COASTFOR ENTERPRISES

Visual Assessment: Final Report

TA0654 Sunset Creek: Blocks 1 (WAW-018) & 2 (WAW-017) and Associated Roads & Forest Service Roads: KL0236.15Kokanee8500 & KL0236.16Kokanee8510

Project VIA-1004
Report VIA-1004A
May 13, 2020

Prepared for:
BC Timber Sales – Kootenay Business Area – Kootenay Lake Field Team



(Proposed Alteration Simulation, Significant Public Viewpoint Kokanee Glacier Park Road Southbound 2)

COASTFOR ENTERPRISES
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1. Executive Summary

This Visual Assessment (VIA) evaluates the management of visual quality within scenic areas, resulting from timber harvesting and road construction associated with proposed blocks **TA0654 Blocks 1 (WAW-018) & 2 (WAW-017)** and associated roads, in addition to proposed Forest Service Roads (FSRs) **KL0263.15Kokanee8500 and KL0236.16Kokanee8510** (the Proposed Development). The Proposed Development is spatially located within **Visual Landscape Inventory (VLI) Polygons 97 & 99, with Established Visual Quality Objectives (EVQO) of *Partial Retention***. It is located within the BCTS Kootenay Business Area (Kootenay Lake Field Team) Sitkum-WADF operating area of the Selkirk Natural Resource District, approximately 20km northeast of Nelson, BC.

The Coastfor VIA Process is based on Phases 2-6 of the *Forest and Range Evaluation Program (FREP) Protocol for Visual Quality Effectiveness Evaluation Procedures and Standards*[1]. After the identification of Significant Public Viewpoints (SPVs) and Landforms of Interest (LFOIs) relative to the Proposed Development, one of three levels of assessment was assigned to each SPV. The level of assessment selected considered the attributes of the SPV (including Worst Case View ranking), the Existing Visual Condition of the LFOI and the degree of visual impact expected from the Proposed Development. The three levels of assessment are: Full CF1252 Effectiveness Evaluation Assessment, Enhanced VQC Assessment, and Basic VQC Assessment. Both the Full CF1252 Effectiveness Evaluation Assessments and Enhanced VQC Assessments utilize simulations rendered with advanced digital terrain modeling software.

Twelve Viewpoints were identified as potential Significant Public Viewpoints**. Four Viewpoints** are associated with **public travel** on local roads. **Five Viewpoints** are associated with **public recreation** near tenured recreation features. **Three Viewpoints** are associated with **public recreation** at nearby lakes.

Three SPVs were confirmed from the initial Viewpoints. The remaining Viewpoints did not meet the criteria necessary to be considered Significant Public Viewpoints.

Three SPVs were ranked as the Worst Case Views associated with this Proposed Development. **VP Kokanee Glacier Rd SB 2** was identified as the **Worst Case - Appropriate Percent Alteration View. VP Kokanee W FSR DN 1.5km** and **VP Kokanee W FSR DN 2.0km** were both identified as equally the **Worst Case - Design View.**

One SPV was evaluated by Full CF1252 Effectiveness Evaluation Assessment; the **VP Kokanee Glacier Rd 2** result was **Well Met** (Basic VQC of *Partial Retention*, Adjusted VQC of 4.34% *Partial Retention*). **Two SPVs** were evaluated by Enhanced VQC Assessment; the **VP Kokanee W FSR DN 1.5km** and **VP Kokanee W FSR DN 2.0km** results were ***Partial Retention*** for both SPVs. **No SPVs** remained unassessed for evaluation by Basic VQC Assessment.

[1] Jacques Marc, MFR Forest Practices Branch. 2008. Protocol for Visual Quality Effectiveness Evaluations Procedures and Standards. Forest and Range Evaluation Program, B.C. Min. For. Range and B.C. Min. Env., Victoria, B.C.

The Overall Effectiveness Evaluation is **Well Met**. The Basic VQCs were ***Partial Retention***. The Adjusted VQCs, where measured, were ***Partial Retention (4.34%)***. Results from both methods indicate VQO achievement for the VQC Class of ***Partial Retention (1.6-7.0%),*** with results within the mid-range for the class.

1.1. FPPR 1.1 Compliance Statements

1.1.1. Blocks 1 & 2 and Associated Roads, FSRs KL0236.15Kokanee8500 & KL0236.16Kokanee8510

Overlapping VLI Polygons 97 & 99, EVQOs = *Partial Retention*.

The altered forest landscape resulting from the Proposed Development, when considered alongside existing alterations, **meets the *Partial Retention* category of altered forest landscape** as defined in FPPR 1.1 when considered from all identified Significant Public Viewpoints. The resultant altered forest landscape will be:

i) easy to see,
ii) medium in scale, and
iii) natural and not rectilinear or geometric in shape.

This altered forest landscape **falls below the upper confines of the *Partial Retention* category of altered forest landscape** applicable to the scenic area.

2. Certification Statement



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

May 13, 2020

Richard Cane, RPF — Date

2.1. Authorship

This report was prepared by Richard Cane, RPF. Mapping, modeling and supporting information was prepared by Renee Van Den Berghe. Field evaluations were also completed by Richard Cane, RPF.

2.1. Limitations & Supervision

The determinations herein are based on a detailed and careful analysis of the Proposed Development in regard to field/office information, the harvest/construction plan and the simulations.

It is strongly recommended that sufficient supervision by an experienced and qualified supervisor be exercised early during harvesting and road construction to ensure that the harvest/construction plan is implemented as prescribed, in respect to ensuring that the Established Visual Quality Objectives will be achieved. The level of supervision necessary will vary according to the EVQO, the findings of this report, and the complexity of the harvest plan. In general, more restrictive EVQOs (e.g. Retention) will require more supervision than less restrictive EVQOs (Modification), clearcuts with no retention will require less supervision than partial cuts, and situations where the altered forest landscape is expected to easily meet the EVQO will require less supervision than those where the altered forest landscape is at or near the upper confines of the EVQO. Consideration should be given to all factors in determining the appropriate level of supervision. If site conditions are encountered that vary significantly from those described in the harvest/construction plan or this report then an immediate field review by a qualified professional is strongly recommended.

For further information regarding this assessment please contact Richard Cane, RPF at 250-372-0857 or richard@atlas-info.com.

3. Introduction

3.1. Coastfor VIA Process

The Coastfor VIA Process is based on Phases 2-6 of the *Forest and Range Evaluation Program (FREP) Protocol for Visual Quality Effectiveness Evaluation Procedures and Standard* (Marc, 2008). The FREP post-harvest evaluation process has been adapted to assess Proposed Developments using pre-harvest field assessments paired with Google Earth and advanced digital terrain modeling software[2].

Within the FREP Protocol, Phase 1 is a government only administrative process. Phases 2-6 cover: (2) collecting office information; (3) visiting locations (viewpoints); (4) compiling the findings; (5) assembling a visual Effectiveness Evaluation package; and (6) summarizing the Effectiveness Evaluations ratings.

3.2. Report Format

The content found in the remainder of this report is summarized below. Please note that numbers in square brackets within this report (e.g. [2.2.3]) are references to specific sections within the *FREP Protocol.*

Section 4 - Methodology first describes how the Coastfor VIA Process follows the FREP Protocol. This description is broad in nature and is meant only to provide an overview of the process. Detailed processes are discussed in Appendix C and the FREP Protocol should also be reviewed.

Section 5 - Proposed Development Overview provides the details specific to the Proposed Development under assessment, including: a description of the Proposed Development; information regarding scenic areas and VLI Polygons with Established Visual Quality Objectives; a summary of previous Visual Assessments consulted; an overview of the Viewpoints identified, Significant Public Viewpoint determinations and Worst Case ranking; details of the Digital Terrain Model constructed; and assignment of levels of assessment to each of the identified SPVs.

Section 6 - Results presents the assessment outcomes for each SPV, categorized by the three level of assessment: Full CF1252 Effectiveness Evaluation Assessment, Enhanced VQC Assessment, or Basic VQC Assessment.

Section 7 - Conclusion presents the Overall Effectiveness Evaluation, considering the results of all the individual SPV assessments; makes overall recommendations regarding opportunity for future alterations; and summarizes the outcome with a final compliance statement.

Schedules - Further supporting documentation specific to this VIA is found in the Schedules, including but not limited to maps, photographs, simulations and detailed assessments. Refer to the Table of Contents for a listing of Schedules. Schedule numbering and content corresponds to numbered sections

[2] Visual Nature Studio 3 (VNS) from AlphaPixel LLC

of this report. Data may not be presented for every numbered Schedule heading listed in the table of contents.

Appendix A - References list those resources specifically cited within this document as well as others more generally consulted during the assessment process.

Appendix B - Detailed methodology summarizes key elements of the CoastFor VIA Process, including: the development of the CF1252 Form and details of the assessments performed, Viewpoint selection and Significant Public Viewpoint determinations, Landform of Interest identification, and a description of the Digital Terrain Model and Simulations produced.

4. Methodology

4.1. FREP Protocol Phase Summaries

4.1.1. Phase 2 - Office Visit [2.1]

Relevant mapping/spatial data for the Proposed Development, VLI data, as well as copies of any previous Visual Assessments with relevance to the Proposed Development were collected from available sources (e.g. MapView, client databases, and Government documents). Potential Viewpoints were identified from any previous VIAs, through Google Earth simulations, or as known from any related field work and/or other knowledge of the area, and Significant Public Viewpoints were determined and rationales recorded. Consideration was also given to VLI Viewpoints (if available) for relevance to the landforms and Proposed Development. The intent behind the establishment of the VLI Polygon was estimated using the available information and simulations, in order to assist in identifying Viewpoints.

4.1.2. Phase 3 - Field Visit [2.2]

Adding to the information collected under Phase 2, Viewpoint locations were visited in the field where possible. Viewpoint attributes were recorded and photographs taken. Consideration was given to the visually effective green-up status of relevant existing openings. Assessments regarding the Basic VQC definition [2.2.3] and design elements [2.2.4] of the Proposed Development were estimated at this time, while they were formally pushed to Phase 4 [2.3] for final consideration.

4.1.3. Phase 4 - Office Compilation of the Results [2.3] & Phase 5 - Assembling a Visual Effectiveness Evaluation Package [3.0]

Where useful, a Digital Terrain Model was built to produce Simulations of the Proposed Development and landforms to simulate the perspectives experienced in the field, as recorded in the photographs, and for the purposes of completing Full CF1252 Effectiveness Evaluation Assessments and Enhanced VQC Assessments.

Usually one or more “worst case” Significant Public Viewpoints associated with the Proposed Development was selected for Full CF1252 Effectiveness Evaluation Assessment. It is a recognized standard practice to use the most direct view or “worst case scenario” of an alteration as the primary means of assessing an alteration, provided that the direct view is also a Significant Public Viewpoint (FAC, 2016 par 120 & 128). Those assessments undertaken as part of the Full CF1252 Effectiveness Evaluation Assessments included assessing the Basic VQC [2.2.3], design elements [2.2.4], the Initial VQC rating [2.3.2], the Adjusted VQC rating [2.3.3], and the final visual quality Effectiveness Evaluation rating for the landform [2.3.6].

Results for SPVs evaluated by Enhanced VQC Assessments and Basic VQC Assessments were also recorded. All results are summarized in Section 6, with supporting imagery and information found in the Schedules.

4.1.4. Phase 6 - Summarizing the Effectiveness Evaluation Ratings for a Sample area [4.0]

The results of the various assessments were compiled into the Overall Effectiveness Evaluation in Section 7, and a final determination with regards to the impacts of the Proposed Development on visual quality was made. (No further aggregation of results across a larger sample area, as described in the FREP Protocol, was completed as this is not relevant to landform level assessments and this Visual Assessment.)

5. Proposed Development Overview

5.1. Proposed Development under Assessment

This Visual Assessment (VIA) evaluates the management of visual quality within scenic areas, resulting from timber harvesting and road construction associated with proposed blocks **TA0654 Blocks 1 (WAW-018) & 2 (WAW-017)** and associated roads, in addition to proposed Forest Service Roads (FSRs) **KL0263.15Kokanee8500 and KL0236.16Kokanee8510** (the Proposed Development). The Proposed Development is spatially located within **Visual Landscape Inventory (VLI) Polygons 97 & 99, with Established Visual Quality Objectives (EVQO) of *Partial Retention***. It is located within the BCTS Kootenay Business Area (Kootenay Lake Field Team) Sitkum-WADF operating area of the Selkirk Natural Resource District, approximately 20km northeast of Nelson, BC.

The Proposed Development is shown in Google Earth overview below (Figure 5.1.A) and detailed Attributes and spatial VLI Polygon / EVQO overlaps are provided in Table 5.1.B.

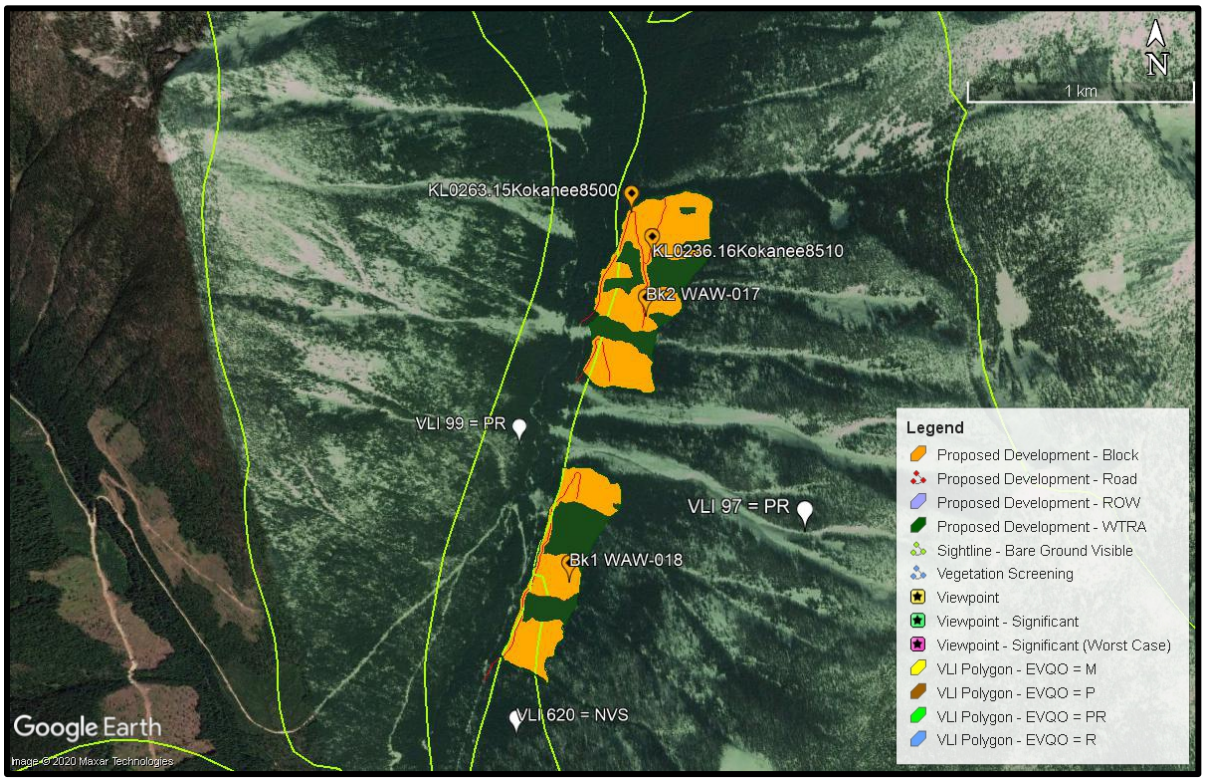


Figure 5.1.A Overview of Proposed Development.

Proposed Development Attributes						
Blocks						
Name	**Harvest Unit**	**VIA Classification**	**VLI Overlap**	**EVQO**	**Harvest Area (ha)**	**Status**
TA0654 Block 1 WAW-018	1 - Ground	PD_{CC} (≥90% removal)	99	PR	1.1	Proposed
	1 - Ground	PD_{CC} (≥90% removal)	97	PR	2.7	
	1 - Ground	PD_{CC} (≥90% removal)	620	NVS	0.5	
	2 - Cable	PD_{CC} (≥90% removal)	97	PR	11.2	
	2 - Cable	PD_{CC} (≥90% removal)	620	NVS	4.5	
TA0654 Block 2 WAW-017	1 - Ground	PD_{CC} (≥90% removal)	97	PR	6.7	
	1 - Ground	PD_{CC} (≥90% removal)	99	PR	2.0	
	2 - Cable	PD_{CC} (≥90% removal)	97	PR	16.5	
	2 - Cable	PD_{CC} (≥90% removal)	99	PR	0.1	
All Blocks	**HU Totals**		**97**	**PR**	**37.1**	
			99	**PR**	**3.2**	
			620	**NVS**	**5.0**	
"Associated Roads"[1]						
Name (Associated Block)	**Standard**	**VIA Classification**	**VLI Overlap**	**EVQO**	**Length (m)**	**Status**
KLR22873_ Kokane6500 (Block 1)	Temporary	PD_{CC} (≥90% removal)	99	PR	170	Proposed
	Temporary	PD_{CC} (≥90% removal)	620	NVS	10	
KLR22873_ 2Kokane8100 (Block 2)	Temporary	PD_{CC} (≥90% removal)	99	PR	68	
All Roads	**Road Totals**		**99**	**PR**	**238.0**	
			620	**NVS**	**10.0**	
Forest Service Roads[2]						
Name	**Standard**	**VIA Classification**	**VLI Overlap**	**EVQO**	**Length (m)**	**Status**
K0236.15 Kokanee8500	Permanent	PD_{CC} (≥90% removal)	97	PR	871	Proposed
	Permanent	PD_{CC} (≥90% removal)	99	PR	429	
K0236.16 Kokanee8510	Permanent	PD_{CC} (≥90% removal)	97	PR	90	
All Roads	**Road Totals**		**97**	**PR**	**961.0**	
			99	**PR**	**429.0**	
[1] Locations & lengths external to above Block boundaries only.						
[2] Locations & lengths both internal and external to above Block boundaries.						
Note: Gray highlighting indicates Non-Visually Sensitive VLI Polygon overlaps.						

Table 5.1.B Proposed Development Attributes.

5.1.1. Advanced Planning to Achieve EVQOs

This VIA was implemented early in the planning stages for the Proposed Development. The design of the Proposed Development was strategically planned in collaboration with the undersigned to meet the EVQO. Layout crews were provided with guidance for implementing block and road development in the field.

5.1.2. Changes to Proposed Development During Assessment

During the assessment process no changes to the Proposed Development were required to ensure that the Proposed Development meet the EVQOs.

5.1.3. Field Reviews [2.2]

The Proposed Development was reviewed in the field by Richard Cane, RPF on October 10, 2019. Five of the identified Viewpoints SPVs were selected for field review based on the preliminary office analysis.

The primary purposes of the field review was to confirm whether identified Viewpoints met Significant Public Viewpoint criteria, to stratify landforms, to estimate Existing Visual Condition (EVC) on Landforms of Interest (LFOI) and to take photographs. The secondary purpose of the field review was to estimate the visual impact of the Proposed Development to Landforms of Interest (when considered in isolation), as well as to estimate the cumulative impacts of both the Proposed Development and the EVC to the LFOIs. This information informed the final assessments made and described in this report, which consider additional data and simulations.

Field conditions on October 10 were clear skies, temperature averaging approximately 10-15°C. Lower light levels from steep narrow valleys were generally compensated for by west (northwest) facing slopes associated and the later afternoon timing of field reviews.

Photographs were taken using a Nikon D70S DSLR camera equipped with Nikon Nikkor 18-55mm lens, as well as the rear-facing camera on a Samsung Galaxy Tab S4 tablet. Landform stratifications and estimates were recorded on the most suitable available photograph (e.g. depending on landform size, complexity of landform stratification, photograph quality/characteristics etc.).

A variety of photographs were taken, including 50mm perspective views.

5.2. Scenic Areas and Visual Quality Objectives

5.2.1. Legal Framework

Scenic Areas were established by a Ministerial Order approving the *Kootenay Boundary Higher Level Plan Order* (KBHLPO) on October 26, 2002 and grand-parented under *Forest and Range Practices Act* (FRPA) Section 180(c). The Visual Quality Objectives for the area were established by a *Government Actions Regulation* (GAR) Section 7(2) Order by the District Manager, Kootenay Lake Forest District, on March 7, 2014.

5.2.2. VLI Polygons

The Proposed Development is spatially located within **Visual Landscape Inventory (VLI) Polygons 97 & 99, with Established Visual Quality Objectives (EVQO) of *Partial Retention.*** Additionally, the Proposed

Development is located within *Non-Visually Sensitive* VLI Polygon 620**.** Some attributes of the VLI Polygons with EVQOs are summarized in Table 5.2.A below, with full attributes available in Schedule 5.2 (*Non-Visually Sensitive* VLI Polygon attributes also included).

VLI Polygon Attributes		
VLI Polygon #	**97**	**99**
Established Visual Quality Objective (EVQO)	Partial Retention	Partial Retention
Relates to Block/Road	Block 1 Block 2	Block 1 Block 2 KL0236.15 Kokanee8500 KL0236.16 Kokanee8510
Biophysical Rating (BR)	High	Moderate
Existing Visual Condition (EVC)	Modification	Partial Retention
Visual Absorption Capability (VAC)	Moderate	Moderate
Viewing Condition (VC)	Moderate	High
Viewer Rating (VR)	Moderate	Moderate
Visual Sensitivity Class (VSC)	3 - Moderate	3 - Moderate
Last Update	8/1/2010	8/1/2010
Note: Refer to Schedule 5.2 for definitions.		

Table 5.2.A Select attributes of VLI Polygons with Established Visual Quality Objectives (EVQOs).

VLI Polygon 97, EVQO = Partial Retention

Description

This VLI Polygon 97 is approximately 1,701ha in area and primarily covers low (770m, southern extent, near Kokanee Creek Provincial Park) to upper (2080m, southeast extent) elevation terrain along the transitional southwest-west-northwest face of Mount Yuill above Kokanee Creek, while also covering south facing moderate (1180m, southern extent) to upper (2080m, southern extent) elevation terrain along the south face of the same. Mount Yuill is situated on the north side of West Arm Kootenay Lake, between Kokanee and Redfish Creeks, northeast of Nelson BC (MFLNRORD, 2020). The Polygon's (i.e. not landform) Existing Visual Condition from the VLI data (2010) is rated as *Modification.* The Polygon is primarily flanked by adjacent VLI Polygons with EVQOs of: *Null* (*Non-Visually Sensitive)* to the north and west; *Retention* to the south; and *Partial Retention* to the east and west. VLI Polygon 99 (*Partial Retentio*n), also the subject of this assessment, is adjacent to the west side of this Polygon.

Landform Affinity

This Polygon has good affinity to the landforms present on the ground. Polygon boundaries generally align to natural topographic features. Areas covered by adjacent *Non-Visually Sensitive (NVS)* VLI Polygons are generally not visible due to screening from view by topography. There are no private land parcels situated within this Polygon that should be excluded from landforms associated with Significant Public Viewpoints.

Estimated Polygon Purpose

The primary Estimated Polygon Purpose is to protect visual quality during **public travel**. The Polygon protects visual quality during land-based public travel via passenger vehicle on local roads while accessing Kokanee Glacier Provincial Park and other nearby tenured Recreation Sites and Trails. Additionally, the Polygon protects visual quality during water-based public travel via watercraft on the surface of Kootenay Lake (West Arm, near Kokanee Narrows).

The secondary Estimated Polygon Purpose is to protect visual quality during **public recreation**. The Polygon protects visual quality during stationary or mobile public recreation at Kokanee Glacier Provincial Park and other nearby tenured Recreation Sites and Trails.

Supplementary protection of visual quality may be afforded to views associated with private land, private residences, and the Kokanee Mountain Zipline. These views are not estimated to be central to the establishment of the Polygon.

VLI Polygon 99 Description, EVQO = Partial Retention

Description

This VLI Polygon is located adjacent to the west side of VLI Polygon 97. This Polygon is approximately 608ha in area and covers low (650m, southern extent, near the Kokanee Creek Provincial Park boundary) to moderate (1500m, northern extent, adjacent to the Kokanee Glacier Provincial Park boundary) elevation terrain surrounding both sides of Kokanee Creek, as well as moderate (1500m, norther extent) to upper (2170m, northeast extent; 2020m, northwest extent) elevation terrain where the Polygon expands eastward/westward where it is adjacent to Kokanee Glacier Provincial Park. The Polygon's (i.e. not landform) Existing Visual Condition from the VLI data (2010) is rated as *Partial Retention.* The Polygon is primarily flanked by adjacent VLI Polygons with EVQOs of: *Null* (*Non-Visually Sensitive)* to the north, east and west; *Retention* to the east and south; and *Partial Retention* to the east and west.

Landform Affinity

This Polygon has poor to fair affinity to the landforms present on the ground. Polygon boundaries do not align particularly well to larger natural topographic features; rather, the polygon spatial extent appears to have been primarily established to protect foreground views from Kokanee Glacier Park Road, assuming a relatively consistently narrow treed road right-of-way. Areas covered by adjacent *Non-Visually Sensitive* VLI Polygons are generally not visible due to screening from view by topography. Areas covered by adjacent *Partial Retention* VLI Polygons are expected to be visible along upper landforms in glimpse views. There are no private land parcels situated within this Polygon that should be excluded from landforms associated with Significant Public Viewpoints.

Estimated Polygon Purpose

The primary Estimated Polygon Purpose is to protect visual quality during **public travel**. The Polygon protects visual quality during land-based public travel via passenger vehicle on local roads while accessing Kokanee Glacier Provincial Park and other nearby tenured Recreation Sites and Trails.

