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Report on Preliminary Reconnaissance of Coal Exploration Licence areas in the Whitehorse Trough, North-Central Yukon, 2017.

Submitted to:

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1 Introduction

2560344 Ontario Inc. has recently acquired the coal exploration licences and leases formerly owned by Pitchblack Resources Inc. which includes the Division Mountain property and numerous other coal occurrences in the northern portion of the Whitehorse Trough in north-central Yukon.

Other than within the Division Mountain area, there has been limited exploration in this coal basin since Cyprus Anvil Mining Limited operated coal mines in the Carmacks area in the 1980's. One exception was Cash Resources Inc. completed a small drill program east of Tantalus Butte coal mine, which was supervised and reported by Carne (2006).

Therefore there is limited company information on known coal prospects and the coal bearing stratigraphy within the exploration licences other than at Division Mountain coal region and areas proximal to the former Tantalus coal mine operations near Carmacks.

The coal exploration licences are of significant extent (604,191 hectares) and cover a majority of the coal basin stratigraphy in the central to northern portion of the Whitehorse Trough extending from Braeburn in the south to Five Finger Rapids in the north, and Walsh Creek area in the east (see Figure 1).

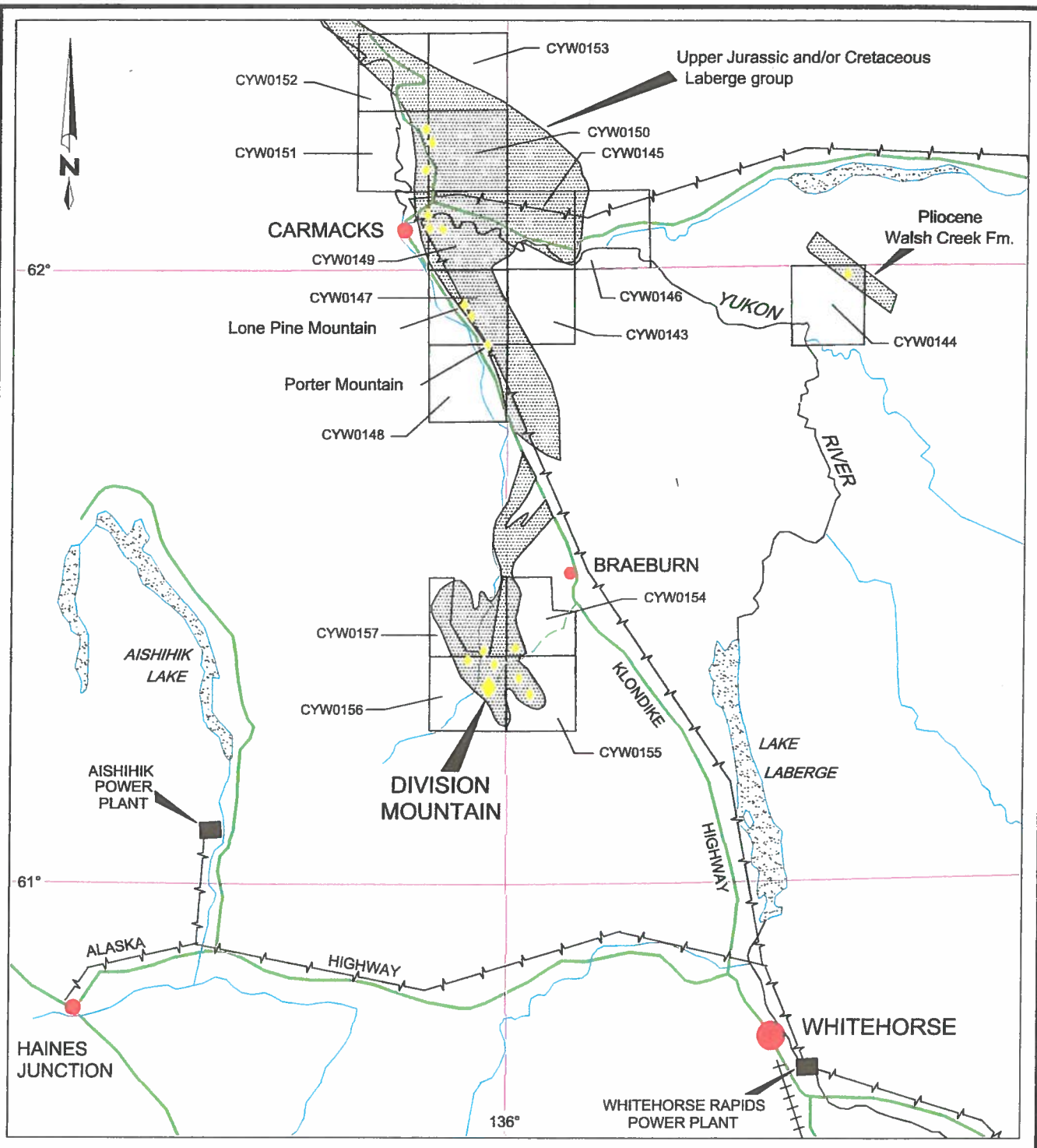
As a result, 2560344 Ontario Inc. engaged Mr. Kevin Brewer, P. Geo. of 39627 Yukon Inc. to conduct a preliminary reconnaissance of these coal exploration licences in north-central Yukon and design a small exploration program for late 2017. The focus of the work was designed to examine the coal licence holdings other than those at Division Mountain to provide a preliminary perspective on their exploration potential. Mr. Brewer also conducted a reconnaissance of the Division Mountain area to gather specific site knowledge in order to design a proposed exploration program that would follow up on recommendations by Gish (2000), Carne (2006), and Norwest (2005, 2008) that proposed to conduct additional work to the southeast and west of the coal leases for the possible existence of additional coal resources thought to occur in those areas of Division Mountain and to further examine possible coal bearing strata at Hull Mountain and Corduroy Mountain.

In addition, Dr. Chris Hale of Intelligent Exploration Inc. accompanied Mr. Brewer during part of the field visit to assess the potential to use geophysical techniques to delineate coal bearing strata in the region and has provided a separate field memorandum to 2560344 Ontario Inc. on his findings.

The reconnaissance program was conducted during the period June 13 – 27, 2017. The following is a summary of key findings during the visit and recommendations for further exploration activities in 2017 or beyond.

2 Coal Exploration Licence Holdings

As previously noted, the coal exploration licence holdings recently acquired by 2560344 Ontario Inc. in Yukon are extensive (see Figure 1). Although not continuous, the current licence holdings cover a significant portion of the central and northern part of the Whitehorse Trough covering a majority of the known coal stratigraphy. The total land holding in 14 exploration licences totals approximately 244,507 acres (604,191 hectares).



COAL OCCURRENCE

WHITE PASS RAILWAY

EXISTING ELECTRICAL GRID

HYDROELECTRIC DAM

HIGHWAY

CYW0004 COAL EXPLORATION LICENCE

COAL BASIN

0 10 20 30 40 50km

FIGURE 1

2560344 Ontario Inc.
DIVISION MOUNTAIN
EXPLORATION LICENSES

DATE: 03/07/2005

K. Brewer P.Geo.

The holdings comprise of three contiguous block holdings, namely: (i) The Division Mountain Block; (ii) The Carmacks Block; and (iii) the Walsh Creek Block.

2.1 Division Mountain Block

The Division Mountain Block is the southernmost block holding and is currently the most important as it hosts the Division Mountain coal deposit as well as some other prominent coal occurrences at Corduroy Mountain, Vowel Mountain, and Cub Mountain. This area has had the greatest concentration of exploration conducted in the region in the past two decades by Cash Minerals Ltd. later renamed to Cash Resources Ltd. and was subject to feasibility and engineering studies.

This block comprises of four (4) exploration licences as follows:

Coal Exploration Licences	Hectares	Expiry Date	NTS Map No.
CYW0154	38876	2019/09/07	105E05 NW
CYW0155	46093	2019/09/07	105E05 SW
CYW0156	44150	2020/03/06	115H08 SE
CYW0157	21279	2020/03/06	115H08 NE

Coal Mining Leases	Acres	Expiry Date of Holding
CMW3000	607.3	April 18, 2038
CMW3001	640.0	April 18, 2038
CMW3002	372.9	April 18, 2038
CMW3003	208.9	April 18, 2038
CMW3004	89.4	April 18, 2038

The leases overlap licence CYW0156 which covers the known reserves and resources of the Division Mountain coal deposit. There are approximately 1,918.5 acres of coal leases and 150,398 hectares of land covered by the exploration licences.

2.2 Carmacks Block

This is the largest contiguous holding of coal exploration licences of the three block areas. The area is significantly important as the licences:

- Include the former open pit mines of Tantalus Butte by Cyprus Anvil Mining Limited;
- Are immediately adjacent to the north and the east of the former Tantalus Butte underground mine (also operated by Cyprus Anvil Mining Limited);
- Include the Tantalus South showing that is immediately south of the former Tantalus underground coal mine;
- Include the former workings and a small adit at the Five Fingers Showing which is an area that has been highlighted by the Yukon Geological Survey as having good potential for conventional and unconventional hydrocarbon resources;
- Include other reported coal showings (Hlavay etc,.);
- Covers a majority of the coal bearing strata of both the Tantalus and Tanglefoot Formations north and east of the community of Carmacks; and,

- Many of the coal occurrences in the northernmost licence area are of interest as historic sampling and testing of these units by other parties have identified that the coal in these areas may be of higher quality as compared to that found at Division Mountain.

Documentation of the Tantalus operations and exploration in the region is fairly detailed although the exact locations of former grids is difficult to discern. This block also includes the area immediately east of Tantalus Butte where a small drill program comprising of six short holes was conducted by Cash Minerals Ltd. and reported by Carne (2006).

The coal holdings in this block are as follows:

Coal Exploration Licences	Hectares	Expiry Date	NTS Map No.
CYW0143	40120	2018/09/06	105E13 NW
CYW0145	44374	2018/09/06	105L04 SW
CYW0146	30833	2018/09/06	105L04 SE
CYW0147	36047	2018/09/06	115H16 NE
CYW0148	38067	2018/09/06	115H16 SE
CYW0149	40707	2018/09/06	1115I01NW
CYW0150	44666	2018/09/06	1115I01NE
CYW0151	44636	2018/09/06	1115I01 SE
CYW0152	44574	2018/09/06	1115I08 SE
CYW0153	44688	2018/09/06	1115I08 SW

The holdings in this area comprise a total of 408,712 hectares.

2.3 Walsh Creek Block

The Walsh Creek block comprises of a singular exploration licence that is isolated and only accessible by helicopter. The licence reportedly covers the Pliocene age Walsh Creek Formation and occurrences of coal were documented to have been observed in creeks.

Coal Exploration Licence	Hectares	Expiry Date	NTS Map No.
CYW0144	45125	2018/09/06	105E15 NW

The holding in this area comprises a total of 45,125 hectares.

3 Program Objectives

The key program objectives were as follows:

- Provide a preliminary assessment of the exploration potential for coal resources within the coal exploration licences in the central-north portion of the Whitehorse Trough;
- Outline specific areas best suited to conduct the 2017 exploration program; and,
- Provide recommendations on current and proposed future status of the coal exploration licences.

4 Geology

The Whitehorse Trough is a northwest-trending, fore-arc basin comprised of Mesozoic volcanic and sedimentary rocks (See Figure 2). The Whitehorse Trough constitutes the northern end of the Intermontane Belt of the Canadian Cordillera. The Whitehorse Trough sequences are bounded by the Omineca Crystalline Belt to the east and the Coast Plutonic Complex to the west. The Trough hosts significant coal-bearing strata which was actively mined in the 1960's and 1970's in the Carmacks area (i.e. Tantalus Butte and Tantalus Mines) and has undergone extensive exploration for coal with significant resources identified at Division Mountain.

During Late Triassic time an island arc assemblage consisting of a 7,000 m thick succession of Lewes River Group aphyric to augite-phyric basaltic andesite flows, breccias and tuff, conglomerate, wacke, limestone and shale was deposited within Whitehorse Trough. Succeeding Jurassic basin-fill stratigraphy is more complex due to disconformities and hiatus in sedimentation and to diachronous or inter-fingering relationships in the shallow water and nearshore facies. In general, two sequences are present: Lower to Upper Jurassic conglomerate and sandstone turbidites of the marine to deltaic Laberge Group; and, Upper Jurassic to Cretaceous conglomerate, sandstone, mudstone and coal of the largely alluvial Tantalus Formation.

Whitehorse Trough stratigraphy can be divided using major bounding disconformities between distinct sedimentary sequences deposited along the basin margins (see Figure 3). These sequences are the Lewes River Group shallow marine carbonate and clastic rocks; Laberge Group conglomerate and sandstone turbidites; and the Tantalus Formation, a largely alluvial package of chert pebble conglomerate, sandstone, shale and coal.

The Lewes River Group represents to oldest stratigraphy within the Trough consisting of Upper Triassic to Jurassic volcaniclastic conglomerates overlain by alternating lenses of greywacke and limestone.

The Laberge Group is subdivided into the following formations: (i) Conglomerate Formation, Hettangian to Bajocian in age, and consisting of polymitic cobble-boulder conglomerates dominated by granitic to granodioritic clasts; (ii) Richtofen Formation, Hettangian to Bajocian in age, and consisting of interlaminated black shale and wispy silt to fine sandstone laminae; and (iii) the Nordenskiold Dacite, of Sinemurian to Toarcian age, and consisting of thick epiclastic and primary dacite tuffs and flows.

In the Division Mountain area, the stratigraphy encountered within the coal measure is comprised of three distinctive lithologies; coal bearing strata within the Tanglefoot Formation; the underlying Richtofen Formation; and intrusive andesite bodies (Gish, 1995).

In the Carmacks area and north, the stratigraphy encountered within the coal measure is comprised of the Tantalus Formation.

The Tanglefoot and Tantalus Formations are the units with the greatest significance for the exploration of coal and will now be briefly described.

