OFFICE OF THE REGIONAL MANAGER
MINERAL RIGHTS
JAN 22 1985
WHITEHORSE
YUKON TERRITORY

GEOLOGICAL REPORT

On The

AL CLAIMS

Whitehorse Mining Division,

Yukon Territory

NTS: 115 H/12W

Latitude: 61°33'N

Longitude: 137°55'W

RECEIVED
11 JAN 1985
MINING
RECORDER'S OFFICE
WHITEHORSE, Y.T.

Owned and Operated By:

Kerr Addison Mines Ltd.
703 - 1112 W. Pender Street
Vancouver, B.C. V6E 2S1

For the Period:

June 23 to July 12, 1984

H. Copland

091598

This report has been examined by the Geological Evaluation Unit under Section 53 (4) Yukon Quartz Mining Act and is allowed as representation work in the amount of $18,294.75.

D.D. Emond

for Regional Manager, Exploration and Geological Services for Commissioner of Yukon Territory.

080180

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SUMMARY AND CONCLUSIONS

The AL claims are situated mainly in Tertiary or near Tertiary "Mount Nansen" volcanic rocks of the Nisling Range, southwestern Yukon. The volcanic package includes rhyolite, lapilli tuff, volcanic breccia, andesite and basalt. During 1984 several zones of a metasedimentary breccia containing spotty anomalous gold, arsenic, and antimony were identified, as well as auriferous quartz veins in volcanic rocks. The mode of emplacement of the older metamorphic rocks amid the younger volcanic pile is not clearly understood.

It is recommended that further sampling of the metasedimentary zones be conducted, in an attempt to clarify the sporadic results obtained so far. In association with this, semi-detailed (1:10,000) geological mapping of the surrounding area of the property should give a better understanding of the lithological relationships and possibly as to the formation of the anomalous breccia zones.

H. Copland

ADDENDUM TO SUMMARY AND CONCLUSIONS, AL CLAIMS, 1984 PROGRAM

A late review of the plotted results has evoked the following thoughts:

The stratigraphic-structural regime on the AL claims represents one of the most complex that we have examined. Any interpretation has to account for abrupt changes in the thickness of stratigraphic layers, unlikely juxtaposition of the various rock types, abrupt changes in the elevation of basement rocks, and the wide distribution of metasedimentary breccias.

Since the granites have an interpenetrative as well as gradational relations with the volcanics and volcanic feeders, intrusion and extrusion must be coeval.

The best fitting structural hypothesis is that of horst and graben development at least some of which is synchronous with major intrusion. There appears to be down-dropped stratigraphy adjacent to the intrusions, and a granitic dyke has been observed along a post-volcanic fault. N10°E to N40° E trends dominate the vertical displacements which locally attain 150m or more. Regionally, (over 5 km to the E), vertical displacements cumulatively attain 700m. It is not known to what extent the pre-volcanic topographic surface contributes to these changes, but the extent is thought to be small.

The best development of volcanic breccia, suggestive of proximity to a vent source, is near 19N, 32E.

The metasedimentary breccias occur at several stratigraphic levels, not restricted to basal units. From their spatial and stratigraphic distribution they cannot be unequivocally assigned to an origin in either syn-volcanic scarp-talus or in faulting or in hydrothermal brecciation with rafting* We can say that most, on the basis of local silicification and of local volcanic matrices, predate the end of volcanism.

Specific Recommendations:

An extension of the present grid to the E seems desirable on the basis of a general improvement in geochemical response in that direction. Extra emphasis should be placed on areas of probable structural complexity e.g. 20N, 42E and south of 12N, 34E.

New grid, 16 line kml, 50m x 200m	8 p.d.	
1:5,000 mapping	16	
1:10,000 reconnaissance	10	
Detail studies	10	
	44 p.d. @ $160.	$7040.
Assays and Analyses 100 @ $20		2000.
Other lab work		1000.
Helicopter, 5 hours # $550.		2750.
Orthophoto coverage (extension to E)		2500.
Mobilization from Vancouver (pro-rated)		1000.
Freight, telephone, miscellaneous		1000.
TOTAL RECOMMENDED PROGRAM		$17,290.

* See regional report for other comments.

D.A.

D. Arscott

LOCATION AND ACCESS

The AL Claims (Lat. 61°33'N, Long. 137°55'W) are located approximately 90 km north of Haines Junction, 175 km northwest of Whitehorse, and 17 km due west of the north end of Sekulmun Lake (see Figure 1). Access is most easily obtained by helicopter from Haines Junction. A four wheel drive road extends from the Alaska Highway to the north end of Aishihik Lake 20 km east northeast of the property. Haines Junction is the nearest centre providing most necessary services.

LEGAL DESCRIPTION

The AL Claims consist of 40 contiguous units (YA 82182 to YA 82221) all located within the Whitehorse Mining Division. (see Figure 2). The claims were located on June 11, 1984 and registered June 12, 1984.

TOPOGRAPHY AND VEGETATION

The property lies at the southern end of the Nisling Range in the southwestern Yukon. The claims cover a broad easterly trending ridge which culminates in a flat peak on AL 24 at an elevation of 1910 metres (6253 feet). The lowest point occurs on AL 39 in the valley to the north of the ridge with an elevation of 1250 metres (4100 feet). The claims are drained by northeasterly and southeasterly flowing creeks which join with Albert Creek. The property is entirely above treeline which occurs near the 1200 metre level. Above this dense alder and willow bushes give way to grass and finally to widespread talus above 1700 metres.

