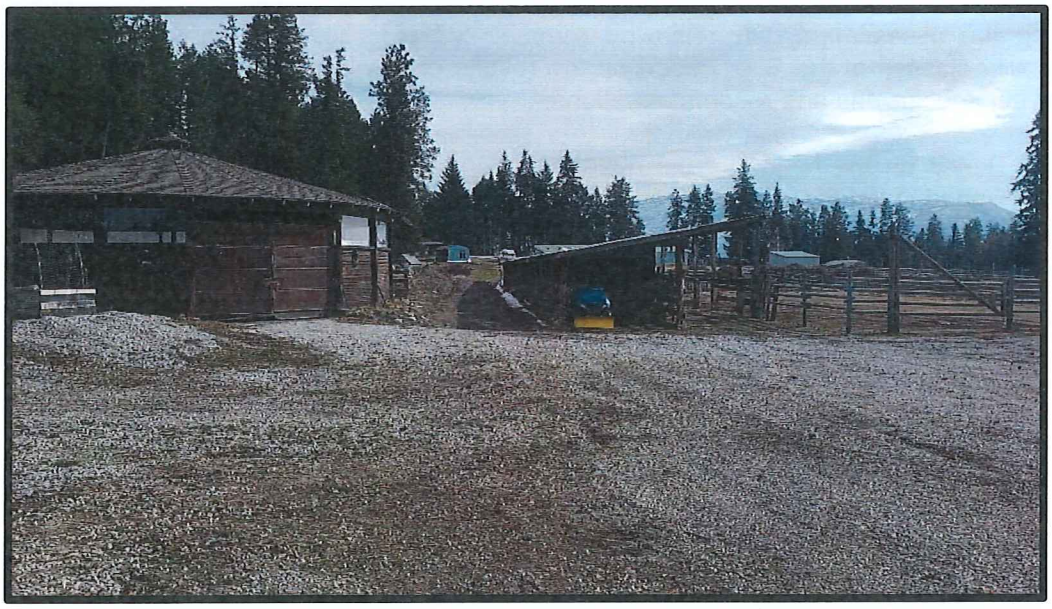
Agricultural Capability Report

4995 Trepanier Road, Peachland, BC



March 2021

Prepared for
Steve Kingsnorth
Civil-X Contracting Ltd.

Prepared by
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Executive Summary

Okanagan EHS Services Ltd. (OE) as retained to conduct an Agricultural Capability assessment of a site located at 4995 Trepanier Road, Peachland, BC (herein referred to as the "Site"). The Site is home to Civil-X Contracting Ltd. currently.

During the assessment, OE reviewed climate, soil conditions, topography and land capability classes of the Site. Based on the results of this investigation, OE makes the following conclusions and recommendations:

- Based on the review of the available information, OE suspects that the Site is limited by aridity, stoniness and topography.
- The eastern portion of the property is considered Class 4, due to aridity. With irrigation the land would still be considered Class 3 and could be improved to Class 2 with topsoil amelioration.
- The western portion and land in the middle of the Site are considered Class 4 due to stoniness and aridity. With irrigation the land would still be considered Class 3 and could be improved to Class 2 with topsoil amelioration.
- The northern portion of the land is considered Class 5 due to topography (steepness of the slope), stoniness and aridity. With irrigation, decreased slope, intensive management, and a crop selection that is particularly adapted to the conditions, this area may be improved to Class 3 due to aridity (the sandy and gravelly nature of the soil) and the stoniness of the land. Imported topsoil would also improve the land capability class.

Upon completing an Agricultural Capability Report, it is OE's opinion that irrigation, slope reduction, crop selection and imported topsoil will be integral for successfully supporting tree fruit and vineyards on this Site.

1 Introduction

1.1 General

Okanagan EHS Services Ltd. ("OE") has been retained by Steve Kingsnorth of Civil-X Contracting Ltd. (the "Proponent") to conduct an Agricultural Capability report for the subject property 4995 Trepanier Road, Peachland BC. The subject property is 20.391 acres in size.

The Proponent requires this Agricultural Capability report to identify the suitability and sustainability of this property for agricultural development. A field review of the Site was conducted on March 4, 2021.

