GEOLOGICAL AND GEOCHEMICAL REPORT ON THE

TOM CLAIMS, YUKON

Latitude 61° 45' North

Longitude 132° 25' West

NTS 105 F/15 and 16

by

D.C. MILLER, P. ENG.

and

D.A.R. HENDRY, P. ENG.

October 10, 1978

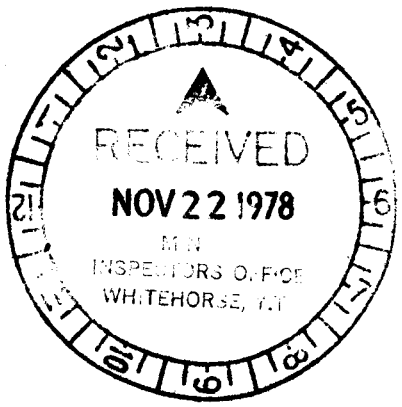
St. Joseph Explorations Ltd.

970 Laval Crescent

Kamloops, B.C.

V2C 5P5

090397

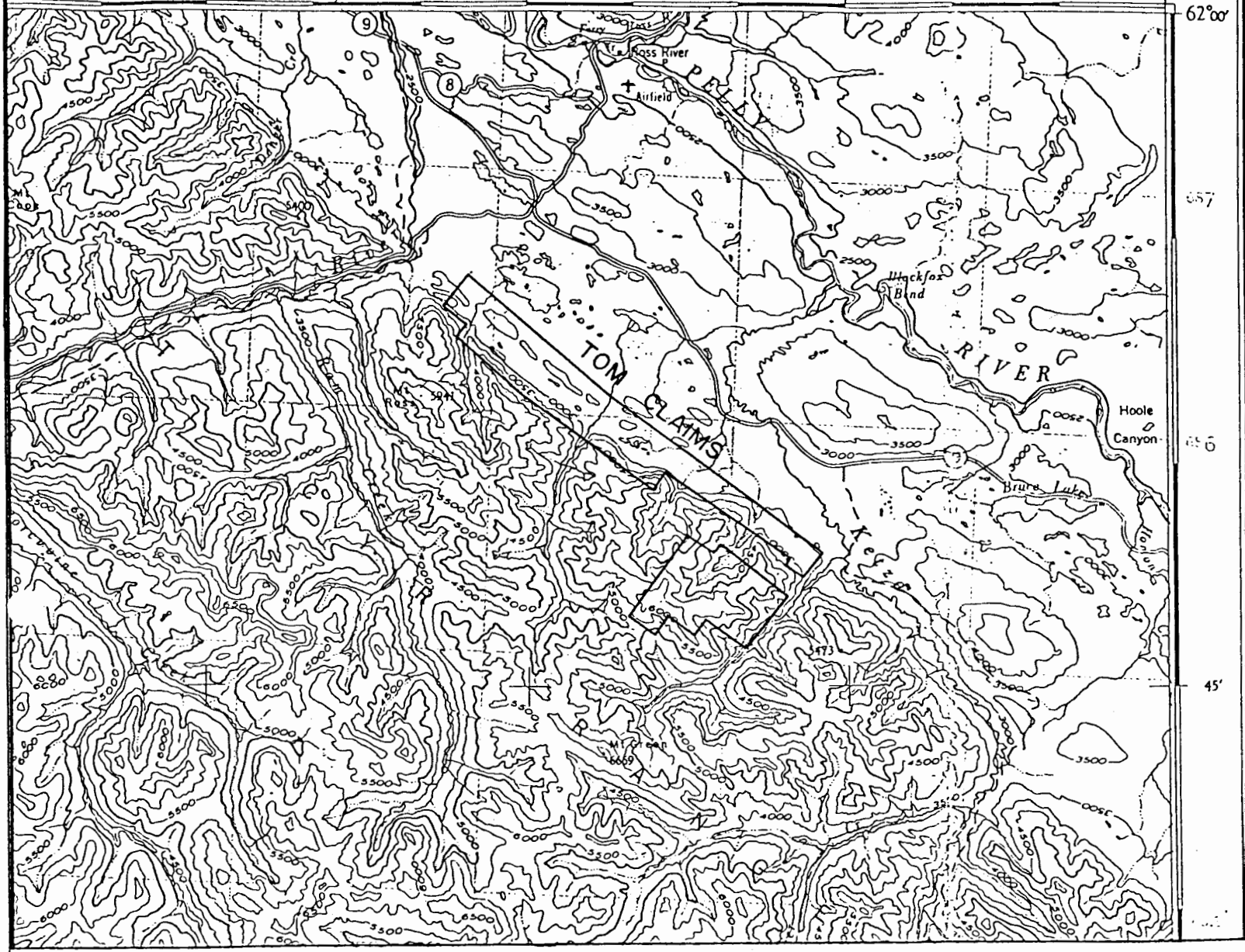


CONTENTS

ILLUSTRATIONS

APPENDICES

Appendix 1	List of personnel and addresses and time employed on project.
Appendix 2	Histograms and cumulative frequency graphs for lead, zinc and copper in soils.



N

Kilometres
0 5 10

APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG. 61° 40' 00" LATITUDE 137° 00' 00" LONGITUDE	PROJECT NO. 261.1	SHEET NO. ____ OF ____
	FIGURE NO. 1	N.T.S. 95F-15,16

ST. JOSEPH EXPLORATIONS LIMITED

TORONTO, CANADA

TOM CLAIMS

YUKON

LOCATION MAP

Scale 1 : 250,000

Introduction and Summary

During May 26 to June 12, geological and geochemical surveys were conducted on the Tom claims located near Ross River, Yukon. On lower parts of the Tom claims, soil samples were generally collected at 50 m intervals along lines 400 m apart. On the mountainous upper Tom claims, to the southwest, wider spacing was used. Additionally, silt and rock samples from within and beyond the claim boundary were collected. All samples were analyzed for lead and zinc and some were analyzed for copper as well. Geological mapping and prospecting was done in conjunction with geochemical work. Grid stations were chained or measured with topofil, ribboned and tied to a central baseline 19 Km long.

Geological units comprise sediments, metasediments and volcanic rocks ranging from Cambrian to Mississippian in age. Minor zinc and copper mineralization was found at several locations within and beyond the claim boundary associated with medium to dark grey limestone and to a lesser extent, graphitic slate. Relatively high zinc and copper soil and silt geochemical analyses were obtained from these areas and from recent fan sediments deposited at the base of the slope from streams draining such areas.

Conclusions and Recommendations

It is concluded that many of the Tom claims stream silt samples which are relatively high in zinc and copper, have been derived from source areas beyond the claim boundaries. However, prospecting and soil sampling have indicated two zones of possible zinc mineralization on the claims (Map 3N lines 136 - 148 and 164 - 184N).

It is recommended that key claims in this area be retained and detailed prospecting and sampling be carried out next season.

Respectfully submitted,

D.C. Miller, P. Eng.

D.A.R. Hendry, P. Eng.

October 10, 1978

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA D. C. MILLER

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA DAVID A. R. HENDRY

Location and Access

The Tom claims lie 11 to 24 Km southward of Ross River, Yukon. Access to the claims is gained most conveniently by helicopter from Ross River. The Robert Campbell highway lies 1.6 to 3.2 Km northeast of the claims. The South Canol road passes within 2.4 Km of the northwest boundary of the claims.

Physiography

The claims lie along the northeastern front of the Pelly Mountains on the southwestern side of Tintina Trench. Much of the Tom claims occupy an area of generally moderate topography comprising low hills, swamps and small lakes. This lowland area rises abruptly to the southwest into mountainous terrain where the upper portion of the Tom claims are located. Elevations range from 850 to 1900 m.

Outcrops within the lowland portion of the claims are sparse and northeasterly flowing streams have deposited fan deposits over large areas adjacent to the mountain front. A number of slides, now covered by vegetation, are also present along the mountain front.

Timberline is at about 1450 m and most areas below this elevation contain stands of spruce and aspen. Slide alder and willow are prominent on northeast facing slopes.

Lowland portions of the claims were covered by northwestward advancing ice during the last glacial period. Glacial deposits have been largely covered by recent fluvial deposits adjacent to the mountain front. A post glacial layer of volcanic ash up to 20 cm thick is present over much of the claims.

Claims and Ownership

Grant numbers, names and due dates for the Tom claims are summarized in the following table:

TOM CLAIM SUMMARY

Grant No.	Name	Due Date
YA 26155	Tom 1	Sept. 30/78
26157	3	"
26159 - 176	5-22	"
16189 - 192	35-38	"
26197	43	"
26199 - 202	45-48	"
26207 - 214	53-60	"
26217 - 252	63-98	"
26863 - 868	99-104	Oct. 26/78
26259 - 289	104-135	Sept. 30/78
26291	137	"
26299 - 374	145-220	"
26869 - 924	221-276	Oct. 26/78

Total: 243 Claims

The claims are located in 2 main blocks (see Fig. 1) with some internal fractions within these blocks. The claims are owned by St. Joseph Explorations Ltd.

History and Previous Work

The claims were staked in the fall of 1977 and no previous work other than stream silt sampling was noted.

1978 Programme

Initial work consisted of preparation of base maps at a scale of 1:12,500 to cover areas of interest. Because of the length of the claim block (19 Km) base maps were divided into 2 sheets designated N and S. During April, a main base line 13.8 Km in length was cut by Eastern Associates of Whitehorse, Yukon.

During May 26 to June 12 and June 30 and July 1, further line cutting was done and geological and geochemical surveys were completed on the Tom claims. On lower claims, soil samples were generally collected at 50 m intervals along lines spaced 400 m apart. Where fan deposits are present, wider spacing was used. On the mountainous, southwestern portion of the claims, soil samples were collected at 100 m intervals along or near claim lines. Additionally, silt samples were collected from streams on and near the claims. A total of 1488 soils and silts and 25 rock samples were analyzed for lead and zinc. Some samples were also analyzed for copper.

Geological mapping and prospecting were done in conjunction with geochemical work. Grid stations were chained or measured with topofil, ribboned and tied into a central baseline 19 Km in length.

