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POTATO TUNGSTEN SHOWING

Dublin Gulch, Mayo District,
Yukon Territory

R.J.Cathro, P.Eng.

October 1, 1968

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scale 1 inch = 50 feet

Introduction

Dublin Gulch is a tributary of Haggart Creek, in the Mayo District, central Yukon. These two streams contain the Yukon's most productive gold placer outside of the Klondike. Placer scheelite occurs in significant amounts with the gold and is derived from a stockwork of quartz veins in a small granite body, the Potato Stock, which occurs at the headwaters of Dublin Gulch and its tributaries (see Figure 2).

The lode mining potential of the tungsten deposit has only become interesting with the advent of modern open-pit mining methods. The property could contain one of the largest reserves of tungsten in the world. Although a great deal of information is available in the geology of the area and its mineralogy and geochemistry, no exploration of the size and grade deposits, from an open-pit standpoint, has ever been conducted.

Location and Access

The Dublin Gulch area is situated at $64^{\circ}02'N$ and $135^{\circ}45'W$, in N.T.S. claim sheet 106-D-4 (see Figure 1). It is accessible by a 55 mile road from Mayo, which in turn is 240 road miles north of Whitehorse. A rough trail passable to 4-wheel-drive vehicles extends from the placer workings in Dublin Gulch across the property to the summit of Potato Hills.

History and Previous Work

The earliest recorded prospecting in the Mayo area was by placer miners in the 1880's. Placer operations have been carried

out on Haggart Creek and Dublin Gulch almost continuously since 1898 and are still underway. Scheelite was identified by the G.S.C. in 1904 as a major constituent of the "grey sand" associated with the gold placer concentrates. Tungsten concentrates have been collected as a byproduct since World War One.

Lode prospecting in the area can be divided into three stages: (1) for arsenopyrite-gold-quartz veins prior to World War One, (2) for scheelite veins during both World Wars, and (3) for silver and gold veins by United Keno Hill Mines Ltd. in 1960, and by Mayo Silver Mines Ltd. between 1962 and 1965, when the Rex property of Peso Silver Mines Ltd. to the west was under active development. The tungsten potential was overlooked in this modern work (T.Heard -personal communication).

The previous work has been well documented in government publications which are listed under "References" at the end of this report. The reports by MacLean(1914) and (1916) deal mainly with the arsenopyrite veins while the later reports are mainly concerned with placer and lode scheelite.

Property

The main part of the deposit is staked as Pan 1 to 36 mineral claims, a contiguous block which was recorded on 25, 27 June, 1968 and is held 60% by Conrad Provencher of Whitehorse and 40% by John Boyce of Mayo, Y.T. and Haney, B.C. These are the only claims presently in good standing. About 24 additional claims are required to adequately protect the property. One crown granted mineral claim, Olive, lot 11 group, 1054, which covers an arsenopyrite-gold vein, is still in good standing and is owned by the heirs of the prospector who staked it in

1910. It is situated on the west edge of the Pan claim group.

Regional Geology (Figure 2)

Potato Hills and other nearby mountains are remnants of an older rolling upland which has an elevation of about 4,500 feet. The summit of Potato Hills reaches just over 5,000 feet with valley floors at about the 2,500 foot elevation. The Mayo area was extensively glaciated during the Pleistocene period. Glaciation consisted mainly of scouring and widening of main valleys with deposition of thick covers of till in the bottoms and lower flanks of the valleys. Local alpine glaciers were present on the higher peaks.

The Potato Hills stood above the upper limit of the ice sheet and probably shielded Dublin Gulch and Haggart Creek from an ice advance from the northeast, preserving the placer deposits. Some evidence of a limited, older glaciation is present as a thin layer of weathered glacial till covering the stream gravels. Lynx Creek valley contains truncated spurs which indicate it contained valley glaciers to about the 4,000 foot elevation. The Potato Hills upland and Dublin Gulch basin are extensively mantled by a layer of residual soil and decomposed bedrock up to ten feet deep.

The bedrock of the area consists of schist and quartzite of Precambrian and/or Cambrian age. This unit regionally contains maroon and green shale and conglomerate but in this area it is both extensively deformed and metamorphosed and consists of chlorite, sericite and graphite schist.

These older rocks are intruded by the Potato Stock, a small irregular body, probably Cretaceous in age, which is elongated in

a northeast direction. The stock, which generally follows the upper headwaters of Dublin Gulch on its south and east sides, is 3.5 miles long and from one quarter to one mile wide. In composition, it ranges from granodiorite to quartz monzonite. Texture is uneven with large potash feldspar crystals commonly giving a porphyritic appearance. Grain size ranges from fine to coarse and locally the stock is foliated. Biotite is the mafic mineral. Magnetite is almost completely absent and the intrusive has no magnetic expression.

To the east of the stock, minor limy beds occur in a strongly contorted, foliated quartzite which trends north up Ray Gulch through the summit of Potato Hills.

The district is structurally complex. Much of the bedding in the rocks has been destroyed by folding and the development of foliation. Complex isoclinal folds have been observed elsewhere in the district in larger outcrops. On a regional scale, these older rocks have been thrust by a major fault over Mesozoic rocks. This thrust fault passes in an irregular fashion within ten miles north and four miles east of Potato Hills and dips under and may be related to the mineralization and vein faulting on the property.

Economic Geology

Three major types and several minor occurrences of mineralization occur in the property. These are:

1. Scheelite
2. Arsenopyrite-gold veins
3. Placer-gold-gold veins.
4. Silver-lead-zinc-antimony and tin veins.

1. Scheelite

Scheelite is colourless and very difficult to recognise without ultraviolet lamping, which only became available in the 1930's. It would probably not have been discovered at all in this area but for the fact that it is a relatively heavy mineral and gold was present in placer form. Scheelite has a specific gravity of 5.9 to 6.1 (compared to magnetite at 5.2) and this caused it to accumulate in the gravels of all streams draining the Potato Stock and to be found and traced readily by panning. Eventually, by using the same approach in the soil and decomposed bedrock, several locations were found where scheelite occurred in bedrock.

Tungsten mineralization appears to be confined to two bedrock environments: (1) associated with a quartz-filled fracture system or stockwork within the stock, and (2) disseminated in skarn zones which have developed in limy horizons on the southeast side of the stock, near Ray Gulch. Minor amounts of wolframite have been found in placer operations but their source is not definitely known. Scheelite bearing quartz veins are rare outside the stock but have been found cutting the skarn horizons in Ray Gulch.