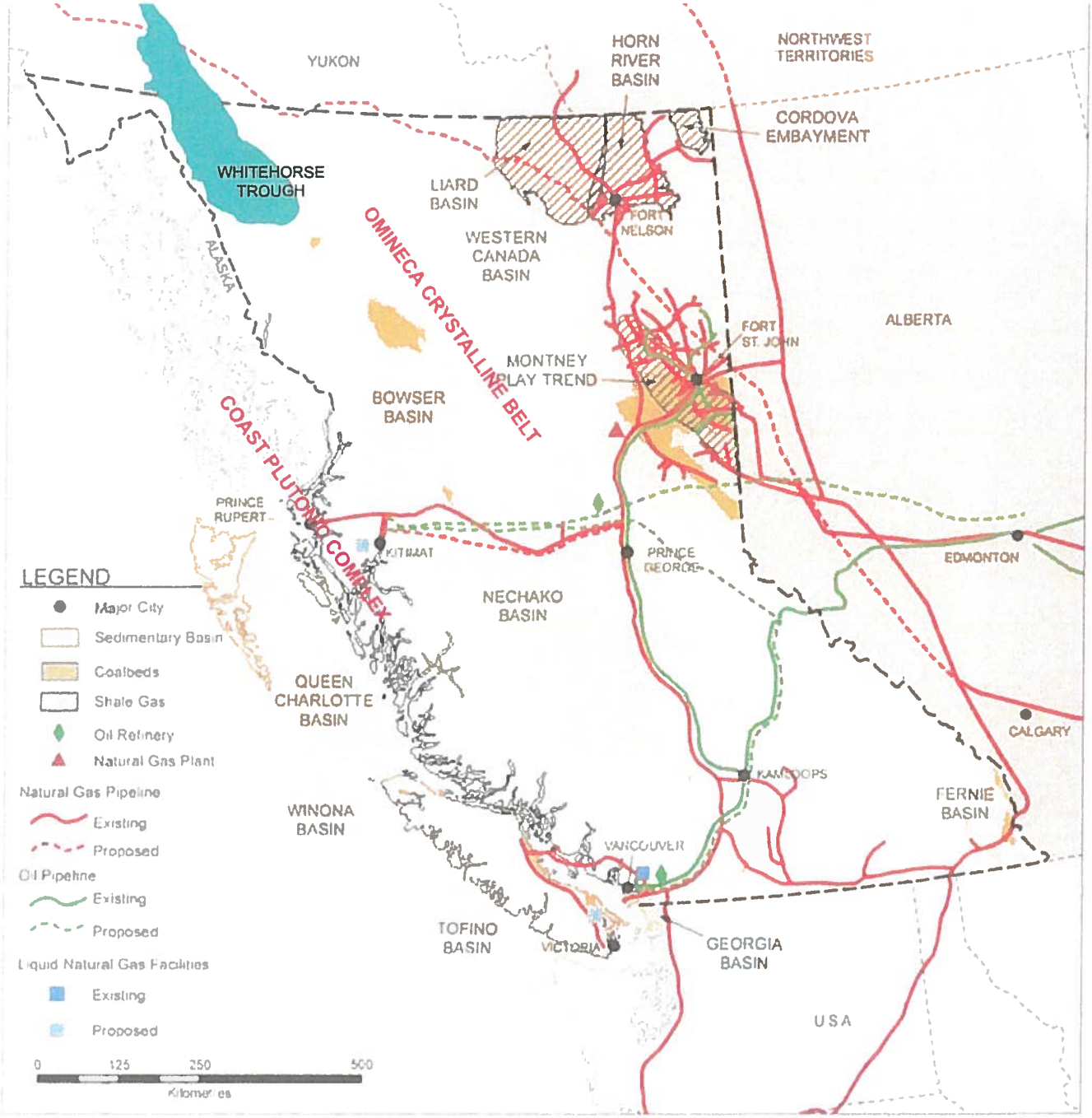


FIGURE 2	
2560344 Ontario Inc. MAP OF WESTERN CANADA CORDILLERA, SHOWINS LOCATION OF WHITEHORSE TROUGH AFTER YGS. MR6	
DATE: 01/05/2017	K. Brewer P.Geo.

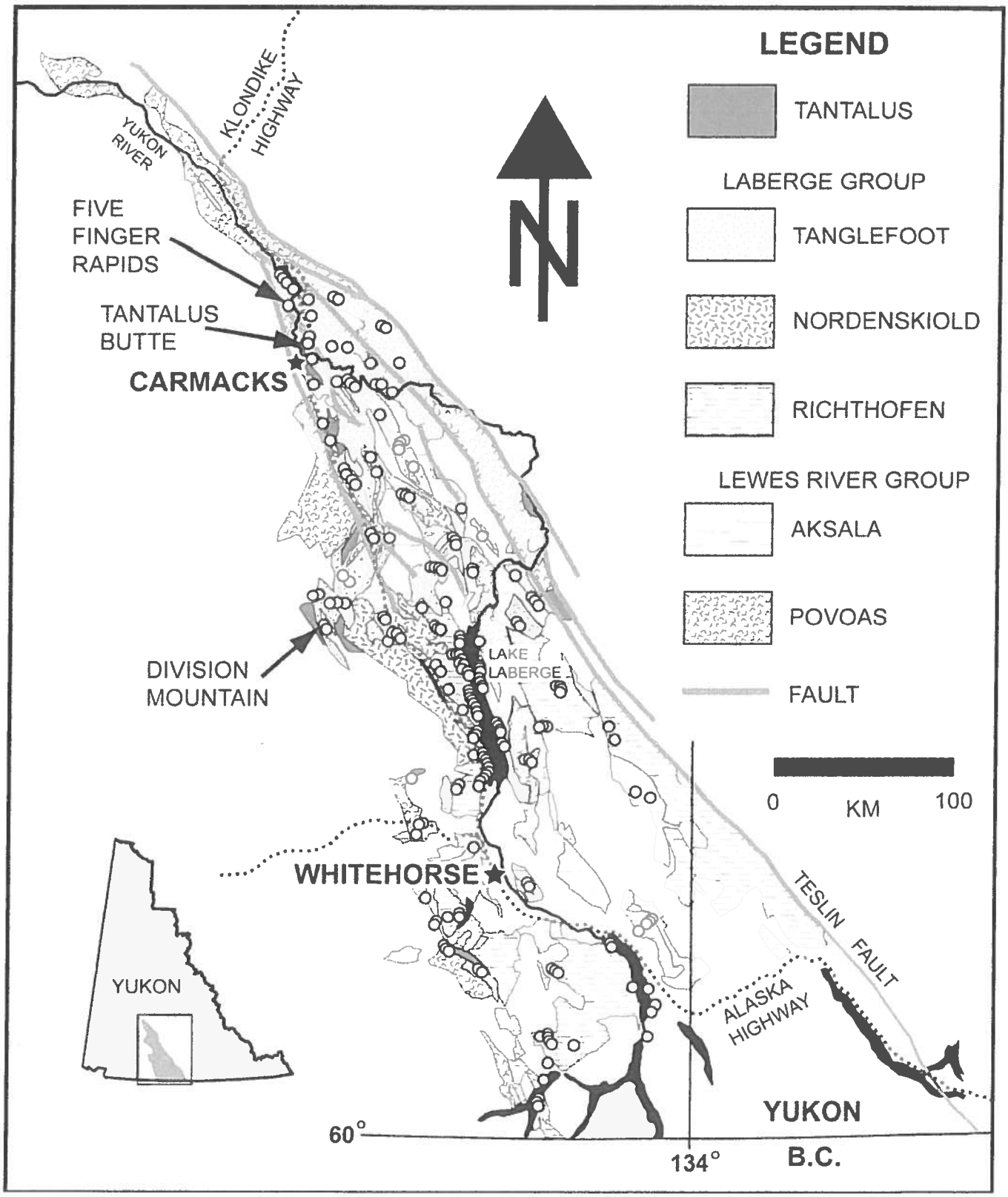


FIGURE 3	
2560344 Ontario Inc. GENERAL GEOLOGY MAP OF WHITEHORSE TROUGH YUKON (After Colpron et. al. 2000)	
DATE: 01/05/2017	K. Brewer P.Geo.

4.1 Tanglefoot Formation

The Tanglefoot Formation is the main coal-bearing unit at Division Mountain and is an important unit for potential coal bearing strata throughout the Whitehorse Trough.

The Tanglefoot Formation occurs as fining-upward cycles of sub-rounded, clast-supported quartz granule conglomerate, brown coarse-grained sandstone and chocolate brown siltstone that often contains plant fossils; and black shale, coaly shale, shaly coal and coal (Gish, 1995). Contacts vary from gradational over several meters to sharp. Thicknesses of all of the constituents of an individual cycle and the number of cycles encountered per drill section vary greatly (Gish, 1995). Often a unit of grey arkosic sandstone with 2 to 8 mm angular rip-up clasts of coaly shale and/or shale lies between the lower contact of the earliest coal-bearing cycle and the Richtofen Formation (Gish, 1995). Fone-grained lithologies include carbonaceous silty mudstone, silty mudstone and shale, grey laminated siltstone and light to medium grey fine to medium grained sandstone and coal (Allen, 2000). The silty mudstone and siltstone are olive-grey to dark grey on the fresh surface , crumbly to platy and parallel laminated (1 to 5mm) with sandstone laminae 92 to 10mm) comprising up to 80% of the rock. Beds are massive to planar parallel to cross stratified with steep dips.

The depositional environment was one of a broad coastal zone characterized by tidal marshes and high-constructive river-dominated deltas (Lowey, 2008). Rapidly aggrading flood-dominated delta. Cross-bedded conglomerate-sandstone cycles represent point-bar deposits from a high energy fluvial system. Paleocurrent variance supports a meandering river interpretation. Of particular interest is that, despite the generally coarse-grained nature of the channel sandstones and conglomerates, the overbank deposits and related coals are relatively thick and demonstrate remarkable lateral continuity. The coal seams were deposited in long-lived delta plain swamps that served as collection sites for transported organic material and for generation of peat bogs. Closer to the Tanglefoot-Tantalus contact, coal becomes less abundant in the Division Mountain area. Instead, grey shale and coaly shale predominates as much thinner beds than the coal seams lower in the succession.

Resistant beds of thick-bedded chert pebble conglomerate of the Upper Jurassic to Lower Cretaceous Tantalus Formation cap the Tanglefoot Formation coal-bearing sequence. The depositional environment of the Tantalus Formation appears to be one of an active flood plain. Coal float has been found in the vicinity of gopher holes in areas underlain by the Tantalus Formation at Division Mountain and Red Ridge but to date none has been found in bedrock.

4.2 Tantalus Formation

The Tantalus Formation (Middle Jurassic-Lower Cretaceous) overlies unconformably with the Tantalus Formation, the uppermost sequence of the Laberge Group. The Tantalus Formation occurs as thickly bedded (5 to 30 m) massive to low-angle cross-bedded conglomerate with lesser sandstone and shale. The overall color of this unit is light-grey to yellowish grey except where locally bleached or iron-stained. The conglomerate beds are resistant, forming mountains of vertical to near-vertical beds with a ribbed (or corduroy) appearance. Conglomerate beds are typically moderate to well sorted and crudely bedded. Graded beds, as well as fining and less often coarsening up successions, are common in the conglomerates. These characteristics are marked by changes in clast size and abundance. Matrix-supported conglomerates contain up to 40% chert clasts averaging o.5 to 4.0 cm across.

This formation is at least 1000 meters thick and occurs widely scattered throughout the Whitehorse Trough and represents sedimentation in fluvial and lake environments. It is significant in the Carmacks region as it is host to the major coal deposits mined at Tantalus Butte and Tantalus and the Tantalus South coal occurrence. The Formation also hosts muddy coal at Corduroy Mountain (Long, D., 1997).

5 Results

5.1 Division Mountain Block

5.1.1 Background

Coal was discovered in the Division Mountain area at the turn of the century. Cairnes (1908) identifies three coal seams near Teslin Creek and one at the base of Vowel Mountain (Red Ridge). The area then lay dormant until the early 1970's and has been intermittently explored.

Recent exploration in the late 1900's and to 2008 at Division Mountain has been directed toward outlining sufficient resources to support an export coal mine and/or a 20 to 50 megawatt (MW, net) generating station for a period in excess of twenty years. Exploration on the property occurred between 1972 and 2008, and has comprised of 10.2 kilometers of excavator trenching, 68 diamond drill holes totaling 11,442 meters, and 20 reverse circulation percussion drill holes totaling 1,869 meters.

Exploration to date at Division Mountain has identified a historic probable reserve of 26.4 million tonnes and a historic measured resource of 52.5 million tonnes (Mt) of high Volatile "B" Bituminous coal. The Division Mountain deposit remains open to the southeast, north, and west. Approximately 47.2 Mt of the resource falls into the area covered by the five coal leases while 5.3 Mt lie just to the southeast of leases, on licenses also controlled by 2560344 Ontario Inc. It is proposed that the leases be extended to cover the entire deposit. The coal reserves are concentrated in a 50m interval in the uppermost portion of the Jurassic Laberge Group (Upper Member- Tanglefoot Formation) below the Tantalus Formation chert pebble conglomerates.

Further exploration by drilling or trenching efforts was recommended to explore potential areas for extension of the deposit to the southwest and unexplored areas to the west (Carne, 2006, Norwest Corporation 2005, 2008).

Reverse circulation percussion drilling, excavator and hand trenches have also exposed both coal and favorable stratigraphy within a 7.5 kilometer radius of the Division Mountain coal deposit. Geophysical surveys in this area have had limited success in identifying the coal resources.

Therefore, the preliminary reconnaissance efforts were aimed at identifying potential locations within the Division Mountain Block where access would be easy, topographical/site conditions are conducive for shallow drilling and/or trenching efforts, and areas proposed for further exploration by previous reports (Gish, 2000; Carne 2006; Norwest Corporation 2005, 2008) can be examined.

5.1.2 Site Access and Physiography

Field work was mainly by a combination of ATV access on trails combined with foot traversing. In the Division Mountain area, the historic Dalton Trail (parts of which are now named the Trans Canada Trail), parallel the west side of the Nordenskiold River and the western side of Braeburn Lake. The Dalton Trail provides limited access to the Corduroy and Hull Mountain areas as the trail is fairly overgrown and in paces covered with deadfall from old forest fires. A forest fire covered large portions of the Division Mountain are during the mid-1960's. Today these areas are covered with deadfall and dense secondary growth making traversing difficult. There is a large network of trails and grid lines in the immediate Division Mountain area. There are two main trails into the site, the northern trail is rather hilly and narrow in places and eventually ends at a westernmost point at a crossing of the Nordenskiold River and the nearby former camp site and drill core storage area and then also joins with a southern leading trail that extends southwards to the main trail network. The southern trail leads into the south central portion of the property and is a 4.0-5.0 meter wide trail in excellent condition and is recommended for use during the proposed 2017 exploration program.

Bedrock exposure is limited to less than 5%. Most streams and lower lying areas throughout the Division Mountain area are blanketed with thick glacial material. Best exposures of strata occur at Teslin Creek (the discovery area), in trenches and natural exposures, and on Division and Corduroy Mountains. Allen (2000) also notes that exposures exist at Joe Creek, Red Ridge Canyon and Vowel Mountain. Exposures tend to be scattered along ridge crests, grassy slopes, and canyons, where glacial material has been down cut or eroded.

Rounded hills with low to moderate relief cover most of the Division Mountain area and reflect the recessive strata of the Laberge Group and lower part of the Tantalus Formation (Allen, 2000). A few of the larger landforms such as Corduroy Mountain and the other mountains, are underlain by thick conglomerate beds of the upper part of the Tantalus Formation and typically have higher elevations ranging from 750 to 1570 meters. Overall, the ground is heavily vegetated except for south-facing slopes that are typically grass to aspen and polar covered, providing patchy exposure.

A major watercourse in the area includes Klusha Creek. This watercourse is small compared to the valley that it occupies, as this valley and the adjacent Nordenskiold Valley on the west side of Division Mountain, were sites of large meltwater channels during the McConnell glacial period in the late Pleistocene (Klassen and Morrison, 1987; Hughes, 1989) that extend 1-2 km across the valley bottoms covering potential bedrock exposures. As ice retreated following the last glaciation, glaciofluvial plains were down-cut in responses to base level changes, leaving behind the steeped terraces that form the valley walls. This makes exploration challenging in the Division Mountain area as the valley area contains numerous marsh, small ponds and wetland areas that could only be accessed under winter conditions and are of sensitive ecological concern as they provide habitat for numerous bird species. In addition the valley sides although they can be accessed in places are characterized with in excess of 60 meters of glacial cover as was intersected by Cash Resources Ltd. in a drill campaign at Hull Mountain and along Klusha Creek. This is particularly challenging for exploration on the west side of Corduroy Mountain and Hull Mountain areas.

