RUSTY SPRINGS PROPERTY

YUKON TERRITORY

NTS 116K/8,9

PREPARED FOR KERR ADDISON MINES LIMITED

BY

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LIST OF ACCOMPANYING MAPS:

SUMMARY

1. Examination of the best mineralization on the Rusty Springs deposit leads to the following conclusions:

A) The vein exposed by eight trenches on Orma Hill occurs in brecciated dolomite, is nearly vertical, has a possible length of 480 metres and an average width of 0.6 metres.

B) The vein matter is largely massive coarse galena and tetrahedrite with 4 - 6 metres of milky white vuggy quartz veining on each wall.

C) Sampling by Taiga Consultants in 1982 suggests that the vein averages 1,360 grams per metric tonne (40 ozs. Ag) and a variable lead content of 10 - 42%.

D) Our sampling gave an average of 918 grams per metric tonne (27 ozs. Ag) across 0.6 metres in five trenches. The average lead content is estimated to be in the order of 50% but needs confirmation by assay.

2. The deposit is not Mississippi Valley type as surmised by authors prior to 1982 but is now distinctly vein type mineralization which is too high in silver to qualify as Mississippi Valley mineralization.

3. Sufficient drilling has been done to eliminate the likelihood of finding large zones of cavity-filling type mineralization at open pit depth.

4. The proposed 1982 program will be limited to four angle drill holes designed to encounter the vein at a vertical depth of 50 metres. This depth will be below the known regolith and should provide good core recovery in compact rocks.

5. Preliminary metallurgical work has yielded 40% of the silver content from oxidized vein material.

6. In the event of future production, a lead-tetrahedrite concentrate would have to be shipped a total distance of 390 Kms to Inuvik or 600 Kms to Whitehorse plus a 162 Km rail haul to Skagway.

Concentrates hauled to Inuvik would have to be barged 100 Kms to the Beaufort Sea and this would have to be done during the shipping season (from mid June to mid September approximately).

7. The combinations of known factors is rather discouraging:

a) Very limited small-vein tonnage potential.

b) High cost of additional exploration.

c) High cost of concentrate transport.

d) Possible metallurgical problems in silver recovery resulting from antimony and arsenic levels.

e) High cost of a small mining operation at the Arctic Circle.

8. Participation by Kerr Addison Mines is not advocated.

INTRODUCTION

The writer was assigned by David Lowrie to examine this property for Kerr Addison Mines. Prior to examination, we received a 1982 report written by James W. Davis of Taiga Consultants Ltd., Calgary, Alberta. This was accompanied by a letter from J.K. Gray, Executive Vice-President of Hunter Oil in which Mr. Gray stated his views of the property.

We were advised by Bob Termuende, current promoter of the property, that he had arranged for a group of entrepreneurs to visit the property on August 16th. We accompanied this entourage from Inuvik to Rusty Springs in a chartered Twin Otter that morning.

Placer Development was represented on the trip by Stuart Tennant.

Only the better showings (Orma Hill) were examined because of time restraints imposed by flight schedules to the property.

CLAIM HOLDINGS AND ACCESS

The property consists of 380 mineral claims located in the north-western corner of the Yukon Territory at 66^{o} 30' north latitude and 140^{o} 20' west longitude. This location is 8 Kms south of the Arctic Circle, 29 Kms east of the Alaska border, 270 Kms north of Dawson and 390 Kms southwest of Inuvik. The elevation at the showings is approximately 600 metres.

HISTORY

1975:

Discovery of lead, zinc, silver float by Termuende and Chernoff while prospecting for Rio Alto.

1976:

Geological mapping, soil geochemistry and sampling by Rio Alto.

1977:

Mapping, soil sampling and 1,975 metres of drilling by Rio Alto. Additional staking brought total holdings to 380 claims.

Geological thesis by G. Schoel concluded that mineralization was Mississippi Valley type.

1978:

Tractor train hauled drill and supplies in winter time to property from Demster Highway, a distance of 196 Kms.

Further mapping, soil sampling, metallurgical sampling and 840 metres of drilling were completed.

Thesis by D. Hanson concluded that mineralization was Mississippi Valley Type.

