July 30, 2018

Porcupine Wood Products Ltd.
Box 850
Salmo, BC
V0G 1Z0

Attn. Bill Kestell, RPF

RE: TERRAIN STABILITY ASSESSMENT
BALFOUR FACE, CP 410, BLOCKS 10, 11, 12 and 13

INTRODUCTION

At the request of Mr. Bill Kestell, RPF of Porcupine Wood Products Ltd. (PWP), Perdue Geotechnical Services Ltd. (PGS) conducted a geotechnical assessment for the proposed timber harvesting within the Balfour Face operating area, Cutting Permit (CP) 410, Blocks 10, 11, 12 and 13. The assessment was completed by Mr. Chris Perdue, P.Geo., Eng.L., of PGS on July 6 and 9, 2018. In addition, a series of cursory field reviews across the Balfour Face development area were conducted in April and May 2018.

The purpose of the assessment was to review the terrain within each of the proposed harvest areas and provide recommendations to minimize the potential for landslide initiation following timber harvesting within or above potentially hazardous terrain.

SITE LOCATION

The proposed CP 410 development area is located along the northwestern side of the Kootenay Lake valley, approximately 28 km northeast of Nelson, BC (see Figure 1). The study area is located in the Kokanee Range of the Selkirk Mountains within the Columbia Mountain System and is centered on UTM coordinates 501581E / 5498046N. The area is found on NTS map sheet 82F.066 in the Selkirk Forest District.

BACKGROUND INFORMATION

Terrain Stability Mapping and Previous Reporting

Detailed terrain stability mapping for the proposed development area was provided by PWP. Terrain Survey Intensity Level (TSIL) B mapping was completed by Kutenai Nature Investigations Ltd. and summarized in a report entitled *"Terrain and Soil Inventory, West Arm Demonstration Forest (WADF)"*, April 1997. The terrain hazard polygons are shown on Figure 2.

Bedrock Geology

Geological mapping of the study area, as illustrated by the Geological Survey of Canada (GSC) Map 1090A Nelson, west half (H.W. Little, 1960), GSC Open File 1195 Nelson, west half (1971) and GSC Map 1864A Kootenay Lake (J.E. Ressor, 1996) shows that the proposed development is underlain by coarse-grained, igneous bedrock of the Nelson batholith across mid to upper valley slopes and finer-grained

meta-sedimentary and sedimentary bedrock of the Milford Group (argillite, phyllite and limestone) across lower valley slopes. Field observations identified igneous bedrock underlying the proposed development.

Biogeoclimatic Mapping

According to biogeoclimatic mapping completed for the area (Nelson 82F map sheet), the proposed CP 410 development is situated within the Dry Warm Interior Cedar-Hemlock biogeoclimatic subzone (ICHdw). The area is considered to be within a moist climate region.

Resource Values

The following resources are considered potential elements at risk associated with the proposed development:

- Private land and several residences are situated downslope of the proposed development;
- According to the on-line database provided by the iMapBC website, several licensed Points of Diversion (PODs) for domestic use exist on Haiseldean Creek, Wyanndotte Creek, Rhymeley Creek and Mountainside Creek below the proposed development;
- The Nelson Hydro (30L) power line is situated downslope of the proposed development;
- Highway 31 is situated downslope of the northeastern half of the proposed Spur 6 alignment.

RESULTS OF THE ASSESSMENT

A field assessment was completed for each of the proposed harvest areas discussed herein on foot within the proposed harvest boundaries and adjacent slopes. A vehicle traverse along the existing roads was completed as well as a brief assessment of previously harvested cut blocks to assess the impact to the terrain following timber harvesting and road construction.

A discussion following the individual block observations details the likelihood of a specific hazardous landslide initiating as a result of the proposed timber harvesting. A hazardous landslide is considered the *landslide of significance*, which is the smallest landslide that could adversely affect an element at risk. The likelihood of a landslide occurring is rated qualitatively as Very Low, Low, Moderate, High and Very High with respect to the proposed harvesting method for each block. The ratings are based primarily on the presence or absence of existing slope instability related to timber harvesting, hydrologic conditions and the professional judgment and experience of the author.

A partial risk analysis will be completed only for blocks encompassing terrain rated as having a Moderate to Very High likelihood of landslide initiation as a result of the proposed timber harvesting, or where the proposed development is expected to adversely affect the stability of the adjacent terrain. *Appendix A* defines the ratings used herein and details the methodology used to complete a partial risk analysis.

