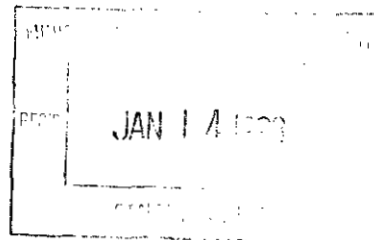


BRITISH COLUMBIA
PROSPECTORS ASSISTANCE PROGRAM
MINISTRY OF ENERGY AND MINES
GEOLOGICAL SURVEY BRANCH

PROGRAM YEAR: 1997/1998

REPORT #: PAP 97-16

NAME: STEVE BELL



Prospectors Assistance Program

Reference No. 97/98 P38

Geochemical Report

On Work Done

Between June 18 and September 3, 1997

On

The Hope Mineral Claim Group

Located on Morice Mountain

Omineca Mining Division, B.C.

NTS Map 97 L/7

By

Steve Bell

November 15, 1997

S.H. Bell

Geological Survey Branch
MEI

JAN 08 1999

P38

Rec'd Jan 8/97

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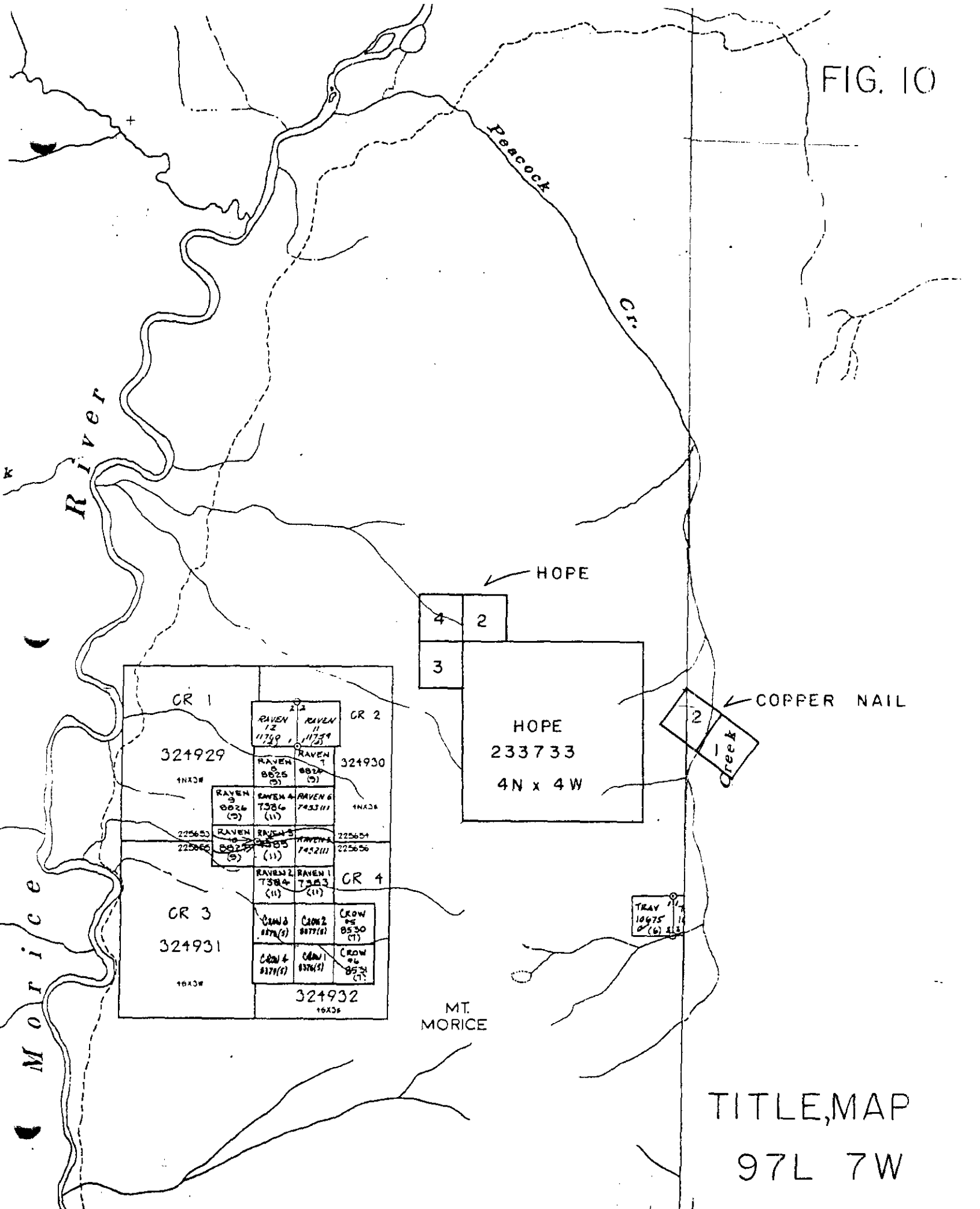
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Introduction

The following report is a record of the exploration work done on the Hope claim group between June 18 and September 3 1997. Refer to the original Program Proposal found in the Appendix for more details regarding local geology and previous exploration.

Location And Access

The Claims are located on Morice Mountain near Peacock Creek. They lie about 13.5 km South - West of Houston B.C. The Hope claim legal post is located near grid coordinates 6018000 N and 646000 E. (N.T.S. Ref. 93L/9W). Morice mountain is accessed by vehicle via the Morice river forest service road. At 8km leave Morice river road and follow Peacock creek west road to its end at 6 km. Travel South from this point by foot through forested terrain. The Northern edge of the Hope claim group lies about 1.8 km to the South.



TITLE, MAP
97L 7W

Claims And Ownership

The Hope claim group is owned by S. Bell of Houston B.C.

<u>Claim name</u>	<u>Record Nos.</u>
Hope	233733
Hope 2	659298 M
Hope 3	659291 M
Hope 4	659294 M
Copper Nail 1	659292 M
Copper Nail 2	659293 M

Geochemical Survey

A Geochemical survey was performed over the claim group where 583 soil samples and 2 rock samples were taken from specific locations and analysed for base metal and pathfinder elements. Threshold values were calculated from this data to identify anomalous terrain.

Sample locations are indicated on Fig. 1. Samples H1 through H7 correspond to Hope 1 through Hope 7 in the ICF report and are stream sediments. Samples T1 and T2 were taken from a tributary of Peacock creek just north of the Hope claim.

3

3

1. Soil Survey

Baselines were established for survey control in an East/West direction every 500m. Sample lines were spaced 100m apart and ran North/South to tie in with the baselines. Samples were taken along each sample line at 100m intervals forming a rectangular sample pattern. Samples were taken from the "C" horizon at depths between 50 and 70 cm. and put in 4"x 7" Kraft paper bags. In swampy areas the grey clay which underlies the organic soil was sampled. Each bag was filled to ensure adequate sample material. Sample locations were noted on each bag and in the field with red flagging.

The survey was designed to test for the following mineralization.

- A) Extensions of existing epithermal mineralization found in Hazelton volcanic rocks near an old adit located at 18.800 N x 46.625 W.
- B) Undiscovered polymetallic mineralization indicated by float recovered from Peacock creek.
- C) Vein/Disseminated/Replacement deposits related to Intermediate - felsic intrusions.

Note: In the vicinity of A) the sample spacing was decreased to 50m along sample lines.

4

4.

Mineralized float found in Peacock creek assayed in p.p.m.

>10,000 Cu, >200 Ag, 6,459 Sb, 3013 Zn and 2,220 As

2. Soil Development

The soil overlies glacial till and locally derived colluvium which is typical of the area. It is primarily of the Podzolic order. Regosolic soils are found over small areas at the higher elevations near the western boundary of the claim group. This soil is poorly developed in places however not enough to hamper sampling. Occasionally small swampy areas were encountered where the soil is largely organic and directly overlies a light grey clay.

3. Analytical Procedure

Samples were transported from the field to Smithers B.C. for sample preparation at Mineral Environments Laboratory. Here the samples were dried and screened. A minus 80 mesh fraction sub sample was sent to Vancouver. At the Vancouver lab ICP analysis was performed to detect the following trace elements:

Cu, Zn, Pb, Ag, As, Ba, Cd, Sb, Mo, Ni, Fe, K

4. Rock Samples

Two rock samples were analysed. The first rock tested was a small plug of Nanika style granite found at 20,000 N x 45,100 W. The testing was performed to see if the plug was enriched in base metals. The results proved negative.

A second rock sample was taken from a pyrite bearing rhyolite encountered at 20,325 N x 44,400 E during a reconnaissance traverse to the north of the Hope claim. Tests proved negative for precious and base metals.

Interpretation of Results

Threshold values were calculated in order to interpret anomalous areas. Thresholds for the trace elements are defined as the geometric mean plus two times the standard deviation. Anomalous soil samples exceed the threshold values in p.p.m. trace elements.

Threshold values for pathfinder elements in p.p.m.

Element	Geometric Mean	Threshold Hope Project
Cu	23	51
Zn	88	148
Pb	23	44
Ag	0.14	0.8
As	7.4	31
Ba	185	465
Cd	.55	1.8
Sb	2.3	15

1. Geochemical Data

Raw data is located in the appendix with the statistical analysis. Geochemistry is plotted for individual elements on figures 1-9. All data for the most important path finder elements Cu, Zn, and Pb have been plotted. Only anomalous values of the other elements tested for are plotted. The exception is for antimony where all samples were plotted to indicate a problem possibly related to the 5 p.p.m. detection limit.

There are two blocks of samples indicated on figure 9 which are highly anomalous for antimony. R.W. Boyle (1979) suggests a mean of 0.7 p.p.m. for Sb in soils. These anomalous zones are suspect since they are so regular in shape. Furthermore the samples which define the anomaly were submitted for analysis at the same time. This suggests an analytical rather than geological cause for the elevated values.

2. Soil Anomalies

The amount of pathfinder elements normally found in weathered residuum and glacial material compares favourably with values determined by the survey. Low order Cu, Zn, Pb, and Ag anomalies encountered during the survey are interpreted as follows.

- A) Poly metallic anomalies consisting of more than two adjacent samples indicate the most extensive mineralization.

- B) Anomalies consisting of at least two adjacent samples represent localized sub economic enrichment of metals in the underlying Hazelton volcanic rock similar to that observed in Peacock creek.

8

8.

C) Isolated anomalies consisting of one sample are considered to be mostly spurious and probably the result of enrichment due to adsorption or organic fixation. These anomalous samples were often collected from the clay underlying an organic soil in a swampy area. They are often mono metallic and unsupported by other pathfinder elements.

Frequency of anomalies encountered is as follows:

1 type "A" anomaly

7 type "B" anomalies

44 type "C" anomalies

Only the type "A" anomaly at 20,300 N x 44,300 E warrants further investigation.

3. Anomaly "A"

Anomaly "A" is a low order Zn-Pb-Ag anomaly located on a prominent ridge at 4,300 feet elevation. Local topography is flat however it rapidly falls away toward the east and west forming a water shed. Overburden is relatively thin with much locally derived colluvium. Angular rock fragments indicate nearby bedrock. The anomaly appears to stem from an area centered about 22,300 N x 44,300 E where there are several small outcrops of pyritic rhyolite and a circular patch of muskeg about 60 m in dia. which drains to the west. The Lead anomaly starts at this point and extends in a down slope direction to the North - East about 500 m. The zinc anomaly follows a similar pattern with some dispersion toward the western watershed. Topography seems to be the major control.

The pyritic rhyolite tested outcrops on Hope 2 claim near the head of anomaly "A". Here the rhyolite is brecciated, bleached and fractured. Fine grained pyrite occurs through out a micro felsitic and chlorite ? rich matrix which supports small white bleached and corroded breccia fragments. Pyrite is also localized on fine fractures which appear as small 1 mm wide veinlets in section. No flow structures were noted.

A kaolinized, lithic pyroclastic flow rock appears in a bed near 20,000 N x 44,500 E. Massive green propylitic volcanic rock of andesitic composition outcrops in a stream bed near H1. The andesite is characterized by fine grained pyrite and coarser calcite which occurs throughout.

Escaping hydrous fluids rich in carbon dioxide and sulfur related to the process of doming and localized venting of felsic intrusive rocks are likely responsible for the most intensive alteration found in the rhyolite at 20,350 N x 44,300. Near by andesites were probably propylitized by circulating fluids and later diagenesis.

Pyritic float was commonly encountered in sample holes on Hope 2 claim. No sulphide minerals other than pyrite were observed. Near the western boundary of the claim large 1 to 2 meter biotite-feldspar porphyry boulders can be found resting on surface. These boulders are probably float from a large bulkley intrusive which lies to the South West. This intrusion was not observed in the field however government mapping indicates the contact is very close possibly on Hope 3 or 4.

Conclusion

The source of the mineralized float found in Peacock creek remains a mystery. Geochemical sampling does not indicate underlying mineralization in the vicinity of Peacock creek canyon. A mineralized source could however escape detection if it does not penetrate overlying argillites which outcrop outside the canyon. In this case the source is probably small with low economic potential.

A low order Zn, Pb, Ag anomaly was detected stemming from a source located near 54 19 50 N x 127 47 00 E. The associated underlying rocks are pyritic rhyolite and propylitic andesite. The altered and fractured rhyolite breccia found at the head of the anomaly indicates that localized venting or degassing of the volcanic rocks occurred here.

The rhyolite at 20,325 N x 44,400 E lies on the edge of the anomalous zone and assays in p.p.m.

62 Zn, 17 Pb, 16 Cu, 0.4 Ag and 0.01 Au

Residual soils overlie this outcrop and should reflect the chemistry of the underlying bed rock. This soil assays.

103 Zn, 41 Pb, 13 Cu and 0.8 Ag

Zn, Pb and Ag concentrations in the soil are approximately double that of the parent material. If these elements are being concentrated by adsorption or some organic process it has not affected the Cu which remains at a low background level. Contamination is likely from the anomalous area 100m to the west where these processes are taking place or the underlying rock is enriched in these metals.

Recommendations

The cause of the anomaly should be investigated by:

1) Taking more soil samples in an attempt to increase the magnitude of the anomaly and reduce the possibility that adsorption and organic fixation are the cause. Eight samples should be collected in a grid about point 20,300 N x 44,300 E. The samples should be taken as deep as possible greater than 1 meter. In addition bulk samples should be taken which are panned down to obtain heavy mineral concentrates. These concentrates should be analysed for gold.

2) The geology of the area should be mapped in detail. Attention should be paid to topographic lineaments and structures that might have channelled circulating fluids. Pyritic and altered outcrop should be analysed to identify lithogeochemical halos. The intrusive porphyry to the South - West should be investigated.

The target is a disseminated and/or stockwork gold - silver deposit in volcanic flows and associated volcanoclastic rocks. Unfortunately commercial deposits of this type are very rare because typical gold and silver values found in them are low. High grade shoots would have to be present since there is limited potential in this location for large tonnages.

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APPENDIX

BRITISH COLUMBIA
PROSPECTORS ASSISTANCE PROGRAM
PROSPECTING REPORT FORM (continued)

B. TECHNICAL REPORT

- One technical report to be completed for each project area.
- Refer to Program Requirements/Regulations, section 15, 16 and 17.
- If work was performed on claims a copy of the applicable assessment report may be submitted in lieu of the supporting data (see section 16) required with this TECHNICAL REPORT.

Name STEVE BELL Reference Number 97 98 - P38

LOCATION/COMMODITIES

Project Area (as listed in Part A) HOPE MINFILE No. if applicable _____

Location of Project Area NTS 97 L/7 Lat 54° 17' Long 127° 46'

Description of Location and Access VIA. PEACOCK CREEK FOREST ROAD NEAR HOUSTON, AT 6 km MARK LEAVE VEHICLE AND HIKE 3.2 km UP PEACOCK CREEK, TURN AT 270° PROCEED 500M TO LEGAL POST OF HOPE CLAIM.

Main Commodities Searched For CU-AG-AU

Known Mineral Occurrences in Project Area MINFILE NO. 07, 08, 202, 268, 269
(THESE ARE WITHIN 2KM OF THE PROJECT AREA)

WORK PERFORMED

1. Conventional Prospecting (area) _____
2. Geological Mapping (hectares/scale) _____
3. Geochemical (type and no. of samples) SOIL SAMPLES C - HORIZON, 583
4. Geophysical (type and line km) _____
5. Physical Work (type and amount) _____
6. Drilling (no., holes, size, depth in m, total m) _____
7. Other (specify) _____

SIGNIFICANT RESULTS

Commodities Zn, Pb, Ag SOIL ANOMALY Claim Name HOPE 2

Location (show on map) Lat 54° 19' 50" Long 127° 47' 00" Elevation 1300 M

Best assay/sample type 326 p.p.m. Zn, 80 p.p.m. Pb, 3.1 p.p.m. Ag
SOIL SAMPLE

Description of mineralization, host rocks, anomalies A LOW ORDER Zn, Pb, Ag SOIL ANOMALY WAS DETECTED, MEASURES 400 x 75 METERS. OUTCROP IS PYRITIC RHYOLITE AND MASSIVE GREEN PROPYLITIC ANDESITE.

Supporting data must be submitted with this TECHNICAL REPORT

Information on this form is confidential for one year from the date of receipt subject to the provisions of the *Freedom of Information Act.*

Program Proposal
Prospectors Assistance Program 1997

Morice Mountain / Peacock Creek
Ominica Mining District
NTS 93L/7

Submitted in Application For Funding

By Steve Bell

April 1997

Application Part B Program Proposal

1(a) Project Location:

- Morice Mountain / Peacock Creek
- 13.5 km south - west of Houston B.C.
- Ominica Mining District
- NTS Map Sheet 093 L/7
- Center of Proposal Location @ 6019000 N, 645000 E
- Minfile Map NTS 093L Smithers

(b) Access:

By motor vehicle via Morice River off highway logging road 4 km west of Houston B.C. At 8 km turn left and proceed on Peacock West forest service road. Leave vehicle @ 6 km and hike 2.5 km @ azimuth 211 degrees to center of proposal location. Location lies on the eastern slopes of Morice Mountain and is west of Peacock Creek a northerly flowing tributary of the Morice river. The highest peak of Morice Mountain lies 3.5 km to the South at 5979 feet altitude.

(c) Prospecting Target

Commodity: Cu-Ag-Au (As-Sb)

Deposit Type: Epigenetic - Epithermal
Vein/Disseminated/Replacement
Related to Intermediate-Felsic Intrusions

Geology (1)

The project area lies on the eastern flank of Morice Mountain near the north-west rim of a large fault bounded depression referred to as the Buck Creek Basin. The basin is largely covered with Tertiary age volcanic rocks and is described as a proto-caldera structure (Church, 1983).

Peacock Creek deeply dissects the eastern flank of Morice Mountain and follows a strong topographic lineament which may be a fault associated with this subsided proto-caldera. Older rocks which underlie Morice Mountain are exposed in Peacock Creek Canyon. These rocks are Lower-Middle Jurassic, Hazelton Group, Telkwa Formation, volcanic breccia, tuff and flows of andesitic to dacitic composition. Plugs of Eocene Nanika intrusives composed of grano-diorite, quartz monzonite and felsite intrude the older volcanics and are exposed at the peak of Morice mountain.

A thick unit of graphitic argillite (striking 180 degrees, dipping 35-40 degrees west) interrupts the volcanic pile which underlie the proposal location. The argillite outcrops in Peacock Creek 1.5 km east of the proposal location where they unconformably(?) overlie the volcanic rocks. The underlying volcanic rocks are altered andesites which become dacitic near the contacting argillite. This volcanic/sedimentary contact marks a facies change and may be an ancient erosional surface. The argillite contains interbeds of mudstone and limestone.

9-5
Geology (2)

Widely scattered chalcopyrite/ pyrite/ quartz/ calcite bearing veinlets occupy fractures and gashes in the underlying andesite. Sub-economic sulfide mineralization occurs in a 10-20 cm wide barite vein which is exposed on surface for about 2 meters near the andesite / argillite contact. The vein strikes @ 305 degrees and dips in a north easterly direction @ 70 degrees. It outcrops in altered andesite on the east bank of Peacock Creek and it's trace along strike penetrates the overlying argillite to the west. Vein contacts are smooth and distinct. Massive white barite lies next to the hanging wall. Bladed crystal forms and zonation of minor quartz, feldspar and calcite vein filling are characteristically epithermal. The footwall is weakly mineralized with disseminations of tetrahedrite and supergene malachite and auzurite. There are no Minfile references describing this occurrence and barite mineralization has not previously been reported at Morice Mountain.

