ASSESSMENT

GEOLOGICAL

REPORT

ON

[AIRPHOTO FRACTURE DENSITY ANALYSIS]

ON THE

F & S [908](11) MINERAL CLAIM

HOMATHKO PEAK AREA

TATLAYOKO LAKE, BRITISH COLUMBIA

CLINTON MINING DIVISION

51 21'N : 125 38½'W

92N7E

FOR

R.R. DION

December 27, 1983

Gerhard von Rosen, P.Eng.

TABLE OF CONTENTS

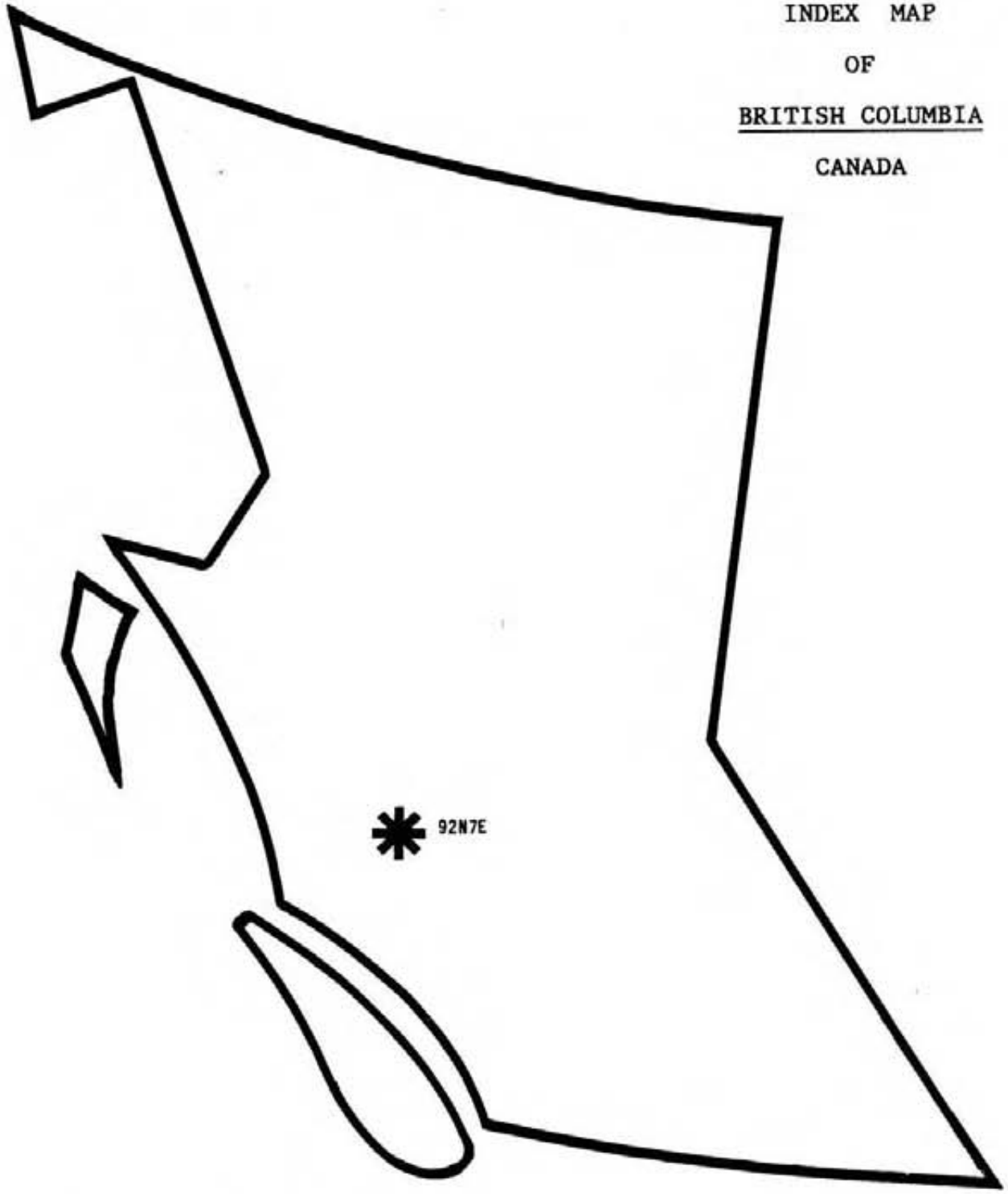
FIGURE "A"

INDEX MAP

OF

BRITISH COLUMBIA

CANADA



F&S [908] GOLD PROPERTY

HOMATHKO PEAK CLINTON MD

BEAREX ENGINEERING mission bc

INTRODUCTION

The writer was instructed by R.R. Dion to perform an airphoto fracture density analysis, and to compile the present summary report for assessment purposes.

Having annotated the appropriate vertical airphotographs, the writer commissioned D.A. Chapman to perform the point-count evaluations, to carry out the relative-density calculations, and to provide the plan of relative density isogradients, based on the visible fault/fracture patterns observed by the writer.

PROPERTY HOLDINGS

This assessment report substantiates work done on the F&S mineral claim. In the process of performing the analysis, a larger area (than covered by the subject claim) was included, to gain extrapolative information about neighbouring geological aspects.

CLAIM NAME	RECORD #	UNITS	ANNIVERSARY
F&S	908	20	November/84

CLINTON MINING DIVISION NTS: 92N7E

The anniversary date shown, applies after the present assessment report has been accepted for one year's credits.

