~~BRENDA MINES LTD.~~
~~EXPLORATION GROUP~~

REPORT on

GEOLOGICAL and GEOCHEMICAL SURVEYS

on the

HUDSON BAY PROPERTY

Lat. 50° 10', Long. 119° 41'

Vernon Mining District

N.T.S. 82L/4W

Operator: Brenda Mines Ltd.
Owner: Bardon Explorations Ltd.

Paul C. Bankes

February, 1981

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I INTRODUCTION

The Hudson Bay property was first staked by Don Sandberg following the discovery of several small molybdenite showings near Hudson Bay Lake. Brenda Mines Ltd. optioned the claims from Mr. Sandberg in 1979, and restaked the ground as the Ash #1 and Ash #2 claim blocks. During the 1980 field season, Brenda Mines personnel completed grass-root geological and geochemical surveys on the property.

II PROPERTY DESCRIPTION

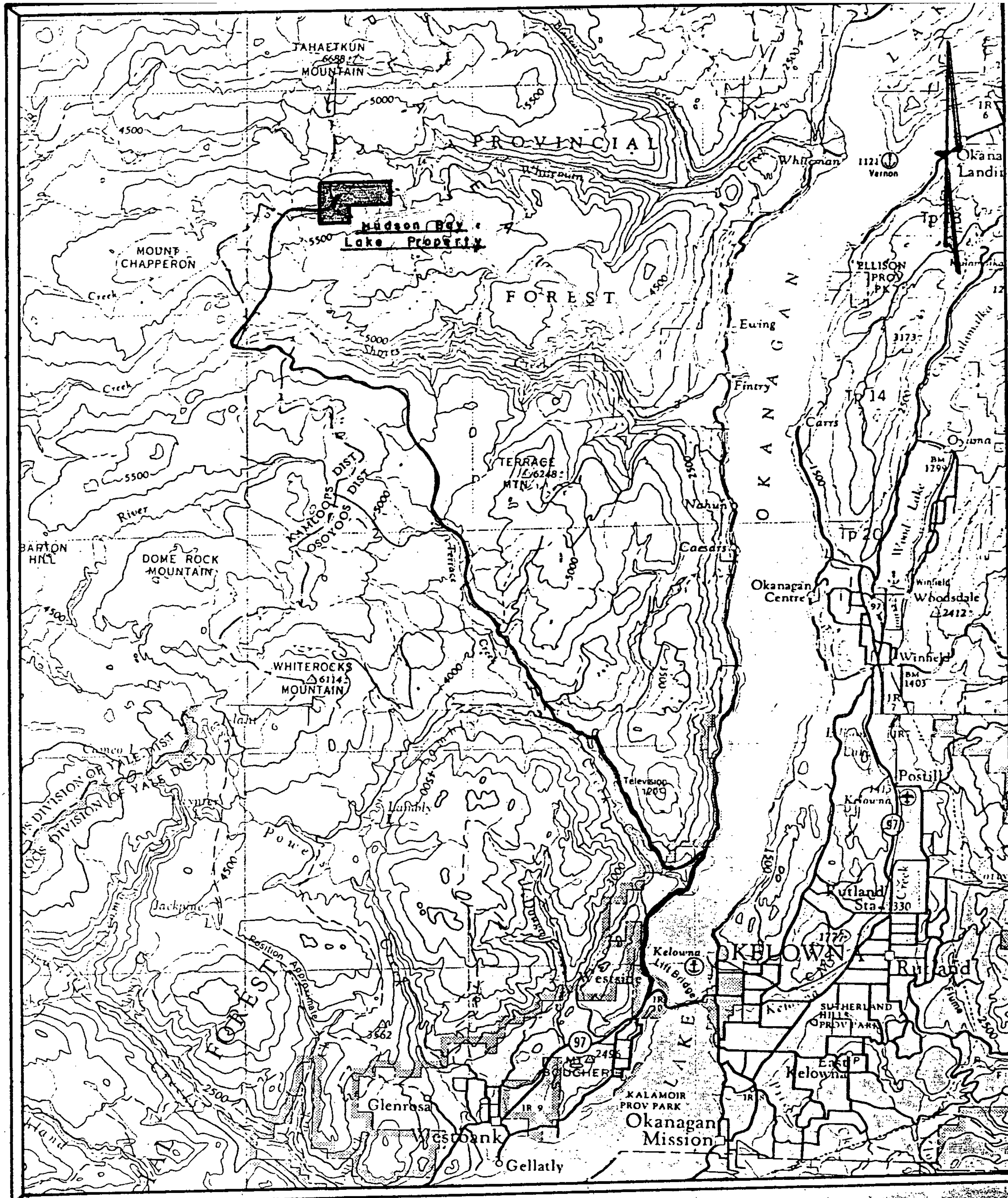
a) Location and Access

The Hudson Bay property is located in south central British Columbia approximately 38 kilometres north, northwest of Kelowna, B.C. The claims are situated 400 metres west of Hudson Bay Lake between the headwaters of Shorts and Whiteman Creeks.

Access to the property is via Westside road which adjoins Bear Main logging road, 7 kilometres northwest of Kelowna. Espron road leaves Bear Main and adjoins Stuart logging road approximately 20 kilometres south of the claim group.

b) Topography and Vegetation

The property covers a small, gently sloping hillside in the Shorts Creek drainage basin. Large logging cuts on the central map area give way to thick stands of immature spruce and pine along property margins. Tag alder and scrub cedar are common to creek bottoms.



LOCATION MAP

Scale 1:250,000 Echelle

Miles 5 0 5 10 15 20 Miles

Kilometres 5 0 5 10 15 20 25 30 Kilometres

Figure 1

c) Claim Statistics

Hudson #1 Claim Group

Claim Name	Record No.	Units	Record Date
Ash #1	652	8 MG	July 31/79
Ash #2	653	12 MG	July 31/79

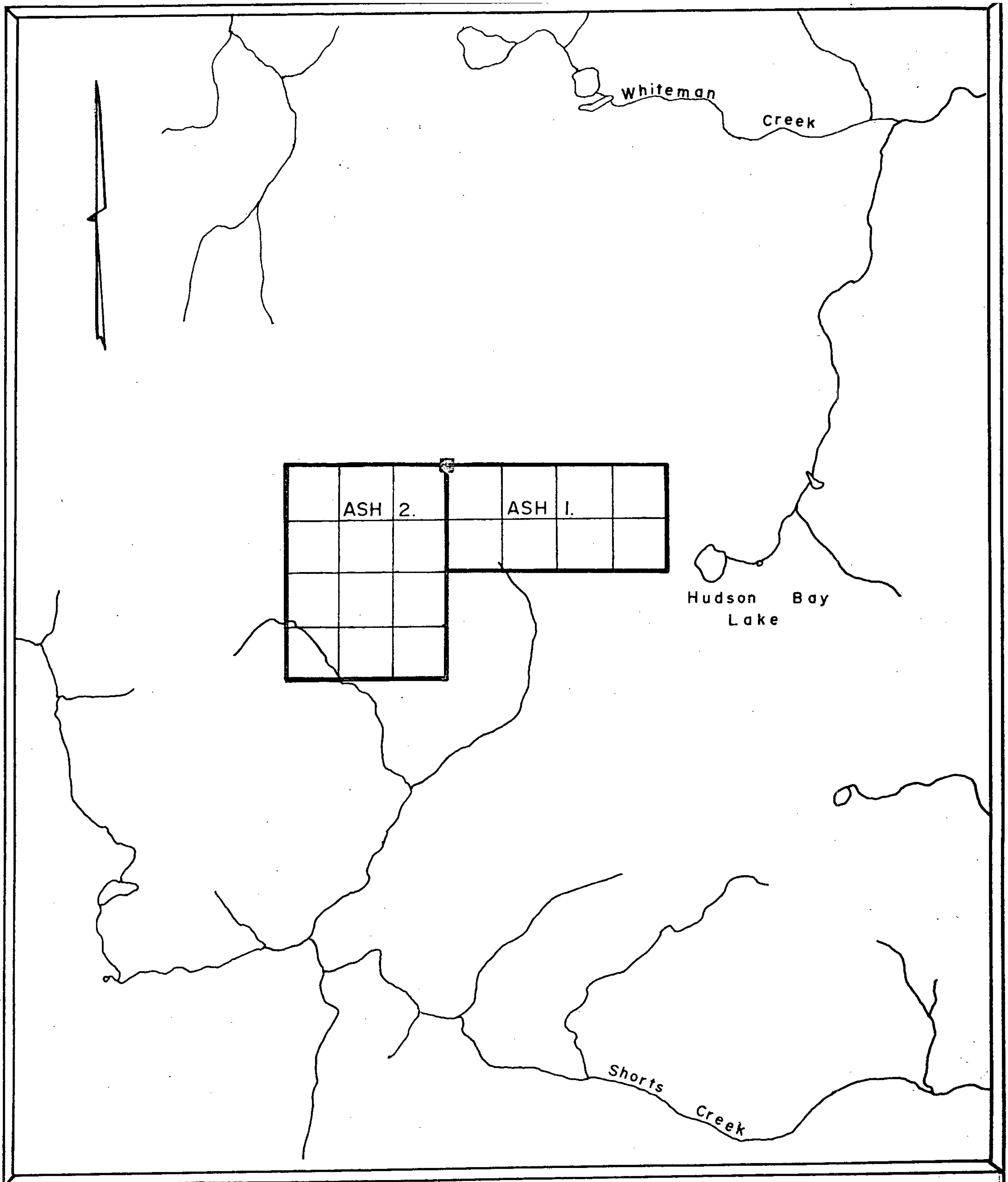
III GRID ESTABLISHMENT

During July 1980, a compass survey grid was established on the Hudson Bay property. North - south location lines were placed at 200 metre intervals along a 3.5 kilometre east - west baseline. A total of 25 kilometres of line were well flagged, surveyed by Silva compass, and marked at 50 metre stations for geological and geochemical surveys.

IV GEOLOGY

a) Regional Geology

The regional geology has been described by A.G. Jones in the Geological Survey of Canada Memoir 296 (Vernon Map Sheet, 1959). He suggests that Cache Creek Group volcanic and meda-sedimentary units have been sharply intruded by younger granite and granodiorite batholiths of the Coast Intrusions. Locally, these lithologies are unconformably overlain by thick basalt flows of the Kamloops Group.