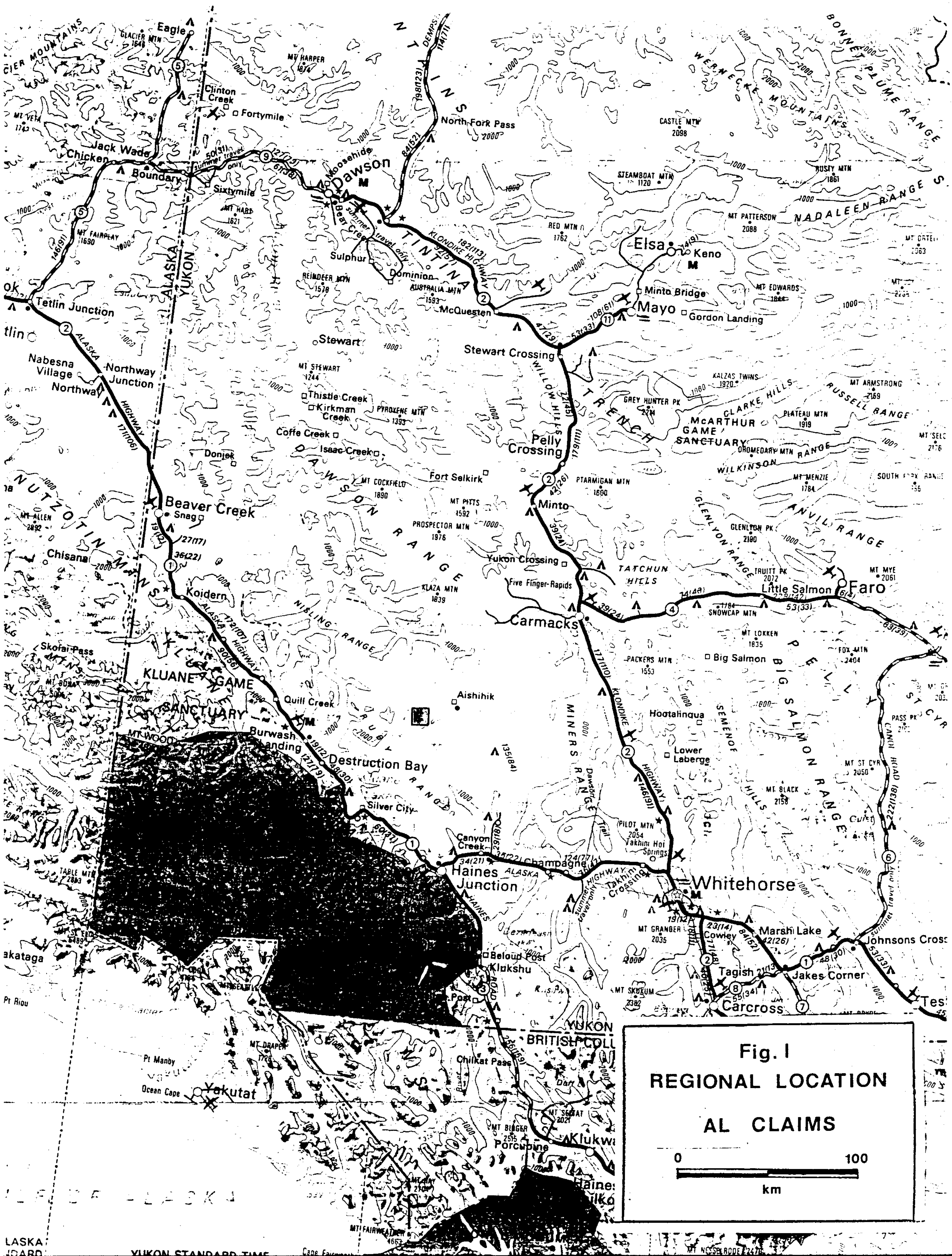


Fig. I
REGIONAL LOCATION
AL CLAIMS

0 — 100
km

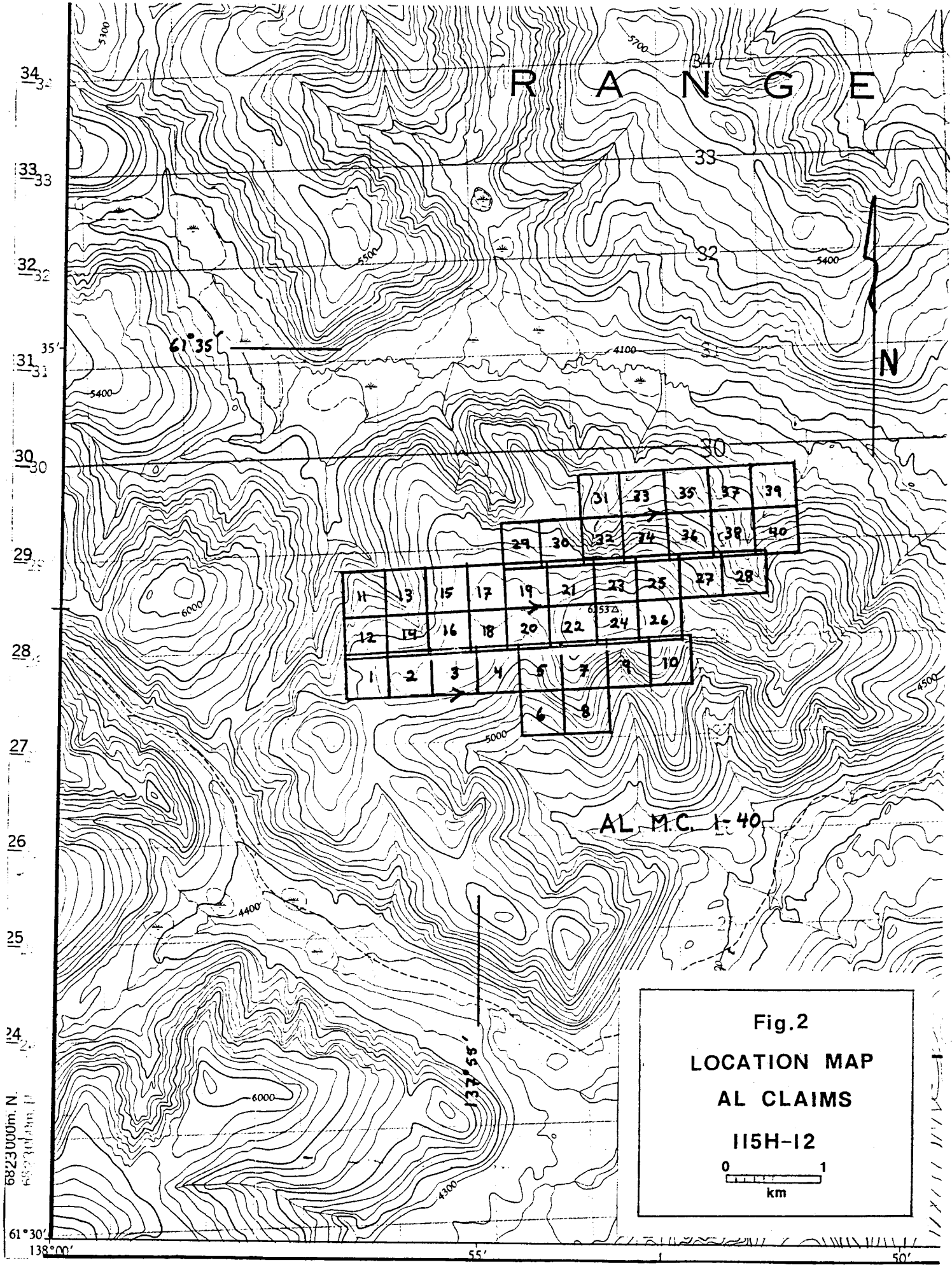


Fig.2

LOCATION MAP

AL CLAIMS

115H-12

HISTORY

No recorded instances or signs of previous work have been found for the area now covered by the AL claims. The HIK claims of Kerr Addison Mines Ltd. and the HATCH, PATCH, CATCH, THATCH, and LEN claims currently operated by Hudson Bay Mining and Development, lie 15 kilometres to the east of the property.

DESCRIPTION OF WORK (1984)

In 1984 property work consisted of laying out approximately 27 kilometres of grid to serve as a base for sampling and geological mapping. The grid consists of N 15°W trending lines averaging 1600 metres in length, and spaced 200 metres apart. Stations are marked by wooden pickets every 50 metres. The grid was located using compass and hip chain with correction made for slopes. The grid was then plotted and adjusted on a contour overlaid orthophoto (1:5,000 scale), on which subsequent geology and sampling were completed. The above work was done with a five person crew over the period June 23 to July 12, 1984.

GEOLOGY

Regional Geology

The AL claims lie within the Yukon Crystalline Terrane of the northern cordillera. This region consists of mainly Lower Paleozoic to Proterozoic metamorphic schist and gneiss. These basement rocks are intruded by Upper Triassic to Tertiary plutons ranging in composition from syenite to diorite. Overlying the metamorphic rocks and in places contemporaneous with the intrusives are Cretaceous to Tertiary volcanic rocks of the Mt. Nansen, Casino and Carmacks Groups as well as minor Cretaceous to Tertiary sedimentary rocks.

A more complete description of the region may be found in Tempelman-Kluit (1974).

The claims lie on the northern boundary of a large pluton regionally mapped as Eocene Coffee Creek Granite, which ranges in composition from granite and quartz monzonite to alaskite.* To the north these are in contact with and probably genetically related to feldspar porphyry and feldspar porphyry dyke swarms. Gneiss, schist, and limestone of the basement Yukon Metamorphic Complex crop out over a large area a few kilometres northeast of the property. To the south of the Coffee Creek Granite lies Triassic granodiorite of the Ruby Range Batholith. The AL and HIK claims (Kerr Addison) cover a portion of the Cretaceous to Lower Tertiary volcanic rocks which sit topographically above both the Yukon Metamorphic Complex and the bulk of the granitic intrusions.

