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GEOLOGICAL MAPPING, GEOCHEMICAL AND  
MAGNETOMETER SURVEYS

September 1 - October 10, 1975

Approx.  $62^{\circ}20'N$ ,  $137^{\circ}20'W$

Claim Sheet 115I/5 & 115I/6

WHITEHORSE MINING DISTRICT, Y.T.

for

KLOTASSIN JOINT VENTURE

November 15, 1975

By

R.J. Cathro, P.Eng., E.M. Jensen & M.P. Phillips

Archer, Cathro & Associates Ltd.



Geology, Geochemical and Magnetometer Surveys  
 WHITEHORSE MINING DISTRICT, Y.T.

62°20'N Lat. 137°20'W Long.  
 Claim Sheet 1151/5 & 6

KLOTASSIN JOINT VENTURE

R.J. Cathro, P.Eng. November 15, 1975



This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of \$ 22,100.00

*D.B. Craig*

Resident Geologist or  
 Resident Mining Engineer

Considered as representation work under  
 Section 53 (4) Yukon Quartz Mining Act.

*B.R. Baxter*

B.R. BAXTER  
 Supervising Mining Recorder

Commissioner of Yukon Territory

090087

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## SUMMARY AND RECOMMENDATION

During the period September 1 - October 10, the following surveys were carried out on three separate claim blocks in claim sheets 115I/5 and 115I/6:

Big Creek West (Roc and Jen claims) - linecutting, preliminary claim location survey, grid soil sampling, prospecting, geological mapping and magnetometer survey on 90 per cent of claim block.

Big Creek East (Roc claims) - as above on 50 per cent of claim block except for magnetometer survey, which was completed on only 25 per cent.

Bow Creek - reconnaissance prospecting, geological mapping, soil sampling and claim location survey.

The program was performed by Archer, Cathro & Associated Ltd. on behalf of Klotassin Joint Venture (KJV), composed of Newconex Canadian Exploration Ltd., Marietta Resources International Ltd., and Molybdenum Corporation of America.

Outcrop is rare on the lower valley slopes covered by these claims and mapping was mostly limited to rock float found in soil sample pits. At least half of the two claim blocks on Big Creek are covered by alluvial till over 25 feet thick that occupies the floor of the valley and forms a terrace up to 75 feet high along the southwest side of the valley. Bedrock above this elevation consists of Triassic or Jurassic monzonite and granodiorite batholiths, late Paleozoic schist and gneiss of the Yukon Metamorphic Complex and late Cretaceous or early Tertiary Mt. Nansen group volcanics and feldspar porphyry unit. Similar rocks underlie the Bow Creek property.

Weak copper anomalies with coincident or adjacent anomalous lead-zinc response were outlined on both Big Creek claim blocks in locations that correspond with KJV regional anomalies K and L found in 1974. Eight shallow bulldozer pits cut in anomaly L on the Big Creek East property in August exposed minor amounts of malachite in schist. Neither anomaly appears to have direct exploration potential although both could represent the uphill edge of richer mineralized zones that are blanketed by thick till lower in the valley. Erratic but weakly anomalous response was obtained from the Bow Creek property.

Neither magnetometer survey showed strong contrast. The survey on the Big Creek West property outlined a gentle negative zone with a linear shape under the valley that is bounded by weakly positive readings. The incomplete survey on the Big Creek East property showed flat response except at the west end where erratic high and low readings appear to be caused by volcanic rocks.

Other than the malachite found in the bulldozer pit, the only mineralization seen is fluorite and scheelite associated with a quartz-rich rock on the Big Creek East property. Fluorite with a trace of scheelite was found in a single small outcrop and in near-outcrop float in a fresh cutbank on the south side of Big Creek. The best mineralization was found in a single large (50 pound) angular boulder on a nearby gravel bar. A typical specimen assayed 2.56 per cent  $WO_3$  and trace gold, silver, fluorine, tin and molybdenum. This mineralization is interpreted as having a greisen origin but more work is necessary to confirm this and to determine its economic significance.

Further work is required to fully explore the two properties on Big Creek. The 1975 survey should be extended over the remainder of the Big

Creek East property and both properties should be covered by an induced polarization (I.P.) survey. Any I.P. anomalies that could represent porphyry type mineralization should be tested by diamond drilling. Only additional prospecting is recommended on the Bow Creek property.

Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES LTD.



INTRODUCTION

A five man crew consisting of Ron Dennett, Doug Eaton, Jim West and Mike Buttle carried out linecutting, grid layout, preliminary claim location surveys, soil sampling, prospecting, geological mapping and a magnetometer survey. The program was directed in the field between September 1 and October 10, 1975 by Earl Jensen under the writer's supervision. The magnetometer survey was completed on the Big Creek West grid but only one third of the Big Creek East grid was surveyed.

CLAIM DATA

The claims occur as three separate blocks recorded in the Whitehorse Mining District as follows:

<u>CLAIM NAME</u>	<u>NO.</u>	<u>TAG NUMBER</u>	<u>EXPIRY DATE</u>
(A) <u>Big Creek West</u> (Contiguous to Bear and Fox groups of KJV)			
ROC 1-50 ✓	50	Y91802-Y91851	31 December, 1975
99-107 ✓	9	Y91900-Y91909	31 December, 1975
108F-111F ✓	4	Y91910-Y91912	31 December, 1975
JEN 1-12	<u>12</u>	Y91996-Y92007	7 February, 1976
	75		
(B) <u>Big Creek East</u>			
ROC 51-98 ✓	48	Y91852-Y91899	31 December, 1975
112-125 ✓	<u>14</u>	Y91913-Y91926	31 December, 1975
	62		
(C) <u>Bow Creek</u>			
ZIT 1-16	16	Y91786-Y91801	31 December, 1975
17-24	<u>8</u>	Y92008-Y92015	7 February, 1976
	24		

The claims are held by Archer, Cathro & Associates Ltd. on behalf of Klotassin Joint Venture (Newconex Canadian Exploration Ltd., Marietta Resources International Ltd., and Molybdenum Corporation of America).

Subsequent to the 1975 field work, part of the Klazan group, which separates the Big Creek East and West properties, was allowed to lapse by the Coranex Syndicate. It was immediately restaked on November 12 - 18th by KJV as the Skunk 1-75 claims, which were recorded on December 2nd.

#### LOCATION AND ACCESS

The three claim blocks are situated in the Mt. Freegold area at the southeast end of the Dawson Range, about 40 miles northwest of Carmacks and within claim sheets 115I/5 and 115I/6. The two largest blocks are situated along the valley of Big Creek and are about three miles apart, separated by the Klazan claim group. The third block (ZIT claims) is situated at Mile 40 on the Mt. Freegold Road, at the junction of Bow and Seymour Creeks. This block lies about five miles southeast of the nearest group on Big Creek and is separated from it by the Yukon Revenue Mines property. The locations are illustrated on an inset map on the figures accompanying this report.

#### REGIONAL GEOLOGY

An early Tertiary orogeny that is closely associated with copper mineralization in this district is represented in the Big Creek area by small plutons and dikes of granite, granite porphyry and feldspar porphyry that are grouped together by the G.S.C. as the feldspar prophyry unit. It is closely associated with acid to intermediate tuff, tuff-breccia and

rhyolite of the Mt. Nansen Group. Both units have been assigned a probable Tertiary age because of similarities to dated rocks elsewhere in the Dawson Range.

The oldest rocks in the Big Creek districts are remnants of Permian or older schists and gneisses of the Yukon Metamorphic Complex resting on syenite to granodiorite of the Mesozoic Klotassin Batholith. The youngest rocks, of Eocene or younger age, are basalt and andesite flows and breccias of the Carmacks Group. Pleistocene glacio-fluvial deposits are present as terraces along the Big Creek valley. The regional geology has been published by the G.S.C. as Open File #200.

Outcrop is very rare and is usually present only along ridges and where creeks have cut through the alluvial cover. Bedrock mapping is based mainly on rock chips which were collected while soil sampling except where prevented at a few locations by thick organic cover or unusually deep permafrost cover. Sub-angular fragments believed to be of local origin were examined in the field by Earl Jensen and were later studied under binocular microscope for rock type and alteration identification by M.P. Phillips.

The oldest rocks are metasediments of the mid to late Proterozoic and/or Paleozoic Yukon Metamorphic Complex. The unit varies from a light colored metaquartzite to a darker schist and gneiss composed of varying amounts of quartz, feldspar, hornblende and biotite. Narrow discontinuous skarn and marble beds are sometimes present. The few available foliation attitudes suggest that the beds are on the southwest limb of a southeast trending antiform with closure in that direction.

The Mesozoic Klotassin Batholith has been divided into hornblende syenite and granodiorite. Hornblende syenite is the most common intrusive rock southwest of Big Creek. It is generally dark colored due to abundant mafics, has a low quartz content, is fine to coarse grained, and has weak to pronounced foliation imparted by the subparallel orientation of hornblende and biotite. The coarse grained variety is usually porphyritic with pink orthoclase pyenocrysts up to 20 mm long. Petrologically the coarser grained varieties can be classed as a true syenite while the fine to medium grained varieties are more properly called a monzonite. Epidote veinlets and specular hematite commonly occur in this unit.

Granodiorite is the dominant rock unit northeast of Big Creek. It is easily recognized in the field by its light color, medium grain size and equigranular texture, lack of a pronounced foliation and low mafic content. The principal mafic mineral is biotite with hornblende only rarely present. Petrologically the unit varies in composition from granite to granodiorite.

The youngest intrusive rocks, believed to be Eocene in age, are volcanic flows of the Mt. Nansen group and crystalline equivalents called the Feldspar Porphyry Unit. Small isolated outcrops of the Mt. Nansen group are scattered along the Big Creek valley. It is characterized by dark green to black color, black weathering and aphanitic texture. The unit is weakly laminated tuff and tuff breccia. According to the G.S.C., these rocks locally overly and elsewhere are cut by dikes of Feldspar Porphyry and Nisling Range Alaskite and appear to be contemporaneous.

Feldspar Porphyry is a term used by the G.S.C. to describe a series of acid to intermediate flows, dikes, and stocks. In this report, the unit has been subdivided on the basis of composition into Intermediate

Porphyry and Acid Porphyry. The Acid Porphyry has been further subdivided according to type of phenocryst. The Intermediate Porphyry occurs as north trending, steep dipping dikes which seldom outcrop. On the Cash property, which was drilled in 1973, this unit forms a small stock and is the source for mineralization and accompanying alteration. It is characterized by a dark green aphanitic to a very fine grained quartzo-feldspathic matrix. Fine to medium grained feldspar phenocrysts make up 20-40% of the rock, small euhedral prismatic hornblende phenocrysts are common, biotite and quartz phenocryst are rare. Pyrite, magnetite and hematite are present in minor amounts.