A sample of altered andesite from the footwall assayed by ICP: 44.2 ppm Ag, 2767 ppm Cu, 427 ppm As, 202 ppm Sb, 341 ppm Zn.

At Peacock Creek canyon 1 km downstream from the andesite / argillite contact massive white barite float is found in the creek bed. The barite displays a platy epithermal habit and some pieces are weakly mineralized with a grey copper mineral. Pyrite bearing float is common and is traced to steeply dipping shear zones in volcanic rock which outcrop in the canyon.

There is only one mineral occurrence (08 Peacock) that is described by minfile on the eastern slopes of Morice Mountain. 08 is located 1350 m upstream from the barite vein and is a narrow silver rich epithermal vein which hosts a grey copper mineral in a quartz / calcite rich gangue. Barite is absent. The vein is hosted by a volcanic rock which appears in the creek bed. A short distance downstream graphitic argillites outcrop. A vein sample taken by the government mine engineer who visited the site in 1929 returned, 0.06 oz/ton Au, 166 oz/ton Ag and 10% Cu.

Other mineralization occurs on the western slope of Morice Mountain 3 km South - West of the proposal location and is described by minfile as mineral occurrences:

- 06 - Rain, vein/hydrothermal, porphyry Cu,Mo,Au
- 07 - Success, vein/hydrothermal, sub-volcanic Cu-Ag-Au (As-Sb)
- 202 - Sholto, disseminated/hydrothermal, Cu skarn
- 268 - Croesus, vein, porphyry Cu,Mo,Au
- 269 - Van, vein, porphyry Mo

In 1996 the applicant discovered tetrahedrite bearing float in Peacock Creek. The mineralization is inconspicuous and occurs as micro-veinlets and disseminations with minor barite and quartz in a dark grey rock of basic composition. ICP analysis of the mineralization returned >10,000 ppm Cu, >200 ppm Ag, 2220 ppm As, 6459 ppm Sb and 3013 ppm Zn. The bedrock source of this float is unknown. It is believed to have been glacially transported since it does not appear to have originated from the barite vein which outcrops 150m upstream.

8-5

Geology (3)

Locating the source of this silver rich float is the focus of the applicants 1997 field season. One main easterly regional ice flow direction dominated throughout much of the last glacial period in the Nechako Plateau. On Morice Mountain glacial lineations recognized from air photos trend easterly and striations on local bedrock average 83 degrees. The proposal location was chosen to include terrain in the up ice direction west of Peacock Creek. This area is heavily forested with mature balsam and minor spruce. Willows, blueberry, huckleberry and alder crowd the ground level. Bedrock is masked by glacially transported material and locally derived colluvium. Soil development is generally poor and consists of clayey silt and clay. Where soil cover is thin considerable angular rock is present in the overburden. Peacock Creek is the principle watershed for the proposal location.

Previous Exploration (1)

The earliest record of prospecting in the Ominica district for lode metals extends back to 1902. Efforts previous to this were focused on placering since lack of wagon roads or rail service hampered mine development. In 1914 the government Mine Engineer visited Bob Creek Canyon 9 km east of the proposal location and suggested that Chinese placer miners may have worked the area in the 1870's. Local folklore states that early Chinese exploration of Morice Mountain took place as well. The earliest recorded account of prospecting on Morice Mountain however occurred in 1905 when Charles P. Price staked the "Peacock" mineral claim (Now known as Minfile occurrence 08 Peacock). Price flumed the water around a small silver bearing quartz vein he located in Peacock Creek and sank a small shaft. In 1909 Price staked the "Hope" mineral claim over a mineralized barite vein he discovered downstream from his "Peacock" claim. Two open cuts and a 100 foot ore tunnel was developed on the "Hope" claim by Price to explore the barite vein. The applicant has examined Price's original workings and they appear undisturbed since Price abandoned the claims in 1912 to explore Sibola mountain near the new Huckleberry mine site. In Sibola creek Price found placer gold. He returned to Houston with some rich gold/quartz samples and news spread that a "bonanza camp" had been found. In 1916 Price left the country and went to Arizona.

Price's early activities brought attention to the mineral potential of the area and other prospectors followed. Copper showings were found on the western slopes of Morice Mountain and more claims were staked. In 1912 Dr. Wrinch and partners discovered the Silver Queen Cu,Ag,Zn,Pb,Au rich epithermal veins 22 km South of the proposal area.

In the 1930's Peacock Creek was again the scene of considerable prospecting and staking. Price's original "Peacock" claims were restaked and 3 short adits were driven on slightly pyritized volcanics which outcrop upstream from the shaft Price sank in 1905.

Geochemical exploration of the Goosly lake area in 1967 lead to the discovery of epithermal mineralization (Equity silver mines 35 km south-west of the proposal location).

11-5

Previous Exploration (2)

In 1978 Placer Development Ltd. performed a 135 soil sample geochemical survey surrounding Price's "Peacock" claim. Three small widely separated low order Cu-Ag anomalies were detected in the "A" and "B" horizons of the poorly developed soil. No conclusion was made as to their significance and other pathfinder elements were not analyzed for.

Data from a government geochemical reconnaissance survey was released in 1986 which included samples taken from streams draining the proposal location. The samples contained anomalous amounts of "pathfinder" elements. Greater than 90th percentile for some samples analyzed for Au, Cu, Ag, Cd, Pb, Fe, Hg, F and 70th percentile for As and Sb.

In 1996 the applicant prospected Peacock Creek to locate Price's original workings. Two one unit claims (tenure #350014 and #350015) were staked over the original "Hope" claim centered on the mineralized barite vein found by Price in 1909. The western slope of Morice Mountain is presently being explored by a local prospector who holds a 48 unit claim group enclosing 5 minfile occurrences. In June 1996 another prospector staked a 20 unit claim covering the southern slope of Morice Mountain just North of a recently discovered copper showing on the Carrier Forest Service road. The proposal area remains open to staking at this time.

Exploration Proposal (1)

Funding is requested to perform a soil geochemical survey over a 5.5 square kilometer proposal area west of Peacock Creek on the eastern slope of Morice Mountain. The bedrock source of silver bearing float found by the applicant in Peacock Creek will be sought by exploring terrain in an up ice direction.

Disseminated and replacement type deposits can occur at lithological contacts which mark changes in volcanic and sedimentary facies. Often these deposits are related to volcanic calderas and their associated ring structures. On Morice Mountain the older underlying volcanic pile could have provided metals to mineralizing fluids which were introduced into favorable structural and chemically receptive sites associated with the intercalated argillites. Igneous activity during the emplacement of the Eocene Nanika intrusives adjacent to the proposal location would have provided the heat flow necessary to drive an epithermal plumbing system.

There may also be a porphyry affiliation on Morice Mountain where the orebody sought is associated with weak porphyry style mineralization such as that found near the Equity mine. Geochemical anomalies of trace elements Sb, As, and Hg have been shown to correlate with other disseminated and replacement type ore bodies found in the area. Stream sediments local to the proposal area are enriched in these elements.

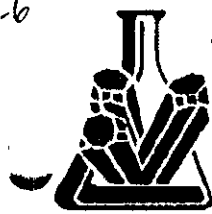
Morice Mountain was first explored by prospectors employing conventional techniques. Modern geochemical methods allow the potential of likely terrain masked by glacial overburden in the vicinity of the known epithermal mineralization to be explored.

A-5

Exploration Proposal

A soil geochemical survey is proposed to detect anomalous metal concentrations in order to outline a halo or dispersal train associated with any underlying epithermal mineralization. Soil samples will be taken where possible from the unoxidized "C" horizon at 100 meter intervals over the proposed area. Sample locations are oriented to grid coordinates and actual locations will be marked in the field. The sampling pattern is rectangular with a sample density of 100 samples per square kilometer. Samples will be analyzed using "ICP" at Min-En Laboratories for 12 "pathfinder" elements Cu, Sb, As, Ag, Zn, Cd, Pb, Ba, Fe, Mo, Ni, and K. To cover the proposal location 565 samples will be required. Thirty days of field work will be applied toward the grant requirements to commence July 1st 1997. Mineral tenure will be established before sample taking by staking a 16 unit claim over the proposal location in the applicants name.

Field work will be performed by the applicant. Financial assistance is asked for direct expenditures, report writing and labour. Other costs will be absorbed by the applicant in the hope that 100% funding will be provided by the program for the following expenses.



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A-6

ANALYTICAL PROCEDURE REPORT FOR ASSESSMENT WORK:
PROCEDURE FOR SAMPLE PREPARATION

- a.) The soil and stream sediment samples are dried at 60 Celsius. The sample is then screened by 80 mesh sieve to obtain the -80 mesh fraction for analysis.
- b.) The rock and core samples are dried at 60 Celsius and when dry are crushed in a jaw crusher. The 1/4 inch output of the jaw crusher is put through a secondary roll crusher to reduce it to -1/8 inch. The whole sample is then riffled on a Jones Riffle down to a statistically representative 300 gram sub-sample. This sub-sample is then pulverized on a ring pulverizer to 95% minus 150 mesh rolled and bagged for analysis. The remaining reject from the Jones Riffle is bagged and stored.



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A-7

Quality Assaying for over 25 Years

ANALYTICAL PROCEDURE REPORT FOR ASSESSMENT WORK:

PROCEDURE FOR TRACE ELEMENT ICP

Ag, Al, As, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, K, Li, Mg, Mn, Mo, Na, Ni, P,
Pb, Sb, Sn, Sr, Th, Ti, U, W, Zn.

0.50 grams for the sample pulp is digested for 2 hours with an 1:3:4 HNO₃:HCl:H₂O mixture.
After cooling, the sample is diluted to standard volume.

The solutions are analyzed by computer operated Perkin Elmer Optima 3000, Inductively Coupled
Plasma Spectrophotometers.

Statistical Summary for Soil ICP Analysis

Date	Sept 3/97
Client:	Steve Bell
Sample Type:	Soil
Analysis Type	ICP aqua regia leach
Elements	12
Min-En Files	7S-0142
	7S-0158
	7S-0165
	7S-0193
	7S-0221
	7S-0240

Summary of Statistics

Variable:	Ag	As	Ba
Units	ppm	ppm	ppm
Sample size	562	562	562
Average	0.204804	12.7224	217.868
Median	0.1	11	179
Mode	0.1	1	154
Geometric mean	0.137119	7.40763	185.405
Variance	0.0971427	135.595	19553.2
Standard deviation	0.311677	11.6445	139.833
Standard error	0.0131473	0.491194	5.89848
Minimum	0.1	1	33
Maximum	3.1	125	1099
Range	3	124	1066
Lower quartile	0.1	3	125
Upper quartile	0.1	19	264
Interquartile range	0	16	139
Skewness	4.91931	2.60317	2.22294
Standardized skewness	47.6098	25.1939	21.5139
Kurtosis	32.5425	17.4404	7.62641
Standardized kurtosis	157.476	84.3955	36.9048
Coeff. of variation	152.183	91.5275	64.1822
Sum	115.1	7150	122442

Variable:	Cd	Cu	Fe
Units	ppm	ppm	%
Sample size	562	562	562
Average	0.833986	25.9573	3.91859
Median	0.7	24	3.86
Mode	0.1	21	4.41
Geometric mean	0.547109	23.1098	3.83737
Variance	0.654297	198.996	0.632441
Standard deviation	0.808887	14.1066	0.795261
Standard error	0.0341208	0.595051	0.0335461
Minimum	0.1	1	1.38
Maximum	4.9	153	7.24
Range	4.8	152	5.86
Lower quartile	0.3	17	3.43
Upper quartile	1	31	4.34
Interquartile range	0.7	14	0.91
Skewness	2.51771	3.12351	0.523089
Standardized skewness	24.3668	30.2298	5.06254
Kurtosis	7.69085	19.476	1.56626
Standardized kurtosis	37.2166	94.2458	7.57924
Coeff. of variation	96.9905	54.3454	20.2946
Sum	468.7	14588	2202.25

Summary of Statistics

Variable:	K	Mo	Ni
Units	%	ppm	ppm
Sample size	562	562	562
Average	0.0586299	1.27758	11.7117
Median	0.05	1	11
Mode	0.05	1	10
Geometric mean	0.0553378	1.18496	10.0479
Variance	4.86E-04	0.3934	44.0308
Standard deviation	0.0220373	0.627216	6.63557
Standard error	9.30E-04	0.0264575	0.279905
Minimum	0.02	1	1
Maximum	0.2	7	54
Range	0.18	6	53
Lower quartile	0.05	1	8
Upper quartile	0.07	1	15
Interquartile range	0.02	0	7
Skewness	2.02793	3.10439	1.90452
Standardized skewness	19.6267	30.0448	18.4323
Kurtosis	6.96356	15.0889	6.81843
Standardized kurtosis	33.6972	73.0164	32.9949
Coeff. of variation	37.5871	49.0941	56.6574
Sum	32.95	718	6582

Variable:	Pb	Sb	Zn
Units	ppm	ppm	ppm
Sample size	562	562	562
Average	25.1655	4.51779	92.1192
Median	24	1	89
Mode	19	1	75
Geometric mean	22.87	2.25986	87.7639
Variance	110.506	39.1164	897.381
Standard deviation	10.5122	6.25431	29.9563
Standard error	0.443429	0.263822	1.26363
Minimum	1	1	22
Maximum	86	30	326
Range	85	29	304
Lower quartile	19	1	74
Upper quartile	29	4	105
Interquartile range	10	3	31
Skewness	1.59461	1.97794	1.84217
Standardized skewness	15.4329	19.1428	17.8288
Kurtosis	6.17633	3.01655	9.18647
Standardized kurtosis	29.8877	14.5973	44.454
Coeff. of variation	41.7721	138.437	32.5191
Sum	14143	2539	51771

Highest Values

Sample	Ag (ppm)	Sample	As (ppm)	Sample	Ba (ppm)
44400E20300N	3.1	46800E18900N	125	46300E19400N	1099
45400E19100N	3.1	46000E20000N	76	45000E20000N	1075
45500E19800N	2.1	46400E19000N	76	45500E19800N	889
17400N45400E	2.0	46600E19400N	51	45900E18700N	866
44300E20300N	1.5	44300E19100N	49	45700E19500N	808
46800E18750N	1.5	46600E18800N	48	45200E19200N	746
46900E18200N	1.5	46500E18200N	41	T-2	705
44500E20400N	1.3	46200E18850N	39	46100E19500N	675
44400E20400N	1.3	46400E18700N	39	46000E19400N	675
46800E18650N	1.3	46500E19050N	39	44800E19200N	647

Sample	Cd (ppm)	Sample	Cu (ppm)	Sample	Fe (%)
44600E19600N	4.9	45200E18100N	153	44500E20300N	7.24
44600E19900N	4.5	45000E20000N	136	44700E18500N	7.00
45700E18500N	4.5	46000E19400N	90	46600E19400N	6.88
44600E18900N	4.4	44800E18500N	86	45500E19800N	6.72
44700E18000N	4.3	45700E19500N	79	46600E18050N	6.45
44600E19000N	4.3	44800E19100N	74	46400E19000N	6.12
44600E19500N	4.3	44900E18800N	74	45400E19700N	6.06
45700E18600N	4.2	46300E19400N	70	46200E18850N	6.05
44600E19100N	4.2	45900E18700N	69	46100E19300N	6.03
45900E18700N	4.0	46500E19050N	68	45500E18100N	6.02

Sample	K (%)	Sample	Mo (ppm)	Sample	Ni (ppm)
45200E18100N	0.2	46600E18000N	7	46400E18600N	54
45300E19500N	0.2	44600E18500N	4	46500E19315N	50
45700E19500N	0.2	46800E19000N	4	46400E19000N	41
44200E19500N	0.2	46800E18800N	4	45900E18700N	39
44300E19500N	0.2	46800E18600N	4	46700E19475N	39
44900E19200N	0.1	44300E19500N	3	44700E18500N	37
46300E19400N	0.1	46600E18050N	3	46500E19250N	35
45000E20000N	0.1	45900E18700N	3	44200E20200N	35
46600E18500N	0.1	44900E20000N	3	46200E18800N	35
44700E18500N	0.1	46900E18300N	3	46300E19000N	32

Sample	Pb (ppm)	Sample	Sb (ppm)	Sample	Zn (ppm)
44700E18500N	86	44300E19500N	30	44200E20200N	326
45900E18700N	85	44300E19000N	29	44500E20400N	257
44600E18500N	79	44200E19500N	28	44600E18500N	229
44300E20300N	78	44200E19800N	28	45400E19700N	215
45300E19500N	64	44200E19400N	27	44300E20300N	198
44600E18700N	60	44300E19300N	27	45000E19100N	185
44500E20400N	57	46600E18500N	26	46500E19050N	183
46400E18600N	56	44400E19100N	26	46500E19050N	182
46300E19400N	56	44500E19400N	25	46400E19000N	174
46600E18500N	56	44200E19100N	24	44300E20250N	172

Frequency Tabulation for Silver

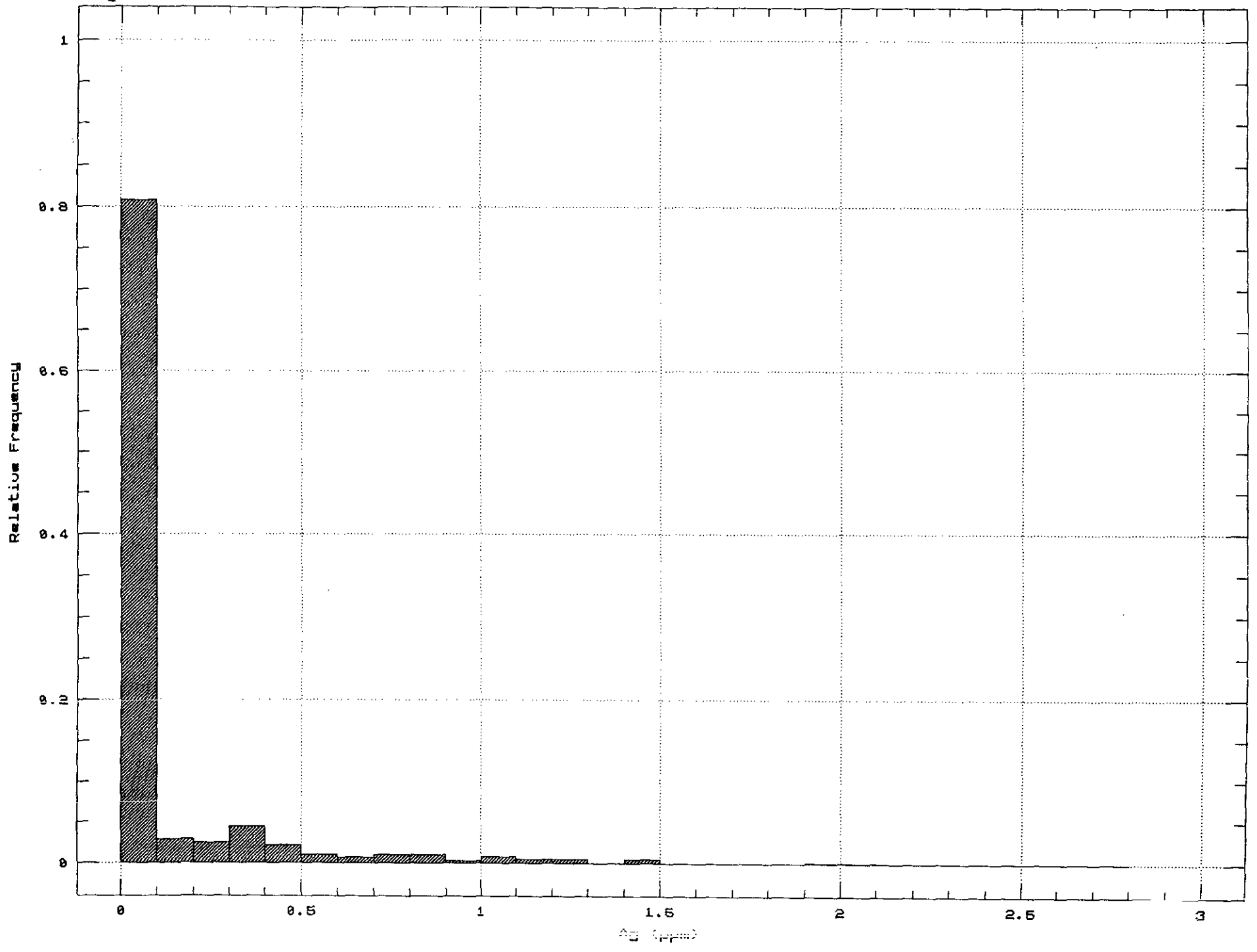
Class	Lower Limit	Upper Limit	Midpoint	Frequency	Relative Frequency	Cumulative Frequency	Cum. Rel. Frequency
at or below		.000		0	.00000	0	.000
1	.000	.100	.0500	453	.80605	453	.806
2	.100	.200	.1500	16	.02847	469	.835
3	.200	.300	.2500	14	.02491	483	.859
4	.300	.400	.3500	25	.04448	508	.904
5	.400	.500	.4500	12	.02135	520	.925
6	.500	.600	.5500	6	.01068	526	.936
7	.600	.700	.6500	4	.00712	530	.943
8	.700	.800	.7500	6	.01068	536	.954
9	.800	.900	.8500	6	.01068	542	.964
10	.900	1.000	.9500	2	.00356	544	.968
11	1.000	1.100	1.0500	5	.00890	549	.977
12	1.100	1.200	1.1500	3	.00534	552	.982
13	1.200	1.300	1.2500	3	.00534	555	.988
14	1.300	1.400	1.3500	0	.00000	555	.988
15	1.400	1.500	1.4500	3	.00534	558	.993
16	1.500	1.600	1.5500	0	.00000	558	.993
17	1.600	1.700	1.6500	0	.00000	558	.993
18	1.700	1.800	1.7500	0	.00000	558	.993
19	1.800	1.900	1.8500	0	.00000	558	.993
20	1.900	2.000	1.9500	1	.00178	559	.995
21	2.000	2.100	2.0500	1	.00178	560	.996
22	2.100	2.200	2.1500	0	.00000	560	.996
23	2.200	2.300	2.2500	0	.00000	560	.996
24	2.300	2.400	2.3500	0	.00000	560	.996
25	2.400	2.500	2.4500	0	.00000	560	.996
26	2.500	2.600	2.5500	0	.00000	560	.996
27	2.600	2.700	2.6500	0	.00000	560	.996
28	2.700	2.800	2.7500	0	.00000	560	.996
above	2.800			2	.00356	562	1.000

