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PROJECT NAME: COMSTAFF PROPRIETARY LIMITED

TITLE: INTERIM REPORT ON RAMSAY GRID CAF

EXPLORATION LICENCE 5/63 PART 2

AREA NAME/S, STATE 1: 250,000 SHEET NO/S & COORDINATES: Burnie Sheet S 55/3  
Metric Co-ordinate 5395000N  
372000E

COMMODITY/IES: Sn, W, Cu, Pb, Zn

TEXT PAGES NO: 43

PLAN NOS: As detailed

TABL: -

APPENDICES: 8

AU S: N P Green

DATE: September 1982

AUSTRALIAN ANGLO AMERICAN LIMITED

Incorporated in the State of Victoria

## EXPLANATORY NOTE

SECTION 1: Ramsay Grid CAF Extensions Ground Work  
(excluding Geophysics)

- In Preparation

SECTION 2: Ramsay Area with Specific Reference to  
Grid CAF: Geophysics

- In Preparation

SECTION 3: Diamond Drilling at Mt Ramsay

- Herein Presented

COMSTAFF PROPRIETARY LIMITEDINTERIM REPORT ON RAMSAY GRID CAFEXPLORATION LICENCE 5/63 PART 2SECTION 3 DIAMOND DRILLING AT MT RAMSAY

## 3.1 Introduction

This section covers the diamond drilling carried out at Ramsay Grid, CAF, over Mt. Ramsay, 17 km south of Waratah in EL 5/63, Part 2. The programme encompassing diamond drillholes CAF 3, 4, 5, 6 & 7 (726.3 metres) was commenced on 11th December, 1981 and completed on 12th March, 1982. The programme was broken between the 1st of February and 12th February for one 217.4 metre drill hole (CAL 1) at Ramsay Grid, CAL.

All core was geologically logged, measured for magnetic susceptibility and sampled for geochemical assay. The results are herein discussed along with those from the first drilling programme (CAF 1 & 2, 384.3 metres) reported in the six monthly report to Tasmania Department of Mines for the period ended 30th December, 1981 by G F Pigott. Work completed on each drill hole is outlined under headings of geology, geophysics and geochemistry followed by a general discussion. A final section of recommendations conclude the section.

## 3.2 Diamond Drill Hole CAF 3 (Plan TAS/2/2724)

Collared at grid co-ordinates	4820N/4440E
National Co-ordinates	371305mE/5395079mN
Azimuth (Av)	273.8 <sup>o</sup> MN
Declination (Av)	69.1 <sup>o</sup>
Length	63.0m

## 3.2.1 Objective

To define the economic potential of the northern portion of the skarn mineralisation adjacent to the Meredith Granite.

3.2.2 Geology

- a) Local (TAS/2/2101) - The bulk of the rocks over CAF are made up of the Cambrian Crimson Creek sedimentary sequence. Specifically these rocks are lithic wackes, tuffaceous greywackes, siltstones, argillites and finely bedded pelites. Associated basic tuffs, basalts and micro-dolerites are also present.

The sequence appears to strike north-northwest and dip mostly to the west although steeply easterly dipping drag folding? is locally common.

The Devonian Meredith Granite outcrops along the western portion of CAF and is made up of a coarse grained equicrystalline biotite granite and an intermittent marginal phase of porphyritic adamellite, which is locally, intensely tourmalinised. The granite also outcrops on Line 4820N (attached section) some distance from the contact in hornfelsed sediments. It was probably this 'tongue' that was intersected in CAF 2.

The contact between the granite and Cambrian rocks is complex. Away from the contact the sediments and volcanics are metamorphosed to a low-medium amphibole grade. At the western contact a distinctive high grade skarn suite of rocks is developed varying between 30 and 100 metres wide and over 700 metres long.

The skarn is made up of interlayered (probably relict bedding) hard calc-silicate rocks and coarsely crystalline garnet-vesuvianite-diopside-ferrohastingsite rocks with interstitial magnetite, pyrrhotite, phlogopite, calcite and fluorite.

Mineralisation

*W.B. 1971*

Rock samples taken from surface and old workings including a 40 metre adit contain visible pyrrhotite, magnetite, fluorite and tourmaline mineralisation.

Old Mines Department records refer to the Mt Ramsay workings as a Bi-Au prospect.

In addition rock and soil sampling outline a zone of W mineralisation with subsidiary Sn in the northern portion of the skarn which was tested by CAF 3.

Drill hole information to the south (CAF 1) describes patches of massive pyrrhotite and magnetite with minor chalcopyrite, pyrite and arsenopyrite along with anomalous Sn, Au and Bi values in the skarn rocks.

b) Drillhole CAF 3

The geology downhole can be summarised as follows:-

DEPTH	ROCK TYPE	MINERALISATION	
		Style	Grade
0- 3.0	Triconed (Hornfelsed Sediments)		
3.0- 7.2m	Ferrohastingsite skarn & minor calc-silicate replaced pelitic ho	Diss & Banded Mt 5% Vein Py 1% in skarn only	6%
7.2- 8.8m	Med. disequigranular xtaline leuco granite with skarn xenolith		
8.8-10.5m	Phlogopitic Ferrohastingsite skarn	Banded & diss. Mt 15% Po tr	15%
10.5-15.4m	Banded Vesuvianite - Diopside-Garnet-Ferrohastingsite-Magnetite skarn	Banded & diss. Mt 15% Vein Po tr	15%
15.4-18.2m	Banded pale gy-gr pelite ho & calc-silicate alt sed.	Diss. Po & f.vein Po	tr
18.2-19.3m	Fine equicrystalline biotite granite		
19.3-21.9m	Patchworked Ferrohastingsite - Mt skarn	Diss. & Banded Mt 15% Vein, Patch Py 2%	17%
21.9-26.0m	Patchworked Vesuvianite-Diopside Ferrohastingsite Mt skarn	Patch & diss. Mt 5%, patch Py 1%, rim Cp tr f.diss. Po tr	6%
26.0-34.7m	Interlayered ho sed & calc. silicate replaced rocks.	Diss. & Vein Po 3% Py 1%	Vein 4%
34.7-34.9m	Fine xtalline gy biotite granite		
34.9-43.6m	Interbedded ho. sediments	Vein f. diss. Po-2% Vein Py-tr	2%
43.6-53.2m	Intercalated ho. sediments & minor spotted ho	Vein f. diss. Po-1% Vein Py-tr	1%

53.2-57.3m	Sl. differentiated semi Porphy/biotite granite	Vein To with qz	tr
57.3-63.0m	Porphyritic biotite granite	Vein To with qz	tr

A detailed drill log is appended. (Appendix 2). The detailed geology and an interpretation are included in section form, Plans TAS/2/2920 and TAS/2/2980 respectively.

Three samples of drill core were dispatched to CMS (Central Mineralogical Services) for thin section description. The CMS report is appended (Appendix 3).

### 3.2.3 Geophysics

#### a) Magnetism

The magnetic ground profile is presented on the Composite Section of L 4820N, Plan TAS/2/2251. In the northern portion of the skarn zone a large but poorly defined magnetic anomaly is situated on the eastern margin, Plan TAS/2/2436. This would appear to indicate an easterly dip for the magnetic body. Information modelled on Line 4940N from the contoured ground magnetic plan (attached) by G O Dickson (Consultant Geophysicist) suggests an initially flat dip, steepening to the east.

#### b) Drill Core Magnetic Susceptibility

The results of the drill core magnetic susceptibility measurements are presented in section form as Plan TAS/2/2975. The measurements on the core were taken approximately every metre using a Geoinstruments Susceptibility Meter JH-8. Four readings were taken at each point, averaged, corrected for core diameter and plotted in SI units.

### 3.2.4 Geochemistry

The accompanying plans (TAS/2/2038 and TAS/2/2039) of Sn & W outline a coincident anomalously high zone over the northern portion of the skarn. One of the main objectives of CAF 3 was to test this zone.

Further more the results of channel sampling a 40 metre adit in the skarn less than 50m to the north had produced the following anomalous W results;

	Average (ppm)	Peak Value (ppm)	No of Samples
0 - 18.0 metres	320	680	6
36.0 - 40.0 metres	440	500	3

CAF 1 to the south had already proved the skarn was anomalous in other elements, specifically Sn, Cu, Au and Bi.

Peak values intersected were:-

Sn	Cu	Au	Bi
1710ppm	1573ppm	0.157ppm	270ppm
between 199.25-216.3m	276.6-282.1	118.05-122.8	118.05-122.8

The drill core was split using a diamond saw and one half dispatched to Analabs for geochemical assay for the following elements Sn, Cu, W (Plan TAS/2/2927), Pb, Zn, Ag (Plan TAS/2/2928), Au, Bi, Mo (Plan TAS/2/2929), F, As, Ta & Fe (TAS/2/2930).

In addition six, three metre sludge samples were taken and analysed for the same elements. All the results of the analyses are appended to the detailed geological log. (Appendix 2).

Four sample pulps Z 1409-12 (19.3 - 26.0 metres) were retrieved and dispatched to Amdel Laboratories for check analyses on Sn, W and Bi. Comparative results are listed below:-

Sample No	Sn		W		Bi	
	Analabs	Amdel	Analabs	Amdel	Analabs	Amdel
Z 1409	240	190	BLD	55	60	85
1410	250	250	BLD	10	BLD	BLD
1411	320	270	BLD	10	26	42
1412	340	340	BLD	20	12	14

As there appeared to be some discrepancy between the two laboratories as far as W was concerned a further seven sample pulps were retrieved from Analabs and dispatched to Amdel. This action was also motivated by the fact that the soil sample results were significantly anomalous in W however the split core samples contained no detectable W. The results are tabulated below:-

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<u>Sample Number</u>	<u>Depth</u> (M)	<u>Analabs</u> (WO <sub>3</sub> )	<u>Amdel</u> (W)
Z 1401	3.0 - 6.4	<10	10
1402	6.4 - 7.2	<10	<10
1403	7.2 - 8.8	<10	<10
1404	8.8 - 9.6	<10	<10
1405	9.6 - 12.6	<10	15
1406	12.6 - 15.4	<10	<10
1407	15.4 - 18.2	<10	<10

The geochemical results were divided into generalised lithologies; skarn, hornfelses sediments and granitoids to aid in identifying anomalous sections. The results of a simple unweighted statistical analysis are tabulated below:-

<u>Element</u>	<u>Lithology</u>	<u>Range of Values</u> (ppm)	<u>m*</u> (ppm)	<u>m + 2σ<sup>+</sup></u> (ppm)	<u>No of Anomalous Values</u>
<u>Sn</u>	skarn	30-420	229	513	-
(Plan TAS/2/2927)	Hornfelses sediments	BLD - 20	6	18	1
	Granitoid	BLD - 10	6	14	-
<u>W</u>	skarn	-	BLD	-	-
(Plan TAS/2/2927)	Hornfelses Sediments	-	BLD	-	-
	Granitoid	-	BLD	-	-
<u>Cu</u>	skarn	20-210	101	213	-
(Plan TAS/2/2927)	Hornfelses Sediments	55-130	87	131	-
	Granitoid	10-25	12	22	1
<u>Mo</u>	skarn	1-2.5	2.0	3.0	-
(Plan TAS/2/2929)	Hornfelses Sediments	1-16	4.0	12.0	1
	Granitoid	3.5-45	10	36	1
<u>Au</u>	skarn	0.010-0.098	0.027	0.075	1
(Plan TAS/2/2929)	Hornfelses Sediments	0.010-0.021	0.013	0.022	-
	Granitoid	BLD - 0.014	0.007	0.016	-
<u>Bi</u>	skarn	BLD - 60	11	47	1
(Plan TAS/2/2929)	Hornfelses Sediments	-	BLD	-	-
	Granitoid	-	BLD	-	-

	<u>Pb</u>	skarn	BLD - 20	5	32	-
(Plan TAS /2 /2928)		Hornfelses Sediments	BLD - 10	2	10	2
		Granitoid	BLD - 10	6.0	25	-
	<u>Zn</u>	skarn	80 - 335	187	327	1
(Plan TAS /2 /2928)		Hornfelses Sediments	85 - 205	150	226	-
		Granitoid	15 - 40	25	39	1
	<u>Ag</u>	skarn	-	BLD	-	-
(Plan TAS /2 /2928)		Hornfelses Sediments	BLD - 0.5	0.1	0.52	-
		Granitoid	BLD - 0.5	0.2	0.7	-
	<u>E</u>	skarn	770 - 2.5%	7045	2.53%	-
(Plan TAS /2 /2930)		Hornfelses Sediments	3 - 1140	665	1309	-
		Granitoid	140 - 2790	1489	3239	-
	<u>As</u>	skarn	8 - 37	19	37	-
(Plan TAS /2 /2930)		Hornfelses Sediments	3 - 33	10	26	1
		Granitoid	BLD - 5	2	6	-
	<u>Ta</u>	skarn	BLD - 15	6	21	-
(Plan TAS /2 /2930)		Hornfelses Sediments	BLD - 15	3	14	2
		Granitoid	-	BLD	-	-
	<u>Fe (Total)</u>	skarn	9.4 - 38.0%	21.1%	37%	1
(Plan TAS /2 /2930)		Hornfelses Sediments	7.8 - 9.9%	9.1%	10.6%	-
		Granitoid	0.61 - 2.4%	1.57%	3.1%	-

\* The small 'm' is the mean of the results  
+ m + 2 s - mean plus twice the standard deviation.

### 3.2.5 Discussion

Conclusions drawn from CAF 3 are included in the general discussion on the skarn, Section 3.7

### 3.3 Diamond Drill Hole CAF 4 (Plan TAS/2/2724)

Collared at grid co-ordinates 4766N/4764E  
National co-ordinates 371616.7mE/5395042.9mN  
Azimuth (Av) 84.4° MN  
Declination (Av) 44.3°  
Length 150.8 m  
R L 680.7 m

3.3.1 Objective

To test the enigmatic co-incident magnetic and ground electromagnetic anomalies, located on 4760N and 4880N at approximately 4820E.

3.3.2 Geology

a) Local (Plan TAS/2/2101)

The bulk of the rocks over CAF are made up of the Cambrian Crimson Creek sedimentary sequence. Specifically these rocks are lithic wackes, tuffaceous greywackes, siltstones, argillites and finely bedded pelites. Associated basic tuffs, basalts and micro-dolerites are also present.

The sequence appears to strike north-northwest and dip mostly to the west although steeply easterly dipping drag folding? is locally common.

The Devonian Meredith Granite outcrops along the western portion of CAF and is made up of a coarse grained equicrystalline biotite granite and an intermittent marginal phase of porphyritic adamellite, which is locally, intensely tourmalinised. The granite also outcrops on Line 4820N (Plan TAS/2/2251) some distance from the contact in hornfelsed sediments.

The contact between the granite and Cambrian rocks is complex. Away from the contact the sediments and volcanics are metamorphosed to a low-medium amphibole grade. At the western contact a distinctive high grade skarn suite of rocks is developed varying between 30 and 100 metres wide and over 700 metres long.

## b) Drill hole

The geology downhole can be summarised as follows:-

Metres	Rock Type	Mineralisation	
		Style	Grade
0- 1.4	Triconed		
1.4- 20.9	Intercalated altered tuf. ltcwacke, s.s. and ar.	Po & Py v.f.veins	tr
20.9- 32.8	Hornfelsed sa. (ltcwacke?)	Po-f.blebs,veins, Py-f.veins	5% @ base
32.8- 43.7	Hornfelsed sediments	Po-f.veins & patch with tr Cpy, diss	3%
43.7- 85.3	Altered hornfelsed sed.	Po & Py-f veins, Po- diss & patch	2%
85.3-101.2	Metasomatized hornfelsed sediments	Po (&Py)-f.veins, To-rare f. diss	1%
101.2-106.1	Broken metasom. ho. sed.	Py-vein, minor Po Vn	3%
106.1-108.0	Altered py. microgb?	Barren	0%
108.0-111.5	Oxidised altered sed.	Barren	0%
111.5-112.9	Oxidised py. g.?	Barren	0%
112.9-120.6	Oxidised altered sed.	Barren	0%
120.6-125.8	Altered hornfelsed sed.	Py - Vein & patch	3%
125.8-127.4	Oxidised altered sed.	Barren	0%
127.4-128.2	Altered sediments	Py - f.veins	tr
128.2-129.9	Spotted biotite ho.	Py - f.veins	tr
129.9-134.4	Altered ho.	Py - patchy veins	5%
134.4-136.7	Oxidised altered sed.	Barren	0%
136.7-140.4	Metasomatized hornfelsed sed.	Py - f.veins, Po- diss.	tr
140.4-141.4	Hornfelsed py.micro gb?	Aspy-f.patch in vein	tr
141.4-150.8	Metasomatized hornfelsed sediments	Py & Po f.veins	tr

A detailed drill log is appended (Appendix 4). The detailed geology and interpretation are included in section form at a scale of 1:500, Plans TAS '2/2921 and TAS '2/2981. Three samples of drill core were dispatched to CMS (Central Mineralogical Services) for thin section description. The CMS report is appended. (Appendix 3).

## 3.3.3 Geophysics

## a) Magnetics

A northerly striking anomaly has pronounced responses on Lines 4760N and 4880N centred at around 4800E (profiles TAS '2 1851 & 1852).

Although erratic, the anomaly on Line 4760N suggests a near vertical body.

The relatively 'quiet' nature of the magnetic profile between the skarn related anomaly and the central anomaly is most uncharacteristic of the Crimson Creek rocks and may indicate granite at depth.

b) Electromagnetics

A very well defined electromagnetic (Crone) response is coincident with the central magnetic anomaly outlined above on Lines 4760N and 4880N. The anomaly has been interpreted by D B Trussell (AAA Senior Geophysicist) as being within 10m of surface, has near vertical dip, and has substantial (20+m) width. Owing to the coincidence of EM and magnetic anomalies he believes pyrrhotite is indicated.

The position and attitude of the EM conductor was further defined by a PEM survey, using a transmitter-receiver spacing of 60 metres and 20 metre sample interval. This more detailed data, also presented on the composite section (TAS/2/1851) implied that the conductor was centred at 4830E and had a steep westerly dip.

The postulated EM conductor is figuratively represented on the interpreted geological section TAS/2/2981) by the cross-hatched block.

c) Drill Core Magnetic Susceptibility

The results of the magnetic susceptibility measurements carried out on the core are presented in section form as Plan TAS/2/2976. The readings were taken approximately every metre using a Geoinstruments Susceptibility Meter JH-8. Four readings were taken at each point, averaged, corrected for core diameter and plotted in SI units.

3.3.4 Geochemistry

a) Local

There is no anomalously high concentration of any element analysed in the C-Horizon soil samples, in fact the values appear anomalously low (Plan TAS/2/1851), with enhancement on either side of the EM conductor.

It is possible that this anomaly form is a 'rabbit ear' pattern controlled by local Eh and pH conditions in the soil.

b) Downhole

The top 1.4 metres of the hole was triconed and a sludge sample taken over the first 3.0 metres. The cored portion of the hole was sampled for geochemical assay by grinding one side of the core and analysing for the following elements:-

- Sn, Cu, W (Plan TAS/2/2931)
- Pb, Zn, Ag (Plan TAS/2/2932)
- Au, Bi, Mo (Plan TAS/2/2933)
- F, As (Plan TAS/2/2934)

The results are also tabulated as an appendix to the detailed drill log. (Appendix 4).

In addition six sample pulps Z 1472-1477 (106.1-122.8 metres) were retrieved from Analabs and dispatched to Amdel Laboratories for check analyses on Sn and W. Comparative results are listed below:-

Sample No	Sn		W	
	Analabs	Amdel	Analabs	Amdel
Z 1472	20	18	BLD	BLD
1473	75	85	20	25
1474	75	65	20	25
1475	7	8	20	20
1476	6	6	30	20
1477	3	BLD	15	10

The results of a simple unweighted statistical analysis, used to identify anomalous sections, are tabulated below:-

Element	Value Range (ppm)	m (ppm)	m+2s (ppm)	No of Anomalous Samples
Sn	BLD - 75	6	33	2
W Plan TAS/2/2931	BLD - 30	4	19	4
Cu	10 - 340	100	240	1
Pb	BLD - 1700	10	511	2
Zn Plan TAS /2/2932	60 - 730	178	442	4
Ag	BLD - 1.0	0.5	5	-

Au		BLD - 0.016	0.004	0.013	3
Bi	Plan TAS /2 /2933	BLD - 6	0.8	3.7	5
Mo		BLD - 3	0.6	1.9	4
F	Plan TAS /2 /2934	BLD - 18700	609	1196	3
As		BLD - 440	35	207	4

The sludge sample values from the top of the hole were not incorporated in the analysis as contamination from the tricone bit was strongly suspected.

### 3.3.5 Discussion

Diamond drillhole CAF 4 failed to intersect any significant concentrations of economic commodities.

The drill core obtained from the hole however at least partly explained the geophysical responses which provided the basis of the drill hole proposal. It is apparent that there are four zones of between two and five metres that contain appreciably more mineralisation than the surrounding rock. The mineralisation is predominantly pyrrhotite and averages approximately 5% in the zones as opposed to 1% or less outside. The pyrrhotite mainly occurs as irregular, patchy and discontinuous quartz-pyrrhotite veins. Scattered blebs and very finely disseminated (rare) pyrrhotite also occur in the zones.

The four zones between 30.0 and 65.0 metres are clearly picked out by the magnetic susceptibility readings taken on the core, Plan TAS /2 /2976. The zones, taken together, conform very well with the indicated source of the magnetic anomaly. Furthermore the dip of the zone (near vertical) and the pyrrhotitic nature of the mineralisation is as indicated by the geophysical interpretation.

However no such apparent conformity is realised from the EM data. The centre of the EM anomaly located at 4830E on line 4760N is twenty metres to the east of the centre of the magnetic anomaly. On dip information from the geological log and geophysical interpretation the interpreted conductor should have been intersected downhole between 80 and 100 metres. The mineralisation at that depth was constant averaging 1%, being made up of scattered irregular pyrrhotite veins and rare finely disseminated pyrrhotite. Selected samples were tested for conductivity but no significant zones were noted.

The EM anomaly is present on grid lines to the north of 4760N but not to the south. It crosscuts the stratigraphy, so the ends of the implied conductor maybe very sharp, possibly being fault controlled. Although the ground EM response is very strong on line 4760N and the drillhole was in fact collared at 4765N, the drillhole drifted to the south passing underneath the target of 4830E at approximately 4750N and may have missed the conductor to the north. Owing to the unexplained nature of the EM anomaly plastic piping was placed down the hole in order to keep it open for anticipated downhole EM surveying. At the time of report writing the surveying had not been undertaken owing to the unavailability of an EM crew and the onset of winter field conditions.

Any further recommendations will have to await the outcome of the downhole EM survey.

Of interest in the lower portion of the hole are a number of oxidised and partially clay altered zones associated with thin granitoid apophyses. Owing to the high core loss and very broken nature of the core through these zones the magnetic susceptibility readings only partly show the extent of the zones. However the presence of the granitoid apophyses may imply that the Meredith Granite is relatively near surface as has been suspected from the quiet magnetic profiles over the sediments to the east of the massif and skarn zone.

As would be expected the oxidised-altered zones and the surrounding hornfelsed sediments have been enriched in a number of elements. In fact the bulk of the anomalous geochemistry of CAF 4 is attributable to these zones, as follows:-

Element	Values associated with Oxidised Zones (ppm)	Drillhole Max Value (ppm)	Drillhole Av (ppm)
Sn	75	75	6
W	30	30	4
Pb	1700	1700	49
Zn	730	730	178
F	1.87%	1.87%	609
As	440 ppm	440	35

Although these values are of interest in their geological context, they alone do not warrant further drilling.

3.4 Diamond Drill Hole CAF 5 (Plan TAS/2/2724)

Collared at grid co-ordinates	4640N/4555E
National co-ordinates	371405mE/5394900mN
Azimuth (Av)	256° MN
Declination (Av)	53°
Length	182.8m
RL	614.2m

3.4.1 Objective

To follow up the encouraging results from DDH CAF 1, which intersected a significant zone of skarn mineralisation, by testing the skarn unit approximately midway between CAF 1 and CAF 3.

3.4.2 Geology

a) Local (Plan TAS/2/2101)

The bulk of the rocks over CAF are made up of the Cambrian Crimson Creek sedimentary sequence. Specifically these rocks are lithic wackes, tuffaceous greywackes, siltstones, argillites and finely bedded pelites. Associated basic tuffs, basalts and micro-dolerites are also present.

The sequence appears to strike north-northwest and dip mostly to the west although steeply easterly dipping drag folding? is locally common.

The Devonian Meredith Granite outcrops along the western portion of CAF and is made up of a coarse grained equicrystalline biotite granite and an intermittent marginal phase of porphyritic adamellite, which is locally, intensely tourmalinised. The granite also outcrops on Line 4820N some distance from the contact in hornfelsed sediments. It was probably this 'tongue' that was intersected in CAF 2. On establishing the drill pad for CAF 5 this granite apophysis was found to outcrop subsurface with no indication on the ground except a possible vegetation anomaly.

The contact between the granite massif and Cambrian rocks is complex. Away from the contact the sediments and volcanics are metamorphosed to a low medium amphibole grade. At the western contact a distinctive high grade skarn suite of rocks is developed varying between 30 and 100 metres wide and over 700 metres long.

The skarn is made up of interlayered (probably relict bedding) hard calc-silicate rocks and coarsely crystalline garnet-vesuvianite-diopside-ferrohastingsite rocks with interstitial magnetite, pyrrhotite, phlogopite, calcite and fluorite.

b) Drill hole

The geology downhole can be summarised as follows:-

ROCK TYPE	MINERALISATION	
	Style	Grade
0- 4.5	Triconed	
4.5- 45.2	Altered hornfelsed sed.	Py & Po-f.veining tr
45.2- 68.5	Interbedded hornfelsed sediments & Pelitic chrt	Po-f.veins, rare f. 3% diss & scattered f. patches with ch.
68.5-72.9	Pelitic Ho.	Po-f.veins & scatt. 7% f.patches, Cpy-tr assos with Po.
72.9-99.7	Intercalated Skarn & Altered Pelitic Units	Po-diss & patchy with tr Cpy 5%
99.7-109.1	Diopside-Vesuvianite - Ferrohastingsite Skarn	Po-scattered f.patches with tr Cpy 1%
109.1-112.5	Diopside-Ferrohastingsite Skarn	Po-scattered f.patches with tr Cpy 1%
112.5-124.5	Diopside-Vesuvianite-Ferrohastingsite Skarn	Po-scattered f.patches with tr Cpy 2%
124.5-128.0	Hornblende - Axinite-Diopside Skarn	Po-f.veinlets & minor patchy 5%
128.0-144.6	Altered (greisen, clay, Cbte ) Granite	Py-v.f. along fracs tr To - small clusters
144.6-174.3	Altered/Fresh Py Granite	As above tr
174.3-182.8	Altered (greisen, clay, Cbte ) Granite	As above tr

A detailed drill log is appended (Appendix 5). The detailed geology and interpretation are included in section form, Plans TAS/2/2922 and TAS/2/2982. Seven drill core samples were dispatched to CMS (Central Mineralogical Services) for thin section description. The CMS report is appended (Appendix 3).

### 3.4.3 Geophysics

a) Magnetics

The skarn zone is readily defined by the ground magnetic responses (Plan TAS/2/2436). The highest readings occur over the eastern contact of the zone possibly indicating a greater concentration of magnetite.

In the north, the anomaly extends eastwards from the mapped skarn suite and from the soil geochemical anomalies. This suggests that although the rock units dip westwards into the granite that the zone of skarn mineralisation dips to the east. The magnetic "low" over the western portion of the skarn is thought to be due to east dipping granite/skarn contact.

The ground magnetic profile along the drillhole on grid line 4640N is included on the composite section, Plan TAS/2/2253.

b) Drill Core Magnetic Susceptibility

The results of the magnetic susceptibility measurements carried out on the drill core are presented in section form, TAS/2/2977. The readings were taken approximately every metre using a Geoinstruments Susceptibility Meter JH-8. Four readings were taken at each point, averaged, corrected for core diameter and plotted in SI units.

3.4.4 Geochemistry

a) Local

Anomalous geochemical responses, derived from the C-Horizon soil sampling, in Sn, W and As are apparent over the skarn zone, Plans TAS/2/1849, 1850 and 2164 respectively.

Sn values are anomalous at four twenty metre stations over the skarn the values being 65, 210, 380 and 270 ppm. Tungsten values are 35 and 50 ppm while arsenic is anomalous over a 60m wide zone with values of 54, 112 and 84 ppm. The composite section, Plan TAS/2/2253 shows these results in relation to the geology and geophysics along grid line 4640N.

b) Downhole

The top 4.0 metres of the hole was triconed and three sludge samples, each of three metres, were taken over the first 9.0 metres.

The sludge samples were analysed for Sn, Cu, W, Pb, Zn, Ag, As and Ni.

The drill core from 4.0 metres to 62.9 metres was sampled for geochemical assay by grinding a sample off the side of core using a diamond studded tungsten carbide wheel.

The samples obtained were analysed for Sn, Cu, W, Pb, Zn, Ag, Au, Bi, Mo, F and As.

The remainder of the drill core was split in half using a diamond saw, one segment being dispatched to Analabs for analysis for Sn, Cu, W, Pb, Zn, Ag, Au, Bi, Mo, F, As, Ni and Li

The results of all analyses are tabulated as an appendix to the detailed drill log (Appendix 5) and are presented in drill hole section form in Plans;

TAS/2/2935	Sn, Cu, W
TAS/2/2936	Pb, Zn, Ag
TAS/2/2937	Au, Bi, Mo
TAS/2/2938	F, As, Ni, Li

In addition, twelve sample pulps Z 1113 - Z 1124 (99.7 - 128.0 metres) were retrieved from Analabs and dispatched to Amdel Laboratories for check analyses of Sn and W. Comparative results are listed below:-

Sample No	Depth (m)	Sn (ppm)		W (ppm)	
		Analabs	Amdel	Analabs	Amdel
Z 1113	99.7 - 102.0	340	300	15	Not analysed
Z 1114	102.0 - 105.0	350	320	BLD	" "
Z 1115	105.0 - 107.0	510	450	BLD	" "
Z 1116	107.0 - 109.1	470	420	BLD	" "
Z 1117	109.1 - 112.5	520	490	BLD	" "
Z 1118	112.5 - 115.5	430	400	50	BLD
Z 1119	115.5 - 118.8	680	620	BLD	BLD
Z 1120	118.8 - 119.7	1100	1000	230	260
Z 1121	119.7 - 122.0	440	410	BLD	Not analysed
Z 1122	122.0 - 124.5	620	560	BLD	" "
Z 1123	124.5 - 126.9	310	280	BLD	" "
Z 1124	126.9 - 128.0	410	420	BLD	" "

Further check analyses were carried out, as significant differences in the W values were noted between ground core samples and split core samples for apparently similar rock types. To investigate these differences 16.9 metres of previously ground core was split and dispatched to the laboratory.

The results are tabulated below:-

Sample No	Depth(m)	W Ground Core (ppm)	W Split Core (ppm)
Z 1387	46.0-49.0	75	<10
1388	49.0-52.0	120	<10
1389	52.0-55.0	140	10
1390	55.0-58.0	150	<10
1391	58.0-62.9	140	<10

The geochemical results from Analabs were divided into generalised lithologies: hornfelsed sediments, skarn and granitoid, to aid in identifying anomalous sections. The results of a simple unweighted statistical analysis are tabulated below:-

Element	Lithology	Range of Values (ppm)	m* (ppm)	m + 2σ <sup>+</sup> (ppm)	No of Anomalous Values
<u>Sn</u> (Plan TAS /2 /2935)	Hornfelsed Sediments	BLD-25	5	16	1
	Skarn	80-1100	399	783	1
	Granitoid	8-160	26	94	1
<u>W</u> (Plan TAS 2 2935)	Hornfelsed Sediments	BLD- 150	56	153	-
	Skarn	BLD- 230	16	107	1
	Granitoid	BLD - 65	8	39	1
<u>Cu</u> (Plan TAS/2/2935)	Hornfelsed Sediments	55 - 325	149	291	2
	Skarn	15 -1350	331	1156	2
	Granitoid	5 - 30	12	27	1
<u>Pb</u> (Plan TAS /2/2936)	Hornfelsed Sediments	BLD - 40	16	57	-
	Skarn	25 - 65	37	55	2
	Granitoid	BLD - 45	20	48	-
<u>Zn</u> (Plan TAS /2 2936)	Hornfelsed Sediments	70 -280	187	299	-
	Skarn	45 -275	106	180	1
	Granitoid	15 - 75	26	66	1
<u>Ag</u> (Plan TAS 2/2936)	Hornfelsed Sediments	BLD- 1.0	0.3	> 1	-
	Skarn	-	BLD	-	-
	Granitoid	BLD-0.5	0.2	>0.5	-
<u>Au</u> (Plan TAS '2 '2937)	Hornfelsed Sediments	-	BLD	-	-
	Skarn	BLD-0.109	0.012	0.062	2
	Granitoid	BLD-0.010	0.001	0.007	2

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Element	Lithology	Range of Values (ppm)	m* (ppm)	M + 2σ (ppm)	No of Anomalous Values
<u>Bi</u> (Plan TAS/2/2937)	Hornfelses Sediments	-	BLD	-	-
	Skarn	BLD-238	41	171	3
	Granitoid	BLD- 8	1	5	2
<u>Mo</u> (Plan TAS/2/2937)	Hornfelses Sediments	BLD-7.5	1	4	1
	Skarn	BLD-2.0	1	2	1
	Granitoid	0.5-9.0	3	7	1
<u>F</u> (Plan TAS/2/2938)	Hornfelses Sediments	490-1240	809	1161	1
	Skarn	805-18000	5709	8654	4
	Granitoid	760-28000	2103	13000	1
<u>Ag</u> (Plan TAS/2/2938)	Hornfelses Sediments	1- 99	15	57	1
	Skarn	21-900	169	561	1
	Granitoid	1- 62	16	49	2
<u>Ni</u> (Plan TAS/2/2938)	Hornfelses Sediments		Not Analysed		
	Skarn	35-175	83	151	2
	Granitoid	25-205	105	190	1
<u>Li</u> (Plan TAS/2/2938)	Hornfelses Sediments		Not Analysed		
	Skarn	1- 12	5	10	1
	Granitoid	2-112	25	72	1

\* m = mean

+ m + 2σ = Mean plus twice the standard deviation.

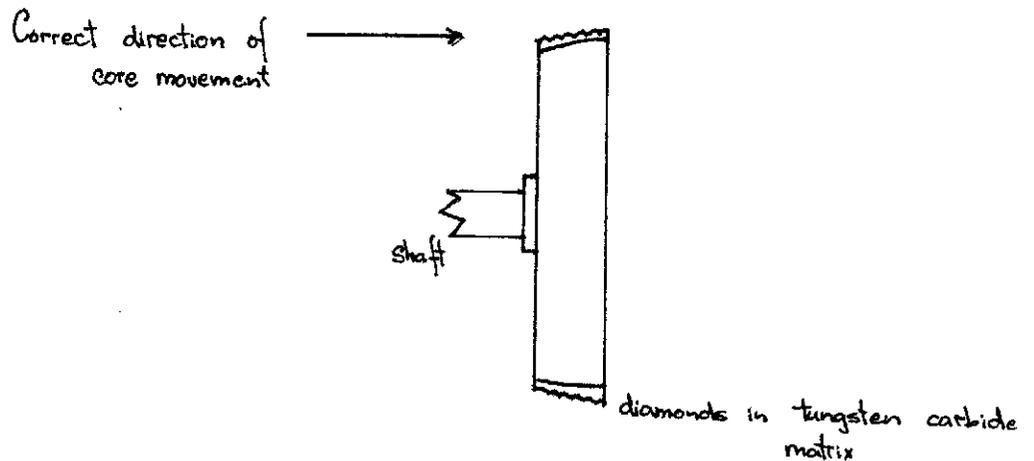
The best intersections (weighted) can be summarised;

i)	Sn & W	From	To	Width	Sn	W
		118.8-	119.7	0.9m	0.11%	230 ppm
ii)	F	142.7-	144.6	1.9m	2.8%	
		83.1-	86.6	3.5m	1.51%	
iii)	Entire Skarn				Sn	
		99.7-	128.0	28.3m	469ppm	

## 3.4.5 Discussion

Conclusions drawn from CAF 5 are encompassed in a general discussion of the skarn in section 3.7

The discrepancy between the ground and split core W analyses reflects a sampling problem. The diamonds on the wheel used to obtain the ground core sample are set in a tungsten carbide matrix. The wheel is slightly bevelled as illustrated and the core should be run in from the left;



however if it is run in from the right the matrix is encountered before the diamonds and although the core is not quite as hard as tungsten carbide inevitable contamination results, albeit slight.

As the contamination only reaches a maximum of 150 ppm any significant W mineralisation would be additive and be thus even more conspicuous. No such values were obtained.

### 3.5 Diamond Drill Hole CAF 6 (Plan TAS '2/2724)

Collared at Grid Co-ordinates	4220N (R) '4824E
National Co-ordinates	371671mE/5394540mN
Azimuth (Av)	72° MN
Declination (Av)	43.25°
Length	99.2 m
RL	529 m

#### 3.5.1 Objective

To test the source of the very pronounced ground EM - magnetic anomaly and anomalous geochemistry.

#### 3.5.2 Geology

##### a) Local (Plan TAS/2 '2812)

Rock units assigned to the Crimson Creek Formation make up the sedimentary sequence on CAF. The rocks comprise a tuffaceous turbiditic sequence of labile lithic wacke, tuffaceous greywacke, siltstone and argillite with finely bedded pelitic horizons.

Basic tuff, basalt and micro dolerite units occur in the sequence.

Measured dips and strikes indicate that the rocks dip and face westwards into the granite but there is some drag folding and faulting.

The granite over the western sector of the grid is mainly a coarse grained equicrystalline biotite granite. Along the contact with the sediments the granite is a porphyritic adamellite, which is heavily tourmalinised in parts and may be patchily greisenised.

The sedimentary and volcanic rock units at CAF are hornfelsed. The metamorphic mineral assemblages represent low to medium amphibole facies within a contact aureole. The highest grade of thermally metamorphosed rocks occur along the granite contact. These rocks form a distinctive zone of skarn mineral assemblages. The only recognisable sedimentary rocks within the zones are finely banded pelites with the bedding outlined by compositional banding of fine calc silicate minerals. Bands, veins and sills of coarsely crystalline amphibolite form Fe-Mg rich skarn suites. These distinctive rocks are composed of ferrohastingsite or hornblende with interstitial magnetite, phlogopite and fluorite. Relict banding may sometimes be recognised within these rocks.

Calc silicate altered hornfelsed sedimentary rocks also outcrop on lines 4220N and 4160N east of the skarn. The rock units strike 130-140° and dip 70° to the west, and could contain the source of the geophysical anomalies. The degree of alteration is moderately intense, the rocks are bleached with pale cream to purple alteration colours, and a weathered envelope of ferruginous clay material is developed. Where fresh, it can be seen that the rocks are well brecciated and foliated.

Significantly, in both outcrop and float, sulphide mineralisation occurs in the form of fine grained disseminated Pyrite and Pyrrhotite with coarse crystalline Pyrrhotite as matrix to the brecciated clasts or as cross cutting veinlets.

b) Drill hole

The geology downhole can be summarised as follows;

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639024

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	ROCK TYPE	Style	MINERALISATION	Grade
0- 3.5m	triconed			
3.5-10.7m	broken sediments	barren		0%
10.7-22.9m	altered hornfelsed sediments	Py & Po associated with alteration		tr
22.9-26.9m	pyrrhotitic interbedded alt ho sed.	Po-v.f.dis & f.vns.Py along frac cp-tr assoc with Po		10%
26.9-29.9m	diopsidic pelitic chert with minor garnet- diopside skarn	Po-small patches,rare vns Py, Cp, to, Cs?-tr		10%
29.9-43.1m	intercalated alt sed with pelitic ch	Po-f-coarse patches;dis & v.f. vns in sed. Py, Cp, To? Cs - tr		
43.1-46.8m	pelitic chert	as above		10%
46.8-68.7m	alt ho seds	Po-scattered f.patches & f.veins		1%
68.7-76.1m	veined alt ho sed	Po - as above		1%
76.1-85.6m	alt ch & pelitic sed	Po - scattered f.patches & dis replacement		10%
85.6-99.2m	pyrrhotitic alt ch & pelitic sed	Po - as above		12%

A detailed geological log is appended (Appendix 6). The detailed geology and interpretation are included in section form at a scale of 1:500, Plans TAS/2/2923 and TAS/2/2983 respectively.

Five samples of drill core were dispatched to CMS (Central Mineralogical Services) for thin section description. The CMS report is appended (Appendix 7).

### 3.5.3 Geophysics

#### a) Magnetism

A very strong (+5,000 nT) ground magnetic anomaly is coincident with the PEM - Crone EM anomaly centred at approximately 4860E.

The ground magnetic profiles of Lines 4220N and 4220N (R) are presented together on Plan TAS/2/2968 in an effort to minimise gaps in the profile caused by off scale readings. The profile of Line 4220N (R) is also presented on the composite section, Plan TAS/2/2822 for direct comparison with geology, EM and geochemistry.

b) Electromagnetics

The following is a note written by D B Trussell (AAA Ltd, Senior Geophysicist) on the EM anomaly delineated by the PEM survey over lines 4160N, 4220N(R) and 4400N and a CEM survey over line 4220N(R).

CAF CONDUCTOR - LINE 4220N(R)  
17.2.82

This conductor was detected by the PEM survey on line 4160N at 4885E, on line 4220N(R) at 4850E and on line 4400N at 4830E.

The anomaly is 8 channels on all three lines. The source therefore is highly conductive. The southern terminus is well defined. There is no response on 4100N which is only 50m to the south of 4160N. The northern terminus is less well defined since the nearest line to the north of 4400N is 260m distant (in the strike direction). The dip of the conductor is steep (over 80°) and to the west. The top of the conductor is 20m subsurface. It has a conductivity width product of 25 mhos.

The shallow depth of the conductor (as little as 15m on 4440) downgrades its importance since some surface geochemical response should be expected. However, the strike length of the conductor is quite modest (300-400m). Formational conductors such as carbonaceous shales usually have a much longer strike. It therefore seems to me that this conductor should be drilled. A 45° angle hole to intersect line 4220N 4850E at a depth of 30m is therefore recommended.

D B Trussell  
Senior Geophysicist

c) Drill Core Magnetic Susceptibility

The results of the drill core magnetic susceptibility measurements are presented in section form as Plan TAS/2/2978. The measurements were taken approximately every metre using a Geoinstruments Susceptibility Meter JH-8. Four readings were taken at each point, averaged, corrected for core diameter and plotted in SI units.

## 3.5.4 Geochemistry

## a) Local

The soil C-Horizon geochemical results of the C-Horizon sampling clearly show an anomalous Cu-Sn zone with attendant enhancement of W, Ni, Zn, As and Pb partly co-incident with the EM - magnetic anomalies. (Plan TAS/2/2822).

## b) Downhole

The drill core over the entire length of the hole was split in half using a diamond saw. One half was dispatched to Analabs for analysis of the following elements; Cu, Pb, Zn, Ag, Bi and Ni by atomic absorption spectrophotometry, As by vapour hydride generation, Au by fire assay, Sn and W by X-Ray Fluorescence Spectroscopy and F by specific ion electrode determination. The results are presented in section form as follows;

Sn, Cu, W	(Plan TAS/2/2939)
Pb, Zn, Ag	(Plan TAS/2/2940)
Au, Bi, F	(Plan TAS/2/2941)
As, Ni	(Plan TAS/2/2942)

The results are also tabulated as an appendix to the detailed drill log (Appendix 6).

In addition six sample pulps Z 1179 - Z 1184 (84.5 - 99.2m) were retrieved from Analabs and dispatched to Amdel Laboratories for check analyses on Sn and W. Comparative results are listed below:-

Sample No	Depth (m)	Sn (ppm)		W (ppm)	
		Analabs	Amdel	Analabs	Amdel
Z 1179	84.5-87.1	160	140	BLD	BLD
Z 1180	87.1-90.0	95	90	"	"
Z 1181	90.0-93.0	15	20	"	"
Z 1182	93.0-95.0	20	10	"	10
Z 1183	95.0-96.7	25	26	10	BLD
Z 1184	96.7-99.2	380	340	BLD	"

The results of a simple unweighted statistical analysis, used to identify anomalous sections are tabulated below:-

Element	Plan	Value Range (ppm)	m (ppm)	m + 2σ (ppm)	No of Anomalous Values
Sn		3-380	19	79	3
Cu	TAS/2/2939	15-310	110	236	2
W		BLD- 20	3	15	2
Pb		10- 55	28	51	1
Zn	TAS/2/2940	25-950	124	516	2
Ag		BLD-0.5	0.1	>0.5	-
Au		BLD-0.033	0.002	0.013	1
Bi	TAS/2/2941	BLD- 20	1	6	1
F		255-940	547	847	2
As	TAS/2/2942	1-520	32	198	1
Ni		85-340	159	281	2

### 3.5.5 Discussion

Diamond drillhole CAF 6 successfully intersected significant sulphide mineralisation as indicated by the ground magnetic and EM surveys. Unfortunately the mineralisation did not carry concentrations of Sn or any other metal.

It is apparent that there are two main zones of sulphide mineralisation down the hole. The first, zone 1, between 22.9 and 46.8 metres contains on average 10% sulphide. Over 9% of that is constituted by pyrrhotite, the rest is made up of traces of pyrite and chalcopyrite. The pyrrhotite is commonly in the form of small discontinuous and irregular patches associated with the intermittent intense calc-silicate metasomatism. In the intercalated sediments the pyrrhotite is more often as fine, discontinuous and irregular veins sometimes associated with carbonate veins. On rare occasions the pyrrhotite is very finely disseminated through certain sedimentary units. The chalcopyrite usually intimately associated with the pyrrhotite as inclusions or rims whereas the pyrite occurs as very fine discrete veins.

This first zone is picked out very clearly by the magnetic susceptibility measurements averaging  $2 \times 10^{-2}$  SI units ( $1.6 \times 10^{-3}$  CGS units) compared to a background of approximately  $2 \times 10^{-3}$  SI units ( $1.6 \times 10^{-4}$  CGS units). The zone is nearly exactly coincident with the postulated position of the EM conductor indicated by the ground PEM survey.

The second zone from 76.1 metres to the base of the hole contains an average of just over 10% mineralisation.

027

The mineralisation appears to be all pyrrhotite and as in Zone 1 occurs in various forms. It is mostly as scattered, small and irregular patches associated with the more intensely metasomatised areas sometimes concentrated up to 20%. It also occurs as very fine disseminations up to scattered grains more often in the less altered sediments.

Zone 2 is also very clearly delineated by the magnetic susceptibility measurements averaging approximately the same as Zone 1. The attendant ground magnetic survey response is poorly defined owing to the lack of readings. However magnetic measurements taken along the old superseded L 4220N less than forty metres to the north do appear to define a second response in the vicinity of 4920 E (Plan TAS/2/2968). This response conforms well with the surface projection of Zone 2. However it is of interest to note that there is no readily recognisable coincident ground EM response. This maybe due to the masking effect of alluvium between 4910E and 4930E and deep weathering beneath the creek associated with subsurface water flow.

The zones contain enhanced Sn, Cu, As, Pb values up to 380, 310, 520, 55 respectively but no significantly anomalous values. This enrichment of the two zones in elements similar to that of the main skarn to the west along with intermittent intense calc-silicate metasomatism suggests these zones were possibly carbonate rich. Certainly within the zones there are narrow bands of 'true' skarn ( garnet, diopside-andesite<sup>?</sup>-calcite etc). There are also narrow bands of mineral assemblages unique to CAF 6. They contain such minerals as calcium rich scapolite and axinite.

The presence of these differing mineral assemblages gives a good indication of the complexity of the various alteration schemes. The presence of scapolite appears to indicate a more pneumatolytic as opposed to a straight metasomatic process, specifically the presence of CO<sub>2</sub> under high pressures. Although scapolite is a common constituent of skarns elsewhere, Fander (CMS), comments that it is less common in West Tasmanian skarns.

Axinite indicates the introduction of boron and as it occurs with pyrrhotite in a coarsely-crystalline random fabric, a more pyrometasomatic alteration scheme is indicated.

Taking into account these different schemes of alteration, the fact that a retrograde metasomatic step is also often overprinted and only one drill hole has been drilled into this zone it is extremely difficult to indicate where Sn or other metals maybe significantly concentrated.

Although significant quantities of pyrrhotite were intersected in Zone 1 coincident with the EM anomaly, D B Trussell (AAA Ltd, Senior Geophysicist) believes there is not sufficient electrical conductivity between the pyrrhotite and concludes the core is inconsistent with the ground EM response.

### 3.6 Diamond Drill Hole CAF 7 (Plan TAS/2/2724)

Collared at grid co-ordinates	4220N (R)/4640 E
National co-ordinates	371490mE/5394510mN
Azimuth (Av)	251.4 <sup>o</sup> MN
Declination (Av)	53.4 <sup>o</sup>
Length	230.5 m
RL	522.0 m

#### 3.6.1 Objective

To intersect and evaluate the main skarn zone adjacent to the Meredith Granite on line 4220(R)N 180 metres south of the intersection in CAF 1.

#### 3.6.2 Geology

##### a) Local (Plan TAS/2/2812)

The bulk of the rocks over CAF are made up of the Cambrian Crimson Creek sedimentary sequence. Specifically these rocks are lithic wackes, tuffaceous greywackes, siltstones, argillites and finely bedded pelites. Associated basic tuffs, basalts and micro-dolerites are also present.

The sequence appears to strike north-northwest and dip mostly to the west although steeply easterly dipping drag folding? is locally common.

