GEOCHEMICAL, GEOLOGICAL AND GEOPHYSICAL REPORT

BEANO PROPERTY

owner: Billikin Resources Inc.
4020 Sefton Street
Port Coquitlam, B.C. V3C 5B9

operator: Battle Mountain (Canada) Inc.
2910 - 390 Bay Street
Toronto, Ontario M5H 2Y2

mining division: Alberni

location: 2.5 km northeast of Zeballos, B.C.
NTS: 92E/15
latitude: 49 deg. 49 min. N
longitude: 126 deg. 48 min. 30 sec. W

authors: M.E. Caron (geologist)
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date: February 22, 1990

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SUMMARY AND CONCLUSIONS

The Beano property, located near the village of Zeballos on the west-central coast of Vancouver Island, contains a small gold-skarn which is hosted within Jurassic Bonanza Group volcanics and sediments. Actinolite-sulphide skarn is found within a thin limestone unit that is at least partially bounded by a high angle fault. Mineralization is found over a strike length of 125 metres and over a vertical range of approximately 80 metres. Widths reach a local maximum of 7 metres and grades reach a maximum of 6.049 opt Au in channel samples from trenching. The best channel sample from outcrop is 5 metres of 2.071 opt Au. A grid was established over a portion of the property for the collection of soil samples and was utilized in the collection of rock chip samples and mapping. A magnetometer survey was conducted over 1700 metres of grid line.

Rock chip and soil sample geochemistry, together with mapping and geophysics, did not outline additional targets on the Beano property. The known skarn at the old showings was more carefully defined than in the past through mapping and sampling. However, while containing impressive Au grades over narrow widths, the skarn remains of limited apparent extent. The rugged topography on the property makes further exploration of the mineralized zone difficult, if not impossible.

INTRODUCTION

1. Location and Access

The Beano property is located 2.5 km northeast of the village of Zeballos, British Columbia, at approximately 49 degrees 49 minutes north and 126 degrees 48 minutes 30 seconds west (see Figure 1). UTM coordinates for the centre of the property are approximately 5540000 north and 656750 west (zone 7).

Access to the property was gained by helicopter based in Port McNeill, Campbell River or Gold River, or by four wheel drive vehicle along a logging road from Zeballos. This rough road was passable only at low tide as it crosses a small estuary located just east of the village of Zeballos. Use was made of several helicopter landing-sites located within the area of the clear-cut logging as well as a landing site established above the old Beano showing. It was also possible to land a helicopter on the peak of Beano Mountain, as well as at various sites along ridges leading down from the peak to the northwest and to the south.

A tent camp was established near an old cabin located beside Bingo Creek at an elevation of 380 metres and a four

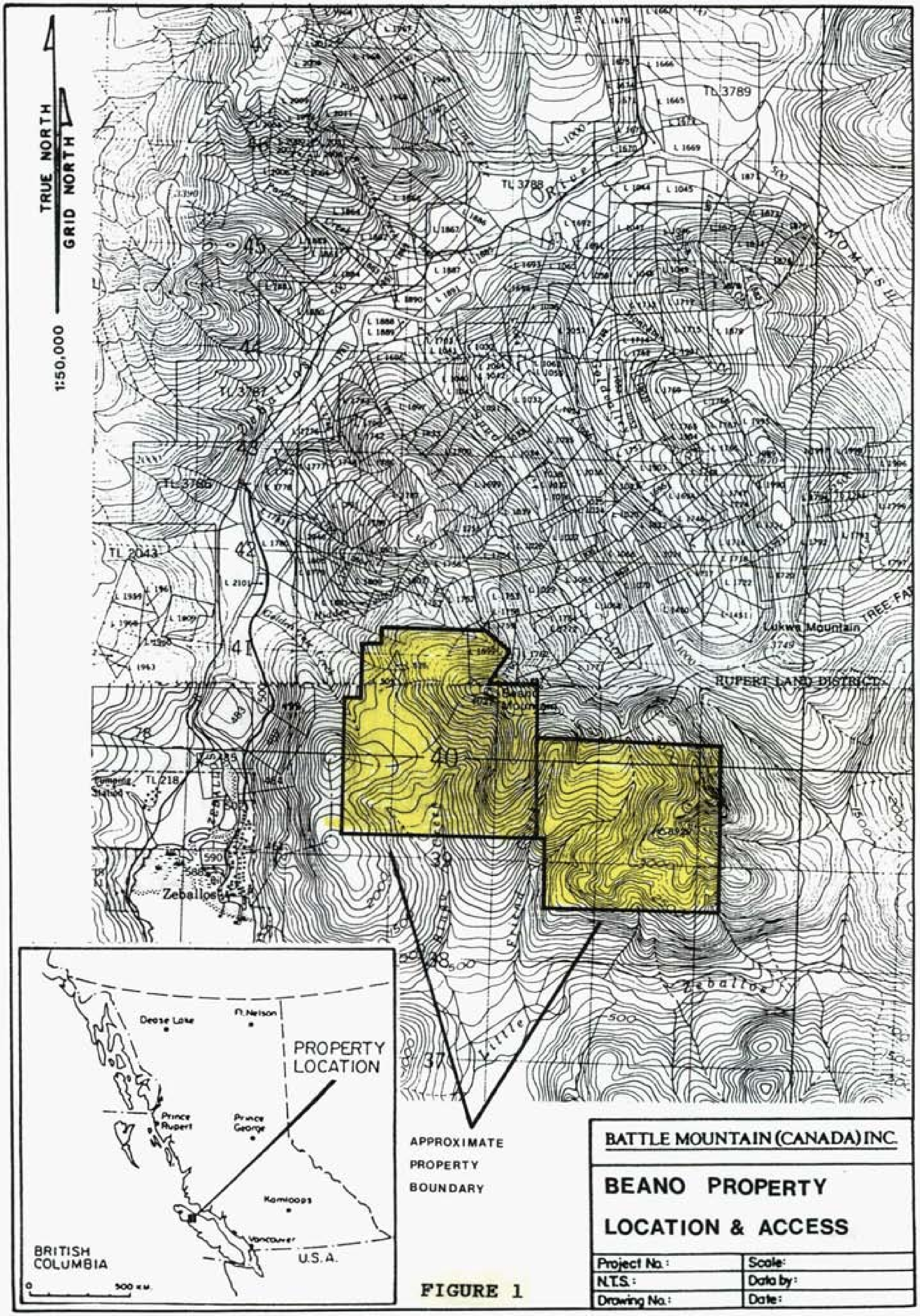

FIGURE 1

BATTLE MOUNTAIN (CANADA) INC.

BEANO PROPERTY

LOCATION & ACCESS

Project No.:	Scale:
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Drawing No.:	Date:

wheel drive truck was used to move men and material along the old logging road to an elevation of approximately 500 metres. A trail was established from this point to an elevation of approximately 800 metres near the old Beano workings.

2. Physiography

The property is steep and rugged, and the most actively explored area consists of slopes in excess of 40 degrees. Elevations range from less than 300 metres along the southern property boundary to 1227 metres at the peak of Beano Mountain in the northwest portion of the property. Two south-draining streams cross the property, Bingo Creek and Friend Creek. Both drain into the Little Zeballos River approximately 1.5 kilometres south of the property boundary. These streams are locally deeply incised; Bingo Creek, in particular, has cut a channel with near-vertical walls that locally are up to 100 metres high.

Approximately 50% of the property is covered in virgin forest consisting primarily of mature Douglas fir. The remainder of the property has been logged at various times during the past 15 years; the logged over areas are variably vegetated with second growth fir and alder.

3. Land Status

The Beano property consists of five modified metric grid (MGS) claims containing a total of 25 units, as follows (also see Drawing 2):

claim name:	record #:	units:	expiry date:
Beano	321	6	11-28-99
Beano 2	1437	6	5-7-99
Beano 3	1650	9	3-7-99
Beano 4	1651	2	3-7-99
Beano 5	1652	2	3-7-99

These claims are all owned by Billikin Resources Inc., 4020 Sefton Street, Port Coquitlam, B.C., V3C 5B9. Work done on the property was carried out under the terms of an option agreement between Billikin and Battle Mountain (Canada) Inc., 2910-390 Bay Street, Toronto, Ontario, M5H 2Y2 under which Battle Mountain was the operator. This work was managed from the Vancouver offices of Battle Mountain (Canada) Inc. at 630-1199 West Pender, Vancouver, B.C., V6E 2R1. The above noted option agreement between Billikin and Battle Mountain was terminated on November 30, 1989.

4. History

A brief summary of the exploration history of the Beano property is as follows:

1924: Exploration for gold began in the Zeballos area.

1936-37: Part of the property first staked by A. Stewart and A. Trout - Friend Creek showings staked by Messrs. Stewart, Smith and McDonald.

1938: Property optioned to Trout and H. Davis, subsequently re-optioned to A. Freake and Assoc. of Toronto who constructed a trail from Zeballos, built cabins and did surface stripping. Friend Creek prospect optioned to Pioneer Gold Mines.

1939: Beano property relinquished to Victory Mining Syndicate of Seattle, later reorganized as Victory Mining Co., who built 4 miles of road and erected ore bunkers.

1940: Pioneer ceased work on the Friend property.

1946: Adit driven on Friend property by Sinclair Clayton and Assoc.

1945-46: 3000 ft. aerial tram built to upper Beano workings.
Production in this period is reported as 21 tonnes of high grade ore from which 3297 grams of Au, 1400 grams of Ag and 33 kilograms of Cu were recovered. This minor production was from shallow open cuts and small adits in the wall of Bingo Creek (see Figure 3).

1947-48: Prospecting on Beano property carried out by Mr. Davies.

1948-50: Inspection of prospects by Stevenson (BCDM Bull. 27).

1972: Property inspection by F.L.C. Price for New Taku Mines Ltd.

1973: Property optioned to Canadian Superior Expl. Ltd. - reconnaissance geology, geochemistry, claim staking.

1974: Geology, geophysics and geochemistry by Ivor Watson and Manex Mining Ltd. for Canadian Superior. Discovery of two Au-Hg geochemical anomalies.

1982: Staking of lapsed ground by M. Cloutier for Billikin Resources Inc.

1983: Winkie diamond drilling at upper Beano showings by Billikin.

1984: VLF-EM survey over one Au-Hg anomaly by Billikin.

5. 1989 Work Program

Work performed on the Beano property during the 1989 field season was intended to evaluate the gold-skarn potential of the property. This work consisted of the following elements:

1. Production of photogrammetric base maps by McElhanney Geosurveys Ltd., 200-1166 Alberni Street, Vancouver, B.C., V6E 3Z3. These are at scales of both 1:2500 and 1:5000, with contours at 10 metre intervals at both scales.

2. Grid work consisted of 6650 metres. The base lines were cut, picketed and slope corrected, whereas the cross lines were only picketed and slope corrected. This work was carried out by a three man crew under contract to Bill Chase and Associates, 407 West 16th Avenue, Vancouver, B.C., V5Y 1Z2.