Property Geology

Feldspar porphyritic rhyolite, flow banded rhyolite, lapilli tuff, volcanic breccia, andesite and basalt underlie most of the AL claims. In contact with these to the south are basement phyllites. The contact averages 1700 metres (5600 feet) in elevation. To the north, contact with granite occurs near the 1670 metre (5500 feet) level although this varies widely. Examination of Figure 3 (Geology) shows the distribution and relationships of the units.

* Later work elsewhere in the district revealed that the Alaskite is a distinct later phase, no doubt representative of the 55 m.y. Nisling Range Alaskite. Whether the earlier phase is of the same age or truly Coffee Creek, (90 to 100 m.y.), is not clear.

Several zones of metamorphic rocks and metamorphic breccias are found amid the volcanic units. These areas range from a few to several hundred metres in size. Brecciation and silicification are common in many of these metamorphic zones. More will be discussed on these areas under structural and economic geology.

A description of the major lithologies follows:

1. Basalt (B): This unit occurs as narrow northerly trending trending dykes. The rock is dark brown, weathering a lighter brown and is fine grained.

2. Andesite (A): The andesite is dark green on both fresh and weathered surfaces. It is very fine to fine grained and locally mildly hornblende porphyritic. It occurs exclusively as dykes up to 10 metres wide.

3. Quartz-feldspar porphyritic Rhyolite (RpI): This widespread unit is typically grey to dark green, weathering a light grey to brown. Subrounded glassy quartz eye phenocrysts up to 2 mm. in size and comprising 2-5% of the rock distinguish it from the other rhyolites. Tabular to subrounded, subhedral, phenocrysts of feldspar 1-5 mm. in size make up 1-10% of the rock. Locallized flow banding is occasionally present as well as an intense widespread clay and chlorite alteration (Rpla).