Aside from early baseline cutting, all work was done by 6 St. Joseph Explorations personnel based at Ross River and transported to the property daily by helicopter. No time was lost because of adverse weather.

Geological Setting

The claims primarily overlie faulted blocks of Cambrian to Devonian eugeoclinal clastic rocks of the Selwyn Basin, along the southwest side of the Tintina Fault. The Tintina Fault trends northwest-southeastward, somewhere near the northeastern boundary of the claims, beneath very thick glacial till and alluvial fans. Paleozoic lithologies comprise slate, siltstone, quartzite, limestone, phyllite and schist with some basaltic volcanics in the Devonian section. The strike is roughly southeastward, dipping both northeasterly and southwesterly due to folding parallelling the strike. Dips are usually less than 40°. Mississipian cherty and sandy tuffs, breccias and minor intermediate flows are faulted above Devonian volcanics in the extreme southern portion of the claims.

Stratigraphy and Mineralization

The oldest rocks on the property, exposed at the base of the mountain range, are brown phyllites and brown biotite schists, both locally calcareous. Although no fossil evidence exists, these are the only rocks that have reached biotite grade metamorphism on the property and are probably metamorphic equivalents of Cambrian fine grained clastics.

Uncomformably overlying these rocks are Ordovician and Silurian clastics divided into a basal slate unit overlain by an upper and lower limestone seperated by a quartzite unit. The slate unit is variably black, rusty and sulphuretted The "upper limestone" is light to medium grey, thin banded, laminated and locally dolomitic. It frequently has hydrozincite on fractures and is regularly cut by white bull quartz containing minor chrome diopside, muscovite and minor chalocite. The

quartzite unit locally is sandstone and siltstone and appears to be discontinuous across the property. The "lower limestone" is dark grey, commonly graphitic, dolomitic and argillaceous. It is absent from the southeastern portion of the claims due to faulting.

Table of Formations

Period	GSC* Map Unit	Property** Map Unit	Lithology	Thickness (Metres) approximate
Quaternary		11	Glacial till & alluvial fans.	
Devonian & Mississippian	Mv & Dvc	10	Acid to intermediate volcanics rhyolite and dacite ash tuff, lapilli tuff, agglomerate, mariposite tuff, andesite and basalt flows, quartz crystal tuff.	undetermined
Silurian &	Dc	9	Brown phyllite and limestone; 9a brown and grey phyllite, laminated phyllite; 9b thin bedded brown and grey limestone	greater than 200 top unexposed
& Devonian	SDsq	8	Quartzite; 8a brown quartzite, brown sandstone, quartz and chert, pebble conglomerate, minor phillite; 8b Rusty-weathering felsic tuff	60 - 80
	OSslq	7	Calcareous and graphitic slate	greater than 600 base unexposed
Ordovician &	OSslc	6	"Lower limestone"; intensely folded, dark grey, thin bedded, graphitic limestone, dolomite and mudstone. Marker horizon of andalusite slate. Minor quartz-chrome diopside and hydrozincite.	100 - 200
Silurian	OSslc	5	Quartzite; 5a quartzite and phyllite; 5b brown sandstone, laminated siltstone & phyllite.	10-20

Table of Formations (Cont'd)

Period	GSC* Map Unit	Property** Map Unit	Lithology	Thickness (Metres) approximate
Ordovician & Silurian (cont'd)	OSslc	4	"Upper limestone"; light and medium grey thin banded and laminated limestone and dolomite. Blocky pale grey limestone. Common hydrozincite, chalcocite in bull quartz, chrome diopside and muscovite. Minor carbonaceous limestone.	80 - 120
	OSslc	3	Slate; 3a rusty slate, soft hematitic and sulphuretted slate, minor argillite and thin banded limestone; 3b "corrugated" black slaty phyllite, non-rusty fissile slate; crenulated slate.	greater than 300 base unexposed
Cambrian & Ordovician	COcsl	2	Brown phyllite; 2a brown-weathering phyllite, silvery-platy phyllite. 2b brown-weathering calcareous phyllite; phyllitic limestone; grey dolomitic phyllite intensely crenulated and folded.	200 - 400
Ordovician	COcsl	1	Brown schist; biotite schist, calcareous biotite schist and phyllite, limestone and laminated biotite schist.	greater than 300 base unexposed

* Open File 486, G.S.C., Templeman-Kluit, 1977

** Accompanying geology map, map 2N & 2S

Faulted above the Ordovician-Silurian packages, and possibly unconformable with it, are three units thought to be Silurian and Devonian, although no fossils were found. Lowermost is a calcareous and graphitic slate with minor hydrozincite reactions and some chalcocite. This is overlain by a quartzite sandstone, chert-pebble conglomerate unit with minor felsic tuff. Uppermost is a brown and grey phyllite and thin bedded limestone unit.

Along the southern boundary and extending off the claims southward, acid to intermediate, Devono-Mississippian volcanics are faulted from the south above Devonian rocks. Lithologies include rhyolite and dacite tuff, lapilli tuff, agglomerate, mariposite tuff, andesite and basalt flows and quartz crystal tuff.

Quaternary sediments blanketing the valley floor are sandy brown glacial tills covered by white volcanic ash up to 20 cm thick. At the mouths of all streams, grey clay and silt, alluvial fans, with up to 2 Km radius, cover the ash and till.

Structure

The Tintina Fault, lying near the northeastern boundary of the claims, experienced approximately 450 kilometres of strike-slip, right lateral movement during the Cretaceous. West of the Tintina Fault, northeasterly directed reverse faults have stacked three packages of rocks above the lowest biotite schist units, which probably overlie Proterozoic clastics at depth. Folding accompanying the faulting has rippled the units within the fault blocks around northwest-southeast trending axial planes.

Geochemistry

Soil environments on the Tom claims can be divided into 4 main types. These comprise the following:

(1) Soils from higher elevations where vegetation is relatively sparse, bedrock exposures are abundant, soils are well drained; soil material is essentially of residual origin, A & B horizons are generally fairly thin or absent;

(2) soils from east-facing or north-facing lower slopes where small vegetation is thick, perma-frost is present and slide material is present; soils have developed from a mixture of transported and residual material, outcrops are sparse;

(3) soils from gently sloping to flat areas at the base of the mountain front where small landslides and extensive fluvial fans are present; the A horizon is thick except near active streams, outcrops are nil, glacial deposits are present beneath fluvial deposits;

(4) soils from the area of low northwest trending hills about 1/2 mile east of the mountain front; here, soils are well developed from parent material composed mostly of till, outcrops are generally sparse.

A total of 1348 soil samples were collected by St. Joseph personnel and were assayed by Bondar-Clegg Ltd., of Whitehorse, Yukon. Where possible, samples were collected from the B horizon. However, because of local frozen soil, 40% of the samples were collected from the A horizon. During collection, samples were coded for the following properties:

(1) Wet, dry or frozen; (2) depth of samples; (3) presence or absence

of organics; (4) depth of A horizon; (5) presence or absence of volcanic ash layer; (6) color and texture; (7) horizon sampled; (8) vegetation environment; (9) slope; (10) angularity of rock fragments; (11) presence of frost boil; and (12) presence of iron precipitates.

Samples were packaged in standard kraft bags and shipped to Whitehorse for drying, screening and analyses. Minus 80 mesh portions of samples were digested with aqua regia and analyzed for lead and zinc by the atomic absorption method. Copper was also analyzed for samples from the Upper Tom claims.

Analyses values for lead, zinc and copper were plotted on the accompanying maps 3, 4 and 5. Histograms and cummulative frequency graphs were prepared for these elements and are appended. For these diagrams, soils collected from lower areas (Lower Tom claims) were separated from soils collected in higher areas (Upper Tom claims).

For the upper Tom soils, lead values have a nearly normal distribution. The cumulative frequency curve steepens at 25 ppm and again at 50 ppm. Values over 25 ppm are considered possibly anomalous and values over 94 ppm are considered probably anomalous. Values over 25 ppm are contoured on accompanying maps 4N and 4S. Background values average 16 ppm.

Zinc values for upper Tom soils have a bimodial distribution. The cumulative frequency curve steepens at 600 ppm and samples above this level are considered possibly anomalous. Values greater than 700 ppm zinc are contoured on accompanying maps 3N and 3S. Background values average 180 ppm.

Copper values for upper Tom soils have a fairly normal distribution.

The cumulative frequency curve shows a slight steepening at 40 ppm and again at 120 ppm. Background values average 33 ppm. Values above 120 ppm, representing the upper 3% of the data, are considered possibly anomalous. These values are contoured on accompanying map 5N.

Lower Tom lead values have a normal distribution. The cumulative frequency curve is of nearly constant slope and a clearly anomalous population is not indicated. For purposes of contrast, values above 25 ppm are contoured on accompanying maps 4N and 4S. Background values average 11 ppm lead and the upper 2½% of values are above 27 ppm.

Lower Tom zinc values have a fairly normal distribution. Much of the cumulative frequency curve has a fairly constant slope. Background values average 100 ppm and possibly anomalous values in the upper 2½% of the data start at 1100 ppm. Values greater than 700 ppm zinc are contoured on the accompanying maps.

One hundred and forty silt samples were collected from streams draining the claims and adjacent areas. These samples were prepared in the same manner as soils and the minus 80 mesh fractions were analyzed by the atomic absorption method for lead, zinc and copper. Analyses values are shown on maps 3N & S, 4N & S and 5N & S.