The secondary Estimated Polygon Purpose is to protect visual quality during **public recreation**. The Polygon protects visual quality during stationary or mobile public recreation at Kokanee Glacier Provincial Park and other nearby tenured Recreation Sites and Trails.

Supplementary protection of visual quality may be afforded to views associated with private land, private residences and the Kokanee Mountain Zipline. These views are not estimated to be central to the establishment of the Polygon.

5.2.3. Previous Visual Assessments

No previous Visual Assessments related to Landforms of Interest associated with this Proposed Development were available for review in the preparation of this assessment.

5.3. Viewpoints & Significant Public Viewpoints (SPVs)

5.3.1. Polygon Predicted Viewpoints

Based on the primary Estimated Polygon Purposes (**public travel**), primary Polygon Predicted Viewpoints are expected to be:

- Dynamic views from local roads, with durations commonly very short (<10sec) to short (10sec to 1min) in duration, in foreground (<1km) to midground (1-8km) distance.
- Dynamic views from Kokanee Lake, with durations commonly short (10sec to 1min) to moderate (1min to 1 hr) in duration, in midground (1-8km) distance.

Based on the secondary Estimate Polygon Purposes (**public recreation**), secondary Predicted Viewpoints generally associated with these VLI Polygons are expected to be:

- Static or dynamic views from tenured recreation features, with durations commonly very short (<10sec) to moderate (1min to 1hr) and infrequently long (1hr to 1 day) in duration, in foreground (<1km) to midground (1-8km) distance. (Non-tenured features may be considered upon discovery and analysis of this attributes.)

5.3.2. VLI Viewpoints

VLI Viewpoints within the March 7, 2014 GAR Order were reviewed with respect to the Proposed Development and VLI Polygons. (Note that this Order does not specifically relate these Viewpoints to VLI Polygons.)

Six localized VLI Viewpoints were identified as having potential relevance to the Polygons and Proposed Development and were reviewed in greater detail.

VLI Viewpoints 18 and 19 appear to be associated with the West Kokanee Creek Trail (Recreation Line REC2223). This tenured recreation trail is heavily timbered in the vicinity of the VLI Viewpoints. These VLI Viewpoints are spatially located within VLI Polygon 99.

VLI Viewpoint 20 appears to be associated with the Kokanee Glacier Park Road (MOTI Maintained). This VLI Viewpoint is spatially located within VLI Polygon 99.

VLI Viewpoints 23 and 24 appear to be associated with Kokanee Creek Old Growth Trail (Forest Recreation Site REC5223). A hiking trail through this Forest Recreation Site provides interpretive guidance relating to an older cedar/hemlock forest type. These VLI Viewpoints are spatially located within VLI Polygon 99.

VLI Viewpoints 21 also appears to be associated with the Kokanee Creek Gold Growth Trail (Forest Recreation Site REC5223) as well as the Kokanee Glacier Park Road (MOIT Maintained). This VLI Viewpoint is spatially located within VLI Polygon 99.

5.3.3. Viewpoints

Twelve Viewpoints were identified as potential Significant Public Viewpoints**. Four Viewpoints** are associated with **public travel** on local roads. **Five Viewpoints** are associated with **public recreation** near tenured recreation features. **Three Viewpoints** are associated with **public recreation** at nearby lakes.

Viewpoint identification considered the scenic area details presented above, previous assessments, Polygon Predicted Viewpoint, VLI Viewpoints, and consultation with qualified professionals. Google Earth viewshed (viewscape) analysis was first used to identify potential viewpoint locations followed by subsequent professional judgement applied to both the office GIS exercise and field truthing. Viewpoint locations are generally shown in Figure 5.3.A and can be seen in the Google Earth Model (.KMZ) found in Schedule 5.3b; attributes and rationales are provided in Schedule 5.3a. Photos for Viewpoints that were field reviewed but not deemed to meet Significant Public Viewpoint Criteria can be found in Schedule 5.3c.

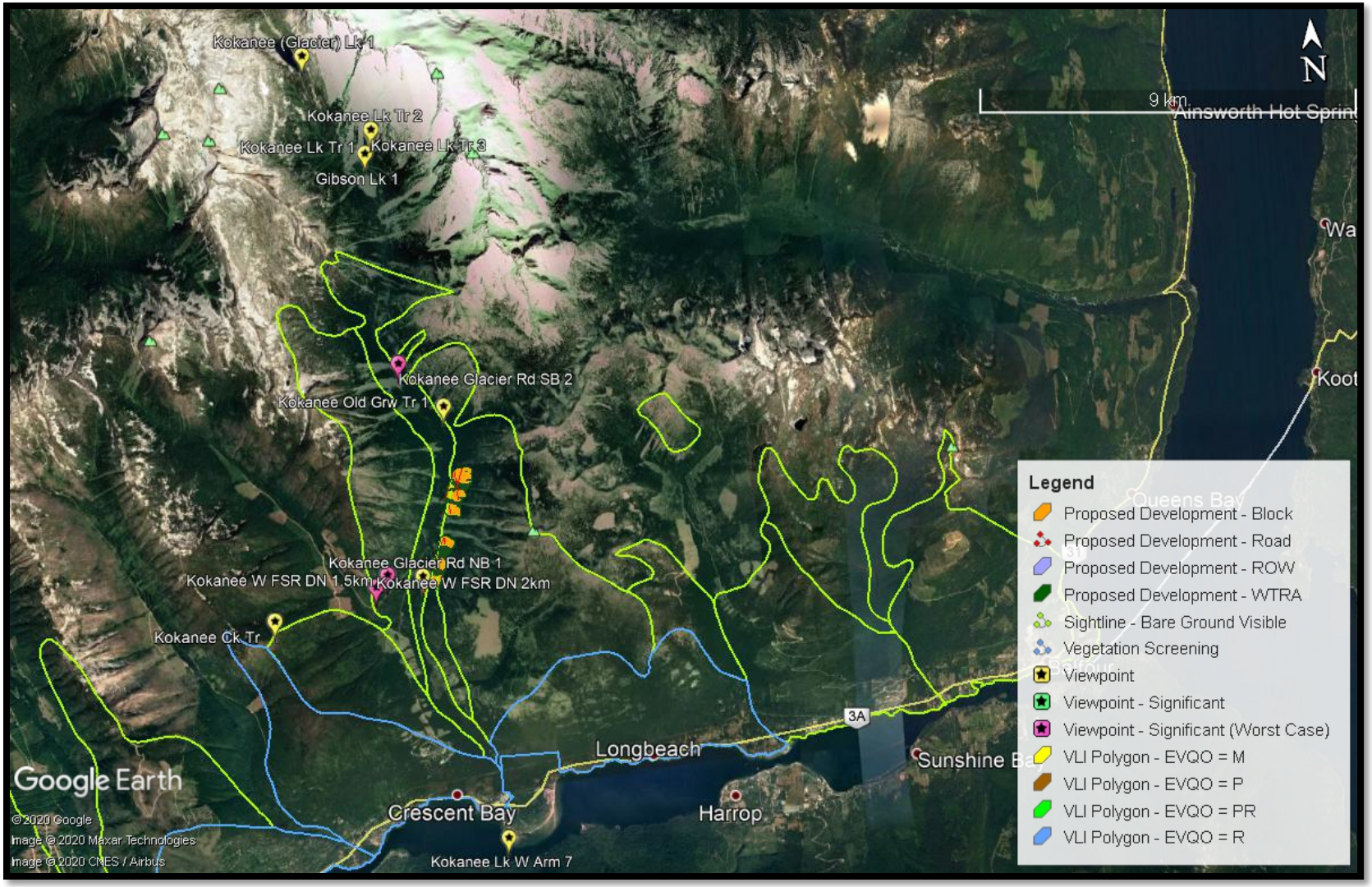


Figure 5.3.A Viewpoints.

5.3.4. Significant Public Viewpoints

Three SPVs were confirmed from the initial Viewpoints. The remaining Viewpoints did not meet the criteria necessary to be considered Significant Public Viewpoints.

All three SPVs are associated with **public travel** on local roads.

- Kokanee Glacier Park Road Southbound 2 (VP Kokanee Glacier Rd SB 2)
- Kokanee West Forest Service Road Down at 1.5km (VP Kokanee W FSR DN 1.5km)
- Kokanee West Forest Service Road Down at 2.0km (VP Kokanee W FSR DN 2.0km)

Identified Viewpoints associated with **public recreation** did not meet the criteria necessary to be considered Significant Public Viewpoints.

SPV locations are generally shown in Figure 5.3.B and can be seen in the Google Earth Model (.KMZ) found in Schedule 5.3b. SPV attributes and rationales are provided in Schedule 5.3a.

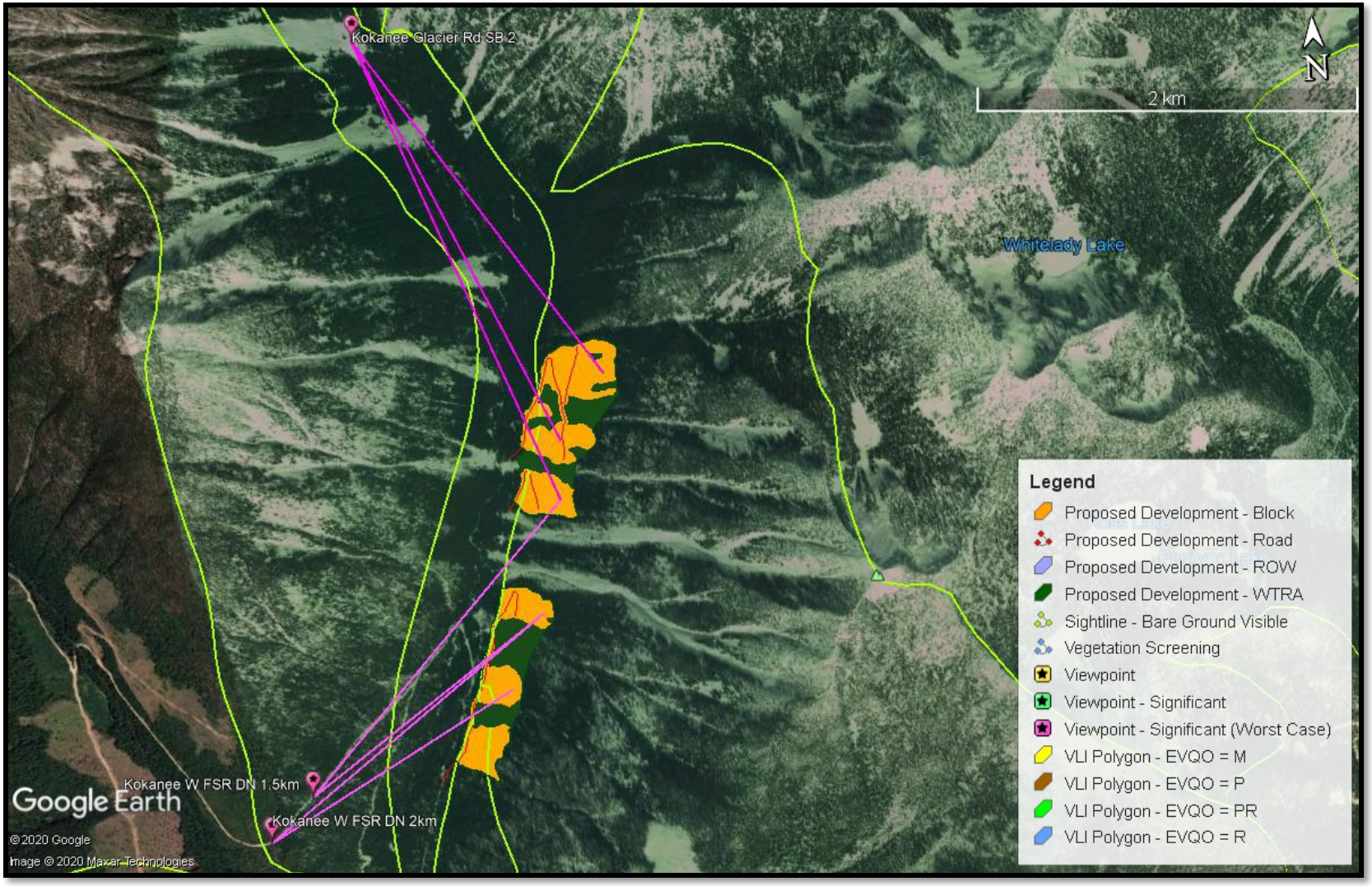


Figure 5.3.B Significant Public Viewpoints and Sightlines. Green sightlines indicate sample/general areas of expected visible bare ground (i.e. altered forest landscape); pink sightlines indicate the same, however these relate to identified Worst Case views.

5.3.5. Worst Case Views

Three SPVs were ranked as the Worst Case Views associated with this Proposed Development. Three types of Worst Case Views were identified: Worst Case - Appropriate Percent Alteration View, Worst Case - Design View, and Worst Case - Singular Viewing Condition View.

Worst Case – Appropriate Percent Alteration View

VP Kokanee Glacier Rd SB 2 was identified as the **Worst Case - Appropriate Percent Alteration View**. A percent alteration calculation from this view is likely to be an effective measurement of consistency with the EVQO. The view (Figure 5.3.C) resembles the FREP Protocol example scenario where percent alteration is measured against a LFOI that is not unduly constrained and where the LFOI plane surface is relatively perpendicular to the viewing direction (Figure 5.3.D).



Figure 5.3.C. Landform of Interest as seen from Significant Public Viewpoint VP Kokanee Glacier Rd SB 2.

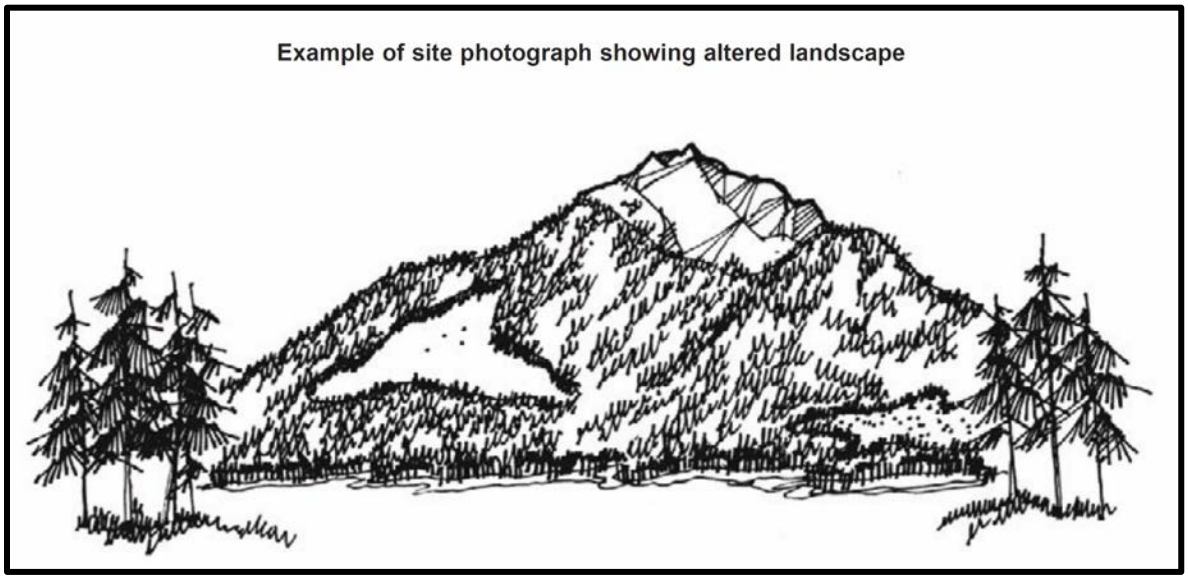


Figure 5.3.D Example landform used to demonstrate calculating percent alteration in perspective view from FREP Protocol (Marc, 2008, Schedule 4).

This SPV has an expansive visible LFOI with high affinity to the natural topographic landform and the VLI Polygon shape. The LFOI is not unduly constrained by screening (aside from minor foreground screening by individual trees) and the LFOI plane surface is relatively perpendicular to the viewing direction.

Worst Case – Design View

VP Kokanee W FSR DN 1.5km and **VP Kokanee W FSR DN 2.0km** were both identified as equally the **Worst Case - Design View**, due to the somewhat constrained visible LFOI resulting from increased vegetative and screening, while at the same time viewing distance is reduced (Figure 5.3.E and Figure 5.3.F). The overall visible LFOI is reduced due to peripheral screening, while the visible extent of the Proposed Development is increased.



Figure 5.3.E Landform of Interest as seen from Significant Public Viewpoint VP Kokanee W FSR DN 1.5km.



Figure 5.3.F Landform of Interest as seen from Significant Public Viewpoint VP Kokanee W FSR DN 2.0km.

Worst Case – Singular Viewing Condition View

VP Kokanee Glacier Rd 2 was also identified as the **Worst Case – Singular Viewing Condition View**.

Worst Case – Singular Viewing Condition is meant to identify an individual SPV which is characteristic of a highest rated viewpoint used in establishing the VLI aggregate Viewing Condition.

This SPV has a moderate viewing distance (1-8km), high Relative Number of Viewers (low Absolute Number of Viewers), short viewing duration (10 seconds to 1 minute), and a high viewing angle (focal).

5.4. Levels of Assessment

The level of assessment assigned to each SPV was determined so as to provide sufficient evidence to demonstrate consistency relative to the EVQOs. These determinations considered all factors aforementioned in this report, such as the results of previous assessments, the extent and attributes of the Proposed Development, Significant Public Viewpoint attributes, Worst Case views, Existing Visual Condition of Landforms of Interest, as well as the category of visually altered forest landscape specified in the Established Visual Quality Objectives.

Three levels of assessment were considered: Full CF1252 Effectiveness Evaluation Assessment, Enhanced VQC Assessment (with DTM Simulations), and Basic VQC Assessment (with Google Earth Simulations). Results from the more detailed assessments are used where appropriate to inform the results of the more basic assessments (e.g. percent alteration calculations from Full CF1252 Effectiveness Evaluation Assessments provide benchmarks against which to relate Basic VQC Assessments).

5.4.1. Full CF1252 Effectiveness Evaluation Assessment

One SPV was selected for Full CF1252 Effectiveness Evaluation Assessment where it was felt the additional detail of the process would be valuable. Full Effectiveness Evaluation assessments employed advanced DTM simulations, in addition to Google Earth simulations and photographs.

The selected SPV was **VP Kokanee Glacier Rd 2** (the **Worst Case – Appropriate Percent Alteration View,** and the **Worst Case – Singular Viewing Condition View**).

Results can be found in Section 6.1.

5.4.2. Enhanced VQC Assessment

Two SPVs were selected for Enhanced VQC Assessment. Basic VQC assessments were enhanced by using advanced DTM simulations, in addition to Google Earth simulations and photographs.

The selected SPVs were **VP Kokanee W FSR DN 1.5km** and **VP Kokanee W FSR DN 2.0km** (equally the **Worst Case – Design View**).

Results can be found in Section 6.2.

5.4.3. Basic VQC Assessment

No unassessed SPVs remained for selection for Basic VQC Assessment. Basic VQO assessments would usually be completed using Google Earth simulations and photographs.

Results can be found in Section 6.3.

5.5. Digital Terrain Model Attributes

This VIA uses a LiDAR-based Digital Terrain Model to support the Full CF1252 Effectiveness Evaluation Assessments and Enhanced VQC Assessments. The Proposed Development is modeled as described in Figure 5.5.A below. Aerial Overviews (Schedule 5.5a) provide a planimetric reference of how the Proposed Development is modeled which can be cross referenced with the Harvest Plan/Road Construction Maps (Schedule 5.1b). Note that Aerial Overviews do not simulate the surrounding forest as well in planimetric view, as they do perspective view.

Digital Terrain Model Attributes						
Blocks						
Name	**Harvest Unit**	**VIA Classification**	**Dispersed Retention Simulated**	**Modeled Reserve Species**	**St/ha**	**Compilation Reference Partial Cut Percent**
TA0654 Bk1 WAW-018	HU1	PD_{CC} (≥90% removal)	No	N/A	N/A	N/A
	HU2	PD_{CC} (≥90% removal)				
TA0654 Bk2 WAW-017	HU1	PD_{CC} (≥90% removal)				
	HU2	PD_{CC} (≥90% removal)				
Associated Roads						
Road Name	**Construction Standard**	**VIA Classification**	**Prism Width (Gray Fill)**		**ROW Width (Brown Fill)**	
KLR22873_1Kokane6500	Temporary	PD_{CC} (≥90% removal)	10m		5m either side of prism	
KLR22873_2Kokane8100	Temporary	PD_{CC} (≥90% removal)	10m		5m either side of prism	
Forest Service Roads						
Road Name	**Construction Standard**	**VIA Classification**	**Prism Width (Gray Fill)**		**ROW Width (Brown Fill)**	
KL0236.15Kokanee8500	Permanent	PD_{CC} (≥90% removal)	15m		5m either side of prism	
KL0236.16Kokanee8510	Permanent	PD_{CC} (≥90% removal)	15m		5m either side of prism	

Figure 5.5.A Digital Terrain Model Attributes.

6. Results

6.1. Full CF1252 Effectiveness Evaluation Assessments

One SPV was selected for Full CF1252 Effectiveness Evaluation Assessment.

6.1.1. VP Kokanee Glacier Rd SB 2

- **Worst Case – Appropriate Percent Alteration View**
- **Worst Case – Singular Viewing Condition View**
- Proposed Development - Clearcuts (PD_{CC})
  - VLI Polygons 97 & 99 - EVQOs = *Partial Retention*
    - Blocks 1 & 2, and associated roads
    - FSRs KL0236.15Kokanee8500 & KL0236.16Kokanee8510
- Proposed Development - Partial Cuts (PD_{PC}) = N/A

This viewpoint presents a dynamic, focal view of the Proposed Development in mid-ground distance (2.2-3.4km) for short duration (10 seconds to 1 minute) while traveling southbound on Kokanee Glacier Park Road at approximately 20km/h. The Proposed Development is located vertically low and horizontally central to right on the Landform of Interest.

The Landform of Interest is not unduly constrained versus the natural topographic landform. It is minimally constrained by foreground vegetation, somewhat constrained by mid-ground topography and minimally constrained by natural topographic landform size relative to viewing distance.

The Landform of Interest plane surface is relatively perpendicular to the viewing direction for the purposes of undertaking a percent alteration calculation; the angle is marginal but acceptable.

A percent alteration calculation is reasonable given the not unduly constrained LFOI and the marginal but acceptable viewing angle.

Assess Basic VQC (FPPR 1.1) [2.2.3]

Existing Visual Condition - Entire Landform (EVC_{ALL})

Considering only the existing alterations on the Landform of Interest, the altered forest landscape meets ***Preservation*** (*not easily distinguishable from pre-harvest landscape, and very small in scale)*.

There are no VEG or non-VEG openings visible on the Landform of Interest. There is no visible bare ground associated with the existing Kokanee Glacier Park Road ROW.

Proposed Development - Clearcuts (PD_{CC})

Excluding any existing alterations on the Landform of Interest, the altered forest landscape associated with the Proposed Development (Clearcuts), is estimated to meet ***Partial Retention*** (*easy to see, medium in scale, and natural and not rectilinear or geometric in shape*).

No bare ground is expected to be visible for Block 1; it is expected to be screened from view by topography and vegetation. Visible bare ground is expected for Block 2. Visible base bare ground is expected for FSRs KL0236.15Kokanee8500 & KL0236.16Kokanee8510, but only within block 2.

The Proposed Development will be visible without great effort or difficulty and will be *medium in scale*.

The design of the Proposed Development does not significantly consist of boundaries with straight lines nor can it be characterized as easily resembling regular shapes. The straight lines and overall visible linear extent of FSRs KL0236.15Kokanee8500 & KL0236.16Kokanee8510 within the visible bare ground of Block 2 are significant when added to the Block 2 TSL Holder temporary Kokanee8510 "associated road". However, the significance of these collective roads does not cause the overall consistency of the Proposed Development design characteristics to exceed of *Partial Retention*.

Proposed Development - Partial Cuts (PD_{PC})

There are no Partial Cuts associated with the Proposed Development.

Cumulative Landform Assessment - Entire Landform (CLA_{ALL})

Considering the Existing Visual Condition of *Preservation* and the Proposed Development (Clearcuts) which meets *Partial Retention*, the additive effect on the Landform of Interest is that the altered forest landscape meets ***Partial Retention*** (*easy to see, medium in scale, and natural and not rectilinear or geometric in shape*).

The overall altered forest landscape is cumulatively *easy to see*. The additive effects of the Existing Visual Condition *very small in scale* openings and the Proposed Development *medium in scale* openings is that the overall openings on the Landform of Interest are *medium in scale*, remaining within the confines of *Partial Retention*. Design elements meet the standards of *Partial Retention*.

Assess Initial VQC [2.3.2]

Cumulative Landform Assessment - Clearcuts (CLA_{CC})

The Initial VQC was calculated in the Clearcut Percent Alteration Analysis based on the Proposed Alteration Simulation, with VEG/non-VEG status and spatial extents of existing openings heavily informed by the field reviews/photos. The estimated total percent alteration in perspective view (i.e. visible portions of the ground disturbed) is **3.81%.** This is within the expected range for the Visual Quality Class of ***Partial Retention (1.6-7.1%)*** [2.3.2 Table 3].

Cumulative Landform Assessment - Partial Cuts (CLA_{PC})

There are no Partial Cuts associated with the Proposed Development.

Assess Adjusted VQC [2.3.3]

Cumulative Landform Assessment - Clearcuts (CLA_{CC})

The Adjusted VQC, at **4.34%,** is increased versus the Initial VQC, remaining within the expected range for the Visual Quality Class of ***Partial Retention (1.6-7.1%)*** [2.3.2 Table 3].

