

**Soil and Agricultural Capability and Suitability Assessment
District Lots 7045, 7046 and 8653, Columbia Shuswap District**

Hill Creek Road, Galena Bay, BC

**Prepared for
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RJR Land Co. Ltd.
for submission to the
Agricultural Land Commission**

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Executive Summary

Richard Adamowicz of RJR Land Co. Ltd, is requesting consideration of the Agricultural Land Commission (ALC) for removal of District Lots 7045, 7046 and 8653, Columbia Shuswap District from the Agricultural Land Reserve (ALR). The land parcels are located along Hill Creek Road on the Galena Bay thumb of Upper Arrow Lake. VAST Resource Solutions was contracted to complete a soil and agricultural capability and suitability assessment ("Agrologist report") as part of the application requirements. A detailed review of existing soil survey and land capability information was completed, followed by a site assessment to characterize soils and landforms, and determine the agricultural capability and suitability of the property.

Historically, and currently, the subject properties and adjacent properties have primarily been used for forestry (timber harvesting) operations. No indications of past or current agricultural use were noted during the site inspection.

A majority of the subject property consists of shallow, poorly-sorted, coarse textured glaciofluvial soils deposited in hummocks and mounds, interspersed with shallow colluvium deposits over bedrock, and bedrock outcrops in steeper terrain. All soil pits used to classify soils were established in existing road cut slopes due to the difficulty in hand excavation of native soils.

According to Canada Land Inventory (CLI) agricultural capability mapping, the property lies within a capability polygon having an unimproved rating of 5TM⁶7RT⁴ and an improved rating of 4TM⁶7RT⁴. The CLI ratings indicate that, while bedrock (R) and topography (T) remain as non-improvable limitations on 40% of the polygon, maintaining a Class 7 non-arable rating, it is considered "feasible" to improve the capability of the remaining 60% of the polygon area from Class 5 to Class 4 by addressing the soil moisture (M) limitation through irrigation.

Based on the detailed on-site assessment, the overall unimproved agricultural capability classification of the properties was determined to be **5TP**, with subclass limitations for coarse fragment content (P) and topography (T). Neither of these limitations can be improved further so the improved agricultural capability classification is also 5TP. Due to physiographic and topographic characteristics, the property is also considered to have climatic limitations related to insufficient heat units and minimum temperature near freezing during the growing season.

Considering the range of crops adapted to the region, the subject property has limited suitability for soil bound agricultural production other than unimproved native forage for seasonal, low carrying capacity grazing. When crop suitability and productivity are considered in relation to the combined impact of the limitations that affect the property, improvements to agricultural suitability are not practical. The feasibility of non-soil bound agricultural uses is severely limited by soil and site characteristics.

Neither the subject properties nor any surrounding properties are presently used for commercial agricultural purposes, and do not appear to have had any historic agricultural use, so approval of the proposed application would not negatively impact local and/or regional agricultural production capacity.

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ALC	Agricultural Land Commission
ALR	Agricultural Land Reserve
AWSC	Average water storage capacity
CLI	Canada Land Inventory
SMD	Soil moisture deficiency

1.0 INTRODUCTION

1.1 Background Information

Richard Adamowicz of RJR Land Co. Ltd, is requesting consideration of the Agricultural Land Commission (ALC) for removal of District Lots 7045, 7046 and 8653, Columbia Shuswap District from the Agricultural Land Reserve (ALR). The land parcels are located along Hill Creek Road on the Galena Bay thumb of Upper Arrow Lake. VAST Resource Solutions was contracted to complete a soil and agricultural capability and suitability assessment ("Agrologist report") as part of the application requirements.

1.2 Site Assessment Procedures and Protocols

A detailed site inspection of the subject parcel and review of surrounding lands were carried out by Cris Romeo, GIT and Tyler Pellegrin, RFT, on October 11th and 12th, 2016. The purpose of the inspection was to complete an assessment of the soils and determine the agricultural capability and suitability of the property. Field procedures included soil classification to the soil association level, description and classification of the landforms and existing vegetation, and a description of present land uses. All fieldwork, analyses and reporting was supervised and reviewed by a Professional Agrologist with expertise in soil science, using procedures and guidelines outlined in the *Canadian System for Soil Classification* (1998) and *Land Capability Classification for Agriculture in British Columbia* (1983).

2.0 DESCRIPTION OF PROPERTY

2.1 Location, Legal Description and Zoning

The subject properties, described as District Lots 7045, 7046 (150 acres) and 8653 (93.83 acres), Columbia Shuswap Regional District, (Figure 1) are located in the Galena Bay thumb on Upper Arrow Lake, 60 km north of Nakusp, BC. According to the Regional District, Lot 7045 is zoned as Rural Holdings (RH), Lot 7046 is zoned as Rural and Resource (RSC) and Lot 8653 is zoned as Small Holdings (SH). Mapping provided by the ALC indicates the property is located entirely within the Agricultural Land Reserve (ALR).

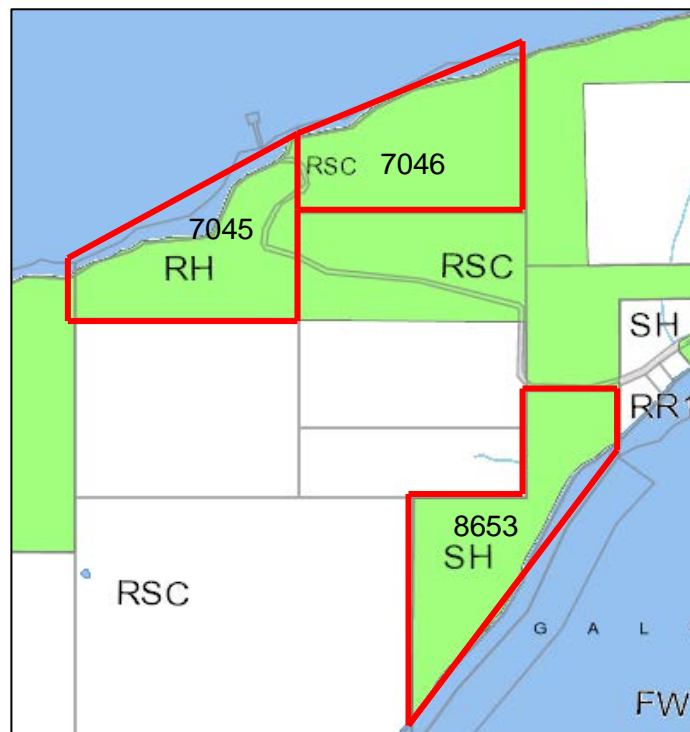


Figure 1. Property map with subject properties highlighted (CSRD)