1.2 Site Location

The Site location and legal description is as follows:

Table 1 - Site Location and Legal Description

Civic Address	Legal Description	PID
4995 Trepanier Road Peachland BC V0H 1X2	Lot 1 Plan KAP42448 District Lot 911 Land District 41 Except Plan KAP52560 (PT L 1 PL 1290 S/O B4244)	001-766-686

1.3 Site Description

The property is located in Peachland along the higher elevations of Trepanier road. South of the property is an irrigated small-scale farm. To the west are irrigated agricultural fields and rural residential properties. Farms in the general area do not produce high valued horticultural crops; rather produce pasture for equestrian needs or other small livestock. Approximately 350m to the south, just beyond the neighbouring property are wooded areas and steep hill sides which lead to Trepanier Creek. The elevation of the subject property is 495 meters. The property has operated as the truck yard and shop for Civil-X Contracting Ltd. for the last 3 years. Prior to the current activity, the Site was used for a sawmill for several decades with little evidence or record of previous agricultural activity. However, the east portion of the site is designated as a horse stable, paddock and corral with a small section of hay production.

The property has water rights under the Trepanier Ditch Water Users Community. This Community of users was incorporated in 1980 under the Water Act, later recalled and incorporated under the Water Act in 1993. Water for the Community is sourced from Lacoma Lake. Lacoma Lake is approximately 17 kilometers to north-west at an elevation of 951 meters.

2 Agrology

2.1 Soils

The soils are described in three distinct polygons according to the "Soils of the Okanagan and Similkameen Valleys".

1. *Gammil-Paradise-Trepanier*
    - Occupies roughly 50% of the land and has three soils contained in it. These soils are described having Gammil (60%), Paradise (30%), and Trepanier (10%) soils
2. *Gammil*
    - 35% of the land is Gammil
3. *Tomlin*
    - Approximately 15% of the land is composed of Tomlin soils

Gammil (GM)

The parent materials are deep, coarse textured, stony and gravely fluvioglacial deposits, capped by 10 to 25 cm of sandy materials. Surface textures are gravelly sandy loam while subsoil textures are very gravelly loamy sand. These soils are rapidly drained, rapidly pervious and have low water holding capacity and slow surface runoff. Organic carbon is low to very low between 0 and 50 cm.

Gammil soils are limited for agricultural uses by stoniness, low water holding capacity and topography when slopes are greater than 20%. Areas with gentle slopes are generally cleared and cultivated to either tree fruits, vineyards or are used for pasture and hay production.

Paradise (PE)

Paradise soils have developed in sandy (fluvial and eolean) veneer between 25 to 60 cm thick, overlaying gravelly fluvioglacial deposits. Surface and subsurface textures are sandy loam and loamy sand; subsoils are very gravelly sand or very gravelly loamy sand. These soils are rapidly drained, have low water storage capacity, are pervious and have slow surface runoff. Organic carbon is low to very low between 0 and 50 cm.

Paradise soils are well suited for agriculture although low water holding capacity is a restriction. Cultivated and irrigated sites are planted to tree fruits, vineyards or are used for intensive vegetable production.

Tomlin (TM)

Tomlin soils have developed in deep, moderate coarse to coarse-textured, stony and gravelly fluvial fan deposits. Surface and subsurface textures are usually gravelly sandy.

Subsoils are gravelly loamy sand or very gravelly sand. These soils occupy moderate to strong slopes.

The soils are well to rapidly drained, rapidly pervious, have low water storage capacity and slow surface runoff. Organic carbon is low to very low between 0 and 50 cm. The soils are moderately suited for agricultural crop production. Limitations include low water holding capacity, stoniness and, in places, adverse topography. A significant portion is either planted to orchards and vineyards or is used for forage and grazing.

Trepanier (TR)

Trepanier soils occur only in a few small areas near Trepanier Creek and Lakeview Heights. They occupy gentle to moderate and have developed in stone-free, medium to moderately coarse textured, usually stratified fluvioglacial deposits. The surface and subsurface texture is generally loam with variations to fine sandy loam or silt loam. The subsoils contain lenses of fine sand or, occasionally, silty clay loam.

Trepanier soils are well drained, are moderately pervious, and have moderate to high water holding capacity. Organic carbon is very low between 0 and 50 cm. The soils are well suited for mostly climatically adapted crops although in some areas adverse topography may be limiting. Cleared and cultivated areas are mostly planted to orchards and vineyards.