CLAIM MAP

Scale 1:50,000 Échelle

Miles 1 0 1 2 3 Milles

Metres 1000 0 1000 2000 3000 4000 Mètres

Figure 2

TABLE of FORMATIONS

Era	Period or Epoch	Formation (thickness in feet)	Lithology
	Pleistocene and recent		Glacial gravels, morainal debris, silt, clay, lake and stream sediments.
Cenozoic			
	Tertiary (Oligocene or lower Miocene)	Kamloops Group 500 - 3,000	Basaltic and andesitic lavas and dykes, pyroclastic breccia, tuff, sandstone, shale, conglomerate, coal.
		Unconformity	
Mesozoic and Cenozoic (?)	Cretaceous and Tertiary (?)	Coast Intrusions	Granite, granodiorite, aplite, peymatite and allied rocks, batholiths, stocks, dykes.
		Intrusive Contact	
Palaeozoic	Carboniferous (?) and Permian	Cache Creek Group 25,000	Argillite, andesite and basalt lava, tuff sandstone, limestone, slate, phyllite, conglomerate.

Figure 3

b) Property Geology

1) Introduction

Geological mapping on the Hudson Bay property was completed between Setpember 22 and September 25, 1980. All available outcrops were mapped on a scale of 1:7,500. With the exception of a narrow zone of argillite (Cache Creek Group) on the central map area, the property is predominantly underlain by basalt flows to the north (Kamloops Group) and granodiorite to the south (Coast Intrusions).

2) Lithologies

- Argillite

Argillite lies in sharp, irregular contact with the granodiorite. Colour ranges from grey to black on fresh surfaces and grey to rusty red on weathered surfaces. The units metamorphic grade can best be described as slaty, although true slaty cleavage is not always present. Sericite frequently gives fresh cleavage surfaces a lustrous appearance. Fine disseminated pyrite and molybdenite occur locally within the argillite proximal to the granodiorite contact.

- Granodiorite

A large body of medium grained, equigranular granodiorite covers much of the central map area. Outcrops are generally glaciated and grey in colour. Clusters of euhedral potasium feldspar phenocrysts (1 to 3 centimetres) occur locally throughout the unit. A series of (2 to 5 centimetres) aplite dykes and (.5 to 2 centimetres) quartz veins cut the granodiorite parallel to its jointing. Jointing plains are widely spaced and frequently host minor pyrite and limonite.

- Basalt

Basalt outcrops on the property's northern flank, host subhedral olivine phenocrysts (.2 to .5 centimetre) in a fine grained aphanitic matrix. Rocks of this unit are generally dark brown to black on fresh surfaces and black to rusty red on weathered surfaces. Weak flow banding and fine disseminated pyrite occur locally throughout the unit.

3) Alteration

Granodiorite was the only lithology in which alteration was observed. Potasium feldspar flooding and kaolinite alteration appears to be restricted to surfaces along quartz veining and jointing.

4) Structure

The overall geology shows metasedimentary rocks sharply intruded by a granodiorite batholith. Jointing within the batholith is widely spaced and follows two predominant trends:

a) Strike 45°, Dip 80° North

b) Strike 155°, Dip 75° North

Increased jointing occurring along intrusive margins appears to have been contact related. Parallel to the jointing, the granodiorite is first cut by a series of narrow, quartz molybdenite veins which in turn are cut by aplite dykes.

5) Mineralization

Mineralization on the Hudson Bay property has been divided into two types:

a) Vein and Jointing Related Mineralization

b) Contact Related Mineralization

- Vein and Jointing Related Mineralization

Granodiorite outcrops on the central map area host small molybdenite rosettes in a series of narrow, widely spaced quartz veins. Veining occurs over an area measuring 600 by 300 metres. Several jointing plains within the zone are weakly mineralized by small pyrite clusters and molybdenite blebs. Veining and jointing densities average only 6 to 10 per 10 metre interval.

- Contact Related Mineralization

Several small (1 to 3 metres) pyrite, molybdenite showings occur within the argillite unit along the granodiorite contact. Mineralization is finely disseminated and appears strongest along cleavage plains. Proximal to these zones, granodiorite jointing plains are frequently coated by molybdenite. Regular and irregular quartz veins occur within both argillite and granodiorite lithologies. Veins host small molybdenite rosettes and pyrite clusters. The contact related mineralization found is isolated, occuring over an area not greater than a few square metres.

V GEOCHEMICAL SURVEY

a) Introduction

Soil samples were taken from the "B(f)" horizon at 50 metre intervals over the entire grid. Silt samples were collected wherever grid lines intersected streams. A total of 551 samples were collected and analyzed at the Brenda Mines assay laboratory. Determinations were made for Cu, Mo, Pb and Zn in ppm.

Soil Geochemical Parametres

Element	Background Value	Low Anomalous	Anomalous Threshold	High Anomalous
Cu	10	15	20	25
Mo	4	6	9	12
Pb	11	14	16	18
Zn	50	60	70	80

* Rounded values from calculations.

Figure 4

Geochemical results have been plotted on accompanying maps and contoured to correspond with element distributions.

b) Treatment of Results

1) Statistical Analysis

Statistical presentation of the various sample types were made so as to better compare bulk characteristics of the geochemical data. The two statistical formats used in this report are cumulative frequency distribution and histogram frequency. The histogram is the more obvious of the two, enabling the reader to make quantitative observations regarding data grouping made etc., while the cumulative frequency plot may be used to graphically derive qualitative information such as standard deviations, background values, low anomalous values and threshold values.

The following is not meant to be a definitive treatment of the statistical analysis of geochem data, but rather a guide to the more important statistical parameters considered in this report.

2) Distribution

In beginning the treatment of a large body of geochemical data, it is necessary to determine the distribution which best fits the data. It has been determined (by concentration vs. frequency plots) that most geochemical data follows a lognormal distribution often referred to as the bell-shaped curve. Natural geochemical values often tend to form negatively skewed distribution curves when plotted. This results from the fact that it is more common to have low values in geochemical data, than high values. If, instead of the actual value itself, it's logarithm is plotted in the abscissa, the frequency curve takes a symmetrical, bell-shaped form, typical of the normal distribution. Plotting the actual geochemical values on a logarithmic graph will achieve the same results. This is the procedure used for the data considered.

3) Histogram

The histogram used in preparing this report is a plot of the interval frequency vs. interval (see Figure 5). Several important statistical parameters may be determined such as the total range of data in sample, modes, and the range with the highest frequency of values. Finally, the general form of the density distribution of the data can be determined quickly.

4) Cumulative Frequency

Cumulative frequency paper is generally constructed with a probability scale as the ordinate and a logarithmic scale as the abscissa (Figure 6). By replacing the arithmetic ordinate scale of the histogram with a probability scale, the cumulative frequency curve is represented by a straight line or a line of "best fit". This line joins points calculated from frequencies, cumulated from the highest to the lowest values; thus the 100% will correspond to the lowest class and can be eliminated.

There are essentially three parameters defining the geochemical population, which may be obtained graphically, using the cumulative probability plots. These are:

a) Geometric mean or background value (b) located by the intersection of the cumulative frequency curve at the population mean (50%). Trace intersection down to ppm scale.

b) Low anomalous value (l) located by the intersection of the cumulative frequency curve at the 16%. Trace intersection down to ppm scale. The 16% line expresses the scatter of the values around the population mean, incorporating the addition of one standard deviation (s) to the mean.

c) Anomalous or threshold value (t) located by the intersection of the cumulative frequency curve at the 2.5%. Trace intersection down to ppm scale. The threshold value is a fairly complex geochemical parameter and is supposed to be the upper limit of the background fluctuation (b). This incorporates the addition of two standard deviations (2s) to the mean.

Geochemical results for each element have been plotted on accompanying maps and contoured to correspond with element distributions.