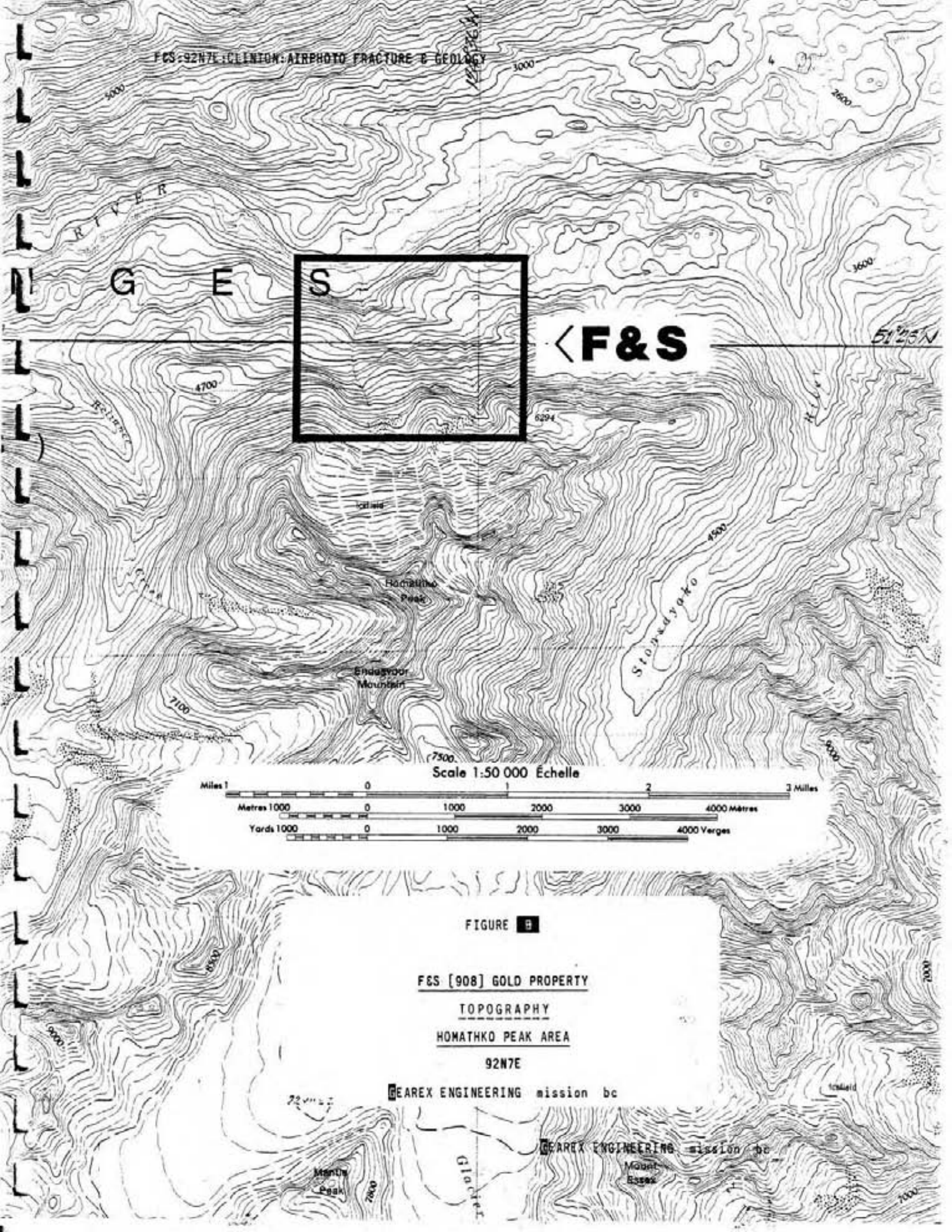


FIGURE 8

F&S [908] GOLD PROPERTY

TOPOGRAPHY

HOMATHKO PEAK AREA

92N7E

LOCATION & ACCESS

51 21'N 125 38½'W 92N7E

An old horse trail existed, heading southwesterly from the south end of Tatlayoko lake, on the north side of Homathko river, ending just north of Homathko peak, near the river; a distance of around 5 km. This would need to be rehabilitated for modern-day use. Otherwise helicopter transport from the south end of Tatlayoko lake is the immediate choice.

Road access to the south end of Tatlayoko lake has been greatly facilitated by the recent operators of the **Morris Mine.** This property is located only a short distance to the southeast of the south end of the lake.

To reach this area one travels via good all weather road to Tatla Lake, a distance of 250 km westerly from Williams Lake, British Columbia, the nearest supply base. From this settlement a gravel road leads one southerly along the east side of Tatlayoko lake for a distance of 50 km, until a logging road takes over and continues for a distance of 16 km which takes one to a point 3 km southeast of the south end of the lake. It is from this area that the supply base for helicopter support for the claims area could be established. British Columbia Hydro operates a camp at the south end of the lake. Short visits to the property can simply be handled by traveling by helicopter from Vancouver, 'up the coast' to Powell River, thence into Bute Inlet, past the subject area, along the Homathko river, and into Tatla Lake, where accommodation exists.