2.2 Subject Property Land Use

Historically, and currently, the subject properties have primarily been used for forestry (timber harvesting) operations (Figure 2). by Pope & Talbot. Pope & Talbot estimate 6,200 cubic metres of merchantable timber on both DL 7045 and 7046. DL 8653 retains approximately 7,500 cubic metres of merchantable timber, of which 1,300 cubic metres is cedar. The southeast corner of DL 7046 has a small quarry which Pope & Talbot wish to retain the right to use. No indications of past or current agricultural use were noted during the site inspection.

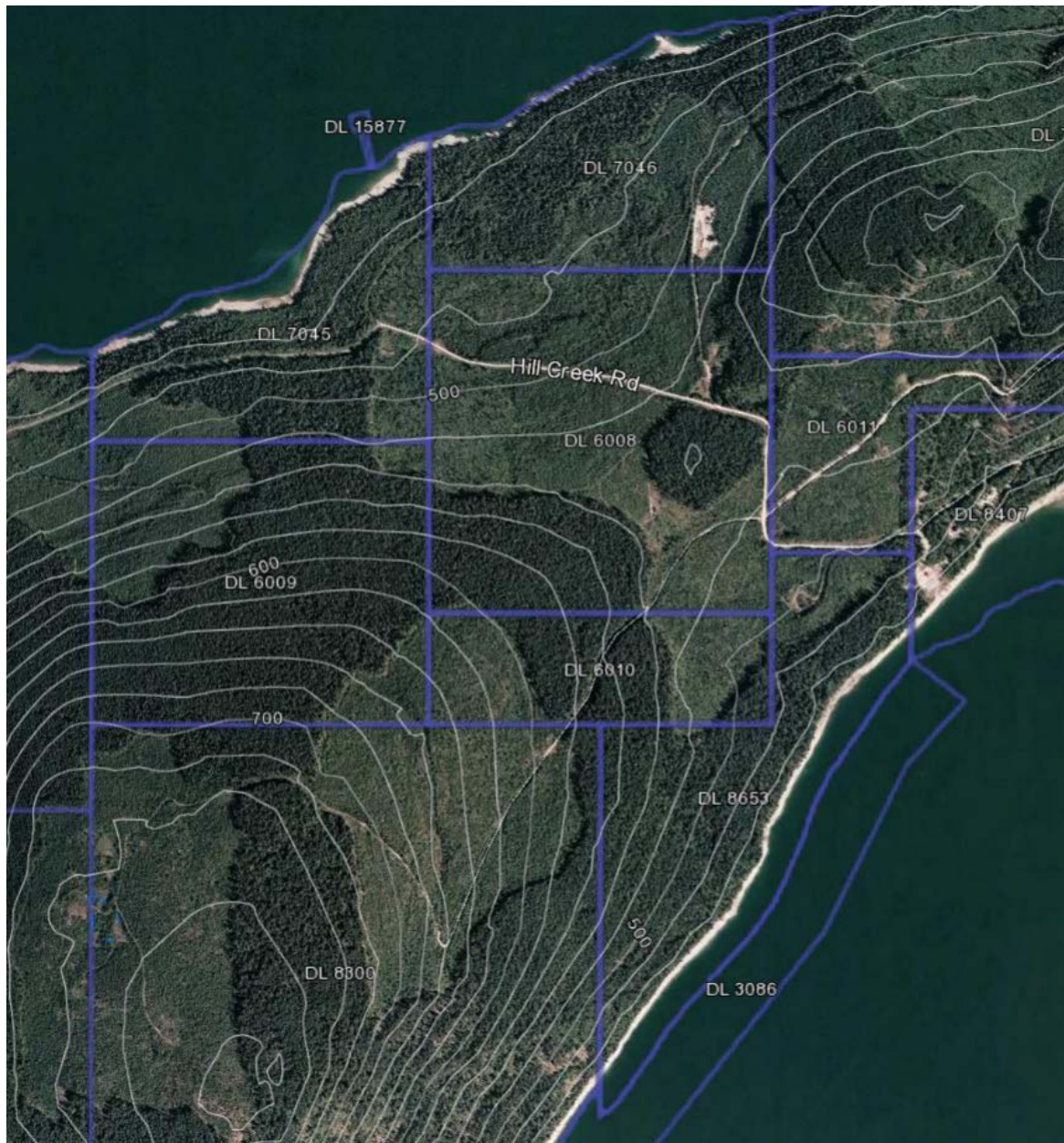


Figure 2. Aerial image, with 20m contour lines (Google Earth).

2.3 Land Use of Surrounding Property

Land uses immediately bordering District Lots 7045 and 7046 include the following:

Direction	Zoning	Ownership	Land Cover/Use
North	FW – Foreshore Water	Private	Upper Arrow Lake
East	RSC – Rural and Resource	Private	open forest; old clear-cut
South	RSC – Rural and Resource	Private	open forest; old clear-cut
West	RSC – Rural and Resource	Private	open forest; old clear-cut

Land uses immediately bordering District Lot 8653 include the following:

Direction	Zoning	Ownership	Land Cover/Use
North	RSC – Rural and Resource	Private	open forest; old clear-cut
East	RR1-Rural Residential	Private	residence with open forest
South	FW – Foreshore Water	Private	Upper Arrow Lake (Galena Bay)
West	RSC – Rural and Resource	Private	open forest; old clear-cut

Most of the land in the vicinity of the subject properties are old clear-cuts and open forest zoned RSC - Rural and Resource (Figure 3). Neither soil bound nor non-soil bound agricultural or horticultural uses such as cattle feedlots, hog or poultry barns, commercial greenhouses or nursery stock operations are not present in the vicinity.