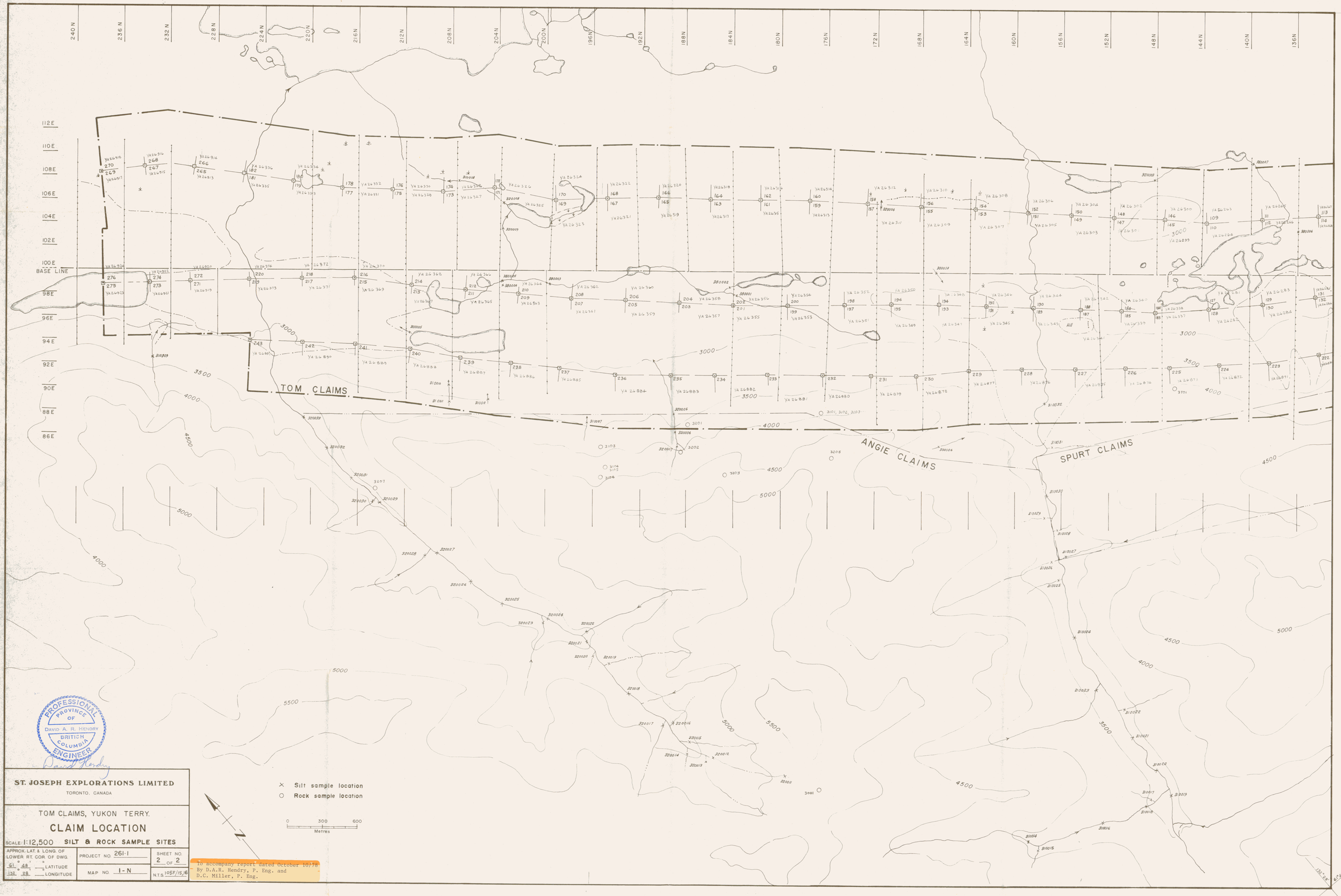
High zinc values in streams are associated with areas of strong zinc soil values on the claims. As well, a number of high zinc values are found in streams beyond the claim boundaries. Lead values in streams on the claims are low. Some higher values are found beyond the claim boundaries. A number of strong copper values are found associated with high zinc values in the stream draining the Angie showing. This stream cuts through the northern portion of the Tom claims. A few high copper values are also found in stream silts draining the upper Tom claims.

Twenty-five rock samples were collected from areas of hydrozincite showings and analyzed for lead and zinc. Zinc values ranged up to 1870 ppm but lead values were low, generally less than 30 ppm. Analyses results are plotted on accompanying maps 3N & 3S and 4N & 4S.

REFERENCES

Campbell, R.B.
1967: Geology of Glenlyon map-area, Yukon Territory (105L); Geol. Surv. Can., Mem. 352.

Templeman-Kluit, D.J.
1977: Quiet Lake and Finlayson Lake map-areas, Yukon Territory; Geol. Surv. Can., OPEN FILE 486.



PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
DAVID A. R. HENDRY

David Hendry

ST. JOSEPH EXPLORATIONS LIMITED
TORONTO, CANADA

TOM CLAIMS, YUKON TERRY.

CLAIM LOCATION

SCALE: 1:12,500 **SILT & ROCK SAMPLE SITES**

APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG.	PROJECT NO. 261-1	SHEET NO. 2 OF 2
61° 48' LATITUDE	MAP NO. 1-N	N.T.S. 105F/15,16
132° 28' LONGITUDE		

To accompany report dated October 10/78
By D.A.R. Hendry, P. Eng. and
D.C. Miller, P. Eng.

240 N 236 N 232 N 228 N 224 N 220 N 216 N 212 N 208 N 204 N 200 N 196 N 192 N 188 N 184 N 180 N 176 N 172 N 168 N 164 N 160 N 156 N 152 N 148 N 144 N 140 N 136 N

112 E 110 E 108 E 106 E 104 E 102 E 100 E BASE LINE 98 E 96 E 94 E 92 E 90 E 88 E 86 E

TOM CLAIMS

ANGIE CLAIMS

SPURT CLAIMS

RECEIVED 18 SEP 1978 MINING RECORDER DISTRICT OF Y.T. & N.W.T.

× Silt sample location
○ Rock sample location

0 300 600 Metres

ST. JOSEPH EXPLORATIONS LIMITED
TORONTO, CANADA

TOM CLAIMS, YUKON TERRY.

CLAIM LOCATION

SCALE: 1:12,500 **SILT & ROCK SAMPLE SITES**

APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG. 61° 48' LATITUDE 132° 28' LONGITUDE	PROJECT NO. 261-1	SHEET NO. 2 OF 2
	MAP NO. 1-N	N.T.S. 105F/15,16

136N 132N 128N 124N 120N 116N 112N 108N 104N 100N 96N 92N 88N 84N 80N 76N 72N 68N 64N 60N 56N 52N

116E 114E 112E 110E 108E BASE LINE 106E 104E 102E 100E 98E 96E 94E 92E 90E 88E 86E 84E 82E 80E 78E 76E 74E 72E 70E 68E 66E 64E 62E 60E 58E 56E 54E 52E 50E

TOM CLAIMS

SPURT CLAIMS

TOM CLAIMS

SPURT CLAIMS

TOM CLAIMS

B.L.

B.L.

Rock sample location

Soil sample location, grid line

Silt sample location, stream

Lake, swamp

Fan deposit

External claim boundary

Claim post, claim location line

0 300 600 Metres

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA DAVID A. R. HENDRY

To accompany report dated October 10/78
By D.A.R. Hendry P. Eng. and
D.C. Miller, P. Eng.

ST. JOSEPH EXPLORATIONS LIMITED
TORONTO, CANADA

TOM CLAIMS, YUKON TERRY.

CLAIM LOCATION

SCALE: 1:12,500 SILT & ROCK SAMPLE SITES

APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG.
61° 45' N LATITUDE
138° 21' W LONGITUDE

PROJECT NO. 261-1

MAP NO. 1-S

SHEET NO. 1 OF 2

N.T.S. 105F/15,16

240 N 236 N 232 N 228 N 224 N 220 N 216 N 212 N 208 N 204 N 200 N 196 N 192 N 188 N 184 N 180 N 176 N 172 N 168 N 164 N 160 N 156 N 152 N 148 N 144 N 140 N 136 N

112 E 110 E 108 E 106 E 104 E 102 E 100 E BASE LINE 98 E 96 E 94 E 92 E 90 E 88 E 86 E

ASSUMED TRACE TINTINA FAULT

TOM CLAIMS

ANGIE CLAIMS

SPURT CLAIMS

3000 3500 4000 4500 5000 5500

HZN HZN, Cr. mica Cu, Cr mica Cr. diop. Angie north trench

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA DAVID A. R. HENDRY

ST. JOSEPH EXPLORATIONS LIMITED
TORONTO, CANADA

TOM CLAIMS, YUKON TERRY.

GEOLOGY

SCALE: 1:12,500

APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG.
61° 48' ___ LATITUDE
136° 28' ___ LONGITUDE

PROJECT NO. 261-1

SHEET NO. 2 OF 2

MAP NO. 2-N

N.T.S. 105F/15,16

FOR LEGEND SEE SHEET 1

To accompany report dated October 10/78
By D.A.R. Hendry, P. Eng. and
D.C. Miller, P. Eng.

136N 132N 128N 124N 120N 116N 112N 108N 104N 100N 96N 92N 88N 84N 80N 76N 72N 68N 64N 60N 56N 52N

116E 114E 112E 110E 108E BASE LINE 106E 104E 102E 100E 98E 96E 94E 92E 90E 88E 86E 84E 82E 80E 78E 76E 74E 72E 70E 68E 66E 64E 62E 60E 58E 56E 54E 52E 50E

Ketza R.

ASSUMED TRACE TINTINA FAULT

TOM CLAIMS

SPURT CLAIMS

HZN, Mariposite

B.L.

0 300 600 Metres

LEGEND

QUATERNARY — 11 — Talus and alluvial fans

DEVONA–MISSISSIPPIAN — 10 — Acid to intermediate volcanics
rhyolite and dacite ash tuff, lapilli tuff, agglomerate, mariposite tuff, andesite and basalt flows, quartz crystal tuff.