The Total Design score [2.2.4.f] was -1 as a result of the Proposed Development having relatively strong response to visual lines of force. The Impact of Roads and Side Cast [2.3.3.d] associated with the Proposed Development was Significant (+2), resulting in a Total Adjustment factor (Y) of 1.

Cumulative Landform Assessment - Partial Cuts (CLA_{PC})

There are no Partial Cuts associated with the Proposed Development.

Determining the Effectiveness Evaluation Rating for the Landform by Comparing Basic VQC with Adjusted VQC [2.3.6]

Cumulative Landform Assessment - Clearcuts (CLA_{CC})

The Cumulative Landform Assessment Clearcuts (CLA_{CC}) Effectiveness Evaluation Rating is **Well Met** from this Significant Public Viewpoint.

The Basic VQC was ***Partial Retention***. The Adjusted VQC was ***Partial Retention***. Both methods indicate VQO achievement and are on the mid-range for the class.

Cumulative Landform Assessment - Partial Cuts (CLA_{PC})

There are no Partial Cuts associated with the Proposed Development.

Cumulative Landform Assessment - Entire Landform (CLA_{ALL})

The Cumulative Landform Assessment All Alterations (CLA_{ALL}) Effectiveness Evaluation Rating is **Well Met** from this Significant Public Viewpoint.

The Basic VQC was ***Partial Retention***. The Adjusted VQC was ***Partial Retention (4.34%)***. Both methods indicate VQO achievement and are on the mid-range for the VQC Class of ***Partial Retention (1.6-7.1%).***

When all alterations are considered, the Landform of Interest meets *Partial Retention* which is consistent with the EVQO.

Opportunity for Future Alterations

There is **reasonable opportunity for future alterations** on this Landform of Interest prior to the Proposed Development and existing non-VEG openings (as applicable) achieving VEG. Future well-designed, well-placed alterations consistent with either the *Preservation*, *Retention* or *Partial Retention* categories of visually altered forest landscape may be feasible on this Landform of Interest, subject to detailed assessments.

Single Viewpoint FPPR 1.1 Compliance Statement

The altered forest landscape resulting from the Proposed Development, when considered alongside existing alterations, **meets the *Partial Retention* category of altered forest landscape** as defined in FPPR 1.1, when considered from all identified Significant Public Viewpoints. The resultant altered forest landscape will be:

i) easy to see,
ii) medium in scale, and
iii) natural and not rectilinear or geometric in shape.

This altered forest landscape **falls below the upper confines of the *Partial Retention* category of altered forest landscape** applicable to the scenic area.

6.2. Enhanced VQC Assessments

Two SPVs were selected for Enhanced VQC Assessment.

6.2.1. VP Kokanee W FSR DN 1.5km

- **Worst Case – Design View**
- Proposed Development - Clearcuts (PD_{CC})
    - VLI Polygons 97 & 99 - EVQOs = *Partial Retention*
        - Blocks 1 & 2, and associated roads
        - FSRs KL0236.15Kokanee8500
- Proposed Development - Partial Cuts (PD_{PC}) = N/A

This viewpoint presents a dynamic, focal view of the Proposed Development in mid-ground distance (14-3.2) for short duration (10 seconds to 1 minute) while traveling southbound on Kokanee West FSR at approximately 15km/h. The Proposed Development is located vertically low and horizontally central on the Landform of Interest.

The Landform of Interest is overly constrained versus the natural topographic landform. It is heavily constrained by foreground vegetation screening, negligibly constrained by mid-ground topographic screening and somewhat constrained by natural topographic landform size relative to viewing distance (the natural topographic landform exceeds the natural field of vision of the viewer).

The Landform of Interest plane surface is somewhat perpendicular to the viewing direction for the purposes of undertaking a percent alteration calculation; however, the angle is becoming very marginal.

A percent alteration calculation is not reasonable given the overly constrained LFOI and very marginal viewing angle.

Assess Basic VQC (FPPR 1.1) [2.2.3]

Existing Visual Condition - Entire Landform (EVC_{ALL})

The Existing Visual Condition is ***Preservation*** (*not easily distinguishable from pre-harvest landscape, and very small in scale)*.

Proposed Development - Clearcuts (PD_{CC})

The altered forest landscape resulting from the Proposed Development is expected to be ***Partial Retention*** *(easy to see, small in scale and natural and not rectilinear or geometric in shape).*

Less than one-third of Block 1 is expected to have visible bare ground due to foreground screening from vegetation. Approximately one-half of Block 2 is expected to have visible bare ground due to foreground screening from vegetation. The last few hundred meters of the KL0236.15Kokanee8500 FSR is visible, with an overall subordinate influence on design of the proposed development. The Proposed Development aligns relatively well with the natural lines of force of the landform.

Proposed Development - Partial Cuts (PD_{PC})

There are no Partial Cuts associated with the Proposed Development.

Cumulative Landform Assessment - Entire Landform (CLA_{ALL})

The altered forest landscape resulting from the Proposed Development, when considered alongside the existing alterations, is expected to be ***Partial Retention*** *(easy to see, small in scale and natural and not rectilinear or geometric in shape).*

The overall altered forest landscape is cumulatively *easy to see*. The additive effects of the Existing Visual Condition *very small in scale* openings and the Proposed Development *small in scale* openings are that the overall openings on the Landform of Interest are *small in scale*, remaining within the confines of *Partial Retention*. Design elements meet the standards of *Partial Retention*.

6.2.2. VP Kokanee W FSR DN 2.0km

- **Worst Case – Design View**
- Proposed Development - Clearcuts (PD_{CC})
    - VLI Polygons 97 & 99 - EVQOs = *Partial Retention*
        - Block 1, and associated roads
- Proposed Development - Partial Cuts (PD_{PC}) = N/A

This viewpoint presents a dynamic, focal view of the Proposed Development in mid-ground distance (1.6-2.2km) for short duration (10 seconds to 1 minute) while traveling southbound on Kokanee West FSR at approximately 15km/h. The Proposed Development is located vertically low and horizontally central to central on the Landform of Interest. The Landform of Interest is significantly constrained by foreground vegetation versus the natural topographic landform.

The Landform of Interest is overly constrained versus the natural topographic landform. It is heavily constrained by foreground vegetation screening, negligibly constrained by mid-ground topographic screening and somewhat constrained by natural topographic landform size relative to viewing distance.

The Landform of Interest plane surface is somewhat perpendicular to the viewing direction for the purposes of undertaking a percent alteration calculation; however, the angle is becoming very marginal.

A percent alteration calculation is not reasonable given the overly constrained LFOI and very marginal viewing angle.

Assess Basic VQC (FPPR 1.1) [2.2.3]

Existing Visual Condition - Entire Landform (EVC_{ALL})

The Existing Visual Condition is ***Preservation*** (*not easily distinguishable from pre-harvest landscape, and very small in scale)*.

Proposed Development - Clearcuts (PD_{CC})

The altered forest landscape resulting from the Proposed Development is expected to be ***Partial Retention*** *(easy to see, small in scale and natural and not rectilinear or geometric in shape).*

Less than one-third of Block 1 is expected to have visible bare ground due to foreground screening from vegetation. Block 2 is expected to be screened from view by foreground from vegetation; no visible bare ground is expected. The Proposed Development aligns relatively well with the natural lines of force of the landform.

Proposed Development - Partial Cuts (PD_{PC})

There are no Partial Cuts associated with the Proposed Development.

Cumulative Landform Assessment - Entire Landform (CLA_{ALL})

The altered forest landscape resulting from the Proposed Development, when considered alongside the existing alterations, is expected to be ***Partial Retention*** *(easy to see, small in scale and natural and not rectilinear or geometric in shape).*

The overall altered forest landscape is cumulatively *easy to see*. The additive effects of the Existing Visual Condition *very small in scale* openings and the Proposed Development *small in scale* openings are that the overall openings on the Landform of Interest are *small in scale*, remaining within the confines of *Partial Retention*. Design elements meet the standards of *Partial Retention*.

6.3. Basic VQC Assessments

No unassessed SPVs remained for selection for Basic VQC Assessment.

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7. Conclusion – Overall Effectiveness Evaluation [4.0]

7.1. Overall Effectiveness Evaluation Determination

One SPVs was evaluated by Full CF1252 Effectiveness Evaluation Assessment; the **VP Kokanee Glacier Rd 2** result was **Well Met** (Basic VQC of *Partial Retention*, Adjusted VQC of 4.34% *Partial Retention*). **Two SPVs** were evaluated by Enhanced VQC Assessment; the **VP Kokanee W FSR DN 1.5km** and **VP Kokanee W FSR DN 2.0km** results were ***Partial Retention*** for both SPVs. **No SPVs** remained unassessed for evaluation by Basic VQC Assessment.

The Overall Effectiveness Evaluation is **Well Met**. The Basic VQCs were ***Partial Retention***. The Adjusted VQCs, where measured, were ***Partial Retention (4.34%)***. Results from both methods indicate VQO achievement for the VQC Class of ***Partial Retention (1.6-7.0%),*** with results within the mid-range for the class.

7.2. Overall Opportunity for Future Alterations

There is **reasonable opportunity for future alterations** on the Landforms of Interest identified in this assessment prior to the Proposed Development and existing non-VEG openings (as applicable) achieving VEG. Future well-designed, well-placed alterations consistent with either the *Preservation*, *Retention* or *Partial Retention* categories of visually altered forest landscape may be feasible within these VLI Polygons, subject to detailed Significant Public Viewpoint Identification and assessments.

7.3. FPPR 1.1 Compliance Statements

7.3.1. Blocks 1 & 2 and Associated Roads, FSRs KL0236.15Kokanee8500 & KL0236.16Kokanee8510

Overlapping VLI Polygons 97 & 99, EVQOs = *Partial Retention*.

The altered forest landscape resulting from the Proposed Development, when considered alongside existing alterations, **meets the *Partial Retention* category of altered forest landscape** as defined in FPPR 1.1 when considered from all identified Significant Public Viewpoints. The resultant altered forest landscape will be:

i) easy to see,
ii) medium in scale, and
iii) natural and not rectilinear or geometric in shape.

This altered forest landscape **falls below the upper confines of the *Partial Retention* category of altered forest landscape** applicable to the scenic area.

Schedule 5.1a
VIA Overview Map

VIA Overview Map

Schedule 5.1a – VIA Overview Map



Schedule 5.1b
Harvest Plan / Road Construction Maps

Block 1 WAW-018

Block 2 WAW-017

KL0236.15Kokanee8500

KL0236.16Kokanee8510

Harvest Plan Map

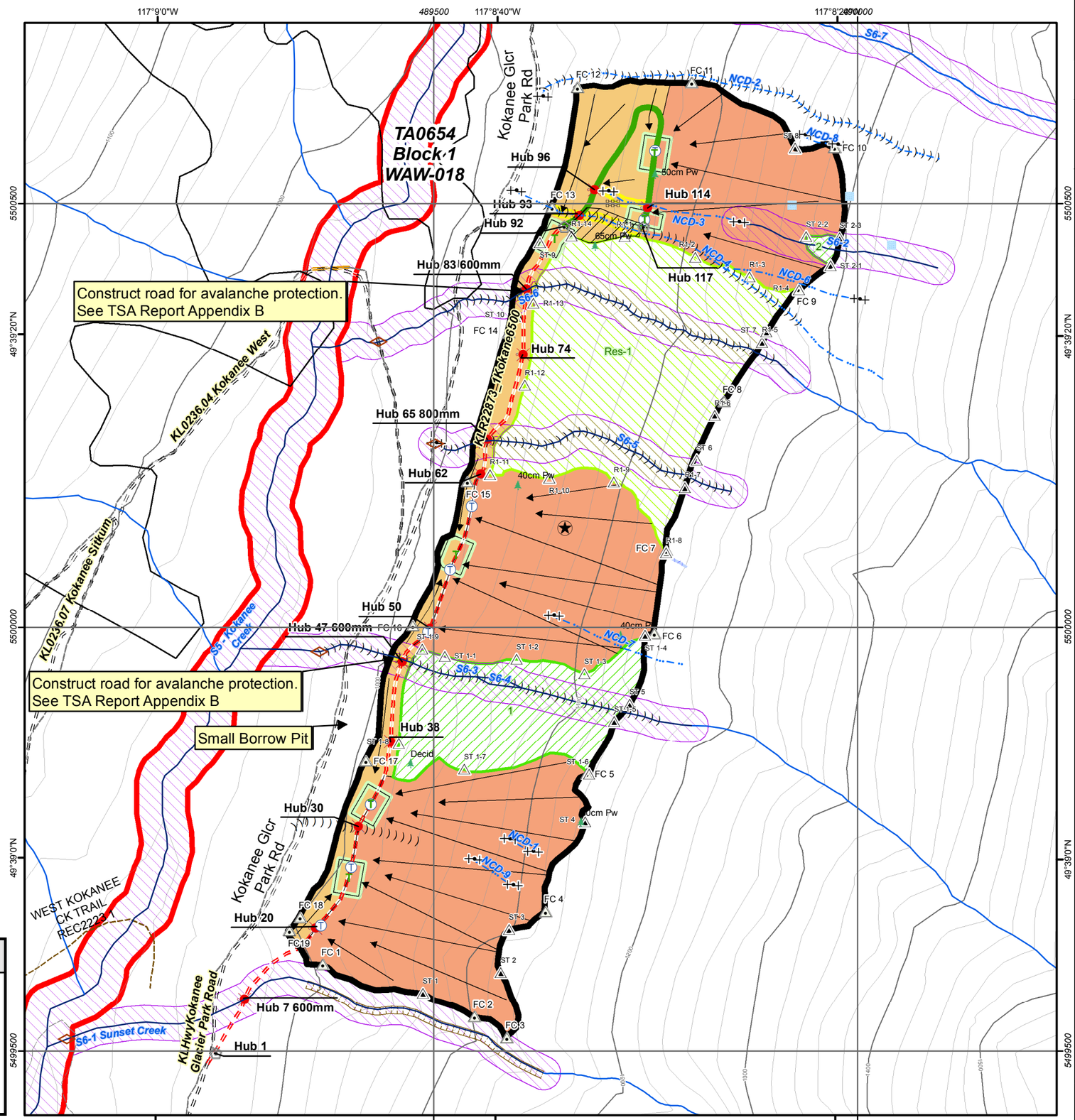
BCTS BC Timber Sales

TSL	Block ID
TA0654	**1**
Business Area: Kootenay	UBI: BF654
Operating Area: North Kootenay Lake	Location: Kokanee Creek
Management Unit: Kootenay Lake	FIZ: G
Gross Block Area (ha): 30.5	Geographic Center — Latitude: 49 39 13, Longitude: 117 08 36

FIELD MARKING STANDARDS	
Block Harvest Area: Boundary	BCTS BLOCK BOUNDARY
Recce Lines	
Traverse Stations	
Cruise strips	CRUISE LINE
Cruise plots	
Reference Trees/Posts	
Road: P-Line	
Road: Centre Line	ROAD CENTER LINE
Culverts	\ \ CULVERT \ \
Right-of-way	BOUNDARY R/W
Skid Trails	\ \ TRAIL \ \
Landings/Tower Settings	
Deflection Lines	
Non-classified Drainage (NCD)	WATER COURSE
Stream	WATER COURSE
Riparian Management Zone	RIPARIAN MANAGEMENT ZONE
Reserve Zones and WTRA	RESERVE
Riparian Reserve Zone	RESERVE
Management Zones	MANAGEMENT ZONE
Single Reserve Trees	BLUE PAINT
Treatment Unit Boundary	TREATMENT UNIT BOUNDARY
Machine Free Zones	\\\\ MACHINE FREE ZONE \\\\

CULVERT TABLE

HUB	Distance (m)	Size (mm)	Comments
KLR22873_1Kokane6500 (Long Term Permanent, LTP)			
1	0+000	-	POC Road
7	0+088	600	S6-1
20	0+212	450	
30	0+344	450	
38	0+452	450	
47	0+548	600	S6-3
50	0+600	450	
62	0+793	450	
65	0+836	800	S6-5
74	0+946	450	
83	1+024	600	S6-6
92	1+111	-	POT LTP
KLR22873_1Kokane6500 (Temporary, TEMP)			
92	1+111	-	POC TEMP
93	1+123	450	NCD-4
96	1+171	450	
114	1+420	450	NCD-3
117	1+443	-	POT Road



LiDAR Legend

RPF PRINTED NAME	RPF SIGNATURE & SEAL
Richard Cane, RPF	
DATE SIGNED	
I certify that I have reviewed this document and, while I did not personally supervise the work described, I have determined that this work has been done to the standards expected of a member of the Association of British Columbia Forest Professionals.	

BLOCK AREA SUMMARY (ha)

Harvest Method	Harvest Unit	Area
Ground	1	4.3
Cable	2	15.7
Subtotal		20.0
WTRA		3.4
Reserve		7.1
Roads		0.0
TOTAL		30.5

Non-Merch: Reserve, WTRA

BCTS All Blocks; Block of Interest; BCTS RG Block; BCTS FG Block

BCTS GPS Stations: POC/ POT; Block Bdy Hub; Falling Corners; Reference Trees

BCTS Layout Points: Block Centre; Woody Debris; Existing Permanent Landing; Proposed Temp. Landing; Slump/Slide Area; Stub Tree; Tower Settings; Fish Barrier; Reach Breaks; Road Barrier; Rock Outcrops; Gate; Cattle Guard; Pipeline Crossing; Prop Skid Bridge; Prop Skid Crossing; Major Culvert; MInor Culvet; Proposed Culvert; Drain Culvert; Snow Fill; Bridge; Cave/ Den; Danger Tree; Nest; Wildlife Tree; Wildlife Feature

BCTS Line Features: Prop Temp Back Spar Tr (not flagged in field); Prop Temp Skid Trail; Exist Perm Skid Trail; Prop Temp Forwarding Trail; Prop Temp Yarder Tr; Recreation Trail; Wildlife Trail; Deflection Line; Pipe Line; Seismic Line; Cultural/Heritage; Fence Line; Cliff; Swale; Embankment; Gully; Ridge; Seepage; Slide; Slope Break; Rest. Side Decking; Stubbed Boundary; Road Permit; Skid/Yarding Direction

TRIM Features: River/Stream-Def; River/Stream-Indef; Contour - Index; Contour - Intermediate; Road Permit; Forest Service Road; Highway/Main/Paved Road; Gravel/Resource Road; Trail; Snow Shed (Railway); Tunnel; Bridge; Airstrip; Rail Line; Pipeline / Wellsite

Area of Concern; Hoe Chucking; Steep Slope in WTRA; Steep Slope; SAR Cliff; SAR Forested; SAR Rare Ecosystems; Special Mgmt Area; Special Forest Mgmt Area; Biodiversity, Mining and Tourism Areaa; Private Land; Conservancy Areas; Protected Areas /Parks; OGMA; Lake/Watercourse; Marsh; Swamp

BCTS Roads - Road State: Deactivated Road; Existing Road; Proposed Road; Proposed Temp.

Riparian Features: MFZ / MSZ; RMZ; RRZ; Streamside Mgmt Zone

BCTS Streams Class: Unknown; INT;NCD; S1;S2;S3;S4; S5;S6

0 50 100 150 200 250 Meters

1:5,000

Date 13Apr2020 **User** RVANDENB

Template Name HarvestPlanMap_11x17L

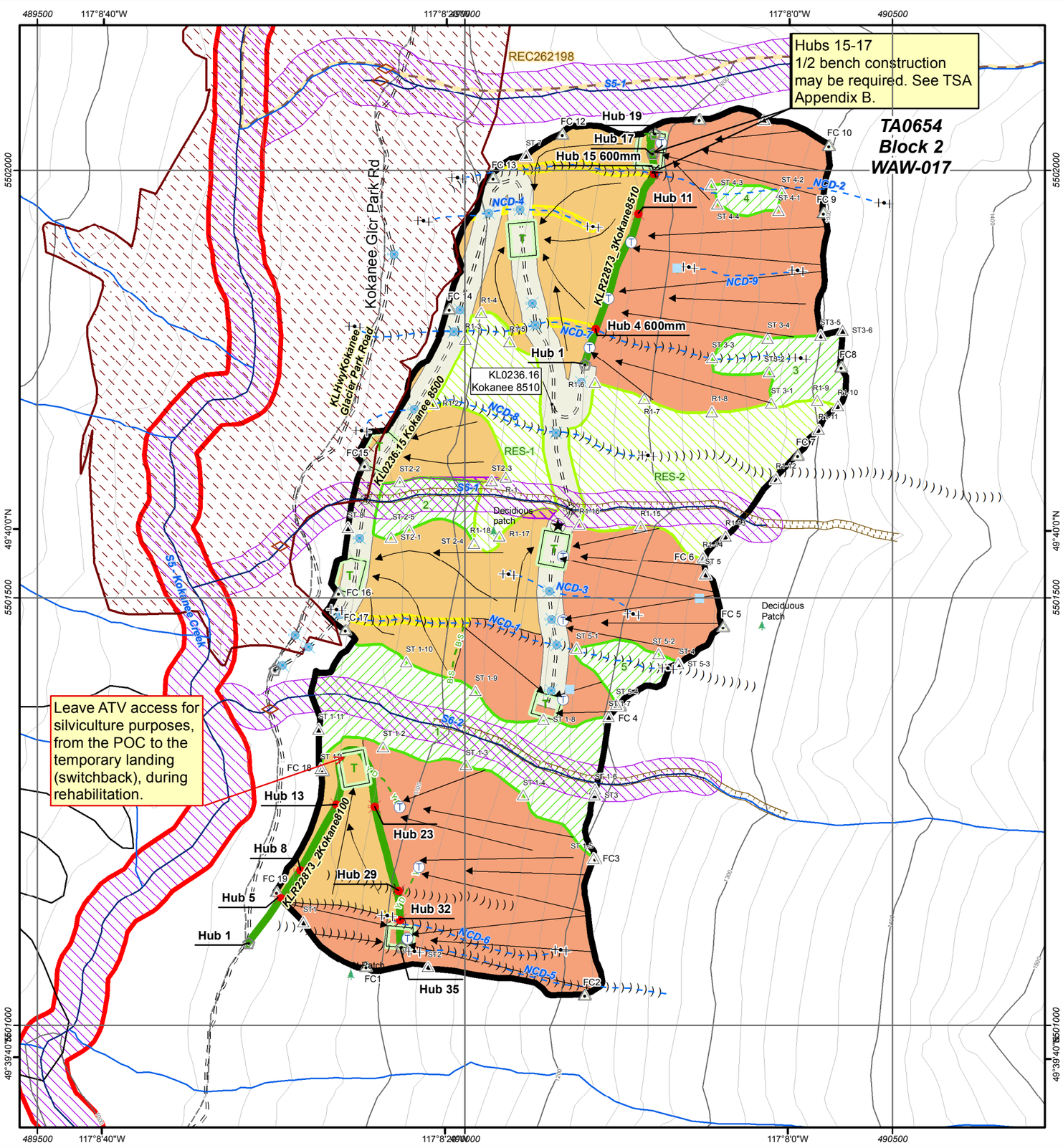
Coordinate System NAD 1983 UTM Zone 11N

FIELD MARKING STANDARDS	
Block Harvest Area: Boundary	BCTS BLOCK BOUNDARY
Recce Lines	
Traverse Stations	
Cruise strips	CRUISE LINE
Cruise plots	
Reference Trees/Posts	
Road: P-Line	
Road: Centre Line	ROAD CENTER LINE
Culverts	\ \ CULVERT \ \
Right-of-way	BOUNDARY R/W
Skid Trails	\ \ TRAIL \ \
Landings/Tower Settings	
Deflection Lines	
Non-classified Drainage (NCD)	WATER COURSE
Stream	WATER COURSE
Riparian Management Zone	RIPARIAN MANAGEMENT ZONE
Reserve Zones and WTRA	RESERVE
Riparian Reserve Zone	RESERVE
Management Zones	MANAGEMENT ZONE
Single Reserve Trees	BLUE PAINT
Treatment Unit Boundary	TREATMENT UNIT BOUNDARY
Machine Free Zones	\\\\ MACHINE FREE ZONE \\\\

CULVERT TABLE			
HUB	**Distance (m)**	**Size (mm)**	**Comments**
Road Name: KLR22873_2Kokane8100 (Temporary, TEMP)			
1	0+000	-	POC Road
5	0+068	450	
8	0+107	450	
13	0+195	450	
23	0+347	450	
29	0+449	450	
32	0+484	450	NCD-6
35	0+515	-	POT Road
Road Name: KLR22873_3Kokane8510 (Temporary, TEMP)			
1	0+000	-	POC Road
4	0+044	600	NCD-7
11	0+188	450	
15	0+239	600	NCD-2
19	0+286	-	POT Road

LiDAR Legend

RPF PRINTED NAME	RPF SIGNATURE & SEAL
Richard Cane, RPF	
DATE SIGNED	
I certify that I have reviewed this document and, while I did not personally supervise the work described, I have determined that this work has been done to the standards expected of a member of the Association of British Columbia Forest Professionals.	