The Devonian Meredith Granite outcrops along the western portion of CAF and is made up of a coarse grained equicrystalline biotite granite and an intermittent marginal phase of porphyritic adamellite, which is locally, intensely tourmalinised. The granite also outcrops on Line 4820N (attached section) some distance from the contact in hornfelsed sediments. It was probably this "tongue" that was intersected in CAF 2.

029

The contact between the granite and Cambrian rocks is complex. Away from the contact the sediments and volcanics are metamorphosed to a low-medium amphibole grade. At the western contact a distinctive high grade skarn suite of rocks is developed varying between 30 and 100 metres wide and over 700 metres long.

The skarn is made up of interlayered (probably relict bedding) hard pelitic calc-silicate rocks and coarsely crystalline garnet-vesuvianite-diopside-ferrohastingsite rocks with interstitial magnetite, pyrrhotite, phlogopite, calcite and fluorite.

The skarn zone appears to broaden progressively southwards from CAF 3 through CAF 5 to CAF 1. It may be readily traced out by mapping outcrop and float material, as far south as line 4220N. South of this however it becomes virtually impossible to trace out the skarn zone by mapping. Rare float of magnetite banded calc silicate altered diopside hornfels and bleached pelite occurs as the only evidence for the strike continuation. However the trace of the skarn zone may be followed by the anomalous soil geochemical pattern, particularly in Sn and As, and by the ground magnetic responses. It may be that the southerly plunge of the skarn alteration zone steepens to the south of line 4220N.

South of line 4280N the Meredith Granite Contact swings away to the southwest (see Plan attached) while the skarn zone retains a north north westerly strike. The rock units which occur between the skarn and the granite comprise biotite hornfelsed argillite and arenite, with, to the south, bodies of microgabbro. If the skarn zone consists of replaced calcareous rock units which may be traced out diverging from the granite, then it is highly prospective for Sn-sulphide mineralisation. Where these units are adjacent to the granite there is a dissemination of Sn throughout the zone probably associated with magnetite and silicate minerals rather than concentrated with sulphides as cassiterite.

This precipitation of Sn as cassiterite can be expected to occur in a lower temperature facies ie at a greater distance from the granite source. This situation appears to occur on line 4220N and possibly down plunge to the south. There certainly is evidence from the PEM data that suggests a concentration of sulphides, with which cassiterite may be associated, in this sector of the skarn.

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Rock samples taken from surface and old workings including a 40 metre adit contain visible pyrrhotite, magnetite, fluorite and tourmaline mineralisation.

Drill hole information to the north (CAF 1) describes patches of massive pyrrhotite and magnetite with minor chalcopyrite, pyrite and arsenopyrite along with anomalous Sn, Au and Bi values in the skarn rocks. Peak values intersected were:-

	Sn	Cu	Au	Bi
	1710 ppm	1573 ppm	0.157 ppm	270 ppm
between	199.25-216-3m	276.6-282.1	118.05-122.8	118.05-122.8

Old Mines Department records refer to the Mt Ramsay workings as a Bi-Au prospect.

b) Downhole

The geology of the drill core can be summarised as follows:-

DEPTH	ROCK TYPE	MINERALISATION	
		Style	Grade
0- 10.8	Triconed		
10.8- 23.7	Broken weathered seds	Barren	
23.7- 45.8	S1 Altered seds	Py-assos.with calc-sil-alt	tr
45.8-49.3	Altered Pelitic Ho	Po-f.diss.in parts Py-tr	tr
49.3-56.3	Altered hornfelsed seds	Po-f.patches& rare diss Py-tr	3%
56.3-65.2	Altered hornfelsed tuff sa. & ch.	As above	4%
65.2-73.2	Altered Pelitic Ho	Po-f.diss & f.veinlets	5%
73.2-82.2	Altered ho. sa & Ch.	" " " "	5%
82.2-92.1	Intbd.Pel.Ho & Ch	Po-f.veinlets/with bdg & patch	10%
92.1-97.0	Pyrrhotitic Bedded Pelitic Ho	Po-diss.on bdg & patch Py-tr	12%
97.0-163.6	Patchworked - Varying Concentrations of (in order of abundance) Diopside-Ferrohastingsite Vesuvianite-Carbonate-Magnetite-Pyrrhotite-Garnet-Fluorite	Conc.-highly irregular Mt - f.xtalline masses Po-f-co.irreg.patches Cpy-tr-1% with Po V.rarely discrete	15%

DEPTH	ROCK TYPE	MINERALISATION	
		Style	Grade
163.6-173.0	Intercalated Pelitic Ho-highly-sl.altered & Skarn (as above)	Po-f.veinlets & patches & Mt.-few masses in Skarn	3%
173.0-175.5	Altered f.Bd.ho. Pelitic Seds	Po-diss.(v.f.f.) & v.f. veinlets	7%
175.5-190.6	Altered hornfelsed Sediments	Po-f.veinlets	2%
190.6-198.8	Altered high grade hornfelsed Sediments	" " "	tr
198.8-204.9	Altered hornfelsed Seds & Aplitic Dykes	Po - rare v.f.veinlets	tr
204.9-215.1	Altered Differentiated Granitoid	Po-scattered f. grains	1%
215.1-230.5	Fresh, Hd.Co. equicryst- alline Granitoid = Meredith Core	Qtz.- To - Py veins	tr

A detailed geological log is appended (Appendix 8). The detailed geology and interpretation are included in section form, Plans TAS/2/2924 and TAS/2/2984 at a scale of 1:500.

Nine drill core samples were dispatched to CMS (Central Mineralogical Services) for thin section description. The CMS report is appended (Appendix 7).

### 3.6.3 Geophysics

#### a) Magnetics (Plan TAS/2/2822)

The ground magnetic pattern is typically highly anomalous, clearly defining the width and limit of the skarn zone. The pattern west of the skarn is typical of hornfelsed argillite containing varying amounts of disseminated pyrrhotite, again demonstrating that on this line the skarn and granite are separated by hornfelsed sedimentary rock units.

#### b) Electromagnetics (Plan TAS/2/2822)

The Crone PEM profile on line 4220N(R) is distinctly anomalous over the skarn zone. This pattern is stronger than that on line 4400N - the line drilled by CAF 1. The EM response on line 4220N(R) is centered at 4570E which is 140m east of the granite contact. On line 4400N the conductor is centered at 4540E which is 45m east of the granite.

There is no anomalous response on line 4640N yet 55m of skarn has been intersected by CAF 5. So the strongest conductor yet detected within the skarn zone by PEM occurs on line 4220N(R). The most obvious source for this response is a sulphide concentration of predominantly Pyrrhotite.

c) Drill Core Magnetic Susceptibility

The results of the drill core magnetic susceptibility measurements are presented in section form as Plan TAS/2/2979. The readings were taken approximately every metre using a Geoinstruments Susceptibility Meter JH-8. Four readings were taken at each point, averaged, corrected for core diameter and plotted in SI units.

3.6.4 Geochemistry

a) Local

The soil geochemical results of the C-Horizon sampling clearly show an anomalous zone of all elements over the vicinity of the skarn. (Plan TAS/2/2822). The pattern shown on the attached profile is somewhat broken owing to the presence of alluvial concentrations in Greco Creek.

b) Downhole

The top 10.8 metres of the hole was triconed and four sludge samples, each of approximately three metres were taken over the first 11.0 metres.

The sludge samples were analysed for Sn, Cu, W, Pb, Zn, Ag and As.

The drill core, from 10.8-73.2 metres was sampled for geochemical assay by grinding a sample off the side of the core using a diamond studded wheel. The samples obtained were analysed for Sn, Cu, W, Pb, Zn, Ag, Au, Bi, Mo, F and As.

The remainder of the drill core was split in half using a diamond saw, one segment being dispatched to Analabs for analysis of Sn, Cu, W, Pb, Zn, Ag, Au, Bi, Mo, F, As and Ni.

Analytical techniques employed were as follows:-

Cu, Pb, Zn, Ag, Ni, Bi, Mo	- atomic absorption spectrophotometry
As	- vapour Hydride generation
Sn, W	- X-ray fluorescence spectroscopy
Au	- fire assay
F	- specific ion electrode determination.

The results of all analyses are tabulated as an appendix to the detailed drill log (Appendix 8) and also in drill hole section form on Plans; TAS/2/2943 (Sn, Cu, W); TAS/2/2944 (Pb, Zn, Ag), TAS/2/2945 (Au, Bi, Mo), TAS/2/2946 (F, As, Ni).

In addition, 38 sample pulps were retrieved from Analabs and dispatched to Amdel (The Australian Mineral Development Laboratories) for check analyses of Sn, W and Bi. Comparative results are listed below:-

Sample No.	Depth (m)	Sn (ppm)		W (ppm)		Bi (ppm)	
		Analabs	Amdel	Analabs	Amdel	Analabs	Amdel
Z 1219	52.8-55.8			130	180		
1220	55.8-58.8			140	190		
1221	58.8-61.8			160	200		
1222	61.8-64.8			140	190		
1223	64.8-67.8	7	10	150	200		
1224	67.8-70.8	3	12	130	180		
1225	70.8-73.2	BLD	4	180	210		
1226	73.2-75.0	BLD	4	BLD	BLD		
1227	75.0-77.5	4	4	10	BLD		
1228	77.5-79.0	BLD	10	BLD	BLD		
1229	79.0-80.5	7	16	BLD	10		
1230	80.5-82.7	BLD	10	BLD	BLD		
1231	82.7-85.0	BLD	10	BLD	BLD		
1232	85.0-88.0	BLD	6	BLD	BLD		
1233	88.0-91.0			6	10		
1234	91.0-92.1			BLD	BLD		
1235	92.1-94.0			BLD	BLD		
1236	94.0-97.0			BLD	BLD		
1237	97.0-99.0			BLD	10		
1238	99.0-101.3			18	30		
1239	101.3-102.8			515	600		
1245	106.6-109.8					76	95
1246	109.8-112.0					134	160
1247	112.0-115.0					114	150
1248	115.0-116.5					258	270
1249	116.5-119.0					110	150
1250	119.0-120.7					62	80
1251	120.7-121.8					160	210

Sample No	Depth (m)	Sn (ppm)		W (ppm)		Bi (ppm)	
		Analabs	Amdel	Analabs	Amdel	Analabs	Amdel
Z 1252	121.8-122.8					134	170
1262	141.5-143.5	1360	1300				
1263	143.5-148.0	1080	1000				
1264	148.0-150.0	2040	2000				
1265	150.0-150.9	1520	1450				
1266	150.9-152.6	1940	1900				
1267	152.6-154.5	839	800				
1268	154.5-156.2	1460	1450	90	120		
1269	156.2-156.9			198	260		
1270	156.9-159.5			340	350		

Further check analyses were carried out, as significant differences in the W values were noted between ground core samples and split core samples from apparently similar rock types. To investigate these difference 20.4 metres of previously ground core was split and dispatched to the laboratory for W analysis. The results are tabulated below:

Sample No	Ground Core (ppm)	Split Core (ppm)
Z 1219	130	<10
1220	140	<10
1221	160	10
1222	140	<10
1223	150	15
1224	130	10
1225	180	<10

The geochemical results from Analabs were divided into generalised lithologies; hornfelses sediments, skarn and granitoid, to aid in identification of anomalous sections. The results of a simple unweighted statistical analyses are tabulated below:-

Element	Lithology	Range of Values (ppm)	m* (ppm)	m + 2σ (ppm)	No of Anomalous Values
<u>Sn</u> (Plan TAS/2/2943)	Hornfelses Sediments	BLD-8	2	7	1
	Skarn	3-2040	637	1693	2
	Granitoid	-	BLD	-	-
<u>Cu</u> (Plan TAS/2/2943)	Hornfelses Sediments	20-330	135	262	3
	Skarn	20-890	294	666	1
	Granitoid	5-480	58	326	1
<u>W</u> (Plan TAS/2/2943)	Hornfelses Sediments	BLD-180	53	147	3
	Skarn	BLD-515	33	231	2
	Granitoid	BLD-150	14	100	1

(Plan TAS/2/2944)	<u>Pb</u>	Hornfelses Sediments	BLD - 80	29	70	4
		Skarn	20 - 75	37	62	3
		Granitoid	15 - 40	28	42	-
(Plan TAS/2/2944)	<u>Zn</u>	Hornfelses Sediments	60 - 305	161	277	2
		Skarn	75 - 285	150	258	2
		Granitoid	15 - 25	20	29	-
(Plan TAS/2/2944)	<u>Ag</u>	Hornfelses Sediments	BLD- 0.5	0.1	0.51	-
		Skarn	BLD- 0.5	0.1	0.54	-
		Granitoid	BLD- 0.5	0.1	0.6	-
(Plan TAS/2/2945)	<u>Au</u>	Hornfelses Sediments	BLD-0.008	BLD	0.009	-
		Skarn	BLD-0.076	0.015	0.058	-
		Granitoid	BLD-0.006	0.002	0.007	-
(Plan TAS/2/2945)	<u>Bi</u>	Hornfelses Sediments	BLD- 6	6	5	3
		Skarn	BLD- 258	51	156	2
		Granitoid	BLD - 6	2	7	-
(Plan TAS/2/2945)	<u>Mo</u>	Hornfelses Sediments	BLD -45.5	4	18	-
		Skarn	BLD- 11.5	1	4.5	1
		Granitoid	2.5-12.5	4.4	9.9	1
(Plan TAS/2/2946)	<u>F</u>	Hornfelses Sediments	500-2920	1077	2282	2
		Skarn	3500-5.24%	1.47%	2.37%	5
		Granitoid	890-1890	1214	1763	1
(Plan TAS/2/2946)	<u>As</u>	Hornfelses Sediments	BLD - 42	13	38	2
		Skarn	12-1000	266	767	2
		Granitoid	1- 57	18	78	-
(Plan TAS/2/2946)	<u>Ni</u>	Hornfelses Sediments	95- 275	164	226	3
		Skarn	35- 125	67	111	3
		Granitoid	97- 165	122	161	1

\* = mean

m + 2σ = mean plus twice the standard deviation

The best intersections, this time 'weighted' for width can be summarised;

i)	Tin	From	To	Width	Sn
a)		141.5	- 156.2m	14.7m	0.14%
b)		159.5	- 162.7m	4.1m	0.13%
c)	Entire Skarn	97.0	- 163.6m	66.6m	697 ppm
d)	Lower part of skarn	128.6	- 163.6m	35.0m	0.1%

ii) Fluorine

a)	105.7 - 128.6m	22.9m	1.98%
b)	154.5 - 162.7m	8.2m	2.33%

3.6.5 Discussion

The discussion of data collected from CAF 7 and conclusions derived are brought together with similar information from the three previous skarn drill holes (CAF, 3, 5, 1) in a general discussion of the skarn, Section 3.7.

The geochemical sampling of the core by grinding it in the wrong direction gave spurious W values from the tungsten carbide matrix in a similar manner to CAF 5 - see section 3.4.5.

3.7 Discussion

3.7.1 General

For the purpose of this discussion the drillholes which intersected the major skarn zone CAF 7, 5, 3 and 1 (7, 5, 3 this programme) are grouped together.

Firstly there are a number of general points to be made. The Ramsay skarn is a calcic skarn with a probable major primary mineral assemblage of;

- Andradite - grossular garnet -  $Ca_3(Fe^{3+}Ti)_2Si_3O_{12}$
- $Ca_3Al_2Si_3O_{12}$
- Diopside - hedenbergite -  $Ca(Mg, Fe)[Si_2O_6]$
- Vesuvianite -  $Ca_{10}(Mg, Fe)_2Al_4[Si_2O_7]_2[SiO_4]_5(OH, F)_4$

The garnet varies between the  $Fe^{3+}$  - Ti andradite and Al grossular. The two are distinguishable in that the andradite is usually dark brown-dark red whereas the grossular is a light brown verging on pink. In terms of theoretical genesis, both are primary prograde minerals. However the andradite is usually formed by an infiltration process into the marble whereas the grossular tends more to be the product of local bimetasomatic contact alteration across a boundary of two unlike rock types one of which being marble. Grossular also results from regional metamorphism.

037

Ore grade mineralisation of any kind is rarely associated with grossular.

The garnet forms first, growing as large poikilitic zoned crystals usually with significant embedded pyroxene. If insufficient silica is available magnetite may also form at this early stage. It is unclear whether the magnetite at Ramsay which can form up to 30% of the rock formed thus or in the normal tertiary oxide alteration stage.

The other major primary mineral occurring at Ramsay is vesuvianite or idocrase which in fact has a very similar crystal structure to garnet and forms poikiloblasts in the same manner as garnet. However vesuvianite is highly variable in colour at Ramsay, ranging from grey, green, mauve to amber brown, the latter making it totally indistinguishable from garnet. The vesuvianite also contains embedded diopside.

Diopside, although a very important primary mineral occurs mainly as inclusions in garnet and vesuvianite, interstitial fillings or fine granular masses. The colour is also variable owing to macroscopically invisible inclusions of minerals such as actinolite-tremolite (gr-yellow) and goethite (brown). At Ramsay the clinopyroxene tends towards the Mg member as opposed to the more usual skarn member, hedenbergite which is Fe rich, although it is sometimes present.

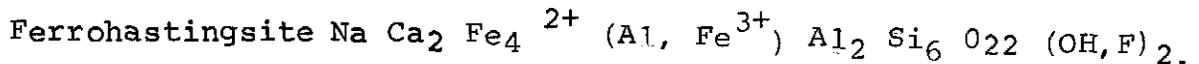
Primary interstitial minerals of the Ramsay skarn appear to include calcite (Ca CO<sub>3</sub>) and fluorite (Ca F<sub>2</sub>). The fluorite is notable for its clear often coarse crystals which are not highly fluorescent.

This mineral grouping is similar to the classical primary mineral assemblage formed by prograde alteration of an argillaceous limestone by magmatic fluids rich in iron and silica. The presence of Vesuvianite as a primary poikiloblastic phase and the trend of pyroxene towards its more magnesium rich end member diopside necessitates the presence of significant amounts of magnesium. Small amounts of dolomite would be sufficient, however it is more likely that the argillaceous Crimson Creek Formation sediments which are known to contain abundant Al<sub>2</sub>O<sub>3</sub> and MgO are a more likely source. In one thin section from CAF 7 the core is predominantly andradite garnet still in the process of forming from an almost pure limestone (now calcite) with embedded pyroxene. This is the only clear evidence of the original limestone.

The presence of the questionable dolomite cherts described by CMS does not appear to be significant with respect to the original carbonate composition.

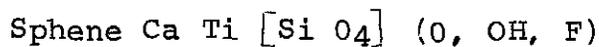
It is envisaged that in the more impure limestones, that is those where sediments, probably argillaceous, exceed the amount of Ca CO<sub>3</sub>, Vesuvianite is formed. If the limestone is almost pure, then the classical andradite-diopside mineral assemblage forms. At this primary anhydrous stage the iron composition is dominated by the Fe<sup>3+</sup> ion, hence the Sn<sup>4+</sup> derived from the magmatic fluids will be largely incorporated in the various mineral lattices. Up to 6% Sn can be included in the garnet lattice making economic separation impossible.

However few skarns maintain their primary assemblage and as with the Ramsay skarn widespread hydrous infiltration alteration takes place as temperatures drop and meteoric water brought in by a convective mechanism starts to dominate. The mineral assemblage formed, often called the retrograde assemblage, is dominated by calcium amphibole. This stage in the Ramsay skarn is dominated by ferrohastingsite.



It occurs at first in the form of veinlets, then vein networks, then finally as full scale replacement of the vesuvianite and garnet. It rarely tends to hastingsite or actinolite. In hand specimen it is relatively distinctive, being dark green and often coarsely crystalline displaying good needle-fibrous like growth.

Sphene is often associated with the ferrohastingsite, occurring as sheaves of acicular crystals, sometimes visible in hand specimen as white crystals.



Coarse patches of calcite are sometimes associated with ferrohastingsite.

This retrograde assemblage is brought about by the destruction of the primary minerals in a reduction reaction whereby Fe<sup>3+</sup> → Fe<sup>2+</sup>. In theory where Sn has been present in the original magmatic fluid and tied up in the lattices of the primary minerals it is now forced out and the maximum amount of Sn found in ferrohastingsite to the authors knowledge is 0.8%. In other skarns it is at this retrograde of Stage 2 that free cassiterite could be expected. No cassiterite was noted in the Ramsay core however stanniferous sphene was possibly identified.

could go into sphene

Magnetite and sulphides make up the last major stage of alteration at Ramsay. There is also evidence to suggest that it could be broken down further to Magnetite replaced by pyrrhotite ± pyrite replaced by chalcopyrite.

This last stage of retrograde alteration is in fact, theoretically the most logical site to encounter cassiterite. A controversial example of this could be Renison Bell where all that is present now is a pure retrograde assemblage.

### 3.7.2 Tin

If the drilled portions of the Ramsay skarn do indeed conform to the theoretical model of a multistage replacement calcic Sn-F skarn derived from an impure argillaceous limestone as the mineral assemblage does suggest then there are certain sites that are mineralogically and statistically favourable for the occurrence of ore.

The first which has already been outlined is those areas of the most 'advanced' retrograde alteration. That is zones of predominantly ferrohastingsite or even more preferably predominantly sulphide and ferrohastingsite. The hypothesis is easily tested with respect to Sn;

#### CAF 1

Best Sn intersections	Description	Weighted Average	Skarn Av. (unweighted)
1) 203.0 - 216.3	dk gr C.xtaline ferrohastingsite with calcite skarn	0.19%	0.06% n=162
2) 233.45 - 244.75	xtaline ferrohastingsite skarn	0.13%	0.06%

#### CAF 7

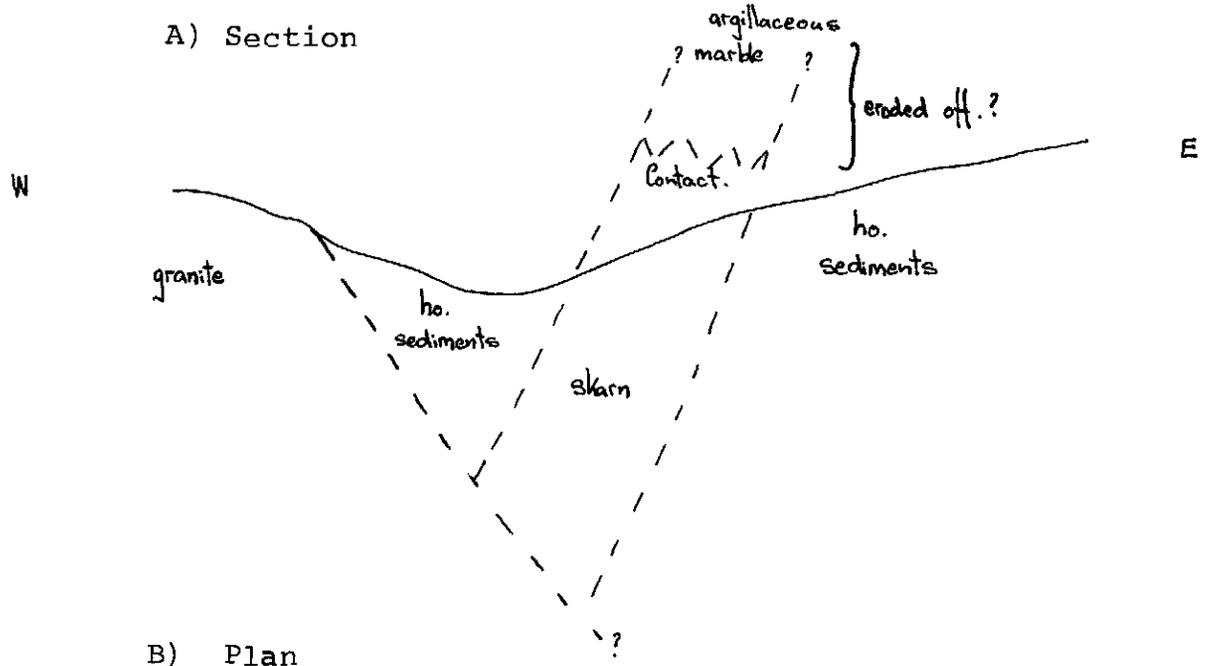
1) 145.3 - 152.6	Mt-Ferrohasting-site-Po skarn	0.16%	0.07%
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The correlation is extremely satisfactory as the three zones outlined above are the major Sn rich and ferrhastingsite dominant zones. Unfortunately the drill portions of the Ramsay skarn are mostly a combination of primary and retrograde skarn. It is evident that there is a greater proportion of retrograde skarn in the southern portion of the skarn, represented by CAF 1 and 7.

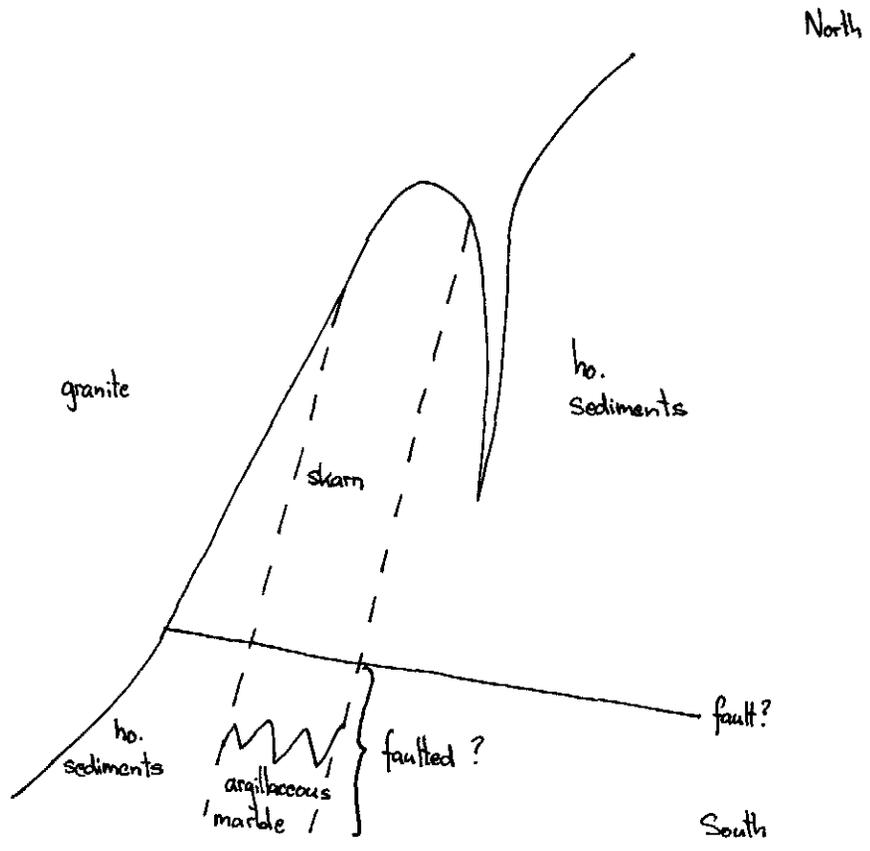
Thus this area appears to offer the best potential for economic concentrations of Sn.

The second favourable site for Sn mineralisation is at the skarn - marble contact. In fact, experts in the field of skarns suggest that when dealing with an infiltration skarn such as that at Ramsay, in roughly 70% of cases the high grade ore is found adjacent to the marble-skarn contact. Unfortunately in the case of the Ramsay skarn this second site may not be present as the two sketches show:

A) Section



B) Plan



What abt. phlogopite!

This zonation away from the granite is partly confirmed by the fact that the theoretical model predicts the presence of annite in the skarn nearest the pluton. CAF 3, drilled at the northern end of the skarn, virtually surrounded by the pluton is the only drillhole which contains appreciable amounts of phlogopite which is virtually indistinguishable in thin section and hand specimen from annite. Annite occurs in a similar position at Mt Lyndsay which is also similar to the Ramsay skarn in many other respects. It is also worthy of note that at least forty drillholes have been drilled at Mt Lyndsay. Furthermore, owing to the complex zoning and structure of most skarns, experience from Canadian and American skarns show that a drill spacing of approximately 30 metres is required to adequately test a skarn.

It is noted that the most encouraging Sn results were derived from CAF 1 and 7 in the southern portion of the skarn, where the skarn is thickest and widest, ie significantly more tonnage potential than in the northern Sn poor area. Present approximate skarn dimensions are:

	Width (m)	Depth (m)	Length (m)
CAF 3	15	25	
CAF 5	45	90	700
CAF 1	100	220	
CAF 7	50	140	
Average	50	120	

### 3.7.3 Tungsten

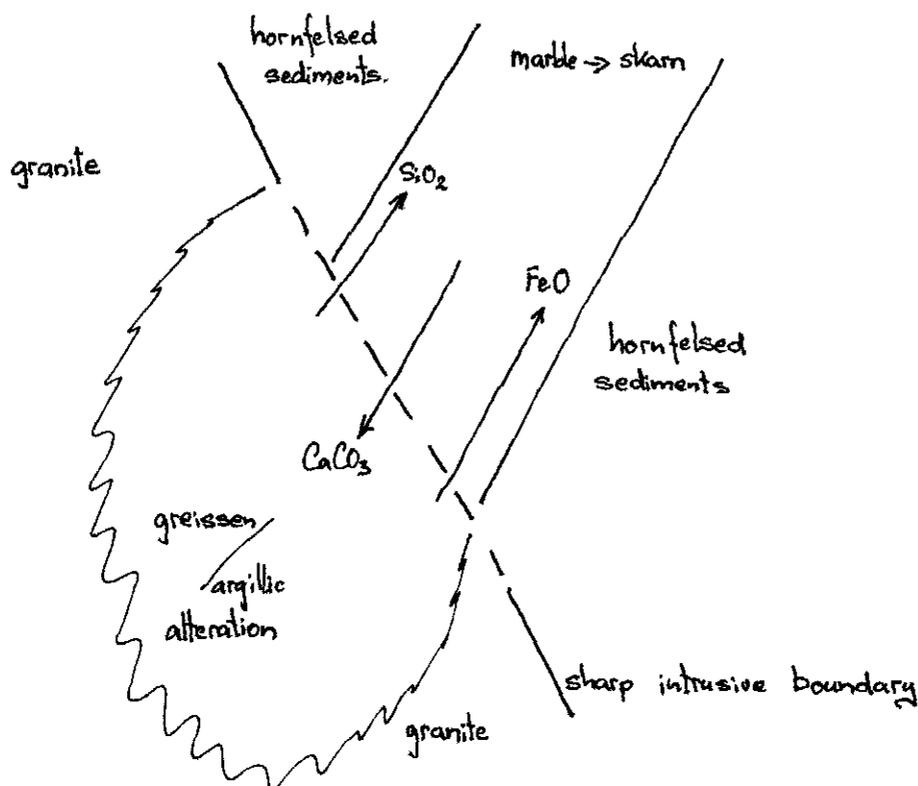
Although W is not always associated with Sn skarns it is not uncommon. As DDH CAF 3 was drilled on a very significant W soil anomaly, in excess of 100ppm the W potential of the Ramsay skarn cannot be overlooked. In fact the magnitude of the W soil anomaly is similar to that which led to the discovery of the Bold Head ore body at King Island. W values down CAF 3 averaged below the limit of detection, 10 ppm. It is possible that all the W bearing skarn which gave rise to the soil anomaly has been eroded off as postulated in the previous sketch A. However the alternative is that the W has been concentrated in a certain chemically favourable zone within the skarn. The skarn intersected in CAF 3 contained grossular as the garnet phase and hence in hindsight was predictably barren of W and significant Sn.

Tungsten as scheelite can occur throughout an andradite-pyroxene-amphibole-magnetite skarn, as W is not accepted into the various mineral lattices as Sn is. However like Sn, W is concentrated into higher grade by the retrograde amphibole alteration. Such a situation occurs at Kara, a similar W-Sn-F type skarn to the northeast. Mt Lyndsay is also given as a prospect belonging in this group of skarns.

The tungsten in the soils at King Island was found to be suprisingly mobile and peak values were displaced erratically from the subsurface mineralisation. Hence the northern W zone (soil anomaly) remains untested, however with the present scant drill hole information the position of the andradite-pyroxene-amphibole source? is problematical.

3.7.4 Alteration

If the W-Sn-F skarn type classification is accepted at least as a general starting point, then some degree of greispenization of the granite is 'invariably present'. This is in fact the case at Ramsay, where the skarn abuts the granite. DDH CAF 5 intersected the granite-skarn contact. This zone within the granite cannot be termed an endoskarn or a greissen (senso stricto) as the first demands calc-silicate alteration and the second requires the presence of topaz. The zone reflects a two way reaction between the marble and granite, that is certain compounds also move from the marble (mostly  $CaCO_3$ ) into the granite. The sketch below summarises the possible situation;



Although topaz is not present, the term greissen is appropriate as the quartz-muscovite-carbonate-rutile assemblage is anomalous in F, up to 2.8% and indicates at least moderate pneumatolytic alteration in addition to the carbonate 'flooding' and argillic alteration.

	Depth	Unweighted average	Unweighted Average of Granitoid(CAF5)
"Greissen" Zone (CAF 5)	128.0-144.6m	4413 ppm F	2103 ppm F
	" "	55 ppm Sn	26

The greissen zone is anomalous in Sn, as outlined above, however it did not contain any economically significant values. Owing to the low values and probable limited extent of the greissen, it is considered a secondary target with respect to the skarn.

### 3.7.5 Structure

The structure of the general skarn has been proved elsewhere to be extremely important for example at King Island (Tasmania) faults controlled the mineralising fluids. The environment of the skarn, adjacent to a pluton, makes it susceptible to all the fracturing and faulting associated with the pluton's emplacement.

The major fault identified at Ramsay which appears to terminate the skarn to the south may be acting as a similar concentrator of mineralisation. Hence it is a valid primary target for exploration.

## 3.8 Recommendations

### 3.8.1 Skarn Zone

On the basis of encouraging Sn results in CAF 1 and 7, the intersection of a promising retrograde mineral assemblage and as yet unexplained significant W soil anomaly vigorous follow up work is sought.

Further drilling is recommended on the Ramsay skarn, general targets being;

- 1) Further concentrations of the retrograde mineral assemblage.
- 2) Margins of the skarn
- 3) Structurally controlled concentrations
- 4) Northern tungsten anomaly

### 3.8.2 CAF 4 EM Zone

In the short term a detailed downhole EM survey is strongly recommended to locate the postulated conductor. A further diamond drill hole would then be drilled to follow up this survey. Although the skarn zone is of priority for follow up, it must be remembered that this EM anomaly, known as CAF (West) from the Input survey was one of the major reasons for CAF grid being cut and it would be premature to write off such a significant response in such a geologically favourable position.

### 3.8.3 CAF 6 EM Zone

Although CAF 6 was partly successful in locating the EM conductor it appears that the zone must be more massive close by, owing to the extraordinary quality of the response.

It is noted that the PEM response on this zone is the best yet encountered in the Ramsay part of the EL. Therefore a downhole EM Survey is required to locate the best position for another diamond drill. If the downhole survey is unsuccessful for whatever reason a second drillhole is highly recommended midway between L 4220(N)R and 4400N.



N P GREEN

LIST OF PLANS

Plan Number	Description	Scale
VOL 2 TAS/2/2724	Location of Drillholes - central sheet	1:2 500
2101	Ramsay Grid - CAF - Geol. Interp. - northern sheet	1:2 500
2920	Ramsay Grid - CAF - Plan & Section of DDH CAF 3: Geol. Details	1:500
2980	Ramsay Grid - CAF Section of DDH CAF 3 Geol. Interp.	1:500
2251	Ramsay Grid - CAF, L 4820N, Composite Section	1:2 500
2436	Ramsay Grid - CAF, Ground Magnetic Contours	1:2 500
2975	Ramsay Grid - CAF, Section of DDH CAF 3: Core Magnetic Susceptibility	1:500
1849	Ramsay Grid - CAF, Geochem auger sampling: Sn contours (Plan)	1:2 500
1850	Ramsay Grid - CAF, Geochem auger sampling: W contours (Plan)	1:2 500
2927	Ramsay Grid - CAF, Section DDH CAF 3: geochemical results Sn/Cu/W	1:500
2928	As above Pb/Zn/Ag	1:500
2929	" " Au/Bi/Mo	1:500
2930	" " F As/Ta/Fe (tot)	1:500
2921	Ramsay Grid - CAF, Plan & Section DDH CAF 4: Geol. details	1:500
2981	Ramsay Grid - CAF, Section DDH CAF 4: Geol. Interp.	1:500
1851	Ramsay Grid - CAF, L 4760N Composite Section	1:2 500
1852	Ramsay Grid - CAF, L 4880N Composite Section	1:2 500
2976	Ramsay Grid - CAF, Section DDH CAF 4 Core Magnetic Susceptibility	1:500
2931	Ramsay Grid - CAF, Section DDH CAF 4: Geochemical results for Sn/Cu/W	1:500
2932	As above Pb/Zn/Ag	1:500
2933	" " Au Bi Mo	1:500
2934	" " F As	1:500
2922	Ramsay Grid - CAF, Plan & Section DDH CAF 5: Geol Details	1:500
2982	Ramsay Grid - CAF, Section DDH CAF 5: Geol interp	1:500
2253	Ramsay Grid - CAF, L 4640N, Composite Section	1:500
2977	Ramsay Grid - CAF, Section DDH CAF 5: Core Magnetic Susceptibility	1:500
VOL 3 2164	Ramsay Grid - CAF, Geochem auger sampling: As contours	1:2 500

2935	Ramsay Grid - CAF, Section DDH CAF 5: geochem results for	Sn/Cu/W	1:500
2936	As above	Pb/Zn/Ag	1:500
2937	" "	Au/Bi/Mo	1:500
2938	" "	F/As/Ni/Li	1:500
2860	Ramsay Grid - CAF, Drill hole location plan (South)		1:2 500
2812	Ramsay Grid - CAF, South Grid Extensions: geol interp		1:2 500
2923	Ramsay Grid - CAF, Plan & Section DDH CAF 6: geol details		1:500
2983	Ramsay Grid - CAF, Section DDH CAF 6: geol interp		1:500
2968	Ramsay Grid - CAF, Section: ground mag profiles L4220N & L4220N(R) compared		1:1 000
2822	Ramsay Grid - CAF, L 4220N(R) Composite Section		1:2 500
2978	Ramsay Grid - CAF, Section DDH CAF 6: core magnetic susceptibility		1:500
2939	Ramsay Grid - CAF, Section DDH CAF 6: geochem results for	Sn/Cu/W	1:500
2940	As above	Pb/Zn/Ag	1:500
2941	" "	Au/Bi/F	1:500
2942	" "	As/Ni	1:500
2924	Ramsay Grid - CAF, Plan & Section DDH CAF 7: geol details		1:500
2984	Ramsay Grid - CAF, Section DDH CAF 7: geol interp		1:500
2979	Ramsay Grid - CAF, Section DDH CAF 7: core magnetic susceptibility		1:500
2943	Ramsay Grid - CAF, Section DDH CAF 7: geochem results for	Sn/Cu/W	1:500
2944	As above	Pb/Zn/Ag	1:500
2945	" "	Au/Bi/Mo	1:500
2946	" "	F/As/Ni	1:500

047

639048

LIST OF APPENDICES

Appendix Number	Description
1	Central Mineralogical Services Report
11	DDH CAF 3 Detailed Geological Drill Log
111	Central Mineralogical Services Report 82/3/10
1V	DDH CAF 4 Detailed Geological Drill Log
V	DDH CAF 5 " " " "
V1	DDH CAF 6 " " " "
V11	Central Mineralogical Services Report 82/4/35
V111	DDH CAF 7 Detailed Geological Drill Log

APPENDIX 1

048

049

639050

IN PREPARATION WITH  
SECTION 1

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050

639051

APPENDIX 11

051

639052

# AUSTRALIAN ANGLO AMERICAN LIMITED DRILLHOLE LOG

Page  
of 1

## Summary Sheet

PROJECT RAMSAY	AREA CAF	GRID	DRILLHOLE TYPE
CO-ORDS 371305 m E 5395079 m N	DEC <sup>LN</sup> 70°	AZIMUTH 264° MN RL	DH No. CAF.3
DATE COMMENCED 8/1/82	DATE COMPLETED 11/1/82	DRILLED BY LONGYEAR	DRILL RIG LONGYEAR 38
Non Coring to: 3.00m HQ Core to:		NQ Core to: 21.00m BQ Core to: 63.00m EOH 63.00m	

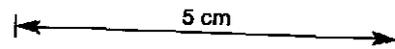
### SURVEY DATA Instrument:

DEPTH	DECLINATION		AZIMUTH	DEPTH	DECLINATION		AZIMUTH
	Uncorr	Corr			Uncorr	Corr	
0		70°	264° Mag				
30m		69.5°	271° Mag				
59.5m		68°	286.50				

### LOG SUMMARY

ROCK TYPE	MINERALIZATION		
	Style	Grade	Intersection width (Corr)
0.3m Triconed (Hornfelsed Sediment)			
3.7-2m Ferrohastingsite skarn + minor calc-silicate replaced pelitic ho	Disc + Band Mt 5%, Vein Py 1%	6%	
7.2-8.8m Med. disequigranular xtaline leuco granite ± skarn xenolith			
8.8-10.5m Phlogopitic Ferrohas <sup>skarn</sup> site	Banded + diss Mt 15% Potr	15%	
10.5-15.4m Banded Vesuvianite - Diopside Ferrohastingsite - Magnetite skarn	Banded + diss Mt 15% & Vein. Po tr	15%	
15.4-18.2m Banded Pale gy-gr pelite ho + calc-silicate alt seds.	Diss. Po + f. vein Po	tr	
18.2-19.3m Fine equicrystalline biotite granite			
19.3-21.9m Patchworked Ferrohastingsite Mt. <sup>skarn</sup>	Diss + Banded mass Mt 15% Vein Patch Py 2%	17%	
21.9-26.0m Patchworked Vesuvianite - Diopside - Ferrohastingsite - Mt skarn.	Patch + diss Mt 5%, patch Py 1% By rim. Cp-tr, f diss Po tr	6%	
34.7m Interlayered ho seds + calc-silicate replaced rocks	Diss + Vein Po - 30%, Vein Py 1%	4%	
34.7-34.9m Fine xtaline gy biotite granite			
34.9-43.6m Interbedded ho. Sediments	Vein of dics Po - 2%, Vein Py-tr	2%	
43.6-53.2m Intercalated ho. Sediments + minor spotted ho.	" " " - 1% " " "	1%	
53.2-57.3m Sl. Differentiated semi porph biotite granite	Vein To ± qz	tr	
57.3-63.0m Porphyritic biotite granite	" " "	"	

002



DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
	Triconad.									
3.0	0.5	0.35	70%	3.0	Broken, weathered - vary wthd red-brown fractured & pitted predominantly dark green, medium-coarsstg ferrohastingsite - amphibole skarn, & minor pale grey pelitic hornfels.	extensive Fe oxidation of core staining re-br & minor black MnO <sub>2</sub> along fracs, rare disseminated quartz.	3.4 contact c. sk & pl ho - probable bd = 35°	Structure generally of a "patchwork" of sk components & pl ho, finely banded & probably replaced bedding.	intense re-br Fe oxidation probably indicates extensive dis sulphide development, minor dis Pyrite in fresher parts.	2%
3.5	0.6	0.95	100%+							
4.1	1.2	1.2	100%							
5.3	1.1	0.7	63-64%							
6.4	0.5	0.38	70%	6.4	Pelitic hornfels - pale gy-gy, f. banded, broken, frac, wthd, re-br.	re-br oxidation effects confined to fracs & vns.	6.3 banding at 45° contact at 45°		8% dis & few fine irregular bands of Mt. Most steel gy when visible, often not.	10%
6.9	1.2	0.95	79-17%							
7.2				7.2	Granite - mg. dis equigranular, crystalline leuco granite - white-pale gy; feldspar 60%, quartz 30%; almost graded? in places & amph ex xenolith.	as above & rare subtle f. qz-tourmaline vns, sometimes & v.f. ophitic vns. f. common dk br stained phlogopite at upper contact	7.1 B at 35°	Appears to approx coarsen towards centre; c. subtle banding at 25° near upper contact - reflect contact reaction - contact at 35°	barren.	0
8.1	3.1	3.1	100%							
8.8				8.8	Amphibole skarn - dk gr ferrohastingsite, f. xaln, micaceous? - phlogopitic? - soft, heavy, & pale green diopside & gy magnetite.	v. minor Fe oxidation. f. phlogopite? at top producing soft rock.	9.5 banding ± B = 20° & replaced flame & loading structures or injection replacement structures - contact at 20°		9.6 common - v. common steel gy Mt as discontinuous bands up to 50 mm & dis.	15%
10.5				10.5	Banded Vesuvianite - diopside - Magnetite skarn. Pale gr f. xaln diopside matrix & bands & br-gr vesuvianite - f. xaln dis & bands of metallic gy Mt; minor dk gr c. vein ferrohastingsite. Vesuvianite sometimes as radioform clusters.	Radioform vesuvianite up to 5mm appear to be last replacement phase in amph, probably replacing c-m. beds. Minor wh s. calcite irregular veining sometimes associated & c. dk gr xaln ferro-hastingsite.	11.0 banding at 25° // & foliation above & below.			
11.2	3.1	3.05	98-39%							
11.9				11.9				11.9 banding at 20° Generally banded, rarely finely, often subtle & graded contacts.		
12.7				12.7				12.7 banding at 40°		
13.0	1.7	1.7	100%					13.0 banding Vesuvianite / Mt at 25°		

SCALE 1:100 (1cm = 1m)

COMSTAFF PROPRIETARY LIMITED

DRILLHOLE LOG FOR DDH CAF3

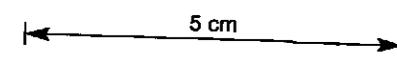
LOGGED BY N.P. Gzran

FROM 0 TO 15m

DATE 0/1/82

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639023



DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
16.0	3.0	3.0	100%	16-17	<u>Pelitic hornfels</u> banded - finely banded pale gray - pale brown - pale green - gr - very fine diopside with v.f. vesuvianite? Highly finely gr. veined & few patches - "inclusions" of coarse-medium skarn material.	Highly & finely veined & dk gr chloritic/amphibole alteration? & white wall rock alt" (halo) round vns makes up a f. network.	16-3 qv contact at ~35° 16-3 qv at 25° 16-3 foliated at 15° 16-4 f. veining & fol at 10°	15-3 20mm dis. Fe band. v. rare disseminated Pyrrhotite associated & v.f. -f. amph veining & possible Magnetite.	30%	
19.0	1.6	1.7	100%+	18-19	<u>Granite</u> Biotite granite; feldspar 45%, quartz 30%, bi 25%. f. crystalline, equigranular & sharply bounded sedimentary xenolith.	minor red-br Fe oxidation staining at base. minor alt" - finer grain around sed xenolith. 19-2 2mm bk to vns at 35°	18-0 finely fol at 10° contact at 40° 18-1 sed xenolith granite harder & more competent at top; more fractured & altered at base. contact at 20° 18-5 amph/fluorite vns at 35°	essentially barren & minor Pb associated & amph veins in xenolith.	4%	
20.5	3.1	3.1	100%	19-21	<u>Amphibole skarn</u> , & ferrohastingsite, m.c. xaln, patchworked & minor pale gr diopside & minor vesuvianite.	rare wh xaln fluorite patches in vns associated & c. dk gr xaln amph. v. rare, v.f. wh calcite veining.	19-5 generally a relatively fine patchwork & minor banding.	dis Mn 3% rarely as discontinuous bands; Py 7% as v.f. discon. vns. v. rare -f. dis. eroded patches - 20-0 5mm Py-qtz oxidized & -f. dis. at 40°	10%	
23.9	3.1	3.1	100%	21-24	<u>Vesuvianite - Diopside - Ferrohastingsite - Magnetite skarn.</u> Patchworked at top, gaining a coarsely banded appearance at base. Diopside mainly interstitial to amph & Mt. Possibly minor xaln garnet at top.	rare. f. wh interstitial Cal, often associated & bands of c. ferrohastingsite & vesuvianite - garnet? fluorite as above.	gradational contact	20-2 Mn - dis, massive in part & minor irregular bands - steel gy & re tinge in strong light. black stockwork.	20%	
26.0	3.15	3.15	100%	24-27	<u>Interaltered hornfelsed argillite &amp; calc silicate rocks.</u> gy & br tinge ho ar interlayered & pale gy. often & slight pale gr tinge. milky calc-silicate rock; & fine & irregular veined - gr to dk gr amph & Py. Relatively light c.-f. sk rocks & harder rare inclusions of vesuvianite.	few v.f. irregular discontinuous Cal & amph & Py-Pb vns only read & concentrated HCl. rare interstitial Cal associated & vesuvianite, also assoc. minor wh fluorite. f. amph vns common in calc-silicate rocks. br tinge to seeds possibly from v.f. dis bi.	24-9 banding at 20° base distinctly banded & gradational contact at -45° 24-2 B at 40° 26-9 B at 60°	Mt - dis, patchy & as irregular bands, steel gy - 1% Pyrite - few f. patches - 1% chalcopyrite - rare rims to Py - tr Pb - f. dis. - tr	6%	
27.0	3.15	3.15	100%	27-30	<u>Interaltered hornfelsed argillite &amp; calc silicate rocks.</u> gy & br tinge ho ar interlayered & pale gy. often & slight pale gr tinge. milky calc-silicate rock; & fine & irregular veined - gr to dk gr amph & Py. Relatively light c.-f. sk rocks & harder rare inclusions of vesuvianite.	few v.f. irregular discontinuous Cal & amph & Py-Pb vns only read & concentrated HCl. rare interstitial Cal associated & vesuvianite, also assoc. minor wh fluorite. f. amph vns common in calc-silicate rocks. br tinge to seeds possibly from v.f. dis bi.	Calc-silicate rocks often v.f. banded, bands often convoluted & minor meso-faulting. Bedding rarely picked out by incipient, bd. controlled alteration-replacement gradational contact	Common f. Py & Pb & Py-Pb vns. irregular & often discontinuous & often associated & quartz & Cal. 12 Common v.f. dis Pb in ho psammitic units - 4%	5%	

SCALE 1:100 (1cm = 1 m)

639024

059

5 cm

DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
30-15	3-15	3-15	100%	31-33	Interbedded hornfelsed sediments into hard - very hd ho br psammitic sandstone & rare white spotting & spotted ho, & grey ho siltstone & minor argillite.	common fine, irregular, discontinuous dark green amphibole + Py & calcite veins. Cal rarely as well developed rhombohedrons few f. wh quartz? vns. especially towards base. v. minor wh relatively f. spotting in a few of the coarse beds. Cloudy replacement alt <sup>n</sup> decreasing.	well bedded in part & few slump features. more defined towards base.		5%	
33-3	3-1	3-1	100%	34-35	34-7 granitic - minor apophysis f. calc. by biotite granite. 34-9 into ho sediments. As above.	34-7 thin argillitic reaction cortex low irregular qz, & gr. alt <sup>n</sup> as before granite. 35-1 f-v.f. wh - pale gy q.v.s irregular & Py, & dk gr amph. qz decreasing towards base + Py + Po increasing.	33-9 B at 20° 34-6 B at 15° Sharp contact at 40° al brecc. sharp contact at 45°	32-3 few discontinuous irregular Pyrrhotite + Pyrite vns - crystalline. minor v.f. disseminated to associated & coarser ps units. barren.	2%	
36-4	2-9	2-9	100%	36-37			36-1 common f. irregular discontinuous to Py vns & minor qz, produce blue-gy reaction haloes. Cloudy br replacement possibly biotite into some ps units.	36-1 B at 20° 36-9 B at 20° possible arched surfaces etc.		
39-3	3-1	3-05	98.39%	39-40						
42-4	3-0	3-1	100%+	43-44	43-6 Intercalated spotted hornfels & hornfelsed sediments. Gy spots developed in br altered coarser psammitic units & spotted ho into & gy ho siltstone & minor highly	43-6 few f. v.f. gr amph. qz. to vns. br alt <sup>n</sup> - replacement (bi) continued, gy spots	40-1 B at 20° 44-5 B, gradad at 40° downhole.			

