

REPORT ON
PRELIMINARY EXAMINATION AND INVESTIGATION

OF

THE HAGGART CREEK AREA
MAYO DISTRICT, YUKON TERRITORY

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INTRODUCTION

The Haggart Creek Mining Company placer property and adjacent area was presented by E. H. Barker, 1086 Butte Street, Vancouver, British Columbia. Mr. Barker has controlling interest in this company and personally owns ten claims adjoining immediately upstream. He is a placer miner and operator with 35 years experience in the Yukon Territory.

CONCLUSIONS

The valley alluvials of the Haggart creek drainage basin offer a promising area for placer exploration with the possibility of developing a large yardage of economic value. There is an estimated yardage potential of 20 million cubic yards as a minimum within a continuous block 17 miles in length. This ground embraces the upper 7 miles (more or less) of Haggart creek, and the full length (10 miles, more or less) of Lynx creek.

Gold production from a limited section, estimated at \$400,000.00, suggests the area as a whole warrants serious consideration and is believed to hold promise for development of a major placer operation. Past work on upper Haggart at two points about 1 mile apart indicates there is a reasonable expectation of proving 1 million cubic yards in this section having a value within the range of 68¢ to \$1.05 per cubic yard.

A prospect drilling program for the area is warranted.

DATE OF EXAMINATION

Accompanied by E. H. Barker a preliminary examination of this area was made from September 27 to September 29, 1945.

LOCATION

Haggart creek - a northeasterly tributary - joins the McQuesten River at approximate Latitude 63°- 55' N and Longitude 136°- 00' W. It is about 38 miles north of Mayo, the latter town being located on the Stewart River, Yukon Territory. Dawson is about 110 miles due west.

GENERAL AND LIMITING CONDITIONS

Accessibility and Transportation

Volume freight movement in and out of the Mayo district is largely a seasonal matter. About 90% of all supplies are brought into the region by the British Yukon Navigation Company's river steamers.

Freight from Vancouver, B. C., and Seattle, Wn., is routed to Skagway, Alaska, by steamship; from Skagway it is hauled by the White Pass and Yukon Railway; and from the latter point it is taken down the Yukon River to mouth of the Stewart and thence up that stream to Mayo Landing. Rates are quoted as being

\$65.00 per short ton from Vancouver or Seattle. A special out-going \$35.00 per short ton was established over the same route for shipment of silver-lead concentrates or high-grade ore from Mayo to the smelter at Kellogg, Idaho, which rate is also reported to still be in effect.

River navigation is possible only from about June 1st to October 1st. During period of silver-lead mining activity a limited amount of supplies were hauled overland by tractor trains from Whitehorse during the winter months.

The Canadian Pacific Airlines serve the Mayo-Dawson region on Tuesday and Friday schedules. Additional flights are made when traffic warrants. Round trip fare from Whitehorse to Mayo is \$103.50; air-freight rates between those two points is 10¢ per pound. An eight place Barley plane is now being used in this service.

Plane fare from Seattle or Vancouver is about \$150.00. Existing schedules permit arrival at Mayo in two days.

It is doubtful that maintenance of the military highway from Haines, Alaska to Whitehorse will materially reduce freight charges into the Mayo-Dawson area.

Railroads

The nearest railhead at Whitehorse is 200 air miles distant. There is no reason to believe that location surveys made during the recent war years will result in railroad construction into Mayo and/or Dawson within the foreseeable future.

Roads

Haggart creek is serviced by 45 miles of fair road from Mayo. Little or no maintenance work was done upon it during the war years; as a result a number of sections require repair before it will again be suitable for heavy truck hauls.

Water Supply

The streams were at low-water stage. The lower 10 miles of Haggart creek carried an estimated 1500 to 2000 cubic feet per minute; above the mouth of Lynx creek stream flow was estimated at 500 to 750 cubic feet per minute. No record of stream flow was available.

There was no evidence to indicate that high water periods would be troublesome. Except for early season high-water from melting snows, flood stages are said to be infrequent. Annual precipitation for the Mayo district averages 20 inches. The water supply on upper Haggart is insufficient to permit hydraulic operations of appreciable size.

Ample water is available throughout the season for dragline or dredging operations. Stream gradients are low, varying from 1 to 2%. Difference of elevation in the 14 miles from mouth of Haggart to Mr. Barkers camp is said to be 800 feet. (Refer to Map 1 for drainage system)✓

Timber

Spruce is the only timber in district suitable for lumber. The remaining growth on upper Haggart is only useful for poles, cribbing, or fire-wood. In lower section of this valley, and in the wide valley of the McQuesten river several areas were noted with timber suitable for sawlogs. The lower end of Lynx creek valley also has some good timber.

Power

There is no hydroelectric power development in the Mayo district, and no power sites were noted or are known to be suitable for development. Power, therefore, is an individual problem with diesel the most economical medium.

Topography

The attached views and maps of the area show this region to be one of moderate relief. The mountains rise to maximum elevations of 4500 feet, ranging from 1500 to 2500 feet above the McQuesten valley. Their summits are rounded and their slopes moderate.

TITLE AND OWNERSHIP

Upper Haggart Creek

The Haggart Creek Mining Company owns 22 placer claims - No. 1 Below to No. 22 Below, inclusive. Of these 20 claims are 500 feet in length, and 2000 feet in width; the other 2 are 240 and 280 feet in length, which gives a total of 10,520 feet along the creek. Ownership of the company is distributed as follows:-

E. H. Barker	10 $\frac{1}{2}$ shares
Robt. & Geo. Potter	6 $\frac{1}{2}$ shares
Oscar Miller	3 shares

Price asked for this property is \$80,000.00, with payments to be arranged on a royalty basis from gross production.

Placer leases No. 1 Above to No. 10 above - ten claims 500 feet long and 2000 feet wide totaling 5000 feet along the creek - are held by Mr. Barker. Price asked for this ground is \$20,000.00, also payable on royalty basis from gross production.

All of above leases are in good standing. (Refer to sketch Map 4).

Lower Haggart Creek

Two 5 mile special dredging leases were located by C. E. Fisher and wife of Mayo during the past summer, and shortly thereafter optioned to W. Church Helmes, mining engineer and agent for the Sunshine Mining Company of Kellogg, Idaho.

This ground had been located in 1944 by Mr. Barker; examination of this area

was one of objectives in making the trip to the Mayo region. It was learned on arrival, however, that through "error" in the local gold commissioners office renewals of the special leases were not made on the due date for Mr. Barkers account, as had been previously requested.

Option terms granted the Sunshine company were not determined, but Mr. Fisher advised the company had been given until 1947 to undertake a drilling program.

