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PROGRESS REPORT

EXPLORATION LICENCE 1/63 (Cleveland)

for six month period ending

February 11, 1977.

77-1197

ABMINCO N.L.

D.M. Ransom

February 19, 1977.

INTRODUCTION

Exploration Licence 1/63 lies 98 km south-west of Burnie in north-west Tasmania. It is 58 square kilometres in area and surrounds the Cleveland Tin mine. The expiry date of the Licence is February 11, 1977 and application has been made for renewal of a reduced area (47 square kilometres) for the six months period ending August 11, 1977.

This report describes exploration within E.L. 1/63 for the six months period ending February 11, 1977.

PREVIOUS EXPLORATION

Previous exploration activities in the E.L. have been reported by Ransom and Hunt (1972); Ransom and Simpson (1973); Sale (1974); Stuart-Smith (1974); Palmer (1975a), (1975b); and Ransom (1976a), (1976b).

These programmes have included geological mapping, line cutting, soil and stream sediment geochemistry, and self potential and aeromagnetic surveys.

CURRENT PROGRAMME

The programme for the six months to February 11, 1977 has been a review of previous soil geochemistry from the period 1972 to 1976. The necessity for this is evident from a review of the history of exploration in the E.L..

Changes in personnel, exploration concept, regional geology interpretation, sampling technique, and analytical method have led to a situation where it is difficult to compare results from one part of the E.L. with another.

For example in 1972-74, samples were taken of 'C' horizon soils, by mattock sieved to -80 mesh, and analysed for Cu & Zn by AAS and Sn by XRF.

The southern extensions of the mine sequence were all surveyed in this way.

Between 1974 and 1976, soil samples were taken of 'B' horizon with hand augers, sieved to -80 mesh, analysed by emission spectrograph for Cu, Pb, Zn, Sn and subsequently values >50 ppm Sn checked by XRF.

Areas mainly away from the mine area were surveyed in this way.

In the period under review, over 4000 samples have been taken from the Licence area. At the completion of the 1975-76 sampling programme, the areas of obvious stratigraphic relationship to the Cleveland mine had been covered and the results indicate that no area of comparable anomalous soil geochemistry seems to exist within the Licence area.

The aim of the current review, therefore, is to computer process a proportion of the Cleveland soil geochemistry using slightly more sophisticated techniques than employed in the past in order to establish whether areas downgraded in the past may require further exploration.

During the six month period to February 11, 1977 over 3500 individual soil analyses have been transferred from sample data sheets to magnetic tape. The data has been classified in two ways:-

1. by geographic area, as follows:-

- (a) Mine area
- (b) Washington Hay area
- (c) Mine southern extensions (RA grid)
- (d) South Magnet Dam area
- (e) Wombat area

Areas (a) & (c) were sampled prior to 1974 and contrast in sampling technique, as described above, to areas (b), (d) & (e).

Plate 163 shows the location of these areas.

2. by rock type:-

The geochemical data is processed by computer in three ways:-

- (a) Calculation of logarithmic and arithmetic means, variance and standard deviations.
- (b) Calculation of a correlation matrix and standardized, log transformed partial regression coefficients.
- (c) Plotting of a histogram of log transformed values for each geographic area or rock type and calculation of cumulative frequency for individual classes.

To date, these calculations have been carried out on the geographic areas and results summarized below.

The computer-calculator employed in the calculations is a Hewlett-Packard 9830A, with a thermal printer attachment. Programmes have been developed by Abminco personnel and are based partly on those of Davis (1973).

The histogram parameters are calculated by a method similar to that of Lepeltier (1969).

RESULTS

The results of the geographic grouping of soil samples is summarized in

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Table 1.

Figures 1 to 23 are the computer plotted histograms and the results of the multiple regression for each of the geographic areas.

It is clear that the emission spectrograph results (Figures 9 to 23) produce disjointed histograms and are difficult to interpret. This is mainly as a result of the lack of precision of the analytical method.

INTERPRETATION

No interpretation is offered at this stage in the investigation. When the classification according to rock type is completed, it should be possible to describe the geochemical environment in considerable detail. This work is planned for the six month period to August 11, 1977.

FINANCE

Geology	266.08
Geochemistry	1,383.40
Diamond Drilling	30.60
Tenure	65.28
	<hr/>
	\$1,745.36
	<hr/> <hr/>

Submitted by: D.M. Ransom
D.M. Ransom
Senior Geologist

Endorsed by: K.R. Yates
K.R. Yates
Chief Geologist

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REFERENCES

Davis, J.C. (1973) "Statistics and Data Analysis in Geology". Wiley.

Lepeltier, C. (1969) "A simplified treatment of geochemical data by graphical representation" Econ. Geol. 64, pp 538-550.

Palmer, K.G. (1975a) "Progress Report - Exploration Licence 1/63 Cleveland Tin N.L., period ending February 11, 1975" CEPL unpublished report to Tas. Mines Dept.

Palmer, K.G. (1975b) "Progress Report - Exploration Licence 1/63 for six months ending August 11, 1975" CEPL unpublished report to Tas. Mines Dept.

Ransom, D.M. (1976a) "Progress Report on Exploration Licence 1/63 for six months ending February 11, 1976." CEPL unpublished report to Tas. Mines Dept.

Ransom, D.M. (1976b) Progress Report on Exploration Licence 1/63 for six months ending August 11, 1976" CEPL unpublished report to Tas. Mines Dept.

Ransom, D.M. and Hunt, F.L. (1972) "Cleveland Tin N.L. Year End Report" CEPL unpublished report to Tas. Mines Dept.

Ransom, D.M. and Simpson D.C. (1973) "Progress Report - Cleveland Tin N.L. for 6 months ending June 30, 1973" CEPL unpublished report to Tas. Mines Dept.

Sale, R.V. (1974) "Progress Report" - Cleveland Tin N.L. for six months ending December 31, 1973" CEPL unpublished report to Tas. Mines Dept.

Stuart-Smith, P.G. (1974) "Progress Report - Cleveland Tin N.L. , six months ending June 30, 1974". CEPL unpublished report to Tas. Mines Dept.