5.1.3 Division Mountain - Local Geology

The Tantalus Formation forms both Division Mountain and Corduroy Mountain (See Figure 4). This Formation occurs as a steeply dipping syncline to form Division Mountain. At Corduroy Mountain, the Tantalus Formation forms a steeply dipping homocline (?) that dips to the northeast (Allen, 2000). The east side of Corduroy Mountain is faulted, otherwise it may have formed a syncline (Allen, 2000).

The Tanglefoot Formation (Tempelman-Kluit, 1984), occurs on the south side of Klusha Creek and also continues as an anticline between Division and Cub Mountains (Allen, 2000). In the Division Mountain area it is subdivided into two mappable units named to lower and upper members (Allen, 2000).
The Lower Member of the Tanglefoot Formation consists of repeated fining-upward sequences on the order of 25cm to 7.5m, averaging 1-2 m thick. These successions typically consist of pebbly conglomerate or grit at the base, and fine sandstone or siltstone at the top. The conglomerate is heterolithic with an overall color of light olive-grey to yellowish-grey and locally weathers dark brown. Clasts, ranging from granules up to boulders 30 cm across, including vein quartz, buff to dark grey mudstone, as well as felsic granitic, metamorphic, and volcanic lithologies are found within the conglomerate. Coal was not observed in this member in the Division Mountain area (Allen, 2000).

The Upper Member of the Tanglefoot Formation consists of very coarse to fine grained sandstone, carbonaceous shale, and coal. Coal seams occur throughout the 450 meter thick Tanglefoot Formation but to date the thickest and most continuous accumulations of coal in the Division Mountain area are found to be present near the base of the Tanglefoot Formation. Strata associated with the coal measures are distinctive from other lithologies in the Division Mountain area (Allen, 2000), including sandstone, grit and pebbly conglomerate that are typically bleached white, although locally the matrix is medium to dark-grey. The composition of these lithologies is primarily quartz (60-90%) and K-feldspar (10-25%) with rare plagioclase. The granules are subangular to round and poorly to well-sorted. Within the pebbly grit, grains reach up to 1 cm across and occupy approximately 5% of the rock. The sandstone, medium to light grey on the fresh surface, possess a white to orange chalky matrix between the grains. A small percentage (1-2%) of tiny macerated plant debris (1-2mm) occurs scattered in the sandstone.

5.1.4 Exploration Options – Division Mountain Area

Exploration options were examined in three areas of the Division Mountain Bock, namely (i) southeast and western portions of the former Division Mountain grid; (ii) west and northwest area at Corduroy Mountain; and (iii) western side of Hull Mountain.

5.1.4.1 Division Mountain

Previous exploration efforts have concluded that the Division Mountain coal deposit remains open to the southeast, west and north of the currently identified resource. In the north, the terrain is more topographically challenging. However, in both the southwest and west-central portions of the property has good access via the main trail that is generally 5 meters wide and in good condition, complimented with the historic grid lines and trench areas. The grid lines are generally overgrown but can be cleared with relative ease to provide access for trenching and/or drilling activities to unexplored areas of the property. Also the area is elevated topographically from the Klusha Creek valley and is therefore not subjected to any of the issues and challenges for exploration activities present in that area.

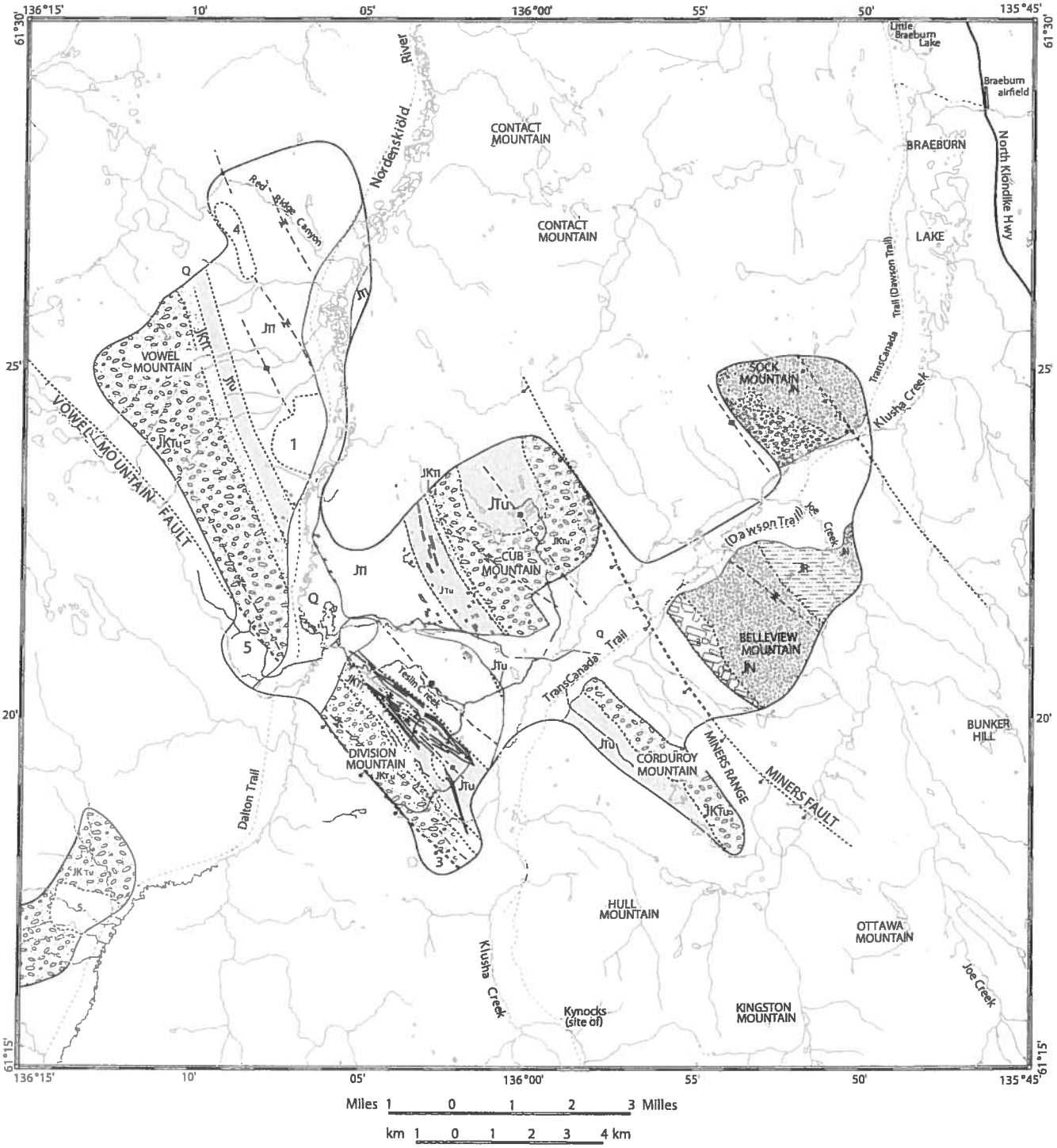


FIGURE 4

2560344 Ontario Inc.
GEOLOGICAL MAP OF THE DIVISION MOUNTAIN AREA AFTER ALLEN (2000)

DATE: 01/05/2017	K. Brewer P.Geo.

It is therefore quite possible to extend the existing former grids to both the west and southeast to explore areas recommended by Carne (2006) and Norwest Corporation (2005, 2008). Prior to heavy equipment being brought into the area, it will be necessary to clear the grids with a line cutting crew. If a RAB drill is available, the width of grid lines can be limited to less than 4 meters. If a trenching program is conducted, wider access will have to be provided for an excavator.

5.1.4.2 Corduroy Mountain

Corduroy Mountain (Minfile 105E 022, see Table 1 for coordinates) is located approximately six (6) kilometers east-southeast of the Division Mountain deposit (See Figure 4). Previous exploration efforts concluded that Tanglefoot Formation stratigraphy exposed by trenching on the west side of Corduroy Mountain in 1997 was the same stratigraphy exposed at Cub Mountain 5 kilometers along strike to the northwest.

Trenching during 1999 in the vicinity of Cub Mountain and Corduroy Mountain exposed northeast-dipping coal and Tanglefoot Formation stratigraphy. At Corduroy Mountain a 360 meter long trench uncovered an aggregate coal thickness of 23 meters in 25 coal seams, the thickest seam being 3 meters (Gish, 2000). Drilling in that same year below the excavator trench, exposed several additional coal seams with one hole returning an aggregate thickness of 17.96 meters of coal. This coal sequence was thought to possibly be a fold repeat of the coal-bearing Division Mountain and Cairnes Syncline Tanglefoot Formation sequences. Gish (2000) recommended that further excavation trenching should be used to define targets for resource definition.

The rocks strike 130 to 150 degrees and dip 45 to 85 degrees to the northeast. Due to overburden thickness which exceeded the 6 meter limit of the excavator, the most favorable part of the lower Tanglefoot stratigraphy at Corduroy Mountain was not explored (Gish, 2000).

To date there has been some success in trenching efforts in the transition zone between the valley floor and the valley walls in an area west of Corduroy Mountain where there is a larger area of drier ground that is good for equipment access and exposures can be found in areas of shallower glacial cover in close proximity to previous trenching areas and also slightly to the east at the base of the valley wall.

5.1.4.3 Hull Mountain

Hull Mountain is located approximately 4 kilometers southeast of Division Mountain (see coordinates Table 1 and Figure 4). In 2006, the Hull Mountain area was selected as a target for reverse circulation drilling to assess whether the relatively abundant and thick coal seams of Division Mountain continued beneath Klusha Creek Valley. A track-mounted percussion drill was used. Three holes were attempted but none were completed through the overburden that exceeded 20 meters in thickness. Notwithstanding the failure of that drill program, further exploration in the form of geological mapping and excavator trenching was recommended on the northwest slope of Hull Mountain where depths may be thinner (Carne, 2006) and he proposed a return to the original drill sites with a more robust drill.

Access to the area is marginal as even though the historic Dawson Trail (parts of which are called the Trans Canada Trail) transects this portion of the property, it is rather marshy and access is limited to ATV only. Only under winter conditions, would it be possible to transport heavier equipment such as a drill into the area on frozen ground, but in all other seasons access by an excavator or drill would only be possible with significant upgrading of the trail and installation of ground drainage systems.

The three diamond drill hole locations were identified during recent reconnaissance efforts. The drill holes were all located at the base of the northwestern slope of Hull Mountain. To the immediate west of these locations is a large wetlands which offer no potential for siting of a drill or trenching. To the immediate east and north of the hole locations, elevation increases rapidly and the slopes are comprised of a thick glacial till cover.

Hull Mountain has a very limited transition area between the wetlands and the valley walls and efforts and appears to be challenged with a thick glacial cover throughout. Therefore, the author does not see trenching as a viable option for exploration moving further east or north as in the Hull Mountain area as one would only encounter the thick (estimated >50m) glacial cover that would not be indifferent from previous exploration efforts in that area. The only option for further exploration in this area would be to either return to the original drill sites with a robust drill as was recommended by Carne (2006) or conduct a winter exploration program in the wetlands area with special protections built in to ensure operations do not adversely impact the local ecology, both of which are beyond the budgetary means of the proposed 2017 exploration program.

5.2 Carmacks Block

As previously noted the Carmacks Block extends from 30 km south of the community of Carmacks, 35 kilometers eastwards paralleling the Robert Campbell Highway and for in excess of 25 kilometers northwards transected by the Dawson Highway. It is the most extensive contiguous holding of the coal exploration licences in the Whitehorse Trough, north-central Yukon.

5.2.1 Town of Carmacks

Carmacks is a community in the Yukon with about 500 year-round residents. Visitor services include hotel rooms, a service station, a convenience and grocery store, and a government campground.

Carmacks is located at the confluence of the Nordenskiold and Yukon Rivers. The community is 180 kilometres north of Whitehorse and 360 kilometres south of Dawson City on the Dawson (North Klondike) Highway. Passing through Carmacks will take you across one of 4 bridges that cross the Yukon River. From Carmacks you can also drive the Robert Campbell Highway which takes you to the communities of Faro, Ross River and eventually south to Watson Lake.

Named after George Washington Carmack, one of the co-discoverers of the gold that sparked the Klondike Gold Rush, Carmacks is located on the shore of the Yukon River. The community got its start when Carmack found two seams of coal nearby—one at Five Finger Rapids and the other near Tantalus Butte. He built a cabin and dallied in a little mining and fur trading before quitting the place for the venture that eventually led to the discovery on Bonanza Creek near Dawson City in 1896.

With the onset of the Klondike Gold Rush, Carmacks prospered as a riverboat fuelling stop because it was roughly midway between Whitehorse and Dawson. It also served as a major stopping point on the Overland Trail that linked the two communities.

Carmacks is situated near the ancestral home of the Ts'awlnjik Dan First Nation and the approximate boundary between the Northern and Southern Tutchone First Nations. The history of these peoples stretches back more than 10,000 years. Archaeological sites in the Carmacks area have yielded fossils and tools related to the so-called "Microblade Peoples" who lived here after the last Ice Age ended between 8,000 and 4,000 years ago. Most of the tool implements dating from this era utilized small, replaceable blades called microblades that were inserted into tools made of bone or antler.

Today, the population of Carmacks numbers approximately 500. It is an important service stop and recreational centre for travellers on the Klondike and Campbell highways. The community has a hotel, restaurant, convenience stores, a gas station, school, campgrounds, community recreational centre, an outreach branch of the Yukon College, nursing station, and an RCMP detachment. It also has the administration office for the Little Salmon Carmacks First Nation (LSCFN). The Carmacks Development Corporation, a subsidiary corporation of the LSCFN is located in Whitehorse, Yukon.

Carmacks has over 90% of First Nations population the majority of which belong to the LSCFN. The local language of the LSCFN community is Northern Tuchone, which is carried on both by the elders and taught to all students at the local Tantalus Elementary/high School.

During the field reconnaissance, the accommodations at Carmacks were found to be quite comfortable and it served to be a base for work efforts while examining the Carmacks Block.

5.2.2 Background

Coal was previously mined within the Tantalus conglomerates 100 km to the north of Division Mountain in the Carmacks region at Tantalus Butte (underground and open pit mine operations) and at Tantalus. There was also limited historic coal production in the Five Fingers Area on exploration coal licence CYW 0151. The underground mine portals of the Tantalus Mines are not within the coal exploration licences. However the surface pits and geology associated with the Tantalus Butte open pit mines extend onto coal exploration licences CYW 0151 and CYW 0150.

Prior to the 1990's exploration activity for coal was also quite active in this area. Of particular interest was Tantalus South, an area immediately south of Tantalus on exploration coal licence CYW 0149 which was subjected to geological mapping, prospecting, geophysical investigations, trenching, and drilling. There was also a small two (2) drill hole program at Hlavay, and noted on other occurrences (i.e. Rink and Claire) within the Carmacks Block.