BCTS BC Timber Sales

Harvest Plan Map

TSL	Block ID
TA0654	**2**
Business Area: Kootenay	UBI: BF653
Operating Area: North Kootenay Lake	Location: Kokanee Creek
Management Unit: Kootenay Lake	FIZ: G
Gross Block Area (ha): 40.5	Geographic Center — Latitude: 49 40 00 — Longitude: 117 08 13

BLOCK AREA SUMMARY (ha)

Harvest Method	Harvest Unit	Area
Ground	1	8.7
Cable	2	16.6
Subtotal		25.3
WTRA		5.8
Reserve		5.6
Roads		3.8
TOTAL		40.5

Non-Merch: Reserve, WTRA, ROW

BCTS All Blocks
Block of Interest
BCTS RG Block
BCTS FG Block

BCTS GPS Stations: GPS Station, Block Bdy Hub, Falling Corners, Reference Trees

BCTS Layout Points: Block Centre, Woody Debris, Existing Permanent Landing, Proposed Temp. Landing, Slump/Slide Area, Stub Tree, Tower Settings, Fish Barrier, Reach Breaks, Road Barrier, Rock Outcrops, Gate, Cattle Guard, Pipeline Crossing, Prop Skid Bridge, Prop Skid Crossing, Major Culvert, MInor Culvet, Proposed Culvert, Drain Culvert, Snow Fill, Bridge, Cave/ Den, Danger Tree, Nest, Wildlife Tree, Wildlife Feature

BCTS Line Features: BS Prop Temp Back Spar Tr (not flagged in field); SK Prop Temp Skid Trail; Exist Perm Skid Trail; FW Prop Temp Forwarding Trail; YD Prop Temp Yarder Tr; Recreation Trail; Wildlife Trail; Deflection Line; Pipe Line; Seismic Line; Cultural/Heritage; Fence Line; Cliff; Swale; Embankment; Gully; Ridge; Seepage; Slide; Slope Break; Rest. Side Decking; Stubbed Boundary; Road Permit; Skid/Yarding Direction

TRIM Features: River/Stream-Def; River/Stream-Indef; Contour - Index; Contour - Intermediate; Road Permit; Forest Service Road; Highway/Main/Paved Road; Gravel/Resource Road; Trail; Snow Shed (Railway); Tunnel; Bridge; Airstrip; Rail Line; Pipeline / Wellsite

Area of Concern; Slope Area (>35%); Steep Slope in WTRA; Steep Slope; SAR Cliff; SAR Forested; SAR Rare Ecosystems; Special Mgmt Area; Special Forest Mgmt Area; Biodiversity, Mining and Tourism Areaa; Private Land; Recreation Area; Protected Areas /Parks; OGMA; Lake/Watercourse; Marsh; Swamp

BCTS Roads - Road State: Deactivated Road; Existing Road; Proposed Road; Proposed Temp.

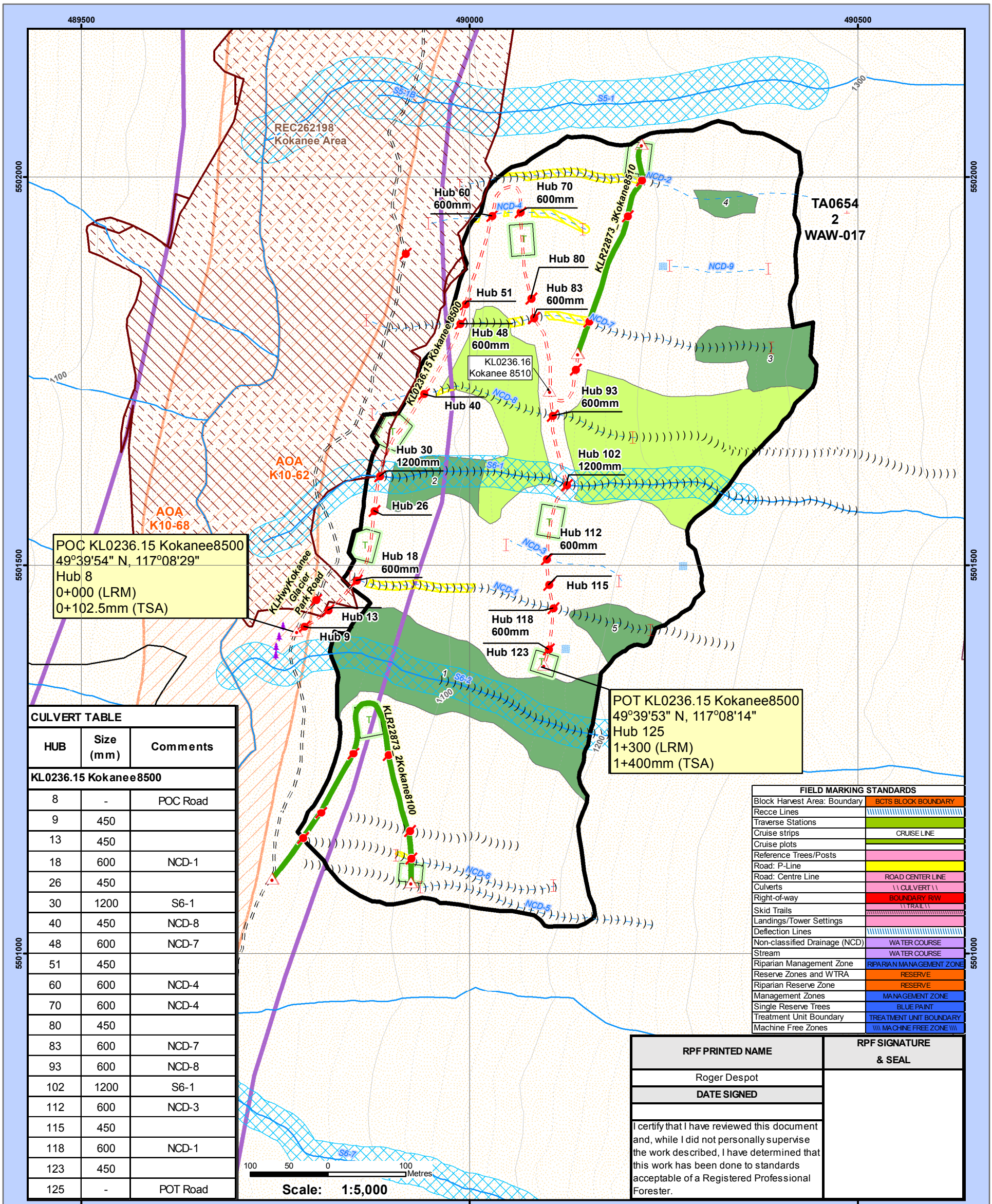
Riparian Features: MFZ / MSZ; RMZ; RRZ; Streamside Mgmt Zone

BCTS Streams Class: Unknown; INT;NCD; S1;S2;S3;S4; S5;S6

0 50 100 150 200 250 Meters

1:5,000

Date 14Apr2020 **User** RVANDENB
Template Name HarvestPlanMap_11x17L
Coordinate System NAD 1983 UTM Zone 11N



CULVERT TABLE		
HUB	**Size (mm)**	**Comments**
KL0236.15 Kokanee8500		
8	-	POC Road
9	450	
13	450	
18	600	NCD-1
26	450	
30	1200	S6-1
40	450	NCD-8
48	600	NCD-7
51	450	
60	600	NCD-4
70	600	NCD-4
80	450	
83	600	NCD-7
93	600	NCD-8
102	1200	S6-1
112	600	NCD-3
115	450	
118	600	NCD-1
123	450	
125	-	POT Road

FIELD MARKING STANDARDS	
Block Harvest Area: Boundary	BCTS BLOCK BOUNDARY
Recce Lines	
Traverse Stations	
Cruise strips	CRUISE LINE
Cruise plots	
Reference Trees/Posts	
Road: P-Line	
Road: Centre Line	ROAD CENTER LINE
Culverts	\ \ CULVERT \ \
Right-of-way	BOUNDARY R/W
Skid Trails	\ \ TRAIL \ \
Landings/Tower Settings	
Deflection Lines	
Non-classified Drainage (NCD)	WATER COURSE
Stream	WATER COURSE
Riparian Management Zone	RIPARIAN MANAGEMENT ZONE
Reserve Zones and WTRA	RESERVE
Riparian Reserve Zone	RESERVE
Management Zones	MANAGEMENT ZONE
Single Reserve Trees	BLUE PAINT
Treatment Unit Boundary	TREATMENT UNIT BOUNDARY
Machine Free Zones	\\\\ MACHINE FREE ZONE \\\\

RPF PRINTED NAME	RPF SIGNATURE & SEAL
Roger Despot	
DATE SIGNED	
I certify that I have reviewed this document and, while I did not personally supervise the work described, I have determined that this work has been done to standards acceptable of a Registered Professional Forester.	

BC Timber Sales - Kootenay Business Area

Road Site Plan Map

Road Name: KL0236.15 Kokanee8500

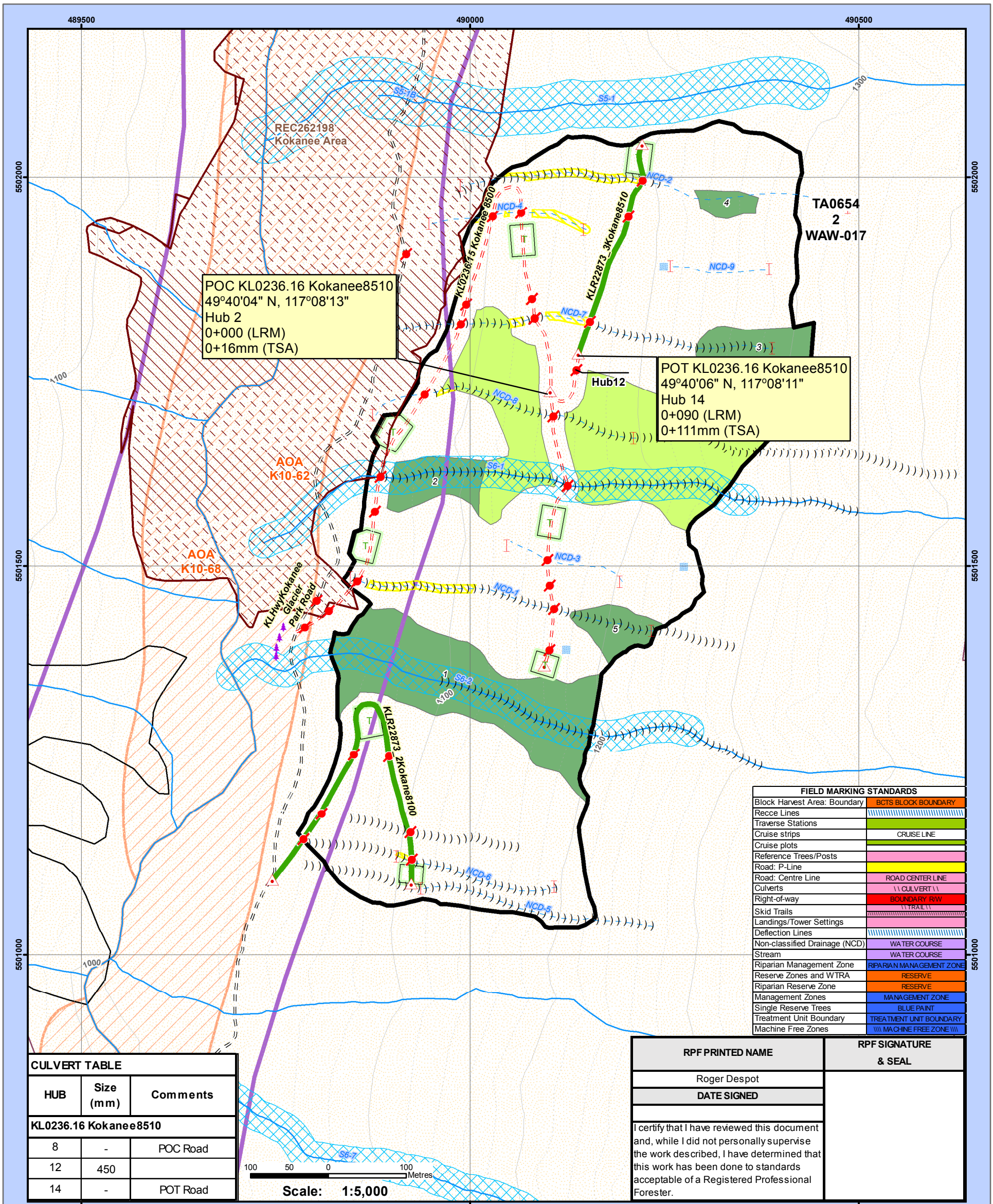
TSA:	Kootenay Lake	**Mapsheet:**	082F.065	**URI:**	-
Forest Region:	Kootenay/Boundary	**Latitude:**	49 39 54	**Minimum Elevation:**	1040
Forest District:	Selkirk	**Longitude:**	-117 08 29	**Maximum Elevation:**	1160
Location:	Kokanee Creek	**Generated on:**	2/28/2020	**Generated by:**	VANDENBERGHE, RENEE

Projection: UTM
Datum: NAD 83

- Block Highlight
- Non-productive
- Reserve
- WTRA, WTP
- FDU
- Biogeoclimatic Zone
- Community Watershed
- Domestic Watershed
- Machine Free Zone
- Riparian Management Zone
- Riparian Reserve Zone
- Streamside Management Zone
- OGMA
- Area of Concern
- Cultural/Heritage Features
- Crown - No Harvest
- Private Lands
- or Wetland
- AOA
- Recreation Site
- Ungulate Winter Range
- Visual Quality Objective
- Woodlot
- Range Agreements
- Connectivity
- Grizzly
- Invasive Plant Species
- Major Highways
- Road
- Proposed Permanent Roads
- Proposed Temporary Roads
- Deactivated Road
- Proposed Temporary Trails
- Rec, Wildlife & Tenured Trails
- Existing Trails / Seismic
- Pipe Line
- Rail Line
- Transmission Lines
- or Seepage
- Ridge
- Slide
- Cultural/Heritage Feature
- Waterline
- Streams
- Non-Classified Drainage
- 20m Contour
- 100m Contour
- Embankment, Cliff
- Gully, Draw
- Slope Break
- Fence Line
- Existing Bridge
- Proposed Bridge
- Existing Arch Pipe
- Proposed Arch Pipe
- Existing Cattle Gate
- Proposed Cattle Gate
- Existing Gate
- Proposed Gate
- Existing Access Control
- Proposed Access Control
- Designated Skid Crossing
- Pipeline Crossing
- Rock Outcrop
- Slump Area
- Culturally Modified Tree
- Tower Setting
- Reference Tree
- Archaeological Feature
- Growth & Yield Plot
- Cabin
- Wildlife Feature
- Nest
- POD
- Fish Obstruction
- Fish Sample Site
- Reach Breaks
- Removed Structure
- Proposed / Existing Culvert
- Proposed / Existing Waterbar
- POC/ POT
- Survey Post
- Existing Permanent Landing
- Existing Temporary Landing
- Proposed Permanent Landing
- Proposed Temporary Landing

Road Tenure

- Road Permit
- Forest Service Road
- Highway



FIELD MARKING STANDARDS	
Block Harvest Area: Boundary	BCTS BLOCK BOUNDARY
Recce Lines	
Traverse Stations	
Cruise strips	CRUISE LINE
Cruise plots	
Reference Trees/Posts	
Road: P-Line	
Road: Centre Line	ROAD CENTER LINE
Culverts	\ \ CULVERT \ \
Right-of-way	BOUNDARY R/W
Skid Trails	\ \ TRAIL \ \
Landings/Tower Settings	
Deflection Lines	
Non-classified Drainage (NCD)	WATER COURSE
Stream	WATER COURSE
Riparian Management Zone	RIPARIAN MANAGEMENT ZONE
Reserve Zones and WTRA	RESERVE
Riparian Reserve Zone	RESERVE
Management Zones	MANAGEMENT ZONE
Single Reserve Trees	BLUE PAINT
Treatment Unit Boundary	TREATMENT UNIT BOUNDARY
Machine Free Zones	\\\\ MACHINE FREE ZONE \\\\

CULVERT TABLE

HUB	Size (mm)	Comments
KL0236.16 Kokanee8510		
8	-	POC Road
12	450	
14	-	POT Road

RPF PRINTED NAME	RPF SIGNATURE & SEAL
Roger Despot	
DATE SIGNED	
I certify that I have reviewed this document and, while I did not personally supervise the work described, I have determined that this work has been done to standards acceptable of a Registered Professional Forester.	

BC Timber Sales - Kootenay Business Area

Road Site Plan Map

Road Name: KL0236.16 Kokanee8510

TSA:	Kootenay Lake	**Mapsheet:**	082F.065	**URI:**	-
Forest Region:	Kootenay/Boundary	**Latitude:**	49 40 04	**Minimum Elevation:**	1140
Forest District:	Selkirk	**Longitude:**	-117 08 13	**Maximum Elevation:**	1160
Location:	Kokanee Creek	**Generated on:**	2/28/2020	**Generated by:**	VANDENBERGHE, RENEE

Projection: UTM
Datum: NAD 83

- Block Highlight
- Non-productive
- Reserve
- WTRA, WTP
- FDU
- Biogeoclimatic Zone
- Community Watershed
- Domestic Watershed
- Machine Free Zone
- Riparian Management Zone
- Riparian Reserve Zone
- Streamside Management Zone
- OGMA
- Area of Concern
- Cultural/Heritage Features
- Crown - No Harvest
- Private Lands
- or Wetland
- AOA
- Recreation Site
- Ungulate Winter Range
- Visual Quality Objective
- Woodlot
- Range Agreements
- Connectivity
- Grizzly
- Invasive Plant Species
- Major Highways
- Road
- Proposed Permanent Roads
- Proposed Temporary Roads
- Deactivated Road
- Proposed Temporary Trails
- Rec, Wildlife & Tenured Trails
- Existing Trails / Seismic
- Pipe Line
- Rail Line
- Transmission Lines
- or Seepage
- Ridge
- Slide
- Cultural/Heritage Feature
- Waterline
- Streams
- Non-Classified Drainage
- 20m Contour
- 100m Contour
- Embankment, Cliff
- Gully, Draw
- Slope Break
- Fence Line
- Existing Bridge
- Proposed Bridge
- Existing Arch Pipe
- Proposed Arch Pipe
- Existing Cattle Gate
- Proposed Cattle Gate
- Existing Gate
- Proposed Gate
- Existing Access Control
- Proposed Access Control
- Designated Skid Crossing
- Pipeline Crossing
- Rock Outcrop
- Slump Area
- Culturally Modified Tree
- Tower Setting
- Reference Tree
- Archaeological Feature
- Growth & Yield Plot
- Cabin
- Wildlife Feature
- Nest
- POD
- Fish Obstruction
- Fish Sample Site
- Reach Breaks
- Removed Structure
- Proposed / Existing Culvert
- Proposed / Existing Waterbar
- POC/ POT
- Survey Post
- Existing Permanent Landing
- Existing Temporary Landing
- Proposed Permanent Landing
- Proposed Temporary Landing

Road Tenure

- Road Permit
- Forest Service Road
- Highway

Schedule 5.2
VLI Polygon Attributes

VLI Polygon Attributes

Schedule 5.2 - VLI Polygon Attributes

VLI Polygon Number	97	99	620			
Aspect	M	M				
BR Aspect	M	M				
BR Final Value	H	M				
BR Initial Value	H	M				
BR Slope	H	M				
Data Capture Standard	97	97	97			
Edge	M	L				
EVC Final Value	M	PR				
EVC Initial Value	M	PR				
EVQO	PR	PR				
Feature Area Sq M	17009632.42	6077602.883	1197004.693			
Feature Length M	24481.5145	27519.8729	7196.8635			
GEOMETRY	Polygon	Polygon	Polygon			
Historic VSR		M				
Infl. Site Disturbance	M	M				
Infl. Veg Color Texture	L	M				
Infl. Vis Landscape Design	L	M				
Influence Adj Scenery	M	L				
Influence Rock Soil	M	M				
Influence Water	M					
Lake Classification						
Lake Classification Goal						
Made Known						
Map Sheet ID	82F.118	82F.118				
Number Viewers Code						
OBJECTID	73996023	73996028	73996003			
Org Unit No	1902	1902	1902			
Project Name	DKL VLI Update	DKL VLI Update				
Rationale	610,062					
Rehabilitation Enhancement						
Rock Soil Veg Variety	M	M				
RVQC	pr	pr				
Scale Existing Alteration						
Slope	L	M				
Surface Variation	H	M				
Topographic Variety	H	M				
Update Date	8/1/2010	8/1/2010				
Update Userid	rrl_ltd	rrl_ltd				
VAC Final Value	M	M				
VAC Initial Value	M	M				
VC Final Value	M	H				
VC Initial Value	M	H				
Vegetation Variety	M	M				
Vertical Relief	H	M				
Viewer Expectations	M	M				
Viewer Type	A	A				
Viewing Angle	M	H				
Viewing Distance Code	M	H				
Viewing Duration	H	H				
Viewing Frequency	M	H				
Visual Recovery						
VLI Polygon ID	223371	223376	223351			
VR Final Value	M	M				
VR Initial Value	M	M				
VSA Number						
VSC Final Value	3	3	NVS			
VSC Initial Value	3	3				
VSU Number	97	99				
VSU Rating Point Number	546	540				
Years to Veg Code						

Abbreviation	Description
BR (Biophysical Rating)	The **degree to which the biophysical characteristics of a Visual Sensitivity Unit (VSU) creates visual interest and draws peoples attention**. (MOF 1997, 5.5)
EVC (Existing Visual Condition)	The **present level of landscape alteration caused by human activities**. (MOF 1997, 5.3)
EVQO (Established Visual Quality Objective)	Provide **qualitative descriptions of expected visual conditions**. (MFLNRO 2013)
VAC (Visual Absorption Capability)	A **landscapes' ability to absorb alteration and maintain its visual integrity**. (MOF 1997, 5.4)
VC (Viewing Condition)	Viewing Condition (VC) is a measure of **the condition under which the Visual Sensitivity Unit (VSU) is most commonly viewed**.
VR (Viewer Rating)	The **number of people likely to view the Visual Sensitivity Unit (VSU) and the preferences, expectations or concerns they have about how they would like the VSU to look**. (MOF 1997, 5.7)
VSC (Visual Sensitivity Class)	The **sensitivity of the Visual Sensitivity Unit (VSU) to visual alteration**. **It is an assessment of the likelihood that carrying out forest practices or other resource development activities in the VSU would give rise to some degree or kind of criticism or**

Schedule 5.3a Viewpoint Details and Rationales

Viewpoint Details and Rationales

COASTFOR ENTERPRISES

Schedule 5.3a - Viewpoint Details and Rationales

VIA-1004																										
Viewpoints				Relates to[6]		Significant Public Viewpoints																		Ground Truthing		
						Criteria[1]					Ranking & Assessment Levels				Attributes[4]			UTM Location						
#	Name	Initial Source	Description[5]	Proposed Development Block / Road	VLI Poly & EVQO	(a) Accessible?	(b) Opportunity?	(c) Relevance?	Determination	Rationale	Significance Ranking[2]	Worst Case Ranking[3]	Assess Level	Comments	Azimuth (°)	Distance (km)	Angle (°)	Zone (U)	Northing (m)	Easting (m)	Elevation (m)	Crew	Date	Photos
VP	Gibson Lk 1	Google Earth	Gibson Lake within Kokanee Glacier Prov Park. Estimated viewpoint. Recreation, hiking. Resting. Static, peripheral view. Midground (1-8km) to background (>8km) distance. Moderate (1min-1day) duration.	Block 1 Block 2 Kokanee8500 Kokanee8510	97 PR 99 PR	Yes	No	No	No	(a) Lake is trail accessible within Prov Park. (b & c) PD is screened from view by topography.															
VP	Kokanee (Glacier) Lk 1	Google Earth	Kokanee (Glacier) Lake within Kokanee Glacier Prov Park. Estimated viewpoint. Recreation, hiking. Resting. Static, peripheral view. Background (>8km) distance. Moderate (1min-1day) duration.			Yes	No	No	No															
VP	Kokanee Ck Tr 1	Google Earth	Kokanee Creek Trail (REC6949), along ridge on westside of Kokanee Creek watershed near outflow to Kootenay Lake. Estimated viewpoint. Recreation, hiking. Active, 5km/hr. Static, peripheral view. Midground (1-8km) distance. Moderate (1min-1day) duration.			Yes	Yes	No	No	(a) Estimated VP on tenured recreation trail. (b) PD bare ground is estimated to be visible. (c) VLI polygon shapes have poor affinity to LFOI indicating lack of intent to manage visual quality from this VP.														
VP	Kokanee Glacier Rd NB 1	Google Earth	Kokanee Glacier Park Road (MOTI). Confirmed viewpoint. Travel, passenger vehicle. Active, 20km/hr. Dynamic (northbound), focal view. Foreground (<1km) to midground (1-8km) distance. Short (10sec-1min) duration.			Yes	No	No		(a) Local public road accessing Prov Park and tenured recreation sites. (b & c) PD bare ground is screened from view by vegetation.														