Dublin Gulch

The lower mile (more or less) of this gulch is held by Wm. Lundy and Fred Martin.

HISTORY AND PRODUCTION OF DISTRICT

Following original discoveries on Dublin Gulch and upper Haggart creek about 1905 or 1906, Haggart was soon staked from point about 3000 feet above mouth of Dublin creek for 14 miles (more or less) downstream.

The most active prospecting and mining period ended abruptly for the numerous individual placer miners about 1913 or 1914 with the discovery of rich silver-lead ores on Keno Hill. Only a few miners remained on Haggart to continue their shoveling-in or drifting operations.

The early day placer mining was largely confined to the right and left limits. Encroachment of tailings on claims downstream, plus shortage of water, prevented a sustained effort to work the recent stream gravels. The work of that period was confined to following sections:-

Gill Gulch

Here an alluvial fan about 2000 feet wide at its lower end occurs along the right limits of Haggart, about 14 miles above its mouth. Along the upper 1000 feet of this fan the shallow gravels - 4 to 6 feet in depth covered by several feet of moss and muck - were mined for width of 60 to 100 feet; the depth increased as face of their cuts advanced to the west. The outer edge of this "fan" in this section rested upon a rim 8 to 12 feet above Haggart creek; the gravels were shoveled-into short sluices and only the sand and smaller gravel were dumped into the creek bed.

In lower half of this 2000 foot section the gravels were too deep for shoveling-in operations. Numerous shafts were put down in the deeper ground of the alluvial fan, and considerable drift work was conducted from them.

The gravels here are a medium wash, predominately slates, schists, and quartzites, with few boulders over 1½ foot in diameter. The coarser wash is in of largely granitic rock types. Total gold production from this section is not known but values would have to average over \$1.00 per cubic yard to pay wages to the miner.

Pictures No. 6 and 7, Plates 3 and 4 show the old hand mining operations and the extent of the alluvial fan at lower end of Gill Gulch.

Dublin Gulch

Extent of early day activity on this short gulch is not now evident. Mining, however, was apparently limited to the lower mile on sections now held by Mr. Lundy and Mr. Martin. Mr. Barker, who has mined on upper Haggart the past 11 years and is familiar with the district since its discovery, estimates the total production to date to be in excess of \$100,000.00.

Wm. Lundy property

During the past 3 years Mr. Lundy reported producing \$25,000.00 from ground sluicing and use of a small giant. His production was made from a number of small cuts which appear to have been remnants left by former miners. His property extends 2500 feet upstream from east sidelines of Mr. Barkers No. 5 and No. 6 Above claims. The lower half of this ground is covered by fine tailings behind a "brush" dam, which was necessary to prevent his tailing being carried onto the Barker claims.

In 1945 Mr. Lundy reports recovering \$3000.00 from 1500 cubic yards in one small cut, and \$6000.00 from 7500 cubic yards mined from two cuts, and employing two men. Depth of ground is 20 to 25 feet. Original width of the pay-streak appears to have averaged about 100 feet. Boulders over 6 or 8 inches were thrown aside by hand and stacked by stiff-leg derrick. Only a few small cuts remain to be work along limits of the gulch. The ground was originally partially thawed, and there was 4 to 5 feet of frozen moss and muck.

Fred Martin property

The Martin property extends about 3000 feet upstream from Mr. Lundy's, and has been worked by him for a number of years. Operations have been confined to ground sluicing and use of a small giant and stiff-leg derrick to stack boulders over 6 to 8 inches in diameter. A crew of 4 or 5 men are usually employed. The property is said to be largely virgin ground of 24 foot average depth. Twenty feet of the gravel bank is reported to be gold bearing.

Production data was not obtained as Mr. Martin was "outside", but others report his gold recovery to be around \$50,000.00. It is claimed this property has over two hundred thousand cubic yards of virgin ground remaining along bottom of gulch, having an average value in excess of \$1.00 per cubic yard. However, evidence of thorough testing of this ground was not noted.

The owner is reported planning purchase of tractor and dozer, and a pump to permit re-use of the water. A much larger yardage should be handled each year and lower costs realized with this equipment than was previously possible.

During early years of the recent war, Mr. Martin was encouraged to operate by the Canadian government on account of the appreciable tin content in the concentrates. A substantial bonus was paid and an appreciable tonnage was produced. Six or eight tons of sacked tin concentrates were noted at camp, which the owner objected to shipping when the bonus was dropped about one year ago.

Upper Haggart creek

Prior to 1933 mining of the recent gravels along this stream was limited to the 1913 effort of Kinsey, Merriman, and MacWhinnie on what is now claim No. 14 Below. Here a drag-scraper was employed operated by hoist which was powered by a wood fired boiler. A cut about 300 feet long by 60 feet wide by 9 feet deep was taken out; an estimated 6000 cubic yards was dragged up an incline to an elevated sluice, and \$7000.00 was reported recovered, which indicates an average value of \$1.16 per cubic yard. The scraping was apparently done under water; no evidence of bedrock being picked-up was observed in the tailings.

Failure to continue this operation was probably due to the high costs of the project and inability to handle appreciable yardage with equipment employed.

Balance of original locators prospecting and mining was limited to sinking shafts and drifting from them at numerous points on the right and left limits of the creek. Several old boilers were observed near collars of old shafts, and a number of those ventures are noted on sketch Map 4. Depths of shafts and extent of drift work from them is not known, but gold recovery from these efforts is believed to have been small.

It seems apparent that the "creep" of the slopes down hill - especially on right limits from No. 7 Below to No. 17 below - have covered the channel gravels to depths of 5 to 20 feet (or more) with muck and gravel, forcing the stream over to the left limits. It seems likely that the numerous shafts may have been put down to locate this presently covered creek channel. (Refer to picture No. 8, Plate 4).

In 1933 the Haggart Creek Mining Company was formed, and claims No. 1 Below to No. 22 Below were consolidated under one ownership. Their operations up to 1942 was confined to working the creek bottom on claims No. 1 to No. 4 Below - a distance of 1782 feet.

During this period Mr. Barker reports the gross production was over \$160,000 from 170,000 to 180,000 cubic yards. From 1939 to 1942 his production estimates are as follows:-

<u>Year</u>	<u>Yardage mined</u>	<u>Gold recovery</u>	<u>Average value/cu. yd</u>
1939	?	\$ 14,000	?
1940	?	34,000	?
1941	70,000	67,000	95.7¢
1942	<u>82,000</u>	<u>45,409</u>	<u>55.3¢</u>
	152,000 cy	\$160,409	74. ¢

The 1941-42 operations are said to have been largely confined to re-working the ground mined in years from 1937 to 1940, inclusive, and while a $\frac{3}{4}$ yard Sauerman crescent scraper was employed for stripping and stacking tailings, and a D-4 tractor used to feed the sluice.

