ASSESSMENT REPORT

1987 FIELD SEASON

SHORE GROUP

SULPHURETS PROJECT

BRUCEJACK LAKE AREA

SKEENA MINING DIVISION

NTS MAP SHEET 104B/8,9

LATITUDE: 56 DEGREES 30 MINUTES NORTH

LONGITUDE: 130 DEGREES 13 MINUTES WEST

for

SULPHURETS JOINT VENTURE
NEWHAWK GOLD MINES LTD. (Operator)
GRANDUC MINES LTD.
860 - 625 Howe Street
Vancouver, British Columbia
V6C 2T6

K. E. HICKS
FEBRUARY 1988

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF APPENDICES

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I. INTRODUCTION

The purpose of this report is to provide a record of work done on the Shore Group mineral claims which will be applied as assessment work as required under the Mineral Act. The report is contained in two volumes; first containg the report text and maps and the second containing drill logs.

II. SUMMARY

The Sulphurets property is located 65 km northwest of Stewart, B.C, with access by helicopter out of Stewart or the Tide Lake airstrip.

As well a tote road exists up the Bowser Valley and across the Knipple Glacier.

The Shore Group is located in the southeast corner of the Sulphurets property.

The Shore Group consists of 42 claim units covering a large zone of alteration and mineralization worked periodically from about 1958.

The 1987 field season began in July and lasted to the end of November, work consisted of 1543 meters of surface diamond drilling on the Shore Zone which falls within the Shore Group. Approximately 2000 fire assays were run for gold and silver on drill core at our Stewart Assay Lab.

The 1987 drilling program was targeted at defining the Shore Zone mineralization using drilling placed close to previous holes to confirm gold and silver values and gradually expand the coverage away from the known mineralization.

III. LOCATION ACCESS and CLIMATE

The property is located approximately 65 km north-west of Stewart, B.C., and approximately 950 km north-north-west of Vancouver, B.C.. Brucejack Lake is centered approximately 56 degress 30 minutes north latitude, 130 degrees 13 minutes west longitude on NTS map sheet 104B/8 east and 104B/8 west.

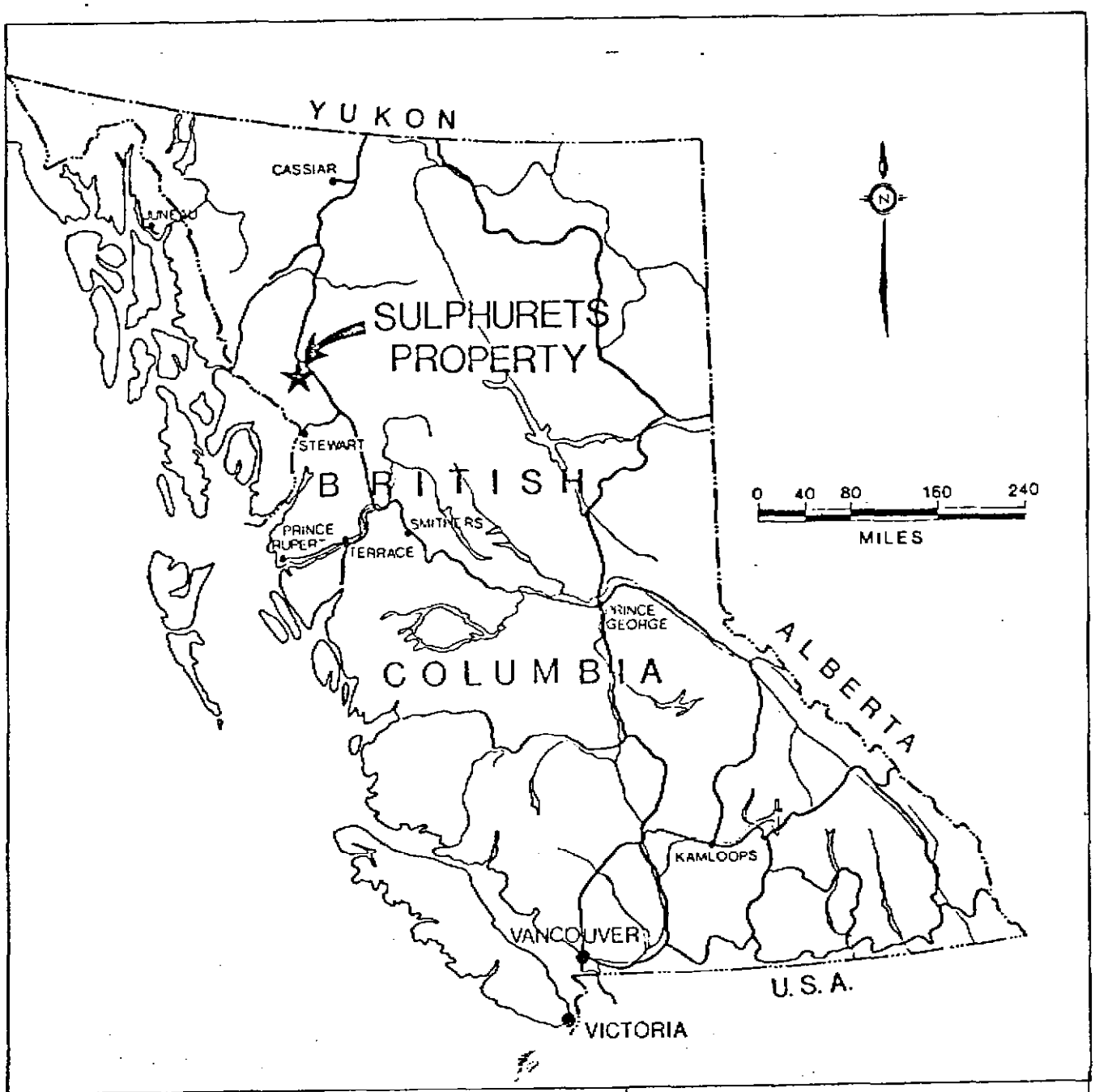
Access to the property at the present time is by tote road using tracked vehicles and by helicopter from Stewart. Equipment and accomodation in the form of an all weather trailer camp has been