COASTFOR ENTERPRISES

VIA-1004

Viewpoints				Relates to[6]		Significant Public Viewpoints																		
						Criteria[1]					Ranking & Assessment Levels				Attributes[4]			UTM Location				Ground Truthing		
#	Name	Initial Source	Description[5]	Proposed Development Block / Road	VLI Poly & EVQO	(a) Accessible?	(b) Opportunity?	(c) Relevance?	Determination	Rationale	Significance Ranking[2]	Worst Case Ranking[3]	Assess Level	Comments	Azimuth (°)	Distance (km)	Angle (°)	Zone (U)	Northing (m)	Easting (m)	Elevation (m)	Crew	Date	Photos
VP	Kokanee Glacier Rd SB 2		Kokanee Glacier Park Road (MOTI). Confirmed viewpoint. Travel, passenger vehicle. Active, 20km/hr. Dynamic (southbound), focal view. Midground (1-8km) distance. Short (10sec-1min) duration.	Block 1 Block 2 Kokanee8500 Kokanee8510	97 PR 99 PR	Yes	Yes	Yes	Yes	(a) Local public road accessing Prov Park and tenured recreation sites. (b) PD bare ground is visible. (c) VLI Polygon shapes indicate intent to manage visual quality from road.	NR	WC %Alt & SVC	CF1252 EE	%Alt - LFOI plane surface is relatively perpendicular to viewing direction. SVC - Characteristic of a highest rated viewpoint used in establishing the VLI aggregate Viewing Condition.	142-164	2.2-3.4		11	5503895	489026		RC	10-Oct-2019	Gen
VP	Kokanee Lk Tr 1	Google Earth	Kokanee (Glacier) Lake Trail within Kokanee Glacier Prov Park.			Yes	No	No	No	(a) Tenured recreation trail in Prov Park. (b & c) PD bare ground is screened from view by topography.														
VP	Kokanee Lk Tr 2	Google Earth	Estimated viewpoint. Recreation, hiking. Active, 5km/hr. Dynamic (southbound), peripheral view. Midground (1-8km) to background (>8km) distance.			Yes	No	No	No															
VP	Kokanee Lk Tr 3	Google Earth				Yes	No	No	No															
VP	Kokanee Lk W Arm 7	Google Earth	Kokanee Lake West Arm surface. Estimated viewpoint **Recreation, boating. Active 5km/hr**. Recreation, swimming. Resting. Travel, boat. Active, 50km/hr. Dynamic (uni-directional), peripheral view. Midground (1-8km) to background (>8km) distance. Moderate (1min-1day) duration.			Yes	No	No	No	(a) Major lake surface used for travel and recreation. (b & c) PD bare ground is screened from view by topography.														
VP	Kokanee Old Grw Tr 1 (Kokanee Glacier Rd SB 1)	Google Earth	Kokanee Old Growth Trail (REC 5223). Confirmed viewpoint. **Recreation, hiking. Resting.** Recreation, hiking. Active, 5km/hr. Travel, passenger vehicle. Resting. Travel, passenger vehicle. Active, 20km/hr. Static, peripheral view. Midground (1-8km) distance. Moderate Duration (1min-1day)			Yes	No	No	No	(a) Tenured recreation trail parking lot and trail head. (b & c) PD bare ground is screened from view by vegetation.												RC	10-Oct-2019	Gen

COASTFOR ENTERPRISES

VIA-1004

Viewpoints				Relates to[6]		Significant Public Viewpoints																		
						Criteria[1]					Ranking & Assessment Levels				Attributes[4]			UTM Location				Ground Truthing		
#	Name	Initial Source	Description[5]	Proposed Development Block / Road	VLI Poly & EVQO	(a) Accessible?	(b) Opportunity?	(c) Relevance?	Determination	Rationale	Significance Ranking[2]	Worst Case Ranking[3]	Assess Level	Comments	Azimuth (°)	Distance (km)	Angle (°)	Zone (U)	Northing (m)	Easting (m)	Elevation (m)	Crew	Date	Photos
VP	Kokanee W FSR DN 1.5km	Google Earth	Kokanee West Forest Service Road (BCTS FSR). Confirmed viewpoint. Travel, passenger vehicle. Active, 20km/hr. Dynamic (eastbound), focal view. Midground (1-8km) distance. Short (10sec-1min) duration.	Block 1 Block 2 Kokanee8500 Kokanee8510	97 PR 99 PR	Yes	Yes	Yes	Yes	(a) Local public road accessing tenured reaction sites. (b) PD bare ground is visible. (c) VLI Polygons have strong affinity to LFOI indicating intent to manage visual quality from this VP.	NR	WC Design	Enhanced VQC	Constrained LFOI. Viewing distance is reduced. More bare ground and less unaltered visible.	35-62	1.4-3.2		11	5499508	488506		RC	10-Oct-2019	Gen
VP	Kokanee W FSR DN 2.0km	Google Earth				Yes	Yes	Yes	Yes		NR	WC Design	Enhanced VQC		46-57	1.7-2.1		11	5499273	488264		RC	10-Oct-2019	Gen

[1] **Significant Public Viewpoint Criteria**
a place or location on the land or water that is:
(a) accessible to the public,
(b) provides a viewing opportunity,
(c) has relevance to the landform being assessed

[2] **Significant Public Viewpoint Significance**
(1) glimpse view, less than 10 seconds
(2) sustained side view
(3) sustained focal view or traveling toward the alteration for more than 1 minute
(4) VP at a rest stop, campsite or other static short-term view location
(5) VP at the location of a community, commercial tourist-related enterprise, or other static long-term view site
(NR) not ranked by this method. Worst Case ranking applied.

[3] **Worst Case Ranking**
WC %Alt = Worst Case Appropriate Percent Alteration View
WC Design = Worst Case Design View
WC SVC = Worst Case Singular Viewing Condition View

[4] **Approximate Viewing Attributes. SPVs only. Describes only general relationship.**

[5] **Where VP is representative of multiple views, bold text indicates viewing attributes described.**

[6] **General association. Does not mean visibility of bare ground.**

Schedule 5.3b
Google Earth Spatial Data

Google Earth Spatial Data

Schedule 5.3b - Google Earth Spatial Data

Spatial data for this Visual Impact Assessment is attached at right in Google Earth KMZ format and includes (but is not necessarily limited to):

- Proposed Development (Clearcuts)
- Proposed Development (Partial Cuts)
- VLI Polygons
- Viewpoints
- Significant Public Viewpoints
- Sightlines
- VLI Viewpoints (if available)
- Recreation Lines and Polygons
- Previous Assessment data (if applicable)
- Existing Opening identification and VEG status (as needed)

.KMZ File



Schedule 5.3c
Viewpoint Field Review Photos

VP Kokanee Glacier Rd NB 1
VP Kokanee Old Grw Tr 1

Schedule 5.3c – Viewpoint Field Review Photos

Foreword

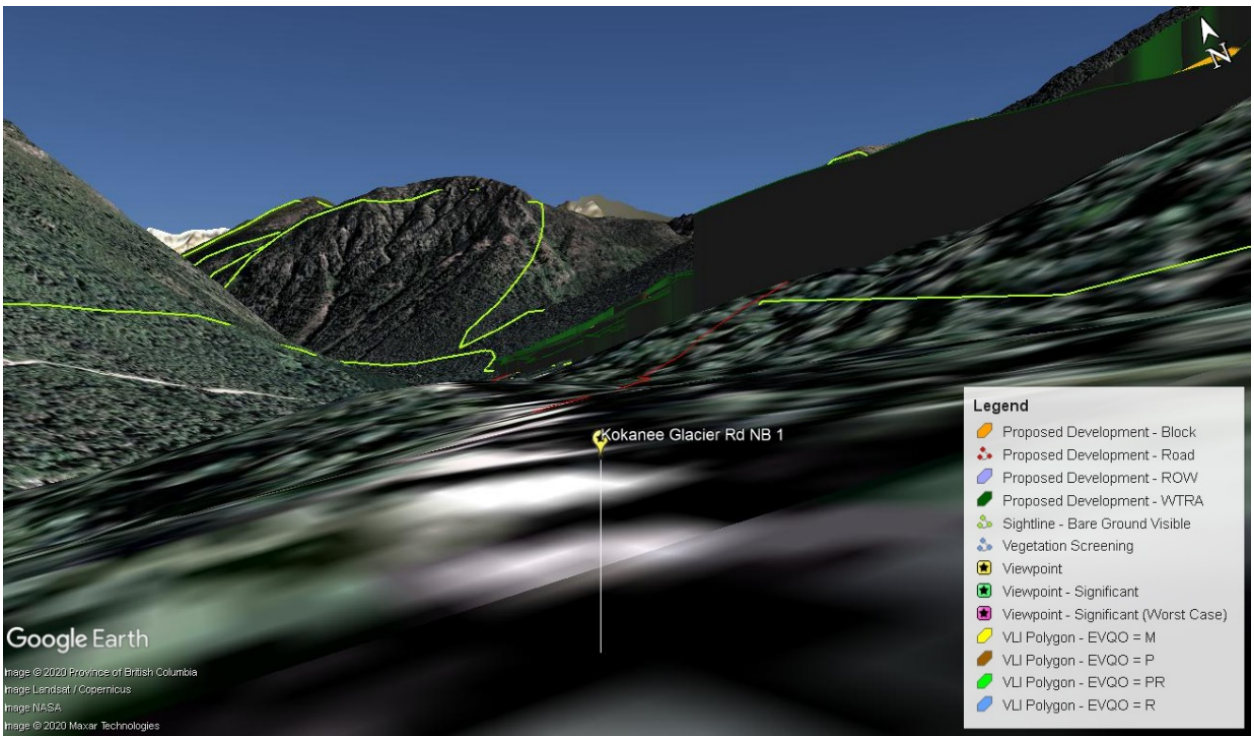
Sample imagery follows below for viewpoints determined not to meet Significant Public Viewpoint criteria, where those Viewpoints were visited in the field. The following imagery is presented below (organized by Viewpoint):

- Viewpoint Photo (if available)
- Google Earth Simulation

The rest of this page is purposefully blank to improve imagery alignment on the pages that follow.

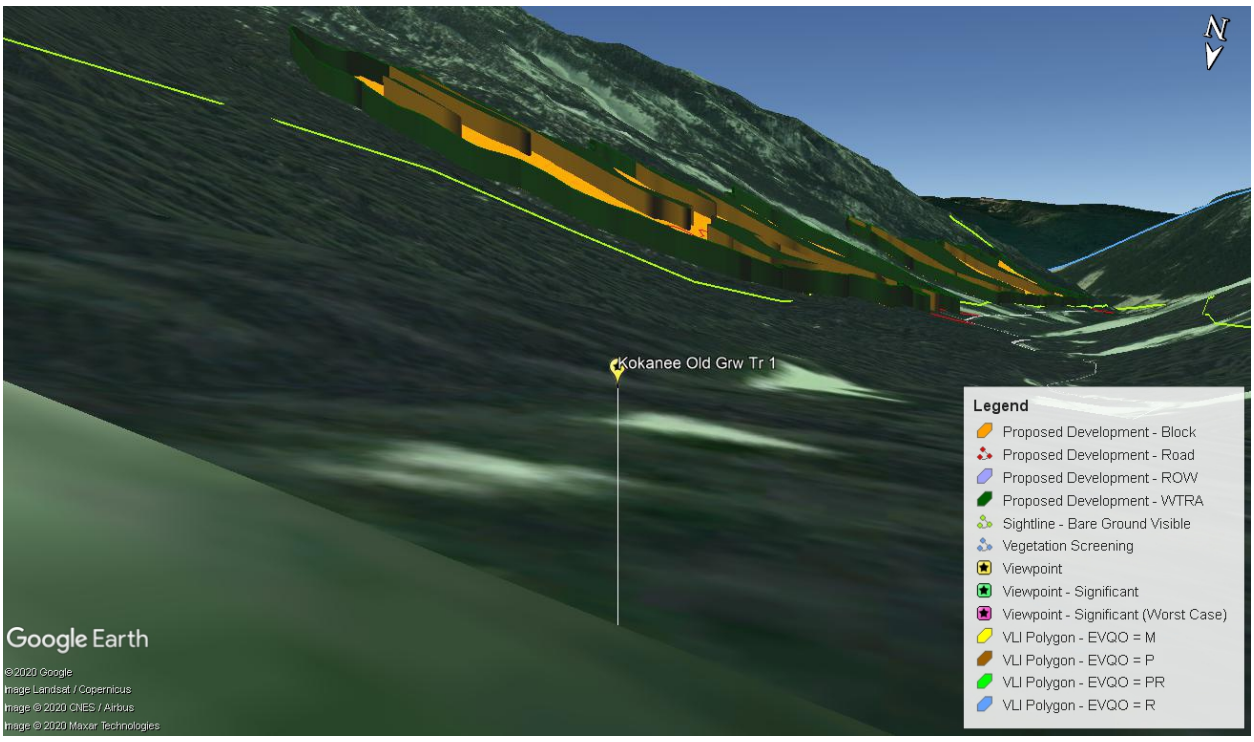
VP Kokanee Glacier Rd NB 1





VP Kokanee Old Grw Tr 1





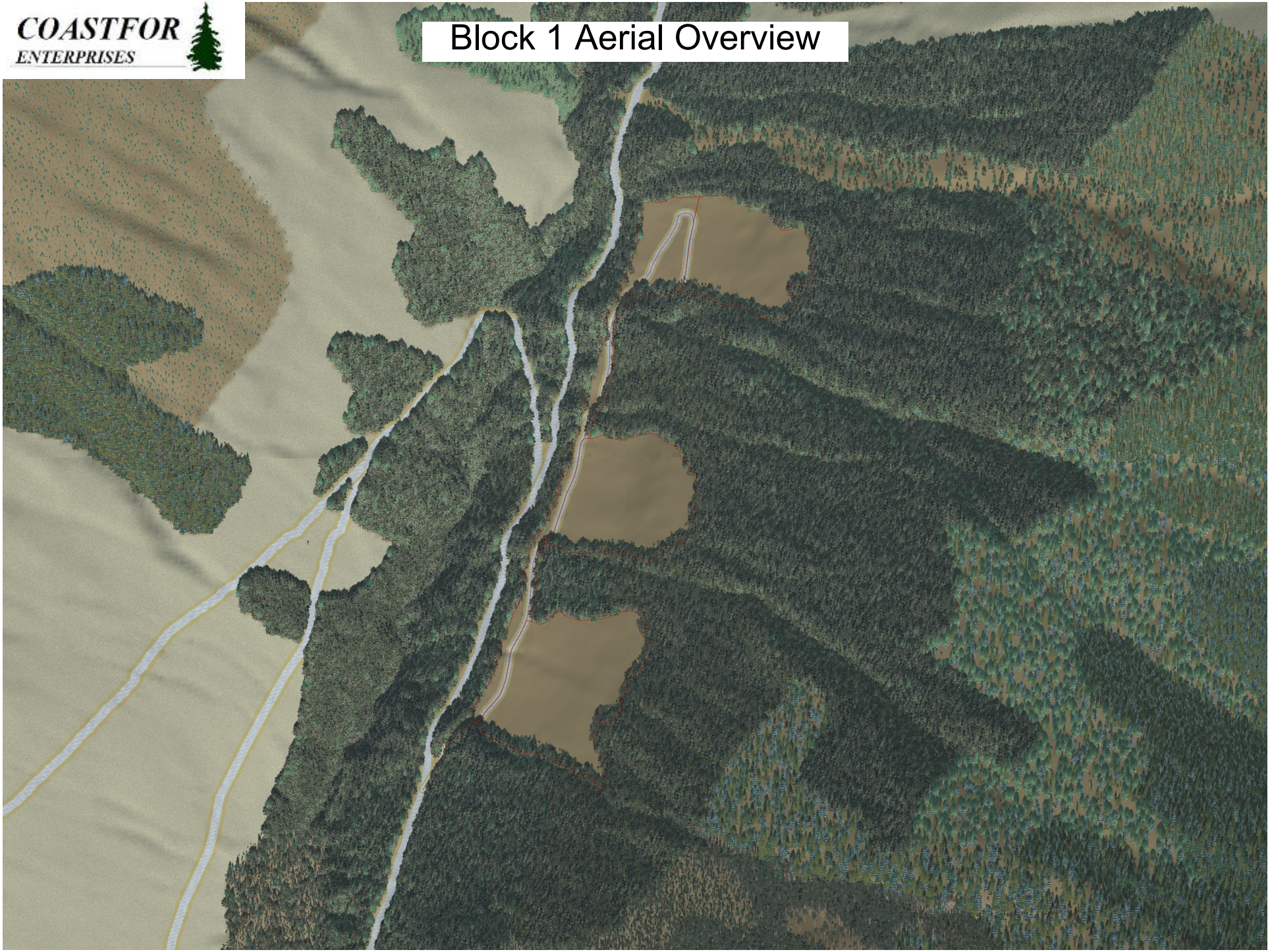
Schedule 5.5a
Aerial Overview Simulations

Block 1 WAW-018

Block 2 WAW-017 & KL0236.15Kokanee8500 & KL0236.16Kokanee8510

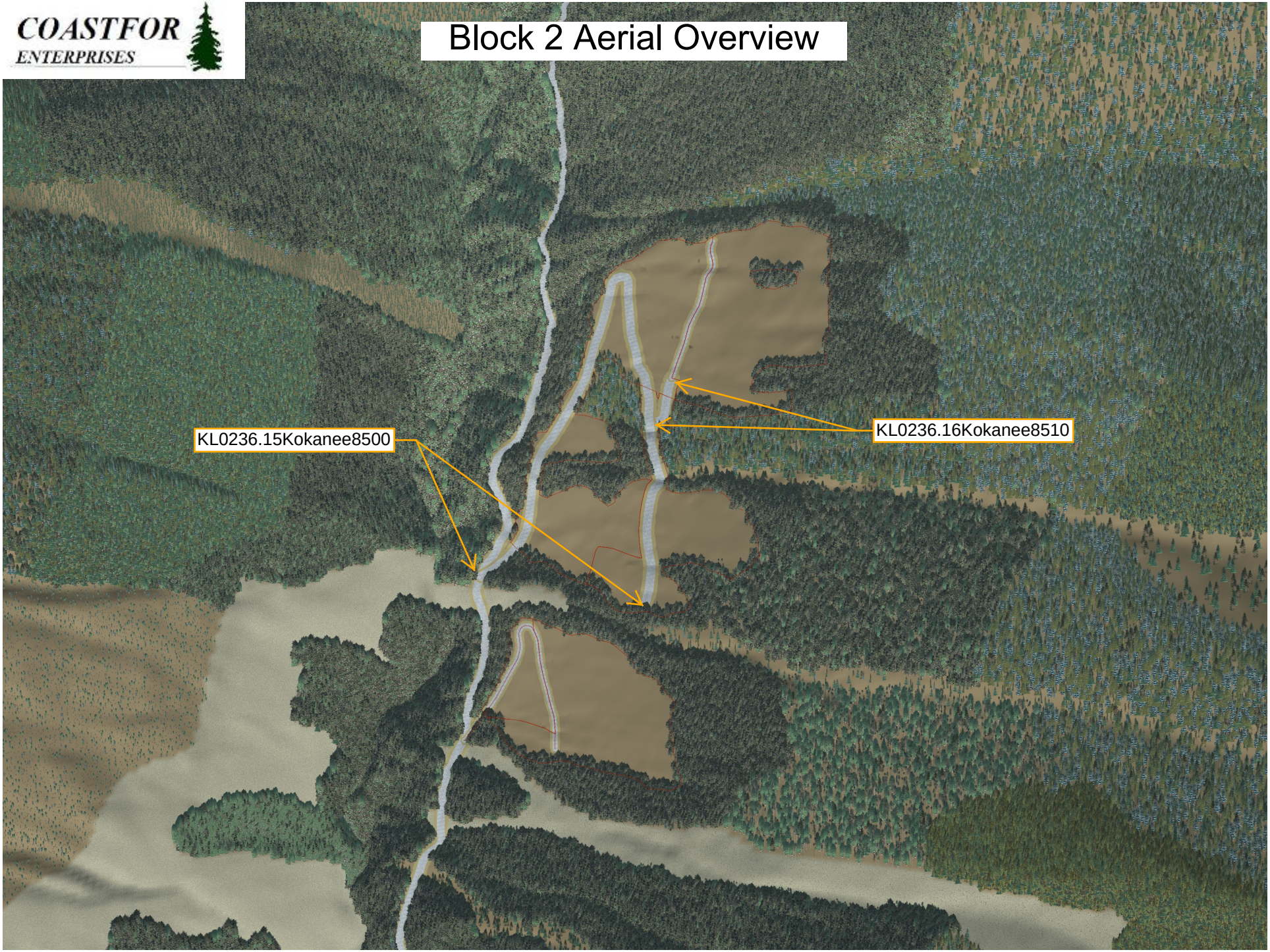
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ENTERPRISES

Block 1 Aerial Overview



COASTFOR ENTERPRISES

Block 2 Aerial Overview



Schedule 5.5b
Select Current Alteration Model Data

No Additional Model Data

Schedule 5.5c
Simulated Dispersed Retention

No Simulated Dispersed Retention

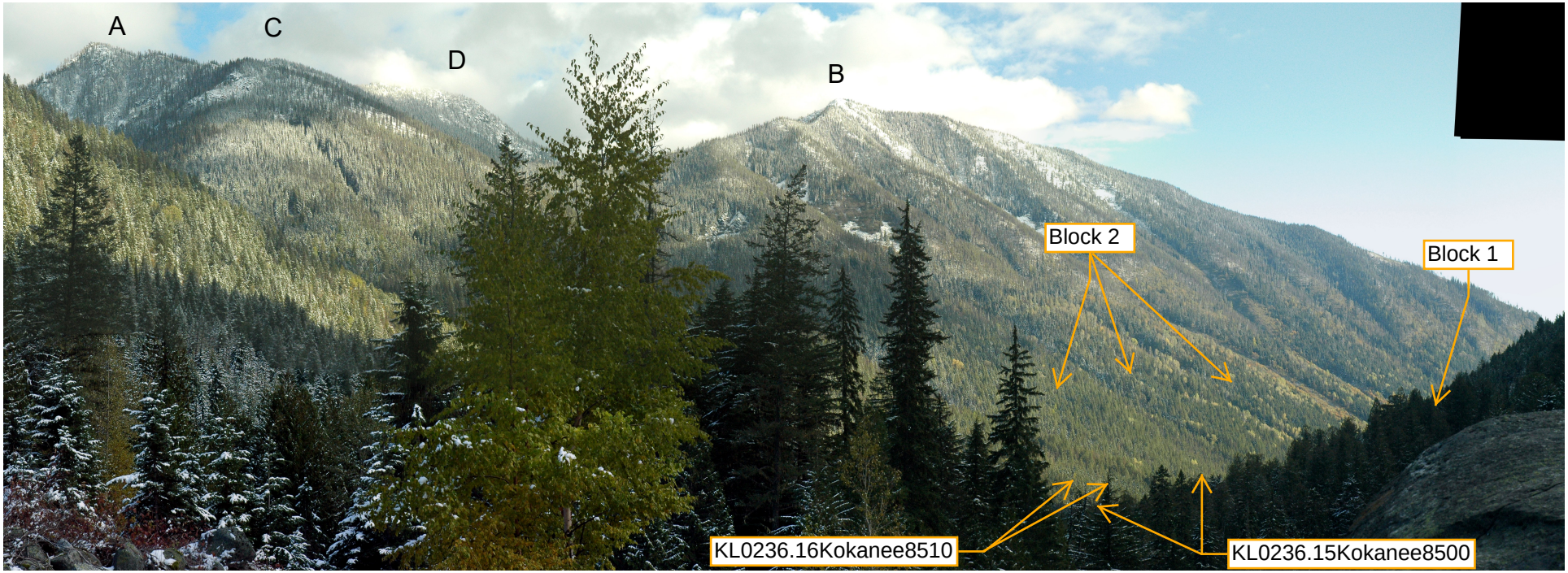
Schedule 6.1a
Full CF1252 Effectiveness Evaluation Assessment Imagery

VP Kokanee Glacier Rd SB 2

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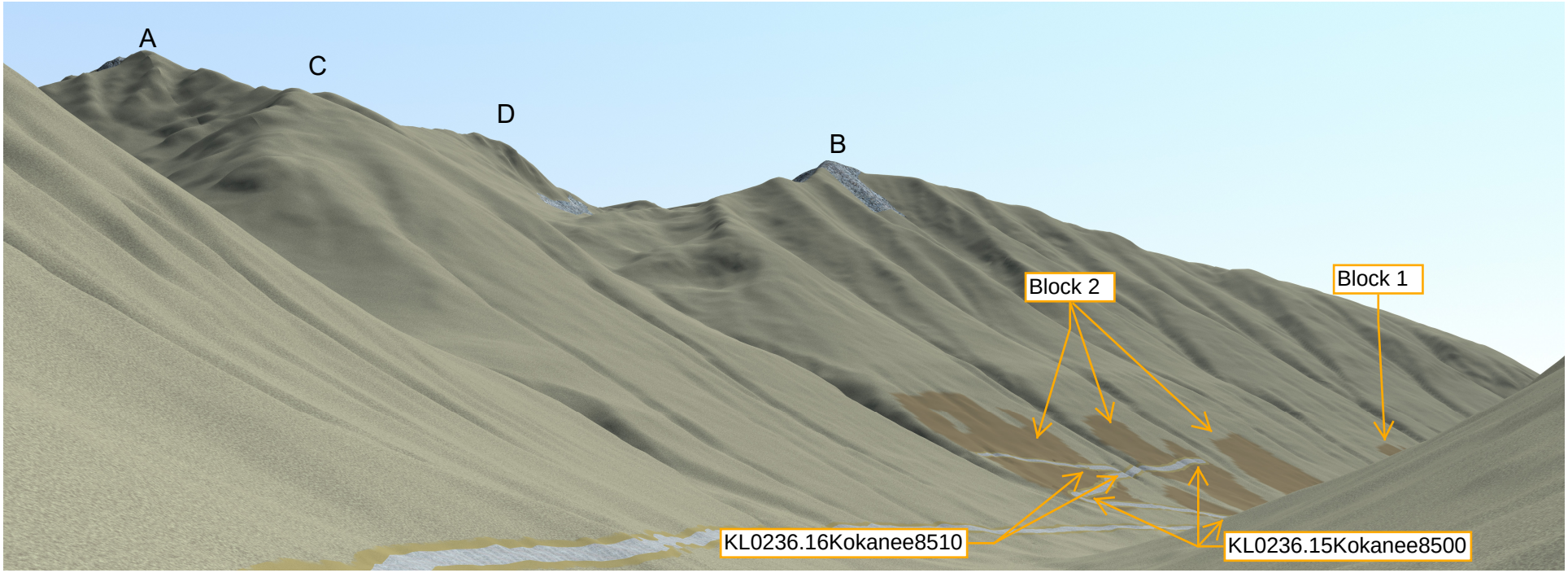
COASTFOR ENTERPRISES