Block 10

Block 10 is an irregular-shaped harvest area situated on the northwestern side of the Kootenay Lake valley. It encompasses the mid to lower valley slopes and is partially bound by existing cut blocks and private land along its upper (northwestern) and lower (southeastern) boundaries, respectively. Primary access will be provided by the existing Balfour Face Road and the proposed Spur 6 alignment that was under construction at the time of the assessment.

According to previous terrain mapping, the entire harvest area is encompassed by Terrain Stability Class (TSC) I, II and III terrain. At the request of PWP, a geotechnical assessment was completed for the entire block. It is understood the proposed cut block will be harvested as a clear cut with reserves, while utilizing ground-based harvesting equipment. A site plan of Block 10 is shown in Figure 3.

Block 10 is characterized by slightly irregular, broken and benched terrain. Slopes generally measure less than 30% with localized, steeper slopes measuring up to 60% in association with near-to-surface, bedrock-controlled features. Surficial soils observed along existing (recently excavated) cut bank exposures, tree churns and shallow test pits consist predominantly of well-drained, mantled deposits of glaciofluvial silty sand and gravel across the lower area of the block. Soils across the upper remainder consist of moderately well-drained, thinly mantled deposits of sandy silt till and lesser accumulations of sandy rubbly colluvium. Infrequent exposures of coarse-grained igneous bedrock was observed across the steeper, upper slopes.

Site conditions throughout the western majority of the block are considered dry, while the eastern remainder is discernibly wetter. Rhymeley Creek bisects the central area of the block within a well-incised, predominantly bedrock-controlled gully. A lesser, poorly confined seasonal stream flows along the northeastern side of Rhymeley Creek, beyond the confines of the larger drainage feature. Wyanndotte Creek and Mountainside Creek flank the southwestern and northeastern extents of Block 10, respectively. Wyanndotte Creek is well-confined within an incised gully, while Mountainside Creek is less confined adjacent to the block and poorly-confined downstream of the Spur 6 crossing.

An earlier field review in May 2018 identified dispersed, surface flow adjacent to Mountainside Creek within the lower, western area of Block 10, resulting from poor channel confinement, low-gradient terrain, windfall and an ATV trail built across the creek. Surface flow broadly migrates towards the main channel, northeast of the block, but some seasonal flow migrates downslope to the southeast, outside the confines of the defined channel.

The terrain downslope of Block 10 is private land and is generally steeper than the lower region of the proposed harvest area (slopes measuring 30% to 45%). The private land has been harvested several decades ago using ground-based equipment. No evidence of slope instability was identified throughout the proposed harvest area or the immediate adjacent terrain during the field review.

Block 11

Block 11 is an elongated and irregular-shaped harvest area situated on the northwestern side of the Kootenay Lake valley, approximately 150 m northeast of Block 10. It also encompasses the mid to lower valley slopes and is partially bound by an existing cut block and private land along its upper (northwestern) and southern boundaries, respectively. Primary access will be provided by the existing Balfour Face Road and the proposed Spur 6 alignment that was under construction at the time of the assessment.

According to previous terrain mapping, the entire harvest area is encompassed by TSC II and III terrain. At the request of PWP, a geotechnical assessment was completed for the entire block. It is understood the proposed cut block will be harvested as a clear cut with reserves, while utilizing ground-based harvesting equipment. A site plan of Block 11 is shown in Figure 3.

Block 11 is characterized by slightly irregular, broken and benched terrain. Slopes generally measure less than 30% with localized, steeper slopes measuring up to 70% in association with near-to-surface, bedrock-controlled features. Surficial soils observed along existing (recently excavated) cut bank

exposures consist predominantly of well-drained, mantled deposits of glaciofluvial silty sand and gravel across the lower (southeastern) area of the block. Soils across the upper remainder consist of moderately well-drained, thinly mantled deposits of sandy silt till and lesser accumulations of sandy rubbly colluvium. Infrequent exposures of coarse-grained igneous bedrock were observed in association with the steeper, upper slopes.

Site conditions throughout the majority of the block are considered dry with seasonally moist areas. A series of seasonal groundwater emergences were identified along and immediately above the upper harvest boundary. Surface flow emerges approximately 50 m upslope of Wildlife Tree Retention Area (WTRA) 1, infiltrates into the permeable colluvial and glaciofluvial soils and re-emerges along the lower harvest boundary.

Additional seasonal surface flow emerges along the upper harvest boundary and migrates to the southwest along a slightly in-sloped topographic bench. Earlier field observations in May 2018 identified a broad area of surface ponding within the southeastern area of Block 11 that flows into a broad wetland area, immediately northeast of Mountainside Creek.