1979:

Property optioned by E & B who carried on geological mapping, soil geochemistry, IP surveys and gravity surveys. This work was jointly funded by Rio Alto and E & B.

Thesis by J. Bankowski concluded that mineralization was a hydrothermal exhalite.

1980:

1,830 metres of diamond drilling, trenching and geological mapping by E & B.

1982:

No further physical work. Research report by Jill Kirker in 1982 who suggested a hydrothermal origin for the mineralization.

CURRENT OWNERSHIP

Kenton Natural Resources Corporation (Termuende's company) has an option from Rio Alto and E & B to earn a 70% working interest in the property by expending a total of $2,400,000. in the years 1982 to 1986.

At the moment, Rio owns 55% and E & B 45%.

Kenton is not entitled to any interest until $150,000. is expended in 1982 and $400,000. in 1983. Should Kenton fail to meet these commitments, Rio and E & B are free to negotiate with other interested parties if any.

Our information does not qualify whether or not Rio and E & B would retain a carried interest if they fail to pay for their share should Kenton's interest reach 70%. Presumably they will both be watered down pro-rata in that event.

LOCAL GEOLOGY AND STRUCTURE

The immediate area of the claims was mapped by Norris in 1977, by Templeman-Kluitt in 1980 and by Taiga in 1982.

The host rocks (and the oldest) are Devonian, dolomite breccias which range from crystalline light colored rocks in the deepest drill holes to darker more carbonaceous dolomite above. Near surface these rocks are a rusty colored fragmental alluvium or regolith which is known to be locally as much as 30 metres thick.

The structure on Orma hill where the best showings are located is mapped as anticlinal by Templeman-Kluitt and Taiga but Taiga goes one step further and calls the structure a dome. The evidence for actual doming is minimal.

The brecciated dolomite is either disconformably or unconformably overlain by shale and sandstone of Mississippian age. Shale is locally pyritic and was probably the source of the transported limonite in Rusty Springs. These rocks in turn are overlain by Permian limestone and shale units.

SOIL GEOCHEMISTRY

Approximately 1,300 soil samples were collected and analysed for copper, lead, zinc and silver. We do not have the results of this work but we know from looking at maps compiled by E & B and Rio Alto that very strong soil anomalies were obtained on Orma Hill from lead and silver analyses. The galena-tetrahedrite vein is well indicated by lead contours in the order of 1,000 - 10,000 p.p.m. and silver in the order of 20 - 30 p.p.m.

The usefulness of this technique is enhanced by the fact that the deposit occurs in unglaciated terrain and frost-heave specimens were found on top of the moss.

GEOPHYSICAL SURVEYS

The Taiga people considered VLF surveys to be highly useful as a means of detecting vein zones. We do not disagree with this in principle but found that high-grade vein material in some trenches was not detected in the VLF survey. It is therefore possible that some of the VLF anomalies are caused by clay or some other organic material rather than sulphides.

An attempt was made to locate massive mineralization by the use of a gravity survey. The gravity anomalies were drilled with vertical diamond drill holes but no mineralization was found.

This is now perfectly understandable and we assume that the gravity anomalies were caused by variations in the depth of the regolith.

We did not see any gravity profiles and hence cannot comment on the amplitude or gradients encountered.

MINERALIZATION

Geologists who examined the Rusty Springs deposits prior to 1982 considered the mineralization to be Mississippi Valley type. This belief was probably based on lack of good exposure together with some sink holes and solution cavities at the shale-dolomite contact. While there may have been some justification for such a deposition premise, the metal ratios certainly do not suggest that the mineralization fitted that category.

Deeper trenching through permafrost in 1982 has exposed a steeply dipping, 0.6 metre wide galena-tetrahedrite vein in trenches 1 - 8 over a distance of approximately 480 metres. Whether or not this vein is continuous over that distance is not known for certain. On either side of the vein, milky white quartz veins occur over a width of 4 - 6 metres with occasional rusty, sandy material between the veins. Obviously there has been, (at least in the near surface rocks), a strong nearly vertical fracture system 10 metres in width which has been mineralized with galena, tetrahedrite and abundant vuggy quartz. These minerals are partly weathered to anglesite, jarosite azurite and malachite. The abundant quartz veining on either side of the main vein often contains small amounts of galena and tetrahedrite plus hematite and limonite.