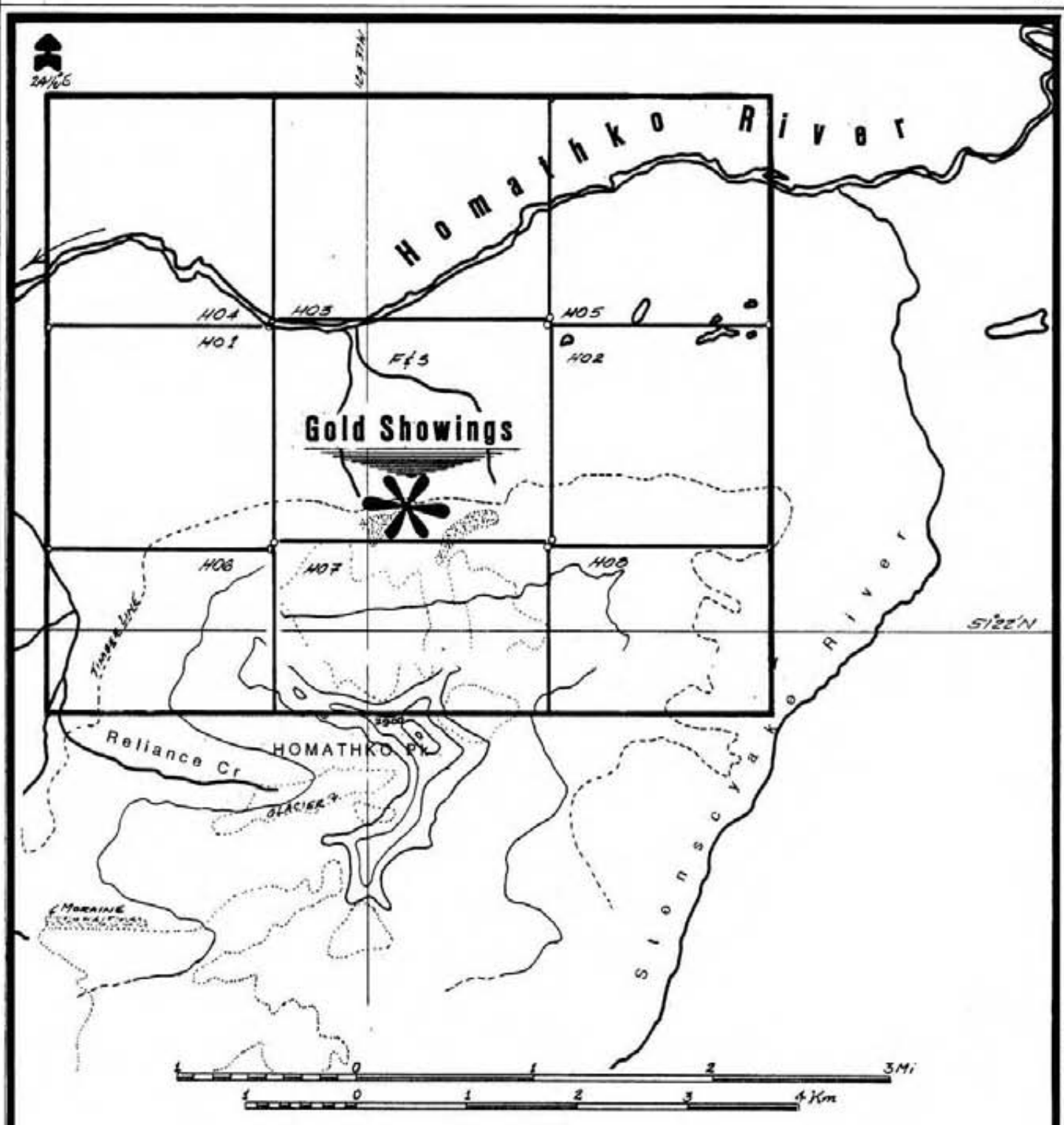


FIGURE C

F&S [908] GOLD PROPERTY

CLAIM LAYOUT

HOMATHKO PEAK AREA

92N7E

OCT 31, 1983
MAY 18, 1983
April 28, 1983

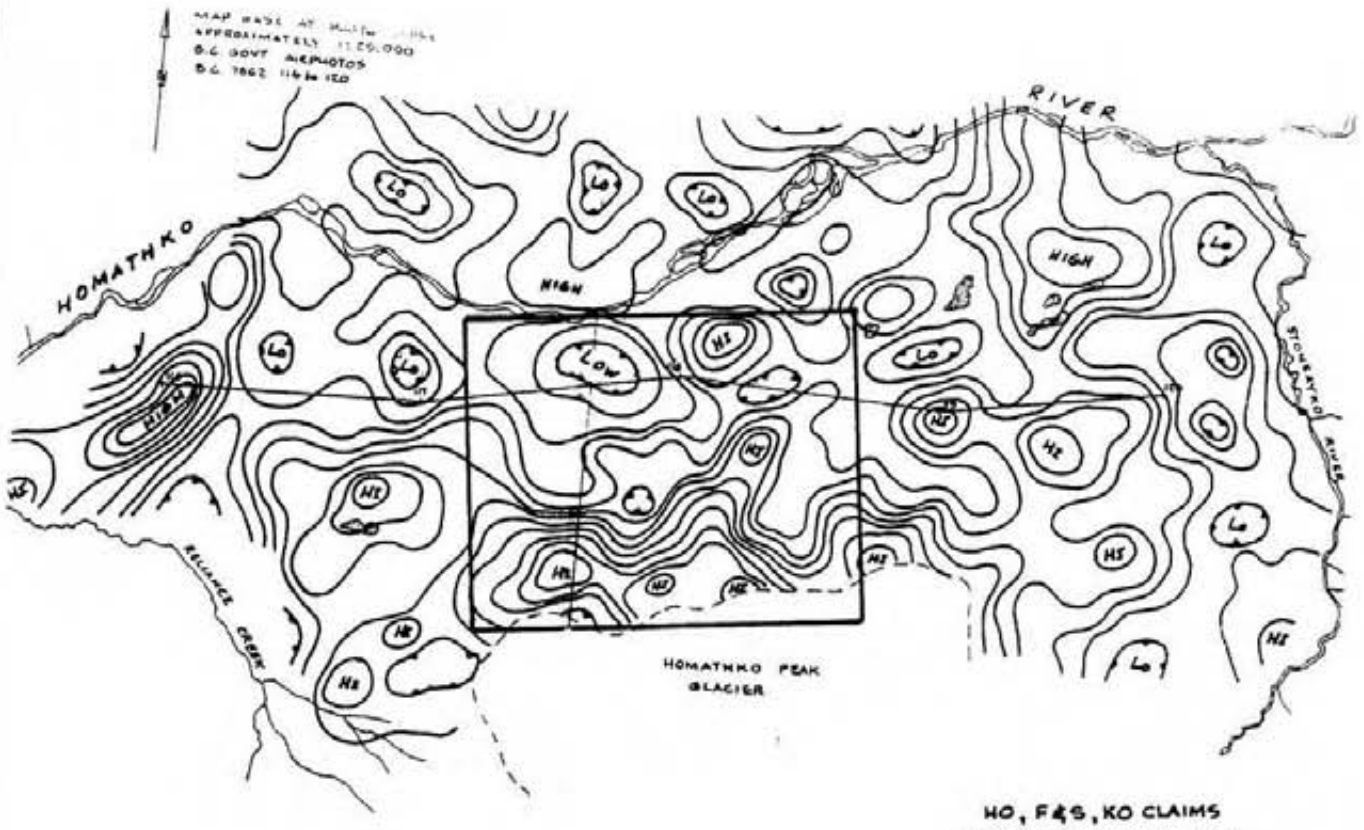
GEAREX ENGINEERING mission bc

PHYSIOGRAPHY, VEGETATION, CLIMATE

The claimed area lies immediately north of Hamathko Peak, near the toe of its north-flanking icefield. Homathko Peak rises to 3000 mASL south of the westerly-flowing Homathko river, in its, in part, deeply-incised canyon. (around 700 mASL)
The main showings are located to the north of the peak at about 1600 mASL. The valley is timbered, while the showings occur at timber line, where scrub vegetation, and slide alder are prevalent.
Climate in the south Tatlayoko lake area is rather pleasant with long warm summer, and crisp winter seasons. The area of the gold showings, being on the north slope of Homathko massif, receives short hours of sunshine during summer, when the sun rises high over the horizon.

HISTORY

Discovery of quartz veins carrying appreciable gold and silver values, in 1907 resulted in the claiming of the original showings which comprise the present-day **Morris Mine** holdings at the south end of Tatlayoko lake. This find was developed over the years, and brought many prospecting crews into the area. Their's was a major undertaking, as the transportation, and communication conditions were extremely difficult. In more recent years, when base metals were being sought, and helicopters were available to major companies and syndicates, several discoveries were made, and explored on the higher reaches of the mountainous regions. The **Homathko (F&S)** property was one of such discoveries, of gold mineralization in this case, which was found several years ago by major interests.



HO, F&S, KO CLAIMS
HOMATHKO PEAK AREA
CLINTON MD, BRITISH COLUMBIA
RELATIVE DENSITY ISOGRADIENT
VISIBLE FAULT/FRACTURE
PATTERNS OBSERVED

AIRPHOTO INTERPRETATION COMPILED
BY D.A. CHAPMAN OCTOBER, 1983

CLAIM OUTLINE APPROXIMATE

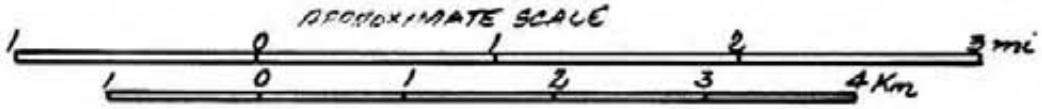


FIGURE 6

F&S [908] GOLD PROPERTY

COMPILATION PLAN

AIRPHOTO-FRACTURE DENSITY ANALYSIS

HOMATHKO PEAK AREA

92N7E

DEC 22, 1983

GEAREX ENGINEERING mission bc

continued:

HISTORY

The writer was commissioned in the fall of 1974 to inspect the property and assess the subject showings. Assays taken from near the already-sloughed trenches, were confirmed to contain gold, and the author incorporated them with those apparently obtained from major interests in the writer's recommendation report.

The property was staked, at that time, as the "11 Ounce Mineral Claims", because that was the assay reported to obtain from 0.2 meters of quartz vein. To the writer's knowledge nothing was done on the property as the metal markets had not, as yet, appreciated to the levels enjoyed by gold in recent times.

The property was acquired some years ago, and further ground was added for protection, with the intent of intensifying the program of exploration, originally recommended.

The writer's previous report on the "11 Ounce Mineral Claims" was dated March 10, 1975.

GENERAL GEOLOGY

The "F&S Gold Property" lies in the contact zone at the eastern edge of the coast plutonic rocks which here intrude Cretacious and older metamorphic rocks. The geology of the area is mapped as GSC Map 5 - 1968, the "Mount Waddington" sheet, authored by H.W. Tipper.

Bedding and structure generally trend northwesterly, while in local instances, like Homathko river valley, major faults are shown with northeasterly and easterly strikes.

LOCAL GEOLOGY

Homathko Peak is a massif of "coast plutonic" granodiorite, in contact with dark green andesitic breccia, tuff and flows striking about E - W, dipping south.

Airphoto interpretation indicates a through-going structure, trending northwesterly in the vicinity of the property. The same scrutiny of the airphoto rock-textures suggests a band of rock striking parallel to the general fracture (schistosity-bedding) pattern. These rocks may be "unit 3" as designated on Tipper's map as comprising "mainly phyllite and garnetiferous schist".

The band of rock consists of buff-weathering intrusive rock, measures about 60 to 100 meters wide, and extends well beyond the limits of the ground-inspection (1974), which was curtailed by ridges to the east and west, by Homathko glacier to the south, and brush-over-burden terrain to the north.

Outcrops are bare. The inspected area lies within these bounds. There are two prominent razor-back moraines in the area, one against the eastern ridge, the other roughly central to the area separating the helicopter landing to the west, from the discovery vein, on the east.

Variable thicknesses of morainal material blanket the area between the two razor-back ridges, but the western half of the examined terrain is nearly totally bare of any cover. Limonite filled fractures commonly appear within or at the borders of the veins; their origin is not immediately evident.