3. 347 soil samples were collected from the grid (see Drawing 4). These were shipped to Bondar Clegg and Co. Ltd., 150 Pemberton Avenue, North Vancouver, B.C., V7P 2R5 for analysis for Au, Ag, As, Bi, Co, Cu, Mo, Pb, Zn and W. Au was analyzed by atomic absorption with a fire assay finish utilizing a 30 gram sample and all other elements were analyzed using inductively coupled plasma (see Appendix 1).

4. Accessible portions of the property were mapped at a scale of 1:2500, during which 65 rock chip samples were collected (see Drawing 3). These were subsequently analyzed by Bondar Clegg for the same suite of elements as the soil samples utilizing the same analytical methods.

5. Nine hand dug and blasted trenches, with a combined length of 127.5 metres, were opened and cleaned (see Figure 5). These trenches averaged 1 metre in width and approximately 1 metre in depth as hillside benches. 91 channel samples averaging 1 metre in length were

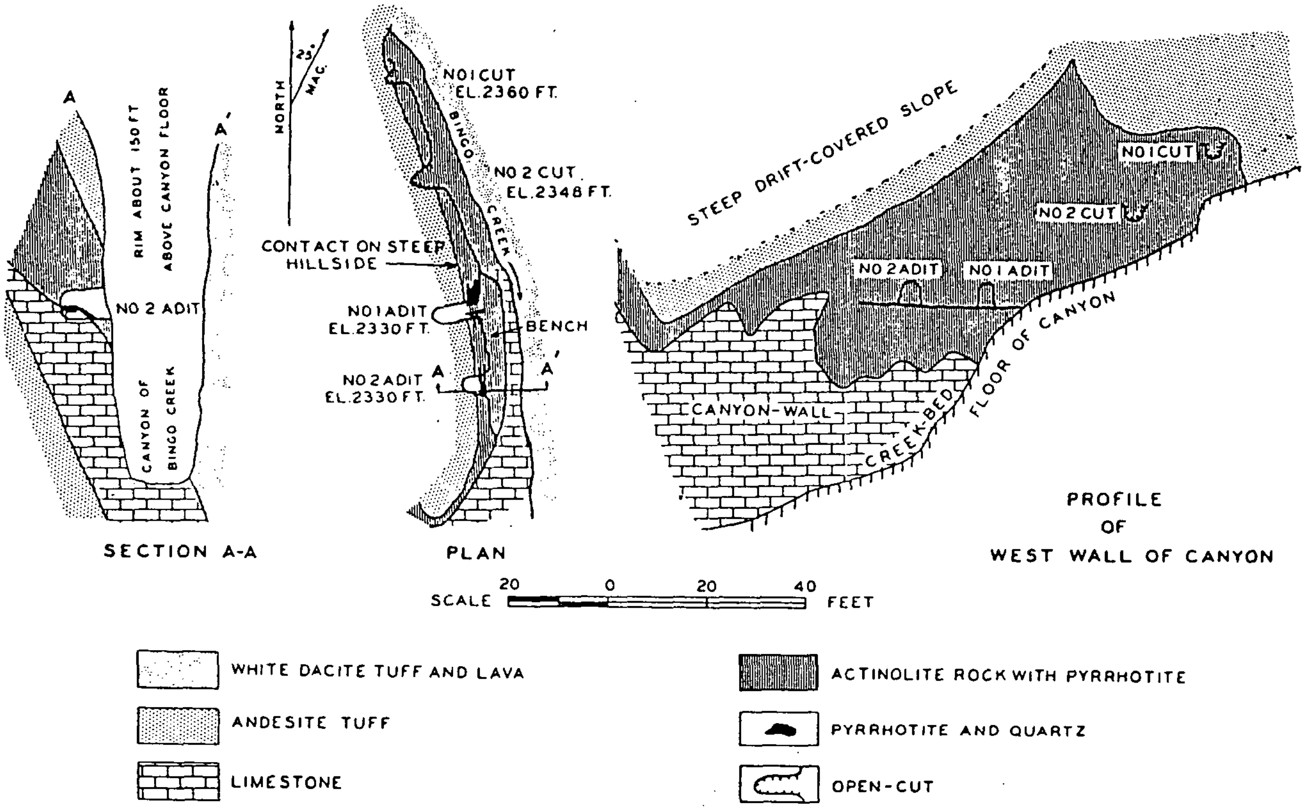


Fig. 40. Beano: Plan, cross-section, and profile of lower or canyon workings.

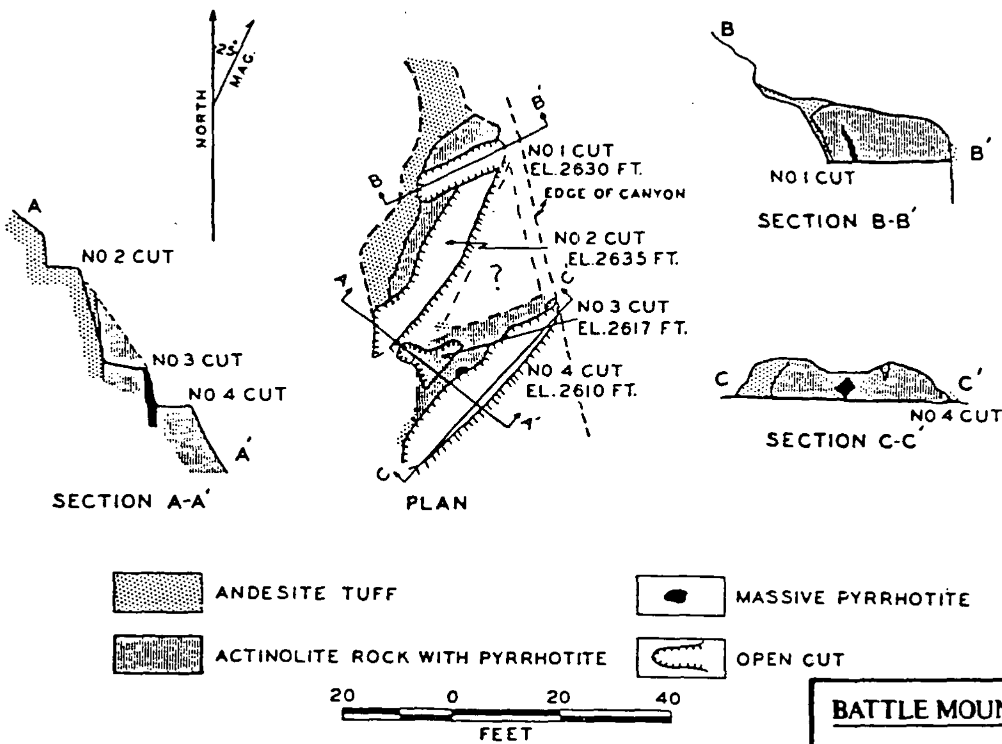


Fig. 41. Beano: Plan and sections of upper workings.

FIGURE 3

BATTLE MOUNTAIN (CANADA) INC.	
BEANO PROJECT 1940's EXPLORATION AFTER J. S. STEVENSON, 1950	
Project No.: 75-95	Scale: As shown
N.T.S.: 92-E/15	Data by:
Drawing No.:	Date: SEP. '89

collected and were shipped to Bondar Clegg for analysis for the same suite of elements as above using the same analytical techniques.

6. A magnetometer survey was carried out over 1700 metres of the established grid utilizing a 1 gamma-sensitivity proton magnetometer with multiple reading of a base station to correct for diurnal drift.

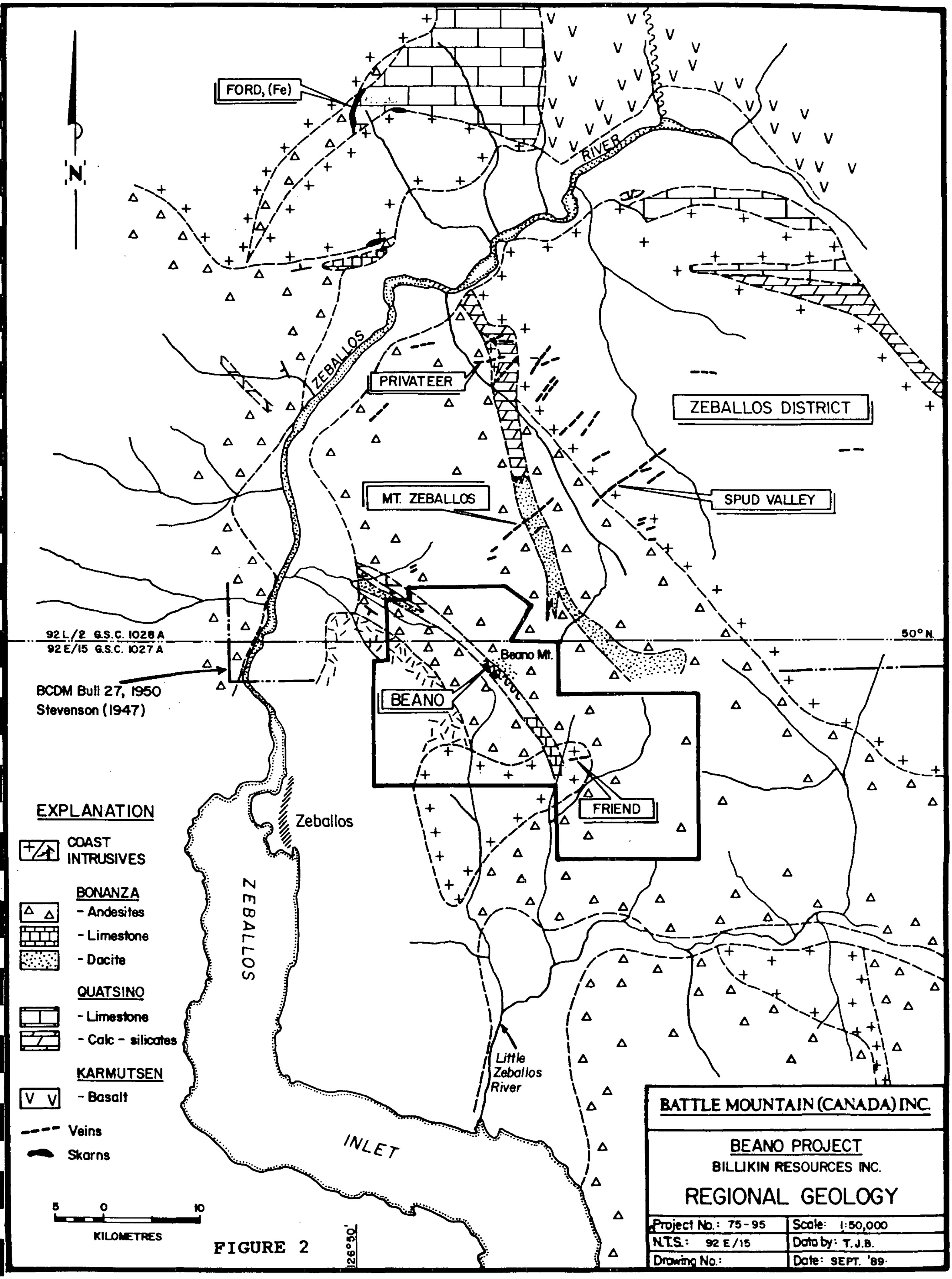
REGIONAL GEOLOGY

Units exposed in the Zeballos area form a northwest-trending, southwest-dipping monoclinal sequence of Mesozoic volcanics and sediments intruded by Jurassic and Eocene intrusives (see Figure 2). From bottom to top, the stratigraphic order consists of the Karmutsen, Quatsino and Parson Bay Formations of the Middle to Late Triassic Vancouver Group, overlain in turn by the Early Jurassic Bonanza Group. All units are locally intruded by Jurassic Island Intrusions (possibly coeval with the Bonanza Group), as well as Eocene Catface Intrusions.