Mean = 0.204804

Standard Deviation = 0.311677

Median = 0.1

Frequency Histogram for Silver



Frequency Tabulation for Arsenic

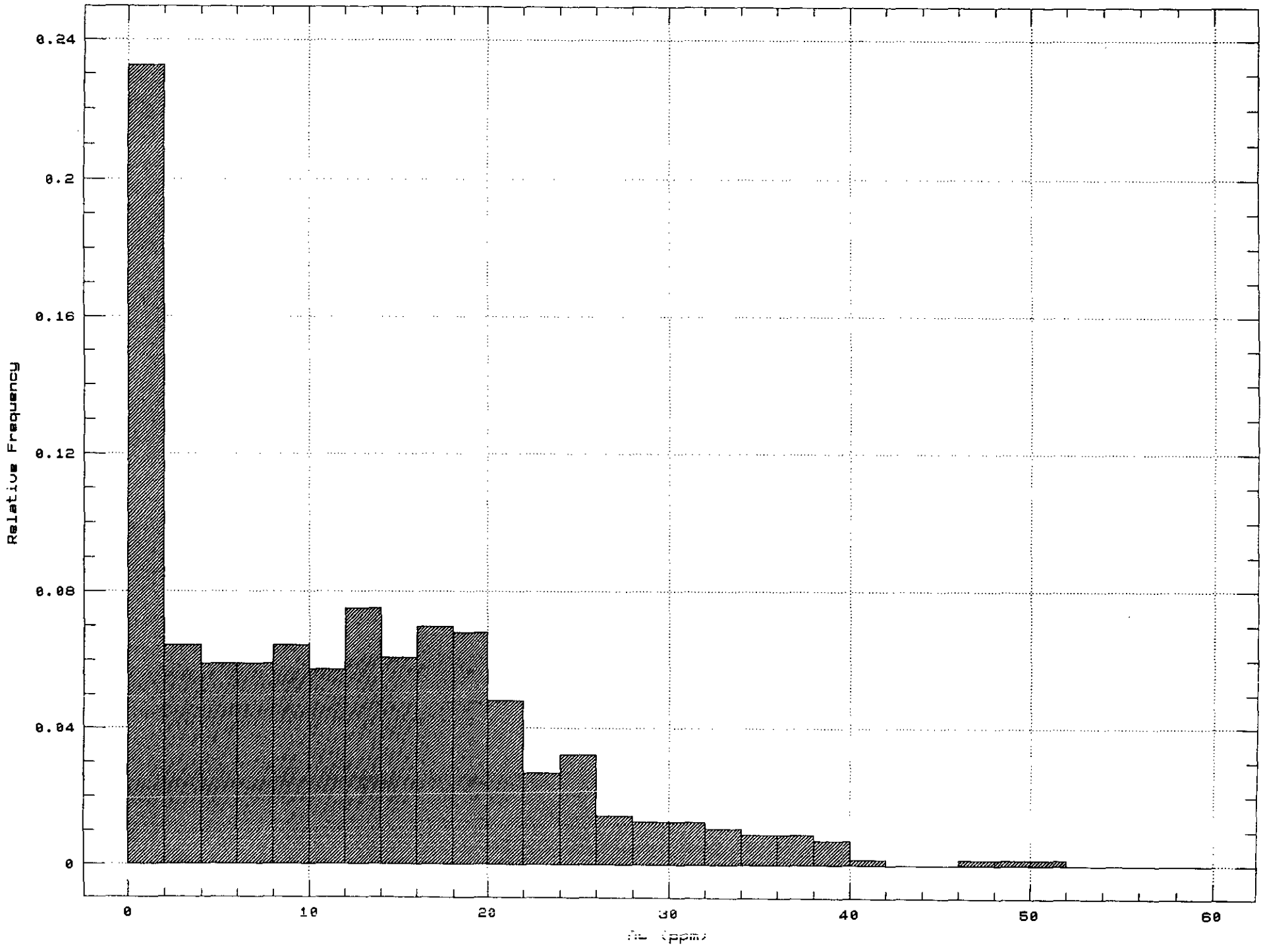
Class	Lower Limit	Upper Limit	Midpoint	Frequency	Relative Frequency	Cumulative Frequency	Cum. Rel. Frequency
at or below		.00		0	.00000	0	.000
1	.00	2.00	1.00	130	.23132	130	.231
2	2.00	4.00	3.00	36	.06406	166	.295
3	4.00	6.00	5.00	33	.05872	199	.354
4	6.00	8.00	7.00	33	.05872	232	.413
5	8.00	10.00	9.00	36	.06406	268	.477
6	10.00	12.00	11.00	32	.05694	300	.534
7	12.00	14.00	13.00	42	.07473	342	.609
8	14.00	16.00	15.00	34	.06050	376	.669
9	16.00	18.00	17.00	39	.06940	415	.738
10	18.00	20.00	19.00	38	.06762	453	.806
11	20.00	22.00	21.00	27	.04804	480	.854
12	22.00	24.00	23.00	15	.02669	495	.881
13	24.00	26.00	25.00	18	.03203	513	.913
14	26.00	28.00	27.00	8	.01423	521	.927
15	28.00	30.00	29.00	7	.01246	528	.940
16	30.00	32.00	31.00	7	.01246	535	.952
17	32.00	34.00	33.00	6	.01068	541	.963
18	34.00	36.00	35.00	5	.00890	546	.972
19	36.00	38.00	37.00	5	.00890	551	.980
20	38.00	40.00	39.00	4	.00712	555	.988
21	40.00	42.00	41.00	1	.00178	556	.989
22	42.00	44.00	43.00	0	.00000	556	.989
23	44.00	46.00	45.00	0	.00000	556	.989
24	46.00	48.00	47.00	1	.00178	557	.991
25	48.00	50.00	49.00	1	.00178	558	.993
26	50.00	52.00	51.00	1	.00178	559	.995
27	52.00	54.00	53.00	0	.00000	559	.995
28	54.00	56.00	55.00	0	.00000	559	.995
29	56.00	58.00	57.00	0	.00000	559	.995
30	58.00	60.00	59.00	0	.00000	559	.995
above	60.00			3	.00534	562	1.000

Mean = 12.7224

Standard Deviation = 11.6445

Median = 11

Frequency Histogram for Arsenic



Frequency Tabulation for Barium

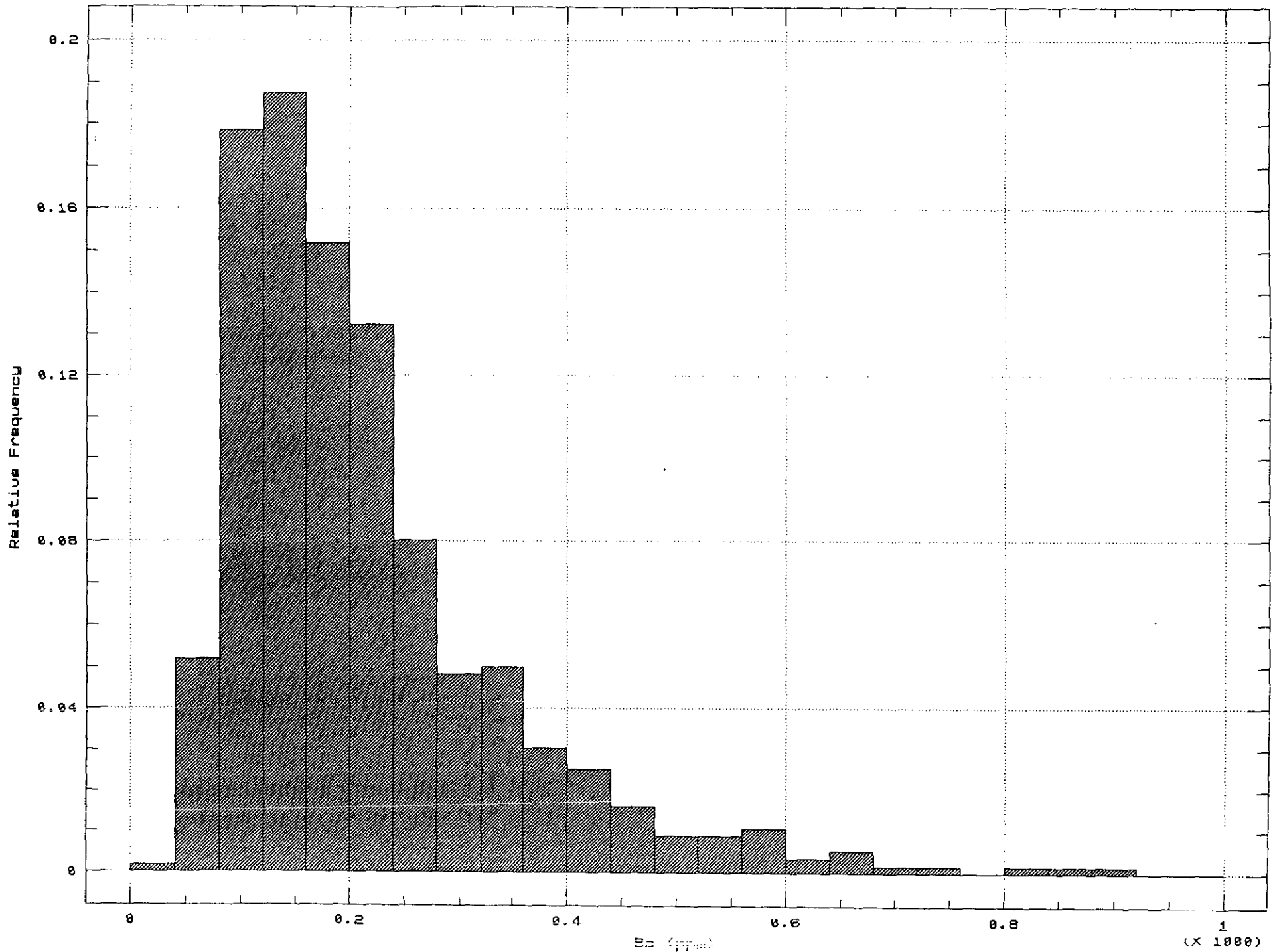
Class	Lower Limit	Upper Limit	Midpoint	Frequency	Relative Frequency	Cumulative Frequency	Cum. Rel. Frequency
at or below		.00		0	.00000	0	.00000
1	.00	40.00	20.00	1	.00178	1	.00178
2	40.00	80.00	60.00	29	.05160	30	.05338
3	80.00	120.00	100.00	100	.17794	130	.23132
4	120.00	160.00	140.00	105	.18683	235	.41815
5	160.00	200.00	180.00	85	.15125	320	.56940
6	200.00	240.00	220.00	74	.13167	394	.70107
7	240.00	280.00	260.00	45	.08007	439	.78114
8	280.00	320.00	300.00	27	.04804	466	.82918
9	320.00	360.00	340.00	28	.04982	494	.87900
10	360.00	400.00	380.00	17	.03025	511	.90925
11	400.00	440.00	420.00	14	.02491	525	.93416
12	440.00	480.00	460.00	9	.01601	534	.95018
13	480.00	520.00	500.00	5	.00890	539	.95907
14	520.00	560.00	540.00	5	.00890	544	.96797
15	560.00	600.00	580.00	6	.01068	550	.97865
16	600.00	640.00	620.00	2	.00356	552	.98221
17	640.00	680.00	660.00	3	.00534	555	.98754
18	680.00	720.00	700.00	1	.00178	556	.98932
19	720.00	760.00	740.00	1	.00178	557	.99110
20	760.00	800.00	780.00	0	.00000	557	.99110
21	800.00	840.00	820.00	1	.00178	558	.99288
22	840.00	880.00	860.00	1	.00178	559	.99466
23	880.00	920.00	900.00	1	.00178	560	.99644
24	920.00	960.00	940.00	0	.00000	560	.99644
25	960.00	1000.00	980.00	0	.00000	560	.99644
above	1000.00			2	.00356	562	1.00000

Mean = 217.868

Standard Deviation = 139.833

Median = 179

Frequency Histogram for Barium



Frequency Tabulation for Cadmium

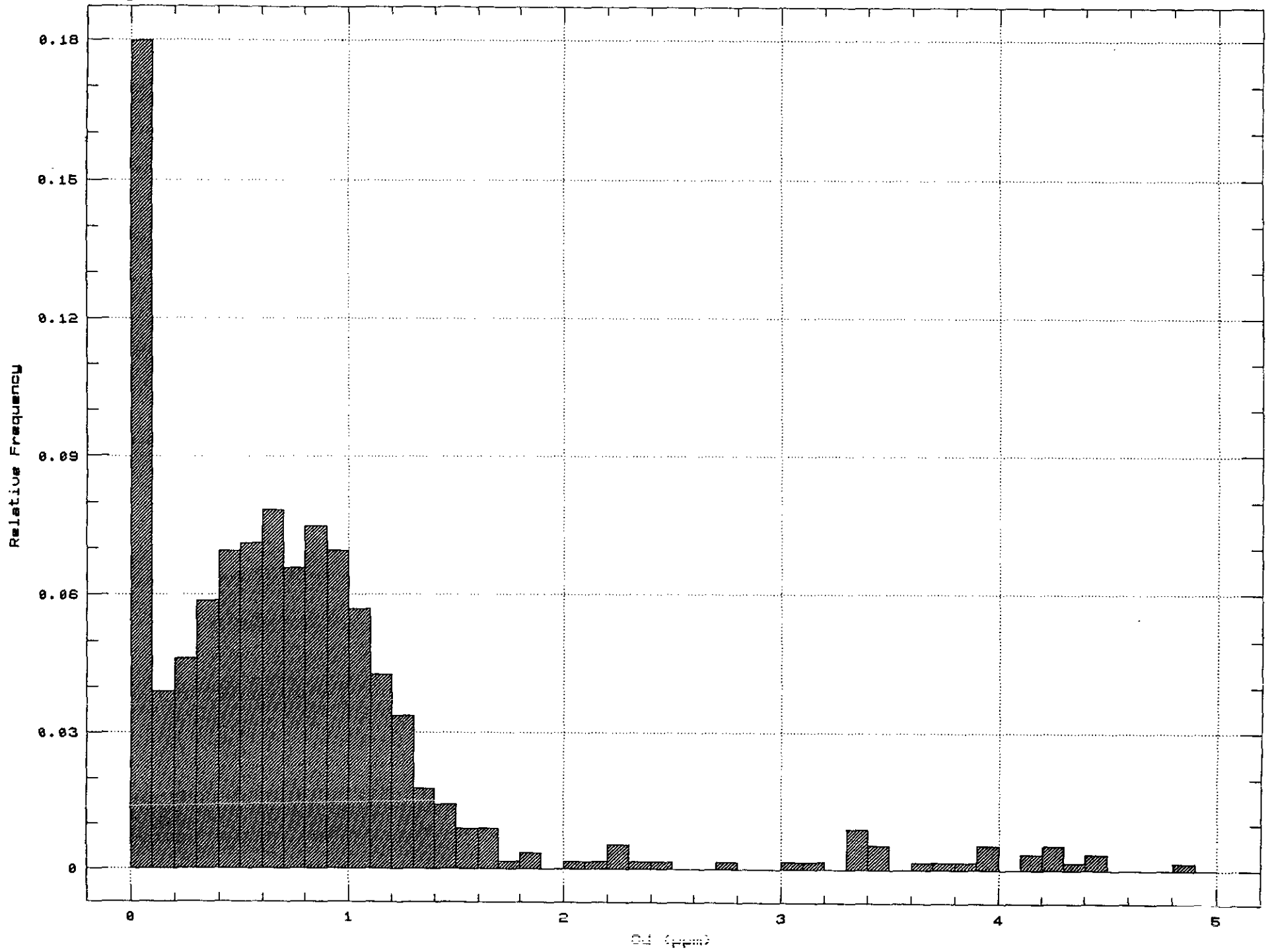
Class	Lower Limit	Upper Limit	Midpoint	Frequency	Relative Frequency	Cumulative Frequency	Cum. Rel. Frequency
at or below		.000		0	.00000	0	.000
1	.000	.100	.0500	101	.17972	101	.180
2	.100	.200	.1500	22	.03915	123	.219
3	.200	.300	.2500	26	.04626	149	.265
4	.300	.400	.3500	33	.05872	182	.324
5	.400	.500	.4500	39	.06940	221	.393
6	.500	.600	.5500	40	.07117	261	.464
7	.600	.700	.6500	44	.07829	305	.543
8	.700	.800	.7500	37	.06584	342	.609
9	.800	.900	.8500	42	.07473	384	.683
10	.900	1.000	.9500	39	.06940	423	.753
11	1.000	1.100	1.0500	32	.05694	455	.810
12	1.100	1.200	1.1500	24	.04270	479	.852
13	1.200	1.300	1.2500	19	.03381	498	.886
14	1.300	1.400	1.3500	10	.01779	508	.904
15	1.400	1.500	1.4500	8	.01423	516	.918
16	1.500	1.600	1.5500	5	.00890	521	.927
17	1.600	1.700	1.6500	5	.00890	526	.936
18	1.700	1.800	1.7500	1	.00178	527	.938
19	1.800	1.900	1.8500	2	.00356	529	.941
20	1.900	2.000	1.9500	0	.00000	529	.941
21	2.000	2.100	2.0500	1	.00178	530	.943
22	2.100	2.200	2.1500	1	.00178	531	.945
23	2.200	2.300	2.2500	3	.00534	534	.950
24	2.300	2.400	2.3500	1	.00178	535	.952
25	2.400	2.500	2.4500	1	.00178	536	.954
26	2.500	2.600	2.5500	0	.00000	536	.954
27	2.600	2.700	2.6500	0	.00000	536	.954
28	2.700	2.800	2.7500	1	.00178	537	.956
29	2.800	2.900	2.8500	0	.00000	537	.956
30	2.900	3.000	2.9500	0	.00000	537	.956
31	3.000	3.100	3.0500	1	.00178	538	.957
32	3.100	3.200	3.1500	1	.00178	539	.959
33	3.200	3.300	3.2500	0	.00000	539	.959
34	3.300	3.400	3.3500	5	.00890	544	.968
35	3.400	3.500	3.4500	3	.00534	547	.973
36	3.500	3.600	3.5500	0	.00000	547	.973
37	3.600	3.700	3.6500	1	.00178	548	.975
38	3.700	3.800	3.7500	1	.00178	549	.977
39	3.800	3.900	3.8500	1	.00178	550	.979
40	3.900	4.000	3.9500	3	.00534	553	.984
41	4.000	4.100	4.0500	0	.00000	553	.984
42	4.100	4.200	4.1500	2	.00356	555	.988
43	4.200	4.300	4.2500	3	.00534	558	.993
44	4.300	4.400	4.3500	1	.00178	559	.995
45	4.400	4.500	4.4500	2	.00356	561	.998
46	4.500	4.600	4.5500	0	.00000	561	.998
47	4.600	4.700	4.6500	0	.00000	561	.998
48	4.700	4.800	4.7500	0	.00000	561	.998
49	4.800	4.900	4.8500	1	.00178	562	1.000
50	4.900	5.000	4.9500	0	.00000	562	1.000
above	5.000			0	.00000	562	1.000