transported in over the road.

The summer season starts mid to late July with about 50-60% of the outcrop free of the snow by mid-July. Snow continues to recede until around October 1st when freezing conditions set in again for the winter. Light snowfalls and strong winds (up to 100 km/hr) can be expected from October 1st until Mid-February, with temperatures varying widely between 0 degrees and -40 degrees centigrade. Mid-February until Mid-April appears to be the period when most of the snow falls. The nearest government snow stations are on Hanna Ridge and Meziadin about 50 km (30 miles) to the east near Highway 37.

Temperatures by Mid-May are warm enough to cause the snow to begin to melt with serious melting not taking place until mid June. Total snowpack in the Brucejack area is less than 3 meters, but the high winds which prevail around the equinoxes can drift snow into the sheltered areas to the west of the ridges to a depth of up to 10 m.

Drifted snow to this depth can cause serious damage to buildings and other structures unless bracing is designed to carry these loads.



NEWHAWK GOLD MINES LTD.

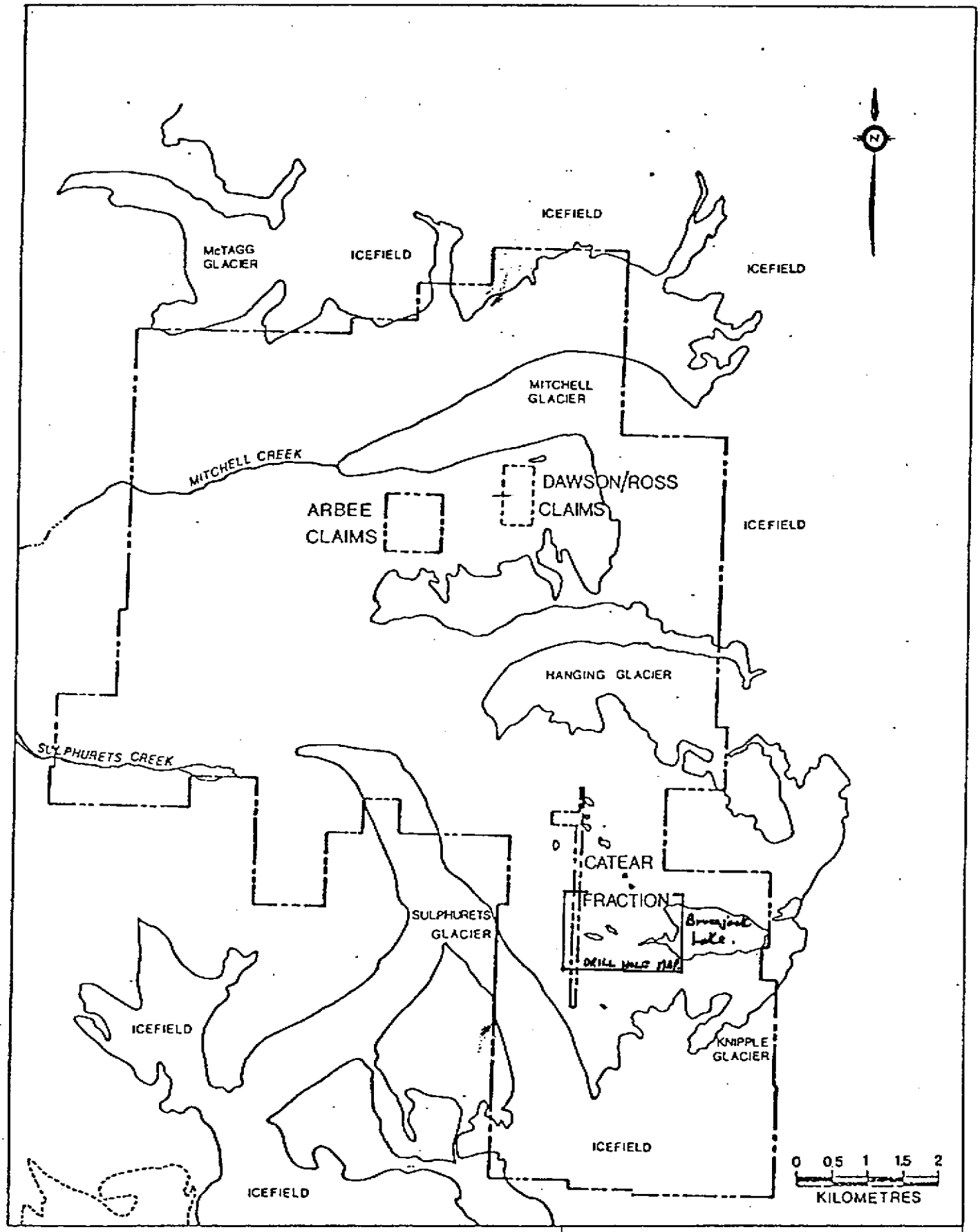
SULPHURETS PROJECT

LOCATION MAP

FIGURE 1.

IV. CLAIMS

Claim	Record No.	Recorded D/M/Yr	Expiry Yr	Units	Yrs	Credit/Unit	Rate/Applied	Total
RED RIVER 2	2555(9)	2/9/80	1993	4	5	200		$4000
RED RIVER 3	2556(9)	2/9/80	1993	2	5	200		$2000
RED RIVER 4	2649(11)	3/11/80	1993	12	5	200		$12000
RED RIVER 5	2650(11)	3/11/80	1993	2	5	200		$2000
RED RIVER 8	3236(9)	29/9/81	1994	2	4	200		$1600
RED RIVER 9	3237(9)	29/9/81	1994	2	4	200		$1600
RED RIVER 10	3516(7)	12/7/82	1994	12	4	200		$9600
RED RIVER 11	3517(7)	12/7/82	1994	6	4	200		$4800
TOTAL APPLIED ASSESSMENT CREDIT								$37,600