The quartz stockwork is a complex network of narrow, ramifying fractures ~~which extend in veinlets~~ ranging in width from a fraction of an inch to six inches. At least three sets of fractures seem to be present and in places the veinlets are spaced every three to six inches. The deep weathering of the intrusive in some areas suggests that a weak but pervasive hydrothermal alteration may be associated with the stockwork. In these weathered areas the intrusive rock has

decomposed to produce a granitic sand containing fragments of quartz veins and scheelite. The sand rests "in situ" or slowly creeps downhill through solifluction and further decomposes to a residual, organic soil. Small scattered areas of unaltered, frost-fractured outcrop and talus occur and these are also shot through with scheelite bearing quartz veins. Calcite and muscovite are the only other minerals in the veins and, where they locally become abundant, the veins have been called pegmatites.

Scheelite occurs as discrete grains both in the veinlets and in the adjacent wallrock. Fairly coarse crystals up to 1/4 inch long are common although most of the crystals are much finer. The scheelite ~~bearing quartz veins~~ is not associated with any other metallic or heavy minerals and could be easily separated from the host rock by crushing and gravity methods.

Prospecting during World War One located three scheelite bearing veins in bedrock near the heads of Bawn Boy and Dublin Gulches. These assayed from 1.8% to 10.1% WO_3 across widths of 2 to 8 inches while the wallrocks up to 2.5 feet on either side assayed from trace to 1.2% WO_3 . A vein which cut the quartzite near the head of Ray Gulch assayed similarly. One "pegmatite" near the head of Dublin Gulch assayed 6.3% WO_3 .

No further lode prospecting was done until 1942 when tremolite skarn float assaying 2.7% to 3.3% WO_3 was found in Ray Gulch. This skarn was not found in place although outcrops of diopside skarn were sampled by the G.S.C. and assayed from 0.27% to 0.50% WO_3 . This area was briefly examined by the writer and samples of ten foot widths from a skarn horizon fifty feet wide assayed from trace to

0.12% WO_3 . It is possible that the skarn contains more scheelite in areas where it is cut by quartz veins or granitic dikes.

During the summer of 1968, Conrad Provencher located one of the old trenches near the head of Dublin Gulch and dug seven shallow prospect pits in an area 200 feet long (see figure 3). Only two of the trenches reached bedrock but all encountered decomposed granitic rock containing fragments of quartz vein with scheelite. Of ten samples taken by the writer, one assayed 0.12% WO_3 and the remainder assayed trace. The area is mostly overburden covered but scattered outcrops and talus in the surrounding area are cut by numerous scheelite bearing quartz veins.

Bostock estimated that the stream gravels in the main portion of Dublin Gulch and its tributaries contain from 0.005% to 0.02% WO_3 and that it increases above Olive Pup to about 0.04% WO_3 . Between 1916 and 1951, about 14 tons of WO_3 was shipped from Dublin Gulch and Haggart Creek, all of which was a byproduct from gold operations ^{expected} for about 500 pounds produced by placering at the head of Bawn Boy Gulch in 1952.

2. Arsenopyrite-gold veins

Approximately six main groups or concentrations of veins were found between 1910 and 1912 in the metamorphic rocks on the northwest side of the Potato Stock. They generally strike northeast and dip steeply, ranging in width from 0.5 to 5.0 feet. The veins have poorly defined walls and probably represent a weak fracture system. Mineralization consists of arsenopyrite and small amounts of pyrite which occurs as a sulfide band within the quartz vein. The arsenopyrite is strongly altered to scorodite and leaching and oxidation was reported by MacLean to extend to a depth of at least

fifty feet. Within this weathered zone, most of the gold was free although very fine and well disseminated, showing up as very fine dust in the pan. Some wire gold was also seen and low silver values were noted. Gold assays ranged from 0.2 oz./ton to 0.5 oz./ton across vein width and interest in these veins quickly waned because of remoteness and the complex mineralogy.

3. Placer Gold

Presumably, the source of the gold is the arsenopyrite veins, and perhaps to a lesser extent, small amounts of gold associated with fracture systems within the Potato Stock. The gold is characteristically rough, even in the finer sizes, and contains 10% silver and a trace of copper. It is tarnished when recovered. In size, about 10% consists of nuggets from 1/8 to one inch long, 60% in fine flakes, and the remainder as dust. Angular shapes, including wires, are common and occasionally the gold is associated with vein quartz. Placering has not been conducted within a mile of the arsenopyrite veins, and it is conceivable that arsenopyrite will be found in increasing amounts associated with free ^{gold} ~~hold~~ as work approaches the vein outcrops.

Traces of several ~~xxxxxx~~ other heavy minerals are found with the gold. Galena, arsenopyrite, sphalerite, cassiterite, hematite, magnetite, wolframite and jamesonite all occur in small amounts and are mainly local in origin. Because the magnetite content of the area is so low, and the scheelite content is so high, that the placer concentrate is grey in colour rather than the typical black.

4. Silver-lead-zinc-antimony & tin veins

Minor amounts of galena, sphalerite and jamesonite occur in scattered veins and are related to more extensive deposits a few

miles west on the property of Peso Silver Mines Ltd., and to the main Keno Hill District ten miles south. One lode occurrence of cassiterite was found during World War Two just northeast of the junction of Dublin Gulch and Haggart Creek. This showing was explored by Cominco at that time. It occurs in greisen alteration associated with a narrow quartz vein.

Marketing

Tungsten is used mainly in steel alloys because of its ability to increase hardness, toughness and workability at high temperatures, and in the production of tungsten carbide and stellite for cutting tools. Its special characteristics also lead to smaller but strategic uses in the electrical industry.

Tungsten has the highest melting point (3,370°C), boiling point (5,900°C) and tensile strength (590,000lbs) of all the metals. Its specific gravity, 19.3, is the same as gold. It is also noted for its elasticity and ductility, low volatility and chemical inertia which gives it strong resistance to corrosion. Tungsten appears to have an important future in the space age.

Tungsten consumption has suffered to a degree from supply uncertainty. Mainland China and neighbouring parts of southeast Asia have long been the major source of world supply and tungsten price has gyrated greatly with political events in that region. Tungsten price has peaked during both world wars, the Korean War, and the Vietnam conflict and a major North American source would have both a strategic value and a steadying effect on price. This would probably stimulate research and result in a healthy growth in consumption.