No evidence of slope instability was identified within the proposed harvest area or the immediate adjacent terrain during the field review.

Downslope Terrain

The terrain downslope of Block 11 is generally steeper than in-block observations. Lower slopes generally range from 40% to 60% with steeper slopes up to 100% in association with exposed bedrock outcrops. Soils are variable, consisting of mantled deposits of sandy silt till and rubbly colluvium approximately above 700 m elevation; and mantled, interlayered deposits of fine-grained glaciolacustrine and coarser glaciofluvial soils downslope thereof.

The Nelson Hydro (30L) power line extends across the lower slopes at approximately 650 m elevation. Several old, heavily-overgrown access trails appear to have been built to facilitate the installation of the power line and conduct timber harvesting within private land (Lots 5 and 6, NEP1570, District Lot 12075) several decades ago. The trails ascend from Highway 31 and were built using antiquated push-fill construction methods with insufficient drainage control measures across steep terrain. Evidence historic and recent slope instability was identified along the abandoned access structures.

A 2-inch diameter polyvinyl chloride (PVC) surface waterline diverts water from Queens Creek and extends across the hillside to the southwest, immediately above the 30L power line corridor. Evidence of several historic breaches were identified along the waterline that resulted in landslides along its length. Two active breaches were identified at UTM coordinates 503102E / 5498752N and 503020E / 5498684N, approximately 150 m and 190 m upslope of Highway 31, respectively. The poorly maintained waterline and inappropriate conduit material presents a significant risk to the highway and private land below.

Harvest Boundary Amendment

Block 11 originally included a large area extending downslope of the currently proposed, northeastern harvest boundary that was designated for cable-based harvesting. The original boundary extended down to the 30L power line corridor.

Recommendations were forwarded to PWP to defer harvesting the lower, cable area (approximately 8.8 hectares), to reduce the Equivalent Clearcut Area (ECA) above the aforementioned concerns identified across the lower slopes. Figure 4 illustrates the amended harvest boundary.

Block 12

Block 12 is a highly irregular-shaped harvest area situated on the northern side of the Kootenay Lake valley. It also encompasses the mid valley slopes and is partially bound by an existing cut block along its southwestern boundary. Primary access will be provided by the existing Balfour Face Road and the proposed Spur 1, Spur 2 and Spur 4 alignments.

According to previous terrain mapping, the majority of the proposed harvest area is encompassed by TSC I, II and III terrain, while the upper (northern) edge of the block and the lower reach of the Haiseldean Creek gully are rated TSC IV. At the request of PWP, a geotechnical assessment was completed for the entire block. It is understood the proposed cut block will be harvested as a clear cut with reserves, while utilizing ground-based harvesting equipment. A site plan of Block 12 is shown in Figure 4.

Block 12 is characterized by slightly irregular and broken terrain. Slopes generally measure 20% to 45%. Limited, steeper slopes (up to 70%) were encountered in association with exposed bedrock within the east-central area of the block. Soils predominantly consist of moderately well-drained, mantled deposits of sandy silt till. Lesser accumulations of overlying rubbly colluvium were identified across the south-central region, below bedrock outcrops within and above the proposed harvest area. In addition, overlying deposits of glaciofluvial (possibly alluvial) silty sand and gravel were identified in the southern extent of the proposed harvest area.

Site conditions throughout Block 12 are considered predominantly dry with localized, seasonally moist areas. Light, seasonal surface flow was identified along a shallow draw in the western area of the block, between the proposed Spur 2 and Spur 4 alignments. Additional, light, seasonal emergence was encountered in the southern area of the block, approximately 50 m upslope of the proposed Spur 1 road.

Haiseldean Creek bisects the southeastern area of Block 12 within WTRA 1. Light, seasonal surface flow was identified above the uppermost section of the existing Balfour Face Road during the annual freshet (May 2018), along with multiple groundwater emergences within and upslope of WTRA 1. By comparison, no surface flow was visible above Balfour Face Road during the field review in July, but strong groundwater emergence was identified beneath the coarse rock-filled road crossing.

An historic, overgrown access road and limited trail network ascends Balfour Face (west of Block 12) that was used to facilitate selective timber harvesting. An eastern switchback enters the lower, southwestern corner of the block. Earlier field observations in May 2018 identified light groundwater emergences along the cut bank of the road within the proposed harvest area. No surface drainage control measures were observed along a limited length of the historic road within, immediately adjacent to and downslope of Block 12. A limited network of trails was identified within the upper (northern) area of the block. The trails were heavily overgrown and built across gentle terrain with minimal cut bank excavation.