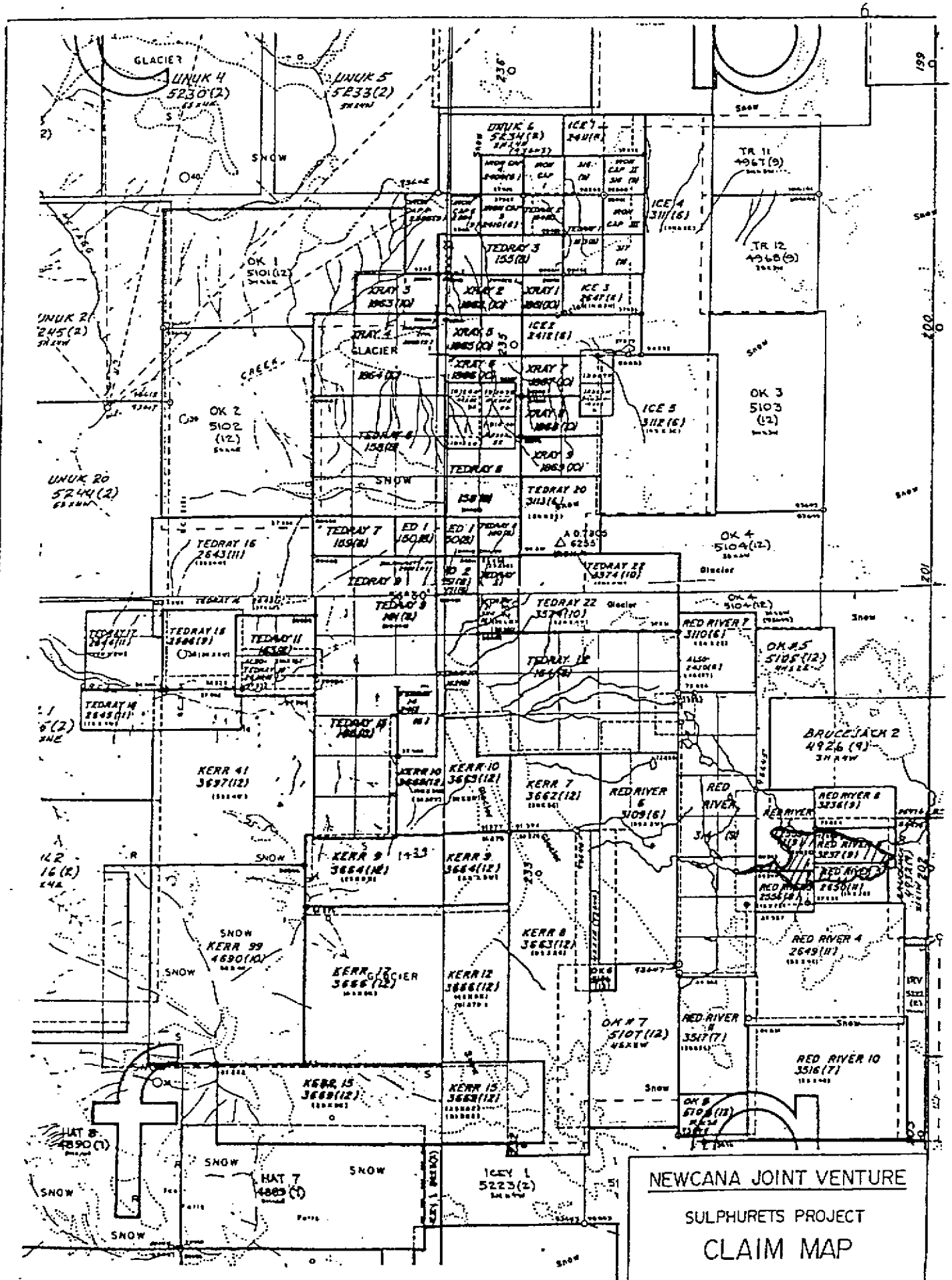


NEWHAWK GOLD MINES LTD.

SULPHURETS PROJECT

CLAIM MAP

FIGURE 2



NEWCANA JOINT VENTURE

SULPHURETS PROJECT

CLAIM MAP

Drawn	By	FIG. No.
Scale 1:100,000	Date	2

V. HISTORY

Early work in the area probably saw prospectors on the Tedray 20 claim as early as 1910. Claims were staked just to the north of the Mitchell Sulphurets Ridge in the 1930's and Newmont had exploration crews in the area searching for copper deposits in the late 1950's. The gold mineralization on the Peninsula at the west end of Brucejack Lake was discovered by Esso Minerals in 1981. This area was mapped and numerous trenches cut across the stock work vein system now referred to as the Shore Zone.

Drilling commenced on the Shore Zone in 1982. The West Zone was discovered, mapped, trenched and drilled in 1982 and 1983. Appoximately 3550 m of diamond drilling has been carried out by Esso Resources and Newhawk Gold Mines from 1980 through the end of 1986 on the Shore Zone.

VI. REGIONAL GEOLOGY

The geology of the Stewart area is typified by moderately folded, intermediate volcanics and sediments intruded by a succession of plutons. Those areas around many of the deposits are washed by a distinctive red iron alteration forming a broad band in which the numerous showings occur.

The lowermost formation within the Sulphurets claims is the Unuk River Formation of dark green volcaniclastic rocks. The Unuk River Formation is composed of medium-grained matrix-supported lapilli tuffs of andesite composition. This andesite lapilli tuff forms the host for most of the

vein deposits in the Stewart area and appears to be the favored host rock at Sulphurets. The Unuk River Formation is believed to be as much as 10,000 feet thick. Above the Unuk River Formation is the Salmon River Formation of siltstone, greywackes and other fine to medium-grained epiclastic and pyroclastic rocks. Both these formations are similarily iron-stained with pervasive pyrite-sericite alteration over most of the property. In the Sulphurets area these two formations are cut by two elongate sub-parallel northerly-trending zones of intrusive rocks which are probably Middle Jurassic in age. These intrusive rocks range from diorite to granite or syenite in compositions and appear to be sub-alkaline. The intrusive rocks roughly enclose a northerly-trending 10 km. lineal zone of intense alteration. Sericite and pyrite are the most abundant alteration minerals with other assemblages locally dominated by K-feldspar, chlorite and propylitic minerals. Porphyry copper-molybdenum mineralization occurs in the north and north-west portions of the property and is often associated with K-feldspar and sericite alteration.