The buff-coloured band of rock, is offset by faulting at most of the creeks and gullies inspected by the writer. Movement of 15 to 30 meters, on-slope, can be enviseaged as shown by the displacement of the south contact. The veins, in some cas-

continued: LOCAL GEOLOGY

es, appear to occur within the cross faults.
Possibly 300 meters west of the area of the discovery vein is a zone containing thicker cross-trend quartz veins (up to 8 meters wide) cutting diagonally through the buff-coloured zone. Sulphide knots occur, randomly dispersed, with an approximate 0.75 meter spacing throughout the rock including the quartz veins. The country rock at this locality is buff, rusty-weathering, intrusive, and the knots upon assay contain 0.68 ounces per ton gold, and 0.2 ounces per ton silver, over 5 cm.

Further quartz veining, evident across an ice-filled gully, could not be reached at the time of the examination. The buff-coloured zone could, at that point, be traced by its distinctive colour, to the prominent ridge, about 300 meters westerly. South and uphill on this same ridge, just below the ice field is a sheer face of rock with an approximately 3 meter-wide reddish-chocolate brown coloured dike-shaped gossan zone transecting the greenish country rock.
Long, linear quartz veins trending up the smooth sloping outcrops and bluffs on the higher reaches (south and up-hill from the "11 Ounce vein") of Homathko massif were inspected by the writer on the most eastern drainage, next to a snow field. These should be explored in greater detail.
This 'east creek' was used during previous exploration (major company in 1964) to ground-sluice the "11 ounce" discovery vein. The presence of a ditch indicated to the writer that the water had been re-routed eastward 15 meters and there, directed down-hill through a pile of moraine material; thereby removing a large amount of debris, otherwise covering the up-hill strike of the 15 meter long quartz vein exposure.

AIRPHOTO FRACTURE DENSITY ANALYSIS

PURPOSE

Black and white, vertical airphotos provide valuable information in many ways, one of which derives from the stereoscopic study of straight, and/or arcuate lineations, caused by breaks in the rocks showing at the surface of the earth. It has been postulated that the relative density per unit area of these signs of rupturing (airphoto lineations) is an indication of the open-ness of the rocks to the influx of mineralizing solutions. Hence, the premise that the study of fracture density may give the explorationist another tool to be used in pinpointing exploration targets.

POSSIBILITIES OF METHOD

Large-volume "porphyry copper" type deposits tend to include ore mineral disseminations in stockwork fractures within granitic, volcanic, or other metamorphosed rocks at or near intrusive contacts of granitic bodies. Because ore metallization appears to be related to rock type contacts and changes in fracture density, this study was undertaken to attempt outlining or rock types, and pinpointing anomalously fractured zones.
This method, when used in conjuction with other information, such as geophysics or geology, can be utilized to outline areas of interest with minor unit-area expense.

LIMITATION OF METHOD

Heavy snow cover and overburden tend to obscure the finer fracture details, although major trends will show through most surficial deposits.

Rock types fracture in different patterns, and each has a special signature. When lithologic boundaries are unknown to the interpreter then there may be difficulty in differentiatting between fracture density increases caused by anomalous tectonic action within a homogeneous lithologic unit, or by simply changes in rock type. In the first case, additional fracturing may be of interest, while in the second instance, a non-mineralized rock body may exhibit more bedding, schistosity, and joints, without enhancement of the ore-hosting process.

Although fracture density anomalies could be assumed to always indicate zones more worthy of interest to the explorationist, it must be realized that metallization of favourable host rocks has been known to occur in moderately-fractured rocks.

In the present study neither arcuate lineaments, nor changes in attitude of structures, have not been given special consideration.

METHOD OF ANALYSIS

The following airphotos, abtainable from the Map Division, Parliament Buildings, Victoria, B.C., were chosen to provide stereoscopic coverage of the area required:

BC7862: #115-116-117-118-119-120-121

continued: METHOD OF ANALYSIS

Plastic overlays were attached to these photos and marked in such a way that reorientation, and pinpointing of adjoining photo centers could be done accurately. Salient geographic features were traced. A non-orthogonal mosaic could thereby be created.

Using a stereoscope, all observable lineations were traced on the overlays of alternate photos, without judgement of their origin, or inherent value. In this way, due to the overlap of airphoto coverage, information was recorded on alternate airphotos along flight lines.

POINT COUNT

In order to facilitate quantifying this information a method has been devised [Tait Blanchet, D.A. Chapman] whereby the airphoto overlays (annotated with the traced lineaments) are divided by an orthogonal grid, - with 1 cm dimensions in this case. The grid is carried on a separate overlay. A moveable circle template, with diameter 1 cm, is then centered on each of the grid points, and the quantizing of the fracture information commences. Valuation information follows:

All traced fracture segments are counted:

a) fractures that cross the circumference of the circle once are given one point.
b) fractures that cross the circumference of the circle twice are given two points.
c) fractures not crossing the circumference of the circle are given 1/3 points.

continued: POINT COUNT

Thus the "sum" of quantized fractures is noted on an overlay at the grid intersections.

VERTICAL AIRPHOTO MOSAIC

The area, covered by this study, encompasses five vertical airphoto centers. As alternate photos are stereo-pairs, the information is concentrated on #116&118&120. These overlays were matched at straight lines. Hence the resulting mosaic is not true-scale, and it schould be remembered that the southern portion is closer to the camera, than the northern, valley, sector.
Point counts were made on this "match-line mosaic".

INTERPOLATED MEAN VALUE

Utilizing the previously-mentioned point counts, a further refinement to the data was made by interpolating the mean value observed within the sample area. This calculation, in effect, provides the inflection areas between "high" and "low" point count areas.

CONTOURING

Normal contouring techniques were used to display the relative-density isogradient of the observed fault/fracture patterns.

RESULTS OF STUDY

The relative density isogradient is shown as contoured areas of 'high' and 'low' value zones.
One such area appears to coincide with the general environs of the "11 ounce" discovery. This particular "high" sector of the claims area trends generally E-W, and seems to be cut off by the Homathko Peak ice field.
Several other "high" localities have also been delineated.

DISCUSSION OF RESULTS

This method of quantizing fracture density determinations has been effectively utilized to outline those areas exhibiting higher-than-average (relative to the survey area) changes in fracture density. It allows the examination of a large area at very reasonable cost.
The survey was extended beyond the limits of the claimed property to provide background information obtainable from the surrounding terrain.
Small 'highs' as found in this study, in addition to the larger anomalies, may relate to areas of interest lithologically, and should not be disregarded, because the geological mapping and prospecting in this terrain is based on spot checks, rather than full traverses.

CONCLUSIONS

1) The F&S claim encompasses the original "11 Ounce" discovery showing of quartz sulphide veins carrying gold. This appears to relate to an intrusive contact zone striking approximately E-W.
2) Results of the present airphoto fracture density study, annotated by Gerhard von Rosen, and compiled by interpreted by D.A. Chapman, show a positive correlation of the anomalous results with the discovery area.
3) The recommendations by D.A. Chapman, as shown in the appendix, are: "I would recommend additional airborne work over the claim areas. A low-level air magnetometer and VLF-EM would be useful in determining contact geology as well as major faults."

RECOMMENDATIONS

In addition to recommending helicopterborne magnetometer and electromagnetic surveys over the claims area (to delineate lithologic & structural changes, as well as pinpointing conductive vein systems), it will be necessary to perform intensive groundwork checks over the areas of known mineralization, and those sectors that show anomalous survey results. Personnel adept at traversing mountainous terrain should be employed.

APPENDIX A

REPORT

ON

AIRPHOTO STUDY

OF

AIRPHOTOS: BC7862/115-121

COVERING

F & S MINERAL CLAIM

PERKINS PEAK AREA

BY

Douglas A. Chapman

TO: GERHARD VON ROSEN, P.ENG.