Figure 3. Adjacent land cover/uses (Google Earth, 2003)

3.0 GEOLOGY AND SOILS

3.1 Terrain/Landform Classification

The BC terrain classification system (Howes and Kenk, 1997) indicates two terrain polygons on the subject properties, F^Gh⁵.C⁵ and C/R (Figure 4). A majority of the subject property is associated with terrain polygon F^Gh⁵.C⁵, which consists of roughly equal proportions of glaciofluvial (F^G) materials deposited in hummocky (h) landforms, and colluvium (C). Glaciofluvial materials, deposited by glacial meltwater streams either directly in front of, or in contact with, glacier ice, typically range from non-sorted and non-bedded gravel made up of a wide range of particle sizes, to well-sorted, stratified gravel. Slump structures and/or their equivalent topographic expression, such as hummocky or irregular terrain may be present, indicating collapse of the material due to melting of supporting ice. Colluvium (C) materials reached their present positions as a result of direct, gravity-induced movement involving no agent of transportation such as water or ice, although the moving material may have contained water and/or ice. Colluvium deposits generally consist of massive to moderately well-stratified, non-sorted to poorly-sorted sediments with any range of particle sizes from clay to boulders and blocks. The character of any particular colluvial deposit depends upon the nature of the material from which it was derived and the specific process whereby it was deposited.

The southern edge of DL 7045, and the western edge of DL 8653 are associated with terrain polygon C/R, which indicates shallow colluvium (C) deposits overlying bedrock (R) outcrops and rock covered by a thin mantle (up to 10 cm thick) of unconsolidated materials.

The surficial materials and landforms observed during the site inspection are generally consistent with the classifications mapped and described by Howes and Kenk. A majority of the subject property consists of shallow, poorly-sorted, coarse textured glaciofluvial materials deposited in hummocks and mounds, interspersed with shallow colluvium deposits over bedrock, and bedrock outcrops in steeper terrain.

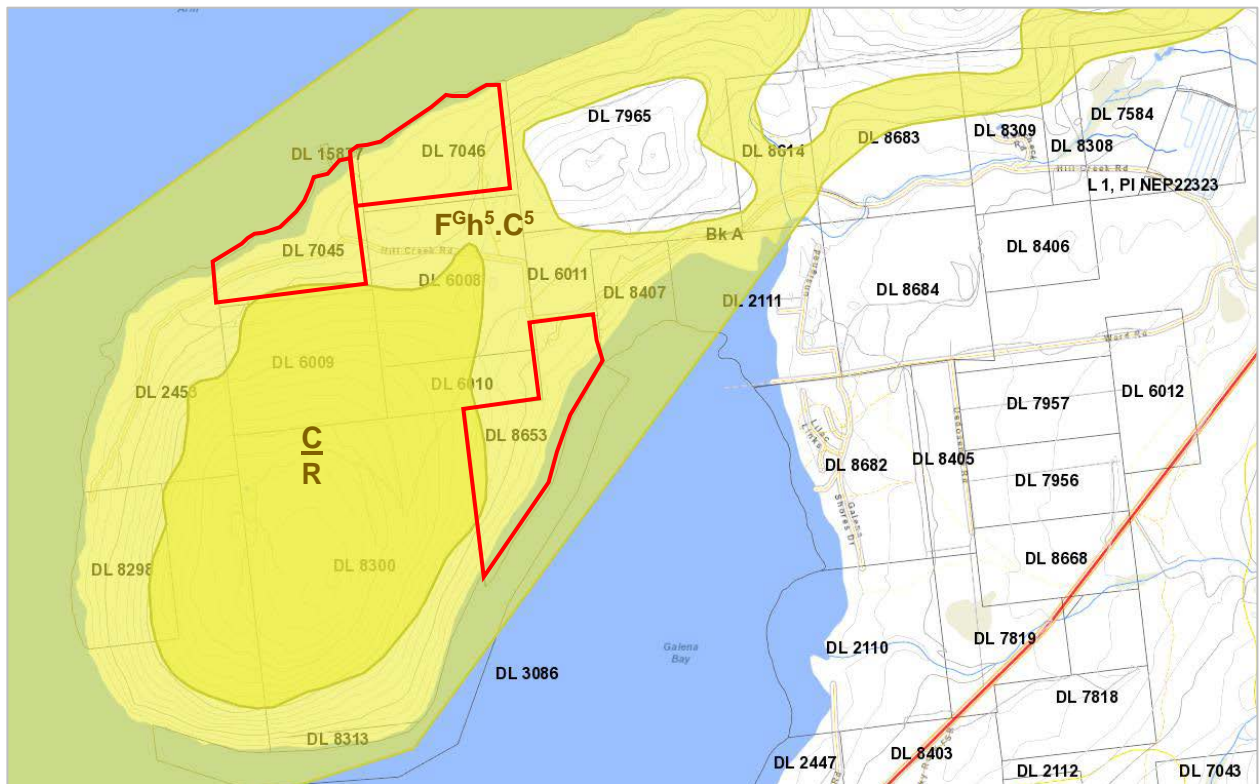


Figure 4. Terrain classification mapping for the subject property (Howes and Kenk, 1997)

3.2 Soil Survey Classification

Soils in the Lardeau region were surveyed and mapped by Wittneben (1980) as part of the BC Soil Survey program. According to the soil survey, the subject properties are comprised of two soil polygons. A majority of the subject property is classified as a complex of Kaslo (KO) and Calamity (CL) soils, while small portions of DL 7045 and DL 8653 are classified as Buhl Creek (BH) soils (Figure 5).

Kaslo (KO) soils developed in rolling glaciofluvial deposits, occurring as poorly-sorted and coarse textured hummocks, mounds and terraces along valley slopes. Kaslo soils are typically very stony (40 to 60% coarse fragments), usually slightly compacted and of variable depth. The typical soil development is Orthic Dystric Brunisol. Wittneben indicated that most Kaslo soils are non-arable owing to the combination of coarse soil textures, stoniness, and, in many areas, relatively steep topography.