The gold mineralization is structurally controlled and is usually in the volcanic rocks, near the sedimentary contact, adjacent to intrusive rocks and within a wide zone of intense quartz-sericite- dominated alteration. The veins consist of quartz +/- carbonate with up to 20 per cent sulphides ranging from simple veins to complex vein zones and stockworks. Pyrite, sphalerite, galena, tetrahedrite, electrum,

argentite, pyrargyrite, chalcopyrite, barite and molydenite have been identified in these veins.

VII. GEOLOGY OF THE SHORE ZONE

VII.1 General Geology

Geology of the Shore Zone is very similar in lithology to the West Zone. It is composed of andesitic lapilli to crystal tuffs, agglomerates and breccias that have undergone significant alteration. In some cases alteration obliterates original rock textures. Attitudes of the volcanics is thought to be north-south, as is the West Zone, with steep east or west dips.

Alteration on the Shore Zone consists of more quartz-carbonate than the quartz-sericite of the West Zone. Quartz-carbonate-sericite-pyrite alteration is the general rule however. The intensive, massive, waxy green sericite alteration found on the West Zone is absent on the Shore Zone. Barite occurs more frequently in discrete white veins in the Shore Zone as compared with the West Zone.

VII.2 Lithologies

Lithologies found on the Shore Zone during drilling are summarized with their abbreviated notation for easy reference to the drill logs.

VII.3 Structure

Structure on the Shore Zone from aerial photos and surface mapping suggest a similar setting to the West Zone with steeply dipping bounding structures with subsidiary oblique quartz filled structures; the result

of quartz filled tension fractures. The bounds of the Shore Zone are not as defined as the West Zone to date and the relationship between structure and mineralization is still not defined.

VII.4 Alteration

General widespread alteration of original mineral assemblages occurs in the Brucejack area. The type and scale of alteration is governed by a number of factors such as proximity to major structures and hydrothermal zones. Other factors controlling alteration are the extent and degree of pre alteration fracturing and the proximity to intrusives. Variations in the original chemistry of the stratigraphy also play an important part.

A number of alteration haloes occur in the vicinity of the Shore Zone quartz stockwork-fracture zone. These form a pattern which is complicated by variations in the chemistry of the rocks being altered and by later overprinting by intrusives and late cross cutting, quartz veins.

VII.5 Mineralization

Mineralization of the Shore Zone consists of sphalerite, galena, pearceite, acanthite, barite, chalcopyrite and proustite with ubiquitous pyrite. Sulphides occur within a quartz-carbonate ganque often with stringers and patches of barite. The quartz for the most part is white and massive. Sulphides occur as stringers, patches and open space fillings within the quartz veins. Electrum occurs as fracture coatings,

stringers and grains within quartz veins. Analyses show that the electrum is made up of equal quantities of gold and silver.

VIII. DRILLING PROGRAM

Drilling on the Shore Zone confirmed high grade gold/silver values reported by previous operators. It also confirmed the presence of gold mineralization along strike and filled in where drill information was lacking. Mineralization on the Shore Zone was found to extend to 200 m below surface and is now known for approximately 450 m along strike.

VIII.1 DRILLING

A total of 1543 m of drilling was completed in 11 surface holes in 1987 on the Shore Zone. Drill logs are attached in Appendix I and detailed lithologic descriptions in Appendix II.

The holes were logged by Leo Lindinger and Dave Handel and these logs are included in Appendix I. On completion of the logging, the sections of vein material were marked and those sections split in a mechanical splitter. The split off portion of the cores was put into bags and transported to our laboratory in Stewart for gold and silver fire assay. The other half of the core was returned to the box and stacked in the yard for future reference.

Both drills were J. K. Smit 300 machines provided by F. Boisvenu Drilling Ltd., of Richmond, B.C. These machines seem ideal for this work as they are easily taken down and moved to a new set-up. With the use of the Hughes 500D helicopter is was possible to reassemble this

drill and be ready again within a single shift.