The Karmutsen Formation consists primarily of tholeiitic basalts up to 6000 metres thick. The formation is divided into a lower member of pillowed flows, a middle member of pillow breccias and aquagene tuffs, and an upper member of amygdaloidal flows with minor intercalated limy argillites. Minor shaly interbeds are common throughout. This formation outcrops northeast of the Beano property on the east side of the Nomash River.

The Quatsino Formation conformably overlies basalts of the Karmutsen Formation. This formation is up to 1200 metres thick and consists of thickly bedded, grey to white, micritic limestone at the base grading upward into thinly and thickly bedded, grey to black, fossiliferous, micritic limestone. Interbedded thin mafic flows or sills are found intercalated with limestone throughout the section. In the Zeballos area, the Quatsino Formation is found in a thin northwest trending wedge on the southwest side of the Nomash River.

The Parson Bay Formation conformably overlies and grades into the underlying Quatsino limestones. The formation is up to 500 metres in thickness and consists primarily of calcareous clastic sediments. The Parson Bay Formation can be divided into a lower member consisting of thinly bedded silty and arenaceous limestone, a lower-middle member consisting primarily of limestone and silty limestone, an upper-middle member consisting primarily of calcarenite and an upper member consisting primarily of coralline reef limestone. The Parson Bay Formation does not crop out in the Zeballos area.



N
FORD, (Fe)
RIVER
ZEBALLOS
PRIVATEER
ZEBALLOS DISTRICT
MT. ZEBALLOS
SPUD VALLEY
92 L/2 G.S.C. 1028 A
92 E/15 G.S.C. 1027 A
50° N.
Beano Mt.
BEANO
BCDM Bull 27, 1950
Stevenson (1947)
FRIEND
Zeballos
ZEBALLOS
Little Zeballos River
INLET
EXPLANATION
COAST INTRUSIVES
BONANZA
- Andesites
- Limestone
- Dacite
QUATSINO
- Limestone
- Calc - silicates
KARMUTSEN
- Basalt
Veins
Skarns
5 0 10
KILOMETRES
126°30'
BATTLE MOUNTAIN (CANADA) INC.
BEANO PROJECT
BILLIKIN RESOURCES INC.
REGIONAL GEOLOGY
Project No.: 75-95
Scale: 1:50,000
N.T.S.: 92 E/15
Data by: T.J.B.
Drawing No.:
Date: SEPT. '89

FIGURE 2

The Bonanza Group is a volcanic island-arc assemblage that is locally up to 2000 metres thick on northern Vancouver Island and conformably overlies Vancouver Group volcanics and calcareous sediments. It exhibits significant lateral and vertical variation in lithology, consisting of interdigitated volcanic and minor sedimentary rocks. The volcanics consist of lavas, breccias and tuffs as basalt, andesite, dacite and rhyolite, and are mostly tholeiitic in composition. The relatively minor sedimentary component consists of shale, sandstone and pebble conglomerate, and is marine in origin.

Both Vancouver Group and Bonanza Group rocks are cut by the Island Intrusions of Jurassic age. These extensive intrusives are considered by some to be co-genetic with the volcanics found within the Bonanza Group (Muller et al., 1981). Compositionally, the Island Intrusions are dominantly granites and granodiorites, although quartz monzonites, monzodiorites, tonalites and quartz diorites are locally present. Stocks belonging to the Island Intrusions are located north and west of the Beano prospect.

Small intrusive stocks of Eocene age known as the Catface Intrusions are also found in the Zeballos area. These intrusives are found along a southwest - northeast trend with the Zeballos Stock, located northeast of the Beano prospect, toward the northern end of the trend. Compositionally, the Catface Intrusions are primarily granodiorites and tonalites, although granites are locally present. K-Ar age determinations for intrusives belonging to this suite range from 32.5 to 48 Ma (late Eocene to early Oligocene age). It is inferred that the Catface Intrusions are related to differentiation of late phase basaltic magmas, most likely the source of the Eocene Metchosin basalts and the Sooke Gabbro, both present on southern Vancouver Island.

PROPERTY GEOLOGY

Most of the rocks exposed on the Beano property are volcanics and minor sedimentary rocks belonging to the Bonanza Group. These rocks are locally intruded by dioritic rocks thought to be correlative to the Island Intrusions as well as by monzonitic rocks belonging to the Catface Intrusions (see Drawing 1).

1. Stratigraphic Units

The following stratigraphic units have been identified in the map area:

| 4 | andesites - pyroclastics with minor flows

| 3 | dacites - pyroclastics and minor flows

| 2 | rhyolites - pyroclastic interbed within unit 3

| 1 | sediments - limestones and argillites

Sediments that may belong to Unit 1 are found in two locations: near Bingo Creek in the vicinity of the old showings; and forming the core of the anticline seen near Friend Creek.

Sedimentary rocks seen near Bingo Creek consist of coarsely crystalline marble and limestone with lesser argillite. These rocks generally strike 010 degrees and dip steeply (67 to 82 degrees) to the northeast. Limestones and marbles in this location are locally replaced by massive, dark green, coarse-grained actinolite skarn containing auriferous pyrrhotite. The sedimentary unit pinches out (or is possibly faulted out) 150 metres to the northwest of the Beano showings. This unit is mapped an additional 300 metres to the south where it has an apparent thickness of about 60 metres. Unit 1 was not mapped beyond this point because of rugged terrain. It is in fault contact along the footwall with dacites of Unit 3. The hangingwall contact with andesites of unit 4 is poorly exposed but generally appears to be conformable.

The sediments exposed in the Bingo Creek area may not be correlative with limestones and argillites seen in the anticline core near Friend Creek as it is possible that these sediments represent a sedimentary interbed within the andesites of Unit 4.

Where Unit 1 outcrops in the Friend Creek area, it consists of hard cherty black argillite, softer, limy, grey to black argillite and grey, micritic limestone. This unit forms the core of the above noted anticline and is overlain by dacites of Unit 3. The base of the sedimentary section in the Friend Creek area is not exposed.

Dacitic volcanics of Unit 3 are primarily massive to thinly bedded, feldspar-crystal-ash and lapilli tuffs. These tuffs are light grey-green in colour and contain minor interbeds (particularly near the bottom of the sequence) of calcite-chlorite rich amygdaloidal flows as well as fiamme-rich intervals.

A thick interbed of several tens of metres of rhyolitic tuffs is found near the base of the dacitic rocks of Unit

3. This unit (Unit 2) has been differentiated from dacites of Unit 3 in the Friend Creek area but similar rocks found northeast of the Beano showings have not been differentiated due to insufficient outcrop control reflecting the steep relief and difficult access. The rhyolites are dominated by white to grey feldspar crystal ash and lapilli tuffs. Feldspar crystals are commonly broken and subrounded and are supported by a fine grained matrix. Contacts between rhyolites and dacites appear to be conformable.

Andesites of Unit 4 form the most extensive mappable unit on the property. These rocks, which conformably overly dacites of Unit 3, are generally light to dark green in colour and consist of massive, feldspar hornblende ash and lapilli tuffs with minor black, aphanitic (basaltic ?) flows. Bedding within Unit 4 is difficult to ascertain due to the massive nature of the unit. However, possible bedding within the andesites 300 metres west of the Beano showings is 280 degrees with a north 66 degree dip.

2. Intrusive Rocks

Two intrusive units are found on the Beano property. The first of these, found as a substantial stock in the western portion of the property, is a massive feldspar-hornblende diorite that is part of the Jurassic Island Intrusions. Several small satellite bodies of diorite also outcrop within dacites of Unit 3 and the andesites of Unit 4 on the east side of Bingo Creek. In addition, numerous mafic dykes cut volcanics of Unit 4 west of Bingo Creek where they are in close proximity to the larger stock.

The second intrusive found on the Beano property is a massive, medium grained, equigranular monzonite thought to be part of the Zeballos Stock. This unit is exposed largely to the east of the property and is one of the Catface Intrusions of Eocene age. Two narrow monzonite dykes are seen within dacites of Unit 3 near the headwaters of Bingo Creek. A folded sill or dyke of monzonite is injected into the contact between dacites of Unit 3 and rhyolites of Unit 2. The monzonite in this location is 5 to 10 metres in thickness. It is uncertain whether the dyke is in fact folded or if it has been injected into or along a previously folded contact between dacites and rhyolites.

3. Structure

Many of the structural elements seen on the property are related to block faulting. North to northeast-trending, steeply-dipping to vertical faults, such as those controlling the drainages of Bingo and Friend Creeks, are complemented by northwest-trending, steeply northeast-dipping faults. An example of this latter fault set can be seen near the old workings in Bingo Creek. An asymmetric anticlinal fold is mapped west of Friend Creek on the Beano 4 claim. This anticline has a warped axial trace that trends approximately 305 degrees and may have a northerly plunge. This fold becomes obscured to the northwest in thick andesite pyroclastics. Jointing is only well developed in andesites of Unit 4; and generally strikes from 350 to 10 degrees and dips from 60 to 80 degrees to the southeast.

ALTERATION AND MINERALIZATION

1. Alteration

Alteration on the Beano property consists of extensive propylitization of Bonanza Group andesites. This propylitization is represented by strong chloritization with lesser epidote and local fine calcite veining. The more felsic rocks, such as dacites and rhyolites, are only weakly altered, whilst intrusives are characterized by local and minor chloritization of mafic minerals. The sediments (Unit 1) are locally quite strongly altered. Argillites are hornfelsed, particularly in the Bingo Creek area where both biotite and diopside hornfels are found in float and in outcrops of argillite. Limestones in the Bingo Creek area are locally altered to actinolite-sulphide skarn or are locally recrystallized to coarse white marble. Sediments in the Friend Creek area are generally unaltered.