4. Feldspar porphyritic Rhyolite (Rp2): This rhyolite ranges from a dark grey to green, weathering a light grey frequently with a maroon tint or orangy-buff colour. Subhedral phenocrysts of k-feldpsar (80%) and plagioclase (10%) are generally less than 3 mm. in size and range from 1 to 10% of the unit. Alteration of this unit (Rp2a) occurs as a clay, limonite, and/or silica alteration frequently associated with intense fracturing.

5. Feldspar porphyritic Rhyolite Flow (Rp_f): Distinct flow banding distinguishes this from Rp2 which it resembles in all other aspects. It is dark grey with a maroon or green tint weathering light grey with white to pink phenocrysts.

6. Rholite Flow (Rf): This unit was observed in only one location. It is dark green weathering a grey-green or tan. The rock is very fine grained, siliceous with distinct flow banding throughout. On the eastern margin on the flow it is quite brecciated with clasts of flow banded material up to several centimetres in size.

7. Lapilli Tuff (tl): This rock is dark green with multi coloured clasts weathering grey-green to brown and locally gossanous. A great variation of clast size, shape and density occurs throughout the property but in general clasts are subangular to subrounded ranging in size from a few millimetres to 3 cm, comprising 10 to 60% of the rock. Clasts consist of phyllite, felsic volcanics, white quartz and various inidentified lithologies.

8. Volcanic Breccia (bu): This unit is identical to tl but with larger clasts. The arbitrary size differential has been taken as 3 cm. A full range of clasts sized from a few millimetres to 15 cm. is observed through these rocks. The larger clasts average about 6 cm. in size. Almost exclusively the largest clasts tend to be phyllite. The size distribution of clasts was observed to be approximately 10-15% greater than 3 cm., 5-10% 1 to 3 cm., and 10-20% less than 1 cm.

9. Feldspar porphyritic lapilli tuff (tpl): This rock is similar to tl but contains feldspar phenocrysts which are subhedral, tabular to subrounded, 2-5 mm in size and up to 10% of the rock.

10. Feldspar porphyry (Fp): This unit is dark green with white phenocryss weathering on olive-grey with pink phenocrysts. An almost equalmix of K-feldspar and plagioclase penocrysts range from euhedral to subhedral, are up to 1 cm in size and form 10-20% of the rock. Linear trains of boulders suggest this unit occurs mainly as northerly trending dykes cutting both porphyritic rhyolite and lapilli tuff.

11. Granite (G): This rock is light grey to pink weathering a similar colour. It is generally fine to medium grained, equigranular with mafics less than 10%. Some boulders of float exhibit a feldspar or quartz porphyritic nature. Minor amounts of a miarolitic texture were observed.

A local gradation to alaskite is possible. The granite occurs primarily as large irregular isolated bodies possibly intruded into the volcanic rocks. It was also observed to occur as northerly trending dykes cutting lapilli tuff and metasediments.

12. Metamorphic rocks (Ph,Sch,qtzite,L,breccias): These units all belong to the Yukon Metamorphic Complex Black phyllite occurs primarily on the southern boundaries of the claims and contributes to a large portion of the so called metasedimentary breccias, which are discussed in more detail later. A more modest amount of siltstone to argillite and minor dark grey recrystalline limestone occur within different metasedimentary zones, but the siltstone is not metamorphosed and must be considered as part of the volcanic package i.e. probably Tertiary.

Structural Geology

Regionally the AL claims lie between the northwest trending Tintina and Shakwak fault zones, both of which are believed to have large right lateral displacements. On the property distinct northwest trending zones of altered well fractured rock have been interpreted as faulted or sheared zones. The occurrence of numerous metasediments and metasedimentary breccia zones throughout the volcanic rocks may be associated with this faulting. The majority of these zones occur as small areas of float in which signs of faulting are either masked

or lacking. It is possible that block faulting of the region has resulted in the uplift and redistribution of the older metamorphics within the volcanic pile. Another suggestion is that the breccias are former talus zones created adjacent to a scarp. A third theory put forward by the writer suggests a simple rafting of the metamorphic rocks upward during emplacement of the volcanic pile. In any case the emplacement of these zones is not clearly understood at present.

Economic Geology

Sampling in 1983 and 1984 has revealed that the main areas of interest lie within the zones of metasedimentary breccia and also to a minor extent in quartz veins and veinlets throughout the volcanic units. The breccias consist mainly of angular fragments up to several centimeters in size of phyllite, quartzite, quartz, schist and gneiss with a silica or silica/carbonate cement. A sample of typical breccia collected and thin sectioned (J32R, 1983) consisted of clasts of impure quartzite, coarse vein quartz and carbonaceous chert in a matrix of fine angular quartz containing abundant sericite and carbonaceous material.

A large variably silicified area of relatively unbrecciated sedimentary rocks (siltstone, argillite, schist, and phyllite) in fault contact with rhyolite was observed to contain zones of intensely silicified mildly auriferous metasedimentary breccia. In most of the breciated areas consistency of appearance and lithology is apparent, although a very quartz rich breccia occurs locally. This breccia consists of white vein quartz, and/or quartzite with a silica/carbonate matrix. No outstanding geochemical differences were noted between the "regular" and quartz rich breccias.

The breccia zones as exposed in float, range from a few metres to almost 100 metres in length with widths up to 25 metres. A few of the samples from various portions of these zones are anomalous in gold, antimony, arsenic and to a lesser extent silver. The anomalous values range as follows: gold 20 to 275 ppb, silver 3.7 to 5 ppm, antimony 10.6 to 13.8 ppm, and arsenic 200 to 500 ppm. The question as to the depth of these zones is still open, dependent mainly on their mode of emplacement. Block faulting with brecciation or development of talus slopes could have left large pathways extending to some depth for invasion by hydrothermal fluids, whereas the rafting up of the metamorphic rocks would leave little hope of them extending to much depth.

