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INDUSTRIAL & MINING INVESTIGATIONS  
PTY LIMITED

SIX-MONTHLY REPORT ON FIELD  
INVESTIGATIONS WITHIN EL4/61 -  
WEST COAST, TASMANIA.

PERIOD ENDED 24 AUGUST 1981.

Department of Mines, Hobart.

888016

888002

Copy for

DEPARTMENT OF MINES, HOBART.

INDUSTRIAL AND MINING INVESTIGATIONS PTY. LIMITED

**MICROFILMED**

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## A. INTRODUCTION

Field activities within EL4/61 during the six-month period ended 24 August, 1981, were curtailed by the onset of winter rains in mid-April. Operations ceased on 9 April 1981, and it will be at least September-October 1981 before weather conditions permit their recommencement. During the six-week period 24 February - 9 April 1981, activities were in the main confined to extending the access track in the north-east of the exploration licence, and the implementation of a stream sediment geochemical survey in the Davis Creek area.

## B. McAULIFFE CREEK-BRODERICK CREEK-<sup>LITTLE</sup> / DONALDSON RIVER AREA

North-east EL4/61 (Plans 2, 3 & 9)

The vehicle track to provide access to the McAuliffe Creek-Broderick Creek-LittleDonaldson River area was extended some 4.2 kilometres from the Savage River Pipeline Road to the ridge between McAuliffe and Broderick Creeks. It was hoped that some use could be made of this track over the winter months but this proved not to be the case.

For the first 2.0 kilometres of this track, tertiary basalt was transversed, then some 1.5 kilometres of permian mudstone and pebbly mudstones, followed by the precambrian Whyte schist psammitic assemblage as outlined by Urquhart (1966). No signs of mineralisation were observed.

It is proposed to extend this track a further 5.0 kilometres this coming field season to provide access for a detailed geochemical and geological survey of the area (see plan No 9) planned for the 1981-82 summer field season.

## C. DAVIS CREEK BASE METAL SURVEY (Plans 3,4,5,6,7)

### (i) Introduction

In the 1979-80 field season, anomalous lead-zinc readings were obtained for two samples on the Hall Creek immediately below the junction with Davis Creek (Nos 99 & 100), an anomalous lead value for a sample in McPhee's Creek (No 106), and anomalous lead-zinc readings from a tributary of Hall Creek, some 3.0 kilometres downstream from the Davis Creek junction (No 130).

As outlined in part 2 of my six-monthly report for the period ended 24 February 1981, unfortunately the main area of interest, as indicated by these anomalous readings, occurs within, or close to, the Northern Deposit magnetite zone under option to Pickands Mather. (See plans 2 & 3)

However, as gossanous material was observed in Davis Creek and near the Specimen Creek-McPhee Creek junction, it was hoped that investigations north along the strike of the country rock would indicate base metal mineralization as suggested by the location of two old silver-lead leases and the presence of several old workings. Thus a stream sediment survey was undertaken along Davis Creek itself, with a follow-up survey proposed for Specimen Creek if results were encouraging. Gossanous samples from within the area of interest, both from outcrops and the adit dump immediately downstream from the Specimen Creek-McPhee Creek junction, were forwarded to the Department of Mines' laboratories in Launceston for base metal analyses.

(ii) Location, Access, Relief, Rainfall, Vegetation & Geology

The area of interest is situated approximately 5.0 kilometres north of the Savage River Mine open cut. Access, relief, rainfall, vegetation and geology of the area has already been outlined in my "Report on Field Investigations of the Hall Creek-Specimen Creek Area, EL4/61" of 5 June, 1980.

(iii) Stream Sediment Survey

a. General:

Forty wet stream sediment samples were collected at 50.0 metre intervals along Davis Creek (Plan 4). Location of samples were surveyed by chain and compass, using Traverse 300S of the Specimen Reef grid as control. Samples were dried and sieved at base as follows:

- + 40 mesh - panned for gold
- 40 + 80 mesh - retained in sample bags
- 80 mesh - forwarded to Analabs, Burnie, for analysis by atomic absorption (A.A.S.) - perchloric acid digestion.

## (iii) b. Analyses (Appendix A):

The -80 fractions were analysed for copper, lead, zinc, gold and silver. The lowest limits of detection and accuracy of analysis of the various elements are as follows:

	<u>Detection</u>	<u>Accuracy</u>
Copper	5 ppm	$\pm$ 5%
Lead	5 ppm	$\pm$ 5%
Zinc	5 ppm	$\pm$ 5%
Gold	0.03 ppm	$\pm$ 5%
Silver	0.5 ppm	$\pm$ 5%

## c. Statistical Evaluation (Appendix A):

Sample locations and analyses were plotted on a 1:10000 map scaled from the Horton 1:20000 topographic dyelines as supplied by the Lands Department. (Maps 4,5,6,7)

Lead, silver and gold results were so scarce that a statistical evaluation was not necessary.

Analytical results for copper and zinc were studied statistically using the cumulative frequency method involving medians and quartiles. (Details of calculations and graphs are included in Appendix A.)

A summary of the median value, standard deviation, and lowest anomalous value for copper and zinc are given below. Readings are in parts per million.

<u>Number of samples</u>	<u>Element</u>	<u>Median</u>	<u>Standard deviation</u>	<u>Lowest anomalous value</u>
40	Copper	36.4	16.95	104.2
40	Zinc	90.0	20.25	171.0

## d. Conclusions on Stream Sediment Survey:

No samples are computed to be anomalous.

(iv) Gossan Samplings - assay results (Appendix B)

Samples of the gossan from Davis Creek (not in situ), the McPhee Creek-Specimen Creek outcrops, and the adit dumps in Hall Creek, below the junction of the abovementioned creeks, were forwarded to the Department of Mines' laboratories in Launceston for copper, lead and zinc analysis. Traces of zinc (100 to 200 ppm) were found in two of the gossan samples and a trace of copper in the adit sample.

(v) Conclusion

Results from the stream sediment survey and the gossan sampling programme were not encouraging. No anomalous readings were obtained from the stream sediment survey and only traces of copper and zinc were found in the gossan samples.

(vi) Exploration Programme for the Six Months from 23 August 1981 to 23 February 1982

A 50-metre stream sediment sampling programme will be undertaken along Specimen Creek where it cuts through the "old silver-lead leases" (see plan 5), and a thorough investigation made of the ridge between Specimen Creek and Davis Creek to check for any sign of gossanous material in situ, north along strike from the known McPhee Creek-Specimen Creek dolomitic gossan outcrop.

D. SPECIMEN REEF DRILLING PROGRAMME (Plan 8)

Due to delays by the drilling contractors and the onset of winter rains rendering access impossible, the drilling programme of Specimen Reef has been postponed until the coming 1981-82 summer field season.

After discussions with the Chief Geophysicist of Scintrex, the drilling programme as outlined in our six-monthly report of 24 February 1981 has been revised as follows:

- (i) DDH No 1    Location 200S/50W  
                   Declination 45  
                   Length        120 metres  
                   Bearing        East along traverse.

This bore will be drilled beneath the old workings.

(ii) DDH No 2    Location    400S/00  
                   Declination 60  
                   Length      100 metres  
                   Bearing     East along traverse

This bore will be drilled beneath a major I.P. and S.P. anomaly and an anomalous geochemical lead reading.

(iii) DDH No 3    Location    500S/225E  
                   Declination 45  
                   Length      100 metres  
                   Bearing     West along traverse

This bore will be drilled beneath a major I.P. source.

(iv) DDH No 4    Location    100S/60E  
                   Declination 45  
                   Length      50 metres  
                   Bearing     East along traverse

This bore will be drilled beneath a major I.P. anomaly.

(v) DDH No 5    Location    400S/210E  
                   Declination 55  
                   Length      50 metres  
                   Bearing     East along traverse

This bore will be drilled beneath a major I.P. anomaly.

(vi) DDH No 6    Location    200S/225E  
                   Declination 50  
                   Length      75 metres  
                   Bearing     East along traverse

This bore will be drilled beneath a secondary I.P. anomaly and an S.P. anomaly.

As mentioned previously, this drilling programme as outlined is of a provisional nature only; the specifications may be changed at any time depending upon initial results. It is hoped that drilling may commence by October.

#### E. LONG PLAINS GOLDFIELD

Due to access problems over the winter months, no investigations of this area were possible during the current six-month period.

Arrangements have been made for contract geologist R. Poltock to commence gridding and mapping in late November. This will be followed by an I.P. survey.

#### F. LONG PLAINS MAGNETITE DEPOSIT (Plan No 10)

As outlined in our six-monthly report for period ended 24 February 1981, it was stated that some 633,000 tonnes of magnetite ore, with an average grade of 32% Fe, may be available for open-cut mining, down to a depth of approximately 76 metres (250 feet). This figure of 633,000 tonnes (over 300,000 tonnes of concentrate), assuming the average depth of oxidation was approximately 24.4 metres (80 feet) as for the Savage River magnetite deposits, allowed for the top 24.4 metres of material being excluded from ore calculations.

As the Savage River magnetite is known to be suitable as a coal washing media, it was decided to undertake initial testing of drill core samples at depth from our DDH 46 to determine whether this Long Plains deposit could also be a suitable source for coal washing heavy media. Unfortunately, Davis tube results (see Appendix C) show that oxidation extends to a far greater depth than was expected. A sample of drill core from a plotted depth of approximately 72 metres (236 feet) below the surface still showed signs of oxidation in that the ferrous iron content was low, the ferrous iron to total iron ratio being only 0.26 compared to the minimum specification required of 0.28. Thus it appears that the Long Plains magnetite available to open cutting is not suitable as a coal washing media.

Although over thirty million tonnes of magnetite ore have been outlined at Long Plains, at this present time there seems to be no available means of developing the deposit.