VP Kokanee Glacier Rd SB 2
Photo



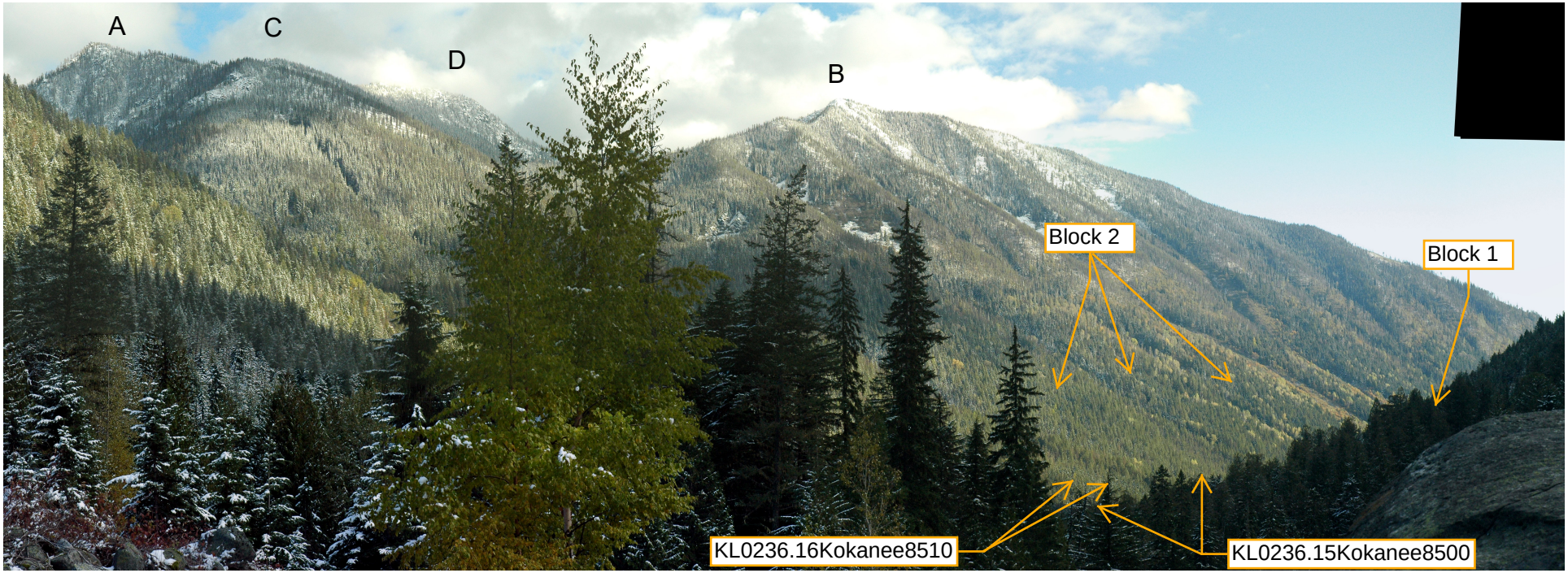
COASTFOR ENTERPRISES

VP Kokanee Glacier Rd SB2
Bare Earth Simulation



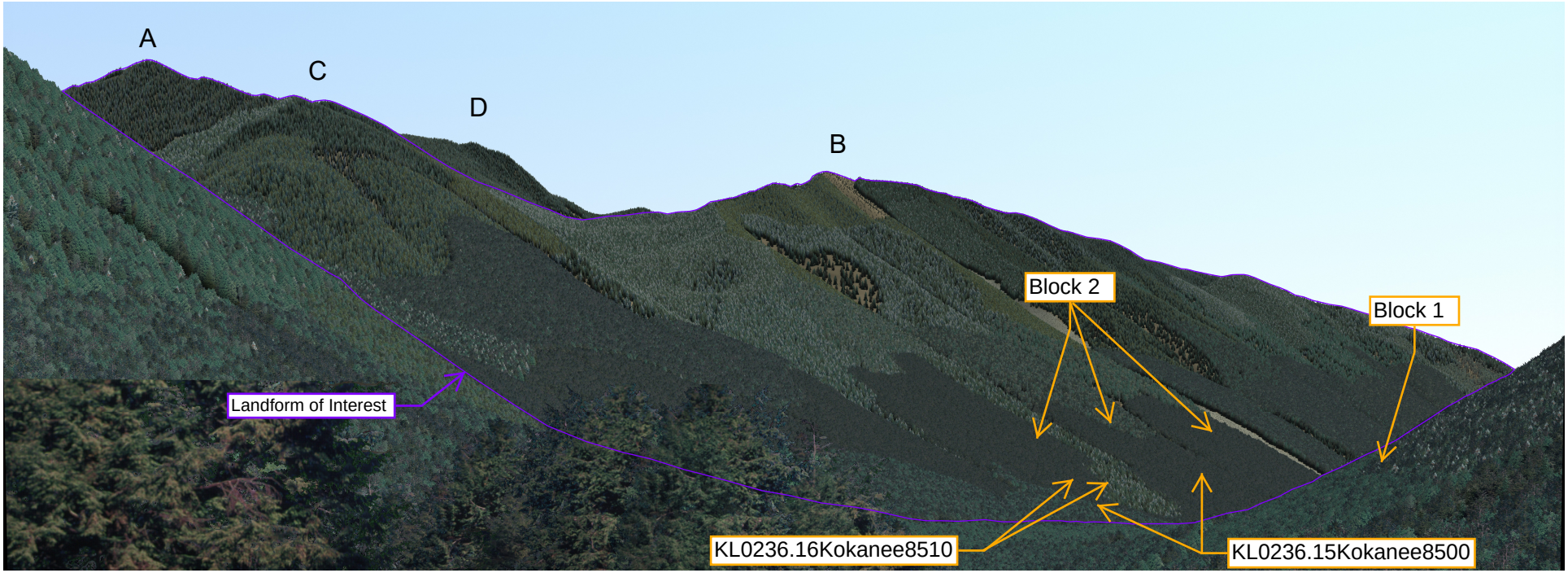
COASTFOR ENTERPRISES

VP Kokanee Glacier Rd SB 2
Photo



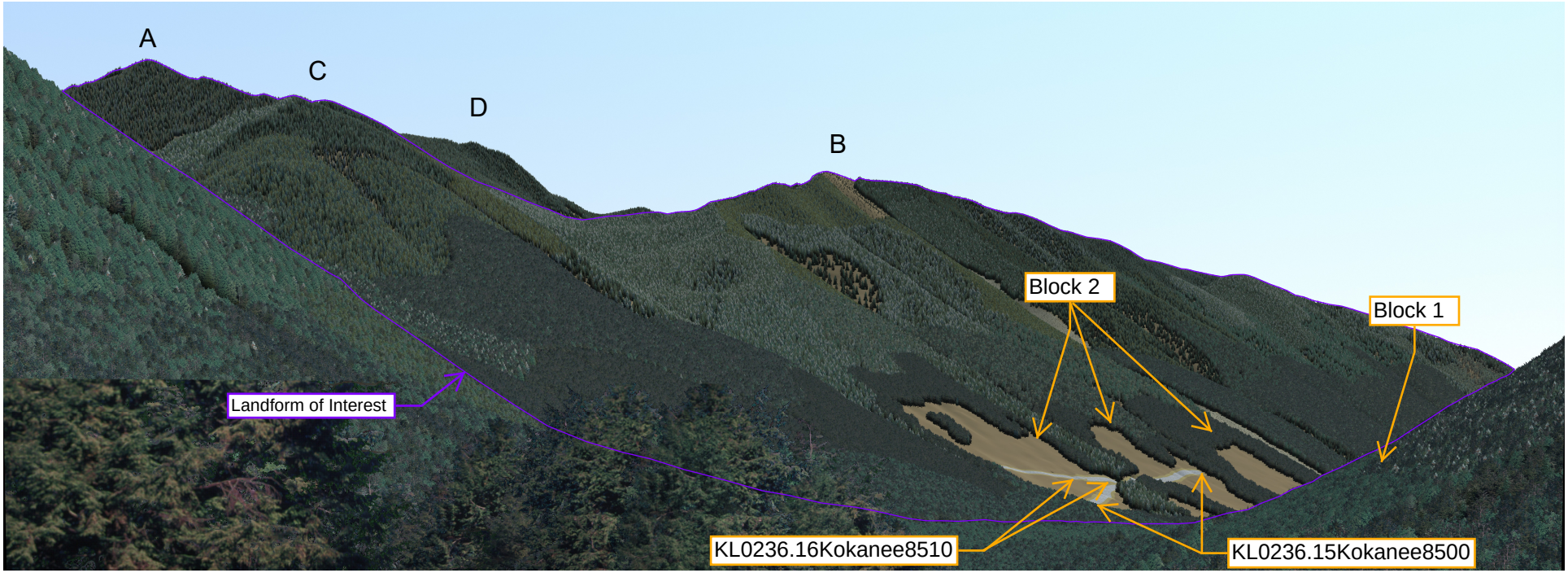
COASTFOR ENTERPRISES

VP Kokanee Glacier Rd SB 2
Current Alteration Simulation



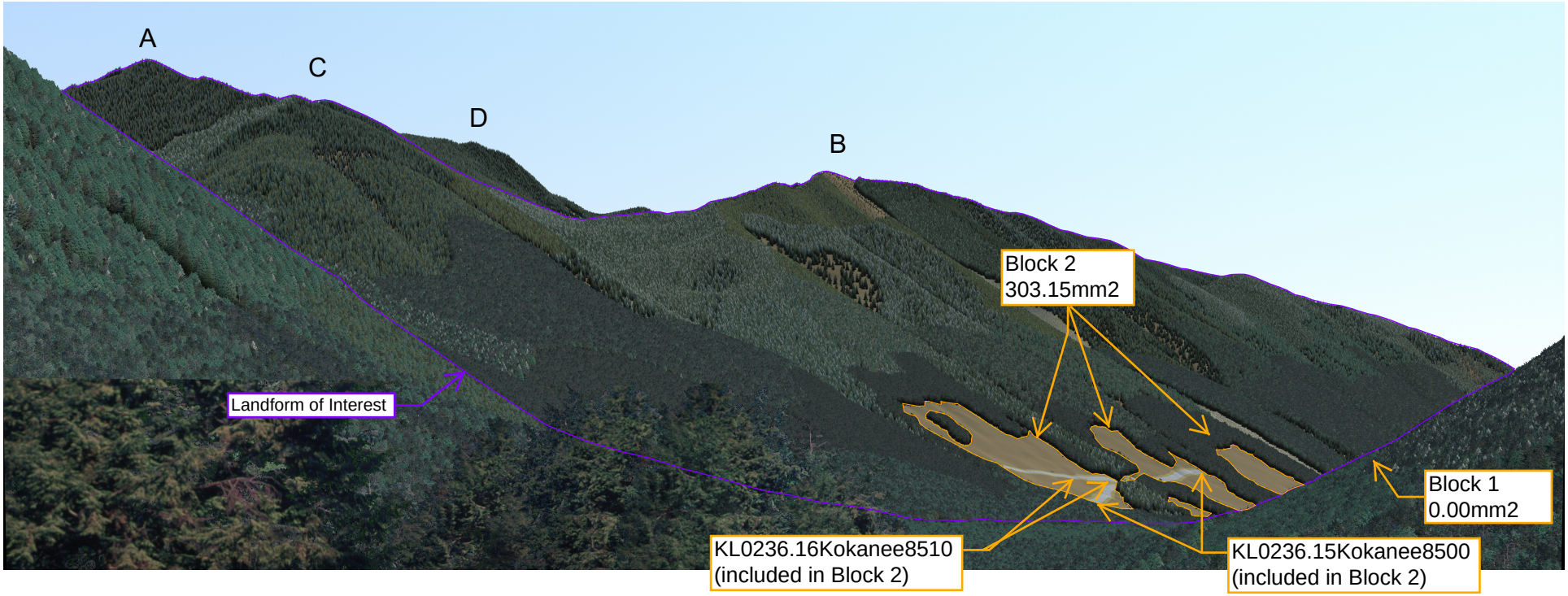
COASTFOR ENTERPRISES

VP Kokanee Glacier Rd SB 2
Proposed Alteration Simulation



COASTFOR ENTERPRISES

VP Kokanee Glacier Rd SB 2
Clearcut Percent Alteration Analysis



Schedule 6.1b
CF1252 Forms

VP Kokanee Glacier Rd SB 2

COASTFOR ENTERPRISES

CF1252 Form — VP Kokanee Glacier Rd SB 2

(09May2020 Revision)

2.1.2 Site Information

Proposed Development Clearcut (PD_{CC})	Block 1 & 2 and Associated Roads, FSRs KL0236.15Kokanee8500 & KL0236.16Kokanee8510	Refer to Proposed Development Overview for additional information.
Proposed Development Partial Cut (PD_{PC})		

2.1.3 VLI Information

VLI Polygon Overlaps	97, 99	EVQO(s)	Partial Retention	Refer to Proposed Development Overview for additional information.
VLI Polygon Overlaps		EVQO(s)		

2.2.1 Viewpoint (Field)

Significant Public Viewpoint	VP Kokanee Glacier Rd SB 2	Refer to Proposed Development Overview for additional information.

2.2.2 Viewpoint (Field)

Refer to Proposed Development Overview for additional information.

2.2.3 Assess Basic VQC

	Visibility	Scale	Design	VQC Comments	Basic VQC	Comments
EVC_{ALL}	Not easily distinguishable from the pre-harvest landscape	Very small			Preservation	No non-VEG or VEG openings
	Preservation			<--Sample alteration image resemblance (Marc, 2008 & MFLNRO, 2013)		
PD_{CC}	Easy to see	Medium	Natural and not rectilinear or geometric in shape		Partial Retention	Roads significant yet within PR
	Partial Retention			<--Sample alteration image resemblance (Marc, 2008 & MFLNRO, 2013)		
PD_{PC}						No PC
				<--Sample alteration image resemblance (Marc, 2008 & MFLNRO, 2013)		
CLA_{ALL}	Easy to see	Medium	Natural and not rectilinear or geometric in shape		Partial Retention	
	Partial Retention			<--Sample alteration image resemblance (Marc, 2008 & MFLNRO, 2013)		

2.2.4 Design Observations (Field)

		Response to visual force lines	Borrows from Natural Character	Edge treatments incorporated	Distance from the viewpoint	Position on the landform	Total Design (f)	Comments
Clearcuts (CC)	EVC_{CC}							No existing openings
	PD_{CC}	Strong (Good, -1)	Partially (Moderate, 0)	Only irregular boundaries present (Moderate, 0)	> 1 and < 8 km (Moderate, 0)	Small opening near centre (Moderate, 0)	-1	Conservative estimate of position
	CLA_{CC}	Strong (Good, -1)	Partially (Moderate, 0)	Only irregular boundaries present (Moderate, 0)	> 1 and < 8 km (Moderate, 0)	Small opening near centre (Moderate, 0)	-1	
Partial Cuts (PC)	EVC_{PC}							
	PD_{PC}							
	CLA_{PC}							

2.3.2 Assess Initial VQC (Office) - See detailed calculations below

		a) % of landform altered by recent openings	b) % of landform with site disturbance outside openings	c) % non veg contribution of old openings	X = (a+b+c) for CC only	Initial VQC	Comments
Clearcuts (CC)	EVC_{CC}		0.0%	0.00%			
	PD_{CC}	3.81%					
	CLA_{CC}				3.81%	Partial Retention (1.6 - 7.0%)	Medium in scale
Partial Cuts (PC)	EVC_{PC}		0.0%	0.0%			
	PD_{PC}	0.00%					
	CLA_{PC}				0.00%		

2.3.3 Assess Adjusted VQC (Office)

	d) impact of roads, side cast, etc. (within openings)	e) tree retention	f) Design (enter total from 2.2.4 above)	Total adjustment Y = (d+e+f)	Calculated adjusted % alteration X*(1+0.14*Y) =	Adjusted VQC	Comments
CLA_{CC}	2 = Significant	0 = Poor < 15%	-1	1	4.34%	Partial Retention (1.6 - 7.0%)	Medium in scale
CLA_{PC}			0		0.00%		

2.3.4 Partial Cut Alterations

(No Partial Cuts - Section Hidden)

2.3.6 Determining EE Rating for the Landform by Comparing Basic VQC with Adjusted VQC (Office)

	2.2.3 Basic VQC CLA (CLA_{ALL})	<--Override	2.3.3 Adjusted VQC CLA	<--Override	Effectiveness Evaluation Comments (Stock Statements from FS1252 Form)	Effectiveness Evaluation	Comments
CLA_{CC}	Partial Retention		Partial Retention (1.6 - 7.0%)		Both methods indicate VQO achievement and are on the lower % alteration limit or mid-range for the class	5 Well met	Mid-range
CLA_{PC}							No PC
CLA_{ALL}			Partial Retention (1.6 - 7.0%)		Both methods indicate VQO achievement and are on the lower % alteration limit or mid-range for the class	5 Well met	

2.3.7 Allowance for Over-ride

	Override Effectiveness Evaluation Comments	Override EE
CLA_{CC}	No Override	No
CLA_{PC}		
CLA_{ALL}		

Comments

CF1252 Form

VP Kokanee Glacier Rd SB 2

Abbreviations

EVC_{ALL}	Existing Visual Condition, All Alterations	PD_{PC}	Proposed Development, Partial Cuts
EVC_{cc}	Existing Visual Condition, Clearcuts	CLA_{ALL}	Cumulative Landform Assessment, All Alterations
EVC_{PC}	Existing Visual Condition, Partial Cuts	CLA_{CC}	Cumulative Landform Assessment, Clearcuts
PD_{CC}	Proposed Development, Clearcuts	CLA_{PC}	Cumulative Landform Assessment, Partial Cuts

Coloured cells = linked cells / evaluations

Bold outlined cells = critical evaluations

2.3.2 Assess Initial VQC - Detailed Calculations

	Viewpoint Landform of Interest				Contributing Area	Units	Comments
	Landform of Interest				7956.24	mm2	
	Total				**7956.24**	**mm2**	
	a) % of landform altered by recent openings (proposed development)				**Contributing Area**	Units	
	Block 1				0.00	mm2	
	Block 2				303.15	mm2	
						mm2	
	Total				**303.15**	**mm2**	
	Total				**3.81%**	**%**	
	b) % of landform with site disturbance outside openings				**Contributing Area**	Units	
Clearcuts (CC)	None				0.00	mm2	
						mm2	
						mm2	
						mm2	
	Total				**0.00**	**mm2**	
	Total				**0.00%**	**%**	
	c) % non veg contrib. of old openings	**Measured Area**	**VEG Met (%)**	**Veg Not Met (%)**	**Contributing Area**	Units	
	None		0%	100%		mm2	
						mm2	
						mm2	
	Total				**0.00**	**mm2**	
	Total				0.00%	**%**	
	X = (a+b+c)					Units	
	Total percent alteration in perspective view				**3.81%**	**%**	

2.3.4 Partial Cut Alterations - Detailed Calculations
(No Partial Cuts - Section Hidden)

Schedule 6.1c
Partial Cut Percent Alteration Analysis

No Partial Cuts

Schedule 6.2
Enhanced VQC Assessment Imagery

VP Kokanee W FSR DN 1.5km

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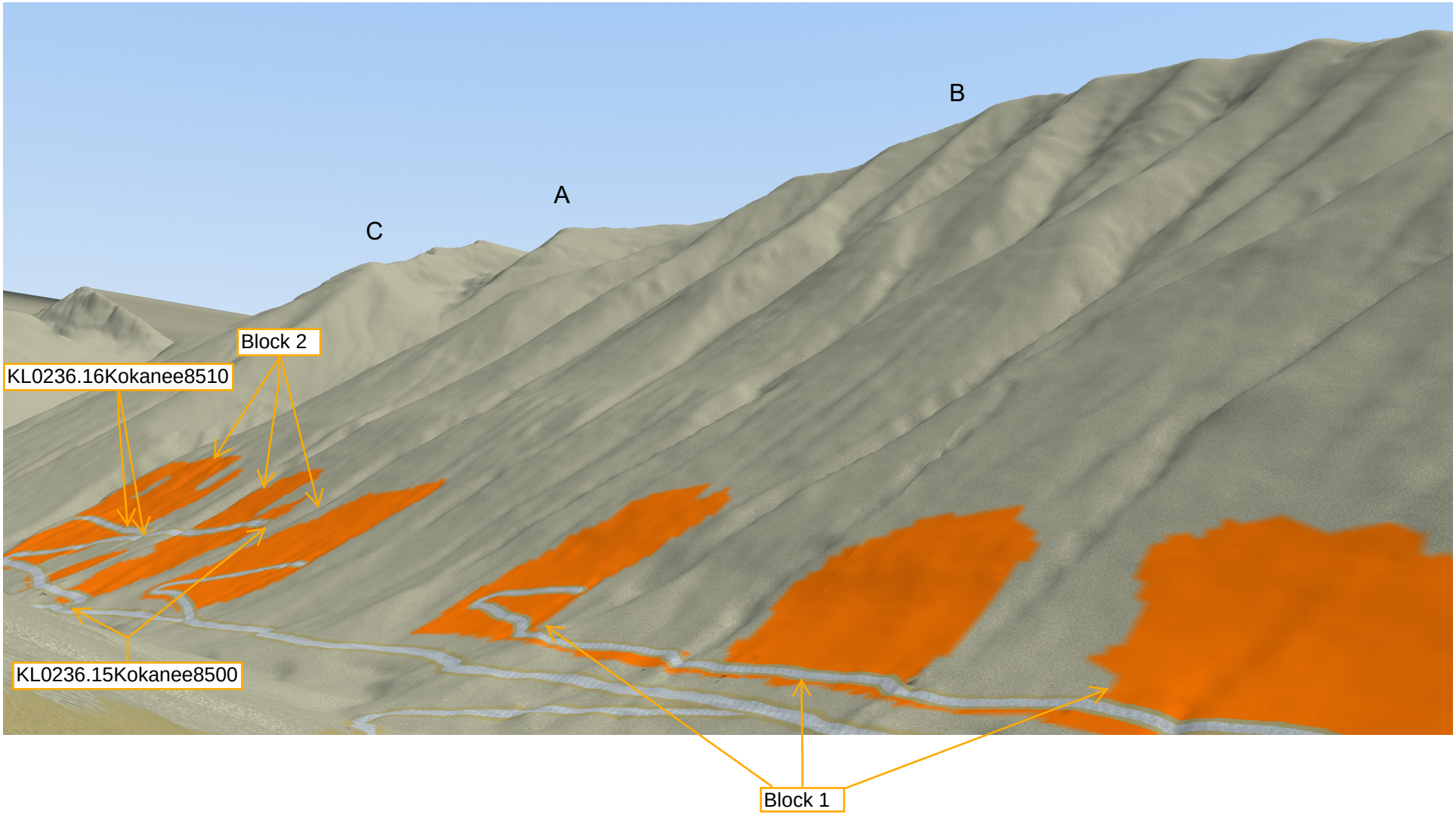
COASTFOR ENTERPRISES