Calamity (CL) soils typically occur further up valley slopes (at higher elevations) than Kaslo soils. Calamity soils developed from deep, medium textured colluvium deposits on and at the base of steep slopes. They are well to rapidly drained, with textures ranging from gravelly loam to gravelly sandy loam and coarse fragment contents exceeding 70%. The typical development for Calamity soils is Orthic Dystric Brunisol. Wittneben indicated that most Calamity soils are unsuitable for agriculture due to their steep topography.

Buhl Creek (BH) soils developed in shallow colluvium materials overlying acidic bedrock. Soil textures are sandy loam or loamy sand containing abundant angular rocks, stones and gravels. Typical soil development is Orthic or Lithic Dystric Brunisol. According to Wittneben, Buhl Creek soils are generally unsuitable for agricultural use, except for some limited domestic grazing,

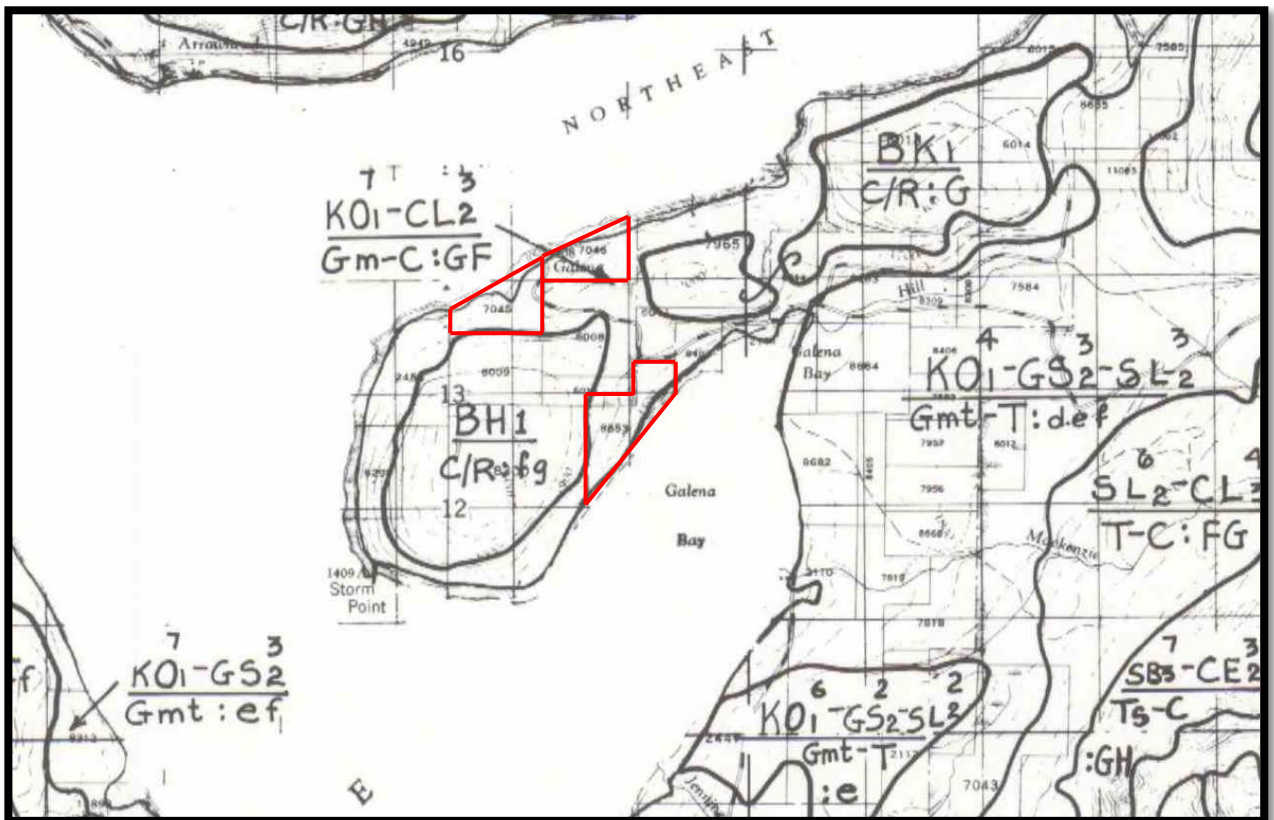


Figure 5. Soil survey map units for the subject properties (Wittneben, 1980)

3.3 Detailed On-site Soil Inventory and Classification

Soils and landforms on the subject property were visually assessed and found to be generally consistent with existing background surveys, reports and maps. There are two distinct landform features associated with the properties. The north portion of District Lots 7045 and 7046, and the southeast part of District Lot 8653 is a high density sand and rock (including bedrock) shoreline. The remaining portions of the properties are low to mid elevation, rolling to hummocky glaciofluvial deposits. Shallow (< 10 cm deep), coarse textured colluvium soils overlying bedrock were observed at mid to higher elevations on all lots.

Soil pits were excavated in existing road cut slopes on each of the three lots due to the difficulty in hand excavation of native soils. At each pit, soil profiles were characterized according to the *Canadian System of Soil Classification*. This confirmed the presence of variable glaciofluvial deposits consistent with the Kaslo soil association. Surface horizons are shallow (< 20 cm) and overlie coarse textured, slightly compacted parent material. Soil textures are quite uniform with depth, varying from sand/sandy loam to gravelly sand. Coarse fragment content increased with depth, with a high percentage of subrounded gravels and cobbles evident below the surface horizon. Field notes and photos describing the soil profile at each pit location are presented in Appendix A.

4.0 CLIMATE

The subject properties are located near the north end of Upper Arrow Lake, in an area known as Galena Bay, within the West Kootenay. The site reside within the Interior Cedar Hemlock dry mild (ICH dm) biogeoclimatic zone. The ICH has a continental climate characterized by warm, dry summers, a fairly long growing season, and cool, wet winters. The main factor controlling the climate is the prevailing easterly flowing air. Mean annual temperature is 3.0-18.3°C. The average temperature is below 0°C for 3 months, and above 10°C for 5 months. Mean annual precipitation ranges from 800 to 850 mm, with 20 to 25% being snow. Substantial growing season moisture deficits are common and frosts can occur at any time.

