		200		200		0	
																			Height Relative to Competition (%)			
																			150			
56: Bulkley forest district - spruce content restricted to <20% well-spaced and free growing trees on a standards unit due to leader weevil																						
99: Carbon Stocking Standard, Carbon Retention Stems can contribute a maximum of 200 stems per ha of preferred and acceptable trees																						

SU: 1										POLE LAYER			
PREFRERRED SPECIES			ACCEPTABLE SPECIES			POST SPACING DENSITY (sph)				MAX CONIFEROUS (sph)			
Species		Characteristic	Footnotes	Species		Characteristic	Footnotes	Min		Max			
								WELL SPACED TREES (sph)					
Ba	Amabilis Fir	>=7.5 to 12.4 cm DBH (all)	99	Sxs	Sitka x Unknown	>=7.5 to 12.4 cm DBH	56, 99	Target Pref/Acc	Minimum Pref/Acc	Minimum Pref	Min Horizontal Dist. Pref/Acc (m)		
Hw	Western Hemlock		99	Plc	Lodgepole Pine		99						
Cw	Western Red Cedar		99				- Coastal		500	300	250	2.0	
										Height Relative to Competition (%)			
										150			
56: Bulkley forest district - spruce content restricted to <20% well-spaced and free growing trees on a standards unit due to leader weevil													
99: Carbon Stocking Standard, Carbon Retention Stems can contribute a maximum of 200 stems per ha of preferred and acceptable trees													

SU: 1 SAPLING LAYER									
PREFERRED SPECIES			ACCEPTABLE SPECIES			POST SPACING DENSITY (sph)		MAX CONIFEROUS (sph)	
Species	Characteristic	Footnotes	Species	Characteristic	Footnotes	Min	Max		
						WELL SPACED TREES (sph)			

Ba	Amabilis Fir	>=1.3 m height to 7.4 cm DBH (all)	99	Sxs Sitka x Unknown hybrid Spruce	>=1.3 m height to 7.4 cm DBH (all)	56, 99	Target Pref/Acc	Minimum Pref/Acc	Minimum Pref	Min Horizontal Dist. Pref/Acc (m)
Hw	Western Hemlock		99	Act Black Cottonwood		99	700	400	300	2.0
Cw	Western Red Cedar		99				Height Relative to Competition (%)			150

56: Bulkley forest district - spruce content restricted to <20% well-spaced and free growing trees on a standards unit due to leader weevil

99: Carbon Stocking Standard, Carbon Retention Stems can contribute a maximum of 200 stems per ha of preferred and acceptable trees

SU: 1 REGENERATION LAYER										
PREFERRED SPECIES			ACCEPTABLE SPECIES			POST SPACING DENSITY (sph)		MAX CONIFEROUS (sph)		
Species	Characteristic	Footnotes	Species	Characteristic	Footnotes	Min	Max	WELL SPACED TREES (sph)		
Ba	Amabilis Fir	<1.3 m height (all)	Sxs Sitka x Unknown hybrid Spruce	<1.3 m height (all)	56, 99	Target Pref/Acc	Minimum Pref/Acc	Minimum Pref	Min Horizontal Dist. Pref/Acc (m)	
Hw	Western Hemlock		Plc Lodgepole Pine - Coastal		99	900	500	400	2.0	
Cw	Western Red Cedar					Height Relative to Competition (%)			150	

56: Bulkley forest district - spruce content restricted to <20% well-spaced and free growing trees on a standards unit due to leader weevil

99: Carbon Stocking Standard, Carbon Retention Stems can contribute a maximum of 200 stems per ha of preferred and acceptable trees

SU: 2 MATURE LAYER										
PREFERRED SPECIES			ACCEPTABLE SPECIES			POST SPACING DENSITY (sph)		MAX CONIFEROUS (sph)		
Species	Characteristic	Footnotes	Species	Characteristic	Footnotes	Min	Max	WELL SPACED TREES (sph)		
Ba	Amabilis Fir	>=12.5 cm DBH (all)	Sxs Sitka x Unknown hybrid Spruce	>=12.5 cm DBH (all)	56, 99	Target Pref/Acc	Minimum Pref/Acc	Minimum Pref	Min Horizontal Dist. Pref/Acc (m)	
Hw	Western Hemlock		Act Black Cottonwood		99	400	200	200	0	
Cw	Western Red Cedar					Height Relative to Competition (%)			150	

56: Bulkley forest district - spruce content restricted to <20% well-spaced and free growing trees on a standards unit due to leader weevil

99: Carbon Stocking Standard, Carbon Retention Stems can contribute a maximum of 200 stems per ha of preferred and acceptable trees

SU: 2 POLE LAYER										
PREFERRED SPECIES			ACCEPTABLE SPECIES			POST SPACING DENSITY (sph)		MAX CONIFEROUS (sph)		
Species	Characteristic	Footnotes	Species	Characteristic	Footnotes	Min	Max	WELL SPACED TREES (sph)		
Ba	Amabilis Fir	>=7.5 to 12.4 cm DBH (all)	Sxs Sitka x Unknown hybrid Spruce	>=7.5 to 12.4 cm DBH (all)	56, 99	Target Pref/Acc	Minimum Pref/Acc	Minimum Pref	Min Horizontal Dist. Pref/Acc (m)	
Hw	Western Hemlock		Plc Lodgepole Pine - Coastal		99	500	300	250	2.0	
Cw	Western Red Cedar					Height Relative to Competition (%)			150	

56: Bulkley forest district - spruce content restricted to <20% well-spaced and free growing trees on a standards unit due to leader weevil

99: Carbon Stocking Standard, Carbon Retention Stems can contribute a maximum of 200 stems per ha of preferred and acceptable trees

SU: 2 SAPLING LAYER										
PREFERRED SPECIES			ACCEPTABLE SPECIES			POST SPACING DENSITY (sph)		MAX CONIFEROUS (sph)		
Species	Characteristic	Footnotes	Species	Characteristic	Footnotes	Min	Max	WELL SPACED TREES (sph)		

Ba	Amabilis Fir	>=1.3 m height to 7.4 cm DBH (all)	99	Sxs Sitka x Unknown	>=1.3 m height to 7.4 cm DBH (all)	56, 99	Target Pref/Acc	Minimum Pref/Acc	Minimum Pref	Min Horizontal Dist. Pref/Acc (m)
Hw	Western Hemlock		99	hybrid Spruce		99	700	400	300	2.0
Cw	Western Red Cedar		99	Act Black Cottonwood			Height Relative to Competition (%)			150

56: Bulkley forest district - spruce content restricted to <20% well-spaced and free growing trees on a standards unit due to leader weevil

99: Carbon Stocking Standard, Carbon Retention Stems can contribute a maximum of 200 stems per ha of preferred and acceptable trees

SU: 2 REGENERATION LAYER

PREFERRED SPECIES			ACCEPTABLE SPECIES			POST SPACING DENSITY (sph)		MAX CONIFEROUS (sph)	
Species	Characteristic	Footnotes	Species	Characteristic	Footnotes	Min	Max	WELL SPACED TREES (sph)	
Ba	Amabilis Fir	99	Sxs Sitka x Unknown	<1.3 m height (all)	56, 99	Target Pref/Acc	Minimum Pref/Acc	Minimum Pref	Min Horizontal Dist. Pref/Acc (m)
Hw	Western Hemlock	99	hybrid Spruce		99	900	500	400	2.0
Cw	Western Red Cedar	99	Act Black Cottonwood			Height Relative to Competition (%)			150

56: Bulkley forest district - spruce content restricted to <20% well-spaced and free growing trees on a standards unit due to leader weevil

99: Carbon Stocking Standard, Carbon Retention Stems can contribute a maximum of 200 stems per ha of preferred and acceptable trees

OTHER REQUIRED STOCKING INFORMATION

ACTIVITIES

SILVICULTURE ACTIVITY COMMENTS	
ACTIVITY	COMMENT
Brushing	Establishment brushing is not expected to be required on Standards 1. Portions of Standards Unit 2 may require establishment brushing if fill planting is required. The anticipated brush complex is fireweed and mixed fern. Deciduous removal brushing is not expected to be required on this block.
Site Preparation	Mechanical site preparation is not expected to be required for this block provided acceptable harvesting practices are followed.
Planting	This block has two standards units both of which are complexes. Standards Unit 1 is dominated by the 01 site series and Standards Unit 2 is dominated by the 04 site series. Both Standards Units have a significant amount of advanced regeneration and have good chances for achieving natural regeneration, however both standards units are also likely to have high brush competition and if stocking is not achieved fill plants will likely require establishment brushing. In addition, the small size of the planned harvest openings combined with Carbon Retention Stems means that significant portions of the harvested openings are potentially exposed to Hw mistletoe from the surrounding stand. The preferred reforestation method is planting at H+1 or H+2 with resistant species. Suggested species mix is 60%Ba, 20%Cw and 20%Sxs. Suitable stock would be PSB410 1+0 or bigger planted to a target of 1000 stems per ha away from the driplines of layer 1, 2 and 3 trees.
Surveys	Walkthrus should be conducted on Standards Unit 2 at H+1 and H+2 to assess brush and conifer regeneration. A regeneration delay/brushing survey should be conducted at H+3 on Standards Unit 1 and 2. This survey should make recommendations on the need for fill planting, brushing and the need for any additional treatments including additional surveys. A Free Growing survey should be scheduled for both Standards Units at H+11 unless the regeneration delay survey recommends rescheduling the survey.