Mean = 0.833986

Standard Deviation = 0.808887

Median = 0.7

Frequency Histogram for Cadmium



Frequency Tabulation for Copper

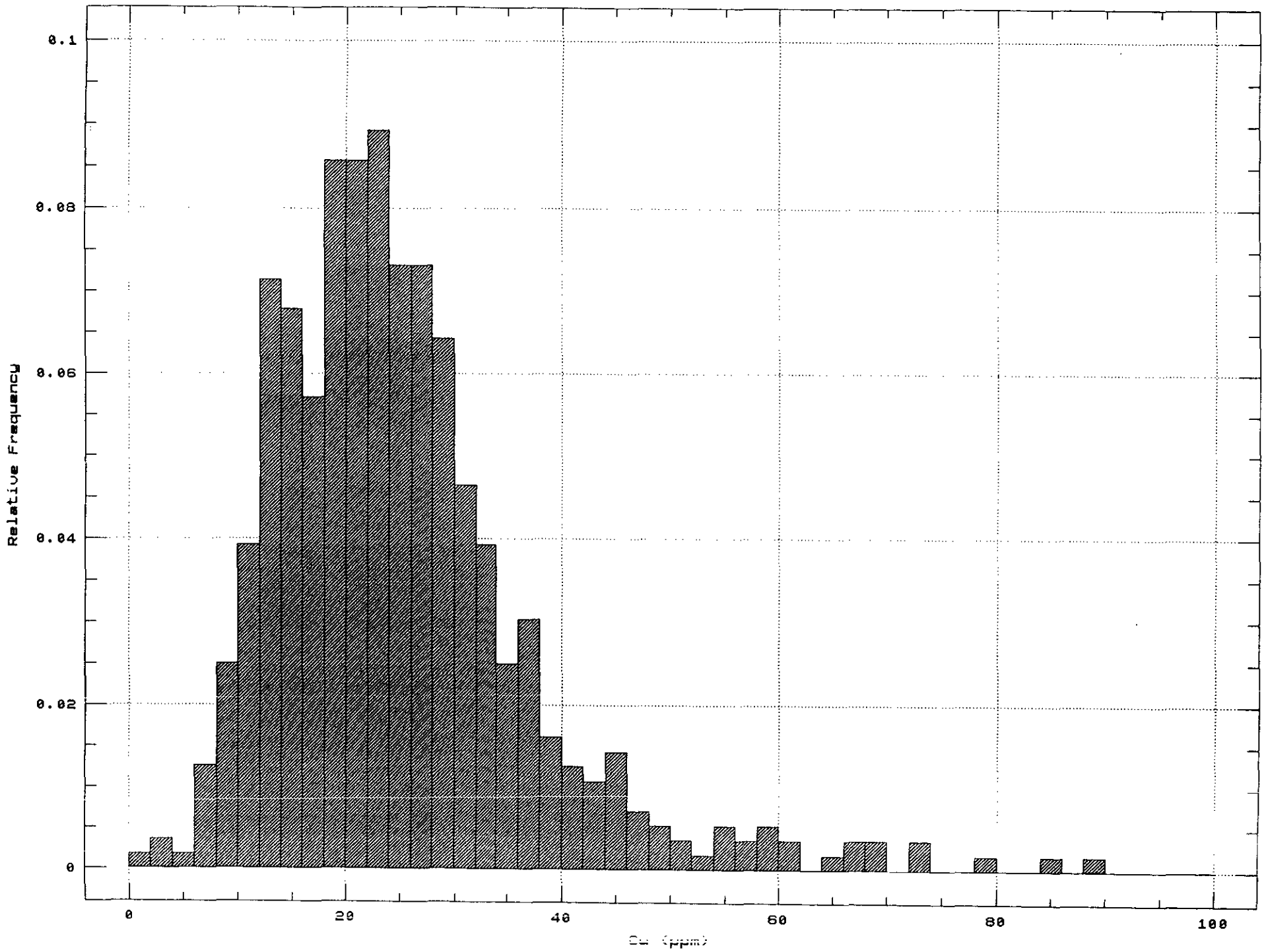
Class	Lower Limit	Upper Limit	Midpoint	Frequency	Relative Frequency	Cumulative Frequency	Cum. Rel. Frequency
at or below		.00		0	.00000	0	.00000
1	.00	2.00	1.00	1	.00178	1	.00178
2	2.00	4.00	3.00	2	.00356	3	.00534
3	4.00	6.00	5.00	1	.00178	4	.00712
4	6.00	8.00	7.00	7	.01246	11	.01957
5	8.00	10.00	9.00	14	.02491	25	.04448
6	10.00	12.00	11.00	22	.03915	47	.08363
7	12.00	14.00	13.00	40	.07117	87	.15480
8	14.00	16.00	15.00	38	.06762	125	.22242
9	16.00	18.00	17.00	32	.05694	157	.27936
10	18.00	20.00	19.00	48	.08541	205	.36477
11	20.00	22.00	21.00	48	.08541	253	.45018
12	22.00	24.00	23.00	50	.08897	303	.53915
13	24.00	26.00	25.00	41	.07295	344	.61210
14	26.00	28.00	27.00	41	.07295	385	.68505
15	28.00	30.00	29.00	36	.06406	421	.74911
16	30.00	32.00	31.00	26	.04626	447	.79537
17	32.00	34.00	33.00	22	.03915	469	.83452
18	34.00	36.00	35.00	14	.02491	483	.85943
19	36.00	38.00	37.00	17	.03025	500	.88968
20	38.00	40.00	39.00	9	.01601	509	.90569
21	40.00	42.00	41.00	7	.01246	516	.91815
22	42.00	44.00	43.00	6	.01068	522	.92883
23	44.00	46.00	45.00	8	.01423	530	.94306
24	46.00	48.00	47.00	4	.00712	534	.95018
25	48.00	50.00	49.00	3	.00534	537	.95552
26	50.00	52.00	51.00	2	.00356	539	.95907
27	52.00	54.00	53.00	1	.00178	540	.96085
28	54.00	56.00	55.00	3	.00534	543	.96619
29	56.00	58.00	57.00	2	.00356	545	.96975
30	58.00	60.00	59.00	3	.00534	548	.97509
31	60.00	62.00	61.00	2	.00356	550	.97865
32	62.00	64.00	63.00	0	.00000	550	.97865
33	64.00	66.00	65.00	1	.00178	551	.98043
34	66.00	68.00	67.00	2	.00356	553	.98399
35	68.00	70.00	69.00	2	.00356	555	.98754
36	70.00	72.00	71.00	0	.00000	555	.98754
37	72.00	74.00	73.00	2	.00356	557	.99110
38	74.00	76.00	75.00	0	.00000	557	.99110
39	76.00	78.00	77.00	0	.00000	557	.99110
40	78.00	80.00	79.00	1	.00178	558	.99288
41	80.00	82.00	81.00	0	.00000	558	.99288
42	82.00	84.00	83.00	0	.00000	558	.99288
43	84.00	86.00	85.00	1	.00178	559	.99466
44	86.00	88.00	87.00	0	.00000	559	.99466
45	88.00	90.00	89.00	1	.00178	560	.99644
46	90.00	92.00	91.00	0	.00000	560	.99644
47	92.00	94.00	93.00	0	.00000	560	.99644
48	94.00	96.00	95.00	0	.00000	560	.99644
49	96.00	98.00	97.00	0	.00000	560	.99644
50	98.00	100.00	99.00	0	.00000	560	.99644
above	100.00			2	.00356	562	1.00000

Mean = 25.9573

Standard Deviation = 14.1066

Median = 24

Frequency Histogram for Copper

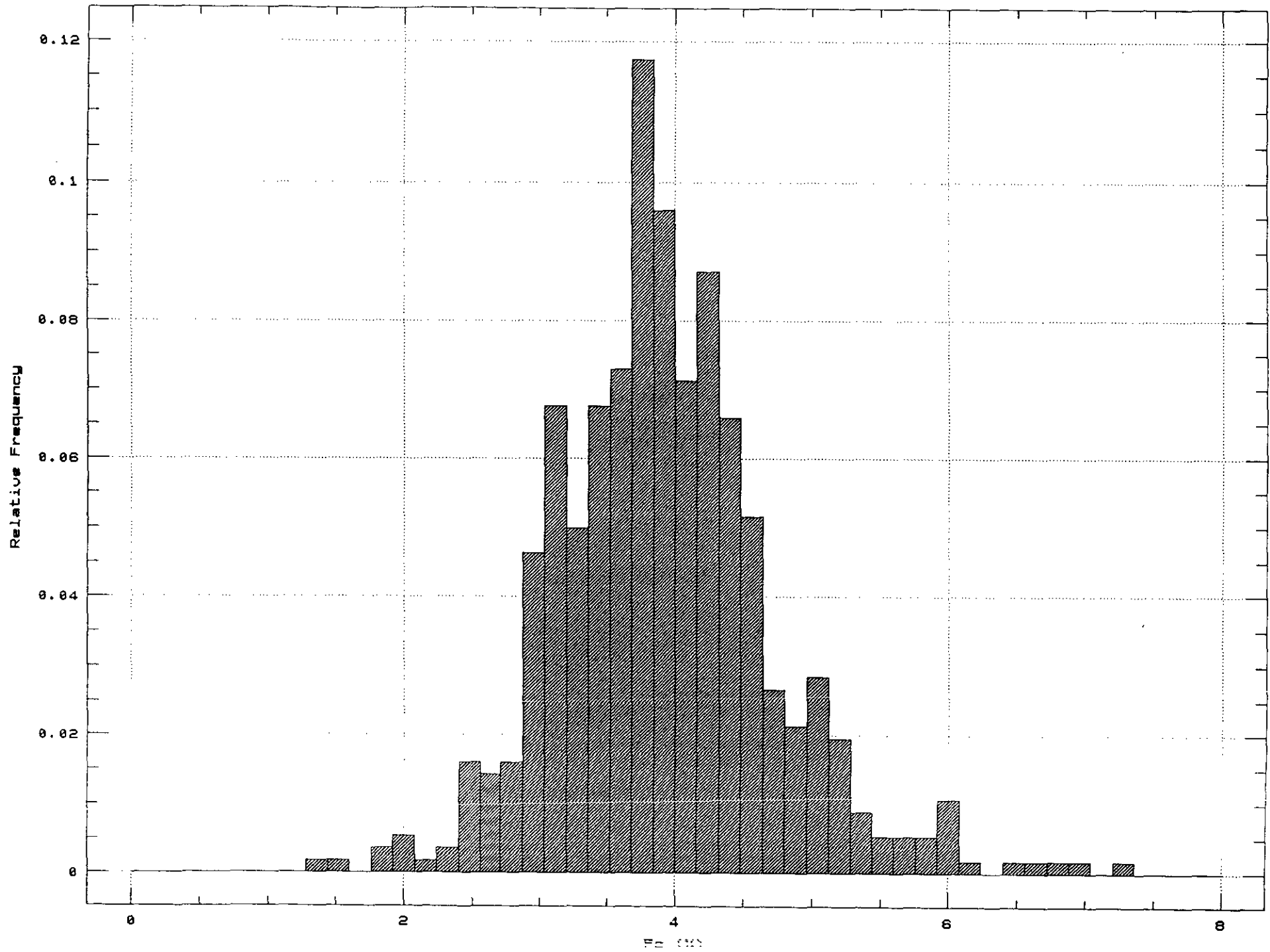


Frequency Tabulation for Iron

Class	Lower Limit	Upper Limit	Midpoint	Frequency	Relative Frequency	Cumulative Frequency	Cum. Rel. Frequency
at or below		.000		0	.00000	0	.00000
1	.000	.160	.0800	0	.00000	0	.00000
2	.160	.320	.2400	0	.00000	0	.00000
3	.320	.480	.4000	0	.00000	0	.00000
4	.480	.640	.5600	0	.00000	0	.00000
5	.640	.800	.7200	0	.00000	0	.00000
6	.800	.960	.8800	0	.00000	0	.00000
7	.960	1.120	1.0400	0	.00000	0	.00000
8	1.120	1.280	1.2000	0	.00000	0	.00000
9	1.280	1.440	1.3600	1	.00178	1	.00178
10	1.440	1.600	1.5200	1	.00178	2	.00356
11	1.600	1.760	1.6800	0	.00000	2	.00356
12	1.760	1.920	1.8400	2	.00356	4	.00712
13	1.920	2.080	2.0000	3	.00534	7	.01246
14	2.080	2.240	2.1600	1	.00178	8	.01423
15	2.240	2.400	2.3200	2	.00356	10	.01779
16	2.400	2.560	2.4800	9	.01601	19	.03381
17	2.560	2.720	2.6400	8	.01423	27	.04804
18	2.720	2.880	2.8000	9	.01601	36	.06406
19	2.880	3.040	2.9600	26	.04626	62	.11032
20	3.040	3.200	3.1200	38	.06762	100	.17794
21	3.200	3.360	3.2800	28	.04982	128	.22776
22	3.360	3.520	3.4400	38	.06762	166	.29537
23	3.520	3.680	3.6000	41	.07295	207	.36833
24	3.680	3.840	3.7600	66	.11744	273	.48577
25	3.840	4.000	3.9200	54	.09609	327	.58185
26	4.000	4.160	4.0800	40	.07117	367	.65302
27	4.160	4.320	4.2400	49	.08719	416	.74021
28	4.320	4.480	4.4000	37	.06584	453	.80605
29	4.480	4.640	4.5600	29	.05160	482	.85765
30	4.640	4.800	4.7200	15	.02669	497	.88434
31	4.800	4.960	4.8800	12	.02135	509	.90569
32	4.960	5.120	5.0400	16	.02847	525	.93416
33	5.120	5.280	5.2000	11	.01957	536	.95374
34	5.280	5.440	5.3600	5	.00890	541	.96263
35	5.440	5.600	5.5200	3	.00534	544	.96797
36	5.600	5.760	5.6800	3	.00534	547	.97331
37	5.760	5.920	5.8400	3	.00534	550	.97865
38	5.920	6.080	6.0000	6	.01068	556	.98932
39	6.080	6.240	6.1600	1	.00178	557	.99110
40	6.240	6.400	6.3200	0	.00000	557	.99110
41	6.400	6.560	6.4800	1	.00178	558	.99288
42	6.560	6.720	6.6400	1	.00178	559	.99466
43	6.720	6.880	6.8000	1	.00178	560	.99644
44	6.880	7.040	6.9600	1	.00178	561	.99822
45	7.040	7.200	7.1200	0	.00000	561	.99822
46	7.200	7.360	7.2800	1	.00178	562	1.00000
47	7.360	7.520	7.4400	0	.00000	562	1.00000
48	7.520	7.680	7.6000	0	.00000	562	1.00000
49	7.680	7.840	7.7600	0	.00000	562	1.00000
50	7.840	8.000	7.9200	0	.00000	562	1.00000
above	8.000			0	.00000	562	1.00000

Mean = 3.91859 Standard Deviation = 0.795261 Median = 3.86

Frequency Histogram for Iron



Frequency Tabulation for Potassium

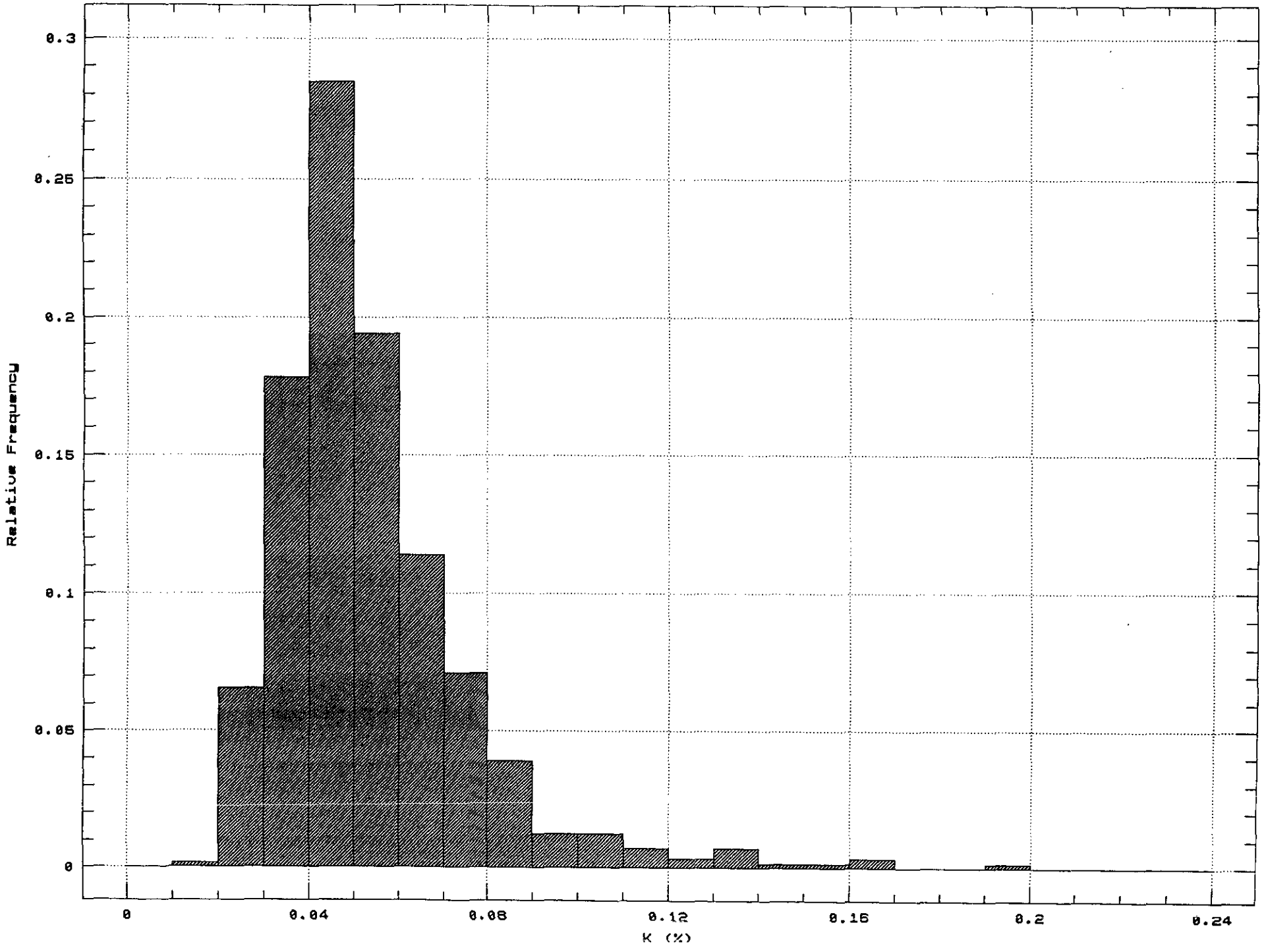
Class	Lower Limit	Upper Limit	Midpoint	Frequency	Relative Frequency	Cumulative Frequency	Cum. Rel. Frequency
at or below		.0000		0	.00000	0	.00000
1	.0000	.0100	.00500	0	.00000	0	.00000
2	.0100	.0200	.01500	1	.00178	1	.00178
3	.0200	.0300	.02500	37	.06584	38	.06762
4	.0300	.0400	.03500	100	.17794	138	.24555
5	.0400	.0500	.04500	160	.28470	298	.53025
6	.0500	.0600	.05500	109	.19395	407	.72420
7	.0600	.0700	.06500	64	.11388	471	.83808
8	.0700	.0800	.07500	40	.07117	511	.90925
9	.0800	.0900	.08500	22	.03915	533	.94840
10	.0900	.1000	.09500	7	.01246	540	.96085
11	.1000	.1100	.10500	7	.01246	547	.97331
12	.1100	.1200	.11500	4	.00712	551	.98043
13	.1200	.1300	.12500	2	.00356	553	.98399
14	.1300	.1400	.13500	4	.00712	557	.99110
15	.1400	.1500	.14500	1	.00178	558	.99288
16	.1500	.1600	.15500	1	.00178	559	.99466
17	.1600	.1700	.16500	2	.00356	561	.99822
18	.1700	.1800	.17500	0	.00000	561	.99822
19	.1800	.1900	.18500	0	.00000	561	.99822
20	.1900	.2000	.19500	1	.00178	562	1.00000
21	.2000	.2100	.20500	0	.00000	562	1.00000
22	.2100	.2200	.21500	0	.00000	562	1.00000
23	.2200	.2300	.22500	0	.00000	562	1.00000
24	.2300	.2400	.23500	0	.00000	562	1.00000
above	.2400			0	.00000	562	1.00000