SCALE 1:100 (1cm = 1m)

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DRILLHOLE LOG FOR DDH CAF 3

LOGGED BY NPG FROM 30 TO 45m DATE 15/1/82 PAGE 4 OF 6

055

5 cm

DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE			INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
	ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY							
45.4	3.0	3.08	100% ↑	(con)	altered pale gray calc-silicate.	(con) later stage again, sometimes as spotty vns.		45.2 B at 47° gradad downhole.	45.4 General decrease in sulphide veining. - minor very fine Pyrrhotite + rare Pyrite veining often associated & quartz +/or v.f. amphibole. - minor v.f. Pb replacement in psammitic units.	<1%
48.7	3.1	3.15	100% ↑	49.5	Intercalated hornfelsed sediments. - lack of coarse gy spots, equivalent to before spotted hornfels.	brown replacement psammitic units - fine to medium micaceous ie slightly coarser than before. Lack of c. gy spotting. Few dark green amphibole vns + minor vns controlled diopside replacement.		49.2 replaced rip-up clasts aligned along B at 35° & possible gradad bedding A		
51.6	2.9	2.85	98.28%	53.2	Differentiated Granite - complex biotite granite, biotite showing concentration, possibly remobilized. Semi porphyritic with distinct bimodal size distinction only developed in feldspar. Phenocrysts = 40% - 60% ; total bi 15% ; total quartz = 40% ; total feldspar 45%	definite areas - bands of enriched bi + leached bi - almost aplitic. Very rare, very fine calcite vns. few v.f. q.v.'s. - 51.1 v.f. eroded Cal vns at 20°		bracciated intrusive contact. 54.4 sharply bounded xenolith 54.9 band of more concentrated bi & preferred orientation // & band at 65°	minor tourmaline veining. (see alteration) no sulphide mineralization.	0
54.8 54.7	0.2 3.0	0.2 3.1	100% 100% ↑	57.3	Porphyritic Biotite Granite. & rare black Tourmaline veins. phc 60% , total bi 10%  average size qz phc = 49% - 7 mm feldspar phc = 80% - 10 mm bi phc = 1% - 3 mm	rare qz-to vns & v. minor associated Cal. Unaltered + v. hard towards base. ↓ - 54.2 v.f. eroded out cal vns - 54.3 to - q.v. at 30° at 20° - last stn phase.		54.5 minor fracturing of granite at 20°		

SCALE 1:100 (1cm = 1m)

COMSTAFF PROPRIETARY LIMITED

DRILLHOLE LOG FOR DDH CAF 3

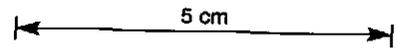
LOGGED BY N.P.G.

FROM 45 TO 60m

DATE 16/1/82

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639056



DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
60.5	2.5	2.55	100%	61 62 63		60.3 fine qz-10 vln at 35° 60.5 fresh very hard granite & no alteration & very rare, v.f. quartz veins.		massive, unfractured, v. hd, compactant conz.		0
					End of DDH: CAF 3 at 63.0 m					

SCALE 1:100 (1cm = 1 m)

639057

COMSTAFF PROPRIETARY LIMITED

DRILLHOLE LOG FOR DDH CAF 3

LOGGED BY NPG FROM 60 TO 63m DATE 17/1/82 PAGE 6 OF 6

057

Metres	Sn	Cu	N	Pb	Zn	Ag	As	Ni									SAMPLE NUMBER
0.0m	350	145	140	35	150	0.5	110	110									Tricone Sludge ↓
3.0m	340	315	25	45	165	3LD	43	135									
6.0m	140	185	65	35	170	3LD	25	115									
9.0m	190	130	15	15	185	0.5	32	110									
12.0	210	95	10	15	170	3LD	21	85									
15.0																	

COMSTAFF PROPRIETARY LIMITED      ASSAY RESULT SHEET FOR      DDH CAF 3

ASSAYED BY Analabs      FROM 0 TO 15m      DATE 25/1/82      PAGE 1A OF 5

639058

	Metres	Sn	Cu	W	Pb	Zn	Ag	As	Ni								SAMPLE NUMBER
15.0																	
17.0	170	155	10	20	120	3LD	22	85									
18.0																	
20.0	230	210	15	45	65	0.5	29	20									
21.0																	
22.0																	
23.0																	
24.0																	
25.0																	
26.0																	
27.0																	
28.0																	
29.0																	
30.0																	

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 3

ASSAYED BY Analabs

FROM 15 TO 30 m

DATE 25 / 1 / 82

PAGE 2A OF 5

059

Matrix	Sn	Cu	WO <sub>3</sub>	Pb	Zn	Ag	Au	Bi	Mo	Total Fe	Total S	F	As	Ta	Ni	SAMPLE NUMBER
0	350	145	BLD	35	150	0.5	-	-	-	-	-	-	110	Tricone	110 Sludge	
3.0	420	210	BLD	15	140	BLD	0.025	6	1.0	21.0%		1020	22	BLD	Split Core ↓	Z1401
6.4	35	105	BLD	15	80	BLD	0.020	BLD	3.0	9.7%		2640	10	15		Z1402
7.2	10	10	BLD	BLD	25	BLD	0.010	BLD	5.5	2.9%		140	5	BLD		Z1403
8.8	45	25	BLD	5	170	BLD	0.013	BLD	2.5	16.0%		3400	16	15		Z1404
9.6	230	65	BLD	15	265	BLD	0.015	BLD	2.5	20.6%		6490	32	BLD		Z1405
12.6	380	85	BLD	15	195	BLD	0.018	2	2.5	22.9%		770	19	BLD		Z1406

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ASSAY RESULT SHEET FOR

DDH CAF 3

ASSAYED BY Analabs

FROM 0 TO 15 m

DATE 12/2/82

PAGE 1 OF 5

0590600

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	Matres	Sn	Cu	H <sub>2</sub> O <sub>2</sub>	Pb	Zn	Ag	Au	Bi	Mo	Total Fe	Total S	F	As	Ta	SAMPLE NUMBER
15	154	30	110	BLD	15	95	BLD	0.016	BLD	2.0	9.40%		1020	9	15	Z1407
16	182	10	25	BLD	5	30	BLD	0.014	BLD	45	2.30%		2790	2	BLD	Z1408
17	193	240	185	BLD	10	205	BLD	0.098	60	2.0	21.4%		2.5%	14	BLD	Z1409
18	202	250	20	BLD	BLD	335	BLD	0.013	BLD	1.5	38.0%		3310	8	15	Z1410
19	219	320	100	BLD	20	200	BLD	0.044	26	2.0	26.8%		1800	22	BLD	Z1411
20	240	340	110	BLD	20	225	BLD	0.024	12	2.5	25.8%		2.5%	37	BLD	Z1412
21	260	20	130	BLD	5	85	0.5	0.010	BLD	4.5	8.50%		890	13	15	Z1413
22	280	15	50	BLD	10	85	BLD	0.011	BLD	16.0	7.80%		770	33	BLD	Z1414
23	300															

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF3

ASSAYED BY Analabs FROM 15 TO 30m

DATE 12/2/82

PAGE 2 OF 5

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Meters	Sn	Cu	WO <sub>3</sub>	Pb	Zn	Ag	Au	Bi	Mo	Total Fe	Total S	F	As	Ta	SAMPLE NUMBER
30-0	BLD	100	BLD	BLD	175	BLD	0.010	BLD	3.5	9.40%		1140	10		Z1415
32.3	BLD	75	BLD	BLD	155	BLD	0.011	BLD	2.5	7.90%		520	11		Z1416
34.7 34.9	8	10	BLD	30	25	0.5	0.010	BLD	4.5	0.61%		410	2		Z1417
36.1	5	55	BLD	10	160	BLD	0.019	BLD	4.0	8.30%		840	5		Z1418
38.1	10	90	BLD	BLD	165	0.5	0.016	BLD	3.0	9.90%		810	9		Z1419
41.0	8	115	BLD	BLD	155	BLD	0.021	BLD	2.0	9.30%		1140	14		Z1420
43.6	5	110	BLD	BLD	115	BLD	0.020	BLD	2.0	9.8%		580	6		Z1421

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF3

ASSAYED BY Analabs

FROM 30 TO 45 m

DATE 12/2/82

PAGE 3 OF 5

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Metres	Sn	Cu	WQs	Pb	Zn	Ag	Au	Bi	Mo	Total Fe	Total S	F	As	Ta	SAMPLE NUMBER
45.4	BLD	70	BLD	BLD	145	BLD	0.011	BLD	4.0	9.40%		500	3	BLD	Z1422
47.5	5	55	BLD	BLD	140	BLD	0.009	BLD	BLD	9.90%		540	3	BLD	Z1423
49.5	6	80	BLD	BLD	210	BLD	0.010	BLD	1.0	9.70%		3	6	BLD	Z1424
51.5	BLD	80	BLD	BLD	205	BLD	0.010	BLD	3.0	9.40%		250	4	BLD	Z1425
53.2	9	10	BLD	10	40	BLD	0.007	BLD	4.5	2.40%		1750	5	BLD	Z1426
54.8	BLD	10	BLD	BLD	25	0.5	0.007	BLD	3.5	1.3%		2260	2	BLD	Z1427
57.3	8	10	BLD	BLD	15	BLD	0.010	BLD	6.5	0.94%		1220	BLD	BLD	Z1428
59.0	6	10	BLD	5	20	0.5	BLD	BLD	4.0	1.07%		2010	BLD	BLD	Z1429

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAP 3

ASSAYED BY Analabs FROM 45 TO 60 m

DATE 12 / 2 / 82

PAGE 4 OF 5

50000

063

Metres	Sn	Cu	WO <sub>3</sub>	Pb	Zn	Ag	Au	Bi	Mo	Total Fe	Total S	F	As	Ta	SAMPLE NUMBER
60.5	BLD	10	BLD	BLD	20	BLD	BLD	BLD	4.0	1.04%		1780	BLD	BLD	Z 1430
63.0															

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 3

ASSAYED BY Analabs FROM 60 TO

DATE 12 / 2 / 82

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064

639065

APPENDIX 111

REPORT CMS 82/3/10Samples T 9993 - T 10000; Z 1491 - Z 1500

Eighteen drill core samples were received for petrological examination; thin-sections were prepared of all rocks, and a polished section was prepared of T 9997 because of its sulphide content. Each sample is briefly described in the accompanying tables and is largely self-explanatory.

Notes

The largest group in this suite comprises a series of hornfelses; these are distinctive in several respects. Their composition is strongly aluminous and magnesian, they generally contain fine opaques (believed to be ilmenite), and may have been metamorphosed in two stages. The first is a lower-grade (albite-epidote hornfels facies) biotite-cordierite hornfels, followed by a prograde development of amphibole (generally anthophyllite, or closely related cummingtonite-grunerite) which clearly replaced, and formed from, earlier minerals. The rocks have distinctive textures too, partly because of the formation of radiating amphibole needles, partly because of the zonal or crudely concentric arrangement of fine ilmenite around cordierite in some rocks (this sometimes results in a grey-black appearance, as in T 10000).

Several skarns are represented, and their appearance is sometimes misleading because of the change in colour of minerals like vesuvianite.

In addition, there are two altered dolerites with well-preserved relict features and characteristic alteration mineral assemblages, two microgranites and a greisenised, sideritised granite; the occurrence of siderite may be significant, as it is sometimes associated with cassiterite (in other Tasmanian rocks).

H.W. Fander, M. Sc.

Sample No.	Rock Type - Composition	Fabric	Minor Minerals	Central Mineralogical Ser Comments
T 9993 (T.S. 41298) CAF 3 46.4m	Spotted Biotite Hornfels. Small random biotite flakes (about 30-35 %), finely granular quartz and feldspars; spots of poorly-defined amphibole poikiloblasts.	Fine-grained, hornfelsic fabric. Very poorly developed	Secondary muscovite. Conspicuous oxide opaques (?ilmenite). Detrital zircon.	Lowermost hornblende-hornfels facies of contact-metamorphism. Rock was argillaceous feldspathic siltstone/sandstone.
T 9994 CAF 3 8.3m	Microgranite. Distinctly zoned from sodic through coarser zone to sodi-potassic, with quartz, chequer-albite, orthoclase, degraded biotite.	Generally medium-grained igneous with coarser, granitic zones.	Poorly defined small goethite patches, may be oxidised sulphides.	Featureless rock of simple composition, verging on aplitic material. Fairly fresh.
T 9995 CAF 3 13.2m	Garnet-Diopside Skarn. About 70 % granular grossularite, 20 % subhedral diopside, with granular magnetite and ferrohastingsite (total 10 %).	Medium-grained with random mineral distribution. Structure less.	Traces of sphene, calcite; pyrite, ferrohastingsite veinlets.	"Diopside" contains Fe and ten towards hedenbergite. Simple, typical skarn composition and fabric.
T 9996 CAF 4 141.2m	Uralitised Dolerite. A few, extensively sericitised plagioclase microphenocrysts scattered through mass of labradorite laths, interstitial amphibole (uralitised pyroxene).	Random, medium-grained fabric; a few irregular amygdales.	Fine oxide opaques. Amygdales contain chlorite, trace siderite.	Relatively fresh and easily recognisable in thin-section. Probably a minor intrusive. Not metamorphosed.
T 9997 CAF 4 133.6m	Biotite Hornfels. Very abundant (60-65 %) fine orange-brown Ti-biotite, fine interstitial quartz and ?feldspar (30-35 %), very fine sulphides.	Uniform mineral distribution, vague preferred fabric (inherited).	Biotite veinlets. Discontinuous quartz veinlets. Pyrite, trace chalcopyrite, pyrrhotite.	Albite-epidote hornfels facies some evidence that biotite is metasomatic, phlogopitic.
T 9998 CAF 4 106.6m	Altered, Uralitised Dolerite. Completely sericitised plagioclase phenocrysts in mass of random argillised plagioclase laths, interstitial fibrous uralitic amphibole.	Well-preserved textures and fabric, verging on fine-grained.	Fine oxide opaques. Brown oxidised chlorite throughout. Pyrite veinlets.	Closely resembles T 9996, but more severely altered by deuteric and low-grade hydrothermal processes.
T 9999 AL 1 34.9m	Anthophyllite-Biotite-Cordierite Hornfels. Radiating anthophyllite needles, small biotite flakes, conspicuous ?ilmenite grains, matrix of granular cordierite.	Fine-grained, uniform fabric, no relict features.	Anthophyllite veinlets with pyrrhotite patches up to 1 mm.	Very unlikely to have been quartzose rock, but rather an Mg-rich type. Anthophyllite may be partly metasomatic.
T 10000 AL 1 41.0m	Anthophyllite-Biotite-Cordierite Hornfels. Small radiating anthophyllite needles, fine biotite flakes, set in mass of cordierite; abundant fine ilmenite.	Relict clastic textures preserved. Fine-grained, hornfelsic.	Clastic quartz, altered lithic grains recognisable. Biotite veins.	Similar to T 9999, but original rock contained sand-sized clastic quartz and lithic grains. Black mineral is ilmenite.

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066

Sample No.	Rock Type - Composition	Fabric	Minor Minerals	Central Mineralogical Ser Comments
Z 1491 2AL 1 81.95m	<u>Biotite-Cordierite-Anthophyllite Hornfels.</u> Mostly fine biotite and small cordierite crystals with biotite inclusions; radiating anthophyllite needles replacing these minerals.	Fine-grained with faint relict bedding. Zones of coarser crystallinity.	Quartz veins. Pyrrhotite grains associated with quartz veins.	Low-grade contact-metamorphism of pelitic sediment, followed by prograde hornblende-hornfels metamorphism to form anthophyllite.
Z 1492 2AL 1 34.0	<u>Cordierite-Anthophyllite-Biotite Hornfels.</u> Mostly ultrafine cordierite with embedded anthophyllite needles, fine biotite and ilmenite, pyrrhotite.	Mostly very fine-grained, finely laminated in places. Shear zones.	Shear zones carry pyrrhotite. A few relict clastic quartz grains. Tremolite patches.	Tremolite has formed at a late stage, as well as anthophyllite and is younger, in vein-like masses.
Z 1493 2AF 5 13.0m	<u>Spotted Biotite-Cordierite Hornfels.</u> Small, random, poikiloblastic grunerite crystals in a very fine matrix of biotite flakes and interstitial cordierite.	Poikiloblasts are < 0.5 mm, matrix < 20µ. Uniform. Thin fractures.	Quartz fracture-fillings. Biotite veinlets.	Two metamorphic events, or one two-stage event; prograded to hornblende-hornfels facies. Comparable with T 9993, Z 1491
Z 1494 2AF 5 3.4m	<u>Spotted Cummingtonite-Cordierite Hornfels.</u> Very small matted cummingtonite needles, interstitial cordierite, poikiloblastic biotite; felted tremolite masses.	Extremely fine-grained; relict clastic textures vague preferred fabric (inherited).	Fine ilmenite throughout. Small pyrrhotite grains with tremolite. Clastic quartz grains.	Anthophyllite, cummingtonite, grunerite all have the same genetic meaning. Paler colour to lack of matrix biotite.
Z 1495 2AF 5 45.5m	<u>Metasomatized Sediment.</u> Development of very abundant cloudy granular diopside; interstitial cherty ultrafine quartz; cut by coarse diopside veins.	Sedimentary features faintly recognisable, including bedding, clastic textures.	Diopside veins contain pyrrhotite, ?bornite, hornblende.	Skarn-type metasomatism; possible a dolomitic chert ranging into dolostone (?clastic) or dolomitic siltstone.
Z 1496 2AF 5 85.65m	<u>Vesuvianite-Diopside Skarn.</u> Large prismatic brown vesuvianite crystals, patches of granular diopside and zones of greenish fine diopside/actinolite.	Mostly coarsely-crystalline, random fabric with fine-grained patches.	Ferrohastingsite with associated pyrrhotite. Sphene, calcite.	The mauve-brown mineral is vesuvianite. The ferrohastingsite appears to be a younger phase replacing vesuvianite.
Z 1497 2AF 5 92.1m	<u>Vesuvianite-Diopside Skarn.</u> Random prismatic vesuvianite crystals, partly replaced by ferrohastingsite; masses of diopside laths, incipiently altered.	Coarsely-crystalline intergrowths, typical skarn-type fabric.	Fine interstitial calcite, rare fluorite. Isolated pyrrhotite patches.	Vesuvianite in this specimen is grey, unlike Z 1496. Diopside brownish, due to veinlets of ?MnO <sub>2</sub> -goethite.
Z 1498 2AF 5 126.38m	<u>Skarn with Axinite.</u> Coarse diopside extensively replaced by pale hornblende. Irregular masses of large, well-formed axinite crystals (dark "veins").	Generally coarse to very coarse; clear replacement textures.	Patches of quartz with ferrohastingsite needles, and calcite. Trace sphene.	Not clear whether axinite is younger and has replaced the other minerals, i.e. postdating replacement hornblende.

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APPENDIX 1V

# AUSTRALIAN ANGLO AMERICAN LIMITED DRILLHOLE LOG

Page 1A  
of 11

## Summary Sheet

PROJECT <b>RAMSAY</b>		AREA <b>CAF GRID</b>		DRILLHOLE TYPE <b>DDH</b>
CO-ORDS <b>3716.6 74 m E 5395.42 96 m N</b>		DECLIN <b>-45°</b>	AZIMUTH <b>0.76°</b>	RL <b>680.7</b>
DATE COMMENCED <b>13.1.82</b>	DATE COMPLETED <b>30.1.82</b>	DRILLED BY <b>LONGYEAR</b>	DRILL RIG <b>LONGYEAR 38</b>	
Non Coring to: <b>1.4 m</b>		HQ Core to: <b>-</b>	NQ Core to: <b>21.0 m</b>	BQ Core to: <b>150.8 m</b> EOH <b>150.8 m</b>

SURVEY DATA			Instrument:				
DEPTH	DECLINATION		AZIMUTH	DEPTH	DECLINATION		AZIMUTH
	Uncorr	Corr			Uncorr	Corr	
0 m		-45°	078° MN	149.5 m		-43 3/4°	84.5° MN
60 m		-44°	87 1/2° "				
90 m		-43 3/4°	86 1/2° "				
116.8 m		-44 1/2°	85.5° "				

### LOG SUMMARY

(Metres)	ROCK TYPE	MINERALIZATION		
		Style	Grade	Intersection width (Corr)
0 - 1.4	Triconed			
1.4 - 20.9	Intc. alt. tuf. ltc. wk. s.s. & ar.	Py & Py v. f. vns.	tr	
20.9 - 32.8	Ho sa (ltc wk?)	Po - f blebs, vns, Py - f vns	5% @ base	
32.8 - 43.7	Ho sed's	↓ ↓ ↓ ↓		
43.7 - 85.3	Alt ho sed's	Po - f vn & patch & tr Cp, dis	3%	
85.3 - 101.2	Metasomatized ho sed's	Po & Py - " " To - rare f dis	1%	
101.2 - 106.1	Broken Metasom. " "	Py - vn, mar Po vn	3%	
106.1 - 108.0	Alt py mcr. gb?	Barren	-	
108.0 - 111.5	Ox. alt. sed's	"	-	
111.5 - 112.9	" py g?	"	-	
112.9 - 120.6	" alt sed's	"	-	
120.6 - 125.8	Alt ho sed's	Py - vn & patch	3%	
125.8 - 127.4	Ox alt "	Barren	-	
127.4 - 128.2	Alt sed's	Py - f vns	tr	
128.2 - 129.9	Spotted bi ho	" - " "	tr	
129.9 - 134.4	Alt sed's	" - patchy vns	5%	
134.4 - 136.7	Ox alt sed's	Barren	-	
136.7 - 140.4	Metasomatized ho sed's	Py - f vns, Po - dis	tr	
140.4 - 141.4	Ho py mcr gb?	AsPy - f patch. in vn	tr	
141.4 - 150.8	Metasomatized ho sed's	Py & Po f vns	tr	

5 cm

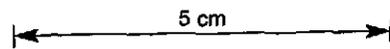
DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
	TRILONED			1						
1.4	1.6	1.45	90.6%	1-4	<p><u>Intc. Sed's</u> Disturbed sequence of intb. gy-br f. lut. ltr wk <math>\bar{c}</math> gy ss + gy-dk gy ar. Brec. in some places + depositional disturbances indicating probable turbiditic depositional history. Ferr. ox. weathering limited + only to 5-2m</p>	<p>Relatively mnr br oxidized products of weathering along fracs. Common cloudy pale gy alt<sup>n</sup> (qz?) often as discontinuous irregular v. form. Br. Bi? replacement in coarser units v. common</p>		<p>Generally coarsely bd. seds <math>\bar{c}</math> common mesofaulting + def<sup>n</sup> indicating turbiditic deposition 2-6 Bd erosional surface younging uphole @ 30° 3-4 Bd Loading + flame structures along erosional base 3-9 Bd. younging downhole @ 15° gradad @ 30° uphole 5-1 Bd - erosional surface - meso-faulted in places @ 20° uphole 5-8 Possibly thin wall healed breccia zone</p>	<p>Essentially barren probably owing to weathering</p>	0
3.0	0.8	0.85	~100%	3						
3.8	3.1	3.05	98.4%	4						
				5						
				6						
6.9	1.4	1.35	96.4%	7	<p>Conc<sup>n</sup> of pale gy alt<sup>n</sup> as a network of vns.</p>	6-9		<p>6-4 Rare usually f Py/Ip vns usually discontinuous + irregular.</p>	Tr	
				8						
8.5	2.0	2.0	100%	9	3-0					
				10	<p><u>Alt. Ss</u> v. f spotted-br (bi)? softish, pale br-gy <math>\bar{c}</math> 10% Andalusite needles.</p>	<p>V. f dk-br bi? spalling + relatively stubby transparent f andalusite needles, gypsum? Few wh. discontinuous qz vns. assoc <math>\bar{c}</math> f fracs = Py</p>	<p>7-8 Erosional surface Bd @ 35°</p>	<p>Bd + Contact @ 30° uphole Contact <math>\approx</math> 20° Contact obscure</p>		
10.5	2.5	2.4	96%	11	<p><u>Ar.</u> Dk gy - bk generally mas. sl ho ar. scratched easily by knife, but suffering alt<sup>n</sup> + replacement in places. Mnr Andalusite; Intb <math>\bar{c}</math> mnr pale gy calc-silicate alt<sup>n</sup>? + mnr gy-br f sa units.</p>	<p>Generally unalt. mnr beds rich in andalusite</p>	<p>Ar generally mas.</p>			
13.0	0.7	0.7	100%	13			<p>13-4 Sharp erosional contact <math>\approx</math> 11 <math>\bar{c}</math> Bd @ 5°</p>	<p>14-1 Bd @ 20° Uniformly finely bd. contact @ 30°</p>		
13.7	1.1	1.1	100%	14		<p>F. wh. - pale gy beds intb <math>\bar{c}</math> seds scratched <math>\therefore</math> not qz possibly dm.</p>	<p>14-7 Structure generally obscured by alt<sup>n</sup> visible <math>\bar{c}</math> selective replacement of bds.</p>			
14.8	1.2	1.1	91.7%	15		<p>Common gr - pale gr conformable alt<sup>n</sup> also as vns assoc.</p>				

SCALE 1:100 (1cm = 1m)

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DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
16.0	0.6	0.6	100%	16		Z mnr qz + Po V mnr faint pale gy-wh F. intb <sup>o</sup> as before		15.6 Bd @ 35°		fr
				16-7		16.2 - 10cm gr chl-gz-Po-am. vn @ 30°			16.1 Common qz-Po-Mg staining 16.5 irregular & discontinuous	2%
				17	Intb Tuff Ltc wk Ho S.S.	Few f. qz vns mnr pale gy alt <sup>n</sup> often as indet - terminate ghost-like shapes in seds & diffuse boundaries. Few partly replaced bands of f dk gr-gr amphibole			Essentially barren	
				18	F tuff ltc wk - alt & br tinge to pred. gy colour & softer than ss which increases toward base - unscratched by knife. Whole unit probably ho but sl coarser bds suff-ered retrograde metasomatism? & bi rept-acement. Mnr cloudy gr amphibole.					
19.0	0.6	0.6	100%	19		alt <sup>n</sup> . Mnr dk gy v hd ho ar.		19.2 Bd - appears as erosional base @ 50° & grading refl-acted by andalusite needles		
19.6	0.25	0.25	100%	20		20.1 - 3cm qz dk gr alt. sed vn @ 35°				
19.85	0.85	0.85	~100%	20		Few small replaced bds & andalusite		20.8 - erosional surface - younging downhole @ 35°		
20.7	0.17	0.17	100%	20-9						
20.85	0.45	0.30	66.7%	21	Mas. Sa.	Few f pale gy-wh qz & gr am. vns		Structure Mas.		
21.3	3.1	2.95	95.2%	22	Hd (not scratched by knife) mas. f. gy sl ho sa. Relatively unalt. & fresh. Possibly tuf, well sorted.	Unit basically fresh & unalt. bar probable recrystallisation.		Few rounded elongate small clasts of ss rarely. Few other structures obscured by hornfelsing recrystallisation effects.		
				23						
				24						
24.4	1.9	2.0	~100%	25						
				26						
26.3	3.0	2.95	98.3%	27						
				28						
				29						
29.3	3.0	3.05	~100%	30				29.1 - Bd from aligned elongate clasts @ 30°		

SCALE 1:100 (1cm = 1m)

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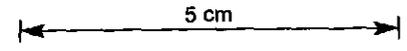
DRILLHOLE LOG FOR DDH CAF 4

LOGGED BY N. P. GREEN FROM 15M TO 30M

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072



DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
				30-2	<u>Altered sandstone</u> Gray fine possibly tuffaceous sandstone, contact obscured by slightly hornfelsed overprint ⇒ relatively hard + very common replacement into sa & Pyrrhotite. Minor interbedded siltstone. Generally massive.	Common f. white-pale gray quartz translucent veins. Common f. Pb replacement.		contact gradational	Common f. medium 'blebby' Pb replacement - 4% Few qz-Pb + Pb vns - 1% Rare f. Pb vns usually 'picked out' - tr	5%
32-3	3-1	3-1	100%	33-32-5	<u>Interbedded hornfelsed sediments.</u> Intb gy f. possibly tuf sa, hd + ho & minor f. brown alteration-replacement in few places + minor f. Pb replacement, intb + intercalated + dark gy ss + minor argillite. finer ho seds harder than ho sa structure obscured by low grade ho.	Common f. irregular often discontinuous pale gy-wh diffusely bounded q.v.'s Rare f. Pb replacement Rare br alt <sup>n</sup> .		32-0 Erosional contact between f. replaced sa + fresher ss. B at ~30° downhole. 34-5 erosion surface & bedding structures. B at 25° uphole	Few irregular m-f. Pb vns often associated & pale gy patchy qz veining. Few highly irregular 34-9 3cm qz-Pb vn at 80° patches of Pb replacement & tr Chalcopyrite associated Minor v.f. disseminated 36-7 5mm Pb vn at 80° 37-1 10mm qz-Pb vn at 45° Pb in few beds. Pb vns rarely have f. black ± hexagonal grains of unknown mineral.	2%
35-4	3-1	3-1	100%	36-38						
38-5	2-8	2-7	96.4%	39-41				37-5 v. disturbed sharp contact. or replaced sa. no B ngle possible but younging uphole		
41-3	3-1	3-1	100%	41-3	<u>Altered hornfelsed sediments.</u> v. alt into ho seds. br replacement common giving semi-banded appearance. Common qz-Pb veining. Majority of unit replaced.	Common f-m, qz-Pb-Py vns + Pb-qz replacement. Few patches of pale br dolomite? assoc. & intense qz-Pb-Py. Minor green chlorite or amphibole vns assoc. & q.v.'s			41-3 Unit of relatively concentrated qz-Pb veining + associated replaced Pb-Py 1%. Minor v.f. dis Pb.	4%
44-4	3-1	3-0	96.8%	44-43-7	<u>Altered siltstone.</u> Softer than unaltered gy ss + sa - scratched by knife. Diffuse br alteration common. Sometimes finely bedded - slightly deformed.	v. common br alt <sup>n</sup> often controlled by slightly coarser units, softer than unaltered ho. units. Few f. q.v.s & rare bk spcls		44-2 44-5 banding at 20° bedding Relatively common f. br lgy banding. probably along bd.	43-7 Few qz-Pb-Py vns. Minor scattered f. dis Py	tr

SCALE 1:100 (1cm = 1m)

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DRILLHOLE LOG FOR DDH CAF 4

LOGGED BY N.P. GREEN FROM 30M TO 45M

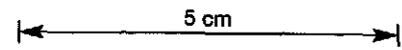
DATE 19/1/82

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DRILL ADVANCE

LITHOLOGY



DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
				46		of unknown mineral.		Structure is highly deformed where visible, finer pelitic units 'flamed', ripped + sharply intb		
47.5	1.1	1.2	~ 100%	47	<u>Tuffaceous Sandstone</u> Pale brown, soft, altered (fine biotite/ phlogopite?) f. tuffaceous sa / lithic wacke? & minor interbedded grey siltstone especially towards base.	very f. br disseminated br mica alteration -47.6 q.v. at 20° especially in coarse units. Minor white irregular discontinuous finely crystalline quartz vein.		47.7 B at 25° & coarser units often too deformed for coherent bedding direction. Small zones of v. fractured core often associated & oblique veining of unknown white-green soft mineral.		
48.6	0.9	0.55	61.1%	48						
49.5	0.3	0.3	100%	49						
49.8	2.2	2.25	~ 100%	50	<u>Altered Hornfelsed Sediments.</u> Hard, highly alt siltstone f. tuf ho sa + pelitic units, possibly dolomitic. Pale br diffuse alteration common, as is pale gy-green replacement dominant possibly very f. diopside. Minor gr - dark gr amphibole f. veins.	Common pale br alt" as above, but more common cloudy gy alt" associated & hornfelsing. Minor pale gy spotting. Cloudy gy alt" often associated & Pyrrhotite + gr amphibole veining. Minor dis dk gr amph grains - angular. Minor qz development as above.				
52.0	0.6	0.55	91.7%	51						
52.6	1.6	1.6	100%	52				52.0 frac - quick gelled 52.6 Major frac - cemented.	50.3 Few - relatively common patchy Pb-Pyrite vns often & q.v.'s. Py often picked out. - 31.6 3cm qz-Pb vn at 60° Minor v.f. dis Pb to coarse scattered grains in few 52.6 Common dis Pb grains often coarse.	57%
54.2	0.6	0.55	91.7%	53						
54.8	3.1	3.05	98.4%	54						
57.9	0.9	0.75	83.3%	55	<u>Slightly Altered Sediments.</u> Pale 'waxy' br, soft, highly irregularly intercalated sed, mostly f. tuf sed. Minor pale gy diffuse alt". Highly disturbed unit.	As 46.5 - 49.5 m. Very rare irregular f. wh calcite veining & patches of replacement alt" as above.		54.6 f. wh discontinuous q.v. & small patch of Cs? + to. 55.3 10mm Pb vn at 55° 55.6 wh q.v. & few grains of Cs? + tourmaline 56.9 B at ~45°	52%	
58.1	0.4	0.4	100%	56						
59.1	0.4	0.4	100%	57						
59.5	0.5	0.5	100%	58				56 base cement 59.1 Major frac 59.2 B at 30° from aligned ripped pelitic clasts.	Few f. Py + Pb vns, few small Pb patches usually associated & qz. qz patches & Pb possibly contain tourmaline.	

SCALE 1:100 (1cm = 1 m)

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DRILLHOLE LOG FOR DDH CAF4

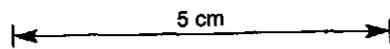
LOGGED BY N.P. GREEN FROM 45M TO 60M

DATE 25/1/82

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639074

074



DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
60.0	3.1	3.05	98.4%	60.1	Altered Hornfelsed Sediments. Hard, ho gy. & minor diffuse alteration alt altatone	As for 49.5 - 55.5 m. Few dark green vns, quartz veining & patches v. common.			60.2 v. common f. Pyrite + Pb vns + common patchy Pb.	10%
				61						
				62	Slightly Altered Sediments. Predominantly softer pale brown-gy slightly alt-replaced f-vf tuf ss & minor ss + pelitic units, & irregularly banded	Combination of units above. Few white f. calcite vns. Few softish wh-gr f. crystalline, f. vns along which core commonly fractures - slightly 'greasy' feel. Rare v.f. disseminated black mineral in coarser beds - possibly dark amphibole or tourmaline?		62.7 B at 45°	Few irregular Py + Pb vns sometimes associated & q.v.s + patches. v. rare small qz patches + f. vns possibly carry Cassiterite. Vainng etc mainly concentrated in more alt. zones.	12%
63.1	2.7	2.6	96.3	63	pale gy hd - v. hd ho sed. as above; often partially obscuring original rock type often & Pb-Py, qz veining.			64.3 B at 20°		
				64						
				65						
65.8	1.2	1.2	100%	66						
				67						
67.0	0.9	0.83	92.2%	67						
				68						
67.9	0.3	0.27	90%	68						
68.2	1.6	1.55	96.9%	69				68.9 good example of loading. 69.1 B at 20° B at 20°		
				69						
69.8	1.5	1.5	100%	70						
				71						
71.3	0.7	0.5	71.4%	71						
				72						
72.0	0.9	0.85	94.4%	72						
				73						
72.9	2.8	2.7	96.4%	73				70.6 B at 35° - v. disturbed. 71.4 B at 45° - disturbed.		
				74						
				75						

SCALE 1:100 (1cm = 1m)

COMSTAFF PROPRIETARY LIMITED

DRILLHOLE LOG FOR DDH CAF 4

LOGGED BY N. P. GREEN FROM 60M TO 75M

DATE 25/1/82

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639075

075

5 cm

DRILL ADVANCE

LITHOLOGY

VISUAL PERCENTAGE MINERALISATION

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
75.7	1.6	1.45	83.3%	76						
77.3	2.3	2.3	100%	78						
79.6	0.3	0.25	83.3%	80						
79.9	1.5	1.5	100%	81						
81.4	0.4	0.35	87.5%	82						
81.8	1.5	1.4	93.3%	83						
83.3	2.3	2.2	95.7%	84						
				85						
				85.3						
85.6	1.2	1.25	~100%	86	<u>Hornfelsed Sediments.</u> Grey-green relatively hard sequence of ho siltstones + fine-very f. sandstones & v.f. probably amphibole, replacement. No brown mica alteration. i.e. 'normal' actinolite? - diopside ho.	Alteration regime more 'normal' & common v.f. gr-dk amph (actinolite?) general replacement & diopside diffuse veining relatively common. Few f. calcite vns. Fewer pale gr-wh f. vns. as before.		Structure generally totally obscured by probable recrystallisation + diffuse alt. Small zones of highly fractured core as before.	Veining as before 83.9m; predominantly Pb & minor Py often associated & diopside. Minor v.f. disseminated Pb. - 2-3 2mm Pb-Cp irregular vns at 20°	1%
86.8	2.3	2.2	95.7%	87						
89.1	2.6	2.55	98.08	90						

-78.1 5cm zone of network of irregular stringy pale green diopside? veining.

77.7 B at 25°

-80.4 5cm zone of network of f. Pb veining & minor Py. Pb replacing Py?

82.7 B at 45°

83.9 Zone of more intense veining + diffuse diopside alteration + bleaching.

83.9 Common f. Pb veining & minor associated Py.

3%

SCALE 1:100 (1cm = 1m)

COMSTAFF PROPRIETARY LIMITED

DRILLHOLE LOG FOR DDH CAF4

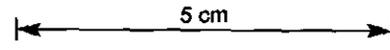
LOGGED BY N.P. GREEN FROM 75 M TO 90 M

DATE 27/1/82

PAGE 6 OF 11

639076

07c



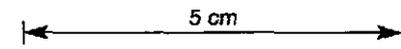
DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
				91		As above.		As above.	90.3 3cm qz-sod-Py m at 65°	
91.7	0.2	0.17	85%	92					91.4 v. small qz patch & 70° possibly minor bk vitreous cs + tourmaline?	
91.9	0.2	0.19	95%							
92.2	3.1	3.0	96.8%	93		92.2 Increase in fine-very f. white irregular calcite veining, picked out in upper matre.				
				94						
				95		94.5 Carbonate unit - partly 2° partly original vns. Dolomite.		94.6 Brecciated unit - chte mtk & sediment clefts - 15%. chte relatively coarse crystalline. Unit at 60°	94.6 Minor 5% patches of black mineral - some to possibly & cs?	
95.3	0.4	0.35	87.5%	96		95.1 Alteration generally as before 94.5 m.				
95.7	2.8	2.7	96.4%							
				97						
				98						
98.5	0.8	0.8	100%	99						
99.3	0.2	0.2	100%	100				99.0 Core becoming fractured & broken owing to increasing veining. Core destroyed in some places. Structure when rarely visible shows deformed nature.		
99.5	0.3	0.22	73.3%							
99.8	0.6	0.18	75%							
100.0	0.2	0.15	75%							
100.2	0.4	0.3	75%	101						
100.6	0.4	0.35	87.5%							
101.0	0.2	0.2	100%	101.2	Altered hornfelsed sediments core generally broken owing to many fractures + veins, grey-green minor brown alt intercalated units. dark gr + gr amphibole alteration as common vns + minor 'patch' replacement. Predominantly siltstone - argillite tending to less alt - very hard, ss + minor sandstone - softer - moderately hd.	Common, increasing to very common, gr - dk gr fine amph vns. Minor amph replacement as - 102.9 2mm cal m at 40° - small rounded patches. Minor pale gr diopside replacement. Few f. wh cal vns. Ubiquitous v.f. amph alt°.			101.2 15 mm qz-Cal-Pb-Py m at 85°	
101.2	0.2	0.16	80%							
101.4	0.2	0.2	100%							
101.6	0.3	0.3	100%							
101.9	0.3	0.22	73.3%	102						
102.2	1.4	1.53	95.6%	103						
				104						
103.8	0.8	0.6	75%	105					103.4 Relatively common, v. irregular Py veining - often discontinuous + patchy. Minor discontinuous B veining Py > 70.	3%
104.6	0.8	0.08	10%							

SCALE 1:100 (1cm = 1m)

77



DRILL ADVANCE

LITHOLOGY

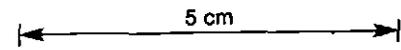
DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
105.4	0.4	0.25	62.5%							3%
105.8	0.8	0.6	75%	106						0%
106.6	1.4	0.48	34.3%	106-1 107	Porphyritic Andesite (microgabbro?) Green matrix with white feldspathic phenocrysts average 2mm - very common 30% soft clay altered to base.	Progressively clay alt. to base clay. few fine dark gr weathered amphibole veins.			barren	
108.0	2.4	0.65	27.1%	108 108-0 109 110	Oxidised sediments. Brown weathered broken seds, clay alt <sup>n</sup> in part. Minor limonitic development.	Zone of oxidation-weathering & ubiquitous br FeOx staining & v. minor black MnOx. Minor re-br lim veins. Minor irregular areas of wh-pale br clay alt <sup>n</sup> especially associated & quartz rich rock = kaolinite??		Very broken, very soft - often only held together by FeOx veining. High core loss. Zone possibly = open fracture & circulating ground water.	lim development + heavy re-br FeOx staining implies at least a trace of sulphides.	tr
110.4	0.8	0.25	31.3%	111						
111.2	1.4	0.53	37.9%	111-3 112	Oxidised quartzose rock. Possibly a highly whd + partly highly clay alt py granite. qz phc up to 5mm. br-wh clay alt <sup>n</sup> . Minor intercalated f. whd seds. v. broken.	Rare lim vns & few wh needle crystals - not gypsum or calcite - possibly andalusite. Common wh-pale br bleaching.				
112.6	0.8	0.5	62.5%	113 112-9	Oxidised sediments. br-pale br v. broken whd soft seds, predominantly siltstones + mudstones.					
113.4	1.0	0.9	90%	114						
114.4	1.1	0.75	68.2%	115						
115.5	1.9	0.73	38.4%	116 117						
117.4	0.9	0.7	77.8%	117-6 117-7 118	oxidised porphyrite granite					
118.3	2.7	0.7	25.9%	119 120						

SCALE 1:100 (1cm = 1m)

639078

DRILL ADVANCE

LITHOLOGY

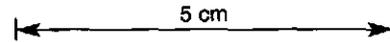


DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
121.0	0.2	0.2	100%	121	Hornfelsed Sediments. Gray, & slight purple tinge. no siltstone. Common fine dark green amphibole veins. core relatively broken. Hard + heavy.	Common f. dk gr originally amph vns. few still fresh. rest = dk gr scaly pug along fractures + veins.		Core broken + fractured which intensifies, along & veining + obscures most structure.	essentially barren.	0%
121.2	0.4	0.35	87.5%	122	Altered sediments. Intensively veined gr-gray seds predominantly ss + sandstone. Minor br oxidation + weathering along fracture planes + middle of wider veins. Coarser units f. tuffaceous - feldspathic content up to 15%.	Veining intensifies ↓ ↓ ↓ Some weathering - oxidation along vns + fracs.		122.8 Common irregular Pyrite vns + patchy coarse crystalline growth, patches up to 30 mm; vns often oxidised. Minor disseminated Py at base.	3%	
121.6	1.6	1.55	96.9%	123	Oxidised Sediments br-pale br, soft, light weathered seds. Minor white-gy clay alt <sup>n</sup> . Minor limonitic (semi-boxwork at top) development & trace MnOx.	As for previous ox zone, i.e. 105.0-120.6m		As for previous ox zone	tr	
123.2	0.8	0.7	87.5%	124	Altered Sediments. gy & pale pu tinge, veined frac. predominantly f. sa.	-127.5 15mm clay vn at 40° Common f. dk gr amph vns & minor associated bleoch fracs v.f. amph replacement		Structure completely obscured by alt <sup>n</sup> , veining + fracturing.	Few irregular f. Py vns, withd in upper metre, + as scaly f. xain patches along fracs.	tr
124.0	0.5	0.32	64%	125	Spotted Biotite Hornfels? gy-pale pu ss + sa & br spots average 2mm up to 5% of br mica & intercalated unaltered ss + f. tuf sa.	Common irregular br spots of f. mica-bi? av 2 mm. Common f. dk gr amph vns as before.		130-1 Common irregular patchy vns of Py often associated & actinolite.	5%	
124.5	0.6	0.6	100%	126	Altered Sediments gr-gy slightly hornfelsed seds, predominantly ss originally, but now highly alt & v.f. gr-dk gr amph replacement. Common dk gr amph-actinolite veins + Py vns.	Many gr-dk gr actinolite vns - highly irregular + discontinuous & Pyrite + rare quartz. Minor patchy blanching.				
125.1	1.9	0.98	51.2%	127	Altered Pale Purple Sediments. Highly disturbed pale pu, soft - v.s predominantly argillite → mudstone.	ox <sup>n</sup> effects - red-br FeOx staining prevalent. Minor f. lim vns. Common v. pale		Vary disturbed - faulted, vn truncated beds.	barren.	0%
127.0	1.0	0.83	83%	128	Oxidised Sediments. br-pale br ox-wthd seds predominantly pelitic.			Withg + oxidation effects mask any structure.		0%
128.0	0.2	0.12	60%	129						
128.2	1.3	1.27	97.7%	130						
129.5	2.2	2.07	94.1%	131						
131.7	0.6	0.46	75%	132						
132.3	0.5	0.5	100%	133						
132.8	1.7	1.12	65.9%	134						
134.5	1.2	1.10	84.6%	135						

SCALE 1:100 (1cm = 1 m)

070000

075



**WELL ADVANCE**

**LITHOLOGY**

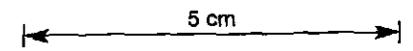
TH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
				135-3		(con) br bleaching.				
8	1-9	1-6	84.2%	136	Altered Pale Purple Sediments. As before oxidised zone.	as before ox zone. sl. weathered → soft.		Highly fractured & f. veining + alt <sup>n</sup> mass structure.		0%
				136-0	Oxidised Sediments - As before ie 134-1-135.3	As before.		As before.		
				137 136.7						
7	0-3	0-3	100%	138	Hornfelsed Sediments. Gray with green tinge 'normal' ho seds softened slightly by gr disseminated amphibole replacement metasomatism. few zones of fine dis biotite + f. needle andalusite development. Core progressively more competent.	Relatively intense metasomatic alteration - patchy + few amph vns - 0.1 narrow zone & v.f. andalusite. as well as v.f. replacement. Minor v.f. bi.		Fracturing lessening + core becoming more competent.	Few irregular veins of Pyrite + few flakes along fractures. Rare trace of dis Pyrrhotite in highly alt vns.	tr
0	1-2	1-1	31.2%	139						
2	0-6	0-64	~100%	140						
8	0-5	0-47	94%	140-4	Hornfelsed Porphyritic Basic (micro-gabbro?) Pale gy matrix & gr tinge & wh feldspar phenocrysts ~15%. Also metabom. mtx clouding txt.	Few v.f. wh calcite vns. mtx = completely replaced Few pale gr vns.		massive, hard - very hard.	140-7 2mm gr vns & rare small ~2mm patches AsPy. barren - except above vns.	tr
3	1-2	1-17	97.5%	141						
5	2-8	2-7	96.4%	141-4	Hornfelsed Sediments gy - dk gy & gr tinge relatively hard, ho + metasomatized seds. Metasomatic alt <sup>n</sup> intense in few zones producing patches + veins of gr amph + minor f. br biotite spotting rarely.	Few - common dk gr amph vns (actinolite?) + paler gr (diopside?) v.f. veining sometimes = network.		Glimpses of structure through obscuring alt <sup>n</sup> affects indicate a disturbed site of deposition.	Essentially barren - v. rare f. irregular discontinuous patchy fb vns.	0%
				142						
				143						
				144						
3	0-5	0-5	100%	145						
8	1-3	1-15	88.5%	145-4		Zone of more intense f. pale gr veining.			145-4 Relatively common irregular B + Py vns. usually associated & dk gr amph veining. Py = Po.	2%
1	1-4	1-26	90%	146						
				147						
5	0-3	0-4	~100%	148						
8	0-5	0-47	94%	148-5					148-5 essentially barren	0%
3	0-2	0-18	75%	149						
8	0-3	0-3	100%	150						

149-4 aligned ripped clasts of pelitic sediments in c. sandstone at 35°

SCALE 1:100 (1cm = 1m)

639080

J86



### DRILL ADVANCE

### LITHOLOGY

LOST CORE	DRILL ADVANCE			INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
	DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY							
	150.0	0.5	0.75	93.8%				150.3 S at 35°		
				151	End of DDH : <u>CAF 4 at 150.8m</u>					

SCALE 1:100 (1cm = 1m)

COMSTAFF PROPRIETARY LIMITED

DRILLHOLE LOG FOR DDH CAF 4

LOGGED BY N.P. Green FROM 150 TO 150.8m

DATE 3/2/82

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639081

081

Matrix	Sn	Cu	N	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni				SAMPLE NUMBER
0 (-3.0m)	BLD	1150	0.575%	BLD	980	1.0					8	325	NB: W by low level fusion technique.	Tricone	Sludge.	
1.4	9	45	15	10	115	BLD	BLD	BLD	1.0	430	15		Ground	Core	Z1431	
4.4	5	50	20	40	135	BLD	0.011	BLD	3.0	540	4				Z1432	
7.4	BLD	35	20	40	105	BLD	BLD	BLD	1.0	125	4				Z1433	
10.4	6	40	BLD	20	220	BLD	0.016	BLD	1.0	645	8				Z1434	
13.4	BLD	60	10	BLD	180	BLD	0.006	BLD	1.0	BLD	4				Z1435	

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 4

ASSAYED BY Analabs

FROM 0 TO 15m

DATE 22/2/82

PAGE 1 OF 11

639082

082

Metres	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As					SAMPLE NUMBER
19.4	5	25	BLD	BLD	145	BLD	0.008	BLD	0.5	140	3					Z1436
19.4	7	25	10	BLD	130	BLD	BLD	BLD	0.5	80	2					Z1437
22.4	BLD	10	BLD	BLD	115	BLD	0.015	BLD	0.5	275	1					Z1438
26.4	4	10	BLD	BLD	105	0.5	0.011	2	1.0	400	3					Z1439
28.4	6	10	BLD	10	110	0.5	BLD	BLD	0.5	760	12		Ground split	Core ↑ Core ↓		Z1440

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 4

ASSAYED BY Analabs FROM 15 TO 30 m

DATE 22/3/82

PAGE 2 OF 11

082082

083

Matras	Sn	Cu	N	Pb	Zn	Ag	Au	Bi	Mo	F	As					SAMPLE NUMBER
30-2	4	85	BLD	BLD	90	BLD	0.008	2	BLD	640	2					Z1441
32-8	BLD	60	10	BLD	175	BLD	BLD	BLD	0.5	670	6					Z1442
39-6	BLD	125	BLD	10	125	0.5	0.007	BLD	1.0	910	16					Z1443
38-5	3	105	BLD	5	140	0.5	0.008	BLD	0.5	360	15					Z1444
41-3	5	165	BLD	10	115	0.5	BLD	BLD	1.0	380	15					Z1445
43-7	BLD	85	BLD	15	185	BLD	0.005	BLD	0.5	360	10					Z1446

Vertical scale markings on the right side of the table.