COARSE WOODY DEBRIS MANAGEMENT STRATEGY INFORMATION

This block consists of a mature stand exhibiting high levels of decay, which will contribute an amount of coarse woody debris (CWD) that meets the objective stated in FPPR section 68 (1)(a). The nature of these forests means that a high level of non-merchantable material is typically left on site. During harvesting, additional breakage of trees occurs and is often left on a site, as most is non-merchantable. **This block has Carbon Stocking Standards with a target of 60 Carbon Retention Stems per ha. These trees will provide additional CWD over time.** Where site occupancy and fire hazard are not significant concerns, BCTS will attempt to avoid practices such as piling and burning (except for landings and roadside), and will not conduct broadcast burning within the FSP area. **The block is located in an area that may allow economic utilization of some of this residual volume. To maximize the likelihood of this occurring, non-merchantable logs at roadside will be decked and only limbs, tops and logs unsuitable for pellets piled. Even with the removal of roadside residual volumes these** actions will maintain high amounts of CWD on blocks following harvest, providing essential habitat for those organisms that are dependent on CWD.

Performance Std. (%):

Block Target (%):

Coarse Woody Debris (m3/ha):

ADMINISTRATION

Amendment number	Date Typed (Yr Mo Dy)	Map Required?
ORIGINAL	2013 02 20	YES
RPF PRINTED NAME		RPF'S SIGNATURE and SEAL
RICO JORIMANN		
DATE SIGNED		
2013/02/20		
I certify I personally completed the work described herein.		

**BC Timber Sales' site plan for TEsw049: revised to demonstrate
Group Selection
with carbon Objective Set by Government**

This page intentionally left blank



BCTS
BC Timber Sales

Skeena

SITE PLAN

GROUP SELECTION, with CARBON OSBG

REVISED FROM ORIGINAL (Original SP date: 2013/02/20)

TENURE IDENTIFICATION

LICENCE #	CP	BLOCK	UBI	OPENING NUMBER	FDU	LOCATION	LATITUDE / LONGITUDE
A90581	-	TEsw049	BI3FE	1031079-	T Fiddler	10 km Fiddler Mainline	54 46 30 / 128 17 36

AREA UNDER THE PLAN

GROSS AREA (TAUP)	PAS	NP	WTRA / WTP	RESERVES	OTHER	NAR
63.2	3.1	1.5	5.5	0.0	0.0	53.1

ADDITIONAL COMMENTS

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 Structures (%)	Access
1	5.0		25.0	7.0	
2	5.0				
SU	CRITICAL SITE CONDITIONS THAT AFFECT THE TIMING OF OPERATIONS, AND HOW THEY AFFECT THE TIMING				
1	The 04 sites within this Standards Unit are moist so care must be taken to ensure site degradation limits are adhered to during harvest activities. Ground based harvesting should be restricted to the dry summer period or to the winter period when the ground is frozen and/or protected by a compressible snow layer. The tenure holder has elected to utilize a group selection harvest system for the creation of an uneven aged-stand structure, thereby allowing for management of a suite of other resource uses.				
2	The 04 and 06 sites within this Standards Unit are moist so care must be taken to ensure site degradation limits are adhered to during harvest activities. Ground based harvesting should be restricted to the dry summer period or to the winter period when the ground is frozen and/or protected by a compressible snow layer. It will be difficult to achieve site degradation limits in all but the driest summers if skidders are used on this Standards Unit. The tenure holder has elected to utilize a group selection harvest system for the creation of an uneven aged-stand structure, thereby allowing for management of a suite of other resource uses.				

RESULTS AND STRATEGIES

Biodiversity Objectives	
Result or Strategy Description	<p>A1-TSK-KA-02S For roads that fall under BCTS' responsibility (i.e. covered by Forest Service Road, or Timber Sale Licence), BCTS will:</p> <p>1a) Perform a risk assessment to determine and document an inspection frequency. Road maintenance inspections will be completed in accordance with the results of the assessment, or</p> <p>1b) If a risk assessment has not been completed, a minimum inspection* frequency of once per year will apply, and,</p> <p>1c) A road inspection under snow-free conditions will be conducted</p> <p>2) Actions for addressing items that are identified through road inspections, based on priorities set by BCTS, will be undertaken that reflect the results of the inspections.</p> <p>* Inspections may be carried out by personnel appointed by BCTS, or by the TSL Holder</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	The Licensee will regularly inspect, document, and prioritize for action roads that will be inactive for more than nine months. As a minimum, inactive roads will be checked annually (once per calendar year), under snow-free conditions.
Result or Strategy Description	<p>A1-TSK-KA-21R</p> <p>1) On blocks where layout activities have not yet started**, wildlife tree retention for a harvest unit* is consistent with Table 6 of the Kalum Sustainable Resource Management Plan (April 2006)</p> <p>a) Where a BEC subzone that exists within a Landscape Unit (LU) is not identified for that LU in Table 6, the closest similar BEC classification identified for that LU will be used for the purposes of this result.</p> <p>2) Wildlife tree retention on blocks where layout activities have started will conform to the approved FDP in effect immediately prior to approval of the FSP</p> <p>* Harvest unit: as defined in the Kalum SRMP (April 2006)</p>

	** As listed in Table B7 of Appendix B to this FSP
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>TEsw049 is located within the Skeena River Kalum Landscape Unit. Although the majority of the block will not be impacted by harvesting, 8.8% of the cutblock area has been designated as WTRA which exceeds the minimum wildlife tree retention requirements of 5% (CWH) for the Skeena River Kalum Landscape Unit listed in Table 6 of the Kalum SRMP. The extra WTRA over the 5% target contributes to biodiversity and wildlife objectives as well as to Carbon Objectives and represents XXX tCO₂e of additional carbon storage at 2030 and 2050. In addition, 100 stems per ha of Carbon Retention Stems will be retained scattered across the area to harvest of the block. These trees represent XXX tCO₂e of additional carbon storage at 2030 and 2050. The Carbon Retention Stems also contribute to biodiversity and wildlife objectives. In addition, snags will be assessed for safety and where safe and practicable left standing. In addition, snags will be assessed for safety and where safe and practicable left standing.</p> <p><u>Comments:</u> <i>Carbon Retention Stacking Standards may require sympathetic administration of Danger Tree regulations in some regions. At a block level assessing all snags will be costly. Some form of incentive would be required to ensure buy-in from Licencees. Similar stands to this have shown that less than 50% of snags in tree class 3 to 7 will be assessed as safe for level 3 disturbance as defined in the Wildlife/Danger Tree Assessor's Course Workbook (2017). A portion of these trees would also be in locations where they obstruct the flow of wood to roadside and must be removed for operational efficiencies. Snags are important wildlife and biodiversity anchors and some research has suggested standing snags have slower decomposition rates than snags that are on the ground (Lewis and Harley, 2005). Actions with a carbon benefit, such as additional WTRA area and Carbon Retention Stems, could be quantified in the Site Plan. A guidance document for reporting carbon numbers should be developed to aid tracking of carbon initiatives.</i></p>
Result or Strategy Description	<p>A1-TSK-KA-35R No forest harvesting by the FSP Holder of old seral stage forest within the Old Growth Management Areas (OGMAs)* other than for insect or disease control measures that are necessary to mitigate severe damage to the habitat attributes in the OGMAs, or other forest values in the landscape, or in accordance with strategy TSK-KA-36</p> <p>* As shown on the FSP maps, which correspond to the OGMAs shown on Map 4 of the Kalum SRMP (April 2006).</p>
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not within an OGMA.
Result or Strategy Description	<p>A1-TSK-KA-36S</p> <ol style="list-style-type: none"> 1) Allow up to 10 hectares or 10% of an individual Old Growth Management Area (OGMA) *, whichever is less, to be disturbed for one or more of the following purposes: <ol style="list-style-type: none"> 1) allowing road development where no practicable alternative exist; 2) to better reflect physical features that were intended to form the actual boundaries of the OGMA; 3) to improve harvest boundary alignment in a way that will contribute to the maintenance of the OGMA; 4) OGMA; 5) to address a compelling forest health issue; or, 6) to shift the location of the contiguous area of the OGMA to improve the retention of old forest attributes as identified through field assessment. 2) Any planned alteration of spatially defined OGMAs that does not meet the criteria in (1) above will be forwarded to the Agency responsible for the Kalum SRMP. 3) A summary will be provided to the District Manager describing the reason for the disturbance of the OGMA, and identifying an alternative OGMA(s) within the same BEC variant within a landscape unit, provided the alternative OGMA: <ol style="list-style-type: none"> a) is of equal or greater extent in total than the area to be disturbed; and, b) will result in equal or greater retention of key old forest attributes that are understood to be important for biodiversity conservation. <p>* As shown on the FSP maps, which correspond to the OGMAs shown on Map 4 of the Kalum SRMP.</p>
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not within an OGMA.