Average values of ground mined in 1937 is reported to have been \$1.21 per cubic yard.

In 1941 the D-4 was equipped with a "high-lift" shovel and a D-7 tractor with cable dozer was rented. With this equipment, plus the Sauerman scraper,

Eighty four cabins were built on the individual claims in this section of the valley by the early day locators, and presumably at least one shaft was attempted on each claim. Local information indicates all were eventually abandoned due to wetness of the ground. It was not determined how many (if any) reached bedrock or what values may have been found. It is evident, however, that values were too low or physical difficulties were too great to overcome (or both). Remains of many of the old cabins were visible from the road. All of this activity is stated to have been prior to 1914, and that the claims were abandoned following discovery of the rich silver-lead prospects on Keno Hill.

The next report interest in this area was in 1941. During summer months of that year the Mayukon Company of Toronto, financed by a Mr. Robert Potter, put down 9 churn drill holes. Six of them - No. 4 to No. 9 - were drilled in the "canyon area" where the valley narrows to width of 400 to 500 feet. The other three holes were drilled further upstream; their location was not determined but all the drilling was done 6 to 7 miles below mouth of Lynx creek.

The drilling was done by Hall Dole, a diamond driller, under the inexperienced direction of George Potter, brother of individual financing the venture. Mr. Barker, who observed the work on numerous occasions, states no attempt was made to pan and "log" each successive drive, or to wash all material from the holes; depths to bedrock, therefore, appears to have been the only useful information obtained. Mr. Barker later acquired the only reputed record of the drilling, which was kept by the driller on sheets of 3" x 5" pocket notebook. These were examined and are reproduced below.

Haggart Creek Drilling Record
Mayukon Company

D. H. No. 1	Date:- June 27, 1941	D. H. No. 3	Date:-	? ? ? ?
Drive shoe	0' - 4"	Drive shoe		0' - 4"
1 length pipe	5 - 4	1 length pipe		5 - 4
1 " "	5 - 4	1 " "		5 - 4
1 " "	6 - 2 $\frac{1}{2}$	1 " "		6 - 3 $\frac{1}{2}$
1 " "	5 - 4 $\frac{1}{2}$	1 " "		5 - 4
1 " "	5 - 5	1 " "		6 - 3
1 " "	6 - 3 $\frac{1}{2}$	1 " "		5 - 5
1 " "	6 - 3	1 " "		6 - 2
1 " "	6 - 3 $\frac{1}{2}$	1 " "		6 - 3
1 " "	6 - 4	1 " "		6 - 4
1 " "	5 - 2	1 " "		6 - 3
1 " "	6 - 3	1 " "		5 - 2
	64' - 7"			64' - 5 $\frac{1}{2}$ "
Pipe in hole	59' - 6"	Depth of hole		62' - 6"

D. H. No. 2	Date:- July 5, 1941	D. H. No. 4	Date:-	? ? ? ?
Drive shoe	0' - 4"	Drive shoe		0' - 4"
1 length pipe	8 - 4	1 length pipe		5 - 4
1 " "	5 - 4	1 " "		5 - 4
1 " "	5 - 4			11' - 0"
1 " "	6 - 4	Depth of hole		7' - 0"
1 " "	5 - 4 $\frac{1}{2}$			
	28' - 0 $\frac{1}{2}$ "			
Depth of hole	? - ?			

D. H. No. 5	Date:-	???	D. H. No. 6	Date:-	???
Drive shoe		08 - 4"	Drive shoe		0' - 4"
1 length pipe		5 - 4	1 length pipe		5 - 4
1 " "		5 - 4	1 " "		5 - 2
		<u>11' - 0"</u>			<u>10' - 10"</u>
Depth of hole		9' - 0"			
D. H. No. 7	Date:-	???	D. H. No. 8	Date:-	???
Drive shoe		0' - 4"	Drive shoe		0' - 4"
1 length pipe		5 - 4	1 length pipe		5 - 4
1 length pipe		5 - 2	1 length pipe		5 - 5
		<u>10' - 10"</u>	1 length pipe		6 - 4
Depth of hole		10' - 0"	Depth of hole		<u>17' - 5"</u>
					13' - 6"
D. H. No. 9	Date:-	???			
Drive shoe		0' - 4"			
1 length pipe		5 - 4			
1 " "		6 - 4			
1 " "		5 - 5			
		<u>17' - 5"</u>			
Depth of hole		17' - 0"			

The above drilling is of no present value, except to indicate depths to bedrock at these points.

The next interest shown in possibilities of lower Haggart valley was in 1944, at which time E. H. Barker located two 5 mile special dredging leases. Now held under option agreement by the Sunshine Mining company, as previously noted, the future plans of that company for this ground are not known.

GEOLOGY AND MINERALIZATION

Areal geology of the district is described under the Descriptive Notes on Preliminary Map 43-9, Upper McQuesten River, Yukon Territory, issued in 1943 by Mines and Geology Branch, Department of Mines and Resources, Ottawa, Canada. This excellent work - attached and referred to as Map 43-9 - reveals geology and drainage system in considerable detail on Scale 1 inch equals 2 miles.

That section embracing Haggart creek and its tributaries has been enlarged 4 diameters; it is attached and marked Map No. 1.

The formations are classed as (1) Pre-Cambrian and (?) Later. These are composed of mica, graphite, and chlorite schists, and quartzites, with slates, conglomerates, and some limestone, which as a whole are known as the Yukon Group; and (2) Mesozoic and (?) Later, composed of granodiorite, minor quartz porphyry, pegmatite and aplite, diorite, and gabbro intrusives.

The Haggart creek area intrusives, as noted on Map No. 1, represented by "stocks" or cupola's, are granitic in character. A short distance below Mr. Barkers camp on No. 3 Below is the only point known to date where an intrusive crosses the creek. Here diorite over 150 in width was exposed in mining. So far as is presently known bedrock along the creek is schist, slate, quartz-

^
balance of

ite, or limestone.

As noted under Descriptive Notes, Map 43-9, the last and main Pleistocene glacial movement was "westward, scouring the bottoms and lower slopes of the deep valleys and depositing morainic material in declivities on either side. Valleys sheltered from this glacial advance, but opening into the main ice-filled valleys, were damned back by the ice and glacial stream debris was deposited in them. Dublin Gulch and Haggart creek are believed to have been protected from this last advance by the hills to the east, but there is some evidence in Dublin Gulch of an earlier period of Pleistocene glaciation during which the ice rose much higher than during the last stage". This latter elevation is shown on the map.