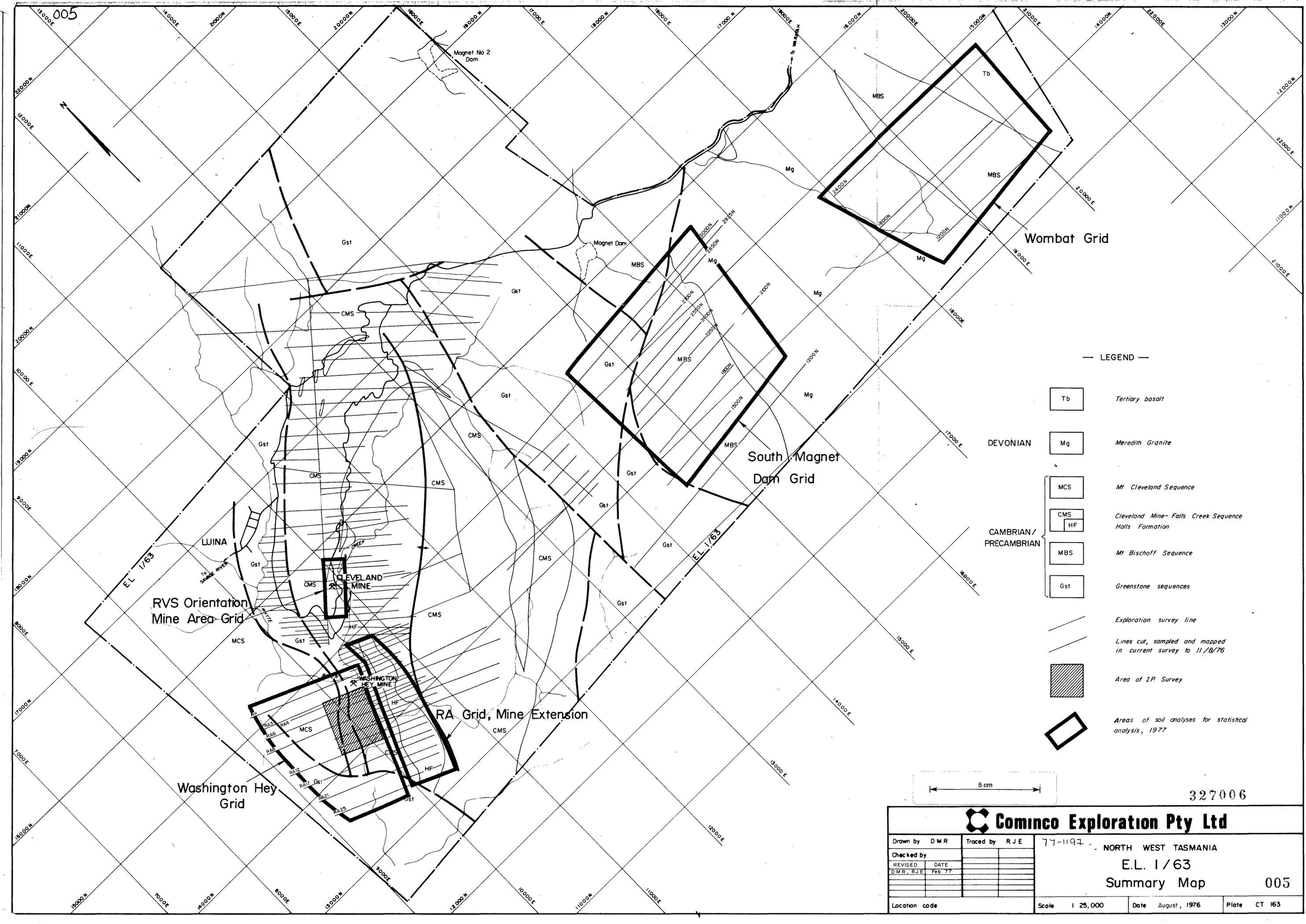
Attachments

Plate CT163

Figures 1 to 23

E.L. 1/63 Cleveland Summary Map, 1:25,000

Histograms, correlation matrices and basic statistics for the Mine, RA, Washington Hay, South Magnet Dam and Wombat grids.



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— LEGEND —

- Tb Tertiary basalt
- DEVONIAN Mg Meredith Granite
- CAMBRIAN/ PRECAMBRIAN MCS Mt Cleveland Sequence
- CMS Cleveland Mine- Falls Creek Sequence
- HF Halls Formation
- MBS Mt Bischoff Sequence
- Gst Greenstone sequences
- Exploration survey line
- Lines cut, sampled and mapped in current survey to 11/8/76
- Area of IP Survey
- Areas of soil analyses for statistical analysis, 1977

5 cm

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Cominco Exploration Pty Ltd

Drawn by	DMR	Traced by	RJE
Checked by			
REVISED	DATE		
DMR, RJE	Feb 77		
Location code			

77-1197 NORTH WEST TASMANIA
 E.L. 1/63
 Summary Map 005
 Scale 1:25,000 Date August, 1976 Plate CT 163