DEAR SIR;

AT YOUR REQUEST I HAVE COMPLETED THE COMPILATION OF ANNOTATED FRACTURE PATTERNS FROM OVERLAYS OF AIRPHOTOS INTERPRETED BY YOURSELF.

THE OVERLAYS COVER B.C. GOVT PHOTOS BC.7862 -116, 118 & 120. AT APPROXIMATE MEAN PHOTO SCALE OF 1:25,000.

SHEETS 1 to 4 INDICATE THE DATA AS OBSERVED.

LOGIC OF SURVEY

THE ISOSTATIC TRACES OF APPARENT FAULT AND/OR FRACTURE JOINT SYSTEMS IN THE EARTH'S CRUST ARE THE RESULT OF THE VARIANCE OF HORIZONTAL STRESSES ACTING ACROSS THE EARTH'S BOUNDARY SURFACE REPRESENTED BY THE PLANE OF THE AERIAL PHOTOGRAPH.

THE MORE VISIBLE AND DENSE THE PATTERN, THE GREATER THE VERTICAL PRESSURE OF THE UNLOADING FORCE ACTING AT THE BOUNDARY RESULTING IN INCREASED SURFACE TENSION.

MOST OREBODIES ARE HOSTED BY ROCK STRUCTURES INDUCED IN THE ROCK AS A RESULT OF DEFORMATION; EITHER AS STRESS AND/OR STRAIN ENVELOPES WITH FRACTURE FLOODING BY MINERALIZERS, OR SHEAR TENSION FISSURES ASCENDED BY VEIN MATERIAL.

METHOD OF SURVEY

THE JOINT PATTERNS AS ISOSTATIC TRACES ARE ANNOTATED TO EITHER THE PHOTOGRAPH OR AN OVERLAY AND ARE THEN ORGANIZED INTO AN EMPIRIC FORM BY ESTIMATING THE COUNT OF TRACES INTERSECTING THE PERIMETER OF EACH SAMPLE AREA TAKEN. SEE SHEETS 1,2,&3

THE INITIAL ESTIMATE OF FRACTURES PER UNIT AREA IS AVERAGED FOR THE MEAN VALUE OF FOUR SAMPLE AREAS AROUND A CENTRAL POINT, THIS RESULTING VALUE FOR THE INTERPOLATED MIDPOINT IS THEN CONTOURED ALONG EQUAL VALUES TO DISPLAY AN ISOGRADIENT OF THE MAXIMA/MINIMA RELATIVE DENSITY.- SEE SHEETS 3&4

RECOMMENDATIONS

I WOULD RECOMMEND ADDITIONAL AIRBORNE WORK OVER THE CLAIM AREAS. A LOW LEVEL AIR MAGNETOMETER AND VLF-EM WOULD BE USEFUL IN DETERMINING CONTACT GEOLOGY AS WELL AS MAJOR FAULTS.