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CNF.4

ASSAYED BY Analabs

FROM 30 TO 48m

DATE 8/3/82

PAGE 3 OF 11

639084

084

Matras	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	P	As					SAMPLE NUMBER
46-8	BLD	25	BLD	BLD	180	BLD	BLD	BLD	1.0	630	9					Z1447
48-8	7	25	BLD	10	70	0.5	0.006	BLD	0.5	310	5					Z1448
50-2	6	70	BLD	5	155	0.5	0.005	BLD	0.5	560	3					Z1449
52-8	BLD	105	BLD	10	95	BLD	0.009	2	BLD	690	3					Z1450
55-8	BLD	100	BLD	5	155	0.5	0.006	BLD	1.0	570	36					Z1451
58-0	BLD	200	BLD	10	150	0.5	0.006	BLD	1.5	810	12					Z1452

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 4

ASSAYED BY Analabs

FROM 45 TO 60m

DATE 29/3/82

PAGE 4 OF 11

639085

085

Matrix	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As				SAMPLE NUMBER
60-1	15	340	BLD	BLD	65	0.5	0.006	BLD	2.5	520	8				Z1453
61-5	3	105	BLD	5	105	0.5	BLD	BLD	1.0	590	26				Z1454
64-0	4	90	15	BLD	30	BLD	0.008	BLD	1.0	730	36				Z1455
67-0	4	45	15	15	136	BLD	0.008	BLD	0.5	650	3				Z1456
70-0	BLD	55	BLD	5	155	BLD	0.006	4	1.0	450	5				Z1457
73-0	BLD	65	10	5	135	BLD	BLD	BLD	BLD	640	2				Z1458

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 4

ASSAYED BY Analabs FROM 60 TO 75m

DATE 29/3/02

PAGE 5 OF 11

639086

386

Matras	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As					SAMPLE NUMBER
760	BLD	90	BLD	10	110	0.5	BLD	BLD	BLD	980	3					Z1459
790	4	140	BLD	10	190	BLD	BLD	BLD	0.5	520	5					Z1460
820	3	55	BLD	5	170	BLD	0.006	BLD	BLD	680	11					Z1461
839	3	225	BLD	15	115	BLD	BLD	BLD	0.5	700	20					Z1462
853	3	115	BLD	5	115	0.5	0.005	BLD	0.5	700	25					Z1463
880	BLD	180	BLD	10	145	BLD	BLD	2	BLD	500	6					Z1464

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 4

ASSAYED BY Anals

FROM 75 TO 90 m

DATE 8/3/52

PAGE 6 OF 11

630081

0871

Metres	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As					SAMPLE NUMBER
90-0	BLD	125	BLD	5	135	BLD	0.006	2	BLD	710	25					Z1465
92-2	6	170	BLD	BLD	150	BLD	BLD	BLD	BLD	BLD	4					Z1466
94-8	6	210	10	15	195	BLD	0.006	BLD	BLD	670	22					Z1467
96-6	9	125	BLD	5	125	0.5	BLD	BLD	BLD	900	2					Z1468
99-0	BLD	145	BLD	BLD	145	BLD	BLD	BLD	BLD	930	19					Z1469
101-2	3	115	BLD	BLD	110	BLD	0.007	4	BLD	790	6					Z1470
103-4	7	250	BLD	10	355	BLD	0.008	4	BLD	830	17					Z1471

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 4

ASSAYED BY Analabs FROM 90 TO 105m

DATE 8/3/82

PAGE 7 OF 11

639088

088

Metres	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As					SAMPLE NUMBER
106.1	20	105	BLD	10	605	0.5	BLD	BLD	BLD	1200	17					Z1472
108.0	75	175	20	1700	730	BLD	BLD	BLD	BLD	810	420					Z1473
111.8	75	70	20	680	98	BLD	0.008	6	0.5	820	440					Z1474
112.9	7	195	20	195	590	BLD	BLD	BLD	BLD	250	23					Z1475
116.0	6	160	30	20	445	BLD	0.006	BLD	BLD	680	25					Z1476 (frac)

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 4

ASSAYED BY Analebs FROM 105 TO 120m

DATE 8/3/82

PAGE 3 OF 11

12000000

089

Metres	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As					SAMPLE NUMBER
120-6	3	10	15	5	165	BLD	BLD	BLD	BLD	BLD	11					Z1477
122-8	10	115	BLD	BLD	165	0.5	BLD	2	BLD	640	55					Z1478
125-8	3	155	BLD	5	315	BLD	BLD	BLD	2.0	570	27					Z1479
128-2	3	45	BLD	BLD	120	1.0	BLD	BLD	0.5	710	16					Z1480
129-9	6	165	BLD	BLD	60	0.5	BLD	2	0.5	1070	250					Z1481
133-1	BLD	225	BLD	5	425	BLD	BLD	BLD	2.0	710	33					Z1482
144																

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAP 4

ASSAYED BY Analysts

FROM 120 TO 135m

DATE 29/3/82

PAGE 9 OF 11

639090

Matrix	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As					SAMPLE NUMBER
	5	65	10	20	345	0.5	BLD	BLD	BLD	1380	23					Z1483
136.7	5	115	BLD	5	170	BLD	BLD	2	1.0	250	10					Z1484
138.5	BLD	55	BLD	BLD	105	BLD	BLD	2	1.0	1.87%	14					Z1485
140.4	20	25	BLD	10	75	BLD	BLD	BLD	0.5	930	280					Z1486
141.4	4	75	BLD	BLD	115	BLD	0.005	2	BLD	670	1					Z1487
143.4	3	55	BLD	10	75	0.5	BLD	2	1.0	BLD	12					Z1488
145.4	4	150	BLD	5	65	BLD	BLD	BLD	0.5	790	BLD					Z1489
146.5	BLD	45	BLD	10	110	BLD	0.013	6	0.5	870	8					Z1490

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 4

ASSAYED BY Analabs

FROM 135 TO 150 m

DATE 10/29/82

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090

191  
639092

Matras	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As						SAMPLE NUMBER
150-8																	
	End of	DDH:	CAF 4	at	150-8 m.												

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 4

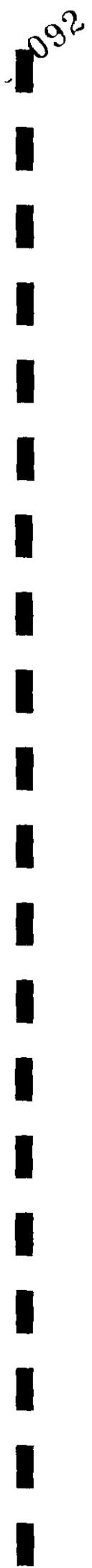
ASSAYED BY Analabs

FROM 150 TO 150-8 m

DATE 8/3/82

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APPENDIX V



# AUSTRALIAN ANGLO AMERICAN LIMITED DRILLHOLE LOG

639094

Page 1  
of 14

## Summary Sheet

PROJECT Ramsay	AREA Grid CAF	DRILLHOLE TYPE Diamond
CO-ORDS 371405 m E 5394900 m N	DEC <sup>LN</sup> -55°	AZIMUTH 270° TN
DATE COMMENCED 13.2.82	DATE COMPLETED 22.2.82	DRILL RIG Longyear 38
DRILLED BY Longyear	RL ~610m	
Non Coring to: 4.5 m	HQ Core to: -	NQ Core to: 29.0 m
		BQ Core to: 182.8 m
		EOH 182.8 m

### SURVEY DATA

Instrument: downhole camera.

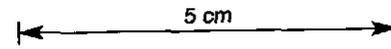
DEPTH	DECLINATION		AZIMUTH	DEPTH	DECLINATION		AZIMUTH
	Uncorr	Corr			Uncorr	Corr	
0 m		-55°	258° MN	150 m	unacceptable	-51.75°	193° MN
30 m	unacceptable	-53.75°	191° MN	180 m		-52°	258° MN
60 m		-53.5°	251.5° MN				
90 m	unacceptable	-53°	316.5° MN				
120 m	unacceptable	-52.5°	279.5° MN				

### LOG SUMMARY

ROCK TYPE	MINERALIZATION		
	Style	Grade	Intersection width (Corr)
0-4.5 m Triconed			
4.5-45.2 m Altered hornfelsed sediments	P <sub>y</sub> + P <sub>o</sub> - fine veining	tr	
45.2-65.5 m Interbedded ho sed + pelitic chert	P <sub>o</sub> - f. vns, rare f. disseminations + scattered f. patches & ch.	3%	
65.5-72.9 m Pelitic hornfels	P <sub>o</sub> - f. vns, scattered f. patches	7%	
	Cp - tr associated & P <sub>o</sub>		
72.9-99.7 m Intercalated skarn + alt pelitic units	P <sub>o</sub> - dis + patchy; & tr Cp	5%	
99.7-109.1 m Diopside - vesuvianite - ferrohastingite site skarn	P <sub>o</sub> - scattered f. patches & tr Cp	1%	
109.1-112.5 m Diopside - ferrohastingite site skarn	P <sub>o</sub> - scattered f. patches & tr Cp	1%	
112.5-124.5 m Diopside - vesuvianite - ferrohastingite site skarn	P <sub>o</sub> - scattered f. patches & tr Cp	2%	
	& 1m of P <sub>o</sub> 20% + Cp 1%		
124.5-128.0 m Ferrohastingite - diopside skarn	P <sub>o</sub> - f. veinlets + minor patches	5%	
128.0-144.6 m Alt (greisen, clay) granite / adamellite	P <sub>o</sub> - v.f. along fractures, tourmaline - small clusters.	tr	
144.6-174.3 m Alt / fresh porphyritic granite / adamellite	P <sub>o</sub> - v.f. along fracs, P <sub>o</sub> - small clusters	tr	
174.3-182.8 m Alt (grs/clay) granite / adamellite	P <sub>o</sub> - v.f. along fracs, P <sub>o</sub> - small clusters	tr	

Signature N P Green

Date 17 3 82



DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
4.0	2.5	0.85	34%	4.0	<u>Broken Altered Hornfelsed Sediments.</u> Very broken, often subrounded by drilling. soft + soft-hard. pale gray. often stained orange-yellow with oxidation products, predominantly of FeOx. Relatively common fine white-pale gy clay alteration along fracture planes. Sediments predominantly siltstone.	Common f. v.s wh clay veins (Kaolinite?) Minor blue-gy v.f. coatings along frac. planes. Common or FeOx stng. traces of dark red-brown limonite. Intermittent v.f. mica replacement. Where fresh, some green-dk gr pervasive calc-silicate replacement. Few dk gr calc-silicate vns.		Core generally 'rubble' - maximum piece 10 cm. Few v. hd pieces. Generally s. + weathered.	Rare irregular veinlets - v. small patches Pyrite/Pyrrhotite + trace of Chalcopyrite in fracture planes; usually associated + coarse crystalline dk gr amphibole vns.	
6.8	2.5	0.6	24%							
9.0	1.0	0.4	40%							
10.0	0.8	0.66	82.5%	10.0	<u>Fractured Altered Hornfelsed Sediments</u> Commonly frac to seds - minor br s. replaced f. sandstone + rare pale br mudstone, usually irregularly intercalated + interbedded hd - v. hd gy-gy-gr ho + alt ss + minor argillite.	v. minor weathering + oxidation products as above, decreasing downhole. Approx 20/30 s. br-pale br replacement by v.f. br mica + wh stubby needles and gr-gy calc-silicate replacement + associated f. veining + minor quartz; replacement often as bands or patches +		10.4 B at 20° Bedding usually disturbed. Few zones of complete disruption + many sharp boundaries + erosion surfaces. Fracturing common.		
10.8	1.6	1.1	69%							
11.4	mid-slash-bronze contact									
12.4	1.6	1.44	90%							
13.2				13.2	<u>Altered Hornfelsed Sediments.</u> As above minus fracturing.			13.3 B at 25° 13.9 B at 25° younging uphole. Fracturing less common.	Visibly barren.	
14.0	1.2	1.08	90%							

SCALE 1:100 (1cm = 1m)

COMSTAFF PROPRIETARY LIMITED

DRILLHOLE LOG FOR DDH CAF 5

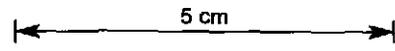
LOGGED BY N.P.Green FROM 0 TO 15.m

DATE 24/2/82

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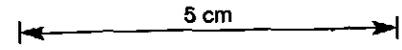
DRILL ADVANCE

LITHOLOGY



DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
15.2	1.3	0.75	57.7%			con) associated very hard gray - pale gy halo.				0%
16.3	1.4	0.95	67.9%						16.2 minor blebby Pyrrhotite	
17.9	3.0	2.53	84.3%			18.0 5mm amphibole-quartz vein at 10°	10.5 B at 30° 10.8 B at -25°		18.8 minor fine blebby Pb & trace Chalcopyrite.	
20.9	2.5	2.33	93.2%			20.0 Absence of green zones & patches of calc-silicate (amph) replacement. Brown alteration restricted to f. ss, associated white-colourless needles finer & smaller. ss generally & relatively unaltered & softer.			19.7 Minor Pb & Pyrite as f. veinlets, & v. small patches encased in amph vns. Rare discrete vns & blabs. 21.9 3mm vuggy Py vn at 30°	tr
23.4	2.4	2.47	95%	24.1	<u>Brown Altered Hornfelsed Sandstone</u> no sediments predominantly fine ss often tuffaceous pervaded by very f. br mica. Minor intercalated siltstone - gy & slight br tinge.	Few irregular, often discontinuous gr-dk gr amph vns rarely & associated quartz & minor sulphide & v. hd pale gy-gy halo often v.f. dk spotted.		Sedimentary pile less disturbed. Structure clearer.	23.6 Visibly barren	0%
26.0	3.0	3.04	100%				26.1 B at 35° 26.9 B at 20° - graded uphole.			
27.9				27.9	Predominantly v. hard gy-dark gy ho ss-argillite.				27.9 Py-vuggy patches in act & v. ss & tr cp - 1% Pb-discrete patches & tr cp ss 28.6 Minor Py & Pb	2%
29.0	3.2	2.89	90.3%	29.0	<u>Intercalated br Altered Hornfelsed Seds.</u> Irregularly intc br alt ho soft f. tuf ss & pale br ss. v. rare dk gy argillite	Pervasive v.f. br mica replacement, slightly more & coarser in ss		Some evidence, where visible of v. disturbed bedding.	associated & calc-silicate veining. Py-usually vuggy vns. Pb-usually discrete	tr

SCALE 1:100 (1cm = 1m)

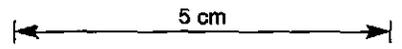


DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
				21	beds. Common irregular calc-silicate alteration bands, patches & veins.	than siltstone. Brown mica alt <sup>n</sup> appears to have 'softened' core. Common irregular zones of pale grey-blue silicification & alt <sup>n</sup> .			v. small patches.	tr
32.2	3.1	3.02	97.4%	22		common irregular zones of pale grey-blue silicification & alt <sup>n</sup> . rarely finely spotted by dark br-black mineral, usually associated & green calc-silicate veining & patchwork development. Intermittent develop <sup>t</sup> , sometimes concentrated		32.1 B at 20° - graded downhole?		
35.3	0.4	0.18	45%	23		of fine - vary f. short, <0.5 mm white - colourless needles. Rare wh. gypsum vns.		35.3 - 35.7 fracture zone - broken core.		
38.7	1.5	1.55	100%+	24						
37.2	2.8	2.64	94.3%	25				38.0 folding	31.6 5 mm fly vn at 60°	
40.0	3.0	2.9	96.7%	26						
43.0	3.0	3.0	100%	27						
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SCALE 1:100 (1cm = 1m)



DRILL ADVANCE

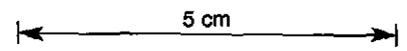
LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
				45-2	Interbedded Hornfelsed Sediments + Pelitic Chert	Few calc-silicate veins in seds as before. Very minor pure quartz in ch as irregular vns. ch beds bounded by br-gy all halo obscuring contacts. Common fine br mica replacement decreasing downhole. Few ch show presio <sub>2</sub> v.f. calc-silicate replacement		pl ch units often show clear brecciation now v. well healed. hornfelsing continues to obscure structure in seds.	Minor f. patchy Pyrrhotite associated & veining in ch, 46-5 10cm of relatively intense v.f. Pb veining + disseminated in 1 bed - 15%. rarely & patchy black tourmaline + calc-silicate veining. v. minor f. Pyrite veining in seds.	1%
46.0	3.0	2.95	98.3%							
47.0										
48.0										
49.0	3.0	2.9	96.7%							
50.0										
51.0										
52.0	3.0	3.0	100%							
53.0										
54.0										
55.0	3.0	2.9	96.7%						54.0 Relatively common f. + v.f. Pb vns + few zones of f. dis Pb. Patches of Pb up to 10mm associated & alteration in few ch units. Few v.f. Py vns.	3%
56.0										
57.0										
58.0	3.0	3.04	100%+							
59.0										
60.0										

51.4 B at 50°  
51.9 B at 50°  
53.6 B at 65°  
57.4 B at 60°

59.0 Intense Pb replacement 20%

SCALE 1:100 (1cm = 1m)



DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
61.0	3.0	2.85	95%	61-62				60.7 B at 35°		3%
64.0	3.0	2.93	97.7%	63-66				66.2 B at 60°	62. Increased fine Pyrrhotite veining verging on a network. Patches of Pb as before. Rare trace Chalcopyrite encased by Pb. Few f. irregular Pyrite vms. Relatively common very f. disseminated Pb preferentially replacing into siltstone + sandstone.	7%
67.0	2.2	1.9	86.4%	67-69						
69.2	2.8	2.65	94.6%	69-72	<u>Psittic Hornfels</u> Dark grey-gy relatively unaltered pl ho, hard-very hd, verging on ch in places towards base. Minor brown-gy siltstone + v. fine sandstone.	Very minor, v.f. br mica replacement restricted to ss + rare f. ss. No green calc-silicate alteration. Few f. irregular quartz veins. Pale gy cloudy alt <sup>n</sup> common towards base associated & silicification.		70.3 B at 50°		
72.0	3.1	3.06	98.7%	72-75				71.5 - lack of calc-silicate + mica alt <sup>n</sup> + 72.2 B at 50° selective silicification → bedding more visible + fine + deformed - contorted.		
				72.7	f interbedded pale green-gy-cream chert.					
				72.9	<u>Intercalated Stern + Altered Psittic Units.</u> sk = irregular patchwork & minor poorly defined banding. Predominantly diopside 'matrix' & bands + patches of vesuvianite + in turn invaded by patches of coarse	Common crystalline white carbonate as patches associated & coarse dk gr ferrochaetingsite.		Multiple replacement obscures any consistent structure. Minor banding in sk but well defined in pl units.	Pb-dis + patchy & tr Cp 73.3 Pb-rare dis. 74.0 Pb-dis & tr Cp 74.4 Pb-rare dis	3% tr 20 tr

SCALE 1:100 (1cm = 1 m)

COMSTAFF PROPRIETARY LIMITED

DRILLHOLE LOG FOR DDH CAF.5

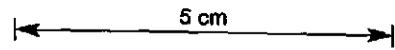
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DATE 26/2/82

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098

099



DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
75.1	3.1	3.07	99%		(con) dark green ferrohastingsite + carbonate. Fe sometimes an important constituent up to 20% usually disseminated through matrix. Pelitic units = very hard often bordering on chert, usually pale gr-gr owing to replacement by ultrafine diopside etc. - Nearly always fine banded - possibly relic banding + f. veined.	Few discrete veins. All skarn constituents also appear as irregular vns.		75.2 banding in pelitic unit at 8°		tr
76.2	2.9	2.7	93.1%					76.6 banding in pl unit at 25°	76.6 Disseminated f. patchy Pyrrhotite, rare discrete f. patchy Chalcopyrite.	15%
78.2	2.9	2.7	93.1%					78.1 banding in pl unit at 25°		
81.1	3.1	2.9	93.5%					79.0 wavy banding in pl unit at 20°	78.4 Predominantly barren.	0%
84.2	3.1	3.0	96.8%					80.0 v.f. banding in pl unit at 40°		
87.3	3.1	3.02	97.4%					81.3 banding in pl unit at 30°		
						- 83.2 5mm white wuggy carbonate vein at 85°			83.1 dis. f. patchy To & tr Cp	5%
								84.3 banding in pl unit at 20°	84.2 prod. barren.	0%
									84.9 dis. f. patchy To & tr associated Cp.	3%
								86.5 banding in pl unit at 20°	86.6 minor v.f. dis To & rare elongate patches + f. vns.	tr
									88.0 patchy To & sharp boundaries. Cp slightly more common - approaches 1%	7%
									89.2 minor dis To & rare patchy To & tr cp.	

SCALE 1:100 (1cm = 1m)

COMSTAFF PROPRIETARY LIMITED

DRILLHOLE LOG FOR DDH CAF 5

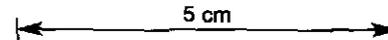
LOGGED BY N.P.G. FROM 75 TO 90m

DATE 26/2/82

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DRILL ADVANCE

LITHOLOGY



DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
90.4	3.1	3.08	99.3%			90.4 5mm vn - white - colourless calcite crystals at 70° E tr Pyrite.			90.6 Pb - fine disseminated up to scattered coarse angular patches with trace Cp - approaching 1%.	20%
95.8	3.1	3.1	100%					95.3 banding in pelitic unit at 10°	95.4 Pb - f. dis up to c. angular patches. Cp associated & Pb discrete.	25%
96.6	3.1	3.15	100%+					96.6 f. banding in pl unit at 25°	96.6 Pb - minor dis	tr
99.7	3.1	3.05	98.4%	99.7	Diopside - Vesuvianite - Ferrohastingsite Skarn. Fine-medium crystalline green-pale gr diopside & f-coarse xaln brown-pale pink vesuvianite, sometimes as disseminated & spheroidal clusters. Dark gr. m.-c, rarely very c. ferrohastingsite, probably later, often a white carbonate & rare fluorite. often as patches or dis through coarser diopside-vesuvianite units. Few intercalated units of gray-purple v.f. grain sk - possibly completely replaced disrupted equivalents of pelitic sediments - chert.	101.5 2mm wh-xaln-carbonate vn at 30°		Often shows c. poorly defined banding - c. veining.	99.1 Pb - c. dis, angular patches. Cp-tr 99.6 Pb - dis f. patches & associated tr Cp, more often associated & c. ferrohastingsite.	30%
102.8	3.1	3.05	98.4%			103.5 minor f. disseminated patches of purple fluorite.				

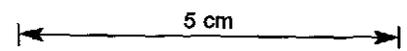
SCALE 1:100 (1cm = 1m)

COMSTAFF PROPRIETARY LIMITED

DRILLHOLE LOG FOR DDH CAF 4

LOGGED BY N.P.G. FROM 90 TO 105m DATE 26/2/82 PAGE 8 OF 14

639101



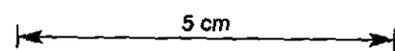
DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
108.9	3.1	3.02	97.4%							
109.0	3.0	3.1	100%+	109.1	Diopside - Ferrohastingsite Skarn. Green - pale gr diopsidic matrix & 'spatches' & 'patches' of dark gr coarse ferrohastingsite = needles up to 10 mm & associated carbonate & rare fluorite.	-110.7 30 mm patch of c. pale purple - transparent - colourless fluorite.		107.2 c. poorly defined banding at 30° 107.6 as at 107.2 m		
112.0	3.0	2.98	99.3%	112.5		-113.7 3 mm 'fuggy' white crystalline carbonate & transparent xln quartz vn at 30°		113.3 c. poorly defined banding at 45° 114.3 poorly defined banding of 30°		
115.0	3.0	2.82	94.0%							
118.0	3.0	3.0	100%							
						118.8 very common wh. cbnz as matrix to c.-v.c. ferrohastingsite & Fo. 119.7 as before & few			118.8 Fo - c. massive angular patches 20%. Cp - intimately associated, often encased by Fo. 119.7 Fo - rare, fine angular	12

SCALE 1:100 (1cm = 1 m)

639102



DRILL ADVANCE

LITHOLOGY

DRILL ADVANCE				LITHOLOGY							VISUAL PERCENTAGE MINERALISATION
DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION		
121.0	2.8	2.7	96.4%	121.0 - 123.5		com scattered fine white irregular carbonate veins.			com patches up to 5 mm. Common, very fine dis Pyrrhotite.	2%	
123.5	3.1	3.0	95.2%	123.5 - 124.5	<u>Ferrohastingsite - Diopside SKarn</u> Dark green, medium-coarse ferrohastingsite intergrown with gr-pale gr diopside displaying a 'gabbroic' texture towards base. Maybe an altered microgabbro unit?	123.8 Few very angular coarse crystals up to 10 mm of wh cble. 126.9					
126.9	3.1	3.04	98.1%	126.9 - 128.0				gradational contact at ~50°	126.9 dis patchy to appear to replace amphibole in places.	7%	
128.0				128.0 - 129.0	<u>Very altered Granitoid.</u> m.-c. grain porphyritic granitoid & v. common pale br gr-pale gr talc/chlorite? alt". v. common wh cble replacement matrix development. Pale gy quartz possibly remobilised away from cont.	v. fine wh. mica? - v. common wh-pale gy cble, often as f. radioform clusters + as discrete vns. v. common (30%) pale br. poss. f. fibrous, unknown mineral - zero at base.		f.g. at top, becoming m.-c.g at base, & increasing phenocrysts of cble. replaced faldspar + quartz. Unit appears partially leached	Traces often in small clusters of black-purple poorly defined tourmaline, possibly tr of Cassiterite? & tr Biotite. v.f. tr of Pyrite along fracture surfaces.	tr	
130.0	3.0	2.92	97.3%	130.0 - 133.0	<u>Altered Porphyritic Granitoid.</u> Predominantly gr mtx - original texture destroyed & minor cble replacement. + pervasive gr talc/chl? alt". possibly v.f. wh mica. Qz phenocrysts are pale gy, translucent, mostly rounded. Faldspar phc highly alt & rims rounded + 'blended' & mtx, many partially destroyed. Possibly a 'arsenised Py Granite'? trace of f. biotite.	v. common dilute but pervasive cble alt" in mtx + as wh milky rarely xaln. 'houndstooth' calcite usually f. vns. Minor v. pale br alt" mineral, mostly f. +		structure better preserved, phc - average maximum qz 6mm 15mm alt. fspr 10mm 17mm.			
133.0	1.2	1.18	98.3%	133.0 - 134.2		133.6 10 mm cble vn at 20° restricted to mtx. minor v.f. wh mica.					
134.2	3.2	3.1	96.9%	134.2 - 136.0							

SCALE 1:100 (1cm = 1m)

COMSTAFF PROPRIETARY LIMITED

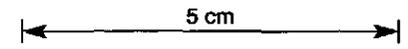
DRILLHOLE LOG FOR DDH CAF5

LOGGED BY N.P.G

FROM 120 TO 135 m

DATE 28/2/82

PAGE 10 OF 14



DRILL ADVANCE

LITHOLOGY

VISUAL PERCENTAGE MINERALISATION

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION
				136					
				137					
137.4	1.6	1.5	93.8%	138-0	Very altered - Clay Granitoid. Slaty v. pale brown alteration as before, giving way to white clay (kaolinite) alt". Common v. fine disseminated wh mica. Green-pale gr chlorite / talc? alt" in matrix & of feldspar phenocrysts as before in 'fresher' zones.	137.5 irregular wh cble v. & crystals up to 10mm, alt"		original structure largely destroyed.	
139.0	0.6	0.53	88.3%	140		v. pale br alt" v. common as before - decreases downhole. Common v.f. dis wh mica increasing downhole. Clay alt" increasing downhole -> v. pale gr-wh core & gr diffuse veins & spots -141.2 30mm patchy quartz quartz remobilised & gone.		139.0 fracturing & severe alt" -> loss of & breaking up of core.	
139.6	2.4	2.2	91.7%	142-0					139.9 6cm patch of disseminated tourmaline.
142.0	3.0	2.95	98.3%	143-7	Very altered - Muscovite Granitoid. v. common in zones silver f. muscovite. plates up to 1mm & pale gr chlorite / talc alt".	v. pale gr-wh clay alt", common decreasing down hole; wh mica ~10%; gr talc/chl alt" increases downhole. Fluorite			
145.0	3.0	2.94	98.0%	144-b	Altered / Fresh Porphyritic Granite / Adamellite. Irregularly alternating gr chlorite alt" & biotite -> muscovite py granite / Adamellite of the Meredith Granite intrusive complex. Fresh -gy-wh & v. common finer bi up to 15%, phc 40% -> 60% feldspar, 40% qz. bi appears to have normal size dist" up to 3mm.	v. common gr-dkgr chl alt", mostly of mtx also replaces feldspar phc. Common carbonate as f. dis through mtx & v.f. veinlets in alt & slightly alt zones. Few f. wh veinlets in 'fresh' zones. Minor v. pale br alt" of -145.5 f. wh cble veining at 45° phc. -149.7 3mm cble-chl? v. alt 20°		original texture largely preserved. fresh granite is v. hard, alt granite soft.	
148.0	2.6	2.6	100%						

SCALE 1:100 (1cm = 1m)

COMSTAFF PROPRIETARY LIMITED

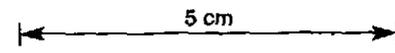
DRILLHOLE LOG FOR DDH CAF.5

LOGGED BY N.P.G FROM 135 TO 150 m

DATE 2/3/82

PAGE 11 OF 14

639104



DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
150.6	0.8	0.7	87.5%	151						tr
151.4	2.4	2.3	95.8%	152		151.8 Predominantly 'fresh' granite/Adamellite.			152.2 patchy black tourmaline vein at 15° E minor f. patches of vuggy dark gold Pyrite.	
153.8	3.1	3.1	100%	154					154.7 10 mm patch of vuggy Py	
156.9	1.3	1.3	100%	157		157.1 Predominantly altered green granite/Adamellite.			156.8 ~10 mm patchy to E tr-Py at 20°	
158.2	2.7	2.5	92.3%	159		160.1 3 mm white-very pale brown carbonate-clay vn at 5°			159.2 patchy to E Py associated E strong muscovite alteration.	
160.9	2.4	2.4	100%	161					161.8 ~10mm patchy to-quartz vn at 20° E patchy Py	
163.3	2.7	2.65	98.1%	164		162.8 Predominantly 'fresh' granite/Adamellite.			162.5 v. irregular 20 mm white to-qz E tr Py vn at 15°	
				165					164.3 ~5 mm qz-to E tr Py vn at 30°	

SCALE 1:100 (1cm = 1 m)

639105

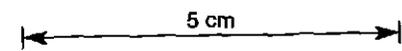
COMSTAFF PROPRIETARY LIMITED

DRILLHOLE LOG FOR DDH CAF 5

LOGGED BY N.P.G FROM 150 TO 165 m

DATE 2/3/82

PAGE 12 OF 14



DRILL ADVANCE

LITHOLOGY

VISUAL PERCENTAGE MINERALISATION

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION
166.0	3.0	2.9	96.7%	166		166.0 Predominantly altered green granite / adamellite.			167.1 20 mm tourmaline-quartz & trace carbonate vein at 20°
169.0	2.1	1.95	92.9%	169		169.5 8mm regular white cble vn at 15° E tr Py on frac.			168.9 10mm vary irregular, patchy to-qz & tr Py vn at 25° Py intimately associated & to.
171.1	2.5	2.35	94.0%	171		169.9 Predominantly 'fresh' granite / Adamellite.			
172.6	3.0	3.0	100%	172					
174.5	3.1	3.04	98.1%	174-3	Very altered Porphyritic Granite / Adamellite. v. common green-pale gr chlorite-talc alteration particularly of phenocrysts. v. pale brown alt <sup>n</sup> of groundmass along with disseminated v. fine muscovite. few black tourmaline patches & veins. clay alt <sup>n</sup> of matrix often plucked & eroded out.	Core extremely alt, as under description. Texture still preserved gr alt <sup>n</sup> of phc shows crude zonation of colour.			175.3 20 mm to-qz-Py vn at 25°
179.7	3.1	3.0	96.8%	179					

SCALE 1:100 (1cm = 1 m)

COMSTAFF PROPRIETARY LIMITED

DRILLHOLE LOG FOR DDH CAF 5

LOGGED BY N.P.G.

FROM 165 TO 180m

DATE 2/3/82

PAGE 13 OF 14

DRILL ADVANCE

LITHOLOGY

5 cm

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
				181 182					181.3 60 mm zone of intense tourmaline-quartz, tr Pyrite, tr Arsenopyrite development at 20°	
182.8					End of DDH: CAF 5 at 182.8 m					

SCALE 1:100 (1cm = 1 m)

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DRILLHOLE LOG FOR DDH CAF 5

LOGGED BY N.P. Green FROM 180 TO 182.8 m DATE 2/3/82 PAGE 14 OF 14

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Matrix	Sn	Cu	W	Pb	Zn	Ag	As	Ni									SAMPLE NUMBER
0.0																	Tricone Sludge
	25	175	BLD	BLD	70	BLD	19	155									
3.0																	
	9	165	BLD	BLD	75	BLD	15	155									
6.0																	
	140	170	20	BLD	110	BLD	34	175									
9.0																	

Matras	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni	Li		SAMPLE NUMBER
0.0															
25	175	BLD	BLD	70	BLD	-	-	-	-	-	19	155	-	Tricone Sludge	
3.0 (96.0)	9	165	BLD	BLD	75	BLD	-	-	-	-	15	155	-	Tricone Sludge	
4.0															
5															
6															
7	3	65	20	15	195	BLD	BLD	BLD	BLD	490	30	-	-	Ground Core ↓	1374Z
8															
9															
10.0															
11	BLD	55	BLD	15	195	BLD	BLD	BLD	BLD	730	2	-	-		1375Z
12															
13.0															
14	8	80	40	15	195	BLD	BLD	BLD	1.0	660	3	-	-		1376Z
15															

COMSTAFF PROPRIETARY LIMITED      ASSAY RESULT SHEET FOR      DDH CAF 5

ASSAYED BY Analabs      FROM 0 TO 15m      DATE 3/3/82      PAGE 1 OF 3

Matras	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni	Li	SAMPLE NUMBER
60	5	155	45	10	260	BLD	BLD	BLD	BLD	660	4	-	-	1377Z
90	BLD	135	45	10	225	BLD	BLD	BLD	BLD	1000	11	-	-	1378Z
220	4	60	40	10	185	10	BLD	BLD	BLD	280	6	-	-	1379Z
250	BLD	65	65	10	210	BLD	BLD	BLD	0.5	920	1	-	-	1380Z
280	4	325	65	5	165	0.5	BLD	BLD	BLD	790	2	-	-	1381Z

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 5

ASSAYED BY Analabs

FROM 15 TO 30m

DATE 6/3/82

PAGE 2 OF 13

Matras	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni	Li	SAMPLE NUMBER
31-0	BLD	85	55	5	185	BLD	BLD	BLD	BLD	1010	2	-	-	13822
34-0	BLD	115	60	5	185	BLD	BLD	BLD	BLD	670	1	-	-	13832
37-0	BLD	295	70	10	195	0.5	BLD	BLD	3-0	750	14	-	-	13842
40-0	8	155	85	10	200	BLD	BLD	BLD	1-0	540	11	-	-	13852
43-0	BLD	145	120	20	255	BLD	BLD	BLD	BLD	750	99	-	-	13862

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF-5

ASSAYED BY Analabs

FROM 30 TO 45m

DATE 13/4/52

PAGE 3 OF 0

Matras	Sn	Cu	N	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni	Li			SAMPLE NUMBER
48-0	10	170	75	3	205	BLD	BLD	BLD	1-0	880	17	-	-			1387 Z
49-0	7	130	120	20	280	0-5	BLD	BLD	1-0	810	25	-	-			1388 Z
52-0	BLD	160	140	10	245	BLD	BLD	BLD	1-0	850	56	-	-			1389 Z
55-0	9	210	150	BLD	260	0-5	BLD	BLD	0-5	1240	12	-	-			1390 Z
58-0	5	255	140	BLD	225	BLD	BLD	BLD	BLD	550	6	-	-			1391 Z

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 5

ASSAYED BY Analabs

FROM 45 TO 60 m

DATE 8/3/82

PAGE 4 OF 5

REC-111

Matrix	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni	Li			SAMPLE NUMBER
															Ground Core↑	
62.9	10	135	BLD	40	105	BLD	BLD	BLD	2.0	630	6	255	26	Split	Core↓	1392Z
66.0	10	100	BLD	30	135	BLD	BLD	BLD	1.5	810	7	165	37			1393Z
68.5	5	115	BLD	25	125	BLD	BLD	BLD	3.0	1140	7	205	35			1394Z
70.5	7	145	BLD	30	125	BLD	BLD	BLD	7.5	740	10	235	43			1395Z
72.9	560	505	BLD	25	80	BLD	0.007	2	1.0	3530	40	135	3			1396Z
74.4																

COMSTAFF PROPRIETARY LIMITED      ASSAY RESULT SHEET FOR      DDH CAF 5

ASSAYED BY Analabs      FROM 60 TO 75m      DATE 26/4/52      PAGE 5 OF 6

Matrix	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni	Li	SAMPLE NUMBER
	360	80	BLD	30	75	BLD	BLD	4	1.5	4425	220	110	7	1397Z
76.6	320	985	BLD	35	110	BLD	0.007	4b	1.0	6320	87	155	3	1398Z
78.4	300	85	BLD	35	90	BLD	BLD	14	1.0	6850	510	95	6	1399Z
81.0	330	85	BLD	40	105	BLD	BLD	10	1.5	6100	270	65	5	1400Z
83.1	340	580	10	30	80	BLD	0.109	238	1.0	1.8%	280	100	3	1101Z
84.2	350	105	15	60	120	BLD	BLD	BLD	0.5	3735	180	65	12	1102Z
84.9	260	600	BLD	35	105	BLD	0.054	226	0.5	1.8%	490	85	3	1103Z
86.6	80	130	BLD	35	45	BLD	BLD	BLD	1.5	1110	73	115	10	1104Z
88.0	370	835	BLD	40	95	BLD	BLD	14	BLD	6185	84	85	4	1105Z
89.2	300	105	10	30	110	BLD	BLD	30	0.5	5010	440	60	2	1106Z

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ASSAY RESULT SHEET FOR

DDH CAPS

ASSAYED BY Analabs

FROM 75 TO 90m

DATE 26/3/82

PAGE 6 OF 13

114

Matras	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni	Li			SAMPLE NUMBER
906	170	1250	BLD	30	90	BLD	0.075	84	2.0	7915	340	175	1			11072
950	350	65	100	40	95	BLD	BLD	24	1.0	9520	900	110	5			11082
954	300	795	30	40	105	BLD	0.037	78	1.0	5385	80	100	5			11092
966	460	240	BLD	35	110	BLD	0.014	58	2.0	4815	71	70	2			11102
971	520	1350	BLD	30	110	BLD	0.020	200	1.5	6270	82	115	2			11112
976	300	95	20	40	95	BLD	0.007	22	1.0	6900	96	85	6			11122
997	340	35	15	30	100	BLD	BLD	10	1.0	5970	96	65	2			11132
1020	350	15	BLD	35	110	BLD	BLD	14	1.0	9480	78	45	6			11142
1050																

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ASSAY RESULT SHEET FOR

DDH CAF 5

ASSAYED BY Analabs

FROM 90 TO 105m

DATE 26/3/82

PAGE 7 OF 8

639115

Metres	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni	Li	SAMPLE NUMBER
105.0	310	65	BLD	25	105	BLD	BLD	10	1.0	1730	52	60	8	1115Z
107.0	470	25	BLD	40	115	BLD	BLD	16	1.5	3145	84	45	6	1116Z
109.1	520	45	BLD	35	95	BLD	BLD	22	1.5	4099	32	35	6	1117Z
112.5	430	55	50	65	135	BLD	BLD	18	0.5	5960	67	50	3	1118Z
115.5	680	45	BLD	35	95	BLD	BLD	8	0.5	4385	49	45	3	1119Z
116.8	1100	1300	230	50	105	BLD	BLD	14	1.5	805	33	50	3	1120Z
119.7														

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 5

ASSAYED BY Analabs FROM 105 TO 120 m

DATE 26/3/82

PAGE 8 OF 13

Metres	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni	Li	SAMPLE NUMBER
	440	135	BLD	45	150	BLD	BLD	4	1.0	4630	81	75	4	1121 Z
122.0	620	145	BLD	40	275	BLD	BLD	10	1.0	3070	58	75	4	1122 Z
124.5	310	20	BLD	40	70	BLD	BLD	BLD	1.0	985	21	45	9	1123 Z
126.9	410	155	BLD	30	95	BLD	0.009	16	BLD	1250	20	80	10	1124 Z
128.0	90	30	BLD	45	90	BLD	BLD	6	9.0	1590	10	100	21	1125 Z
130.0	BLD	10	BLD	45	25	BLD	BLD	2	2.0	1630	4	125	23	1126 Z
133.0	5	5	BLD	40	5	BLD	BLD	BLD	3.0	1095	3	180	23	1127 Z

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COMSTAFF PROPRIETARY LIMITED ASSAY RESULT SHEET FOR DDH CAF 5  
 ASSAYED BY Analabs FROM 120 TO 135m DATE 26/3/82 PAGE 9 OF 9

117  
639118

Matras	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni	Li			SAMPLE NUMBER
135-0	15	10	BLD	40	25	BLD	BLD	2	2-5	1090	4	105	14			1128 Z
138-0	60	5	BLD	35	60	BLD	BLD	BLD	2-0	1025	3	70	4			1129 Z
139-6	160	5	BLD	35	75	BLD	BLD	BLD	0-5	1575	2	40	2			1130 Z
142-7	35	5	10	25	15	BLD	BLD	BLD	0-5	2-8%	1	25	4			1131 Z
144-5	15	5	BLD	25	30	BLD	0-005	4	2-5	1290	7	85	57			1132 Z
147-0	10	5	BLD	15	15	0-5	0-005	BLD	3-5	975	20	140	59			1133 Z
150-0																

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF S

ASSAYED BY Analabs

FROM 135 TO 150 m

DATE 10/26/42

PAGE 10 OF 13

118

	Matrixs	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni	Li		SAMPLE NUMBER
150	150-0	15	5	BLD	20	15	0.5	BLD	BLD	4.0	760	4	115	23		1134 Z
151																
152	151-8	15	20	10	10	20	BLD	BLD	BLD	4.5	1090	14	130	18		1135 Z
153																
154	154-0	9	10	10	5	15	0.5	BLD	2	3.0	1065	9	105	18		1136 Z
155																
156																
157	157-1	10	15	10	10	15	0.5	BLD	BLD	3.0	850	19	100	12		1137 Z
158																
159																
160	160-0	9	15	BLD	10	15	BLD	BLD	BLD	2.0	960	15	85	9		1138 Z
161																
162																
163	162-8	8	15	BLD	5	15	0.5	BLD	BLD	3.0	890	13	65	21		1139 Z
164																
165	165-0															

639119

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 3

ASSAYED BY Analabs

FROM 150 TO 165 m

DATE 26/3/82

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119  
639120

Metres	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni	Li			SAMPLE NUMBER
165-0	9	10	BLD	5	15	BLD	BLD	BLD	2.5	1050	15	95	25			Z 1140
166-0	20	15	BLD	25	20	0.5	BLD	2	3.0	935	26	85	11			1141 Z
168-0	10	5	25	15	15	BLD	BLD	BLD	2.5	855	12	100	9			1142 Z
169-9	15	5	BLD	5	20	BLD	0.007	BLD	3.0	855	6	60	17			1143 Z
172-0	15	20	65	BLD	15	0.5	BLD	2	6.5	1320	62	205	18			1144 Z
174.3	15	20	BLD	20	20	BLD	BLD	BLD	4.0	855	60	185	112			1145 Z
177-0	20	20	20	15	15	0.5	BLD	BLD	3.0	1245	25	110	46			1146 Z
180-0																

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAP 5

ASSAYED BY Analabs

FROM 165 TO 180 m

DATE 26/3/82

PAGE 12 OF 13

Matrix	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni	Li	SAMPLE NUMBER
180-0	20	25	35	20	35	0.5	0.010	8	2.5	965	37	110	28	1147 Z
182-8	End of DDH: CAF 5 at 182.8m.													