2.2 Climate Capability for Agriculture

The climate capability for agriculture is Class 5 without irrigation. With irrigation, the land is improved to Class 1, with limitations due to insufficient accumulation of heat units above 5 Celsius during the growing season. There is 2060 to 2225 growing degree days and greater than 150 frost free days. The land has moderate to good air drainage, and the climate can support perennial fruit crops or grapes. The land is 495 meters in elevations. This elevation is considered one of the higher elevations at which tree fruits and grapes are grown in the Okanagan.

2.3 Agricultural Capability

The agricultural capability of the land is limited by aridity, stoniness and topography.

The eastern portion of the property is considered Class 4, due to aridity. With irrigation the land would still be considered Class 3 and could be improved to Class 2 with topsoil amelioration.

The western portion and land in the middle of the Site are considered Class 4 due to stoniness and aridity. With irrigation the land would still be considered Class 3 and could be improved to Class 2 with topsoil amelioration.

The northern portion of the land is considered Class 5 due to topography (steepness of the slope), stoniness and aridity. With irrigation, decreased slope, intensive management, and a crop selection that is particularly adapted to the conditions, this area may be improved to Class 3 due to aridity (the sandy and gravelly nature of the soil) and the stoniness of the land. Imported topsoil would also improve the land capability class.

The southern portion of the land will remain a trucking yard and shop for Civil-X Contracting Ltd.

The limiting agricultural use of this property is very sandy soil. The genesis of these soils did not allow for much or any organic matter in the soils. Any brown coloration in the soils is due to oxidized minerals contained in the parent materials, rather that the presence of aged organic matter.

Stoniness is overly apparent and stones larger than 30 centimeters in diameter are present throughout. Stone removal or imported topsoil would need to take place before any agriculture could take place.

Table 2 - Land Capability Classes

Class	Description
1	Lands that are level or nearly level. The soils are deep, well to imperfectly drained under natural conditions, or have good artificial water table control, and hold moisture well. They may be managed for a wide range of field crops. Land in this class either has no or only very slight limitations that restrict its use for production of common agricultural crops.
2	Lands that are considered to have minor limitations that require good, ongoing management. Crop ranges are slightly restricted. Productivity is considered less than Class 1 land but crops can be managed with little difficulty. Land in this class has minor limitations that require good ongoing management practices or slightly restrict the range of crops, or both.
3	Lands that have limitations that require moderately intensive management practices or moderately restrict the range of crops or both. Land management practices are more difficult to maintain than those on Class 2 land. Land in this class has limitations that require moderately intensive management practices or moderately restrict the range of crops, or both.

4	Lands that have limitations which make it suitable only for a few crops or the yield for a wide range of crops is low, or the risk of crop failure is high, or the soil conditions are such that special development and management practices are required. Land in this class has limitations that require special management practices or severely restrict the range of crops, or both.
5	Lands that have limitations that restrict its capability of producing perennial forage or other specially adopted crops. Class 5 lands can be used for cultivated field crops provided unusually intensive management is employed and/or the crop is particularly adapted to the conditions. Land in this class has limitations that restrict its capability to producing perennial forage crops or other specially adapted crops.
6	Lands that provide sustained natural grazing for domestic livestock and are not arable in their present condition. Land is placed in this class because of severe climate, or terrain is unsuitable for cultivation or use of farm machinery, or the soils do not respond to intensive improvement practices. Some unimproved Class 6 lands can be improved by draining, dyking and/or irrigation. Land in this class is non-arable but capable of producing native and / or uncultivated perennial forage crops.
7	Lands that are lands that are not included in classes 1 to 6. Class 7 lands may have limitations equivalent to Class 6 but does not provide natural sustained grazing for domestic livestock due to unsuitable natural vegetation. Also included are rocky land, other nonsoil areas and small bodies of water. Some unimproved Class 7 land can be improved by draining, dyking, irrigation and / or leveling. Land in this class has no capability for arable culture or sustained natural grazing.

Irrigation Water

The land needs to be irrigated to produce agricultural crops. Water is available for irrigation through the Trepanier Ditch Water Users Community. The water for this community is taken from Lacoma Lake.

3 Closure

This report has been prepared by Okanagan EHS Ltd. (OE) exclusively for Civil-X Contracting and the conclusions made in this report reflect OE's best judgment in the light of the information available at the time of preparation. No other warranty, expressed or implied, was made. Any use which a third party makes of this report, or any reliance on or decisions to be made or actions based on this report, are the responsibility of such third parties. OE accepts no responsibility for damages, if any, suffered by a third party as a result of decisions made or actions based on this report.

Respectfully Submitted,

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4 Reference list

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