Historic climatic data for the Fauquier and Revelstoke areas are reported in Climatic Capability Classification for Agriculture in British Columbia (1981). This information, combined with data presented in the soil survey report, indicates that the biogeoclimatic zone occupied by Kaslo soils has a climatic capability for agriculture of 3G, indicating that the average frost free period of 60 to 74 days and insufficient heat units (G) during the growing season have the potential to adversely affect plant growth, and a moisture climatic capability of 3A, meaning drought or aridity (A) occurring during the growing season will result in moisture deficits that will limit plant growth. Based on the climatic moisture deficit and thermal limitations, the range of crops that can be produced under dryland conditions is restricted to perennial forage crops.

5.0 AGRICULTURAL CAPABILITY

5.1 Existing Canada Land Inventory Capability Information

According to Canada Land Inventory (CLI) agricultural capability mapping, the property lies within an agricultural capability polygon having an unimproved rating of 5TM⁶7RT⁴ and an improved rating of 4TM⁶7RT⁴ (Figure 6). The unimproved capability rating indicates capability based on site conditions and limitations/hazards that existed at the time of the initial CLI survey, while the **improved** capability reflects the potential capability after existing limitations have been adequately alleviated. The CLI system arbitrarily assumes that a range of possible improvements are available, and feasible within “the present day economic possibility for the farmer”. The unimproved CLI classification of 5TM⁶7RT⁴ indicates sixty percent (60%) of this capability polygon is Class 5 land with topography (T) and moisture (M) limitations. The land capability classification system for BC describes Class 5 lands as having limitations that restrict their capability to producing perennial forage crops or other specially adapted crops. The remaining forty percent (40%) is Class 7 with consolidated bedrock (R) and topography (T) limitations. Class 7 land has no capability for arable agriculture, but may sustain natural grazing.

This is a topographic map of Galena Bay, Alaska. The map features several place names: "Storm Pt." on the left, "Galena Bay" in the center, and "Galena" on the right. Elevation contours are marked with numbers such as 2453, 6008, 6009, 6010, 6011, 6012, 6013, 6014, 6017, 6018, 6019, 6020, 6021, 6022, 6023, 6024, 6025, 6026, 6027, 6028, 6029, 6030, 6031, 6032, 6033, 6034, 6035, 6036, 6037, 6038, 6039, 6040, 6041, 6042, 6043, 6044, 6045, 6046, 6047, 6048, 6049, 6050, 6051, 6052, 6053, 6054, 6055, 6056, 6057, 6058, 6059, 6060, 6061, 6062, 6063, 6064, 6065, 6066, 6067, 6068, 6069, 6070, 6071, 6072, 6073, 6074, 6075, 6076, 6077, 6078, 6079, 6080, 6081, 6082, 6083, 6084, 6085, 6086, 6087, 6088, 6089, 6090, 6091, 6092, 6093, 6094, 6095, 6096, 6097, 6098, 6099, 6100. A red outline highlights a specific area on the western side of the bay, encompassing the 6008, 6009, and 6010 contours. The map also shows various contour lines and a grid system.

5.2 Detailed On-site Capability Information

16.0138.00_RJR Land Co ALC
Soil/Agricultural Capability and Suitability Assessment
District Lot 7045, 7046 and 8653, Columbia Shuswap Regional District

5.2.1 Soil Moisture (A or M)

This capability subclass limitation is used where crop growth is adversely affected by droughtiness either through insufficient growing season precipitation or low water holding capacity of the soil, or both. Note that the Canadian CLI system uses “M” to indicate this limitation while the BC system uses “A”. Soil moisture deficiency (SMD) ratings were calculated for soils identified on the property using the average water storage capacity (AWSC) of the upper 50 cm of soil and the potential improvement in AWSC associated with the removal of cobbles and stones from the upper 25 cm (see Appendix A).

Based on the site-specific SMD calculations, the unimproved and improved CLI classifications are equivalent, Class 3A, indicating the soils have moisture holding capacity limitations that restrict their capability to producing perennial crops or other specially adapted crops. Soil moisture limitations can be addressed through the application of irrigation water, provided that a suitable source of water (quality, quantity and proximity) is available. In this instance, there are no existing water licenses for the properties so irrigation is not possible; furthermore, the topography limitation negates the potential for irrigation.

5.2.2 Stoniness (P)

This subclass applies to soils with sufficient coarse fragments to hinder tillage, planting and/or harvesting operations. The guidelines for class designation are based on the proportion of coarse gravels, cobbles and stones in the upper 25 cm of mineral soil. Coarse fragment content ranges from 20 to in excess of 50%, indicating an overall stoniness classification of 4P to 5P. The majority of coarse fragments are gravel sized, which do not pose a serious handicap to cultivation but are considered impractical to remove manually or by mechanical means.

5.2.3 Topography (T)

This capability subclass limitation applies to soils for which topography limits agricultural use by affecting the use of farm machinery, decreasing the uniformity of growth and maturity of crops and increasing the potential for water erosion. As noted earlier, portions of the subject properties are characterized by variable, simple slopes up to 20 – 40%. Improvement of topographic limitations is considered impractical.

5.2.4 Climate

Climatological parameters for any given area are influenced by physiographic and topographic characteristics including elevation, slope, aspect and landforms. The thermal climatic capability classification for the area is 3G, indicating that the average frost free period of 60 to 74 days and insufficient heat units (G) during the growing season have the potential to adversely affect plant growth, and a moisture climatic capability of 3A, meaning drought or aridity (A) occurring during the growing season will result in moisture deficits that will limit plant growth.

Based on the detailed on-site assessment, the overall unimproved agricultural capability classification of the properties is 5TP, with subclass limitations for coarse fragment content (P) and topography (T). As discussed above, neither of these limitations can be improved further so the improved agricultural capability classification is also 5TP. Due to physiographic and topographic characteristics, the property is also considered to have climatic limitations related to insufficient heat units and minimum temperature near freezing during the growing season.