Result or Strategy Description	<p>A1-TSK-KA-37R Within the Skeena Islands Area**:</p> <ol style="list-style-type: none"> 1) On areas harvested or authorized by BCTS under this FSP: <ol style="list-style-type: none"> a) Harvest operations will be in accordance with guidance mutually agreed between representatives of BCTS and the MoE***, or b) Harvest operations will be conducted as follows: <ol style="list-style-type: none"> i) For forest types* identified as "High" conservation value**, no harvesting will occur, other than for road construction necessary to access other areas. ii) For forest types* identified as "Medium" conservation value**, harvesting will be for deciduous trees only (other than incidental harvest of coniferous trees for road construction or safety purposes), employing small-patch harvesting (openings less than 5 ha). At least 70% of the area will be maintained at a mid-seral (or older) stage, and at least 30% of the areas will be at a mature or older seral stage. iii) For forest types* identified as "Low" conservation value**, at least 30% of the area will be maintained at a mid-seral (or older) stage. <p>* Forest types are limited to CWHws1/07; CWHws1/08; CWHvm1/09; CWHvm1/10. ** As shown on the FSP maps. This information corresponds to the map provided with the Kalum SRMP (April 2006) *** MoE representative = Ecosystem Specialist or Ecosystem Biologist</p>
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not within the Skeena Islands.
Result or Strategy Description	<p>A1-TSK-KA-38R No harvesting or road construction within the uncommon reticulated fens in the Miliglit Creek Sensitive Area*</p> <p>* As shown on the FSP maps</p>
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not within the Miliglit Creek Sensitive Area.
Cultural Heritage Resources	
Result or Strategy Description	<p>A1-TSK-KA-27S</p> <ol style="list-style-type: none"> 1) Where site specific cultural heritage resource information for an area in a Forest Development Unit is not available, BCTS will make use of the Archaeological Overview Assessments for the Kalum TSA, TFL 41, and TFL 1: <ol style="list-style-type: none"> a) Any blocks within a "High" archaeological potential polygon will have an Archaeological Impact Assessment (AIA) done before harvesting commences. 2) For any potential cultural heritage resource sites identified by operational personnel (e.g. layout, road construction, or harvesting crews) which were not previously identified through cultural heritage resource information sharing as described in TSK-KA-26, and for which a process or policy that describes how to deal with that cultural heritage resource is not in place or has not been shared with the appropriate First Nation(s): <ol style="list-style-type: none"> a) A BCTS representative will be notified; b) A site visit will be conducted to determine the need for mitigative measures or for a Preliminary Field Reconnaissance or Archaeological Impact Assessment to be done 3) Any new cultural heritage resource information resulting from item (2) above will be shared with the appropriate First Nation(s) in accordance with item (5) below. 4) Any new cultural heritage resource information resulting from item (2) above and a description of any mitigative measures will be provided to the BC Timber Sales Manager in accordance with item (5) below. 5) Information noted in (3) and (4) above will be shared/provided as follows: <ol style="list-style-type: none"> a) Where a cultural heritage resource feature is discovered before a cutting authority is issued, at or before Timber Sale Licence issuance. a) Where a cultural heritage resource feature is discovered after a cutting authority is issued, the information will be shared/provided within two weeks of a BCTS representative being notified of the cultural heritage resource features' discovery.
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>Not within a high Archaeological Overview Assessment polygon. No CMTs or areas with high subsurface potential were identified within the area to harvest by field crews. CMTs were located within WTRA#2. The Cultural Heritage Resources pre-harvest evaluation noted the potential for several travel and resource trails within the block, despite extra attention looking for possible trails on the logical travel routes no indications of any trails were noted.</p> <p>In the event that operational personnel (road construction and or harvesting crews) identify a potential Cultural Heritage Resource within the block.</p> <ul style="list-style-type: none"> - Operations will be halted so that the site is protected from damage; - A BCTS representative will be notified; - A site visit will be conducted to evaluate the site and determine the need for mitigation measures or for a Preliminary Field Reconnaissance or Archaeological Impact Assessment to be done. - Where a CHR site is confirmed, the resulting information and mitigation measures will be provided to the Timber Sale Manager. - BCTS will share resulting information with potentially affected First Nations within 2 weeks of notification of the CHR sites discovery.

Result or Strategy Description	<p>TSK-KA-26S BCTS will meet regularly with local First Nation groups that have asserted claim area within the BCTS FDUs. As a minimum, meetings must occur annually.</p> <ul style="list-style-type: none"> - Request from both the Ministry of Forests and Range and the First Nations the opportunity to review and discuss cultural heritage resources of continuing importance (including but not limited to traditional use information, archaeological information, and traditional use studies where they are available), ideally in conjunction with first nation representatives. - Where traditional use information is made available, BCTS will hold any information received in confidence. It is only with the express written consent or direction of the holder of the Traditional Use information that BCTS will release any traditional use information to any other party (Including other First Nation groups, the Government of BC, or the BC Ministry of Forests and Range). - BCTS will review with respective First Nations the areas where forest development operations are planned, with the intent of describing and addressing the concerns of both parties. Specifically: <ul style="list-style-type: none"> • Determine areas of concern that may result from forest management activities when compared with First Nation interests or activities, or that may occur between First Nations groups as a result of different forest management approaches. • Attempt to resolve any conflicts through consensus. BCTS will prepare a short summary indicating whether there were any issues and how they were resolved. • If conflicts cannot be resolved, BC Timber Sales will prepare a summary of the concerns and how BCTS has attempted to address the concerns. <p>Summaries* of this process will be provided to the Skeena Business Area Timber Sales Manager (TSM), and copied to the First Nation representative.</p> <p>In the unlikely event that meetings have not occurred, documentation of the efforts made to meet and/or review information with First Nations will be provided to the TSM by BC Timber Sales. This will allow the TSM to assess if efforts were reasonable and consistent with the intent of this Strategy.</p> <p>* summaries will respect confidentiality</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>BCTS consultation and information sharing for TEsw049 is consistent with strategy TSK-KA-26 in the BCTS-Kalum Forest Stewardship Plan Extension 2011-2016 as reviewed by Gail Campbell, RPF on January 7, 2013. Potential concerns raised include:</p> <p>Block level:</p> <p>Gitxsan: No block specific interests have been communicated to BCTS</p> <p>Kitselas: No block specific interests have been communicated to BCTS</p> <p>General/Landscape Level:</p> <p>Gitxsan: Management of large diameter cedar trees; cedar conservation; management of cultural heritage resources</p> <p>Kitselas: Salmon habitat; management of cultural heritage resources</p>
Result or Strategy Description	<p>TSK-KA-28S For any block with Cedar or Cypress, removal of Cedar or Cypress from retention areas (including WTPs or Riparian Management Zones* (RMZs) for cultural purposes occurs as follows:</p> <ul style="list-style-type: none"> - No more than 5% of the co-dominant/ dominant stems within a WTP are removed, with no more than 10% of the stems within a given hectare, unless the Site Plan describes how the WTP is able to retain its function; and - Removal of co-dominant/ dominant stems from within an RMZ area must be consistent with the RMZ retention described in result TSK-KA-17, unless the Site Plan describes how the RMZ is able to retain its function; and - When from within an area within an active cutting authority that is held by BCTS or one of its licensees, removal is authorized through a letter of agreement between a First Nation Council and BCTS, with a copy to the District Manager of the Kalum Forest District <p>* Removal of stems from within Riparian Reserve Zones will be as per the Forest Planning and Practices Regulation - currently, removal for cultural purposes is not an allowed activity within RRZs.</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	No more than 5% of the co-dominant/ dominant stems within a WTP are allowed to be removed, with no more than 10% of the stems being removed from within a given hectare. Removal must be authorized through a letter of agreement between a First Nation Council and BCTS, with a copy to the District Manager of the Kalum Forest District.
Soil Objectives	
Result or Strategy Description	<p>A1-TSK-KA-AAS During the period of this FSP the TSM will undertake to comply with sections 35 and 36 of the FPPR. The TSM will notify each holder of a timber sale license or road permit to which the plan relates that FPPR sections 35 and 36 apply to the holder's primary forest activities carried out during the term of the plan.</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>This Site Plan is consistent with section 35 (Soil Disturbance Limits) and section 36 (Permanent Access Structure Limits) of the FPPR. All holders of a Timber Sale or Road Permit to which the plan relates are hereby notified that FPPR sections 35 and 36 apply to the holder's primary forest activities carried out during the term of the plan. Result A1-TSK-KA-AAS applies as described in the Soil Disturbance table on page 1 of this Site Plan.</p> <p><u>Comments:</u></p> <p><i>Reducing Site Degradation has potential carbon benefits. Some research indicates that the rate of carbon decomposition may be increased for forest floor that is buried (i.e. like areas of site preparation or site degradation). The rate of carbon decomposition is unlikely to be increased by more than 1% on a block level but site degradation also potentially impacts carbon by reducing the productivity of the site (reducing the sites ability to sequester carbon).</i></p>

Result or Strategy Description	A1-TSK-KA-ABS During the period of this FSP, roads that are not required for silviculture or access to additional harvesting opportunities and are practicable to rehabilitate will be rehabilitated and reforested to the appropriate stocking standard. <i>Comments:</i> Successful uptake of this strategy will require changes to the appraisal system to allow road rehabilitation as an allowable cost or for an agency such as FESBC to fund road rehabilitation.
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	All roads are required for future harvesting opportunities and will not be rehabilitated.
Recreation Resources	
Result or Strategy Description	TSK-KA-29R On these established Recreation Trails or Sites with established objectives: <ul style="list-style-type: none"> - Big Cedar Recreation Trail - Bonney Lake Portage Recreational Trails - Clearwater Lakes Recreation Site - Hai Lake Recreation Trail - Maroon Mountain Recreation Trail - Mt. Elizabeth Recreation Trail - Onion Lake Recreation Trail - Onion Lake Recreation Ski Trails - Pine Lake Recreation Trail - Robinson Ridge Recreation Trail - Sterling Mountain Recreation Trail - Thornhill Mountain Recreation Trail No disturbance by harvesting, road construction, or silviculture activities to natural vegetation within 10 m of trail centerline other than for a required crossing. Development activities that occur within 50 m either side of trail centerline will only occur after the planned activity has been referred to the Ministry responsible for the trail. Timber Sale Licence, Road Permit, or Forest Service Road submission indicates that development is within 50 m of the trail and describes the results of the referral to the Ministry responsible for the trail. A crossing of the trail is permitted if the crossing is required to access productive forest land that would otherwise be isolated. The trail location is re-established if the crossing disturbs it. Alternatively, the trail can be relocated away from the crossing. The timing of the trail crossing, re-establishment, or trail relocation will require consultation with the Ministry responsible for the trail. A trail crossing is deactivated once it is no longer required.
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not near an established Recreation Trail or Site.
Result or Strategy Description	TSK-KA-30R On these established Recreation Sites with established objectives: <ul style="list-style-type: none"> - Bonney Lake Recreation Site - Clearwater Lakes Recreation Site - Deception Lake Recreation Site - Glory Hole Recreation Site - Jigsaw Lake Recreation Site - Pine Lake Recreation Site - Red Sand Lake Interpretive Forest Site - West Lake Recreation Site No disturbance* to areas within 10 m of lake shorelines, river-, stream-, or creek-banks, or marine foreshore. (This only applies to sites where an RRZ is not in existence). The remainder of the area within the recreation sites will be reserved from disturbance other than where BCTS and the Kalum District Manager agree the disturbance will be for the improvement of the recreation experience, or where action or access is required to prevent or address potential losses due to fire, wind, or forest health factors. * from activities related to BCTS' road construction, harvesting or silviculture activities
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not near an established Recreation Site.
Result or Strategy Description	TSK-KA-33R On all established recreation sites or trails with established objectives (excepting Deception Lake, which has had access cut-off): At least four-wheel drive status is maintained for roads under the control of BCTS that are the only access to the trail or site.
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not near an established Recreation Trail or Site.