IX. SAMPLING AND ASSAYING

After the core was logged it was sampled according to the following procedure: The core was marked in sections corresponding to lithologic boundaries, vein boundaries or mineralization changes with a maximum length of 3 meters (9.8 feet). The core was then taken piece by piece from the box and split in a mechanical splitter, half bagged and tagged the other half returned to the box in its original position. The bagged sample weighing about 5-8 kg. was transported to the laboratory on the first helicopter that went to town.

Upon arriving at the laboratory the samples were put into pans and dried in the drying oven usually for a couple of hours. When the sample was dry it was crushed in a jaw crusher to -1/2" and split in the Jones type riffle splitter until the sample was reduced to between 250 gm. and 500 gm.

The remainder of the sample ("reject") was rebagged and stored in a storage area in the laboratory.

The sample was then pulverized to 80% - 100 mesh. This grind was about the limited of the capabilities of the disk pulverizer on site. The pulverized sample was then shaken in a cocktail shaker and poured out onto a sheet of rubberized canvas. A one assay ton sample was then dipped with a spatula, weighed and put into crucibles for fire assaying.

X. CONCLUSIONS

The drilling on the Shore Zone has confirmed the existence of somewhat narrow but good grade material at the southern end of the zone. Future work is warranted to continue to develope possibly economic mineralization.

XI. COST STATEMENT - SHORE GROUP

Covering the period from November 3 to November 26, 1987

Personnel

NAME	POSITION	RATE	PERIOD	MAN-DAYS	TOTAL
L. Lindinger	Geologist	$170/day	Nov 3-Nov 26	24	$4,080.00
K. Kraft	Core Splitter	$160/day	Nov 3-Nov 26	24	$3,840.00
					$7,920.00

Diamond Drilling
1543 m BQ drilling @ $65.36/m inclusive $100,850.48

Camp Lodging for 8 drillers + Supervisor
9 men x 25 days x $40/man-days $9,000.00

Fuel
100 gals/day x 25 days x $8/gal $20,000.00

Assaying
1543 m (5060 ft) x $1.00/ft $5,060.00

Air Travel
Helicopter (Hughes 500d) 7 hrs @ $550/hr + oil $3,861.75

TOTAL ASSESSMENT CREDIT FOR SHORE GROUP $146,692.23

XII. STATEMENT OF QUALIFICATIONS

I, Kenneth, E. Hicks, of Vancouver, B.C., do hereby certify that:

1. I am a geologist with residence at 115 - 1741 West 10th Avenue, Vancouver, B.C., V6J 2A5.

2. I am a graduate of the University of British Columbia with a Bachelor of Science Degree (Honours, 1982).

3. I have practised in the field of mineral exploration and mining geology since 1978.

4. I am an associate of the Geological Association of Canada in good standing.

5. I am familar with the Sulphurets Property having worked on the West Zone, Shore Zone and other areas in the Property as a Field Project Geologist for Newhawk Gold Mines in 1986 and spring 1987.

6. The conclusions in the accompanying report were drawn from information provided to me by Newhawk Gold Mines Geologists working on the 1987 drilling program.

7. I have no financial or legal interest in the mineral properties herein described, nor do I intend to receive such interest.

8. I am currently employed as Project Geologist by Northair Mines Ltd.

Respectfully Submitted,

Ken Hicks

Ken Hicks, B.Sc.

STATEMENT OF QUALIFICATIONS

I, Fred G. Hewett, with business address in the City of Vancouver, and residential address in the District of Coquitlam, in the Province of British Columbia,

DO HEREBY CERTIFY THAT:

1. I am a graduate of the University of British Columbia with a Bachelor of Science Degree in Geology.

2. I am a registered member of the Association of Professional Engineers of the Province of British Columbia.

3. I am a member of the Canadian Institute of Mining & Metallurgy, a fellow of the Geological Association of Canada, and a member of the Society of Economic Geologists.

4. I have practiced various levels of my profession in Canada for approximately twenty years.

5. I am presently employed by Newhawk Gold Mines Ltd.

6. I am aware of the qualifications of Leo Joseph Lindinger who was responsible for logging diamond drill core at Sulphurets during the 1987 field season.

7. Leo Joseph Lindinger's qualifications are as follows:

- a graduate of the University of Waterloo with a B.Sc. in 1980.

- approximately 10 years experience directly related to the mining industry.