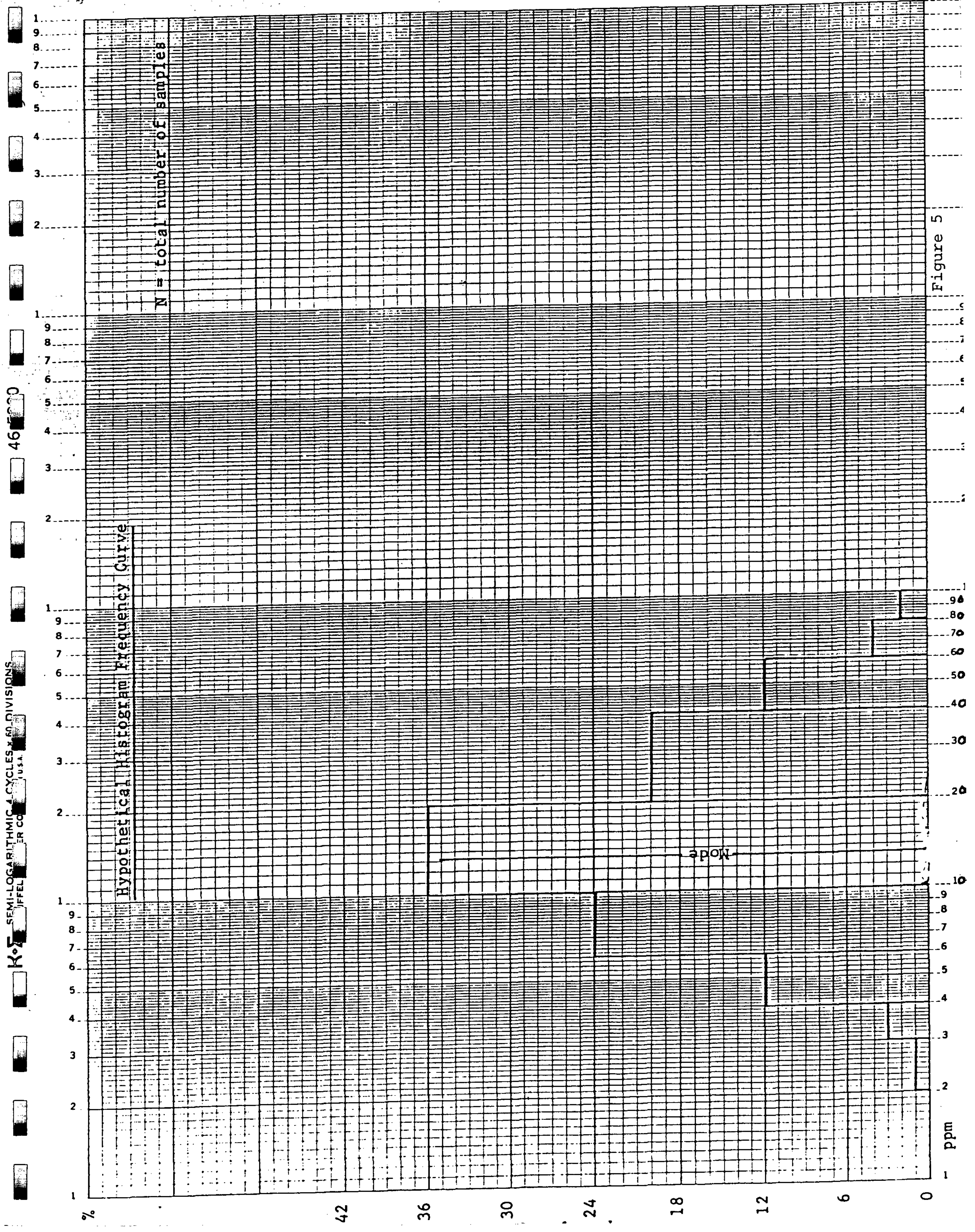

Hypothetical Histogram Frequency Curve
N = total number of samples
Mode
ppm
%
0
6
12
18
24
30
36
42
10
20
30
40
50
60
70
80
90
SEMI-LOGARITHMIC 4 CYCLES x 60 DIVISIONS

Figure 5

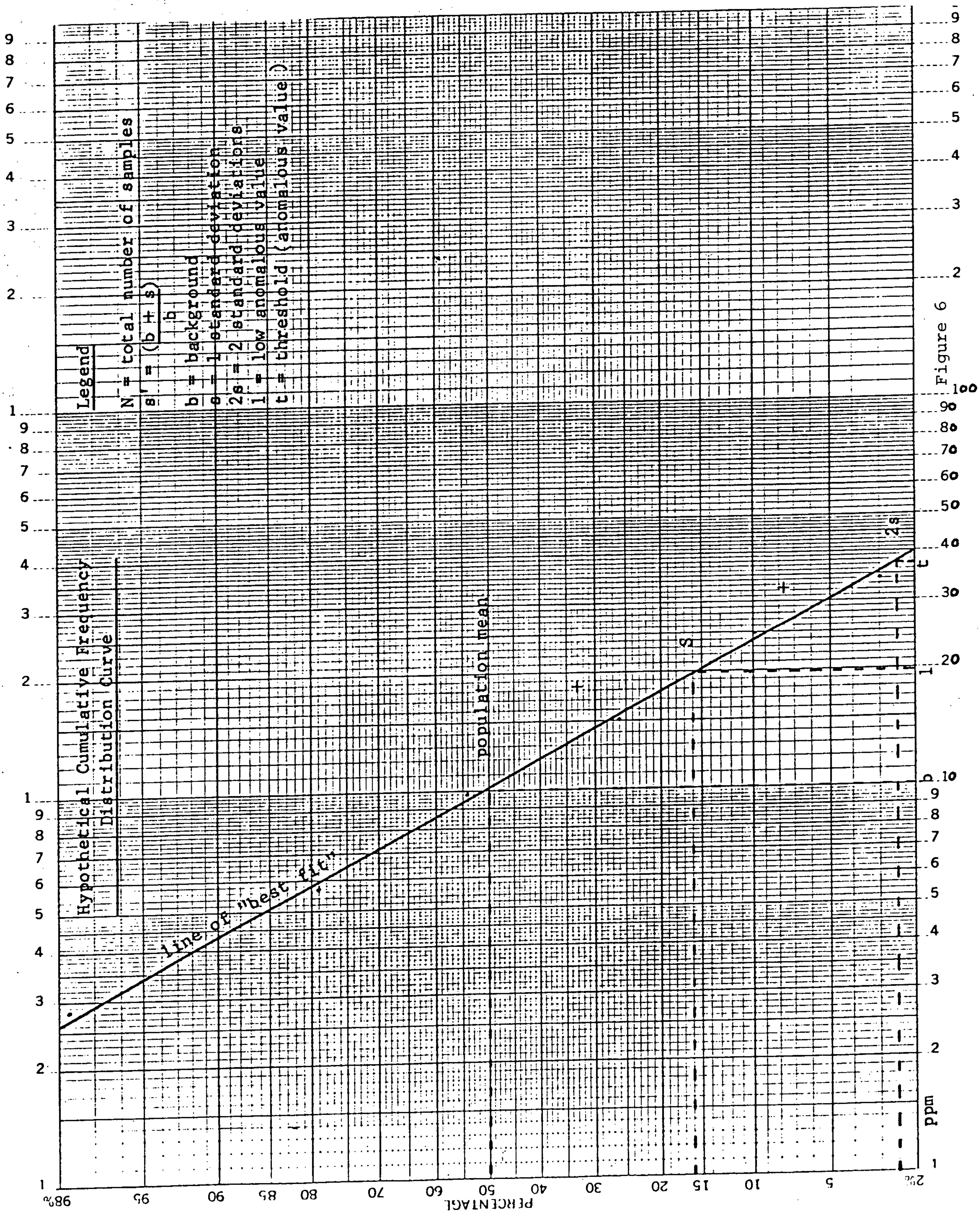

Legend
N = total number of samples
s' = (b + s) / b
b = background
s = 1 standard deviation
2s = 2 standard deviations
l = low anomalous value
t = threshold (anomalous value)
Hypothetical Cumulative Frequency Distribution Curve
line of "best fit"
population mean
PERCENTAGE
ppm
s
2s
t
l
b
46 8080
K-E PROBABILITY X 3 LOG CYCLES

Figure 6

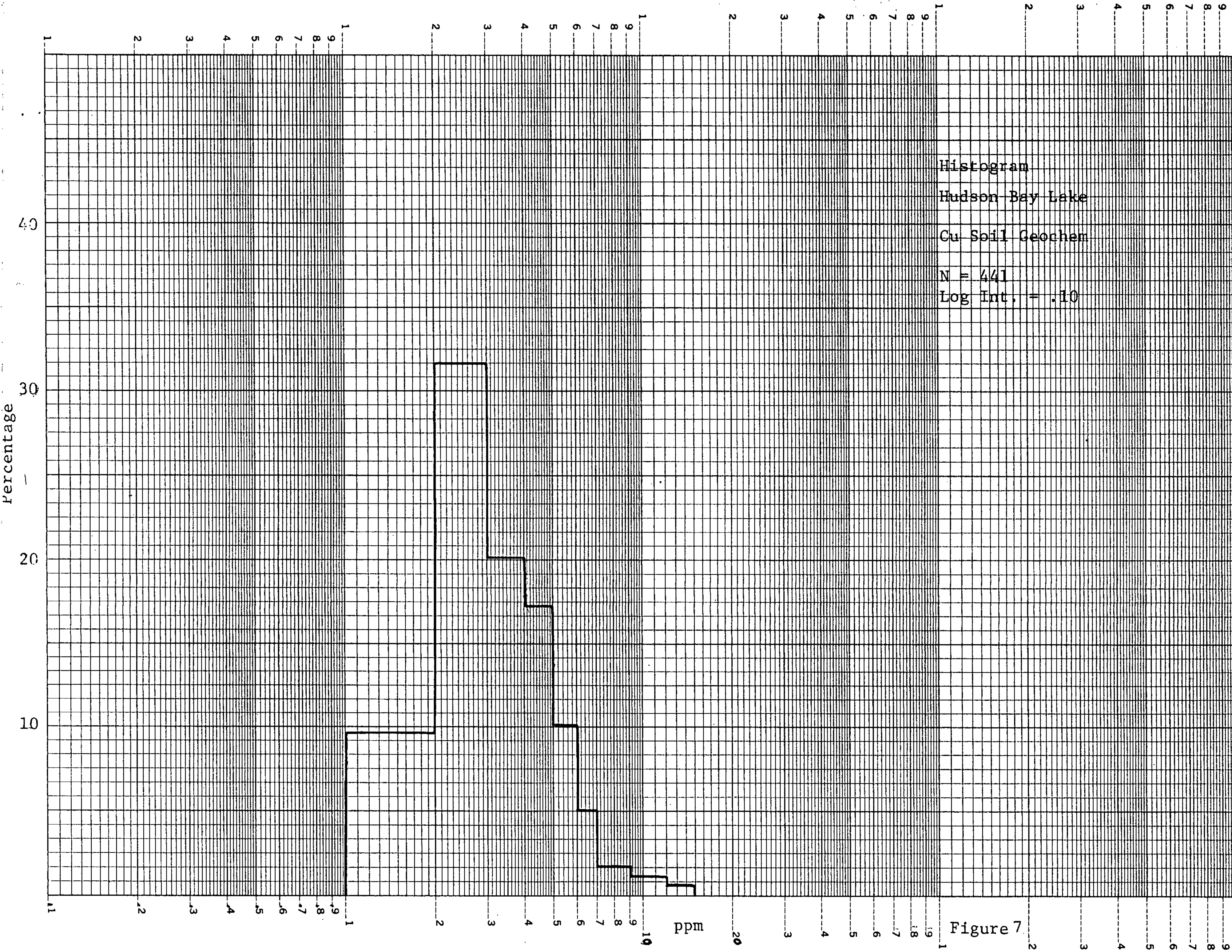
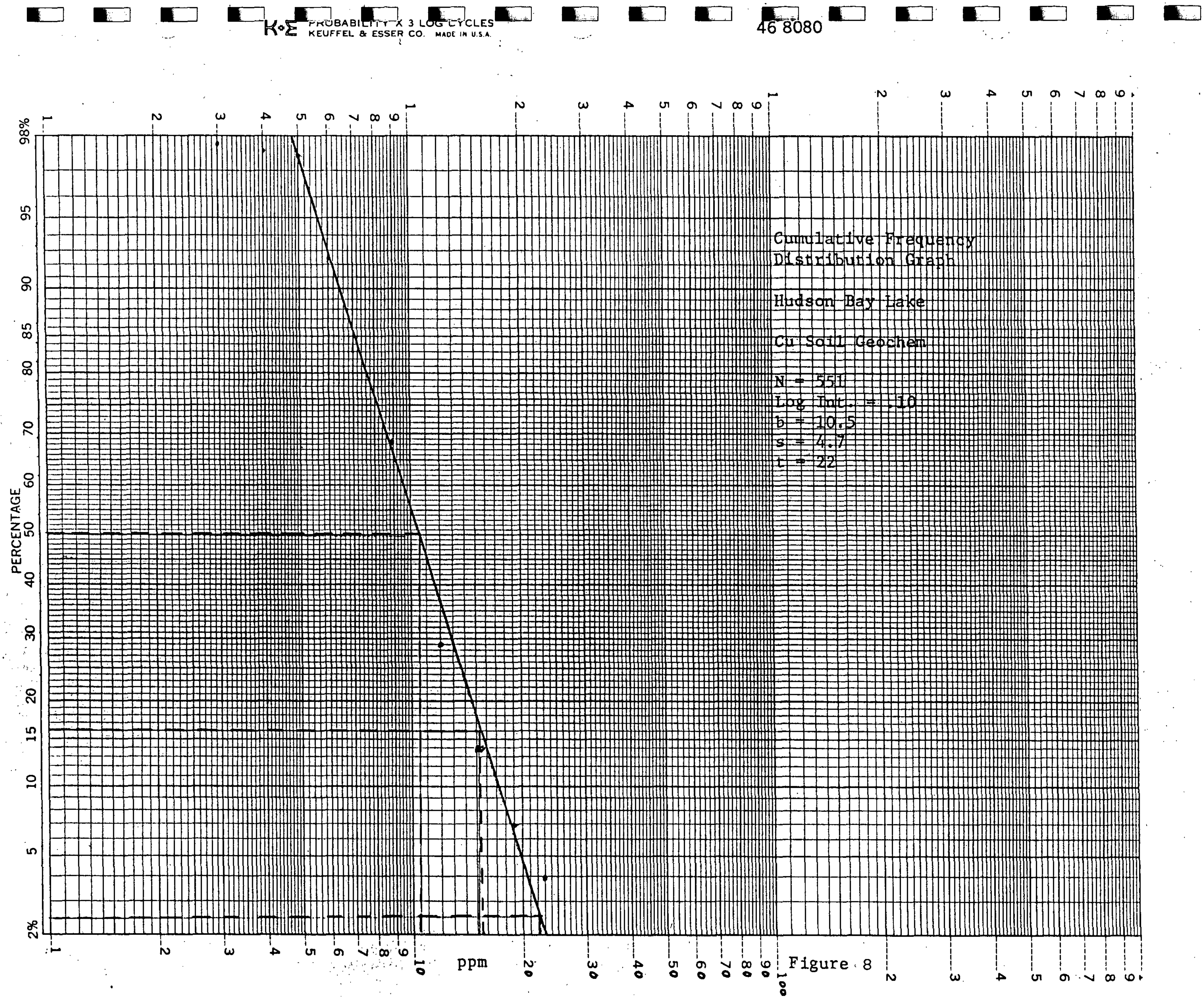