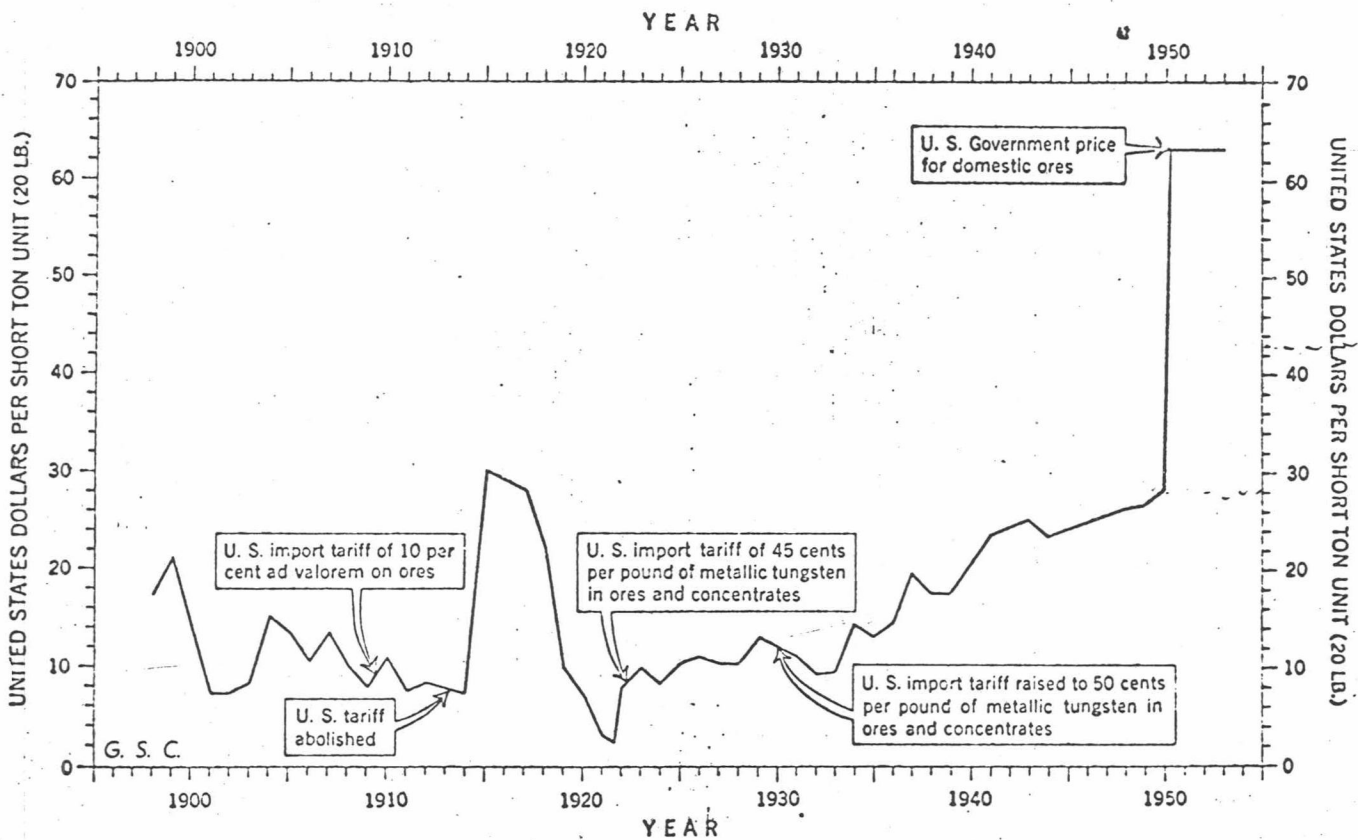


Figure 29. Graph showing yearly average prices of tungsten concentrates for period 1893 to 1953, inclusive. (After Stevenson (1943, p. 27) with additional information from *Minerals Yearbook, U.S. Bureau of Mines*, and *Engineering and Mining Journal*.)

\$43. / unit of 20# grading 65% WO₃

CaWO₄ $\frac{1}{2}$ 63.9% W

CaWO₄ $\frac{1}{2}$ 80.4% WO₃

Tungsten is marketed as WO_3 , which at present sells at about \$40.00 per short ton unit (st \bar{u}), which is 20 lbs, or about \$2.00 per lb. Penalties are imposed on concentrates grading less than 65% WO_3 and containing impurities, notably molybdenum. Concentrates from a scheelite deposit, such as the Potato Hills prospect, should be very clean, grade better than 70%, and command premium prices. Scheelite, $CaWO_4$ has a hardness of 4.5 to 5.0, a specific gravity of 6.1, and contains 80.6% WO_3 and 19.4% CaO. Because of its great density and high WO_3 content, a scheelite concentrate is a very low-volume, high-value shipping product.

Conclusions and Recommendations

The Potato Hills area is both structurally complex and well mineralized. Intrusion of a small, medium-grained granodiorite stock and subsequent, intense tensional fracturing have been superimposed on a regional metamorphism which consists of drag folding, strong schistosity and thrust faulting.

Mineralization consists of several distinct types and probably consists of several separate stages. These are, from oldest to youngest:

1. Quartz and scheelite filling the fracture network within the intrusive stock and to a lesser extent replacing altered limy rocks near the intrusive contact.
2. Quartz-arsenopyrite-pyrite-gold occurring as veins in the metamorphic rocks near the margins of the intrusive. Cassiterite may be associated with these veins in minor amounts.
3. Carbonate-galena-sphalerite-jamesonite-silver also occurring as veins marginal to the intrusive.

Outcrop information is scanty and much of the data on the tungsten mineralization has been gathered indirectly from placer gold operations and exploration for gold and silver-lead veins. The WO_3 content of the quartz stockwork and its distribution within the intrusive can only be determined by a large scale sampling program and to date, only a very minor amount of sampling on scattered individual quartz veins has been attempted.

Although the grade of the stockwork may prove to be very low, the deposit has an exciting economic potential and warrants an initial surface trenching and sampling program. The scheelite is not associated with any other metallic or heavy minerals and can be cheaply separated to produce a concentrate which will assay 70% WO_3 or better. The nature of the deposit is such that it can be expected to be very extensive and fairly uniform in grade and to extend to considerable depth. Because tungsten has historically been won from vein and skarn deposits, which are characteristically rich but small and erratic, the Potato Hills Tungsten Prospect could easily be one of the largest in the world. The absence of a significant overburden or cap rock cover would permit mining to proceed with very little preparation, employing bulk mining methods.