2. Mineralization

Mineralization at the Beano property consists primarily of sulphides found within skarn at the old Beano showings near Bingo Creek. Mineralization over a vertical extent of 70 or 80 metres is seen along the very steep cliff forming the west wall of the stream. Most of the work in the old showings was carried out near the top of the cliff where mineralized skarn is found as thin, discontinuous rinds. In this area, mineralized skarn remnants do not exceed 2 metres in thickness. The thickest skarn exposure is seen at the base of the cliffs adjacent to Bingo Creek where a mineralized skarn up to 7 metres thick appears to be fault-bounded by a major high angle fault. Skarn at this location, which shows evidence of past prospecting, (as reported in Stevenson ((1950)), has a strike length of approximately 125 metres and dips steeply to the east at approximately 80 degrees. Exposures along the west side of Bingo Creek consist of patchy actinolite-sulphide skarn developed in limestone protolith. The skarn is locally cut by narrow (<1 cm) stringers of late pyrite, particularly close to the major fault. The mineralized skarn thins markedly to both the north and to the south. Grades within the actinolite-sulphide skarn are quite variable but the best intersection sampled at the base of the cliff near Bingo Creek contained 1.383 opt Au over a width of 7.5 metres (including 2.071 opt Au over 5.0 metres). Similar grades were achieved over smaller intervals elsewhere in the exposed mineralized skarn (see Figure 4).

Mineralization in the Friend Creek area was not examined in great detail during the course of this field program but appears to consist largely of widely spaced narrow quartz veins cutting limestones, argillites and dacite tuffs of Unit 1 and Unit 3. The veins may be related to a north-trending shear zone or fault zone characterized by abundant chlorite alteration and more localized silicification. Vein-hosted mineralization consists of stringers and pods of pyrite, arsenopyrite and pyrrhotite. Grades reported from past work range up to 90.8 ppm Au and 37.4 ppm Ag (Geological Survey of Canada Memoir 272, p. 54).

GEOPHYSICS

1. Magnetometer Survey

A magnetometer survey was carried over a portion of the property on the grid lines. This survey utilized a Scintrex MP-2 proton magnetometer with a sensitivity of 1 gamma. The survey was carried out over 1700 metres of grid line. Insufficient data was collected to characterise geologic or mineralogic features of the property other than to indicate that a significant magnetic high exists in the northwest corner of the property near the contact between andesites of Unit 4 and quartz diorite belonging to the Island Intrusions. As well, localized magnetic highs near the old Beano showings appear to be related to the presence of abundant pyrrhotite (see Drawing 5).

GEOCHEMISTRY

1. Summary

A geochemical evaluation of the Beano Mountain property comprising 347 soil samples and 156 rock chip samples has identified a variable Pb-As-Cu-Co-Bi-Mo-Ag association with

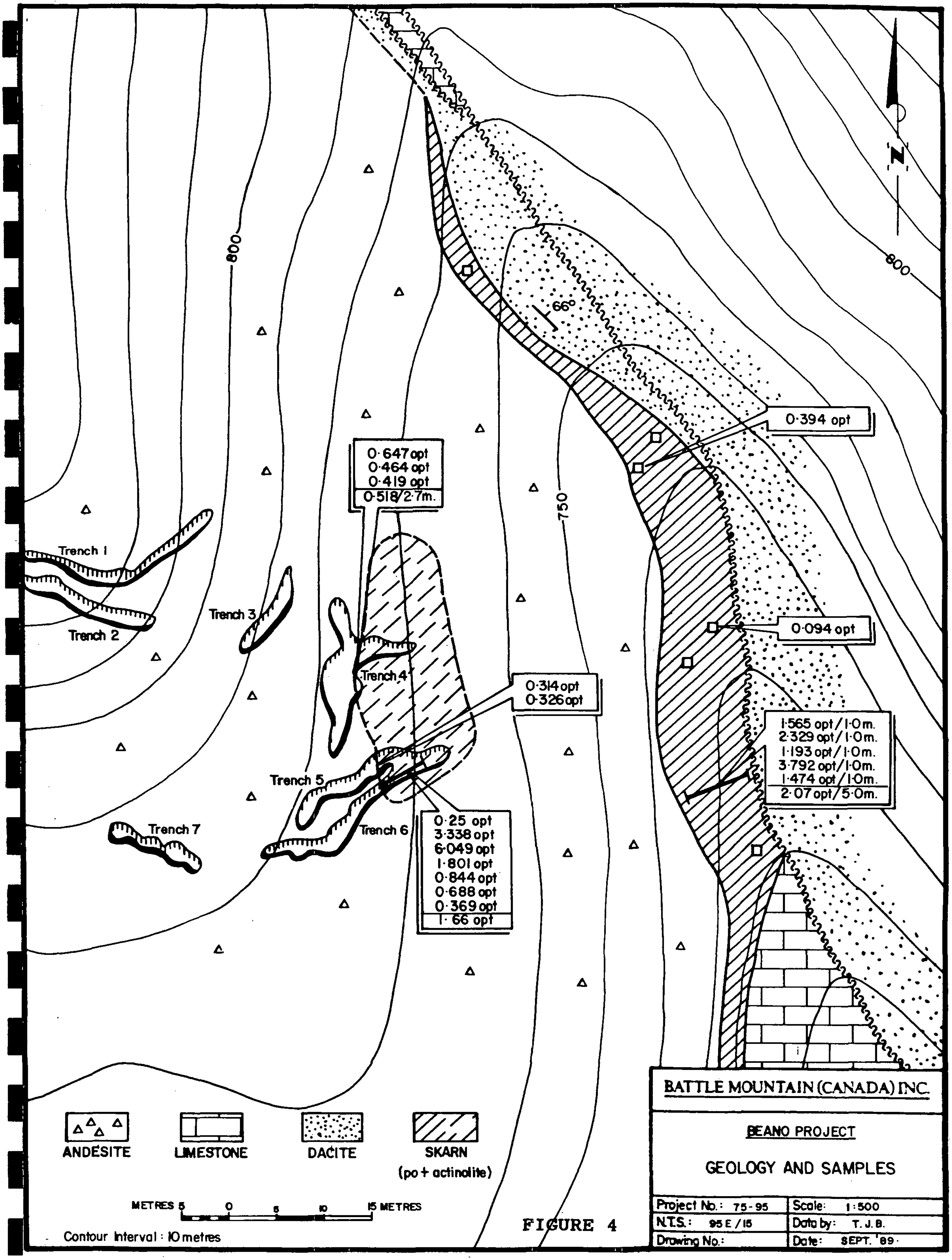


FIGURE 4

BATTLE MOUNTAIN (CANADA) INC.

BEANO PROJECT

GEOLOGY AND SAMPLES

Project No.: 75-95	Scale: 1:500
N.T.S.: 95 E/15	Data by: T. J. B.
Drawing No.:	Date: SEPT. '89

Au. Although Au grades can be appreciable, mineralized bedrock has a limited areal extent and potential pathfinder element anomalies do not extend zones in a demonstrable way for great distances. Followup involving more trenching and/or diamond drilling is needed.

The soil survey defines Cu and Mo to be the best pathfinders for Au, in part because As & Pb data are currently faulty. Contamination and alluvial transport of metal from source areas down steep slopes has likely dispersed the Au and created false anomalies. The best potential lies in extending the known Au zone northward and southward by continuing the existing grid in these directions. Continued work is recommended.

2. Introduction

A total of 347 soil samples were collected (Drawing 4) along a grid established at a 25 X 50 m density. Samples were taken at a 25 m X 25 m density locally and followup comprising sampling at a 5 m interval was undertaken near existing trenches and workings. Soil geochemical maps in two mapsheets are found in Appendix A.

A total of 156 rock chip samples were taken (Drawing 3 and Figure 5). Chip samples were collected regionally where bedrock was altered, quartz veined or appeared otherwise mineralized. Geochemical maps are found plotted on three mapsheets in Appendix B. Existing trenches were sampled in detail (Figure 5). Maps are found in Appendix C.

3. Method of Data Evaluation

Soil data and lithogeochemical data were evaluated separately (Figures 13 and 14). Histograms were drawn and evaluated following methods described in Appendix F to arrive at a coding methodology for the symbolized plots of Appendices A, B & C. All rock chip data were evaluated at one time. Several elements (i.e. Zn) show the effect of this approach being much higher on average than on average on one map type (i.e. for Zn on the trench map) than on the other map type. Nevertheless, this method of evaluation has provided a suitable vehicle for interpreting the limited volumes of data available here.

4. Description of Results

A. Soils (Appendix A)

a) Gold

Background Au concentrations are defined as less than about 40 ppb. This permits definition of a series of Au anomalies along the southwest facing slope of Bingo Creek in the west and along the west side of an eastern tributary of Bingo Creek. Anomalous zones exceed 40 ppb Au to maxima in excess of 250 ppb in elongated regions up to 300 m long, the most prominent of which is the known Beano Prospect. Other anomalous zones lie down drainage or along the tramline, suggesting creek erosion and/or contamination. Underlying geology is andesite. By contrast, in the southeast limited sampling has identified a series of weak Au anomalies underlain by dacitic volcanics.

b) Arsenic

The As distribution is distinctly bimodal. The reason for this bimodality appears to be analytical error.

c) Bismuth

Bi values essentially are all at detection limits.

d) Molybdenum

Two anomalies are defined, one a three point feature in the extreme north, and the other a weak zone of enhancement around the base of the tramline. Anomaly dimensions are in the order of 100 m. Known showings are not particularly Mo-rich.

e) Tungsten

Two samples contain detectable W. They are located in the same general regions as are the Mo anomalies.

f) Copper

Cu enrichment typifies areas underlain by andesite. The distribution resembles that of Au, although it is not the same is detail. The Beano Prospect area is Cu-rich, as is the northern Mo anomaly. The mouth of the drainage feature southwest of the northern Mo anomaly is also Cu-rich, suggesting stream dispersion. Cu anomalies following stretches of grid lines suggest a sampling or analytical peculiarity.

g) Lead

The Pb distribution is bimodal, suggesting analytical problems.

h) Silver

With the exception of 2 isolated samples containing in excess of 0.9 ppm Ag, all Ag values are at detection limits.

i) Zinc

The andesites are associated with the highest Zn backgrounds of 60 to 135 ppm. Some anomalous values are found with the northern Mo anomaly, the known Beano Prospect, and the mouth of the stream draining the Mo anomaly. Many high values are along the southwest facing slope of Bingo Creek. Often these follow lines, suggesting sampling or analytical factors.

j) Cobalt

Co is not associated with the known Au occurrence. The most homogeneous Co anomaly is at the mouth of the stream draining the northern Mo anomaly and within the large Zn-rich region.