No evidence of slope instability was identified within the proposed harvest area or the immediate adjacent terrain during the field review.

Block 13

Block 13 is a small, irregular-shaped harvest area situated on the northern side of the Kootenay Lake valley, approximately 150 m northeast of Block 12. It encompasses the mid valley slopes and is not bound by any distinct features other than the existing Balfour Face Road that defines its upper (northern) boundary. Primary access will be provided by Balfour Face Road and the proposed Spur 4 alignment.

According to previous terrain mapping, the eastern majority of the block is encompassed by TSC IV terrain, while the western edge of the block is rated TSC I and II. At the request of PWP, a geotechnical assessment was completed for the entire block. It is understood the proposed cut block will be harvested as a clear cut with reserves, while utilizing ground-based harvesting equipment. A site plan of Block 13 is shown in Figure 4.

Block 13 is characterized by slightly irregular and benched terrain with slopes generally ranging from 15% to 30%. Soils consist of moderately well-drained, mantled deposits of sandy silt till Exposed igneous bedrock was identified along Balfour Face Road, above the proposed harvest area.

Site conditions throughout the block are considered moist. A series of small, poorly-confined seasonal streams bisect the western approximate half of the block that originate as groundwater emergences directly above Balfour Face Road. Haiseldean Creek emerges from beneath the coarse rock-filled road crossing at the northeastern corner of Block 13, at a similar elevation as the aforementioned emergences.

No evidence of slope instability was identified within the proposed harvest area or the immediate adjacent terrain during the field review.

Geotechnical Assessment

Provided the general and block-specific recommendations in the subsequent section (below) are followed, the likelihood of landslide initiation as a result of the proposed timber harvesting of Blocks 10, 11, 12 and 13 is rated as Low. The following factors were considered in determining the hazard rating:

- Hillslope hydrology appears to be predominantly governed by the underlying, highly-fractured igneous bedrock and subject to surface influences beyond the topographically-defined upslope catchment area above each block;
- The predominantly gentle to moderate-sloping terrain and steeper, bedrock-controlled slopes are generally not conducive to mass wasting following timber harvesting;
- Road construction practices and drainage control measures along access routes within and downslope of the proposed harvest areas (including seasonal surface drainage control measures during periods of non-operational use) will have the greatest influence on surface/sub-surface watercourses and slope stability. Provided all natural watercourses are appropriately managed and maintained, the proposed timber harvesting is not expected to have a significant adverse effect on hillslope hydrology or slope stability.

RECOMMENDATIONS

Block 10

The lower reach of Mountainside Creek within the western corner of Block 10 is poorly confined and subject to dispersed, seasonal flow beyond the confines of the defined channel. Ground-based timber

harvesting may increase the likelihood of additional dispersed flow away from the main creek channel. Repeated machine traffic across wet areas or unidentified, discontinuous streams could result in subtle drainage diversions or alter sub-surface migration routes above the private, downslope terrain.

A 30 m wide machine free zone should be established along the lower, northeastern harvest boundary, extending from the Spur 6 crossing of Mountainside Creek to Falling Corner (FC) 07. Repeated machine traffic adjacent to the machine free zone should be avoided to prevent rutting. Upon completion of the proposed timber harvesting, coarse woody debris should be removed from the creek channel to ensure surface flow migrates unimpeded along the present channel.

Block 12

Seasonal groundwater emergence was identified along the cut bank of an historic, overgrown access road within the southwestern corner of the block with no surface drainage control measures along the in-block length. As a result, the section of the abandoned road within, immediately adjacent to and downslope of Block 12 should be rehabilitated concurrently with the completion of timber harvesting to restore natural drainage patterns.

General Recommendations

The following general recommendations for all season operations are intended to reduce the effects of timber harvesting:

1. Ground skidding across natural drainage paths and surface watercourses should be avoided. If this cannot be avoided, harvesting should be conducted during the drier months of the year, on a compressed snowpack, or effort made to ensure timber is skidded butt-first to minimize potential ground disturbance within such drainage features;
2. Timber harvesting should not be conducted under excessively wet site conditions, such as during spring snow melt or periods of heavy and prolonged rainfall;
3. A post-harvest inspection should be completed to ensue all natural drainage patterns have been maintained. Logging debris should be removed from the wetted perimeter of all watercourses and subtle drainage features to ensure an accumulation of coarse woody debris or site degradation from logging operations does not result in a drainage diversion. These measures include ensuring the drainage network (i.e. culverts and ditch lines) along permanent roads remain functional, as intended;
4. All temporary access trails may be built using debris-supported fill slopes to reduce cut bank excavation and the potential for groundwater interception. Appropriate drainage control measures must be implemented to ensure all natural drainage paths are maintained. All trails must be fully rehabilitated concurrently with completion of the proposed timber harvesting. If harvesting is to be conducted during winter months, trails should be seasonally deactivated prior to the freshet by out sloping where practical and installing cross ditches to maintain natural drainage patterns.

