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ABMINCO N.L.  
EXPLORATION DIVISION

EXPLORATION LICENCE 22/74,  
TASMANIA  
MARIONOAK RIVER AREA

Progress Report on Exploration for  
the year ending July, 1977.

**MICROFILMED**

by  
I. B. Freytag, B.Sc. (Hons)  
Geologist

**OPEN FILE**

Adelaide  
South Australia

24th August, 1977.

CONTENTS

	<u>Page</u>
1. INTRODUCTION	1
2. OBJECTIVES	1
3. GEOCHEMICAL SURVEYS	2
3.1. Stream Sediment Survey	2
3.1.1. Sampling Coverage	2
3.1.2. Analytical Procedure	2
3.1.3. Evaluation of Analyses	2
3.1.4. Discussion of 1977 Results	3
3.2. Tin-Tungsten Geochemistry	4
3.3. Lynch Anomaly Follow-up	5
3.3.1. Confirmation of Stream Anomaly	5
3.3.2. Soil Geochemistry	5
3.3.3. Costeaming	6
4. GEOLOGY	7
4.1. Regional	7
4.2. Lynch Creek Area.	7
5. EXPENDITURE	8
6. CONCLUSIONS	9
7. REFERENCE	10

LIST OF MAPS

- Figure 1 EL 22/74 - Marionoak River.  
Exploration Summary Map, 1976. (Plate MOC6)
- Figure 2 Marionoak EL 22/74.  
Stream Sediment Values Cu,Pb,Zn (ppm)  
Sheet A. (Plate MOC 3/375)
- Figure 3 Marionoak EL 22/74.  
Stream Sediment Values Cu,Pb,Zn (ppm)  
Sheet B. (Plate MOC 3/380)
- Figure 4 Marionoak EL 22/74.  
Stream Sediment Values Cu,Pb,Zn (ppm)  
Sheet C. (Plate MOC 3/385)
- Figure 5 Marionoak EL 22/74.  
Stream Sediment Values Cu,Pb,Zn (ppm)  
Sheet D. (Plate MOC 3/390)
- Figure 6 Marionoak EL 22/74.  
Lynch Catchment Anomaly - Reconnaissance  
Soil Geochemistry Cu,Pb,Zn in ppm. (Plate MOC 7)
- Figure 7 Marionoak EL 22/74.  
Costean 5100N - Section and Plan (Plate MOC 8a)
- Figure 8 Marionoak EL 22/74.  
Costean 5200N - Section and Plan (Plate MOC 8b)
- Figure 9 Marionoak EL 22/74.  
Stream Sediment Locations - Sn, W.  
Sheet A. (Plate MOC 2)
- Figure 10 Marionoak EL 22/74.  
Stream Sediment Locations - Sn, W.  
Sheet B.
- Figure 11 Marionoak EL 22/74.  
Stream Sediment Locations - Sn, W.  
Sheet C.

## 1. INTRODUCTION

This is an interim progress report on exploration carried out in Exploration Licence No. 22/74, Marionoak River area, north-west Tasmania, through the year ending July, 1977.

It follows on from the progress report for the previous year (Freytag, 1976), the status of which is summarized graphically in Figure 1 of this report. In July, 1976, about 70 per cent of the licence area had been covered by geological reconnaissance and a detailed stream sediment geochemical survey, which had successfully located several anomalous areas including one 1st-order Cu-Pb-Zn anomaly in a small tributary off Lynch Creek.

In the current year, field activities commenced late in November, 1976, with the clearing of about 5 kilometres of disused forest track north from Higgins Creek to allow access into the northern part of the licence. Heavy rains in December then delayed further field operations until January, 1977.

The programme of stream sediment sampling, anomaly follow-up, gridding, soil geochemistry and trenching continued into April, but not without periodic delays after rain, which can render the very steep, clayey tracks impassable.

## 2. OBJECTIVES

The 1977 field programme for EL 22/74 aimed to complete the stream sediment geochemical survey for Cu, Pb and Zn, which began in the previous year.

Soil geochemistry and trenching with a provisional IP survey were planned in follow-up of the Lynch Creek Cu-Pb-Zn drainage anomaly, defined in 1976.

A spread of stream sediment samples were to be analysed for tin and tungsten.

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### 3. GEOCHEMICAL SURVEYS

#### 3.1. Stream Sediment Survey

##### 3.1.1. Sampling Coverage

Sampling in January, 1977 covered the previously unsampled area northward from Higgins Creek to the northern boundary of the licence, and a small drainage pocket at the western boundary of the licence, west of the Chester Mine (see Fig. 1, also Figs. 2, 3, 4, and 5 for detail).

About four square kilometres in the area surrounding the confluence of the Marionoak and Pieman rivers (Fig. 2) has not been sampled. Most of this area is flat and un-dissected, being covered with Quaternary boulder beds and dense hauera scrub.

The total number of stream sediment samples now taken in the survey is 593. One hundred and sixty of these were collected and analysed this year.

##### 3.1.2. Analytical Procedure

The minus 80 mesh sieved fraction of each sample was analysed for total Cu, Pb and Zn in the Abminco laboratory. This is an AAS determination following hot perchloric acid leach.

The geochemical metal values are plotted on Figures 2, 3, 4, and 5.

##### 3.1.3. Evaluation of Analyses

The same threshold values for Cu, Pb and Zn have been applied to this year's analytical results, as were derived by simple statistical treatment for the first part of the survey. (Freytag, 1976).

However, the representation of anomalies (tabulated in Fig. 2) has been revised so as to indicate three arbitrary classes of

anomaly, viz : -

	<u>ANOMALIES</u>		
	<u>3rd Order</u>	<u>2nd Order</u>	<u>1st Order</u>
	Threshold ←	→ 2xT ←	→ 3xT →
Cu	55 ppm	110 ppm	165 ppm
Pb	80 ppm	160 ppm	240 ppm
Zn	200 ppm	400 ppm	600 ppm

All anomalies are shown graded in Figures 2,3,4, and 5.

3.1.4. Discussion of 1977 Results

It is notable that most of the defined anomalous metal values occur in the lower catchment of Lynch Creek (Fig.4.).

Areas sampled north of Lynch Creek and north of Ross Creek (Fig.5) are geochemically flat. In those parts, only seven anomalous samples were defined, all of a low order but one, 500 metres north of Ross Creek, which assayed 395 ppm Pb, 40 ppm Zn and 18 ppm Cu.

The small area sampled in the southern part of the licence (Fig.3) produced nine anomalous Zn values and one of Cu, all of a low order not requiring further consideration.

The Lynch Creek anomalies are located along three kilometres of drainage north of the confluence with Higgins Creek (Fig.4). Many of these values are not significant.

However, several Pb anomalies of 1st - and 2nd-order occur in drainages interposed between two significant Pb-Zn-Cu anomalies about one kilometre apart, located between the main channel of

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Lynch Creek and the western boundary of EL 22/74.

The northern of these two Cu-Pb-Zn anomalies was defined in 1976, and it was the target of a soil geochemistry and trenching follow-up programme this year, as is described in this report.

The southern Cu-Pb-Zn anomaly (365 ppm Cu, 1700 ppm Pb, 9400 ppm Zn) in this area was ground-checked geologically and small exposures of black shales were found in the vicinity. A base metal association with these shales has not been established.

The other anomalous streams in this area including one with 290 ppm Pb near the western licence boundary, and a segment of the Lynch Creek channel with 770 ppm Pb, have not been investigated.

### 3.2. Tin-Tungsten Geochemistry

Most of the licence area has now been checked for the occurrence of Sn and W in stream sediments. Appropriate sample locations from the base metal survey were selected to provide a relatively coarse drainage grid, as shown in Figures 9,10 and 11.

A minus 80 mesh cut from each sample shown, was analysed by the emission spectroscopy technique at the AMDEL laboratories in Adelaide. Analytical results are tabulated in Appendix B of this report.

It is evident from these results that neither tin nor tungsten mineralisation is likely to be present in the licence area.

Included in the emission spectroscopy analyses are two stream sediment samples which were scanned for a wider range of elements (Appendix B).

Sample 186658, the highly anomalous Cu-Pb-Zn locality west of Lynch Creek ( Section 3.1.4.) has no obvious association of other metals.

Sample 205707 is located in a patch of fine, dendritic drainage west of Ross Creek (Fig.11), of a type sometimes developed on alteration zones. The spectrographic analysis gave no indication of mineralisation.

3.3. Lynch Anomaly Follow-up

3.3.1. Confirmation of Stream Anomaly

The stream locality 186444 (Fig.11) was re-located in a small tributary draining a fairly narrow V-shaped gully.

Upstream from the sample point the channel was soiled in, without active sediment. Re-sampling of locality 186444 and at three points downstream, gave analyses ranging from :-

78 - 130 ppm	Cu
380 - 1530 ppm	Pb
430 - 1030 ppm	Zn

These confirmed the original anomaly.

3.3.2. Soil Geochemistry

Figure 4 shows the location of the grid established for reconnaissance soil sampling.

Six cross-lines 100 metres apart were pegged on a base line passing through the stream anomaly 186444.

Soil samples were augered at 10 metre intervals along all cross-lines and at 20 metre intervals along the base line, from depths ranging between 40 and 60 centimetres below ground surface.

The sample material consisted of brown, grey and orange clay with rocky fragments, considered to be representative of highly weathered bed-rock.