The Acid Porphyry occurs as flows, north trending dikes and stocks and is gradational to the Intermediate Porphyry. The Porphyry is white to buff to light gray in color, with fine to medium grained phenocrysts forming up to 10% of the rock. The matrix for the phenocrysts varies from a hard, aphanitic and light gray to a soft, buff, very fine crystalline groundmass showing strong pervasive argillic alteration. In order of decreasing abundance, phenocrysts are composed of feldspar, quartz, biotite and hornblende. Mirolitic cavities are common and are often lined with quartz. Some of the smoky quartz phenocrysts are euhedrally terminated. Pink feldspar phenocrysts, believed to be orthoclase, are generally subordinate to a plagioclase feldspar. Biotite occurs as anhedral leafs and in euhedral books but hornblende is rare. Mafics show moderate to strong chloritization. A weak yellow-brown jarosite coating is common along fractures. Pyrite is rare and occurs only where it has been encapsuled by fresh aphanitic groundmass.

Minerals indicative of hydrothermal alteration were noted by mode and quantity on a form devised by Chapman, Wood and Griswold Ltd. The potassic facies is characterized by the presence of pervasive pink orthoclase and/or biotite. These minerals do not show any replacement texture and could possibly be primary constituents rather than a feature of hypogene alteration. The phyllic facies is characterized by feldspar and biotite phenocrysts altered to fine sericite. Supergene processes may have altered some or all of the sericite to kaolinite. In the argillic facies, feldspars are altered to kaolinite, imparting a strong clay odour and taste to the rock. This effect could be partly or totally supergene in origin. Chloritization of biotite and hornblende is a diagnostic feature of the propylitic facies.

#### PROPERTY GEOLOGY

##### BIG CREEK WEST (see Figure B1)

Above the terrace elevation, bedrock is entirely hornblende monzonite except for a small area of feldspar porphyry at the southeast end of the grid and a small area of schist-gneiss at the northwest end of the grid. The northeast side of the valley is bounded by granodiorite. No evidence of mineralization or hydrothermal alteration was seen in float mapping, but the centre of the property is totally obscured by a 5,000 foot wide blanket of alluvial till following Big Creek. The feldspar porphyry unit at the southeast end of the grid is believed to be an extension of the intrusive body that hosts the mineralization and hydrothermal alteration on the adjoining Klazan claims.

A circular zone about 2,000 feet in diameter underlain by acid porphyry in the southeastern corner of the property contains weak to moderate phyllic alteration surrounded by smaller patches of potassic and argillic alteration. Brecciation occurs on the southwest edge of the potassic facies adjoining the phyllic zone. Feldspar porphyry dikes and enclosing host rock show potassic, phyllic and argillic alteration, while other rocks show only weak supergene argillic and propylitic alteration. Both the potassic and phyllic zones within the acid porphyry stock have a low sulfide content and an absence of jarosite or leaching.

BIG CREEK EAST (see Figure B5)

Above the terrace elevation, irregular small bodies of feldspar porphyry have invaded the schist and gneiss unit, except at the northwest end where the volcanic equivalent of the porphyry occurs. The porphyry appears to be part of the body that is associated with copper mineralization on the neighboring Revenue property to the east. The grid is bounded by monzonite to the southwest and by granodiorite and schist-gneiss across the valley to the northeast. Alterating purple and white banding that could be a flow texture occurs in feldspar-biotite-hornblende-quartz porphyry unit.

Two areas of weak potassic alteration are present. The first is about 3,500 feet long and 400 to 1,000 feet wide at the northwest end. The second, near the middle of the property, is doughnut shaped with a diameter of 3,000 feet surrounded by argillic alteration. Phyllic alteration occurs as small patches in all rock types, particularly near

the contacts of feldspar porphyry dikes. Surrounding the potassic alteration and within the feldspar porphyry unit are zones containing moderate to strong argillic alteration. The remaining rocks show weak supergene argillic and propylitic alteration.

Quartz veins and vein stockworks cut both porphyry and schist-gneiss. The only mineralization occurs in a fresh cut bank on the south side of Big Creek near line 400W where minor banded and disseminated fluorite was noted in small quartz-rich schist outcrops. Nearby float has been visually estimated to grade as high as 10 per cent fluorite. A typical specimen from a large piece of angular float (50 lbs. weight) found on a nearby gravel bar assayed 2.56%  $WO_3$  and trace in tin, fluorine, molybdenum, gold and silver. The tungsten occurs as coarse grains of scheelite in a gangue of vuggy, sugary textured quartz with minor fluorite. Little is known of this mineralization, which was not discovered until the end of the field program. Tungsten has not been previously reported in lode exploration in the Big Creek area although scheelite has been found by placer miners in Revenue and Bow Creeks. The appearance of the mineralization suggests a greisen source, probably related to the feldspar porphyry unit.

BOW CREEK (see Figure B9)

This small claim block has not been mapped in nearly as much detail as the other two properties. A pyritic shear zone was found in the southeast corner which is probably an extension of a major fault that crosses the south side of Mt. Freegold. Most of the property is underlain by granodiorite although monzonite occurs to the west of the claim group,

schist-gneiss was recognized on the north boundary and Mt. Nansen volcanics outcrop on the south boundary. One small outcrop of argillic alteration in quartz-biotite porphyry occurs near the best boundary.

#### GEOCHEMISTRY

Previous sampling by Archer, Cathro crews has shown that soil backgrounds in the Big Creek district are about 20 ppm Cu, less than 1 ppm Mo, 20 ppm Pb and 60 ppm Zn, while threshold levels are about 50 ppm Cu, 3 ppm Mo, 70 ppm Pb and 100 ppm Zn.

Soil samples and occasional silt samples were collected on the top of the terrace and above the elevation of the terrace on the two Big Creek grids, and on a reconnaissance pattern on the Bow Creek group. The number of samples collected was: 365 at Big Creek West; 207 at Big Creek East; and 143 at Bow Creek.

All samples were obtained, where possible, from a B or B + C soil horizon beneath the organic and volcanic ash layers. The B + C horizon is generally a yellowish brown to gray-brown layer consisting of sandy clay with rock fragments. Permafrost, which is present where vegetation cover is well developed, thaws to depths of 6 to 15 inches during summer.

Samples were collected in individual, prenumbered, kraft paper bags and were shipped by air freight to Chemex Labs Ltd., North Vancouver, B.C. All samples were dried, screened to a minus 80 mesh fraction and digested in nitric perchloric acid. They were then routinely analyzed for copper,

molybdenum, lead and zinc using atomic absorption spectrometry. A few samples collected near the fluorite-scheelite float on the Big Creek East grid were also analyzed for tungsten and fluoride. Tungsten was analyzed colorimetrically after fusing the sample with potassium pyrosulfate, leaching with concentrated HCL, extracting into an amyl acetate solution containing dithiotoluene, and reducing interfering elements with stannous fluoride in a hot water bath. Fluoride ( $F^-$ ) was analyzed with a USGS technique that involves a fluoride-ion-specific potentiometer after sintering the sample with carbonate nitric flux, leaching in water and adding citric acid.

Copper-molybdenum and lead-zinc are plotted and described separately for each property.

BIG CREEK WEST (see figures B2 and B3)

Copper and molybdenum response is very low except for one small area along the southwest edge of the grid in the vicinity of Lines 176E to 192E that corresponds with 1974 regional anomaly K. Copper values in soil range between 50 and 206 ppm and molybdenum assays are below 5 ppm. Two isolated anomalous copper values were obtained on Lines 136E (154 ppm) and 240E (138 ppm), neither of which have associated molybdenum response. Anomaly K is too localized and weak to have any exploration significance.

Five separate small zones of coincident weakly anomalous lead and zinc response are scattered on either side of Anomaly K along the upper edge of the alluvial terrace, and mainly occur on gentle ridges between a

series of small, north flowing streams. These have lead values between 60 and 350 ppm and zinc values between 150 and 700 ppm, compared with background of 20 ppm lead and 75 ppm zinc.

The most westerly anomaly A, is the only one which occurs below the break in slope and on top of the terrace. The anomaly has peak values of 172 ppm Pb and 285 ppm Zn, and is probably underlain by metasediments. Anomaly B occurs 500 feet south and up the slope from Anomaly A and consists of four anomalous samples with values ranging as high as 107 ppm Pb and 233 ppm Zn. Anomaly C, located 1,000 feet southeast of Anomaly B, has peak values of 108 ppm Pb and 275 ppm Zn and is 1,200 feet in width by 2,400 feet long. Anomaly D is the strongest of the five with assays ranging as high as 350 Pb and 700 Zn. It is located 3,200 feet southeast of Anomaly C near 1974 copper Anomaly K, and is roughly 2,000 feet by 1,000 feet in size. A small pyritic shear zone has been found near the center of this anomaly. Anomaly E is apparently related to hydrothermal alteration and brecciation associated with acidic feldspar porphyry volcanics. This is the only anomaly that is still open and more samples should be collected to the south to close off the zone. Peak assays of 300 Pb and 189 Zn are located furthest uphill on the open edge.

The lead-zinc response probably indicates the presence of small galena-sphalerite veinlets, which could represent a peripheral zone of mineralization around a copper zone concealed beneath the 5,000 foot wide alluvial cover on the valley floor.

BIG CREEK EAST (see Figures B6 and B7)

Soil sampling outlined a weak copper anomaly on the uphill edge of the alluvial terrace between Lines 8W and 24W that corresponds to 1974 regional anomaly L and with the edge of a weak anomaly outlined by grid sampling on the COM claim group by Cominco in 1970. Copper values are in the range 50 to 110 ppm, compared to a background of 20 ppm, and are not accompanied by any molybdenum response. Eight shallow bulldozer pits cut in this anomaly in August encountered only a trace of malachite in schist. The anomaly is underlain by a contact between monzonite to the south and schist to the north.

A localized, fairly intense lead-zinc anomaly is partially coincident with the copper anomaly and extends east as far as Line 8E. Lead values range from 60 to 550 ppm and are accompanied by zinc values between 150 and 640 ppm, compared to background levels of 30 ppm lead and 74 ppm zinc. This anomaly is underlain by hornblende syenite.

Because of the discovery of scheelite-rich float on the gravel bar near line 00E, some 40 samples from the central part of the grid, uphill from the discovery, were also analyzed for tungsten and fluoride. Only two samples assayed above the detection limit of 4 ppm tungsten, while all but two fluoride assays were in the background range of 200 to 500 ppm. The low fluoride values in an area of obvious fluorite mineralization suggests that soil sampling is not effectively exploring bedrock in this area.

BOW CREEK (see Figures B10 and B11)

Four separate zones of weakly anomalous copper and molybdenum response were obtained. Anomaly A is about 2,500 feet square with copper assays up to 116 ppm and molybdenum response up to 52 ppm and extends off the west side of the property. Anomaly B is about 1,500 feet by 700 feet with assays up to 102 ppm Cu and 13 ppm Mo and straddles the south boundary. Anomaly C occurs along the valley bottom at the junction of Bow and Seymour Creeks. A sample on the north side assayed 108 ppm Cu and 6 ppm Mo while a sample on the south side assayed 1320 ppm Cu. Anomaly D consists of a strongly anomalous sample assaying 1200 ppm Cu and 82 ppm Mo that was collected close to the pyritic shear zone. Adjacent samples assayed only 63 ppm Cu.

MAGNETIC SURVEY

Vertical field readings were measured with a Sharpe MF-2 Fluxgate Magnetometer (Serial No. 002191) rented from Scintrex Ltd., Toronto (Scintrex No. 751). The survey was completed on the Big Creek West grid but was only half completed on the Big Creek East grid due to an instrument breakdown. No survey was conducted on the Bow Creek property. Base stations used on the Cash property in 1974 were extended onto the Big Creek West property for correlation. An arbitrary datum was selected for the Big Creek East survey.