Mean = 0.0586299

Standard Deviation = 0.0220373

Median = 0.05

Frequency Histogram for Potassium



Frequency Tabulation for Molybdenum

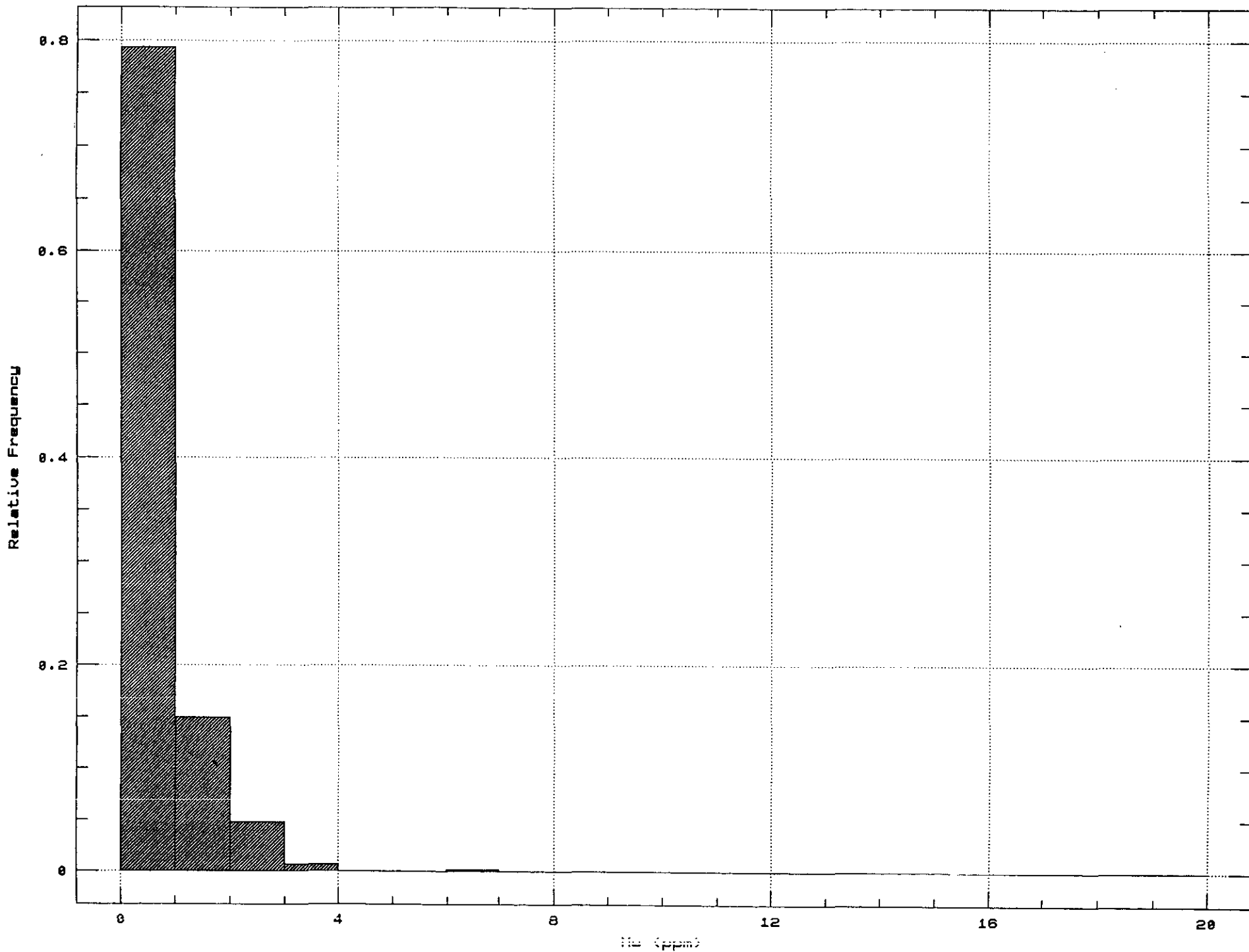
Class	Lower Limit	Upper Limit	Midpoint	Frequency	Relative Frequency	Cumulative Frequency	Cum. Rel. Frequency
at or below		-.500		0	.00000	0	.000
1	-.500	.500	.00	0	.00000	0	.000
2	.500	1.500	1.00	446	.79359	446	.794
3	1.500	2.500	2.00	84	.14947	530	.943
4	2.500	3.500	3.00	27	.04804	557	.991
5	3.500	4.500	4.00	4	.00712	561	.998
6	4.500	5.500	5.00	0	.00000	561	.998
7	5.500	6.500	6.00	0	.00000	561	.998
8	6.500	7.500	7.00	1	.00178	562	1.000
9	7.500	8.500	8.00	0	.00000	562	1.000
10	8.500	9.500	9.00	0	.00000	562	1.000
11	9.500	10.500	10.00	0	.00000	562	1.000
12	10.500	11.500	11.00	0	.00000	562	1.000
13	11.500	12.500	12.00	0	.00000	562	1.000
14	12.500	13.500	13.00	0	.00000	562	1.000
15	13.500	14.500	14.00	0	.00000	562	1.000
16	14.500	15.500	15.00	0	.00000	562	1.000
17	15.500	16.500	16.00	0	.00000	562	1.000
18	16.500	17.500	17.00	0	.00000	562	1.000
19	17.500	18.500	18.00	0	.00000	562	1.000
20	18.500	19.500	19.00	0	.00000	562	1.000
21	19.500	20.500	20.00	0	.00000	562	1.000
above	20.500			0	.00000	562	1.000

Mean = 1.27758

Standard Deviation = 0.627216

Median = 1

Frequency Histogram for Molybdenum



Frequency Tabulation for Nickel

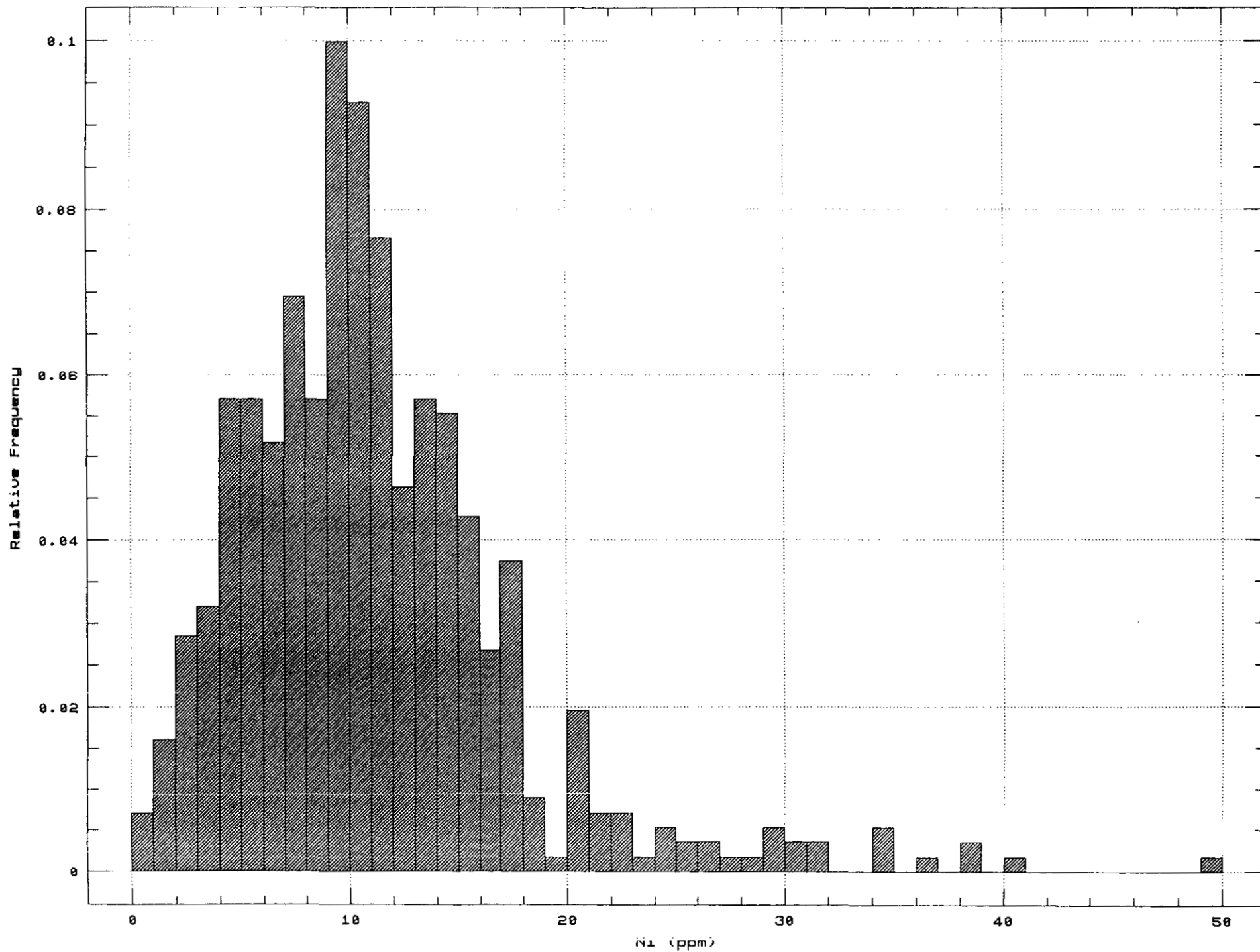
Class	Lower Limit	Upper Limit	Midpoint	Frequency	Relative Frequency	Cumulative Frequency	Cum. Rel. Frequency
at or below		.00		0	.00000	0	.00000
1	.00	1.00	.500	4	.00712	4	.00712
2	1.00	2.00	1.500	9	.01601	13	.02313
3	2.00	3.00	2.500	16	.02847	29	.05160
4	3.00	4.00	3.500	18	.03203	47	.08363
5	4.00	5.00	4.500	32	.05694	79	.14057
6	5.00	6.00	5.500	32	.05694	111	.19751
7	6.00	7.00	6.500	29	.05160	140	.24911
8	7.00	8.00	7.500	39	.06940	179	.31851
9	8.00	9.00	8.500	32	.05694	211	.37544
10	9.00	10.00	9.500	56	.09964	267	.47509
11	10.00	11.00	10.500	52	.09253	319	.56762
12	11.00	12.00	11.500	43	.07651	362	.64413
13	12.00	13.00	12.500	26	.04626	388	.69039
14	13.00	14.00	13.500	32	.05694	420	.74733
15	14.00	15.00	14.500	31	.05516	451	.80249
16	15.00	16.00	15.500	24	.04270	475	.84520
17	16.00	17.00	16.500	15	.02669	490	.87189
18	17.00	18.00	17.500	21	.03737	511	.90925
19	18.00	19.00	18.500	5	.00890	516	.91815
20	19.00	20.00	19.500	1	.00178	517	.91993
21	20.00	21.00	20.500	11	.01957	528	.93950
22	21.00	22.00	21.500	4	.00712	532	.94662
23	22.00	23.00	22.500	4	.00712	536	.95374
24	23.00	24.00	23.500	1	.00178	537	.95552
25	24.00	25.00	24.500	3	.00534	540	.96085
26	25.00	26.00	25.500	2	.00356	542	.96441
27	26.00	27.00	26.500	2	.00356	544	.96797
28	27.00	28.00	27.500	1	.00178	545	.96975
29	28.00	29.00	28.500	1	.00178	546	.97153
30	29.00	30.00	29.500	3	.00534	549	.97687
31	30.00	31.00	30.500	2	.00356	551	.98043
32	31.00	32.00	31.500	2	.00356	553	.98399
33	32.00	33.00	32.500	0	.00000	553	.98399
34	33.00	34.00	33.500	0	.00000	553	.98399
35	34.00	35.00	34.500	3	.00534	556	.98932
36	35.00	36.00	35.500	0	.00000	556	.98932
37	36.00	37.00	36.500	1	.00178	557	.99110
38	37.00	38.00	37.500	0	.00000	557	.99110
39	38.00	39.00	38.500	2	.00356	559	.99466
40	39.00	40.00	39.500	0	.00000	559	.99466
41	40.00	41.00	40.500	1	.00178	560	.99644
42	41.00	42.00	41.500	0	.00000	560	.99644
43	42.00	43.00	42.500	0	.00000	560	.99644
44	43.00	44.00	43.500	0	.00000	560	.99644
45	44.00	45.00	44.500	0	.00000	560	.99644
46	45.00	46.00	45.500	0	.00000	560	.99644
47	46.00	47.00	46.500	0	.00000	560	.99644
48	47.00	48.00	47.500	0	.00000	560	.99644
49	48.00	49.00	48.500	0	.00000	560	.99644
50	49.00	50.00	49.500	1	.00178	561	.99822
above	50.00			1	.00178	562	1.00000

Mean = 11.7117

Standard Deviation = 6.63557

Median = 11

Frequency Histogram for Nickel



Frequency Tabulation for Lead

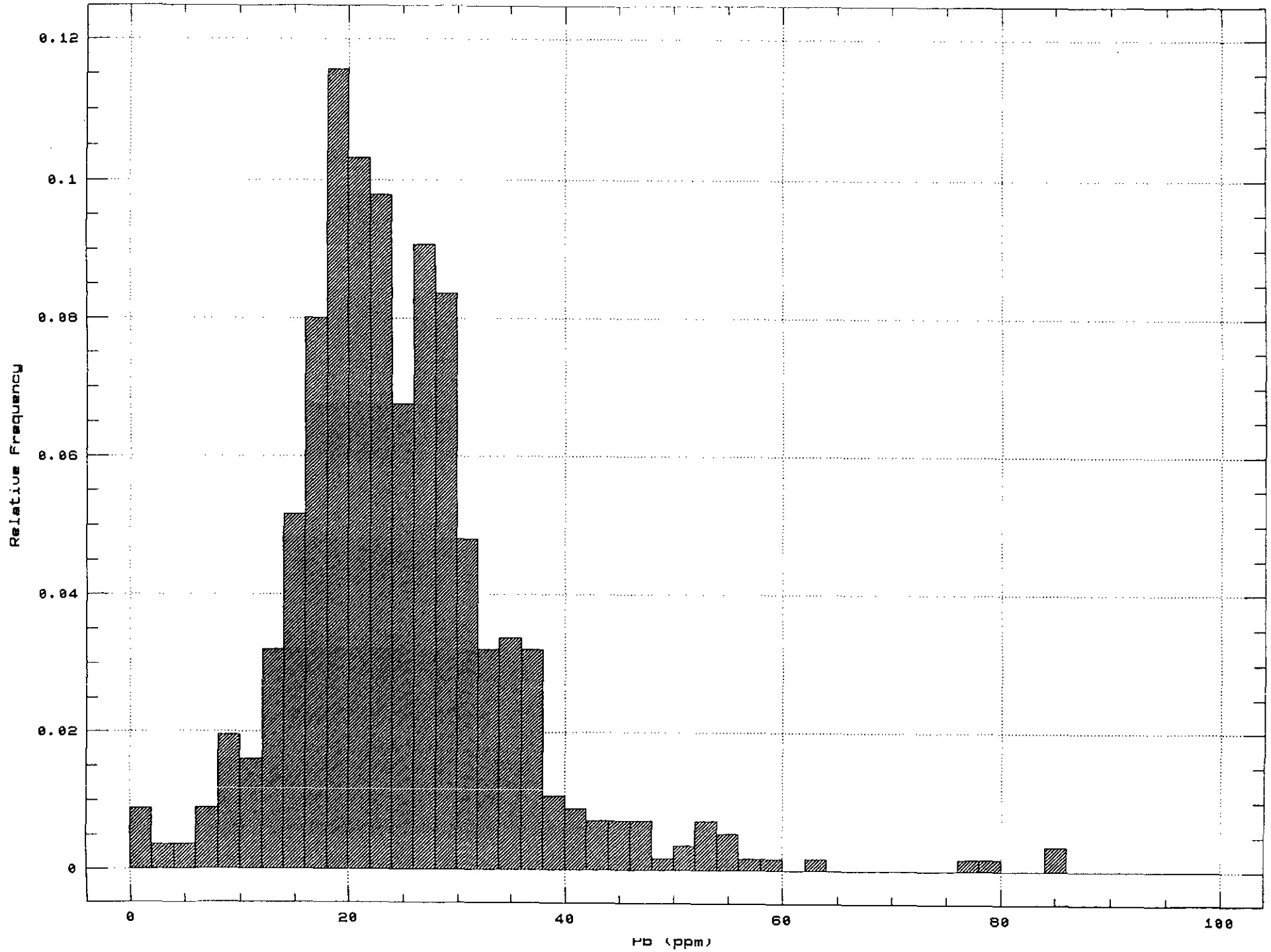
Class	Lower Limit	Upper Limit	Midpoint	Frequency	Relative Frequency	Cumulative Frequency	Cum. Rel. Frequency
at or below		.00		0	.00000	0	.00000
1	.00	2.00	1.00	5	.00890	5	.00890
2	2.00	4.00	3.00	2	.00356	7	.01246
3	4.00	6.00	5.00	2	.00356	9	.01601
4	6.00	8.00	7.00	5	.00890	14	.02491
5	8.00	10.00	9.00	11	.01957	25	.04448
6	10.00	12.00	11.00	9	.01601	34	.06050
7	12.00	14.00	13.00	18	.03203	52	.09253
8	14.00	16.00	15.00	29	.05160	81	.14413
9	16.00	18.00	17.00	45	.08007	126	.22420
10	18.00	20.00	19.00	65	.11566	191	.33986
11	20.00	22.00	21.00	58	.10320	249	.44306
12	22.00	24.00	23.00	55	.09786	304	.54093
13	24.00	26.00	25.00	38	.06762	342	.60854
14	26.00	28.00	27.00	51	.09075	393	.69929
15	28.00	30.00	29.00	47	.08363	440	.78292
16	30.00	32.00	31.00	27	.04804	467	.83096
17	32.00	34.00	33.00	18	.03203	485	.86299
18	34.00	36.00	35.00	19	.03381	504	.89680
19	36.00	38.00	37.00	18	.03203	522	.92883
20	38.00	40.00	39.00	6	.01068	528	.93950
21	40.00	42.00	41.00	5	.00890	533	.94840
22	42.00	44.00	43.00	4	.00712	537	.95552
23	44.00	46.00	45.00	4	.00712	541	.96263
24	46.00	48.00	47.00	4	.00712	545	.96975
25	48.00	50.00	49.00	1	.00178	546	.97153
26	50.00	52.00	51.00	2	.00356	548	.97509
27	52.00	54.00	53.00	4	.00712	552	.98221
28	54.00	56.00	55.00	3	.00534	555	.98754
29	56.00	58.00	57.00	1	.00178	556	.98932
30	58.00	60.00	59.00	1	.00178	557	.99110
31	60.00	62.00	61.00	0	.00000	557	.99110
32	62.00	64.00	63.00	1	.00178	558	.99288
33	64.00	66.00	65.00	0	.00000	558	.99288
34	66.00	68.00	67.00	0	.00000	558	.99288
35	68.00	70.00	69.00	0	.00000	558	.99288
36	70.00	72.00	71.00	0	.00000	558	.99288
37	72.00	74.00	73.00	0	.00000	558	.99288
38	74.00	76.00	75.00	0	.00000	558	.99288
39	76.00	78.00	77.00	1	.00178	559	.99466
40	78.00	80.00	79.00	1	.00178	560	.99644
41	80.00	82.00	81.00	0	.00000	560	.99644
42	82.00	84.00	83.00	0	.00000	560	.99644
43	84.00	86.00	85.00	2	.00356	562	1.00000
44	86.00	88.00	87.00	0	.00000	562	1.00000
45	88.00	90.00	89.00	0	.00000	562	1.00000
46	90.00	92.00	91.00	0	.00000	562	1.00000
47	92.00	94.00	93.00	0	.00000	562	1.00000
48	94.00	96.00	95.00	0	.00000	562	1.00000
49	96.00	98.00	97.00	0	.00000	562	1.00000
50	98.00	100.00	99.00	0	.00000	562	1.00000
above	100.00			0	.00000	562	1.00000