The second economic area of interest lies with anomalous values (20 to 390 ppb Au) occuring in quartz veinlets and veins through the volcanic rocks. These are found almost exclusively on the western half of the property. Glassy to grey, locally drusy quartz veinlets and veins from a few millimetres to almost a metre in width are found within float of porphyritic rhyolite and lapilli tuff. Of the numerous samples taken of these structures only a few showed any geochemical response, mainly in the form of gold with a spotty associated silver.

The highest gold value obtained thus far from the claims (2550 ppb in sample J10R, 1983) was an intensely silicified quartz-schist/quartzite found at the basal contact of the volcanic pile. Silicification is thought to be derived from the volcanic rocks but may be related to a nearby metasedimentary breccia zone.

GEOCHEMISTRY

Procedure

A total of 89 rock samples were collected on the AL claims during 1984. The majority of these are grab samples from talus and felsenmeer. All samples were sent to Chemex Labs Ltd, North Vancouver, B.C., for preparation and analysis utilizing standard Atomic Absorption procedures. The samples were analysed for Ag, Sb, As and Au with 14 of these additionally tested for W and Sn. The Au analyses were preceded by Fire Assay preconcentration.

Results

Out of the 89 rock samples collected during 1984, 16 proved anomalous in gold (>20ppb). Two were anomalous in silver((>4.0 ppm), 3 in arsenic (>200 ppm), and 12 were in antimony (>10ppm). Of the 14 samples analysed for tin and tungsten 3 may be considered anomalous (>5ppm Sn, >10 ppm W).

These threshold values may be a trifle high. They are based on extensive regional sampling conducted in 1983. A table of the best anomalous samples complete with descriptions follows.

RECOMMENDED WORK

Further work on the property should first concentrate on a better definition of the geochemical values of the metasedimentary zones. At present random sampling and the resulting sporadic anomalies do not give a clear economic potential of these areas. It is suggested that abundant chip sampling across the anomalous breccias should be undertaken. The benefit of trenching these zones is doubtful in view of that conducted on the nearby HIK claims. Talus and felsenmeer in the main zones of interest probably extend to a greater depth than can be penetrated in normal hand dug trenches.

To obtain a better understanding of the relationships of the various lithologies and hopefully as to the emplacement of the metasedimentary zones, regional mapping adjacent to the property should be conducted. A semi-detailed 1:10,000 geological mapping of the immediate area may also uncover other areas of economic potential.

SELECTED REFERENCES

Douglas, R.J.W.

1980: MacMillan River, Yukon-District of Mackenzie-Alaska, Sheet 105, 115; G.S.C. Map 1398 A.

Tempelman-Kluit, D.J.

1974: Reconnaissance Geology of Aishihik Lake, Snag, and part of Stewart River Map Areas, West Central Yukon; G.S.C. Paper 73-41.

1984 ANOMALOUS SAMPLES AL CLAIMS (Target 55)

ROCK SAMPLE LIST

SAMPLE NO.	LOCATION	TYPE	DESCRIPTION	ANOMALOUS VALUE
Y55-DR 1	Grid 49+00E, 26+80N	Grab (float)	Quartz, white, sugary, rusty weathering, from 15 cm boulder	17.0 ppm Sb
Y55-DR 2	Grid 48+80E, 26+20N	Grab (float)	Quartz	20.0 ppb Au
Y55-DR 4	Grid 48+00E, 25+50N	Grab (float)	Breccia, rhyolite or quartzite fragments. Abundant float.	200 ppm As 12.4 ppm Sb 45 ppb Au
Y55-DR 5	Grid 48+10E, 24+60N	Grab (float)	As DR 4. Isolated float but possibly from same source as DR 4	3.7 ppm Ag 11.0 ppm Sb 90 ppb Au
Y55-DR 6	Grid 49+00E, 22+10N	Grab (float)	Breccia ?	14.0 ppm Sb
Y55-DR 10	Grid 48+80E, 20+40N	Grab Composite over 10m (float)	Quartz, white, sugary, rusty weathering, brecciated in zone of abundant carbonate-quartz breccia float.	115 ppm As
Y55-DR 11	Grid 49+00E, 20+20N	Grab Composite (float)	Mix of breccias including high quartz schist composition, high carbonaceous schist, and lesser volcanic material	220 ppm As 10.6 ppm Sb 45 ppb Au
Y55-DR 24	Grid 41+40E, 19+20N	Grab (float)	Metasedimentary breccia, very intensely silicified, veinlike, from 25cm boulder.	10.6 ppm Sb 100 ppb Au
Y55-DR 25	Grid 43+00E, 18+00N	Grab (float)	Breccia, grungy. Appears to have quartz schist and carbonaceous schist fragments	10.6 ppm Sb 70 ppb Au
Y55-DR 26	Grid 43+50E, 17+00N	Grab (float)	Argillaceous grunge, weakly chloritized.	150 ppm As