BIG CREEK WEST (see Figure B4)

Only a slight variation in magnetism was outlined by the survey, which was conducted between September 23 and 28 and consisted of readings taken

at 200 foot intervals on lines spaced 800 feet apart. The highest readings, up to 725 gammas, occur within a broad semi-circular zone of positive readings along the southwest side of the grid and in a narrow belt which extends off the southeast end of the grid between Big Creek and the baseline. Weak positive response was also obtained along the west corner of the grid. The central portion of the grid, which is also the area that apparently has the thickest overburden, contains a negative linear shaped anomaly of from 200 to 850 gammas, the axis of which roughly coincides with the baseline. The mapped portions of the grid, underlain mainly by monzonite, gave a positive response. The reason for the negative response is not known.

BIG CREEK EAST (see Figure B8)

Readings were taken at 200 foot intervals on lines spaced 400 or 800 feet apart on the southwestern half of the grid on September 4th and 5th. The area surveyed is too small to give much of a pattern but erratic response was outlined on the westernmost 1600 feet of the survey. In this area, readings range between 1050 gammas positive and 555 gammas negative over short intervals, whereas most of the readings taken in 1975 are between 0 and 300 gammas positive. The anomalous area is mainly underlain by Mt. Nansen volcanics, whereas the remainder of the surveyed area is underlain by monzonite and feldspar porphyry.

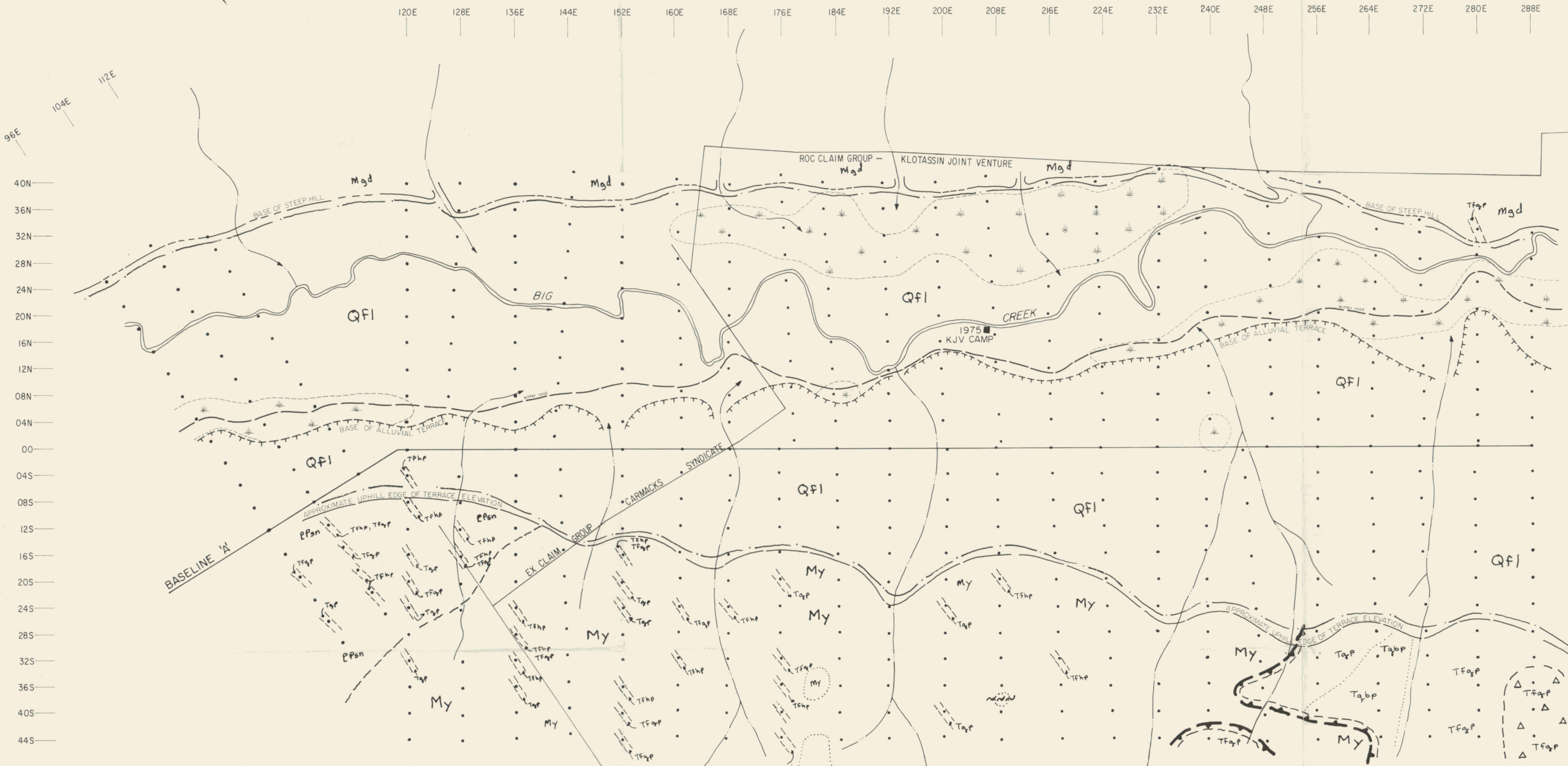
Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES LTD.



R. J. Cathro.

/mc



- GEOLOGY**
- CENOZOIC**
- PLEISTOCENE**
- Qf1 Quaternary
- EOCENE**
- FELSOPHAR PORPHYRY (Tfp)**
- INTERMEDIATE PORPHYRY**
- Tfhp Felsophar hornblende porphyry
- ACID PORPHYRY**
- Tqp Quartz porphyry
- Tfqp Felsophar quartz porphyry
- Tfbp Felsophar biotite porphyry
- Tfbhp Felsophar biotite hornblende porphyry
- MESOZOIC**
- LOWER & MIDDLE JURASSIC**
- Mgd Granddike
- My Hornblende gneiss
- PALEOZOIC**
- MISSISSIPPIAN, PENNSYLVANIAN OR PERMIAN**
- YUKON METAMORPHIC COMPLEX**
- Ppsn Schist gneiss
- LEGEND**
- Contact - defined, approximate, inferred
- Swamp
- Outcrop
- Fault
- Foliation - inclined
- Bedding - inclined
- Trench
- Claim post
- △ Requisition
- Limit of phyllic and potassic alteration (with post to alteration)
- Limit of deep overburden
- Bullbar pit