Prior sampling suggested that the main vein has a silver content of approximately 1,360 grams per metric tonne (40 ozs.) and a lead content varying from 42% at the south end of the vein to something like 10% at the north end.

While our sampling results are not complete, the arithmetic mean of five chip samples from five separate trenches was 928.78 grams per metric tonne (27.09 ozs.) across an average of 0.6 metres. We do not have lead, zinc, antimony or arsenic results.

ECONOMICS

Unless greater thicknesses of vein or cavity filling type mineralization are found in future, the outlook for the property is not good. Sufficient drilling was done by E & B to eliminate the likelihood of Mississippi Valley type mineralization as a source of mill feed and while the possibility of other vein structures remains, the likelihood of making adequate profits at today's metal prices is debatable.

If the presently known vein on Orma Hill turned out to be continuous and if we give it a thickness of 1 metre, the tonnes/per metre of depth approximate 1,800. 150 metres of depth would provide a total of 270,000 tonnes or less than four years ore for a 200 ton per day mill. Such an operation including road building might require something approximating $40,000,000. in capital expenditures or close to $150. per tonne. If we add operating costs of $150. per tonne we have a total of $300. in costs against net smelter returns of possibly $260. (assuming unoxidized ore). In that connection preliminary metallurgical work has given only 40% recoveries from the oxidized material.

CONCLUSIONS

It had been the intention of Mr. Termuende (Kenton) to raise working capital by selling one million shares of Kenton at $1.50 per share. This has not materialized under present market conditions and Mr. Termuende is therefore seeking private money or money from interested mining companies. As we explained earlier, Kenton would have no equity in the Rusty Springs deposit until a total of $550,000. has been expended. This must be done before November of 1983.

From a purely technical standpoint, we would prefer a less difficult location in which to consider mining small veins. In the case of Orma Hill we suspect that because of their great thickness the dolomites have been able to fracture near the axis of the anticline but we would not care to predict the depth of mineralization particularly when it borders on the epithermal.

In any case, the criteria established thusfar suggests that the likelihood of finding sufficient tonnage and grade to justify a mining operation in that very high cost environment is now rather limited. Kerr Addison's participation in the Rusty Springs project is not recommended.

Trenches
- Sampled interval
- Stripped area – not down to bedrock

- Dip and strike of bedding
- Dip and strike of veining
- Dip component projected to surface obtained from drill sections
- Geologic contact
- Outcrop
- Fault
- Anticline
- VLF-EM conductors
- Previous drill holes
- Proposed drill holes

4 Hart River Fm. – lt grey weathering with occ rusty stains, blk carb. sl arg. Sts., laminated, thinly bedded with mn interbedded carb chert thin to md. bedded, mod. well indurated, and very well sorted.

3 chert, brecciated, carb.