<u>Copper</u>	<u>RA Mine Grid (1972)</u>	<u>RVS Orientation</u>	<u>Wombat</u>	<u>South Magnet Dam</u>	<u>Washington Hey</u>
No. of samples	1349	150	799	500	1132
Arithmetic Mean	52	235	50	31	34
Arithmetic Variance	6719	102400	5504	1353	1659
Arithmetic Standard Deviation	82	320	74	37	41
% Samples Below Detection Limit	11	0	0	0	2
Log Mean (log units)	3.32	4.73	3.24	3.01	3.23
Log Mean (ppm)	28	113	26	20	25
Log Variance	1.14	1.56	1.40	0.75	0.60
Log Standard Deviation(log units)	1.07	1.25	1.19	0.87	0.78
Log Standard Deviation (ppm)	6	8	6	6	6
Correlation	Zn (0.824)	Sn (0.535)	Zn (0.39)	Zn (0.469)	Zn (0.414)
Coefficients	Sn (0.065) No. Pb	Zn (0.251) No. Pb	Pb (0.07) Sn (0.065)	Pb (0.199) Sn (0.168)	Sn (0.233) Pb (0.179)
<u>Zinc</u>					
No. of samples	1349	150	800	500	1181
Arithmetic Mean	50	234	118	49	31
Arithmetic Variance	4234	69149	13782	7242	5343
Arithmetic Standard Deviation	65	263	117	85	73
% Samples Below Detection Limit	11	0	0	0	2
Log Mean (log units)	3.4	4.91	4.3	3.07	3.09
Log Mean (ppm)	30	136	74	22	22
Log Variance	0.85	1.33	1.05	1.25	0.60
Log Standard Deviation(log units)	0.92	1.15	1.02	1.12	0.77
Log Standard Deviation (ppm)	6	9	8	6	6
Correlation	Cu (0.824)	Cu (0.251)	Cu (0.388)	Cu (0.469)	Cu (0.414)
Coefficients	Sn (0.128) No. Pb	Sn (0.249) No. Pb	Pb (-.027) Sn (-.096)	Pb (0.365) Sn (0.198)	Pb (0.357) Sn (0.236)
<u>Lead</u>					
No. of samples			530	322	929
Arithmetic Mean			111	109	40
Arithmetic Variance			18840	40252	111000
Arithmetic Standard Deviation			137	201	334
% Samples Below Detection Limit	Not	Not	34	11	8
Log Mean (Log Units)	Analysed	Analysed	3.7	3.56	2.69
Log Mean (ppm)			40	35	15
Log Variance			1.93	2.52	1.29
Log Standard Deviation (log units)			1.39	1.59	1.14
Log Standard Deviation (ppm)			7	7	5
Correlation			Sn (0.397)	Zn (0.365)	Zn (0.357)
Coefficients			Cu (0.065) Zn (-.027)	Sn (0.318) Cu (0.199)	Sn (0.261) Cu (0.179)
<u>Tin</u>					
No of samples	1278	150	757	381	1131
Arithmetic Mean	30	498	31	23	31
Arithmetic Variance	33387	921000	5070	3963	5343
Arithmetic Standard Deviation	183	960	71	63	73
% Samples Below Detection Limit	11	0	0	6	2
Log Mean (Log Units)	2.22	5.59	2.69	2.3	2.36
Log Mean (ppm)	9	268	13	10	11
Log Variance	1.10	1.31	1.45	1.66	1.34
Log Standard Deviation (log units)	1.05	1.14	1.20	2.06	1.16
Log Standard Deviation (ppm)	4	11	5	8	5
Correlation	Zn (0.128)	Cu (0.535)	Pb(0.397)	Pb (0.318)	Pb (0.261)
Coefficients	Cu (0.065) No. Pb	Zn (0.249) No. Pb	Cu(0.075) Zn(-.096)	Zn (0.198) Cu (0.168)	Zn (0.236) Cu (0.233)

COPPER
 NUMBER OF SAMPLES= 150
 MAXIMUM VALUE= 1625
 MINIMUM VALUE= 7
 ARITHMETIC MEAN= 234.54

VARIANCE= 1.02E+05
 STANDARD DEVIATION= 320.02

NUMBER OF SAMPLES BELOW DETECTION LIMIT= 0
 PERCENTAGE SAMPLES BELOW DETECTION LIMIT= 0
 NUMBER OF SAMPLES NOT ASSAYED= 0

LOGARITHMIC INTERVAL= 0.20

CLASS	INTERVAL	FREQ	FREQ%	CU.FREQ	CU.FREQ%
FROM	TO				
6.9-	9.0	3	2.00	3	2.00
9.0-	11.9	3	2.00	6	4.00
11.9-	15.7	1	0.67	7	4.67
15.7-	20.7	7	4.67	14	9.33
20.7-	27.3	10	6.67	24	16.00
27.3-	36.0	5	3.33	29	19.33
36.0-	47.4	5	3.33	34	22.67
47.4-	62.5	16	10.67	50	33.33
62.5-	82.3	15	10.00	65	43.33
82.3-	108.5	10	6.67	75	50.00
108.5-	143.0	5	3.33	80	53.33
143.0-	188.4	13	8.67	93	62.00
188.4-	248.4	15	10.00	108	72.00
248.4-	327.3	16	10.67	124	82.67
327.3-	431.4	5	3.33	129	86.00
431.4-	568.6	5	3.33	134	89.33
568.6-	749.4	3	2.00	137	91.33
749.4-	987.6	4	2.67	141	94.00
987.6-	1301.6	5	3.33	146	97.33
1301.6-	1715.5	4	2.67	150	100.00

HISTOGRAM
 FROM TO

RELATIVE FREQUENCY

FROM	TO	RELATIVE FREQUENCY
6.9-	9.0	XXXXXXXXXXXX
9.0-	11.9	XXXXXXXXXXXX
11.9-	15.7	XXX
15.7-	20.7	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
20.7-	27.3	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
27.3-	36.0	XXXXXXXXXXXXXXXXXXXX
36.0-	47.4	XXXXXXXXXXXXXXXXXXXX
47.4-	62.5	XX
62.5-	82.3	XX
82.3-	108.5	XX
108.5-	143.0	XXXXXXXXXXXXXXXXXXXX
143.0-	188.4	XX
188.4-	248.4	XX
248.4-	327.3	XX
327.3-	431.4	XXXXXXXXXXXXXXXXXXXX
431.4-	568.6	XXXXXXXXXXXXXXXXXXXX
568.6-	749.4	XXXXXXXXXXXX
749.4-	987.6	XXXXXXXXXXXXXXXXXXXX
987.6-	1301.6	XXXXXXXXXXXXXXXXXXXX
1301.6-	1715.5	XXXXXXXXXXXX

FIGURE 1

ZINC
 NUMBER OF SAMPLES= 150
 MAXIMUM VALUE= 1575
 MINIMUM VALUE= 5
 ARITHMETIC MEAN= 233.54

VARIANCE= 69148.62
 STANDARD DEVIATION= 262.96

NUMBER OF SAMPLES BELOW DETECTION LIMIT= 0
 PERCENTAGE SAMPLES BELOW DETECTION LIMIT= 0
 NUMBER OF SAMPLES NOT ASSAYED= 0