090087

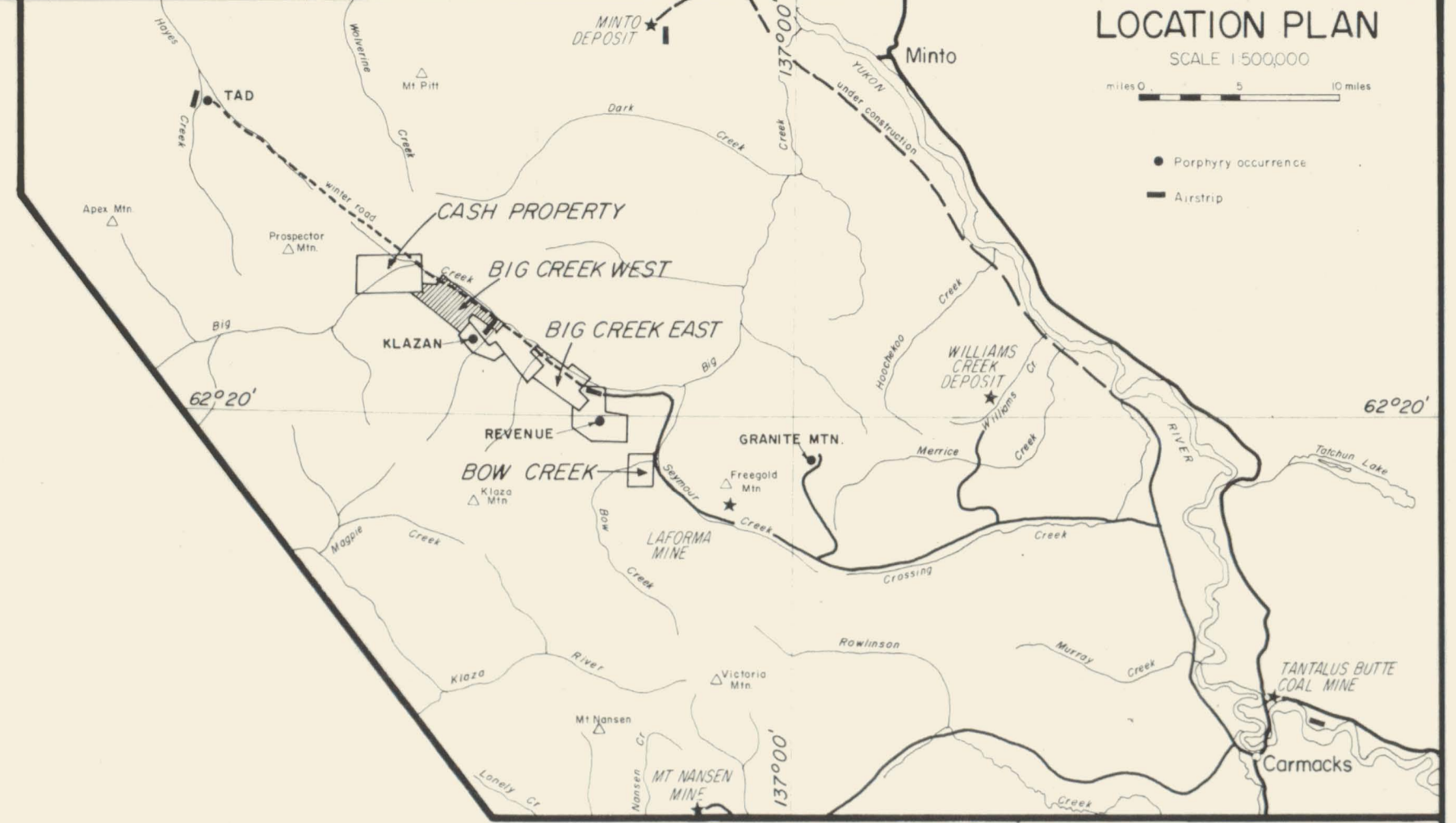
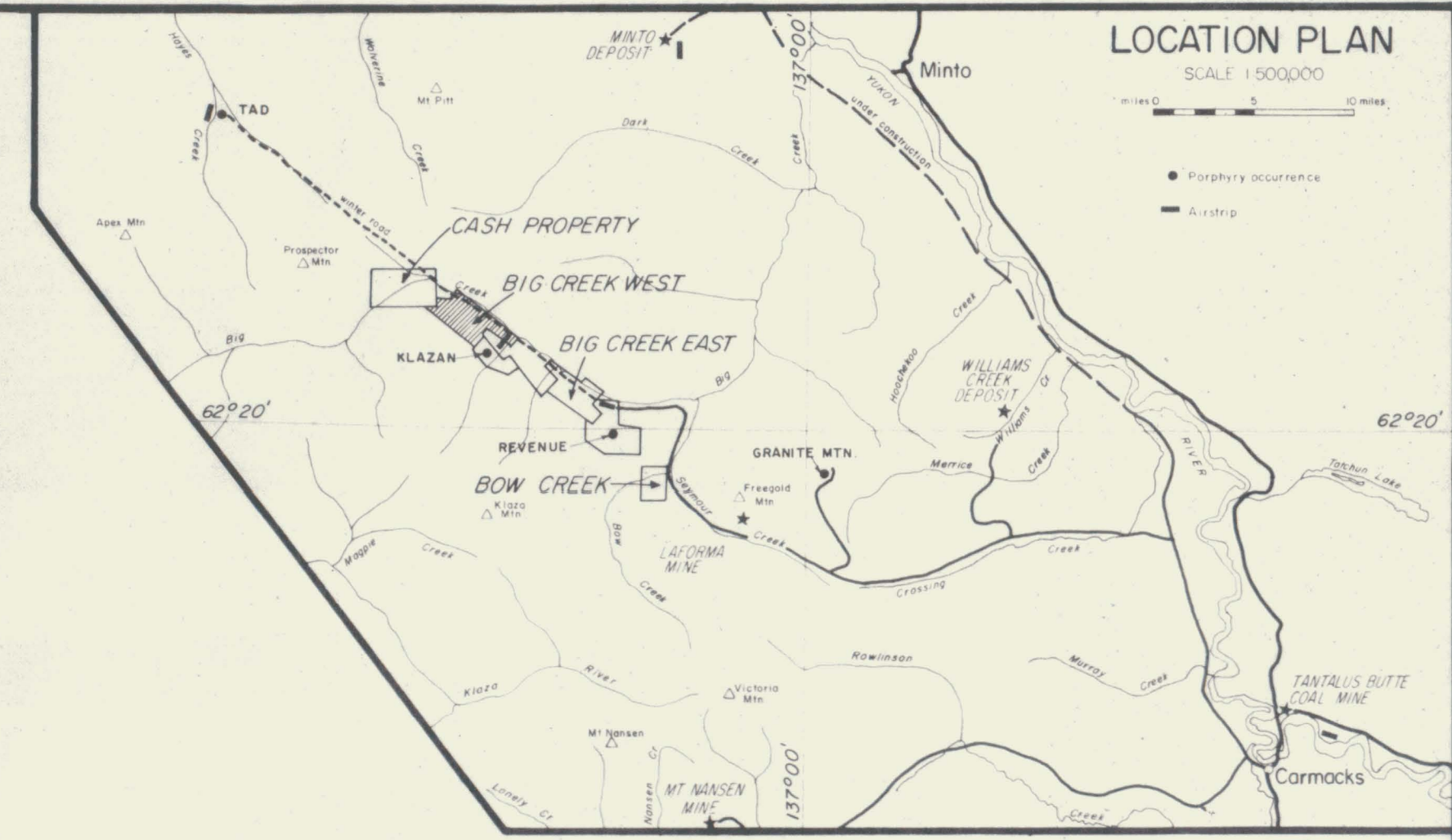
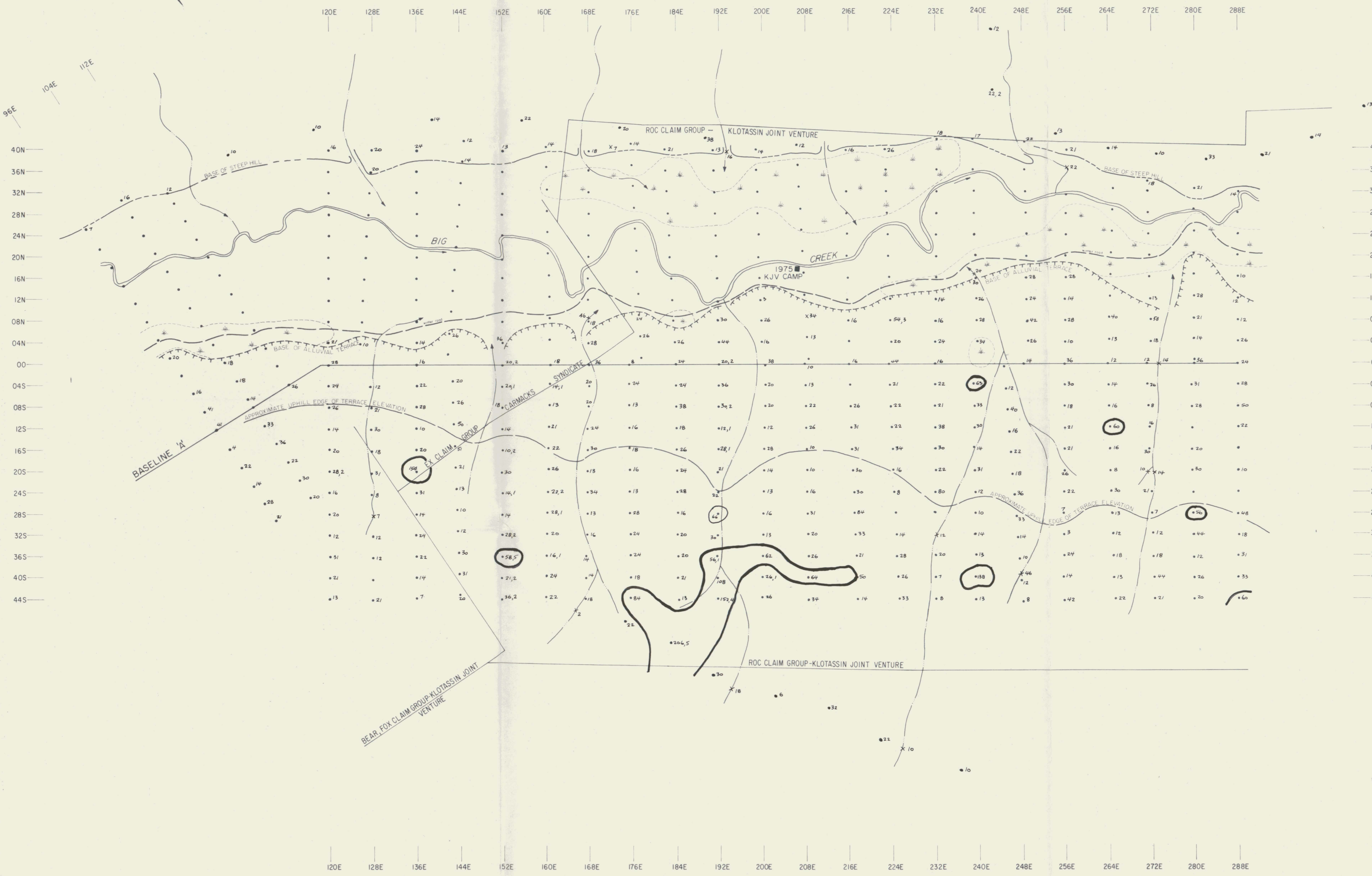
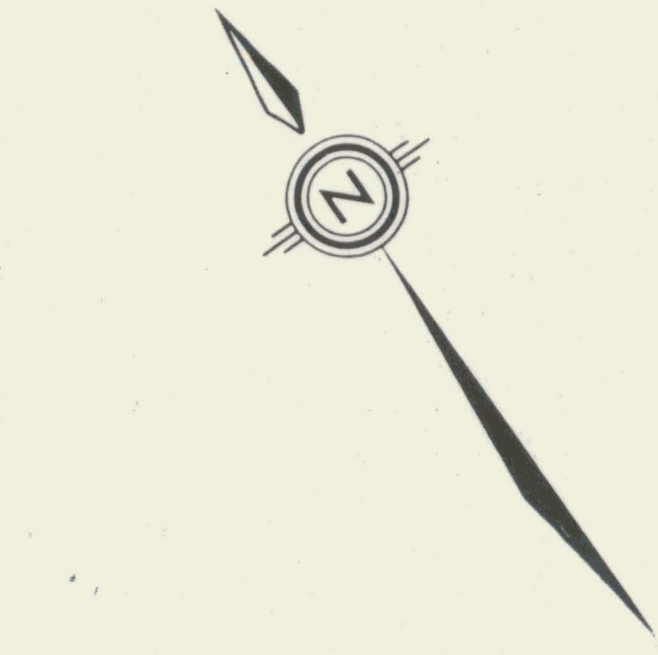


FIG. B1  
 ARCHER, CATHRO & ASSOCIATES LTD.  
**GEOLOGY**  
 BIG CREEK WEST CLAIM GROUP  
 KLOTASSIN JOINT VENTURE  
 SCALE IN FEET  
 0 1000 2000 3000

To accompany report dated Jan. 1976.

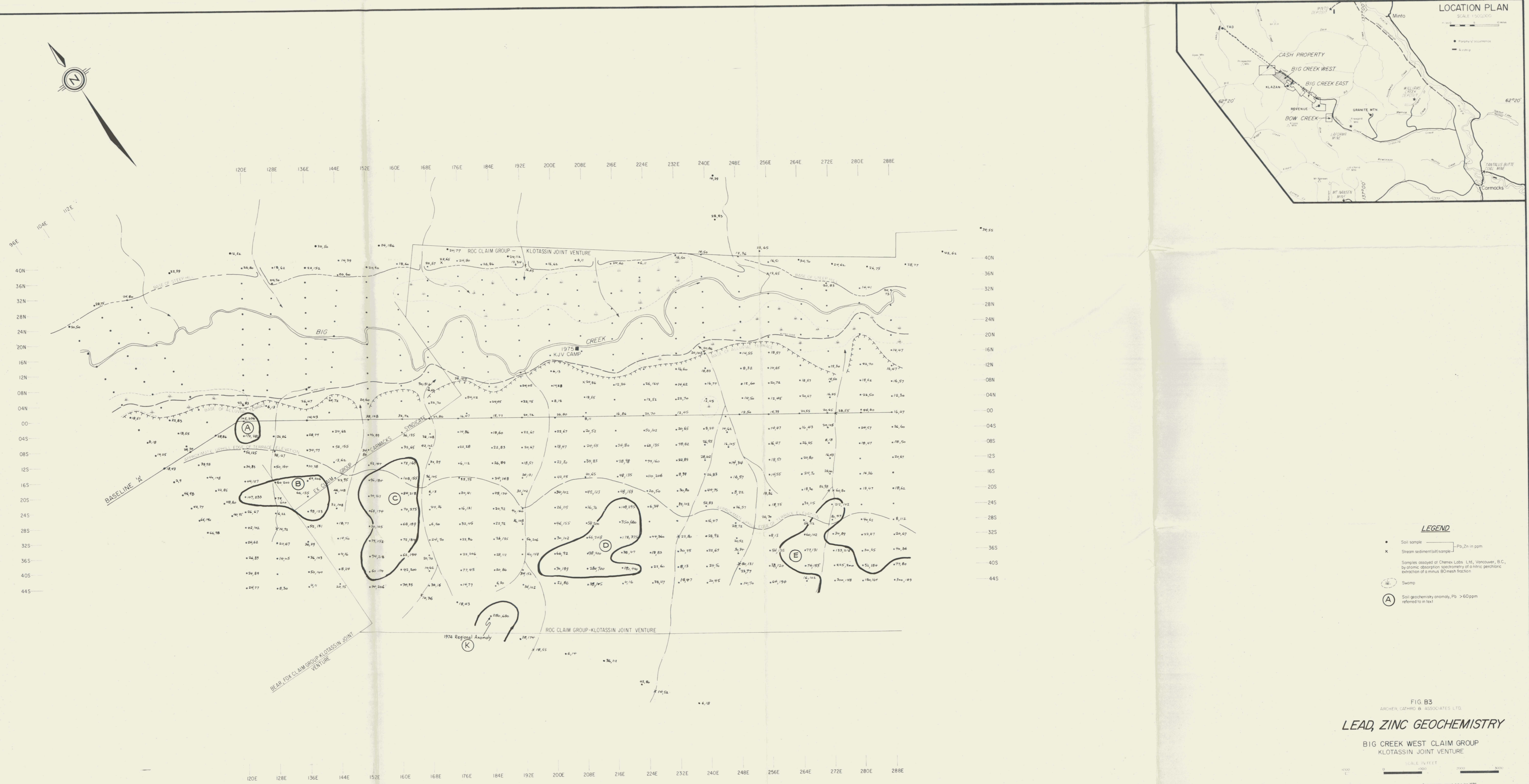


**LEGEND**

- Soil sample
- x Stream sediment (1/16 sample)
- Mo only shown when 1 ppm or greater
- Samples assayed at Chemex Labs Ltd., Vancouver, B.C., by atomic absorption spectrometry of a nitric perchloric extraction of a minus 80-mesh fraction.
- Swamp
- Soil geochemistry anomaly, Cu > 50 ppm