2 coarse gr foline, grey weathering, beige to grey dol., vuggy

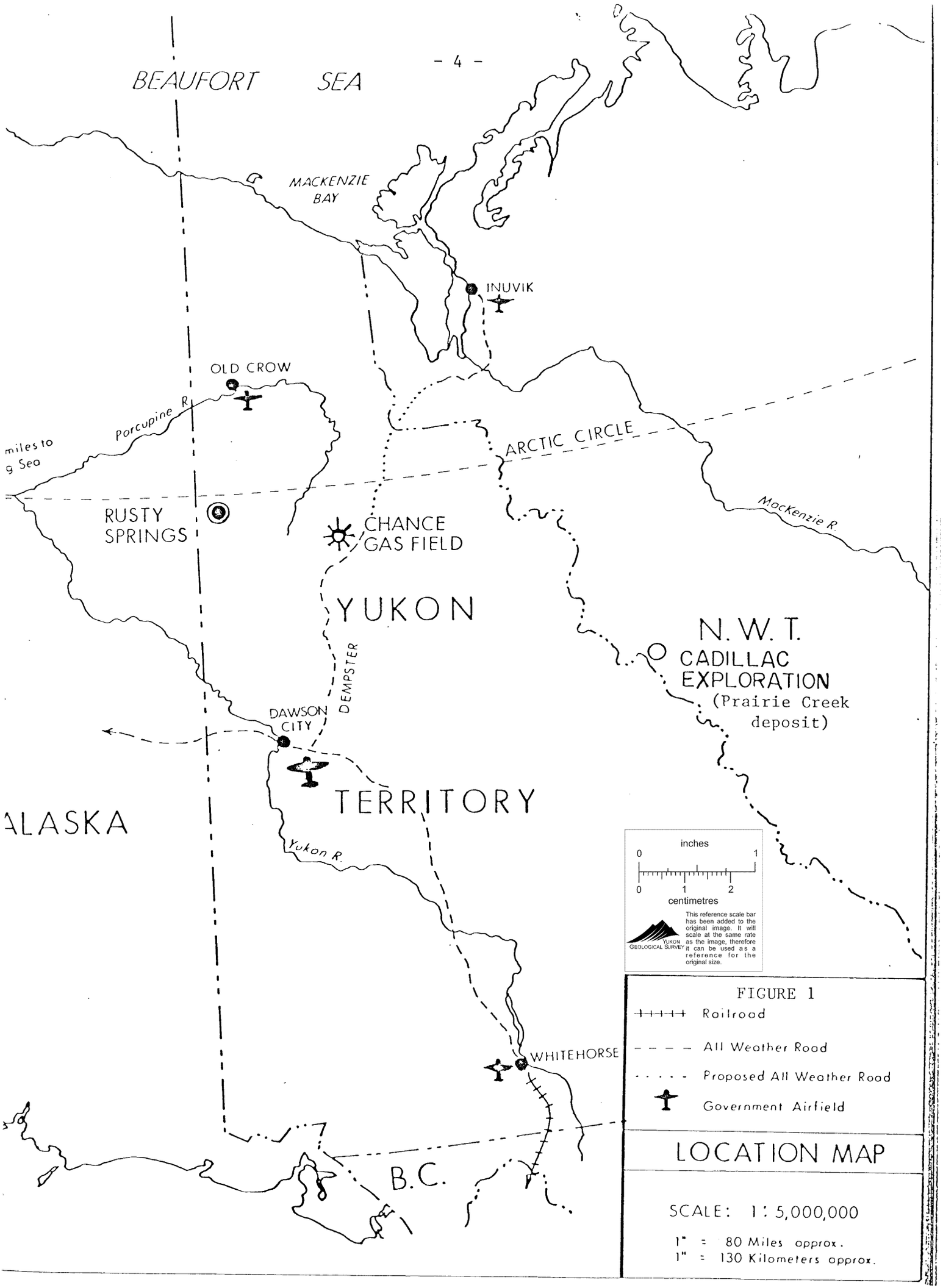
1 grey to rusty buff – occ mottled purple and green, grey dol., silty in areas, fetid, brecciated, siliceous
1a – unbrecciated, nonsiliceous

inches
0 1 2
0 1 2 3 4 5
centimetres
YUKON GEOLOGICAL SURVEY
This reference scale bar has been added to the original drawing. It was plotted at the same rate as the image, therefore it can be used as a reference for the original size.

KENTON NATURAL RESOURCES CORPORATION

RUSTY SPRINGS, YUKON
ORMA HILL
GEOLOGY

DATE JULY 1982	NTS 116K/8,9
PROJECT Y-81-1	MAPPED/DRAWN BY C. AUSSANT
SCALE 1:2500	0 25 50 75 100 METRES
FAGA CONSULTANTS LTD	MAP 1


BEAUFORT SEA
MACKENZIE BAY
INUVIK
OLD CROW
Porcupine R.
miles to
g Sea
ARCTIC CIRCLE
RUSTY SPRINGS
CHANCE GAS FIELD
Mackenzie R.
YUKON
N.W.T.
CADILLAC EXPLORATION
(Prairie Creek deposit)
DEMPSTER
DAWSON CITY
TERRITORY
ALASKA
Yukon R.
WHITEHORSE
B.C.
inches
0 1
0 1 2
centimetres
This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.
YUKON GEOLOGICAL SURVEY
FIGURE 1
Railroad
All Weather Road
Proposed All Weather Road
Government Airfield
LOCATION MAP
SCALE: 1 : 5,000,000
1" = 80 Miles approx.
1" = 130 Kilometers approx.