LOGARITHMIC INTERVAL= 0.29

CLASS	INTERVAL	* FREQ	* FREQ%	* CU.FREQ	* CU.FREQ%
FROM	TO				
4.9-	6.6	3	2.00	3	2.00
6.6-	8.8	1	0.67	4	2.67
8.8-	11.8	3	2.00	7	4.67
11.8-	15.8	3	2.00	10	6.67
15.8-	21.2	3	2.00	13	8.67
21.2-	28.4	1	0.67	14	9.33
28.4-	38.1	3	2.00	17	11.33
38.1-	51.8	10	6.67	27	18.00
51.8-	68.4	11	7.33	38	25.33
68.4-	91.7	5	3.33	43	28.67
91.7-	122.9	12	8.00	55	36.67
122.9-	164.7	22	14.67	77	51.33
164.7-	220.8	20	13.33	97	64.67
220.8-	295.9	19	12.67	116	77.33
295.9-	396.6	15	10.00	131	87.33
396.6-	531.6	7	4.67	138	92.00
531.6-	712.5	3	2.00	141	94.00
712.5-	955.0	4	2.67	145	96.67
955.0-	1279.9	2	1.33	147	98.00
1279.9-	1715.5	3	2.00	150	100.00

HISTOGRAM	RELATIVE FREQUENCY
FROM TO PPM	
4.9- 6.6	XXXXXXXX
6.6- 8.8	XX
8.8- 11.8	XXXXXXXX
11.8- 15.8	XXXXXXXX
15.8- 21.2	XXXXXXXX
21.2- 28.4	XX
28.4- 38.1	XXXXXXXX
38.1- 51.8	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
51.8- 68.4	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
68.4- 91.7	XXXXXXXXXXXXXXXX
91.7- 122.9	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
122.9- 164.7	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
164.7- 220.8	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
220.8- 295.9	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
295.9- 396.6	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
396.6- 531.6	XXXXXXXXXXXXXXXX
531.6- 712.5	XXXXXXXX
712.5- 955.0	XXXXXXXXXX
955.0- 1279.9	XXXXXX
1279.9- 1715.5	XXXXXXXX

FIGURE 2

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TIN
 NUMBER OF SAMPLES= 150
 MAXIMUM VALUE= 11000
 MINIMUM VALUE= 5
 ARITHMETIC MEAN= 497.67

VARIANCE= 9.21E+05
 STANDARD DEVIATION= 959.82

NUMBER OF SAMPLES BELOW DETECTION LIMIT= 0
 PERCENTAGE SAMPLES BELOW DETECTION LIMIT= 0
 NUMBER OF SAMPLES NOT ASSAYED= 0

LOGARITHMIC INTERVAL= 0.39

CLASS INTERVAL	FREQ	FREQ%	CU. FREQ	CU. FREQ%
FROM 4.9- TO 7.2	1	0.67	1	0.67
7.2- 10.7	2	1.33	3	2.00
10.7- 15.8	0	0.00	3	2.00
15.8- 23.3	3	2.00	6	4.00
23.3- 34.5	2	1.33	8	5.33
34.5- 50.9	6	4.00	14	9.33
50.9- 75.2	5	3.33	19	12.67
75.2- 111.0	13	8.67	32	21.33
111.0- 164.0	10	6.67	42	28.00
164.0- 242.3	10	6.67	52	34.67
242.3- 357.9	40	26.67	92	61.33
357.9- 528.6	24	16.00	116	77.33
528.6- 780.8	9	6.00	125	83.33
780.8- 1153.3	9	6.00	134	89.33
1153.3- 1703.5	12	8.00	146	97.33
1703.5- 2516.3	3	2.00	149	99.33
2516.3- 3716.8	0	0.00	149	99.33
3716.8- 5490.0	0	0.00	149	99.33
5490.0- 8109.3	0	0.00	149	99.33
8109.3-#####	1	0.67	150	100.00

HISTOGRAM FROM	TO	RELATIVE FREQUENCY
4.9- 7.2	PPM	X
7.2- 10.7		XXX
10.7- 15.8		
15.8- 23.3		XXXX
23.3- 34.5		XXX
34.5- 50.9		XXXXXXXXXX
50.9- 75.2		XXXXXXXXXX
75.2- 111.0		XXXXXXXXXXXXXXXXXXXXXXXXXXXX
111.0- 164.0		XXXXXXXXXXXXXXXXXXXXXXXXXXXX
164.0- 242.3		XXXXXXXXXXXXXXXXXXXXXXXXXXXX
242.3- 357.9		XX
357.9- 528.6		XX
528.6- 780.8		XXXXXXXXXXXXXXXXXX
780.8- 1153.3		XXXXXXXXXXXXXXXXXX
1153.3- 1703.5		XXXXXXXXXXXXXXXXXXXX
1703.5- 2516.3		XXXX
2516.3- 3716.8		
3716.8- 5490.0		
5490.0- 8109.3		
8109.3-#####		X

FIGURE 3

CLEVELAND SOILS **** RVS **** ORIENTATION(MINE AREA) NO PB

NUMBER OF VARIABLES:- 4

COLUMNS USED

2 4 5 1

DETECTION LIMITS OF VARIABLES

1 1 1 1

FILES USED:- 17 TO 19

X ARRAY:- X1=NO. OF SAMPLES, X2=SUMS, X3=SUMS OF SQUARES

X4=MEAN, X5=STANDARD DEVIATION, X6 TO X15 ARE

THE TOTALS FOR X-PRODUCTS, X16 TO X25 =X-PRODUCTS

STANDARDISED DATA, X26=SUMS STAND. DATA, X27=SUMS OF

SQUARES OF STANDARDISED DATA.

	Cu	Zn	Sn
1	150.0	150.0	150.0
2	35181.0	35031.0	74650.0
3	2.4E+07	1.9E+07	1.8E+08
4	234.5	233.5	497.7
5	321.1	263.8	963.0
6	150.0	150.0	150.0
7	150.0	150.0	150.0
8	150.0	150.0	150.0

16	149.0	37.4	79.8
17	37.4	149.0	37.0
18	79.8	37.0	149.0

26	0.0	0.0	-0.0
27	149.0	149.0	149.0

CORRELATION MATRIX:- FILES 17 TO 19

	Cu	Zn	Sn
	1.000	0.251	0.535
Cu	0.251	1.000	0.249
Zn	0.535	0.249	1.000
Sn	0.001	0.076	0.006

PARTIAL REGRESSION COEFFICIENTS

B 0= 1090.426

B 1= 0.154 Zn

B 2= 0.168 Sn

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RA, MINE GRIDS, 1972-73 PROGRAMME; CU, PB, ZN, SN; (ALL)