Mean = 25.1655

Standard Deviation = 10.5122

Median = 24

Frequency Histogram for Lead



Frequency Tabulation for Antimony

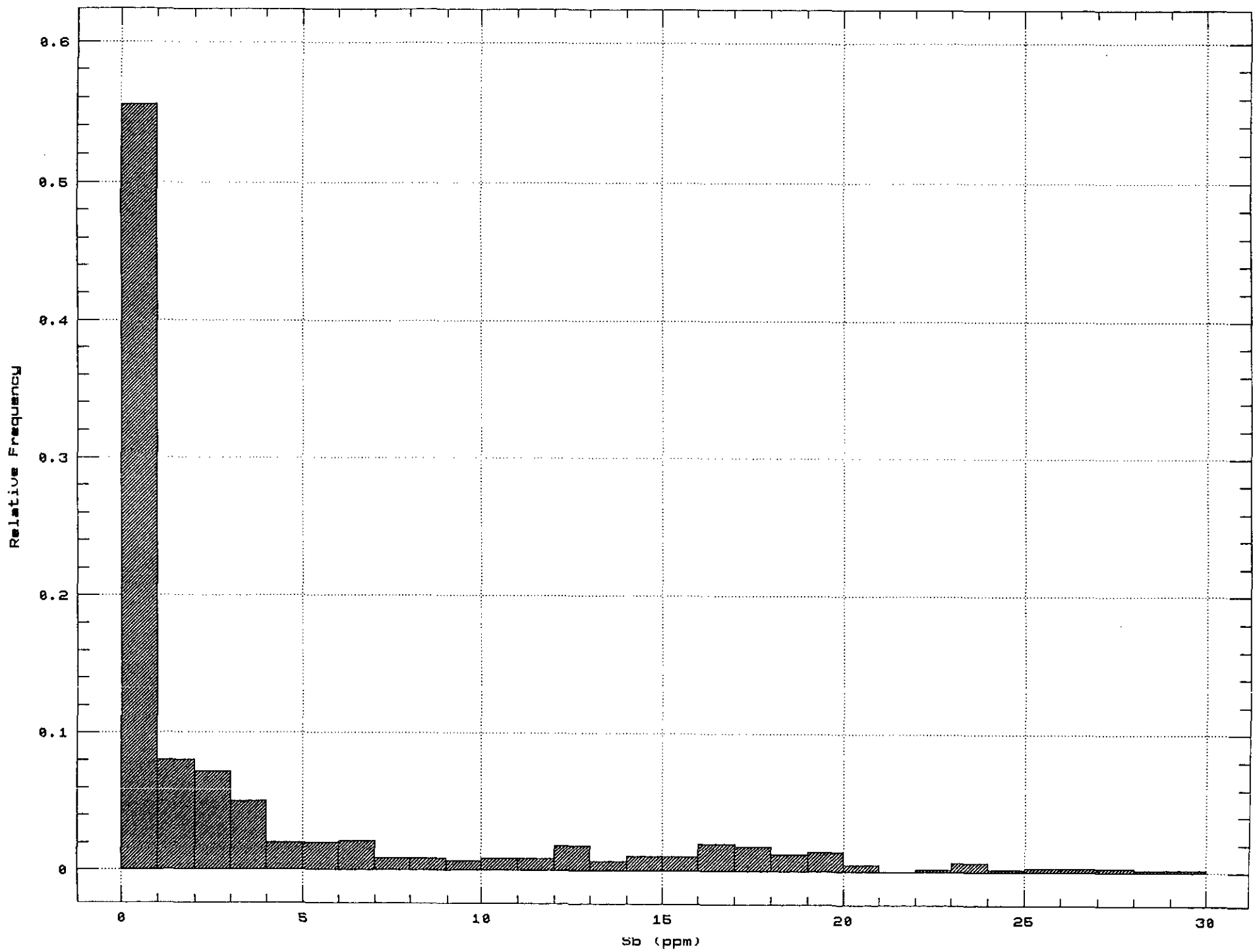
Class	Lower Limit	Upper Limit	Midpoint	Frequency	Relative Frequency	Cumulative Frequency	Cum. Rel. Frequency
at or below		-.500		0	.00000	0	.000
1	-.500	.500	.00	0	.00000	0	.000
2	.500	1.500	1.00	312	.55516	312	.555
3	1.500	2.500	2.00	45	.08007	357	.635
4	2.500	3.500	3.00	40	.07117	397	.706
5	3.500	4.500	4.00	28	.04982	425	.756
6	4.500	5.500	5.00	11	.01957	436	.776
7	5.500	6.500	6.00	11	.01957	447	.795
8	6.500	7.500	7.00	12	.02135	459	.817
9	7.500	8.500	8.00	5	.00890	464	.826
10	8.500	9.500	9.00	5	.00890	469	.835
11	9.500	10.500	10.00	4	.00712	473	.842
12	10.500	11.500	11.00	5	.00890	478	.851
13	11.500	12.500	12.00	5	.00890	483	.859
14	12.500	13.500	13.00	10	.01779	493	.877
15	13.500	14.500	14.00	4	.00712	497	.884
16	14.500	15.500	15.00	6	.01068	503	.895
17	15.500	16.500	16.00	6	.01068	509	.906
18	16.500	17.500	17.00	11	.01957	520	.925
19	17.500	18.500	18.00	10	.01779	530	.943
20	18.500	19.500	19.00	7	.01246	537	.956
21	19.500	20.500	20.00	8	.01423	545	.970
22	20.500	21.500	21.00	3	.00534	548	.975
23	21.500	22.500	22.00	0	.00000	548	.975
24	22.500	23.500	23.00	1	.00178	549	.977
25	23.500	24.500	24.00	4	.00712	553	.984
26	24.500	25.500	25.00	1	.00178	554	.986
27	25.500	26.500	26.00	2	.00356	556	.989
28	26.500	27.500	27.00	2	.00356	558	.993
29	27.500	28.500	28.00	2	.00356	560	.996
30	28.500	29.500	29.00	1	.00178	561	.998
31	29.500	30.500	30.00	1	.00178	562	1.000
above	30.500			0	.00000	562	1.000

Mean = 4.51779

Standard Deviation = 6.25431

Median = 1

Frequency Histogram for Antimony



Frequency Tabulation for Zinc

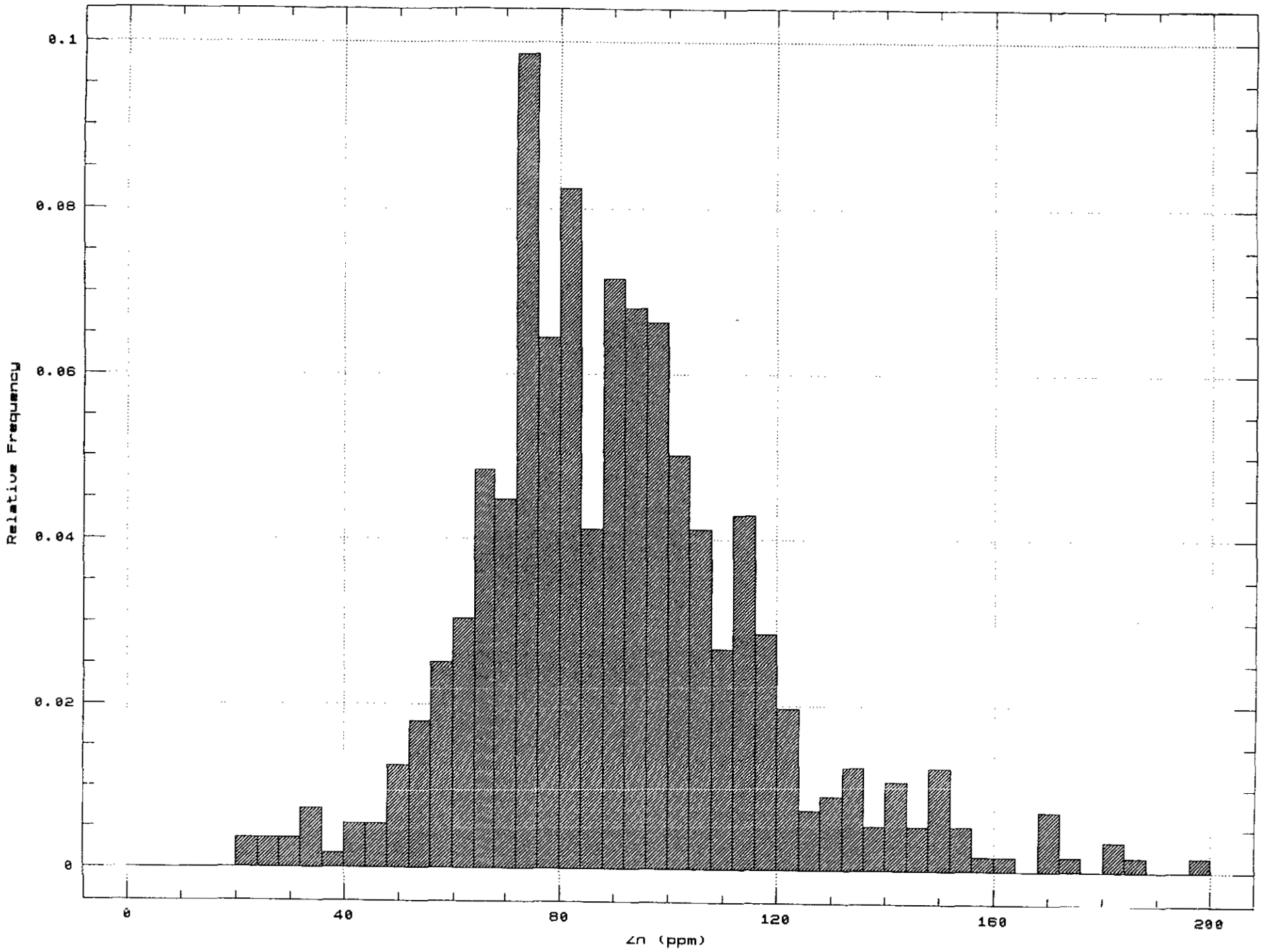
Class	Lower Limit	Upper Limit	Midpoint	Frequency	Relative Frequency	Cumulative Frequency	Cum. Rel. Frequency
at or below		.00		0	.00000	0	.00000
1	.00	4.00	2.00	0	.00000	0	.00000
2	4.00	8.00	6.00	0	.00000	0	.00000
3	8.00	12.00	10.00	0	.00000	0	.00000
4	12.00	16.00	14.00	0	.00000	0	.00000
5	16.00	20.00	18.00	0	.00000	0	.00000
6	20.00	24.00	22.00	2	.00356	2	.00356
7	24.00	28.00	26.00	2	.00356	4	.00712
8	28.00	32.00	30.00	2	.00356	6	.01068
9	32.00	36.00	34.00	4	.00712	10	.01779
10	36.00	40.00	38.00	1	.00178	11	.01957
11	40.00	44.00	42.00	3	.00534	14	.02491
12	44.00	48.00	46.00	3	.00534	17	.03025
13	48.00	52.00	50.00	7	.01246	24	.04270
14	52.00	56.00	54.00	10	.01779	34	.06050
15	56.00	60.00	58.00	14	.02491	48	.08541
16	60.00	64.00	62.00	17	.03025	65	.11566
17	64.00	68.00	66.00	27	.04804	92	.16370
18	68.00	72.00	70.00	25	.04448	117	.20819
19	72.00	76.00	74.00	55	.09786	172	.30605
20	76.00	80.00	78.00	36	.06406	208	.37011
21	80.00	84.00	82.00	46	.08185	254	.45196
22	84.00	88.00	86.00	23	.04093	277	.49288
23	88.00	92.00	90.00	40	.07117	317	.56406
24	92.00	96.00	94.00	38	.06762	355	.63167
25	96.00	100.00	98.00	37	.06584	392	.69751
26	100.00	104.00	102.00	28	.04982	420	.74733
27	104.00	108.00	106.00	23	.04093	443	.78826
28	108.00	112.00	110.00	15	.02669	458	.81495
29	112.00	116.00	114.00	24	.04270	482	.85765
30	116.00	120.00	118.00	16	.02847	498	.88612
31	120.00	124.00	122.00	11	.01957	509	.90569
32	124.00	128.00	126.00	4	.00712	513	.91281
33	128.00	132.00	130.00	5	.00890	518	.92171
34	132.00	136.00	134.00	7	.01246	525	.93416
35	136.00	140.00	138.00	3	.00534	528	.93950
36	140.00	144.00	142.00	6	.01068	534	.95018
37	144.00	148.00	146.00	3	.00534	537	.95552
38	148.00	152.00	150.00	7	.01246	544	.96797
39	152.00	156.00	154.00	3	.00534	547	.97331
40	156.00	160.00	158.00	1	.00178	548	.97509
41	160.00	164.00	162.00	1	.00178	549	.97687
42	164.00	168.00	166.00	0	.00000	549	.97687
43	168.00	172.00	170.00	4	.00712	553	.98399
44	172.00	176.00	174.00	1	.00178	554	.98577
45	176.00	180.00	178.00	0	.00000	554	.98577
46	180.00	184.00	182.00	2	.00356	556	.98932
47	184.00	188.00	186.00	1	.00178	557	.99110
48	188.00	192.00	190.00	0	.00000	557	.99110
49	192.00	196.00	194.00	0	.00000	557	.99110
50	196.00	200.00	198.00	1	.00178	558	.99288
above	200.00			4	.00712	562	1.00000

Mean = 92.1192

Standard Deviation = 29.9563

Median = 89

Frequency Histogram for Zinc



ICP DATA



**MINERAL
ENVIRONMENTS
LABORATORIES LTD.**

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
8282 SHERBROOKE STREET
VANCOUVER, B.C., CANADA V5X 4E8
TELEPHONE (604) 327-3436
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3176 TATLOW ROAD
SMITHERS, B.C., CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Quality Assaying for over 25 Years

Assay Certificate

7S-0240-RA1

Company: **MR. STEVE BELL**
Project: **HOPE**
Attn: **Steve Bell**

Date: **SEP-02-97**

We hereby certify the following Assay of 1 ROCK samples
submitted AUG-21-97 by STEVE BELL.

Sample Number	Au-fire g/tonne
R20325N 44400E	.01

Certified by _____

MIN-EN LABORATORIES

COMP: MR. STEVE BELL
 PROJ: HOPE
 ATTN: STEVE BELL

MIN-EN LABS — ICP REPORT
 8282 SHERBROOKE ST., VANCOUVER, B.C. V5X 4E8
 TEL:(604)327-3436 FAX:(604)327-3423

FILE NO: 7S-0158-BJ3+4
 DATE: 97/07/31
 * * (ACT: F31)

SAMPLE NUMBER	AG PPM	AS PPM	BA PPM	CD PPM	CU PPM	FE %	K %	MO PPM	NI PPM	PB PPM	SB PPM	ZN PPM
45200E 18400N	.1	12	102	1.3	21	4.58	.03	2	11	26	1	106
45200E 18500N	.1	18	226	.6	39	4.05	.03	1	8	16	1	93
45200E 18600N	.1	1	362	.5	27	3.34	.05	1	13	20	1	99
45200E 18700N	.1	14	186	.8	50	3.85	.05	1	10	18	1	83
45200E 18750N	.1	6	100	1.2	22	3.94	.05	1	8	23	1	78
45200E 18800N	.1	7	71	1.5	21	4.49	.04	2	6	22	2	82
45200E 18900N	.1	2	111	.9	29	4.63	.04	2	15	26	1	18
45200E 19000N	.1	9	111	1.4	35	3.98	.05	1	14	27	1	96
45200E 19100N	.1	12	210	1.1	31	3.38	.05	1	16	22	1	94
45200E 19125N	.1	13	139	1.2	30	3.79	.03	1	17	28	1	84
45200E 19150N	.1	10	130	.4	13	2.94	.04	1	9	13	1	61
45200E 19200N	.4	1	746	.7	45	4.51	.10	1	30	36	1	15
45200E 19300N	.5	1	430	1.6	26	2.99	.07	1	13	35	1	97
45200E 19400N	.1	1	137	.7	32	2.75	.04	1	3	9	1	55
45200E 19500N	.1	1	138	.6	12	2.71	.05	1	4	16	1	50
45200E 19600N	.1	10	102	.6	37	3.42	.05	1	2	19	1	51
45200E 19700N	.1	19	80	.7	15	3.13	.05	1	3	13	1	57
45200E 19800N	.1	1	394	1.6	38	3.44	.08	1	10	32	3	92
45200E 19900N	.1	1	348	1.0	17	3.30	.05	1	9	28	1	73
45200E 20000N	.1	1	126	1.0	23	3.45	.04	1	6	23	1	73
45300E 18000N	.1	16	108	.8	11	3.37	.04	1	5	18	2	54
45300E 18100N	.2	10	409	.4	37	3.92	.06	1	11	24	1	103
45300E 18200N	.1	2	97	.8	22	3.60	.05	1	6	20	1	66
45300E 18300N	.1	1	196	.7	27	3.79	.06	1	7	16	1	79
45300E 18400N	.1	1	221	1.1	32	3.62	.05	1	9	33	1	77
45300E 18500N	.1	15	318	.6	29	3.58	.05	1	12	20	1	94
45300E 18600N	.1	10	312	.1	18	3.51	.05	1	11	20	1	92
45300E 18700N	.1	14	254	.1	25	3.03	.05	1	10	20	1	70
45300E 18800N	.1	18	177	.6	23	4.17	.05	1	14	21	1	96
45300E 18900N	.1	16	131	.6	19	4.08	.03	1	15	30	1	94
45300E 19000N	.1	1	357	.4	36	3.74	.07	1	16	30	1	112
45300E 19100N	.1	4	310	.1	24	3.58	.06	1	12	25	1	78
45300E 19200N	.3	1	590	.2	37	4.45	.08	1	32	46	1	135
45300E 19300N	.6	1	501	1.0	25	3.07	.08	1	11	35	1	91
45300E 19400N	.1	1	243	.2	21	3.06	.07	1	8	27	1	111
45300E 19500N	.8	1	511	1.2	60	4.87	.17	2	12	64	1	118
45300E 19600N	.1	5	82	.5	22	3.61	.05	1	4	19	1	63
45300E 19700N	.1	8	160	.9	31	3.72	.05	1	7	22	1	62
45300E 19800N	.1	13	80	.9	14	3.74	.04	1	5	19	1	72
45300E 19900N	.1	11	250	.1	20	3.16	.05	1	6	16	1	70
45300E 20000N	.2	11	295	.4	15	3.10	.05	1	6	16	1	67
45400E 18000N	.1	29	115	1.2	21	5.70	.03	3	6	23	3	98
45400E 18100N	.1	7	328	.8	46	3.18	.05	1	12	27	1	71
45400E 18200N	.6	9	366	.3	59	3.22	.06	1	10	26	1	69
45400E 18300N	.1	13	305	.8	35	4.30	.07	2	12	35	2	116
45400E 18400N	.1	12	125	.1	23	3.52	.05	1	7	24	1	64
45400E 18500N	.1	7	364	.7	22	3.21	.05	1	13	31	1	96
45400E 18600N	.1	15	176	1.1	32	4.49	.04	2	14	26	1	108

COMP: MR. STEVE BELL

PROJ:

ATTN: Steve Bell

MIN-EN LABS — ICP REPORT

8282 SHERBROOKE ST., VANCOUVER, B.C. V5X 4E8

TEL:(604)327-3436 FAX:(604)327-3423

FILE NO: 7S-0193-SJ4+4+5

DATE: 97/08/14

* * (ACT:F31)