#### G. BROWN PLAINS LEAD

Four small pits have been dug at 100 metre intervals along traverse line 1200N, the line of high geochemical lead and zinc values from the 1979/80 tin sampling programme. (See our six-monthly report for period ended 24 February 1981.) Ten kilogram samples were collected from the decomposed schist underlying the tertiary gravels. These samples were sieved and the -80 fraction forwarded to Analabs (Aust.) Pty Ltd in Burnie for copper, lead, zinc and silver analysis by atomic absorption methods. Results were not encouraging (see Appendix D), and no further investigations are proposed for this area in the immediate future.

## H. PROPOSED EXPLORATION PROGRAMME FOR 1981/1982 FIELD SEASON

Field activities within EL4/61 will be concentrated in the area north of the Savage River. Specific projects are as follows:

### 1. Completion of ground survey, Davis Creek area

A 50-metre stream sediment sampling programme will be undertaken along Specimen Creek where it cuts through the 'old silver-lead leases' (see plan 5), and a thorough investigation made of the ridge between Specimen Creek and Davis Creek to check for any sign of gossanous material in situ, north along strike from the known McPhee Creek-Specimen Creek dolomitic gossan outcrop.

### 2. McAuliffe Creek-Broderick Creek-Little Donaldson River area

The main concentration of exploration will be for base metals in the northern area of the licence. During the last six-months period, a road running off the Pipeline road and to the west, was constructed over a distance of 4.2 km. This country has never been traversed; it is rainforest, creeks and steep ravines, and even the road when constructed will often not be usable to 4-wheel drive vehicles because it receives no sunlight and is continuously wet.

A tractor has been engaged to start on October 7 to extend the track for another 5 km. A senior base metal geologist and a junior geologist, with two offsidiers and a cook, have been engaged, and a camp will be established at the end of the present 4.2 km, and extended further as the road is extended. The extending of the road is an expensive operation, and it is estimated that some \$300,000 will be expended during the next six months in exploring the northern area of the exploration licence. There is no other way in which the area can be explored, because the dense rainforest and steep topography prevent the effectiveness of aerial flying, magnetically or otherwise.

It is expected that the programme of pushing a road through the western boundary of the licence and completing a 5 miles-a-year survey and exploration of the intermediate country will take at least 5 years to complete.

(PROPOSED EXPLORATION  
PROGRAMME - continued)

3. Rocky River iron ore deposits

Samples were taken during the preceding six months from an adit at the base of the deposit, and there was some evidence of tin. It is intended to put one exploratory drillhole of about 100 metres in depth below the adit to test whether there is any increase in the tin value.

The Rocky River iron ore deposit has been drilled and is of no commercial value. It is a banded ore, averaging about 16% Fe.

4. Area south of the Rocky River, and area in the south-west portion of the EL

Difficulty of access and the limitation of time to about 4 to 5 months of fine weather will limit any exploratory programme, although it is hoped to undertake a helicopter reconnaissance during the next six months, but this would be dependent upon results of the exploration being undertaken in the northern section.

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I. FURTHER COMMENTS ON ACTIVITIES WITHIN EL4/61

a) Savage River - Northern Area

It is expected that the option which expires on 1 October 1981 will be exercised, and that a substantial portion of the exploration licence will be excised and an application for a special lease made by the present consortium.

In the event that the option is not exercised, then arrangements are being made to mine the area for the production of heavy media for coal washing.

b) Main Creek magnesite deposit

Work has been continuing with the CSIRO over the last two years and numerous tests have been undertaken to develop a process for the elimination of the iron content, the aim being to produce a material containing an iron content of about .02/.03 Fe. The highest grade magnesite at present sold on the world market carries an iron content of .05. Considerable success has been obtained so far in the preliminary tests, and it is hoped that this will be verified by the later tests which are now taking place. If the CSIRO can develop a process to achieve the result as above, then this deposit (which is probably the largest magnesite deposit in the world - containing an estimated 200,000,000 tonnes of ore) can be brought into production.

It would be necessary to establish a pilot plant to confirm the laboratory testing of the CSIRO, and this would probably be at a cost of approximately \$30,000,000.

There has been a dramatic change in the production of magnesite due to the higher cost of oil. Most magnesite plants were based on the extraction of magnesite from sea water, but the high cost of oil in treating the limestone cake has made most sea water plants uneconomic, and the tendency will be for production of magnesite to take place from land-based deposits, particularly if cheap power is available.

Continuing work and expenditure is being undertaken on this project, but it will still need a lead time of 5 or 6 years before an industry could be established. An overseas company has shown an interest in participating in the project. In the event of the recent amendments to exploration licences being passed, it will be necessary to take out leases covering this area. The long lead time in bringing this project to a stage of production is due to the fact that until the increase in oil prices, production from sea water was more economic. It is understood that the Japanese government is subsidising its sea water plants.

It is difficult to estimate the expenditure that has been incurred on the project, including the drilling area, over the last 20 years, but it would be in the order of \$300,000-\$400,000.

APPENDIX A

STATISTICAL EVALUATION OF DAVIS CREEK GEOCHEMICAL  
STREAM SEDIMENT SURVEY (WITH ANALYSES AND GRAPHS)

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STATISTICAL EVALUATION - COPPER - DAVIS CREEK AREA

ppm	10	15	25	30	35	40	45	50	60	75	80	85	100
Frequency	1	3	2	6	6	5	4	4	3	1	2	1	1
Cumulative frequency	1	4	6	12	18	23	27	31	34	35	37	38	39
Cumulative %	2.6	10.3	15.4	30.8	46.2	59.0	69.2	79.5	87.2	89.7	94.9	97.4	100

From Graph 1

$$Q_1 = 28.5 \text{ ppm}$$

$$Me = 36.4 \text{ ppm}$$

$$Q_3 = 47.7 \text{ ppm}$$

(i) Standard Deviation at 1.5 ( $Q_3 - Me$ )

$$= 1.5 \times 11.3$$

$$= 16.95 \text{ ppm}$$

(ii) Normal Distribution =  $Me \pm$  Standard Deviation

$$= 36.4 \pm 16.95$$

$$= 19.45 - 53.35 \text{ ppm}$$

(iii) Anomalous Values =  $Me + 4$  Standard Deviations

$$= 36.4 + 4(16.95)$$

$$= 36.4 + 67.8$$

$$= 104.2 \text{ ppm}$$

(iv) Anomalous Readings - NIL.

STATISTICAL EVALUATION - ZINC - DAVIS CREEK AREA

ppm	20	25	35	55	65	70	75	80	85	90
Frequency	1	1	1	1	4	1	1	1	2	8
Cumulative frequency	1	2	3	4	8	9	10	11	13	21
Cumulative %	2.6	5.2	7.8	10.3	20.5	23.1	25.6	28.2	33.3	53.8

ppm	95	100	105	110	115	120	125	130	135	140
Frequency	2	4	3	2	1	2	1	1	1	1
Cumulative frequency	23	27	30	32	33	35	36	37	38	39
Cumulative %	59.0	69.2	76.9	82.1	84.6	89.7	92.3	94.9	97.4	100

From Graph 2

$$Q_1 = 75.0 \text{ ppm}$$

$$Me = 90.0 \text{ ppm}$$

$$Q_3 = 103.5 \text{ ppm}$$

- (i) Standard Deviation at 1.5 ( $Q_3 - Me$ )  
 $= 1.5(103.5 - 90.0)$   
 $= 1.5 \times 13.5$   
 $= 20.25 \text{ ppm}$
- (ii) Normal Distribution =  $Me \pm$  Standard Deviation  
 $= 90.0 \pm 20.25$   
 $= 69.75 \text{ ppm} - 110.25 \text{ ppm}$
- (iii) Anomalous Values =  $Me + 4$  Standard Deviations  
 $= 90 + 4(20.25)$   
 $= 90 + 81$   
 $= 171 \text{ ppm}$
- (iv) Anomalous Readings - NIL.

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 Phone (090) 21 1416  
 Phone (077) 43 6837  
 Phone SUVA 361512

Code No. 99.0 08 042  
 Rack No. R-32  
 Page No. 1  
 Order No. \_\_\_\_\_

**GEOCHEMICAL RESULT SHEET**

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag				
1	50 27	60	10	65	0.5				
2	28	100	10	80	0.5				
3	29	35	x	35	0.5				
4	30	50	15	65	0.5				
5	31	40	5	90	0.5				
6	32	35	10	70	0.5				
7	33	85	5	75	x				
8	34	75	10	105	0.5				
9	35	80	5	140	0.5				
10	36	80	5	130	0.5				
11	37	60	x	95	0.5				
12	38	60	10	90	x				
13	39	50	5	85	0.5				
14	40	15	x	25	0.5				
15	41	40	x	65	0.5				
16	42	40	5	90	0.5				
17	43A	50	5	110	x				
18	43B	50	x	120	0.5				
19	45	45	5	120	x				
20	46	30	5	100	x				
21	47	35	5	120	x				
22	48	45	5	135	0.5				
23	49	15	x	55	0.5				
24	50	30	5	105	x				
25	51	15	x	65	0.5				
26	52	30	x	90	0.5				
27	53	25	x	90	x				
28	54	30	x	110	x				
29	55	10	x	20	x				
30	56	35	5	125	0.5				
31	57	35	5	115	0.5				
32	58	40	x	90	0.5				
33	59	45	x	105	x				
34	60	30	x	85	0.5				
35	61	35	x	95	0.5				
36	62	40	x	100	x				
37	63	45	x	100	x				
38	64	30	x	90	0.5				
39	65	25	x	90	x				
40	D.C. 1	35	x	20	x				
Detection		5	5	5	0.5				
Standard	ASS 5	460	340	130	0.5				
Repeat—	50 27	60	5	60	0.5				
Repeat—	50 46	35	x	100	x				

RESPONSIBLE OFFICER B. Dorn  
7 1 3 1 81

Results in ppm unless otherwise specified  
 T = element present; but concentration too low to measure  
 X = element concentration is below detection limit  
 — = element not determined