Riparian Management	
Result or Strategy Description	<p>A1-TSK-KA-17R</p> <ol style="list-style-type: none"> 1) On all streams*, wetlands* and lakes* within or directly adjacent to blocks where layout activities have started prior to January 1, 2008**, the provisions of FPPR s. 47, 48, 49, 50, and 51 will apply, as they were at the time layout commenced. 2) On streams, wetlands and lakes identified in (4) below: for those blocks where layout activities start after January 1, 2008, maintain the forest in a hydriparian zone** in a mature or old state, and <ol style="list-style-type: none"> a) the width of the hydriparian zone in any one location may be increased or decreased by up to 0.5 tree heights to address site specific value b) Roads are only located in the hydriparian zone if <ol style="list-style-type: none"> i) The road is necessary to access timber beyond the hydriparian zone that otherwise would be isolated from harvest, ii) Terrain conditions such as slope, gradient or terrain stability constrain road locations and dictate that sections of road enter and leave "red listed" plant communities to access timber that otherwise would be isolated from harvest, iii) The area is being accessed for mineral development, or iv) No practicable alternative exists 3) On streams, wetlands and lakes other than those identified in (4) below: for those blocks where layout activities start after January 1, 2008, <ol style="list-style-type: none"> a) Riparian management areas, riparian reserve zones, and riparian management zones (RMZ) will be as described in FPPR s. 47, 48, and 49, and the provisions of FPPR s. 50, and 51 will apply, as they were at the time layout commenced. b) retain an amount of basal area within the RMZ as follows: <ol style="list-style-type: none"> i) On S1, S2, and S3 streams, retain a minimum of 20% of the basal area of the RMZ. ii) On S4 and S5 streams, retain a minimum of 10% of the basal area of the RMZ. iii) On S6 streams, no basal area retention is necessary. iv) On all Wetlands and Lakes, a minimum of 10 % of the basal area of the RMZ will be retained. 4) The streams, wetlands and lakes mentioned in (2) and (3) above are those <ol style="list-style-type: none"> a) Identified in MAP C1 in Appendix C, or b) Within cutblocks <ol style="list-style-type: none"> i) under the authority of BCTS on which layout has started after January 1, 2008: and ii) that have more than 50% of the block area within a Water Management Unit (WMU)*** or that overlap with the WMU by more than 200 m (horizontal distance) 5) Basal area retention in RMZs may be distributed in a non-uniform manner along the stream: that is, clumps of retention may be interspersed with portions of RMZ that have no retention. 6) The use of area retention will be considered a reasonable estimate of basal area retention as long as the forest type of the retained portion of the RMZ is similar to that of the original portion. * Stream, Wetland, and Lake and associated classification is as defined in FRPA <p>** The hydriparian zone, is defined as the area that extends to the edge of the influence of water on land, or land on water, as defined by plant communities (including high bench or dry flood plain communities) or land form (e.g. gullies, immediately adjacent steep unstable terrains), plus one and one-half tree heights (horizontal distance), Tree height is the average height of merchantable trees in a cutblock, based on cruise data, or if no cruise data available, forest inventory data.</p> <p>*** As shown in APPENDIX C until the Nass South SRMP is legally established; after the Nass South SRMP is legally established, as per the established SRMP.</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	The block retains greater than the minimum 0% of the basal area in the Riparian Management Zone for the S6 streams within the block, several stream reaches are protected within WTRAs. The planned group selection silviculture system will result in significant basal area retention within the Riparian Management Zones of all streams.
Timber Objectives	
Result or Strategy Description	<p>TSK-KA-03R Harvested blocks are reforested to</p> <ul style="list-style-type: none"> - at least the minimum stocking with the species identified in the stocking standards that apply to this FSP; and - meet the regeneration delay, free growing heights, and free growing dates as described in the stocking standards that apply to this FSP
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Stocking standards will be consistent with the approved FSP. Stocking Standard ID#. SU1 - 2004723; SU2 – 2004726. These are Carbon Stocking Standards as noted in the FSP.

Carbon Objectives	<p>6.1 The objectives set by government for carbon are, without unduly reducing the supply of timber from British Columbia's forests, to</p> <p>(a) enhance carbon retention or sequestration on British Columbia's forests, and</p> <p>(b) develop, promote, or take advantage of opportunities for utilization of cut trees into products that provide carbon retention, sequestration or substitution benefits.</p>
Result or Strategy Description	<p>TSK-KA-AC(R)</p> <p>For each cutblock harvested within the FSP Holder's Forest Development Unit by the FSP Holder or its contractors, the FSP Holder will offer fibre that does not meet current utilization levels to local consumers of fibre. This offer will occur prior to the FSP Holder scheduling the fibre for disposal. (For the purposes of this Result, "local" means within XX hours haul time from the cutblock.)</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>This block is expected to result in significant logs and woody material that do not meet current utilization levels and under previous management regimes would have been left on site. This material has been offered for sale to the local pellet mill. No agreement to sell this material has been reached at this point, the block is approximately 45km from the facility and cycle time would be 2.9 hours. In anticipation of utilizing residual materials, non-merchantable logs will be decked roadside and only limbs, tops and material unsuitable for pellets will be piled.</p> <p><u>Comments:</u></p> <p><i>The block is on the edge of where it would be economical to transport material to a biofuel/pellet facility. Programs to encourage utilization of this material by subsidizing transportation of residuals to facilities will expand the area where it is economic to utilize residual materials.</i></p>
Result or Strategy Description	<p>TSK-KA-AD(S)</p> <p>When developing a cutblock, stems that are known to have limited timber value may be retained for carbon storage purposes. Carbon Retention Stems are to be preferentially located in WTRAs, in RMAs, in visual retention areas, and where safe to do so, may be dispersed throughout the stand. Site Plans will describe Carbon Retention Stem characteristics.</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	<ol style="list-style-type: none"> Information attached to this site plan will describe Carbon Retention Stem characteristics and location Stocking standards in the approved FSP include criteria for carbon retention and will be adhered to. Stocking Standard ID#. SU1 - 2004723; SU2 – 2004726. The prescription calls for 100 stems per ha of Carbon Retention Stems across the area to harvest. A range of 50 to 150 Carbon Retention Stems is considered acceptable. Retention of 100 Carbon Retention Stems per ha on the area to be harvested will result in approximately XXX tCO₂e of additional carbon storage at 2030 and 2050.
Visual Objectives	
Result or Strategy Description	<p>A1-TSK-KA-23S</p> <ol style="list-style-type: none"> A visual impact assessment (VIA) will be carried out and attached or referred to in the Site Plan for blocks that are located within known scenic areas and that are identified with a Visual Quality Objective (VQO) of Preservation (P), Retention (R), Partial Retention (PR), or Modification (M), or a Visual Sensitivity Class (VSC) of 1, 2, 3, or 4. <ol style="list-style-type: none"> Visual Sensitivity Class will be treated as having VQOs as follows: <ol style="list-style-type: none"> VSC 1 = Retention VSC 2 = Partial Retention VSC 3 and 4 = Modification VSC 5 = Maximum Modification The visual impact assessment will <ol style="list-style-type: none"> review the visual landscape from selected viewpoints (see below for viewpoint selection and criteria) describe how the visual design is consistent with the VQO. The block configuration in the signed Site Plan will reflect the visual design as described in the visual assessment Viewpoints are identified as follows: <ol style="list-style-type: none"> As shown on the FSP maps (as amended from time to time), or if no viewpoints area identified on the FSP maps, through selection of points in the field that meet the viewpoint criteria* * Viewpoint criteria: for a visual landscape, a viewpoint must be: <ol style="list-style-type: none"> At a point along a travel corridor that allows for an extended viewing experience**, or At a place that persons can stop for an extended viewing experience*** <p>** Extended viewing experience = greater than 60 seconds uninterrupted view (at the posted/ normal speed limit)</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	<p>A VIA was completed by Rick Brouwer of Northwest Timberlands on Nov.22, 2012 titled, 'Visual Impact Assessment for Blocks laid out under Contract SD13TIF200: Skeena West - Fiddler Creek Area: Blocks TEsw022, TEsw025, TEsw030, TEsw049, and TEsw050,' the VIA showed the block was consistent with the Visual Quality Objective for the area. The choice of a group selection silviculture system means the block is very difficult to see from the selected viewpoints.</p>