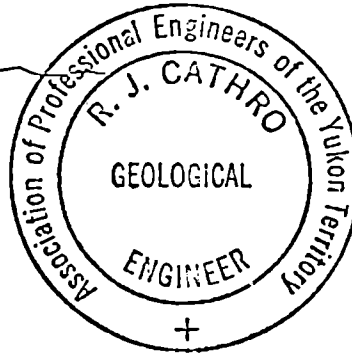
The mineralization appears to occur in a crude halo around the intrusive. Except for the presence of tungsten and complete absence of copper or molybdenum mineralization, the deposit has the essential characteristics of a "porphyry-type" deposit namely, an extensive, quartz-healed fracture pattern within or near an intrusive, associated with weak hydrothermal alteration. If any overlapping occurs between the tungsten and gold zones, this could add appreciably to the

value of the deposit.

Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES LTD.,


R. J. Cathro



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BULLDOZER TRENCHING & SAMPLING PROGRAM

POTATO TUNGSTEN PROSPECT

DUBLIN GULCH, MAYO DISTRICT, Y.T.

October, 1968

Between October 9 and 23, 86 hours of bulldozing were completed at the head of Dublin Gulch in building one mile of winter trail and digging 24 trenches. A Caterpillar D7E with hydraulic U tilt blade was rented from placer miner Fred Taylor who resides a few miles downstream. Eighteen trenches are near the hand pits dug by Conrad Provencher earlier in 1968 and these are shown on the accompanying plan. They were dug in soil and weathered bedrock to an average depth of 5 feet. The volume moved in this area totals 4500 cubic yards. In addition, six trenches consisting of 500 cubic yards were dug elsewhere, two to the northeast towards Cascallen Creek, two on the south side of Dublin Gulch, and two at the head of Bawn Boy Gulch. These did not reach bedrock due to permafrost and were not sampled.

Bedrock consists of decomposed, rubbly granodiorite

cut by numerous quartz veins. Some of these contain visible scheelite while others contain arsenopyrite and scorodite. Bedrock is coloured light to medium brown by iron stain. The weathered rubbly zone extends to an unknown depth. It is covered by at least three feet of sand which has formed from the weathering of the bedrock, and one foot of black organic soil. The sandy layer displays vague horizontal banding which indicates that it is slowly creeping downhill, even on slopes as gentle as 5°.

The trenches were examined at night with the aid of an ultraviolet lamp. The scheelite occurs both in individual veins and in local patches up to one foot in length. There was no noticeable horizontal banding or enrichment in the sandy layer.

The trenches were sampled by filling large plastic bags with random grabs from the entire length of the trench. Each sample weighed about 20 pounds. All samples were taken from the bottom of the walls of the trenches and each trench was sampled twice- one sample by Provencher and one by Cathro. In addition, trenches 1, 2, 3, and 11 were sampled twice by each man, a total of 4 samples from each, because of their greater length, and trenches 4 and 6, which are particularly long, were divided into upper and lower halves and four samples were taken from each half. The total number of samples taken was 56. The assaying was conducted at three

laboratories as a further check on accuracy. Twenty samples were assayed by Coast Eldridge, Vancouver, 28 by Whitehorse Assay Office, and 8 by Technical Service Labs, Toronto. If trace and nil is assumed to be 0.01% W_3 , the average of all 56 assays is 0.042% W_3 . Only six assays exceeded 0.10%, as follows:

<u>% W_3</u>	<u>Trench No.</u>	<u>Sampler</u>
0.36	15	Provencher
0.28	10	Cathro
0.21	2	Cathro
0.20	4	Provencher
0.18	2	Provencher
0.11	8	Cathro

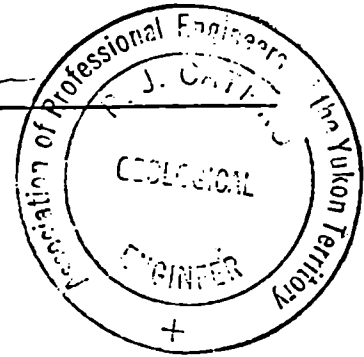
Of the four samples from trench 2, two assayed 0.4% and 0.18%, while the other two assayed trace, an average of 0.10%. In trench 4, one sample assayed 0.20% while two assayed 0.08% and 0.06% and five assayed trace. The average for trench 6 is 0.04%. In trench 8, the two samples assayed 0.11% and trace, an average of 0.06%. Similarly, the second samples from trenches 10 and 15 each assayed trace, giving averages of 0.15% and 0.19%.

Thus, the significant samples show a random distribution with no consistency within a trench or by one sampler. The sampling is considered to be representative

of the particular depth reached by the trenches. The average for this area is about 1 pound WO_3 /ton with a gross value at present metal prices of about \$2.00/ton. While this is a significant, measurable amount considering the size of the Potato Stock, it is too low to be of economic interest in the foreseeable future.