Method

888017

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Code No. 999 0 08 042  
 Rack No. \_\_\_\_\_  
 Page No. 2  
 Order No. \_\_\_\_\_

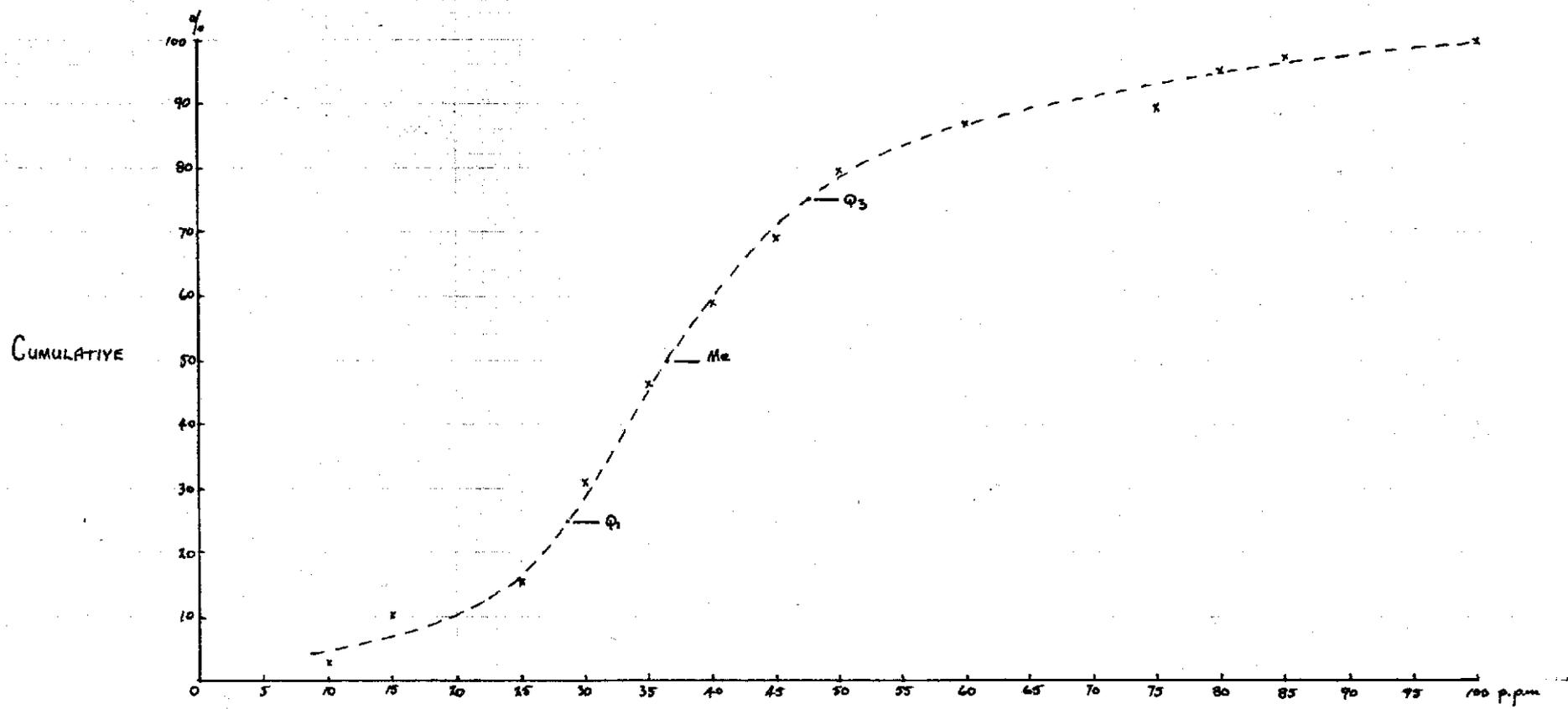
## GEOCHEMICAL RESULT SHEET

TUBE No.	SAMPLE No.		Au						
1	S	027	x						
2		28	x						
3		29	x						
4		30	x						
5		31	x						
6		32	x						
7		33	x						
8		34	x						
9		35	x						
10		36	x						
11		37	x						
12		38	x						
13		39	x						
14		40	x						
15		41	x						
16		42	x						
17		43	x						
18		44	x						
19		45	x						
20	S	046	x						
21		47	x						
22		48	x						
23		49	x						
24		50	x						
25		51	x						
26		52	x						
27		53	x						
28		54	x						
29		55	x						
30		56	x						
31		57	x						
32		58	x						
33		59	x						
34		60	x						
35		61	x						
36		62	x						
37		63	x						
38		64	x						
39	S	065	x						
40	DC	1	x						
Detection			0.03						
Standard									
Repeat—									
Repeat—									
Method			LC5						

RESPONSIBLE OFFICER B. Dore  
20/3/81

Results in ppm unless otherwise specified  
 T = element present; but concentration too low to measure  
 X = element concentration is below detection limit  
 - = element not determined

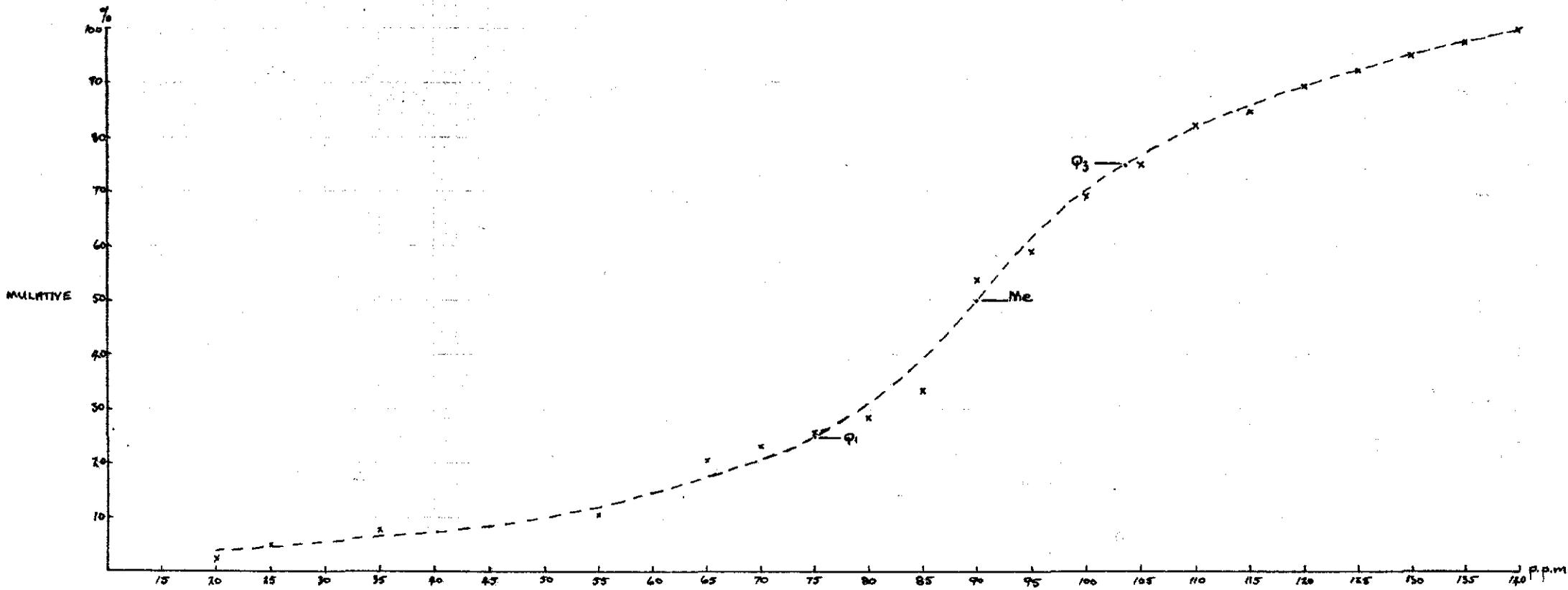
STATISTICAL EVALUATION - STREAM SEDIMENT SURVEY - COPPER ANALYSES  
DAVIS CREEK AREA - E.L. 4/61.



Q<sub>1</sub> = 28.5 p.p.m.  
 Me = 36.7 p.p.m.  
 Q<sub>3</sub> = 47.7 p.p.m.

INDUSTRIAL AND MINING  
 INVESTIGATIONS PTY. LTD.  
 M. EDYVEAN.  
 AUGUST 1961.

STATISTICAL EVALUATION - STREAM SEDIMENT SURVEY - ZINC ANALYSES  
 DAVIS CREEK AREA - ELA/61



$Q_1 = 75.0$  p.p.m.

$Me = 90.0$  p.p.m.

$Q_3 = 103.5$  p.p.m.

INDUSTRIAL AND MINING  
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M. EDYVEAN  
 AUGUST 1961.

APPENDIX B

ANALYSES : DAVIS CREEK, McPHEE'S CREEK GOSSAN,  
HALL CREEK ADIT MATERIAL

---

17th March 1981

Industrial & Mining Invest. Pty Ltd,  
 1st Floor,  
 A.M.P. building,  
 46 St. John Street,  
LAUNCESTON 7250

Reg. Nos 810991-997

Dear Sir,

Please find below results of samples submitted to this laboratory on the 19th Feb'81 and stated to be from lease E.L. 4/61

<u>Reg. Nos</u>	<u>Description</u>	<u>%Pb</u>	<u>%Cu</u>	<u>%Zn</u>	<u>g/t Au</u>
810991	No. 601	<.01	.01		
992	No. 602	<.01	<.01		
993	Specimen Reef T.B. 1				<0.3
994	" " T.B. 2				<0.3
* 995	<small>DAVIS</small> [REDACTED] Creek (Gossau)	<.01		.01 (100ppm)	
* 996	McPhees Camp (Gossau)	<.01		.02 (100ppm)	
997	Specimen Reef T2.2				<0.3

Yours faithfully,

*[Signature]*  
 (H. K. Wellington)  
Chief Chemist & Metallurgist.