The grid area is forest covered.

The 239 soil samples were analysed for total Cu, Pb and Zn in the Abminco laboratory.

The values, on grid, are plotted in Figure 6.

Contours of Pb values at 200 ppm and above, which visually appear to be anomalous, clearly define a main zone at the centre of the grid, up to 150 metres wide and more than 200 metres long (Fig. 6).

Peak values ranging up to 900 ppm Pb define a north-south trend, perhaps along three separate lines.

Inspection of the Zn and Cu values in relation to Pb suggest a correlation between all three metals.

They define a significant anomaly with respect to background values on outer parts of the grid.

As there were no surface indications of mineralisation in the grid area, it was decided to costean the anomaly to investigate its source.

### 3.3.3. Costeaning

Two bull-dozer trenches were cut, one along 5100N from 4965E to 5075E, and the other along 5200N from 4970E to 5060E (Fig.6).

Channel samples taken at 5 metre intervals along the costeans were analysed for Cu, Pb and Zn (Figs. 7 and 8). The results show that overall, the trench analyses are of a similar order to the corresponding auger sample analyses, the exceptions being in the eastern 50 metres of the 5100N trench, where a proportion of Cu, Pb, Zn values are of an order  $1\frac{1}{2}$  to 2 times higher than the related soil auger values.

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Peak values of 200 ppm Cu, 2,000 ppm Pb and 850 ppm Zn occur near the eastern end of this trench.

No mineralisation was exposed in the trenches. However, a small patch of soft limonitic material at 4997E in costean 5200E assayed 100 ppm Cu, 1080 ppm Pb and 2550 ppm Zn.

4. GEOLOGY

4.1. Regional

No systematic work was done during 1977.

Casual observations of quartzites siltstones and shales along the access into the Lynch Creek area, and recognition of sediments in the grid area (see 5.2.) support earlier conclusions (Freytag, 1976) that EL 22/74 is underlain largely by clastic sediments, probably equatable with the upper Huskisson or Dundas Group.

4.2. Lynch Creek Area

Detailed mapping at 1:250 scale of the two costeans (Figs 7 and 8) and mapping of the surrounding grid revealed that the underlying rocks are predominantly siltstones with subordinate greywackes and carbonaceous pyritic shales.

Weathered siltstones exposed in the trenches are blocky, commonly reddish-orange in colour and very clayey. Joint surfaces are frequently coated with manganese oxide, which may have been effective in scavenging base metal ions. The extent of this manganiferous rock, in relation to the defined Cu-Pb-Zn soil anomaly has not been established.

Petrological examination of a limonitic fractured siltstone (sample

206365, Appendix A) from 5100N, 5082E suggests the rock is brecciated, with fracture planes healed by quartz-chlorite aggregates of a low temperature hydrothermal character. Limonite staining in the rock results from the degradation of Fe-Mg chlorite. Minor traces of oxidized, fine-grained pyrite and possibly rare ultra-fine chalcopyrite were noted.

A sample of carbonaceous shale (206367, Appendix A) from 5175N, 5015E contains limonite clots after pyrite, both framboidal and crystalline. This sample assayed 30 ppm Cu, 310 ppm Pb and 75 ppm Zn, in comparison to the limonite associated with weathered carbonaceous shale from 5200N, 4995E which assayed 100 ppm Cu, 1080 ppm Pb and 2550 ppm Zn. The latter values may reflect supergene enrichment in a weakly mineralised shale.

Several small (to 3 cm) "ironstone nodules" collected as float from the creek at 5190N, 4950E were found on examination (sample 206 502, Appendix A) to contain siderite and possibly smithsonite, although subsequent analysis showed a low Zn content. However 500 ppm Sn in this sample suggests that the primary mineralisation may have been in a carbonate vein of hydrothermal origin, of the "Zeehan-type".

The source of these nodules has not been located.

5. EXPENDITURE

A total of \$14,225 was expended on EL 22/74 during the 12 months ending July, 1977, as follows:-

Geochemistry	\$ 6,065
Geology	3,477
Geophysics	149
Gridding	2,163
Costeaming	767
Tenure	62
Sundries	1,542
	<hr/>
	\$14,225
	<hr/>

6. CONCLUSIONS

- (1) Ninety per cent of EL 22/74 has now been covered by a detailed Cu-Pb-Zn stream sediment survey. Sampling during 1977 has extended the area of anomalous streams along, and west of Lynch Creek, to a one square kilometre area containing two 1st-order Cu-Pb-Zn anomalies and several Pb anomalies, † Zn and Cu.

Stream anomalies defined elsewhere in the sampled area are not of immediate significance.

- (2) The Lynch Cu-Pb-Zn stream anomaly located in 1976, has been followed up effectively with soil geochemistry and costeaning. A Cu-Pb-Zn soil anomaly of significant size and order was thus defined.

Costeaning of this anomaly on two grid lines exposed manganese-stained siltstones with rare patches of limonitic material but no evidence of either disseminated or massive vein mineralisation.

It is concluded that the anomaly relates to a sedimentary formational source, probably pyritic black shales, and that the dispersion pattern may be controlled by the abundance of manganese oxides.

Ferriferous carbonate float material with anomalous Sn suggests hypogene mineralisation but the presence of this in the anomaly area has not been verified.

No further work is recommended.

- (3) Spectrographic analyses of selected stream sediment samples indicate that neither Sn nor W are likely to be present in most of the licence area.
- (4) The concentration of base metal drainage anomalies west of Lynch

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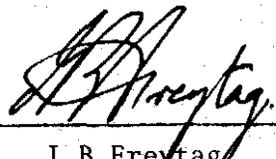
Creek is such that further ground follow-up (geology and rock geochemistry) is necessary to assess this area adequately.

This work should be done in conjunction with similar work in the Silver Falls area.

Application for an extension of EL 22/74 is therefore recommended.

7. REFERENCES

Freytag I.B. (1976) : Exploration Licence 22/74, Marionoak River Area. Progress Report on Exploration to July, 1976. Company report to Cominco.

Submitted by:   
I.B. Freytag  
Geologist

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APPENDIX A

Petrographic thin-section descriptions  
of three rock samples from the Lynch  
Anomaly soil geochemistry grid.

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**CENTRAL MINERALOGICAL SERVICES PTY. LTD.**

Date 3rd May 1977

**SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)**

<b>IDENTIFICATION</b>
206365
<b>BRECCIATED, ALTERED LABILE SANDY PELITE</b>

Job No. CMS 77/4/19 Date Received: 28.4.77

Reference Order No. 7128

Sample No. 206365

Nature of Sample: Hand specimen

**DESCRIPTION** SECTION No. 21060

**a. Hand Specimen:**

Grey green weakly limonitic fractured altered ?siltstone, K stain negative.

**b. Microscopic:**

This is a deformed and altered labile sandy pelite. It was primarily weakly bedded on a millimetric scale with a subtle alternation of shaley and silty to fine sandy bands. Recognisable clastic components comprise completely altered (chloritised) rock fragments, similarly altered feldspar grains and subordinate splintery to angular and subrounded quartz grains. The rock has a certain tuffaceous character but this is inferred rather than established due to the pervasive chloritic alteration.

The rock has been brecciated into angular to subround clasts sized from < 500µ to around 1cm. There is some evidence of an early phase of semi-plastic deformation (?slumping) but most of the brecciation can be related to discontinuous fracture planes healed with quartz-chlorite aggregates of low temperature hydrothermal character.

Limonite staining in this rock results largely from degradation of chlorite which is a Fe-Mg variety. Minor traces of anhedral fine grained (now oxidised, mainly < 50µ) pyrite were introduced with the chlorite and possibly rare ultrafine chalcopyrite particles were present. It is doubtful if this rock would account for significant geochemical anomalies.

D. Cowan, B.Sc.

Sample location : Lynch Anomaly soil geochemistry grid, 5100N, 5110E (Refer to Fig.6).

Analysis by AAS :  
Cu - 59 ppm  
Pb - 110 ppm  
Zn - 420 ppm

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**CENTRAL MINERALOGICAL SERVICES PTY. LTD.**

Date 3rd May 1977

**SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)**

<b>IDENTIFICATION</b>
206367
<b>WEATHERED CARBONACEOUS PYRITIC SILTY SHALE</b>

Job No. CMS 77/4/19 Date Received: 28.4.77

Reference Order No. 7128

Sample No. 206367

Nature of Sample: Hand specimen

**DESCRIPTION SECTION No. 21061**

**a. Hand Specimen:**

Dark grey/whitish carbonaceous shale, K stain negative.

**b. Microscopic:**

This is a moderately weathered carbonaceous pyritic silty shale.

The rock has undergone incipient regional metamorphism and could be termed a carbonaceous sericite phyllite. It is weakly bedded on a fine millimetric scale and consists mainly of orientated sericite, semi-pervasive carbonaceous matter which is mainly reorganised into crude flakes and discontinuous films, and subordinate amounts of very fine relict detrital white mica flakes (partly degraded to illite) and splintery to subangular quartz grains.

The irregular whitish patches (hand specimen) reflect bleaching of the carbonaceous matter in response to weathering, partly along discontinuous late stage microfractures. The rock is pervasively stained with very fine clots (mainly < 20µ) of limonite which developed in part from carbonate but largely from pyrite which appears to have been present as framboids in addition to an- to subhedral crystals.