COMSTAFF PROPRIETARY LIMITED ASSAY RESULT SHEET FOR DDH CAF 5

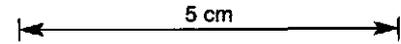
ASSAYED BY Analeba FROM 180 TO 182.8m DATE 26/3/82 PAGE 13 OF 13

APPENDIX VI



DRILL ADVANCE

LITHOLOGY



DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION
3.5	1-10	0.86	78.18%	3-5	Broken sediments grey, fine, poorly sorted slightly tuffaceous sandstone intercalated & dark gy siltstone and minor argillite. Often slightly weathered to brown colour & relatively common red-orange ferric oxide staining.	Common re-or FeOx staining along fractures. Common white-yellow clay alteration along fracs + on surfaces. Few veinlets of FeOx + clay alt. Slight hornfels overprint.		very broken nature of core precludes definition of internal sedimentary structure. Also obscured by ho overprint. Rare fine brecciation.	Visibly barren, although f. re-br limonitic veins may suggest original sulphide.
4.6	0-80	0.62	77.50%						
5.4	0-50	0.46	92.00%						
5.9	1-18	0.57	51.82%						
7.0	1-18.5	0.30	27.27%	7-0	Broken-oxidised sediments extremely broken br. v. whtd-ox seds.	br-re ox products v. common & wh. clay alt along fracs. wh. pale br bleach seds.		no complete core, all broken to an average 20mm.	
8.1	0-40	0.25	62.50%						
8.5	1-20	0.42	38.00%	8-1	Broken sediments predominantly green & sometimes a br tinge into slight ho. f. poorly sorted tuf sa & ss + minor dk gr arg. sometimes whtd br.	common, decreasing down hole, br-or FeOx + wh clay alt-ox products.		core still well broken, becoming more competent downhole. 'Glimpses' of internal structure suggest a disturbed environment of deposition & irregular intercalation of seds	
9.7	0-50	0.47	94.00%						
10.2	0-40	0.35	87.50%						
10.6	1-00	0.98	98.00%	10-7	Altered hornfelsed sediments. Frac. pred into pale slightly ruddy-brown replaced f. tuf? sa & v.f. disseminated br mica (biotite?) & gy-dk gy sometimes & slight gr tinge from calc-silicate alt associated & metasomatism. Very hard, owing to hornfelsing + metasomatism, ss + minor ar; whereas sa softer owing to bi replacement - retrograde in terms of hardness.	10-7 20mm zone of pelitic chert + intense calc-silicate alt at 35° v. common, v.f. disseminated biotite replacement in coarse units. v. rare bi in rare veins. v.f. gr calc-silicate alt of finer units sometimes & patchy gr amphibole development & associated pale gy halo.		irregular intercalation of seds + v. minor regular bedding. Rare small scale mesofaulting	minor vuggy Pyrrhotite + Pyrite associated & irregular calc-silicate veining + v. rare f. discrete veining. Re predominating downhole.
11.6	0-30	0.28	83.33%						
11.9	0-30	0.24	80.00%						
12.2	1-20	1.18	97.22%						
14.0	0-40	0.30	75.00%						
14.4	3-10	2.98	98.33%						

SCALE 1:100 (1cm = 1 m)

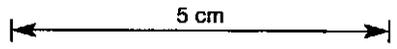
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DRILLHOLE LOG FOR DDH CAF 6

LOGGED BY N.P.G. FROM 0 TO 15 m

DATE 3/3/82

PAGE 2 OF 3



DRILL ADVANCE

LITHOLOGY

VISUAL PERCENTAGE MINERALISATION

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
				16		(cont) Few very-fine, f. gypsum veins. Few discrete green calc-silicate veins.	15.7 B at 50°			1%
17.5	3.10	3.08	98.39%	17		16.9 irregular pale gr veining at a 25° of amph needles up to 3mm.	17.1 B at 36° 17.4 B at 35°			
				18			18.0 B at 55°			
				19			19.1 B banding in small pl ch unit at 50°			
				20			19.9 B at 45°			
20.6	3.10	3.10	100%	21						
				22	21.8 22.0 Pale gray pelitic chert bed	more intense gr calc-silicate vns	21.9 banding in pl ch unit at 60°			
				23						
				24	22.9 Mineralised interbedded altered hornfelsed sediments.	br, v.f. disseminated biotite replacement decreasing downhole calc-silicate patches + vns alteration not as pronounced.	23.2 B at 45° 23.8 B at 45° 24.5 B at 55° 24.7 B at 55° 26.0 B at 55°	Structure well defined at top & f. into sa + ss. Decreasing br alt + sa decreases; sharp definition of beds downhole.	very common Pyrrhotite as v.f. dis in sa + f. discrete vns + few patches associated & calc-silicate alt. trace Pyrite along fractures + rare patches. tr Chalcopyrite associated & patchy Fe + Py	10%
23.7	3.10	3.03	97.74%	25	bedded, sometimes finely brown f. replaced sandstone with grey siltstone; ss increasing downhole & decreasing well defined bedding					
				26						
				27	26.9 Diopside pelitic chert pale gr diopside ch & minor gr amphibole intercalated & minor dark gray-argillite - sometimes f. bd. sed < 5%	Ferrous v.f. pale gr diopside replacement through ch. Minor coarser grain pale red garnet + possibly vesuvianite = f.g. skarn assembly 27.5 3mm carbonate m at 25 deg. rare, v.f. wh cblc vns.	26.8 B at 60° 27.1 f. banding at 55° Calc-silicate replacement mainly multiple vns controlled rather than by bedding. 28.5 banding at 45° Some coarse banding + some fine banding in beds		Fe common as v. small patches up to few c patches. Rarely as veins associated & tr Py + Cp. Fe & tr tourmaline/cassiterite	10%
28.6	2.80	2.70	96.43%	28						
				29						
29.6	3.20	3.10	96.88%	30	29.9 See next page.		30.0 B at 45°			

SCALE 1:100 (1cm = 1m)

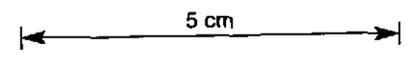
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DRILLHOLE LOG FOR DDH CAF 6

LOGGED BY N.P.G. FROM 15 TO 30m

DATE 3/3/82

PAGE 3 OF 9



DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
32.8	2.60	2.88	95.00%	31-35	<p>Intercalated altered sediments + pelitic chert.</p> <p>Very irregularly lentic - sometimes interbedded, otherwise strongly &amp; sharply vein controlled combination of v. pale grey-green &amp; white pelitic chert often replaced with v. fine calc-silicate (diopside &amp; rare garnet) &amp; f. biotite &amp; pyrrhotite replaced sandstone &amp; more common dark gy siltstone - argillite &amp; possibly a small carbonaceous component.</p> <p>NB: Boundary between replaced pelitic ch &amp; v. altered replaced sands indistinguishable</p>	<p>Pervasive silicification of certain zones most pronounced alteration feature. &amp; v.f. pale gr diopside replacements, tr red-pink garnet.</p> <p>Trace of unknown f. spotted diffuse black mineral.</p> <p>Few f. &amp; v.f. white carbonate veins, especially in sands.</p>	<p>30.8 B at 25° - slightly deformed fg. wavy bedding.</p> <p>31.5 B at 10° Structure as before pl. ch.</p> <p>32.8 B at 12° f. originally mudflakes in alt ss.</p> <p>34.3 B at 50°</p> <p>34.7 f. banding at 50°</p> <p>35.3 B at 50°</p> <p>35.9 v.f. banding at 45°</p> <p>36.5 f. banding at 35°</p> <p>37.5 B at 50°</p>	<p>70 as f. to coarse patches in pl ch &amp; disseminated grains giving spotted appearance.</p> <p>70 also as f. &amp; v.f. veins in seds.; sometimes associated &amp; wh. cbtz vns; common v.f. dis; v. seldom as in pl patchy form.</p> <p>Tr chalcopyrite associated &amp; 70.</p> <p>Tr of tourmaline (cassiterite) in pl units, usually in margins of 70 patches.</p>	10%	
38.4	3.00	3.00	100%	36-39						
39.4	1.60	1.60	100%	39-40						
40.0	3.00	2.85	95.00%	40-43						
43.0	2.8	2.84	100%+	43-45	<p>Pelitic chert.</p> <p>Pale gy - pale gr irregularly &amp; generally f. banded pl ch. Commonly replaced by 70 &amp; v. minor bi &amp; minor pale gr calc-silicate.</p>	<p>Common v.f. pale gr calc-silicate replacement. Trace of pale re garnet.</p> <p>some minor f. wh. spotting</p>	<p>41.0 f. banding at 45°</p> <p>41.5 f. B at 60°</p> <p>42.1 f. B at 55°</p> <p>42.8 f. B at 60°</p> <p>44.8 Banding at 60°</p>	<p>Commonly, finely banded often truncated, displaced by f. mesofaults.</p>	<p>As above, without sed contained 70.</p> <p>70 verges on massive in few instances.</p>	10%

SCALE 1:100 (1cm = 1 m)

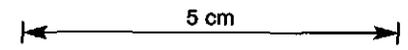
COMSTAFF PROPRIETARY LIMITED

DRILLHOLE LOG FOR DDH CAF 6

LOGGED BY N.P.G. FROM 30 TO 45 m

DATE 3/3/82

PAGE 4 OF 8



DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
45.8	3-10	3.00	96.77%	45.8-47.8		(con) → high grade metamorphism? minor biotite replacement.		45.5 Banding at 60° - slightly deformed.		10%
47.8				47.8-48.9	Altered hornfelsed sediments. Brown, going to slight brgy fine often tuffaceous sandstones & v. common, very f.-br mica, biotite at top decreasing downhole, intercalated (structure masked by alteration) & pale gy chert, silicified & alt pelitic units. Pl ch units common at top, decreasing downhole. Minor dark gy siltstone & argillite towards base.	General alteration effects appear to decrease downhole e.g. bi. replacement & alt of pl units. Common f. gy-gr veins of mostly calc-silicate vns, often & partially silicified, alt pale gy halo. V. minor f. pale gy-black spotting of few bi. replaced ss units.		47.8 f. banding at 60° 48.5 banding at 55° 50.0 diffuse banding at 55° 51.1 banding at 55°	Pyrrhotite commonly associated & pl ch units as disseminated f. patches; also as f. veins associated & calc-silicate vns.	12%
48.9	3-10	3.05	98.39%	48.9-52.0				51.1 banding at 55°	51.1 3mm f. quartz vn at 55°	
52.0	3-00	2.92	97.33%	52.0-55.0					54.4 10mm f. -qv. at 50°	
55.0	3-00	3.08	100%	55.0-58.0					57.2 5mm f. -qz-calc-silicate vn at 70°	
58.0	3-00	2.84	94.67%	58.0-60.0				58.3 bedding graded downhole at 40°	59.8 pl ch unit & dis f. & irregular vns.	7%

SCALE 1:100 (1cm = 1 m)

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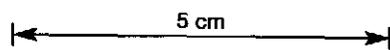
DRILLHOLE LOG FOR DDH CAF6

LOGGED BY N.P.G.

FROM 45 TO 60 m

DATE 4/3/82

PAGE 5 OF 8

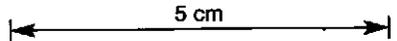


DRILL ADVANCE				LITHOLOGY					
DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION
61.0	3.00	3.03	100.2%	61.0-61.2		61.2 bands of fine white spotting at 50°		60.1 banding at 45° 61.2 f. banding at 45°	61.0 As before pelitic chert unit.
64.0	2.30	2.30	100%	64.0-64.2				62.3 B at 48° 63.4 banding at 60°	
66.3	3.10	3.00	96.77%	66.3-66.7				65.2 B at 42°	
69.4	2.10	1.98	94.29%	69.4-71.5	Highly veined altered hornfelsed <u>sediments</u> . Intercalated, rarely interbedded (visibly) brown + br-grey fine sandstone & gy silt + relatively unaltered siltstone - appears to be the preferred host to very common calc-silicate veining destroys original sedimentary structure; therefore appearing as ss - pelite.	v. common, v. irregular almost network of pale gr-wh calc-silicate veining without prominent halo alteration sometimes & patches of coarse gr crystalline (needle like) amphibole? v.f. disseminated biotite		66.7 B at 50° 69.5 B at 40° - graded uphole. 70.2 B at 40° 70.5 Structure more obscured by alt + replacement.	
71.3	3.00	3.00	100%	71.3-72.5				72.5 frac. zone relatively regular at 45° due partly to rag. cbite vning	
74.5	3.20	3.05	95.31%	74.5-75.3		replacement in f. ss beds again relatively common. Few br pl. units from ultrafine bi?		73.3 structure obscured as before.	

SCALE 1:100 (1cm = 1m)

DRILL ADVANCE

LITHOLOGY



DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
				76.1	<p>Altered chert &amp; pelitic sediments. Irregularly interbedded pale grey-pale green often very alt ch units - often mineralised with Pyrrhotite, infib? &amp; often deformed - contorted dark gy-gy pl seds, possibly &amp; trace of carbonaceous material. pl sed content decreases downhole to &lt;10%.</p>	<p>Common apparent silicification &amp; bleaching. Common ultrafine pale gr calc-silicate (diopside?) replacement. Common white carbonate veining up to 5 mm wide at mostly &lt;5°; also as pervasive replacement in coarser alt ch units. Calc-silicate alt<sup>n</sup> generally increasing downhole.</p>	78-1 3 at 10°	ch & alt units show coarse banding, whereas pl seds mostly highly deformed.	To as disseminated f. patches in v. alt units, also as dia grains, f. discrete veins especially in seds. Few zones of intense replacement up to 20%	10%
77.7	3-10	3-00	96-17%	79-1			19-1 Banding at 55° - cut & frac by a 2mm chltz vn at 0°	29-4 5 mm To vn at 50°	To dis along bedding in seds, more accentuated downhole.	
80.8	0-70	0-71	100% +	81-1			24-2 10 mm wh chltz vn at 30°	22-7 def. bd at 225°		
81.8	1-00	1-03	100% +	82-1				23-4 def. bd at 20°		
82.5	2-50	2-35	94-00%	84-1				24-1 disturbed bd at 35°		
85-0	3-00	2-85	95-00%	86-1		26-1 Wavy bd at ~40°		25-4 General increase in To especially f. dis.	15%	
89-0	3-00	2-96	95-33%	87-1		29-4 f. banding at 40°		26-9 intense patchy mas To 29-4 f. AC	40%	
				90		29-7 40 mm ch-To-garnet zone.			15%	

SCALE 1:100 (1cm = 1 m)

COMSTAFF PROPRIETARY LIMITED

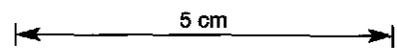
DRILLHOLE LOG FOR DDH CAF 6

LOGGED BY N.P.G.

FROM 75 TO 90 m

DATE 5/3/82

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DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
91.0	3.00	2.88	96.00%					90.8 very well healed - 10 cm zone of replaced pelitic sediments & chert matrix. 91.9 v. fine banding at 20°		15%
94.0	2.10	2.16	100.2%					94.6 Banding at 60° 95.3 banding at 53° 96.0 banding at 65° 96.5 B at 55°	94.8 40 mm patch Py, ch & pale garnet.	
96.1	3.0	3.00	96.77%			96.7 Now almost totally replaced as before. 98.1 3 mm white carbonate vn at 55°			96.7 General reduction especially in disseminated Pyrrhotite. patchy Py; few discrete vns remain.	7%
					End of DDH: CAF 6 at 99.2 metres					

SCALE 1:100 (1cm = 1 m)

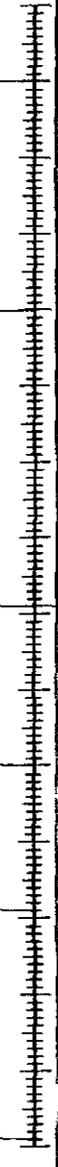
Metres	Sn	Cu	N	Pb	Zn	Ag	Au	Bi	F	As	Ni					SAMPLE NUMBER
35	6	25	BLD	10	45	BLD	0.005	BLD	350	9	115			Split	Corax	Z1148
70	7	130	BLD	10	170	BLD	BLD	BLD	475	7	150					Z1149
81	4	20	BLD	10	85	BLD	BLD	BLD	480	23	195					Z1150
107	10	45	BLD	15	75	BLD	BLD	BLD	315	10	105					Z1151
130	4	65	BLD	10	90	BLD	BLD	BLD	610	6	145					Z1152

COMSTAFF PROPRIETARY LIMITED      ASSAY RESULT SHEET FOR      DDH CAF6

ASSAYED BY Analabs      FROM 3.5      TO 15.m      DATE 26/3/92      PAGE 1 OF 7

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Matrix	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	F	As	Ni					SAMPLE NUMBER
40	4	85	BLD	15	95	0.5	BLD	BLD	545	7	130					21153
40	9	60	20	25	90	BLD	BLD	BLD	590	11	205					21154
229	3	310	15	35	950	0.5	BLD	BLD	665	24	220					21155
250	8	175	BLD	35	905	0.5	BLD	BLD	490	25	185					21156
269	70	115	BLD	35	55	BLD	0.005	4	415	9	130					21157
299																



COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF6

ASSAYED BY Analabs

FROM 15 TO 30 m

DATE 26/3/82

PAGE 2 OF 7

639132

Mztre5	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	F	As	Ni					SAMPLE NUMBER
30	10	135	BLD	35	70	BLD	BLD	BLD	475	28	135					Z1158
35	15	125	BLD	40	60	BLD	BLD	BLD	465	50	130					Z1159
36	15	155	BLD	30	75	BLD	BLD	BLD	480	29	140					Z1160
39	20	165	10	35	45	0.5	BLD	BLD	430	12	125					Z1161
40	10	130	BLD	20	50	BLD	0.007	BLD	255	25	145					Z1162
43	25	175	BLD	35	45	BLD	BLD	BLD	425	7	165					Z1163
45																

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 6

ASSAYED BY Analabs

FROM 30 TO 45 m

DATE 26/3/82

PAGE 3 OF 7

Matrix	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	F	As	Ni				SAMPLE NUMBER
45-0	25	95	BLD	45	45	BLD	BLD	BLD	770	56	275				Z1164
46-8	15	95	BLD	35	90	BLD	BLD	BLD	940	66	305				Z1165
50-0	15	75	20	25	85	BLD	BLD	BLD	900	36	255				Z1166
53-0	15	95	BLD	25	95	BLD	BLD	BLD	300	33	340				Z1167
56-0	8	95	15	25	95	BLD	BLD	BLD	490	25	215				Z1168
59-8															

COMSTAFF PROPRIETARY LIMITED ASSAY RESULT SHEET FOR DDH CAF 6

ASSAYED BY Analabs FROM 45 TO 60.00 DATE 26/13/82 PAGE 4 OF 7

	Mz/rzs	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	F	As	Ni					SAMPLE NUMBER
60		20	260	BLD	15	25	BLD	BLD	BLD	635	3	185					Z1169
61.0																	
62		6	40	BLD	20	65	BLD	BLD	BLD	540	6	170					Z1170
63																	
64.0																	
65		BLD	45	10	20	55	BLD	BLD	BLD	520	1	150					Z1171
66																	
67		8	145	BLD	15	55	BLD	0.009	2	560	7	135					Z1172
68																	
69																	
70		BLD	25	BLD	15	65	BLD	BLD	BLD	470	14	120					Z1173
71																	
72																	
73.0																	
74		7	45	BLD	25	75	0.5	BLD	BLD	535	7	125					Z1174
75																	
75.0																	

Matrix	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	F	As	Ni				SAMPLE NUMBER
75.0	8	15	10	15	25	BLD	0.008	BLD	780	21	180				Z1175
76.1	20	135	10	30	45	BLD	0.033	20	550	520	145				Z1176
79.0	10	130	BLD	40	55	BLD	BLD	2	620	23	135				Z1177
82.0	10	110	BLD	45	40	0.5	BLD	2	755	33	150				Z1178
84.5	160	195	BLD	35	65	0.5	BLD	2	680	25	155				Z1179
87.1	95	145	BLD	30	195	0.5	BLD	6	660	4	115				Z1180
90.0															

COMSTAFF PROPRIETARY LIMITED      ASSAY RESULT SHEET FOR      DDH CAP 6

ASSAYED BY Analabs      FROM 75 TO 90 m      DATE 26/3/82      PAGE 6 OF 7

Metres	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	F	As	Ni				SAMPLE NUMBER
990	15	105	BLD	40	205	BLD	0.010	BLD	575	20	105				Z 1181
990	20	85	BLD	40	55	BLD	BLD	BLD	465	6	95				Z 1182
980	25	125	10	55	120	0.5	BLD	BLD	570	13	125				Z 1183
967	380	85	BLD	45	85	BLD	BLD	BLD	475	2	85				Z 1184
992	End of DDH:		CAF 6	at 992 metres											

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APPENDIX V11

REPORT CMS 82/4/35Rock Samples Z1185 - Z1198

Fourteen rock samples were received for petrological examination; thin-sections were prepared, and offcuts were subjected to stain tests for potash feldspar or calcite, as appropriate. Each sample is briefly described in the accompanying table, with comments relating to the specific questions in your letter.

Summary

Most of the specimens may be termed calc-silicate rocks, and some of them are typical skarns; others, however, have the characteristics of calc-silicates formed more by regional metamorphism than metasomatism. This could be a superimposed effect, and final interpretations must be made using all the data available.

A few rocks should perhaps be regarded as pneumatolytic, though obviously there cannot be a hard and fast division between pneumatolysis and metasomatism.

Several rocks show a retrograde metasomatic phase whereby earlier calc-silicates are partly or progressively replaced by (generally) hydrous silicates, notably ferrohastingsite; in fact, this particular mineral is quite widespread (it occurs under similar circumstances at Kara, for instance) as a late-stage replacive phase.

The sulphides seem to belong to a late phase of skarn formation, and postdate any magnetite present; they comprise pyrrhotite and traces of pyrite.

Samples Z1197 and Z1198 are biotite granites, though Z1197 does not have typical igneous fabric; it may have been partly recrystallized by subsequent intrusions.

H.W. Fander, M. Sc.

Sample No.	Rock Type - Composition	Fabric	Minor Minerals	Central Mineralogical Service Comments
21185 (T.S. 1833) AF 6 27.4m	<u>Calc-Silicate Rock.</u> Small euhedral diopside crystals, larger epidote patches and porphyroblasts, sometimes forming eutectoid growths with garnet. Pyrrhotite masses.	Weak but distinct preferred orientation. Medium-grained.	A few irregular patches of calcite and prehnite.	Probably a skarn, with inherited preferred orientation. Pyrrhotite presumably introduced with other minerals.
1186 AF 6 29.8m	<u>Garnet-Diopside Skarn.</u> Dominantly massive coarse grossularite garnet, with embedded fine diopside crystals (mostly < 50 μ).	Structureless, with contrasting coarse garnet/fine diopside. Weakly orientated.	Interstitial patches of andesine and coarse calcite.	Orthodox, featureless skarn evidently formed from uniform carbonate rock.
1187 AF 6 35.7m	<u>Diopside-Scapolite Rock.</u> Composed mainly of large interlocking scapolite (Ca-rich) crystals with many small diopside inclusions.	Long axes of scapolite crystals show preferred orientation. Medium-grained.	Irregular small pyrrhotite patches; traces of chalcopyrite.	Scapolite is less common as a skarn mineral (in W. Tasmania), compared with the others.
1188 AF 6 18.0m	<u>Calc-Silicate Rock.</u> Bands of finely intergrown diopside/plagioclase; coarser bands/lenses of oligoclase-scapolite, diopside-scapolite.	Some compositional and textural banding and preferred orientation.	Thin stringers of fine sphene. Traces of pyrrhotite.	Definite preferred fabric suggests regional metamorphism rather than skarn-type metasomatism.
1189 AF 6 37.0m	<u>Axinite-Pyrrhotite Rock.</u> Large axinite crystals, coarse pyrrhotite patches; partly replaced by fine matted tremolite/carbonate masses.	Coarsely-crystalline, random fabric, typical of pyrometasomatic rocks.	Large and small calcite crystals. Finely granular sphene conspicuous.	Pyrometasomatic phase followed by "retrograde metasomatism". Sphene <u>could</u> be stanniferous.
1190 AF 7 21.0m	<u>Garnet-Vesuvianite-Magnetite Skarn.</u> Coarse vesuvianite, largely replaced by fine calcite and ferrohastingsite; interspersed garnet and coarse magnetite.	Originally coarsely-crystalline, but replacive minerals much finer.	Granular sphene throughout. Traces of chalcopyrite, pyrrhotite.	Characteristic second stage of lower-grade metasomatism replacing pyrometasomatic assemblage.
1191 AF 7 17.8m	<u>Garnet-Diopside Skarn.</u> Granular to euhedral garnets containing small diopside inclusions with interstitial coarse calcite and a few coarse fluorite patches.	Granular, medium to coarse fabric. Distinctive poikiloblastic garnet.	Minor ferrohastingsite throughout. A few pyrrhotite, chalcopyrite patches.	Ferohastingsite appears replacing but fluorite is contemporaneous with other minerals.
1192 King Is Ore	<u>Quartz-Garnet Rock.</u> Coarse/very coarse quartz with embedded euhedral garnet (andradite) crystals containing very minor diopside grains.	Structureless, coarsely-crystalline minerals. Microfractured.	Traces of epidote, pyrrhotite, chalcopyrite. Calcite, trace ferrohastingsite.	Similar garnet to Z1191, but much less diopside, ferrohastingsite, no fluorite, but abundant quartz. However, broadly similar conditions of formation.

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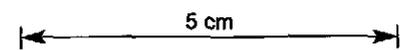
Sample No.	Rock Type - Composition	Fabric	Minor Minerals	General Mineralogical Comments
Z 1193 CAF 7 143m	<u>Garnet-Vesuvianite-Calcite Skarn</u> . Small prismatic vesuvianite crystals and granular garnet (andradite), both intergrown with calcite; fluorite patches.	Textures suggest calcite was older, replaced by silicates. Medium-grained. Eutectoid textures.	A few diopside crystals, traces ferrohastingsite. Interstitial pyrrhotite, trace chalcopyrite.	Garnet similar to Z1191, Z1192. Rock was probably coarse calcite marble, progressively metasomatised.
Z 1194 CAF 7 460m	<u>Ferrohastingsite-Magnetite Rock</u> . Bunches of prismatic-acicular ferrohastingsite crystals forming matted mass, with scattered magnetite.	Medium-grained, random textures; some replacive textures.	Relict prismatic vesuvianite. Platy sphene. Replacive pyrrhotite, trace chalcopyrite.	Presence of sphene (white crystal) could support basic origin, but complexity of multiple metasomatism makes this very speculative.
Z 1195 CAF 7 156.6m	<u>Phlogopite-Fluorite Rock</u> . Dominantly finely intergrown small phlogopite flakes and fluorite grains; plagioclase patches (oligoclase); magnetite.	Variable grain sizes, random fabric, generally fine-grained.	Fibrous hastingsite; traces of pyroxene. Irregular pyrrhotite. Trace garnet.	More of a pneumatolytic-metasom assemblage than a skarn-type assemblage.
Z 1196 CAF 7 159.2m	<u>Vesuvianite-Fluorite Rock</u> . Dominantly large pale green vesuvianite crystals, with irregular interstitial patches of clear, colourless fluorite.	Columnar, radiating coarse textures. Structureless rock.	Small lensoid crystals of siderite in fluorite.	Fluorite in this skarn is similar to occurrences in previous rock i.e. colourless, clear (quartz usually milky).
Z 1197 CAF 7 209.2m	<u>Biotite Granite</u> . Occasional perthitic orthoclase phenocrysts in a mass of quartz, orthoclase, minor oligoclase; chloritised biotite, partly replaced by pyrrhotite.	Random igneous(?) fabric; variable textures, medium-grained in places.	Some relict unaltered biotite; conspicuous pleochroic haloes.	Mineral assemblage is granitic, but fabric not typical. Pyrrhotite very specifically replaces biotite.
Z 1198 (T.S. 41846) CAF 7 230.3m	<u>Coarse Biotite Granite</u> . About 50 % perthitic orthoclase, mostly as phenocrysts, with 40 % anhedral stressed quartz; 5 % oligoclase, 5 % fresh biotite.	Coarse porphyritic fabric; all minerals weakly stressed.	Zircon, xenotime, ?monazite embedded in biotite.	Orthodox granitic, major intrus all components quite fresh. Featureless rock, but K-feldspar content is high.

APPENDIX V111



DRILL ADVANCE

LITHOLOGY



DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
				0-10						
10.8	1.0	0.8	80.0%	11-10.8	<u>Broken weathered sediments.</u> Gray, with brown, fine-medium poorly sorted tuffaceous sandstone irregularly intercalated with dark gy, rarely with br, & slightly harder, i.e. with hornfels siltstone. ss appears to dominate.	very common orange-yellow iron oxide staining along fractures. Common white-ye clay altered veins & scaly deposits along fracs. Few f. red-br veins.		Core very broken & poor recovery. Visible internal sedimentary obscured by broken nature & weathering & withg products. Where seen & disturbed to very disturbed environment of deposition.	Visibly barren, probably due to strong withg.	0%
11.8	1.2	0.7	58.33%	12-11.8						
13.0	1.5	1.3	86.67%	13-13.0						
14.5	1.4	0.85	60.71%	15-14.5						

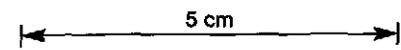
SCALE 1:100 (1cm = 1m)

COMSTAFF PROPRIETARY LIMITED

DRILLHOLE LOG FOR DDH CAF7

LOGGED BY N.P. Green FROM 10.8 TO 15.17

DATE 6/3/82 PAGE 2 OF 17



DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
15.9	0.6	0.4	66.67%	16						
16.5	1.1	0.65	59.09%	17						
17.6	1.7	0.4	23.53%	18						
19.3	0.6	0.2	33.33%	19						
19.9	1.0	0.7	70.0%	20						
20.9	0.5	0.38	76.0%	21						
21.4	1.3	0.63	48.46%	22						
22.7	0.9	0.12	13.33%	23						
23.6	3.1	2.81	90.65%	24	<p><u>Slightly altered sediments</u> Brown all fine poorly sorted tuffaceous sandstone irregularly intercalated very rarely regularly interbedded with grey siltstone; appreciably harder than sa. as unaffected by very f. biotitic replacement in sa + appears hornfelsed. Very rarely affected by pervasive green calc-silicate alteration.</p>	<p>Very common f-v.f. br bi mica replacement in sa units. Few v.f. white gypsum veins. Rare gr calc-silicate alt<sup>n</sup> as f. vns + v. rare pervasive replacement. Rare f. quartz vns + irregular f. veinlets. Minor v.f. black alt<sup>n</sup> mineral associated &amp; bi replacement as f. vns increasing downhole + rare disseminations along &amp; ultrafine: bi starting to</p>	<p>20.6 B at 20° - graded younging downhole. 22.1 B at 40° 24.1 B at 40°</p>	<p>Structure is cleaner owing to: 1. sa units picked out by br units 2. core now competent. 3. ha not so intense as to obscure structure. Structure is very disturbed &amp; no f. bedding, mostly sharp erosional deformed contacts. common small scale masofaults.</p>	<p>Rare Pyrite associated with rare gr calc-silicate vns.</p>	tr
26.7	3.0	2.91	97.0%	27						
29.7	3.0	2.90	96.67%	30						

SCALE 1:100 (1cm = 1m)

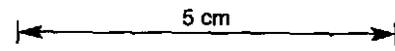
COMSTAFF PROPRIETARY LIMITED

DRILLHOLE LOG FOR DDH CAF 7

LOGGED BY N.P.G. FROM 5 TO 30m

DATE 6/3/82

PAGE 3 OF 17



DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
						com) replace siltstone → pale brown-gray.		30.2 B at 30°		
						31.8 First visible introduction of very fine small, average 1mm, colourless needles.		31.0 B at 40°		
32.7	1.1	1.03	93.4%					32.5 Structure more obscured by slight increase in alt <sup>n</sup> effects = predominance of massive sandstone.		
33.8	2.9	2.84	97.0%							
36.7	2.1	2.07	99.0%					36.7 B at 60°		
						37.7 Absence of red-br iron oxide staining along fractures				39.1 Small 4mm patch of Chalcopyrite in 4mm quartz vn at 25°
39.8	2.9	2.72	93.7%					40.3 B at 30°		
						41.3 3mm green calc-silicate vn at 50° & rare f. patchy Pyrrhotite.				41.0 traces of Cp associated & irregular f. qz veinlets.
42.7	2.8	1.35	48.2%					41.9 B at 50°		
						43.1 Marked increase in irregular white qz veining				
44.5	0.6	0.38	58.3%	44.4	Fractured sediments. frac, sometimes intensely, dark gray siltstone + minor gy-br			44.3 20mm qz-ch heated br zone at 65°		44.1 To as rare f. patches in qz-calc-silicate vns, v.f. disseminations + rare f. pale veinlets.

SCALE 1:100 (1cm = 1m)

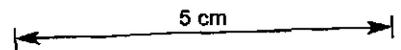
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DRILLHOLE LOG FOR DDH CAF 7

LOGGED BY N.P.G. FROM 30 TO 45m

DATE 7/3/82

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DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
45.1	0.4	0.25	62.50%		(con) fine slightly tuffaceous sandstone. Relatively soft & light.			(con) drilling	(con) Py as rare f. picked out veinlets	1%
45.5	0.8	0.75	93.75%	45.5	Altered Pelitic Hornfels	Pervasive cloudy slightly re-br alt <sup>n</sup> , rarely pale gy. V. common mostly eroded out vning gives 'etched' appearance also possibly responsible for case of fracturing. Common f. irregular vns of bk unknown mineral.		contact at 50°	45.5 Visibly barren.	0%
46.3	1.0	0.84	84.0%	46.3	Pale red-brown, rarely pale grey & gy diffusely alt, i.e. cloudy amorphous alt <sup>n</sup>			46.4 70 - coarse dis (av. 1mm)	3%	
47.3	1.6	1.5	93.75%	47.3	Vary commonly 'etched' on surface possibly along bedding.			47.0 F. banding at 5°		
48.9	1.7	1.7	100.0%	48.9	Altered hornfelsed sediments. Intercalated, often vary irregularly. pale br f. tuf sa; v. pale br minor siltstone + gy ss + rare dark green argillite.	V. common v.f. br biotite replacement in sa units + ultrafine in few pelitic units. Common & increasing downhole, pale gr - pale gy f. irregular calc-silicate-Py-Pyrrothite veining. Associated pale gy bleaching & silicification or at least maintenance of ho recrystallisation; broken down by biotite replacement in sa units.		47.2 Core competent. structure generally obscured by irregular various alt <sup>n</sup> effects.	46.9 v. rare trace Pyrite along fracs.	1%
50.5	0.6	0.44	73.33%	49.3				49.0 To as f. patches associated & quartz vns + minor calc-silicate development + ss medium	3%	
51.2	0.4	0.35	87.50%	50.5				50.9 80mm ch & dis to 20% at 25°	20%	
51.6	0.9	0.85	94.44%	51.2				Scattered disseminations, average 0.8mm. Py rare as patchy, discontinuous frac coats + picked out vns.		
52.5	3.0	2.95	98.33%	51.6				To > Py + increasingly so downhole.		
55.5	3.0	3.02	100.67%	52.5				51.1 D at 23°		
56.3				55.5	Altered hornfels tuffaceous sandstone + chert. Irregularly intc br, poorly sorted tuf sa, & v.f. replaced & br mica (bi) & pale gy - pale gr massive ch. Minor v. pale br alt pelitic ho + gys.			52.0 D at 25°		
58.5	3.0	2.98	99.33%	56.3				53.0 D at 40°		
				58.5				54.8 2mm discontinuous To vns at 38°		
								56.2 D at 55°		
								59.4 40mm To & ch vns at 30°		

SCALE 1:100 (1cm = 1m)

147  
630148

DRILL ADVANCE				LITHOLOGY					5 cm	VISUAL PERCENTAGE MINERALISATION
DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	
				61						3%
61.5	3.0	2.92	97.33%	62					61.1 Pyrrhotite - 1. finely disseminated in ss + sh sometimes concentrated along bedding. 2. v.f. to f. veinlets 3. small patches in ch.	5%
64.5	3.0	2.93	97.66%	65						
				65-2	<u>Altered Pelitic Hornfels</u> Interbedded, sometimes finely, very pale brown + pale br alt siltstone + gray-dark gy relatively unaltered ss - argillite. Some dk gy ss possibly has v. small amount of f. carbonaceous material.	Ultrafine br mica as amorphous cloudy alteration of pelitic units not as strong as before. No visible calc-silicate alt. Few v.f. white gypsum veins.	65.2 B at 23° 66.2 B at 10° 67.2 B at 25° 67.6 B at 15° 67.9 B at 0° 68.2 B at 35°	Structure more visible + more regular i.e. less disturbed & some fine bedding.		
67.5	3.0	3.0	100%	68						
				70						
70.5	3.0	2.91	97.0%	71						
				72						
				73						
				73-2	<u>Altered hornfelsed sandstone + chert</u> Irregularly intercalated massive br + br-gy f-v.f. fulfaceous ss & pale green-pale gy, pale purple. v. hard ch, often showing disturbed banding. Minor gr ss	Common calc-silicate veining, often & to, in ch, v. rare in sediments. Pervasive v.f. br mica (biotite) in ss, v. rare in ss.	71.4 B at 30° 72.6 B at 10° 73.6 B at 33° 74.7 B at 20°	Structure more obscure, owing to increased alteration.	74.9 20 mm fb-calc-silicate m at 40°	
73.5	3.0	3.0	100%	74						
				75						

SCALE 1:100 (1cm = 1 m)

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DRILLHOLE LOG FOR DDH CAF 7

LOGGED BY N.P.G. FROM 60 TO 75m

DATE 7/3/82

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DRILL ADVANCE				LITHOLOGY						5 cm
DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
					(con) interbedded with sandstone. sediments = 80% ; chert = 20%					5%
76.5	3.0	2.87	95.67%							
79.5	3.0	2.92	97.33%							
82.5	3.0	3.0	100%	82.2	Interbedded Pelitic Hornfels & Chert. Intb, sometimes finely, mostly wavy, grey, pale gy siltstone - argillite & minor dark gy ar, very minor fine tuffaceous sandstone, pelitic ho rarely at top & rare pale brown alteration, possibly ultrafine br mica (biotite) Chert as before.	Very common pale green -gr ultrafine calc-silicate (diopside?) replacement in certain bands in ch & coarse vns & patches.	82.4 B at 15° 82.9 B at 35° 84.3 B at 37° 85.2 B at 45° 86.6 B at 30°	Bedding and structure relatively v. well exposed. Wavy f. bd common. Ch internal structure often appears to conform & sedimentary bd but boundaries always cross-cut bd.	82.7 Increase in discrete f. Tb veinlets in pl units & Tb often following bd, Tb as scattered irregular patchwork in ch also increased. 87.0 25mm Tb (80%) - ch vn at 30° - 30 89.8 v.f. quartz-diopside-tourmaline veining at 15°	10%
85.5	1.7	1.4	92.36%							
87.2	3.0	3.01	100.2%							

SCALE 1:100 (1cm = 1m)

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DRILLHOLE LOG FOR DDH CAF 7

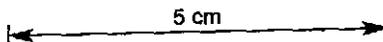
LOGGED BY N.P.G. FROM 75 TO 90m

DATE 8/3/82

PAGE 7 OF 17

DRILL ADVANCE

LITHOLOGY



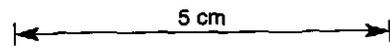
DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
90.2	1.7	1.61	94.71%							
91.9	2.6	2.24	97.69%	92-1	<u>Pyrrhotitic Dredded Talcitic Hornfels</u> Finely bedded, often wavy + disturbed, gray-dark gy pl ho of siltstone + minor argillite + traces of fine tuffaceous sandstone. Pb common as irregular veinlets often along bedding + disseminated along bd. Possibly minor carbonaceous material in argillite.	Relatively unaltered apart from hornfelsing, basically only recrystallisation, only visible alteration. Rare f. gypsum veins.	91.7 B at 20°	Wavy disturbed as in sediments previously	Pb common as concentrations along bedding + as veinlets, rarely combined to form patches. Pyrite - traces associated & Pb towards base.	12%
94.5	2.4	2.25	93.75%							
95.9	3.1	3.1	100%	97-0	<u>Ferrohastingsite - Magnetite - Carbonate Skarn.</u> Very heavy coarsely patchworked dk gy-black Mt in matrix of dk green ferrohastingsite & interstitial white cbte. All bar cbte f. grain. Minor v.f. grain pl units. Garnet locally important - brown-red version not red.	97.3 20mm cbte - Py m at 55° v. common wh cbte as interstitial + f. veining. Note: the described assemblage is in fact an entirely altered unit.	96.5 v. common fractures associated & dissolved carbonate veining. Contact at 45°	Basically an irregular patchwork & minor coarse poorly defined banding. Minerals are crystalline, usually relatively coarse. 99.5 banding at 25° averages 2 mm.	Mt - scattered patchwork - 25% Py - f. vns + rare f. patches at top of unit - 1% Pb - scattered f. patches poorly defined antipathetic relationship & Mt. locally important from 99.7 m - 8% Cp - tr intimately associated & fPb	30%
100.0	3.1	3.1	100%	101-3	<u>Diopside - Vesuvianite - Pyrrhotite - Carbonate Skarn.</u> Irregularly patchworked above combination & minor locally important magnetite, ferro-hastingsite + vesuvianite, re-br important at base of unit.			Rare radioform clusters of needle-like vesuvianite up to 20 mm, sometimes & Pb along partings.	101.5 possibly f. wh grains of Scheelite? Pb - disseminated f. patches, - veinlets, locally concentrated up to 20% Cp - tr	12%
103.1	3.1	3.06	98.71%							
104.8										
102.4									Pb - tr as fine grains	tr
103.4									Pb + Mt. Intergrown Mt? Pb, as c. dilute patches + & cbte	20
103.9									Pb - scattered fine irregular patches.	20
104.4									Cp - tr associated & tr Pb	tr
104.8									Mt as granular masses	15%

SCALE 1:100 (1cm = 1 m)

150

DRILL ADVANCE

LITHOLOGY



DEPTM	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
				106	<u>Ferrohastingsite - Vesuvianite - Magnetite Skarn.</u> Irregular patchwork as before & interstitial white carbonate. pyrrhotite. Patches sometimes almost circular.				(con) associated & wh cblz. Mt > Pb Pb - dis f. patches, tr Cp	15%
106.2	3.1	3.07	99.03%	107		106.8 2 x 1mm wh cblz - possibly schaalite - bright wh fluorescence vn at 55°			106.7 Pb - traces of scattered v.f. patches → barren down-hole	1% ↓ 0%
				108		108.3 1mm wh cblz / Sch? vn 108.7 f. wh cblz - Sch? vn & wh fluorescence from 50°-60°			106.4 Mt - as scattered f. grain masses at top, increasing to filling interstices & diopside. Pb - as scattered small irregular patches ≈ 1% Mt > Pb Cp - tr as before.	10% ↓ 25%
109.3	3.1	3.04	98.06%	109						
				110	<u>Diopside - Vesuvianite - Garnet Skarn</u> Irregularly patchworked as before & interstitial wh cblz, pyrrhotite & unknown soft, colourless, fine, translucent mineral locally important. Garnet - first obvious concentrations, as red-pink, probably andradite garnet appears to become, contact within a metre of 114.5m, grossularite garnet & with associated cblz & Pb ≡ King Is Ore horizon?				109.8 Pb - as scattered irregular massive f. patches - masses rarely concentrating to ~80%. Sometimes scattered to 3%. Cp - as traces associated & Pb a rare discrete f. grains. Pyrite - very rare, v.f. vms	12%
				111						
112.4	3.1	3.12	100.7%	112		Pale re-pk-brown Garnet-almadine?				
				113		Dark br resinous f. crystals of garnet - grossularite?				
				114						
115.5	3.0	3.0	100%	115				115.4 f. wh qz - Sch? - cblz vn at 30°		
				116				115.4 Banding at 20°		
				117	<u>Diopside - Magnetite - Vesuvianite Skarn</u> Irregularly patchworked - intergrown as before & grossularite? garnet, wh cblz, Pb, & f. crystalline translucent mineral locally important = fluor spar.				116.4 possible wh Sch? br-bl wh fluor - as seen	
				118		Rare, usually f. xsln masses of transparent, translucent material, rarely & green tinge, no reaction to HCl, no fluorescence & soft = Fl			Mt - as mas patches & disseminated granular masses ≈ 15% Pb - as irregular sharply defined patches, veinlets & rarely dis - 7% Cp - trace - up to 1% in places associated & Pb. AsPy? - wh silvery v.f. patches tr. assoc & intergrown Mt & Pb.	25%
118.5	3.0	2.86	95.33%	119						
				120						

SCALE 1:100 (1cm = 1m)

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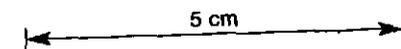
DRILLHOLE LOG FOR DDH CAF 7

LOGGED BY N.P.G. FROM 105 TO 120m. DATE 9/3/82. PAGE 9 OF 17.

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DRILL ADVANCE

LITHOLOGY



DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
				121						25%
121.5	3.0	2.98	99.33%	122				121.1 Banding at 37°	120.7 Tl - as above Cp-tr - as above, also v.f. discrete grains.	7%
				123					121.8 Mt - concentrated as mass patches or dis masses. Pg - scattered, irreg f. patches	30%
				124					122.8 Tl - v.f. - f. patchy, slight coarsening downhole. Cp-tr - discrete grains + E Tl. Mt - traces at base of unit.	3% ↓ 10%
124.5	3.0	3.03	100% ↑	125					124.1 Mt - dk gy E distinct dk pu tinge + where mass f. xals. Tl - scattered f. irregular patches. 8-10% Cp - tr. Mt (5% - 10%) > Tl	20%
				126	125.9 Diopside - Vesuvianite - Pyrrhotite skarn. Intergrown, sometimes subtly banded above. E important fine 'stringers' of dark green ferrohastingsite; interstitial white calcite more important towards base.			125.4 coarse poorly defined banding at 53° 125.9 c. poorly defined banding at 38°	125.9 Tl - scattered - dis f. + coarse patches E sharp v. irregular patches. Cp - f - v.f. xaln masses associated E Tl + also as discrete masses - tr.	15%
127.5	3.0	2.96	98.67%	128				127.2 poorly defined banding at 40°		
				129	128.6 Diopside - Cal - Garnet - Tl skarn. Pale gr - gr diopside intergrown sometimes coarsely + subtly banded E wh. often cty crystalline wh cal, brown - dk br resinous lustrous garnet (E King Is Ore zone) E Tl locally important constituents. Minor scattered patchy dk gr ferrohastingsite + magnetite.	128.9 St vn at 40° Rare pale br - cream siderite + v. rare f. veins of wh cble.		128.6 banding: sk + small unit of palitic sk at 37°	128.6 Brief hiatus.	1%
				130					129.3 129.6 10 cm of 30% Mt.	15%
130.5	3.0	2.93	97.67%	131		131.1 3 mm cble vn E vuggy perfect zoned hexagonal Cal xale up to 3mm across at 70°.				
				132						
				133	132.5 Diopside? - Ferrohastingsite - Cal - Tl sk. Gr - pale g diopside giving way to unknown gray mineral - vesuvianite? - patchworked as before E dk gr ferrohastingsite, wh Cal + locally important Tl. Minor finely banded palitic sk.	Few zones up to 30cm of granular br - dk br resinous often v. well formed xaln garnet.		133.6 f. banding in pl unit at 23°	132.5 5cm of 10% Mt Tl - as concentrated f-c. Irregular patches making up to 20%. mostly fine disseminations. Cp - as rare rims to Tl + discrete f. - v.f. grains - tr	5%
133.5	3.0	3.0	100%	134						
				135						

SCALE 1:100 (1cm = 1m)

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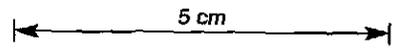
DRILLHOLE LOG FOR DDH CAF 7

LOGGED BY N.P.G. FROM 120 TO 135m

DATE 12/3/82

PAGE 10 OF 17

DRILL ADVANCE				LITHOLOGY							
LOST CORE	DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VIS. PERCENT MINERALISAT
					136		135:1 7cm band of garnet at 45°		135.5 banding at 40°	Pb + Cp - as before Mt - few massive patches up to 30mm. Pb > Mt.	7
	136.5	3.0	2.93	97.67%	137				136.4 Poorly defined banding at 30°	136.6 Mt - few irreg bands at ~ 40°; Pb - as before, except more often verging on mass. Cp - as before. Pb > Mt.	20
					138						
					139	138:1	Diopside - Magnetite - Amphibole Skarn Irregularly patchworked & locally important Pyrrhotite + dark green ferrohastingsite. Calcite very important as fine - vary f. interstitial matrix.			138.1 Mt - v. common f. to v. coarse patches up to 7cm semi-mass f. crystalline & dk purple tinge. Pb - sometimes intergrown & Mt, locally up to 25% Cp - traces as before Mt > Pb.	11
	139.5	3.0	2.98	99.33%	140						
					141						
					142	141:5	Magnetite - Diopside - Garnet Skarn. Irregularly patchworked, sometimes more regularly than before. Brown-pale br garnet declining towards base of unit & finely banded pelitic sk common.		141.1 Poorly defined banding at 35°		
	142.5	3.0	2.93	97.67%	143						
					144						
					145				143.9 Banding at 35° 144.4 Banding at 30° 144.9 f. banding at 30° in pl sk 145.3 contact at 40°		
	145.5	3.0	3.02	100.67%	146	145:3	Magnetite - Ferrohastingsite - Pyrrhotite sk. Metacrustic, v. heavy, intergrown, rarely patchy. dk gr ferrohastingsite & diopside slightly increasing down unit; + dk gy & slight purple iridescent tinge, f. patchy irregular Pb. v.f., v. short white needlelike crystals - possibly sphene? minor units of gr-pale br diopside - vesuvianite pelitic skarn.	147.5 1mm wh + wh fluor-escing schaalite vn? at 65° 148.2 fine 1-2mm wh, wh-cream, wh. fluorescing sch vaining? at 55°; v. irregular.		Mt + Pb intergrown & relatively common - 1% Cp in first 30 cm. Mt ↓ Pb ↑ 147.5 Sch vn, see alt° 148.0 148.2 Sch vring, see alt°	4
					147						
					148						
	148.5	3.0	2.91	97.0%	149				148.5 f. banding in pl at 35° 149.5 subtle banding at 45° in pl sk. 150.0 banding at 50°	f. to v.f. scattered patchy Pb; Mt - rare, f. patchy Pb > Mt	
					150						

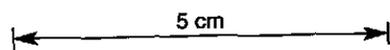


SCALE 1:100 (1cm = 1m)

COMSTAFF PROPRIETARY LIMITED

DRILLHOLE LOG FOR DDH CAF 7

LOGGED BY N.P.G. FROM 135 TO 150m DATE 12/3/82 PAGE 11 OF 17



DRILL ADVANCE

LITHOLOGY

LOST CORE

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENT MINERALISATION
				151		150.3 7mm regular white translucent carbonate vein at 60°			Mt - common as semi-mas. masses Pb - scattered irregular patches v. rarely verging on massive. Cp-tr fine v. trace.	30
151.5	3.0	2.95	98.33%	152				151.3 v.f. banding in plunit at 35°	150.9 Pb - scattered f. irregular patches associated & coarse ferrohastingsite - cste unit	37
				153	152.6 Vesuvianite - Diopside Palitic Skarn Pale brown - pale red fine vesuvianite with fine pale green - gr diopside & minor dark gr ferrohastingsite.				152.6 Pb - few f. irregular veins.	7
154.5	3.0	2.96	98.67%	155	154.5 Mixed Skarn Very irregularly intercalated mixture of most combinations of skarn minerals - ferrohastingsite, diopside, vesuvianite, pyrrhotite, magnetite, carbonate all locally dominant. Minor irte often finely banded palitic sk.	156.2 f. mica - possibly phlogopite in dk. gr. - bk amphibole rock - CAF 3 156.8		contact at 35°  Alteration - banding (mica?) at 50° - common, v. irreg wh-milky, q.v. & patch	Pb - v.f. f, medium, c. patches - disseminated, up to mas (v. rare) - decreasing → base. Mt - mostly f. crystalline black & dk purple tinge sometimes verging on mas, increasing → base. Cp-tr associated & semi-mas Pb.	20
157.5	3.0	2.93	97.67%	158		158.2 f. mica - possibly phlogopite in dk. gr. - bk amphibole rock - CAF 3 158.8		157.6 f. banding at 30°	157.6 Pb - f, v.f. dis & scattered, irregular patches & grains.	tr
				159		158.2 f. mica - possibly phlogopite in dk. gr. - bk amphibole rock - CAF 3 158.8		158.2 subtle banding at 30°		
				160		158.2 f. mica - possibly phlogopite in dk. gr. - bk amphibole rock - CAF 3 158.8			159.5 Pb - scattered f. to medium irregular patches.	15.2
160.5	3.0	2.96	98.67%	161		158.2 f. mica - possibly phlogopite in dk. gr. - bk amphibole rock - CAF 3 158.8		162.5 banding at 45°	Mt - bk & dk pur tinge, more associated & dk gr amphibole verging on massive masses of f. xals.	
				162		158.2 f. mica - possibly phlogopite in dk. gr. - bk amphibole rock - CAF 3 158.8				
				163		158.2 f. mica - possibly phlogopite in dk. gr. - bk amphibole rock - CAF 3 158.8			162.7 Pb - few f. ves; rare f. patches & v. rare tr cp; rare units of f. dis. Mt - v. rare patches in sk patches.	12
163.5	3.0	3.0	100%	164	163.6 Palitic hornfelsed skarn & skarn. Pale grey, pale gr, pale purple pl ho - palitic sk; ho shows f. bedding & palitic sk, often f. banding.			164.0 B at 12° Evidence of f. bedding in few palitic ho units.		