Respectfully submitted,

D.A. Chapman

APPENDIX B

COPIES OF OVERLAYS

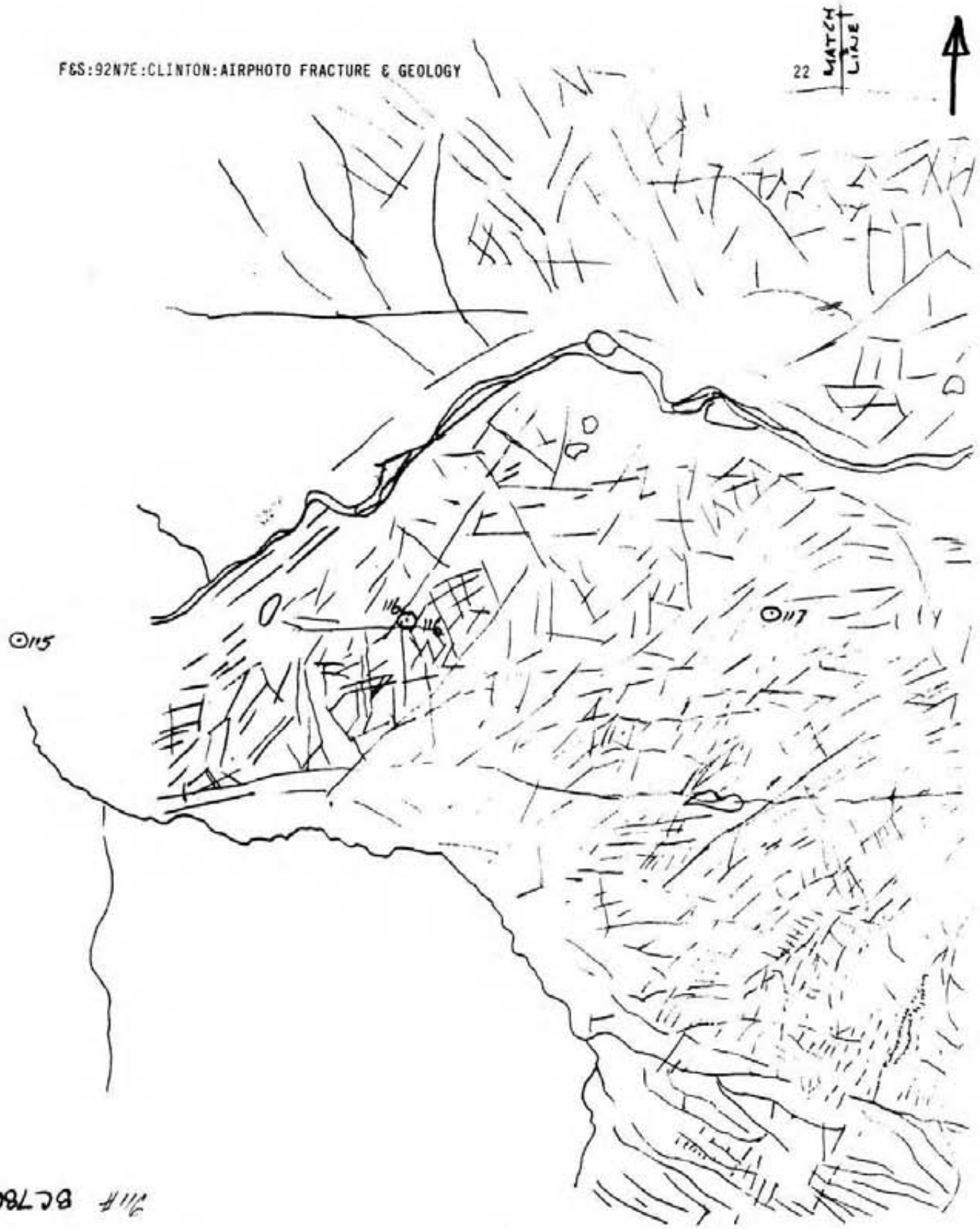
ON

BC7862: #116, #118, & #120

SHOWING

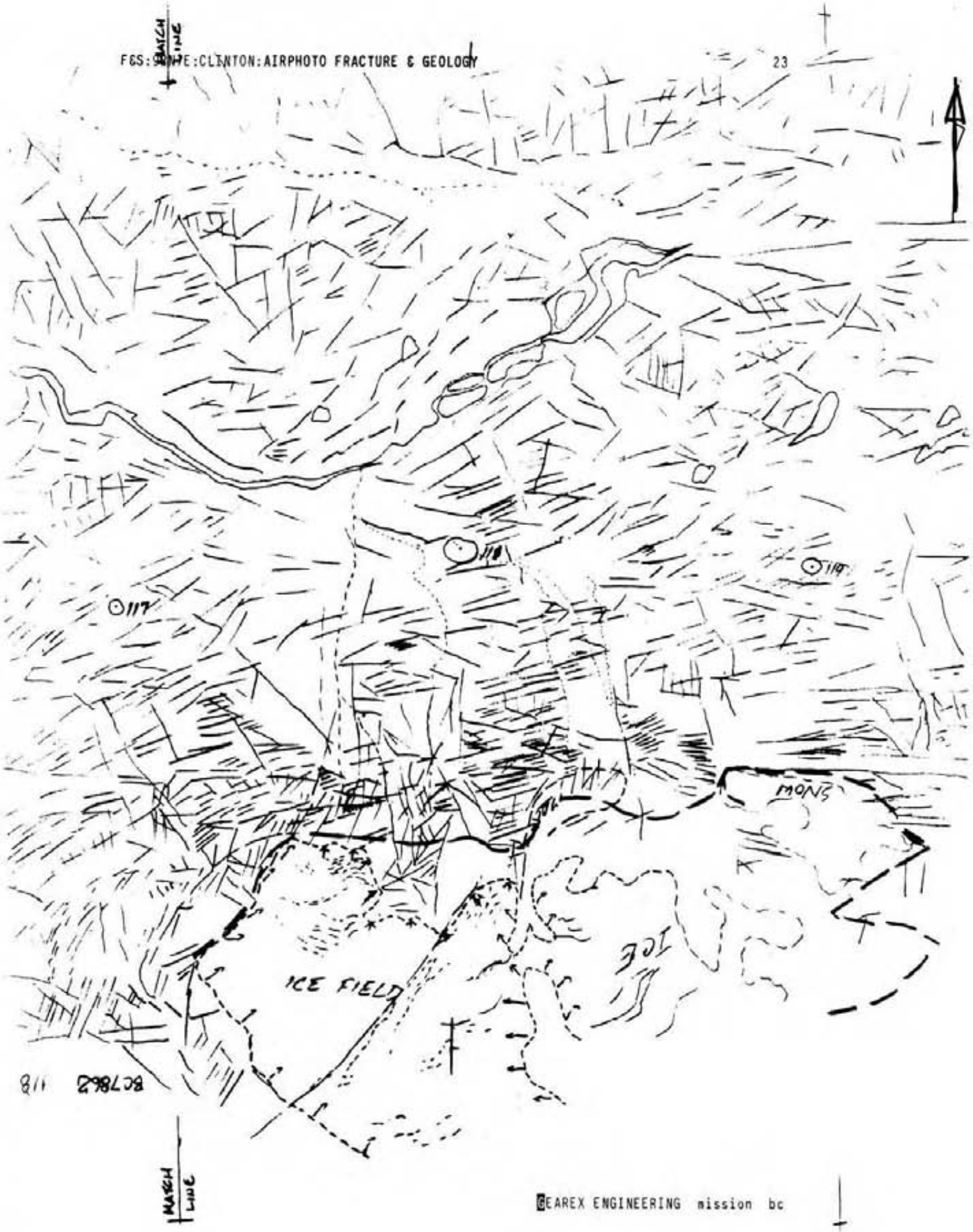
OBSERVED FRACTURE PATTERNS

F&S:92N7E:CLINTON:AIRPHOTO FRACTURE & GEOLOGY



BC7802 #116

EAREX ENGINEERING mission bc


MATCH LINE
117
118
119
MONS
ICE FIELD
ICE
BC7862 118
MATCH LINE


120
MOSTLY SNOW
BC7862 0120

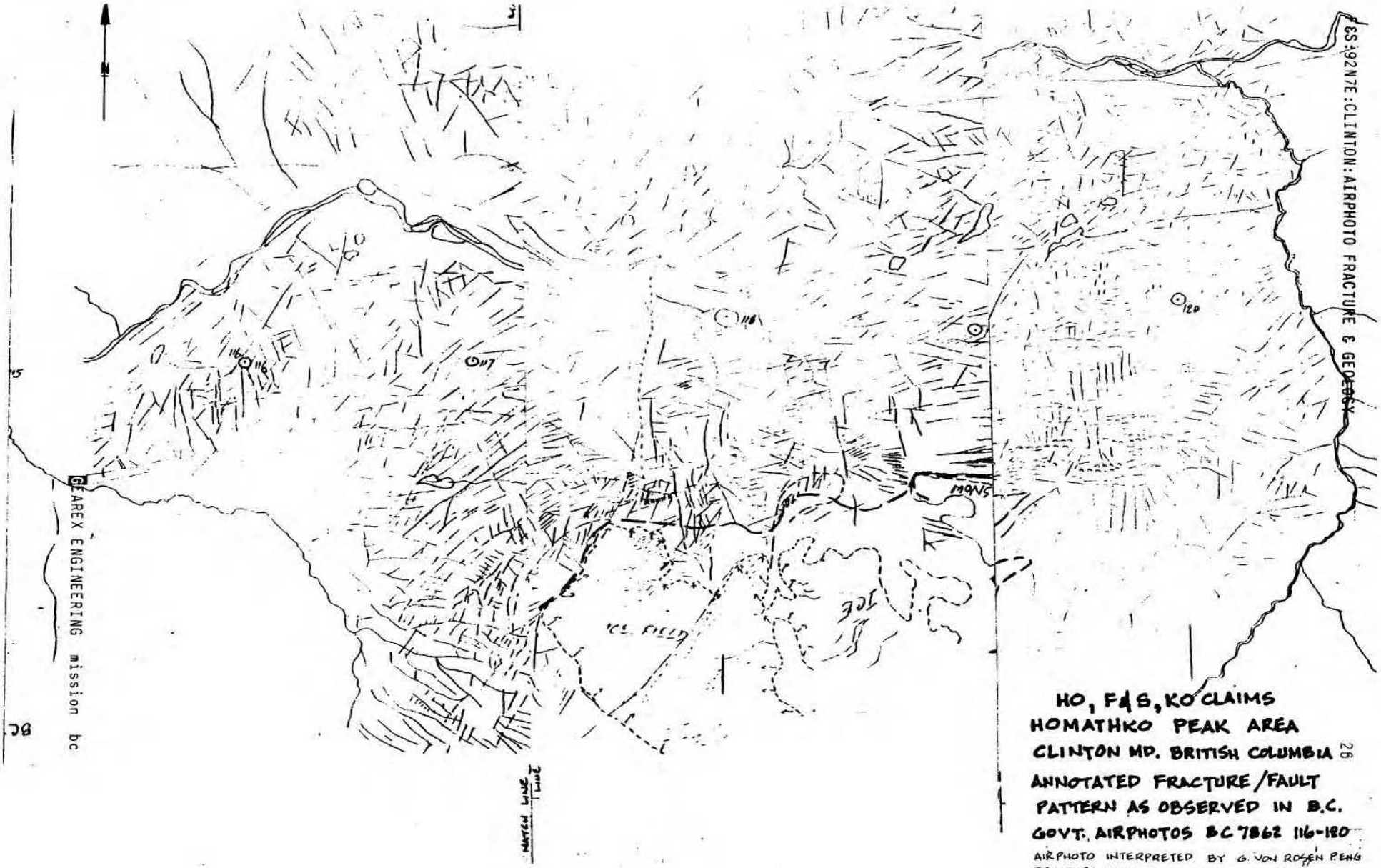
APPENDIX C

SHEET 1/4: MATCHLINE MOSAIC OF ANNOTATED OVERLAYS