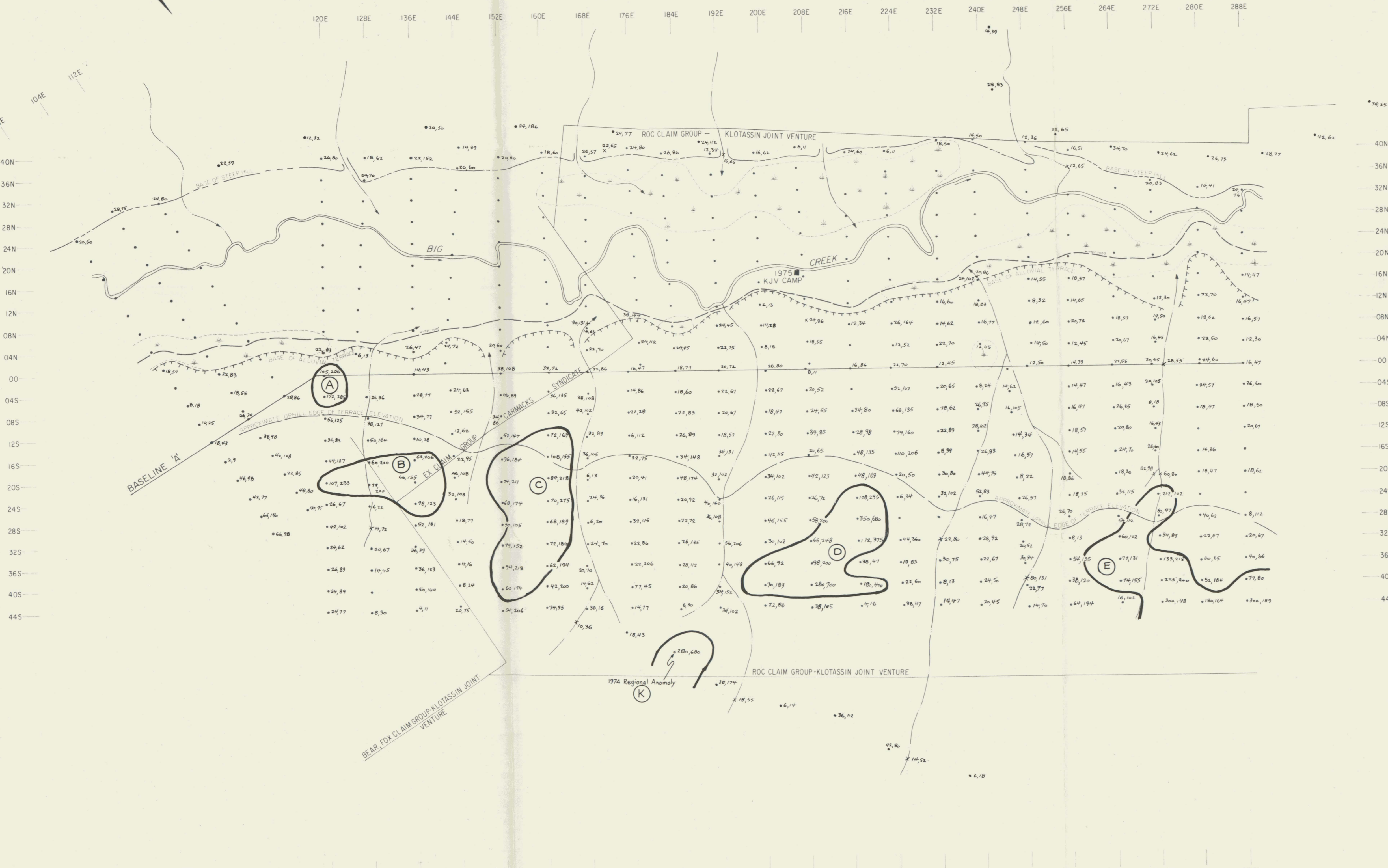
FIG B2  
 ARCHER, CATRO & ASSOCIATES LTD.  
**COPPER, MOLYBDENUM GEOCHEMISTRY**  
 BIG CREEK WEST CLAIM GROUP  
 KLOTASSIN JOINT VENTURE  
 SCALE IN FEET  
 0 1000 2000 3000 4000

To accompany report 66M/Jan, 1976



LOCATION PLAN  
SCALE 1:50000

Legend:  
● Property occurrence  
— Air strip

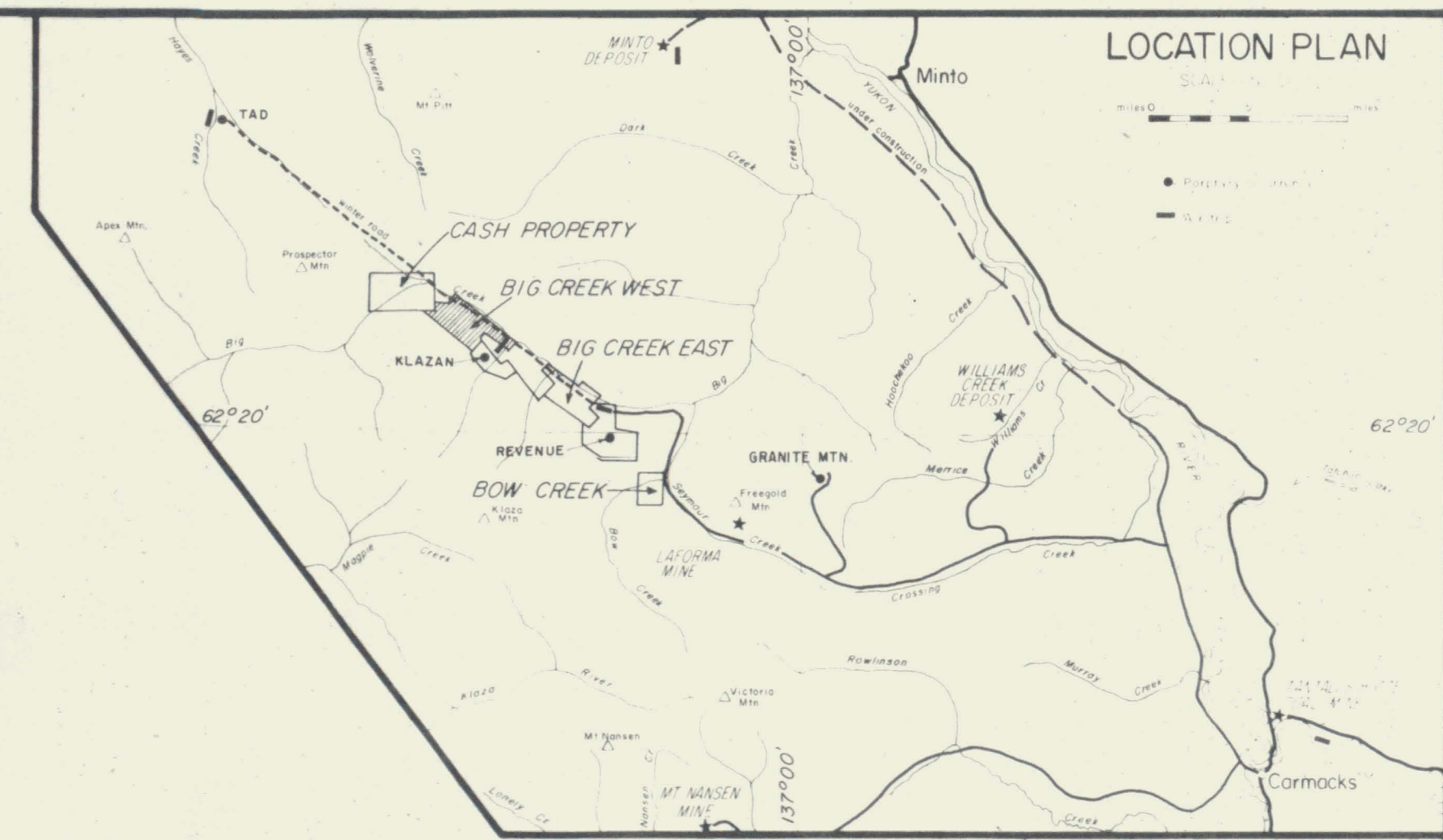
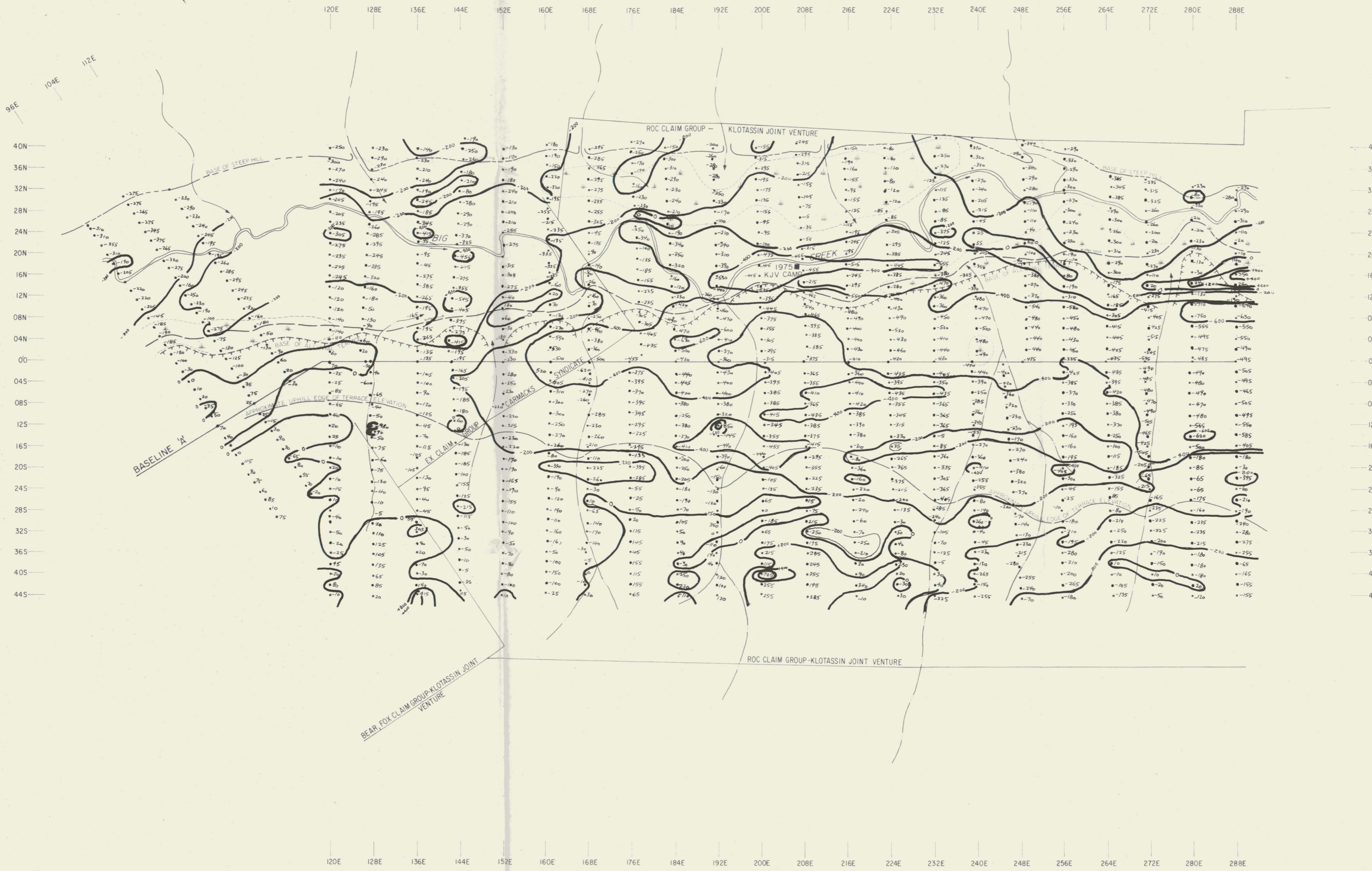
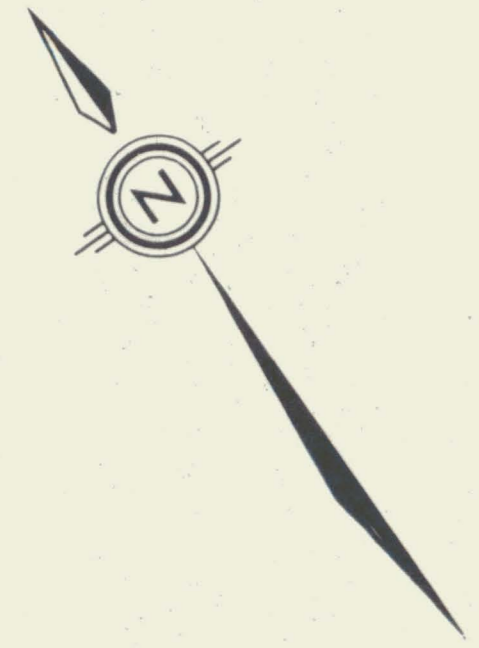


