

**CANAMERA GEOLOGICAL LTD.**

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**GEOCHEMICAL and PROSPECTING REPORT**

on the

**ARA PROPERTY**

(NA 4664, NA 4666, NA 4668, NA 4670, NA 4672, NA 4864, NA 4866, NA 4868, NA 4870,  
NA 4872, NA 5068, NA 5070, NA 5072 claims)

**ATLIN MINING DIVISION**

**BRITISH COLUMBIA**

Latitude: 59° 15'N  
Longitude: 134° 08'W

**N.T.S. 104 M/1E & 8E**

LOG NO: 0719	RD.
ACTION:	
FILE NO:	

Owner/Operator: **Equity Silver Mines**  
#13-1155 Melville Street  
Vancouver, B.C.  
V6E 4C4

Consultants: **Canamera Geological Ltd.**  
#14-1155 Melville Street  
Vancouver, B.C.  
V6E 4C4

by:

**Bill Dynes**

under the supervision of:

**James Wetherill, B.A.Sc.**

July 12, 1990

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**20,134**

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## INTRODUCTION

The Willison Bay (Atlin Recreation) area was reopened for staking in April, 1989, following a 13 year exclusion from exploration. Equity Silver Mines Ltd. acquired 13 contiguous claims in this area in a draw held by the British Columbia Ministry of Energy, Mines and Petroleum Resources.

The ARA property, as these claims are now known, was recently the subject of a preliminary evaluation to determine economic significance of mineralization originally discovered around the turn of the century. The results of this evaluation, which took place between October 7th and 13th, 1989, form the basis of this report.

### Location and Access

The ARA property is situated in the Atlin Mining Division approximately 75 kilometers east of Haines, Alaska and 48 kilometres southwest of Atlin, B.C. (figure 1). The claims, which are centered near 59° 15' north latitude, 134° 08' west longitude, can be located on N.T.S. maps 104 M/1E and 8E near the southwest end of Atlin Lake.

Access to the property can be gained via boat, float plane or helicopter from Atlin. High relief within the claims, however, makes the latter form of transportation the most practical. Within the claims, several trails leading from a campsite on the south shores of Willison Bay to some old workings were established by Cominco Ltd. in the 1960's.

### Physiography and Vegetation

The property is situated on the eastern margin of the Boundary Ranges, near Willison Bay at the southwest end of Atlin Lake. The immediate area is typified by sharp ridge tops and broad U-shaped valleys masked by thick glacio-fluvial deposits. Elevations within the claims vary from approximately 668 meters on Atlin Lake to over 2,000 meters on the south slopes of The Cathedral.

The property's main drainage, Hoboe Creek, flow north from the Llewellyn Glacier into Willison Bay. Willison Creek, which flows east through the NA 4668 claim, also enters Atlin Lake at its southwest end.

The area's lower elevations are characterized by often dense coniferous vegetation typical of the spruce, willow, birch and alpine biogeoclimatic zone. The most common species observed on the property was alpine fir. This vegetation becomes sparse above 1,200 metres, where mosses predominate.

PROPERTY



EQUITY SILVER MINES LTD  
 ARA PROPERTY  
 ATLIN MINING DIVISION, B.C.

LOCATION MAP

DATE	SCALE	FIGURE No.
7.8.77	1:8,000,000	1

Precipitation in the area is light, averaging approximately 325 millimetres per annum, about half of which falls as snow in the winter months. The property can generally be worked between June and September.

### Claim Information

The ARA property consists of 13 contiguous mineral claims totaling 208 units (5,200 hectares) located in the Atlin Mining Division (figure 2). The claims were acquired by Equity Silver Mines Ltd. of Vancouver, British Columbia through a draw held by the British Columbia Ministry of Energy, Mines and Petroleum Resources. They have been organized into three groups as follows:

#### Atlin 1 Group

CLAIM NAME	RECORD NUMBER	UNITS	EXPIRY DATE*
NA 4664	3841	16	April 17, 1991
NA 4666	3843	16	April 17, 1991
NA 4668	3846	16	April 17, 1991
NA 4670	3848	16	April 21, 1991
NA 4864	3844	16	April 17, 1991
NA 4866	3845	16	April 17, 1991