Pyritic carbonaceous shales, such as this, frequently carry minor traces of sphalerite and commonly also minor traces of galena and chalcopyrite. There are no diagnostic boxworks but these would not be expected due to the typically ultrafine grainsizing. Low order base metal geochemistry would be likely.

D. Cowan, B.Sc.

Sample Location: Lynch Anomaly soil geochemistry grid, 5175N, 5015E (refer to Fig.6).

Analysis by AAS; Cu - 30 ppm  
Pb - 310 ppm  
Zn - 75 ppm

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**CENTRAL MINERALOGICAL SERVICES PTY. LTD.**

Date 3rd May 1977

**SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)**

<b>IDENTIFICATION</b>
206502
IMPURE ?SMITHSONITE

Job No. CMS 77/4/19 Date Received: 28.4.77  
 Reference Order No. 7128  
 Sample No. 206502  
 Nature of Sample: Hand specimen

**DESCRIPTION SECTION No. 21062**

**a. Hand Specimen:**

Greenish brown carbonate rock with limonite-stained margins, non-fluorescent.

**b. Microscopic:**

This specimen was examined briefly in thin section and subsequently by XRD.

The rock consists virtually entirely of semi-massive microcrystalline carbonate sized mainly in the 5-15 $\mu$  range. The carbonate has a pale yellow-brown tint in thin section, and moderately high R.I. and is a member of the "brownspar" group (ie. magnesite-siderite-rhodocrosite-smithsonite-spherochalcite). It shows incipient thin bands of Fe-staining. The aggregate, as a whole, is cavernous on a fine scale, devoid of growth structures (eg. colloform or nodular) and is marginally corroded with development of spongy limonitic selvages.

An XRD powder photograph was prepared and this suggests the carbonate is intermediate between siderite and smithsonite in comparison. It should be pointed out that XRD and optical data alone provide a guide only to carbonate composition. More complete data (eg. S.G., precise R.I. determination) could be obtained but this is doubtfully warranted as the most meaningful approach would be chemical assay for Zn.

As noted this "nodule" shows marginal corrosion and as such is clearly exotic (or introduced) to the creek bed.

D. Cowan, B.Sc.

Sample Location: Lynch Anomaly soil geochemistry grid 5190N, 4950E - floater in creek. (Refer to Fig. 6).

Analysis : Cu - - 9 ppm  
 Pb - 30 ppm  
 Zn - 130 ppm  
 Sn - 500 ppm

APPENDIX B

Semi- quantitative Sn,W and Ba analyses by Emission Spectroscopy of selected stream sediment samples, EL 22/74. Sample locations are shown in Figures 9,10 and 11 of this report.

Two samples were scanned for a range of elements. Sample 186658 (Fig.11) was highly anomalous in Pb,Zn and Cu in the regional drainage survey. Sample 205707 (Fig.11) comes from a small area of anomalous finely dendritic drainage.

FORM 91

## THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES

REPORT AN 3958/77

x = not detected at the limits quoted.

Results in ppm unless otherwise stated. Detection limits in brackets.

Sample No.	W (50)	Ba (200)	Sm (3)			Sample No.	W (50)	Ba (200)	Sm (3)
186206	X	X	X			186372	X	X	X
07	X	X	X			76	X	X	X
21	X	X	X			85	X	500	X
25	X	X	X			92	X	200	X
27	X	X	X			99	X	300	X
30	X	X	X			400	X	X	X
42	X	X	X			405	X	X	X
49	X	X	X			06	X	X	X
59	X	X	X			14	X	X	X
62	X	X	X			16	X	X	X
63	X	X	X			22	X	X	X
186266	X	X	X			24	X	X	X
76	X	500	3			31	X	X	X
99	X	X	X			38	X	200	X
186309	X	X	X			50	X	X	X
15	X	X	X			18453	X	X	X
16	X	X	X			55	X	X	X
22	X	200	X			60	X	200	X
30	X	200	X			70	X	X	X
38	X	300	X			71	X	500	X
39	X	X	X			76	X	300	X
53	X	X	X			80	X	300	X
56	X	X	X			85	X	200	X
61	X	X	X			95	X	X	X
64	X	X	X			96	X	X	X

Results are semi-quantitative. Elements apparently present in concentrations of economic interest should be redetermined by an appropriate accurate analytical technique.

## THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES

REPORT AN 3958/77

x = not detected at the limits quoted.  
 Results in ppm unless otherwise stated. Detection limits in brackets.

Sample No.	W (50)	Ba (200)	Sn	Sample No.	W (50)	Ba (200)	Sn (3)
186497	X	X	X	186616	X	X	X
99	X	X	X	22	X	X	X
186505	X	X	X	23	X	300	X
06	X	X	X	30	X	X	X
18	X	X	X	35	X	300	X
21	X	X	X	36	X	X	X
28	X	X	X	40	X	300	X
38	X	X	X	50	X	500	X
40	X	200	X	55	X	300	X
44	X	X	X	58	X	700	X
48	X	X	X	63	X	X	X
52	X	200	X	68	X	X	X
57	X	X	X	73	X	X	X
59	X	X	X	74	X	X	X
66	X	X	X	89	X	X	10-
70	X	X	X	93	X	300	X
74	X	X	X	94	X	500	3-
82	X	200	X	97	X	X	X
87	X	X	X	205707	X	X	X
89	X	200	X	111	X	X	X
92	X	200	X	12	X	X	X
97	X	X	X	20	X	X	X
98	X	200	X	21	X	200	X
186605	X	X	X	28	X	200	X
09	X	200	X	30	X	X	X

Results are semi-quantitative. Elements apparently present in concentrations of econ interest should be redetermined by an appropriate accurate analytical technique.



Form 60

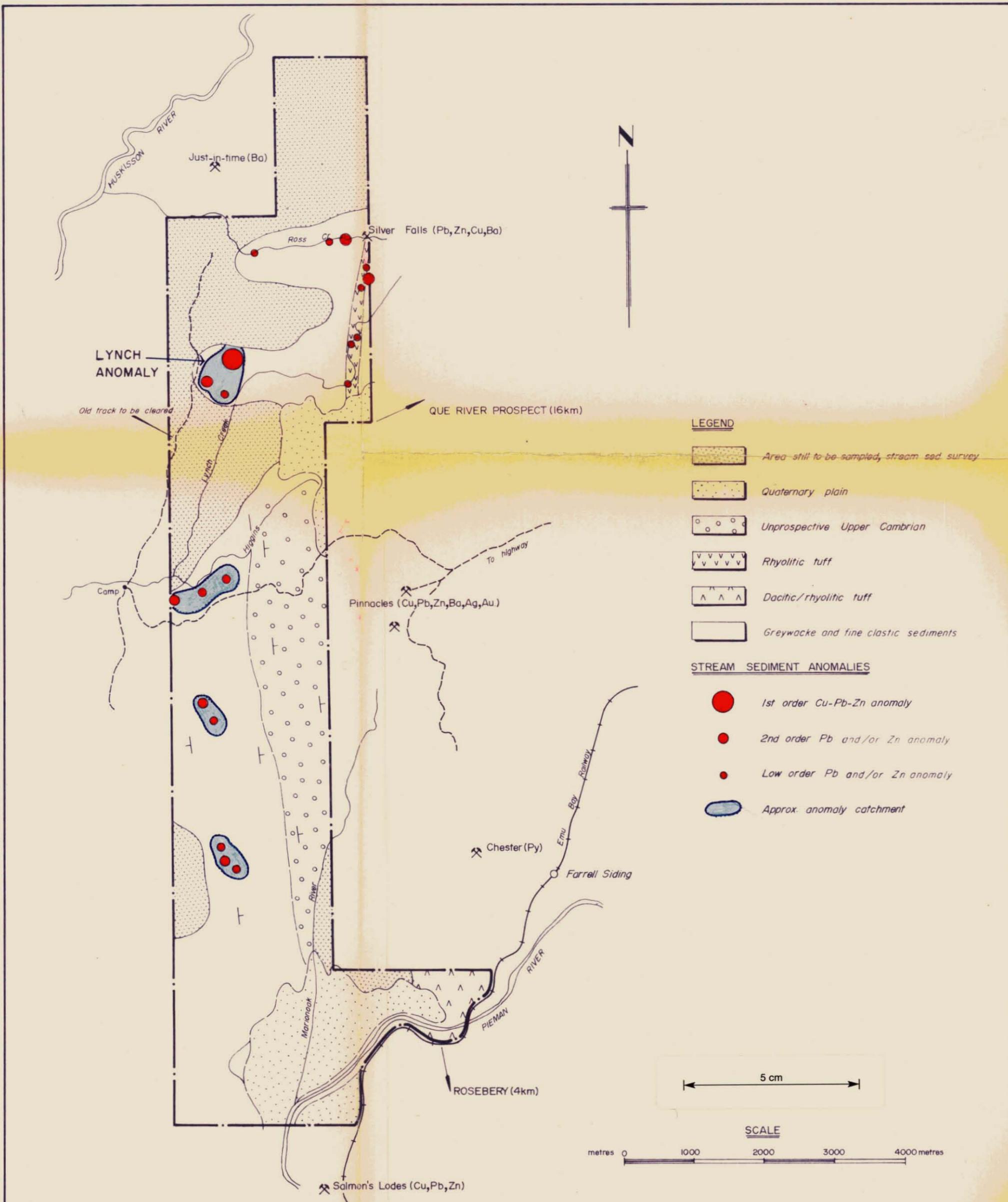
Results in ppm unless otherwise stated. Detection limits in brackets.