Histogram
Hudson Bay Lake
Cu Soil Geochem
N = 441
Log Int. = .10
Percentage
40
30
20
10
ppm
10
20

Figure 7


K·E PROBABILITY X 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.
46 8080
Cumulative Frequency
Distribution Graph
Hudson Bay Lake
Cu Soil Geochem
N = 551
Log Int. = .10
b = 10.5
s = 4.7
t = 22
PERCENTAGE
ppm
Figure 8

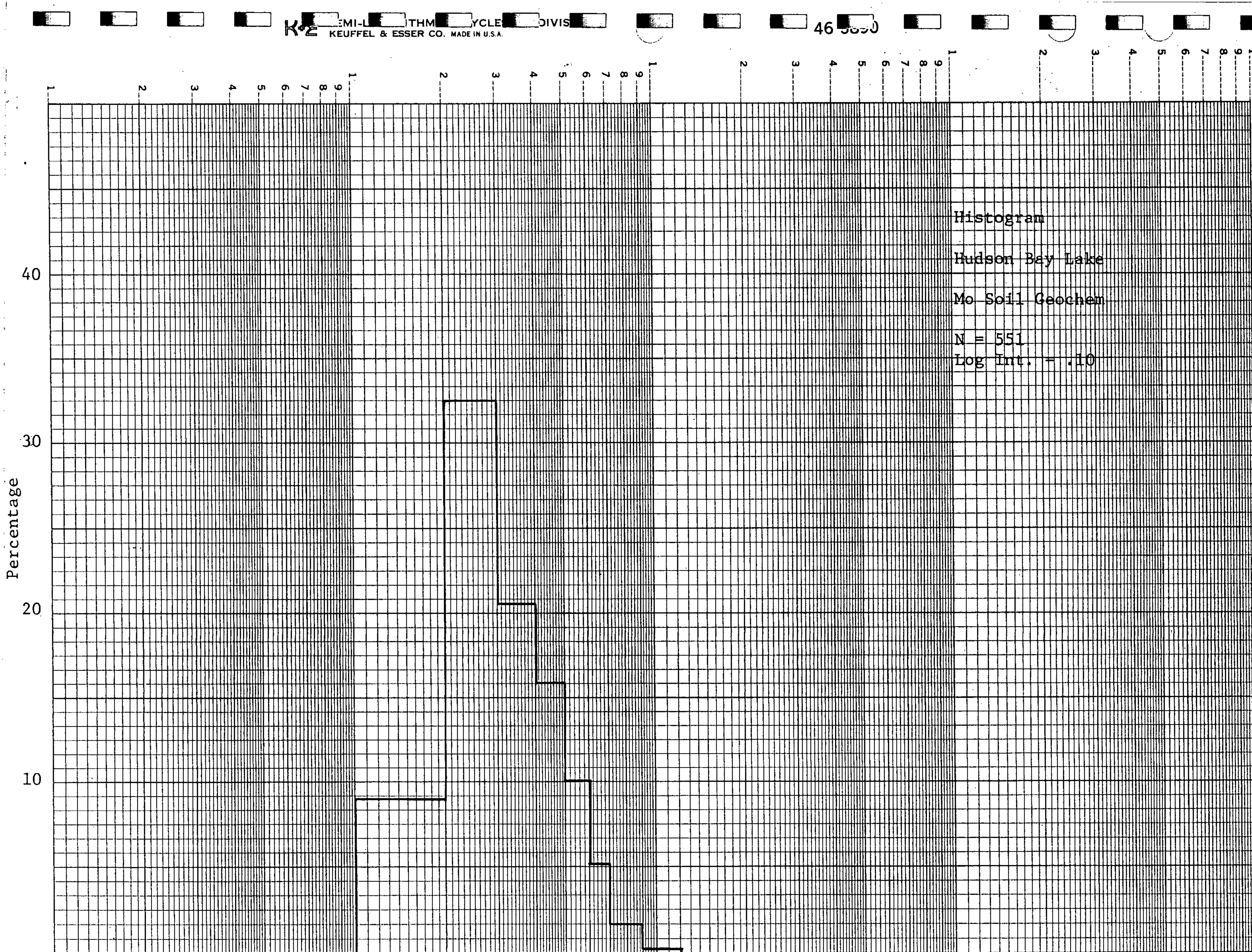

Histogram
Hudson Bay Lake
Mo Soil Geochem
N = 551
Log Int. = .10
Percentage
40
30
20
10
ppm
1
10