SHEET 2/4: POINT COUNT PLOT

SHEET 3/4: RELATIVE DENSITY ESTIMATE

SHEET 4/4: RELATIVE DENSITY ISOGRADIENT



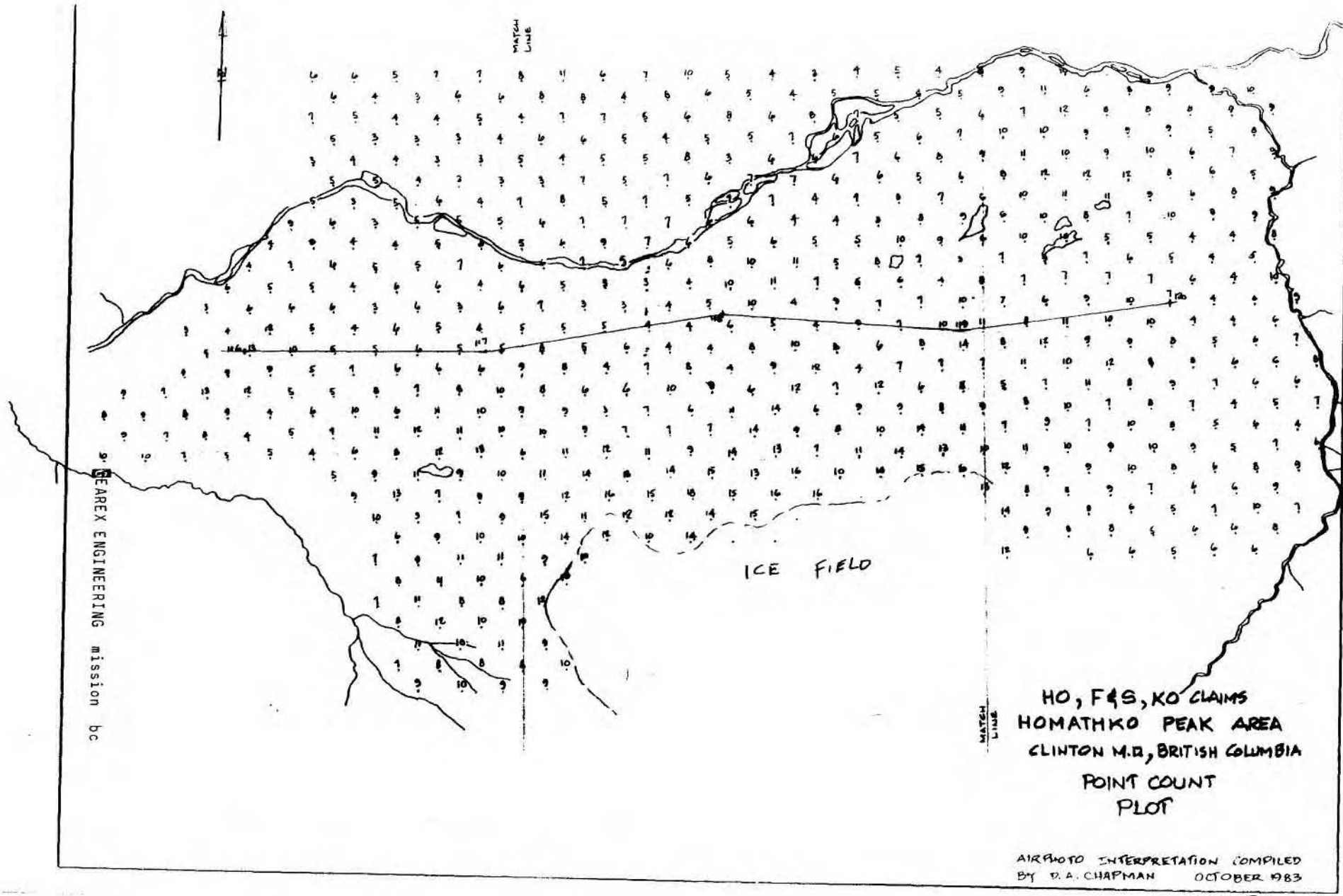
HO, F&S, KO CLAIMS
HOMATHKO PEAK AREA
CLINTON MD. BRITISH COLUMBIA
ANNOTATED FRACTURE/FAULT
PATTERN AS OBSERVED IN B.C.
GOVT. AIRPHOTOS BC 7862 116-120

AIRPHOTO INTERPRETED BY G. VON ROSEN P.ENG
FRACTURE DENSITY COMPILATION BY
D.A. CHAPMAN OCTOBER 1983

SHEET 1 OF 4

AREX ENGINEERING mission bc

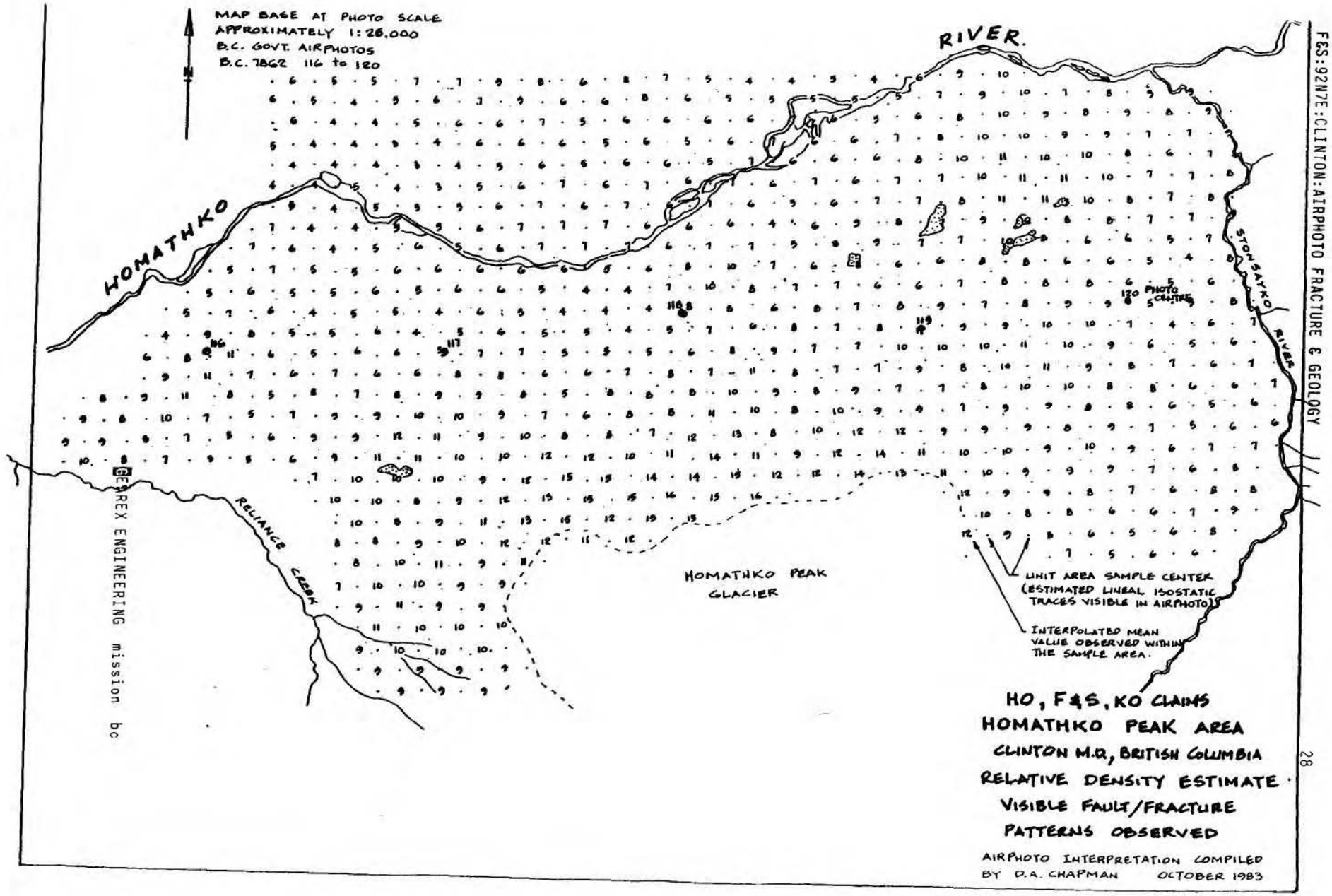
92N7E:CLINTON:AIRPHOTO FRACTURE & GEOLOGY