Sample No	186658	205707					Sample No	186658	205707				
A1 Ba (200)	700	X					A2 In (10)	X	X				
Be (1)	1	X					Pb (1)	300	30				
Ce (300)	X	X					Sb (30)	X	X				
Co (5)	30	20					Sn (1)	X	X				
Cr (20)	50	50					Zn (20)	3000	X				
La (100)	X	X					A3 Au (3)	X	X				
Mn (10)	500	200					P (100)	X	X				
Mo (3)	X	X					Te (20)	X	X				
Nb (20)	X	X					Tl (1)	X	X				
Ni (5)	100	70					A4 Li (1)	20	30				
Sc (3)	3	X					Na (50)	200	200				
Sr (50)	80	50					A5 Cs (30)						
Ta (100)	X	X					K (5)						
Th (100)	X	X					Rb (10)						
Ti (100)	700	700					A7 Hg (0.15)						
V (10)	100	100					A8 B (3)						
W (50)	X	X					A9 Al (100)						
Y (10)	30	10					Ca (100)						
Yb (1)	X	X					Fe (100)						
Zr (10)	50	50					Mg (100)						
A2 Ag (0.1)	0.5	X					Si (100)						
As (50)	X	X					U (5000)						
Bi (1)	X	X											
Cd (3)	30	X											
Cu (1)	100	10											
Ga (1)	5	3											
Ge (3)	X	X											

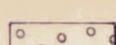
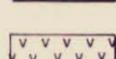
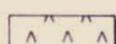
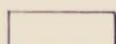
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Results are semi-quantitative. Elements apparently present in concentrations of economic interest should be redetermined by an appropriate accurate analytical technique. X = Not detected at limit quoted.



**LEGEND**

-  Area still to be sampled, stream sed survey
-  Quaternary plain
-  Unprospective Upper Cambrian
-  Rhyolitic tuff
-  Dacitic/rhyolitic tuff
-  Greywacke and fine clastic sediments

**STREAM SEDIMENT ANOMALIES**

-  1st order Cu-Pb-Zn anomaly
-  2nd order Pb and/or Zn anomaly
-  Low order Pb and/or Zn anomaly
-  Approx. anomaly catchment

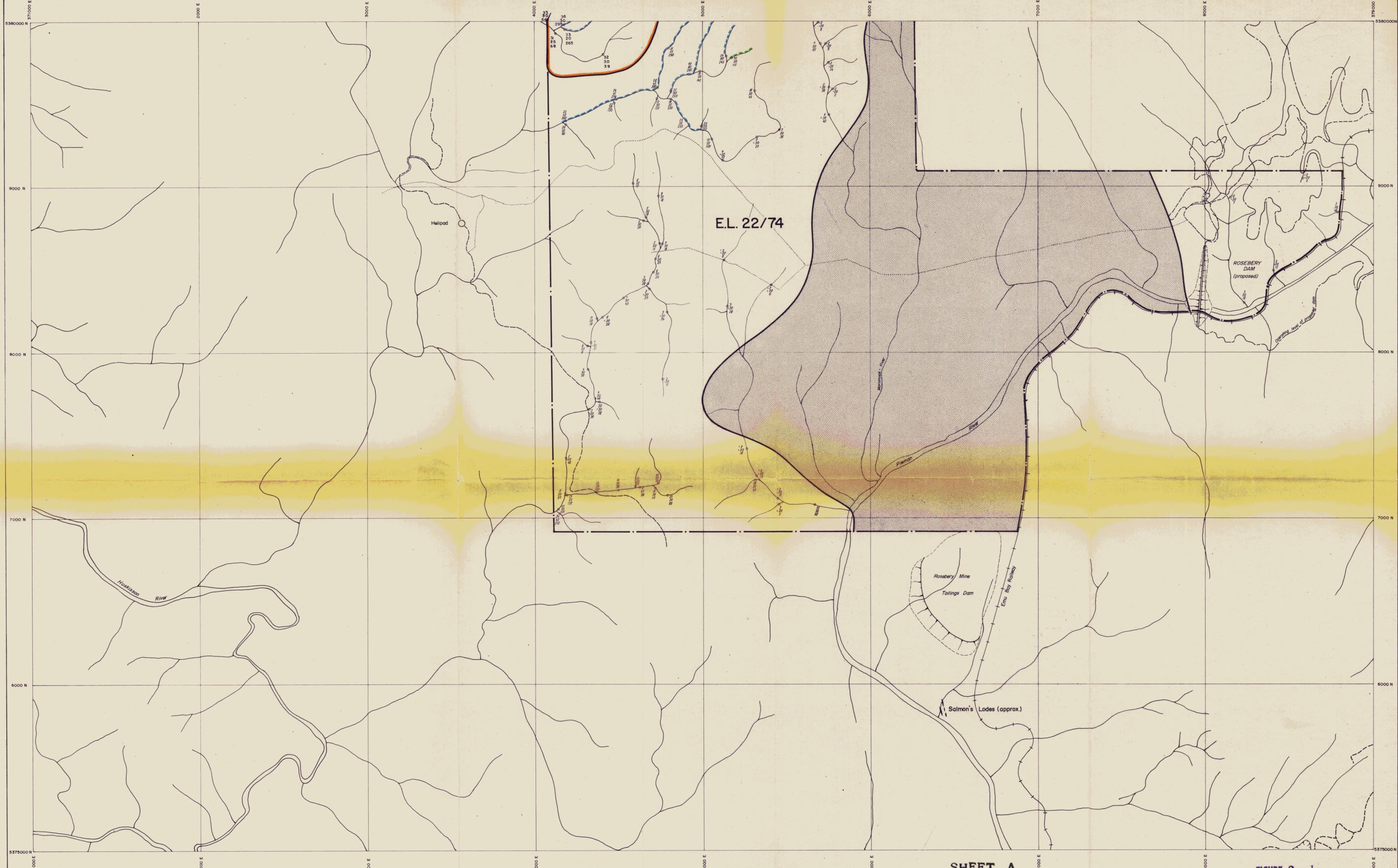
**FIGURE 1**

302023

77-1223

**Cominco Exploration Pty Ltd**

Drawn: I.B.F.	NORTH WEST TASMANIA <b>E.L.22/74 - MARIONOAK RIVER</b> <b>EXPLORATION SUMMARY MAP 1976</b>	Location code:
Traced: R.K.Y.		Scale: 1:50,000
Checked:		Date: October 1976
Revised: _____ Date: _____		Plate N <sup>o</sup> : MOC 6



**REPRESENTATION OF ANOMALIES**

Element	1st ORDER	2nd ORDER	3rd ORDER
Cu	≥ 165 ppm	< 165 ppm, > 110 ppm	> 55 ppm, ≤ 110 ppm
Pb	≥ 240 ppm	< 240 ppm, > 160 ppm	≥ 80 ppm, ≤ 160 ppm
Zn	≥ 600 ppm	< 600 ppm, > 400 ppm	> 200 ppm, ≤ 400 ppm

NOTE: Geochemical values were determined by AAS on the -80 fraction of sediment. See plan MOC 2 for sample numbers.