Figure 9

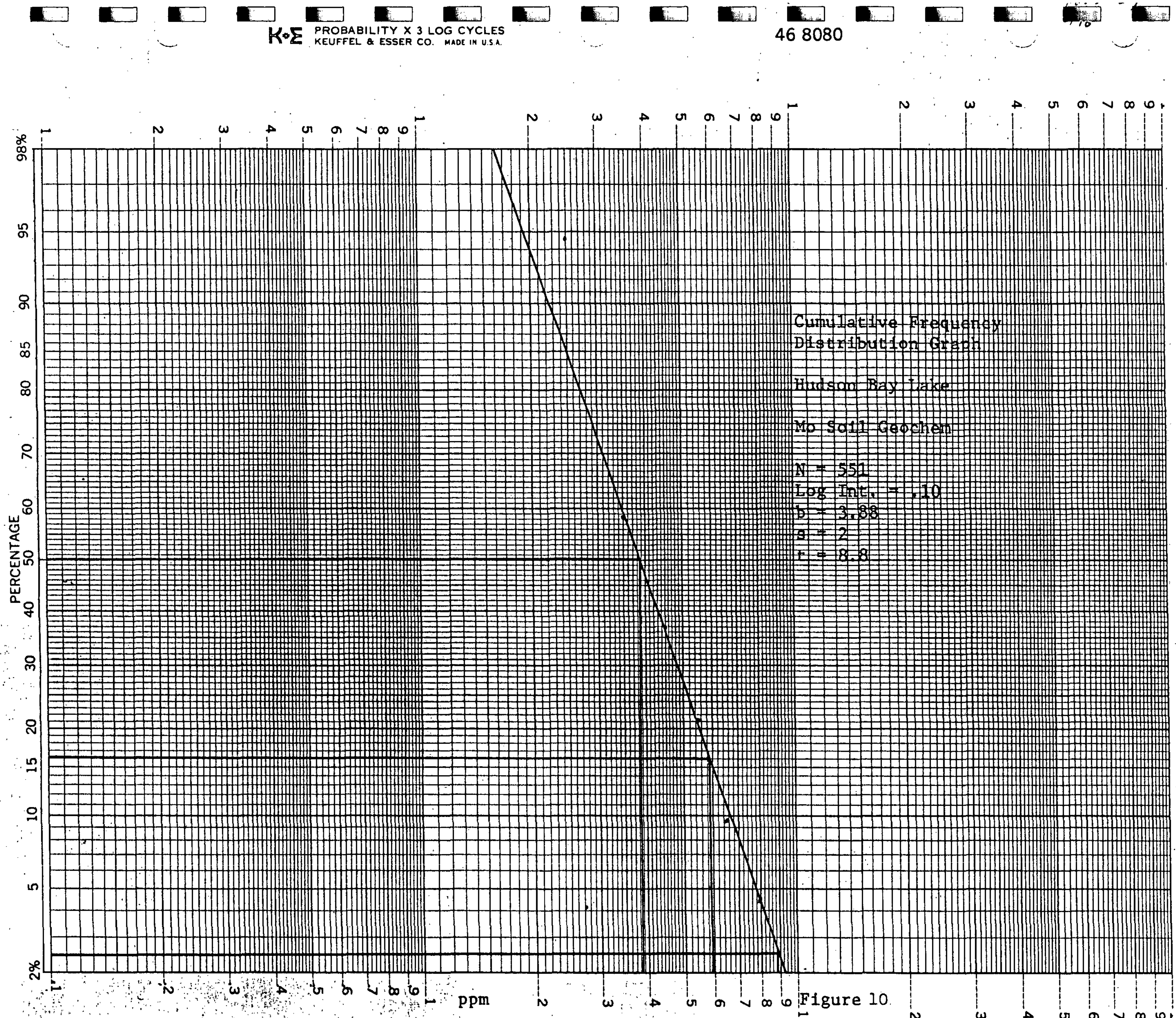

K+E PROBABILITY X 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.
46 8080
Cumulative Frequency
Distribution Graph
Hudson Bay Lake
Mo Soil Geochem
N = 551
Log Int. = .10
b = 3.88
s = 2
r = 8.8
PERCENTAGE
98%
95
90
85
80
70
60
50
40
30
20
15
10
5
2%
ppm

Figure 10

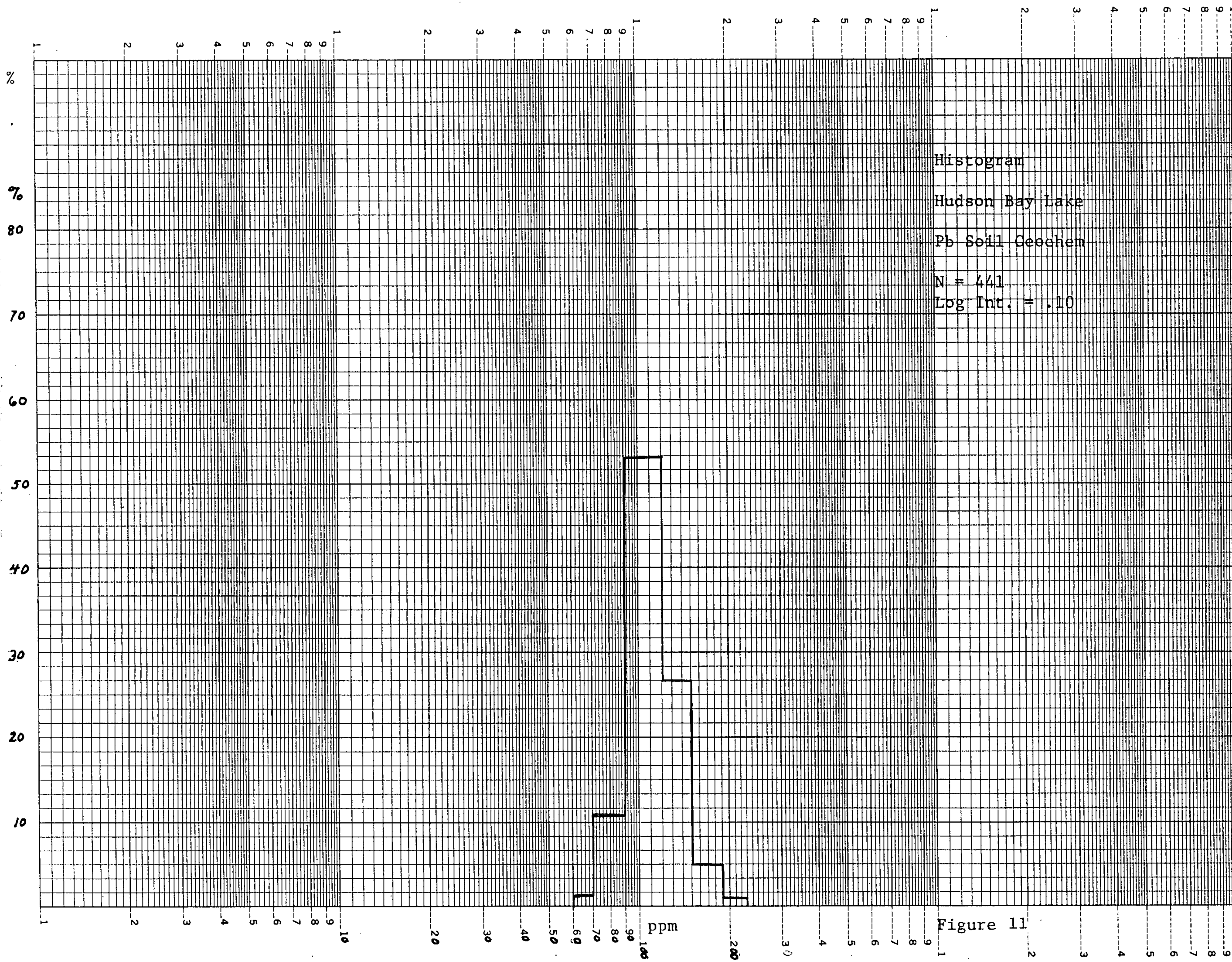

Histogram
Hudson Bay Lake
Pb Soil Geochem
N = 441
Log Int. = .10
%
80
70
60
50
40
30
20
10
ppm
10
20
30
40
50
60
70
80
90
100
200