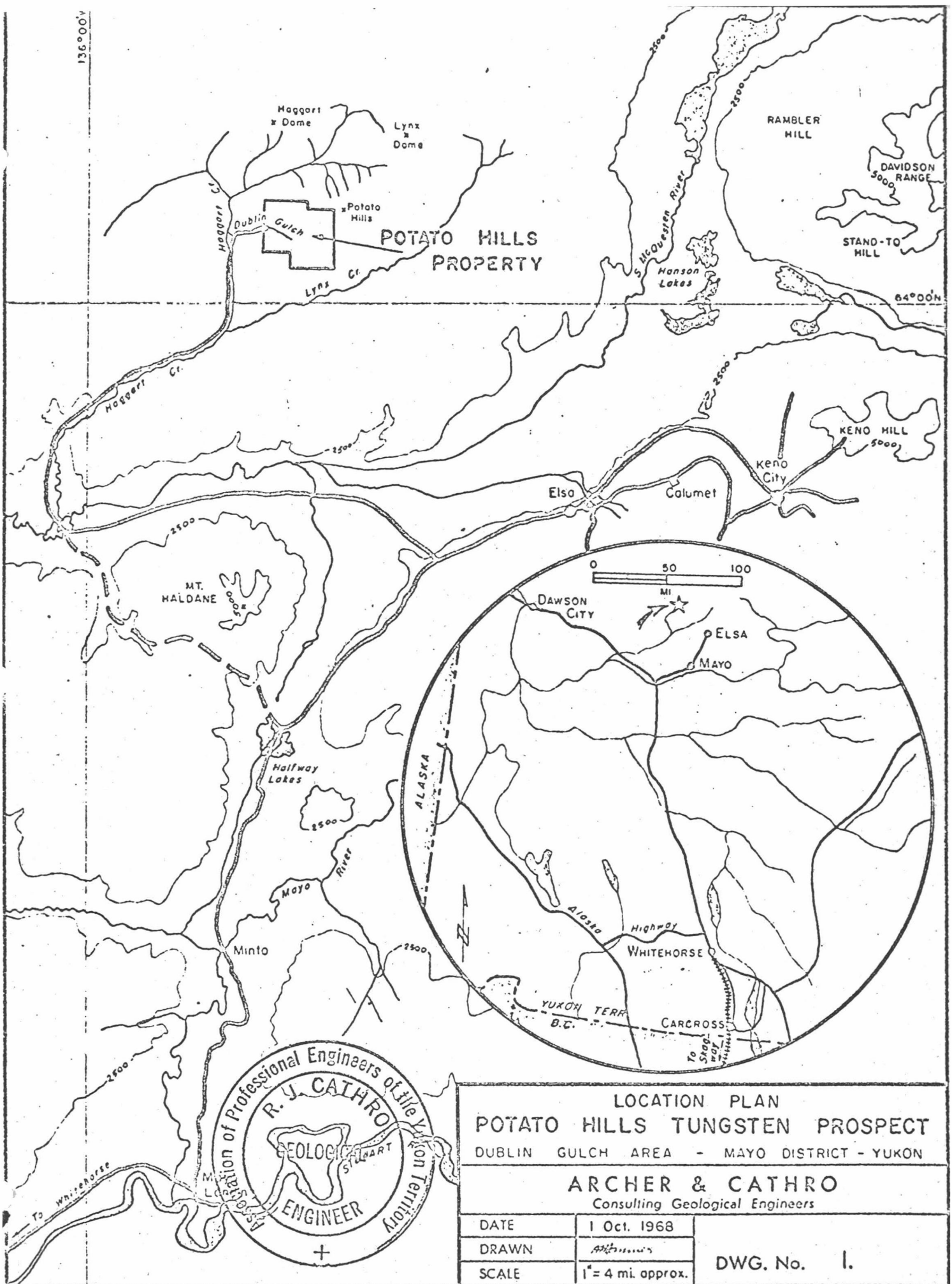
Respectfully submitted,
ARCHER, CATHRO & ASSOC. LTD.


R.J. Cathro



136°00'W

64°00'N



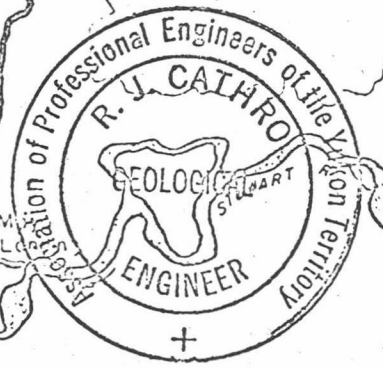
POTATO HILLS PROPERTY

LOCATION PLAN
 POTATO HILLS TUNGSTEN PROSPECT
 DUBLIN GULCH AREA - MAYO DISTRICT - YUKON

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 Consulting Geological Engineers

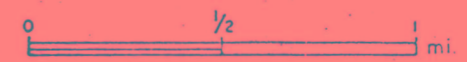
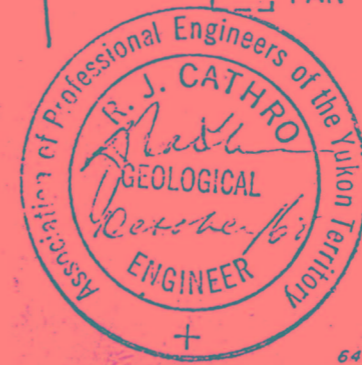
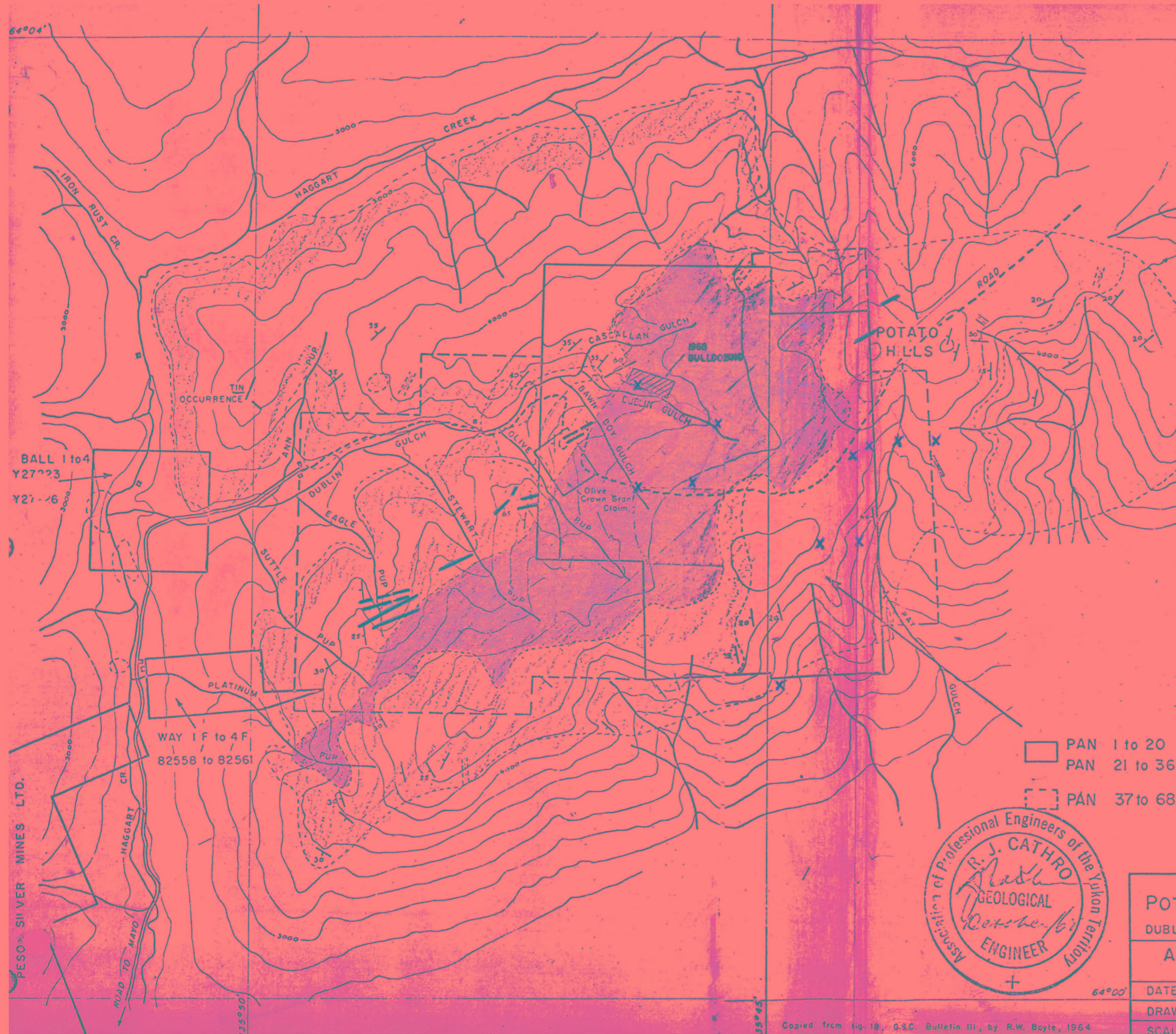
DATE	1 Oct. 1968
DRAWN	<i>Archers</i>
SCALE	1" = 4 mi. approx.