**LEGEND**  
 ○ 35% Cu  
 ○ 15% Pb  
 ○ 10% Zn  
 Licence area not sampled

**SHEET A**

371/380	
371/375	379/375

Index to adjoining sheets

5 cm

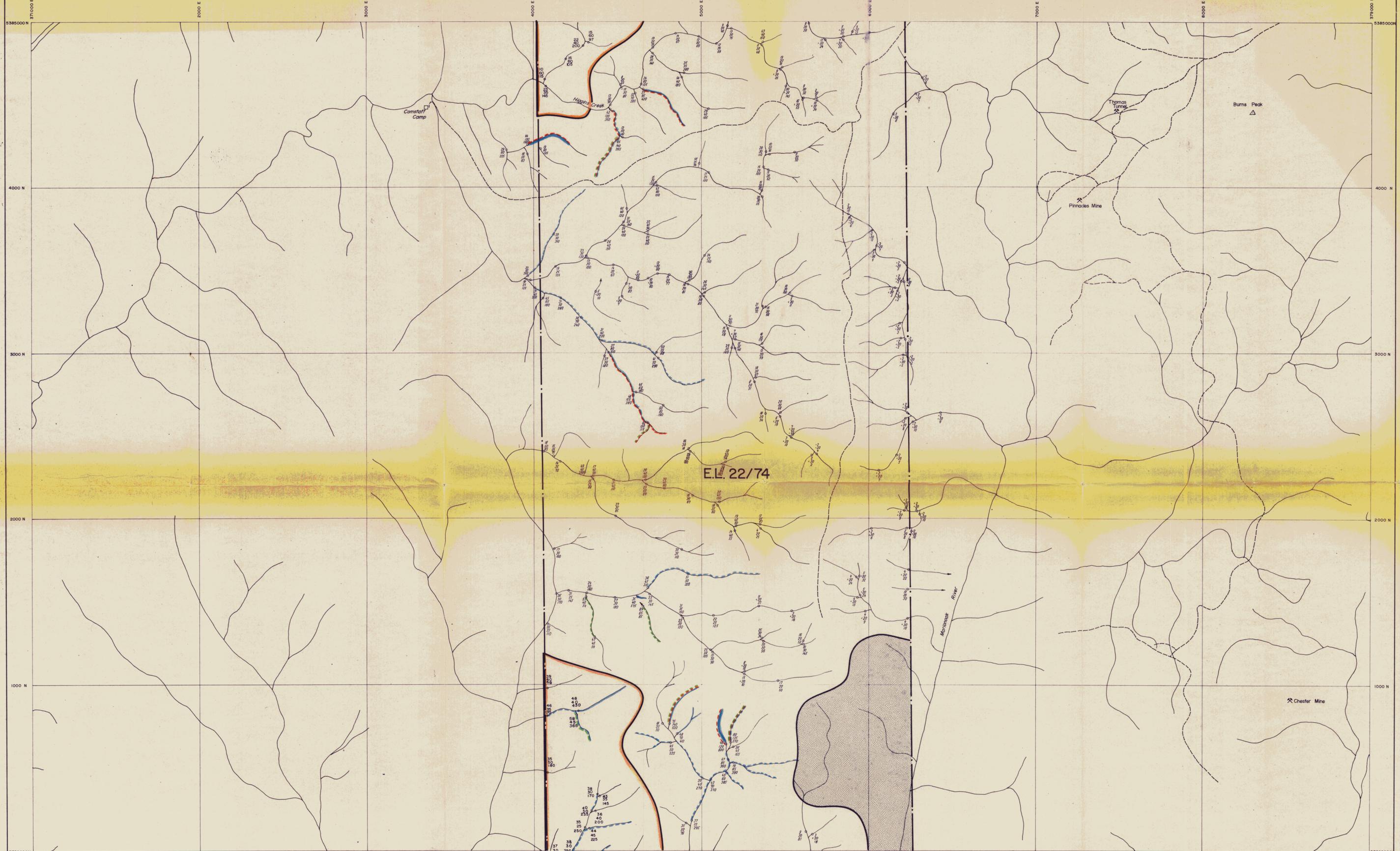
**FIGURE 2**  
 302024 77-1223

**COMINCO EXPLORATION PTY. LTD.**

NORTH WEST TASMANIA  
 DUNDAS TROUGH  
 MARIONOAK E.L. 22/74

**STREAM SEDIMENT VALUES Cu, Pb, Zn (ppm)**

Drawn by	Traced by E.D.
Checked by	
Location code	K55/5
Scale	1:10,000
Date	May 1976
Plate	MOC 3/375



E.L. 22/74

SHEET B

302025

FIGURE 3

COMINCO EXPLORATION PTY. LTD.

NORTH WEST TASMANIA  
DUNDAS TROUGH  
MARIONOAK E.L. 22/74

STREAM SEDIMENT VALUES Cu, Pb, Zn (ppm)

Drawn by	Traced by E.D.
Checked by	
Location code	K55/5

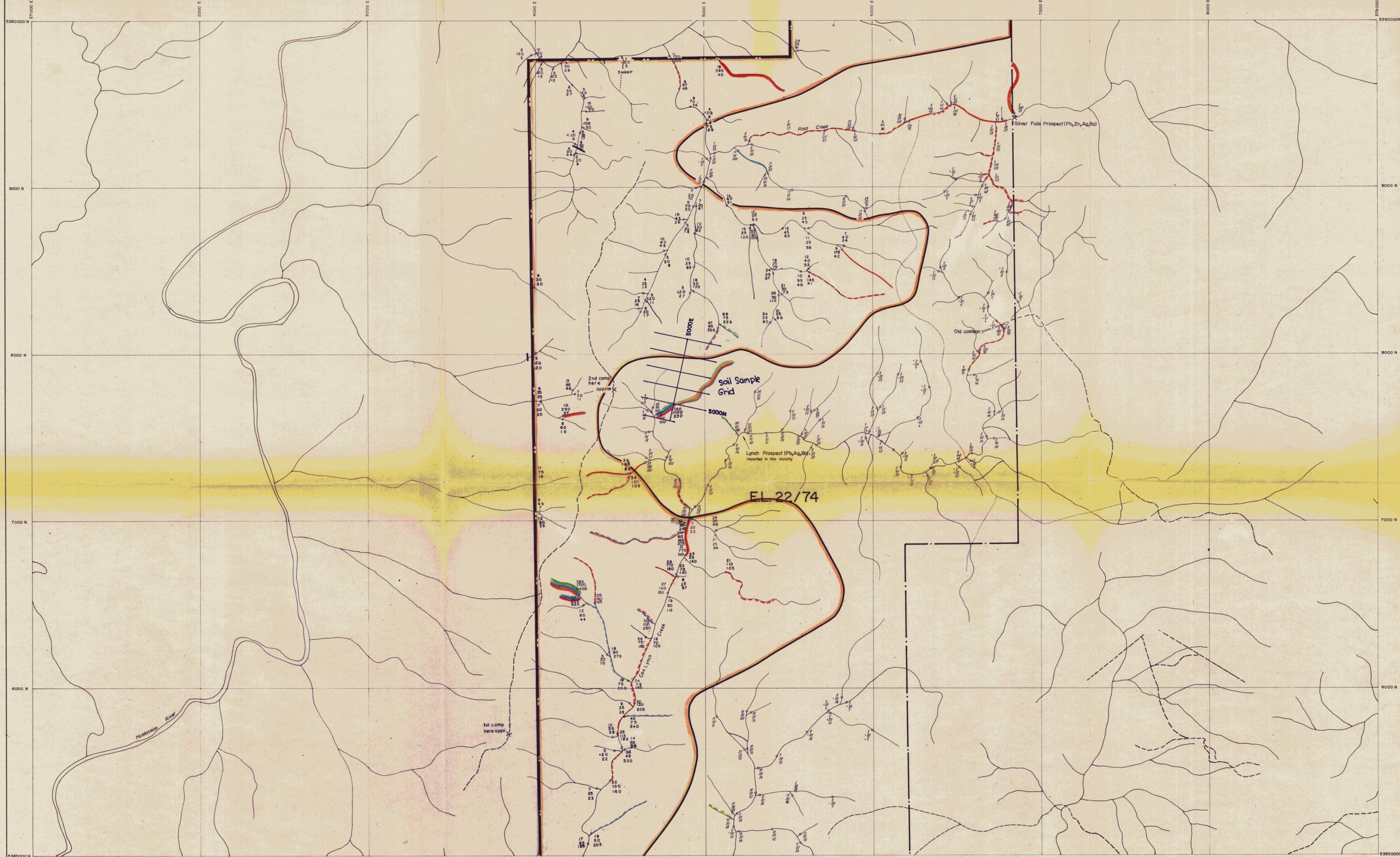
Scale 1:10,000 Date May 1976 Plate MOC 3/380

LEGEND  
 ○ Cu  
 □ Pb  
 △ Zn  
 D Licence area not sampled

371/385	
371/380	
371/375	

Index to adjoining sheets  
5 cm

Area Sampled, 1977



EL. 22/74

SHEET C

302026

FIGURE 4  
77-1223

COMINCO EXPLORATION PTY. LTD.

NORTH WEST TASMANIA  
DUNDAS TROUGH  
MARIONOAK E.L. 22/74

STREAM SEDIMENT VALUES Cu, Pb, Zn, (ppm)