1984 ANOMALOUS SAMPLES AL CLAIMS (Target 55)

ROCK SAMPLE LIST

SAMPLE NO.	LOCATION	TYPE	DESCRIPTION	
Y55-DR 28	Grid 43+00E, 16+60N	Grab (float)	Metasedimentary breccia, strongly silicified, slightly vuggy, moderately rusty, with traces of red stain.	4.3 ppm Ag 100 ppm As 17.0 ppm Sb 30 ppb Au
Y55-DR 33	Grid 41+20E, 19+40N	Grab (float)	Quartz gneiss breccia, intensely silicified, slightly rusty. Float along same lineament as DR 24.	110 ppm As 21.0 ppm Sb
Y55-DR 38	Grid 40+00E, 21+10N	Grab (float)	Breccia. Schist fragments in silicified carbonaceous matrix.	13.6 ppm Sb 90 ppb Au
Y55-DR 15	Grid 30+30E, 13+90N	Grab (float)	Rhyolite lapillic tuff to tuff breccia, moderately clay altered, with yellow stained, limonitic fractures.	5.4 ppm Ag 390 ppb Au
Y55-HR 1	Grid 50+20E, 27+90N	Grab (float)	Coarse grained white quartz, 30cm in width, (vein?), intense limonitic stain on fractures.	115 ppm As 9.6 ppm Sb
Y55-HR 2	Grid 47+70E, 21+30N	Grab (float)	Fine grained grey quartz, in metasedimentary breccia, intense limonite, weak jarosite stain.	500 ppm As 13.8 ppm Sb 75 ppb Au
Y55-HR 12	Grid 35+50E, 18+65N	Grab (float)	Coarse, glassy to grey drusy quartz veinlets to 3cm in width in lapilli tuff; intense limonite and Fe-Mn stain.	65 ppb Au
Y55-HR 16	Grid 31+40E, 12+15N	Grab (float)	Coarse grained white to grey quartz stringers in lapilli tuff. Less than 1 to 10cm in width, weak limonite stain.	3.8 ppm Ag

1984 ANOMALOUS SAMPLES AL CLAIMS (Target 55)

ROCK SAMPLE LIST

SAMPLE NO.	LOCATION	TYPE	DESCRIPTION	
Y55-CR 8	Grid 25+80E, 22+10N	Grab	Intense clay altered, rusty,fractured rhyolite porphyry ?	7.6 ppm Sb
Y55-CR 13	Grid 22+30E, 20+60N	Grab	Drusy quartz vein, grey, smoky crystals and gossanous coarse grained quartz.	30 ppm Au
Y55-CR 15	Grid 23+70E, 22_50N	Grab	Coarse grained, gossanous quartz vein	20 ppb Au

STATEMENT OF COSTS

1984 FIELD PROGRAM

AL CLAIMS

23 June - 13 July 1984

Labour	Office	Field	Travel	Total
D. Arscott, Geologist, 2275 W. 20th Ave. Vancouver, B.C.	3	5	1	9
J. Pautler, " , 4912-62nd Street Ladner, B.C.	-	11	1	12
L. Grexton, " , 1761-16th Ave. W. Vancouver, B.C.	-	11	1	12
H. Copland, " , Site 20,Comp.109 RR#1, Whitehorse, Y.T.	2	15	1	18
C. Baldys, " , 9013 Steveston Hwy, Richmond, B.C.	-	15	1	16
	Total	Person Days		67

Total Wages (including 15% burden) $7820.00

Expenses

Helicopter: (Pro-rated)

23 June	1.6
29 June	1.5
5 July	1.0
13 July	2.5
	6.6 hours @ $550.00 $3630.00

Analyses:

89 rocks @ $17.75 Au, As, Sb, Ag (geochem) 1579.75

14 rocks @ $8.00 W , Sn 112.00

Food: 62 days @ $150.00 930.00

Field supplies: pickets, propane, camp hardware, etc. 57 days @ $12. 684.00

Truck: 14 days @ $45.00 630.00

Orthophoto: 2735.00

Shipping: 174.00

Sub total $10,474.75

TOTAL PROGRAM COST $18,294.75

This total represents a conservative figure for the cost of the 1984 AL Claims Program.

D. Arscott

QUALIFICATION

I, David Philip Arscott, am a Professional Engineer registered in British Columbia.

I have had 17 years experience in Mineral Exploration, mainly in the Canadian Cordillera.

I directed and took part in the 1984 program on the AL claims.

David Arscott

David P. Arscott, P.Eng.

PROJECT Y6

Thin Section Specimens

Sept.83

SAMPLE NO: Y55-J10R ANALYSES: 2250Au, 0.4 Ag, 6 As, 1.8 Sb

LOCATION: Sekulmun Lake

FIELD DESCRIPTION: ~~Rhyolite lap.~~ tuff - intensely silicified. Cataclastically deformed impure quartzite with quartz vein

Stained Slab - Rhyolite? - very little yellow stain however rock is highly altered - 1cm wide siliceous vein.

THIN SECTION DESCRIPTION: Cataclastically deformed impure quartzite with quartz vein

The host rock is an impure muscovite quartzite of the Yukon Metamorphic Complex, similar to the clasts in Y55 J32R. The quartz grains in it have highly variable grain sizes and uneven grain boundaries. The rock has been brecciated in place. Trains of very small quartz neoblasts penetrate the fragments; the breccia matrix ranges from aggregates of neoblasts to actually sheared, angular quartz grains in a dense clay-oxide matrix. This texture is the result of high strain rates under fairly low temperatures, at the interface between brittle and ductile strain regimes.

Muscovite forms trains in the quartzite, which define a foliation. A few biotite grains are present.

The quartz vein is coarse grained with some open-space-filling textures, e.i. euhedral quartz prisms, in the center. Fe-oxides coat the crystals.

Clay-limonite patches occur in the quartzite.

PROJECT Y6

Thin Section Specimens

Sept.83

SAMPLE NO: Y55-J20R ANALYSES: ?

LOCATION: Selkirk Lake.

FIELD DESCRIPTION: Rhyolite lapilli tuff - rosilica. Rhyolite porphyry

Stained Slab - Rhyolite porphyry flow - phenos of white f in a K rich groundmass - faint flow banding

THIN SECTION DESCRIPTION:

Y55 J20R Rhyolite dyke

This sample has a heterogeneous texture, in part flow-banded, in part massive; with uneven concentrations of plagioclase xenocrysts. The foliation is very irregular, suggesting chaotic flow. The plagioclase xenocrysts are unzoned and anhedral to euhedral, commonly occurring in clumps with broken edges.