Water Management Objectives	
Result or Strategy Description	<p>A1-TSK-KA-18R Within Identified Watersheds* where ECA thresholds*** have been established: before harvesting commences within an Identified Watershed under authority of this FSP:</p> <ol style="list-style-type: none"> 1) Clear-cut equivalency is calculated** for the Identified Watershed as a whole, and for individual sub-basins larger than 250 ha; or 2) An assessment** is conducted, and if <ol style="list-style-type: none"> a) the threshold for clear-cut equivalency that is determined as appropriate as a measure of maintenance of natural flow regimes is more than the ECA threshold for the Identified Watershed, then that threshold is used in 3) below b) a threshold for a parameter different from clear-cut equivalency is determined to be more appropriate as a measure of maintenance of natural flow regimes, then that parameter and threshold is used in 3) below then 3) 3) If there is a parameter and/or threshold that qualifies as described in 2(a) or 2(b) above, then that parameter and/or threshold will be used for the Identified Watershed instead, and the sub-basin size identified in 3. above will not necessarily apply. <p>* Identified watersheds are:</p> <ul style="list-style-type: none"> - Community watersheds as shown on the FSP maps. Community Watersheds that are within BCTS FDU are Carlotta (Rosswood/ Clear) Creek; Deep Creek; Drake Creek; Eneeksagilaguaw Creek; (Kleanza) Singlehurst Creek; Skovens (Usk) Creek; Spring Creek; and Virginia Brook - Watersheds within the Nass FDU that are identified as having ECA limits through a legally established objective <p>** Consistent with the Watershed Assessment Guidebook (2nd Ed, version 2.1 April 1999), or with another process determined to be acceptable by a qualified professional *** ECA Thresholds are as follows:</p> <ul style="list-style-type: none"> - For Community Watersheds: for sub-basins larger than 250 ha, 20%; for sub-basins smaller than 250 ha, the threshold may exceed 20% only if the overall clear-cut equivalency for the community watershed basin is less than 20% - For non-community watersheds identified in the Nass FDU: as per ECA limits described in a legally established objective.
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not within an Identified Watershed.
Wildlife Objectives	
Result or Strategy Description	<p>A1-TSK-KA-07R For harvested blocks</p> <ol style="list-style-type: none"> 1) within Grizzly Bear Watershed Units*, or 2) outside of Grizzly Bear Watershed Units* but within Moose Ungulate Winter Range*, where a site plan identifies that this result is necessary to provide for or conserve Moose Winter Range habitat, the stocking and inter-tree spacing requirements for the site associations described in Table A2 of Appendix A (as discussed in Section 3.2 of this FSP) are met when free-growing is declared. <p>* As shown on the FSP maps</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	TESW049 is not located within Moose Ungulate Winter Range. It is located within the Little Oliver-Skeena River East Grizzly Bear Identified Watershed (GBIW). The block does not contain a significant amount of identifiable and stratifiable Grizzly site series (06/11 ecosystems). Wildlife stocking standards will not apply.
Result or Strategy Description	<p>A1-TSK-KA-14S</p> <ol style="list-style-type: none"> 1) Areas harvested or authorised by BCTS will be of a size and distribution that emulates the historical temporal and spatial distribution of the Natural Disturbance Types (NDTs) for the forests within the FSP area. 2) Development within an FDU will move towards the patch size and seral stage distribution targets that are in place for NDTs, and will be calculated separately for each LU that overlaps the FDU, in accordance with items 3 and 4 below. 3) Temporal: Conduct Seral stage analysis by LU and natural disturbance type <ol style="list-style-type: none"> a) Determine proportional representation of the LUs within the BCTS FDUs b) Determine representation with respect to sensitive areas c) Determine need for actions to address seral stage imbalances, based on the applicable land use objective(s)* d) If necessary, prepare action plan(s) and implement 4) Spatial: Analyse patch size distribution by LU and natural disturbance type <ol style="list-style-type: none"> a) Determine proportional representation of existing patch sizes within the BCTS FDUs b) Determine target patch size distribution for the BCTS FDU c) Determine need for actions to address patch size imbalances, based on the applicable land use objective(s)* d) If necessary, prepare action plan(s) and implement e) Prepare a summary of the allowable patch size distribution. <p>* In the Terrace, Kitimat Valley and Douglas Gardner FDUs, the applicable land use objective is the Kalum SRMP (April 2006). In the Nass and Kowesas FDUs, the applicable land use objective is the Old Growth Order (June 2004), unless superseded by a new land use objective.</p>
Applies:	YES

How Result or Strategy Applies to the Site (or Rationale if it does not apply)	The group selection silviculture system within the planned harvest area means that this block does not impact the historical and spatial distribution of the NDTs for the forests within the FSP area.
Result or Strategy Description	<p>A1-TSK-KA-15R</p> <ol style="list-style-type: none"> 1) The sizes of harvest openings under this FSP are within the limitations as described in an allowable patch size distribution. 2) If there are areas that are outside of target* levels for temporal and spatial distribution: <ol style="list-style-type: none"> a) Starting in 2007, by April 30 of each year a report summarizing the changes in the seral and patch distribution in those areas is provided to the District Manager. This report includes changes that have occurred in the previous year, plus projected changes (i.e. planned harvest) for at least the current year. Where this report indicates movement away from the target* levels, a rationale is provided that describes management strategies for moving towards the target* levels. b) Within a specified period after the approval of this FSP, harvest activities under this FSP are shown to be static or moving toward the target* levels for these areas. This specified period shall be five (5) years for each Landscape Unit, unless otherwise determined by mutual agreement between the BC Timber Sales Manager and the District Manager. <p>* Target levels for Landscape Units and Special Resource Management Zones are from the Kalum SRMP; Target levels for FDUs are as determined through the Strategy TSK-KA-14</p>
Applies:	YES
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	The group selection silviculture system within the planned harvest area means that this block does not impact the historical and spatial distribution of the NDTs for the forests within the FSP area.
Result or Strategy Description	<p>A1-TSK-KA-12S</p> <ol style="list-style-type: none"> 1) For areas within FDUs under this FSP, where Moose Ungulate Winter Range (UWR) areas have been designated through an Order under the Land Act, no further action is required. 2) Subject to (1) above, for areas within FDUs under this FSP, where Moose Ungulate Winter Range areas have not been designated through an Order under the Land Act, <ol style="list-style-type: none"> a) a) Harvesting operations within Proposed Moose UWR* may occur during a period other than between May 1 and November 30 (inclusive), if: <ol style="list-style-type: none"> i) A qualified professional (QP) evaluates the Moose UWR and determines that <ol style="list-style-type: none"> (1) all or a portion of the UWR is not suitable as UWR, or (2) the population of moose using the UWR will not be unduly disturbed or affected by operations, or (3) there are mitigative actions that can be taken to ensure that operations that will not unduly disturb ungulates within their winter range; ii) A report is prepared by a QP to indicate mitigative actions or a different timing for operations that will not unduly disturb ungulates within their winter range; iii) BCTS implements the mitigative actions in the report. <p>* As shown on the FSP maps, which correlate with (1) the maps provided in support to the Moose Ungulate Winter Range notices for TFL 1; TFL 41; and the Kalum TSA (Dec 2004); and (2) the habitat amount in the FPPR s. 7 Notices for Moose.</p>
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not within Moose UWR.
Result or Strategy Description	<p>A1-TSK-KA-13R</p> <ol style="list-style-type: none"> 1) For areas within FDUs under this FSP, where Moose Ungulate Winter Range (UWR) areas have been designated through an Order under the Land Act, no further action is required. 2) 2) Subject to (1) above, for areas within FDUs under this FSP, where Moose Ungulate Winter Range areas have not been designated through an Order under the Land Act, harvesting operations within Proposed Moose Ungulate Winter Range (UWR)* <ol style="list-style-type: none"> a) occur <ol style="list-style-type: none"> i) between May 1 and November 30 (inclusive), or ii) are consistent with a report prepared by a qualified professional that meets the requirements of strategy TSK-KA-12. b) include wildlife tree retention trees or patches that are no more than the distance prescribed in (3) below from other standing mature or old-growth trees. 3) The distance in (2)(b) above is <ol style="list-style-type: none"> a) 250 meters, horizontal distance <p>* As shown on the FSP maps, which correlates with the (1) maps provided in support to the Moose Ungulate Winter Range notices for TFL 1; TFL 41; and the Kalum TSA (Dec 2004); and (2) the habitat amount in the FPPR s. 7 Notices for Moose</p>
Applies:	NO
How Result or Strategy Applies to the Site (or Rationale if it does not apply)	Not within Moose UWR.

STOCKING REQUIREMENTS

SU	NAR	STANDARDS ID #	OTHER PERFORMANCE STANDARDS
1	29.3	2004723	(SS56); SS-Kalum forest district - spruce content restricted to < 20% well spaced and FG trees on a standards unit due to leader weevil. (99): Carbon Stocking Standard, Carbon Retention Stems can contribute a maximum of 200 stems per ha of preferred and acceptable trees. The target in this site plan is 60 stems per ha. MITD will be reduced to 1.6m on hygric, sub-hydric or mechanically prepared areas (other than mechanically mounded); 1.0m on mechanically mounded sites, 1.0m on colluvial sites as identified in the Site Plan.
2	23.8	2004726	(SXS56); SXS-Kalum forest district - spruce content restricted to < 20% well spaced and FG trees on a standards unit due to leader weevil. (99): Carbon Stocking Standard, Carbon Retention Stems can contribute a maximum of 200 stems per ha of preferred and acceptable trees. The target in this site plan is 60 stems per ha. MITD will be reduced to 1.6m on hygric, sub-hydric or mechanically prepared areas (other than mechanically mounded); 1.0m on mechanically mounded sites, 1.0m on colluvial sites as identified in the Site Plan.