Figure 11

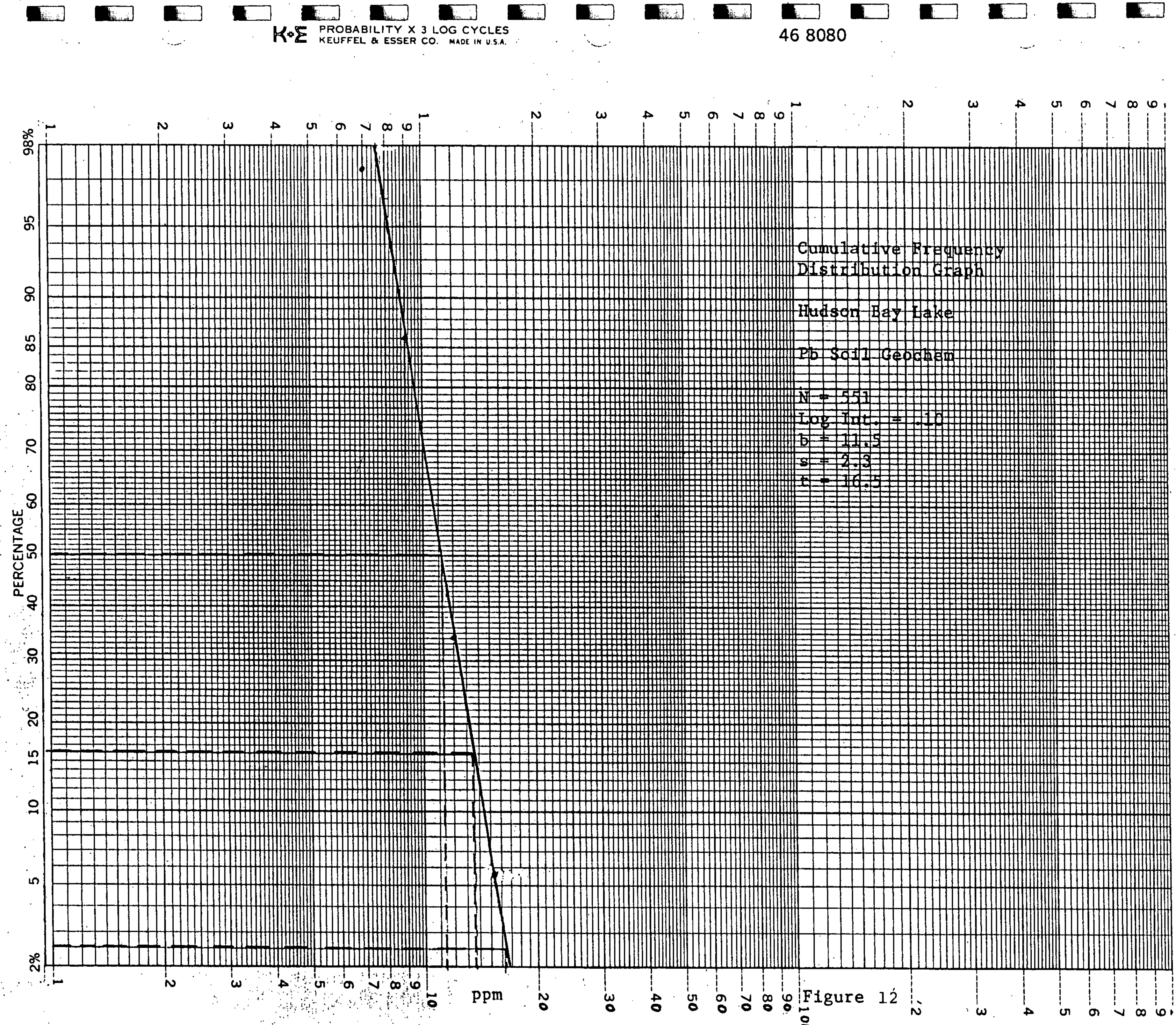
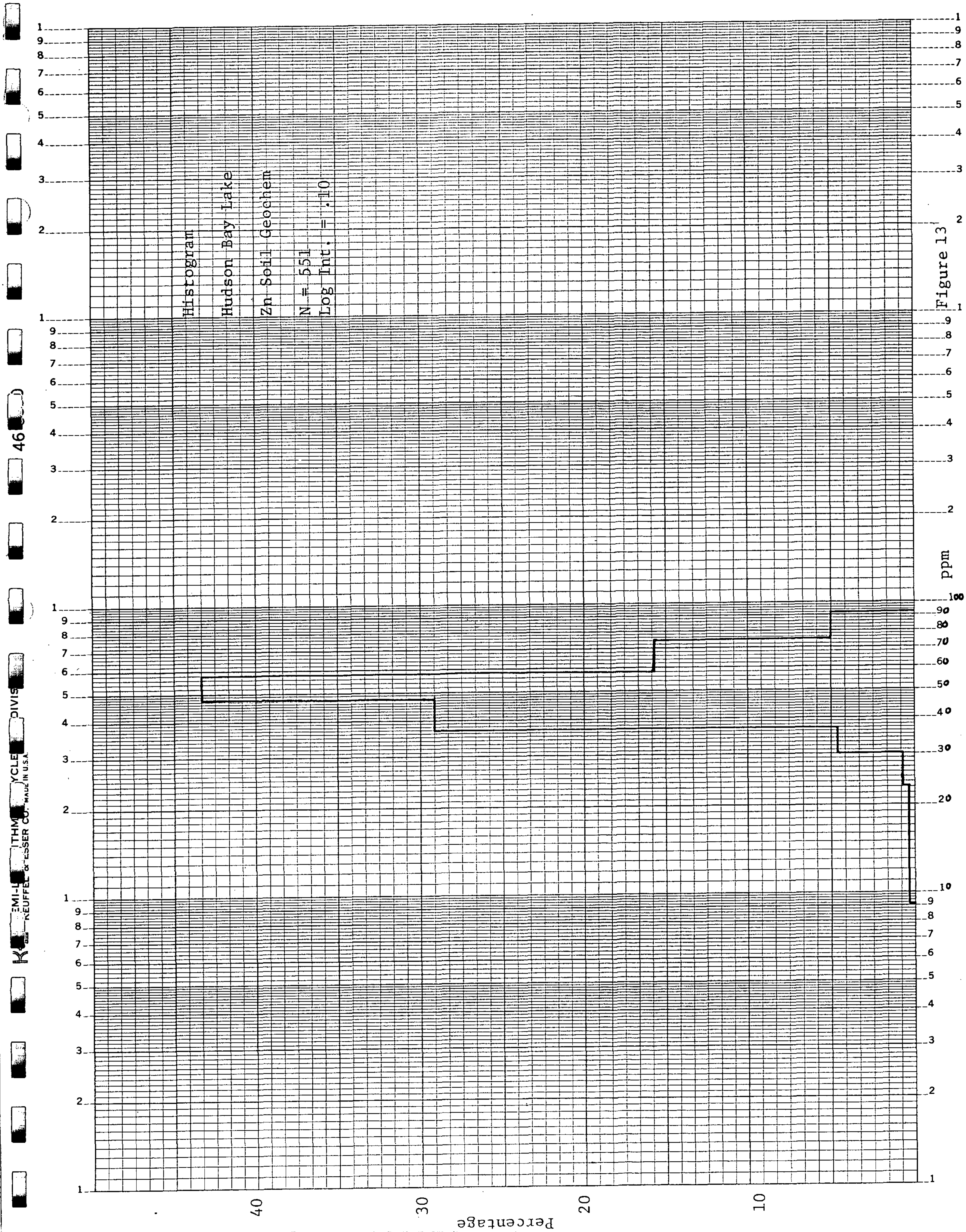
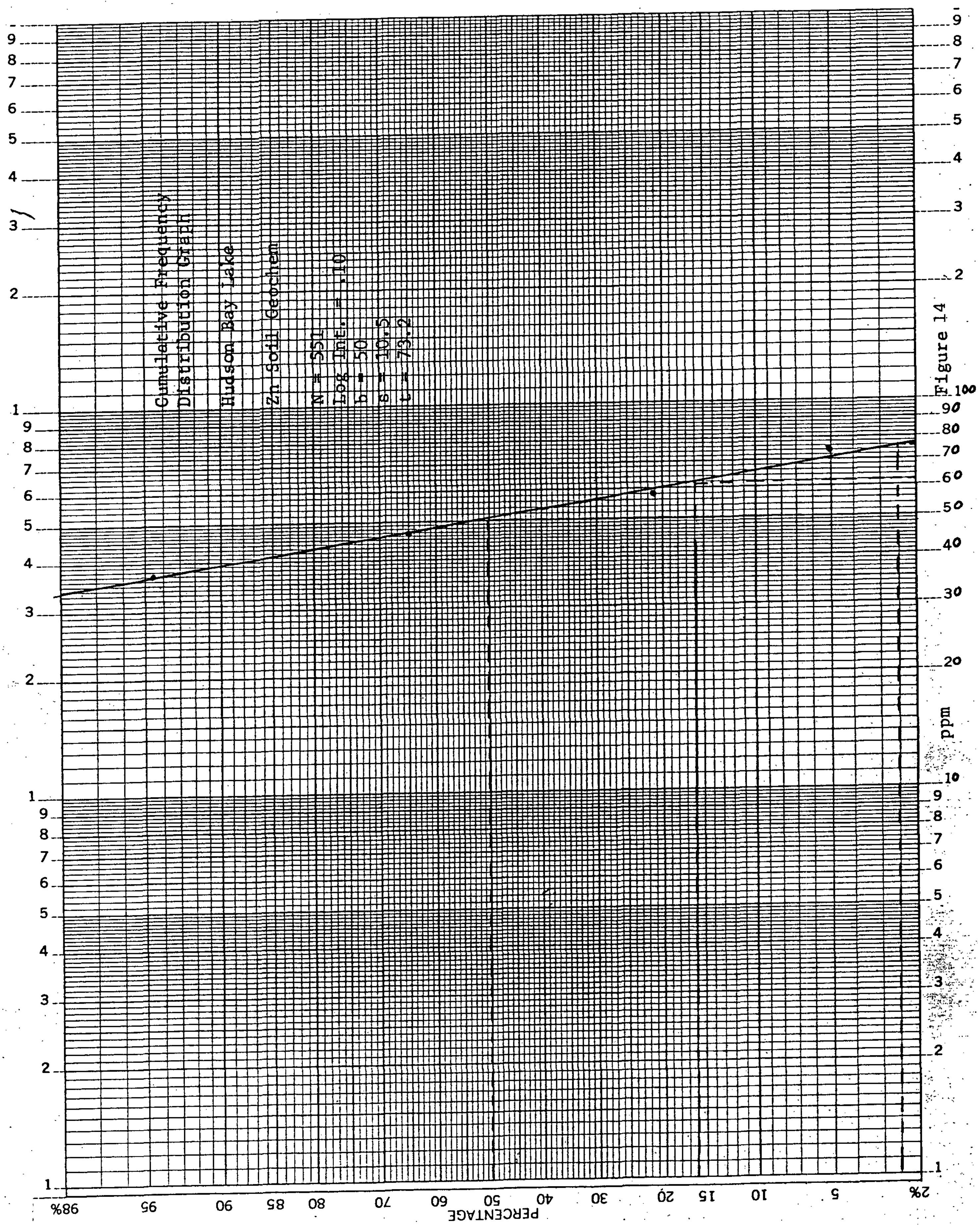

K+E PROBABILITY X 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.
46 8080
Cumulative Frequency
Distribution Graph
Hudson Bay Lake
Pb Soil Geochem
N = 551
Log Int. = .10
b = 11.5
s = 2.3
t = 16.5
PERCENTAGE
ppm

Figure 12


Histogram
Hudson Bay Lake
Zn Soil Geochem
N = 551
Log Int. = .10
Figure 13
ppm
100
90
80
70
60
50
40
30
20
10
Percentage
40
30
20
10


Cumulative Frequency
Distribution Graph
Hudson Bay Lake
Zn Soil Geochem
N = 551
Log Int. = .10
b = 50
s = 10.5
t = 73.2
Figure 14
ppm
PERCENTAGE
46 8080
K+E PROBABILITY X 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.

c) Discussion of Results

Geochemical results were generally disappointing. Soil samples taken around known mineral occurrences averaged only slightly above regional background levels. Contouring of the various elements did, however, identify three weakly anomalous zones.

Zone 1

A large Cu, Mo, Pb, Zn anomaly on the central map area area corresponds to known mineral occurrences at 22+00E and 18+50N. Mo, Pb values are generally more irregular and discontinuous than the Cu, Zn geochem.

Zone II

Zone II follows the basalt granodiorite contact on the property's northwestern flank. Anomalous Pb, Zn values are widespread and uniform in distribution. Prospecting has not identified any mineral occurrences within this zone.

Zone III

Poorly exposed basalt on the claim group's northeastern margin coincides with a large Pb geochem. A small Cu anomaly occurs central to the zone. Soil values remain unsubstantiated by geological mapping.

VI CONCLUSIONS

The two primary objectives of the 1980 program were:

a) To better determine the size and grade of mineral showings.

b) To locate new target areas on the property.

Based upon surface mapping and geochemical interpretation, mineralization appears to be restricted in both size and grade to the limits of initial mineral exposures.

The contact related mineralization most likely occurred as a result of localized leakage of hydrothermal solutions along the contact region.

Though work done to date provides little evidence to support a deposit of economic potential, the true extent of mineralization may have been effectively masked by thick basalt flows on the northern map area.

VII RECOMMENDATIONS

Since mineralization on the property appears to be both low grade and localized, no further work is recommended at this time.

APPENDIX I

PREPARATION of SOILS and SILTS for GEOCHEMICAL ANALYSIS

1. Empty soil sample into the pan and then place the sample packet into the pan with the sample.

2. Place the pan containing the sample into the oven (Temp=105 C) and leave until dry approx. 2 hours.

3. Remove from the oven when dry and remove rocks and twigs etc.

4. Break up the clay lumps with a rubber bung and then transfer the sample to an 80 mesh screen.

5. Screen approx. 50 - 100 grams of sample through the screen and transfer to the original packet and seal.

6. Discard the +80 mesh fraction of the sample.

ANALYSIS by A.A. for Cu, Pb, Zn, Ag and Mo.

1. Weigh 2.00 GM on the top pan balance into a 150 ML beaker (check that beaker No. is the same as written on work sheets)

2. Add 15 MLS Nitric Acid, cover with watchglass and heat on low heat until brown Nitrous fumes are gone.

3. Remove beakers from hot plate, cool for 5 minutes.

4. Add 10 ML Hydrochloric Acid. Place on hot plate. When all brown Nitrous fumes are gone, remove watchglasses and take just to dryness on a low plate.