COPPER

NUMBER OF SAMPLES COUNTED= 1349
 NUMBER OF SAMPLES BELOW DETECTION LIMIT= 151
 PERCENTAGE SAMPLES BELOW DETECTION LIMIT= 11.19
 DEFINED LOWER (OR DETECTION) LIMIT OF POP'N= 2
 DEFINED UPPER LIMIT OF POP'N= 500000
 MAXIMUM VALUE COUNTED= 1225
 MINIMUM VALUE COUNTED= 2
 ARITHMETIC MEAN= 52.15

VARIANCE= 6719.36
 STANDARD DEVIATION= 81.97

LOGARITHMIC INTERVAL= 0.34

CLASS	INTERVAL	* FREQ	* FREQ%	* CU.FREQ	* CU.FREQ%
FROM	TO	*	*	*	*
2.0-	2.7	2	0.15	2	0.15
2.7-	3.8	5	0.37	7	0.52
3.8-	5.4	34	2.52	41	3.04
5.4-	7.5	78	5.78	119	8.82
7.5-	10.5	136	10.08	255	18.90
10.5-	14.7	188	13.94	443	32.84
14.7-	20.5	179	13.27	622	46.11
20.5-	28.7	142	10.53	764	56.63
28.7-	40.1	124	9.19	888	65.83
40.1-	56.0	106	7.86	994	73.68
56.0-	78.3	84	6.23	1078	79.91
78.3-	109.5	88	6.52	1166	86.43
109.5-	153.2	81	6.00	1247	92.44
153.2-	214.2	67	4.97	1314	97.41
214.2-	299.5	16	1.19	1330	98.59
299.5-	418.8	8	0.59	1338	99.18
418.8-	585.7	3	0.22	1341	99.41
585.7-	818.9	6	0.44	1347	99.85
818.9-	1145.2	1	0.07	1348	99.93
1145.2-	1601.3	1	0.07	1349	100.00

HISTOGRAM FROM

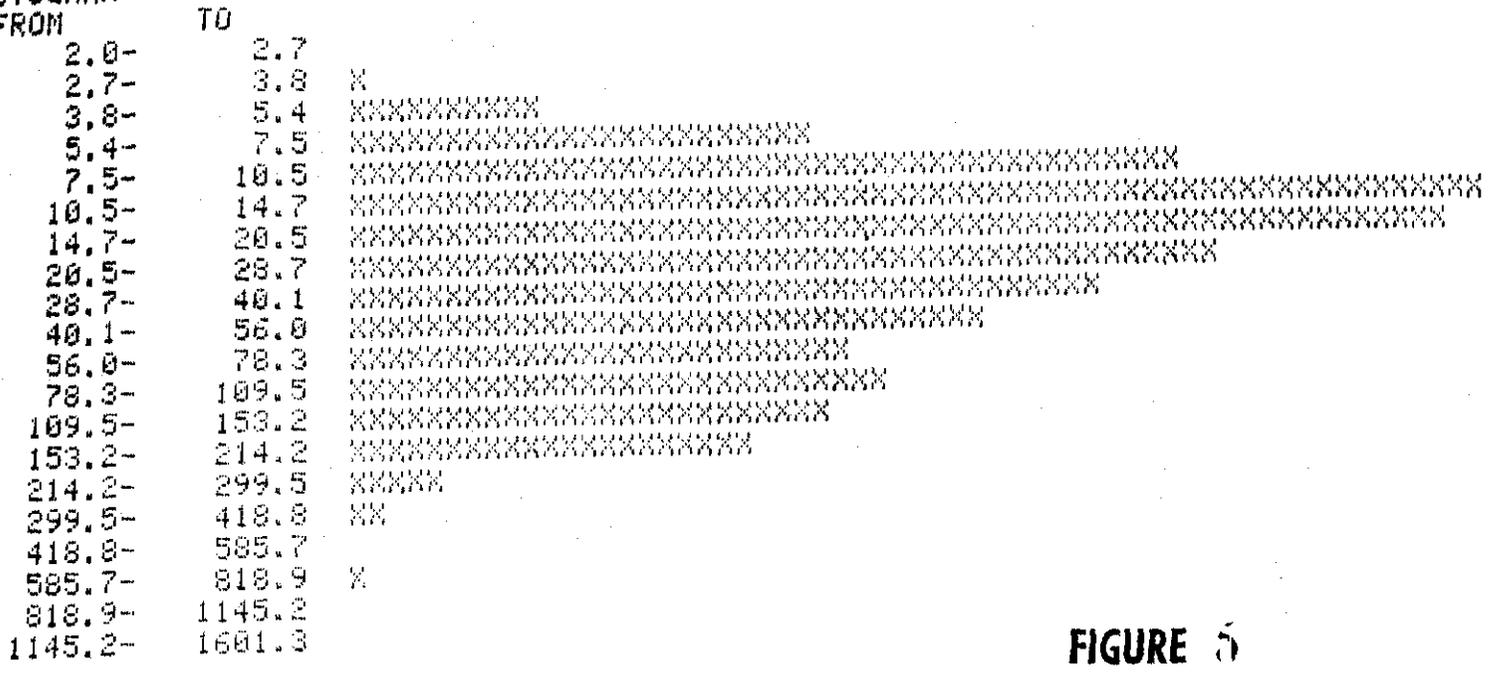


FIGURE 5

014
 RA, MINE GRIDS, 1972-73 PROGRAMME; CU, PB, ZN, SN; (ALL)

DETECTION LIMITS OF VARIABLES

2	2	1
500000	500000	500000

X ARRAY:- X1=NO. OF SAMPLES, X2=SUMS, X3=SUMS OF SQUARES
 X4=MEAN, X5=STANDARD DEVIATION, X6 TO X15 ARE
 THE TOTALS FOR X-PRODUCTS, X16 TO X25 =X-PRODUCTS
 STANDARDISED DATA, X26=SUMS STAND. DATA, X27=SUMS OF
 SQUARES OF STANDARDISED DATA.