CLOSURE

This report has been prepared for the exclusive use of the Porcupine Wood Products Ltd. and their authorized representatives. The methods used herein are in accordance with generally accepted geological and geotechnical principles and practice. Site conditions are based on surface observations, shallow test pits and exposed soils. Deep, sub-surface exploration techniques were not used unless otherwise noted. Recipients of this report should be aware that sub-surface variability is inherent, as a function of natural geomorphic processes.

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Please contact the undersigned to resolve any questions or concerns regarding the foregoing information.

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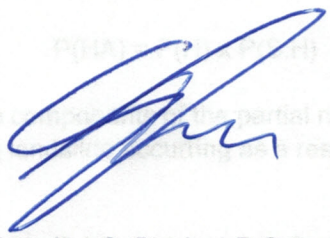

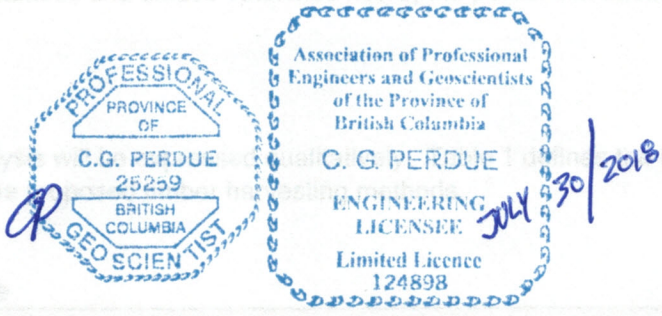

Christopher G. Perdue, P.Geo., Eng.L.
Engineering Geologist

Attachments: Appendix A - Partial Risk Analysis
Figure 1 - Key Map (1:250,000 scale)
Figure 2 - CP 410, Development Overview Map (1:10,000 scale)
Figure 3 - CP 410, Blocks 10 and 11 Site Plan Map (1:5,000 scale)
Figure 4 - CP 410, Blocks 12 and 13 Site Plan Map (1:5,000 scale)

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ORIGINAL SIGNED

Christopher G. Perdue, P.Geo., Eng.L.
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APPENDIX A

Partial Risk Analysis

Partial Risk, P(HA), is defined as the product of the probability of a specific hazardous landslide occurring and the probability of that landslide reaching or adversely affecting the site occupied by a specific element. Partial risk is mathematically expressed as:

$$P(HA) = P(H) \times P(S:H) \times P(T:S)$$

P(H) is the probability (or likelihood) of occurrence of a specific hazardous landslide. P(S:H) is the spatial probability relating the potential of a landslide to reach or adversely affect the site occupied by a considered element. P(T:S) is the temporal probability of a mobile element to be at the affected site at the time the event occurs. Static elements, such as a bridge, road or a building for example, have a quantitative (numerical) value of 1 because it is certain that the element will be at the affected site when the event occurs. Under these circumstances and unless otherwise noted, the partial risk equation can be simplified and expressed as:

$$P(HA) = P(H) \times P(S:H)$$

The components of the partial risk analysis will be expressed qualitatively. Table 1 defines the likelihoods of a landslide occurring as a result of the proposed timber harvesting methods.

Table 1 - Landslide Occurrence

Likelihood of Occurrence, P(H)	Qualitative Definition
Very High	Landslide initiation is imminent or highly likely to occur shortly after timber harvesting or road construction has been completed. Evidence of naturally occurring instability identified within the proposed development area within the past 15 years. Evidence of development-related instability adjacent to the proposed development area with similar terrain characteristics and timber harvesting/road construction practices.
High	Landslide initiation as a result of the proposed timber harvesting or road construction is probable unless site conditions are significantly better than assumed. Subtle evidence of naturally occurring instability may be present.
Moderate	Landslide initiation is not likely to occur following the proposed timber harvesting or road construction, but considered possible if one or more the assumed site conditions are significantly altered as a result of the proposed development.
Low	Landslide initiation following timber harvesting or road construction is considered unlikely, although is possible under exceptional circumstances (i.e. an extreme or anomalous hydrological event).
Very Low	Remote possibility of a landslide initiating as a result of the proposed timber harvesting or road construction.

Table 2 provides the qualitative definition of the potential spatial effect of a specific hazardous landslide to reach or otherwise affect a site occupied by an element.