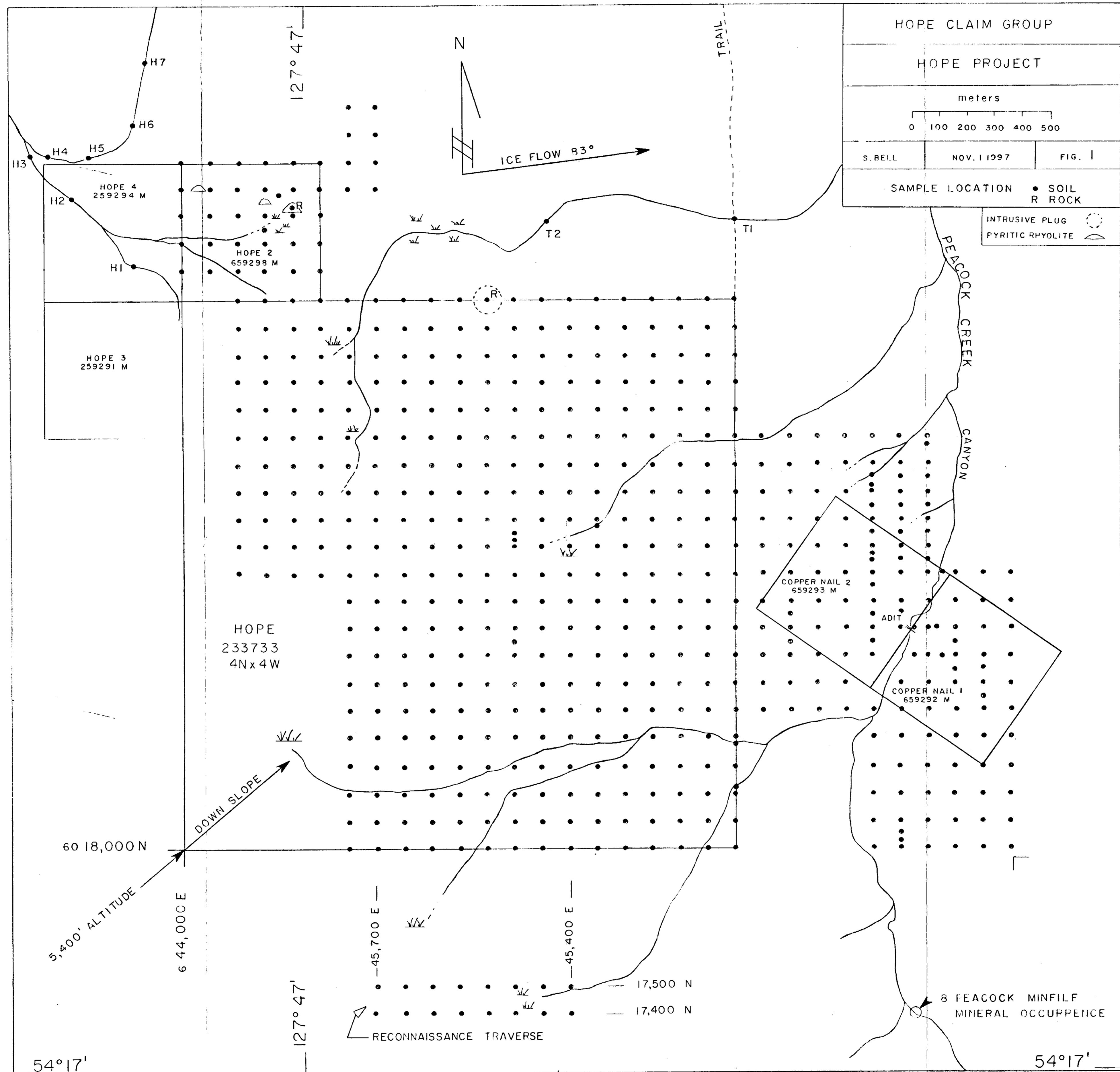
SAMPLE NUMBER	AG PPM	AS PPM	BA PPM	CD PPM	CU PPM	FE %	K %	MO PPM	NI PPM	PB PPM	SB PPM	ZN PPM
46300E 19200N	.1	23	131	1.0	33	4.33	.05	1	15	20	1	83
46300E 19300N	.1	20	166	.8	20	4.10	.05	1	14	19	1	92
46300E 19400N	.4	1	1099	2.8	70	4.53	.14	2	27	56	1	151
46300E 19500N	.1	22	452	1.4	40	4.65	.08	1	25	38	1	135
46400E 18500N	.1	10	335	1.2	40	3.67	.08	1	16	21	1	99
46400E 18600N	.4	1	228	.1	29	4.92	.08	1	54	56	1	101
46400E 18700N	.1	39	133	1.2	26	5.59	.04	1	18	21	2	153
46400E 18800N	.1	14	193	1.3	14	4.33	.07	1	14	28	1	75
46400E 18900N	.1	33	135	1.0	42	5.24	.04	1	22	21	2	118
46400E 19000N	.1	76	172	.6	28	6.12	.04	1	41	30	1	174
46400E 19100N	.1	14	138	1.7	30	3.92	.05	1	11	24	1	88
46400E 19200N	.1	14	105	.8	28	4.41	.05	1	13	27	2	103
46400E 19300N	.1	26	120	.9	25	5.09	.04	1	13	16	1	105
46400E 19400N	.1	23	118	1.2	21	3.84	.05	1	10	20	1	82
46400E 19500N	.1	17	147	.8	23	3.54	.05	1	9	19	1	87
46500E 18700N	.1	18	179	1.3	25	4.62	.04	1	17	25	1	112
46500E 18750N	.1	9	168	1.5	35	4.35	.05	1	23	26	1	109
46500E 18800N	.1	13	143	1.3	14	3.20	.03	1	8	14	1	82
46500E 18850N	.1	16	101	.9	15	2.85	.03	1	6	13	1	59
46500E 18900N	.1	21	166	1.5	28	4.17	.06	1	14	23	1	118
46500E 18950N	.1	20	240	1.6	30	3.77	.05	1	22	27	1	97
46500E 19000N	.1	4	235	.9	14	2.90	.04	1	15	22	1	84
46500E 19050N	.6	14	415	2.3	68	5.14	.11	1	30	44	1	183
46600E 18025N	.1	26	164	.9	24	4.39	.06	1	14	19	1	89
46600E 18800N	.1	48	242	.1	32	4.77	.09	1	21	11	1	100
46600E 18850N	.1	34	71	.1	16	3.87	.05	1	11	4	1	75
46600E 18900N	.1	19	163	.1	22	3.10	.04	1	13	17	1	67
46600E 19000N	.1	30	175	.2	24	3.97	.06	1	21	28	1	08
46600E 19050N	.1	18	163	.2	25	3.18	.04	1	15	18	1	74
46600E 19100N	.1	28	55	.1	14	4.13	.03	1	5	8	2	76
46600E 19150N	.1	32	111	.1	40	3.86	.04	1	9	14	1	83
46600E 19200N	.1	28	143	.1	20	4.25	.04	1	17	16	1	98
46600E 19250N	.1	31	76	.1	31	4.30	.03	1	14	10	3	28
46600E 19300N	.1	31	71	.1	24	4.03	.03	1	15	5	3	24
46600E 19350N	.1	26	115	.5	27	3.69	.06	1	10	17	1	92
46600E 19400N	.1	51	160	.7	27	6.88	.05	2	26	1	6	34
46600E 19500N	.1	24	157	.4	19	3.66	.04	1	9	19	1	86
46700E 18900N	.1	21	230	.4	21	3.41	.06	1	11	18	1	78
46700E 19000N	.1	21	229	.1	32	3.75	.05	1	13	23	1	83
46700E 19050N	.1	37	142	.7	30	5.21	.04	2	15	24	5	19
46700E 19100N	.1	21	131	.1	25	3.26	.04	1	13	17	1	69
46700E 19150N	.1	25	129	.1	28	3.88	.04	1	9	10	3	73
46700E 19200N	.1	22	116	.1	23	4.23	.03	1	8	19	1	92
46700E 19250N	.1	13	198	.1	30	3.52	.05	1	26	23	2	83
46700E 19300N	.1	31	33	.1	62	3.17	.04	1	2	1	4	47
46700E 19350N	.1	29	108	.1	25	3.82	.04	1	10	17	2	73
46700E 19400N	.1	23	249	.1	21	3.70	.05	1	14	18	2	07
46700E 19475N	.1	37	218	.4	31	4.63	.07	1	39	11	1	18
46700E 19500N	.1	7	188	1.0	33	3.60	.04	1	15	18	1	77
46750E 19300N	.1	28	171	.8	42	3.82	.05	1	15	13	2	99
46750E 19400N	.1	20	233	.8	42	3.63	.05	1	16	16	1	98
46800E 19000N	.1	20	290	.9	34	3.85	.09	1	15	24	1	96

COMP: MR. STEVE BELL
 PROJ: HOPE
 ATTN: Steve Bell

MIN-EN LABS — ICP REPORT
 8282 SHERBROOKE ST., VANCOUVER, B.C. V5X 4E8
 TEL:(604)327-3436 FAX:(604)327-3423

FILE NO: 7S-C330-SJ1
 DATE: 97/10/24
 * * (ACT:ICP 31)

SAMPLE NUMBER	AG PPM	AS PPM	BA PPM	CD PPM	CU PPM	FE %	K %	MO PPM	NI PPM	PB PPM	SB PPM	ZN PPM	Au-fine PPM
HOPE 1	.9	14	365	.5	57	2.72	.08	1	11	13	1	110	
HOPE 2	.4	10	271	.4	30	3.53	.07	1	11	17	1	107	
HOPE 3	.3	12	197	.3	24	3.81	.07	1	11	22	1	95	
HOPE 4	.6	12	334	.2	37	3.62	.11	1	14	19	1	108	
HOPE 5	.3	13	391	.2	43	3.58	.09	1	17	14	1	108	
HOPE 6	.6	10	316	.3	17	4.41	.06	1	14	10	1	114	
HOPE 7	1.3	17	668	.4	13	6.06	.06	2	12	13	1	178	



Geological Survey Branch
MEI

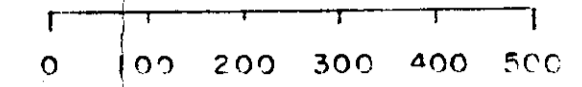
JAN 08 1999

238

COPPER GEOCHEMISTRY

HOPE PROJECT

meters



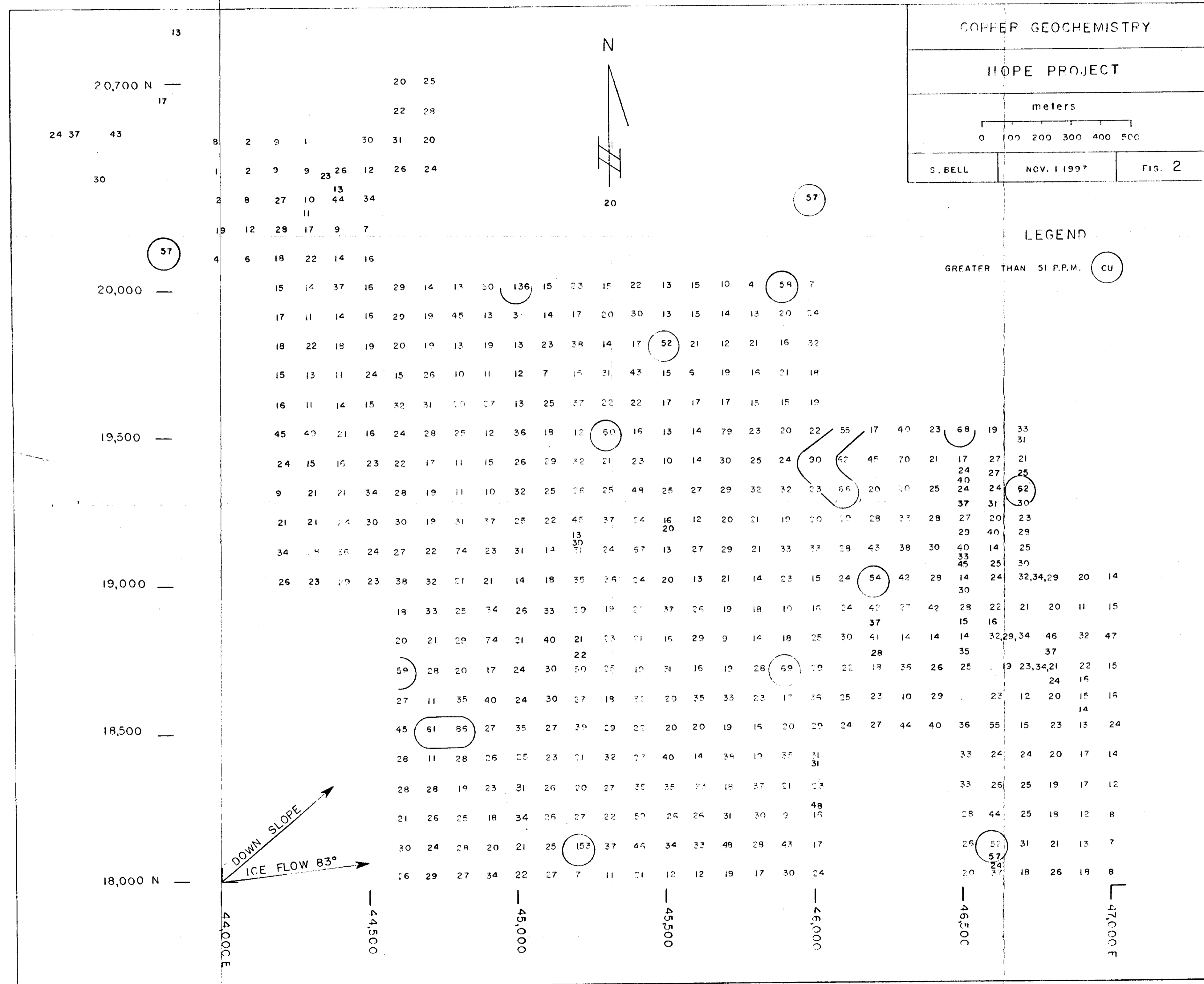
S. BELL

NOV. 1 1997

FIG. 2

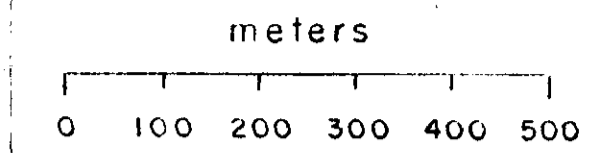
LEGEND

GREATER THAN 51 P.P.M. (CU)



ZINC GEOCHEMISTRY

HOPE PROJECT

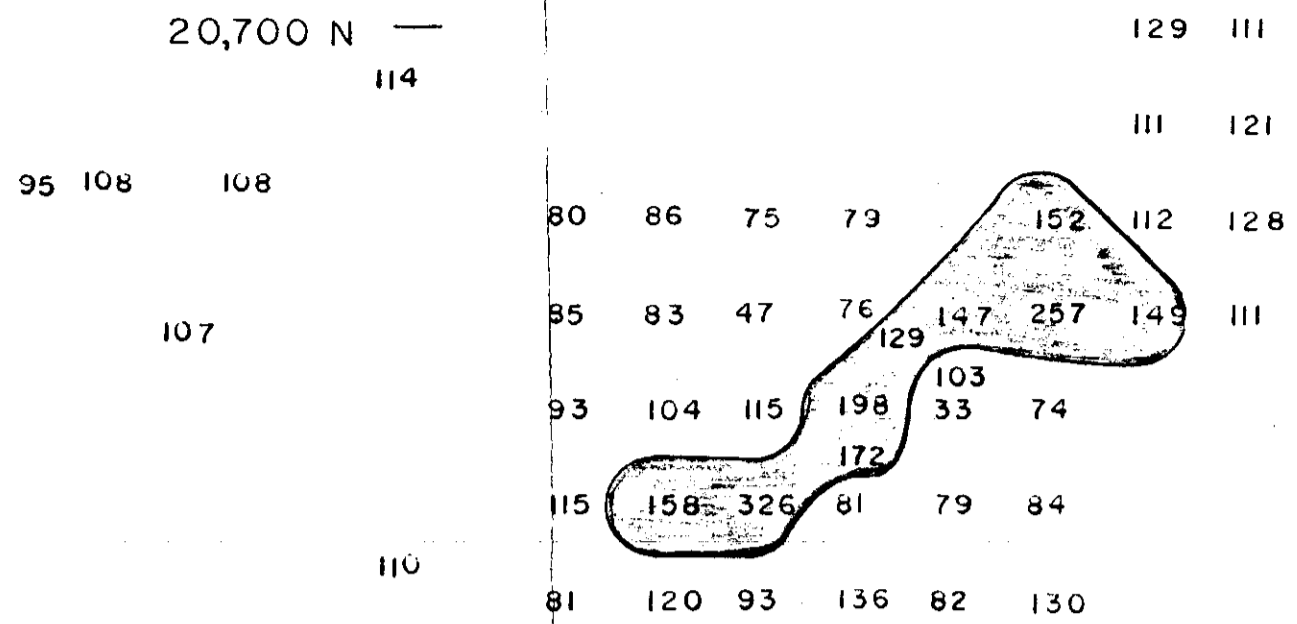


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NOV. 1 1997

FIG. 3

N



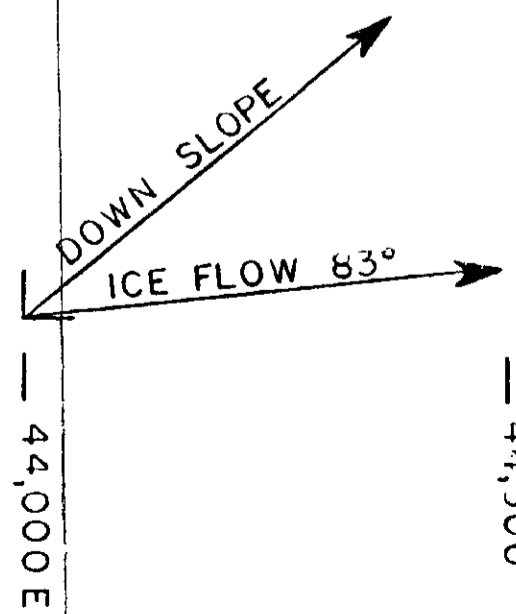
20,000

19,500

19,000

18,500

18,000 N



44,000 E

44,500

45,000

45,500

46,000

LEGEND

GREATER THAN 148 P.P.M.

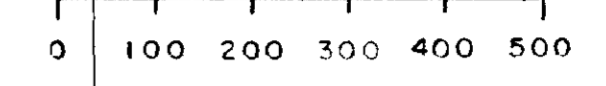
Geological Survey Branch
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JAN 08 1999
p 58

129	111																							129	111																																																								
111	121																							111	121																																																								
80	86	75	79	152	112	128																80	86	75	79	152	112	128																																																					
85	83	47	76	147	257	149	111																85	83	47	76	147	257	149	111																																																			
93	104	115	198	103	33	74																93	104	115	198	103	33	74																																																					
115	158	326	81	79	84																115	158	326	81	79	84																																																							
81	120	93	136	82	130																81	120	93	136	82	130																																																							
																						92	80	99	128	97	97	102	169	151	23	73	57	65	109	74	78	22	97	152																																									
																						83	54	71	93	106	97	79	74	36	109	73	70	112	65	89	82	91	115	73																																									
																						61	63	72	94	67	85	66	90	65	60	92	72	91	86	75	104	112	94	95																																									
																						75	60	58	83	87	95	51	49	64	78	57	82	215	53	44	92	74	67	27																																									
																						75	49	72	68	116	96	75	46	42	61	61	83	43	75	76	84	98	90	154																																									
																						118	132	53	57	75	73	66	64	102	85	60	138	67	73	121	146	103	72	69	142	72	135	87	183	86	77																																		
																						92	60	63	104	58	56	55	73	81	79	55	101	92	67	70	87	95	98	117	115	100	151	82	77	134	107																																		
																						33	75	96	107	124	73	67	66	113	74	97	91	100	98	89	123	99	87	108	142	101	92	105	130	124	47																																		
																						93	105	94	89	119	98	116	111	119	74	115	125	80	57	92	92	97	104	75	90	87	83	103	115	98	92																																		
																						117	105	102	99	103	105	142	143	185	53	94	78	32	64	97	96	87	94	106	116	110	114	88	118	76	69																																		
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																																					102	84	92	87	96	94	118	94	93	103	77	74	108	60	66	116	106	87	118	118	67	78	63	50	80																				
																																					91	66	136	141	81	146	82	96	67	82	75	55	73	80	79	111	156	119	75	82	100	97	129	66	109																				
																																					135	83	76	117	77	84	83	70	100	100	68	82	105	143	100	66	66	116	153	112	113	76	93	75																					
																																					87	72	89	138	89	78	99	92	108	80	71	103	111	101	86	88	172	62	101	74	55	82	77	71																					
																																					229	164	89	82	105	94	93	94	96	95	74	101	81	99	158	76	83	94	99	98	121	63	72	66	91																				
																																					98	81	75	90	116	98	106	77	64	105	75	115	69	89	70																98	81	75	90	116	98	106	77	64	105	75	115	69	89	70
																																					82	74	83	85	122	93	72	79	116	103	82	94	79	123	72																82	74	83	85	122	93	72	79	116	103	82	94	79	123	72
																																					93	98	95	111	114	107	118	66	99	93	89	64	93	62	96																93	98	95	111	114	107	118	66	99	93	89	64	93	62	96
																																					124	105	121	99	77	90	113	103	71	128	92	103	121	88	103																124	105	121	99	77	90	113	103	71	128	92	103	121	88	103
																																					101	95	104	81	91	82	36	54	78	65	70	105	81	99	110																101	95	104	81	91	82	36	54	78	65	70	105	81	99	110