Mode

65 orthoclase
30 quartz
5 plagioclase

The matrix is generally composed of very fine grained orthoclase which in places takes on a strong trachytic orientation. This pattern is interrupted by domains of unfoliated because equant orthoclase matrix with broken quartz grains. A combination of flowage and explosivity is suggested.

Quartz occurs as broken piences and as anhedral, irregular "eyes" .5 mm across. The latter may have formed during devitrification.

Plagioclase occurs as xenocrysts or broken phenocrysts.

PROJECT Y6

Thin Section Specimens

Sept.83

SAMPLE NO: Y55-307R ANALYSES: ?

LOCATION: Sekulmun Lake.

FIELD DESCRIPTION: Rhyolite porphyry - q rich bands.
~~Rhyolite~~ breccia
rhyolite
Contact Zone - Rhyolite Lapilli tuff.

THIN SECTION DESCRIPTION: Rhyolite breccia

This is a polymict volcanic breccia. Clasts in it include:

1) Rhyolite, consisting of Kspar and quartz, the Kspar forming a very trachytic fabric.
2) Fragments of individual spherulites. These are obviously incorporated from earlier extrusive units, since the devitrification had to occur before they were caught up in the present matrix.
3) Rhyolite: quartz and Kspar in an interlocking fine grained maggregate with clumped plagioclase phenocrysts.
4) Fragments which are themselves breccias, indicating multiple explosive events of this nature.
5) Flow-banded rhyolite.

The matrix is vert fine grained, full of angular fragmental material. No tuffaceous clasts are present. One angular zircon was seen. Scattered patchese of Fe-oxide, possibly jarosite, occur in the matrix.

PROJECT Y6

Thin Section Specimens

Sept.83

SAMPLE NO: Y55-332R ANALYSES: ?

LOCATION: Sekulmun Lake

FIELD DESCRIPTION: Breccia - meta-sedimentary and quartz fragments in a siliceous groundmass.

Stained Slab - as above

THIN SECTION DESCRIPTION: Polymict breccia

This sample is a breccia that contains fragments of differing, but allied lithologies. All of them derive from the Yukon Metamorphic Complex. They are as follows:

1) Impure quartzite. These are most abundant. They consist of an aggregate of quartz grains .1 to .2 mm in diameter with uneven to sutured borders. The grains are commonly flattened in a foliation defined by small muscovite plates.

2) Vein quartz. These quartz aggregates are coarser than the quartzites, and they contain no muscovite. One occurs in a compound clast cutting chert.

3) Chert. These are aggregates of very fine grained quartz. Some contain abundant black carbonaceous debris, while others are comparatively clear. One is a fine grained breccia of possible sedimentary origin.

The matrix is finely ground angular quartz surrounded by masses of sericite with Fe-oxide and carbonaceous material.

A few fragments consist of opaque Fe-oxide or fine grained yellow Jarosite?

PROJECT Y6

Thin Section Specimens

Sept.83

SAMPLE NO: Y55-J50R ANALYSES: None.

LOCATION: Sekulmun Lake.

FIELD DESCRIPTION: Granite

Stained Slab - Quartz Monzonite porphyry - white phenos in a groundmass of quartz + kspar.

THIN SECTION DESCRIPTION:

Y55 D50R Porphyritic granodiorite

This sample contains plagioclase, hornblende and biotite phenocrysts in a matrix of grains averaging .2 mm in diameter, which contains quartz and orthoclase in additional to the phenocryst phases. Abundant convex-bordered quartz grains in the matrix may be the result of later recrystallization. Biotite phenocrysts show bent cleavages.

Mode

40 plagioclase
25 quartz
20 microcline
9 biotite
6 hornblende

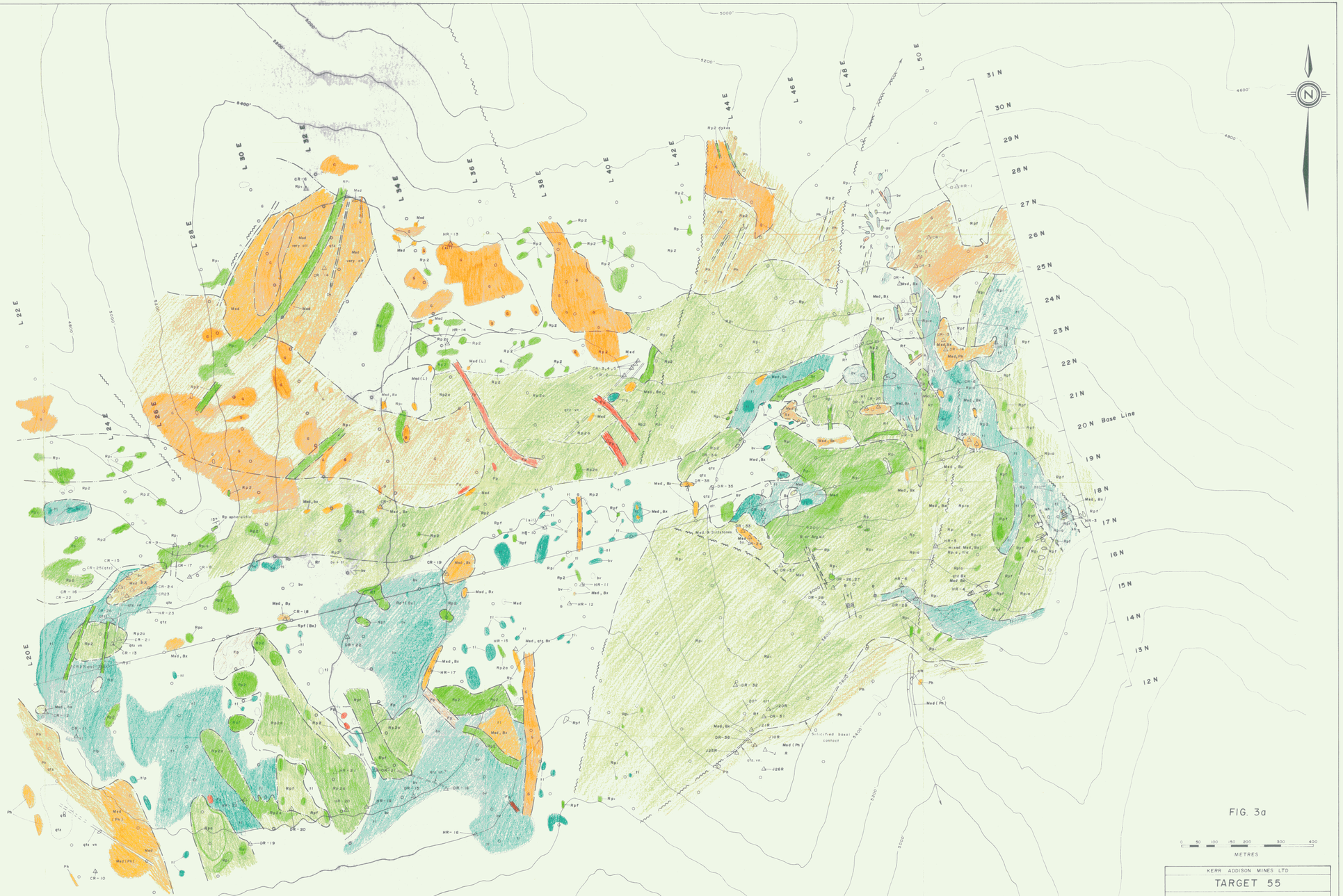
Plagioclase forms subhedral tabular phenocrysts, their borders intergrown with matrix quartz. In contrast to the oscillatory zoning seen in many of the granodiorites, these plagioclases show patchy, normal or no zoning. They contain swarms of tiny euhedral epidote grains. These may be upgraded saussurite, a further argument for thermal recrystallization.