SILURO–DEVONIAN — 9 — Brown phyllite and limestone
9a brown and grey phyllite, laminated phyllite
9b thin bedded brown and grey limestone

8 — Quartzite
8a brown quartzite, brown sandstone, quartz and chert, pebble conglomerate, minor phillite
8b Rusty-weathering felsic tuff

7 — Calcareous and graphitic slate

ORDO-SILURIAN — 6 — "Lower Limestone"
Intensely folded dark grey thin bedded graphitic limestone, dolomite and mudstone. Marker horizon of andalusite slate. Minor quartz-cr. diopside and hydrozincite

5 — Quartzite
5a quartzite and phyllite
5b brown sandstone, laminated siltstone & phyllite

4 — "Upper Limestone"
Light and medium grey thin banded and laminated limestone, and dolomite. Blocky pale grey limestone. Common hydrozincite, chalcocite in bull quartz, chrome diopside and muscovite. Minor carbonaceous limestone

3 — Slate
3a rusty slate, soft hematitic and sulphuretted slate, minor argillite and thin banded limestone
3b "corrugated" black slaty phyllite, non-rusty fissile slate; crenulated slate

CAMBRO–ORDOVICIAN — 2 — Brown phyllite
2a brown-weathering phyllite, silvery-platy phyllite, minor quartzite
2b brown-weathering calcareous phyllite; phyllitic limestone; grey dolomitic phyllite intensely crenulated and folded.

1 — Brown schist
biotite schist, calcareous biotite schist and phyllite, limestone and laminated biotite schist

× Outcrop; float and talus
Layering, schistosity, fold axis, syncline, anticline
Assumed fault, thrust
3500 Topographic contours, 500' intervals
HZN Hydrozincite, smithsonite
Mariposite, Cr. mica Chrome muscovite, mariposite, fuchsite
Cr. diopside Chrome diopside
Cu Chalcocite, malachite, azurite, tetrahedrite

Soil sample location, grid line
Silt sample location, stream
Lake, swamp
Fan deposit
External claim boundary

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — DAVID A. R. HENDRY

To accompany Report dated October 10/78
By D.A.R. Hendry, P. Eng. and D.C. Miller, P.Eng.

ST. JOSEPH EXPLORATIONS LIMITED
TORONTO, CANADA

TOM CLAIMS, YUKON TERRY.

GEOLOGY

SCALE: 1:12,500

APPROX LAT & LONG OF LOWER RT COR OF DWG.
61° 45' " LATITUDE
132° 27' " LONGITUDE

PROJECT NO. 261-1

MAP NO. 2-S

SHEET NO. 1 OF 2

N.T.S. 105F/14,16


240 N
236 N
232 N
228 N
224 N
220 N
216 N
212 N
208 N
204 N
200 N
196 N
192 N
188 N
184 N
180 N
176 N
172 N
168 N
164 N
160 N
156 N
152 N
148 N
144 N
140 N
136 N
112E
110E
108E
106E
104E
102E
100E
BASE LINE
98E
96E
94E
92E
90E
88E
86E
FAN
TOM CLAIMS
ANGIE CLAIMS
SPURT CLAIMS
3000
3500
4000
4500
5000
5500
LEGEND
Soil sample location & grid line
Silt sample location (stream)
Lake, swamp
Fan deposit
Rock sample location
> 700 PPM in soils
0 300 600
Metres
PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
DAVID A. R. HENDRY
ST. JOSEPH EXPLORATIONS LIMITED
TORONTO, CANADA
TOM CLAIMS, YUKON TERRY.
PPM ZINC
in silts, soils & rocks
SCALE 1:12,500
APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG.
61° 48' LATITUDE
132° 28' LONGITUDE
PROJECT NO. 261·1
SHEET NO. 2 OF 2
MAP NO. 3-N
N.T.S. 105F/15,16
To accompany report dated October 10/78
By D.A.R. Hendry, P. Eng. and
D.C. Miller, P. Eng.
132° 28'
61° 48'

136N 132N 128N 124N 120N 116N 112N 108N 104N 100N 96N 92N 88N 84N 80N 76N 72N 68N 64N 60N 56N 52N

116E 114E 112E 110E 108E BASE LINE 106E 104E 102E 100E 98E 96E 94E 92E 90E 88E 86E 84E 82E 80E 78E 76E 74E 72E 70E 68E 66E 64E 62E 60E 58E 56E 54E 52E 50E

TOM CLAIMS

SPURT CLAIMS

TOM CLAIMS

SPURT CLAIMS

TOM CLAIMS

> 700 PPM in soils

Rock sample location

Soil sample location, grid line

Silt sample location, stream

Lake, swamp

Fan deposit

External claim boundary

0 300 600
Metres

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
DAVID A. R. HENDRY

To accompany report dated October 10/78
By D.A.R. Hendry, P. Eng. and
D.C. Miller, P. Eng.

ST. JOSEPH EXPLORATIONS LIMITED
TORONTO, CANADA

TOM CLAIMS, YUKON TERRY.
PPM ZINC
in silts, soils & rocks

SCALE: 1:12,500

APPROX LAT & LONG OF LOWER RT COR OF DWG
61° 45' LATITUDE
135° 21' LONGITUDE

PROJECT NO. 261-1

MAP NO. 3-S

SHEET NO. 1 OF 2

NTS 105F/16

240 N 236 N 232 N 228 N 224 N 220 N 216 N 212 N 208 N 204 N 200 N 196N 192 N 188 N 184 N 180 N 176 N 172 N 168 N 164 N 160 N 156 N 152 N 148 N 144 N 140N 136N

112E 110E 108E 106E 104E 102E 100E BASE LINE 98E 96E 94E 92E 90E 88E 86E

TOM CLAIMS

ANGIE CLAIMS

SPURT CLAIMS

3000 3500 4000 4500 5000 5500

LEGEND

- Soil sample location & grid line
- Silt sample location (stream)
- Lake, swamp
- Fan deposit
- Rock sample location
- >25 PPM in soils

0 300 600 Metres

To accompany report dated October 10/78
By D.A.R. Hendry, P. Eng. and
D.C. Miller, P. Eng.

ST. JOSEPH EXPLORATIONS LIMITED

TORONTO, CANADA

TOM CLAIMS, YUKON TERRY.

PPM LEAD
in silts, soils & rocks

SCALE: 1:12,500

APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG.	PROJECT NO. 261-1	SHEET NO. 2 OF 2
61° 48" LATITUDE	MAP NO. 4-N	N.T.S. 105F/15,16
132° 28" LONGITUDE		

136N 132N 128N 124N 120N 116N 112N 108N 104N 100N 96N 92N 88N 84N 80N 76N 72N 68N 64N 60N 56N 52N

116E 114E 112E 110E 108E BASE LINE 106E 104E 102E 100E 98E 96E 94E 92E 90E 88E 86E 84E 82E 80E 78E 76E 74E 72E 70E 68E 66E 64E 62E 60E 58E 56E 54E 52E 50E

TOM CLAIMS

SPURT CLAIMS

B.L.

TOM CLAIMS

SPURT CLAIMS

TOM CLAIMS

> 25 PPM in soils

Rock sample location

Soil sample location, grid line

Silt sample location, stream

Lake, swamp

Fan deposit

External claim boundary

0 300 600
Metres

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
DAVID A. R. HENDRY

To accompany report dated October 10/78
By D.A.R. Hendry, P. Eng. and
D.C. Miller, P. Eng.

ST. JOSEPH EXPLORATIONS LIMITED
TORONTO, CANADA

TOM CLAIMS, YUKON TERRY.
PPM LEAD
in silts, soils & rocks

SCALE 1:12,500

APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG.
61 ° 45 ' — LATITUDE
136 ° 21 ' — LONGITUDE

PROJECT NO. 261-1

MAP NO. 4-9

SHEET NO. 1 OF 2

N.T.S. 105F/15

240 N 236 N 232 N 228 N 224 N 220 N 216 N 212 N 208 N 204 N 200 N 196N 192N 188N 184N 180N 176N 172 N 168N 164N 160N 156N 152N 148N 144N 140N 136N

112E 110E 108E 106E 104E 102E 100E BASE LINE 98E 96E 94E 92E 90E 88E 86E

TOM CLAIMS

ANGIE CLAIMS

SPURT CLAIMS

3000 3500 4000 4500 5000 5500

LEGEND

Silt sample location (stream)

Lake, swamp

Fan deposit

0 300 600 Metres

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA DAVID A. R. HENDRY

ST. JOSEPH EXPLORATIONS LIMITED

TORONTO. CANADA

TOM CLAIMS, YUKON TERRY.

PPM COPPER in silts

SCALE: 1:12,500

APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG.	PROJECT NO. 261-1	SHEET NO. 2 OF 2
61° 48' LATITUDE	MAP NO. 5-N	N.T.S. 105F/15,16
132° 28' LONGITUDE		

To accompany report dated October 10/78
By D.A.R. Hendry, P. Eng. and
D.C. Miller, P. Eng.

136 N 132 N 128 N 124 N 120 N 116 N 112 N 108 N 104 N 100 N 96 N 92 N 88 N 84 N 80 N 76 N 72 N 68 N 64 N 60 N 56 N 52 N

116 E 114 E 112 E 110 E 108 E BASE LINE 106 E 104 E 102 E 100 E 98 E 96 E 94 E 92 E 90 E 88 E 86 E 84 E 82 E 80 E 78 E 76 E 74 E 72 E 70 E 68 E 66 E 64 E 62 E 60 E 58 E 56 E 54 E 52 E 50 E

TOM CLAIMS

SPURT CLAIMS

B.L.

TOM CLAIMS

SPURT CLAIMS

TOM CLAIMS

Soil sample location, grid line

Silt sample location, stream

Lake, swamp

Fan deposit

External claim boundary

> 120 PPM in soils

0 300 600 Metres

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA DAVID A. R. HENDRY

To accompany Report dated October 10/78
By D.A.R. Hendry, P. Eng. and
D.C. Miller, P. Eng.

ST. JOSEPH EXPLORATIONS LIMITED

TORONTO, CANADA

TOM CLAIMS, YUKON TERRY.