DWG. No. 1.






Legend

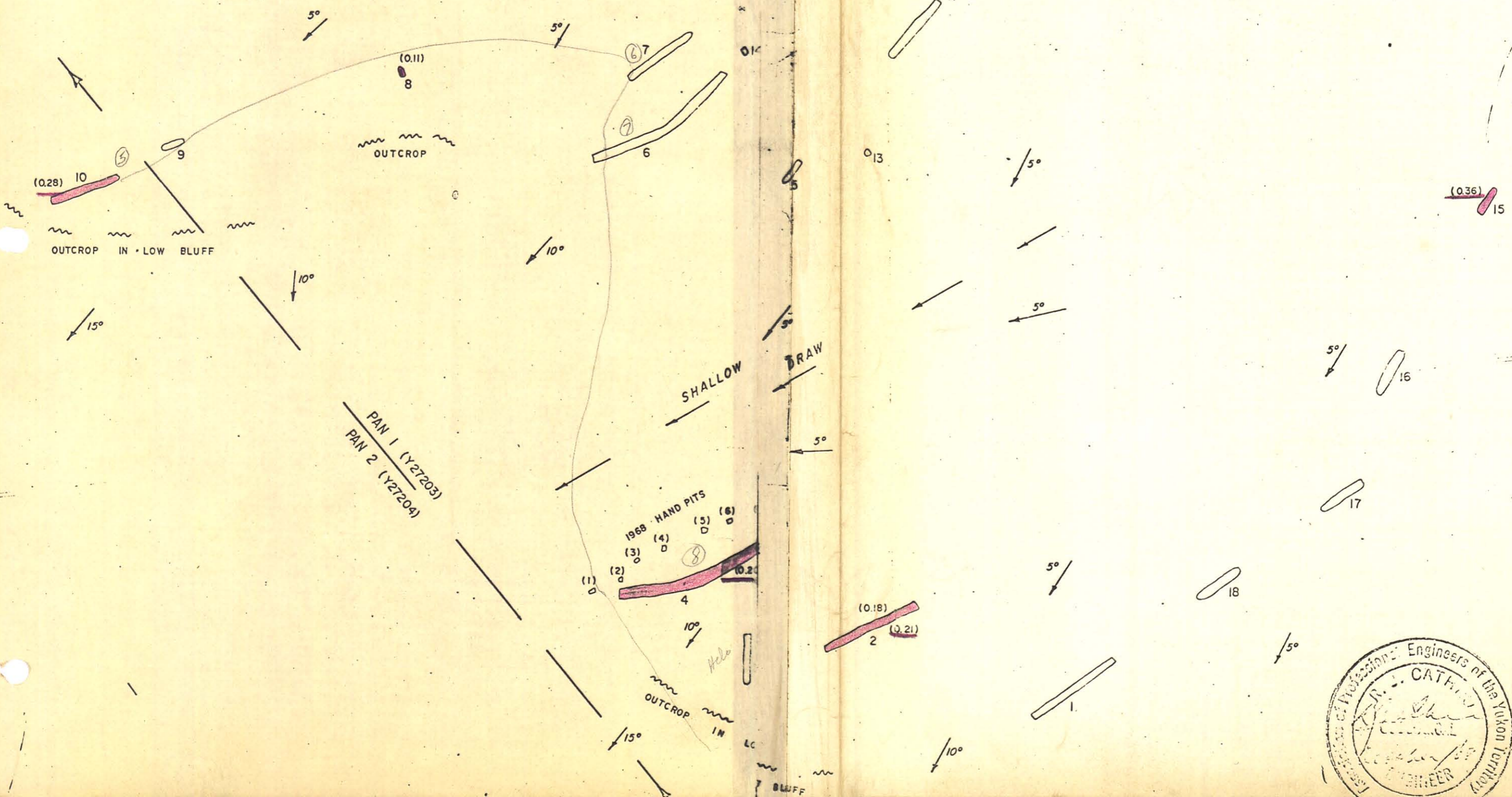
- CRETACEOUS (?)
 - POTATO STOCK - GRANODIORITE, QUARTZ MONZONITE
- PRECAMBRIAN OR CAMBRIAN
 - QUARTZITE, GRAPHITE, CHLORITE AND SERICITE SCHISTS
 - QUARTZITE, QUARTZ-MICA SCHIST, MINOR LIMESTONE
 - QUARTZITE, QUARTZ-MICA SCHIST
 - SCHEELITE OCCURRENCE IN BEDROCK
 - ARSENOPYRITE - GOLD - PYRITE - QUARTZ VEINS
 - PLACER GOLD
 - PLACER SCHEELITE
 - BEDDING &/OR CLEAVAGE
 - ROAD
 - TRACTOR ROAD (PASSABLE TO 4-WHEEL-DRIVE VEHICLES)
 - LIMIT OF OUTCROP OR MAPPING
 - LODE MINERAL CLAIMS
 - CABIN



POTATO HILLS TUNGSTEN PROSPECT	
DUBLIN GULCH AREA - MAYO DISTRICT - YUKON	
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<i>Consulting Geological Engineers</i>	
DATE	1 Oct. 1968
DRAWN	<i>S. J. ...</i>
SCALE	1" = 1/2 mi. DWC.