No morainal deposits were noted in the Haggart drainage basin. The only possible evidence of glacial influence is the silt or surface muck which may have been deposited as "outwash" on the valley alluvials, when the valley was blocked by the glacier moving down the McQuesten valley.

Depth⁸ muck and moss resting upon the valley alluvials where possible to observe averages 3 to 5 feet, and is said to be frozen as a rule.

Mineralization is widespread and closely associated with the granitic intrusives. The highly distorted schists, slates, and quartzites contain numerous quartz stringers. Pyritization is common throughout the area. Immediately north of the diorite crossing the creek near camp, and within a few hundred feet of its contact with the intruded schist, a wide pyritized zone was exposed in mining. Here the pyrite occurs in small masses or lenses associated with irregular quartz stringers, as well as in small veinlets and disseminated grains. Assays up to 7 ounces in silver are reported to have been obtained in zone. A hand sample (No. 68) of the massive, coarse grained pyrite assayed only 0.01 oz gold and 0.20 oz silver.

An 7 foot 9 inch width of heavily pyritized graphitic schistose slate outcrops in the low exposed rim-rock on right limits of creek on No. 3 Above. Marcasite occurs with the pyrite, and their oxidation has developed considerable limonite. This outcrop was sampled in 5 sections with following results:-

No. 62	13"	Tr Au	Tr Ag	Pyrite &/or marcasite in graphitic slate.
No. 63	10"	.005	.34	Weathered blue slate & soft oxidized vein matter. $\frac{3}{8}$ " limonite.
No. 64	12"	.005	.48	Limonite & oxidized vein filling. Some pyrite. 3" graphitic slate.
No. 65	20"	Tr	.14	Broken siliceous vein material with pyrite and limonite in graphitic slate.
No. 66	38"	Tr	.04	Weathered pyritized siliceous schistose material.

Near crest of ridge immediately north of Mr. Lundy's camp on Dublin Gulch lode tin (cassiterite) was located by Harvey Ray. Prospecting for the Mining Corporation of Canada, Mr. Ray spent summers of 1940 and 1941 tracing scheelite and cassiterite "float" up the slope by panning the shallow overburden and digging numerous trenches. This project was conceived as a war effort, aimed to increase

the supply of vitally needed tin and tungsten, and was based upon abundance of cassiterite, scheelite, and ferberite in Dublin Gulch placer concentrates.

The tin occurs in subangular brown or greenish pebbles, and the finely crystalline cassiterite is associated with tourmaline, quartz and chlorite; it is described as "resembling coagulated sugar (brown) and is very different from the wood tin found in the Klondike placers", as shown in specimen obtained. Source of the tungsten minerals was not determined but the cassiterite was isolated near crest of the rounded dome shaped ridge.

The property was optioned to and exploration undertaken by the Consolidated Mining and Smelting Company. Diamond drilling was attempted but the ground would not core; extensive stripping by dozer equipment was done and several adits were driven. The tin ore was found in place, associated with narrow sills (?) of an altered greenish siliceous rock in a highly distorted graphitic schist; the numerous irregular quartz stringers and narrow sills (?) are broken and discontinuous. No granitic rock types were exposed by the work; the apparent theory and/or objective was to trace the tin bearing stringers into the granitic stock believed to have been responsible for and to be close to surface of the ridge. This effort was unsuccessful and the project was dropped early in September 1945. Where the tin bearing stringers were found, assays are reported to have shown 1.2% tin, and negligible amounts of tungsten.

Abundance of scheelite in Dublin Gulch gravels resulted in a six week testing program, in 1942, of the Dublin bench, which is located on south side of gulch and extends down stream on left limits of Haggart creek for $\frac{1}{2}$ mile or more. This work was under direction of Dr. Bostock of the Geologic Survey of Canada. Results apparently proved the scheelite content high enough to pay for its mining; in addition an appreciable gold content was determined. Mr. Barker was asked to mine the area for its tungsten, but the project was not undertaken due to lack of adequate available equipment.

Map 2, made by Dr. Bostock, shows area tested but not the location of his test work. Over 1 million cubic yards of commercial value are said to have been estimated in this block of ground.

Map 3 shows location and ownership of lode claims staked following discovery of the lode tin occurrence.

The showings on the Wasp lode claim - the most easterly claim along the Gulch - was examined. Mr. Harvey Ray, the locator, claimed to have found gold values across a wide, sparsely mineralized zone. One chip sample (No. 61) was taken across a 50 foot width; the mineralization consisted of occasional small grains of pyrite, wolframite, chalcopyrite, and a soft sectile gray metallic mineral (possible a bismuth mineral ?) in a siliceous groundmass. Only a trace of gold was found in the sample.

On right limit of Lynx creek - 5 or 6 miles above its mouth - Harvey Ray reports finding numerous pieces of gold-quartz float, from which he claims to have obtained up to 7 $\frac{1}{2}$ pans upon crushing and panning. Source of the float had not been determined.

Samples of the placer gold from upper Haggart, recovered by Mr. Barker during last period of Haggart Creek Mining Company's operations, were examined. At least two gold types are found here, obviously from different sources. The gold is predominately coarse, but an appreciable amount of "wire" gold occurs, which is "brighter" than the coarse and has traveled a much shorter distance.

A small amount of platinum is reported - its presence is suggested by "Platinum Pup".

Very little magnetite is found - the predominate heavy concentrate is scheelite. Hematite is common and is found in size range from small particles up to subangular boulders 8 inches or more in diameter. Some "wood" tin is found in the concentrates, differing from the crystalline cassiterite occurring in the Dublin Gulch gravels. Occasionally small pieces of a soft dark gray metallic mineral is found in the clean-ups - its identity was not determined.

DEVELOPMENT

A systematic development or prospecting program has never been carried out on Haggart creek or its tributaries to determine yardage reserves of economic value.

SAMPLING

No sampling was attempted during period of preliminary investigation. However, operations of the Haggart Creek Mining Company in recent years indicates the recovered average value to have been somewhere between 68¢ and \$1.05, and the limited mining operation in 1913 or 1914 on No. 14 Below to have been about \$1.16 (the latter with Au @ 20.67).

Mining operations at these two widely separated points along the creek bottom is considered indicative of "possible" values in the intervening block of ground - a distance of approximately one mile.