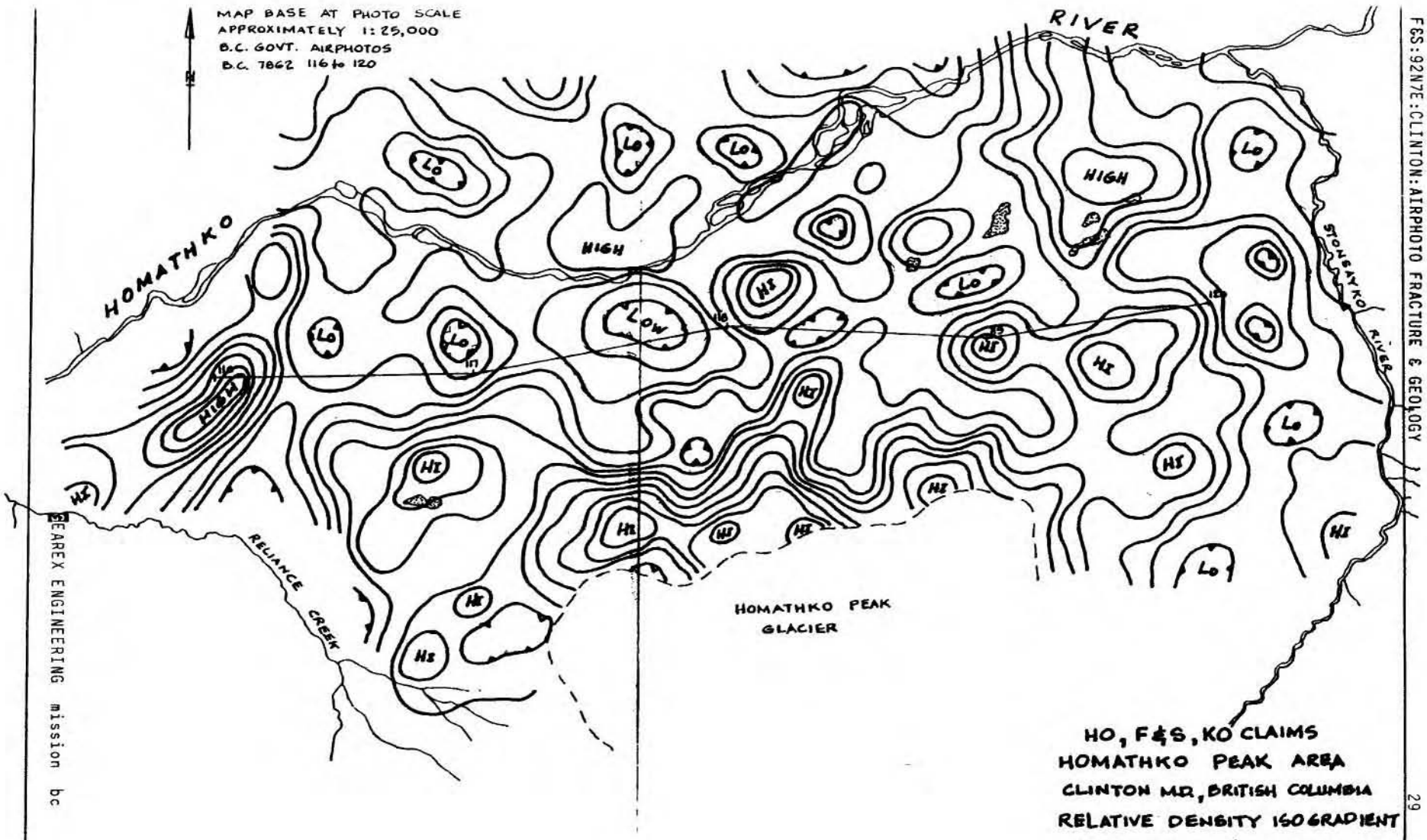
HO, F&S, KO CLAIMS
HOMATHKO PEAK AREA
CLINTON M.D., BRITISH COLUMBIA
POINT COUNT
PLOT

AIRPHOTO INTERPRETATION COMPILED
BY D. A. CHAPMAN OCTOBER 1983

SHEET 2 OF 4


MAP BASE AT PHOTO SCALE
APPROXIMATELY 1:26,000
B.C. GOVT. AIRPHOTOS
B.C. 7862 116 to 120
N
HOMATHKO
RIVER.
STONSATKO
RIVER
PHOTO CENTRE
RELIANCE CREEK
HOMATHKO PEAK
GLACIER
UNIT AREA SAMPLE CENTER
(ESTIMATED LINEAL ISOSTATIC
TRACES VISIBLE IN AIRPHOTO)
INTERPOLATED MEAN
VALUE OBSERVED WITHIN
THE SAMPLE AREA.
HO, F&S, KO CLAIMS
HOMATHKO PEAK AREA
CLINTON M.D., BRITISH COLUMBIA
RELATIVE DENSITY ESTIMATE
VISIBLE FAULT/FRACTURE
PATTERNS OBSERVED
AIRPHOTO INTERPRETATION COMPILED
BY D.A. CHAPMAN OCTOBER 1983
GEOREX ENGINEERING mission bc

SHEET 3 OF 4



APPENDIX D

CERTIFICATION

D.A. CHAPMAN

GERHARD VON ROSEN

CERTIFICATION

1. I Douglas A. Chapman, certify that I have practised the art of photogeological interpretation for mineral exploration for more than 15 years.

2. I received a Technical Diploma in 1949 from the Vancouver Technical School.

3. From 1950 to 1955 I was engaged in mapping and surveys using both ground and airborne methods; first, with the Canadian Government and, secondly, with Photographic Surveys (Western) Ltd. in Vancouver.

4. From 1955 to 1959 I was engaged by Blanchet and Associates Ltd. in Calgary, Alberta, where I practised interpretation and compilation of fracture patterns for structural studies; studies related to oil exploration.

5. From 1961 to 1964 I was engaged by Chapman, Wood and Griswold Ltd. and assisted Mr. Blanchet in the formation of their air photo department as well as carrying out studies relating to tectonics and their association to mineral deposits.

6. In 1965 I formed D.A. Chapman & Associates Ltd. to provide air photo interpretation for mining exploration and, primarily, exploration reports to assist consulting engineers in planning field programmes.

7. In 1978 I formed J.C. Explorations to provide similar services as D.A. Chapman & Associates Ltd.

Signed this 20 day of OCTOBER A.D. 1983

D.A. Chapman

QUALIFICATIONS

I, Gerhard von Rosen, reside at Mission British Columbia, at 33176 Richards Ave.

I have been practicing my profession of consulting geologist since my graduation from the University of British Columbia in 1962 with a B.Sc., and in 1966 with an M.Sc. degree in Honours Geology.

I have been involved with this kind of survey several times before, and I am qualified to compile and interpret this information.

Respectfully submitted,

Gerhard von Rosen, M.Sc., P.Eng.

December 27, 1983

ITEMIZED COST STATEMENT

Airphoto Fracture Density Analysis: D.A. Chapman	$2000
Assessment Report: Summary	$1350
Report Preparation	$250
TOTAL COSTS	$3500

AREA COVERED	Total area of survey	approximately	3400 ha
	Area of claims	approximately	500 ha