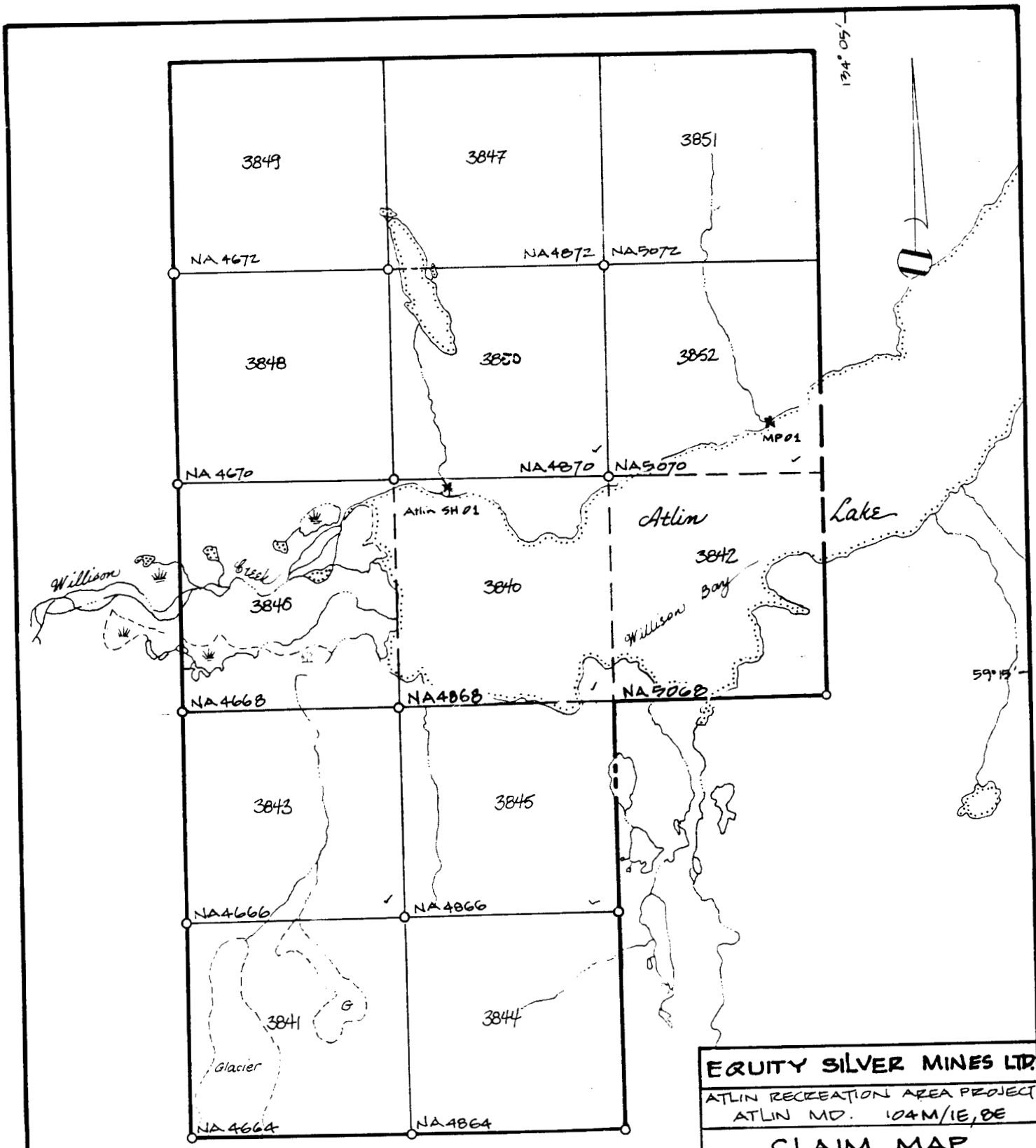
#### Atlin 2 Group

CLAIM NAME	RECORD NUMBER	UNITS	EXPIRY DATE*
NA 5068	3842	16	April 17, 1991
NA 5070	3852	16	April 21, 1991
NA 5072	3851	16	April 21, 1991

#### Atlin 3 Group

CLAIM NAME	RECORD NUMBER	UNITS	EXPIRY DATE*
NA 4672	3849	16	April 21, 1991
NA 4868	3840	16	April 17, 1991
NA 4870	3850	16	April 21, 1991
NA 4872	3847	16	April 21, 1991

\* when the work detailed in this report is accepted as assessment.



LEGEND:  
 x Atlin SH01, 11110  
 SAMPLE # , ppb Au

<b>EQUITY SILVER MINES LTD.</b>	
ATLIN RECREATION AREA PROJECT	
ATLIN MD. 104M/1E, BE	
<b>CLAIM MAP</b>	
with	
SELECTED HEAVY MINERAL	
CONCENTRATE RESULTS	
Date May 1990	Fig. No. 2
Drawn by BC/uk	104M/1E, BE

## History

The earliest work in the immediate area of the present ARA property appears to have taken place around the turn of the century on the Laverdiere prospect. This skarn deposit, exposed on the west side of Hoboe Creek south of Willison Bay, is reported to consist of a series of semi-conformable magnetite-chalcopyrite  $\pm$  specularite lenses eventually explored by several adits and numerous drill holes. Tetrahedrite, pyrite, pyrrhotite, molybdenite, scheelite, cobaltite, erythrite, malachite and bornite are also reported to have occurred in association with this skarn mineralization.