Analyses by.....  
*[Signature]*

\$55.00

\* DAVIS CREEK BASE METAL SURVEY.



DEPARTMENT OF MINES—TASMANIA

## TELEPHONES:

Metallurgical Research .. .. .	} 44 2431-2 (2 lines)
Laboratory .. .. .	
Mines Inspection .. .. .	
Explosives & Inflammable Liquids	

LAUNCESTON OFFICES  
287 WELLINGTON STREET  
SOUTH LAUNCESTON 7250

27th Jul'81

Industrial & Mining Invest. P/L,  
1st Floor,  
A.M.P. Building,  
46 St. John Street,  
LAUNCESTON 7250

Reg. Nos 813524-28

Dear Sir,

Please find below results of samples submitted to this laboratory on the 13th Jul'81 and stated to be from McPhee creek area.

<u>Reg. Nos</u>	<u>Descriptions</u>	<u>Ag g/t</u>	<u>%Pb</u>	<u>%Zn</u>	<u>%Cu</u>
813524	McPhee Crk. Outcrop 1	<10	<0.01	<0.01	<0.01
525	" " " 2	<10	<0.01	<0.01	<0.01
526	" " " 3	<10	<0.01	<0.01	<0.01
527	" " " 4	<10	<0.01	<0.01	<0.01
528	McPhee " Adit No. 5	<10	<0.01	<0.01	0.01 (100 p.p.m)

Yours faithfully,

*H.K. Wellington*  
(H.K. Wellington)

Chief Chemist & Metallurgist.

Analyses by... *M. Luth...*

Fee \$100.00

APPENDIX CDAVIS TUBE TESTS - LONG PLAINS MAGNETITE  

---



**DEPARTMENT OF MINES—TASMANIA**

---

LAUNCESTON OFFICES  
287 WELLINGTON STREET  
SOUTH LAUNCESTON 7250

## TELEPHONES:

Metallurgical Research .. .. .	} 44 2431-2 (2 lines)
Laboratory .. .. .	
Mines Inspection .. .. .	
Explosives & Inflammable Liquids	

4th Jun '81

Industrial & Mining Invest, Pty Ltd,  
1st Floor,  
A.M.P. Building,  
46 St. John Street,  
LAUNCESTON 7250

Attent. Mr. M. Edyvean.

812755: Long Plains Magnetite. Bore Hole 46

Dear Mr. Edyvean,

A composite sample has been made of equal parts of samples 700395 and 700396 which were held at this laboratory. The sample was magnetically separated using the David Tube and the magnetic (M/A) portion assayed to obtain the following results:-

Head Assay	62.8%	T.Fe.	
M/A	78.9%		
Assay of M/A	71.4%	T.Fe (Total iron)	Ratio 0.26
	18.3%	Fe <sup>++</sup> (Ferrous)	

The ferrous iron content is low indicating other iron minerals are present besides magnetite.

*(viz Haematite)*

Yours faithfully,

(H. K. Wellington)  
Chief Chemist & Metallurgist.

Analyses by Metallurgist.....*K. Austin*

- NS ① Intersection 322' - 560' = Depth below surface of approximately 236 feet. (≈ 72 metres)
- ① Davis Tube Recovery : 89.70%

APPENDIX D

ANALYSES - BROWN PLAINS LEAD

# ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.  
52 Murray Road, Welshpool, W.A. 6106 (Reg. Office)

Phone (09) 458 7999

Code No.

Rack No.

Page No.

Order No.

Division Cooee, Tasmania

Phone 216837

888026

111-26141

-26C

1

## RESULT SHEET

TUBE No.	SAMPLE No.					Cu	Pb	Zn	Ag
1	BROWN PLAINS	1200N	110E	A		5	5	55	0.5
2				B		x	x	45	0.5
3			200E	A		x	x	35	1.0
4				B		x	x	50	x
5			300E	A		x	x	5	x
6				B		x	x	5	x
7			400E	A		x	x	10	0.5
8				B		x	x	10	x
9									
10									
11									
12									
13									
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18									
19									
20									
21									
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29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									
Detection						5	5	5	0.5
Standard	ASS 5					470	360	140	0.5
Repeat—	BROWN	PLAINS	1200N	110E	A	x	5	50	0.5
Repeat—									
Method						AI/1			

RESPONSIBLE OFFICER B. Deane  
29/4/81

Results in ppm unless otherwise specified  
 T = element present; but concentration too low to measure  
 X = element concentration is below detection limit  
 - = element not determined

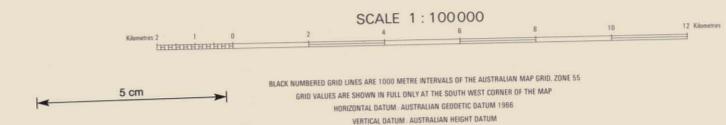


PRODUCED by the Survey Branch, Lands Department, Hobart, for the Division of National Mapping, Department of Natural Resources as part of the national mapping programme.  
 MAP RELIABILITY: Topographic information shown on this map is the result of a mapping programme PRINTED by authority of the Minister for Natural Resources, 1978  
 DISTRIBUTED by the Department of Natural Resources.  
 MAP ACCURACY: The average accuracy of this map is ± 25 metres in the horizontal position and ± 5 metres in elevation.  
 ROAD CLASSIFICATION: Roads are classified according to their intended function as part of the national road system.

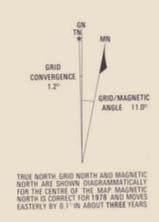
**UNIVERSAL GRID REFERENCE**  
 BEFORE GIVING A GRID REFERENCE, CIVILIAN USERS SHOULD STATE THE NUMBER AND NAME OF THIS MAP.  
 7915 ARTHUR RIVER

**TO GIVE A STANDARD REFERENCE ON THIS SHEET TO NEAREST 100 METRES**

100000 METRE SQUARE IDENTIFICATION	CD
SAMPLE POINT: 703.6 M. MT. BERTHA	00
1. Mark letters identifying 100 000 metres square in which the point lies.	
2. Legible first VERTICAL grid line to left of point and read LARGE figures.	52
3. Estimate tenths from grid line to point.	2
4. Legible first HORIZONTAL grid line BELOW point and read LARGE figures.	27
5. Estimate tenths from grid line to point.	6
SAMPLE REFERENCE	CD522726
If reporting beyond 10' in any direction, give Grid Zone Designation, i.e. 55GCD522726	



- |  |   |   |
|--|---|---|
| <ul style="list-style-type: none"> <li>Build up area, National route marker</li> <li>Principal road and highway, Cutting</li> <li>Secondary road, Embankment</li> <li>Minor road, Road bridge</li> <li>Vehicular track</li> <li>Gate, Cattle grid</li> <li>Railway, multiple track, Station, Railway bridge</li> <li>Railway, single track, Railway tunnel</li> <li>Light railway or tramway</li> <li>Power transmission line</li> </ul> | <ul style="list-style-type: none"> <li>Fence, Levee or bank</li> <li>Mine, Windmill, Yard, Quarry</li> <li>Building's, Church, Ruin, Drive-in theatre</li> <li>Trig station, Bench mark, Spot elevation</li> <li>Contour with value, Depression contour</li> <li>Forest: dense, medium, scattered</li> <li>Scrub, dense, medium, scattered</li> <li>Tropical rainforest, Pine plantation</li> <li>Orchard, plantation or vineyard, Mangrove</li> <li>Windbreak</li> </ul> | <ul style="list-style-type: none"> <li>Lake, perennial, Stream, perennial</li> <li>Lake, intermittent, Stream, intermittent</li> <li>Lake, mainly dry, Stream, mainly dry</li> <li>Swamp, perennial, intermittent</li> <li>Land subject to inundation, Rice field</li> <li>Bore or well, Spring, Tank or small dam</li> <li>Breakwater, Pier, Wharf</li> <li>Wreck, exposed, Lighthouse</li> <li>Rock, bare or awash, Foreshore flat, Sand</li> <li>Reef, Rock ledge</li> </ul> |
|--|---|---|



INDEX TO ADJOINING MAPS

WELDON 7910	CIRCULAR HEAD 7914	TABLE CAPE 8018
SANDY CREEK 7913	ARTHUR RIVER 7915	WELLYN 8015
CIRCULAR HEAD 7914	PEMAN 7914	SOPHA 8014

SHEET 7915  
 ARTHUR RIVER  
 TASMANIA  
 EDITION 1 1977  
 GOVERNMENT PRINTER TASMANIA



SOUTHERN OCEAN

PRODUCED by the Survey Branch, Lands Department, Hobart 1977.  
 NOMENCLATURE: Topographic names on this map have been approved by the Nomenclature Board of Tasmania.  
 MAP ACCURACY: The average accuracy of this map is 2.25 metres in the horizontal position of well defined detail and 3.5 metres in elevation.  
 MAP RELIABILITY: Topographic information shown on this map is correct to 1977.  
 ROAD CLASSIFICATION: Roads are classified according to their intended function as part of the national road system.  
 The representation of a road or track on this map is no evidence of the existence of a right of way.

**UNIVERSAL GRID REFERENCE**  
 BEFORE GIVING A GRID REFERENCE, CIVILIAN USERS SHOULD STATE THE NUMBER AND NAME OF THIS MAP.  
 7914: PIEMAN

<b>GRID ZONE DESIGNATION</b> 55G	<b>TO GIVE A STANDARD REFERENCE ON THIS SHEET TO NEAREST 100 METRES</b>
<b>100 000 METRE SQUARE IDENTIFICATION</b> 100 CQ CP	<b>SAMPLE POINT 846 A, MOUNT AGNEW</b>
	1. Read letters identifying 100 000 metre square in which the point lies.
	2. Locate first VERTICAL grid line to LEFT of point and read LARGE figures labelling the line on either the top or bottom margin, or on the line itself.
	3. Estimate tenths from grid line to point.
	4. Locate first HORIZONTAL grid line BELOW point and read LARGE figures labelling the line on either the left or right margin, or on the line itself.
	5. Estimate tenths from grid line to point.
<b>SAMPLE REFERENCE</b> CP52803	
	If reporting beyond 10° in any direction, prefix Grid Zone Designation as 55GCP52803

CROWN COPYRIGHT RESERVED.