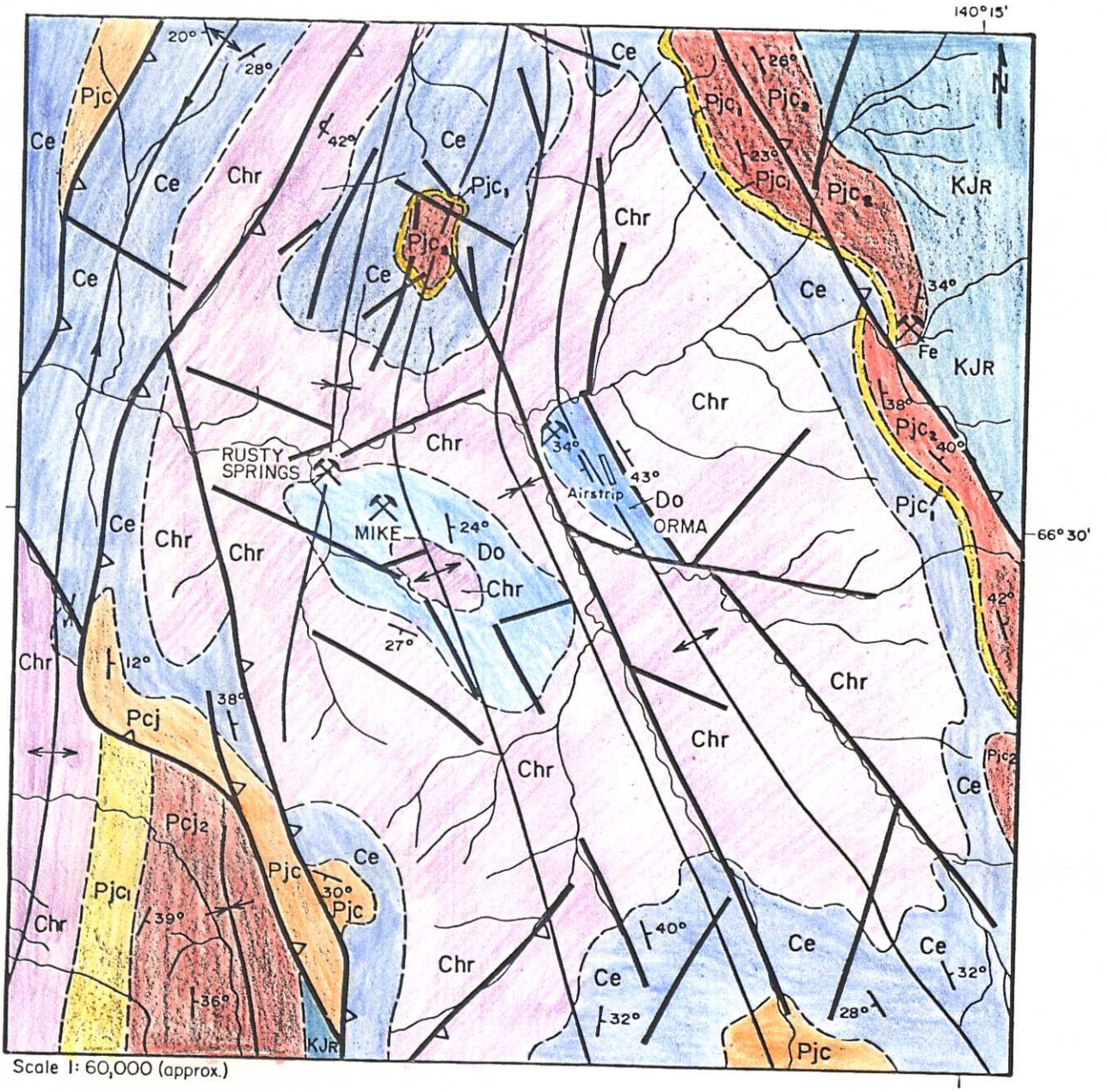


Figure 3

GEOLOGY OF THE RUSTY SPRINGS AREA

- KJR — Kingak Fm. - shale
- Pjc2 — Jungle Cr. Fm. (shale unit)
- Pjc1 — Jungle Cr. Fm. (carbonate unit)
- Pjc — Undifferentiated
- Ce — Ettrain Fm. - shale and limestone
- Chr — Hart River Fm. shale, siltstone and limestone
- Do — Ogilvie Fm. - limestone