YARDAGE POSSIBILITIES AND VALUE ESTIMATES

Between No. 4 Below and No. 22 below there is an estimated 1 million cubic yards. Past production suggests a "possible" valuation for this block to be within range of \$680,000.00 to \$1,116,000.00. This section at present is the only one having a reasonable expectancy of economic value.

of

Under classification "possible" gravel reserves the following estimates are made:-

1. Upper Haggart Creek. In the 5 miles of valley (more or less) above section mined by Haggart Creek Mining Company, there is an estimated 440,000 cubic yards per mile, or a total of 2,200,000. This is based on 150 foot average width and 15 feet average depth, both of which are probably greater. This ground is open for location.

The alluvial fan at mouth of Gill Gulch has an estimated 1,000,000 cubic yards. (Refer to pictures No. 2 & 3, Plates 3 & 4).

Dublin bench has an estimated 1,000,000 cubic yards. (Refer to pictures No. 2 & 3, Plates 2 & 3).

2. Lower Haggart Creek. In the 10 mile section below mouth of Lynx creek, the width of valley floor varies from an estimated $\frac{1}{2}$ mile at lower end to $\frac{1}{4}$ mile at the upper. In the short canyon section about half way down the valley the width is about 400 feet. Depths to bedrock, based upon the 1941 drilling,

varied from 7 to 62 feet. For estimating purposes an average 30 foot depth and 900 foot width is taken, which gives a calculated 5,340,000 cubic yards per mile or 53,400,000 for this block. This section is not presently available but is included to show yardage potential of the area.

3. Lynx Creek. The valley of this stream is about 10 miles in length; it was not traversed but is said to average 400 to 600 feet along the creek bottom.

Using a 300 foot width and 30 foot depth, the possible yardage is 1,760,000 cubic yards per mile or 17,600,000 for the valley. This ground is open for location; only superficial prospecting is said to have been done upon it.

4. Secret and Swede Creeks. Secret creek and its tributary, Swede creek, is about 6 miles in length, and has an estimated 3,000,000 cubic yards of possible value. This drainage was not traversed. Mr. Barker reports having obtained very good "prospects" from the area during late fall prospecting several years ago. The ground is open for location.

Yardage Potential Summary

The yardage potential in the valley alluvials is summarized as follows:-

Lower Haggart - 10 miles	53,400,000 cubic yards
Upper Haggart - No. 4 Below to No. 22 Below	1,000,000
Upper Haggart - 5 miles	2,200,000
Upper Haggart - Gill Gulch	1,000,000
Upper Haggart - Dublin Bench	1,000,000
Lynx creek - 10 miles	17,600,000
Secret & Swede creeks - 6 miles	<u>3,000,000</u>
Total	79,200,000 cubic yards

It is not to be assumed that the above total estimated yardage potential will prove of economic value. Excluding the estimate for the lower Haggart creek block, there is an estimated 25,800,000 cubic yards.

MINING METHODS AND COSTS

The area as a whole is considered suitable for bucket-line dredging.

On upper Haggart creek, from point about $\frac{1}{2}$ mile above Lynx creek, the probable width, depth, type of gravel and bedrock suggests the ground could be worked either by dragline or $3\frac{1}{2}$ to 5 cubic foot bucketline dredge equipment.

With possible exception of Secret creek, the balance of area is probably suitable for larger bucketline dredging equipment.

It is estimated that length of dredging season would be about 6 months. Where the ground is covered with moss and muck it will probably be frozen to depths of 5 feet or more.

Mining costs should not exceed 25 to 30 ¢ per cubic yard for a dredging operation. Mining with dragline equipment costs would probably be at least 10¢ higher.

LABOR SUPPLY

At present there is no labor available locally, and would therefore have to be recruited in southern British Columbia. Wage scales would have to at least equal the rates established in the Dawson area, where they are set by union contracts.

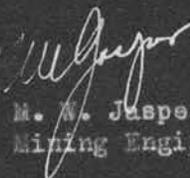
RECOMMENDATIONS

With upper Haggart creek, from mouth of Lynx creek to head of valley, considered to have a good chance of proving a minimum of 3,000,000 cubic yards of economic value, the following recommendations are made for the area:-

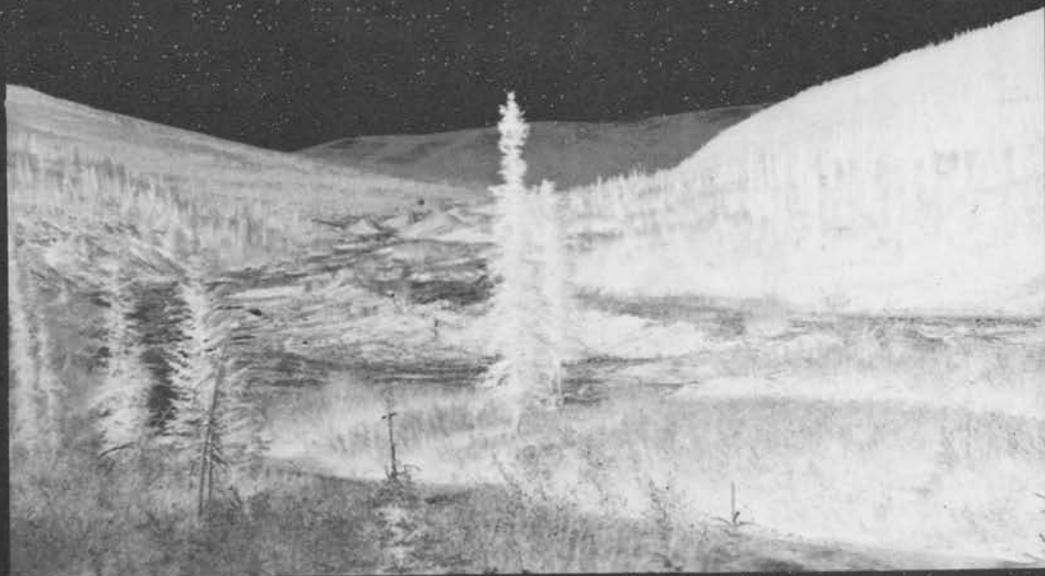
1. That suitable option agreements be made with the Haggart Creek mining Company and E. H. Barker.
2. That a minimum of \$15,000.00 be spent on a prospect drilling program. Initial drilling should be confined to evaluation of the Haggart Creek Mining Company ground. Results of this work will determine whether further exploration is warranted.
3. Before the drilling program is started, the following ground should be acquired by staking:-
 - (a) The unlocated ground between No. 22 Below and the Sunshine Mining Company's special leases. There is possibly $\frac{1}{2}$ to 1 mile of the creek believed to be open.
 - (b) The 5 miles (more or less) from Mr. Barkers No. 10 Above to the head of the valley.
 - (c) The 10 miles (more or less) covering the full length of Lynx creek.
 - (d) Secret creek and its tributary Swede creek should be investigated and probably located.