PPM COPPER

in silts & soils

SCALE: 1:12,500

APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG.
61° 45' LATITUDE
132° 21' LONGITUDE

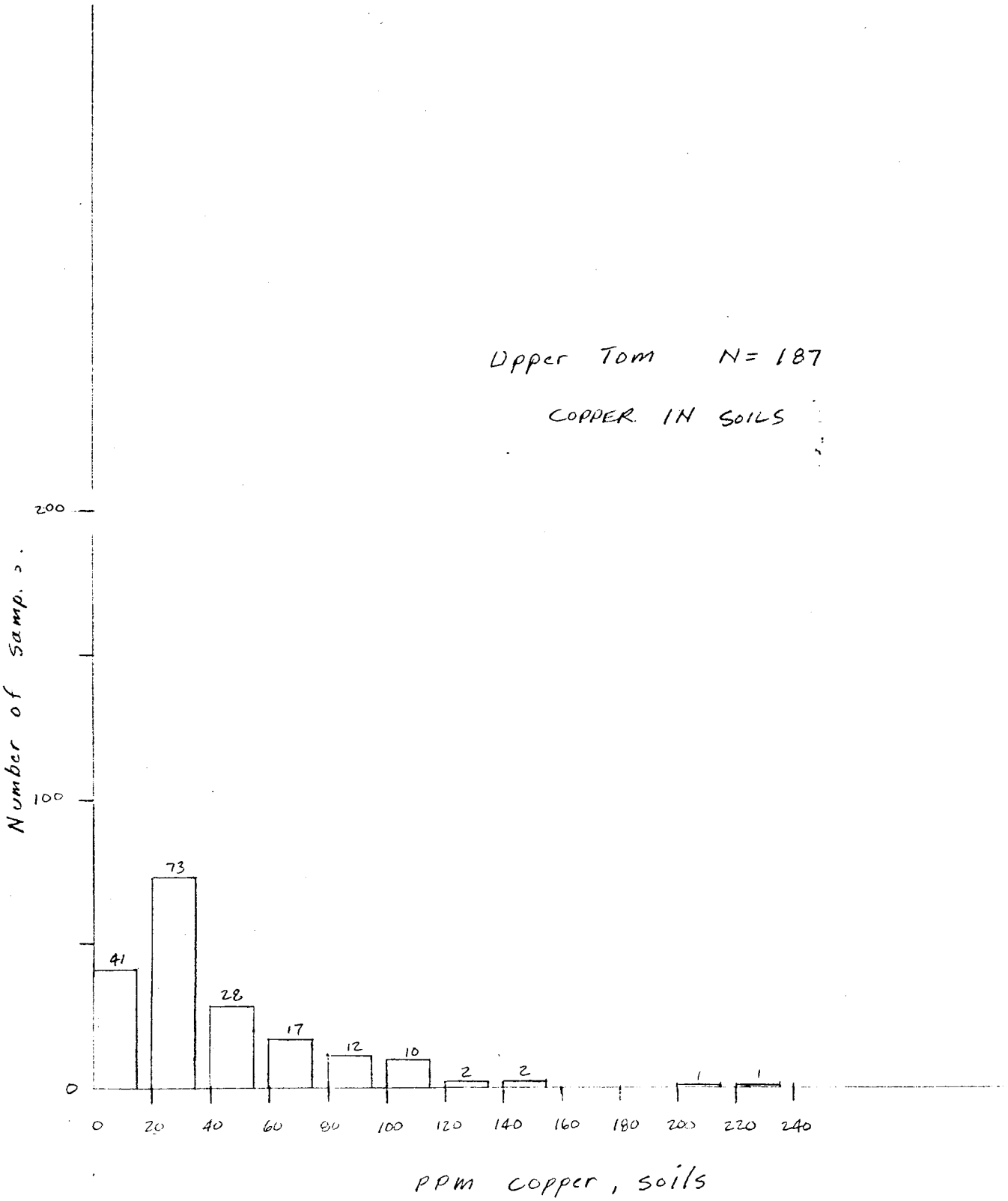
PROJECT NO. 261-1

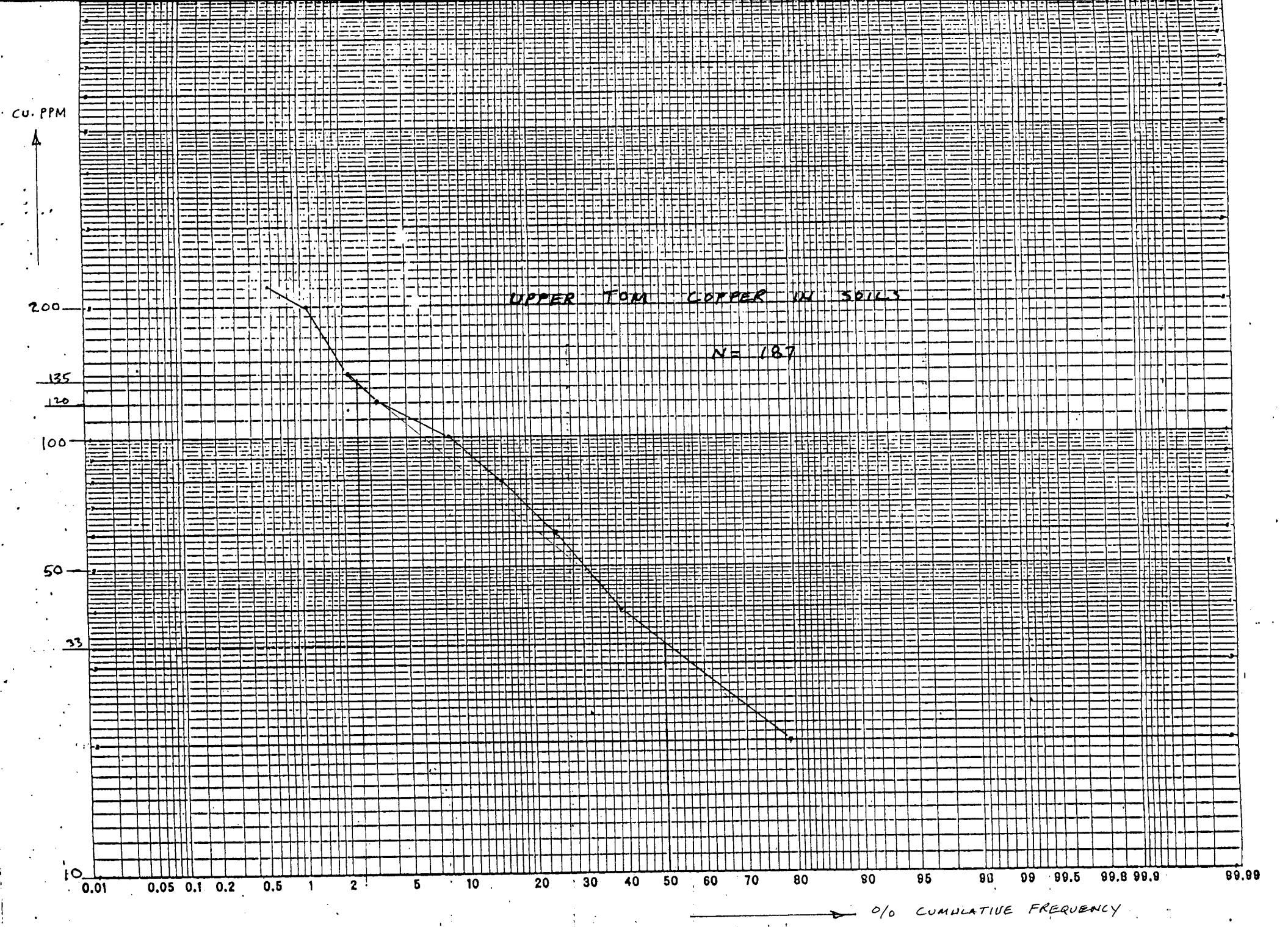
SHEET NO. 1 OF 2

MAP NO. 5-S

N.T.S. 105F/16

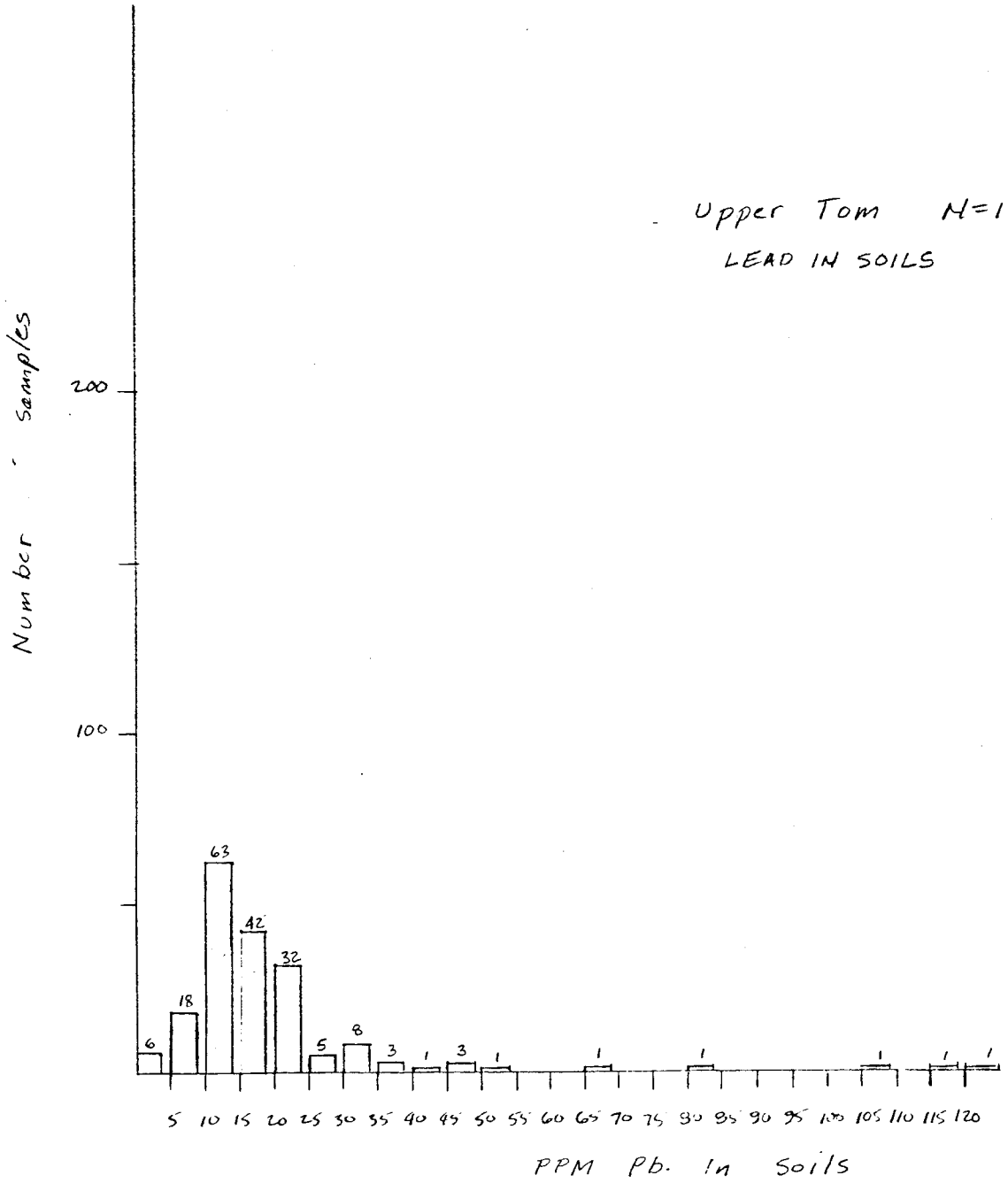
APPENDIX II

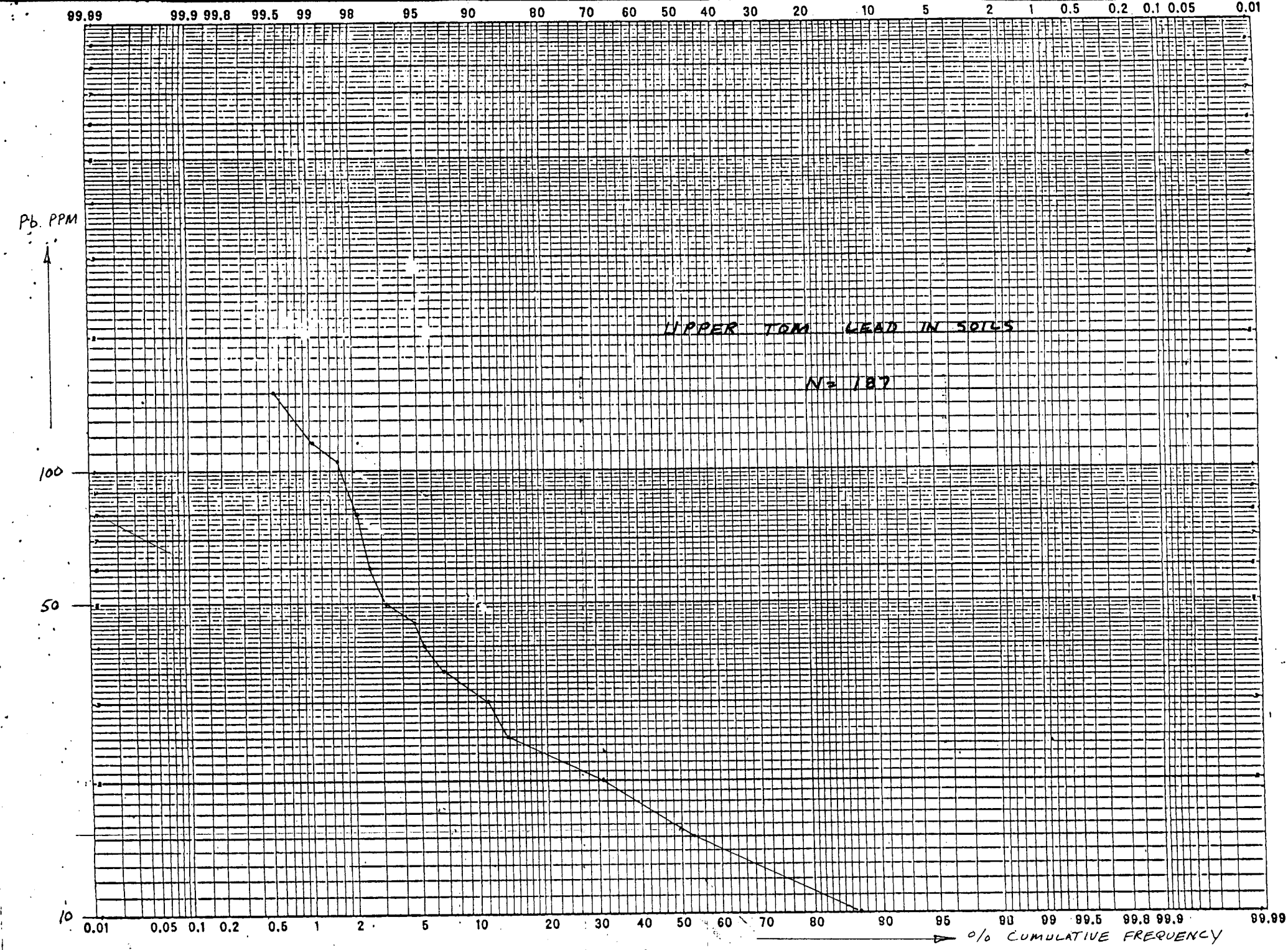