ADMINISTRATION

Amendment number	Date Typed (Yr Mo Dy)	Map Required?
ORIGINAL	2013 02 20	YES

RPF PRINTED NAME	RPF'S SIGNATURE and SEAL
RICO JORIMANN	
DATE SIGNED	
2013/02/20	
I certify I personally completed the work described herein.	

Map attached forms an integral part of the site plan.

SUPPORT DOCUMENT

ORIGINAL

LICENCE #	CP	BLOCK	UBI	OPENING NUMBER	FDU	LOCATION	LATITUDE / LONGITUDE
A90581	-	TEsw049	BI3FE	103I079-	T Fiddler	10 km Fiddler Mainline	54 46 30 / 128 17 36

ASSESSMENTS

VISUAL IMPACT ASSESSMENT INFORMATION					
A VIA was completed by Rick Brouwer of Northwest Timberlands on Nov.22, 2012 titled, 'Visual Impact Assessment for Blocks laid out under Contract SD13TIF200: Skeena West - Fiddler Creek Area: Blocks TEsw022, TEsw025, TEsw030, TEsw049, and TEsw050,' the VIA showed the block was consistent with the Visual Quality Objective for the area.					
PEST INCIDENCE SURVEY INFORMATION					
Pest Specific Comments					
Forest Health Comments					
No Forest Health survey is required. Dwarf mistletoe is present in the stand. Slashing of all hemlock regen above 2.0 metres will reduce the threat of losses to this pathogen. Hw with obvious signs of mistletoe infection should not be selected as Carbon Retention Stems. There was significant damage from porcupine near the road in the adjacent stand. Managing the block to a mix of species will reduce the risk from this pest. The blocks will be harvested using a group selection system – any openings are expected to be small (less than 2 tree lengths) in width so they will provide less opportunity for winds to “dip” into them. In effect, the entire block will be “feathered”. Additionally, the development is located in a wide valley so that dominant winds will be less prone to being funnelled or accelerated. No further action is required.					
ARCHAEOLOGICAL IMPACT ASSESSMENT INFORMATION					
Not within a high Archaeological potential polygon. No CMTs observed within the area to harvest (CMTs were removed from the area to harvest and placed within WTRA #2), no areas of subsurface potential identified. No AIA required.					
TERRAIN STABILITY FIELD AND GULLY ASSESSMENTS INFORMATION					
Terrain Stability Comments					
This block is not located within Class IV or V Terrain or on flat over steep terrain. No signs of slope instability were observed within the block (or road) boundary. A terrain stability assessment is not required for this block.					
Gully Comments					
No gullies within the block.					
VEGETATION					
RIPARIAN ASSESSMENTS					
Management Strategies					
Streams 1, 3, 4, 6, 7, 8 and 9 are small S6 streams. No basal area retention is required along these small S6 streams but the planned group selection silviculture system will result in significant basal area retention within the Riparian Management Zones of all streams. Fall and yard away. These streams require a 5m Machine Free Zone with machine crossings only at designated skid bridges. Skid bridges must be constructed with appropriate materials such as puncheon to minimize channel disturbance and maintain stream bank integrity. Wherever safe and practical non-merchantable trees less than 17.5cm, understory deciduous trees, shrubs, and herbaceous vegetation within 5m of the stream channel will be retained. Streams 2 and 5 are slightly larger S6 streams that may have the potential to mobilize debris. No basal area retention is required along these S6 streams but the planned group selection silviculture system will result in significant basal area retention within the Riparian Management Zones of all streams. Fall and yard away. These streams require a 5m Machine Free Zone with machine crossings only at designated skid bridges. Skid bridges must be constructed with appropriate materials such as puncheon to minimize channel disturbance and maintain stream bank integrity. Wherever safe and practical non-merchantable trees less than 17.5cm, understory deciduous trees, shrubs, and herbaceous vegetation within 5m of the stream channel will be retained. Accumulations of slash or debris that do enter streams 2 or 5 above must be cleaned out concurrent with harvesting activities					
Riparian I.D. and Class	RMA	SU	WIDTH (m)	BA or SPH Retained	Comments (Indicate if in a Community Watershed)
	MFZ		5.0		

Stream 1, 2,3,4,5,6,7, 8 & 9 S6	RMZ		20.0				
SOIL ASSESSMENT							
HAZARD RATINGS				SOIL CHARACTERISTICS			
SU	Soil Comp	Soil Erosion	Soil Disp	Depth To Unfavourable Subsoil		Type of Unfavourable Subsoil	Sediment Delivery Risk (Community Watersheds)
				Min(cm)	Max(cm)		
1	VH	H	M	20.0	80.0	R	
2	VH	H	H	20.0	80.0	SEEP	
COMMENTS							
In order to achieve the 5% soil disturbance limits for Standards Unit 1 and 2 established under FPPR 35(3)(a) it is recommended that ground-based harvesting be limited to the summer period or the winter period when the soils are frozen or protected by snow. It is recommended that hoe forwarding be utilized in conjunction with conventional skidding to limit site degradation and provide a safer work environment. Shut down logging during periods of saturated soils.							

RESERVE / RETENTION INFORMATION

WTRA / WTP (INSIDE OR ATTRIBUTED TO THE BLOCK)										
I.D.#	Area	Description								
WTRA	5.5	HB947								
GROUP WTRA / WTP AND SITE DEG. CALCULATION (to be retained on the first block of the Permit only), CARBON BENEFIT SUMMARY										
Block	Gross Cutblock Area	WTRA / WTP	%	BEC	Perm Access	%	Carbon Benefit from Carbon Results and Strategies at time of harvest 2020	Carbon Benefit from Carbon Results and Strategies 2030	Carbon Benefit from Carbon Results and Strategies 2050	Carbon Benefit from Carbon Results and Strategies at Rotation 2110
TEsw049	63.2	5.5	8.8	CWHws1	3.1	4.8	XXX tCO ₂ e <i>Note: numbers subject to information from CBM modelling outputs</i>	XXX tCO ₂ e <i>Note: numbers subject to information from CBM modelling outputs</i>	XXX tCO ₂ e <i>Note: numbers subject to information from CBM modelling outputs</i>	XXX tCO ₂ e <i>Note: numbers subject to information from CBM modelling outputs</i>
Total # of Blocks: 1	63.2	5.5	8.8		3.1	4.8	XXX tCO ₂ e	XXX tCO ₂ e	XXX tCO ₂ e	XXX tCO ₂ e

Comments:

Actions with a carbon benefit, such as additional WTRA area and Carbon Retention Stems, could be quantified in the Site Plan and summarized as shown in the above table. A guidance document for reporting carbon numbers should be developed to aid tracking of carbon initiatives.

SUPPORTING INFORMATION

HLP/FSP CONSIDERATIONS
Wildlife/Endangered Species Comments
<p>This block is not located within a Moose UWR or Mountain Goat UWR.</p> <p>Wildlife species at risk designated under FPPR s. 7(2) (a) found within the Kalum Forest District are: Coastal Tailed Frog, Great Blue Heron, Grizzly Bear, Marbled Murrelet, Fisher and Wolverine. Evidence of tailed frogs was noted just outside of WTRA#1 in stream 5. The majority of suitable habitat for tailed frogs is outside of the area to harvest. No evidence of any other species at risk was noted during the field phase of development although there is suitable habitat for Grizzly Bear and Wolverine within the block. Habitat for Grizzly bears is addressed through Wildlife Habitat Areas and special stocking standards within high value site series. There is a Grizzly Bear Wildlife Habitat Area along the west boundary of the block. No special measures are prescribed for Wolverine or Fisher at this time.</p>
Range Comments
Not within a range tenure area.
Fisheries Comments
<p>There are no fisheries values within the block. The block has 9 S6 streams. Stream 2 has potential permanent habitat but was tested and found not to be fish bearing in the 1:20,000 Reconnaissance Fish and Fish Habitat Inventory: Middle Skeena River Tributaries 400 - Skeena West Planning Area by Triton Environmental Consultants in 2001. The remaining streams either do not have permanent habitat above downstream barriers to fish passage or are greater than 20% gradient.</p>
Watersheds/Hydro Assessments Comments
<p>Maintain water quality and quantity by ensuring that timber harvesting operations will be designed to prevent or minimize any negative impacts on the water resource. No community watersheds have been identified in this area.</p>
Sensitive Areas Comments
Not within a designated sensitive area.
Recreation Comments
There are no Recreation Sites, Trails, Backcountry Recreation Sites or other recreation features identified within or directly adjacent to this block.
Cultural Heritage Comments
<p>Not within a high Archaeological Overview Assessment polygon. CMTs were identified by field crews but removed from the area to harvest and placed within WTRA#2. The Cultural Heritage Resources pre-harvest evaluation noted the potential for travel and resource trails within the block, no indications of any trails were noted. The block has some blueberry and devils club but surrounding areas contain similar habitat for these cultural species.</p>
Biodiversity Emphasis/L.U. Comments
<p>TEsw049 is located within the Skeena River Kalum Landscape Unit. 8.8% of the cutblock area has been designated as WTRA which exceeds the minimum wildlife tree retention requirements of 5% (CWH) for the Skeena River Kalum Landscape Unit listed in the Table 6 of the Kalum SRMP. The extra WTRA over the 5% target contributes to biodiversity and wildlife objectives as well as to Carbon Objectives and represents XXX tCO₂e of additional carbon storage in 2030 and 2050. In addition, 100 stems per ha of Carbon Retention Stems will be retained scattered across the block. These trees represent XXX tCO₂e of additional carbon storage in 2030 and 2050. The Carbon Retention Stems also contribute to biodiversity and wildlife objectives. TEsw049 is located within the Little Oliver-Skeena River East Grizzly Bear Identified Watershed (GBIW). The block does not contain a significant amount of identifiable and stratifiable Grizzly site series (06/11 ecosystems).</p>
Carbon Management Comments
<p>Carbon Strategies employed on TEsw049 include additional WTRA, retention of 100 Carbon Retention Stems per ha, use of a group selection silviculture system resulting in less requirement for piling and burning, additional retention of non-merchantable understory stems within the RMA of streams and processing and piling residual material such that it can be utilized if a future market occurs.</p>
Other Resources Comments
<p>To address invasive plants:</p> <ol style="list-style-type: none"> 1. Use certified seed only in erosion control and grass-seeding activities 2. In the course of their duties, BCTS field team personnel will make note of occurrences of invasive plants, and will report these occurrences to the Terrace Planning Forester within ten (10) working days of noting the occurrence. The Terrace Planning Forester will then collate and pass this information to a representative of the North West Invasive Plant Council within ten (10) working days of receiving a report from a BCTS field team member.
ADDITIONAL COMMENTS:

ADMINISTRATION

Amendment number	Date Typed (Yr Mo Dy)	Map Required?
ORIGINAL	2013 02 20	YES

HARVEST PLAN

ORIGINAL

LICENCE #	CP	BLOCK	UBI	OPENING NUMBER	FDU	LOCATION	LATITUDE / LONGITUDE
A90581	-	TEsw049	BI3FE	103I079-	T Fiddler	10 km Fiddler Mainline	54 46 30 / 128 17 36

SILVICULTURE SYSTEMS

SU	SYSTEM	VARIANT	PHASE	RESERVE	Min BA (m2/ha)	Min Residual Density (sph)
1,2	Group Selection			G		
Current Stand Structure/Site Conditions			Typical old growth HB age class 9.			
Silviculture Systems SU Comments			<p>SU-1: Group Selection. A group selection harvesting method will be used. Target retention will be 65%, however this is a guideline and retention between 50-75% will be acceptable due to the long-term management objective of creating a multi-age/ multi-story stand with multiple regular entries.</p> <p><u>In variable retention (small patch) areas:</u></p> <p>Opening should not be any wider than two tree-lengths. Opening size will be between 0.1ha and 0.6ha. Retain greater than 50% of Cw of good form and vigour within harvest units wherever safe and practicable. Openings (small patch areas) will be managed to even aged stocking standards.</p> <p>There are a several creeks within the block, see Riparian Management Strategies for more information. Terrain is generally gentle, see Harvest Plan map for a general location of slopes >40%. Workers should be aware that there is scattered blowdown as well as dispersed retention via Carbon Retention Stems. This block has been prescribed Carbon Stocking Standards. A target of 100 stems/ha of Carbon Retention Stems in the harvest area has been selected. A range of 50 to 150 Carbon Retention Stems is considered acceptable. Carbon Retention Stems must be Layer 1 or Layer 2 trees and must not exceed the damage criteria of Table A of the Free Growing Damage Criteria for Multi-Layered Stands in British Columbia (February 2007), except as noted. A maximum of one Porodaedalea pini conk per tree is allowed on layer 1 trees and frost cracks, rotten branches, forks and crooks are allowed. Selection of Carbon Retention Stems should consider windthrow hazard. Preferentially select Carbon Retention Stems growing on well drained microsites and that have good live crown and height to diameter ratios (trees with lots of taper). The 04 sites within this Standards Unit are moist so care must be taken to ensure site degradation limits are adhered to during harvest activities. Ground based harvesting should be restricted to the dry summer period or to the winter period when the ground is frozen and/or protected by a compressible snow layer.</p> <p>SU-2: Group Selection. A group selection harvesting method will be used. Target retention will be 65%, however this is a guideline and retention between 50-75% will be acceptable due to the long-term management objective of creating a multi-age/ multi-story stand with multiple regular entries.</p> <p><u>In variable retention (small patch) areas:</u></p> <p>Opening should not be any wider than two tree-lengths. Opening size will be between 0.1ha and 0.6ha. Retain greater than 50% of Cw of good form and vigour within harvest units wherever safe and practicable. Openings (small patch areas) will be managed to even aged stocking standards.</p> <p>There are a several creeks within the block, see Riparian Management Strategies for more information. Terrain is generally gentle, see Harvest Plan map for a general location of slopes >40%. Workers should be aware there is scattered blowdown within the block as well as dispersed retention via Carbon Retention Stems. This block has been prescribed Carbon Stocking Standards. A target of 100 stems/ha of Carbon Retention Stems has been selected. A range of 50 to 150 Carbon Retention Stems is considered acceptable. Carbon Retention Stems must be Layer 1 or Layer 2 trees and must not exceed the damage criteria of Table A of the Free Growing Damage Criteria for Multi-Layered Stands in British Columbia (February 2007), except as noted. A maximum of one Porodaedalea pini conk per tree is allowed on layer 1 trees and frost cracks, rotten branches, forks and crooks are allowed. Selection of Carbon Retention Stems should consider windthrow hazard. Preferentially select Carbon Retention Stems growing on well drained microsites and that have good live crown and height to diameter ratios (trees with lots of taper). The 04 sites within this Standards Unit are moist so care must be taken to ensure site degradation limits are adhered to during harvest activities. Ground based harvesting should be restricted to the dry summer period or to the winter period when the ground is frozen and/or protected by a compressible snow layer.</p>			
Min. Characteristics of Leave Trees (Form, Health, Vigour)			<p>Retain preferred and acceptable conifers of good form and vigour as per stocking standards. Hw advanced regeneration greater than 2m is not considered acceptable within harvested units due to the presence of Hw mistletoe in the stand.</p> <p>A target of 100 stems/ha of Carbon Retention Stems for the area to harvest has been selected. A range of 50 to 150 Carbon Retention Stems is considered acceptable. Carbon Retention Stems must be Layer 1 or Layer 2 trees and must not exceed the damage criteria of Table A of the Free Growing Damage Criteria for Multi-Layered Stands in British Columbia (February 2007), except as noted. A maximum of one Porodaedalea pini conk per tree is allowed on layer 1 trees and frost cracks, rotten branches, forks and crooks are allowed. Selection of Carbon Retention Stems should consider windthrow hazard. Preferentially select Carbon Retention Stems growing on well drained microsites and that have good live crown and height to diameter ratios (trees with lots of taper).</p>			

	Retain all trees within the WTRAs except when leaving those trees presents a safety hazard.
--	---

Additional Comments

SOIL ASSESSMENT											
SU	HAZARD RATINGS			SOIL DISTURBANCE				SOIL CHARACTERISTICS			
	Soil Comp.	Soil Erosion	Soil Disp.	Max Allow Soil Dist %	Max Allow Max Amount TAS may exceed MASD prior	Max Allow Perm Access Structures %	MASD for Roadside work areas %	Depth to Unfavorable Subsoil		Type of Unfavorable Subsoil	Sediment Delivery Risk (Comm. Watershed)
								Min (cm)	Max (cm)		
1	VH	H	M	5.0		7.0	25.0	20.0	80.0	Bedrock	
2	VH	H	H	5.0				20.0	80.0	Seepage	
SU	Critical site conditions that affect the timing of operations and how they affect the timing										
1	The 04 sites within this Standards Unit are moist so care must be taken to ensure site degradation limits are adhered to during harvest activities. Ground based harvesting should be restricted to the dry summer period or to the winter period when the ground is frozen and/or protected by a compressible snow layer. The tenure holder has elected to utilize a group selection harvest system for the creation of an uneven aged-stand structure, thereby allowing for management of a suite of other resource uses.										
2	The 04 and 06 sites within this Standards Unit are moist so care must be taken to ensure site degradation limits are adhered to during harvest activities. Ground based harvesting should be restricted to the dry summer period or to the winter period when the ground is frozen and/or protected by a compressible snow layer. It will be difficult to achieve site degradation limits in all but the driest summers if skidders are used on this Standards Unit. The tenure holder has elected to utilize a group selection harvest system for the creation of an uneven aged-stand structure, thereby allowing for management of a suite of other resource uses.										
SU MANAGEMENT COMMENTS											
SU	SU Description										
1	This Standards Unit is dominated by the CWHws1 01 site but has a significant amount of 04 sites. The Standards Unit is transitional between the CWHws1 and the CWHws2 with ICHmc2 influences. This Standards Unit will be managed using a group selection harvesting system but for ease of administration harvested areas will be managed to even aged stocking standards and unharvested areas will not have stocking standards applied.										
2	This Standards Unit is dominated by the CWHws1 04 site series with a significant amount of 01 on drier sites and some 06 on seepage sites. It is transitional to the CWHws2 and has ICHmc2 influences. This Standards Unit will be managed using a group selection harvesting system but for ease of administration harvested areas will be managed to even aged stocking standards and unharvested areas will not have stocking standards applied.										