Acquisition of the above ground will provide a continuous block 17 miles (more or less) in length with a yardage potential estimated at 25,000,000 cubic yards as a minimum.

Signed by-


M. W. Jasper
Mining Engineer

803 Arctic Building
Seattle, Washington



No. 1

Haggart Creek, Yukon Territory. Looking downstream from bench
1/2 mile above E. H. Barkers camp. Tailings in background stacked
by D-7 during last operating period.

September 27, 1945



No. 2

Haggart Creek. Looking south and down the valley from summit
dump on Tin Mountain.

September 28, 1945



No. 3

Haggart Creek. Looking SW and downstream, showing upper section of E. H. Barker's property. Small creek from Dublin Gulch joins Haggart in right foreground. Taken from summit dump on Tin Mt. September 28, 1945



No. 4

Haggart Creek. Looking downstream and showing most of area mined by E. H. Barker.

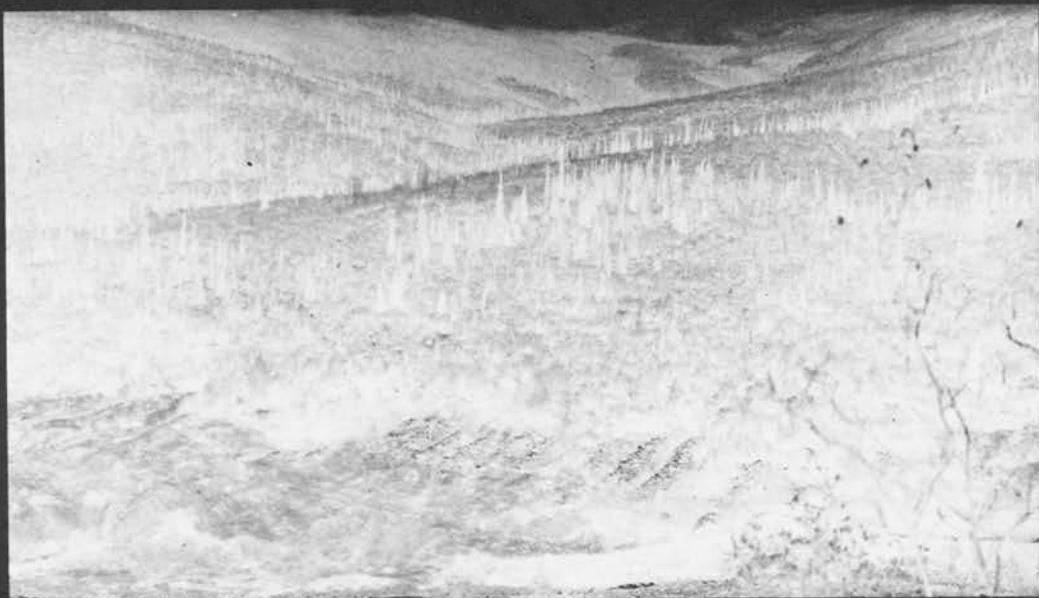
September 29, 1945



No. 5

Haggart Creek. Showing balance of short section mined by E. H. Barker to date.

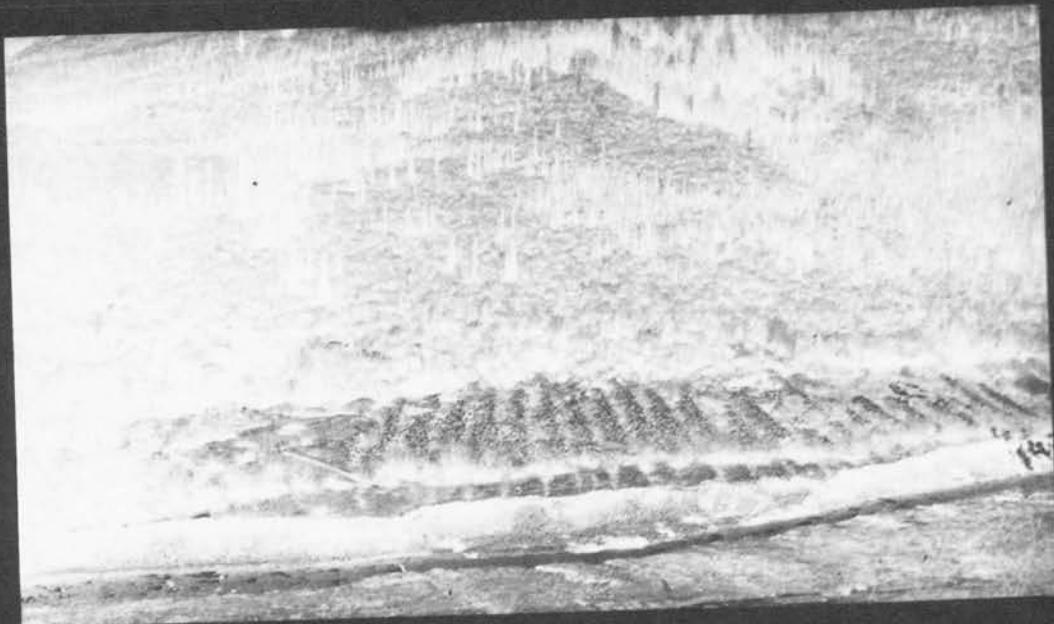
September 29, 1945



No. 6

Haggart Creek. Looking across creek and up Gill Gulch from point $\frac{1}{4}$ mile above Barker's camp. Foreground shows tailings from early day "shoveling-in" operations on "rim" of right limits.

September 29, 1945



No. 7

Haggart Creek. Tailings from old hand mining operations on right limit rim just above picture No. 6. Ground above old tailings worked to undetermined extent by drift mining from old shafts across lower end of Gill Gulch.

September 29, 1945



No. 8

Haggart Creek. Showing lower limits of short section recently mined by E. H. Barker, from point about 1200 ft below camp.