8. The described diamond drilling was done on the Red River claims adjacent to Brucejack Lake.

9. The described core is stored at the Sulphurets camp at Brucejack Lake.

Fred G. Hewett, P.Eng.

Dated at the City of Vancouver,
In the Province of British Columbia,
This 14th day of September, 1988.

STATEMENT OF QUALIFICATIONS

I, Thomas J. Drown, of Port Moody, B.C., do hereby certify that:

1. I am a geologist with residence at 819 Ioco Road, Port Moody, B.C., V3M 2W7.

2. I am a graduate of the University of British Columbia with a Bachelor of Science Degree (Honours, 1973).

3. I have practiced in the field of mineral exploration and mining geology since 1970.

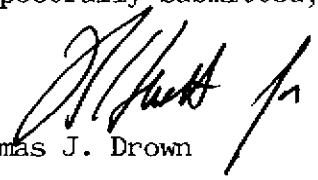
4. I am a fellow of the Geological Association of Canada in good standing.

5. I am familar with the Sulphurets Property having worked on the West Zone, Shore Zone and other areas of the Property as Senior Geologist since spring 1987.

6. I have no financial or legal interest in the mineral properties herein described, nor do I intend to receive such interest.

7. I am currently employed a Senior Geologist by Newhawk Gold Mines Ltd.

Respectfully Submitted,



Thomas J. Drown

STATEMENT OF QUALIFICATIONS

I, Dave Handel, of Comox, B.C., do hereby certify that:

1. I am a geologist with a residence at 395 Rodello Ave., Comox, B.C., V9N 5A5.

2. I am a graduate of the University of British Columbia with a B.Sc. (General 1986).

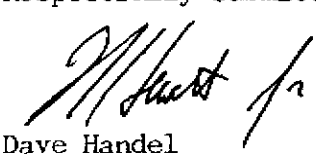
3. I have practiced in the field of mineral exploration and mining geology since 1984.

4. I am familar with the Sulphurets Property having worked on the West Zone, Shore Zone and other areas in the property as an assistant to the Project Geologist for Newhawk Gold Mines Ltd., since 1987.

5. I have no financial or legal interest in the mineral properties herein described nor do I intend to receive such interest.