6.0 AGRICULTURAL SUITABILITY

The land capability classification system does not consider factors such as distance to markets, available transportation infrastructure (roads, etc.), location, farm size, type of ownership, cultural patterns, skills or resources of individual operators, or hazard of crop damage by storms (wind, hail, etc.). As a result, capability classifications do not provide an interpretation of the agricultural suitability of land for the production of specific crops, the potential productivity of those crops or the feasibility of improvements that may be required to achieve acceptable levels of production. An assessment of agricultural suitability considers the practical commercial options for agricultural use of the land considering the cumulative effects of multiple limitations and the feasibility of improvements.

6.1 Soil Bound Agricultural Uses

Soil bound uses encompass those that rely on growing crops in soil on site to support a specific agricultural enterprise. The properties under assessment contain low suitability for soil bound cultivated agricultural uses such as cereal/oilseed crop production, tame hay or green feed production, fruit and/or vegetable production for the following reasons:

- *Topography* - The complex topography limits the use of farm machinery in some areas, and may impact the uniformity and growth of certain crops.
- *Soil characteristics* - Soil pit excavation confirmed the soils are underlain by coarse textured (sandy gravel) deposits, resulting in poor nutrient supply capacity and soil moisture deficits that limit plant growth. Irrigation is not feasible due to the topography limitations.
- *Climate* - Drought or aridity during the growing season results in moisture deficits that negatively impact plant growth, restricting land use to seasonal low intensity livestock grazing.

6.2 Non-Soil Bound Agricultural Uses

Non-soil bound uses are those that do not rely on growing crops in soil on site to support a specific agricultural enterprise. Examples of non-soil bound uses include beef or horse feedlots, hog production, poultry (eggs and meat birds), veal production, production of fur bearing animals, mushroom barns, and greenhouses or potted nursery stock production.

Intensive livestock operations such as feedlots or hog or poultry barns are not appropriate uses for the subject property due to the complex topography and coarse textured, high permeability subsoil. Similarly, greenhouses, potted nursery stock and/or mushroom barns are not practical.

The semi-remote nature of the property increases the operating costs associated with many potential non-soil bound uses.

7.0 POTENTIAL IMPACTS

7.1 Local and Regional Agricultural Capacity

The properties are not presently used for commercial agricultural purposes, so approval of the proposed application would not negatively impact the local and/or regional agricultural production capacity.

7.2 Surrounding Agricultural Operations

Agricultural use of the surrounding properties are non-existent. The area is primarily used for seasonal residential/recreational dwellings and forestry (timber harvesting) operations.

7.3 Conflicts with Adjoining Land Uses

Approval of the proposed application is unlikely to create conflict with adjoining land uses and/or property owners, as there is currently only one seasonal residence in the vicinity of the properties.

8.0 SUMMARY AND CONCLUSIONS

- (a) A majority of the subject property consists of shallow, poorly-sorted, coarse textured glaciofluvial soils deposited in hummocks and mounds, interspersed with shallow colluvium deposits over bedrock, and bedrock outcrops in steeper terrain.
- (b) Historically, and currently, the subject properties and adjacent properties have primarily been used for forestry operations. No indications of past or current agricultural use were noted.
- (c) The overall unimproved CLI agricultural capability rating for the property is Class 5, with limitations for topography and stoniness. Improvements to capability are not considered feasible due to the combined influence of these limitations.
- (d) Considering the range of crops adapted to the region, the subject property has limited suitability for soil bound agricultural production other than unimproved native forage for seasonal, low carrying capacity grazing. When crop suitability and productivity are considered in relation to the combined impact of the limitations that affect the property, improvements to agricultural suitability are not practical. The feasibility of non-soil bound agricultural uses is limited by soil and site characteristics.
- (e) Neither the subject properties nor any surrounding properties are presently used for commercial agricultural purposes, and do not appear to have had any historic agricultural use, so approval of the proposed application would not negatively impact local and/or regional agricultural production capacity.

9.0 STATEMENT OF LIMITATIONS

The client is hereby advised of the following:

- The work performed in this report was carried out in accordance with the terms and conditions specified in the signed Project Work Agreement (PWA) between the client and VAST Resource Solutions Inc. The conclusions presented herein are based solely upon the scope of services and time and budgetary limitations described in the PWA.
- Services provided by VAST Resource Solutions for this report have been conducted in a manner consistent with the level of skill, care and competence ordinarily exercised by members of the profession of agrology currently practicing under similar conditions and like circumstances in the same jurisdiction in which the services were provided. Professional judgment has been applied in developing the conclusions in this report. No warranties, expressed or implied, are made as to the professional services provided under the terms of the PWA and included in this report.
- Since site conditions may change over time, this report is intended for immediate use.
- The report is based on and limited by circumstances and conditions referred to throughout the report and on information available at the time of the site investigation. The conclusions of this report are based in part on information provided by others. VAST Resource Solutions believes this information is accurate but cannot guarantee or warrant its accuracy or completeness.
- The information presented in this report was acquired, compiled and interpreted exclusively for the client for the purposes described in this report. VAST Resource Solutions does not accept any responsibility for the use of this report, in whole or in part, for any purpose other than intended or to any third party for use whatsoever.
- The conclusions and/or recommendations provided in this report do not relieve the client or their agents or representatives of the responsibility to comply with applicable acts, regulations, bylaws and/or decisions of any authorities that have jurisdiction under an enactment.

10.0 CLOSURE

VAST Resource Solutions trusts that this report satisfies your present requirements. Should you have any comments or require additional information, please contact us at your convenience.

I certify that I supervised and reviewed all work as described in this report.

Prepared by:

David Struthers, B.S.A., P.Ag.
Senior Agrologist
VAST Resource Solutions Inc.

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Appendix A

Soil pit profiles and soil moisture deficit (SMD) calculations

Land Capability Classification for Soil Moisture Deficiency

Historic average climatic data as reported in Climatic Capability Classification for Agriculture in British Columbia.