SCALE 1:100 (1cm = 1 m)

COMSTAFF PROPRIETARY LIMITED

DRILLHOLE LOG FOR DDH CAF 7

LOGGED BY N.P.G. FROM 150 TO 165 m

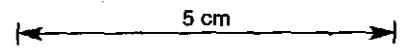
DATE 15/3/82

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002-04

DRILL ADVANCE

LITHOLOGY



DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VSJA PERCENTAGE MINERALISATION
				164	coarse skarn predominantly green diopside with dark gr ferrohastingsite & minor patchy vesuvianite & interstitial white carbonate. Talitic units dominate - 70%			165.4 f. banding in pl sk - ch at 15°		17%
166.5	3.0	2.92	97.33%	167		167.4 fine to medium dk - 167.9 7mm wh vn at 45° & broken clasts of pl sk. gr amphibole vns common in talitic units, relatively regular at 25°, veining decreasing downhole.		168.9 banding at 20°	168.3 Pyrrhotite - fine - very f. - 168.9 2mm wh grain of highly fluorescent mineral - blue-white - scheelite? patches & discontinuous irregular veinlets.	39%
169.5	3.0	2.94	98.0%	170	Highly Altered sediments / skarn. Pale grey, pale gr, pale purple-blue very hard, probably silicified, predominantly talitic. v. minor c. sk & brown patchy mostly biotite? - br mica replacement. often banded, sometimes finely.	170.4 zone of diopside - garnet - vesuvianite - ta - edersite skarn 171.1 6mm wh colourless vn at 37°, & included sed clasts - 70. 172.0 6mm irregular vn, as above at 25°		170.9 banding - probably B at 45°	170.4 zone of c. sk & Pb-linked irregular patches.	15%
172.5	3.0	2.98	99.33%	173	Altered Hornfelsed talitic sediments. Bedded, often disturbed, pale br pl sed & gy-br siltstone & rare dk gy argillite. Rare gy fine tuffaceous sandstone.	Rare f. white-translucent mostly regular quartz veins.		172.3 f. banding at 40° 173.0 contact at 40°		3%
175.5	3.0	2.96	98.67%	176	Altered Hornfelsed sediments. Brown & br-gy f. sa intercalated & gy-br predominantly ss & rare gy spotting (spotted bi ho). f.-v.f. br mica-bi replacement almost ubiquitous. Few zones up to 20cm of bl-gy silicified - leached? ho sed, often accompanied by irregular amphibole veining.	Few f. to m. wh-translucent mostly regular q.v., often clean. v. rare qz patches usually associated & gy-bl alt zones. few bl-gy & common gr calc-silicate alteration & silicification - usually as halo to calc-silicate alt., often & 70.		173.4 B at 34° true sedimentary bedding & pale br replaced pl units often broken up & disturbed. Mostly syndepositional disturbance at least pre-lithification.	Pb-disseminated f.-v.f. in ss & rare f. sa units & relatively common f.-v.f. veinlets. nearly always discrete. rare associated & q.v.'s.	7%
178.5	3.0	2.98	99.33%	179				Structure obscured by intensive bi replacement & ho effects. 'dimples' of structure indicate it is m.4 B at 10° - slightly wavy probably v. disturbed & mesofaulting.	Pb - few f.-v.f. discrete vns & patches & calc-silicate as f.-m. veins.	27%
				180				179.2 - 179.7 gy spotting - average 2mm.	179.2 5cm zone of intense Pb veining.	

SCALE 1:100 (1cm = 1m)

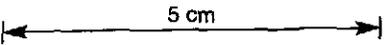
COMSTAFF PROPRIETARY LIMITED

DRILLHOLE LOG FOR DDH CAF 7

LOGGED BY N.P.G. FROM 166 TO 180m

DATE 15/3/92

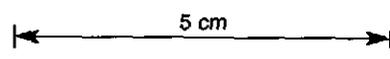
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DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
				181						
181.8	2.6	2.5	96-15%	182				180.9 B at 33°		
				183						
				184						
184.1	3.1	3.1	100%	185		184.1 60 mm regular white translucent clean quartz vein & very sharp contacts at 45°.				
				186						
				187						
187.2	1.4	1.34	95-7%	188				185.2 B at 15° - slightly disturbed		
				189						
189.6	0.7	0.76	100%+	190					185.2 10 mm scattered very fine patches of sulphide - Looks like Pb & Ir Cp - no magnetic attraction - possibly pyritised Fe.	
189.3	2.9	2.64	97-93%	191						
				192						
				193						
				194	190-6	Altered High Grade Hornfelsed Meta-sediments. Intercalated, sometimes interbedded, made more visible by selective replacement, brown-grey siltstone, biotite replaced sandstone beds; br mica/bi notably medium grain, i.e. coarser than before & concentrated. These units & other often spotted with fine m. average 1 mm pale gy spots, often not even partly circular; & pale gy-gy often & scattered green calc-silicate alteration	Highly altered unit & pale gy spotting indicating slightly higher grade contact metamorphism. See description column.	187.0 B at 20°		
192.2	3.1	3.06	99-28%	195				190.7 B at 25°		
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DRILL ADVANCE

LITHOLOGY

DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
195.3	1.4	1.32	94.29%	195.3 - 196.0	(cont) associated silicification & leaching.			195.4 B at 35°	195.3 10 cm complex m of chert - tourmaline, qz, droptide, Pb	tr
196.7	2.8	2.82	100.7%	196.0 - 197.0		196.0 1 mm quartz-carbonate m at 30°, cross-cuts bedding		196.3 B at 20° 196.5 B at 30°	196.3	1%
199.5	3.0	2.97	99.0%	197.0 - 200.0	Altered Hornfelsed Sediments & Aplitic Dykes. Intercalated, rarely obviously interbedded. fine-coarse, replaced & brown mica / biotite siltstone & f. sandstone. Sediments invaded by leucocratic ap. dykes & very sharp, often irregular, boundaries; dykes from 2cm to 70cm. often show evidence of differentiation & sometimes sed xenoliths & thin reaction rims.	Lack of visible pale gy spotting => slight decrease or increase again of metamorphic grade as sed. intimately invaded & very sharp contact dykes. Few f. -v.f. white, sometimes picked out, usually regular carbonate veins, up to 1 mm. Common v.f. wh-gy qz? / calc-silicate vns.		Structure more obscure owing to veins & alteration. Dykes have v. sharp regular & irregular contacts. Rare sed xenoliths.	Pyrrhotite - v. rare irregular veinlets, usually associated & calc-silicate alteration.	tr
202.5	3.0	2.85	95.0%	200.0 - 203.0	& separated units - dykes or veins of dykes. generally < 5% biotite. Few rare pale gray bleached-leached zones & green calc-silicate alteration.			200.3 Pb-f. veinlets associated & dk aplitic sediments & calc-silicate alt <sup>n</sup> between 200.4 & 200.6 m	1%	
204.5	3.0	2.85	95.0%	203.0 - 206.0	Altered Differentiated Granitoid. Very complex bi granitoid. bi often remobilised - differentiated into bands up to 50% & < 1%. Texture varies from microgranite -> porphyritic microgranite -> medium-c. crystalline & equigranular granite; all & gradual boundaries, not separate intrusive events. green alt <sup>n</sup> (chlorite?) & erratic. Minor Pb mineralisation.	few f.-v.f. wh cbte vns as above. gr (chloritic?) alt <sup>n</sup> appears to increase downhole, progressively invading phenocryst. bi, although remobilised appears mostly stable. few diffusely bounded quartz-veins, & without black schorl.		201.5 Pb - as before 200.2 m, although usually finely disseminated in pl sed.	tr	
206.5	0.7	0.7	100%	206.0 - 206.7				204.5 contact at 30°	Pb - minor scattered f.-v.f. grains - patches. tourmaline - minor associated & few q.v.'s	tr
206.2	1.1	1.08	98.45%	206.7 - 207.8				Textural changes rapid but gradational. Minor fracturing probably due to breakdown of cbte vns.		
207.3	1.5	1.46	97.33%	207.8 - 209.3						
209.5	2.7	2.55	94.44%	209.3 - 210.0					209.2 Pb - elongate scattered patches 209.8 visibly barren.	tr

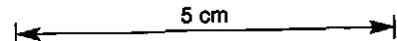
SCALE 1:100 (1cm = 1 m)

COMSTAFF PROPRIETARY LIMITED

DRILLHOLE LOG FOR DDH CAF 7

LOGGED BY N.P.G. FROM 195 TO 210 m DATE 17/3/82 PAGE 15 OF 17

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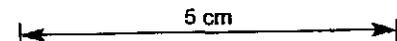


DRILL ADVANCE				LITHOLOGY					
DEPT	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION
				211					
211.5	0.8	0.85	100%+	212					
212.3	2.2	2.13	96.82%	213					
				214					
214.5	0.6	0.46	100%+	215	213-8	Fresh differentiated Granitoid, grain size, texture & relative concentration of qz / feldspar & especially fsp varying from microg. to coarse grain granite.			
215.1	0.8	0.71	88.75%	216					
215.9	2.5	2.56	100%+	217					
				218					
218.4	3.1	3.06	98.71%	219					
				220					
				221					
221.5	3.2	1.15	35.93%	222					
				223					
222.7	3.1	3.09	99.68%	224					
				225					

SCALE 1:100 (1cm = 1 m)

DRILL ADVANCE

LITHOLOGY



DEPTH	DRILL ADVANCE INTERVAL	CORE RECOVERY	PERCENT RECOVERY	INTERVAL	DESCRIPTION	ALTERATION	GRAPHIC LOG	STRUCTURE	MINERALISATION	VISUAL PERCENTAGE MINERALISATION
225.5	3.1	3.1	100%	224						
228.9	1.6	1.56	97.50%	230						
230.5					<u>End of DDH: CAF 7 at 230.5m</u>					

SCALE 1:100 (1cm = 1m)

COMSTAFF PROPRIETARY LIMITED

DRILLHOLE LOG FOR DDH CAF 7

LOGGED BY N.P.G. FROM 225 TO 230.5m

DATE 19/3/92

PAGE 17 OF 17

Metres	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni			SAMPLE NUMBER
0.0														Tricone Sludge ↓	
1.0	BLD	140	BLD	980	295	3.0	-	-	-	-	3	100			Z1201
3.0															
4.0	4	150	BLD	52	75	BLD	-	-	-	-	1	145			Z1202
6.0															
7.0	5	130	BLD	39	29	0.1	-	-	-	-	2	155			Z1203
9.0															
9.0 (+11.0)	BLD	120	BLD	34	68	BLD	-	-	-	-	1	155			Z1204
10.0														Tricone Sludge ↓	
10.0														Ground Core ↓	
10.0	5	140	75	15	135	BLD	BLD	2	BLD	585	2	-			Z1205
12.0															
13.0															

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 7

ASSAYED BY Analabs

FROM 0 TO 15m

DATE 2/3/82

PAGE 1 OF 16

Matrix	Sn	Cu	N	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni				SAMPLE NUMBER
15-8	5	115	80	15	110	0.5	BLD	2	BLD	570	2	-				Z1206
16-8	6	110	30	10	125	BLD	BLD	BLD	BLD	695	1	-				Z1207
20-8	6	115	50	10	135	BLD	BLD	BLD	BLD	560	2	-				Z1208
22-8	BLD	90	45	5	135	BLD	BLD	BLD	BLD	520	3	-				Z1209
28-8	6	125	85	BLD	155	BLD	BLD	2	BLD	670	2	-				Z1210
28-8																

COMSTAFF PROPRIETARY LIMITED ASSAY RESULT SHEET FOR DDH CAF 7  
 ASSAYED BY Analabs FROM 15 TO 30m DATE 24/3/82 PAGE 2 OF 4

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639162

Matrix	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	P	As	Ni				SAMPLE NUMBER
	5	145	35	5	140	BLD	BLD	BLD	BLD	785	1	-				Z1211
31-B	5	155	40	5	155	BLD	BLD	2	BLD	740	1	-				Z1212
34-B	BLD	135	65	15	175	BLD	BLD	6	BLD	660	1	-				Z1213
37-B	5	145	45	10	165	BLD	BLD	BLD	BLD	865	1	-				Z1214
40-B	BLD	155	85	15	180	BLD	BLD	BLD	BLD	600	6	-				Z1215
43-B																

	Mtrecs	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni				SAMPLE NUMBER
45		3	85	85	10	175	0.5	BLD	4	BLD	710	7	-				Z1216
46	46-8																
47		6	115	75	10	190	BLD	BLD	BLD	BLD	660	5	-				Z1217
48																	
49	49-8																
50		5	170	70	10	170	0.5	BLD	BLD	0.5	800	5	-				Z1218
51																	
52																	
53	52-8																
54		BLD	330	130	25	250	BLD	BLD	2	BLD	660	11	-				Z1219
55																	
56	53-8																
57		4	295	140	25	295	BLD	BLD	BLD	0.5	540	36	-				Z1220
58																	
59	58-8																
60																	

COMSTAFF PROPRIETARY LIMITED ASSAY RESULT SHEET FOR DDH CAF 7  
 ASSAYED BY Analabs FROM 45 TO 60 m DATE 24/3/82 PAGE 4 OF 16

Metres	Sn	Cu	N	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni				SAMPLE NUMBER
60	8	265	160	25	245	BLD	BLD	BLD	0.5	855	26	-				Z1221
61																
62	61-8															
63	4	245	140	25	260	BLD	BLD	BLD	0.5	790	9	-				Z1222
64																
65	64-8															
66	7	255	150	20	265	BLD	BLD	2	BLD	500	14	-				Z1223
67																
68	67-8															
69	3	205	130	20	250	BLD	BLD	BLD	1.5	890	12	-				Z1224
70																
71	70-8															
72	BLD	200	180	15	235	BLD	BLD	BLD	2.0	765	11	-				Z1225
73														Ground split	Corz ↑	
74	73-2														Corz ↓	
75	BLD	115	BLD	55	100	BLD	BLD	BLD	2.0	770	23	135				Z1226
76																
76.0																

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 7

ASSAYED BY Analabs

FROM 60 TO 75m

DATE 24/3/82

PAGE 5 OF 16

Matras	Sn	Cu	N	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni			SAMPLE NUMBER
75.0	4	55	10	70	160	BLD	BLD	BLD	0.5	920	30	200			Z1227
77.5	BLD	110	BLD	55	155	0.1	BLD	2	BLD	670	10	145			Z1228
79.0	7	90	BLD	75	120	0.1	BLD	BLD	3.0	690	42	150			Z1229
80.5	BLD	110	BLD	75	305	BLD	BLD	BLD	5.5	1320	11	150			Z1230
82.7	BLD	150	BLD	50	125	0.5	BLD	4	10.0	1050	20	215			Z1231
85.0	BLD	145	BLD	50	125	BLD	0.008	6	11.0	990	27	230			Z1232
88.0	BLD	110	6	55	120	BLD	BLD	BLD	7.0	1420	9	175			Z1233

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 7

ASSAYED BY Analabs

FROM 75 TO 90 m

DATE 25/3/82 to 23/4/82

PAGE 6 OF 16

Metres	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni				SAMPLE NUMBER
91.0	BLD	90	BLD	55	100	0.5	BLD	BLD	11.5	1420	18	185				Z1234
92.1	BLD	105	BLD	80	200	BLD	BLD	6	13.5	1200	26	145				Z1235
94.0	BLD	140	BLD	45	230	BLD	BLD	2	10.5	1230	36	140				Z1236
97.0	291	160	BLD	75	240	BLD	BLD	16	0.5	4680	290	75				Z1237
99.0	465	245	18	70	210	BLD	0.009	74	BLD	5760	350	65				Z1238
101.3	302	310	515	70	130	BLD	0.010	80	1.0	1.32%	280	60				Z1239
102.8	519	230	BLD	45	120	BLD	BLD	24	1.0	7200	240	45				Z1240
103.4	562	270	BLD	55	110	BLD	BLD	18	0.5	9060	210	55				Z1241
103.9	252	300	BLD	30	95	BLD	0.006	44	0.5	1.044%	530	65				Z1242
104.8																

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 7

ASSAYED BY Analabs

FROM 90 TO 105 m

DATE 7/4/82

PAGE 7 OF 16

Metres	Sn	Cu	N	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni				SAMPLE NUMBER
	254	260	BLD	30	155	BLD	0.011	96	BLD	6900	1000	85				Z1243
105.7	157	110	6	40	110	0.5	0.002	26	0.5	1.134%	230	55				Z1244
106.6																
	267	205	BLD	35	160	BLD	0.010	76	1.0	9660	400	75				Z1245
109.8																
	317	355	BLD	30	100	BLD	0.038	134	0.5	2.30%	710	80				Z1246
112.0																
	201	300	BLD	50	100	BLD	0.038	114	BLD	2.60%	290	55				Z1247
115.0																
	233	400	BLD	40	115	0.5	0.076	258	1.0	2.03%	410	60				Z1248
116.8																
	469	275	BLD	45	180	0.5	0.032	110	1.0	1.95%	1000	65				Z1249
119.0																
	500	230	BLD	40	180	0.5	0.020	62	1.0	1.96%	360	55				Z1250

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 7

ASSAYED BY Analabs

FROM 105 TO 120 m

DATE 7/4/82

PAGE 3 OF 16

Matras	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	P	As	Ni				SAMPLE NUMBER
120-7	227	390	BLD	45	110	0.5	0.056	160	BLD	2.98%	360	65				Z1251
121-8	182	435	BLD	40	115	BLD	0.037	134	1.0	1.78%	450	65				Z1252
122-8	303	275	BLD	35	110	BLD	0.017	52	0.5	1.904%	410	60				Z1253
124-1	399	240	BLD	30	230	BLD	0.016	60	0.5	2.50%	520	65				Z1254
125-9	182	495	BLD	40	130	0.5	0.036	98	1.0	1.924%	520	75				Z1255
128-6	665	410	BLD	25	110	0.5	BLD	30	1.0	3640	160	60				Z1256
130-8	1000	385	BLD	30	75	BLD	0.009	18	1.0	3320	590	125				Z1257
132-8	624	320	18	30	125	BLD	BLD	24	1.0	6540	240	90				Z1258
134-9																

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Matrix	Sn	Cu	N	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni				SAMPLE NUMBER
	1120	430	31	25	30	0.5	0.019	70	1.0	5020	190	75				Z1259
135.6	877	890	11	30	100	BLD	0.007	58	0.5	7560	93	60				Z1260
138.1	389	370	BLD	30	250	BLD	0.009	44	0.5	6780	150	70				Z1261
141.6	1360	165	BLD	25	280	BLD	0.010	24	0.5	3020	37	50				Z1262
143.5																
	1080	360	BLD	40	210	BLD	BLD	22	BLD	5080	74	75				Z1263
145.0	2040	175	BLD	30	165	BLD	BLD	18	1.0	6360	43	45				Z1264
150.0																

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COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 7

ASSAYED BY Analabs

FROM 135 TO 150 m

DATE 4/23/82

PAGE 10 OF 16

Matrix	Sn	Cu	N	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni			SAMPLE NUMBER
150-0	1320	270	78	35	215	0.5	BLD	20	0.5	7600	60	40			Z1265
150-9	1940	95	BLD	35	165	BLD	BLD	14	BLD	7860	28	35			Z1266
152-6	839	65	BLD	35	145	BLD	BLD	14	BLD	9380	100	30			Z1267
154-5	1460	335	90	35	175	0.5	BLD	10	BLD	1.226%	58	35			Z1268
156-2	31	20	198	20	285	0.5	BLD	BLD	0.5	5.24%	12	50			Z1269
156-9	342	75	340	30	165	BLD	BLD	6	1.5	4.06%	57	55			Z1270
159-8	1550	195	BLD	30	155	BLD	BLD	16	1.0	1.042%	26	55			Z1271
	1250	95	BLD	35	105	BLD	0.011	20	1.0	6060	81	55			Z1272
	283	235	BLD	30	150	BLD	0.006	2	1.0	4660	43	125			Z1273

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 7

ASSAYED BY Analabs

FROM 150 TO 165 m

DATE 1/23/4/82

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Mzlnes	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni				SAMPLE NUMBER
166-0	965	40	22	20	125	BLD	BLD	10	1-0	1-146%	40	50				Z1274
168-3	92	255	BLD	25	130	BLD	BLD	BLD	2-5	3500	18	115				Z1275
171-0	4	255	BLD	30	75	BLD	0-005	2	11-5	4500	15	125				Z1276
173-0	BLD	45	BLD	25	135	0-5	BLD	2	5-0	2240	22	235				Z1277
175-5	BLD	215	BLD	35	155	0-5	BLD	BLD	45-5	1860	40	275				Z1278
178-0	BLD	105	BLD	15	150	BLD	BLD	BLD	2-0	2200	25	115				Z1279

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 7

ASSAYED BY Analabs

FROM 165 TO 180m

DATE 7/4/82

PAGE 12 OF 16

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Matras	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni				SAMPLE NUMBER
181-0	BLD	105	BLD	15	135	BLD	BLD	BLD	2.5	1770	23	120				Z1280
184-0	BLD	75	BLD	25	145	BLD	BLD	BLD	4.0	1630	BLD	175				Z1281
187-0	BLD	45	BLD	20	195	BLD	BLD	BLD	1.0	800	15	105				Z1282
190-8	BLD	95	BLD	25	155	0.5	BLD	BLD	2.0	900	5	95				Z1283
193-0	BLD	70	BLD	25	155	0.5	0.006	2	2.5	810	38	150				Z1284

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COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 7

ASSAYED BY Analabs

FROM 180 TO 195 m

DATE 23/4/82

PAGE 13 OF 16

Metres	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni				SAMPLE NUMBER
196-3	BLD	65	BLD	20	135	BLD	BLD	BLD	2.0	1770	24	145				Z1285
198-8	BLD	20	BLD	30	85	0.5	0.007	BLD	2.5	2630	16	150				Z1286
200-3	BLD	175	BLD	25	155	BLD	0.006	BLD	6.0	2920	12	265				Z1287
201-5	BLD	80	BLD	20	145	0.5	BLD	2	3.0	2080	3	165				Z1288
204-9	BLD	25	BLD	20	25	BLD	BLD	BLD	3.5	1020	2	105				Z1289
207-0	BLD	55	BLD	30	20	0.5	BLD	BLD	6.0	970	5	140				Z1290
209-2	BLD	480	BLD	40	25	BLD	BLD	2	12.5	1110	57	95				Z1291
209-8																

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 7

ASSAYED BY Analabs

FROM 195 TO 210m

DATE 7/4/82

PAGE 14 OF 16

Matrix	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni				SAMPLE NUMBER
	BLD	10	BLD	30	25	BLD	0.006	BLD	4.0	1140	2	145				Z1292
212-0	BLD	5	150	20	15	0.5	BLD	6	2.5	890	9	110				Z1293
213-8	BLD	5	4	30	20	0.5	BLD	2	3.0	980	22	115				Z1294
215-1	BLD	10	BLD	35	15	BLD	0.006	BLD	2.5	1360	2	120				Z1295
218-0	BLD	10	BLD	25	15	BLD	BLD	2	3.0	1180	1	100				Z1296
221-0	BLD	5	BLD	35	25	BLD	0.006	6	3.0	1390	3	165				Z1297
224-0																

COMSTAFF PROPRIETARY LIMITED

ASSAY RESULT SHEET FOR

DDH CAF 7

ASSAYED BY Analebs

FROM 210 TO 225 m

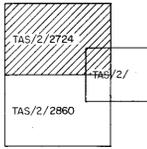
DATE 7/4/82

PAGE 15 OF 16

Matrix	Sn	Cu	W	Pb	Zn	Ag	Au	Bi	Mo	F	As	Ni				SAMPLE NUMBER
	BLD	25	5	25	15	BLD	BLD	6	3.5	1890	3	125				Z1298
227.0	BLD	10	BLD	15	25	BLD	BLD	BLD	3.0	1430	1	120				Z1299
230.5	End of DDH:	CAF 7 at	230.5m													

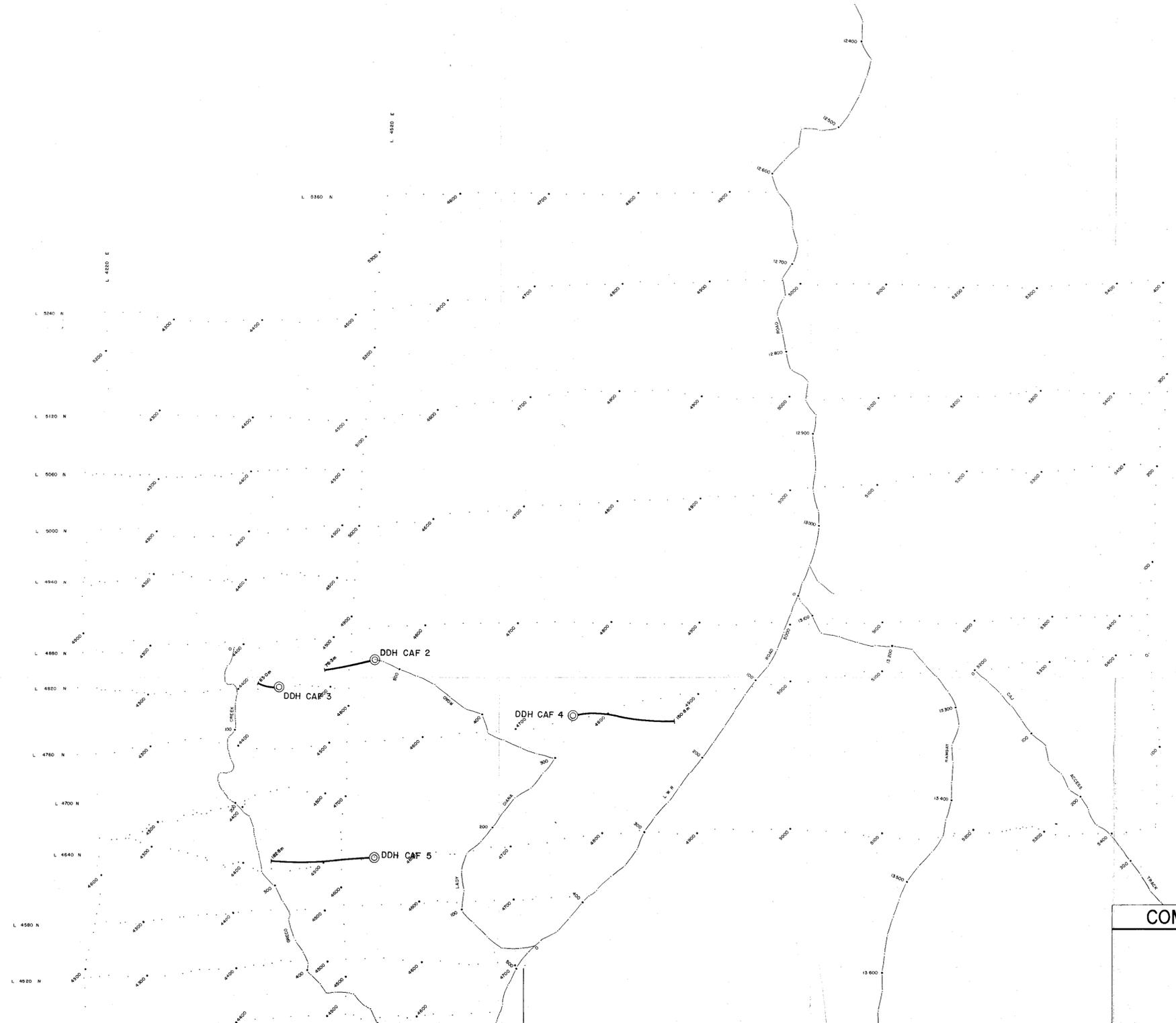


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SHEET INDEX

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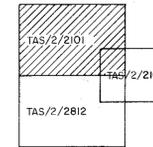
COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAF

DRILLHOLE LOCATION PLAN 016

COMPLETED	GEO DRAFT
DRAWN	DATE
GEO DRAFT	4 / 79
AMENDED	
8 / 7 / 82	
SCALE	1 : 2500
PLAN No	TAS / 2 / 2724

372 000 m E



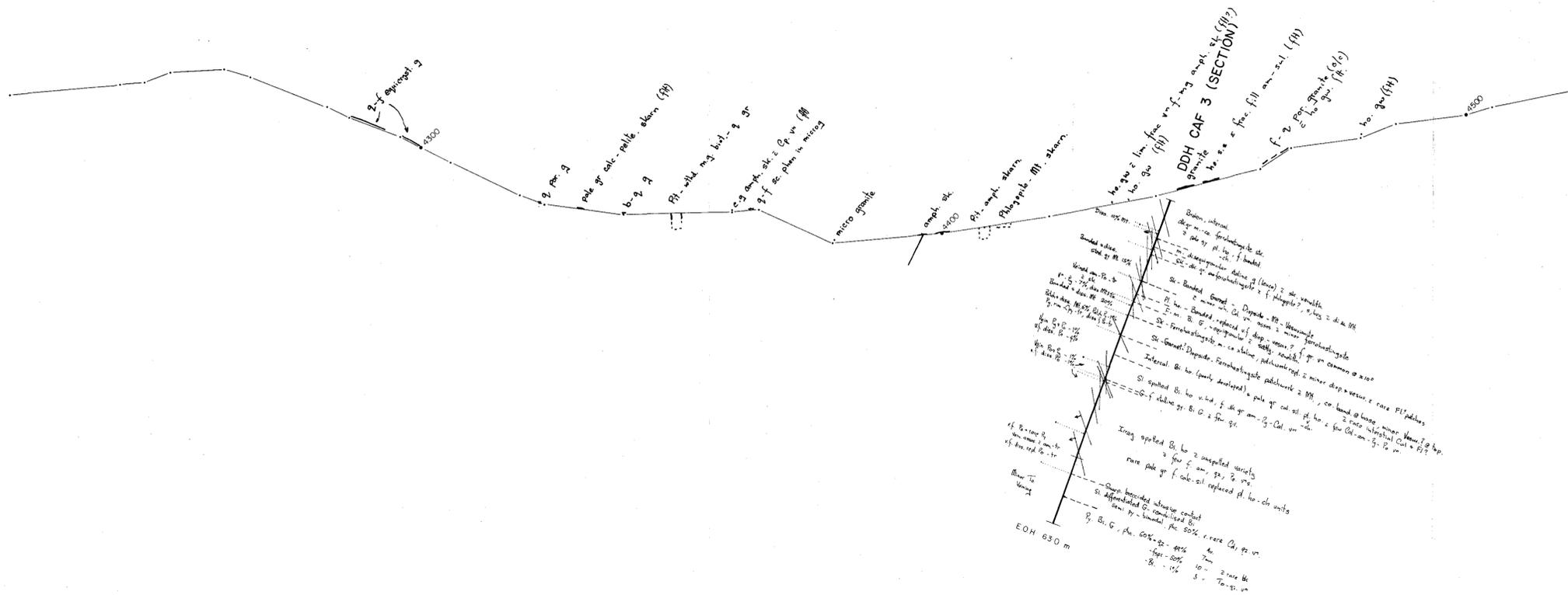
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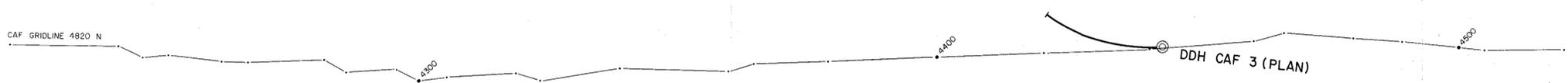
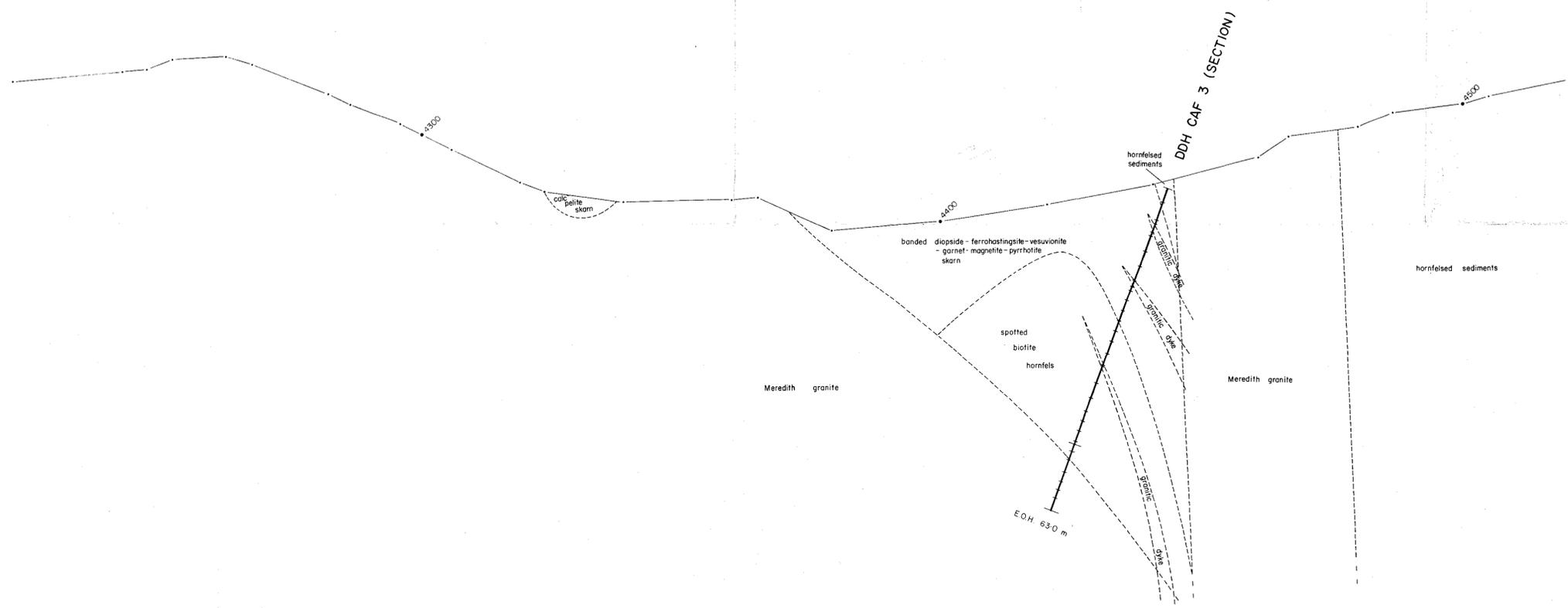
COMSTAFF PROPRIETARY LIMITED	
RAMSAY GRID - CAF	
GEOLOGICAL INTERPRETATION PLAN	
015	
COMPILED	G.F.P.
DRAWN	DATE
GEO DRAFT	6/8/82
AMENDED	8/7/82
SCALE	1:2500
PLAN No	TAS/2/2101



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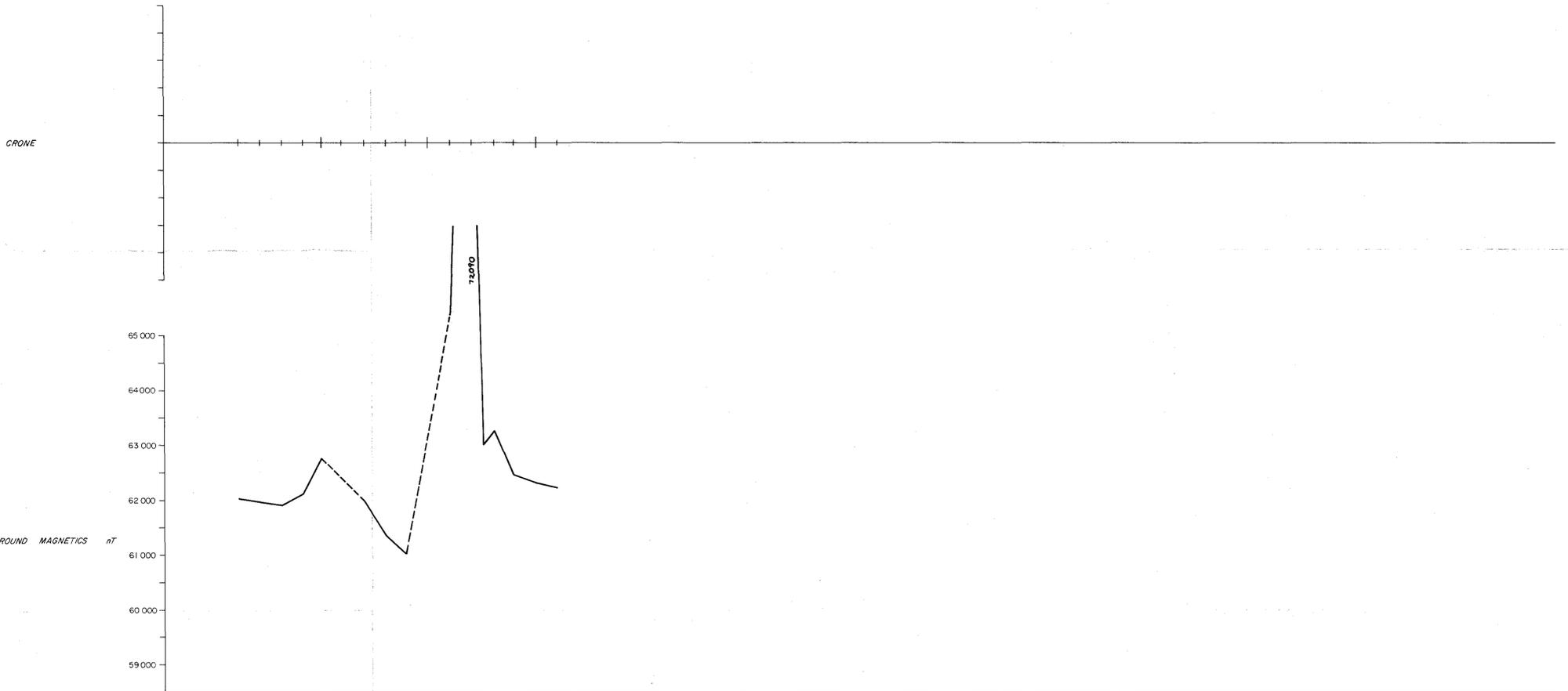
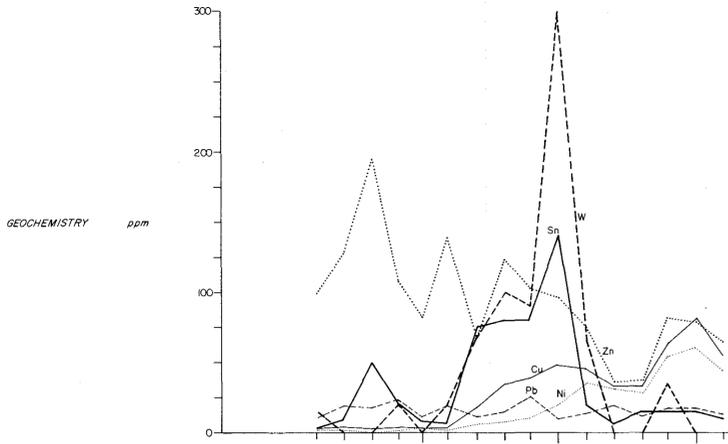
<b>COMSTAFF PROPRIETARY LIMITED</b>	
RAMSAY GRID - CAF	
PLAN & SECTION OF DRILLHOLE DDH CAF 3	
GEOLOGICAL DETAILS 017	
COMPILED N. P. G.	DATE
DRAWN N. P. G.	DATE
AMENDED	
SCALE 1 : 500	PLAN NO. TAS/2/2920



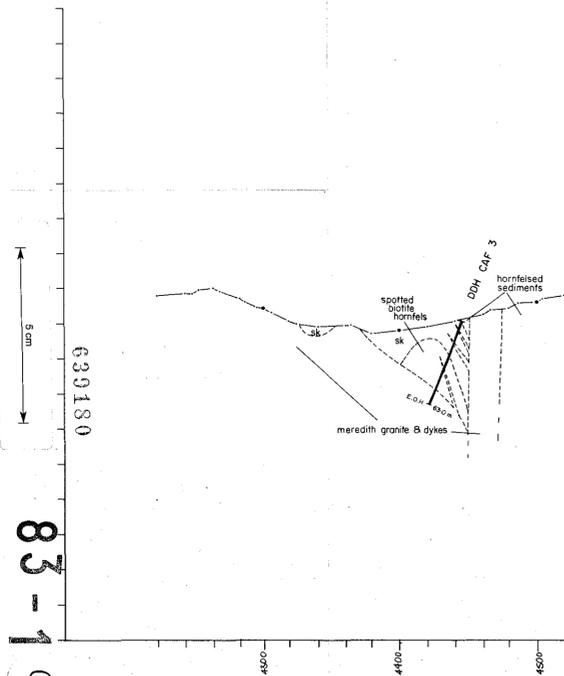
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<b>COMSTAFF PROPRIETARY LIMITED</b>													
RAMSAY GRID - CAF PLAN & SECTION OF DRILLHOLE DDH CAF 3 GEOLOGICAL INTERPRETATION													
001	<table border="1"> <tr> <td>COMPILED</td> <td>N.P.G.</td> </tr> <tr> <td>DRAWN</td> <td>DATE</td> </tr> <tr> <td>GEO DRAFT</td> <td>7/82</td> </tr> <tr> <td>AMENDED</td> <td></td> </tr> <tr> <td>SCALE</td> <td>1 : 500</td> </tr> <tr> <td>PLAN No.</td> <td>TAS / 2 / 2980</td> </tr> </table>	COMPILED	N.P.G.	DRAWN	DATE	GEO DRAFT	7/82	AMENDED		SCALE	1 : 500	PLAN No.	TAS / 2 / 2980
COMPILED	N.P.G.												
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TOPOGRAPHY & GEOLOGY



FOR LEGEND SEE TAS/2/2030

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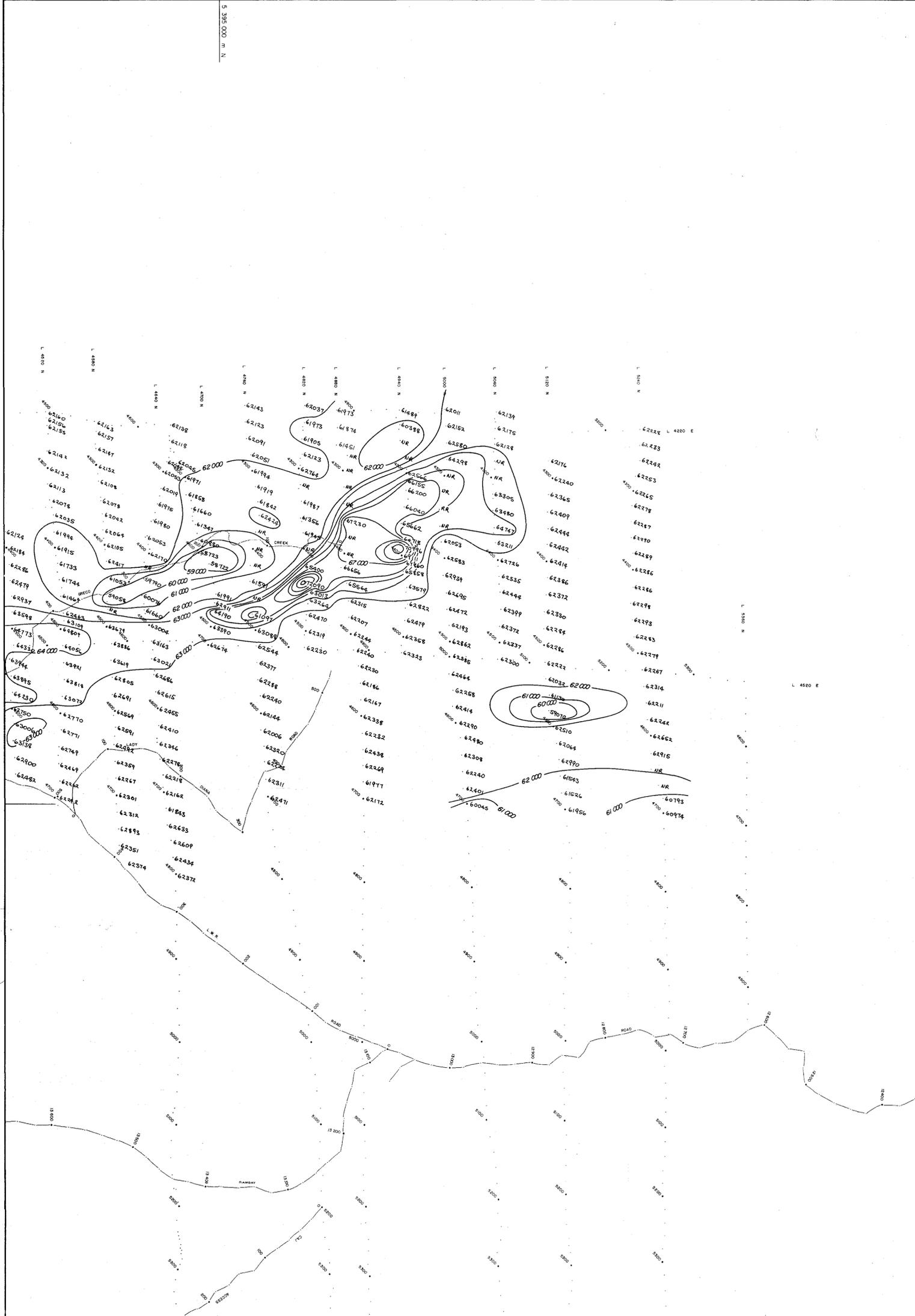
COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAF

L 4820 N PROFILES 003

TOPO, MAG, CRONE, GEOCHEM, GEOLOGY

PROJECT	GEOGRAPHY & G.P.
PREPARED BY	G.P.
DATE	25/8/90
REVISIONS	14/8/92
SCALE	1:2500
PROJECT NO.	TAS/2/2261

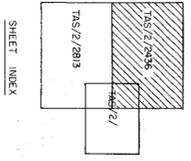


COMSTAFF PROPRIETARY LIMITED  
 RAMSAY GRID - CAF  
 GROUND MAGNETIC CONTOUR PLAN

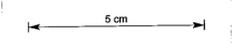
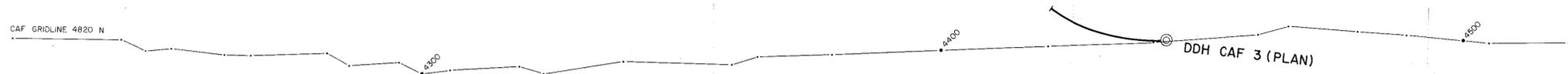
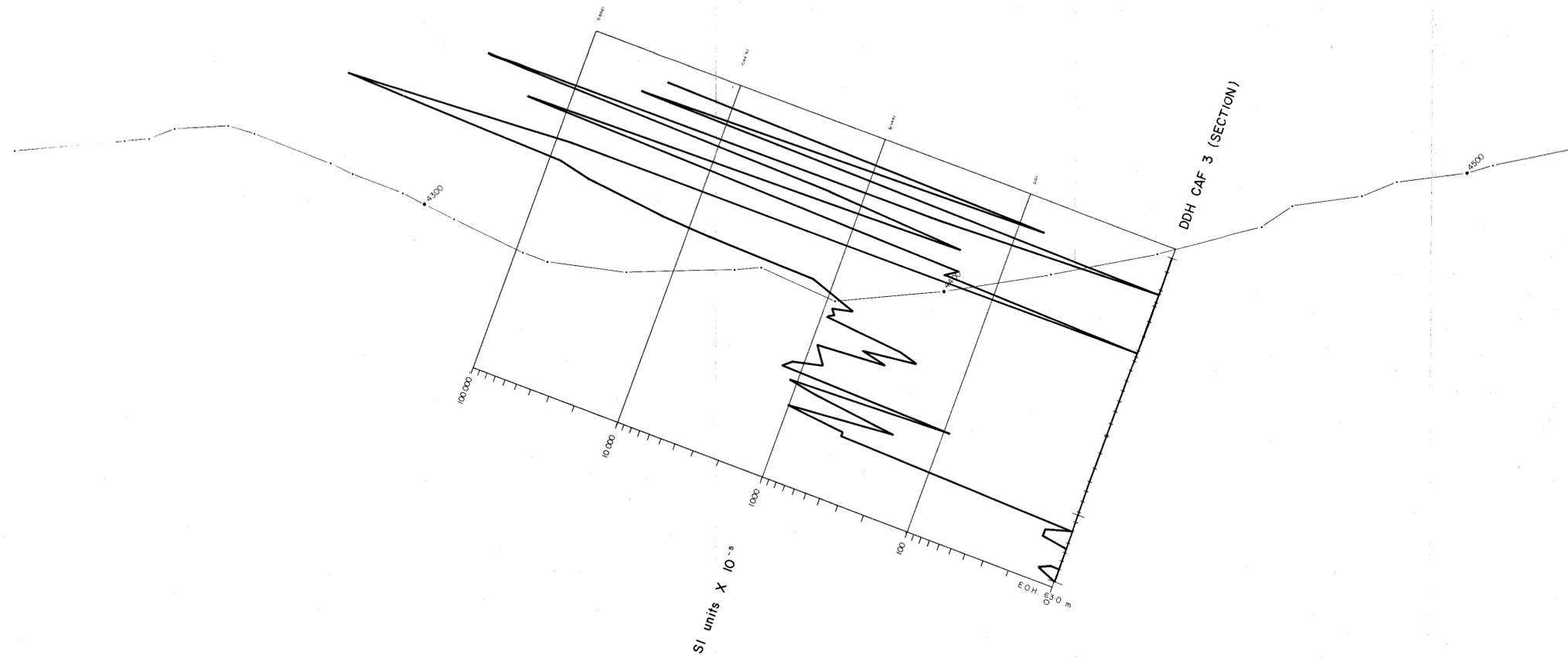
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**83-1907**