Table 2 - Spatial Effect

Potential Effect, P(S:H)	Qualitative Definition
High	Landslide will reach or directly affect the considered element at risk (eg. private or public infrastructure, high-value fish habitat or consumptive water source).
Moderate	Landslide will marginally affect the considered element. Possible termination within 200 m of the site. Secondary transport of sediment and/or small woody debris may affect the element.
Low	Landslide is unlikely to reach or affect the considered element. The terrain above the site is capable of intercepting or dissipating slide debris and the potential secondary affects.

Table 3 is an example of a linear partial risk matrix that illustrates the relationship between the potential landslide occurrence and its estimated spatial effect to an element.

Table 3 - Partial Risk Matrix

Partial Risk, P(HA)		Spatial Effect, P(S:H)		
		High	**Moderate**	**Low**
Landslide Occurrence, P(H)	**Very High**	Very High	Very High	High
	High	Very High	High	Moderate
	Moderate	High	Moderate	Low
	Low	Moderate	Low	Very Low
	Very Low	Low	Very Low	Very Low

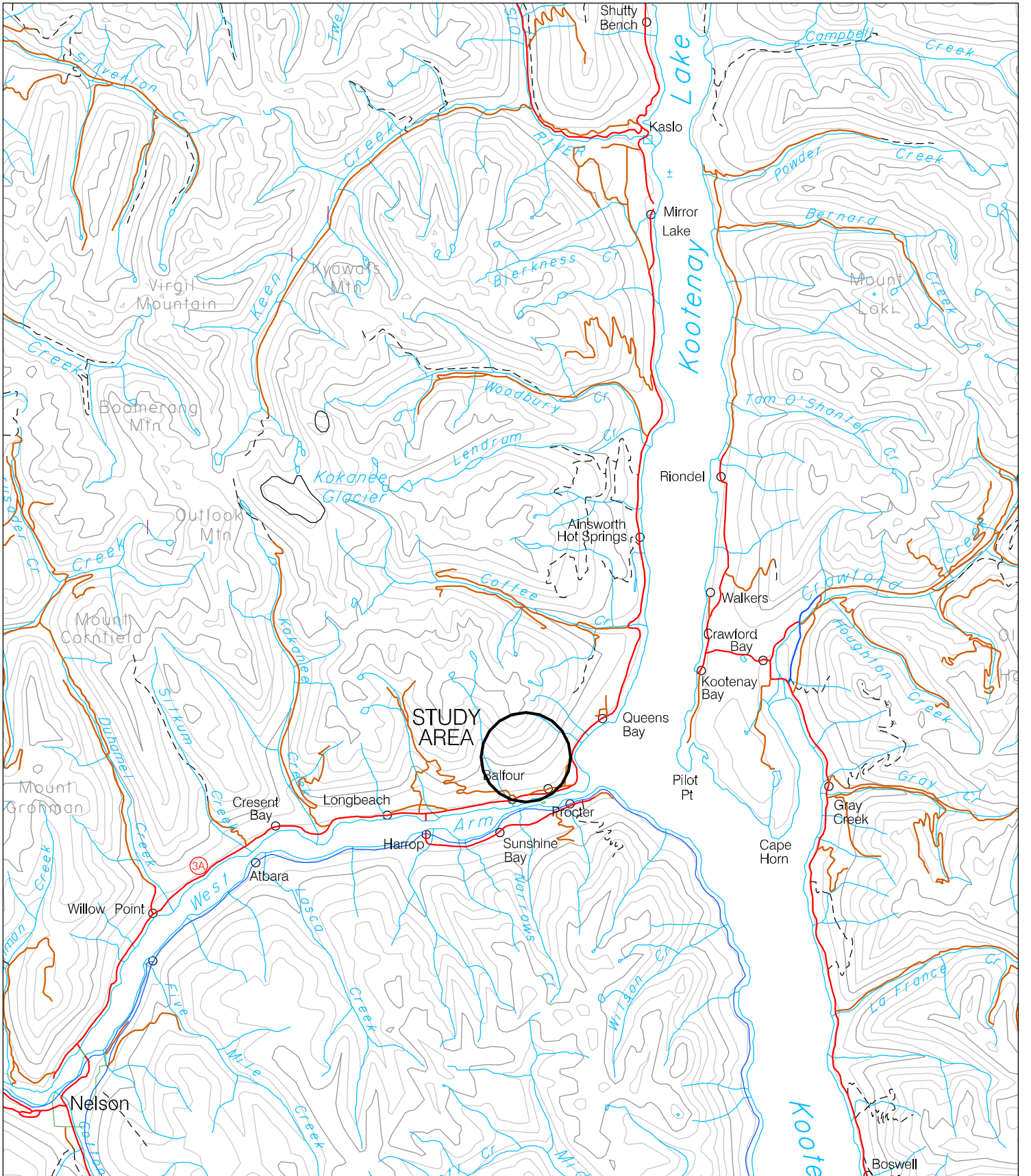
For the purposes of this report, partial risk does not include the vulnerability of the element(s) at risk, and therefore, is not considered a completed estimate of risk. Partial risk is usually the preferred analysis method when insufficient information is known about the vulnerability of the element(s). The vulnerability of certain elements is best provided by professionals with a specific knowledge of the element(s) at risk.