5. Remove from plate, cool, add 20 MLS distilled water, 5 MLS Conc. Hydrochloric Acid and boil salts into solution.

6. Cool in water bath, when cold transfer to 100 MLS Volumetric flask, add 1 MLS Superfloc solution and dilute to 100 MLS with distilled water.

7. Mix thoroughly and then transfer to original beaker.

8. When all samples ready, transfer to A.A. room for reading.

9. If Mo is required, 10.00 MLS of this solution is transfered to a test tube and 1.00 MLS of ALC_3 solution added.

APPENDIX II

STATEMENT of QUALIFICATIONS

I, Paul Bankes, of the town of Peachland, Province of British Columbia, do hereby certify that:

1) I am a geologist residing in Peachland with Post Office Box 9 as my address.
2) I am a graduate of the University of Western Ontario, with a BSc in geology (1978).
3) I have been employed as an exploration geologist by Brenda Mines Ltd. since April 1978.

P.C. Bankes, BSc
Exploration Geologist
Brenda Mines Ltd.

Date

STATEMENT of QUALIFICATIONS

I, Arnold R. Pollmer of Peachland, Province of British Columbia, do certify that:

1) I have been employed as a geologist by Noranda Mines Limited from December 1973 to June 1977; I am presently employed as the chief geologist by Brenda Mines Ltd.

2) I am a graduate of the University of Wisconsin with a Bachelor of Science Degree in Geology (1972).

3) I am a member of the Canadian Institute of Mining and Metallurgy.

4) I am a fellow of the Geological Association of Canada.

Arnold R. Pollmer
Chief Geologist
Brenda Mines Ltd.

APPENDIX III

Personnel and Time Allotment

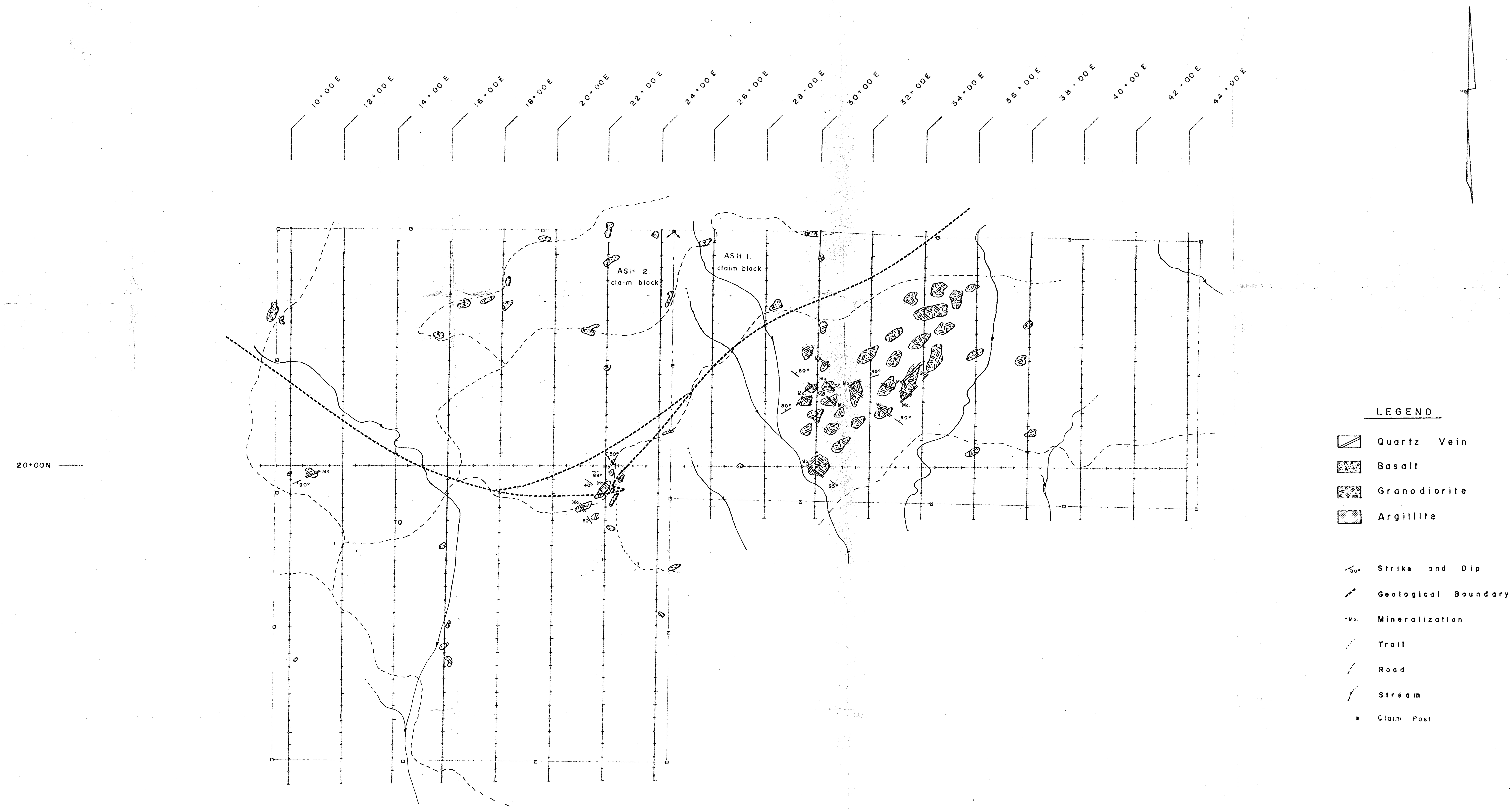
Work was performed on the property between September 22, 1980 and September 25, 1980. Crew members were:

		Man Days
Paul C. Bankes	Project Geologist	2
Tim Henneberry	Field Geologist	4
Blair Thompson	Field Assistant	4

APPENDIX IV

Statement of Costs

1)	**Food and other Camp Expenses**	
	September 22 - 25, 1980; 4 days; $16.67/man day for 9 man days	$150.03
2)	**Transportation**	
	a) Truck Rental September 22 - 25, 1980; 4 days; $15.00/day	60.00
	b) Fuel Costs September 22 - 25, 1980; 4 days	27.30
3)	**Geology**	
	a) Students September 22 - 25, 1980; 4 days; $50.00/day/man for 2 men	400.00
	b) Geologist September 24 - 25, 1980; 2 days; $60.00/day	120.00
4)	**Geochem Survey**	
	a) Assay Costs August 1 - 30, 1980; 551 samples analyzed for Cu, Mo, Pb, Zn; $6.58/sample	3,626.00
	Total	$4,383.33



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BRENDA MINES LTD. EXPLORATION GROUP	
Drawn P.C. BANKES	HUDSON BAY
Check	GEOLOGY + CLAIM MAP
Approv	SCALE 1:7,500 (0–150M) · FILE No. 8-90-21 · Figure 15

LEGEND

Contour Interval 5 ppm.

Contour Interval 10 ppm

Low Anomalous

Anomalous

High Anomalous

Road

Trail

Stream

Marsh

Claim Post

9487

BRENDA MINES LTD.
EXPLORATION GROUP

Drawn P.C. BANKES	HUDSON BAY
Check	Cu. GEOCHEM SURVEY
Approv	
SCALE 1:7,500 0—150M	FILE No. 8-90-21 Figure 16

LEGEND

Contour Interval 1 ppm.

Contour Interval 3 ppm

Low Anomalous

Anomalous

High Anomalous

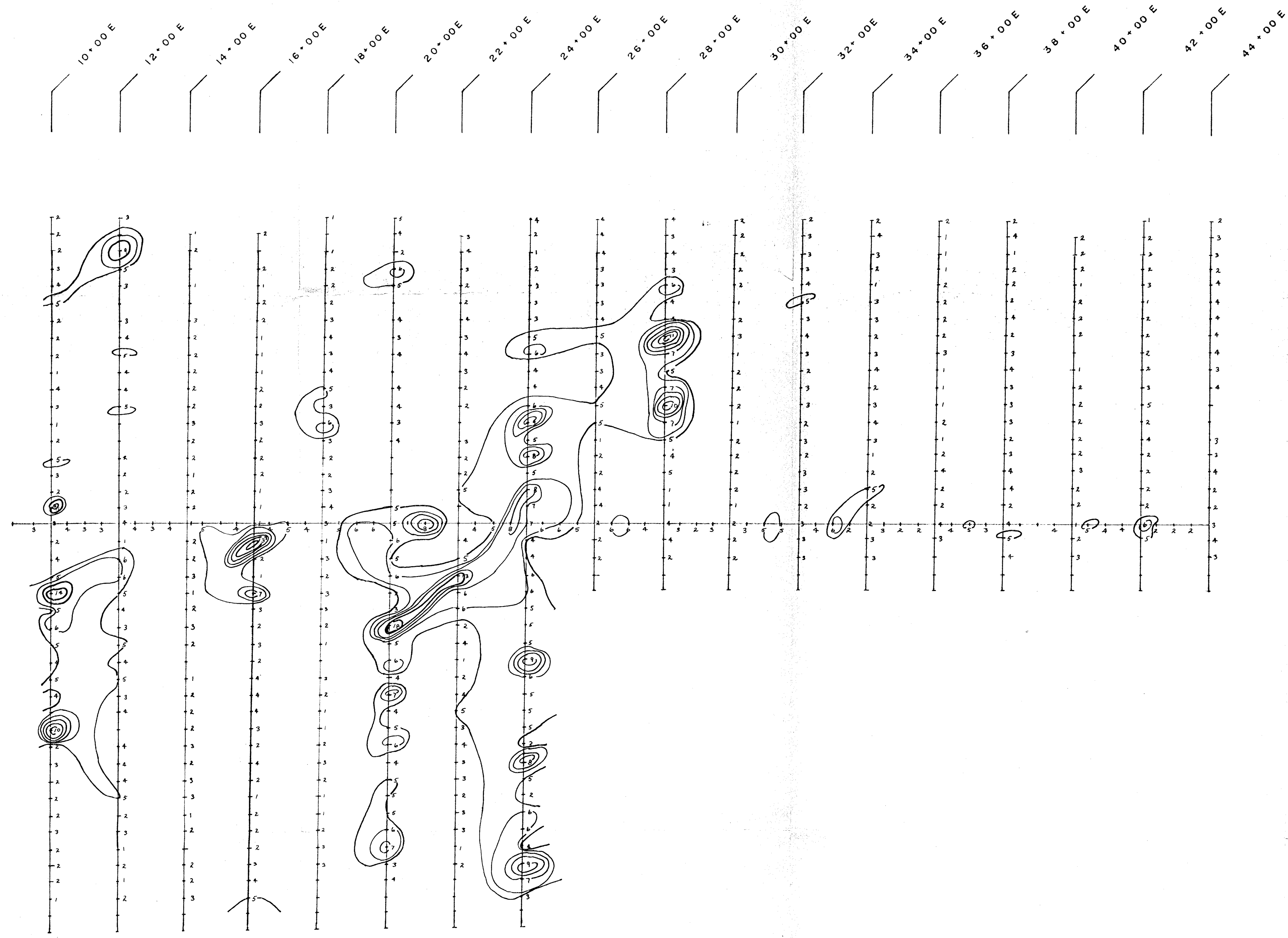
Road

Trail

Stream

Marsh

Claim Post



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BRENDA MINES LTD.
EXPLORATION GROUP