Upper Tom N= 187
COPPER IN SOILS
200
100
0
Number of Samp.
41
73
28
17
12
10
2
2
1
1
0
20
40
60
80
100
120
140
160
180
200
220
240
ppm copper, soils

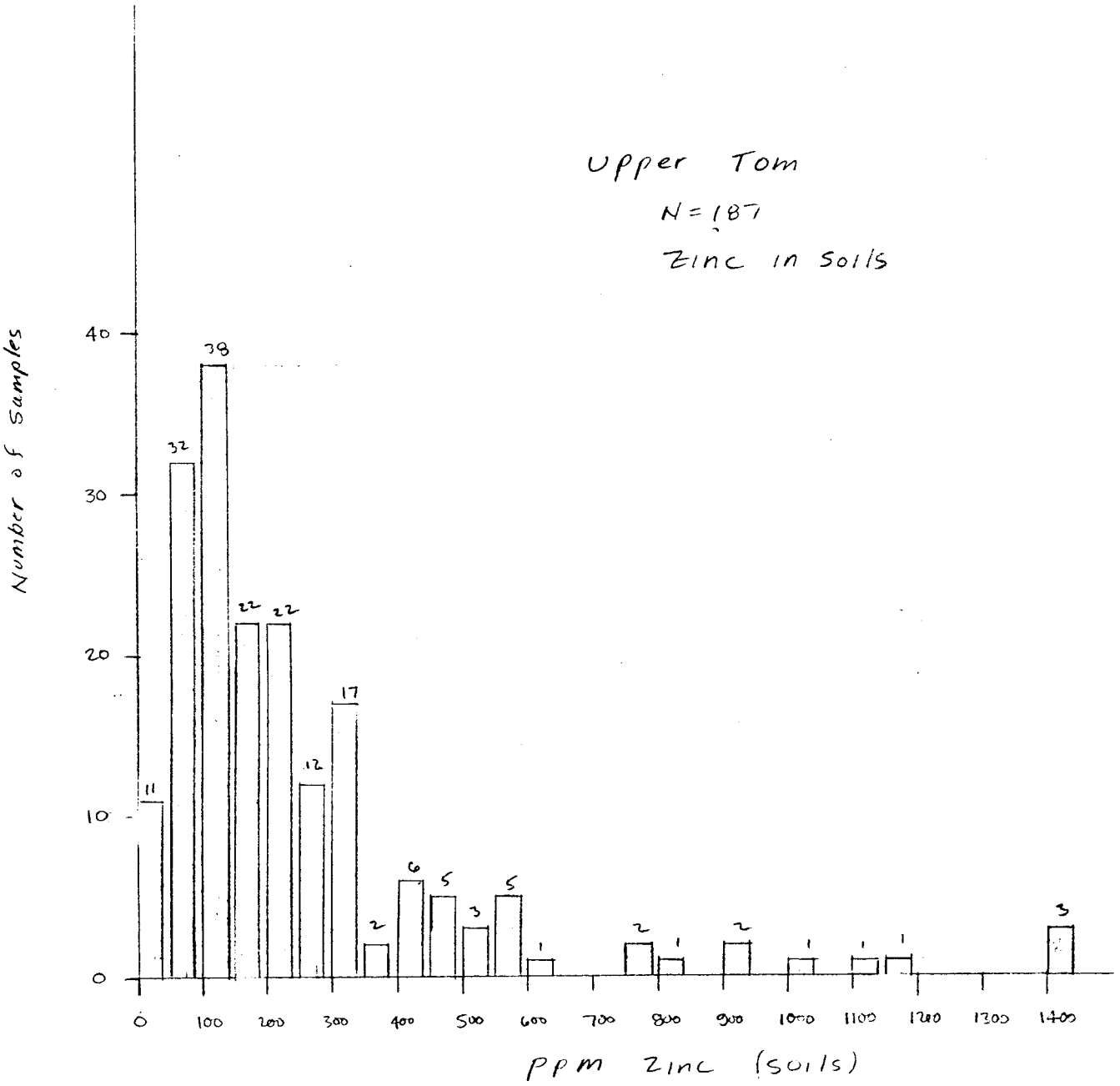

CU. PPM
UPPER TOM COPPER IN SOILS
N= 187
200
135
120
100
50
33
10
0.01
0.05
0.1
0.2
0.5
1
2
5
10
20
30
40
50
60
70
80
90
95
98
99
99.5
99.8
99.9
99.99
% CUMULATIVE FREQUENCY