**LEGEND**

- Soil sample — Pb, Zn in ppm
- x Stream sediment (all) sample
- Samples assayed at Chemex Labs Ltd., Vancouver, B.C., by atomic absorption spectrometry of a nitric perchloric extraction of a minus 80 mesh fraction
- Swamp
- (A) Soil geochemistry anomaly, Pb > 60 ppm referred to in text

FIG B3  
ARCHER, CATHRO & ASSOCIATES LTD.  
**LEAD, ZINC GEOCHEMISTRY**  
BIG CREEK WEST CLAIM GROUP  
KLOTASSIN JOINT VENTURE





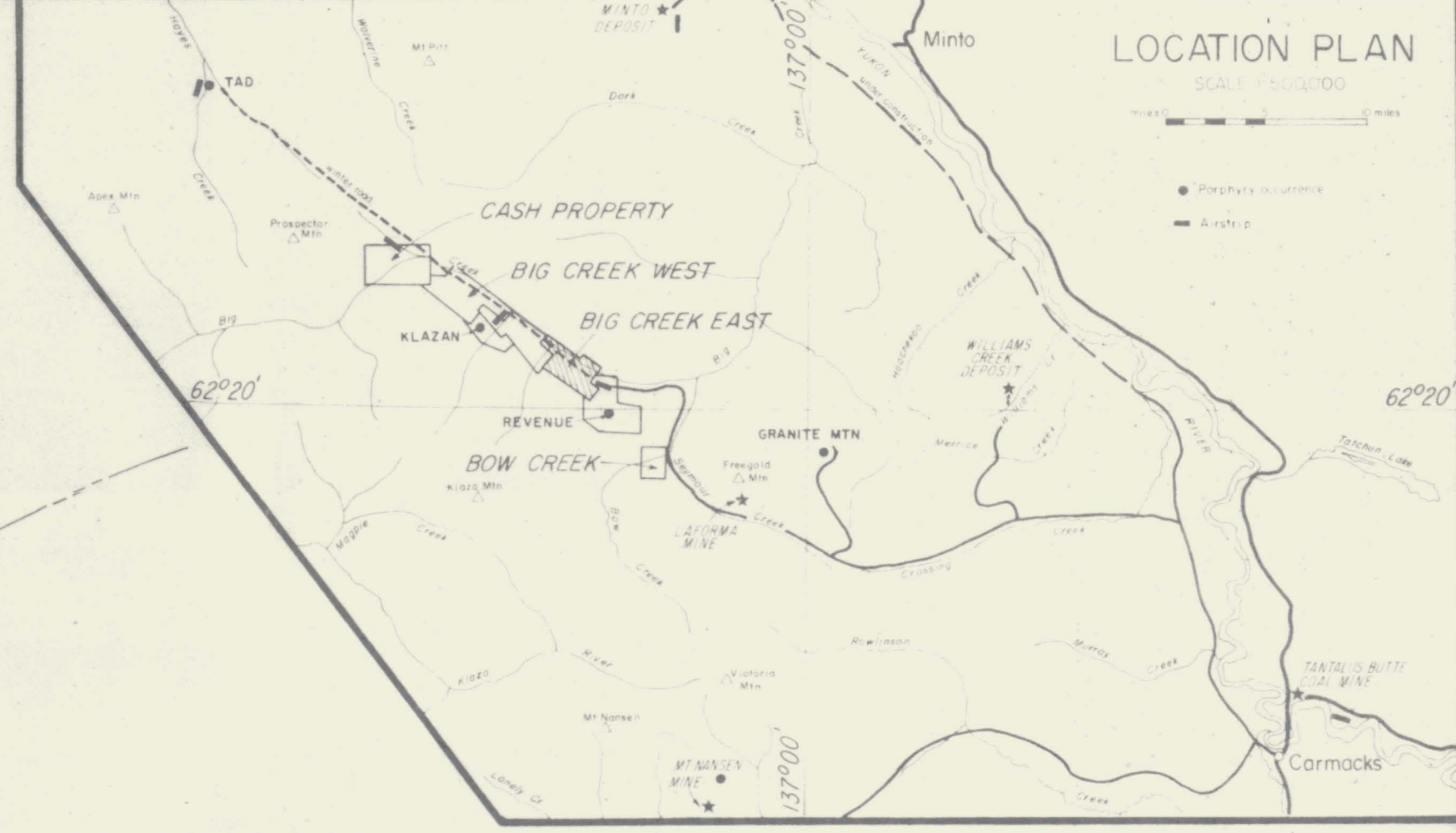
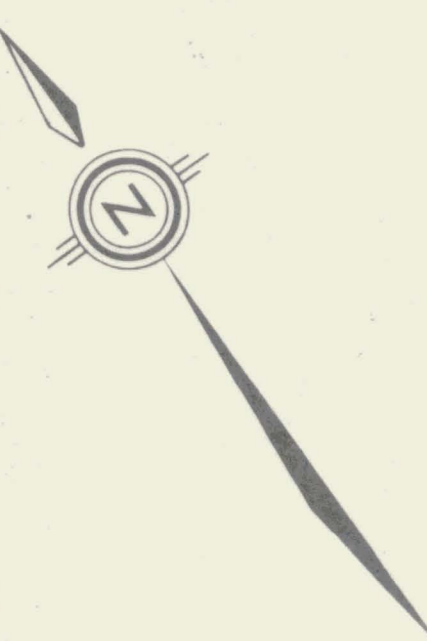
**LEGEND**

- Swamp
- Magnetometer reading in gammas
- 200 gamma contour line

Survey conducted by D. Eaton using a  
 sharpie MF 2 Fluxgate magnetometer  
 S/N 002181 Oct, 1975