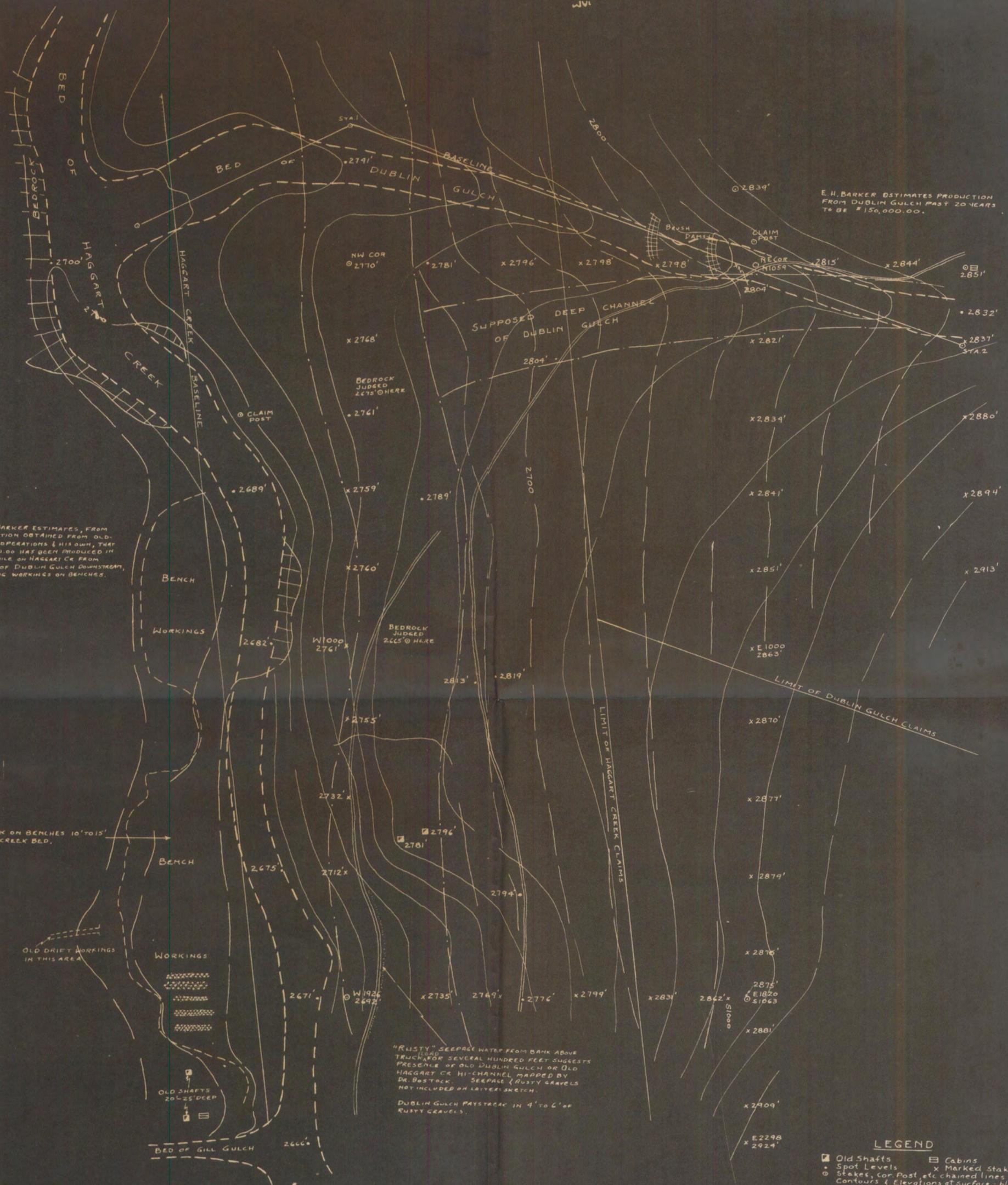
September 29, 1945



No. 9

Haggart Creek. Looking upstream along short section mined by
E. H. Barker. Note absence of coarse wash in stacked tailings.
Taken from point about 1200 feet below camp.

September 29, 1945



NOTE:-
E. H. BARKER ESTIMATES, FROM INFORMATION OBTAINED FROM OLD-TIMERS OPERATIONS & HIS OWN, THAT \$400,000.00 HAS BEEN PRODUCED IN 1 TO 1 1/2 MILE ON HAGGART CR FROM MOUTH OF DUBLIN GULCH DOWNSTREAM, INCLUDING WORKINGS ON BENCHES.

BEDROCK ON BENCHES 10' TO 15' ABOVE CREEK BED.

OLD DRIFT WORKINGS IN THIS AREA

"RUSTY" SEEPAGE WATER FROM BANK ABOVE TRUCK FOR SEVERAL HUNDRED FEET SUGGESTS PRESENCE OF OLD DUBLIN GULCH OR OLD HAGGART CR HI-CHANNEL MAPPED BY DR. BOSTOCK. SEEPAGE (RUSTY) GRAVELS NOT INCLUDED ON LATTER SKETCH.
DUBLIN GULCH PAYSTRAK IN 4' TO 6' OF RUSTY GRAVELS.

E. H. BARKER ESTIMATES PRODUCTION FROM DUBLIN GULCH PAST 20 YEARS TO BE \$150,000.00.

LEGEND
 □ Old Shafts □ Cabins
 • Spot Levels x Marked Stakes
 ○ Stakes, Cor. Post, etc. chained lines
 Contours & Elevations at surface - black
 Old channels (supposed) dash-dot - red
 Contours showing greatest likely depth to bedrock in red.
 Contour intervals 20'

**MAP OF
DUBLIN-HAGGART BENCH
MAYO DISTRICT-Y.T.**

BY
DR. BOSTOCK - CAN. GEOL. SURV.
1942

Scale: 1" = 200'

NOTE: Traced from print held by E. H. BARKER, SEPT. 28, 1945, with additional notes by M. W. G. J. P. 1943, 1946.

FREERORT EXPLORATION COMPANY
MAP PLATE NO. 2

□ CAMP □
BARKER & RAY

HELD BY MINING CORP. OF CANADA
OPTIONED TO CONS. MIN. & SMELT. CO.

HARVEY RAY'S CABIN

OLD SHAFT - REPORTED
60' DEEP

TIN SHOWINGS -
STRIPPED BY DOZER
FOR C.M. & S. CO. 7/6

HELD BY E. H. BARKER

WM. LUNDY'S -
1945 HYDRAULIC OPERATION

BARKER & RAY CAMP

F. TAYLOR'S -
1945 HYDRAULIC OPERATIONS

HELD BY BRALORNE

HELD BY BRALORNE

HELD BY RAY, SWANSON,
BECKER, & CEHOLM

MAP OF UPPER HAGGART BENCH MAYO DISTRICT-Y.T.