VP Kokanee W FSR DN 1.5km
Photo



COASTFOR ENTERPRISES

VP Kokanee W FSR DN 1.5km
Bare Earth Simulation



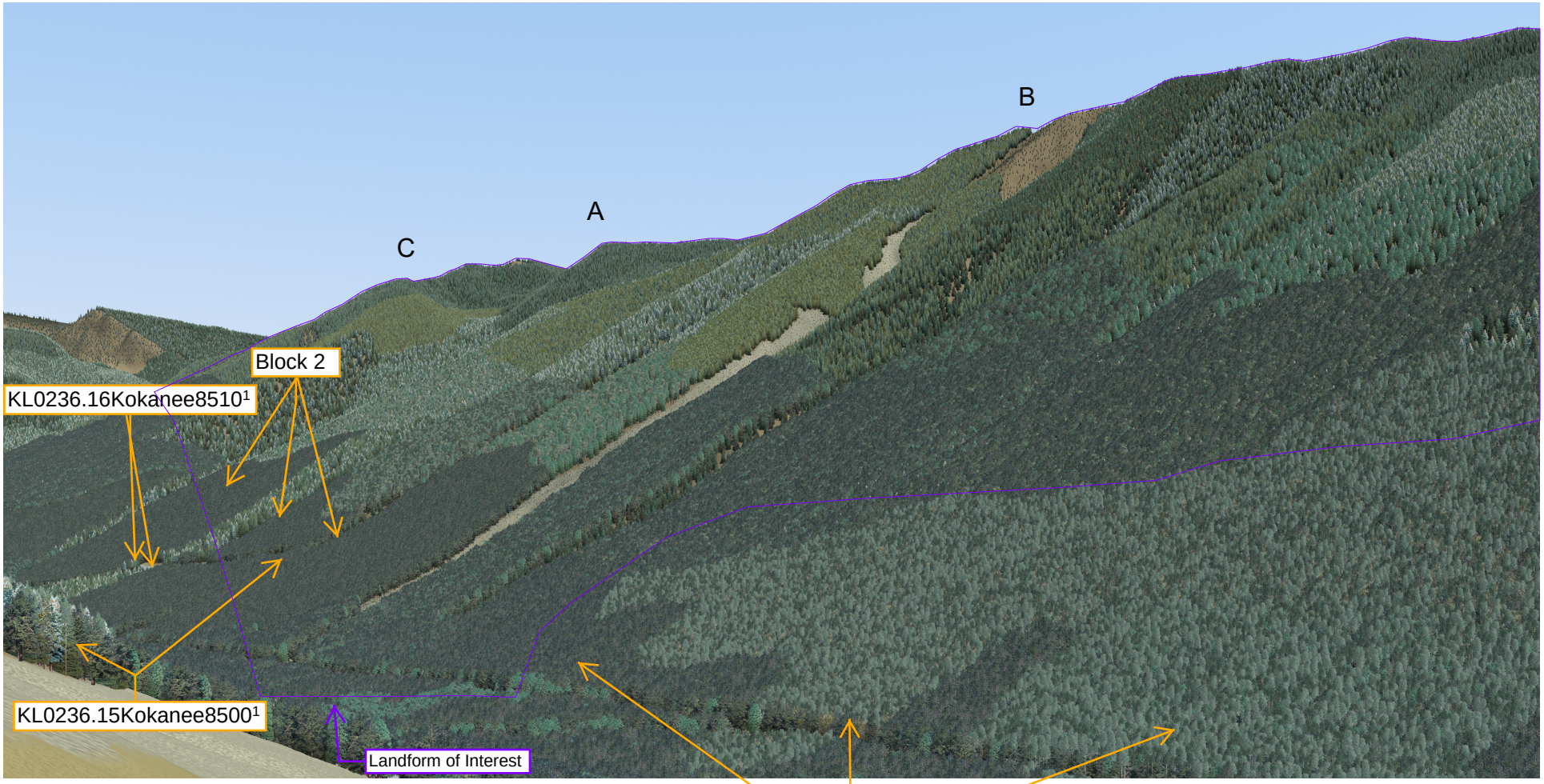
COASTFOR ENTERPRISES

VP Kokanee W FSR DN 1.5km
Photo



COASTFOR ENTERPRISES

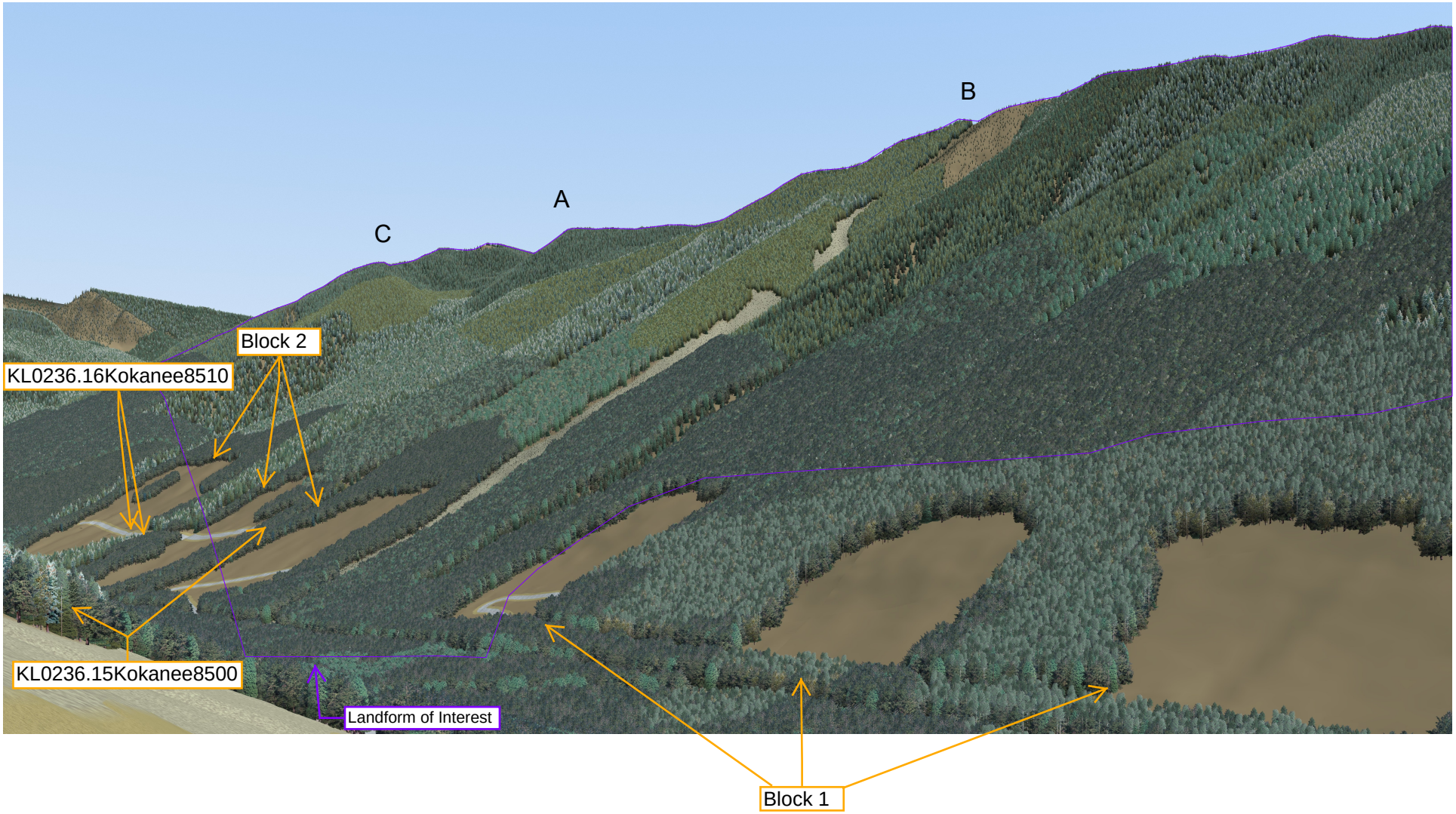
VP Kokanee W FSR DN 1.5km
Current Alteration Simulation



[1] ROW shows as existing in simulation. Disregard.

COASTFOR ENTERPRISES

VP Kokanee W FSR DN 1.5km
Proposed Alteration Simulation

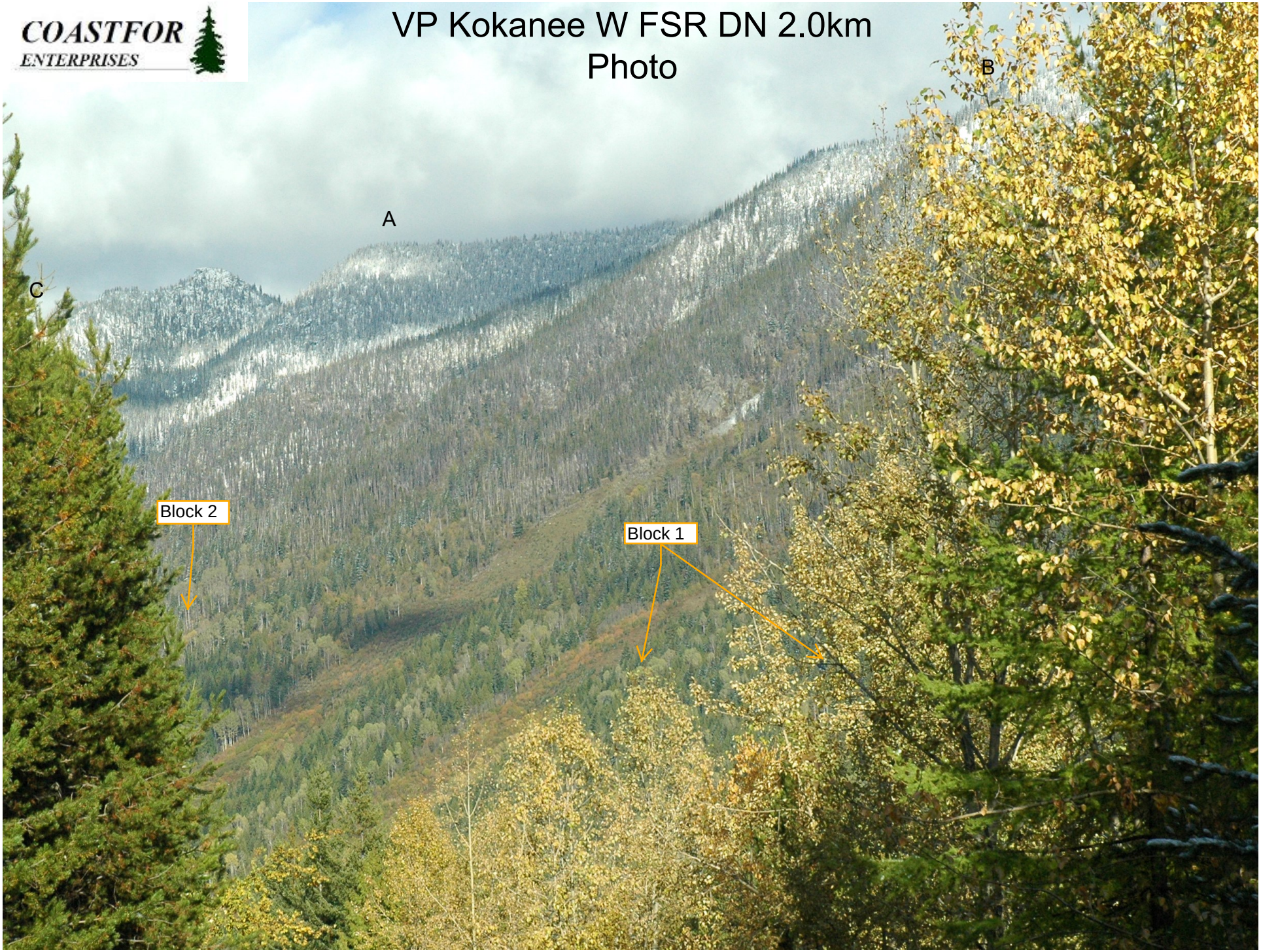


VP Kokanee W FSR DN 2.0km

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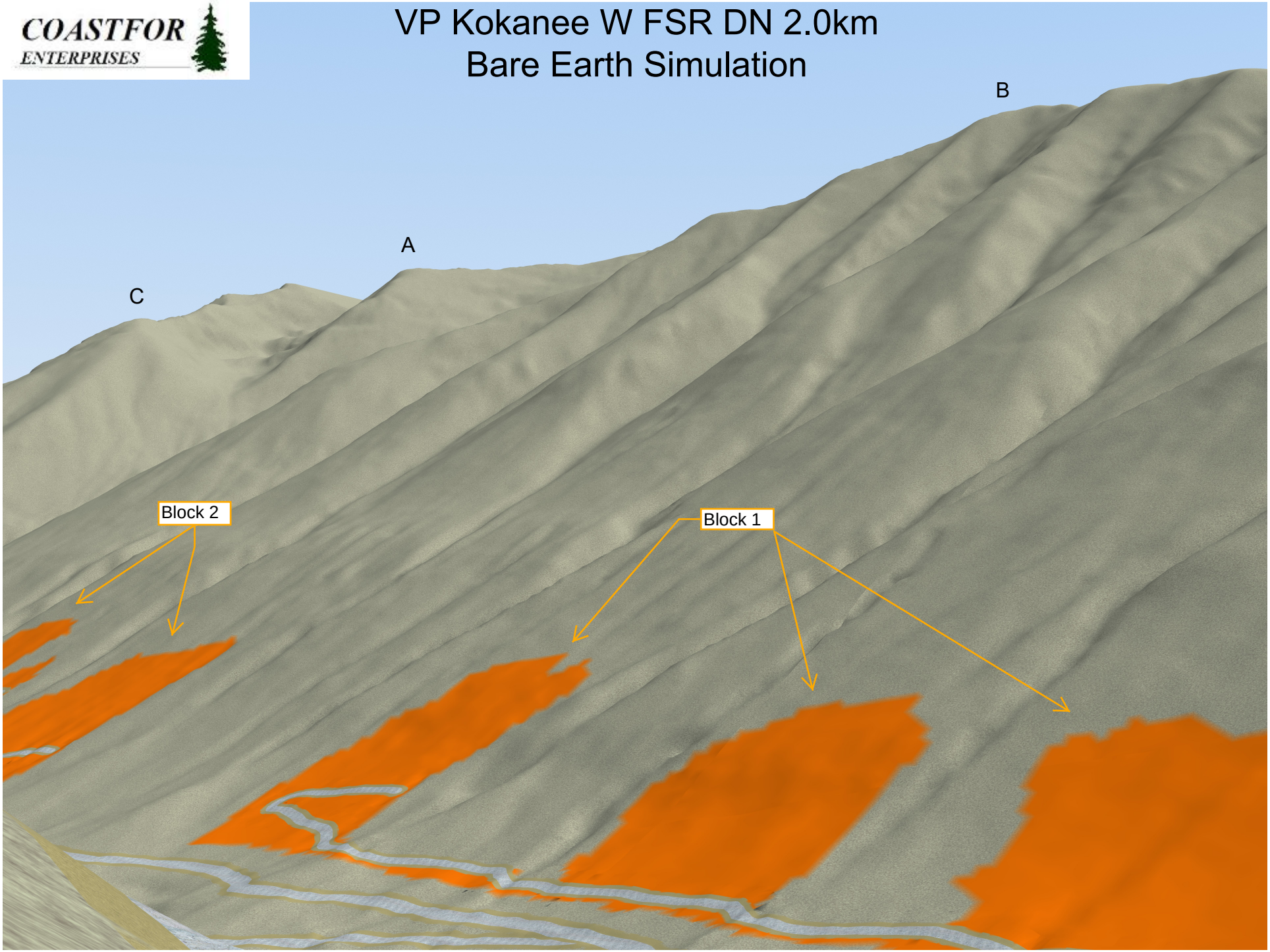
COASTFOR ENTERPRISES

VP Kokanee W FSR DN 2.0km Photo



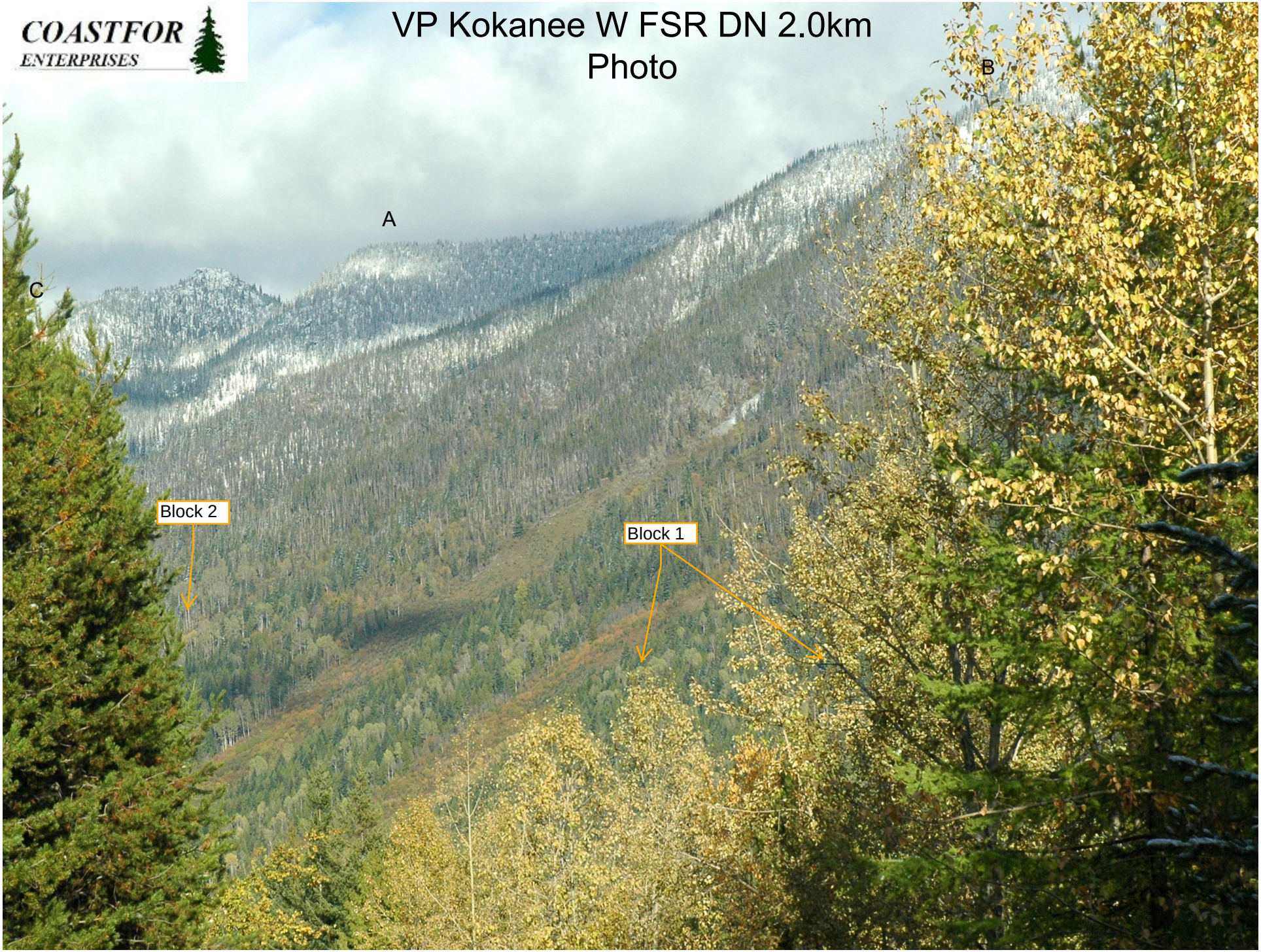
COASTFOR ENTERPRISES

VP Kokanee W FSR DN 2.0km
Bare Earth Simulation



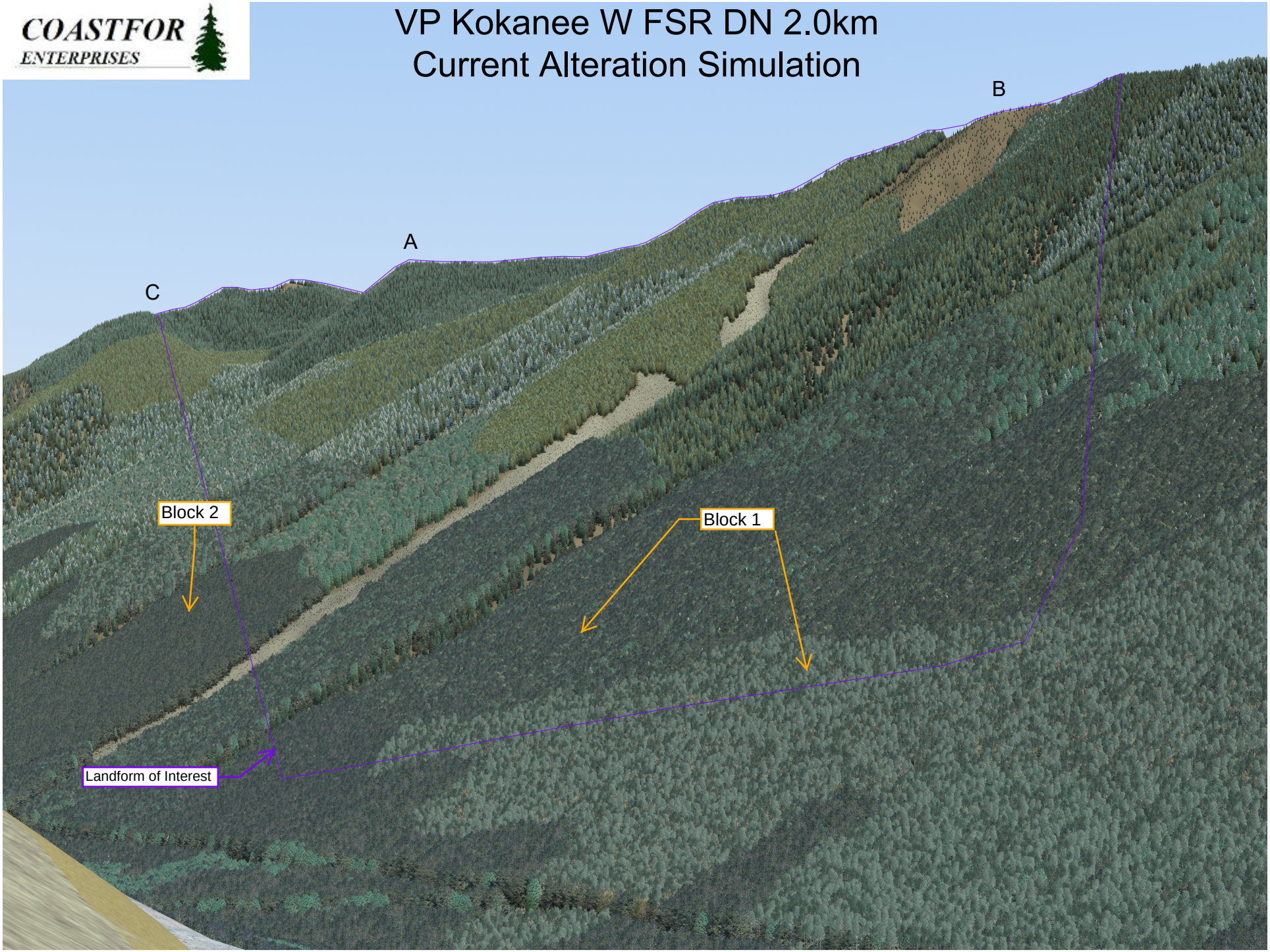
COASTFOR ENTERPRISES

VP Kokanee W FSR DN 2.0km Photo



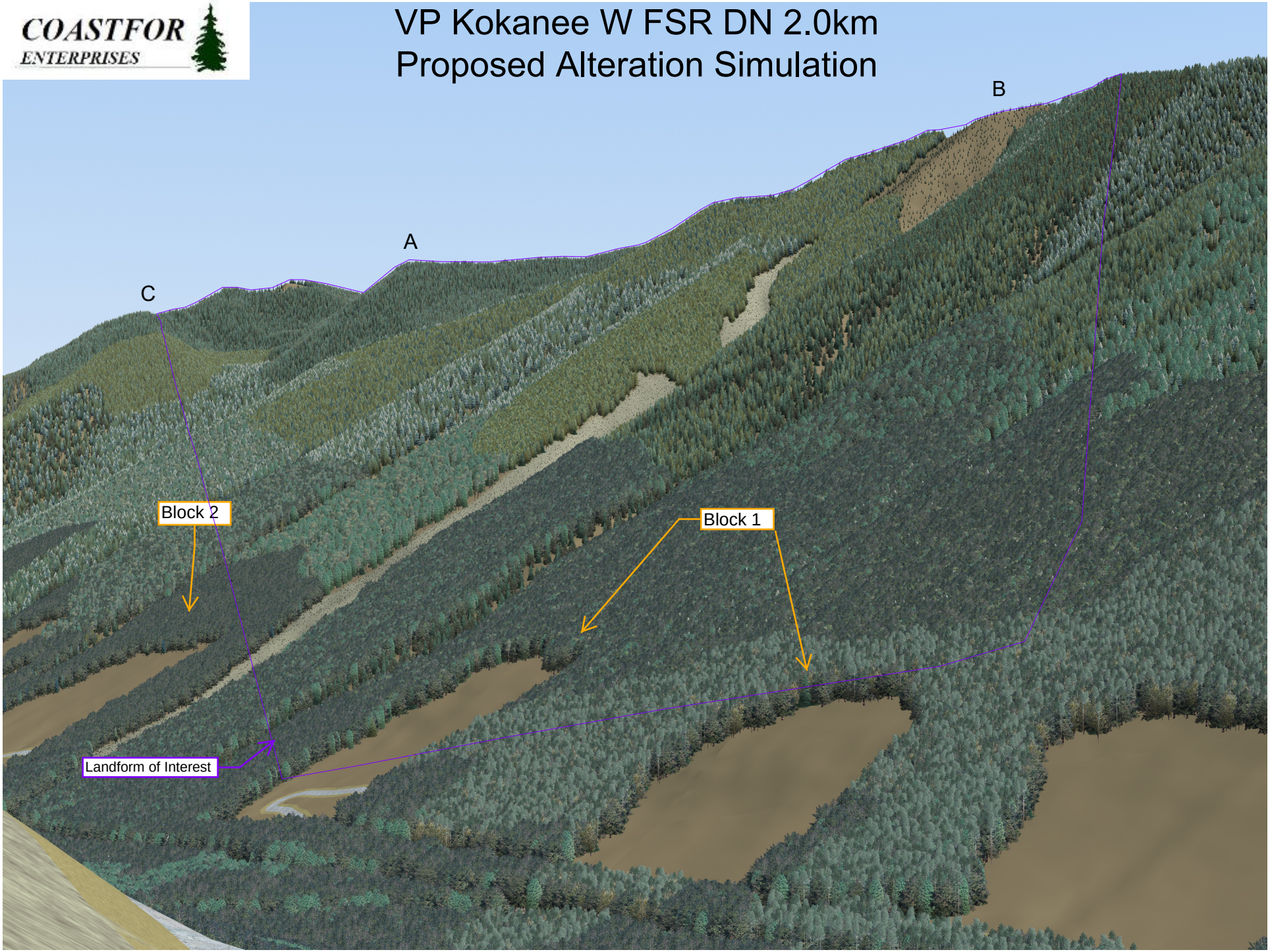
COASTFOR ENTERPRISES

VP Kokanee W FSR DN 2.0km
Current Alteration Simulation



COASTFOR ENTERPRISES

VP Kokanee W FSR DN 2.0km
Proposed Alteration Simulation



Schedule 6.3
Basic VQC Assessment Imagery

No Basic VQC Assessments

Appendix A - References

1. Foreword

The following references were generally consulted in the development of the visual assessment to which this appendix is attached. All references may not be cited in the report or in detailed methodology (Appendix B) . Where references are made in the report, they should follow the naming conventions below. Clarifications may be referred to the report author.

2. References

(ABCFP, 2018) Guidance for Forest Professionals Practicing in Visual Resource Management: Draft Guidance for Member Comment. Association of British Columbia Forest Professionals, January 12, 2018.