LEAD GEOCHEMISTRY

HOPE PROJECT

meters



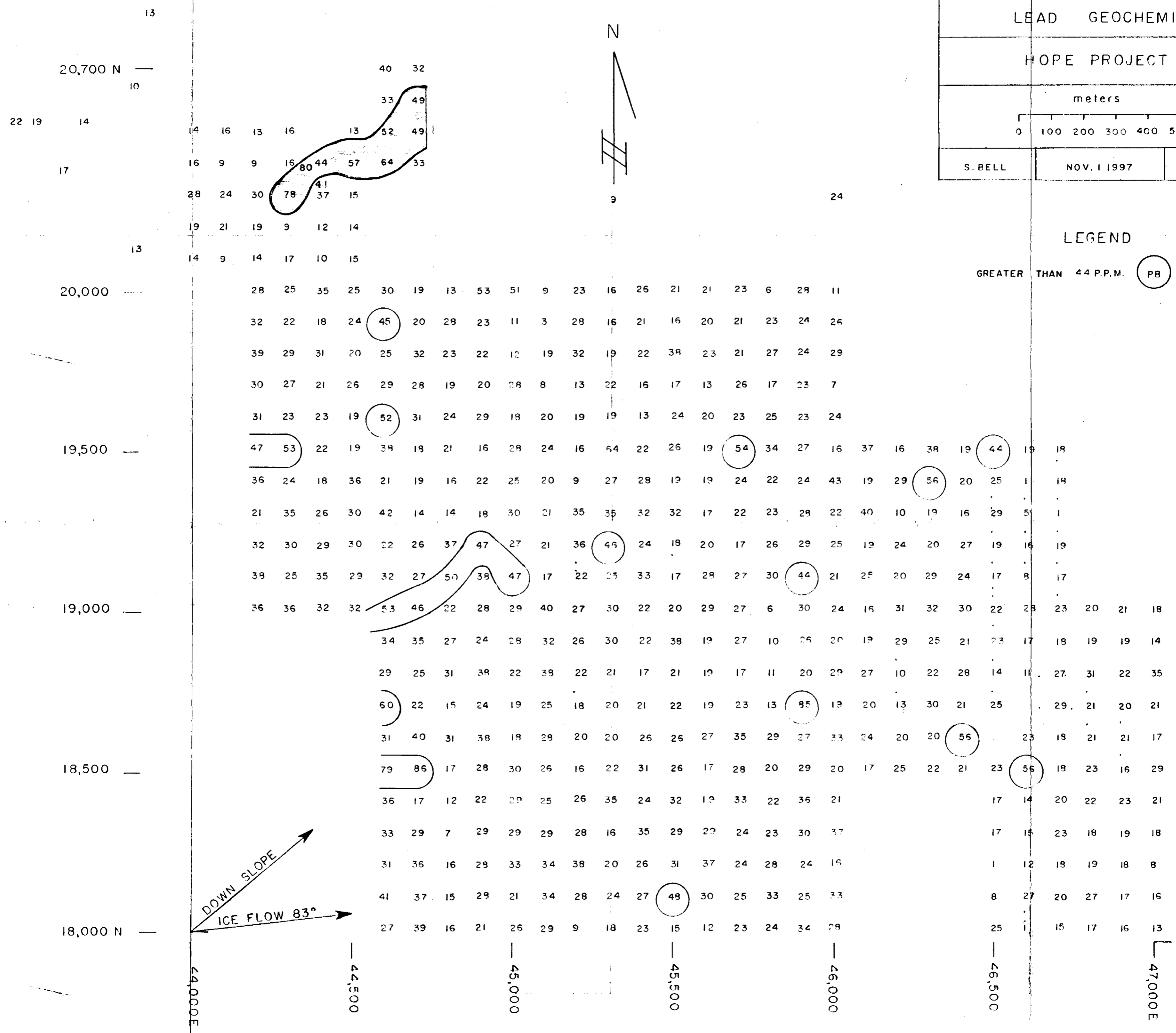
S. BELL

NOV. 1 1997

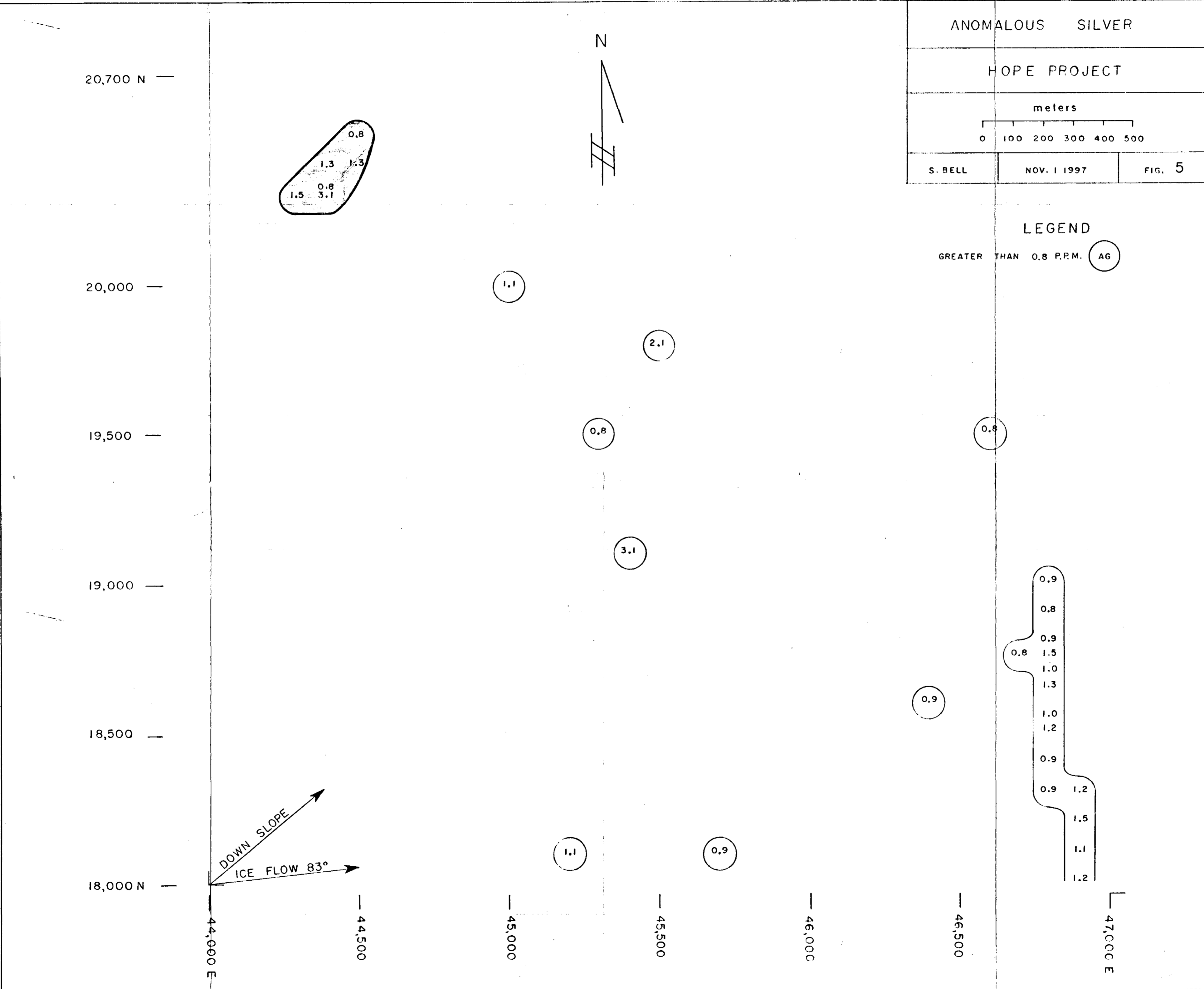
FIG. 4

LEGEND

GREATER THAN 44 P.P.M. PB



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JAN 08 1999
p38



ANOMALOUS SILVER		
HOPE PROJECT		
meters		
S. BELL	NOV. 1 1997	FIG. 5

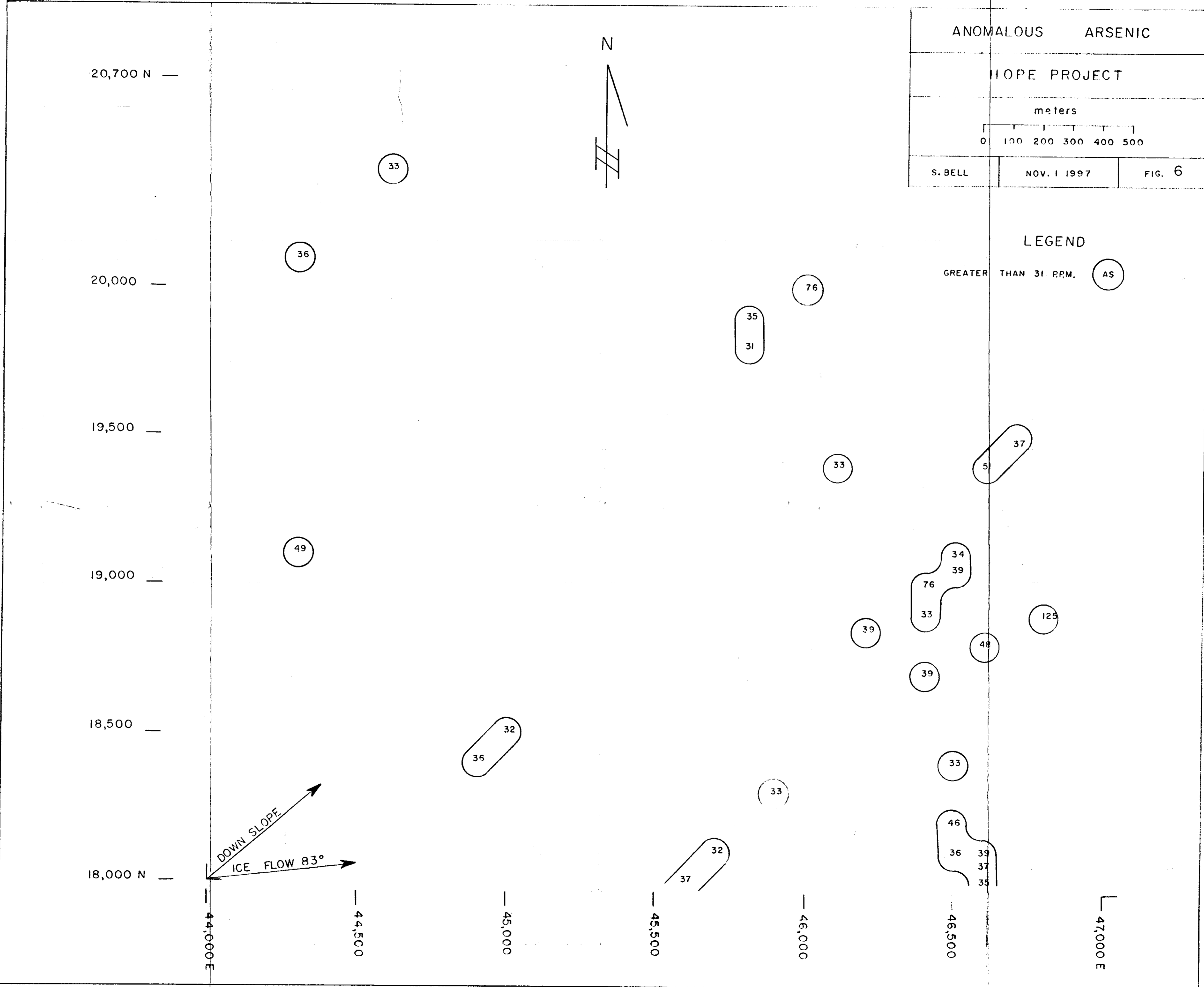
LEGEND
 GREATER THAN 0.8 P.P.M. AG

- 0.9
- 0.8
- 0.9
- 1.5
- 1.0
- 1.3
- 1.0
- 1.2
- 0.9
- 0.9
- 1.2
- 1.5
- 1.1
- 1.2

ANOMALOUS		ARSENIC	
HOPE PROJECT			
meters			
0 100 200 300 400 500			
S. BELL	NOV. 1 1997	FIG. 6	

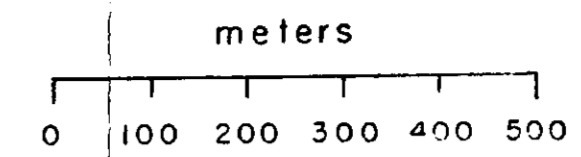
LEGEND

GREATER THAN 31 PPM. 



ANOMALOUS BARIUM

HOPE PROJECT



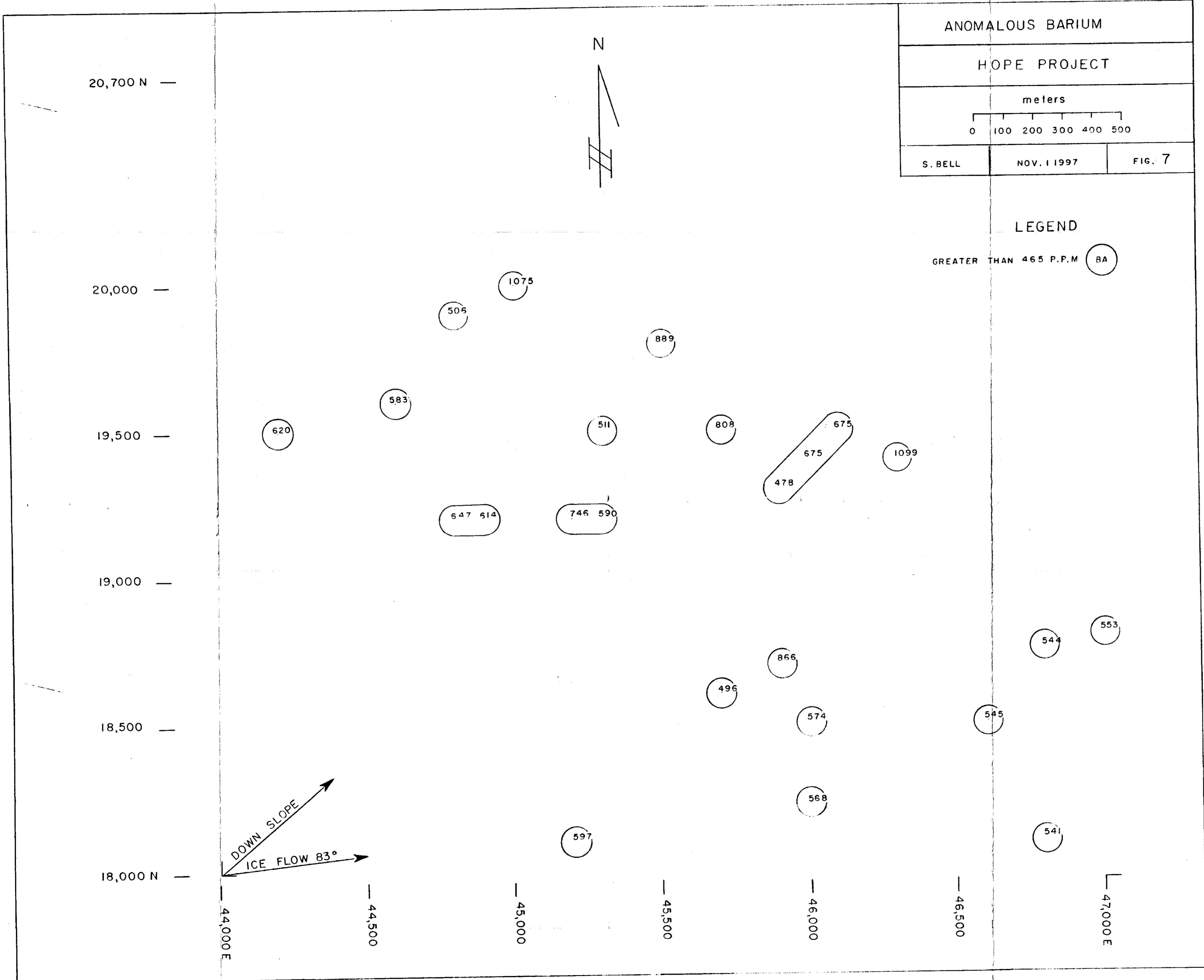
S. BELL

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FIG. 7

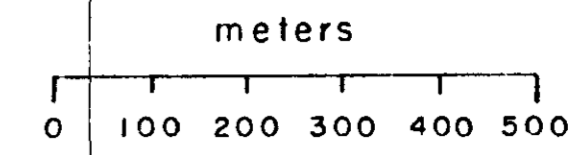
LEGEND

GREATER THAN 465 P.P.M. BA



ANOMALOUS CADMIUM

HOPE PROJECT



S. BELL

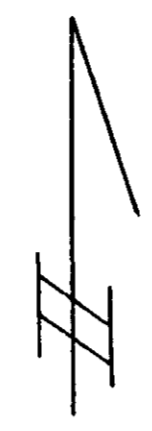
NOV. 1 1997

FIG. 8

LEGEND

GREATER THAN 1.8 R.P.M. (CN)

N



20,700 N

20,000

19,500

19,000

18,500

18,000 N

44,000 E

44,500

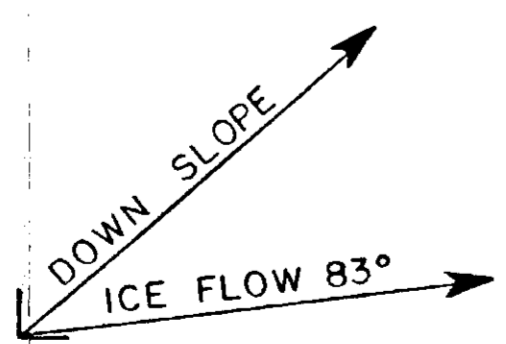
45,000

45,500

46,000

46,500

47,000 E



3.7
4.5
3.4
3.5
4.9
4.3
3.4
3.8
4.0
4.2
4.3
4.4
3.9

2.1 2.5

1.9

3.2

3.4
3.1
3.4
2.4

1.9

2.8

2.3

2.2

4.0

4.0

3.4

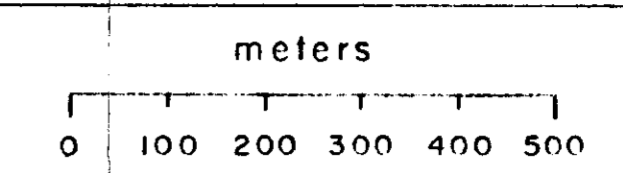
4.2
4.5

1.8

3.5
3.5
4.3

ANOMALOUS ANTIMONY

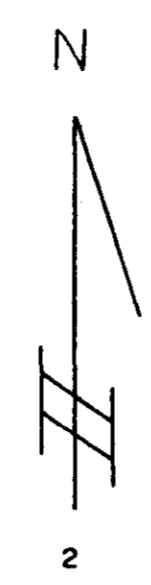
HOPE PROJECT



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FIG. 9



20,700 N

28 23

17 31

31 18

16 18

2 2 4 3 3 3

2 2 4 3 3 3

2 2 2 4 1 2

NOTE: LOWER LIMIT FOR MULTI ELEMENT ICP ANALYSIS IS 5 P.P.M. ANTIMONY VALUES ARE RECORDED AS REPORTED.

20,000

24 17 16 18

20 16 19 18

28 18 20 20

20 20 19 13

24 15 17 8

19,500

28 30 13 9

27 15 9 25

13 27 17 15

24 20 14 15

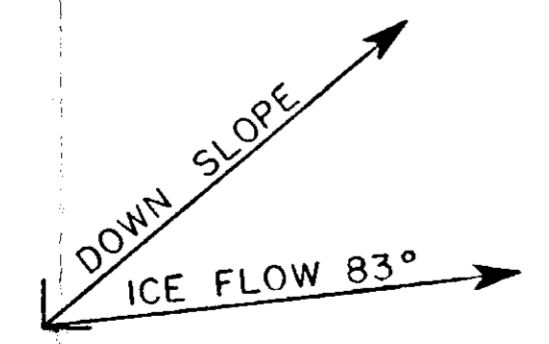
24 21 26 13

19,000

23 29 20 18

18,500

18,000 N



44,000 E

44,500

45,000

45,500

46,000

46,500

47,000 E

LEGEND

GREATER THAN 15 P.P.M. (SR)