Climatic Parameter	Station 1	Station 2	Station 3	Average
	Fauquier	Revelstoke		(mm)
P: Growing Season Precipitation (May 1- Sept 30)	239	323		281
PE: Potential Evapo-transpiration from May1 to Sept 30	479	499		489
CMD: Climatic Moisture Deficit (P-PE)	240	176		208

Site ID: DL 7045

Horizon		Bm	C			
Depth (cm)		20	30			
Soil Texture		S	GS			
Coarse fragments (CF)	% gravels	20%	50%			
	% cobbles and stones	1%	15%			
Water storage capacity texture adjustment factor (mm/cm)		0.8	0.8			
Unimproved soil moisture deficit calculation						
AWSC (Average water storage capacity) = Depth x texture factor x CF(mm)		12.6	8.4	0	0.0	0.0
Total AWSC in upper 50 cm of soil profile (mm)		21.0				
Soil Moisture Deficit (SMD) = CMD - Total AWSC (mm)		187.0				
Land capability for soil moisture deficiency subclass rating (unimproved)		3A				
Improved soil moisture deficit calculation						
AWSC (Average water storage capacity) = Depth x texture factor x CF(mm)		12.8	9.0	0.0	0.0	0.0
Total AWSC in upper 50 cm of soil profile (mm)		21.8				
Soil Moisture Deficit (SMD) = CMD - Total AWSC (mm)		186.2				
Land capability for soil moisture deficiency subclass rating (improved)		3A				

Textural Class	Factor (mm/cm)
Sand	0.8
Loamy Sand	1.0
Sandy Loam	1.2
Fine Sandy Loam	1.4
Loam	1.7
Silt Loam	2.1
Clay Loam	2.0
Clay	2.0
Organic	2.5

SMD	Class
< 40 mm	1A
40 to 115 mm	2A
116 to 190 mm	3A
191 to 265 mm	4A
266 to 340 mm	5A
341 to 415 mm	6A
> 415 mm	7A

Soil Pit: 1 Waypoint: 1060 Elevation (m): 470

Horizon	Depth	Texture	Coarse Fragments (%)				Calcareous
			Gravels	Cobbles	Stones		
Bm	0 - 20 cm	S	20%	< 1	0%		N
C	20 - 97 cm	GS	50%	15%	<1		N



Land Capability Classification for Soil Moisture Deficiency

Historic average climatic data as reported in Climatic Capability Classification for Agriculture in British Columbia.

Climatic Parameter	Station 1	Station 2	Station 3	Average
	Fauquier	Revelstoke		(mm)
P: Growing Season Precipitation (May 1- Sept 30)	239	323		281
PE: Potential Evapo-transpiration from May1 to Sept 30	479	499		489
CMD: Climatic Moisture Deficit (P-PE)	240	176		208

Site ID: DL 7045

Core ID: DE 1646

Horizon		Bm	C			
Depth (cm)		24	26			
Soil Texture		SL	SL			
Coarse fragments (CF)	% gravels	40%	45%			
	% cobbles and stones	1%	5%			
Water storage capacity texture adjustment factor (mm/cm)		2.1	2.1			
Unimproved soil moisture deficit calculation						
AWSC (Average water storage capacity) = Depth x texture factor x CF(mm)		29.7	27.3	0.0	0.0	0.0
Total AWSC in upper 50 cm of soil profile (mm)		57.0				
Soil Moisture Deficit (SMD) = CMD - Total AWSC (mm)		151.0				
Land capability for soil moisture deficiency subclass rating (unimproved)		3A				
Improved soil moisture deficit calculation						
AWSC (Average water storage capacity) = Depth x texture factor x CF(mm)		30.0	27.4	0.0	0.0	0.0
Total AWSC in upper 50 cm of soil profile (mm)		57.4				
Soil Moisture Deficit (SMD) = CMD - Total AWSC (mm)		150.6				
Land capability for soil moisture deficiency subclass rating (improved)		3A				

Textural Class	Factor (mm/cm)
Sand	0.8
Loamy Sand	1.0
Sandy Loam	1.2
Fine Sandy Loam	1.4
Loam	1.7
Silt Loam	2.1
Clay Loam	2.0
Clay	2.0
Organic	2.5

SMD	Class
< 40 mm	1A
40 to 115 mm	2A
116 to 190 mm	3A
191 to 265 mm	4A
266 to 340 mm	5A
341 to 415 mm	6A
> 415 mm	7A

Soil Pit: 2 Waypoint: 1061 Elevation (m): 467

Horizon	Depth	Texture	Coarse Fragments (%)			
			Gravels	Cobbles	Stones	Calcareous
Bm	0 - 24 cm	SL	40%	1%	0%	N
C	24 - 78 cm	SL	45%	5%	<1	N



Land Capability Classification for Soil Moisture Deficiency

Historic average climatic data as reported in Climatic Capability Classification for Agriculture in British Columbia.

Climatic Parameter	Station 1	Station 2	Station 3	Average
	Fauquier	Revelstoke		(mm)
P: Growing Season Precipitation (May 1- Sept 30)	239	323		281
PE: Potential Evapo-transpiration from May1 to Sept 30	479	499		489
CMD: Climatic Moisture Deficit (P-PE)	240	176		208

Site ID: DL 7046

Horizon		Ae	Bm	C		
Depth (cm)		19	31			
Soil Texture		S	S	S		
Coarse fragments (CF)	% gravels	20%	25%	30%		
	% cobbles and stones	5%	5%	5%		
Water storage capacity texture adjustment factor (mm/cm)		0.8	0.8	0.8		
Unimproved soil moisture deficit calculation						
AWSC (Average water storage capacity) = Depth x texture factor x CF		11.4	17.4	0.0	0.0	0.0
Total AWSC in upper 50 cm of soil profile (mm)		28.8				
Soil Moisture Deficit (SMD) = CMD - Total AWSC (mm)		179.2				
Land capability for soil moisture deficiency subclass rating (unimproved)		3A				
Improved soil moisture deficit calculation						
AWSC (Average water storage capacity) = Depth x texture factor x CF		12.0	17.6	0.0	0.0	0.0
Total AWSC in upper 50 cm of soil profile (mm)		29.6				
Soil Moisture Deficit (SMD) = CMD - Total AWSC (mm)		178.4				
Land capability for soil moisture deficiency subclass rating (improved)		3A				