North of this prospect, near the south shores of Willison Bay, quartz veining containing significant precious metal values are reported to occur at the Callaghan showing. Although discovered around 1910, little development work appears to have been done on this prospect to date.

Copper-molybdenum porphyry mineralization later known as the Molly showing was discovered in the late 1950's, west of the Callaghan showing. Cominco Ltd. staked and evaluated this prospect in the early 1970's when it carried out geological mapping, geochemistry, geophysics and 645 metres of diamond drilling. Results from this work appear to have been inconclusive, as Cominco held on to several of their claims for many years before allowing them to lapse.

Documentation of other exploration in the area of the ARA property has yet to be located.

## Summary of Work

Work completed as part of the 1989 assessment programme on the ARA property took place between October 7 and 13 and included prospecting and heavy mineral sediment and rock geochemistry to assess the potential of the claims. The prospecting was carried out over an area of 0.6 km<sup>2</sup> on the NA 4666 and NA 4866 claims, while 13-9 kilogram heavy mineral sediment samples were extracted from creeks draining the NA 4868, NA 4870, NA 5070, NA 4666 and NA 4866 claims, all of which drain either north or south into Willison Bay. Thirteen rock samples were also taken in the course of prospecting. Two of these were of drill core stored at Cominco's campsite on Willison Bay. Analysis of these samples has yet to be performed.

A total of 12 mandays were spent collecting data, as poor weather conditions precluded helicopter travel on one of the four days spent in the field.

## GEOCHEMISTRY

As part of the geochemical survey, 13 heavy mineral concentrates were extracted from creeks draining into Willison Bay (figures 2 & 4). The samples consisted of approximately 9 kilograms of -20 mesh alluvial material which was bagged, labelled and shipped to Min-En Labs in North Vancouver, B.C. for analysis.

Here, the samples were dried, weighed and then floated in tetrabromoethane (S.G. = 2.95 g/cm<sup>3</sup>) to isolate the heavy minerals. The heavy fractions were then weighed, pulverized to -150 mesh and then fused in litharge, carbonate and siliceous flux with the addition of ten milligrams of gold-free silver metal. The fusion was then cupelled and the resulting silver bead parted with dilute nitric acid and treated with aqua regia. The remaining salts were then dissolved in dilute HCl and analyzed for gold via atomic absorption spectrophotometer. This procedure has a detection limit of five parts per billion.

Assay certificates can be found in Appendix A.