The Carmacks Block was of particular interest in this reconnaissance effort as:

- It has been subjected to historical commercial mining;
- Studies to date suggest that the coal quality improves in the northernmost sections of the Whitehorse Trough; and,
- There is relatively good access to most of the sites.

5.2.3 Access and Physiography

The Carmacks area is located within the Yukon Plateau-Central Ecoregion, an area of glaciated rounded and rolling hills, plateaus and broad valleys, and surrounded by higher mountain ranges. In contrast to the large open grassland areas and forest fire burnout areas in the Division Mountain area, the

Carmacks block is characterized with thick forests of lodgepole pine, spruce and aspen and in wetter areas by willows and alders.

Outcrop is uncommon because of the subdued topography and/or the extensive glacial till cover. Outcrops are more common in the higher plateaus above the broad valleys which host numerous lakes, small streams, and major rivers. The Yukon River bisects the entire ecoregion from south to north. The Nordenskiold and Big Salmon Rivers occupy northwest trending valleys.

Glacial till in the valley walls can often reach thicknesses in excess of 50 to 100 meters. Where glacial till or overburden is generally thin, a few centimeters of moss and organic material overlie 5 to 20 cm of white felsic volcanic ash (White River Ash, approximately 1,250 years old). This white ash is often underlain by tills generally 1-2 meters thick. Permafrost is at varying depths on most north facing slopes and at depth in other areas.

Access throughout this area was by truck on the extensive roads network, ATV trails, or by ground traversing. The Yukon River provides good access to some of the coal occurrences (i.e. Five Fingers and Rink), but unfortunately boat rentals were unavailable during the reconnaissance effort. It may be possible at certain times of the year to hire a local guide with a boat to facilitate observations of possible coal seams that may be exposed in the banks of the Yukon River.

5.2.4 Exploration Options – Carmacks Block

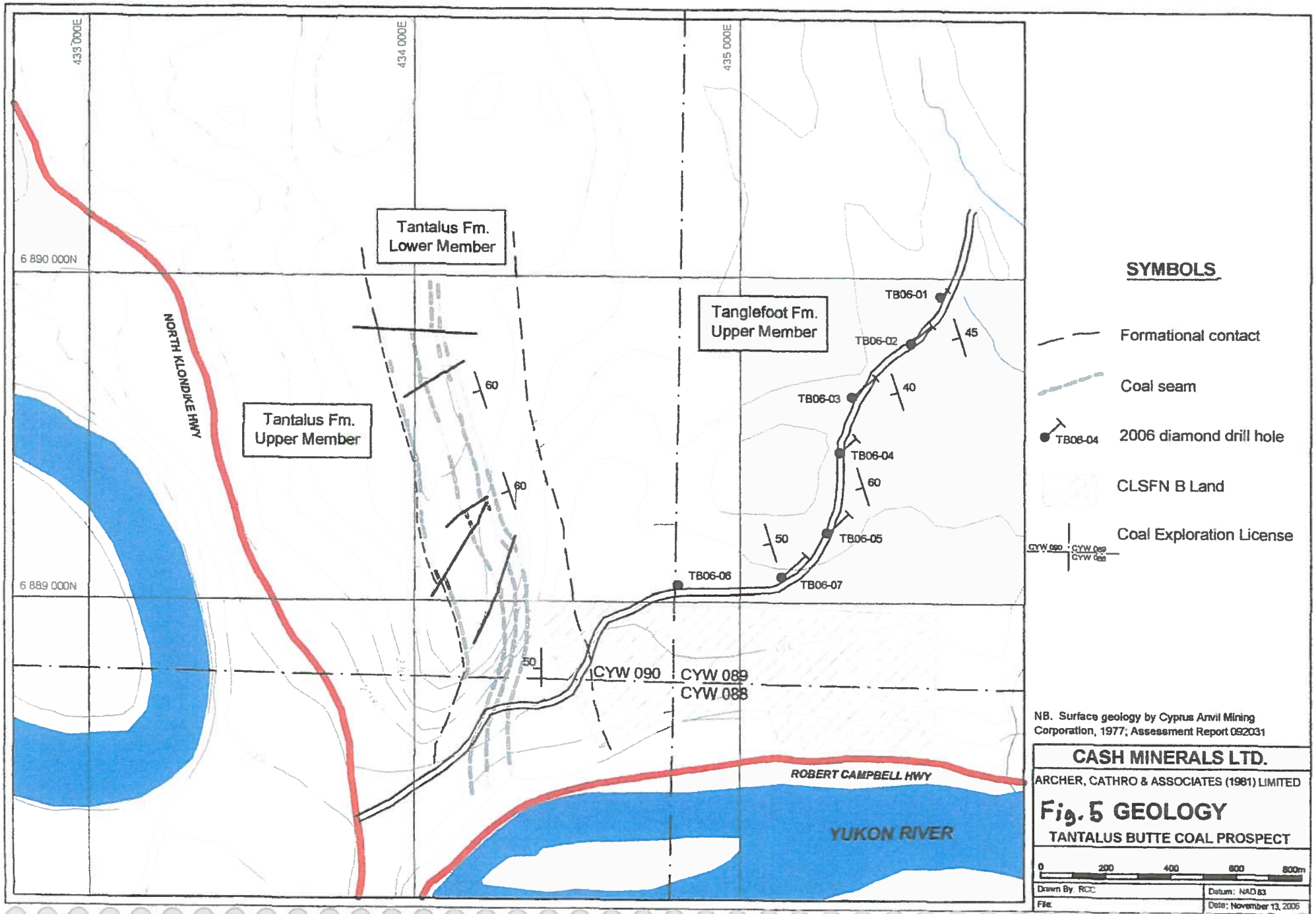
5.2.4.1 Tantalus Mines

The underground Tantalus Butte and Tantalus mines are not included within the coal exploration licences. These former mines indicate the possibility for additional resources of medium coal quality that may exist within the Tantalus Formation that is more found within the northernmost coal licences.

5.2.4.1.1 Tantalus Butte Underground Mine and Area

Approximately 500 meters north of the intersection of the Dawson Highway with the Robert Campbell Highway and thence 500 meters eastwards along a gravel road, the former adit and workings (see Plate 1, Appendix 1) of the underground Tantalus Butte Mine exist. The main coal seam at the underground Tantalus Butte was classified as non-coking, high-volatile bituminous B coal with an average analysis of 14% ash, 35% volatile, 51% fixed carbon and a gross calorific value of between 11,000 and 12,700 BTU. It was not of coking quality and occasionally was found to have a high ash content. Carne (2006) noted that the coal was agglomerating with a free swelling index of 1 and was not suitable for metallurgical coal. Coal waste on the surface appears to be of this quality.

The road then continues eastwards onto exploration licence CYW 0150. This area was subject to the 2006 drilling program, where six (6) short holes were drilled along the edge of the road to test the possible extension of Tantalus Butte coal seams to the east (see Figure 5). At each drill site the core is still contained within the core boxes in neatly stacked arrangements. The drill program provided a roughly complete stratigraphic section across the lower 450 meters of the Upper Member of the Tanglefoot Formation which is the stratigraphic interval that contains abundant coal seams in the Division Mountain area (Carne, 2006). However in this area, the coal is only present in the Tanglefoot Formation as relatively abundant detrital fragments in the coarser grained strata and as infrequent, very


433 000E
434 000E
435 000E
6 890 000N
6 889 000N
Tantalus Fm.
Lower Member
Tantalus Fm.
Upper Member
Tanglefoot Fm.
Upper Member
NORTH KLONDIKE HWY
ROBERT CAMPBELL HWY
YUKON RIVER
TB06-01
TB06-02
TB06-03
TB06-04
TB06-05
TB06-06
TB06-07
45
40
60
60
60
50
50
CYW 090
CYW 089
CYW 088
SYMBOLS
Formational contact
Coal seam
TB06-04
2006 diamond drill hole
CLSFN B Land
Coal Exploration License
NB. Surface geology by Cyprus Anvil Mining Corporation, 1977; Assessment Report 092031
CASH MINERALS LTD.
ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
Fig. 5 GEOLOGY
TANTALUS BUTTE COAL PROSPECT
0
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800m
Drawn By: RCC
Datum: NAD 83
File:
Date: November 13, 2006

thin seams of apparent poor quality (Carne, 2006). Carne concluded that there was little potential for significant coal resources in this region. The reconnaissance effort did not find any visible outcrops in the area and no evidence of any near surface coal seams. It is therefore proposed no further exploration in this area is warranted.

5.2.4.1.2 Tantalus Butte Open Pit Mines

Tantalus Butte also extended to the north in surface to near-surface exposures. Approximately six (6) kilometers north of Carmacks (see coordinates, Table 1), a gravel road heads eastwards into the former open pit mine areas. The road is gated by the government with a warning sign of dangerous former mines in the area. Locals have created a road around the gate and it appears to be regularly traversed with vehicles and/or ATV's. Approximately 300 meters along the road is a 100 meter by 150 meter clearing covered in coal and some remnant coal piles. There is an estimated 500 tonnes of coal on surface at this location which was probably leftover from mine operations. This was possibly a loading area for the trucks transporting coal from Tantalus Butte to the Faro Mines of Cyprus Anvil Mining, where they used coal as a fuel source for the drying plant and other mill operations.

Approximately 1 kilometer in the road to the southeast, you encounter the northern end of the former open pit mines (see Plates 2-6, Appendix 1) that extend southwards for 1.5 kilometers. At this northernmost end, the coal seam is not evident in a rock face on the northern end on the immediate north side of the road, and is thought to be indicative that the coal seam discontinued in this area or was significantly displaced by a fault.

Moving southwards into the pit, the hanging wall comprises of a steep cliff face approximately 30-35 meters in height as the pit in this area cut into the side of the hill. The hanging wall comprises of thin, discontinuous, alternating beds of siltstones, sandstones and mudstone that confirm to the existing structure. These beds are adjacent to the relative massive, homogeneous upper conglomerate that has an average thickness of 130 feet and continues beyond the pit limits. The hanging wall lowers to the south as you move away from the hill to an average height of less than 10 meters. At the road on the northernmost end of the pit, there is a small hill side of approximately 20 meters height which is fully cleared but shows no evidence of coal extending further to the north (see plate 2).

The coal seams in the north pit varied from 8-15 feet in width, dip at 70 degrees west (i.e., into the hill) and fault displacements were common (Bowers et al., 1982). Offset faults are evident in the hanging wall in the north pit (see Plate 5). Offset faults of the coal seams were also noted to be commonplace in the underground coal operations. The width of the pit trench is approximately 10-12 meters and appear to have directly followed the coal seam. The extent of the pits at Tantalus Butte are noted in Table 1.

Approximately 200 meters south of the north pit is a large clearing. Initially the significance of the clearing was not evident but further research into the reports of Cyprus Anvil Mining note that this was also an open pit that has been reclaimed and a layer of 3-4 meters of glacial till and mine waste was paced over the former pit and is now naturally revegetating. Cyprus Anvil used a phased approach to mining in this area which provided for short haul waste cycles by backfilling the preceding mined out phase. Once backfilling of a phase was complete, a till cover was laid over the waste rock providing a suitable base for revegetating the disturbed area. Ramps were designed to a 10% slope and were 40 feet wide. This would allow for an excavator to mine coal 15 feet below the mine floor. This system is evident in the north pit where the pit wall on the eastern side is approximately 15 feet in height and the ramps are narrower but in places would have reached upwards of 40 feet (Bowers et al, 1982).

Just to the west of the south clearing (the former south pit), a series of trenches still exist (see Plate 8, Appendix 1) and a couple of these appear to have exposed up to 5 – 7 minor coal seams, typically of less than 2m in width, and spread over an area of 75 meters. Cyprus Anvil Mining constructed these trenches and extensively explored this area and determined that there no coal of economic value existed west of the open pits. At the end of the reclaimed clearing (see Plate 9, Appendix 1) is a small pit that exposes coal seams that are likely remnants of the mined coal seam that were not fully mined out. One coal seam of a width of less than 3.0 meters appears along with a couple of minor seams of less that 0.5 meters thickness within a 10 meter zone on the southeastern face of the pit appear to have continuity to the south in direct strike of the former Tantalus Butte Mine are likely northern extensions of the underground coal seams. The pit does extend to the west for 30 meters and southwards for approximately 100 meters but shows no evidence of further coal mineralization.

In the mine plan of 1980, Cyprus Anvil noted that there was approximately 27,000 tons of coal remaining that could be economically mined with open pit means at the north Tantalus Butte area. It is thought that the company likely mined this out, completed the reclamation of the southern pit, graded the walls of the southernmost extension of the pit as they had no further fill, and then abandoned the operation. The northern pit was not fully reclaimed and that would require extensive scaling of the hanging all and back filling.

5.2.4.1.3 Tantalus South

At Tantalus a coal seam is exposed approximately 60 meters west of the southern end of the bridge crossing of the Yukon River in a 10-15 meter face and further coal evidence is found along a small trail that parallels the Yukon River to the east for approximately 50 meters. The coal seam is dipping steeply (60-65 degrees) to the southeast within the Tantalus Formation. This coal seam is not on any of the coal exploration licences and was therefore only briefly examined for reference purposes.

The access road/trail then extends southwards to the Tantalus South coal occurrence. The road follows a ridge and is underlain by Tantalus Formation conglomerates, Beneath the conglomerates to the west are coarse, white feldspathic and (locally) calcareous sandstones of the Laberge Group (Hill, 1977). The known coal-mudstone horizon occurs between the two, apparently within the top 100 feet of the Laberge Group. The Laberge and Tantalus rocks are folded by an anticline-syncline pair, with the coal seam lying on the northeasterly-dipping western limb of the syncline (Hill, 1977).

During reconnaissance efforts, the coal occurrence was not observed to be exposed naturally on the surface. The author found two trenches on the western side of the trail that provided exposure of a 12-15 meter wide coal seam that appeared to have a high ash content. Trench 1 (see Plate 10) was located at UTM 434550/68833929 and Trench 2 at 434386/6884044. The coal seam was underlain by a coarse conglomerate thought to belong to the Tantalus Formation. Hill (1977) concluded that the coal seams exposed in these trenches and intersected in drill holes was apparently stratigraphically below the other Tantalus coals and within the top 100 feet of the Laberge Group. Hill (1977) added that the drilling had intersected five coal seams with an aggregate thickness of about 20 feet, had a strike length of over 6,000 feet, and had recoverable reserves of approximately 860,500 tons with a strip ration of 10.7:1. He also noted that the coal in this area was of lower rank as even though it showed good coking characteristics its high ash content would require coal washing facilities to produce either thermal or metallurgical coal (Hill, 1977). These trenches were not on any of the exploration licences.

Further south of these trenches there is a network of trails that likely provided access to drill sites and additional trench sites. A majority of the drill sites were likely on the trail itself as no clearings were evident. There are significant clearings in the southern portion of the trail system thought to have been cleared for hydro lines that were then constructed elsewhere. Again there are no visible outcrops in these areas nor any sign of coal evidence.

This area was subjected to a moderate drilling effort that served to identify coal resources that were of marginal quality due to their higher ash content. Reports noted that the 1977 drill program demonstrated potential for coal below the Laberge-Tantalus contact which at Tantalus Butte would be found in the low ground to the east (Hill, 1977). However at Tantalus South the target is essentially a blind one and coal quality is marginal so no further exploration is proposed with the limited proposed program in 2017 as any further examination would require a significant drill and testing program.