- SCALE 1 : 100 000**
- 0 1 2 3 4 5 6 7 8 9 10 12 Kilometres
- 0 1 2 3 4 5 6 7 8 9 10 Centimetres
- BLACK NUMBERED GRID LINES ARE 1000 METRE INTERVALS OF THE AUSTRALIAN MAP GRID ZONE 55  
 GRID VALUES ARE SHOWN IN FULL ONLY AT THE SOUTH WEST CORNER OF THE MAP  
 HORIZONTAL DATUM: AUSTRALIAN GEOIDETIC DATUM 1966  
 VERTICAL DATUM: AUSTRALIAN HEIGHT DATUM  
 TRANSVERSE MERCATOR PROJECTION  
 CONTOUR INTERVAL 40 METRES  
 ELEVATIONS IN METRES
- |  |   |   |
|--|---|---|
| Built-up area, National route marker             | Fence, Levee or bank                          | Lake, perennial, Stream, perennial        |
| Principal road and highway, Cutting              | Mine, Windmill, Yard, Quarry                  | Lake, intermittent, Stream, intermittent  |
| Secondary road, Embankment                       | Building, Church, Room, Drive-in theatre      | Lake, mainly dry, Stream, mainly dry      |
| Minor road, Road bridge                          | Trig station, Bench mark, Spot elevation      | Swamp, perennial, intermittent            |
| Vehicular track                                  | Ditch, Contour with value, Depression contour | Land subject to inundation                |
| Road distance in kilometres                      | Forest, dense                                 | Bore or well, Spring, Tank or small dam   |
| Railway, multiple track, Station, Railway bridge | Forest, medium                                | Breakwater, Pier, Wharf                   |
| Railway, single track, Railway tunnel            | Pine plantation                               | Wreck, exposed Lighthouse                 |
| Light railway or tramway                         | Orchard                                       | Rock, bare or awash, Foreshore flat, Sand |
| Power transmission line                          | Windbreak                                     | Reef, Rock ledge                          |

**TASMAP** publication

GRID CONVERGENCE 1.2' (21 METRES) AT 100 METRES

TRUE NORTH GRID NORTH AND MAGNETIC NORTH ARE SHOWN DIAGRAMMATICALLY FOR THE CENTRE OF THE MAP. MAGNETIC NORTH IS CORRECT FOR 1977 AND MOVES EASTWARD BY 0.1" IN ABOUT THREE YEARS.

**INDEX TO ADJOINING MAPS**

SANDY CREEK 7815	ARTHUR RIVER 7815	HELLYER 8015
CONICAL ROCKS 7814	PIEMAN 7914	SOPHIA 8014
CAPE BOWEN 7913	FRANKLIN 8013	

PART OF 1:250 000 SERIES  
 SK55-3 BURNIE  
 SK55-5 QUEENSTOWN  
 REPRINTED BY ROYAL AUSTRALIAN SURVEY CORPS, 1981.  
 ON BEHALF OF THE GOVERNMENT PRINTING DEPARTMENT

**SHEET 7914  
 PIEMAN  
 TASMANIA  
 EDITION 3 1977**

MERCURY WORKS

STOCK NO. R661X7914

PLAN 407  
**LOCATION: SPECIMEN REEF - EAST DONALDSON RIVER AREA — EL4/61**

EL4/61 Boundary

Magnetic North

To Pt Latta

Vehicle Track (approx)

Old Ag-Pb Leases

Specimen Reef Grid Baseline

10

Area Under Option To Pickands Mather

888029

INDUSTRIAL AND MINING INVESTIGATIONS PTY LTD

AUTHOR: M. EDYVEAN

DATE : AUGUST, 1981

EL4/61

1:50000 HORTON (part map)

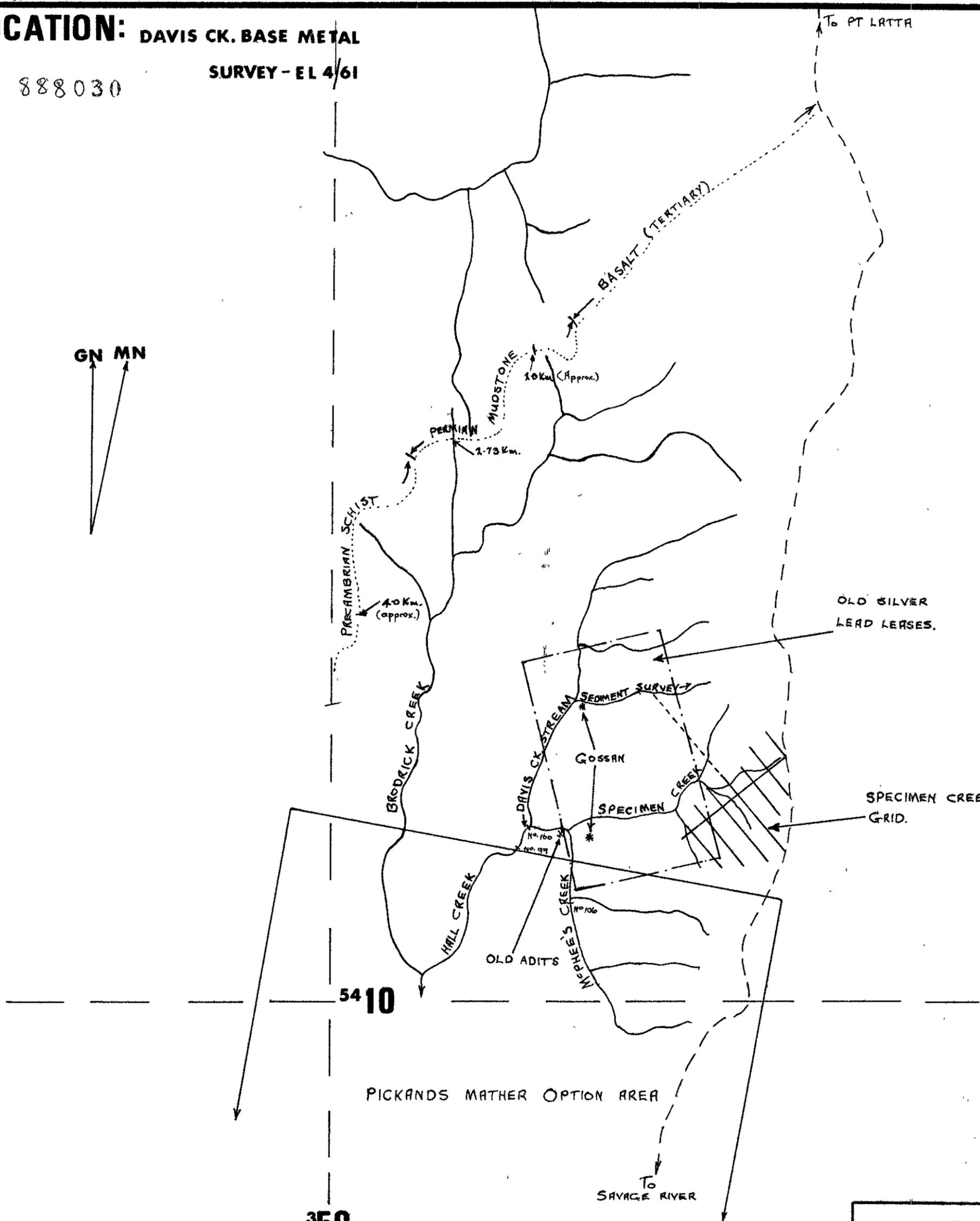
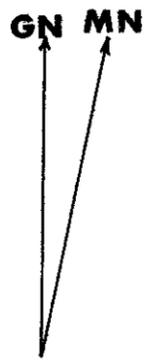
5 cm

350

# LOCATION: DAVIS CK. BASE METAL

888030

SURVEY - EL 4/61



OLD SILVER  
LEAD LEASES.

SPECIMEN CREEK  
GRID.