B. Rock Chips (Appendix B)

a) Gold

Au contents are highest associated with faults and rhyolite at the known Beano Au occurrence and to the southeast along strike. In areas remote from the known Au showings, Au contents can be as high as 400 ppb. Sampling is too limited to assess the merits of these isolated values.

b) Arsenic

Anomalous Au contents are typically accompanied by anomalous As values, in the 80 to 500 ppm range. Sampling is too limited to determine unequivocally the existence of a pathfinder relationship to Au, but such a relationship appears to exist around the area of the known Beano Au showing.

c) Bismuth

Known Au anomalies are commonly Bi-rich, particularly at the main Beano Au showing. It is uncertain how the differences in the distribution of Bi versus Au can be used to exploration advantage.

d) Molybdenum

Anomalous levels of Mo, greater than 10 ppm, typically follow the structure containing the Beano Prospect. Other Au-rich samples are only weakly Mo enriched.

e) Tungsten

Only one W value exceeds detection limits of 10 ppm.

f) Copper

Cu follows Mo. Maximum Cu contents at the Beano Prospect are 2500 to 3500 ppm. Many of the samples anomalous in Au are Cu-rich.

g) Lead

Pb concentrations are generally less than 25 ppm, except in two areas around the Beano occurrence.

h) Silver

Ag values are not very high for rock chip data, maximum values at the known Beano Au occurrence are only 2.5 ppm. Elsewhere, Ag values are at detection limits.

i) Zinc

Zn contents in regional rock chips are generally low at less than 75 ppm. Anomalous levels are seen around but not at the known Au showing, with a 5100 ppm value in the north. Two samples containing just over 200 ppm Zn are found in the south.

j) Cobalt

Co levels in anomalous Au samples are regionally outstanding at over 100 ppm. The known Beano showing and its structure are reflected by the most homogeneous Co anomaly.

C. Trench Lithogeochemistry (Appendix C)

a) Gold

A major anomaly is defined along the eastern limit of sampling, associated with rhyolitic rocks. The zone is 10 m wide and up to 15 m long, open to the south. Maximum values often exceed 10000 ppb Au.

b) Arsenic

By contrast to Au, As values are low at less than 7 ppm, with perhaps a 7 to 15 ppm halo adjacent to the Au zone. A sedimentary unit in the north is As-rich.

c) Bismuth

Bi is enriched to exceptional levels in association with Au only when the host rock is unit 2a rhyolite (see legend for Drawing 1). Otherwise, Bi follows patterns described for As.

d) Molybdenum

Elevated backgrounds of Mo characterize portions of trenches remote from the Au anomaly.

e) Tungsten

All values are at detection limits.

f) Copper

Cu forms a smaller anomalous zone in association with Au. The Cu distribution appears controlled by underlying rock type.

g) Lead

A major Pb anomaly is associated with the Au anomaly and extends at least 2.5 m beyond the limits of the Au zone. Maximum Pb contents are in the 100 to 500 ppm range. Pb is also able to map geology remote from the Au anomaly.

h) Silver

Ag follows Cu, but the distribution of its anomalous conditions is even more restricted to the core of the Au anomaly. Maximum Ag content is 3.4 ppm.

i) Zinc

Zinc backgrounds are higher in the trench area than regionally. Data map geology but do not show the presence of the Au anomaly.

j) Cobalt

Co follows Cu.

5. Discussion of Results

Detailed study at the Beano Prospect trench area suggests that Pb is the best pathfinder for Au, forming a larger anomaly. As might be related to Au in a halo relationship, but levels are so weak they are likely to be masked by variations in regional background elsewhere. Elements correlating with Au but forming smaller anomalies include, in approximate order of diminishing size; Bi, Cu, Co and Ag. Patterns for Mo and W are uniformly low whereas for Zn they are high without exhibiting evidence of alteration.

The trench area represents a known orientation to which the more regional sampling can be compared. The Beano showing north of the tram exhibits a multi-element signature, diminishing in size from As-Bi-Cu-Co, to Au-Mo, to Ag, to Pb-Zn. The Pb and Zn features are single points. Differences in the two sets of metal signatures are probably related to the limited nature of the sampling. Remaining lithogeochemical data may give favourable prospecting indications, but too few samples were taken to define lithogeochemical targets for followup.

The soil survey has the best potential of defining large anomalies of interest. Recognizing the existence of the two zonation patterns described lithogeochemically above enables the soil data to be scanned for comparable signatures. Unfortunately, data are analytically faulty for Pb and As, and these distributions are not considered further. Moreover, patterns following grid lines suggest either another analytical problem or adverse sample composition parameters are also distorting relationships. With these limitations in mind, the soils data can be assessed.

The known Beano Au showing is well represented in the Au soils data, as is a zone in the extreme north along structural trend. Continued sampling northwards is recommended and trenching of anomalies represents a prudent method of followup. Anomalous conditions following the tram line may be due to contamination, whereas anomalies among the north side of Bingo Creek could be alluvially transported material deposited by a southwestward flowing tributary. Mo and Cu appear to be the only viable pathfinders for Au. Co and Zn show anomalous trends, but these probably relate to enrichment of concentrations derived from unmineralized andesites. Additional analysis of sample pulps could determine if these anomalies represent pedogenic curiosities.

Limited sampling over dacite in the south is notable by virtue of Au anomalies present in the area. Sampling is too restricted to offer additional comments, other than to note Cu and Mo values are low.

6. Conclusions

Lithogeochemical surveys have determined known Au occurrences to have a Bi, Cu, As, Ag & Co signature, plus or minus Pb and Mo. The soil survey recognizes existing showings, suggesting Cu and Mo can act as pathfinders for Au. Additional work consisting of trench sampling along trend and extensions of the soil grid along trend is warranted.

7. Recommendations

1. Samples should be re-analyzed to replace faulty data with bona fide readings.

2. Analytical and/or sampling parameters adversely affecting soil results could be estimated if a larger suite of elements were available for review.

3. Existing soil data suggest sampling be continued northwards to fully delimit anomalous conditions and to the south to assess the meaning of Au anomalies associated with dacitic units.

4. Followup would be most effectively conducted by trenching, however, logistical problems may dictate that diamond drilling is the most cost effective method of operation.

CONCLUSIONS

The Beano property contains a small gold-skarn hosted in a thin sedimentary interbed within Jurassic Bonanza Group volcanics consisting primarily of andesitic pyroclastics. This skarn, exposed at the old Beano showings, consists of actinolite with lesser auriferous pyrrhotite. This mineralized zone is exposed over a strike length of 125 metres and an vertical range of approximately 80 metres. A local width of 7 metres is locally exposed. Grades reach a maximum of 6.049 opt Au in channel samples from trenching while the best channel sample from outcrop is 5 metres of 2.071 opt Au.

A grid was established over part of the property and utilized for the collection of soil samples, as well as mapping and rock chip sampling control. A limited magnetometer survey was also carried out in the vicinity of the old showings.

Rock chip lithogeochemistry indicates that the known Au occurrences are characterised by a Bi, Cu, As, Ag and Co signature, while soil sample geochemistry indicates that Cu and Mo may act as pathfinders for Au.

Geochemistry, geophysics and mapping carried out on the Beano property during 1989 did not outline additional targets other than to indicate that soil anomalies both to the north and to the south of the Beano showings continue at least to the bounds of the grid and should perhaps be followed up by further sampling.

The known skarn at the old Beano showing was more carefully defined than in the past through detailed mapping, sampling and trenching. However, the skarn remains of limited apparent extent. Further evaluation of the skarn may be severely limited by steep topography.

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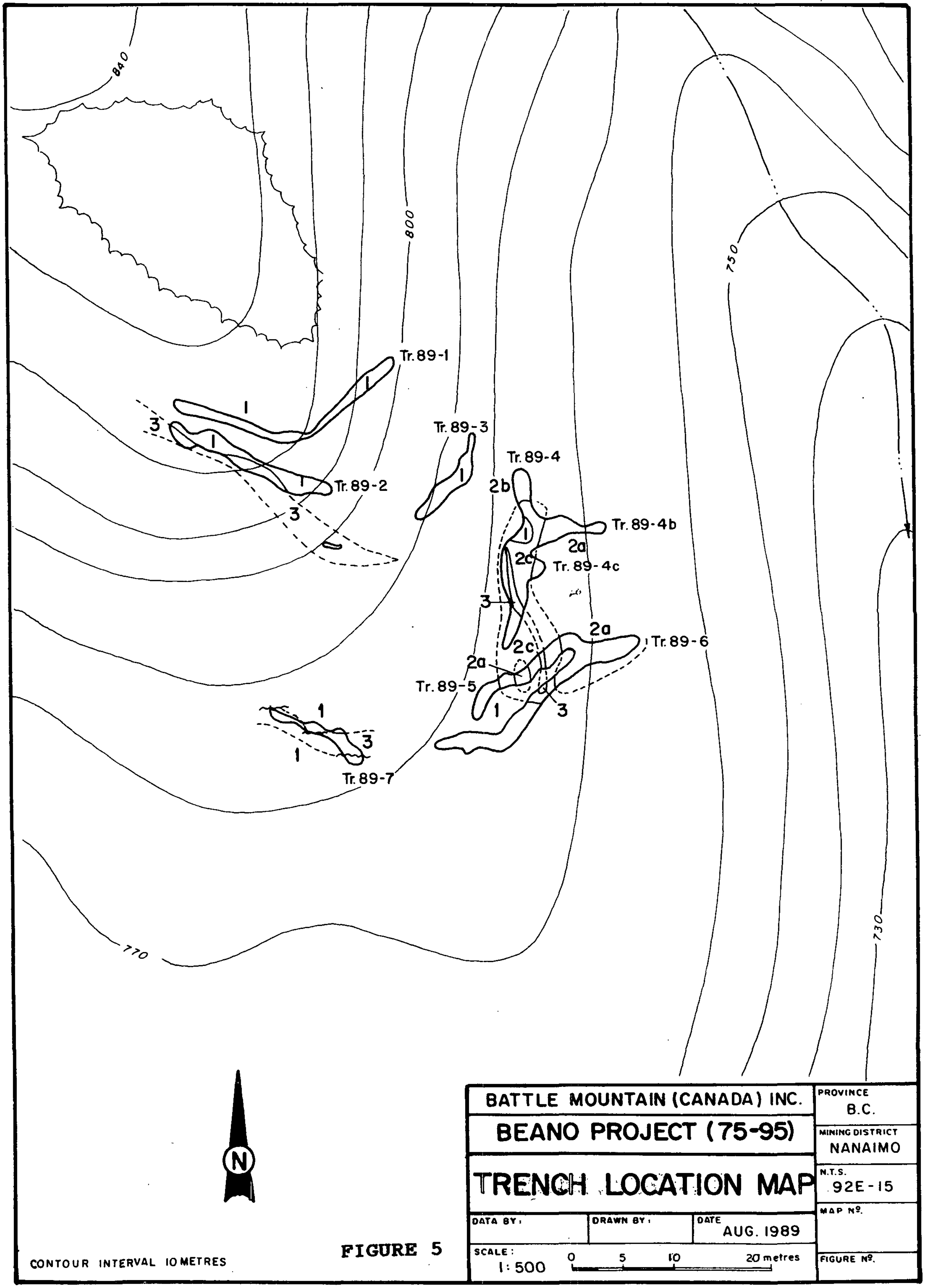
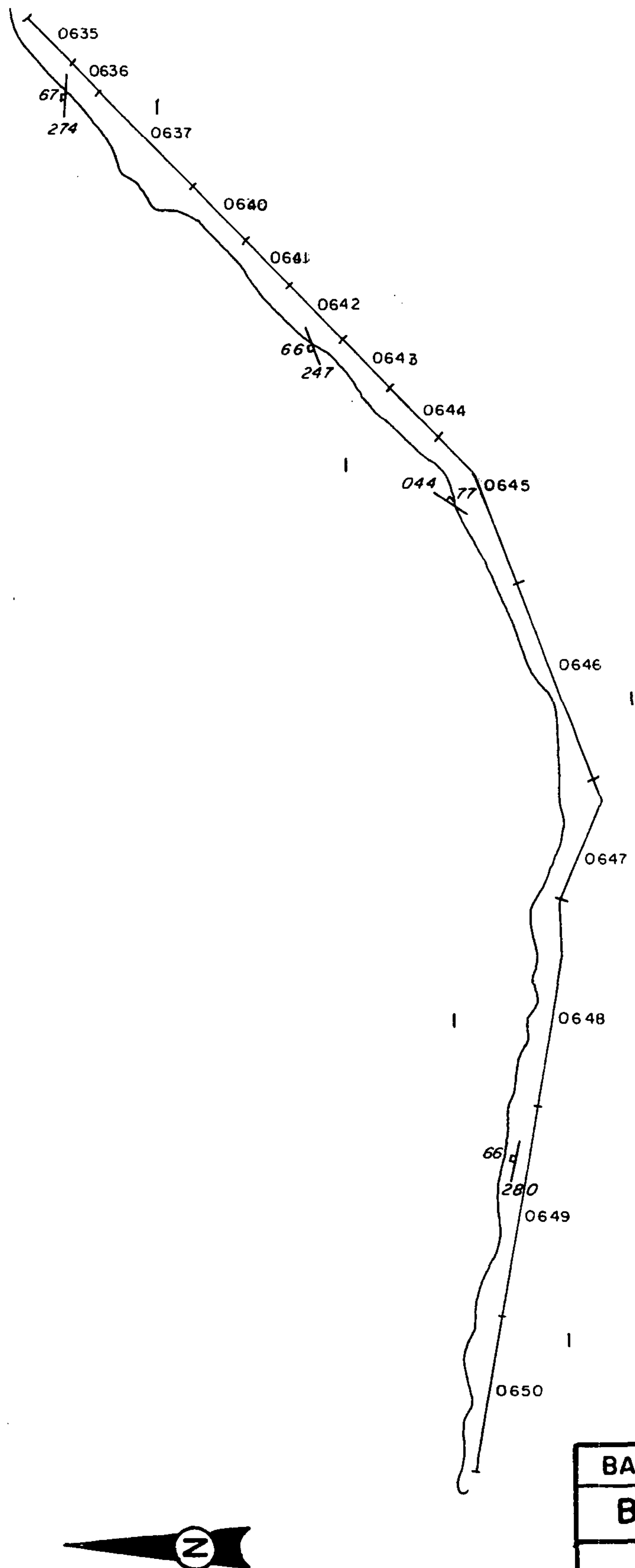