Textural Class	Factor (mm/cm)
Sand	0.8
Loamy Sand	1.0
Sandy Loam	1.2
Fine Sandy Loam	1.4
Loam	1.7
Silt Loam	2.1
Clay Loam	2.0
Clay	2.0
Organic	2.5

SMD	Class
< 40 mm	1A
40 to 115 mm	2A
116 to 190 mm	3A
191 to 265 mm	4A
266 to 340 mm	5A
341 to 415 mm	6A
> 415 mm	7A

Soil Pit: 1 Waypoint: 1062 Elevation (m): 499

Horizon	Depth	Texture	Coarse Fragments (%)			
			Gravels	Cobbles	Stones	Calcareous
Ae	0 - 19 cm	S	20%	<5	0%	N
Bm	19 - 64 cm	GS	25%	<5	<1	N
C	64 - 96 cm	GS	30%	5%	1%	N



Land Capability Classification for Soil Moisture Deficiency

Historic average climatic data as reported in Climatic Capability Classification for Agriculture in British Columbia.

Climatic Parameter	Station 1	Station 2	Station 3	Average
	Fauquier	Revelstoke		(mm)
P: Growing Season Precipitation (May 1- Sept 30)	239	323		281
PE: Potential Evapo-transpiration from May1 to Sept 30	479	499		489
CMD: Climatic Moisture Deficit (P-PE)	240	176		208

Site ID: DL 8653

Horizon		Bm	C			
Depth (cm)		14	36			
Soil Texture		SL	SiL			
Coarse fragments (CF)	% gravels	30%	30%			
	% cobbles and stones	1%	5%			
Water storage capacity texture adjustment factor (mm/cm)		1.2	2.1			
Unimproved soil moisture deficit calculation						
AWSC (Average water storage capacity) = Depth x texture factor x CF		11.6	49.1	0.0	0.0	0.0
Total AWSC in upper 50 cm of soil profile (mm)		60.7				
Soil Moisture Deficit (SMD) = CMD - Total AWSC (mm)		147.3				
Land capability for soil moisture deficiency subclass rating (unimproved)		3A				
Improved soil moisture deficit calculation						
AWSC (Average water storage capacity) = Depth x texture factor x CF		11.7	50.3	0.0	0.0	0.0
Total AWSC in upper 50 cm of soil profile (mm)		62.0				
Soil Moisture Deficit (SMD) = CMD - Total AWSC (mm)		146.0				
Land capability for soil moisture deficiency subclass rating (improved)		3A				

Textural Class	Factor (mm/cm)
Sand	0.8
Loamy Sand	1.0
Sandy Loam	1.2
Fine Sandy Loam	1.4
Loam	1.7
Silt Loam	2.1
Clay Loam	2.0
Clay	2.0
Organic	2.5

SMD	Class
< 40 mm	1A
40 to 115 mm	2A
116 to 190 mm	3A
191 to 265 mm	4A
266 to 340 mm	5A
341 to 415 mm	6A
> 415 mm	7A

Soil Pit: 1 Waypoint: 1063 Elevation (m): 572

Horizon	Depth	Texture	Coarse Fragments (%)			
			Gravels	Cobbles	Stones	Calcareous
Bm	0 - 14 cm	SL	30%	<1	0%	N
C	14 - 78 cm	SiL	30%	<5	<1	N



Land Capability Classification for Soil Moisture Deficiency

Historic average climatic data as reported in Climatic Capability Classification for Agriculture in British Columbia.

Climatic Parameter	Station 1	Station 2	Station 3	Average
	Fauquier	Revelstoke		(mm)
P: Growing Season Precipitation (May 1- Sept 30)	239	323		281
PE: Potential Evapo-transpiration from May1 to Sept 30	479	499		489
CMD: Climatic Moisture Deficit (P-PE)	240	176		208

Site ID: DL 8653

Horizon		Bm	C			
Depth (cm)		28	22			
Soil Texture		SL	SiL			
Coarse fragments (Cf)	% gravels	30%	45%			
	% cobbles and stones	1%	5%			
Water storage capacity texture adjustment factor (mm/cm)		1.2	2.1			
Unimproved soil moisture deficit calculation						
AWSC (Average water storage capacity) = Depth x texture factor x CF		23.2	23.1	0.0	0.0	0.0
Total AWSC in upper 50 cm of soil profile (mm)		46.3				
Soil Moisture Deficit (SMD) = CMD - Total AWSC (mm)		161.7				
Land capability for soil moisture deficiency subclass rating (unimproved)		3A				
Improved soil moisture deficit calculation						
AWSC (Average water storage capacity) = Depth x texture factor x CF		23.5	23.1	0.0	0.0	0.0
Total AWSC in upper 50 cm of soil profile (mm)		46.6				
Soil Moisture Deficit (SMD) = CMD - Total AWSC (mm)		161.4				
Land capability for soil moisture deficiency subclass rating (improved)		3A				

Textural Class	Factor (mm/cm)
Sand	0.8
Loamy Sand	1.0
Sandy Loam	1.2
Fine Sandy Loam	1.4
Loam	1.7
Silt Loam	2.1
Clay Loam	2.0
Clay	2.0
Organic	2.5

SMD	Class
< 40 mm	1A
40 to 115 mm	2A
116 to 190 mm	3A
191 to 265 mm	4A
266 to 340 mm	5A
341 to 415 mm	6A
> 415 mm	7A

Soil Pit: 2 Waypoint: 1064 Elevation (m): 487

Horizon	Depth	Texture	Coarse Fragments (%)				Calcareous
			Gravels	Cobbles	Stones		
Bm	0 - 28 cm	SL	30%	<1	0%		N
C	28 - 78 cn	SiL	45%	<5	<1		N