- 15° — Strike and dip (estimated)
- Overturned dip
- Anticline
- Syncline
- Fault, lineament
- Thrust fault
- Geological contact

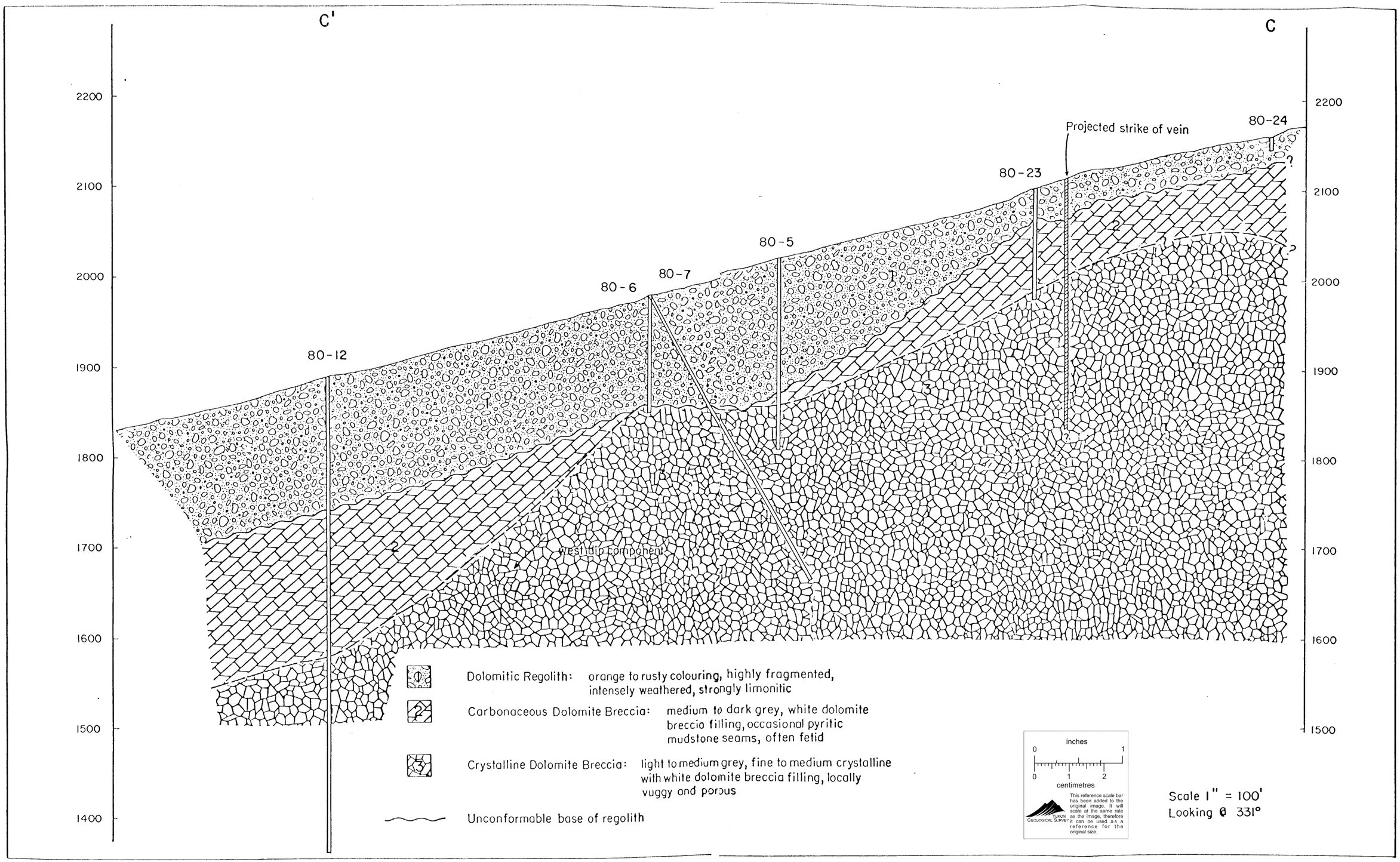


Figure 6

CROSS SECTION C-C'