840
800
770
750
730
Tr. 89-1
Tr. 89-2
Tr. 89-3
Tr. 89-4
Tr. 89-4b
Tr. 89-4c
Tr. 89-5
Tr. 89-6
Tr. 89-7
1
2a
2b
2c
3
N
CONTOUR INTERVAL 10 METRES
BATTLE MOUNTAIN (CANADA) INC.
BEANO PROJECT (75-95)
TRENCH LOCATION MAP
PROVINCE B.C.
MINING DISTRICT NANAIMO
N.T.S. 92E-15
MAP No.
DATA BY:
DRAWN BY:
DATE AUG. 1989
SCALE: 1:500
0 5 10 20 metres
FIGURE No.
CHONG

FIGURE 5



BATTLE MOUNTAIN (CANADA) INC.	PROVINCE B.C.
BEANO PROJECT (75-95)	MINING DISTRICT NANAIMO
TRENCH 89-1	N.T.S. 92E-15
	MAP Nº.
DATA BY: DRAWN BY: DATE AUG. 1989	
SCALE: 1:100 0 1 2 4metres	FIGURE Nº.

FIGURE 6

CHONG

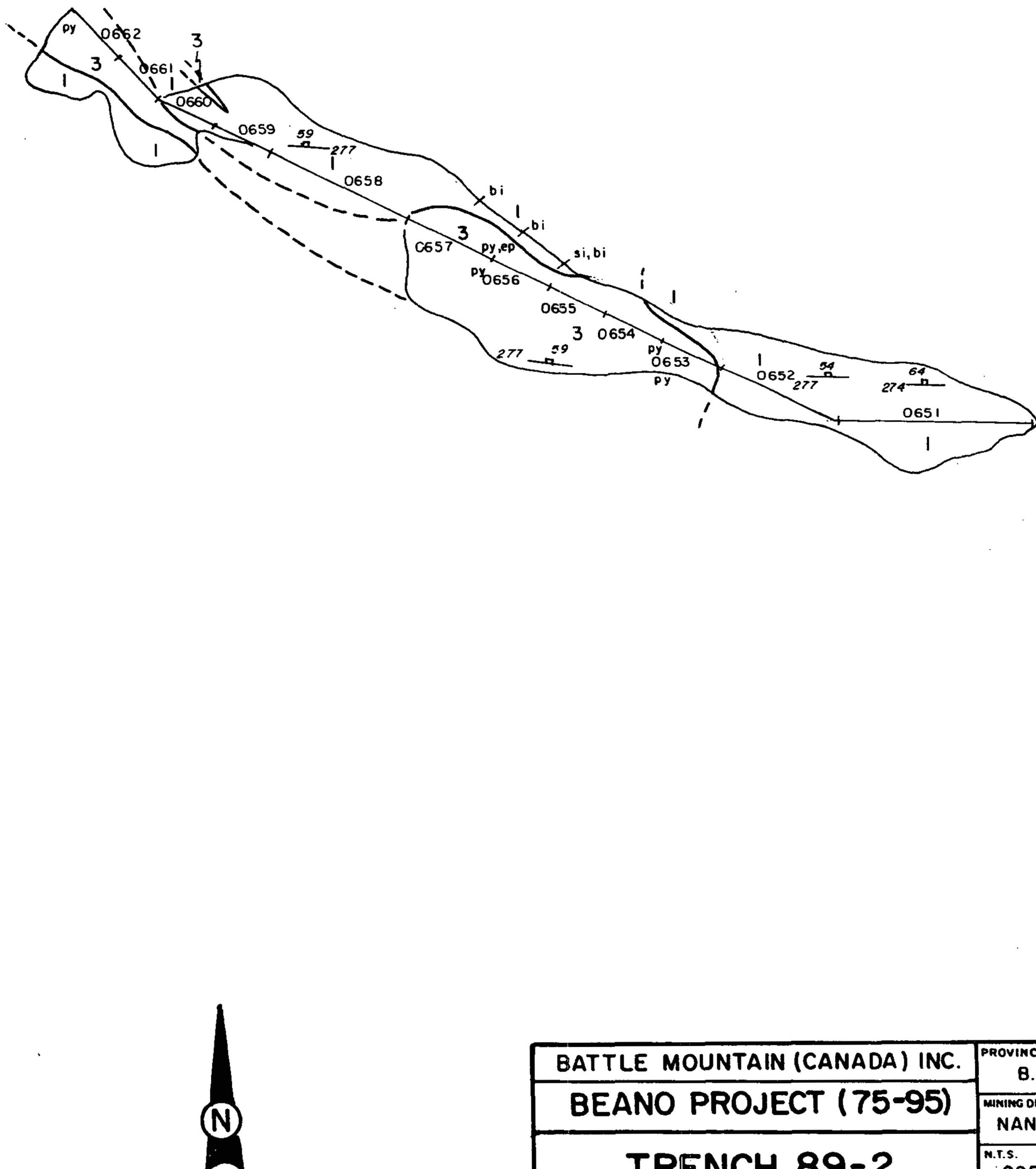


FIGURE 7

BATTLE MOUNTAIN (CANADA) INC.		PROVINCE B.C.
BEANO PROJECT (75-95)		MINING DISTRICT NANAIMO
TRENCH 89-2		N.T.S. 92E-15
DATA BY:	DRAWN BY:	DATE AUG. 1989
SCALE: 1: 100	0 1 2 4 metres	MAP Nº. / FIGURE Nº.

CHONG

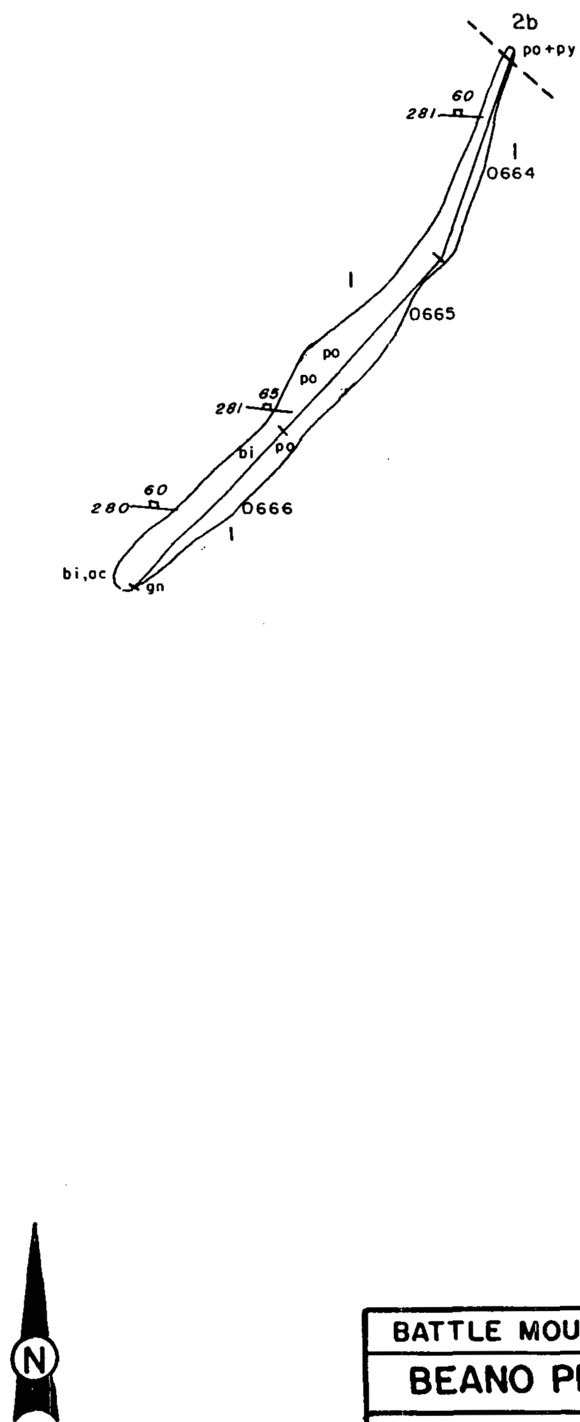


FIGURE 8

BATTLE MOUNTAIN (CANADA) INC.