Forest Resource Managers with a greater knowledge of the vulnerability of an element can determine the specific risk of an element by multiplying the assigned vulnerability rating with the partial risk value.

References

BC Ministry of Forests (2002). Forest Road Engineering Guidebook. Forest Practices Code of British Columbia. BC Ministry of Forests, Victoria, BC.

Wise, M.P., G.D. Moore and D.F. VanDine (2004). Landslide Risk Case Studies in Forest Development Planning and Operations. BC Ministry of Forests, Research Branch, Victoria, BC. Land Management Handbook No. 56.



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LOCATION MAP

N

Scale: 1:250,000
Date: JUNE 2018
Drawn by: CP

Adapted from: 82/F Nelson

Figure 1

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CP 410
BLOCK 11

CP 410
BLOCK 13

CP 410
BLOCK 12

CP 410
BLOCK 10

SPUR 1

SPUR 2

SPUR 4

SPUR 6

BALFOUR FACE ROAD

Queens Creek

Wygnotte Creek

Mackay Creek

Haiseldean Creek

Laird Creek

Mountainside Creek

Rhymeley Creek

HIGHWAY 31

Kootenay Lake

NELSON HYDRO 30L POWER LINE

QUEENS BAY ROAD

1700 1600 1500 1400 1300 1200 1100 1000 900 800 700 600

PORCUPINE WOOD PRODUCTS LTD.

Mapsheet:	82F065–066	CP:	410
Chart Area:	Laird Creek	Scale:	1:10,000
UTM:	501730E 5498750N	Figure:	2

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OVERVIEW MAP

PERDUE
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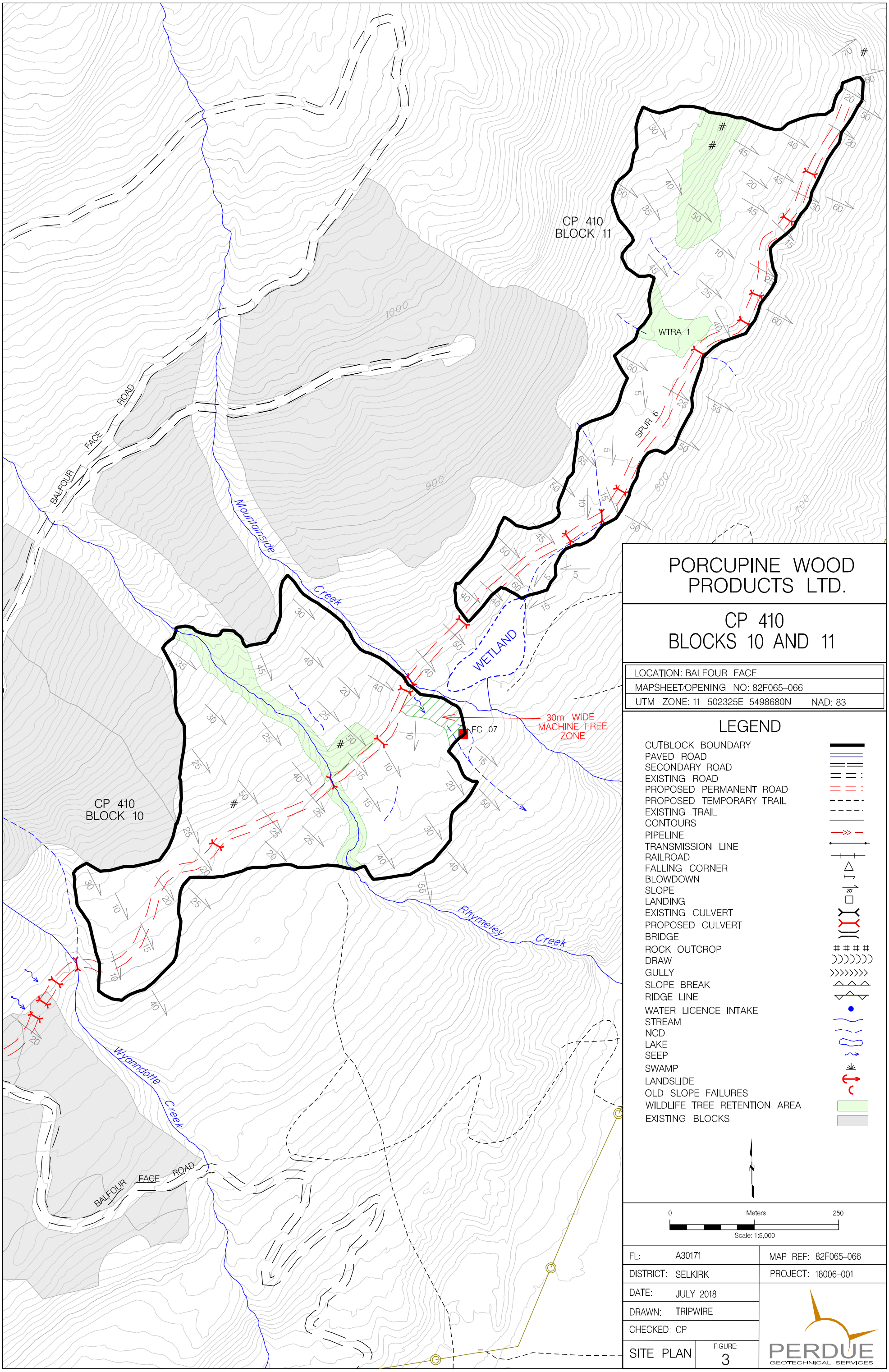