(Marc, 2008) Jacques Marc, MFR Forest Practices Branch. 2008. Protocol for Visual Quality Effectiveness Evaluations Procedures and Standards. Forest and Range Evaluation Program, B.C. Min. For. Range and B.C. Min. Env., Victoria, B.C.

(FAC, 2016) Decision No. 2015-FRP-002(a). Forest Appeals Commission, July 2016.

(MFLNRO, 2013) A Guide to Visual Quality Objectives: Categories of Visually Altered Forest Landscape. BC Ministry of Forests, Lands and Natural Resource Operations, March 2013. QP371691.

(MFLNRO, 2017) Managing Change on British Columbia's Scenic Landscapes: An Introduction to Visual Resource Management. BC Ministry of Forests, Lands and Natural Resource Operations, February 2017.

(MOF, 1994a) A First Look at Visually Effective Green-up in BC: A Public Perception Study. BC Ministry of Forests, Recreation Branch, 1994.

(MOF, 1994b) Visual Landscape Design Training Manual. BC Ministry of Forests, Recreation Branch, 1994.

(MOF, 1997) Visual Landscape Inventory Procedures & Standards Manual. BC Ministry of Forests, Forest Practices Branch, 1997.

(MOF, 1999) Green-up Guidebook, Second Edition. Practices Code Guidebook. BC Ministry of Forests Forest, January 1999.

(MOF, 2001) Visual Impact Assessment, Second Edition. Practices Code Guidebook. BC Ministry of Forests Forest, 2001.

(MOF, 2008) Integrated Visual Design Procedures and Standards. BC Ministry of Forests, Forest Investment Account, April 2008.

(MFLNRORD, 2020) British Columbia Geographical Names Information System. BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development, Heritage Branch, 2020. https://www2.gov.bc.ca/gov/content/governments/celebrating-british-columbia/historic-places/geographical-names

Appendix B – Detailed Methodology

1. Foreword

The detailed methodology presented below summarizes key elements of the CoastFor VIA Process. Coastfor visual assessments are subject to natural evolution associated with continual improvement, individual assessment needs, and professional judgement. In the event of gaps or discrepancies between this appendix and a report to which this appendix is attached, the report should be given precedence. Requests for clarification may be referred to the report author.

2. CF1252 Form Development

The *FREP Protocol* post-harvest evaluation process has been slightly modified for making assessments of proposed rather than existing alterations. Firstly, in making determinations, it relies on assessments of the Proposed Development in Simulations rendered through the use of advanced digital terrain modeling, whereas the FREP Protocol utilizes field and/or photograph based assessments. Secondly, and more importantly, the FS1252 Form has been expanded into the CF1252 Form. The CF1252 Form provides additional room, relative to the FS1252, to quantify, assess, and record the visual attributes of both the Existing Visual Condition and the Proposed Development. Furthermore, it allows for separate but parallel assessments of clearcuts and partial cuts on the same landform that in the author's opinion, are necessary to make sound determinations as to whether the Established Visual Quality Objectives have been met.

2.1. Clearcuts and Partial Cuts

In the Coastfor VIA Process, the principal deviation from the FREP Protocol relates to cumulative assessments of clearcut and partial cut alterations on the same landform [2.3.5]. Marc (2008) Section [2.3.5] specifies:

> *Add the number generated from the equivalency table [Table 4] to the clearcut percent alteration to get a total percent alteration impact and enter the value in section 2.3.2a of the evaluation form.*

This guidance implies that for a landform with a clear cut percent alteration of 5%, and a partial cut to clearcut equivalency of 6.7% (60% volume removed, 25m mean height of residual trees), then the total value entered in section [2.3.2a] of the evaluation form should be 11.7%. However, the partial cut to clearcut equivalency determination (Table 4) does not account for the size of the partial cut. For a standard volume removed percent and mean height of residual trees, partial cuts of 0.25ha, 2.5ha, 25ha and 250ha would all have the same clearcut equivalencies, despite their disproportionate sizes.

In the CoastFor VIA Process, clearcut and partial cut percentages are not added in this manner. Rather, the clearcut percent alteration and partial cut percent alterations are assessed individually. The

cumulative effects of clearcuts and partial cuts on the landform can then be considered alongside the Basic VQC determinations in making the final assessments. For example, where a landform has:

- clearcuts meeting a Basic VQC for *Partial Retention,* plus a percent alteration within the applicable ranges presented in Table 3 (e.g. 5.0%), and
- partial cuts meeting a Basic VQC for *Partial Retention,* plus a percent alteration (Table 4 derived) within the ranges presented in Table 3 (e.g. 6.7%) (or alterative described percent alteration calculation), then

as long as the Basic VQC for the combined clearcuts and partial cuts also meets *Partial Retention*, then the overall altered forest landscape would be considered to meet *Partial Retention* (though opportunity for professional interpretation remains). According to [2.3.5] for this example, if the percent alterations values were instead added together, a percent alteration of 11.7% (M*odification*) would have been found, regardless of the size of the partial cut on the landform.

Given the above, in the Coastfor VIA Process, cutblocks and roads associated with the Proposed Development (PD_{ALL}) are classified according to the percentage of the pre-harvest stems to be removed as either Proposed Development, Clearcuts (PD_{CC} , ≥90% removal) or Proposed Development, Partial Cut (PD_{PC} , <90% removal).

The CF1252 Form allows PD_{CC} and PD_{PC} to be assessed both separately in parallel, while also considering of how they interact with the Existing Visual Condition to result in the overall Effectiveness Evaluation [2.3.6]. Further details regarding specific assessments follow below.

2.2. Assess Basic VQC [2.2.3]

For Basic VQC [2.2.3], Existing Visual Condition, All Alterations (EVC_{ALL}), PD_{CC} , and PD_{PC} can all be assessed independently as well as cumulatively (Cumulative Landform Assessment, All Alterations or CLA_{ALL}). This can be expressed mathematically as:

$$CLA_{ALL} = EVC_{ALL} + PD_{CC} + PD_{PC}$$

2.2.1. Design Observations [2.2.4]

The assessment of Design Observations [2.2.4] is used to adjust the Initial VQC [2.3.2] percentage as part of the Adjusted VQC [2.3.3]. Because the design elements of existing clearcuts on the landform should not be used to adjust the Initial VQC related to PD_{PC} (and vice-versa), EVC_{ALL} must be broken down into the subsets of Existing Visual Condition, Clearcuts (EVC_{CC}) and Existing Visual Condition, Partial Cuts (EVC_{PC}). This can be expressed mathematically as:

$$EVC_{ALL} = EVC_{CC} + EVC_{PC}$$

The design elements of PD_{CC} and PD_{PC} are then also assessed individually.

To complete the [2.2.4] assessment, EVC_{CC} and EVC_{PC} can then be added separately to the design elements of either PD_{CC} or PD_{PC}, to produce the distinct Cumulative Landform Assessment, Clearcuts

(CLA_{CC}) and Cumulative Landform Assessment, Partial Cuts (CLA_{PC}). This can be expressed mathematically as:

$$CLA_{CC} = EVC_{CC} + PD_{CC}$$

$$CLA_{PC} = EVC_{PC} + PD_{PC}$$

2.2.2. Assess Initial VQC [2.3.2]

Clearcuts

In assessing the Initial VQC rating [2.3.2] "visible portions of the ground disturbed" were measured according on the Proposed Alteration Simulation, where photographic evidence and opening data supported that these areas did not meet visually effective green-up. Cutblocks are considered "suspect blocks" (partially greened-up) where specifically noted in the determinations.

The percent alteration measurements from the Clearcut Percent Alteration Analysis for PD_{CC} (a, orange outline) are added to measurements for EVC_{CC} (b, blue outline & c, red outline) to produce the CLA_{CC} value of (X). This can be expressed mathematically as:

$$CLA_{CC} = PD_{PC}(a) + EVC_{CC}(b) + EVC_{CC}(c)$$

Partial Cuts

The clearcut equivalent percent alteration for PD_{PC} from [2.3.4] is added to any values for EVC_{PC} (b & c) present to produce the CLA_{PC} value of (X).

$$CLA_{PC} = PD_{PC}(a) + EVC_{PC}(b) + EVC_{PC}(c)$$

2.2.3. Assess Adjusted VQC [2.3.3]

The Adjusted VQC assessment [2.3.3] can be calculated separately for both the CLA_{CC} and CLA_{PC}.

2.2.4. Partial Cut Alterations [2.3.4]

For PD_{PC}, the procedures for partial cut alterations [2.3.4] were followed, and while the Proposed Alteration Simulation was generally compared to the referenced photographs on page 3 of the FS1252, the focus of the assessment was to use data from the cruise compilation to assess the partial cut according to Table 4. The Partial Cut Summary from the reduced compilation provided the volume of the pre-harvest stand that was removed. The weighted mean height of residual stems and retained stems per hectare is calculated for each species using information within the cruise compilation Leave Tree Report. Where required to address complex harvest plans with multiple levels of partial cutting, Visual Occupancy weighted averaging was applied relative to the Significant Public Viewpoint, where the Clearcut Equivalent Percent Alterations Values for each Partial Cut HU were weighted according to the visual extent of the overall PD_{PC} visual extent that they took up in perspective view. By applying this method, a Partial Cut with a high percentage of volume removed, but hardly visible, would have a lesser impact on the final Equivalent Clearcut Percent Alteration than a Partial Cut with a low percentage of volume removed, but that is highly visibly.

2.2.5. Effective Evaluation Ratings [2.3.6]

Finally, the Effective Evaluation Ratings [2.3.6] of the CLA_{CC} and CLA_{PC} is determined using independent Basic VQC [2.2.3] and Adjusted VQC [2.3.3] values, and the final aggregate CLA_{ALL} is established. This can be expressed mathematically as:

$$CLA_{ALL} = CLA_{CC} + CLA_{PC}$$

2.2.6. Allowance for Over-ride [2.3.7]

Should over-ride be required for any of CLA_{CC} , CLA_{CC} , or CLA_{ALL} (or subordinate assessments) this is applied in [2.3.7]. Allowance for Over-ride has also been made for in the CF1252 form under [2.3.6] where specific override to either the Basic VQC or Adjusted VQC is required. This allows the overall Effectives Evaluation to then consider the independently overridden values, which is often a preferred approach of the author as that provides more opportunity for context in describing the final visual assessment findings.

3. Viewpoints and Photos

3.1. Viewpoint Identification

The identification of VPs begins with a review of previous Visual Impact Assessment and known VLI Viewpoints, with the goal of locating previously identified Significant Public Viewpoints, as well as developing a deeper understanding of the intent behind the established spatial extents of VQO Polygons in the area. Next, the Viewpoint identification process is expanded to include Google Earth analyses as well as field work/ground truthing. VLI Polygon shape is heavily considered to assist in understanding the intent of establishing the polygon; polygons often fit with landforms like puzzle pieces when viewed from the correct locations. Known tenured and non-tenured recreation site and trails are reviewed, as well as travel routes. Viewpoint data are added to the Google Earth Model and Viewpoint attributes are summarized in Schedule 5.3a.

3.2. Significant Public Viewpoint Determinations

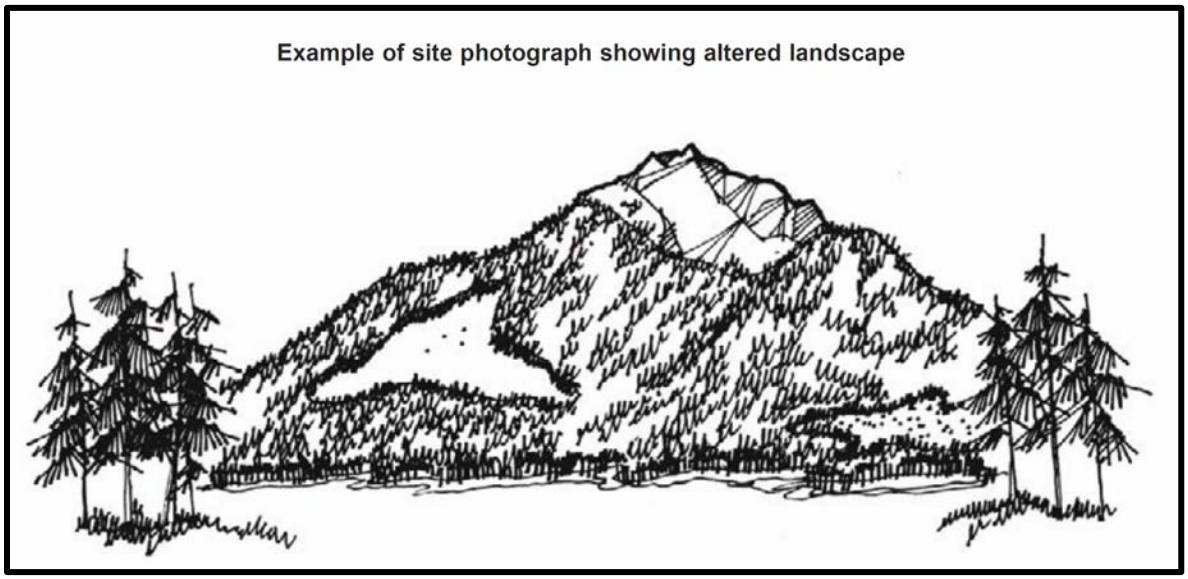
While as of yet there is no legal definition for a Significant Public Viewpoint, a proposed definition is “a place or location on the land or water that is accessible to the public, provides a viewing opportunity, and has relevance to the landform being assessed” (MFLNRO, 2017). This working definition was used to guide the determinations of which Viewpoints should be considered Significant Public Viewpoints, and any other known relevant criteria were also considered. A detailed rationale for the determination of Significant Public Viewpoints from the identified Viewpoints is found in Schedule 5.3a.

3.3. Worst Case Ranking

Views from Significant Public Viewpoints are usually ranked as the Worst Case Views associated with the Proposed Development, to aid in determining the appropriate levels of assessments to apply. Three types of Worst Case Views are usually identified: Worst Case - Appropriate Percent Alteration View, Worst Case - Design View, and Worst Case - Singular Viewing Condition View.

3.3.1. Worst Case – Appropriate Percent Alteration View

This view is a Significant Public Viewpoint where a percent alteration calculation is likely to be an effective measurement of consistency with the EVQO. The view resembles the FREP Protocol example scenario where percent alteration is measured against a LFOI that is not unduly constrained and where the LFOI plane surface is relatively perpendicular to the viewing direction.



Example landform used to demonstrate calculating percent alteration in perspective view from FREP Protocol (Marc, 2008, Schedule 4).

3.3.2. Worst Case – Design view

The Worst Case – Design View represents the view of the Proposed Development where the design elements will be perceived as having maximum visual impact.

3.3.3. Worst Case – Singular Viewing Condition View

Viewing Condition as defined in the VLI Procedures and Standards Manual (MOF, 1997) is "a measure of the condition under which the Visual Sensitivity Unit (VSU) is most commonly viewed" and is a factor of: viewing distance, viewing frequency, viewing duration and viewing angle. Worst Case – Singular Viewing Condition identified here is similar to Viewing Condition for the purposes of establishing/analyzing VLI Polygons but it has been slightly varied; whereas the VLI definition considers overall Viewing Condition from an aggregate of viewpoints, Worst Case – Singular Viewing Condition is meant to identify an *individual SPV* which is characteristic of a *highest rated* viewpoint used in establishing the VLI aggregate Viewing Condition.

Worst Case – Singular Viewing Condition has three common factors with the VLI definition (viewing distance, viewing duration and viewing angle, when considered at the individual viewpoint scale) while Viewing Frequency has been exchanged for Relative Number of Viewers. Viewing Frequency is "a measure of the viewing opportunities of a Visual Sensitivity Unit (VSU)", whereas Number of Viewers is "a measure of the number of people who view or look at a VSU". Number of Viewers is a factor

considered in establishing View Rating in MOF (1997) and it is actually an absolute measurement of the Number of Viewers. Relative Number of viewers used to establish the Worst Case - Singular Viewing Condition here is slightly different in that it considers the number of viewers relative to the SVPs identified in this VIA. So while Absolute Number of Viewers may be Low, where all SPVs within a VIA are of this same ranking, the Relative Number of Viewers will be High. While Viewing Frequency may be a useful factor for establishing VLI Polygons and resultant EVQOs, in the opinion of the undersigned, Relative Number of Viewers is a more useful factor for managing visual quality in respect to an Established VQO.

3.4. Photos

Photos were taken in the field from Viewpoints, for record keeping purposes and to aid in determining Significant Public Viewpoint, as listed in Schedule 5.3a. Photos were taken using either a variety of commonly available devices (point and shoot digital cameras or mobile phones/tablets) or using a DSLR with a 50mm lens. Sample photos are included in the Schedules.

Unless specifically addressed in the Effectiveness Evaluation summaries in Section 6, for Significant Public Viewpoints where a 50mm lens was not used, although the photos may not exactly match the perspective as seen in the field, or as modeled in the Proposed Alteration Simulation, differences in perspective are considered to have negligible measurable impact on the final interpretation of the altered forest landscape, unless specifically noted in the assessments.

4. Landform and Landform of Interest Stratification

Visible landforms were stratified for each Significant Public Viewpoint. Visible landforms account for screening from vegetation and topography. The visible landform overlapped by the Proposed Development is classified as the Landform of Interest (LFOI) for the Significant Public Viewpoint. It is the author's opinion that each Significant Public Viewpoint has its own Landform of Interest (e.g. VP1 Landform or Interest, VP2 Landform of Interest etc.). Depending on the LFOIs and SPVs in question there may be no difference between LFOIs as seen from multiple SPVs, or there may be significant differences. Landform of Interest has been selected to emphasize that these assessments have been completed at a landform level, as prescribed within the FREP Protocol, and are not tied to the fixed spatial extents of established VLI Polygons. LFOIs are identified on Simulations for each SPV selected for Full CF1252 Effectiveness Evaluation Assessment or Enhanced VQC Assessment.

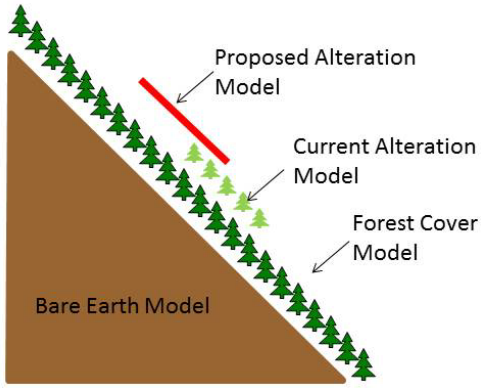
EVQOs from VLI Polygons were applied to the identified LFOI. EVQOs were extended into minor areas within LFOIs that lie spatially within adjacent *Non-Visually Sensitive (NVS)* VLI Polygons, but yet are clearly within the visible LFOIs. Private land parcels were excluded from LFOIs. Although inclusion of private land parcels during initial VLI Polygon stratification makes for considering visual quality management requirements, when considered at a manageable visible landform perspective, these areas have been excluded from LFOIs as they cannot be managed for visual quality by *Forest Act* tenure holders. Although private land parcels are often rectilinear in shape cannot be managed for visual

quality by *Forest Act* tenure holders, tenure holders can manage how their altered forest landscapes respond where adjacent to these parcels.

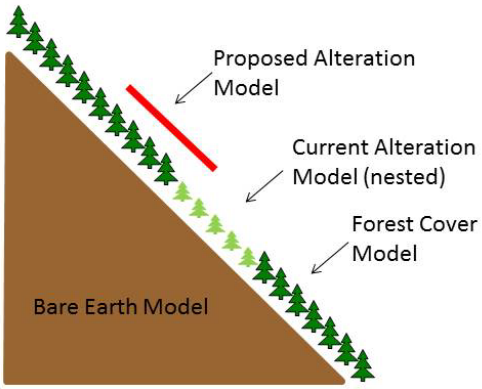
5. Digital Terrain Model and Simulations

The Digital Terrain Model was built using Visual Nature Studio 3 (VNS) from AlphaPixel LLC, to replicate the area under assessment and to simulate the altered forest landscape resulting from the Proposed Development. The Digital Terrain Model is the hierarchical, nested model comprised of four sub-models: the Bare Earth Model, the Forest Cover Model, the Current Alteration Model, and the Proposed Alteration Model.

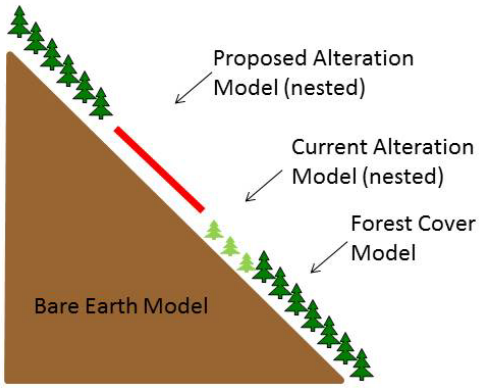
The Bare Earth Model provides the foundation upon which other models are overlaid, beginning with the Forest Cover Model. The Current Alteration Model and Proposed Alteration Model replace the Forest Cover Model where there are overlaps, with the Proposed Alteration Model taking precedence over any conflicts with the Current Alteration Model. Two dimensional images (Simulations) are rendered and presented in this report based on these models. Simplified diagrams of the how the four sub-models interact follow in the Figures below.



The four sub-models of the Digital Terrain Model, presented without nesting.



The four sub-models of the Digital Terrain Model, presented with the Current Alteration Model nested into the Forest Cover Model.



The four sub-models of the Digital Terrain Model, presented with the Proposed Alteration Model and Current Alteration Model nested into the Forest Cover Model. Note the Proposed Alteration Model takes precedence.

5.1. Bare Earth Model & Simulation

The Bare Earth Model uses LiDAR or TRIM contour data to produce a terrain model that captures detailed ground features of the area under assessment (i.e. slope gradient, aspect, slope continuity etc.). LiDAR datasets were used wherever possible. Hybrid LiDAR-contour models were constructed where LiDAR coverage was incomplete. In the absence of LiDAR coverage, TRIM contour data was used. The Bare Earth Simulation is rendered from the Bare Earth Model in order to present the underlying terrain attributes, as seen from each Significant Public Viewpoint.

5.2. Forest Cover Model

The Forest Cover Model is generated from VRI Polygon data. It simulates forest cover using scaled tree images based on the attributes of each VRI polygon, using attributes such as leading species, live stems per hectare, and height. The Forest Cover Model simulates existing forest cover over top of the Bare Earth Model, using scaled tree images that are native to VNS (species specific where feasible).

5.3. Current Alteration Model & Simulation

The Current Alteration Model captures data representing the previous alterations that have occurred on the modeled area (e.g. forest harvesting and road construction). Data is sourced from FTA and RESULTS along with client specific databases. Existing cutblocks are given a brown background whereas existing roads typically have a gray colour for the road surface and a brown colour for remaining right-of-way width, if applicable. Where the data includes attributes of the regenerating forests, these areas are simulated, again taking into consideration attributes such as leading species, stems per hectare and height (for both even and uneven aged silviculture systems). Where they are critical to final VEG determinations on the Landforms of Interest, some of the information used to generate the Current Alteration Model is summarized in Schedule 5.6b. The Current Alteration Model takes precedence over the Forest Cover Model, and likewise it uses scaled tree images in rendering forest cover (species specific where feasible). Brown background colouring can be seen within existing openings where the imagery for regenerating stands does not provide adequate cover, simulating non-visually effective green-up (VEG). Gray or brown colouration can be seen for roads where screening is not provided by standing timber or aspect. The Current Alteration Model, along with the Forest Cover Model and Bare Earth Model, are used to render the Current Alteration Simulation as seen from each Significant Public Viewpoint. The Current Alteration Simulation provides an accurate reproduction of the area under

assessment (relative to data input), against which the accompanying photographs can be compared to verify the model accuracy.

5.4. Proposed Alteration Model & Simulation

The Proposed Alteration Model simulates the alterations resulting from the Proposed Development and is added on top of the previous three models. The Proposed Alteration Simulation is rendered from the combined four models to produce an accurate representation of the post-harvest spatial extents of the Proposed Development, as seen from each Significant Public Viewpoint. Proposed cutblocks are given a brown background whereas roads have a gray colour for the road surface (typically 10m wide) and a brown colour for remaining right-of-way width (typically 5m either side of the road surface).

5.4.1. Dispersed Retention

For cutblock alterations classed as PD_{CC}, where dispersed retention is modeled, the retained dispersed stems are simulated according to the prescribed retention specifications / Schedule B. Appropriate species, heights and stems per hectare are simulated, using species specific imagery where possible, with references to Site Plans or cruise compilations data for tree heights.

PD_{PC} retention is modeled similarly; however the retention prescription is more complex. The weighted total mean height of retained stems is calculated for each species using information within the cruise compilation Leave Tree Report.

Refer to Schedule 5.6c for dispersed retention specifications for this Proposed Development.

5.4.2. Aerial Overviews

Aerial Overviews of the Proposed Alteration Model, looking down at the Proposed Development from above, are produced to verify the model accuracy (spatial extent) and for comparison against the Proposed Alteration Simulations as seen from the Significant Public Viewpoints. Note that at times VNS has difficulty in rendering images from this camera orientation and simulations may look strange, mostly in terms of colouration. When rendered in perspective view, the simulations are improved.

6. Google Earth Model

Spatial data for the Proposed Development was compiled into a Google Earth KMZ for use in determining the intent of VLI Polygons, identifying Viewpoints, determining Significant Public Viewpoints, and estimating screening by topography and standing timber. Google Earth viewshed analysis and resultant perspective views from significant Public Viewpoints were recorded in the KMZ as Sightlines. The Google Earth KMZ can be found in Schedule 5.3b.