Drawn by	Traced by E.D.
Checked by	
Location code	K 55/5

Scale 1:10,000 Date May 1976 Plate MOC 3/385

LEGEND

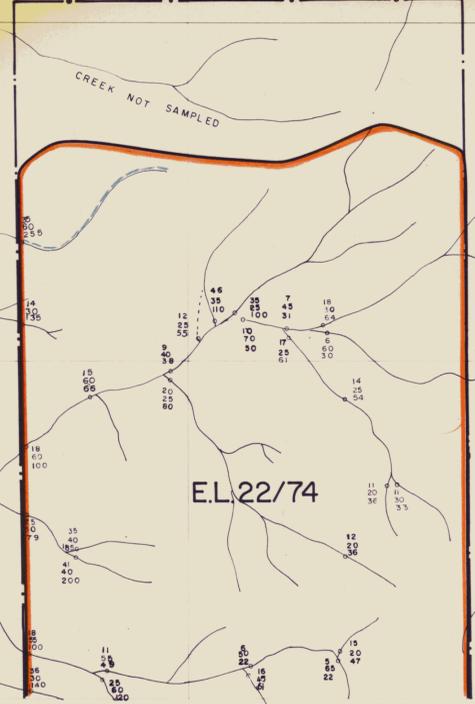
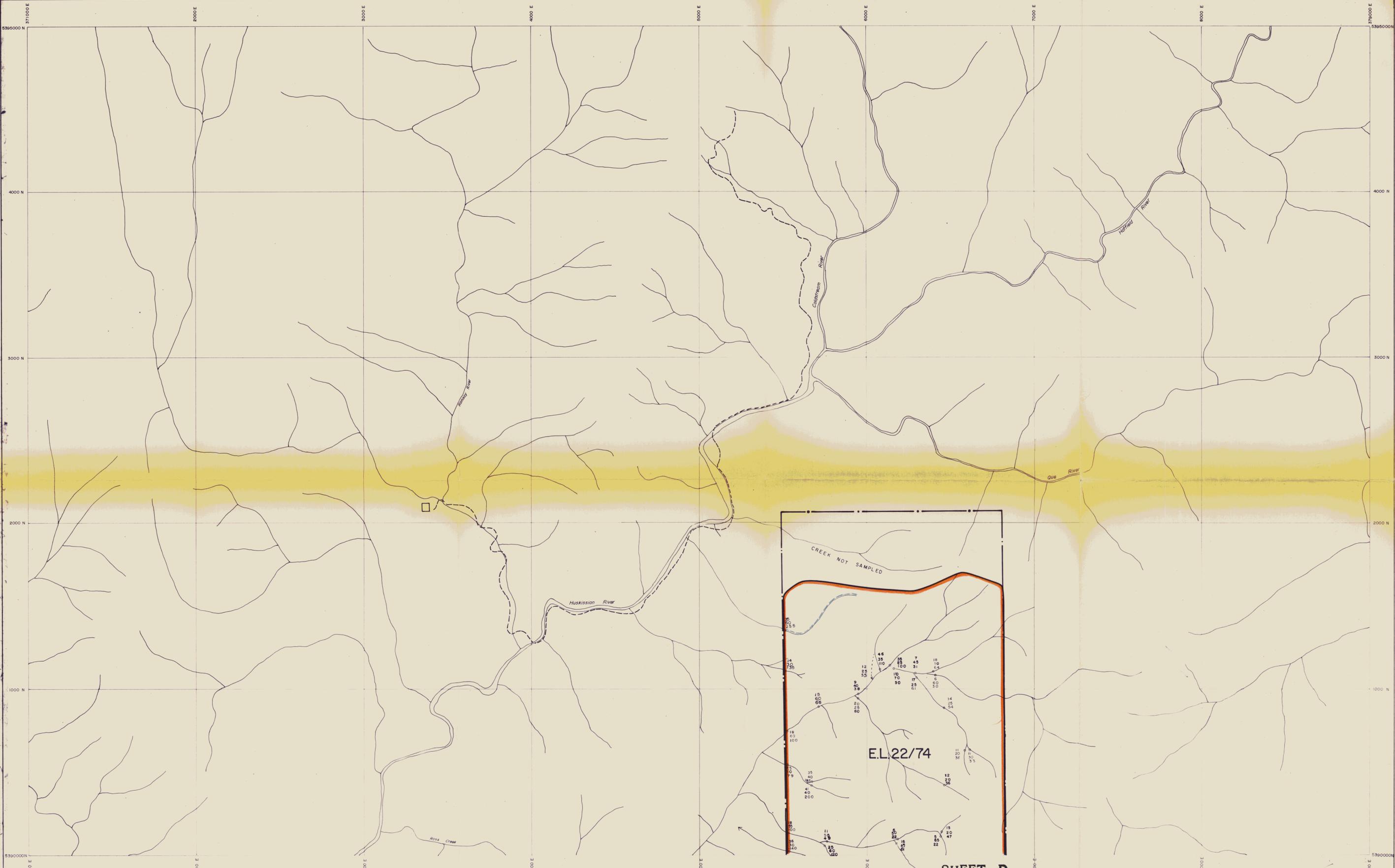
- 31/390
- 371/385
- 371/380

● Licence area not sampled

371/390	
371/385	
371/380	

Index to adjoining sheets





E.L. 22/74

SHEET D



5 cm

371/390	
371/385	

Index to adjoining sheets

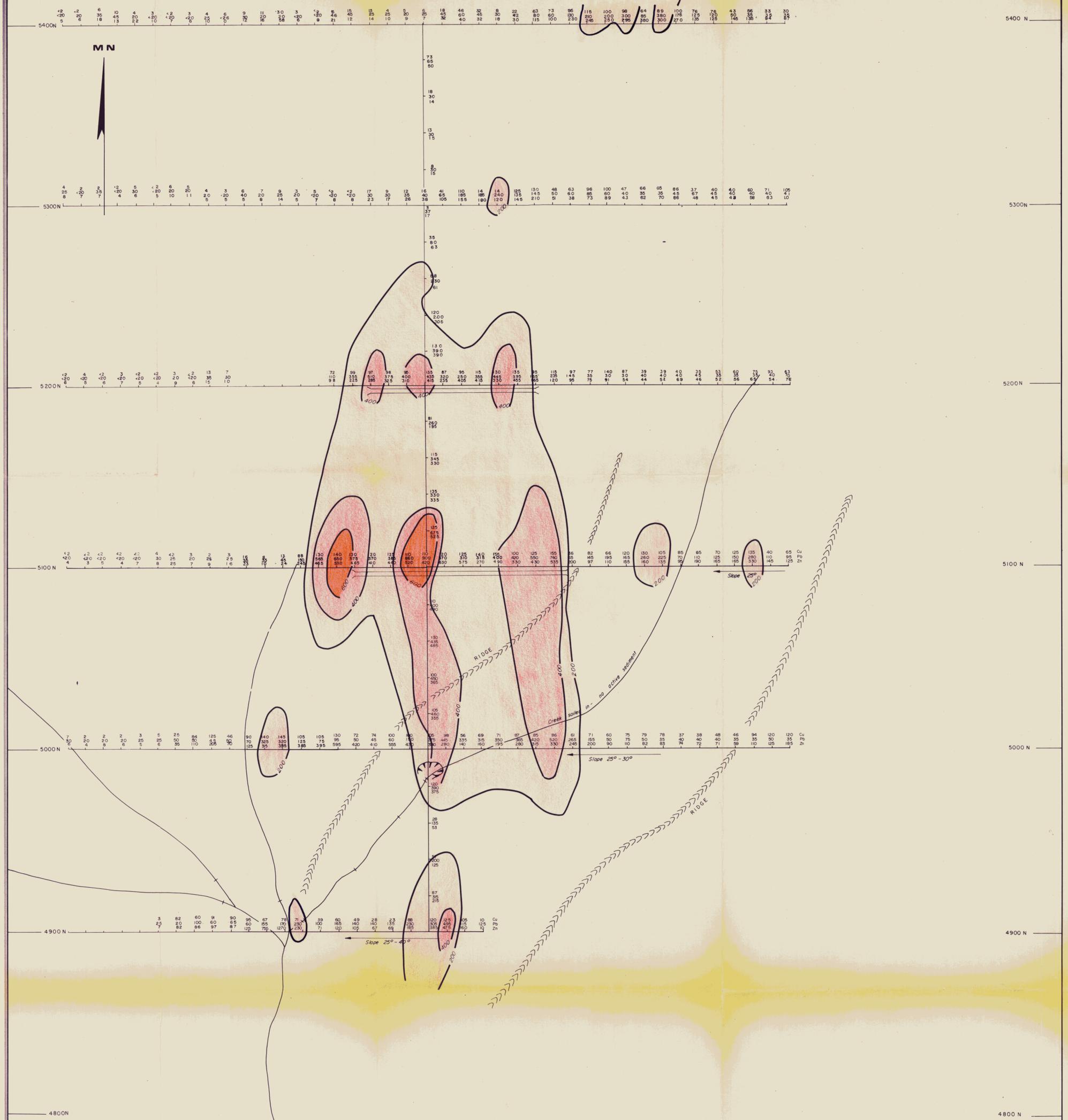
302027 **FIGURE 5** 77-1223

**COMINCO EXPLORATION PTY. LTD.**

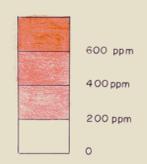
NORTH WEST TASMANIA  
DUNDAS TROUGH 1812

MARIONOAK E. L. 22/74  
STREAM SEDIMENT VALUES Cu, Pb, Zn (ppm)

Location code K 55/5 Scale 1:10,000 Date FEB 1977 Plate MOC 3/390



CONTOURS OF LEAD VALUES (ppm)