PORCUPINE WOOD PRODUCTS LTD.

CP 410
BLOCKS 10 AND 11

LOCATION: BALFOUR FACE
MAPSHEET/OPENING NO: 82F065–066
UTM ZONE: 11 502325E 5498680N NAD: 83

LEGEND

- CUTBLOCK BOUNDARY
- PAVED ROAD
- SECONDARY ROAD
- EXISTING ROAD
- PROPOSED PERMANENT ROAD
- PROPOSED TEMPORARY TRAIL
- EXISTING TRAIL
- CONTOURS
- PIPELINE
- TRANSMISSION LINE
- RAILROAD
- FALLING CORNER
- BLOWDOWN
- SLOPE
- LANDING
- EXISTING CULVERT
- PROPOSED CULVERT
- BRIDGE
- ROCK OUTCROP
- DRAW
- GULLY
- SLOPE BREAK
- RIDGE LINE
- WATER LICENCE INTAKE
- STREAM
- NCD
- LAKE
- SEEP
- SWAMP
- LANDSLIDE
- OLD SLOPE FAILURES
- WILDLIFE TREE RETENTION AREA
- EXISTING BLOCKS

N

0 Meters 250
Scale: 1:5,000

FL: A30171	MAP REF: 82F065–066
DISTRICT: SELKIRK	PROJECT: 18006–001
DATE: JULY 2018	
DRAWN: TRIPWIRE	
CHECKED: CP	
SITE PLAN	FIGURE: 3

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PORCUPINE WOOD PRODUCTS LTD.

CP 410
BLOCKS 12 AND 13

LOCATION: BALFOUR FACE	
MAPSHEET/OPENING NO: 82F.065-066	
UTM ZONE: 11 500775E 5498320N	NAD: 83

LEGEND

- CUTBLOCK BOUNDARY
- PAVED ROAD
- SECONDARY ROAD
- EXISTING ROAD
- PROPOSED PERMANENT ROAD
- PROPOSED TEMPORARY TRAIL
- EXISTING TRAIL
- CONTOURS
- PIPELINE
- TRANSMISSION LINE
- RAILROAD
- FALLING CORNER
- BLOWDOWN
- SLOPE
- LANDING
- EXISTING CULVERT
- PROPOSED CULVERT
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- NCD
- LAKE
- SEEP
- SWAMP
- LANDSLIDE
- OLD SLOPE FAILURES
- WILDLIFE TREE RETENTION AREA
- EXISTING BLOCKS

N

0 Meters 250

Scale: 1:5,000

FL: A30171	MAP REF: 82F065-066
DISTRICT: SELKIRK	PROJECT: 18006-001
DATE: JULY 2018	
DRAWN: TRIPWIRE	
CHECKED: CP	
SITE PLAN	FIGURE: 4

PERDUE GEOTECHNICAL SERVICES