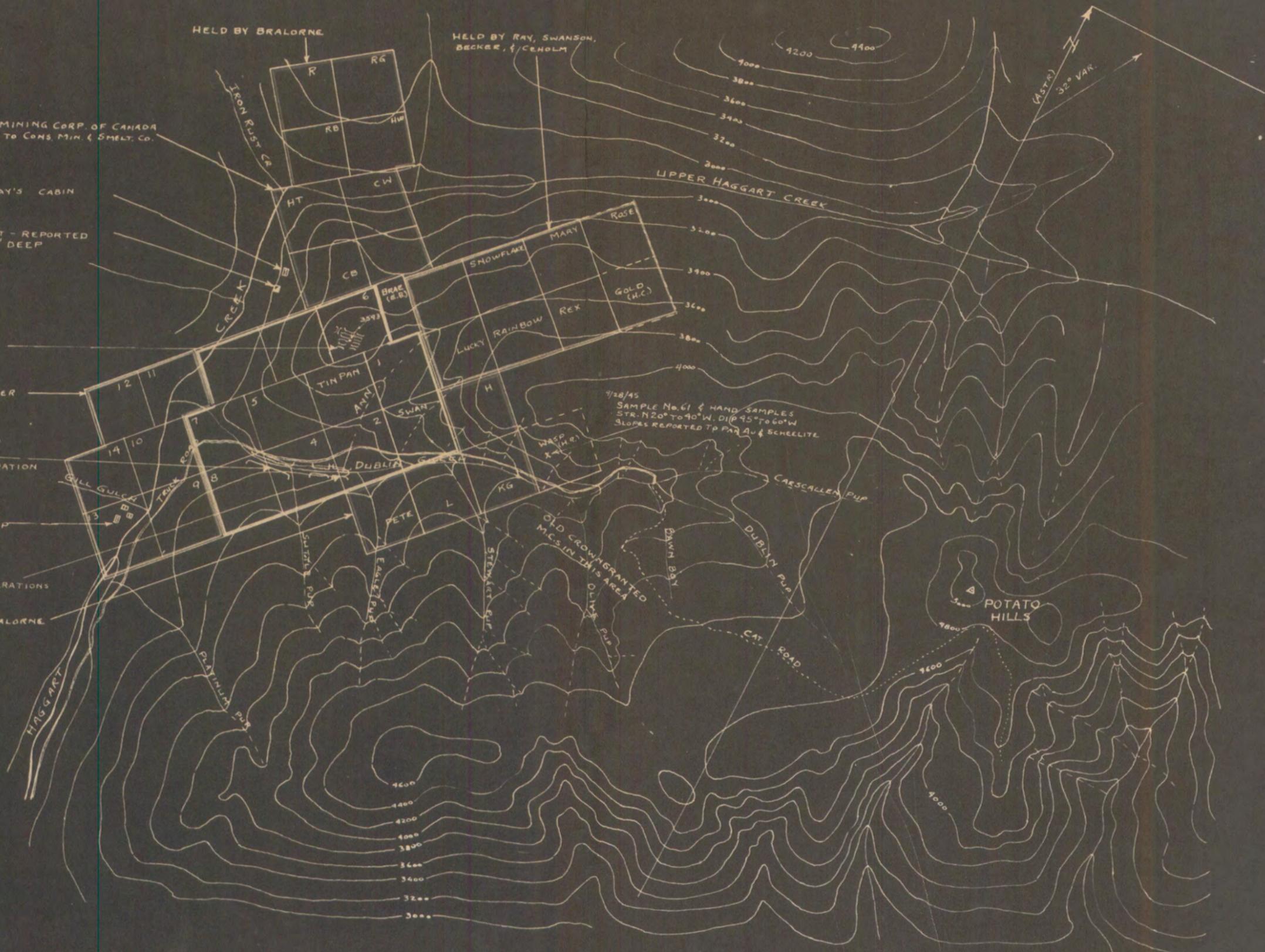
SHOWING LODE CLAIM LOCATIONS,
STRIPPING OPERATIONS ON TIN
SHOWINGS, AND MINERALIZED SECTIONS
SAMPLED IN SEPT. 1945.

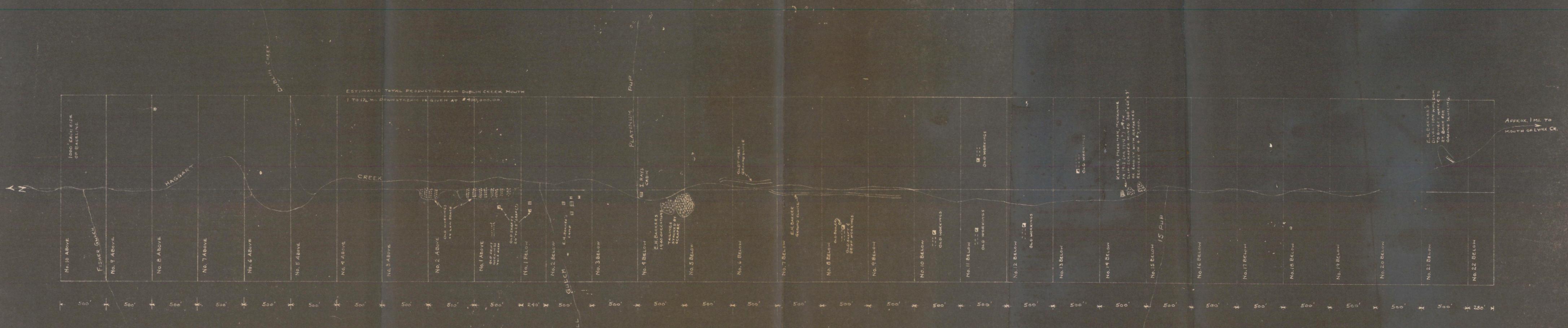
TAKEN FROM BLUEPRINT SUPPLIED BY
E. H. BARKER - SOURCE C.M. & S.M. CO.

Scale: - Date: Feb. 9, 1946

By: M.W. JEFFER

FREEPORT EXPLORATION COMPANY
MAP PLATE NO. 3





ESTIMATED TOTAL PRODUCTION FROM DUBLIN CREEK MOUTH
 1 TO 1 1/2 MI. DOWNSTREAM IS GIVEN AT \$400,000.00.

SKETCH MAP,
 OF
 UPPER HAGGART CREEK CLAIMS
 MAYO DISTRICT, Y.T.
 HELD BY E.H. BARKER AND ASSOCIATES
 COMPILED FROM DATA SUPPLIED BY OWNER.
 LOCATION OF WORKINGS ROUGHLY CHECKED
 ON PROPERTY BETWEEN 7/27-29/45.
 Scale: 1" = 500' Date: Feb. 13, 1946
 By: M.W. Gorman, Min. Eng.
 MAP No. 4