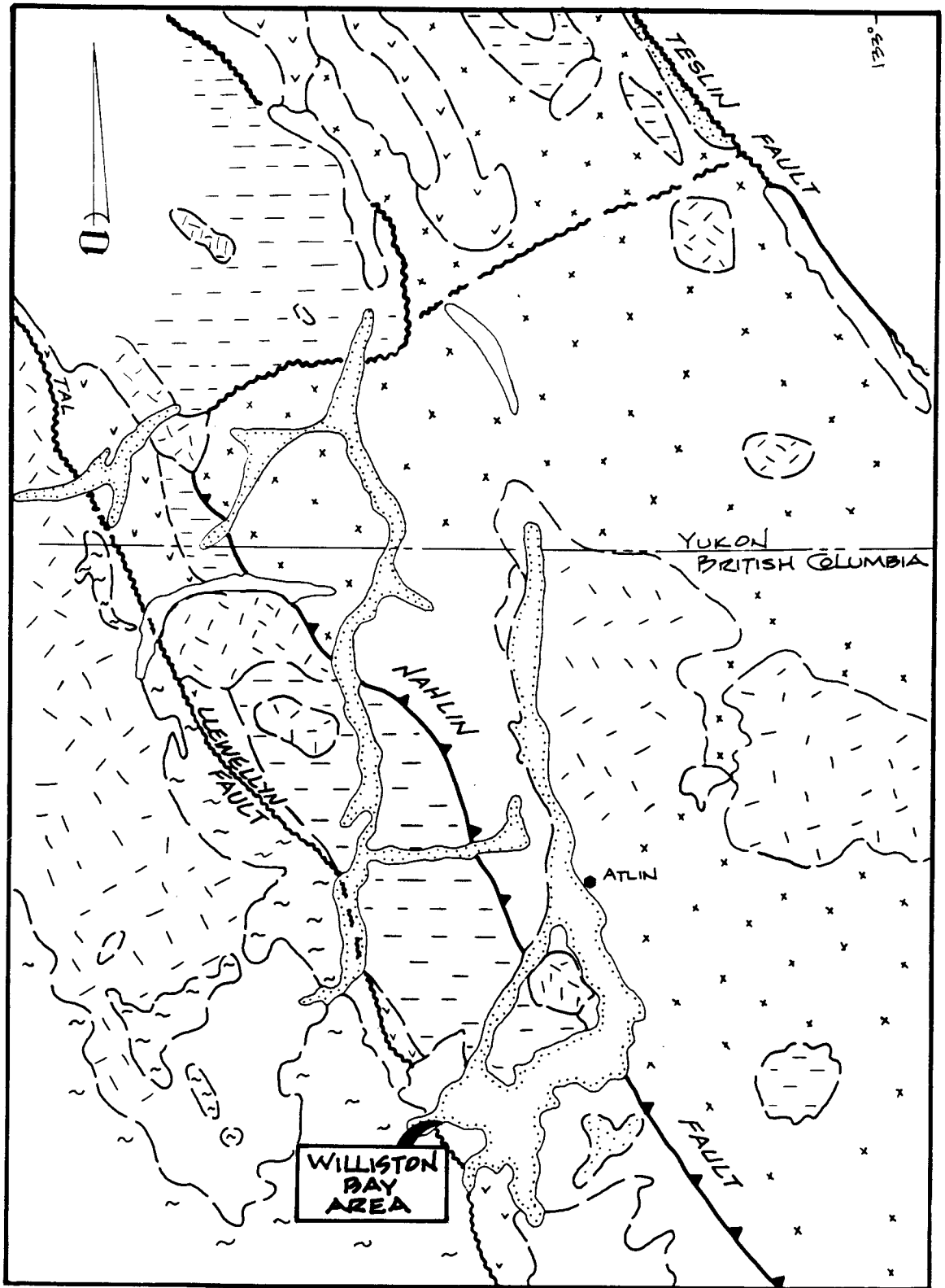
## GEOLOGY

The Willison Bay area is situated near the contact between the Intermontane Belt and the Coast Plutonic Complex (figure 3). Geology in the area is characterized by deformed Proterozoic to Paleozoic aged sub-amphibolite facies metamorphic rocks assigned to the Nisling assemblage and mafic volcanics the Upper Triassic Stuhini Group, all of which have been intruded and are dominated by granitic rocks of varying ages (Jackson et al., 1990).

The oldest rocks in the area are biotite-quartz-feldspar schists and marbles belonging to the Nisling assemblage. In fault contact with these rocks are sheared basalts assigned to the Stuhini Group. These rocks have been variously intruded by foliated hornblende-biotite granodiorite in Paleozoic time, biotite granite in Cretaceous time and by biotite granodiorite during the Eocene.

The most dominant structural feature in the area is the Llewellyn fault zone, which crosses the head of Willison Bay from the northwest to the southeast. This zone marks the western extent of the Nisling assemblage rocks and may represent a terrane boundary (Mihalynuk et al., 1988). It may also hold good potential for hosting economic mineral deposits.





### LEGEND

- Tertiary overlap
- MZ-CZ Plutonic Rocks
- LaBerge Group
- Cache Creek
- Northern Stikine
- Nisling

**EQUITY SILVER MINES LTD.**

ATLIN RECREATION AREA PROJECT  
ATLIN MD. 104M/1E, 8E

**REGIONAL GEOLOGY**  
of  
**Williston Bay AREA**

0 10 20 30 Kms.

Date: May 1990 NTS: 104M/1E, 8E Figure No. 3  
Drawn by BD/vk

Comamerica GEOLOGICAL LTD.

### Prospecting\1989

A total of 1.5 mandays were spent prospecting the A.R.A. claims. As well, 1 manday was spent inspecting and sampling drill core stored on and near the property.

Prospecting was confined to Eric Creek (Fig. 4), where outcrop is exposed in the stream bed and banks of the creek. The geology in the area of the creek is predominated by intrusive rocks (see Fig. 5).

Unit 7, a hornblende granodiorite, is typically a rusty buff colour on weathered surface and is medium to medium coarse grained with mottled subeuhedral hornblende. The ground mass has a bluish tinge with grey feldspar phenocrysts and 1% to 2% disseminated pyrite. Locally the quartz in the matrix forms to 2cm "blotches".

Unit 6 occurs as a medium coarse grained granite with no mafic minerals. Rock is about 60% feldspar and 40% quartz.