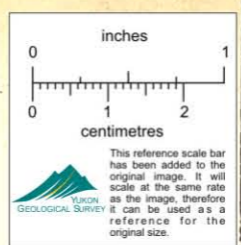
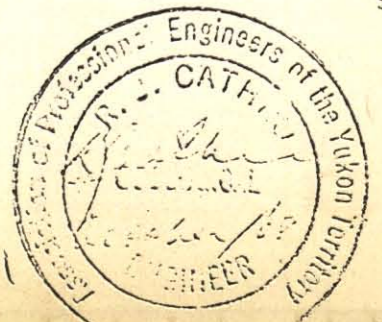
Legend

- 16  Bulldozer trench into hard to decomposed bedrock
-  5° Direction of slope
- (0.23)  WO₃ assay exceeding 0.10%



PAN 1 (YZT203)
PAN 2 (YZT204)

1968 HAND PITS
(1) (2) (3) (4) (5) (6)



PACE & COMPASS SURVEY OF BULLDOZER TRENCHES		
POTATO HILLS TUNGSTEN PROSPECT		
DUBLIN GULCH AREA - MAYO DISTRICT - YUKON TERRITORY		
ARCHER & CATHRO		
<i>Consulting Geological Engineers</i>		
DATE	31 Oct. 1968	DWG. No.
DRAWN		
SCALE	1" = 50'	

DATE Oct 30, 1968

ASSAY CERTIFICATE

K NO. 5132-29

WHITEHORSE ASSAY OFFICE

P.O. BOX 346, WHITEHORSE, YUKON

RECEIVED FROM

ARCHER & CATRO

SAMPLE NO.	GOLD OZ. PER TON	SILVER OZ PER TON	Tungsten	Copper	Molly			
8013 - 8017			TR					
8018			.05					
8019 - 8028			TR					
8029			.36					
8030			.04					
8031 - 8032			TR					
8690 - 8697			TR					
Composite	TR	TR		TR	TR			

ASSAYER

Geo. Spalding



604) 876-4111
 X: 04-50353
 CABLE ADDRESS:
 ELDRICO

TO:
 Archer Cathro & Associates.....
 P.O. Box 1708.....
 Whitehorse, Y.T.....

Certificate of Assay
COAST ELDRIDGE
 PROFESSIONAL SERVICES DIVISION
 WARNOCK HERSEY INTERNATIONAL LIMITED
 125 EAST 4TH AVE. VANCOUVER 10, B.C., CANADA

FILE NO. A.3-A.4-68-2818

DATE November 6, 196

We Herely Certify that the following are the results of assays made by us upon submitted DRILL CORE samples

MARKED	GOLD		SILVER	Tungsten (WO ₃)	Copper (Cu)				
	OUNCES PER TON	VALUE PER TON	OUNCES PER TON	PER CENT.	PER CENT.	PER CENT.	PER CENT.	PER CENT.	PER CENT.
		\$							
8670				0.04					
8671				0.21					
8672				0.07					
8673				0.06					
8674				0.08					
8675				0.06					
8676				0.02					
8677				0.01					
8678				0.01					
8679				0.11					
8680				0.01					
8681				0.28					
8682				0.01					
8683				0.07					
8684				0.05					

Gold calculated at \$ per ounce

/j/p

Note. Rejects retained one week.
 Pulps retained one month.
 Pulps and rejects may be stored for a maximum
 of one year by special arrangement.

Unless it is specifically stated otherwise, gold
 and silver values reported on these sheets have
 not been adjusted to compensate for losses and
 gains inherent in the fire assay process.

H. Sharp

Provincial Assayer

TO:

Archer Cathro & Associates... (2)



PHONE (504) 876-4111
 T. 4-50353
 ADDRESS:
 ELDRICO

Certificate of Assay
COAST ELDRIDGE
 PROFESSIONAL SERVICES DIVISION
 WARNOCK HERSEY INTERNATIONAL LIMITED
 125 EAST 4TH AVE. VANCOUVER 10, B.C., CANADA

FILE NO. A.3-A.4-68-2818

DATE November 6, 1968

We Herby Certify that the following are the results of assays made by us upon submitted DRILL CORE samples

MARKED	GOLD		SILVER	Tungsten (WO ₃)	Copper (Cu)	PER CENT.	PER CENT.	PER CENT.	PER CENT.
	OUNCES PER TON	VALUE PER TON	OUNCES PER TON	PER CENT.	PER CENT.				
8685		\$		0.01					
8686				0.01					
8687				0.02					
8688				0.09					
8689				0.01					
Composite	0.01	0.35	0.06		0.02				

Gold calculated at \$ per ounce

Note. Rejects retained one week.
 Pulps retained one month.
 Pulps and rejects may be stored for a maximum
 of one year by special arrangement.

Unless it is specifically stated otherwise, gold
 and silver values reported on these sheets have
 not been adjusted to compensate for losses and
 gains inherent in the fire assay process.

H. Shaffer

Provincial Assayer



PHONE: (604) 876-4111
 TEL: 50353
 ADDRESS:
 ELDRICO

To: Archer, Cathro & Associates.....
 P.O. Box 1708.....
 Whitehorse, Y.T.

Certificate of Assay
COAST ELDRIDGE
 PROFESSIONAL SERVICES DIVISION
 WARNOCK HERSEY INTERNATIONAL LIMITED
 125 EAST 4TH AVE. VANCOUVER 10, B.C., CANADA

FILE NO. A.3-A.4-68-2818
 DATE November 7, 1968

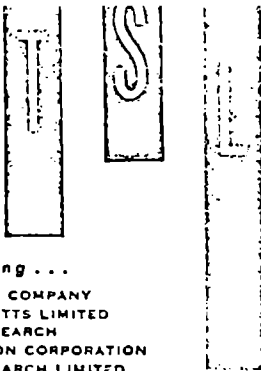
We Hereby Certify that the following are the results of assays made by us upon submitted **COMPOSITE** samples

MARKED	GOLD		SILVER	Total Molybdenum					
	OUNCES PER TON	VALUE PER TON	OUNCES PER TON	PER (Mo) CENT.	PER CENT.	PER CENT.	PER CENT.	PER CENT.	PER CENT.
8670 - 8689		\$		0.015					

/jp Gold calculated at \$ per ounce

Note. Rejects retained one week.
 Pulps retained one month.
 Pulps and rejects may be stored for a maximum of one year by special arrangement.
 Unless it is specifically stated otherwise, gold and silver values reported on these shoots have not been adjusted to compensate for losses and gains inherent in the fire assay process.