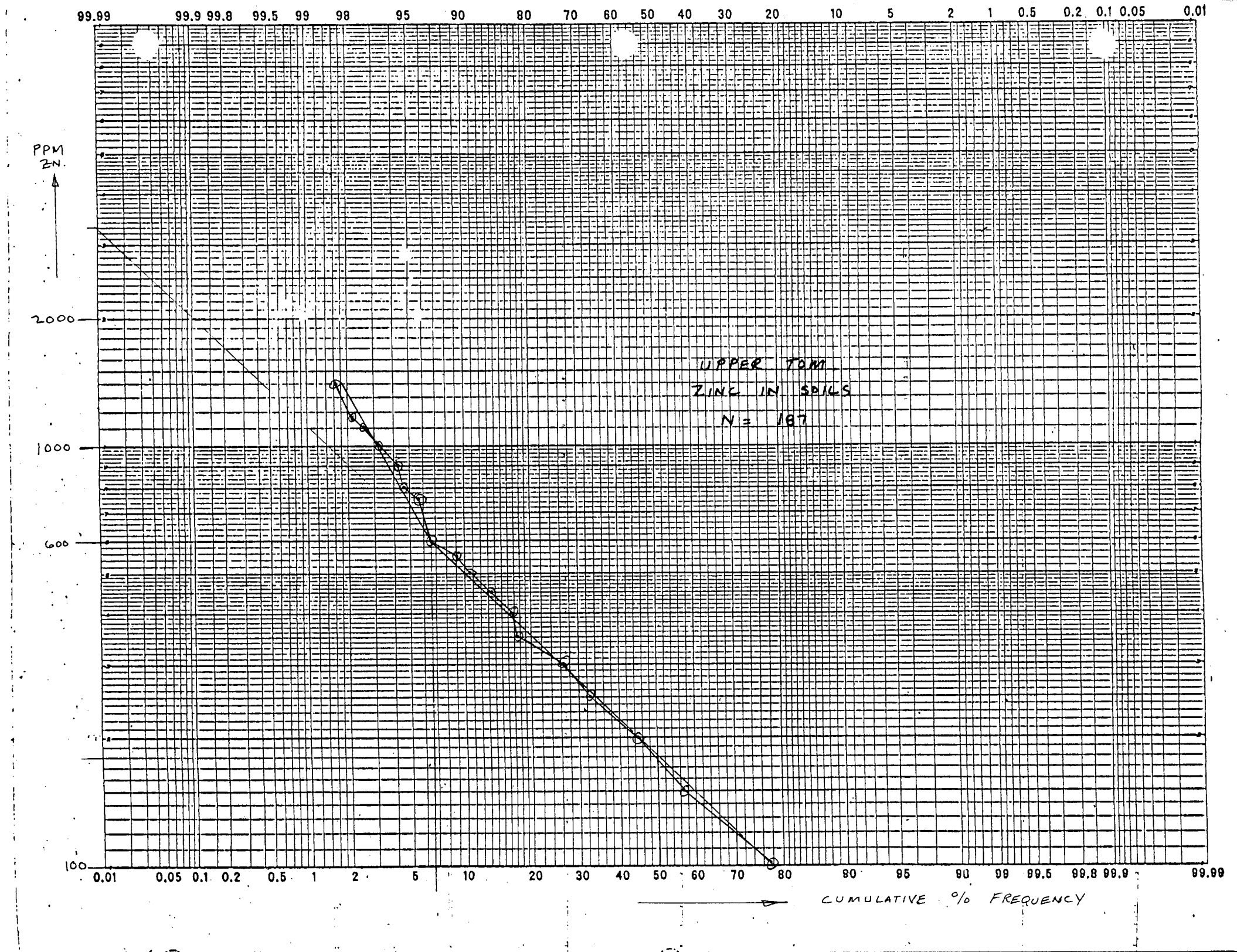
Upper Tom N=187

LEAD IN SOILS




99.99 99.9 99.8 99.5 99 98 95 90 80 70 60 50 40 30 20 10 5 2 1 0.5 0.2 0.1 0.05 0.01
Pb. PPM
UPPER TOM LEAD IN SOILS
N= 187
100
50
10
0.01 0.05 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.5 99.8 99.9 99.99
% CUMULATIVE FREQUENCY

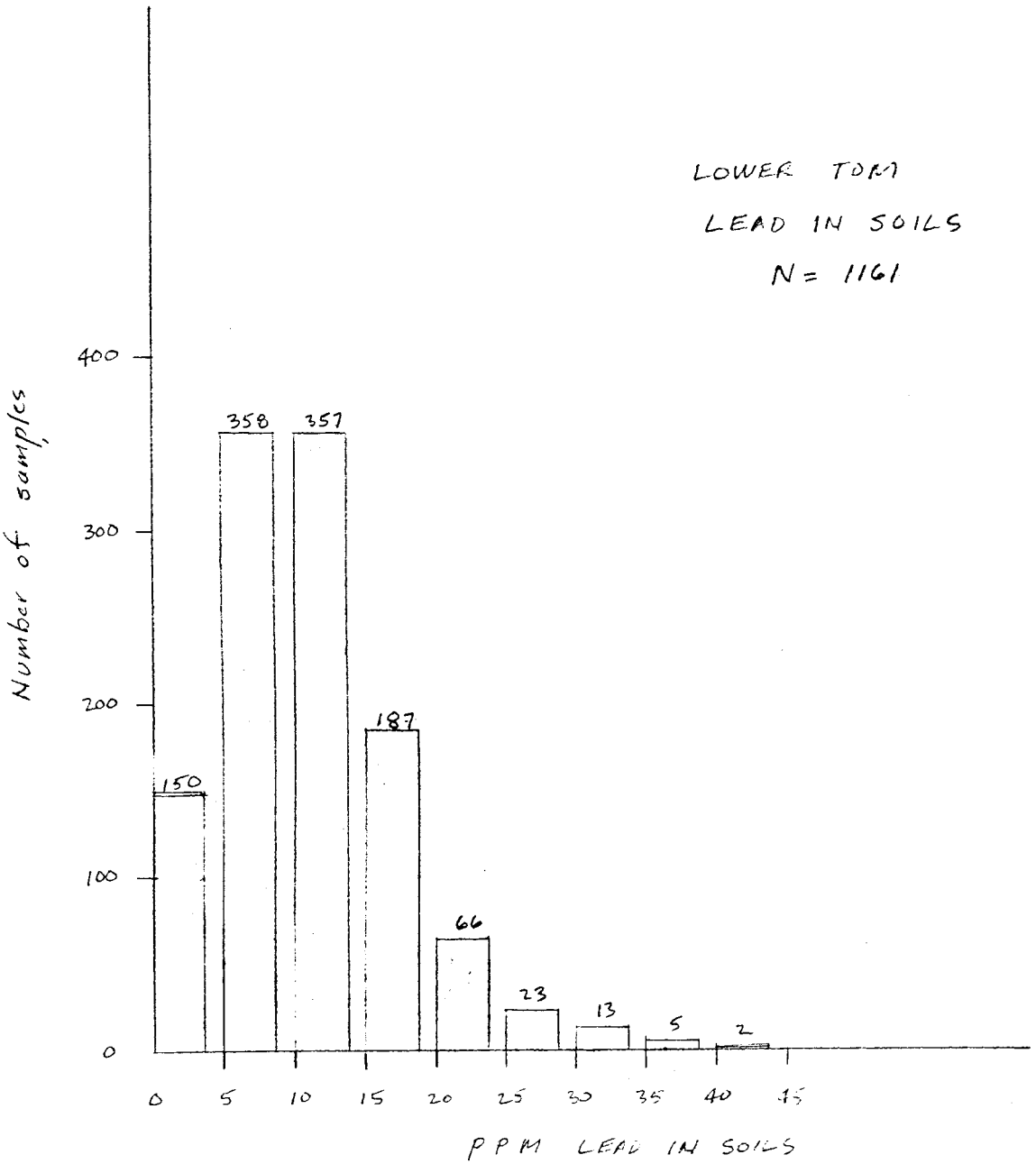

Upper Tom
N = 187
Zinc in Soils
Number of Samples
0
10
20
30
40
11
32
38
22
22
12
17
2
6
5
3
5
1
2
1
2
1
1
1
3
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
ppm Zinc (soils)