BEANO PROJECT (75-95)

TRENCH 89-3

DATA BY:	DRAWN BY:	DATE AUG. 1989

SCALE: 1: 100 — 0 1 2 4 metres

PROVINCE B.C.

MINING DISTRICT NANAIMO

N.T.S. 92E-15

MAP Nº.

FIGURE Nº.

CHONG

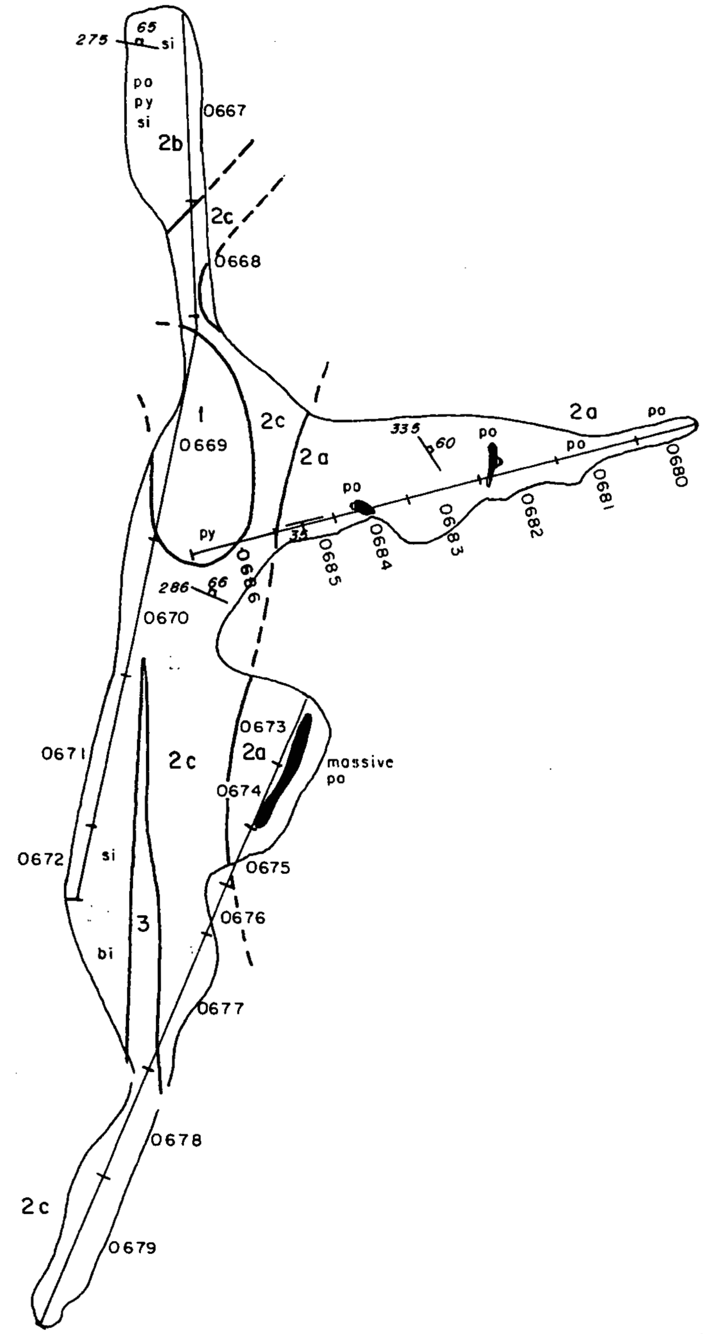
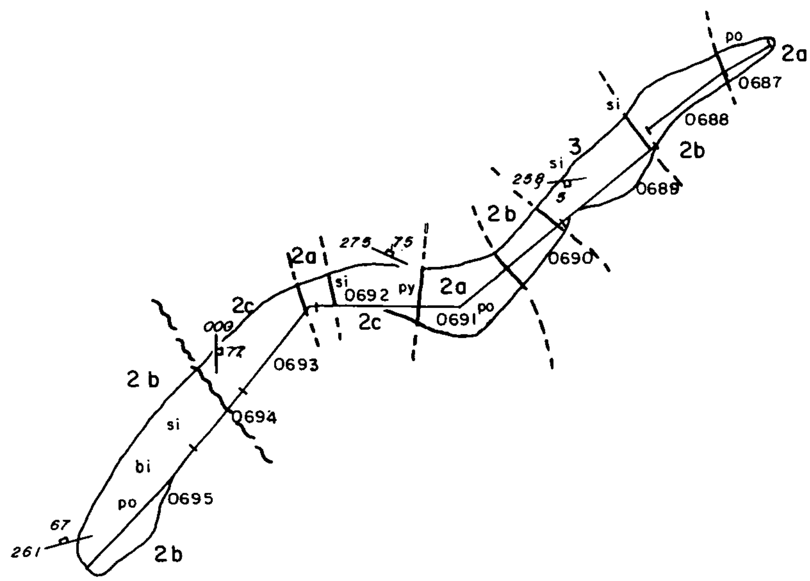


FIGURE 9

BATTLE MOUNTAIN (CANADA) INC.			PROVINCE B.C.
BEANO PROJECT (75-95)			MINING DISTRICT NANAIMO
TRENCH 89-4			N.T.S. 92E-15
DATA BY:	DRAWN BY:	DATE AUG. 1989	MAP Nº.
SCALE: 1: 100	0 1 2 4 metres		FIGURE Nº.

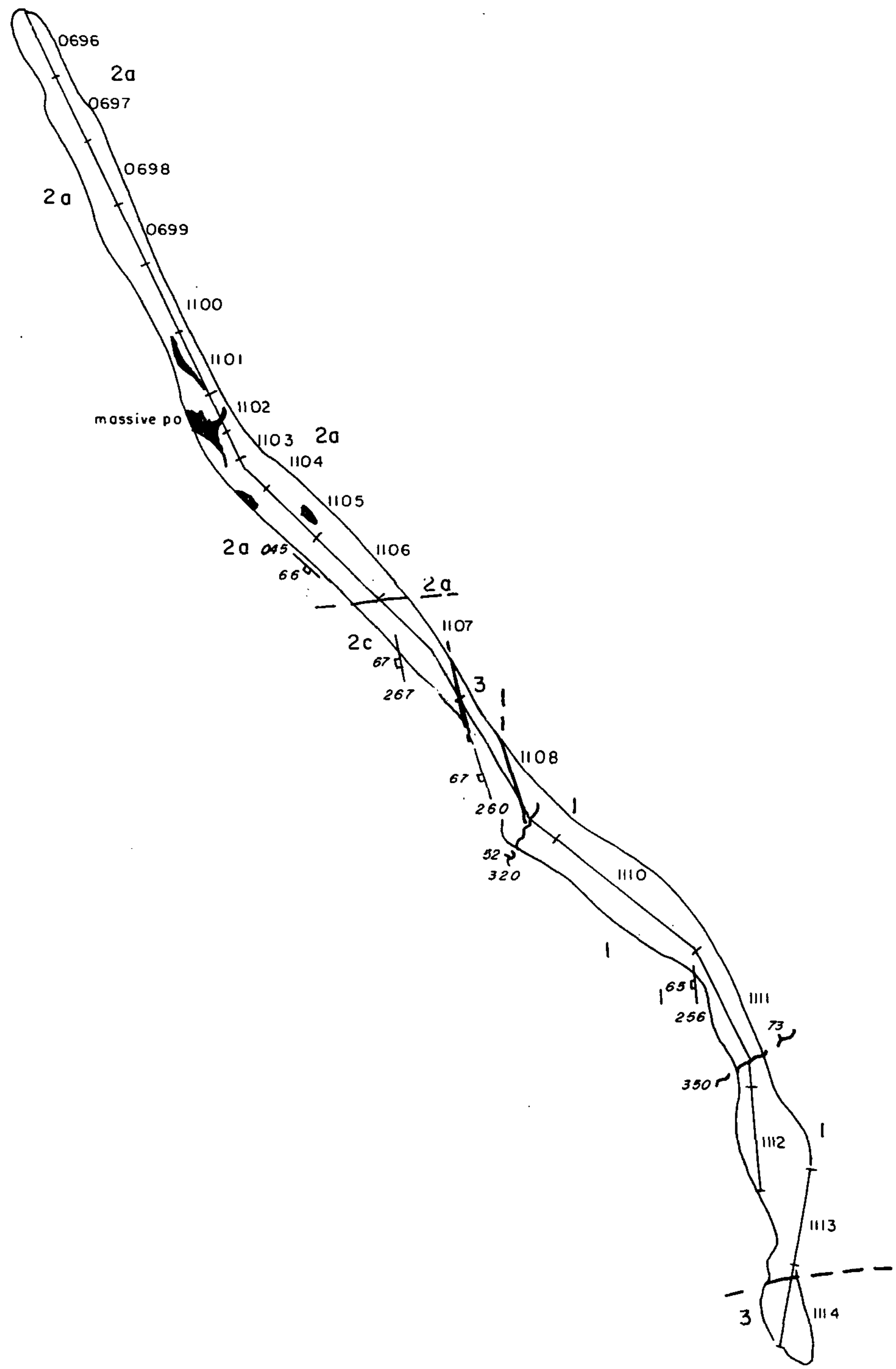
CHONG



BATTLE MOUNTAIN (CANADA) INC.			PROVINCE B.C.
BEANO PROJECT (75-95)			MINING DISTRICT NANAIMO
TRENCH 89-5			N.T.S. 92E-15
DATA BY:	DRAWN BY:	DATE AUG. 1989	MAP NO.
SCALE: 1: 100	0 1 2 4metres		FIGURE NO.

FIGURE 10

CHONG



BATTLE MOUNTAIN (CANADA) INC.		PROVINCE B.C.
BEANO PROJECT (75-95)		MINING DISTRICT NANAIMO
TRENCH 89-6		N.T.S. 92E-15
DATA BY:	DRAWN BY:	DATE AUG. 1989
SCALE: 1: 100 — 0 1 2 4metres		MAP Nº. / FIGURE Nº.