	Cu	Zn	Sn
1	1347.0	1349.0	1278.0
2	4476.7	4643.9	2876.5
3	16408.4	17123.8	7814.8
4	3.3	3.4	2.3
5	1.1	0.9	1.0
6	1347.0	1347.0	1137.0
7	1347.0	1349.0	1138.0
8	1137.0	1138.0	1278.0
16	1346.0	1109.5	85.1
17	1109.5	1348.0	168.0
18	85.1	168.0	1277.0
26	0.0	0.0	0.0
27	1346.0	1348.0	1277.0

CORRELATION MATRIX:- FILES 1 TO 18)

	Cu	Zn	Sn
Cu	1.000	0.824	0.065
Zn	0.824	1.000	0.128
Sn	0.065	0.128	1.000

PARTIAL REGRESSION COEFFICIENTS

B 0=	0.107	
B 1=	0.962	Zn
B 2=	-0.043	Sn

FIGURE 8

WASHINGTON HEY GRID: CU, PB, ZN, SN: (ALL)
ZINC

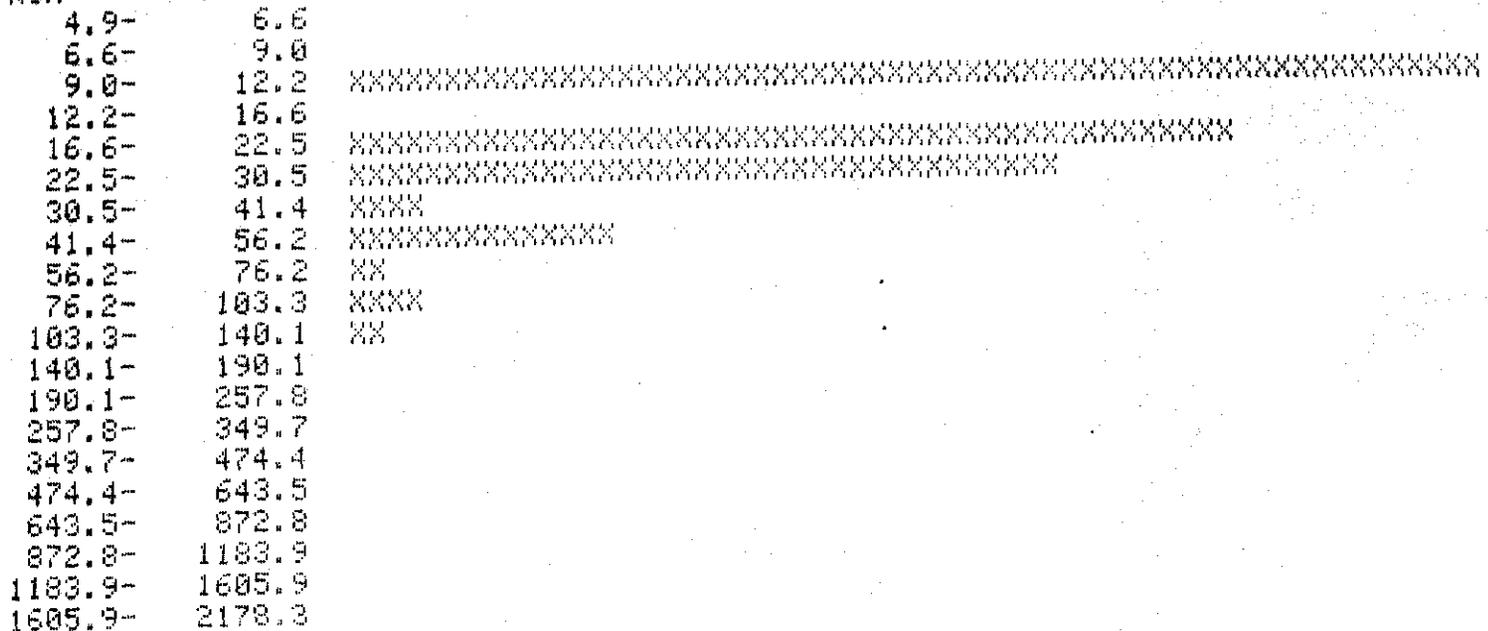
NUMBER OF SAMPLES COUNTED= 1131
NUMBER OF SAMPLES BELOW DETECTION LIMIT= 19
PERCENTAGE SAMPLES BELOW DETECTION LIMIT= 1.68
DEFINED LOWER (OR DETECTION) LIMIT OF POP'N= 1
DEFINED UPPER LIMIT OF POP'N= 500000
MAXIMUM VALUE COUNTED= 2000
MINIMUM VALUE COUNTED= 5
ARITHMETIC MEAN= 31.06

VARIANCE= 5343.89
STANDARD DEVIATION= 73.10

LOGARITHMIC INTERVAL= 0.30

CLASS	INTERVAL	FREQ	FREQ%	CU.FREQ	CU.FREQ%
FROM	TO				
4.9-	6.6	2	0.18	2	0.18
6.6-	9.0	6	0.53	8	0.71
9.0-	12.2	384	33.95	392	34.66
12.2-	16.6	6	0.53	398	35.19
16.6-	22.5	298	26.35	696	61.54
22.5-	30.5	239	21.13	935	82.67
30.5-	41.4	26	2.30	961	84.97
41.4-	56.2	90	7.96	1051	92.93
56.2-	76.2	18	1.59	1069	94.52
76.2-	103.3	30	2.65	1099	97.17
103.3-	140.1	15	1.33	1114	98.50
140.1-	190.1	4	0.35	1118	98.85
190.1-	257.8	6	0.53	1124	99.38
257.8-	349.7	3	0.27	1127	99.65
349.7-	474.4	0	0.00	1127	99.65
474.4-	643.5	2	0.18	1129	99.82
643.5-	872.8	1	0.09	1130	99.91
872.8-	1183.9	0	0.00	1130	99.91
1183.9-	1605.9	0	0.00	1130	99.91
1605.9-	2178.3	1	0.09	1131	100.00

HISTOGRAM
FROM TO



013

327020

WASHINGTON HEY GRID: CU, PB, ZN, SN (ALL)

DETECTION LIMITS OF VARIABLES

1 1 1 1
 UPPER LIMITS OF VARIABLES
 500000 500000 500000 500000

X ARRAY:- X1=NO. OF SAMPLES, X2=SUMS, X3=SUMS OF SQUARES
 X4=MEAN, X5=STANDARD DEVIATION, X6 TO X15 ARE
 THE TOTALS FOR X-PRODUCTS, X16 TO X25 =X-PRODUCTS
 STANDARDISED DATA, X26=SUMS STAND. DATA, X27=SUMS OF
 SQUARES OF STANDARDISED DATA.