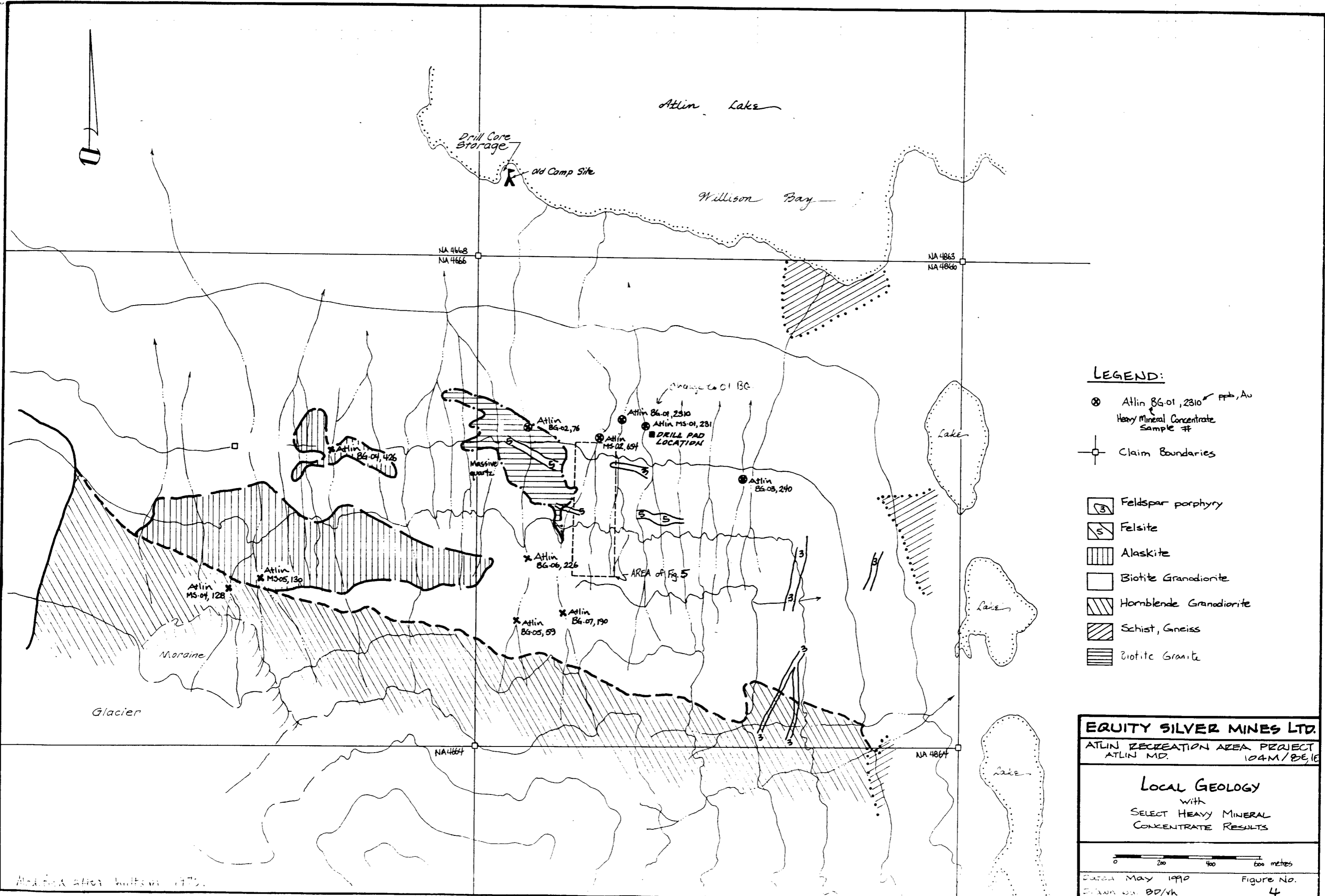
Unit 4 is quartz that seems to be of two origins: i) a pegmatite that is perhaps related to a phase of the granodiorite, and ii) a hydrothermal quartz that is associated with sericite and locally contains disseminated pyrite, molybdenum, arsenopyrite and galena.

Unit 3, a grey feldspar porphyry, seems to occur as dykes with chilled margins. The rock is a grey colour and is both feldspar and hornblende phyric with a blue-dull green fine grained matrix.

Abundant kaolinized medium fine grained felsite float from the upper reaches of Eric Creek indicate the local presence of this rock type to the south of the area prospected.

Mineralization encountered consisted of disseminated pyrite, molybdenum, arsenopyrite and galena. This mineralization was associated with quartz which occurred as i) large pods to 15m x 10m ii) veins to 3m wide and iii) angular to subangular breccia zones. At least some of the quartz-sulphide mineralization is associated - localized by the intrusive contact of Units 3 and 7. A sample site Dy 10-8B (see insert figure 5), large flakes of sericite occur as inclusions within the quartz pod. Several angular quartz bodies occur peripheral to this pod as either gash fillings or perhaps as breccia fragments.