Drawn P.C. BANKES	HUDSON BAY
Check	Mo. GEOCHEM SURVEY
Approv.	SCALE 1:7,500 0 — 150M; FILE No. 8-90-21; Figure 17

LEGEND

Contour Interval 2 ppm.

Contour Interval 10 ppm

Low Anomalous

Anomalous

High Anomalous

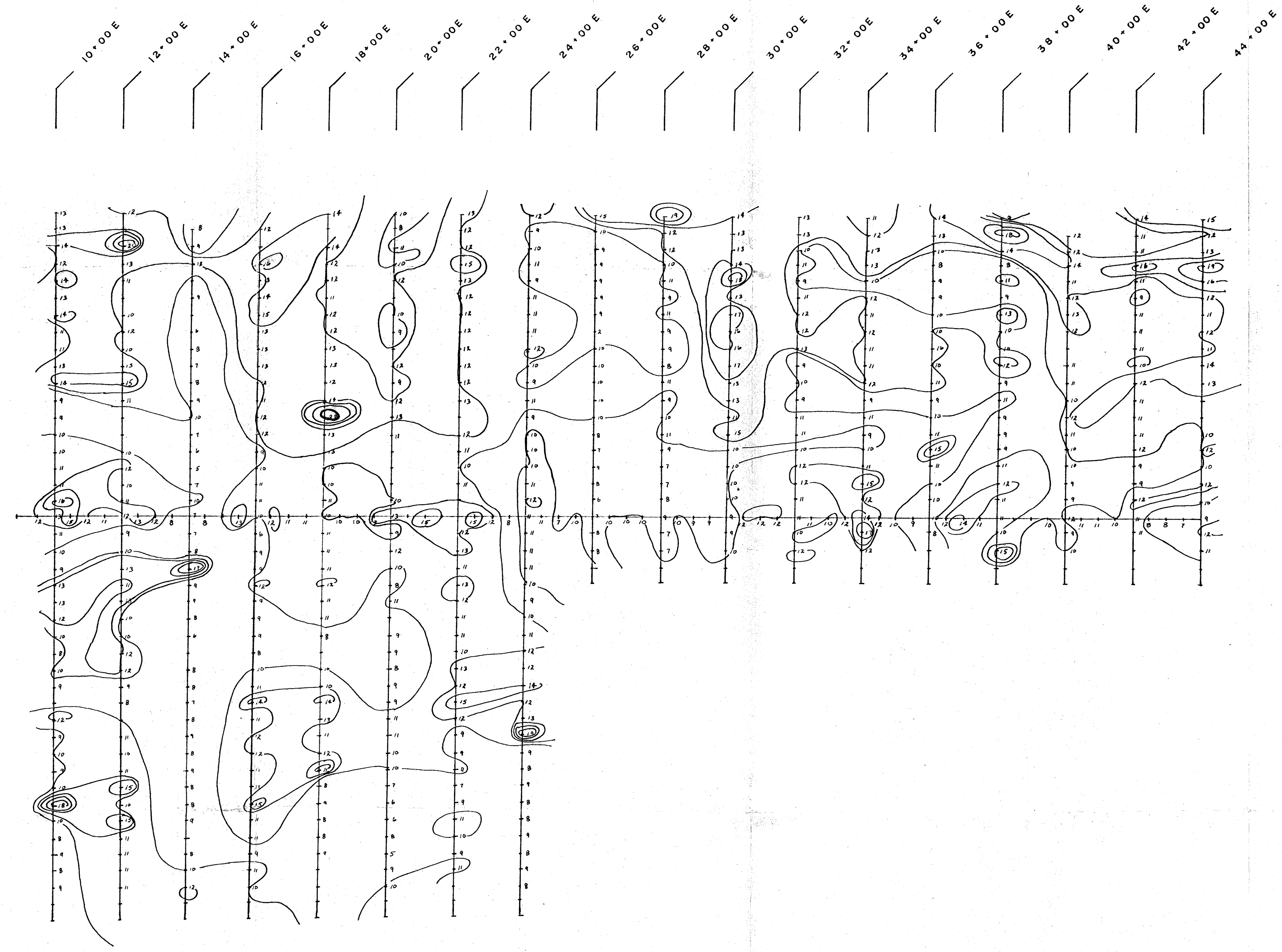
Road

Trail

Stream

Marsh

Claim Post



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
9487

BRENDA MINES LTD.
EXPLORATION GROUP

HUDSON BAY
Pb GEOCHEM SURVEY

Drawn P.C. BANKES
Check
Approv

SCALE 1:7,500 0 — 150 M

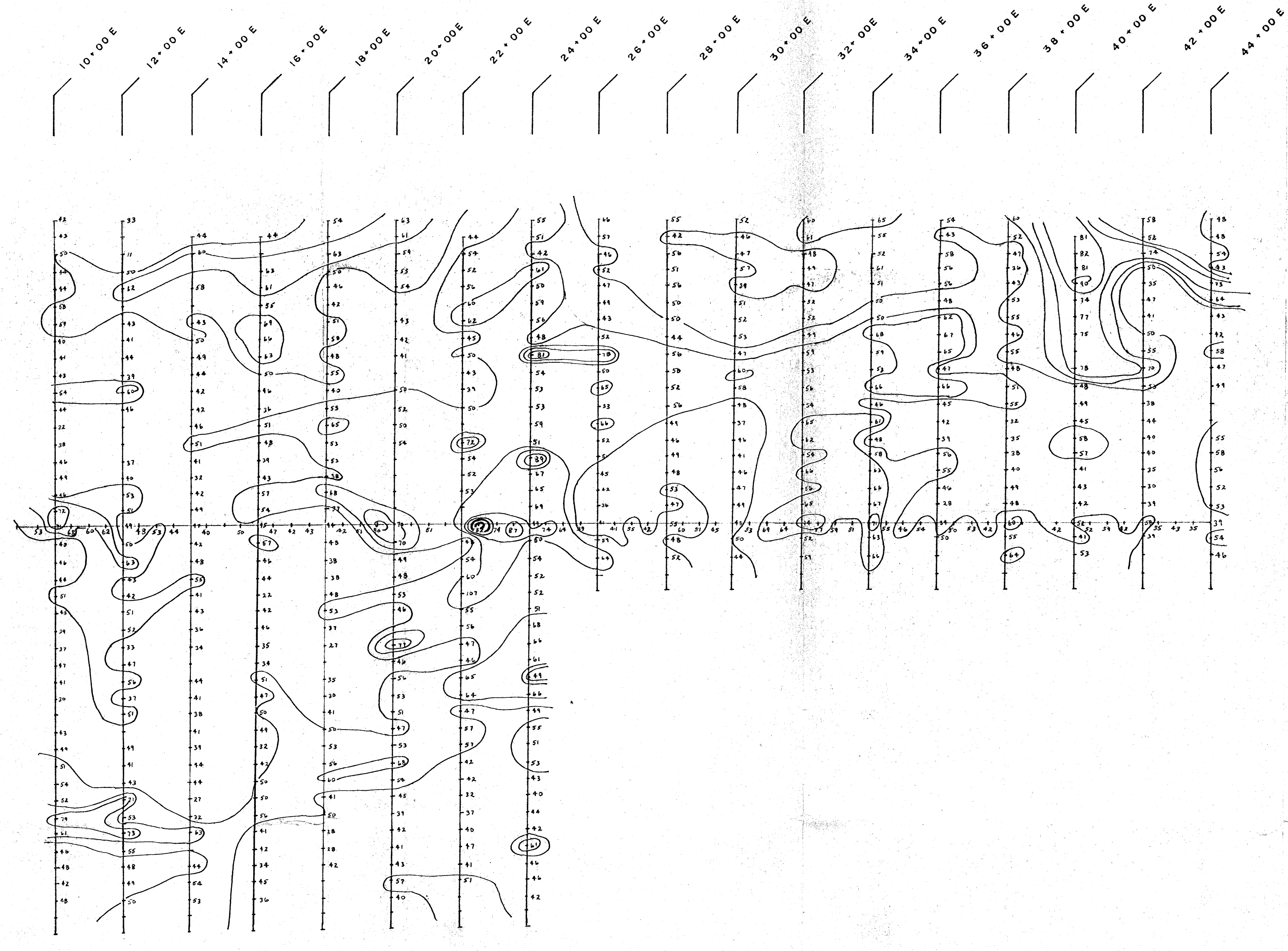
FILE No. 8-90-21

Figure 18

LEGEND

- Contour Interval 10 ppm.
- Contour Interval 20 ppm
- Low Anomalous
- Anomalous
- High Anomalous

Road ....
Trail ....
Stream ....
Marsh ....
Claim Post ....



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
9487
NO.

BRENDA MINES LTD. EXPLORATION GROUP		
Drawn P.C. BANKES Check Approv.	HUDSON BAY Zn GEOCHEM SURVEY	
	SCALE 1:7,500 0 150M	FILE No. 8-90-21 Figure 19