5410

350

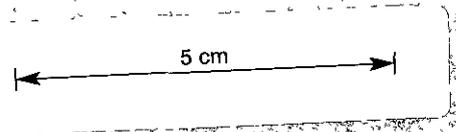
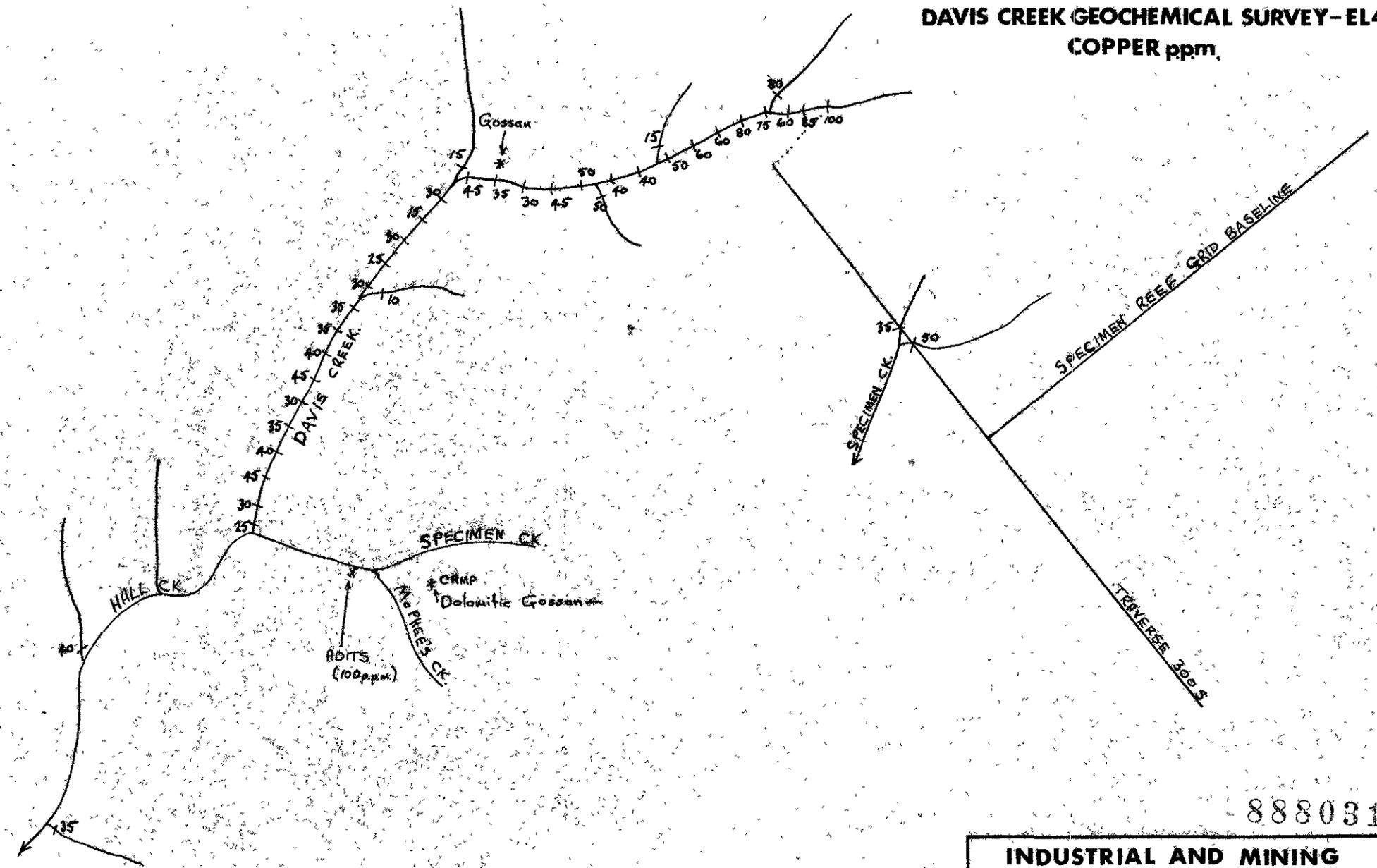
PICKANDS MATHER OPTION AREA

5 cm

HORTON (part map)

<b>INDUSTRIAL AND MINING INVESTIGATIONS PTY. LTD.</b>	
<b>AUTHOR: M. EDYVEAN</b>	
<b>DATE</b>	<b>: AUGUST 1981</b>
<b>SCALE</b>	<b>: 1:20000</b>

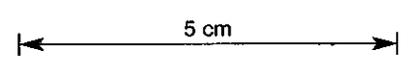
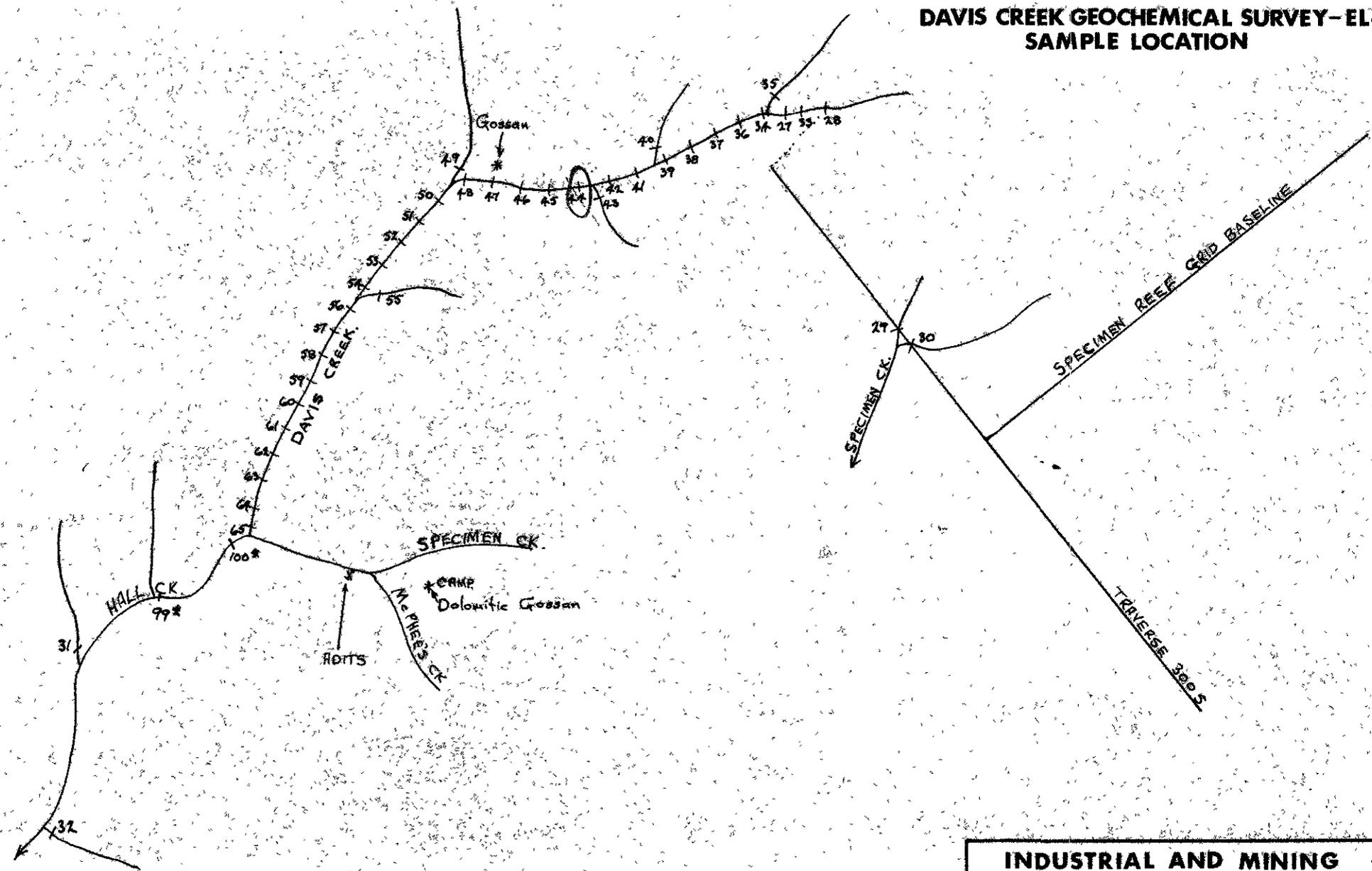
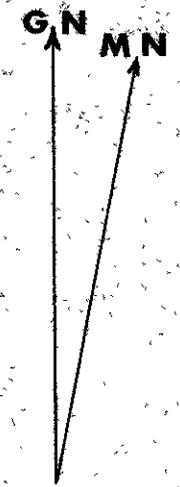
DAVIS CREEK GEOCHEMICAL SURVEY-EL4/61  
COPPER ppm.



888031

INDUSTRIAL AND MINING INVESTIGATIONS PTY. LTD.
AUTHOR : M. EDYVEAN
DATE : AUGUST, 1981
SCALE : 1:10000

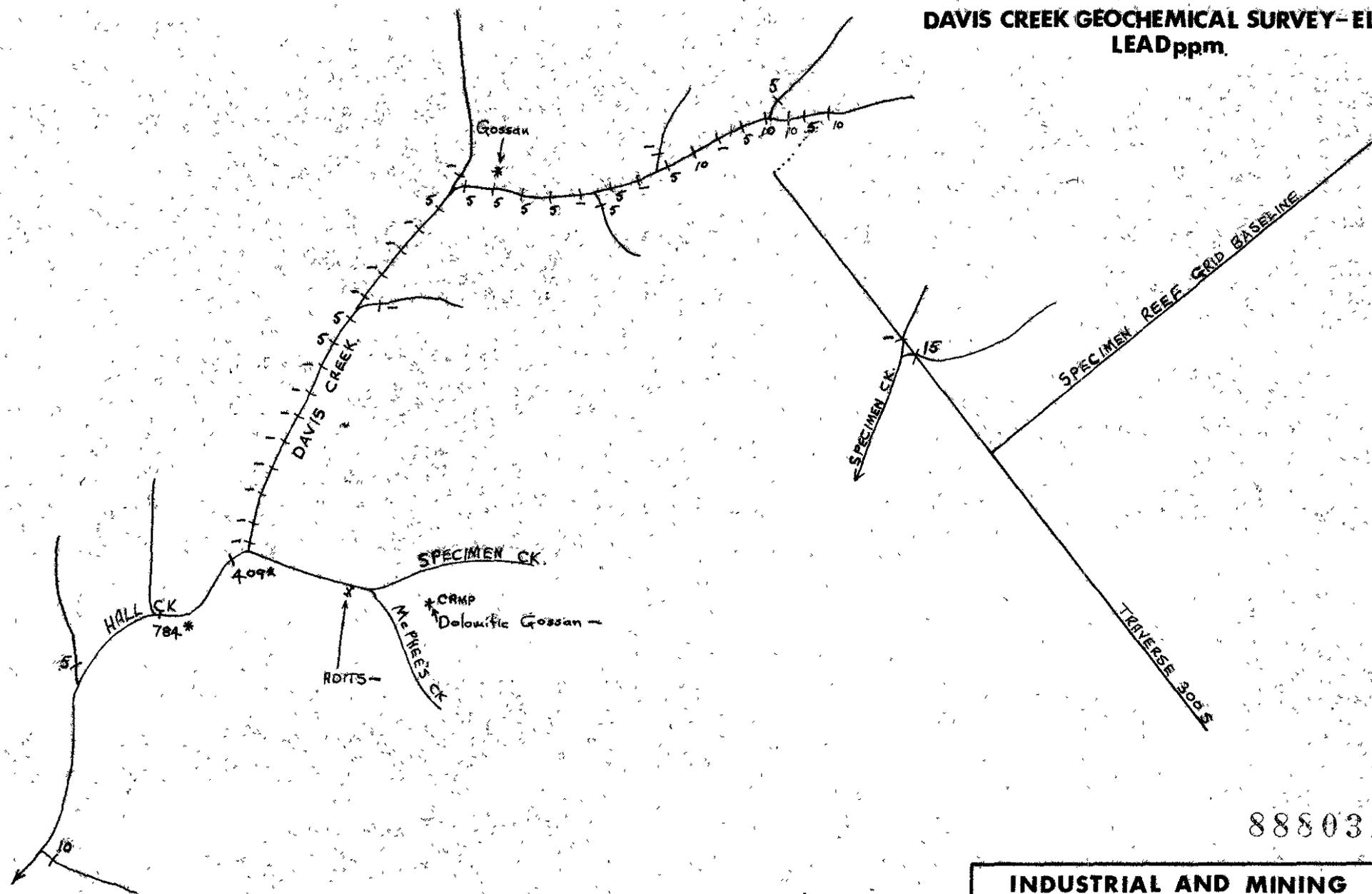
# DAVIS CREEK GEOCHEMICAL SURVEY-EL4/61 SAMPLE LOCATION