5.2.5.1 Other Coal Occurrences

Travelling from south to north, there are a number of other coal occurrences in the Carmacks Block which will now be described.

5.2.5.1.1 Andesite

At the Andesite coal occurrence (Minfile, 115H 002, see Table 1 for coordinates, Plates 11 and 12, Appendix 1), in 1910 the Department of Mines assayed thin seams of anthracite. The assays gave sample results of 4.68% water (Moisture), fixed carbon 72.26%, 7.47% ash and non-coherent coke at 79.73%. Using the Research Council of Alberta formulas this would give a gross calorific value of the coal as between 15,700 to 16,000 g/BTU. Teslin Exploration also sampled this occurrence from 3 localities and results ranged from 8.0 to 19.3% water (Moisture), 11.8 to 14.7% volatiles, 23.9 to 66.5% fixed carbon, and 0.5 to 0.6% Sulphur with the coal rank ranging from sub-bituminous A to sub-bituminous C and dry calorific value ranging from 4,750 to 10,340 g/BTU all non-coking.

The author initially identified an outcrop on the east side of the Dawson Highway that had evidence of a coal seam(s). A traverse was then conducted to the coordinates noted in the Yukon Geological Survey Minfile and no showing was found. A small creek is located nearby and that also did not provide any evidence of coal present in the area. Also a major power line transects the area and that also does not reveal any outcrops or evidence of possible coal present.

Therefore it is thought that the road side showing is that of Andesite as documented and appears to be consistent with the description of the occurrence in the Minfile. Despite the possible good quality of the coal in this area, the lack of evidence for any further coal other than that within the thin anthracite seams in the showing does not warrant any further exploration in this area.

5.2.5.1.2 Losch

Losch (Minfile 115H 001, see Table 1 for coordinates, Plate 13, Appendix 1) is located approximately 1.5 kilometers north of Andesite. The Minfile describes a coal occurrence on Lone Pine Mountain within Laberge Group rocks comprising of a 2.1 meter thick coal seam that dipped steeply to the northeast and was oriented NE-SW. A traverse to the site location was conducted and the occurrence as described in the Minfile was not located. The terrain is steep in this area and it would be difficult to construct trails or conduct trenching in the area. It is proposed that no further exploration is warranted at this location.

5.2.5.1.3 Hlavay

Hlavay (Minfile 115I 098, See Table 1 for coordinates) is located northwest of the Tantalus Butte Mine. It is accessed via a gravel road that forks left to a private residence and right to the site. The property was acquired by Teslin Exploration Limited who mapped the area and conducted geophysics in 1970-72. They then drilled 2 holes (for a total of 84 meters) in 1973. The holes reportedly cut steep, westerly dipping Tantalus Formation that contained a narrow coal band up to 9 cm thick. The report also notes that it was thought that they drilled the west limb of a tight anticline.

The author visited the site and found two clearings (see Plate 14, Appendix 1) that were thought to be the former drill sites approximately 150 meters apart. There are no outcrops in the area, no evidence of coal sign, and no drill core. It is quite possible that this could be an extension of the formation that hosts the Tantalus Butte mines but the target would be a blind one. Trenching might serve to expose coal seams which could then be further drilled if they were of possible economic extent and width. Also with the minimal data even the theory of a possible anticline in the area cannot be justified. Given the close proximity of this occurrence to a residence it may also be challenging to obtain exploration permits. No further work is proposed at this site.

5.2.5.1.4 Five Fingers

At the Five Fingers coal occurrence (Minfile 115I 004, See Table 1 for coordinates), in 1908 the Department of Mines assayed two coal seams which gave results of 5.29% water (Moisture), 31.64% volatiles, fixed carbon 40.12%, 18.45% ash and reportedly produced an excellent, firm, coherent coke with reported gross calorific value of between 12,100 to 13,600 g/BTU. Teslin Exploration also sampled this occurrence and results ranged from 8.4% water (Moisture), 16.7% ash, 32.8% volatiles, 40.1% fixed carbon, and 0.2% Sulphur with the coal rank high volatile bituminous C and dry calorific value of 10,740 g/BTU all non-coking.

The author traversed the upper ridges of this area and concluded that to explore any further at this site would require extensive trail construction down to the showing from the Dawson Highway or access via barge from Yukon River. Either option would be quite expensive so before any work of that nature was to proceed one would have to be convinced that the property held merit to be trenched and/or drilled and it would require a significant budget.

Attempts were made to locate a possible boat rental in Carmacks from a local but it was not possible at the time of the program. It may be possible to find a boat that could be chartered from a local resident in the future or to rent a boat in Whitehorse and trailer it to the area. Therefore no further reporting is possible as to the merit of this showing. It is proposed that continued efforts be made to examine this site.

5.2.5.1.5 Rink

Coaly soil was reported to occur at Rink (Minfile 115I 092, see coordinates Table 1). The showing is a considerable distance from the highway and terrain is steep between the highway and the occurrence. The author did not traverse to the site as it would best be accessed by boat via the Yukon River. The author traversed the upper ridges of this area and concluded that to explore any further at this site would require extensive trail construction down to the showing from the Dawson Highway or access via barge from Yukon River. Either option would be quite expensive so before any work of that nature was

to proceed one would have to be convinced that the property held merit to be trenched and/or drilled and it would require a significant budget. Due to the lack of any significant previous reporting of coal in this area it is proposed that no further exploration is warranted at this time.

5.2.5.1.6 Claire

Coal was reported to outcrop in the Tantalus Formation rocks in the Claire Creek area (Minfile 105E 011, see Table 1 for coordinates). The author was unable to visit this site as it is only helicopter accessible. There is limited evidence of coal being present in this remote location so no further work is proposed at this site.

5.3 Walsh Creek Block

The Walsh Creek block comprises of a singular coal exploration licence and it is isolated. It is only accessible by helicopter. The author did not visit this property during this reconnaissance effort.

Previous reporting on the coal in this area noted that coal was only found along Jumpont Creek (George, 1970). Coal was found in float along the stream gravel, in slides and slumps, and in place. The best coal was noted in stringers up to two inches thick and was interlaminated with siltstone. This coal was not tested by Atlas Explorations Ltd. who were conducting the exploration effort. They concluded that drilling would be necessary to determine the extent of the coal measures in this area.
Due to the isolated location of this coal occurrence and the small extent found in initial surveys, no further work is recommended at this time.

6 Coal Exploration Licences and Leases Management

All of the coal exploration licence and lease holdings are managed through the Yukon Mining Recorders Office in Whitehorse, Yukon.

Under the Yukon Coal Regulations Act, exploration licences are currently subject to rental fees of $0.05/acre in the first year, $0.10/acre in the second year, and $0.20/acre in the third and final year for each license period. Costs incurred by the license holder on exploration work may be reported to the Yukon Mining Recorder and credited against rental fees.

Annual fees for the coal mining leases are currently levied at $1/acre. Work conducted in the leases may be applied against the levy charges for a maximum period of five (5) years within the 21 year lease period. In the case of the current lease holdings, payments are due "in advance of the 18th day of April each year." Annual payments for the five leases total $1,918.50.

7 Interpretation and Conclusions

The preliminary reconnaissance program determined that many of the coal exploration licences have minimal potential for significant coal resources.

The Carmacks Block has potential for the identification of significant coal resources but exploration efforts to undertake a program with a good probability of success would be quite expensive. The area is challenged with limited outcrops, fault offsets within coal measures, and exploration techniques limited to trenching followed up by drilling efforts as geophysical techniques do not work to identify coal stratigraphy or "marker" horizons. There is potential to identify coal north of Tantalus Butte and the seams at Five Fingers have not been actively explored and little is known about them. Both areas therefore have potential although not without their individual challenges. For an exploration program to occur at Five Fingers, equipment would have to be barged in at considerable expense and permitting of the project may be challenging given its close proximity to the Yukon River. Exploration efforts north of Tantalus Butte would be easier to undertake although the immediate area around the open pits and to the east of the underground mines appear to have already been explored by Cyprus Anvil. Strip ratios in the pits to mine the coal seams were generally high (i.e., in excess of 10:1 relating mainly to the deeply stripping nature of the seams and local topographic issues, and seams were of limited thickness making open pit mining challenging. Therefore any exploration in this area would have to consider sites where extensions are likely as the targets would be essentially "blind" and where if coal was found, strip ratios could be minimized, and glacial overburden is thin. Considering the nature of the topography between Tantalus Butte and Five Fingers which are likely related, this could be quite challenging to achieve.

The Shell Creek Block is quite isolated, exploration efforts would be totally helicopter-dependent, and the current extent of the target is not encouraging.

The Division Mountain Block remains the most practical and feasible target in terms of both exploration potential, ease of access, permitting, and cost of exploration. Hull Mountain presents some challenges to explore with thick glacial cover and a limited areal extent for a transition zone between the wetlands of Klusha Creek Valley and the valley walls, and hence is of low priority. Corduroy Mountain has been subjected to limited exploration and has good exploration potential, is easily accessible with mostly grassland open areas and pre-existing trail networks, and presents minimal environmental issues. Despite being a bit more heavily wooded, areas in Division Mountain with the exception of the northern part of the grid are relatively accessible using pre-existing roads, trails and grids. Areas recommended for further exploration should be accessible and be explored either with trenching or RAB drilling means. Local camps at Braeburn Lake may serve to provide accommodations for crew who would then transport back and forth from Division Mountain daily via ATV on the Dawson Trail.

8 Recommendations

The following are recommendations for the 2017 exploration program and for the ongoing management of the coal exploration licences and leases in the Whitehorse Trough:

1. It is most feasible and likely most productive to conduct the limited 2017 exploration program in the Division Mountain area. Key sites recommended include just west and southeast of previously explored areas that will require minimal trail development and physiographic, environmental, and accessibility conditions are well suited to facilitating trenching and/or RAB drilling efforts.
2. Phase 2 of the 2017 exploration effort should also include an examination of the Five Fingers occurrence via a boat charter. That will aid in determining a recommendation on whether the coal exploration licence in that area should be maintained in the future.
3. The Division Mountain Coal exploration licences should be maintained. During the Phase 2 Exploration effort the area for the extension of the coal lease should be delineated in the field as per the Yukon Coal Regulations in order to support an application for a sixth coal lease which would ensure full coverage of all the known coal resources and reserves (See Recommendation, Appendix 4).
4. Various coal exploration licence blocks should be dropped as follows (See Recommendation, Appendix 4):
   - Shell Creek Block exploration licence (CYW 0144)
   - Carmacks Block – exploration licences CYW 0153, CYW 0152, CYW 0148, CYW 0147, CYW 0146, CYW 0143. If it not the intention to expend significant resources in this area in the foreseeable future, pending recommendation 2 it may be worthwhile considering dropping the entire Carmacks Block.

   This would result in a cost savings of $29,824.85 in 2017 and over a normal three year licence cycle over $52, 193.48 (see Table 2, Appendix 2). If all blocks in the Carmacks block were dropped the savings in 2017 would be $36,731.94, or $64,280.89 over the three year licencing cycle. Another option may possibly be that instead of dropping entire exploration licences may be to enter into discussions with Yukon EMR with the intent to minimize the licence sizes from the current quarter map sheets to a smaller holding. In such a licence the intent should be to hold areas covering Tanglefoot and Tantalus stratigraphy and eliminate mined out areas.

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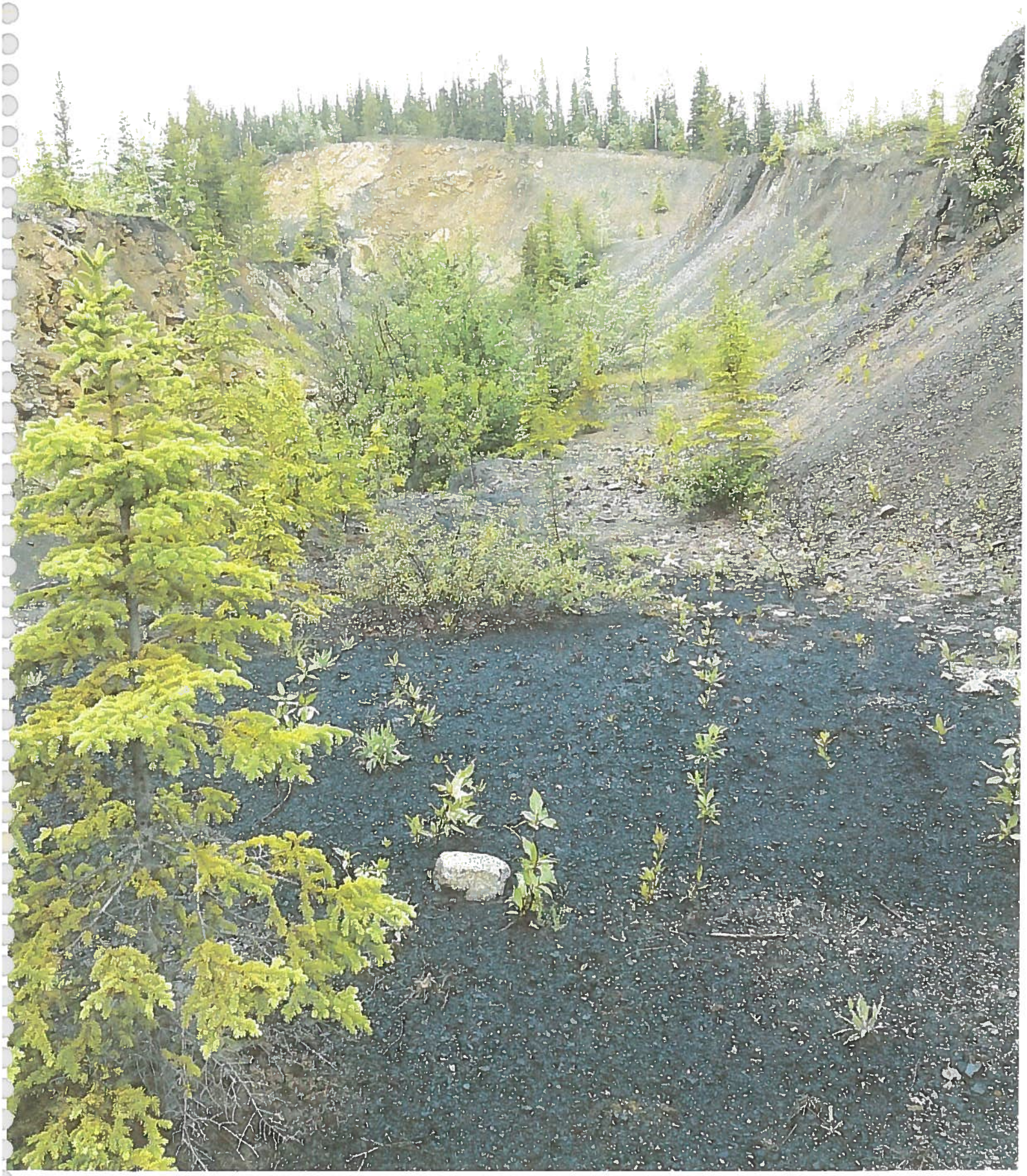
Appendix 1.