Quartz forms even-bordered aggregates in the matrix.

The Kspar in this sample shows the grid twinning typical of microcline. It forms small but convex (not interstitial) grains. Myrmekite is seen in places.

Red brown biotite plates are partially converted to finer grained aggregates.

Hornblendes are recrystallized to polygrain aggregates.



LEGEND

GEOLOGY

- A — Andesite : dark green , fine grained , dykes
- B — Basalt : dark green to brown , locally vesicular
- Rp1 — Rhyolite : quartz and feldspar porphyritic , buff to dark green , frequently altered (Rp1a)
- Rp2 — Rhyolite : feldspar porphyritic , grey green to buff with maroon tint.
- Rpf — Rhyolite : feldspar porphyritic & flow banded , grey to green , probably related to Rp2.
- Rf — Rhyolite : flow banded , dark green , aphanitic.
- lt — Lapilli tuff : rhyolitic groundmass , multilithic clasts , dark green
- bx — Volcanic breccia : similar to 'lt' , multilithic clasts greater than 4cm in size.
- lt p — Lapilli tuff : feldspar porphyritic with multi-lithic clasts , similar to 'lt'

- Fp — Feldspar porphyry : large feldspar phenocrysts (to 1 cm) , aphanitic dark green groundmass.
- G — Granite : Coffee Creek granite , fine to medium grained , may also include Nisling Range Alaskite
- Ph — Mbs — Yukon Metamorphic Complex : Phyllite , Limestone , Metasediments (undifferentiated) , locally brecciated or altered.

NOTE – The geological units not necessarily in exact geochronological order.

SYMBOLS

- Subcrop : talus or felsenmeer
- Outcrop
- Contact – approximate
- – – inferred
- Fault , shear zone – interpreted
- △ Rock sample site & number

qtz	Quartz
p	Porphyritic
a ; alt	Altered
sh	Sheared
sil	Silicified
vn	Vein
f	Flow banded
Bx	Breccia

FIG. 3a

0 50 100 150 200 300 400
METRES

KERR ADDISON MINES LTD

TARGET 55

AL CLAIMS

GEOLOGY 091598

SCALE – 1 : 5000	DATE – JULY , 1984
MAPPED BY – D A , C B , H C	REVISED –
DRAWN BY – P Hallot	NTS – 115 H 12 W

△ DR15 - 390 , 5.4 , 27 , 2.4

Sample site & number - Au (ppb), Ag (ppm), As (ppm), Sb (ppm).

J-R samples from 1983 program.

ALTERATIONS:

cl.	clay	sh.	sheared, sheeted
ch.	chlorite	sil.	silicification
ep.	epidote	cal.	calcite (carbonaceous)
jr.	jarosite	lm.	limonite (gossanous)
ser.	sericite		
---	limit of alteration		

FIG. 3b

0 50 100 150 200 300 400
METRES

KERR ADDISON MINES LTD	
TARGET 55091598	
AL CLAIMS	
ROCK GEOCHEMISTRY	
SCALE - 1:5000	DATE - JULY, 1984
MAPPED BY - D.A.,C.B.,H.C.	REVISED -
DRAWN BY - P.Hallot	NTS - 115 H 12W

ORTHOPHOTO MOSAIC COMPILED FROM
1:30,000 FEDERAL PHOTOGRAPHY AND
SCALED TO 1:50,000 N.T.S. MAPS.

Northway-Gestalt Corporation
1450 O'Connor Drive, Toronto, Ontario Canada M4B 2V2

KERR-ADDISON MINES LIMITED
AREA NO. 55

SCALE 1:5000 (1" = 416·66')

500 250 0 500 1000 1500 2000 FEET

100 0 100 200 300 400 500 600 METRES

VERTICAL INTERVAL 25 FEET FORMLINES

FIG. 3c

AL CLAIMS

091598