A total of 4 rock samples were taken either as selected grab samples or as representative chip samples across measured widths. (see appendix B for sample descriptions). The samples were numbered and placed in polyethylene bags for shipment to International Plasma Laboratories of Vancouver, See appendix A for results.



**LEGEND:**

- ⊗ Atlin BG-01, 2310 <sup>ppb, Au</sup>  
Heavy Mineral Concentrate Sample #
- ⊕ Claim Boundaries
- 3 Feldspar porphyry
- 5 Felsite
- Alaskite
- Biotite Granodiorite
- Hornblende Granodiorite
- Schist, Gneiss
- Biotite Granite

<b>EQUITY SILVER MINES LTD.</b>	
ATLIN RECREATION AREA PROJECT ATLIN MD. 104M/BE/1E	
<b>LOCAL GEOLOGY</b> with SELECT HEAVY MINERAL CONCENTRATE RESULTS	
Date: May 1990	Figure No. 4
Drawn by: BD/vk	

Map of Atlin Willison 1970.

## RESULTS AND INTERPRETATIONS

Of the thirteen heavy mineral concentrates taken from creeks draining the property, two samples, Atlin BG-01 (figure 4) and SH-01 (figure 2), are considered significant.

The former sample was extracted from Eric Creek, which drains several mineralized showings (see Prospecting). It is probable that the gold in this concentrate was derived from one or more of these showings.

The latter sample was taken on an unnamed creek draining south into Willison Bay. As little prospecting has been done in this area, it is difficult to determine the source of the gold in this highly anomalous concentrate. It is interesting to note that the creek approximates the Llewellyn fault zone, one possible source.

Additional follow-up work will have to be undertaken to fully assess the ARA property, particularly in the immediate area of the Llewellyn fault zone.

**COST STATEMENT**

ARA Property Assessment Programme (October 7 - 13, 1989).

**Field****Wages:**

Bill Dynes, 6 mandays @ \$300.....	\$1,800.00
Bob Grauburg, 6 mandays @ \$225 .....	1,350.00
Mike Pym, 6 mandays @ \$225.....	1,350.00
Shawn Philps, 6 mandays @ \$225 .....	1,350.00
Room & Board: 24 mandays @ \$35 .....	840.00
Supplies and consumables.....	98.25

**Assays:**

13 HM sediment for Au @ \$25 .....	325.00
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**Transportation:**

Airfare (4 persons, split with other project) .....	1,500.00
Helicopter, 6 hours .....	4,651.22

**Office**

Project & report preparation .....	\$1,400.00
Drafting .....	229.80
Computer and copying.....	200.00

Subtotal.....	\$15,094.27
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Management fee (10% of project costs) .....	\$1,509.43
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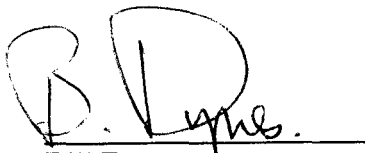
<b>Total.....</b>	<b>\$16,603.70</b>
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**CERTIFICATE OF QUALIFICATIONS**

I, Bill Dynes, do hereby certify that:

1. I am a prospector with business offices at #14-1155 Melville Street, Vancouver, British Columbia, and am employed by Canamera Geological Ltd.
2. I have practised my profession in Canada for 8 years and am familiar with the geological setting of the Atlin area.
3. I personally supervised the programme described in this report.
4. I currently have no interest in the properties or securities of Equity Silver Mines Ltd., nor do I expect to receive any.

Dated this 12th day of July, 1990 at Vancouver, British Columbia.

  
Bill Dynes

**CERTIFICATE OF QUALIFICATIONS**

I, James Wetherill, do hereby certify that:

1. I am a Geologist (Engineer In Training) with business offices at #14-1155 Melville Street, Vancouver, British Columbia, and am employed by Canamera Geological Ltd.
2. I am a graduate of the University of British Columbia with a Bachelor of Applied Science degree in Geology (1987). I have practised my profession in Canada for 3 years.
3. This report has been prepared under my supervision and is based on data generated during a four day field program carried out on the ARA property in October, 1989.
4. I currently have no interest in the properties or securities of Equity Silver Mines Ltd., nor do I expect to receive any.

Dated this 12th day of July, 1990 at Vancouver, British Columbia.

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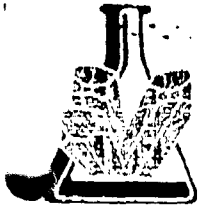
James Wetherill, B.A.Sc.