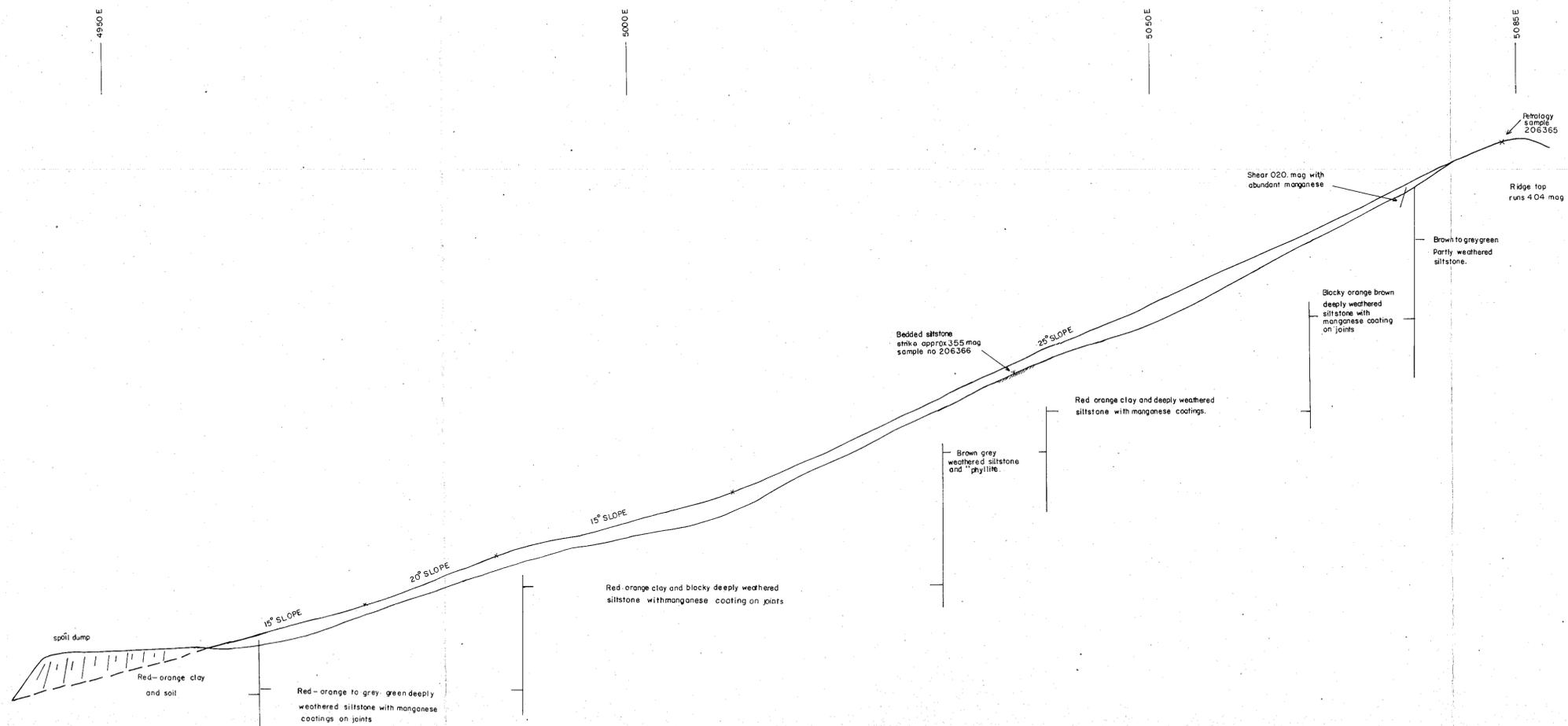


302028

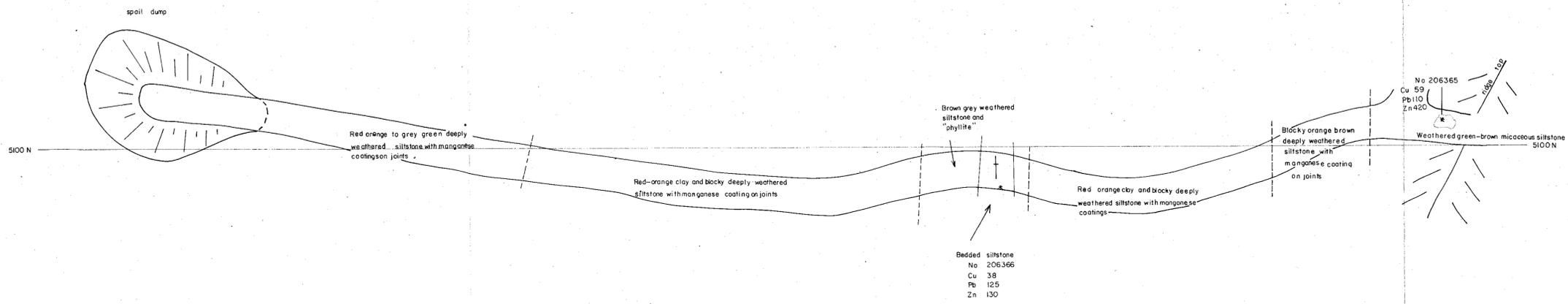
FIGURE 6

**A** Abminco Exploration

Drawn by I.B.F.	Traced by R.J.E.	NORTH WEST TASMANIA MARIONOAK E.L. 22 / 74 LYNCH CATCHMENT ANOMALY Reconnaissance Soil Geochemistry Cu, Pb, Zn in p.p.m.	77-1223
Checked by:			
Location code K55/5	Scale: 1:1000	Date: January, 1977	Plate: Mac. 7



sample No's	198329	198330	198331	198332	198333	198334	198335	198336	198337	198338	198339	198340	198310	198309	198308	198307	198306	198305	198304	198303	198302	198301
Cu (ppm)	100	110	130	125	120	160	110	125	140	125	145	140	140	58	150	140	115	175	175	155	200	175
Pb (ppm)	400	335	175	300	800	780	400	205	400	290	295	360	515	420	700	860	620	785	890	1250	2000	145
Zn (ppm)	300	205	360	580	660	600	445	370	570	400	345	280	570	375	490	525	540	575	485	680	850	310

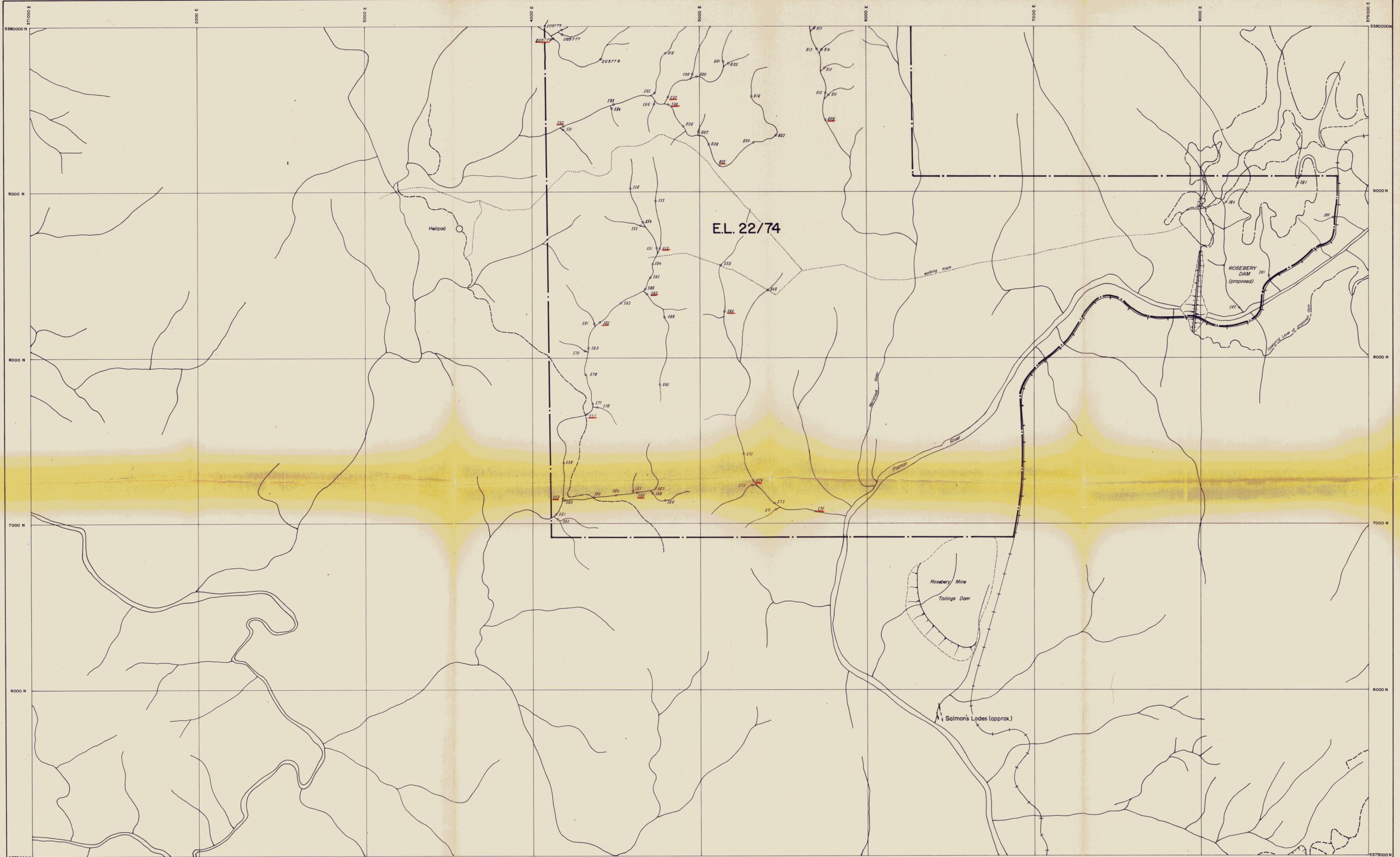


5 cm  
NOTE Vertical scale = Horizontal scale.

302029 **FIGURE 7** 1814  
77-1223

<b>Abminco Exploration</b>		N.W. TASMANIA <b>MARIONOAK E.L. 22/74</b> COSTEAN 5100 N SECTION & PLAN	Location code: Date: April 1977 Scale: 1 : 250 Plate No. Rec. No.
Geology:	Drawn: C.H.Y.		
Traced: J.D.	Checked:		
Revised by: Date:			





E.L. 22/74

Helipod

Rosebery Mine  
Tailings Dam

Salmon's Lodes (approx.)

ROSEBERY DAM  
(proposed)

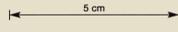
SHEET A

552 Sample analysed for Sn, W

NOTE: ALL SAMPLE NUMBERS HAVE PREFIX 86.