SOIL MANAGEMENT COMMENTS	
Soil Conservation	
In order to achieve the 5% soil disturbance limits for Standards Unit 1 and 2 established under FPPR 35(3)(a) it is recommended that ground-based harvesting be limited to the summer period or the winter period when the soils are frozen or protected by snow. It is recommended that hoe forwarding be utilized in conjunction with conventional skidding to limit site degradation and provide a safer work environment. Shut down logging during periods of saturated soils.	
Temporary Access	
N/A	
Slope Instability	
This block is not located within Class IV or V Terrain or on flat over steep terrain. No signs of slope instability were observed within the block (or road) boundary. A terrain stability assessment is not required for this block.	

RIPARIAN ASSESSMENTS					
Management Strategies					
Streams 1, 3, 4, 6, 7, 8 and 9 are small S6 streams. No basal area retention is required along these small S6 streams but the planned group selection silviculture system will result in significant basal area retention within the Riparian Management Zones of all streams. Fall and yard away. These streams require a 5m Machine Free Zone with machine crossings only at designated skid bridges. Skid bridges must be constructed with appropriate materials such as puncheon to minimize channel disturbance and maintain stream bank integrity. Wherever safe and practical non-merchantable trees less than 17.5cm, understory deciduous trees, shrubs, and herbaceous vegetation within 5m of the stream channel will be retained.					
Streams 2 and 5 are slightly larger S6 streams that may have the potential to mobilize debris. No basal area retention is required along these small S6 streams but the planned group selection silviculture system will result in significant basal area retention within the Riparian Management Zones of all streams. Fall and yard away. These streams require a 5m Machine Free Zone with machine crossings only at designated skid bridges. Skid bridges must be constructed with appropriate materials such as puncheon to minimize channel disturbance and maintain stream bank integrity. Wherever safe and practical non-merchantable trees less than 17.5cm, understory deciduous trees, shrubs, and herbaceous vegetation within 5m of the stream channel will be retained. Accumulations of slash or debris that do enter streams 2 or 5 above must be cleaned out concurrent with harvesting activities					
Riparian I.D. and Class	RMA	SU	WIDTH (m)	BA or SPH Retained	Comments (Indicate if in a Community Watershed)
Stream 1, 2,3,4,5,6,7, 8 &9 S6	MFZ		5.0		
	RMZ		20.0		
COARSE WOODY DEBRIS MANAGEMENT STRATEGY INFORMATION					
This block consists of a mature stand exhibiting high levels of decay, which will contribute an amount of coarse woody debris (CWD) that meets the objective stated in FPPR section 68 (1)(a). The nature of these forests means that a high level of non-merchantable material is typically left on site. During harvesting, additional breakage of trees occurs and is often left on a site, as most is non-merchantable. This block has Carbon Stocking Standards with a target of 100 Carbon Retention Stems per ha. These trees will provide additional CWD over time. Where site occupancy and fire hazard are not significant concerns, BCTS will attempt to avoid practices such as piling and burning (except for landings and roadside), and will not conduct broadcast burning within the FSP area. Utilization of a Group Selection harvest system will result in a greater percentage of waste material being dispersed throughout the block. In addition, harvested group selection units located away from the road will have reduced access post harvest and this will affect the fire hazard assessment. Units with restricted access potentially reduce the need for fire hazard abatement (piling and burning). The block is located in an area that may allow economic utilization of some of this residual volume. To maximize the likelihood of this occurring, non-merchantable logs at roadside will be decked and only limbs, tops and logs unsuitable for pellets piled. Even with the removal of roadside residual volumes these actions will maintain high amounts of CWD on blocks following harvest, providing essential habitat for those organisms that are dependent on CWD.					
Performance Std. (%):		Block Target (%):		Coarse Woody Debris (m3/ha):	

DEFINITIONS

ADMINISTRATION

Amendment number	Date Typed (Yr Mo Dy)	Map Required?
ORIGINAL	2013 02 20	YES

Print off the PAS/TAS table located as an attachment on the Block Details Screen and attach to this prescription.

RPF PRINTED NAME	RPF'S SIGNATURE and SEAL
RICO JORIMANN	
DATE SIGNED	
2013/02/20	
I certify I personally completed the work described herein.	

SILVICULTURE PLAN

ORIGINAL

LICENCE #	CP	BLOCK	UBI	OPENING NUMBER	FDU	LOCATION	LATITUDE / LONGITUDE
A90581	-	TEsw049	BI3FE	1031079-	T Fiddler	10 km Fiddler Mainline	54 46 30 / 128 17 36

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	A	29.6	CWH	ws	1	01-80 04-20	460	30	V	Middle Slope	80	
2	B	23.9	CWH	ws	1	04-60 01-30 06-10	445	25	V	Lower Slope	80	

STOCKING REQUIREMENTS

ASSESSMENT DATES

Standard Unit	Standards ID	Regen Delay (yrs)	Freegrow Early (yrs)	Freegrow Late (yrs)
1	2004723	6		20
2	2004726	3		20
Min/Max Elevation Regime: 370 / 520				

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	Max		
Ba Amabilis Fir	1.4	99	Sxs Sitka x Unknown hybrid Spruce	2.0	56, 99	WELL SPACED TREES (sph)			
Hw Western Hemlock	2.0	99	Plc Lodgepole Pine - Coastal	2.0	99	Target Pref/Acc	Minimum Pref/Acc	Minimum Pref	Min Horizontal Dist. Pref/Acc (m)
Cw Western Red Cedar	1.4					900	500	400	2.0
								Height Relative to Competition (%)	
								150	

56: Bulkley forest district - spruce content restricted to <20% well-spaced and free growing trees on a standards unit due to leader weevil

99: Carbon Stocking Standard, Carbon Retention Stems can contribute a maximum of 200 stems per ha of preferred and acceptable trees

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	Max		
Ba Amabilis Fir	1.4	99	Sxs Sitka x Unknown hybrid Spruce	2.0	56, 99	WELL SPACED TREES (sph)			
Hw Western Hemlock	2.0	99	Act Black Cottonwood	1.4	99	Target Pref/Acc	Minimum Pref/Acc	Minimum Pref	Min Horizontal Dist. Pref/Acc (m)
Cw Western Red Cedar	1.4					900	500	400	2.0
								Height Relative to Competition (%)	
								150	

56: Bulkley forest district - spruce content restricted to <20% well-spaced and free growing trees on a standards unit due to leader weevil

99: Carbon Stocking Standard, Carbon Retention Stems can contribute a maximum of 200 stems per ha of preferred and acceptable trees

ACTIVITIES

SILVICULTURE ACTIVITY COMMENTS	
ACTIVITY	COMMENT
Brushing	Establishment brushing is not expected to be required on Standards 1. Portions of Standards Unit 2 may require establishment brushing if fill planting is required. The anticipated brush complex is fireweed and mixed fern. Deciduous removal brushing is not expected to be required on this block.
Site Preparation	Mechanical site preparation is not expected to be required for this block provided acceptable harvesting practices are followed.
Planting	This block has two standards units both of which are complexes. Standards Unit 1 is dominated by the 01 site series and Standards Unit 2 is dominated by the 04 site series. Both Standards Units have a significant amount of advanced regeneration and have good chances for achieving natural regeneration, however both standards units are also likely to have high brush competition and if stocking is not achieved fill plants will likely require establishment brushing. In addition, the small size of the planned harvest units combined with Carbon Retention Stems means that significant portions of the harvested units are potentially exposed to Hw mistletoe from the surrounding stand. The preferred reforestation method is planting at H+1 or H+2 with resistant species. Suggested species mix is 60%Ba, 20%Cw and 20%Sxs. Suitable stock would be PSB410 1+0 or bigger planted to a target of 1000 stems per ha.
Surveys	Walkthrus should be conducted on Standards Unit 2 at H+1 and H+2 to assess brush and conifer regeneration. A regeneration delay/brushing survey should be conducted at H+3 on Standards Unit 1 and 2. This survey should make recommendations on the need for fill planting, brushing and the need for any additional treatments including additional surveys. A Free Growing survey should be scheduled for both Standards Units at H+11 unless the regeneration delay survey recommends rescheduling the survey.

COARSE WOODY DEBRIS MANAGEMENT STRATEGY INFORMATION		
<p>This block consists of a mature stand exhibiting high levels of decay, which will contribute an amount of coarse woody debris (CWD) that meets the objective stated in FPPR section 68 (1)(a). The nature of these forests means that a high level of non-merchantable material is typically left on site. During harvesting, additional breakage of trees occurs and is often left on a site, as most is non-merchantable. This block has Carbon Stocking Standards with a target of 100 Carbon Retention Stems per ha. These trees will provide additional CWD over time. Where site occupancy and fire hazard are not significant concerns, BCTS will attempt to avoid practices such as piling and burning (except for landings and roadside), and will not conduct broadcast burning within the FSP area. Utilization of a Group Selection harvest system will result in a greater percentage of waste material being dispersed throughout the block. In addition, harvested group selection units located away from the road will have reduced access post harvest and this will affect the fire hazard assessment. Units with restricted access potentially reduce the need for fire hazard abatement (piling and burning). The block is located in an area that may allow economic utilization of some of this residual volume. To maximize the likelihood of this occurring, non-merchantable logs at roadside will be decked and only limbs, tops and logs unsuitable for pellets piled. Even with the removal of roadside residual volumes these actions will maintain high amounts of CWD on blocks following harvest, providing essential habitat for those organisms that are dependent on CWD.</p>		
Performance Std. (%):	Block Target (%):	Coarse Woody Debris (m3/ha):

ADMINISTRATION

Amendment number	Date Typed (Yr Mo Dy)	Map Required?
ORIGINAL	2013 02 20	YES

RPF PRINTED NAME	RPF'S SIGNATURE and SEAL
RICO JORIMANN	
DATE SIGNED	
2013/02/20	
I certify I personally completed the work described herein.	