Site Photographs

1

2

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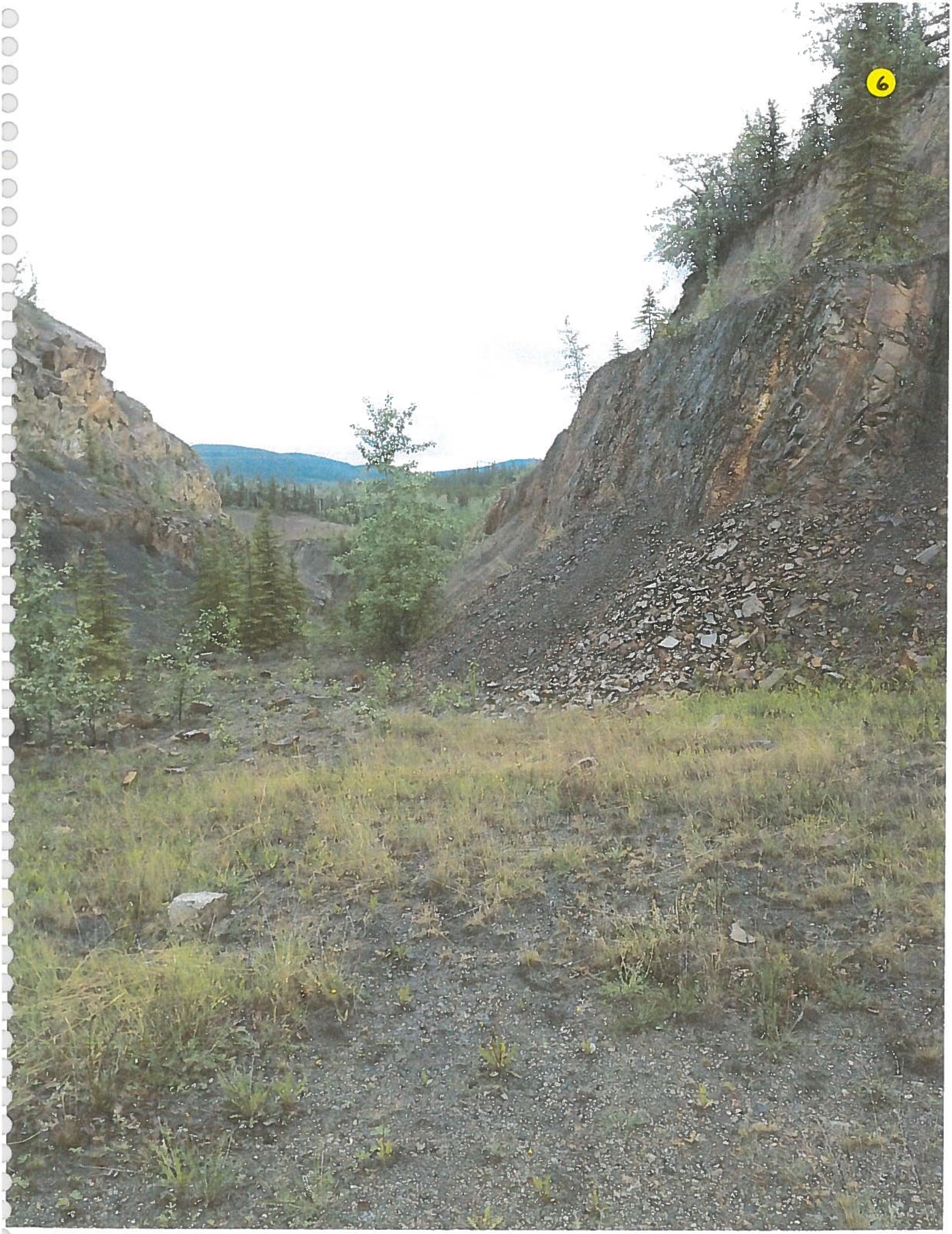
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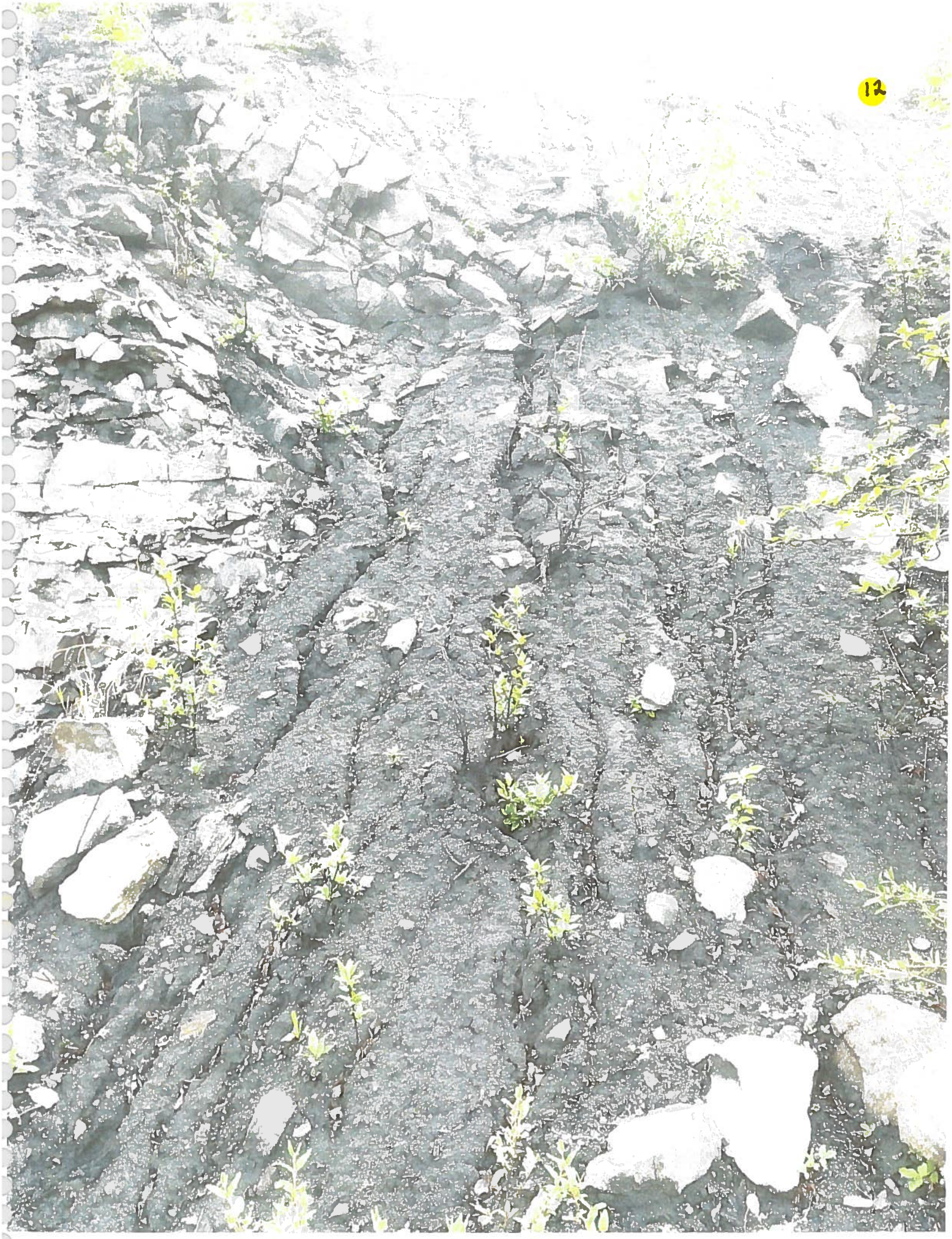

12


14

Appendix 2.

Key Coordinates

Table 1: Key Coordinates - Coal Occurrences in North-Central Whitehorse Torugh

			Latitude Degrees/Minutes/Seconds	Longitude Degrees/Minutes/Seconds
Carmacks Block				
Tantalus Butte				
	mine road entrance		62 8 46.33 N	136 17 37.44 W
	North Pit	north end	62 8 41.80 N	136 16 2.93 W
		south end	62 8 22.21 N	136 15 55.65 W
	South Pit Reclaimed	center	62 8 14.76 N	136 15 51.26 W
		south end	62 8 8.18 N	136 15 51.58 W
	Trench area - east		62 8 23.40 N	136 15 26.09 W
	Trench area - west		62 8 19.40 N	136 16 6.43 W
	Waste Dump		62 8 9.96 N	136 15 25,42 W
Tantalus	showing		62 5 38.03 N	136 16 12.10 W
Tantalus South	North Trench 1		62 5 8.97 N	136 16 12.10 W
	North Trench 2		62 5 3.88 N	136 15 28.55 W
	South Trench Area		62 4 26.52 N	136 14 18.71 W
	Southernmost Trench		62 3 52.16 N	136 13 17.03 W
Hlavay			62 10 10 N	136 14 58 W
Claire			61 55 37 N	135 19 32 W
Five Fingers			62 12 9 N	136 20 25 W
Division Mountain Block				
Corduroy Mountain			61 17 55 N	135 54 36 W

Appendix 3.

Exploration Expenditure Summary – Phase 1

Expenditure Summary – Phase 1 – Preliminary Reconnaissance

Gas	$477.91
Field Supplies	$168.12
Meals	$2700.00
Accommodations	$2692.84
Travel	$1761.54
Rentals	$2643.34
Project Administration	$1044.38
Geologist	
- Fieldwork	$8850.00
- Reporting	$3375.00
Field Assistant	$2480.00
TOTAL	**$23,284.97**

Appendix 4.

Recommendations on Licences

PITCHBLACK RESOURCES INC.

COAL EXPLORATION LICENCES - AREA AND ANNUAL PAYMENTS

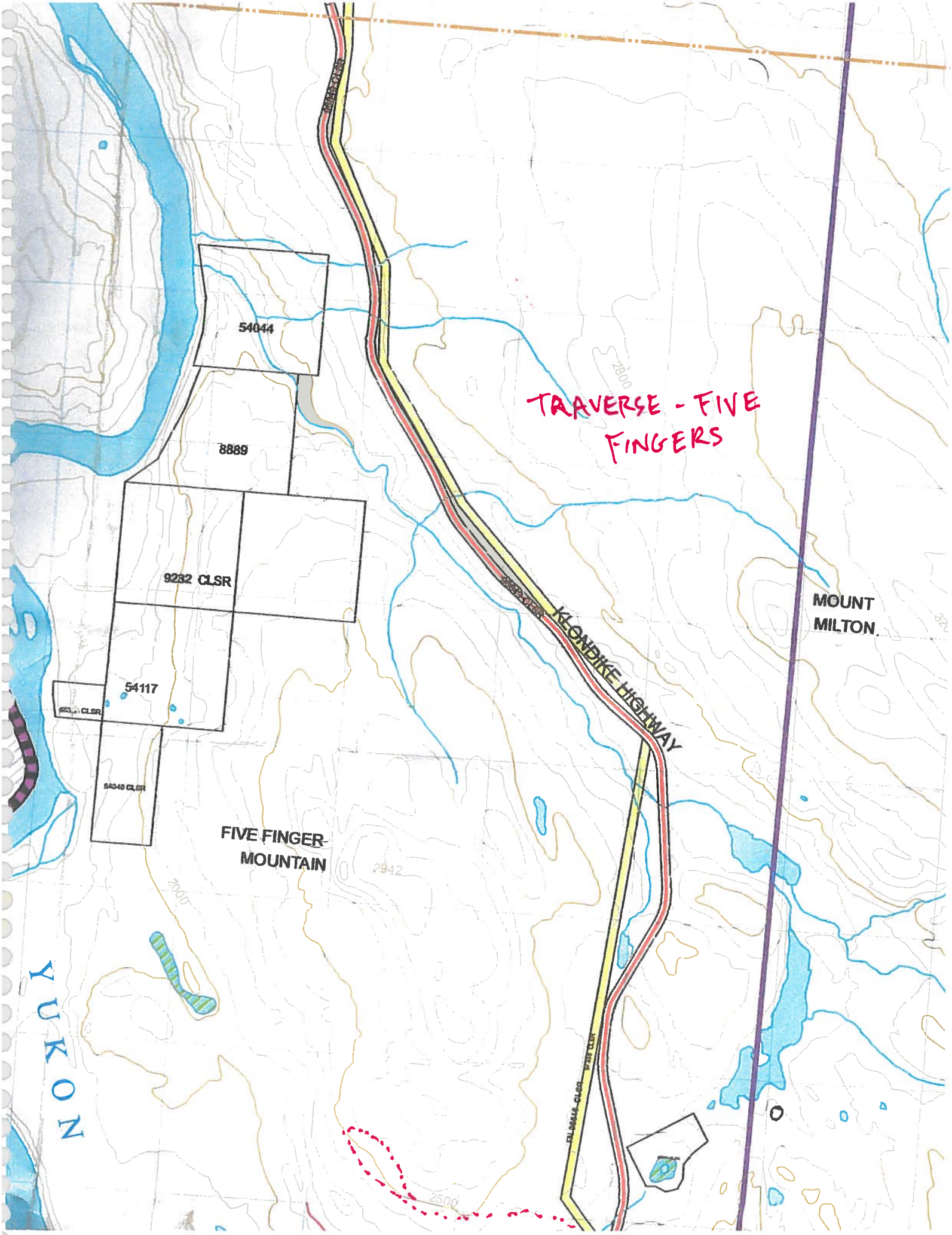
Licence No.	Hectares	conversion	Acres	Annual Payment Yr 1	Yr 2	Yr 3	Recommendation	Savings in 2017 From Release	Total Saving in each 3 year Licence Period
157	21279	0.40468564	8611	$ 430.57	$ 861.13	$ 1,722.26	maintain		
156	44150	0.40468564	17867	$ 893.34	$ 1,786.69	$ 3,573.37	maintain		
155	46093	0.40468564	18653	$ 932.66	$ 1,865.32	$ 3,730.64	maintain		
154	38836	0.40468564	15716	$ 785.82	$ 1,571.64	$ 3,143.27	maintain		
153	44688	0.40468564	18085	$ 904.23	$ 1,808.46	$ 3,616.92	release	$ 3,616.92	$ 6,329.61
152	44574	0.40468564	18038	$ 901.92	$ 1,803.85	$ 3,607.69	release	$ 3,607.69	$ 6,313.46
151	44636	0.40468564	18064	$ 903.18	$ 1,806.35	$ 3,612.71	maintain		
150	44666	0.40468564	18076	$ 903.78	$ 1,807.57	$ 3,615.14	release	$ 3,615.14	$ 6,326.49
149	40703	0.40468564	16472	$ 823.60	$ 1,647.19	$ 3,294.38	maintain		
148	38067	0.40468564	15405	$ 770.26	$ 1,540.52	$ 3,081.03	release	$ 3,081.03	$ 5,391.81
147	36047	0.40468564	14588	$ 729.39	$ 1,458.77	$ 2,917.54	release	$ 2,917.54	$ 5,105.70
146	30833	0.40468564	12478	$ 623.88	$ 1,247.77	$ 2,495.53	release	$ 2,495.53	$ 4,367.19
145	44374	0.40468564	17958	$ 897.88	$ 1,795.75	$ 3,591.50	release	$ 3,591.50	$ 6,285.13
144	45125	0.40468564	18261	$ 913.07	$ 1,826.14	$ 3,652.29	release	$ 3,652.29	$ 6,391.50
143	40120	0.40468564	16236	$ 811.80	$ 1,623.60	$ 3,247.20	release	$ 3,247.20	$ 5,682.60
Totals	604191		244507	$ 12,225.37	$ 24,450.74	$ 48,901.48		$ 29,824.85	$ 52,193.48