PROJECT NO.	TAS/2/2436
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DATE	4/79
REVISION	8/1/82
DRAWN	GEODRAFT
CHECKED	GEODRAFT



SHEET INDEX

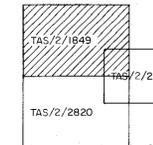


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2/3

639182

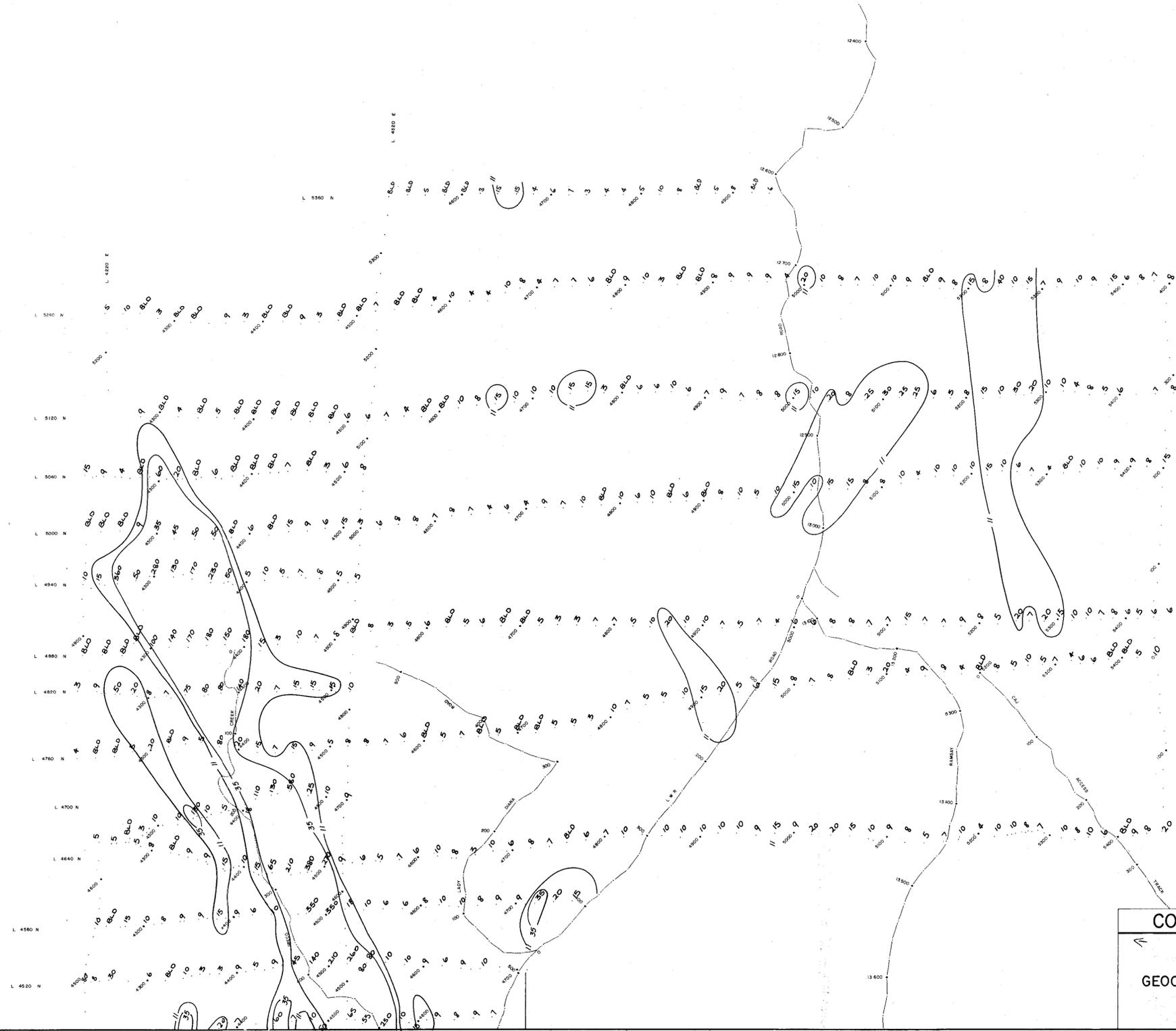
<b>COMSTAFF PROPRIETARY LIMITED</b>	
RAMSAY GRID - CAF	COMPILED A.H.
PLAN & SECTION OF DRILLHOLE DDH CAF 3	DRAWN: GEODRAFT DATE: 7/82
MAGNETIC SUSCEPTIBILITY PROFILE	AMENDED
005	SCALE: 1 : 500
	PLAN NO: TAS/2/2975

372 000 m E



SHEET INDEX

5 395 000 m N

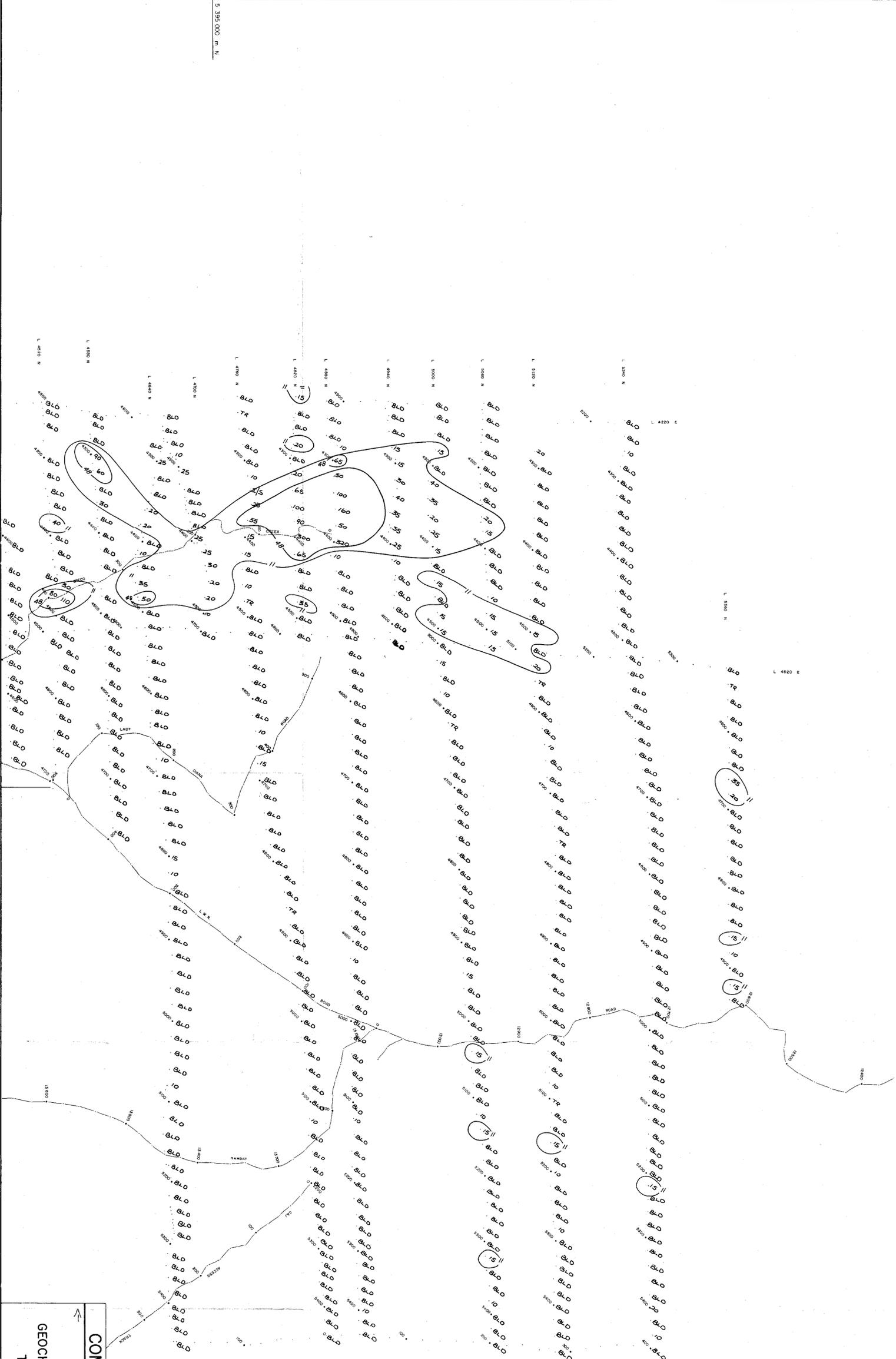


639183

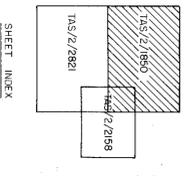
83-1907

<b>COMSTAFF PROPRIETARY LIMITED</b>	
RAMSAY GRID - CAF	COMPILED GEO DRAFT
GEOCHEMICAL GRID AUGER SAMPLING	DRAWN H. P.      DATE 4/79
TIN RESULTS in ppm	AMENDED 2/8/82
006	SCALE 1 : 2500
	PLAN NO TAS/2/1849

5 395 000 m N



372 000 m E



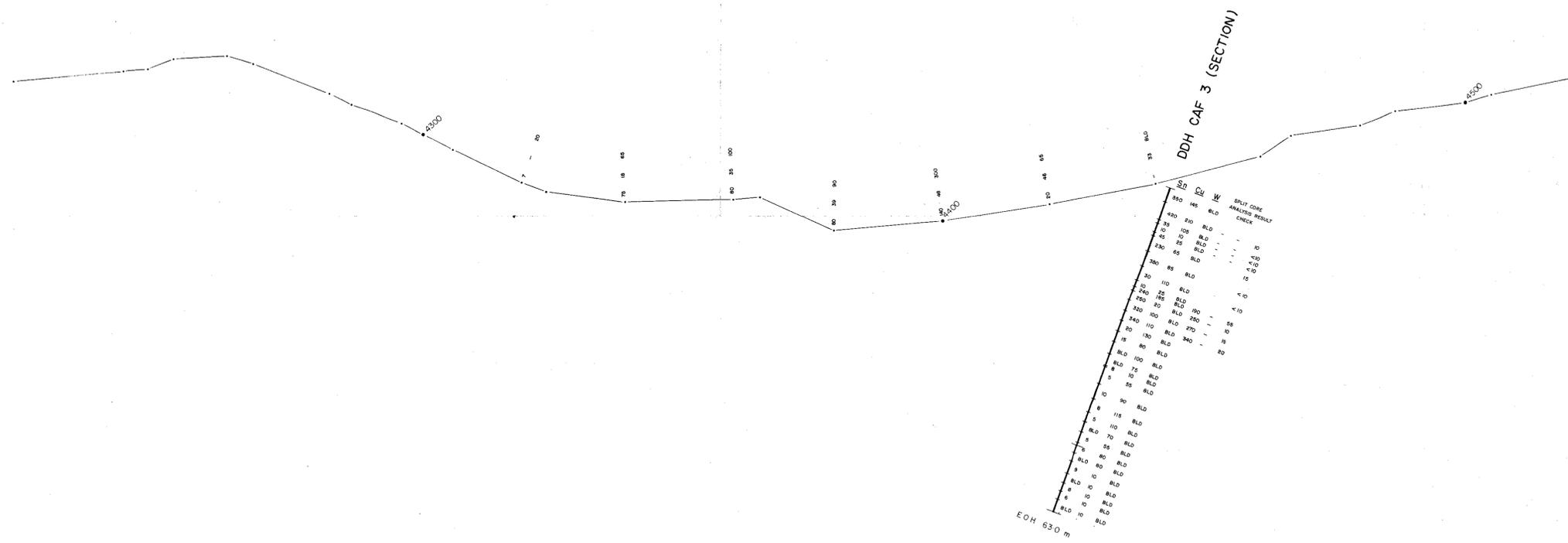
SHEET INDEX

COMSTAFF PROPRIETARY LIMITED  
 RAMSAY GRID - CAF  
 GEOCHEMICAL GRID AUGER SAMPLING  
 TUNGSTEN RESULTS in ppm

83-1907

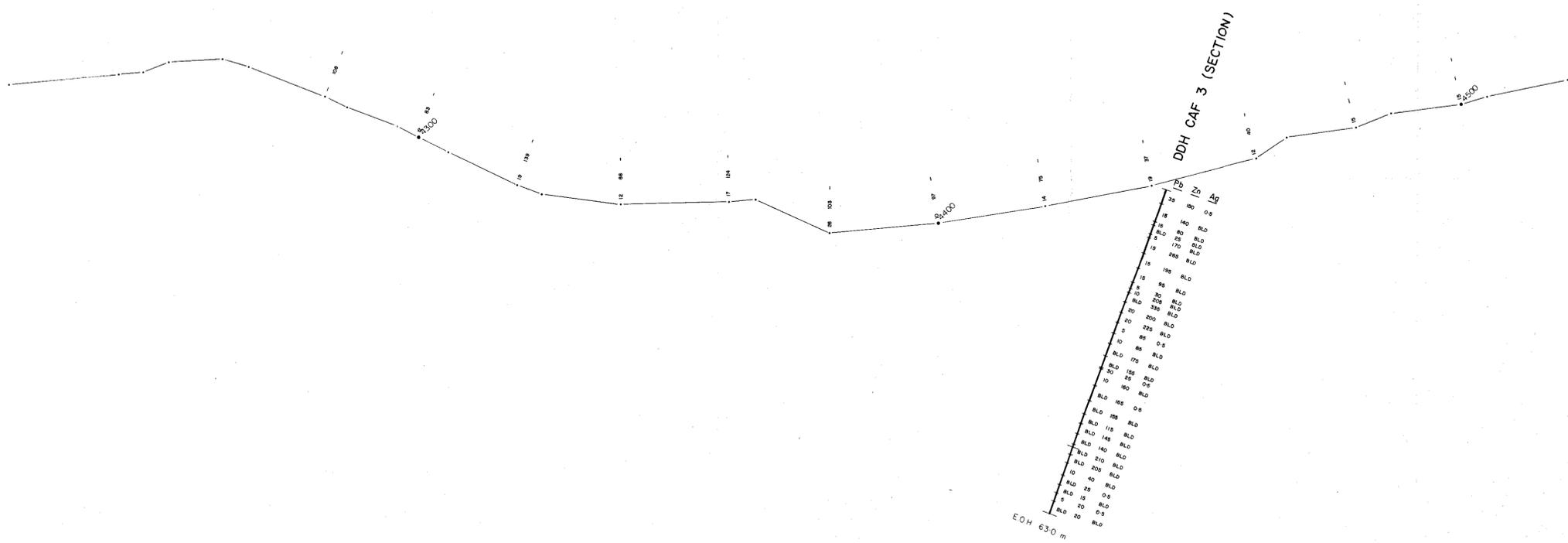


007  
 T/S/2/1850  
 DATE 4/79  
 SCALE 1:2500



639185 83-1907 2/3

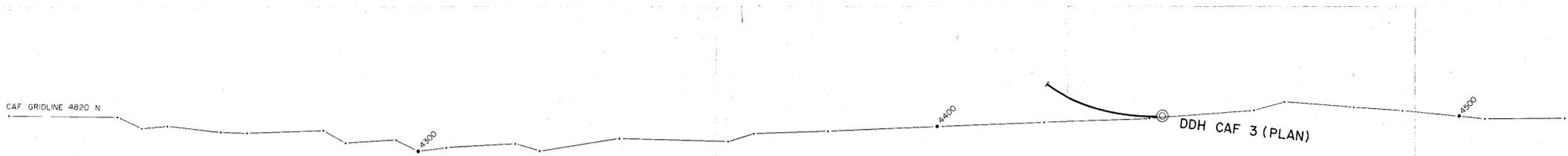
COMSTAFF PROPRIETARY LIMITED	
RAMSAY GRID - CAF	
PLAN & SECTION OF DRILLHOLE DDH CAF 3	
GEOCHEMICAL RESULTS FOR Sn, Cu, W	
002	
COMPILED	GEOGRAFT
DRAWN	DATE
GEOGRAFT	5/82
AMENDED	
	4/11/82
SCALE	1 : 500
PLAN NO.	TAS/2/2927



DDH CAF 3 (SECTION)

BLD	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
BLD	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

EDH 630 m



CAF GRIDLINE 4820 N



83-1907 ]

639186

al3

COMSTAFF PROPRIETARY LIMITED

COMPILED		GEOGRAFT	
DRAWN	DATE	AMENDED	DATE
GEOGRAFT	3/82		
SCALE			
1 : 500			
PLAN No			
TAS/2/2928			

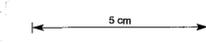
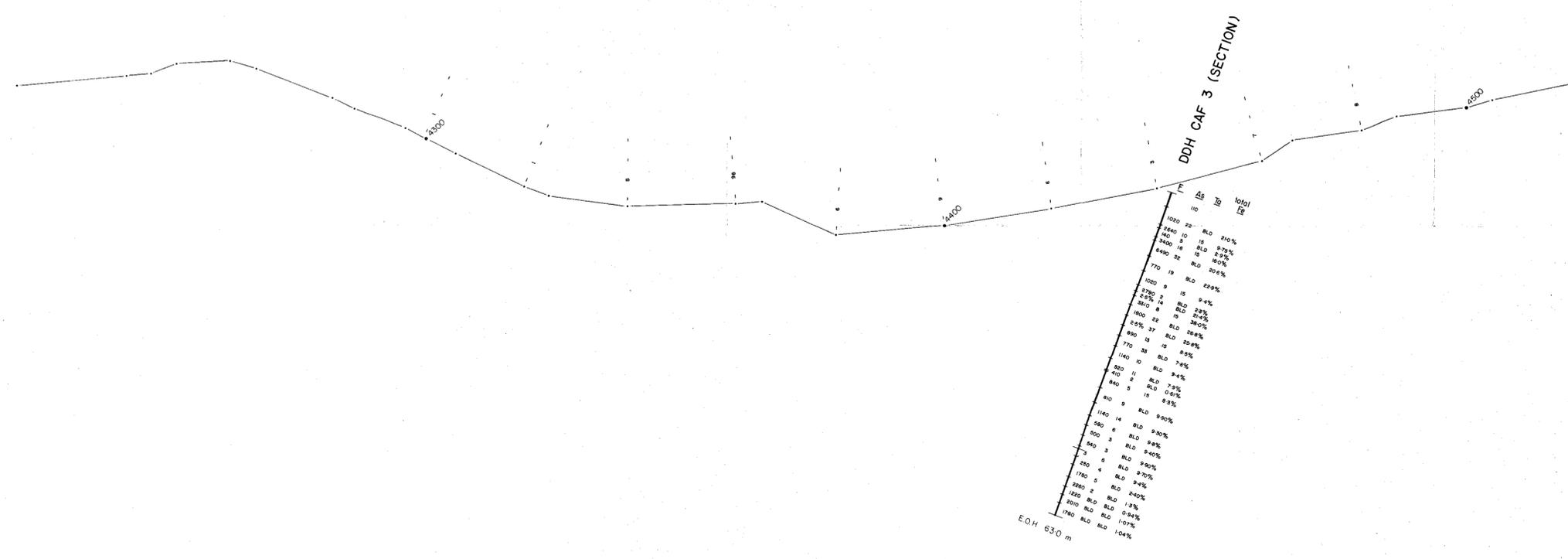
RAMSAY GRID - CAF

PLAN & SECTION OF DRILLHOLE DDH CAF 3

GEOCHEMICAL RESULTS FOR Pb, Zn, Ag

008



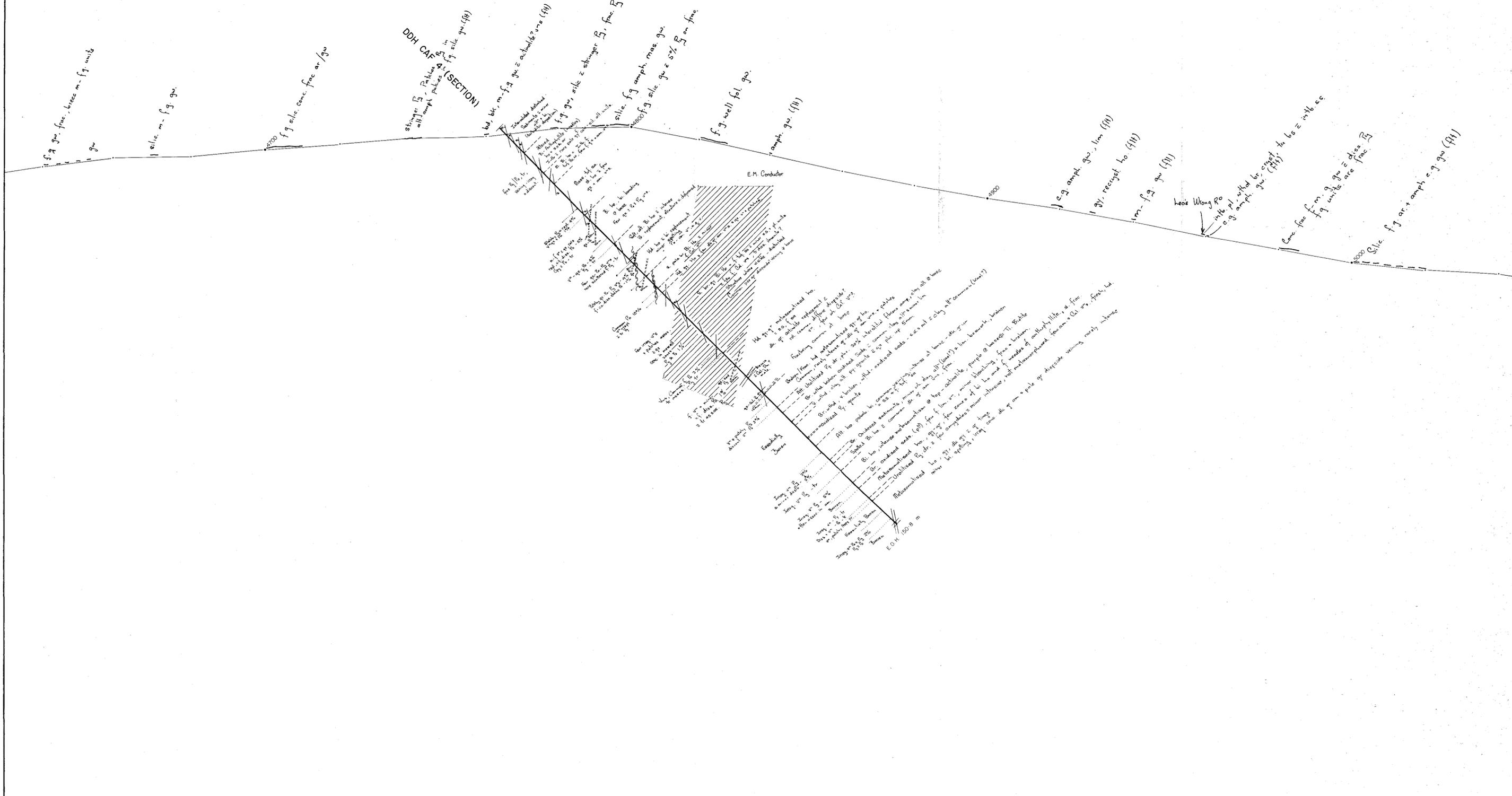


639188 83-1907 2/3

COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAF  
 PLAN & SECTION OF DRILLHOLE DDH CAF 3  
 GEOCHEMICAL RESULTS FOR F,As,Ta,Fe

COMPILED	GEODRAFT
DRAWN	DATE
GEODRAFT	5/82
AMENDED	
SCALE	1 : 500
PLAN No	010
TAS / 2 / 2930	



DDH CAF 4 (PLAN)

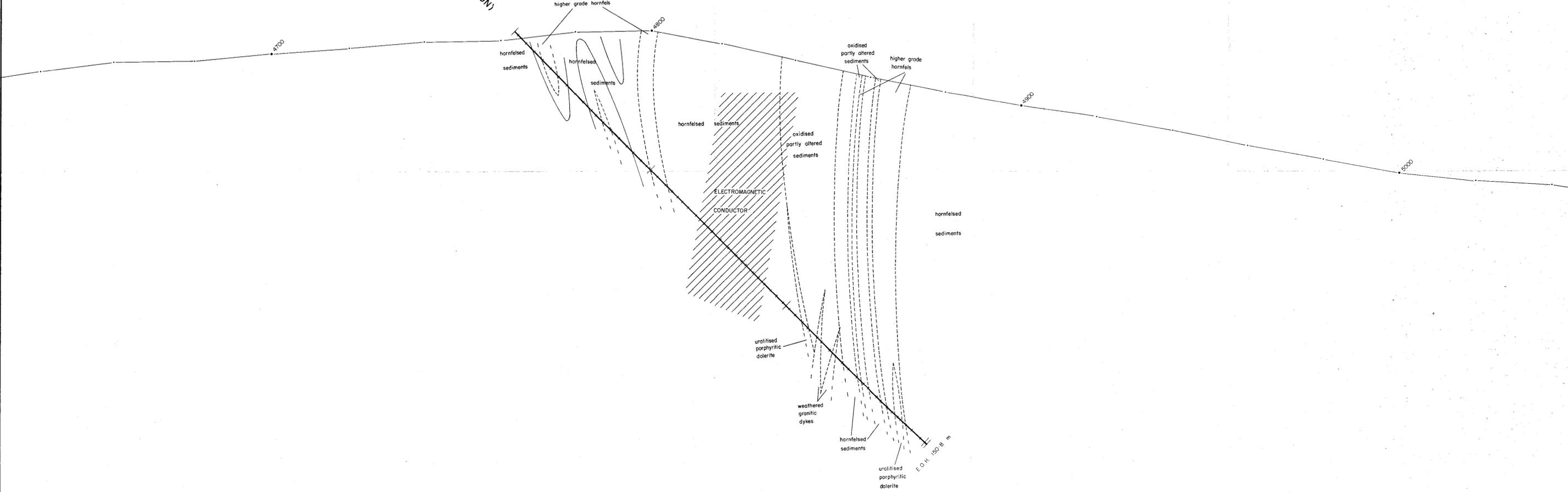
CAF GRIDLINE 4760 N



639189 83-1907 2/2

COMSTAFF PROPRIETARY LIMITED	
RAMSAY GRID - CAF	
PLAN & SECTION OF DRILLHOLE DDH CAF 4	
GEOLOGICAL DETAILS	
011	
COMPILED	N.P.G.
DRAWN	DATE
AMENDED	
SCALE	1 : 500
PLAN No.	TAS/2/2921

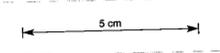
DDH CAF 4 (SECTION)



DDH CAF 4 (PLAN)



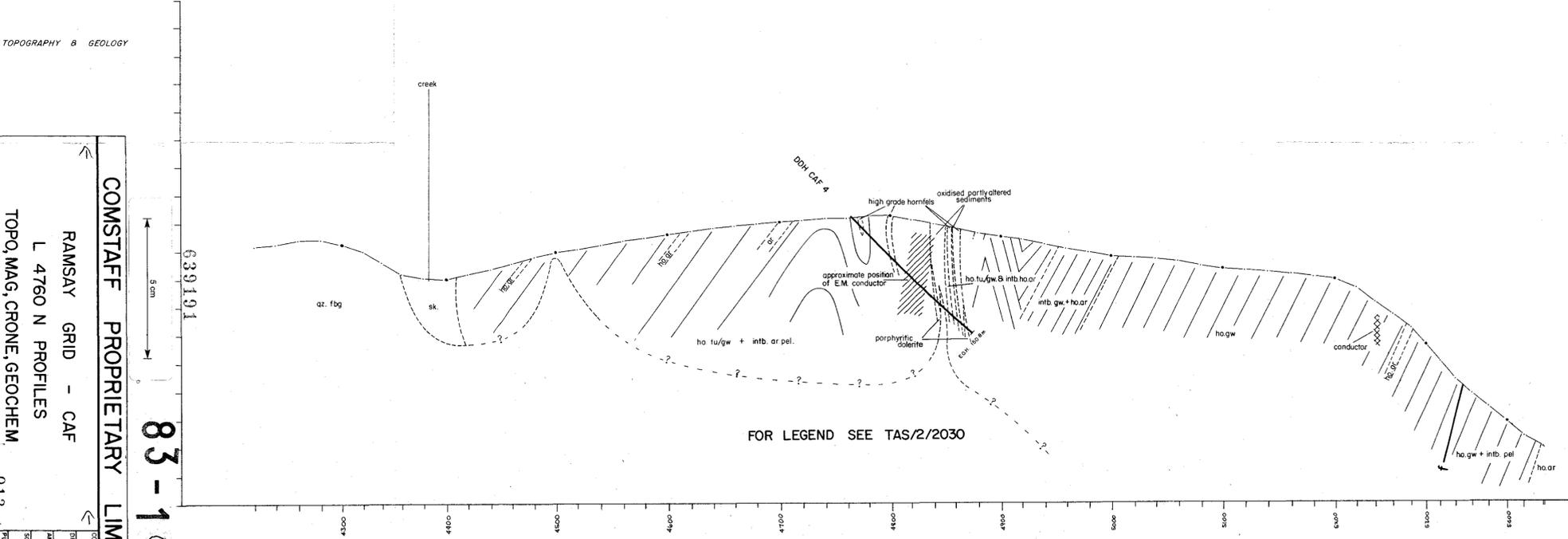
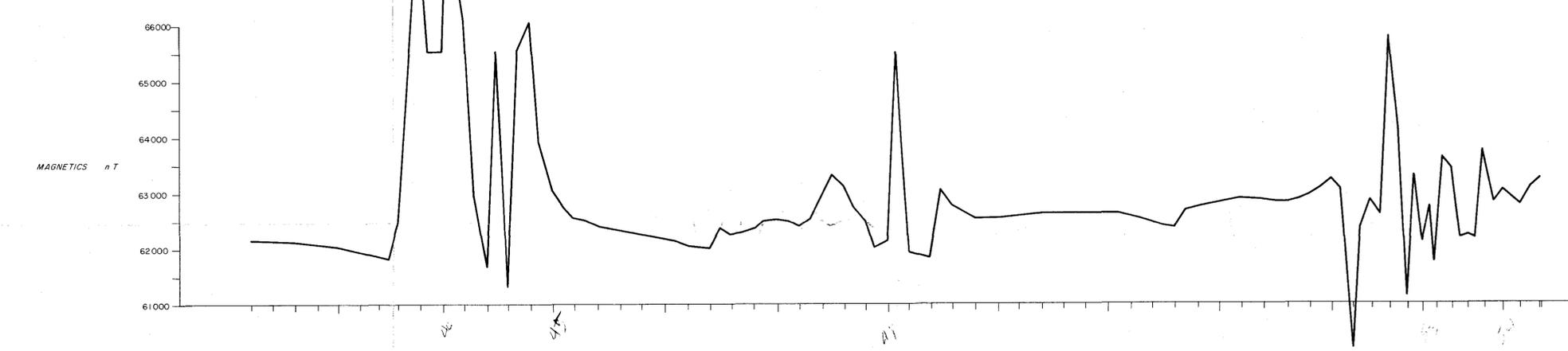
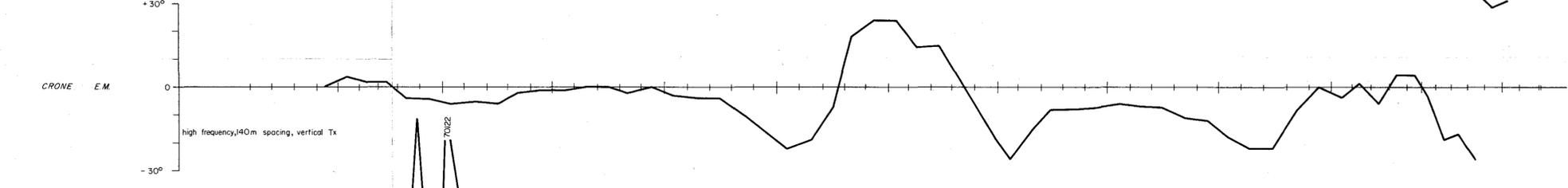
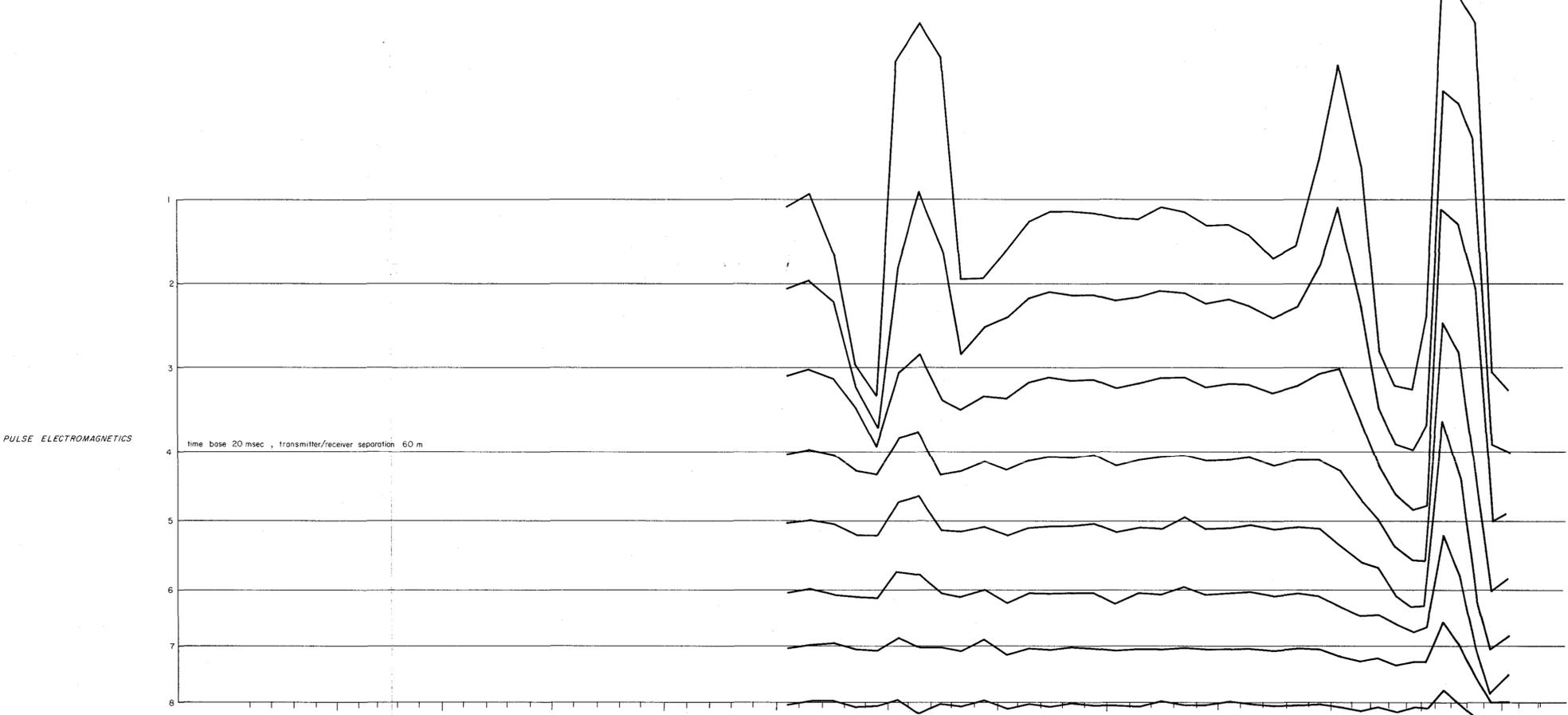
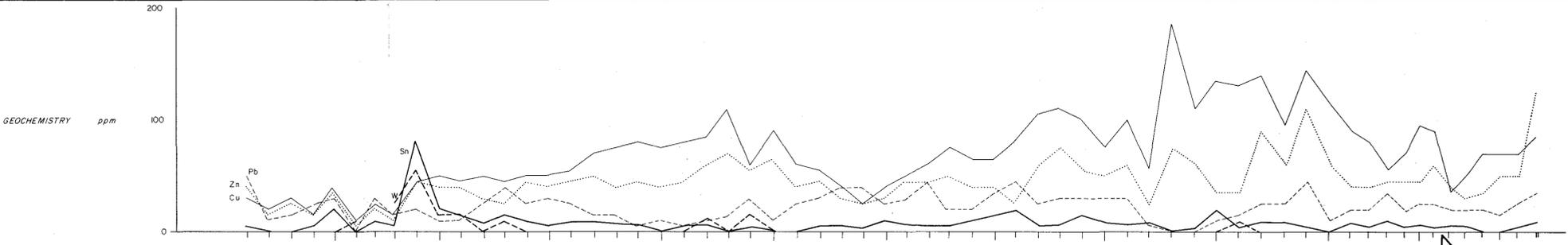
CAF GRIDLINE 4760 N



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639190

COMSTAFF PROPRIETARY LIMITED	
RAMSAY GRID - CAF	
PLAN & SECTION OF DRILLHOLE DDH CAF 4	
GEOLOGICAL INTERPRETATION 012	
COMPILED N. P. G.	DATE 7/82
DRAWN GEOGRAFT	AMENDED
SCALE 1 : 500	PLAN No TAS/2/2981



COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAF

L 4760 N PROFILES

TOPO, MAG, CRONE, GEOCHEM

013

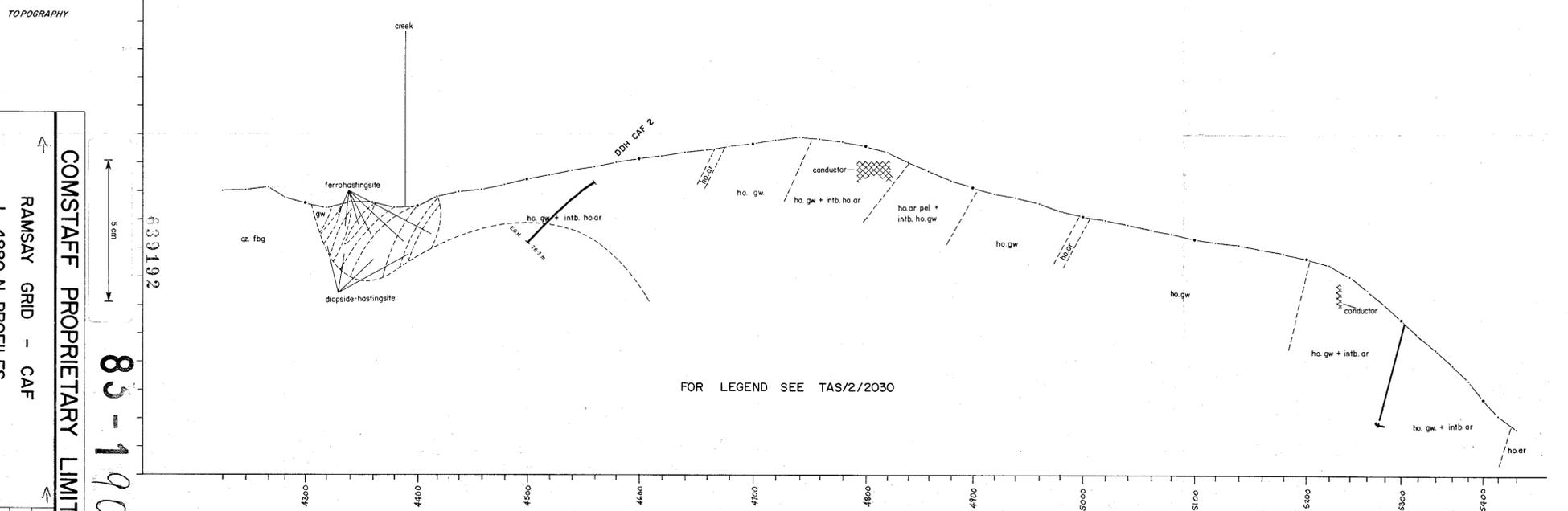
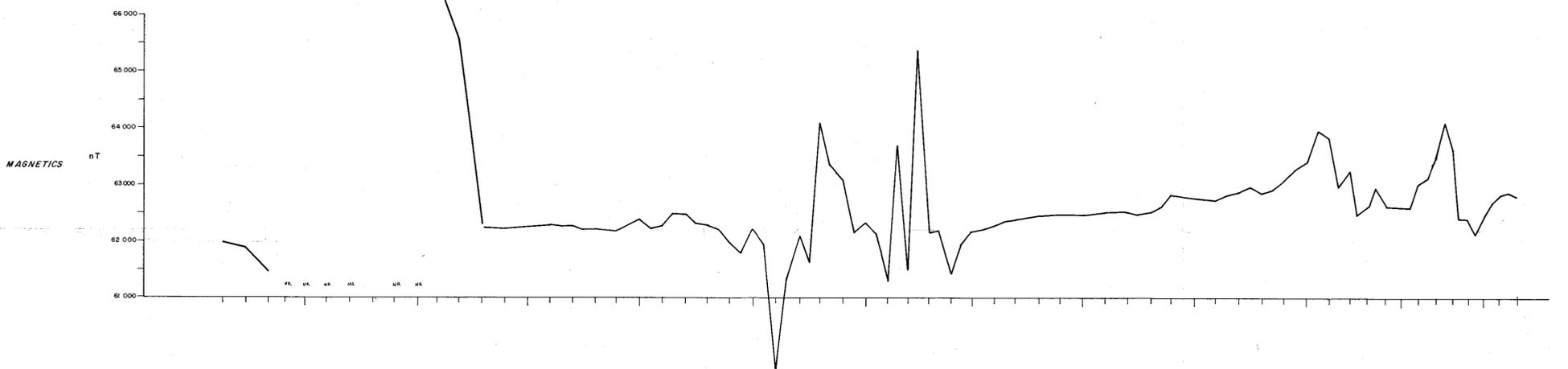
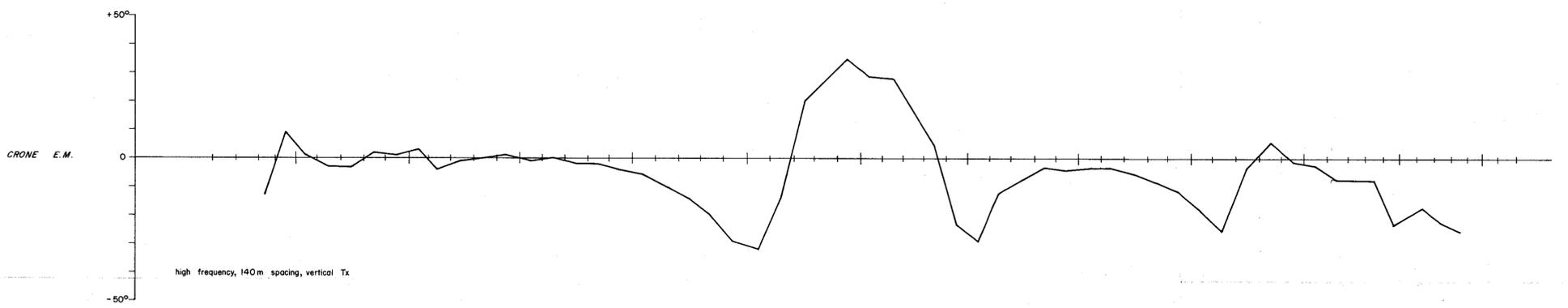
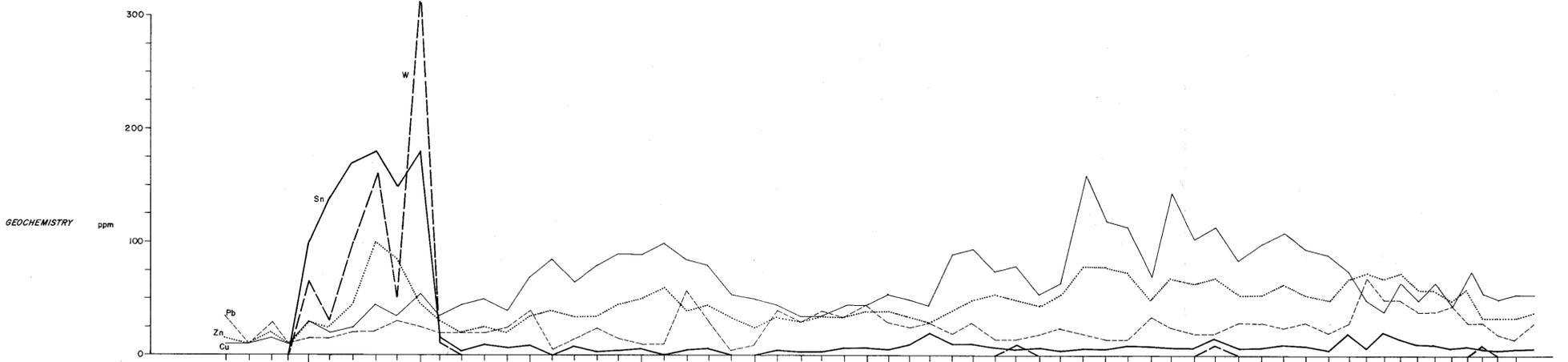
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14/8/82

5/79

83-1907

FOR LEGEND SEE TAS/2/2030



COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAF

L 4880 N PROFILES

TOPO, MAG, CRONE, GEOCHEM

014

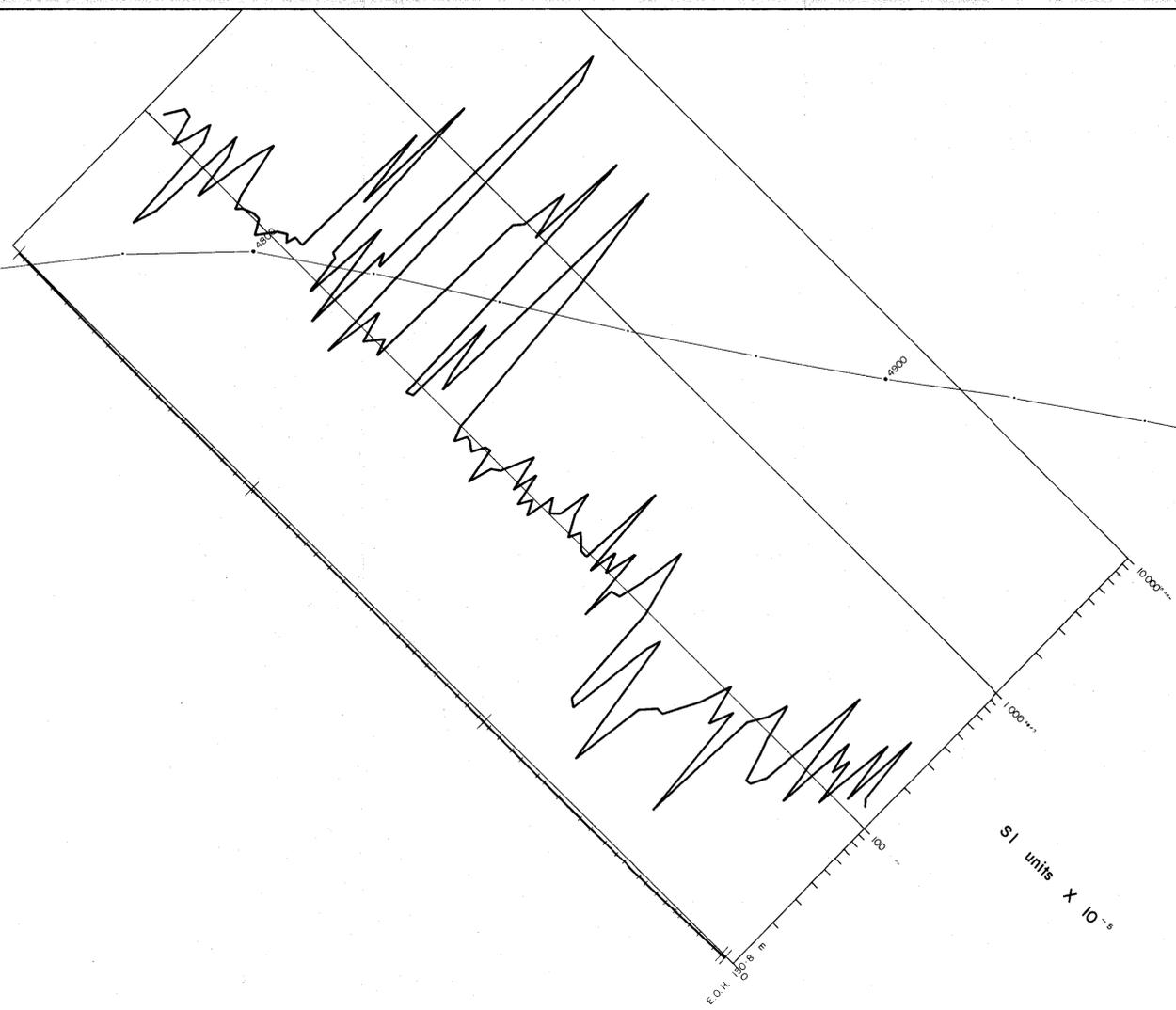
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TAS/2/1852