6. I am currently employed by Newhawk Gold Mines Ltd.

Respectfully Submitted,



Dave Handel

WEST ZONE

367 ZONE

GOSSAN HILL

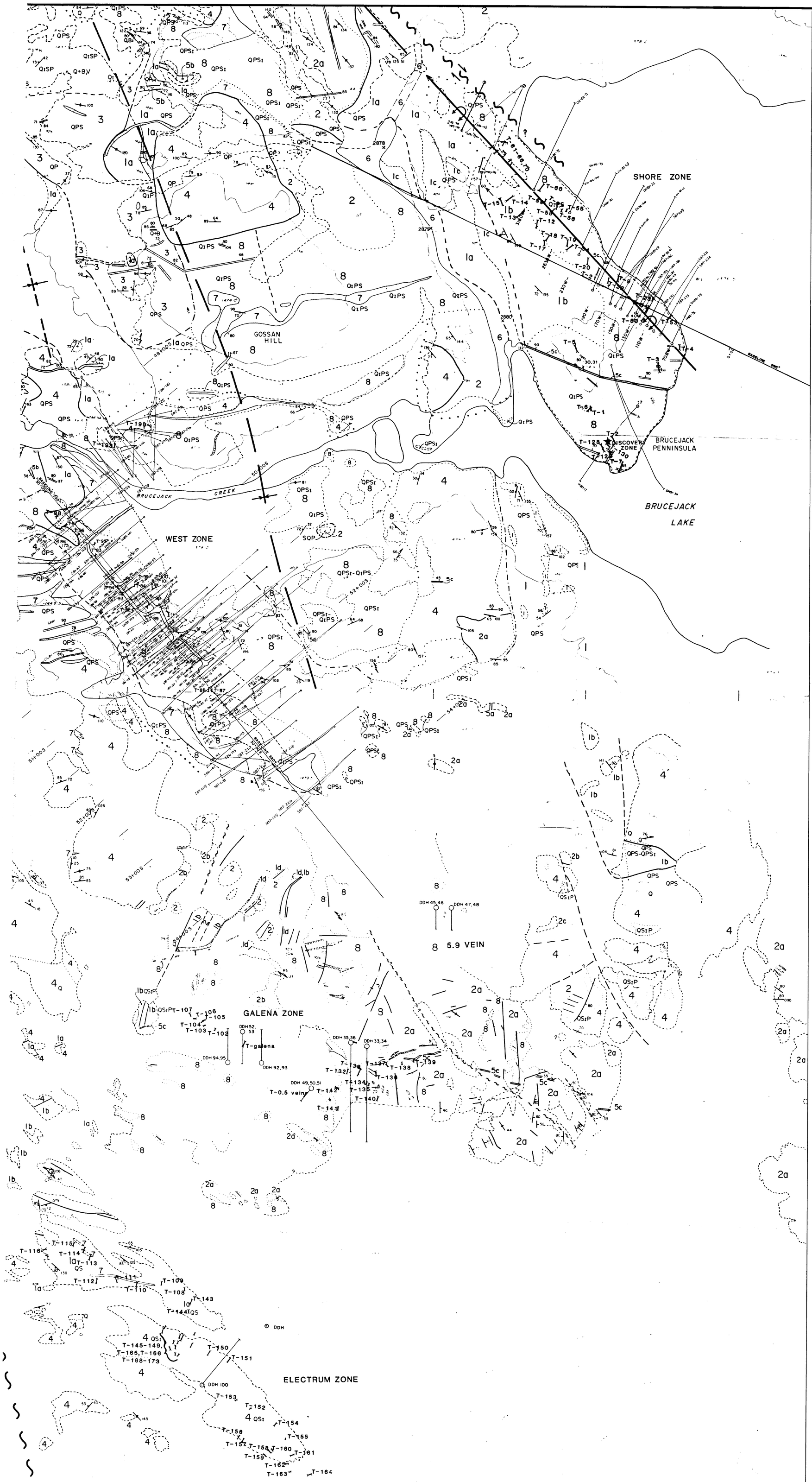
BRUCEJACK CREEK

GALENA ZONE

ELECTRUM ZONE

5.9 VEIN

17133(pt. 1 of 2)-01(a)



LITHOLOGY

Alteration, age relationships of alteration not known.

- 8 — Intense alteration, original lithology not known.
  - Q Quartz veining or silicification
  - S Sericitization
  - P Pyritization
  - I Intense development of above three alteration types
- 7 — Quartz veins, greater than 50% vein quartz, quartz veins undifferentiated
- 6 — Intense pervasive silicification of black quartz.

Dikes, age relationships of dikes not known

- 5a — Equigranular hornblende syenite dike.
- 5b — Hornblende-feldspar porphyry dike.
- 5c — Dark green banded "andesite" dikes.
- 5d — Lamprophyre

Intrusive rocks, age relationship based on a cross cutting horneblende-porphyry syenite dike.

- 4 — Hornblende-feldspar porphyry syenite, undifferentiated
- 3 — Alkali feldspar porphyry syenite.

Sediments and volcanic fragmental rocks

- 2 — Volcanic fragmental formation, undifferentiated due to cleavage and/or alteration.
- 2a — Low matrix, tuff-breccia to minor lappilli-tuff, monolithic