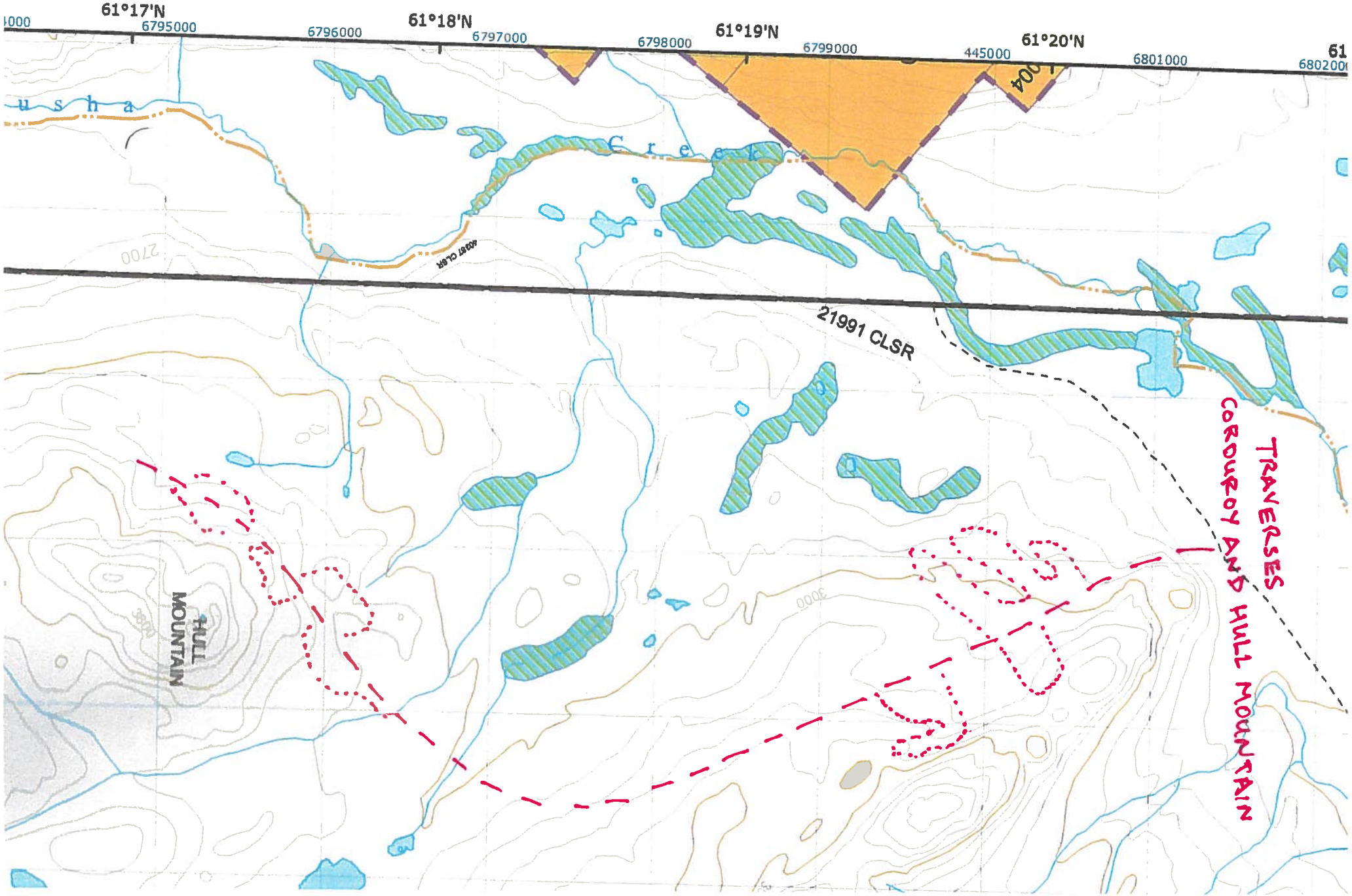
PITCHBLACK RESOURCES INC.
COAL EXPLORATION LICENCES - AREA AND ANNUAL PAYMENTS
PROPOSED HOLDINGS TO MAINTAIN OR RELEASE AND RATIONALE

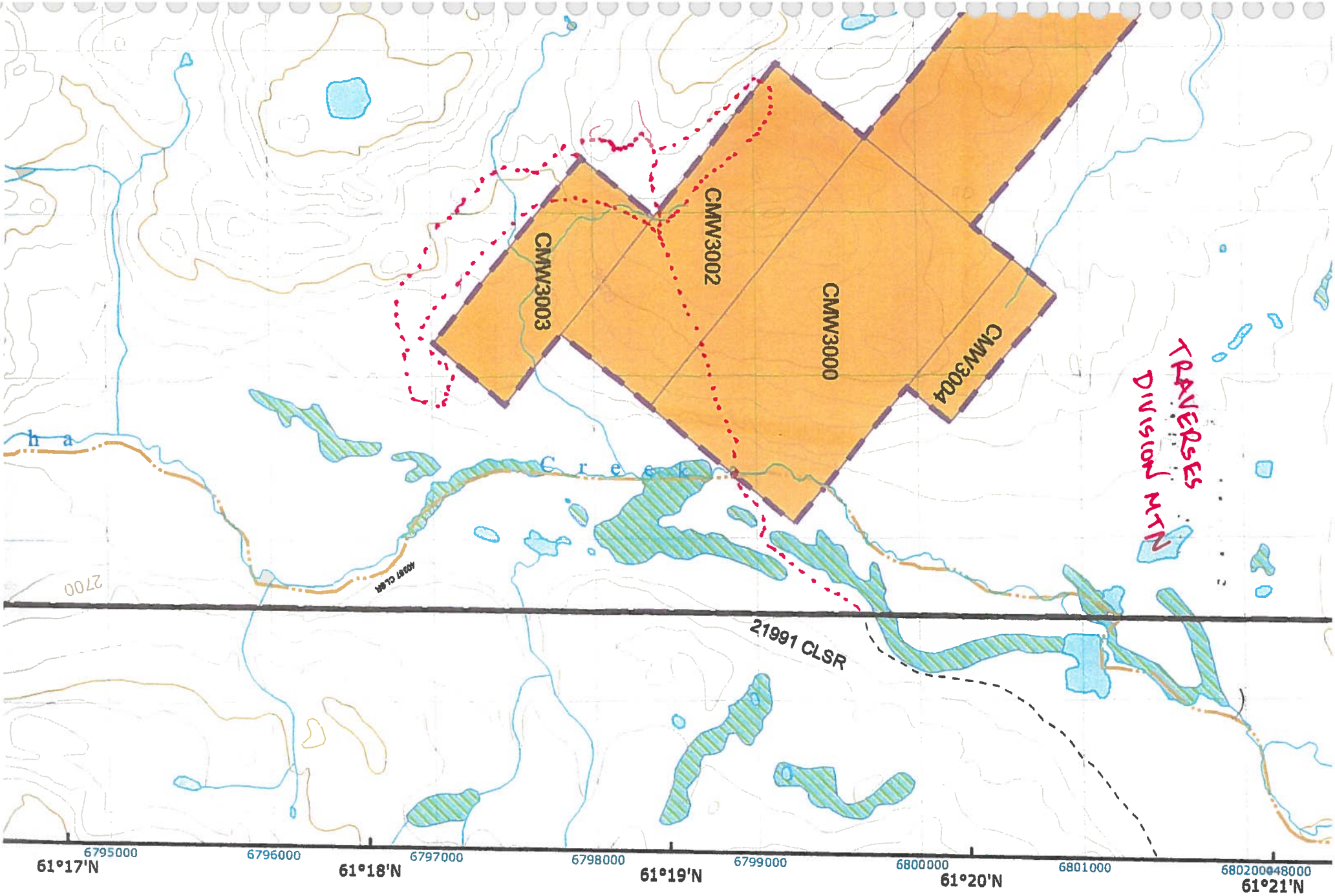
Licence No.	Acres	Recommendation	Rationale
157	8611	maintain	Cover the Division Mountain Block
156	17867	maintain	Cover the Division Mountain Block
155	18653	maintain	Cover the Division Mountain Block
154	15716	maintain	Cover the Division Mountain Block
153		release	Most of block isolated and hosts minimal target coal stratigraphy
152		release	Covers large park area that is highly sensitive, permitting would be very difficult
151	18064	maintain	Potential for coal resources between Tantalus Butte and Five Fingers
150		release	Most of this block, if not all, is mined out
149	16472	maintain	Potential for coal resources between Tantalus Butte and Five Fingers
148		release	Little potential for quality coal in Tantalus South, Expensive to expand potential resources
147		release	Limited to no coal evidence, most of block hill terrain difficult to access
146		release	Most of block isolated and helicopter accessible. No evidence of coal along Campbell Highway
145		release	Most of block isolated and helicopter accessible. No evidence of coal along Campbell Highway
144		release	Isolated block only helicopter accessible
143		release	Isolated block only helicopter accessible
Total to Maintain	95383		

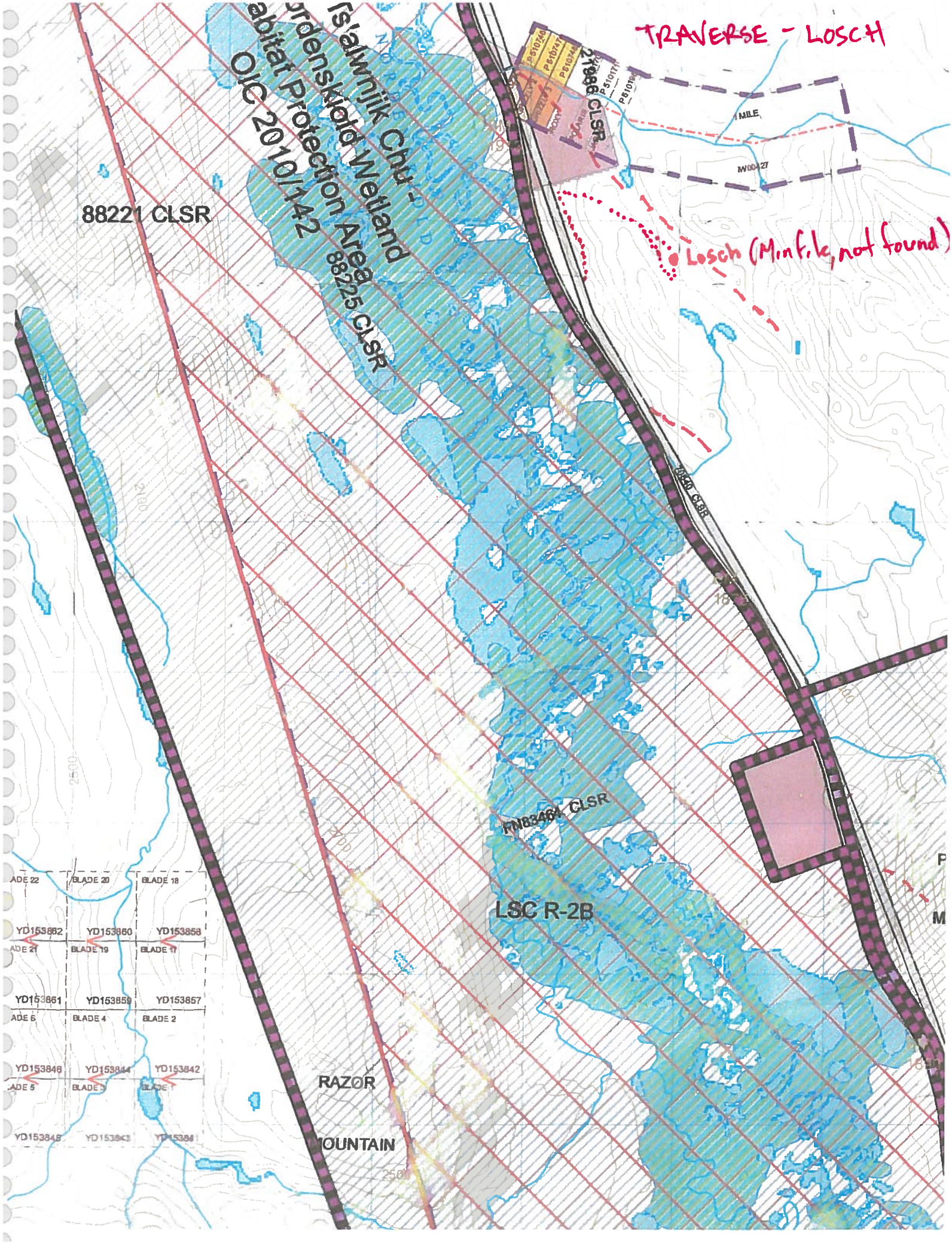
Appendix 5.