FIG B4  
 ARCHER, CATRO & ASSOCIATES LTD  
**MAGNETIC SURVEY**  
 BIG CREEK WEST CLAIM GROUP  
 KLOTASSIN JOINT VENTURE

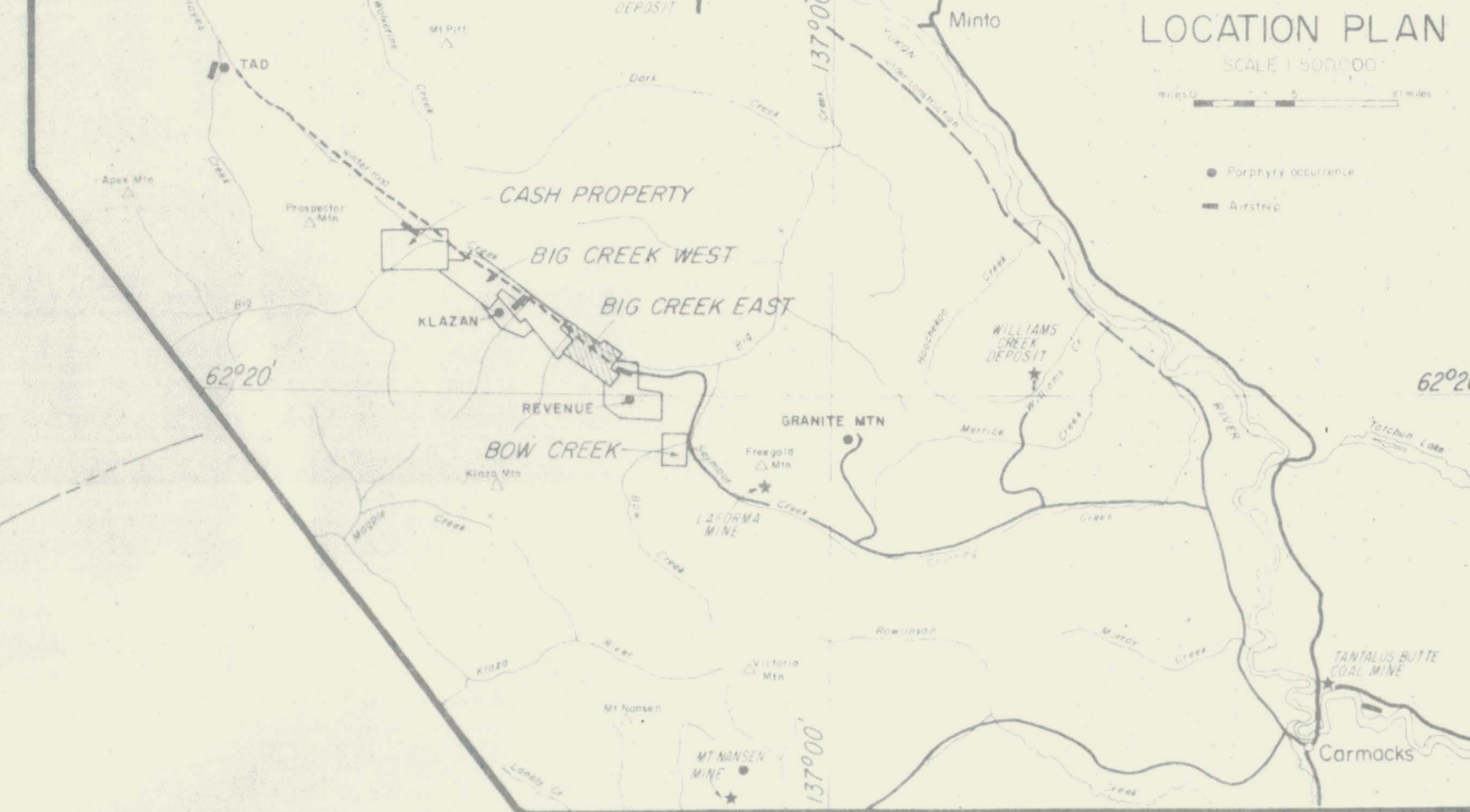
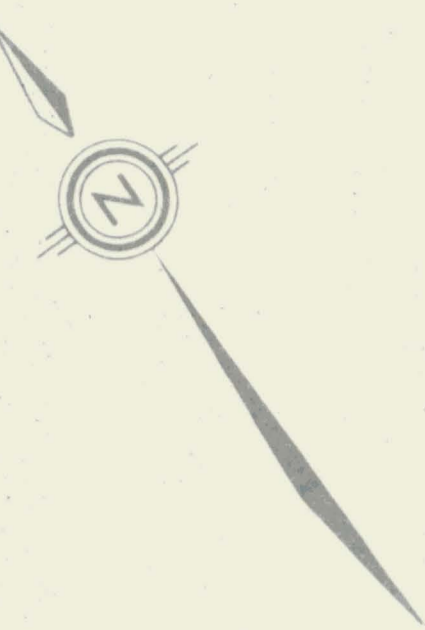
SCALE IN FEET  
 0 1000 2000



GEOLOGY		LEGEND	
<b>CENOZOIC</b>			
<b>PLEISTOCENE</b>			
QFI	Quartzite	~	Contact - defined, approximately inferred
<b>Eocene</b>			
<b>FELDSPAR PORPHYRY (Tfp)</b>			
Tfbhp	Feldspar tonalitic porphyry	○	Swamp
<b>ACID PORPHYRY</b>			
TqP	Quartz porphyry	○	Outcrop
TqP	Feldspar quartz porphyry	~	Fault
Tqbp	Feldspar quartz biotite porphyry	~	Foliation - inclined
Tfbhp	Feldspar biotite tonalitic porphyry	~	Bedding - inclined
<b>MESOZOIC</b>			
<b>LOWER &amp; MIDDLE JURASSIC</b>			
Mgd	Granodiorite	— —	Trench
My	Metabasite gneiss	+	Claim post
<b>PALEOZOIC</b>			
<b>MISSISSIPPIAN, PENNSYLVANIAN OR PERMIAN</b>			
PPsn	Schist gneiss	△	Intersection
		~	Limit of phyllic and potassic alteration (south point to alteration)
		~	Limit of deep overburden
		○	Ballast pit

FIG B5  
 ARHER, CATRO & ASSOCIATES LTD.  
**GEOLOGY**  
 BIG CREEK EAST CLAIM GROUP  
 KLOTASSIN JOINT VENTURE  
 SCALE IN FEET  
 0 1000 2000 3000

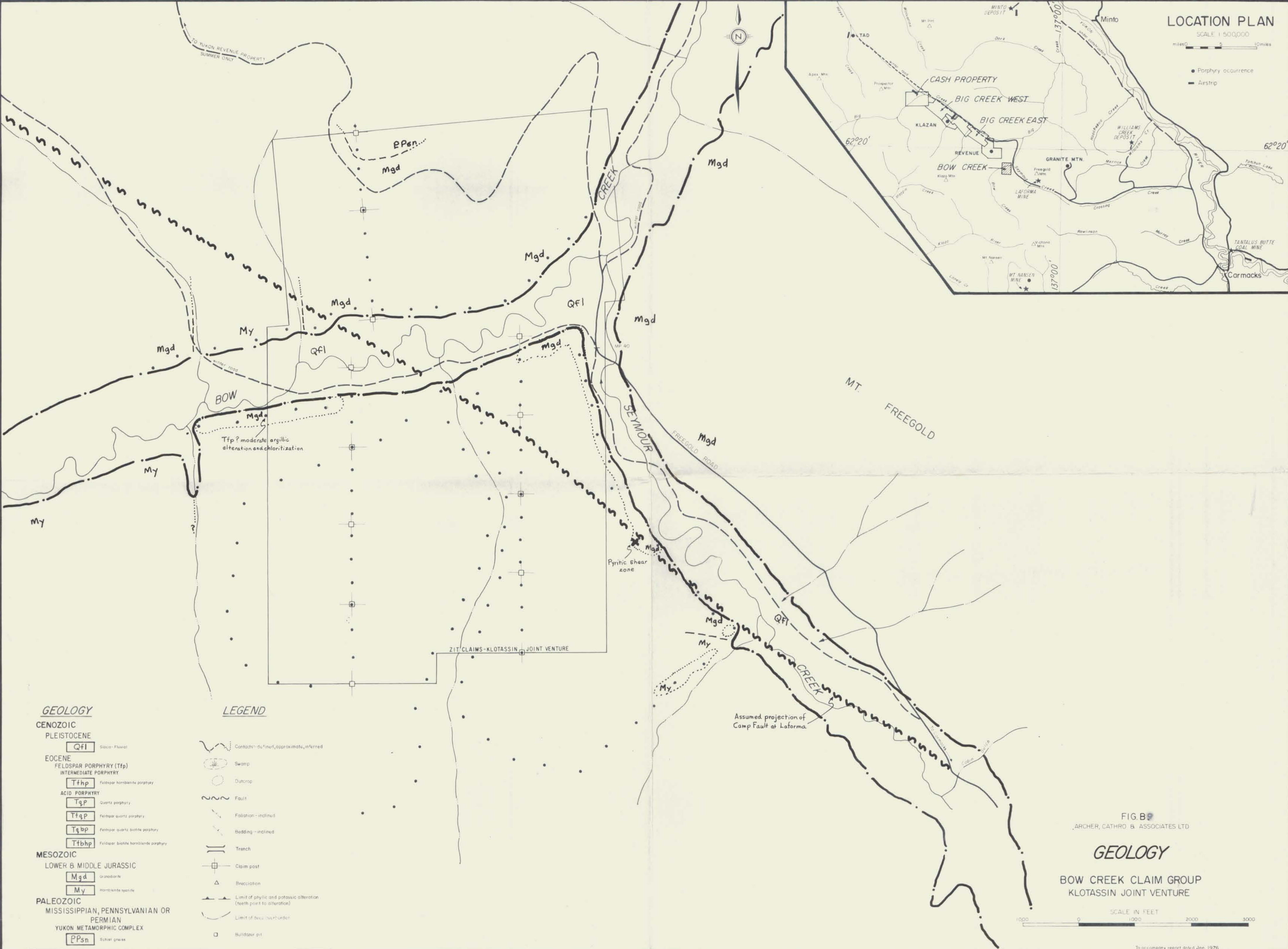
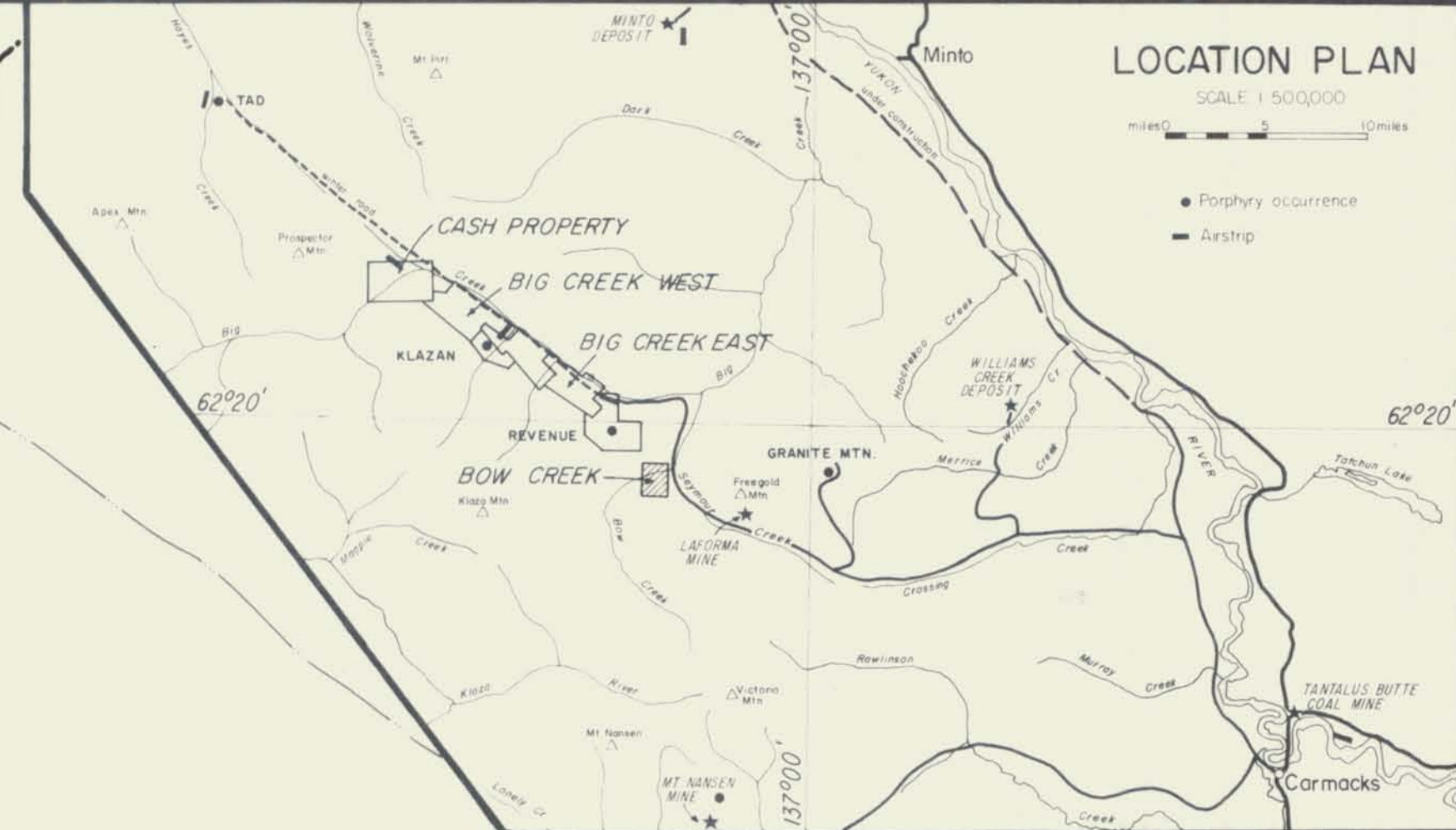