FIGURE 11

CHONG

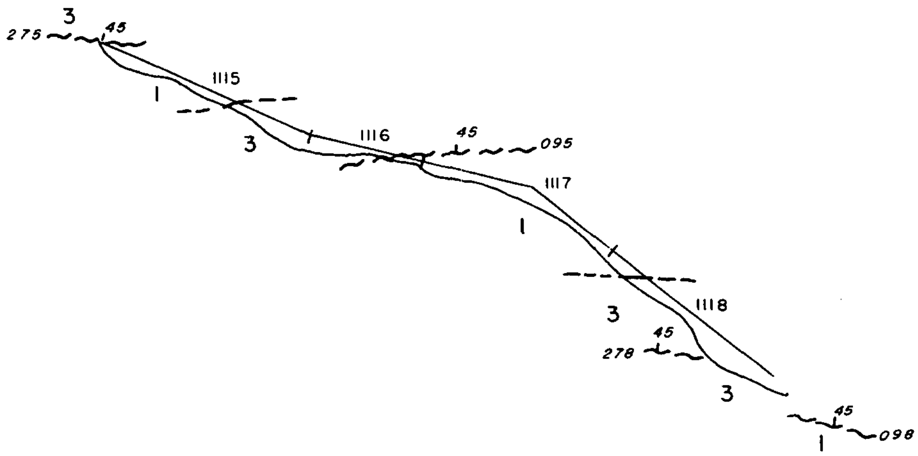
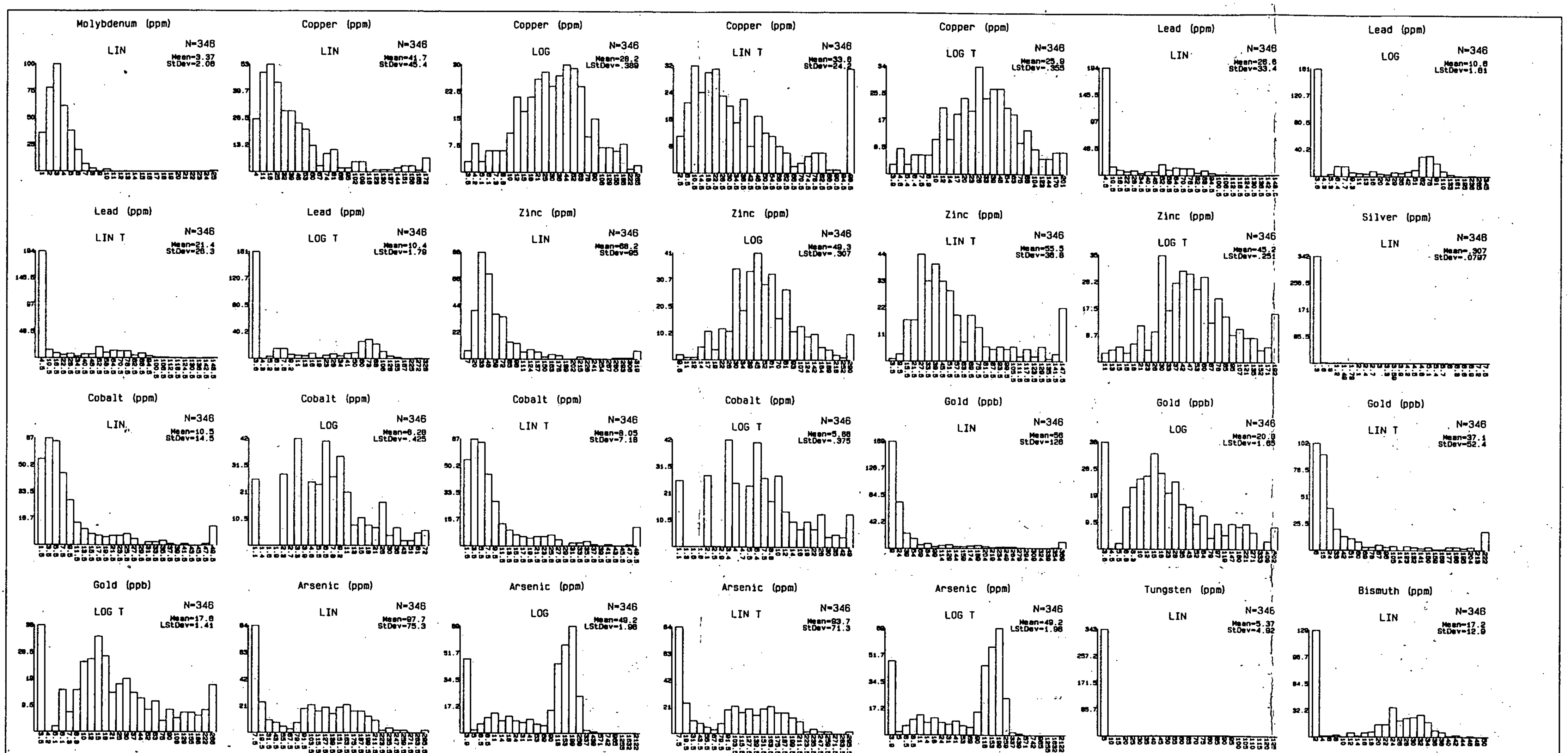


FIGURE 12

BATTLE MOUNTAIN (CANADA) INC.	PROVINCE B.C.
BEANO PROJECT (75-95)	MINING DISTRICT NANAIMO
TRENCH 89-7	N.T.S. 92E-15
DATA BY: / DRAWN BY: / DATE AUG. 1989	MAP Nº.
SCALE: 1: 100 — 0 1 2 4metres	FIGURE Nº.

CHONG



DISTRIBUTION HISTOGRAMS

LIN = LINEAR
LOG = LOGARITHMIC
LINT= TRUNCATED LINEAR
LOGT= TRUNCATED LOGARITHMIC

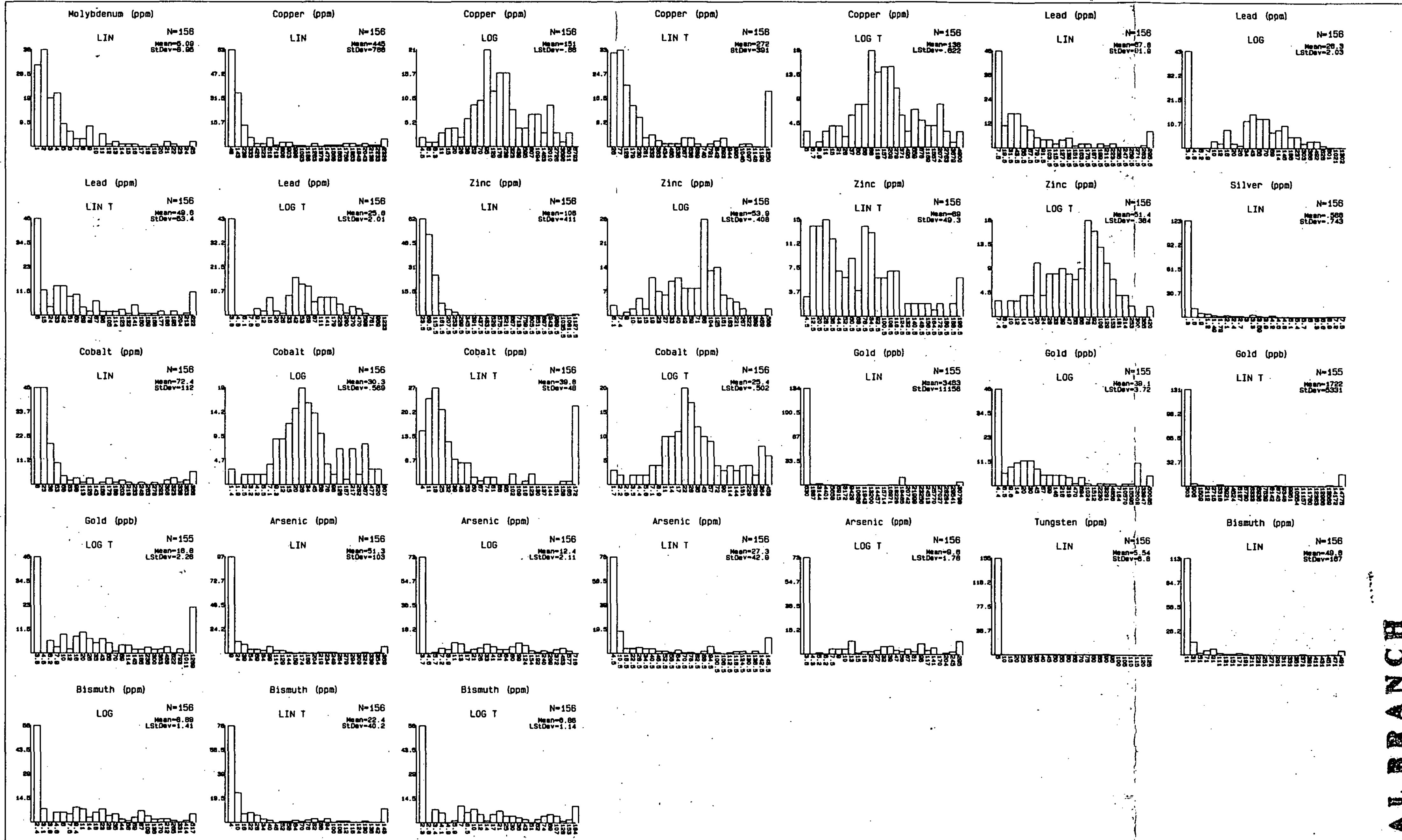
SAMPLE SELECTION CRITERIA:

SAMPLE TYPE	50
PROPERTY CODE	A
LSE CODE	ALL
OB ORIGIN	ALL
SAMPLE TEXTURE	ALL
SOIL HORIZON	ALL
BEDROCK GEOLOGY	ALL
NORTH LIMIT	NONE
SOUTH LIMIT	NONE
EAST LIMIT	NONE
WEST LIMIT	NONE

BEANO MOUNTAIN
BEANO PROJECT - B.C. (75-95)
1989 SOIL SURVEY
HISTOGRAMS

DATE: FEB/90	PROJECT#: 108A
NTS: 92E/15	

FIGURE 13



DISTRIBUTION HISTOGRAMS

LIN = LINEAR
LOG = LOGARITHMIC
LINT= TRUNCATED LINEAR
LOGT= TRUNCATED LOGARITHMIC

SAMPLE SELECTION CRITERIA:

SAMPLE TYPE	80
PROPERTY CODE	A/B
LSE CODE	ALL
OB ORIGIN	ALL
SAMPLE TEXTURE	ALL
SOIL HORIZON	ALL
BEDROCK GEOLOGY	ALL
NORTH LIMIT	NONE
SOUTH LIMIT	NONE
EAST LIMIT	NONE
WEST LIMIT	NONE

BEANO MOUNTAIN
BEANO PROJECT - B.C. (75-95)
1989 LITHOGEOCHEMICAL SURVEY
HISTOGRAMS

DATE: FEB/90 | PROJECT#: 108AB
NTS: 92E/15

FIGURE 14