	Cu	Pb	Zn	Sn
1	1131.0	917.0	1131.0	982.0
2	3661.3	2494.9	3446.6	2376.9
3	12522.1	7899.4	11092.7	6961.0
4	3.2	2.7	3.0	2.4
5	0.8	1.1	0.7	1.1
6	1131.0	917.0	1131.0	982.0
7	917.0	917.0	917.0	839.0
8	1131.0	917.0	1131.0	982.0
9	982.0	839.0	982.0	982.0
16	1130.0	181.8	467.7	245.6
17	181.8	916.0	362.9	247.6
18	467.7	362.9	1130.0	249.0
19	245.6	247.6	249.0	981.0
26	0.0	0.0	0.0	0.0
27	1130.0	916.0	1130.0	981.0

CORRELATION MATRIX:- FILES 1 TO 10

	Cu	Pb	Zn	Sn
Cu	1.000	0.179	0.414	0.233
Pb	0.179	1.000	0.357	0.261
Zn	0.414	0.357	1.000	0.236
Sn	0.233	0.261	0.236	1.000

PARTIAL REGRESSION COEFFICIENTS

B 0= 1.758
 B 1= 0.005 Pb
 B 2= 0.403 Zn
 B 3= 0.099 Sn

FIGURE 13

SOUTH MAGNET DAM GRID; CU,PB,ZN,SN; (ALL)

LEAD

NUMBER OF SAMPLES COUNTED= 322

NUMBER OF SAMPLES BELOW DETECTION LIMIT= 37

PERCENTAGE SAMPLES BELOW DETECTION LIMIT= 11.49

DEFINED LOWER (OR DETECTION) LIMIT OF POP'N= 1

DEFINED UPPER LIMIT OF POP'N= 500000

MAXIMUM VALUE COUNTED= 2000

MINIMUM VALUE COUNTED= 1

ARITHMETIC MEAN= 109.38

VARIANCE= 40252.11

STANDARD DEVIATION= 200.63

LOGARITHMIC INTERVAL= 0.41

CLASS	INTERVAL	* FREQ	* FREQ%	* CU.FREQ	* CU.FREQ%
FROM	TO				
1.0-	1.5	4	1.24	4	1.24
1.5-	2.2	2	0.62	6	1.86
2.2-	3.4	22	6.83	28	8.70
3.4-	5.1	31	9.63	59	18.32
5.1-	7.8	0	0.00	59	18.32
7.8-	11.8	47	14.60	106	32.92
11.8-	17.9	0	0.00	106	32.92
17.9-	27.0	20	6.21	126	39.13
27.0-	40.9	44	13.66	170	52.80
40.9-	62.0	40	12.42	210	65.22
62.0-	93.8	0	0.00	210	65.22
93.8-	142.1	45	13.98	255	79.19
142.1-	215.1	19	5.90	274	85.09
215.1-	325.6	30	9.32	304	94.41
325.6-	493.0	0	0.00	304	94.41
493.0-	746.4	11	3.42	315	97.83
746.4-	1130.0	6	1.86	321	99.69
1130.0-	1710.7	0	0.00	321	99.69
1710.7-	2589.9	1	0.31	322	100.00
2589.9-	3921.0	0	0.00	322	100.00

HISTOGRAM

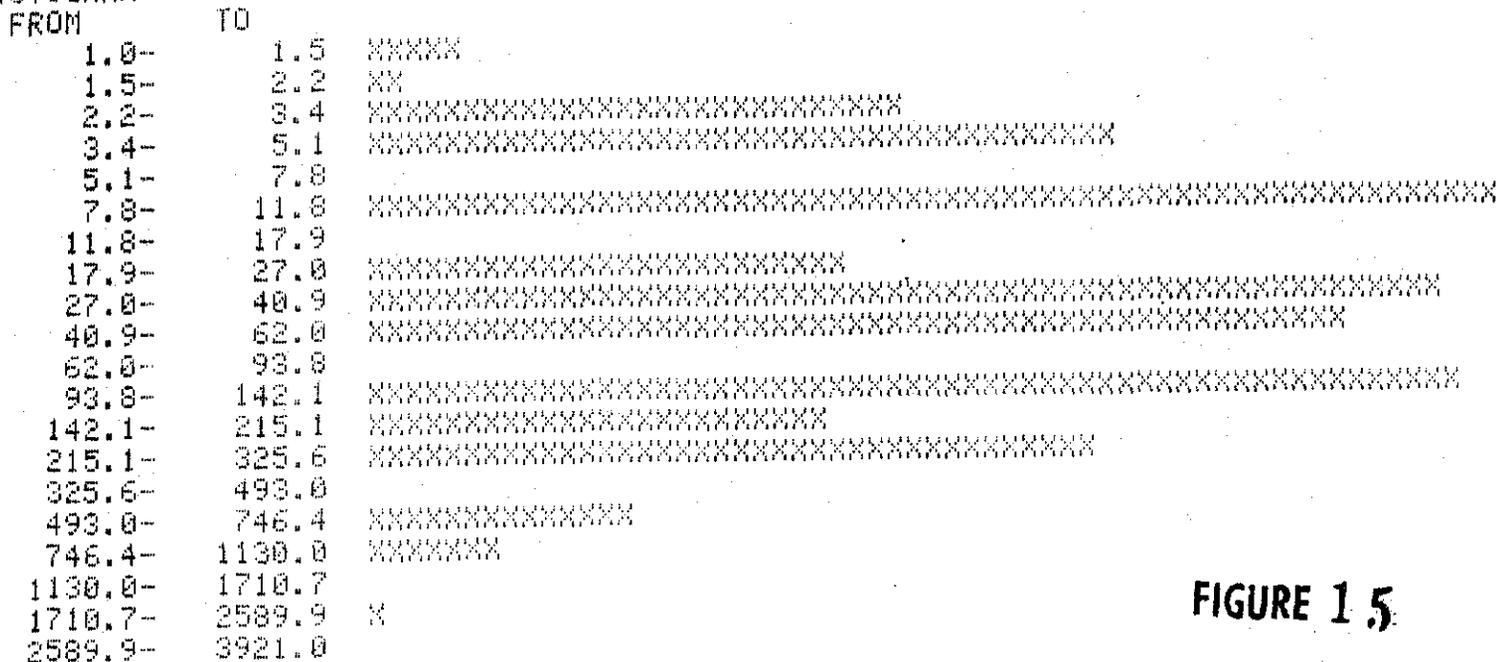


FIGURE 1.5

U24

SOUTH MAGNET DAM GRID; CU, PB, ZN, SN; (ALL)

DETECTION LIMITS OF VARIABLES

1 1 1 1
 UPPER LIMITS OF VARIABLES
 500000 500000 500000 500000

X ARRAY:- X1=NO. OF SAMPLES, X2=SUNS, X3=SUNS OF SQUARES
 X4=MEAN, X5=STANDARD DEVIATION, X6 TO X15 ARE
 THE TOTALS FOR X-PRODUCTS, X16 TO X25 =X-PRODUCTS
 STANDARDISED DATA, X26=SUNS STAND. DATA, X27=SUNS OF
 SQUARES OF STANDARDISED DATA.