371/380	
371/375	379/375

Index to adjoining sheets



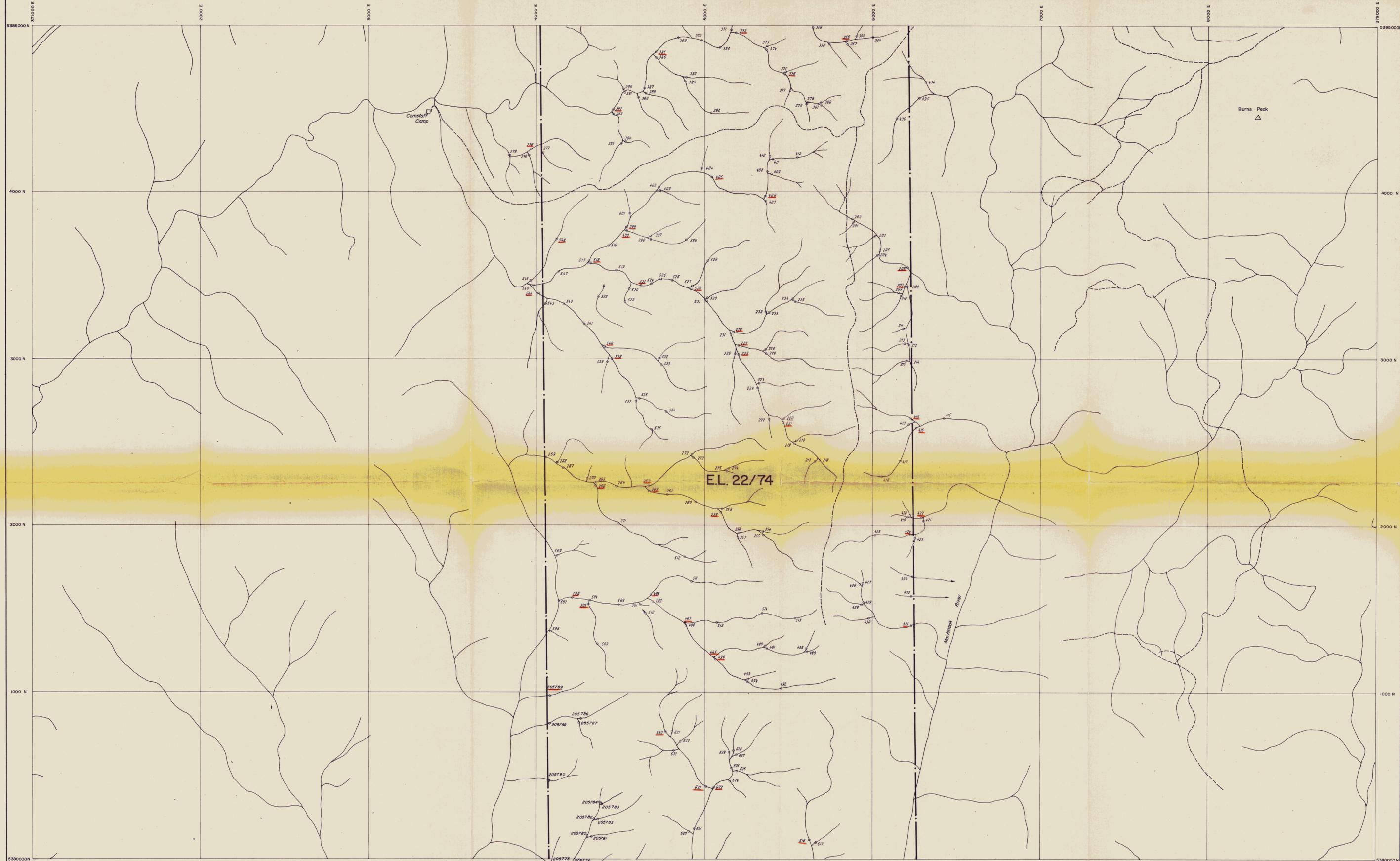
302031 FIGURE 9 1816  
77-1223

COMINCO EXPLORATION PTY. LTD.

Drawn by	Traced by
Checked by	

NORTH WEST TASMANIA  
DUNDAS TROUGH  
MARIONOAK E.L. 22/74  
STREAM SEDIMENT LOCATIONS & SAMPLE No.S

Location code Scale 1:10,000 Date May 1976 Photo MOC.2



E.L. 22/74

SHEET B

497 Sample analysed for Sn W

NOTE: ALL SAMPLE NUMBERS HAVE PREFIX NO.



	371/385	
	371/380	
	371/375	

Index to adjoining sheets

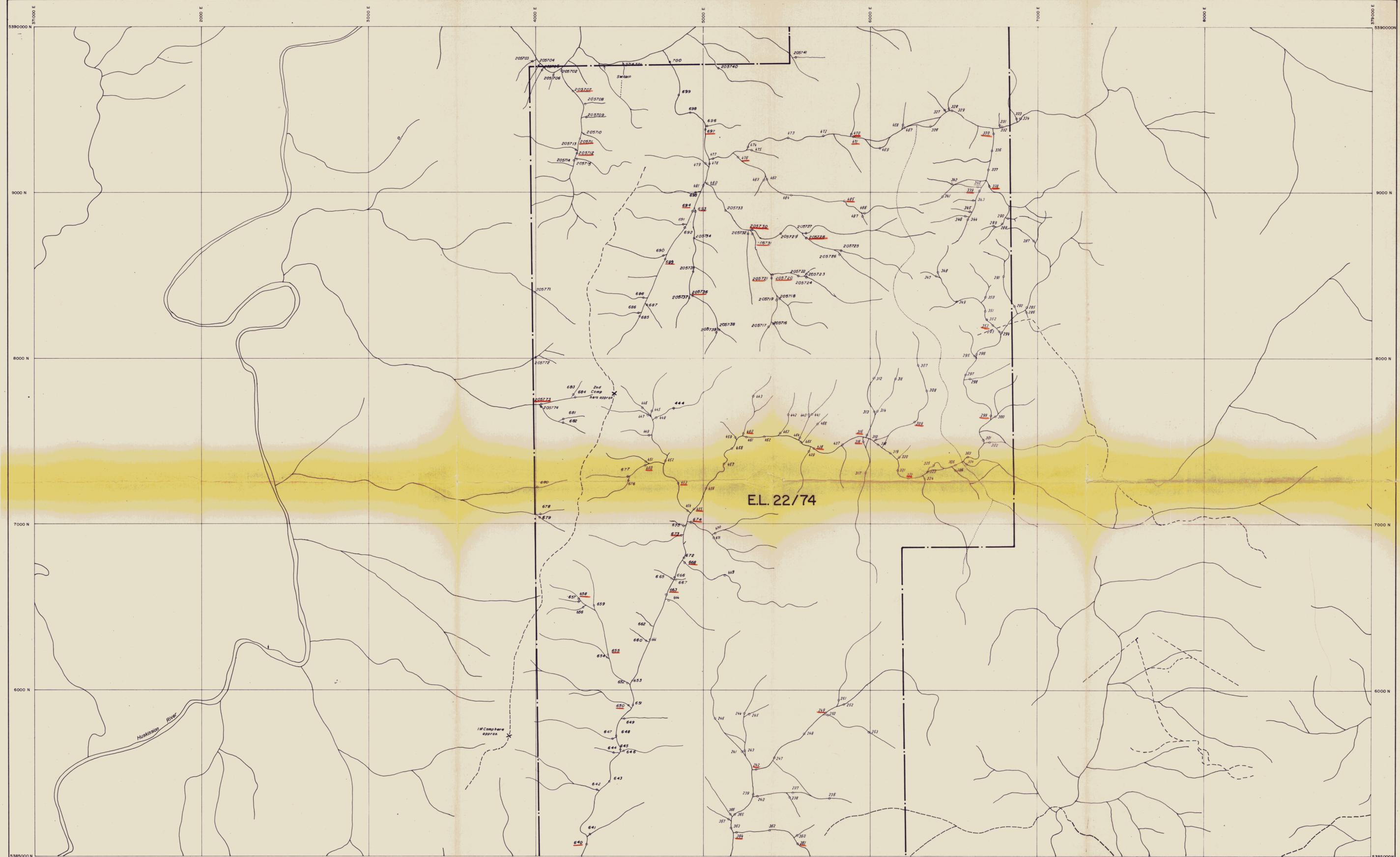
302032 **FIGURE 10** 1817  
77-1233

**COMINCO EXPLORATION PTY. LTD.**

NORTH WEST TASMANIA  
DUNDAS TROUGH  
MARIONOAK E.L. 22/74

**STREAM SEDIMENT LOCATIONS & SAMPLE No.**

Drawn by	Traced by
Checked by	
Location code	Scale 1:10,000 Date May 1976 Plate MOC. 2



E.L. 22/74

SHEET C

302033 FIGURE 11 1813  
77-1323

COMINCO EXPLORATION PTY. LTD.

NORTH WEST TASMANIA  
DUNDAS TROUGH  
MARIONOAK E.L. 22/74

STREAM SEDIMENT LOCATIONS & SAMPLE No.S

Drawn by	Traced by
Checked by	
Location code	

Scale 1:10,000 Date May 1976 Plate MOC 2

371/390	
371/385	
371/380	

Index to adjoining sheets

NOTE: ALL SAMPLE NUMBERS WITH THREE DIGITS  
HAVE THE PREFIX 186

5 cm

Sample analysed for Sn, W

Camp Hill Camp

Huskisson River

1st Camp here approx

2nd Camp Here approx