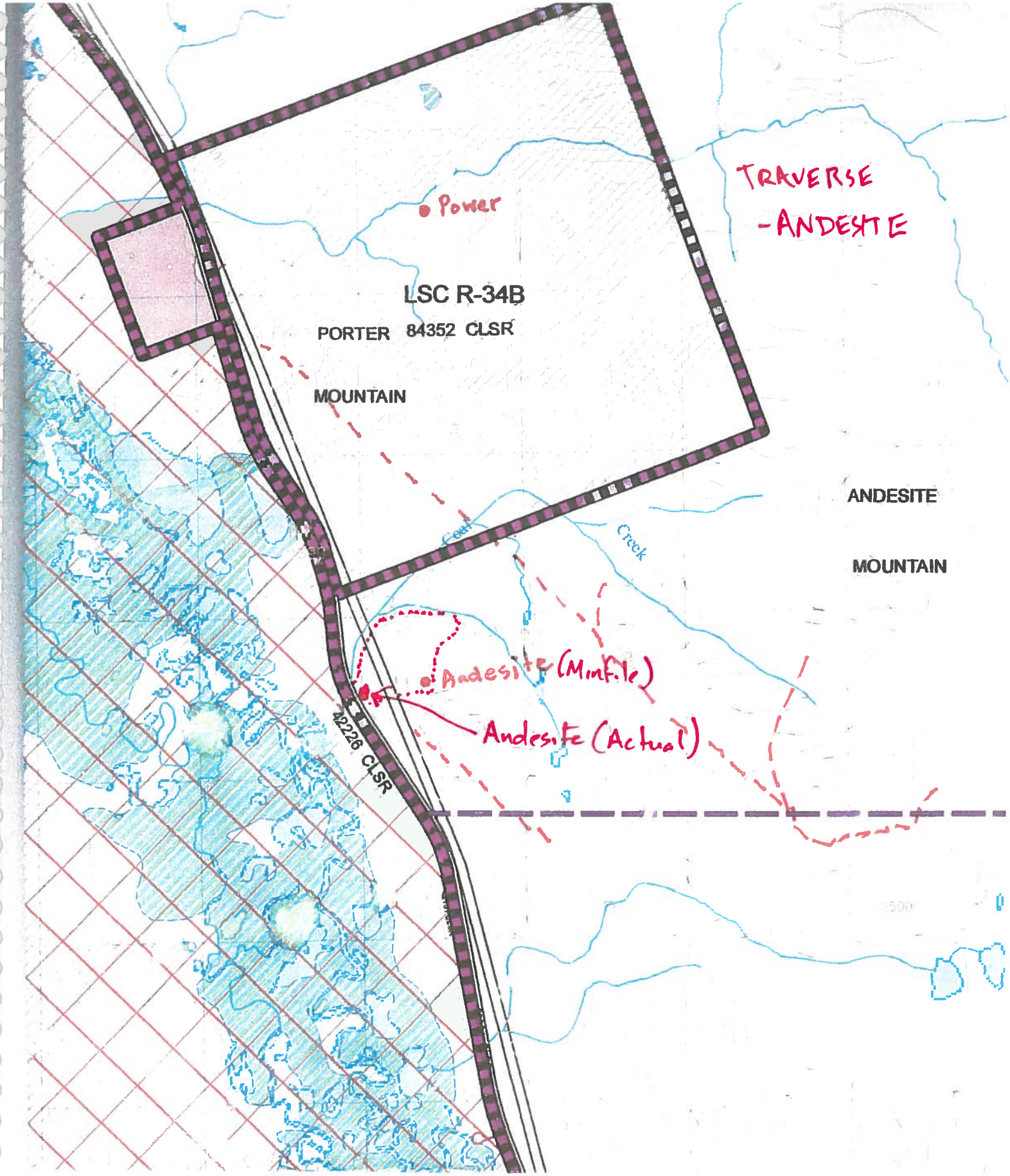
Traverse Maps

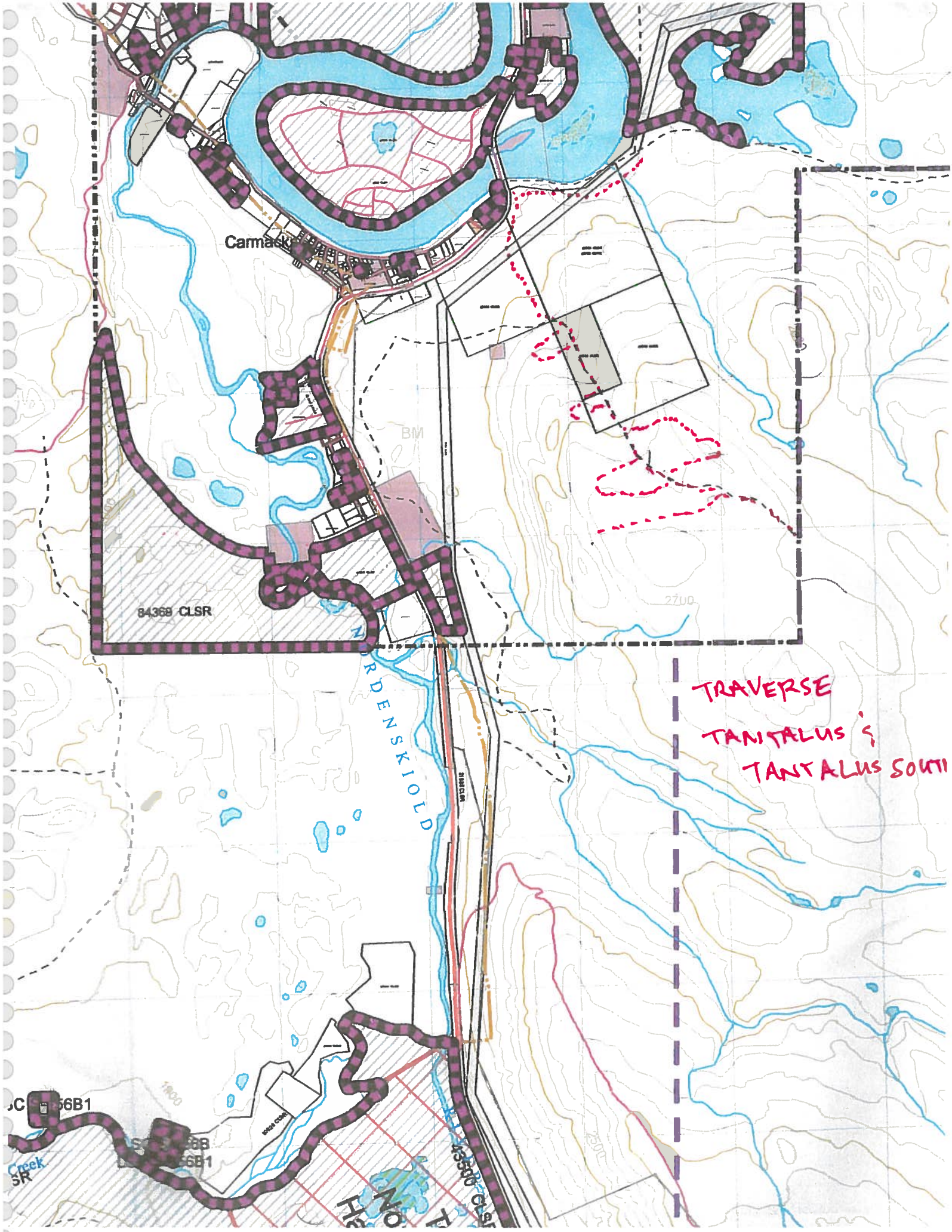

54044
8889
9232 CLSR
54117
54048 CLSR
TRAVERSE - FIVE FINGERS
KLONDIKE HIGHWAY
MOUNT MILTON
FIVE FINGER MOUNTAIN
2942
2800
2000
2500
YUKON

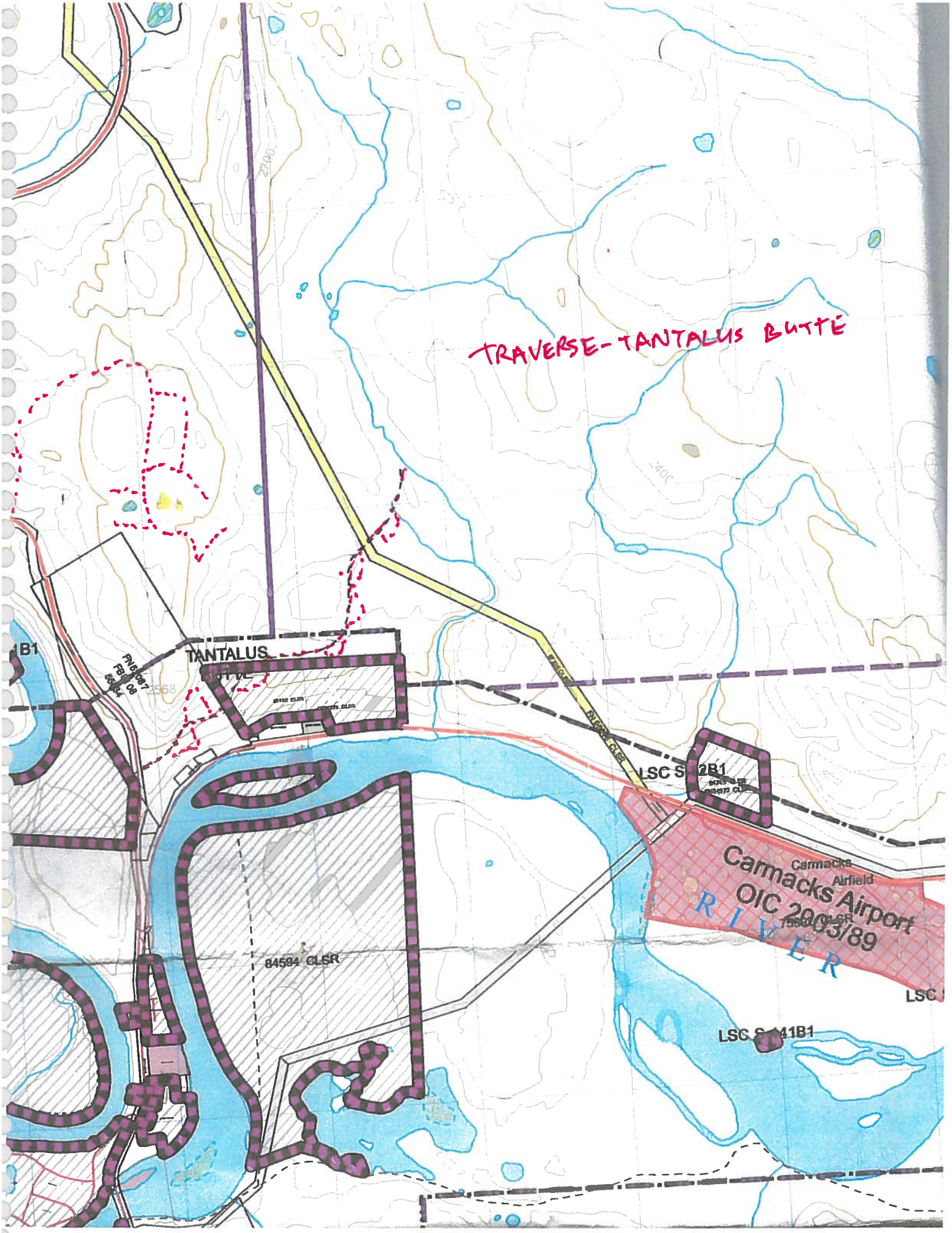

61°17'N
6795000
6796000
61°18'N
6797000
6798000
61°19'N
6799000
445000
61°20'N
6801000
u s h a
C r e e k
21991 CLSR
HULL MOUNTAIN
TRAVERSES CORDUROY AND HULL MOUNTAIN

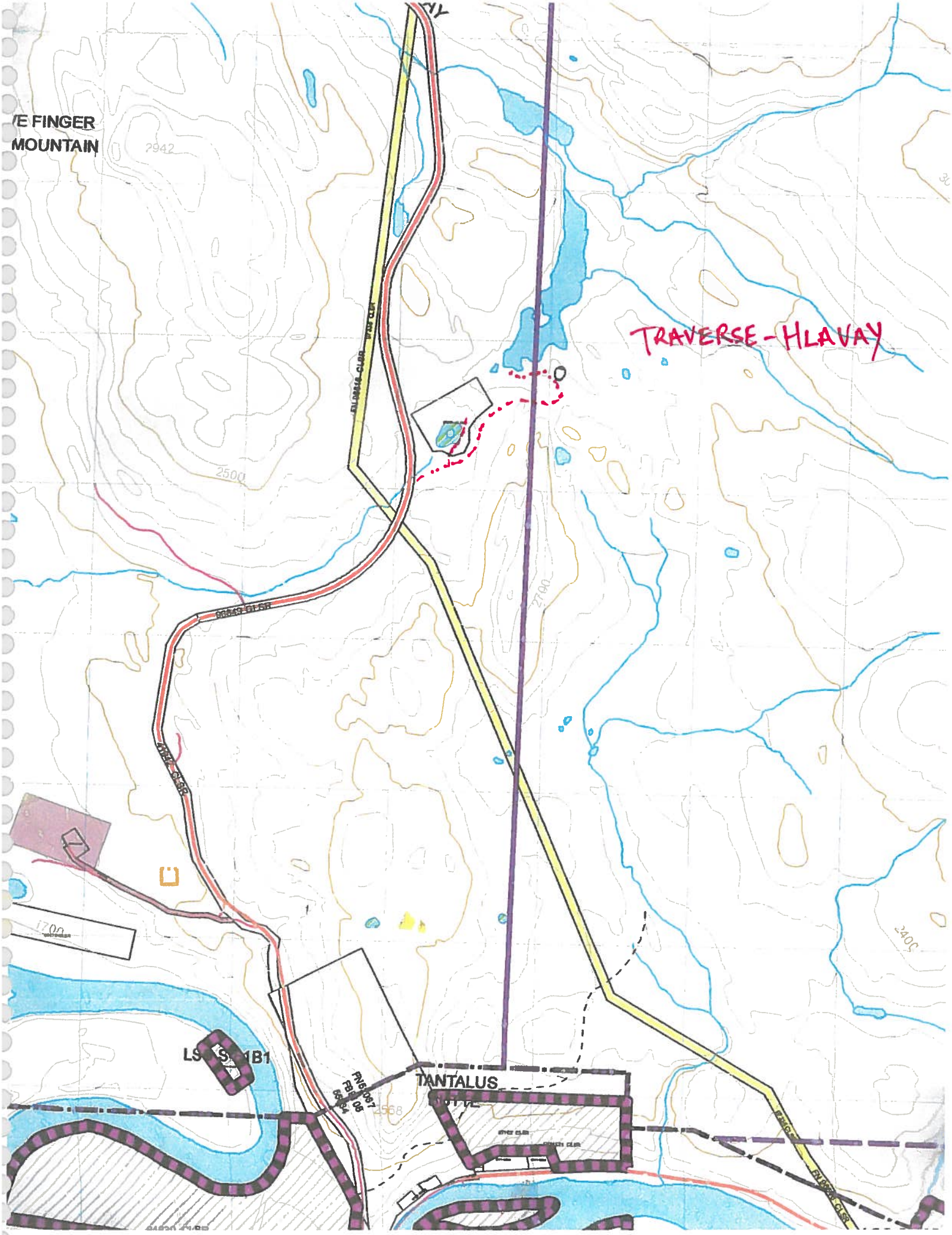

CMW3003
CMW3002
CMW3000
CMW3004
TRAVERSES
DIVISION MTN
21991 CLSR
6795000
6796000
6797000
6798000
6799000
6800000
6801000
680200048000
61°17'N
61°18'N
61°19'N
61°20'N
61°21'N


TRAVERSE - LOSCH
Losch (Min file, not found)
88221 CLSR
Ts'alwnjik Chu - Wetland Area
88225 CLSR
Tordenskjold
Habitat Protection
OIC 2010/142
21886 CLSR
P510746
P510747
P510748
P510717
P510718
1 MILE
W00427
21850 CLSR
FN88464 CLSR
LSC R-2B
RAZOR
MOUNTAIN
BLADE 22
BLADE 20
BLADE 18
YD153862
YD153860
YD153858
BLADE 21
BLADE 19
BLADE 17
YD153861
YD153859
YD153857
BLADE 6
BLADE 4
BLADE 2
YD153846
YD153844
YD153842
BLADE 5
BLADE 3
BLADE 1
YD153848
YD153843
YD153841


TRAVERSE
-ANDESITE
Power
LSC R-34B
PORTER 84352 CLSR
MOUNTAIN
ANDESITE
MOUNTAIN
Creek
Andesite (Minfile)
Andesite (Actual)
42226 CLSR


Carmack
84369 CLSR
BM
2700
RDENSKIOLD
TRAVERSE
TANTALUS &
TANTALUS SOUTH
Creek
SR


TRAVERSE-TANTALUS BUTTE
TANTALUS
84594 CLSR
Carmacks Airport
OIC 2003/89
Carmacks Airfield
RIVER
LSC S 2B1
LSC S 41B1


/E FINGER
MOUNTAIN
2942
2500
2700
TRAVERSE-HLAVAY
TANTALUS
LS
1B1
2568