99\*, 100\* - 1980 SURVEY.

<b>INDUSTRIAL AND MINING INVESTIGATIONS PTY. LTD.</b>	
<b>AUTHOR : M. EDYVEAN</b>	
<b>DATE</b>	<b>: AUGUST, 1981</b>
<b>SCALE</b>	<b>: 1:10000</b>

# DAVIS CREEK GEOCHEMICAL SURVEY-EL4/61 LEAD ppm.

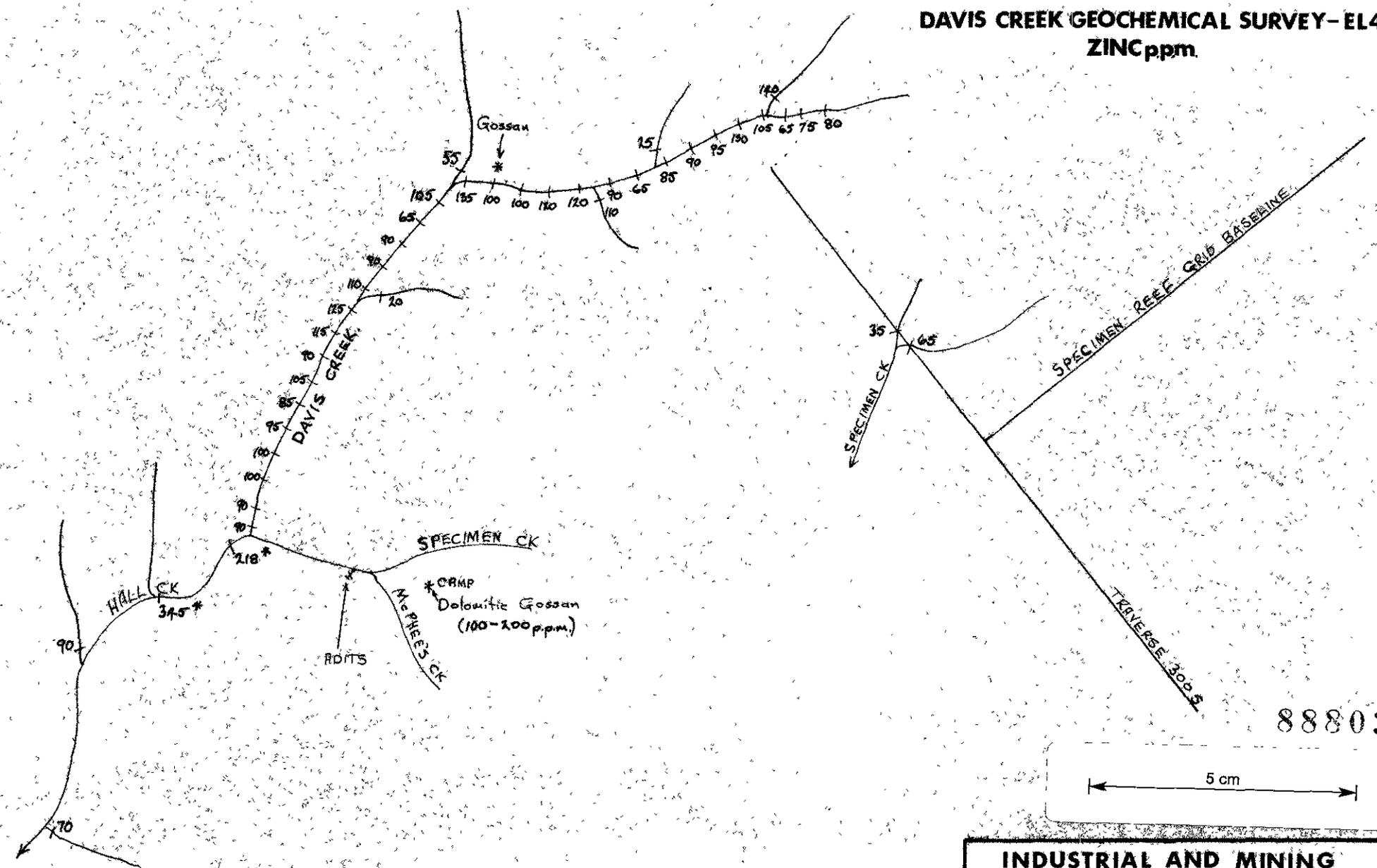


888032

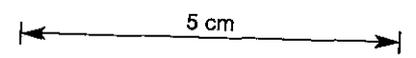
409, 784\* - 1980 SURVEY

<b>INDUSTRIAL AND MINING INVESTIGATIONS PTY. LTD.</b>
<b>AUTHOR : M. EDYVEAN</b>
<b>DATE : AUGUST, 1981</b>
<b>SCALE : 1:10000</b>

# DAVIS CREEK GEOCHEMICAL SURVEY-EL4/61 ZINC ppm.



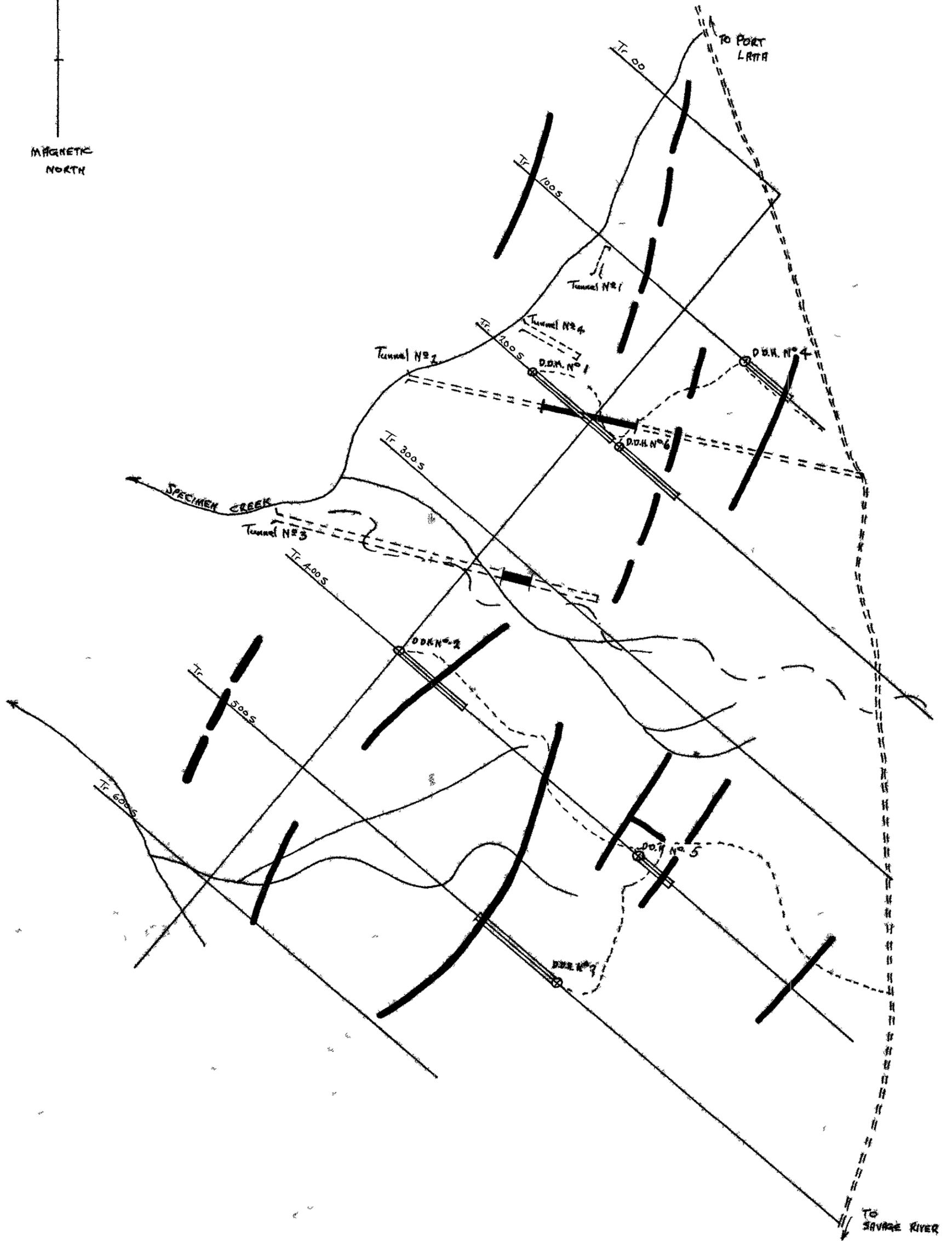
888033



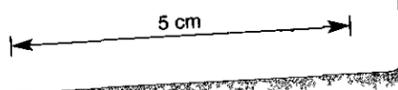
<b>INDUSTRIAL AND MINING INVESTIGATIONS PTY. LTD.</b>
<b>AUTHOR : M. EDYVEAN</b>
<b>DATE : AUGUST, 1981</b>
<b>SCALE : 1:10000</b>