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- Jackson, J.L., Gehrels, G.E., and Patchett, P.J. (1990): Geologic and Isotopic Analysis of the Nisling - Northern Stikine Terrane Boundary Near Atlin, British Columbia, *B.C. Ministry of Energy, Mines and Petroleum Resources*, Geological Fieldwork 1989, Paper 1990-1, pages 175-179.
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- Wilton, H.P. and Szabo, N.L. (1970): Geological - Geochemical Report on the Molly 13 and Molly 14 Claim Groups, Willison Bay Area, Atlin Lake, British Columbia, *Mineral Resources Branch*, Assessment Report 2755.



**APPENDIX A**  
**ASSAY CERTIFICATES**



**MIN-EN LABORATORIES**

SPECIALISTS IN MINERAL ENVIRONMENTS  
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

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33 EAST IROQUOIS ROAD  
P.O. BOX 867  
TIMMINS, ONTARIO CANADA P4N 7G7  
TELEPHONE: (705) 264-9986

*Assay Certificate*

OV-0226-CA2

Company: EQUITY SILVER MINES LTD.  
Project:  
Attn:

Date: MAR-22-90  
Copy 1. EQUITY SILVER MINES, VANCOUVER, B.C.

We hereby certify the following Assay of 24 CONCENTRATES samples submitted MAR-19-90 by .

Sample Number	AU-FIRE PPB	TOTAL AU % MGM	TOTAL WT. GM	SAMPLE WEIGHT
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(Kg)

ATLIN-M S-01	231	.0019	8.21	11.50
ATLIN-M S-02	654	.0034	5.12	12.80
ATLIN-M S-04	128	.0011	8.59	15.20
ATLIN-M S-05	130	.0009	6.93	9.00
ATLIN-BG-01	2310	.0132	5.71	16.16
ATLIN-BG-02	76	.0005	5.93	12.10
ATLIN-BG-03	240	.0018	7.51	15.50
ATLIN-BG-04	426	.0026	5.99	14.65
ATLIN-BG-05	59	.0004	6.76	14.75
ATLIN-BG-06	226	.0017	7.31	11.20
ATLIN-BG-07	190	.0010	5.00	8.30
ATLIN-MP-01	257	.0014	5.45	14.25
ATLIN-SH-01	11110	.0528	4.75	11.35