..... *H. Stoyles* Provincial Assayer



- CHEMICAL RESEARCH AND ANALYSIS
- INSTRUMENT SALES AND SERVICE

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355 KING ST. W., TORONTO 2B, ONT., CANADA

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 HILGER & WATTS LIMITED
 SADTLER RESEARCH
 ULTRA CARBON CORPORATION
 METALS RESEARCH LIMITED

CERTIFICATE OF ANALYSIS

SAMPLE(S) FROM Archer Cathro and Associates Ltd.,
 Bentall Centre,
 Vancouver, B.C.

REPORT NO.
 T-13259

SAMPLE(S) OF CRUSHED ROCK

<u>Sample No.</u>	<u>Gold (Au)</u> <u>oz:ton</u>	<u>Silver (Ag)</u> <u>oz:ton</u>	<u>Copper (Cu) %</u>	<u>Molybdenum (Mo) %</u>
Composite 1033 - 8040	trace	trace	< 0.01	< 0.01

(<less than)

Samples, Pulps and Rejects discarded after ^{two}~~six~~ months

DATE Nov. 5/68

SIGNED *C.S. Joyce*
 C.S. JOYCE, B.Sc., Manager of Laboratories



REF:

DUBLIN PLACERS

MAYO, Y. T.

Mr. Fred Taylor

IN ACCOUNT WITH: Archer, Cathro and Associates,
Whitehorse, Y.T.

DATE: October 23, 1968

to rental D7E tractor (Hyd. U tilt blade), operator and fuel, for trenching,
pitting and access trails to head of Dublin Gulch area, Mayo, Y.T.

Oct. 9	.....	5½ hrs.
" 10	.....	11 "
" 11	.....	7 "
" 12	.....	10 "
" 13	.....	9½ "
" 14	.....	9 "
" 15	.....	10 "
" 16	.....	10 "
" 22	.....	4 "
" 23	.....	10 "

Total 86 hrs. @ \$26.00 per hour

paid
October 23
Ch # 2104
Alathas Total \$2236.00

ARCHER, CATHRO
AND ASSOCIATES LTD.
CONSULTING GEOLOGICAL ENGINEERS

CASCA BUILDING, WHITEHORSE, Y.T. 667-4113

BENTALL CENTRE, VANCOUVER, B.C. 688-3022 OR 522-1562

770 ONE BENTALL CENTRE
505 BARRARD ST.
VANCOUVER 1, B.C.

BULLDOZER TRENCHING & SAMPLING PROGRAM

POTATO TUNGSTEN PROSPECT

DUBLIN GULCH, MAYO DISTRICT, Y.T.

October, 1968

Between October 9 and 23, 86 hours of bulldozing were completed at the head of Dublin Gulch in building one mile of winter trail and digging 24 trenches. A Caterpillar D7E with hydraulic U tilt blade was rented from placer miner Fred Taylor who resides a few miles downstream. Eighteen trenches are near the hand pits dug by Conrad Provencher earlier in 1968 and these are shown on the accompanying plan. They were dug in soil and weathered bedrock to an average depth of 5 feet. The volume moved in this area totals 4500 cubic yards. In addition, six trenches consisting of 500 cubic yards were dug elsewhere, two to the northeast towards Cascallen Creek, two on the south side of Dublin Gulch, and two at the head of Bawn Boy Gulch. These did not reach bedrock due to permafrost and were not sampled.

Bedrock consists of decomposed, rubbly granodiorite

cut by numerous quartz veins. Some of these contain visible scheelite while others contain arsenopyrite and scorodite. Bedrock is coloured light to medium brown by iron stain. The weathered rubbly zone extends to an unknown depth. It is covered by at least three feet of sand which has formed from the weathering of the bedrock, and one foot of black organic soil.

The sandy layer displays vague horizontal banding which indicates that it is slowly creeping downhill, even on slopes as gentle as 5°.

The trenches were examined at night with the aid of an ultraviolet lamp. The scheelite occurs both in individual veins and in local patches up to one foot in length. There was no noticeable horizontal banding or enrichment in the sandy layer.

The trenches were sampled by filling large plastic bags with random grabs from the entire length of the trench. Each sample weighed about 20 pounds. All samples were taken from the bottom of the walls of the trenches and each trench was sampled twice- one sample by Provencher and one by Cathro. In addition, trenches 1, 2, 3, and 11 were sampled twice by each man, a total of 4 samples from each, because of their greater length, and trenches 4 and 6, which are particularly long, were divided into upper and lower halves and four samples were taken from each half. The total number of samples taken was 56. The assaying was conducted at three

laboratories as a further check on accuracy. Twenty samples were assayed by Coast Eldridge, Vancouver, 28 by Whitehorse Assay Office, and 8 by Technical Service Labs, Toronto. If trace and nil is assumed to be 0.01% W_3 , the average of all 56 assays is 0.042% W_3 . Only six assays exceeded 0.10%, as follows:

<u>% W_3</u>	<u>Trench No.</u>	<u>Sampler</u>
0.36	15	Provencher
0.28	10	Cathro
0.21	2	Cathro
0.20	4	Provencher
0.18	2	Provencher
0.11	8	Cathro

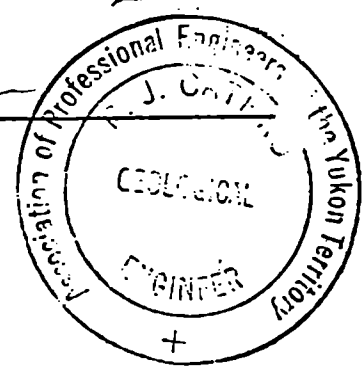
Of the four samples from trench 2, two assayed 0.4% and 0.18%, while the other two assayed trace, an average of 0.10%. In trench 4, one sample assayed 0.20% while two assayed 0.08% and 0.06% and five assayed trace. The average for trench 6 is 0.04%. In trench 8, the two samples assayed 0.11% and trace, an average of 0.06%. Similarly, the second samples from trenches 10 and 15 each assayed trace, giving averages of 0.15% and 0.19%.

Thus, the significant samples show a random distribution with no consistency within a trench or by one sampler. The sampling is considered to be representative

of the particular depth reached by the trenches. The average for this area is about 1 pound WO_3 /ton with a gross value at present metal prices of about \$2.00/ton. While this is a significant, measurable amount considering the size of the Potato Stock, it is too low to be of economic interest in the foreseeable future.

Respectfully submitted,
ARCHER, CATHRO & ASSOC. LTD.


R.J. Cathro



RJC/pc