218, 345 - 1980 SURVEY

SPECIMEN CREEK ELA/61 - DRILLING PROGRAMME



- Track Constructed for Drilling Programme
- Major I.P. Axes
- Secondary I.P. Axes
- == Old Workings



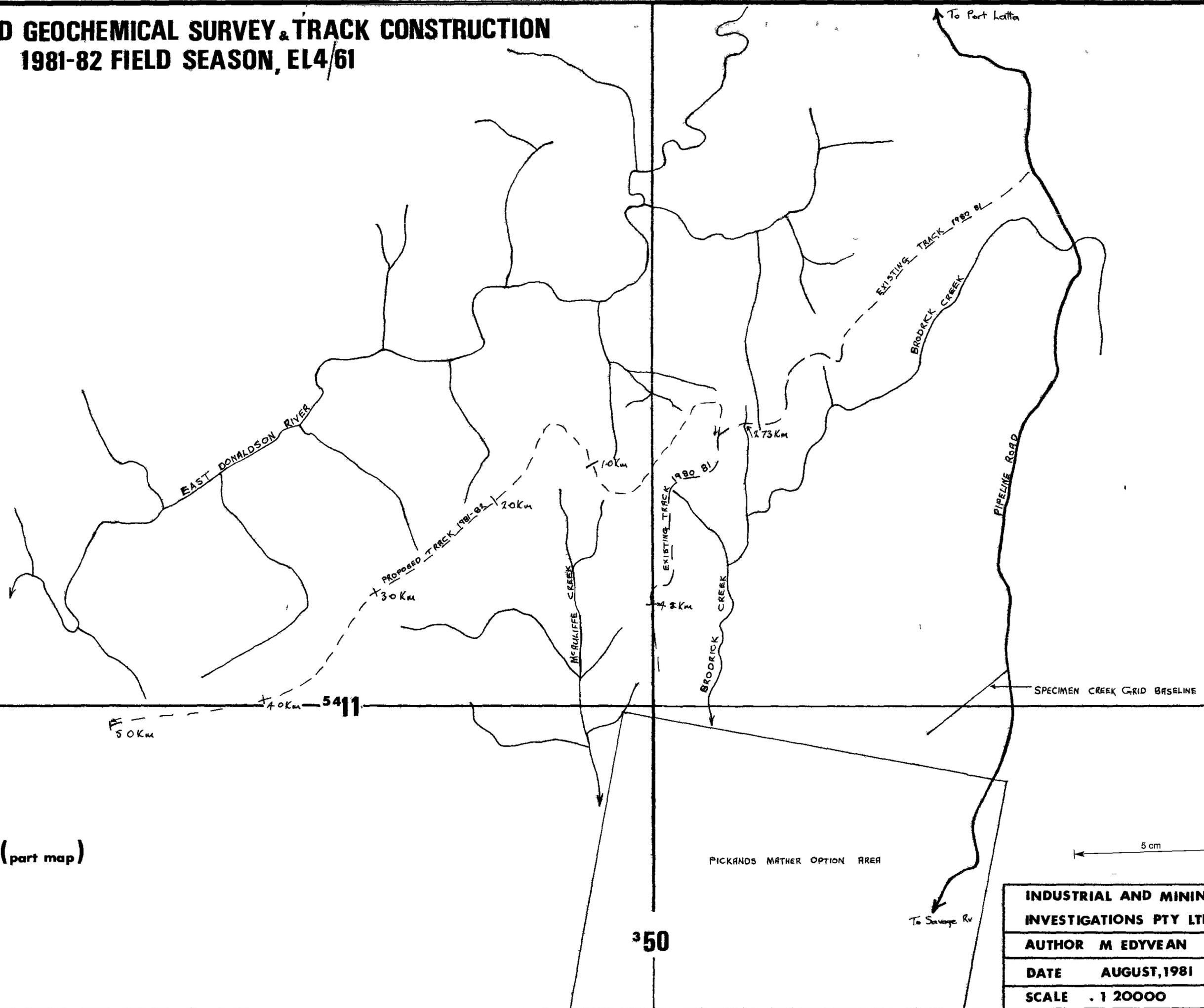
SCALE 1:2500

M. EDYUEAN  
27/4/81

# PROPOSED GEOCHEMICAL SURVEY & TRACK CONSTRUCTION

888035

## 1981-82 FIELD SEASON, EL4/61



**HORTON (part map)**

5 cm

<b>INDUSTRIAL AND MINING INVESTIGATIONS PTY LTD</b>	
<b>AUTHOR</b>	<b>M EDYVEAN</b>
<b>DATE</b>	<b>AUGUST, 1981</b>
<b>SCALE</b>	<b>. 1 20000</b>

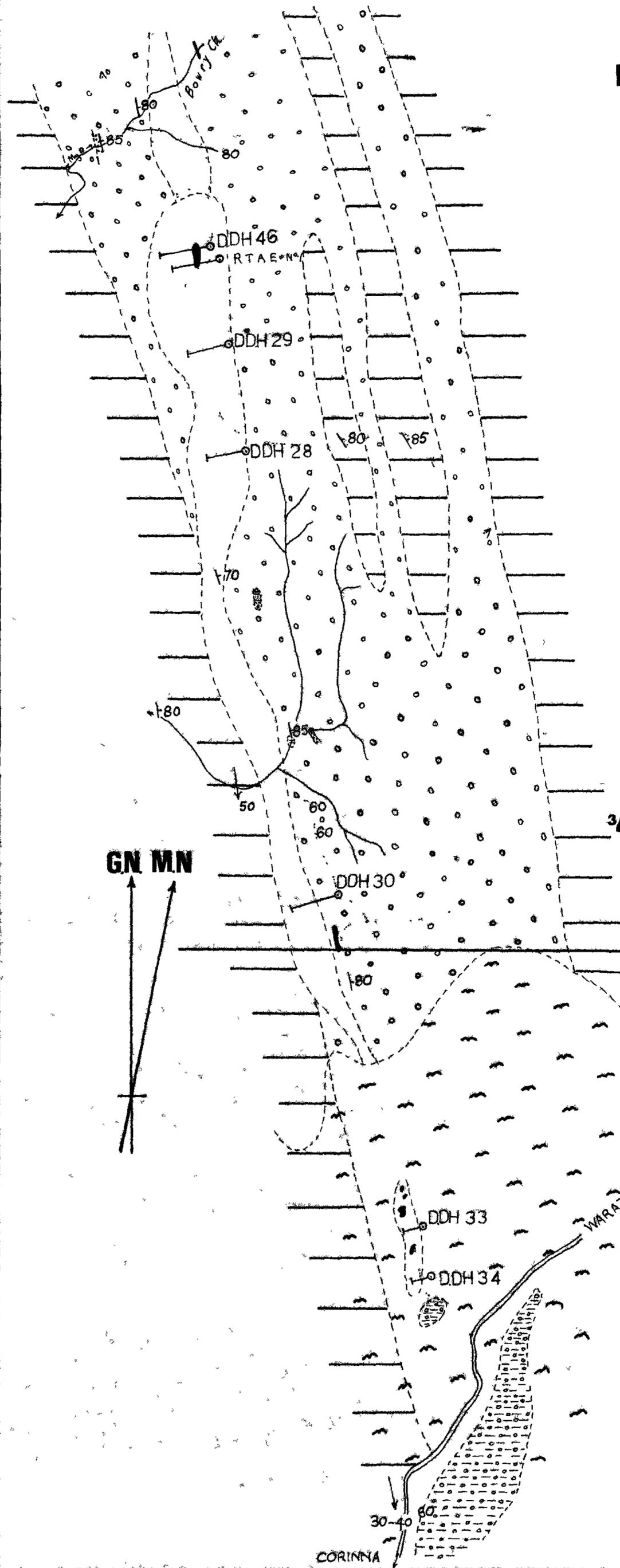
# LONG PLAINS IRON DEPOSIT

EL4/61

888036

GEOLOGY (after Urghart)

## & DRILLHOLE LOCATIONS



- IRON RUBBLE & SCREE 
- REDISTRIBUTED TERTIARY GRAVEL 
- GRAVEL, GRIT, CONGLOMERATE, MUDSTONE & SILTSTONE 
- FINE GRAINED META BASICS 
- WHYTE SCHIST 
  - GREY MICA-QUARTZ-CHLORITE PHYLLITE, GRAPHITIC SCHIST, SILICEOUS SHALE, QUARTZITE & QUARTZ SCHIST
- LOWER PRECAMBRIAN 
  - GREEN CHLORITE PHYLLITE, META-PELITE & INTERCALATED PSAMMITIC BEDS
- MAGNESITE & MAGNESIUM DOLOMITE 
- EXPOSED IRON PODS & LENSES IN AMPHIBOLITE (META BASICS) 
- DIP & STRIKE OF SCHISTOSITY 
- DIAMOND DRILL HOLE 
- PLUNGE OF ISOCLINAL & MINOR DRAG FOLDS 

INDUSTRIAL AND MINING INVESTIGATIONS PTY. LTD.	
AUTHOR	M EDYVEAN
DATE	AUGUST, 1981
SCALE	1 9600

5 cm

PIEMAN (1 100 000)

WA 36 m