\* CALCULATED

Certified by

*Ben Maib*

MIN-EN LABORATORIES

**APPENDIX B**

**ROCK SAMPLE DESCRIPTIONS**

### SAMPLE DESCRIPTIONS

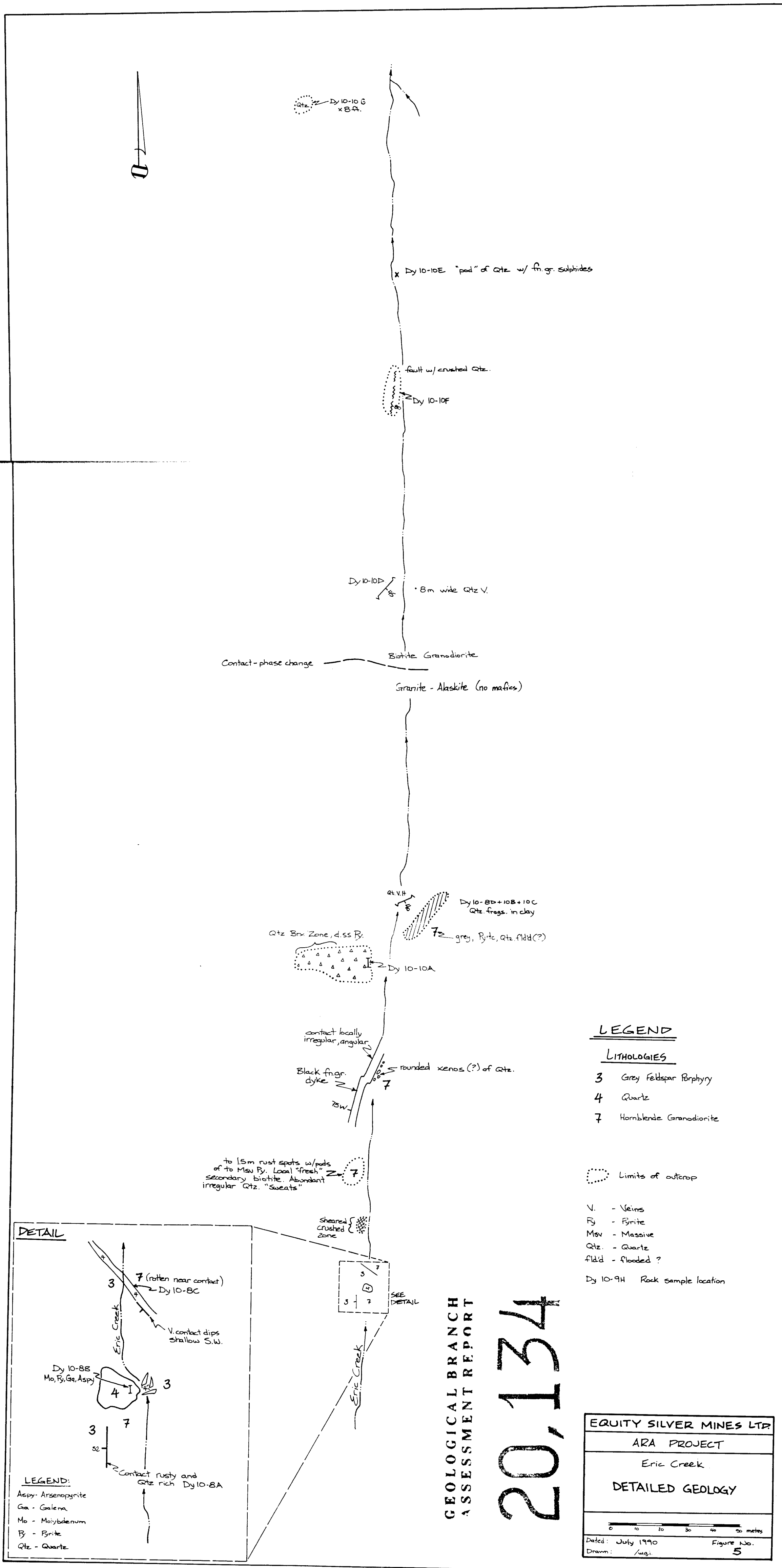
- Dy10-8B - Chip sample across 1.5 meters. Rusty to white, large (15mx10m) quartz pod. Two phases - types of quartz, one is bull white and the other is grey. Blotches of very coarse grained pyrite, minor disseminated molybdenum and arsenopyrite. *Moly*
- Dy10-8C - Chip sample across 3.0 meters. Very coarse grained quartz vein. Vein attitude is 140/shallow SW. No visible sulphides. *Moly*
- Dy10-8D - Select sample. Clay zone with quartz fragments.
- Dy10-8F - Select sample. Massive magnetite with minor disseminated chalcopyrite. *?*
- Dy10-8A - Chip sample across 0.35 meters. Quartz rich slightly sheared zone in foot wall of grey feldspar porphyry dyke. *Moly*
- Dy10-10A - Chip sample across 4.0 meters. Quartz breccia in granodiorite host. Rusty.
- Dy10-10B - Select grab. Same location as Dy10-8D. Clay zone trending 30° with quartz fragments.
- Dy10-10C - Select grab. As above.
- Dy10-10D - Chip sample across 0.8 meters. Quartz vein, irregular contact, minor rust. Attitude is 40/45 SE.
- Dy10-10E - Chip sample across 2.0 meters. Sheared quartz vein. Attitude 195/80F. *Moly*
- Dy10-10F - Chip sample across 0.2 meters. Quartz in selvage of black dyke.

Diamond Drill Core stored on Williston Bay:

- Dy10-10G - Chip sample across 2 meters. Quartz vein.
- Dy10-12A - Chips across 6 meters of split core. Core is granodiorite that is very orthoclase rich or potassically altered and pyritic. Local grey quartz veining(?) and hematitic clay altered zones. \*(578')
- Dy10-12B - Type sample - quartz feldspar porphyry. Specks of molybdenum in grey quartz. \*(565')
- Dy10-12C - Chips across 1.25 meters of split core. Fine grained amorphous quartz. \*(545').
- Dy10-12D - Chip across 0.06 meters of split core. Quartz vein with minor molybdenum.
- Dy10-8A - Chip sample across 0.35 meters. Quartz rich slightly sheared zone in foot wall of grey feldspar porphyry dyke.
- Dy10-10A - Chip sample across 4.0 meters. Quartz breccia in granodiorite host. Rusty.
- Dy10-10B - Select grab. Same location as Dy10-8D. Clay zone trending 30° with quartz fragments.
- Dy10-10C - Select grab. As above.
- Dy10-10D - Chip sample across 0.8 meters. Quartz vein, irregular contact, minor rust. Attitude is 40/45 SE.
- Dy10-10E - Chip sample across 2.0 meters. Sheared quartz vein. Attitude 195/80F.

Dy10-10F - Chip sample across 0.2 meters. Quartz in  
selvage of black dyke.

\* Hole #'s unknown



GEOLOGICAL BRANCH  
 ASSESSMENT REPORT

20,134

EQUITY SILVER MINES LTD	
ARA PROJECT	
Eric Creek	
DETAILED GEOLOGY	
Dated: July 1990	Figure No. 5
Drawn: /wgl	