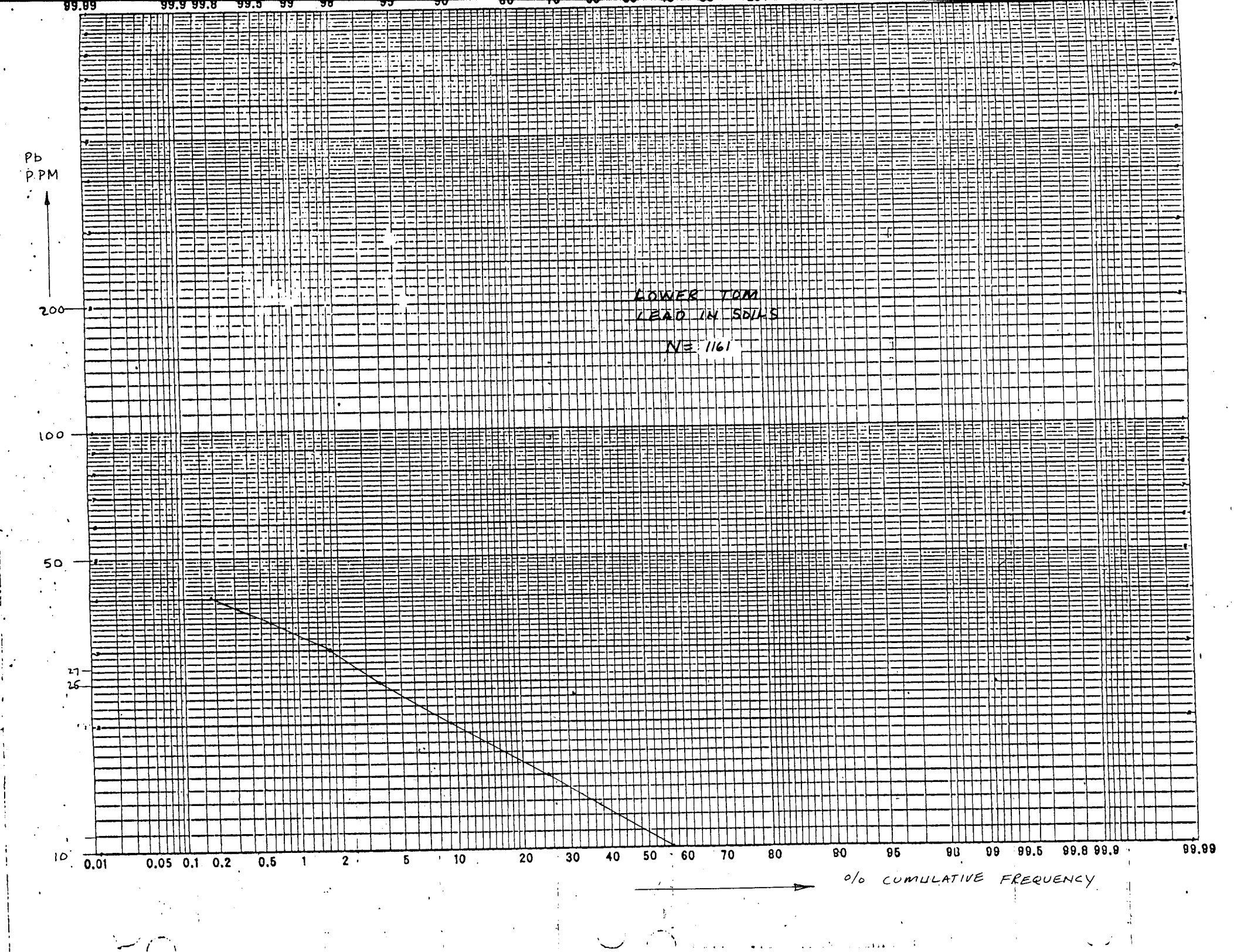

99.99 99.9 99.8 99.5 99 98 95 90 80 70 60 50 40 30 20 10 5 2 1 0.5 0.2 0.1 0.05 0.01
PPM ZN.
2000
1000
600
100
UPPER TOM
ZINC IN SPICS
N = 187
0.01 0.05 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.5 99.8 99.9 99.99
CUMULATIVE % FREQUENCY

LOWER TOM

LEAD IN SOILS

N = 1161

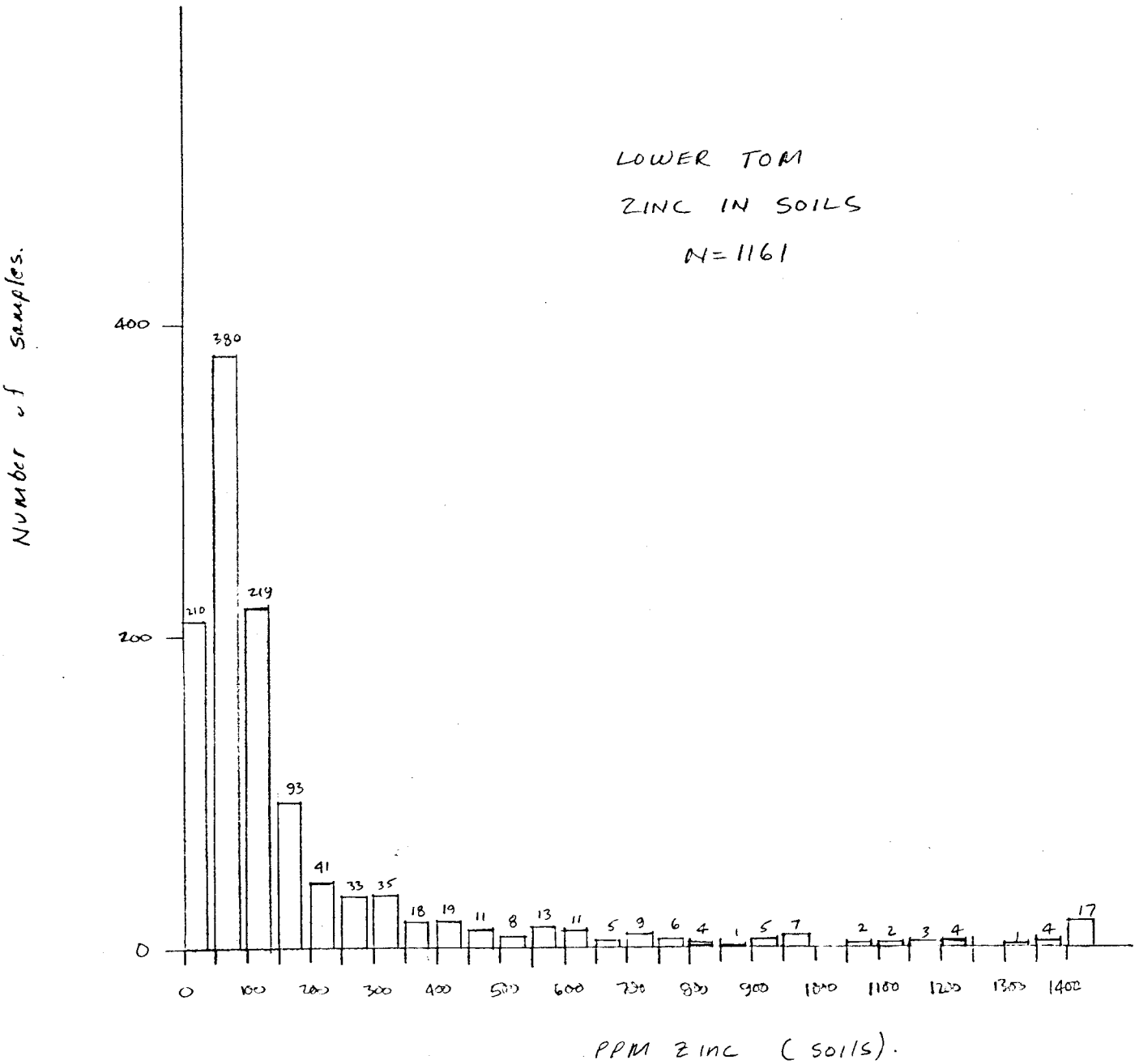


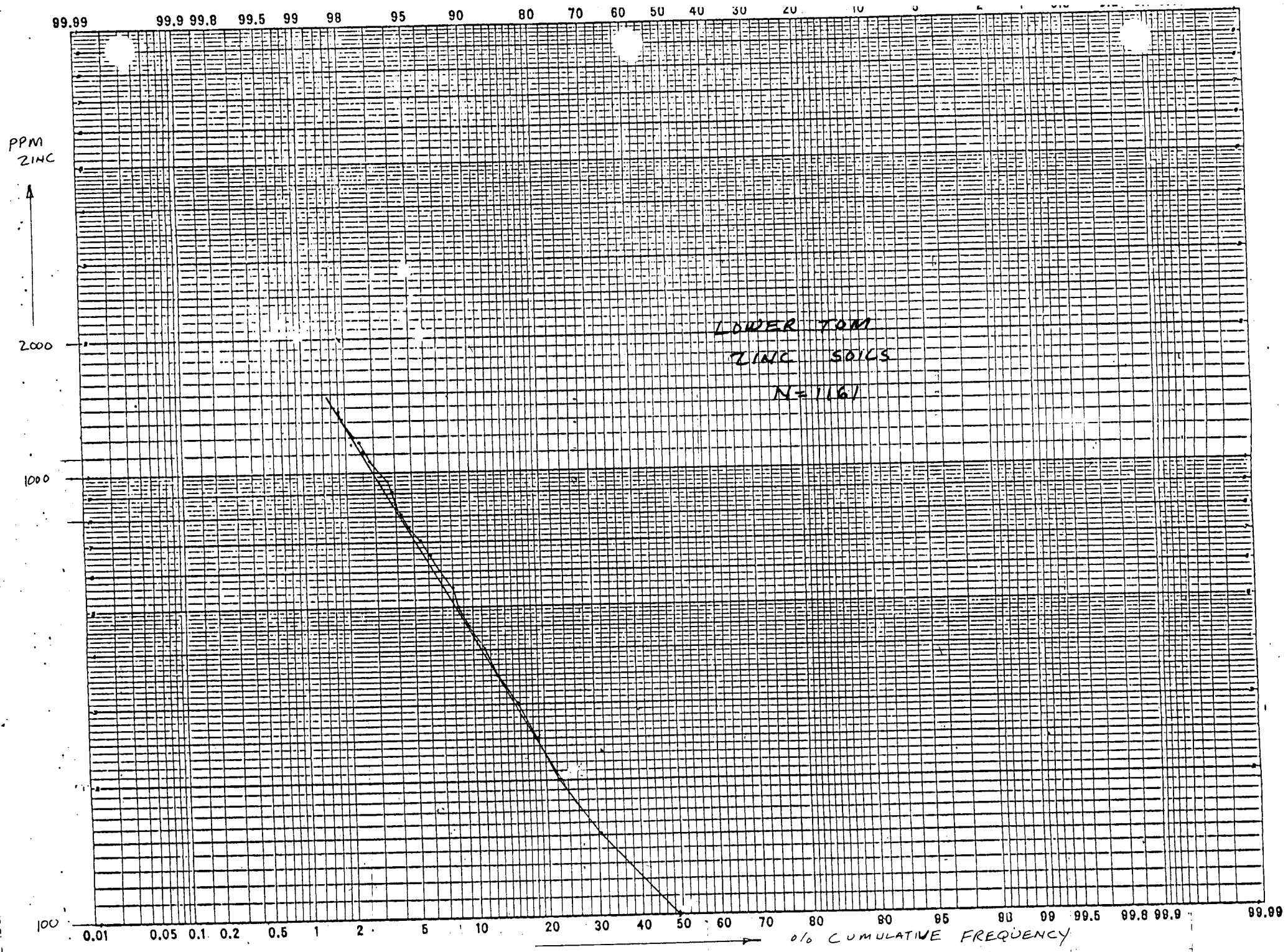

Pb
P.PM
200
100
50
27
25
10
LOWER TOM
LEAD IN SOILS
N= 1161
99.99 99.9 99.8 99.5 99 98 95 90 80 70
0.01 0.05 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.5 99.8 99.9 99.99
% CUMULATIVE FREQUENCY

LOWER TOM

ZINC IN SOILS

N = 1161




99.99
99.9 99.8
99.5
99
98
95
90
80
70
60
50
40
30
20
10
PPM ZINC
2000
1000
100
LOWER TOM
ZINC SOILS
N=1161
0.01
0.05
0.1
0.2
0.5
1
2
5
10
20
30
40
50
60
70
80
90
95
98
99
99.5
99.8
99.9
99.99
% CUMULATIVE FREQUENCY