- 2b — High matrix member, up to 10% chloritic lappilli and blocks, monolithic, probably an ash flow, marker horizon
- 2c — Low matrix with interbedded heterolithic conglomerate sequences.
- 1 — Sandstone formation, arkose, arkosic wacke, lithic arkose and wacke, shale, pebble conglomerate and arenite.
- 1a — Lithic arkose, shales, wackes and conglomerate.
- 1b — Arenite member, mainly quartz rich arkose, arenite conglomerate
- 1c — Hornfels derived from sandstone formation
- 1d — Slate

SYMBOLS

- Tops known, load structures, cross bedding
- Cleavage, strike and dip
- Bedding, strike and dip
- Jointing, strike and dip.
- Hornblende or feldspar foliation, strike and dip.
- Lineation, cleavage bedding intersection, trend plunge.
- Dike, strike and dip
- Quartz vein, strike and dip.
- Anticline, known, overturned, inferred direction of plunge
- Syncline, known, inferred, direction of plunge
- Fault, known strike and dip.
- Outcrop
- Alteration contact, known, inferred
- Geologic contact, known, inferred

0 50 100 200 METRES

17,133

CONTOUR INTERVAL: 5 METRES

Part 1 of 2

NEWHAWK GOLD MINES LTD.

SULPHURETS JOINT VENTURE

GEOLOGY & DRILL HOLE MAP

N.T.S 104 B 8, 9		
Drawn by CHONG	Revised	Plate No.
Date: JAN. 1988	....	
Scale: 1: 2000		Drawing No.