- LEGEND**
- Soil sample — Pb, Zn in ppm
  - x Stream sediment (silt) sample
  - Samples assayed at Chemex Labs Ltd, Vancouver, B.C., by atomic absorption spectrometry of a minus perchloric extraction of a minus 80 mesh fraction
  - Swamp
  - Soil geochemistry anomaly, Pb > 60 ppm
  - Soil geochemistry anomaly, Zn > 100 ppm

FIG B7  
GEOCHEMISTRY & ASSOCIATES LTD.  
**LEAD, ZINC GEOCHEMISTRY**  
BIG CREEK EAST CLAIM GROUP  
KLOTASSIN JOINT VENTURE





**GEOLOGY**

- CENOZOIC**
- PLEISTOCENE
  - Qf1 Glacio-fluvial
- EOCENE
  - FELDSPAR PORPHYRY (Tfp)
  - INTERMEDIATE PORPHYRY
    - Tfhp Feldspar hornblende porphyry
  - ACID PORPHYRY
    - TqP Quartz porphyry
    - TfqP Feldspar quartz porphyry
    - Tqbp Feldspar quartz biotite porphyry
    - Tfbhp Feldspar biotite hornblende porphyry
- MESOZOIC**
- LOWER & MIDDLE JURASSIC
  - Mgd Granodiorite
  - My Hornblende gneiss
- PALEOZOIC**
- MISSISSIPPIAN, PENNSYLVANIAN OR PERMIAN
- YUKON METAMORPHIC COMPLEX
  - PPsn Schist gneiss

**LEGEND**

- Contact - definite, approximate, inferred
- Swamp
- Outcrop
- Fault
- Foliation - inclined
- Bedding - inclined
- Trench
- Claim post
- Brecciation
- Limit of phyllic and potassic alteration (teeth point to alteration)
- Limit of decollement
- Buildup pit

FIG. B  
ARCHER, CATHRO & ASSOCIATES LTD

**GEOLOGY**  
BOW CREEK CLAIM GROUP  
KLOTASSIN JOINT VENTURE



To accompany report dated Jan, 1976

090087

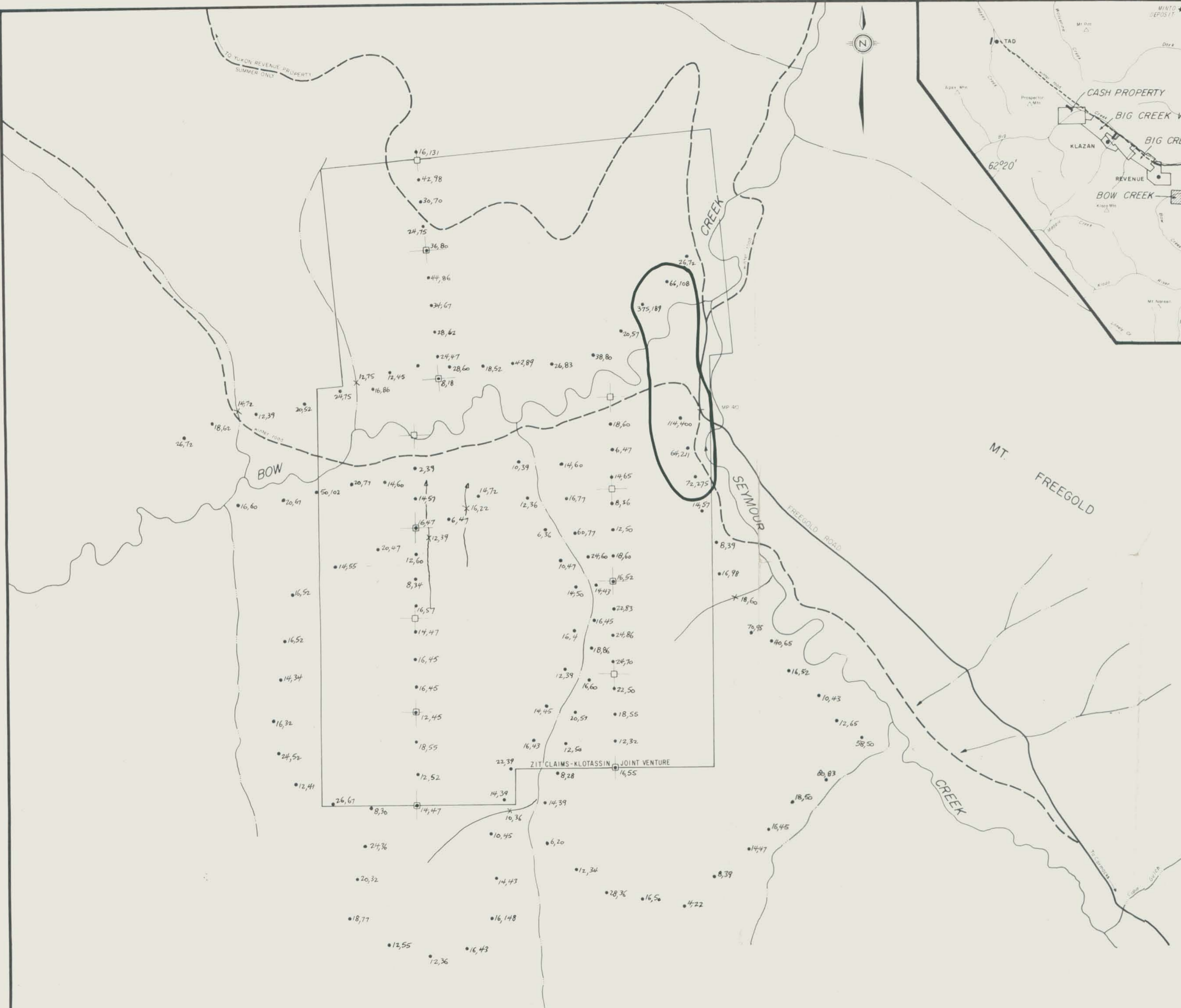
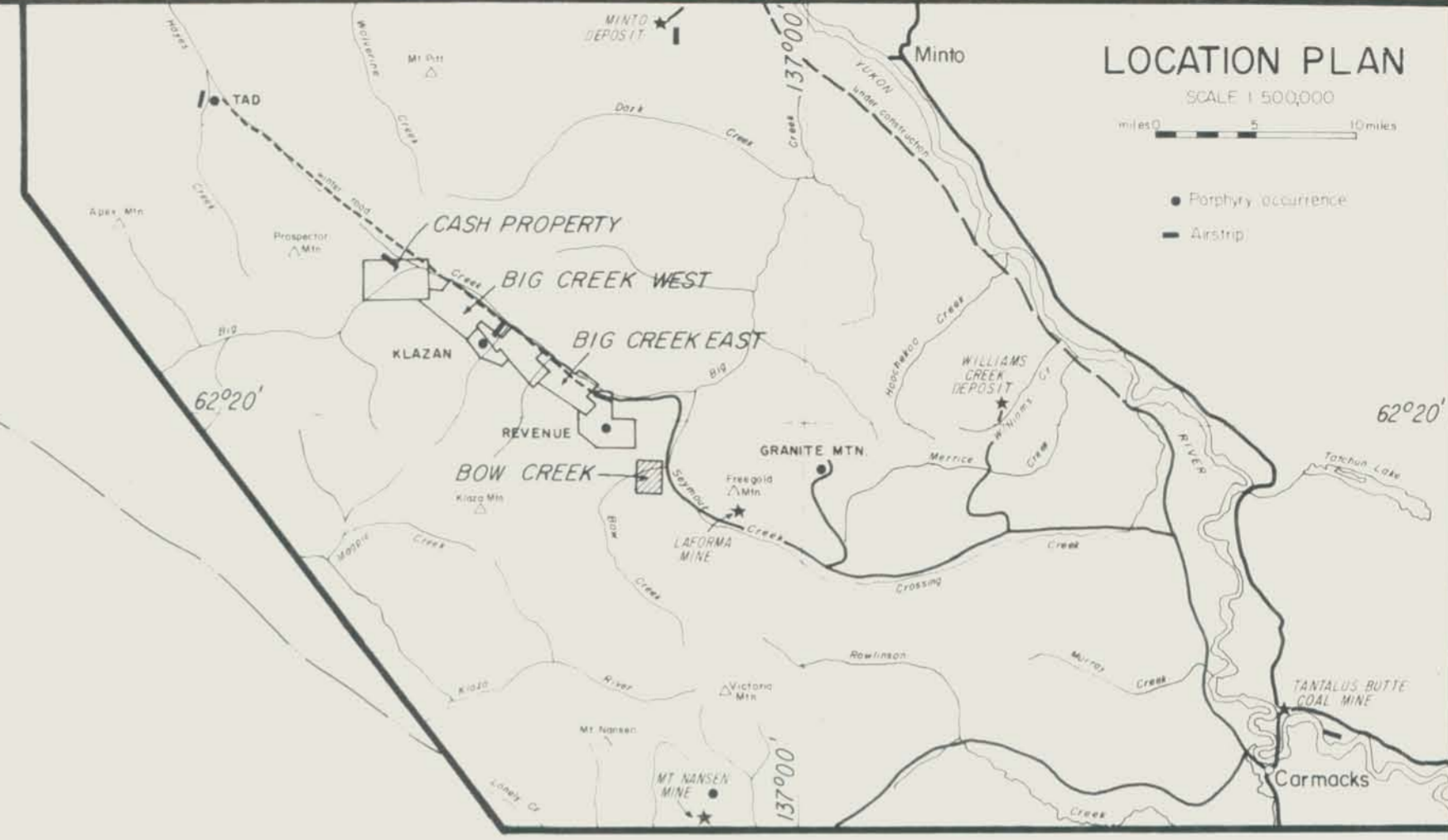


LOCATION PLAN

SCALE 1:500,000

miles 0 5 10

- Porphyry occurrence
- Airstrip



LEGEND

- Soil sample — Pb, Zn in ppm
- × Stream sediment (silt) sample
- Swamp
- Soil geochemistry anomaly, Pb > 60 ppm

Samples assayed at Chemex Labs Ltd., Vancouver, B.C., by atomic absorption spectrometry of a nitric perchloric extraction of a minus 80 mesh fraction

FIG. B11  
ARCHER, CATHRO & ASSOCIATES LTD.

LEAD, ZINC GEOCHEMISTRY

BOW CREEK CLAIM GROUP  
KLOTASSIN JOINT VENTURE

SCALE IN FEET  
0 1000 2000 3000

To accompany report dated Jan., 1976