500.0	318.0	500.0	346.0
1507.0	1146.1	1533.3	785.1
4919.5	4890.3	5325.7	2249.2
3.0	3.6	3.1	2.3
0.9	1.5	1.1	1.2
500.0	318.0	500.0	346.0
318.0	318.0	318.0	262.0
500.0	318.0	500.0	346.0
346.0	262.0	346.0	346.0
499.0	80.2	234.2	69.6
80.2	317.0	160.8	141.4
234.2	160.8	499.0	82.3
69.6	141.4	82.3	345.0
0.0	-0.0	0.0	-0.0
499.0	317.0	499.0	345.0

CORRELATION MATRIX:- FILES 1 TO 5

1.000	0.202	0.469	0.168
0.202	1.000	0.404	0.428
0.469	0.404	1.000	0.198
0.168	0.428	0.198	1.000

PARTIAL REGRESSION COEFFICIENTS

B 0= 1.813
 B 1= -0.012
 B 2= 0.359
 B 3= 0.064

02

327026

WOMBAT GRID; CU, PB, ZN, SN; (ALL)
 COPPER
 NUMBER OF SAMPLES COUNTED= 800
 NUMBER OF SAMPLES BELOW DETECTION LIMIT= 0
 PERCENTAGE SAMPLES BELOW DETECTION LIMIT= 0.00
 DEFINED LOWER (OR DETECTION) LIMIT OF POP'N= 1
 DEFINED UPPER LIMIT OF POP'N= 500000
 MAXIMUM VALUE COUNTED= 1000
 MINIMUM VALUE COUNTED= 1
 ARITHMETIC MEAN= 50.37

VARIANCE= 5504.00
 STANDARD DEVIATION= 74.19

LOGARITHMIC INTERVAL= 0.38

CLASS	INTERVAL	* FREQ	* FREQ%	* CU. FREQ	* CU. FREQ%
FROM	TO				
1.0-	1.4	1	0.13	1	0.13
1.4-	2.1	0	0.00	1	0.13
2.1-	3.1	59	7.38	60	7.50
3.1-	4.5	0	0.00	60	7.50
4.5-	6.6	51	6.38	111	13.88
6.6-	9.6	0	0.00	111	13.88
9.6-	14.0	168	21.00	279	34.88
14.0-	20.5	62	7.75	341	42.63
20.5-	30.0	0	0.00	341	42.63
30.0-	43.8	163	20.38	504	63.00
43.8-	64.1	129	16.13	633	79.13
64.1-	93.8	0	0.00	633	79.13
93.8-	137.1	114	14.25	747	93.38
137.1-	200.5	34	4.25	781	97.63
200.5-	293.2	0	0.00	781	97.63
293.2-	428.8	13	1.63	794	99.25
428.8-	627.0	5	0.63	799	99.88
627.0-	917.0	0	0.00	799	99.88
917.0-	1340.9	1	0.13	800	100.00
1340.9-	1961.0	0	0.00	800	100.00

HISTOGRAM

FROM	TO	
1.0-	1.4	
1.4-	2.1	
2.1-	3.1	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
3.1-	4.5	
4.5-	6.6	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
6.6-	9.6	
9.6-	14.0	XX
14.0-	20.5	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
20.5-	30.0	
30.0-	43.8	XX
43.8-	64.1	XX
64.1-	93.8	
93.8-	137.1	XX
137.1-	200.5	XXXXXXXXXXXXXXXXXXXX
200.5-	293.2	
293.2-	428.8	XXXX
428.8-	627.0	X
627.0-	917.0	
917.0-	1340.9	
1340.9-	1961.0	

FIGURE 19

WOMBAT SOILS; CU,PB,ZN,SN; (ALL)

DETECTION LIMITS OF VARIABLES

	1	1	1	1
UPPER LIMITS OF VARIABLES	500000	500000	500000	500000

X ARRAY:- X1=NO. OF SAMPLES, X2=SUMS, X3=SUMS OF SQUARES
 X4=MEAN, X5=STANDARD DEVIATION, X6 TO X15 ARE
 THE TOTALS FOR X-PRODUCTS, X16 TO X25 =X-PRODUCTS
 STANDARDISED DATA, X26=SUMS STAND. DATA, X27=SUMS OF
 SQUARES OF STANDARDISED DATA.

	Cu	Pb	Zn	Sn
1	799.0	700.0	800.0	736.0
2	2595.8	2571.8	3436.2	1967.1
3	9546.1	10697.2	15598.5	6208.3
4	3.2	3.7	4.3	2.7
5	1.2	1.3	1.0	1.1
6	799.0	699.0	799.0	735.0
7	699.0	700.0	700.0	657.0
8	799.0	700.0	800.0	736.0
9	735.0	657.0	736.0	736.0
16	798.0	48.5	310.0	57.8
17	48.5	699.0	-20.3	284.9
18	310.0	-20.3	799.0	-73.5
19	57.8	284.9	-73.5	735.0
26	-0.0	-0.0	-0.0	0.0
27	798.0	699.0	799.0	735.0

CORRELATION MATRIX:- FILES 12 TO 27

	Cu	Pb	Zn	Sn
Cu	1.000	0.065	0.388	0.075
Pb	0.065	1.000	-0.027	0.397
Zn	0.388	-0.027	1.000	-0.096
Sn	0.075	0.397	-0.096	1.000

PARTIAL REGRESSION COEFFICIENTS

B 0=	0.882	
B 1=	0.032	Pb
B 2=	0.459	Zn
B 3=	0.103	Sn