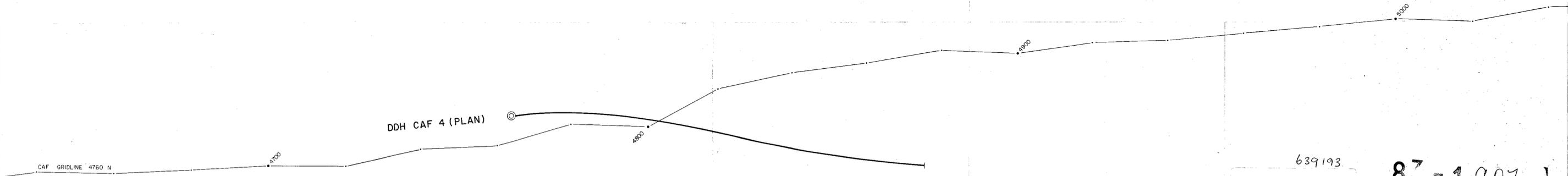
83-1907

2/3

DDH CAF 4 (SECTION)



DDH CAF 4 (PLAN)

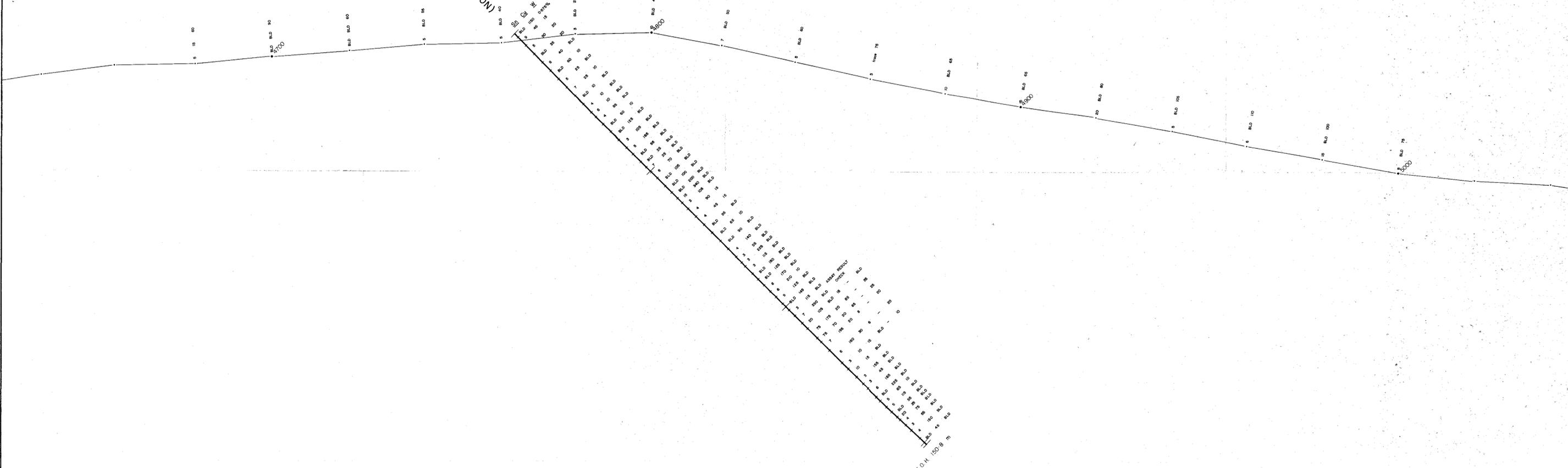


639193  
 5 cm

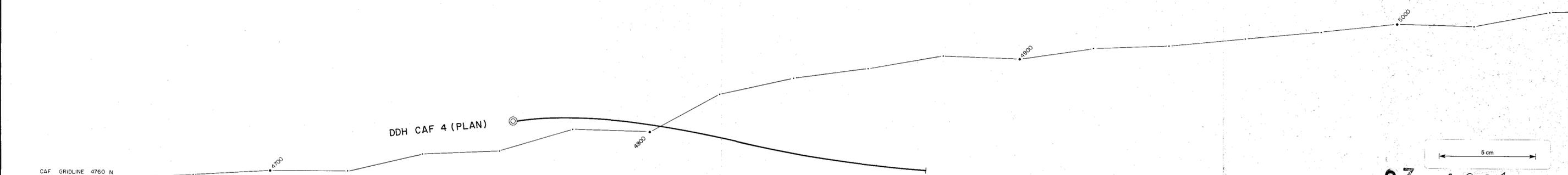
83-1907  
 23

<b>COMSTAFF PROPRIETARY LIMITED</b>	
RAMSAY GRID - CAF	COMPILED A.H.
PLAN & SECTION OF DRILLHOLE DDH CAF 4	DRAWN GEODRAFT DATE 7/82
MAGNETIC SUSCEPTIBILITY PROFILE	AMENDED
018	SCALE 1 : 500
	PLAN No TAS/2/2976

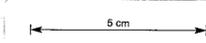
DDH CAF 4 (SECTION)



DDH CAF 4 (PLAN)



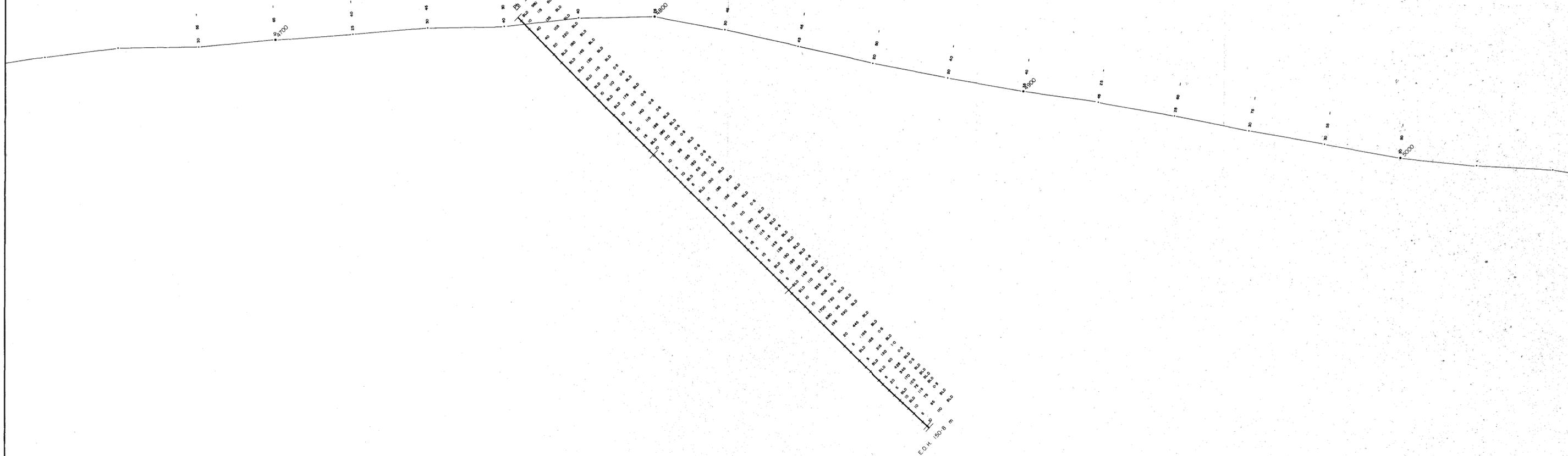
CAF GRIDLINE 4760 N



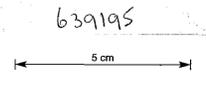
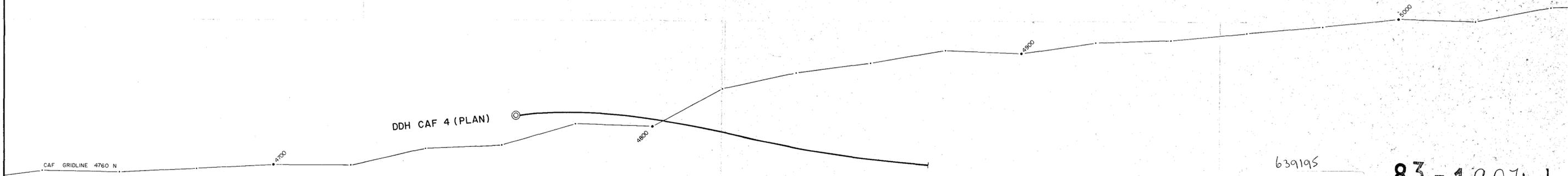
83-1907

COMSTAFF PROPRIETARY LIMITED	
RAMSAY GRID - CAF	COMPILED GEOGRAFT
PLAN & SECTION OF DRILLHOLE DDH CAF 4	DATE 5/82
GEOCHEMICAL RESULTS FOR Sn,Cu,W	AMENDED
013	SCALE 1 : 500
	PLAN No TAS/2/2931

DDH CAF 4 (SECTION)



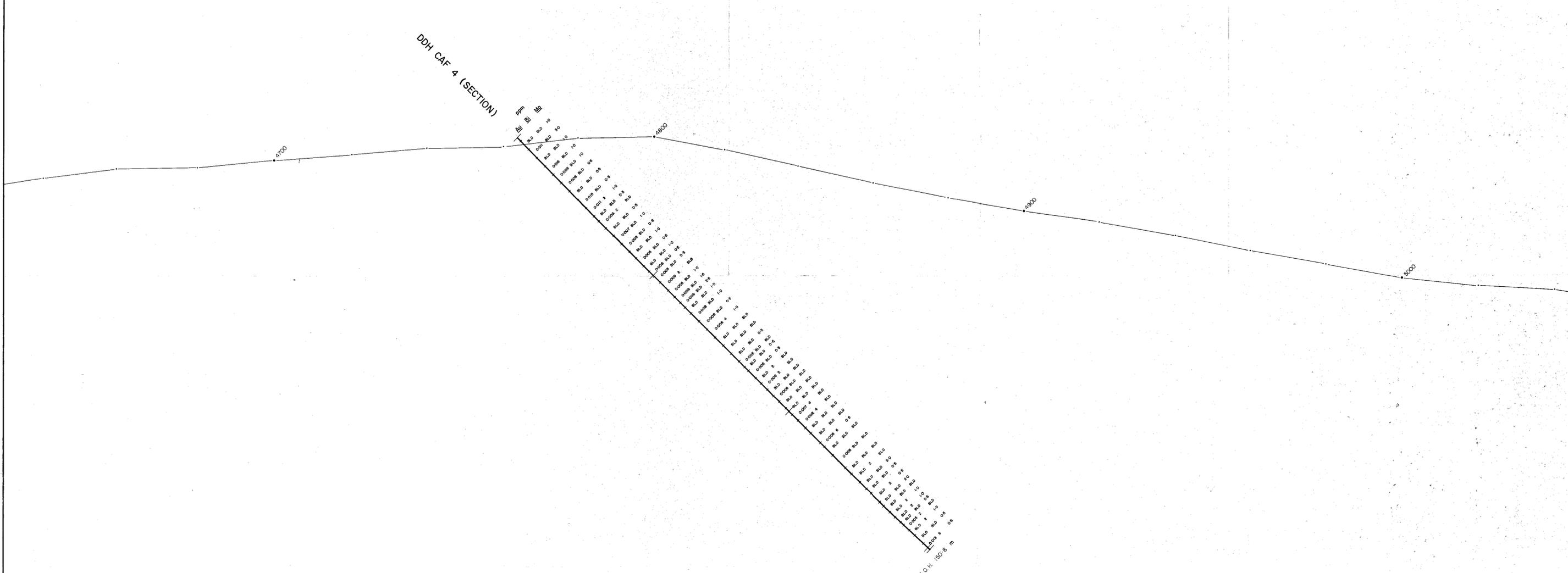
DDH CAF 4 (PLAN)



83-19071  
2/3

<b>COMSTAFF PROPRIETARY LIMITED</b>	
RAMSAY GRID - CAF	COMPILED GEOGRAFT
PLAN & SECTION OF DRILLHOLE DDH CAF 4	DATE 5/82
GEOCHEMICAL RESULTS FOR Pb,Zn,Ag.	AMENDED
020	SCALE 1 : 500
	PLAN NO. TAS/2/2932

DDH CAF 4 (SECTION)

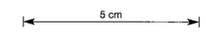


DDH CAF 4 (PLAN)



CAF GRIDLINE 4760 N

639196



83-1907

<b>COMSTAFF PROPRIETARY LIMITED</b>	
RAMSAY GRID - CAF	
PLAN & SECTION OF DRILLHOLE DDH CAF 4	
GEOCHEMICAL RESULTS FOR Au, Bi, Mo.	
021	
COMPILED	GEODRAFT
DRAWN	DATE
GEODRAFT	5/82
AMENDED	
SCALE	1 : 500
PLAN No	TAS /2 /2933







CAF GRIDLINE 4640 N

2000

2400

2800

3200

DDH CAF 5 (PLAN)

DDH CAF 5 (SECTION)

639199

5 cm

**83-1907** 2/3

**COMSTAFF PROPRIETARY LIMITED**

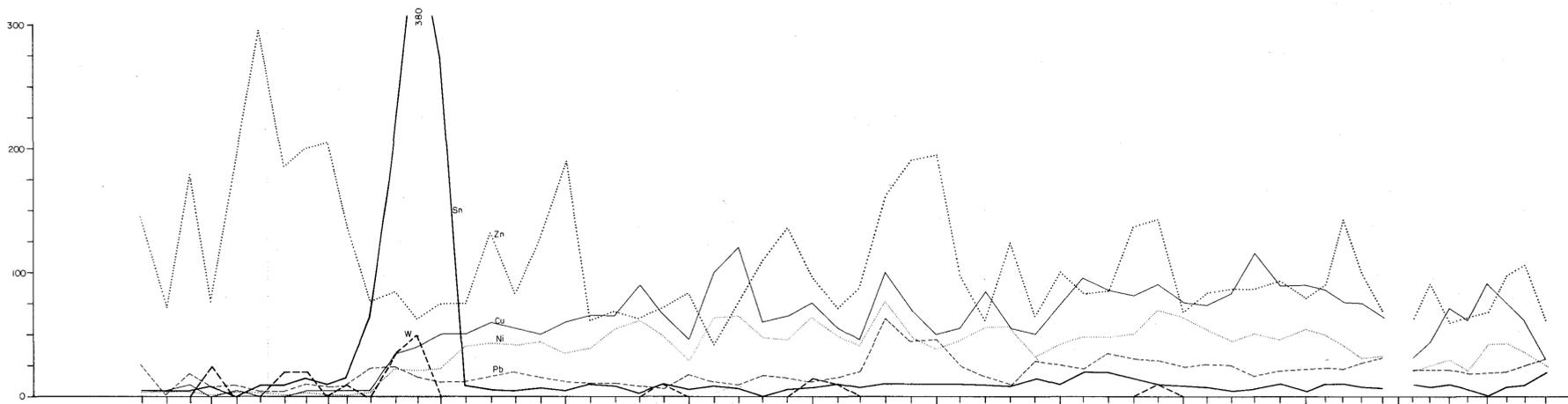
RAMSAY GRID - CAF  
 PLAN & SECTION OF DRILLHOLE DDH CAF 5  
 GEOLOGICAL INTERPRETATION

COMPILED	N.P.G.
DRAWN	DATE
GEO DRAFT	7/82
AMENDED	
SCALE	1:500
PLAN No.	TAS/2/2982

024

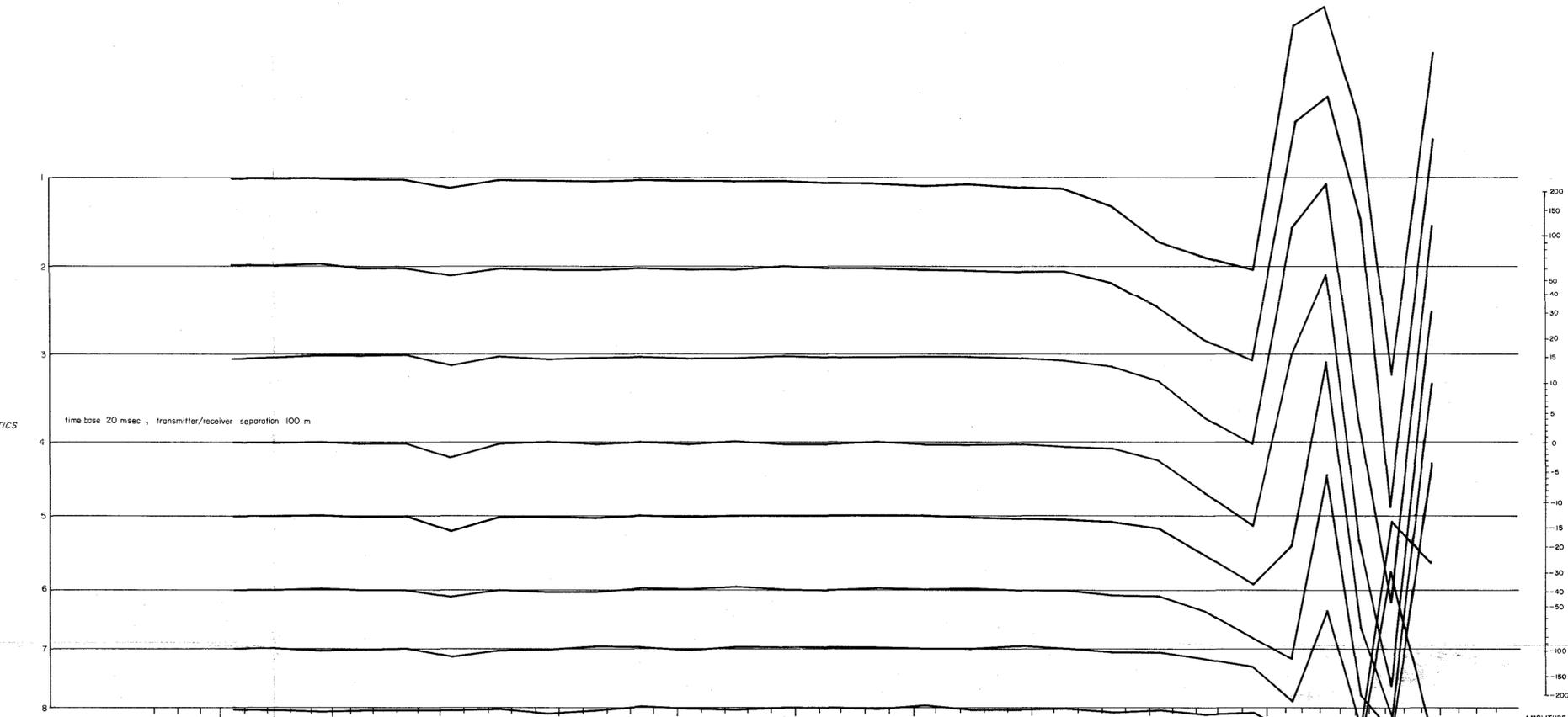
GEOCHEMISTRY

ppm

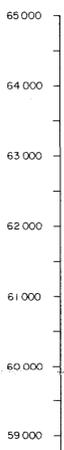


PULSE ELECTROMAGNETICS

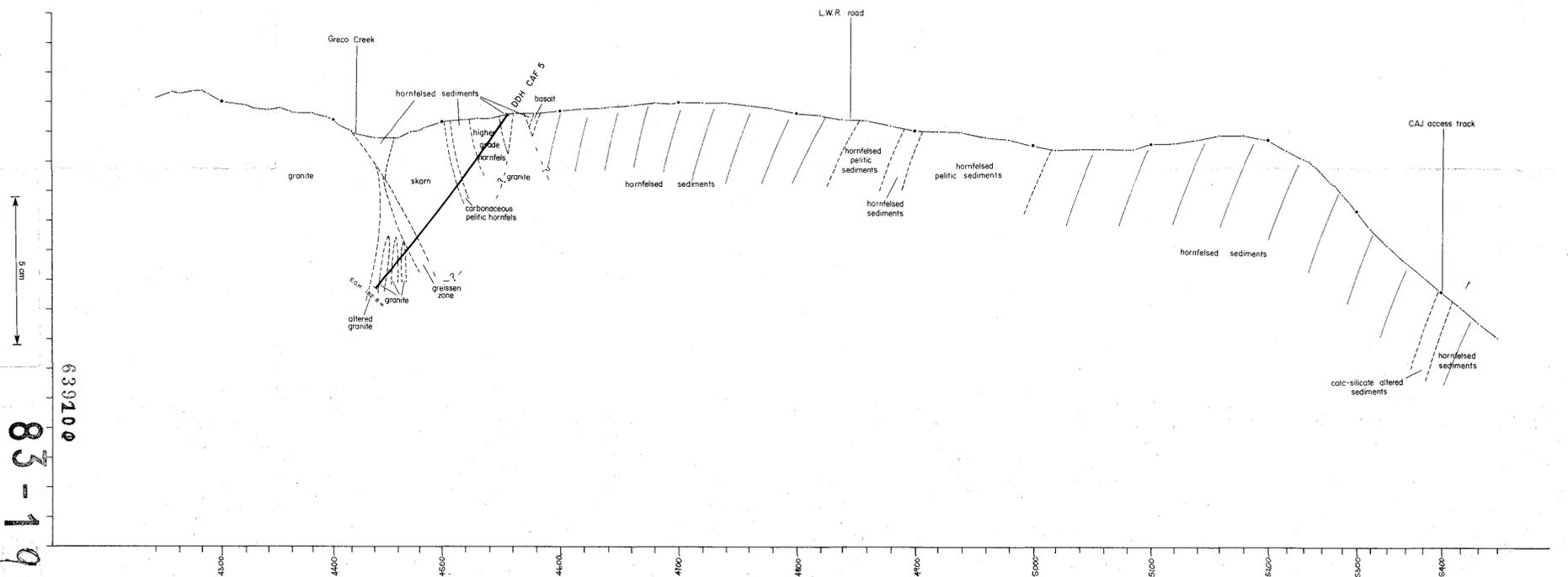
time base 20 msec, transmitter/receiver separation 100 m



GROUND MAGNETICS nT



TOPOGRAPHY & GEOLOGY



639100  
83-1907

COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAF

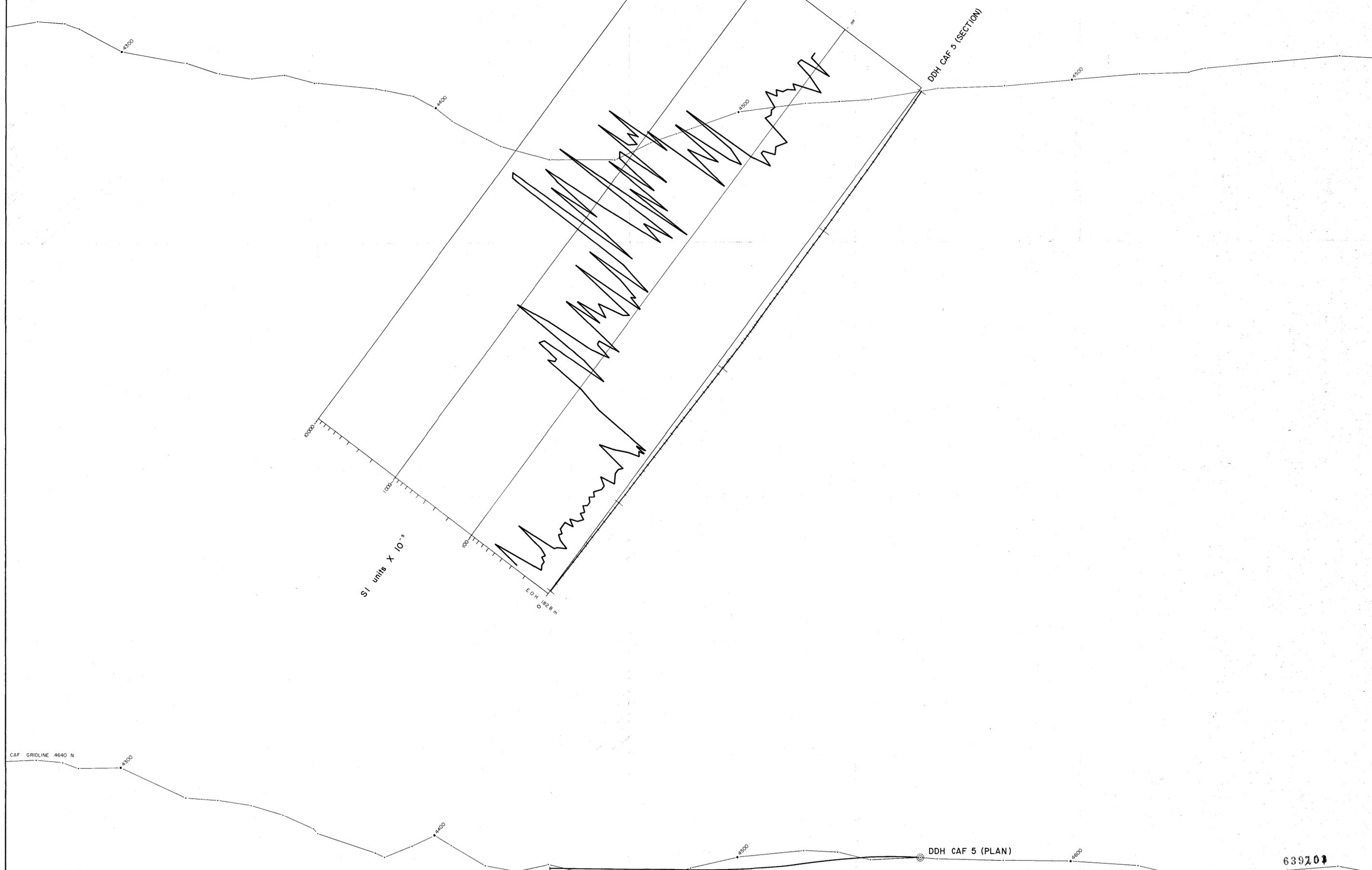
L 4640 N PROFILES

TOPO, MAG, CRONE, GEOCHEM, GEOLOGY

025

PROJECTED  
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 SHEET NO. 2  
 SHEET NO. 3  
 SHEET NO. 4  
 SHEET NO. 5  
 SHEET NO. 6  
 SHEET NO. 7  
 SHEET NO. 8  
 SHEET NO. 9  
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 SHEET NO. 93  
 SHEET NO. 94  
 SHEET NO. 95  
 SHEET NO. 96  
 SHEET NO. 97  
 SHEET NO. 98  
 SHEET NO. 99  
 SHEET NO. 100

SCALE 1:2500  
DATE 28/10/92  
TAS/2/2253



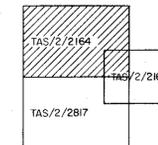
639201

83-1907 2/3

<b>COMSTAFF PROPRIETARY LIMITED</b>	
RAMSAY GRID - CAF	
PLAN & SECTION OF DRILLHOLE DDH CAF 5	
MAGNETIC SUSCEPTIBILITY PROFILE	
COMPILED	A.H.
DRAWN	DATE
GEOGRAFT	7/82
AMENDED	
SCALE	1 : 500
PLAN NO.	TAS/2/2977

026

372 000 m E



SHEET INDEX

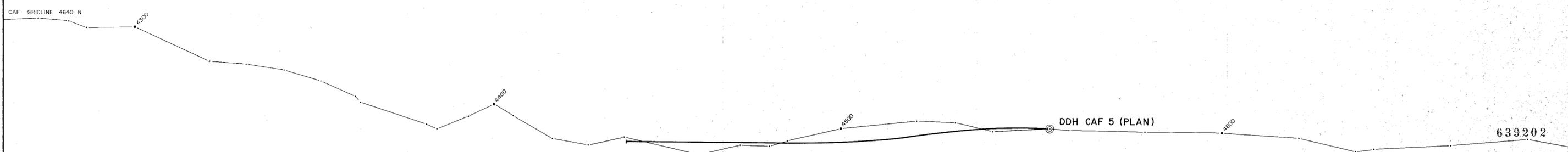
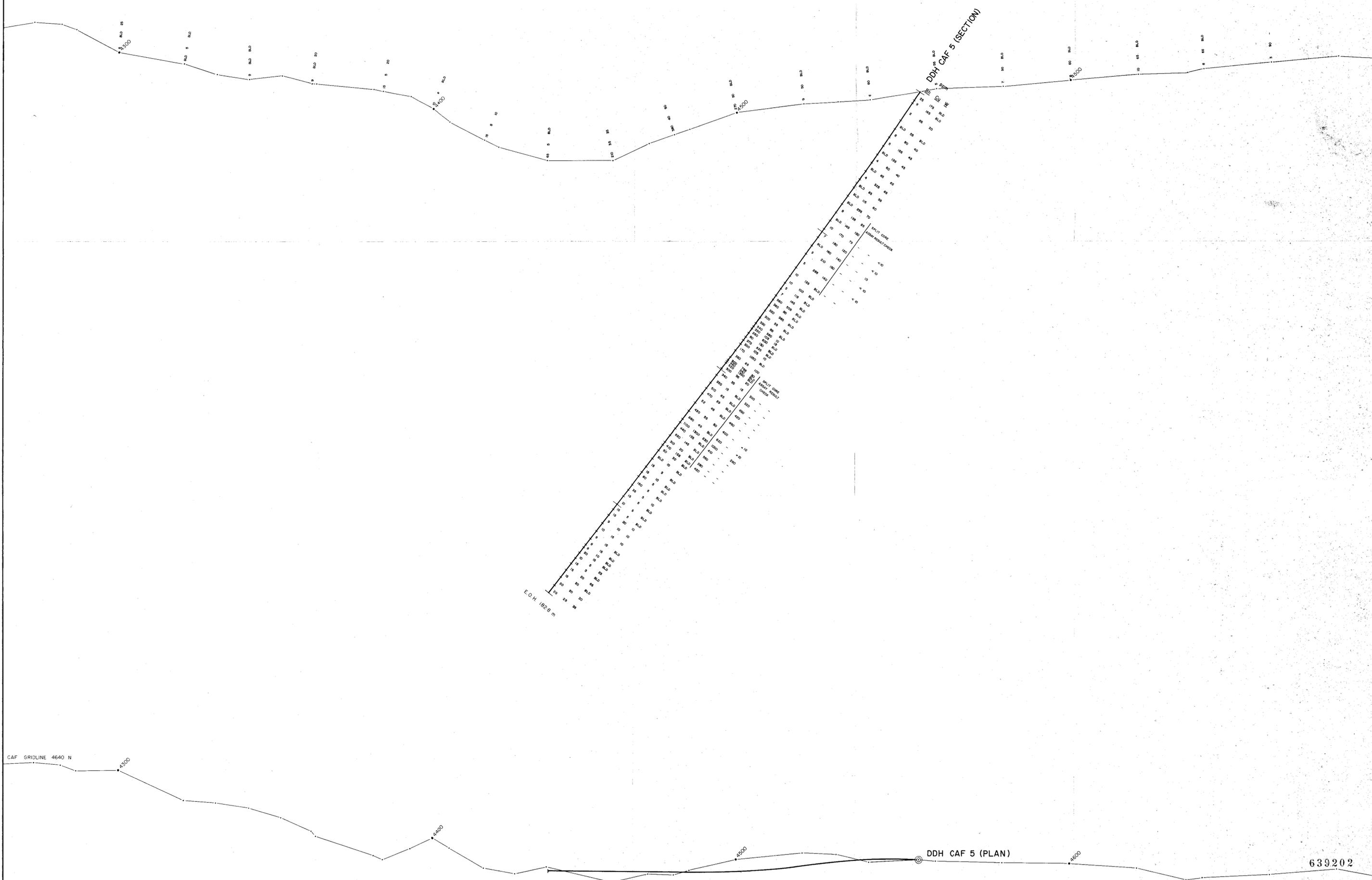
5 395 000 m N



639201

83 - 19073 ]  
33

<b>COMSTAFF PROPRIETARY LIMITED</b>	
RAMSAY GRID - CAF	
GEOCHEMICAL GRID AUGER SAMPLING	
ARSENIC RESULTS in ppm: 028	
COMPILED	GEODRAFT
DRAWN	DATE
AMENDED	2 / 8 / 82
SCALE	1 : 2500
PLAN NO	TAS/2/2164

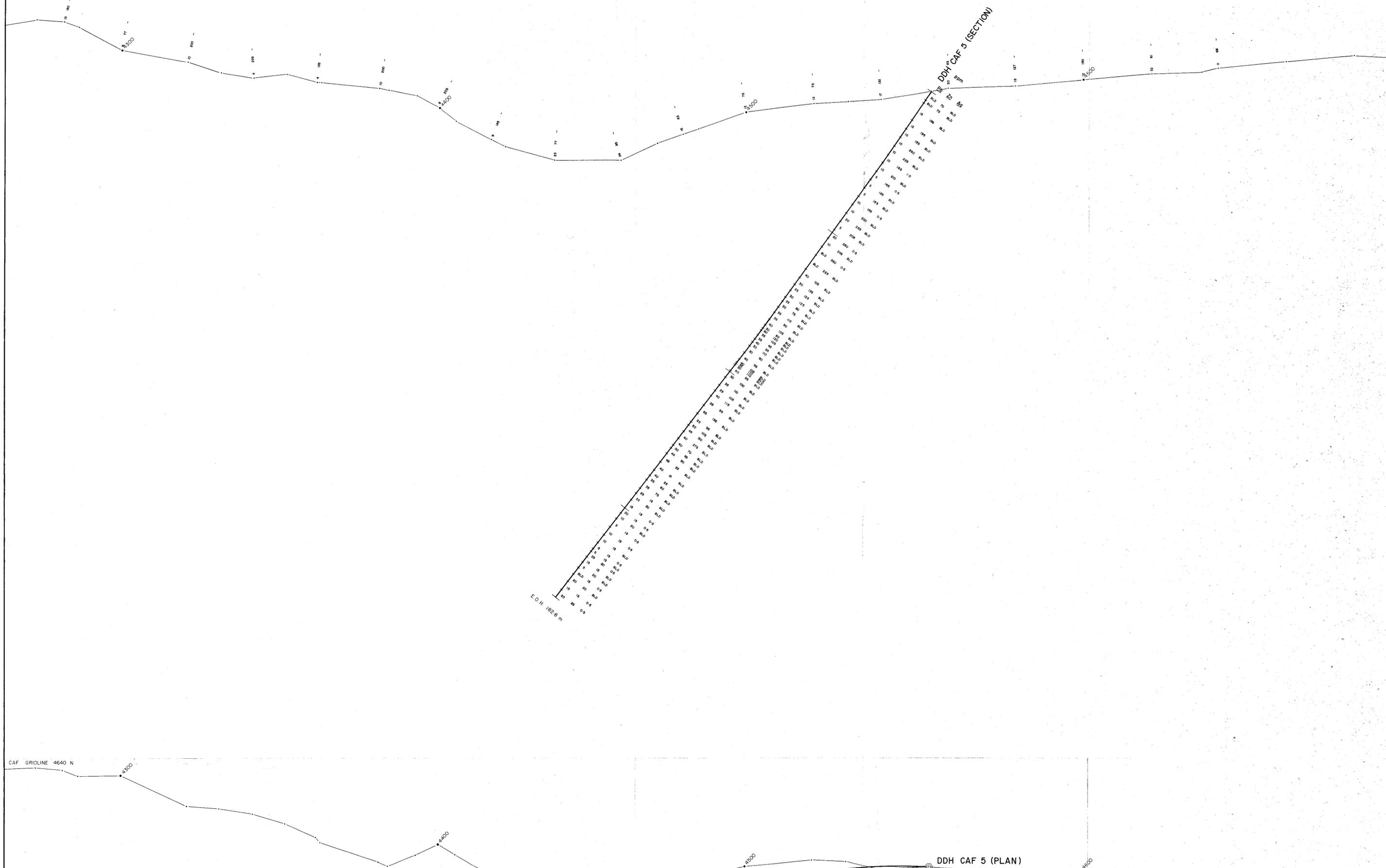


85-1907

COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAF  
 PLAN & SECTION OF DRILLHOLE DDH CAF 5  
 GEOCHEMICAL RESULTS FOR Sn,Cu,W  
 029

COMPILED	
DATE	5 / 82
DRAWN	
DATE	26 / 10 / 82
AMENDED	
SCALE	1 : 500
PLAN No.	
TAS / 2 / 2935	



639203

5 cm

83-1907 3/3

COMSTAFF PROPRIETARY LIMITED

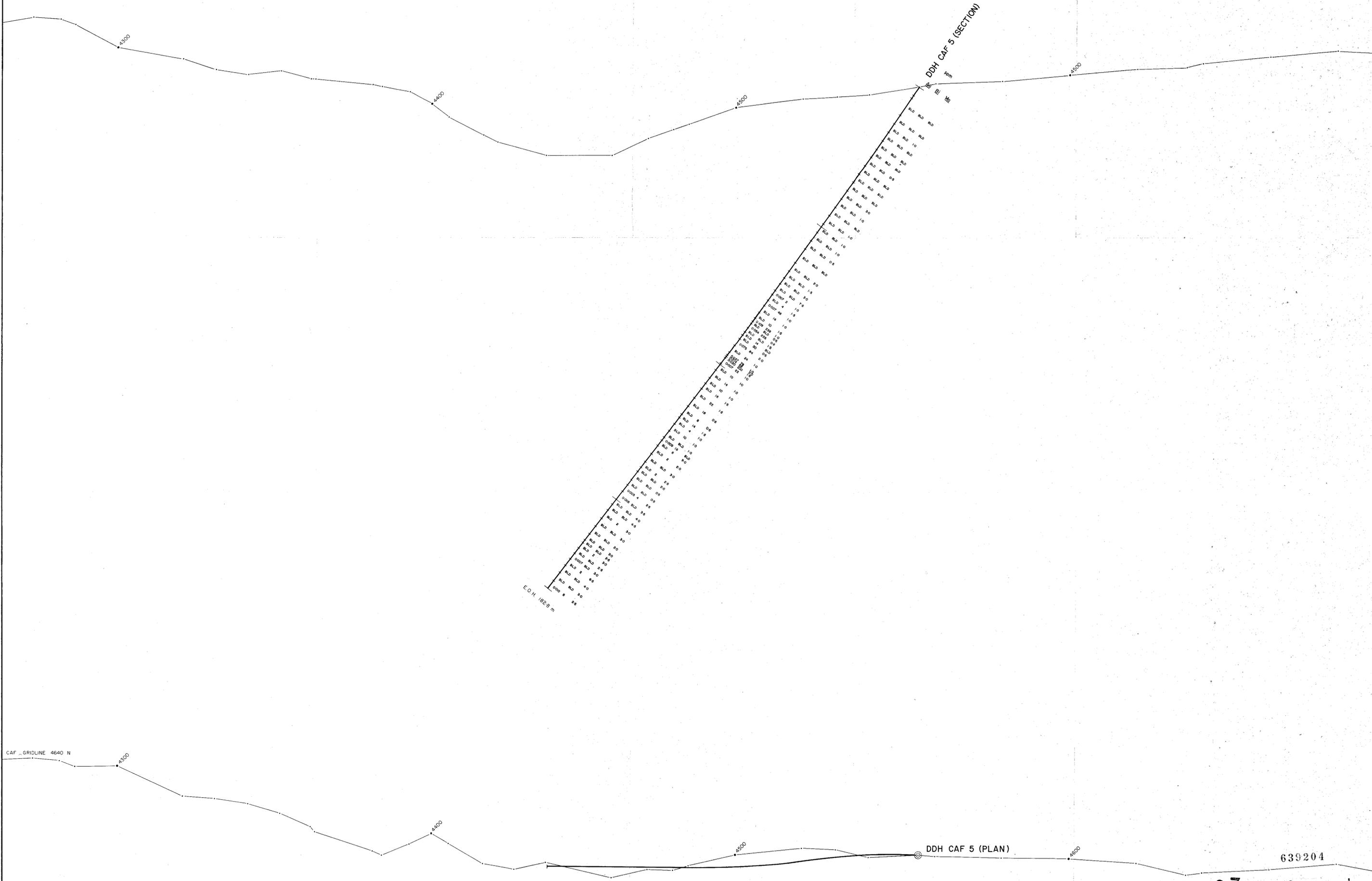
RAMSAY GRID - CAF

PLAN & SECTION OF DRILLHOLE DDH CAF 5

GEOCHEMICAL RESULTS FOR Pb, Zn, Ag

030

COMPLETED	GEO-DRAFT	
DRAWN	DATE	
GEO-DRAFT	9 / 82	
AMENDED		
SCALE	1 : 500	
PLAN No	TAS / 2 / 2936	

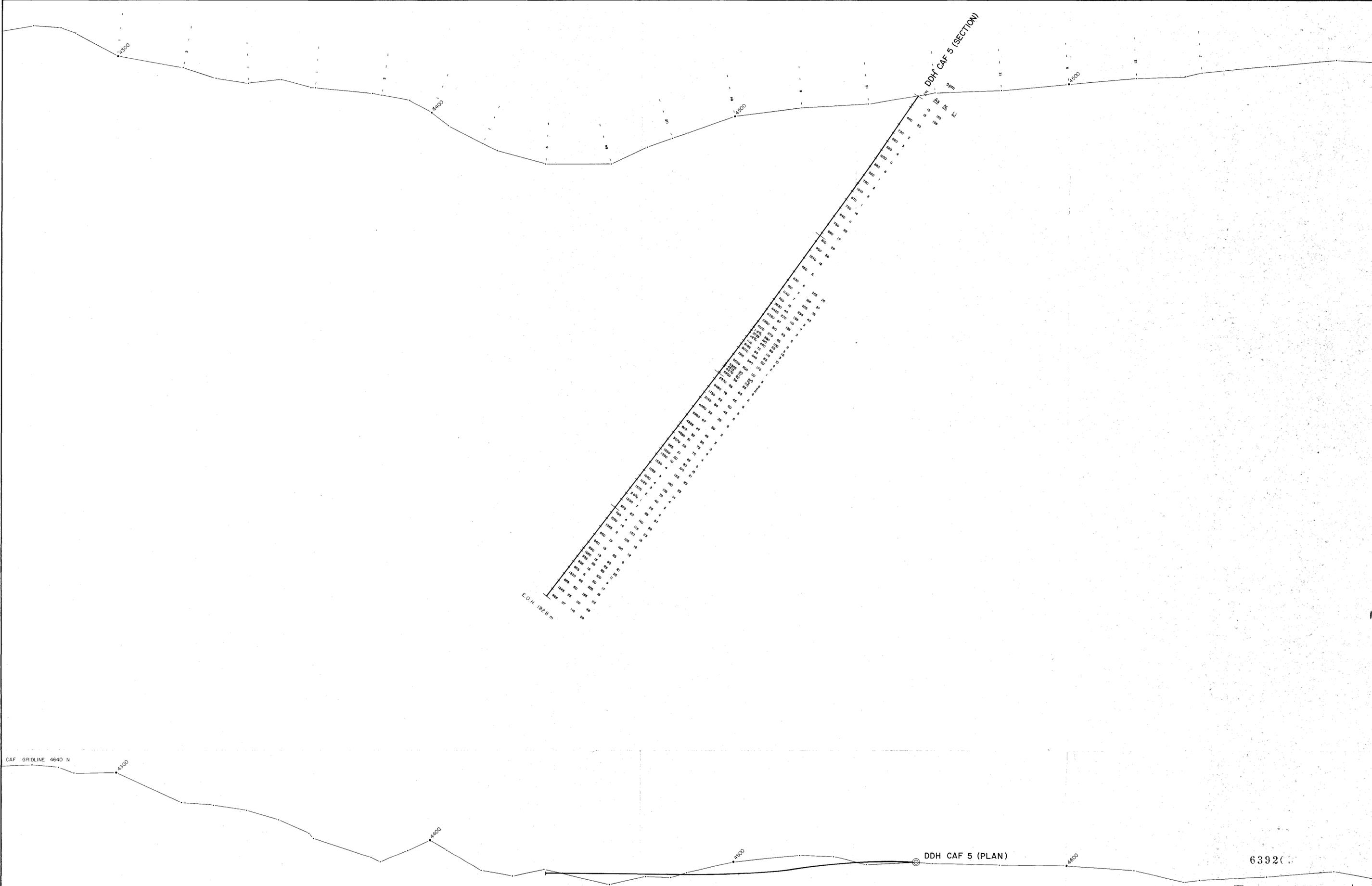


639204

83-1907 3/3

5 cm

<b>COMSTAFF PROPRIETARY LIMITED</b>	
RAMSAY GRID - CAF	
PLAN & SECTION OF DRILLHOLE DDH CAF 5	
GEOCHEMICAL RESULTS FOR Au, Bi, Mo	
031	
TAS / 2 / 2937	

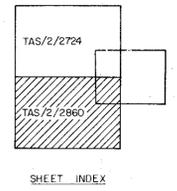
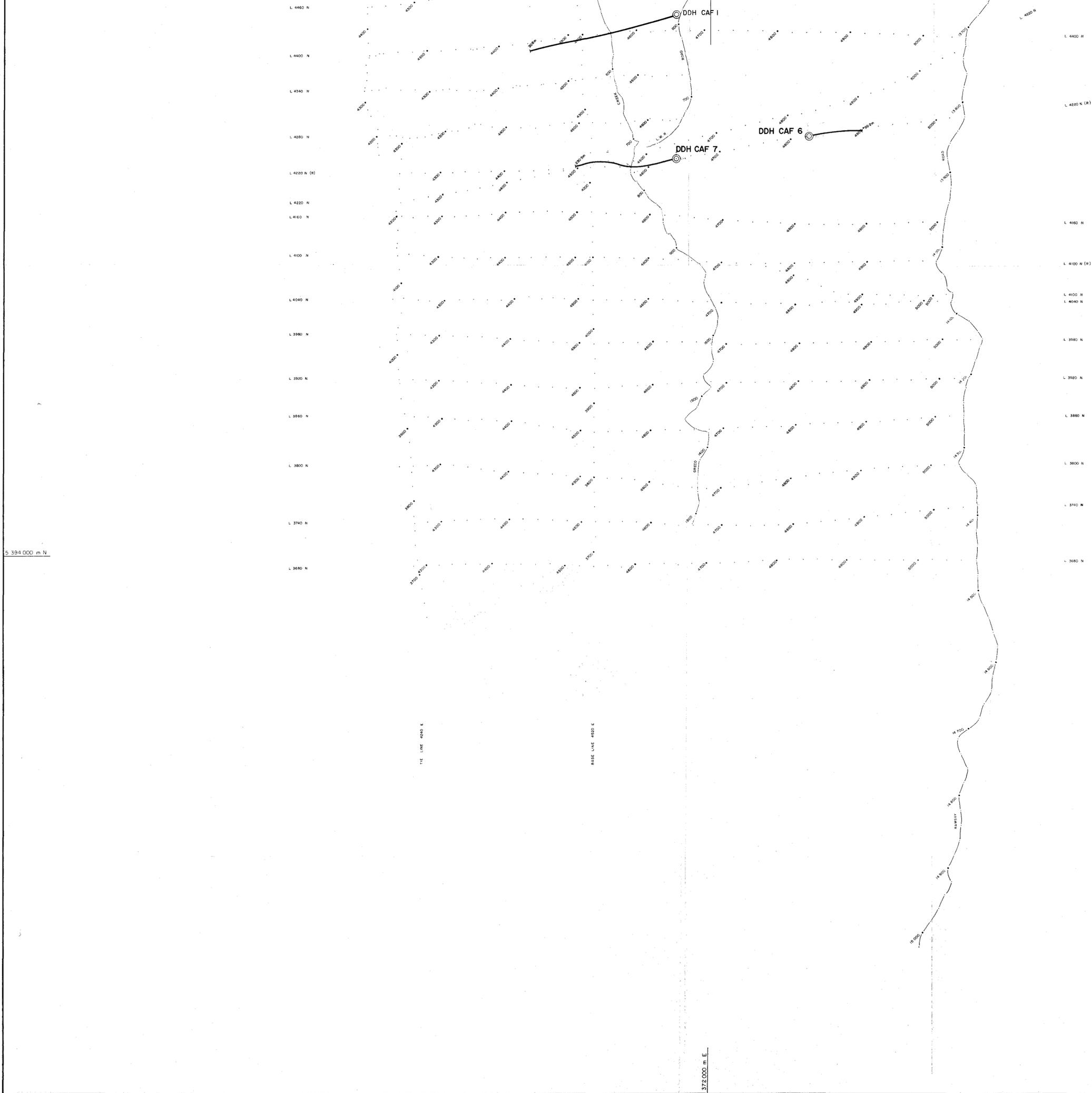


83-1907 3/3

COMSTAFF PROPRIETARY LIMITED

RAMSAY GRID - CAF  
 PLAN & SECTION OF DRILLHOLE DDH CAF 5  
 GEOCHEMICAL RESULTS FOR F,As,Ni,Li

COMPILED	GEOGRAFT
DRAWN	DATE
GEOGRAFT	5 / 82
AMENDED	
SCALE	1 : 500
PLAN NO.	TAS / 2 / 2938

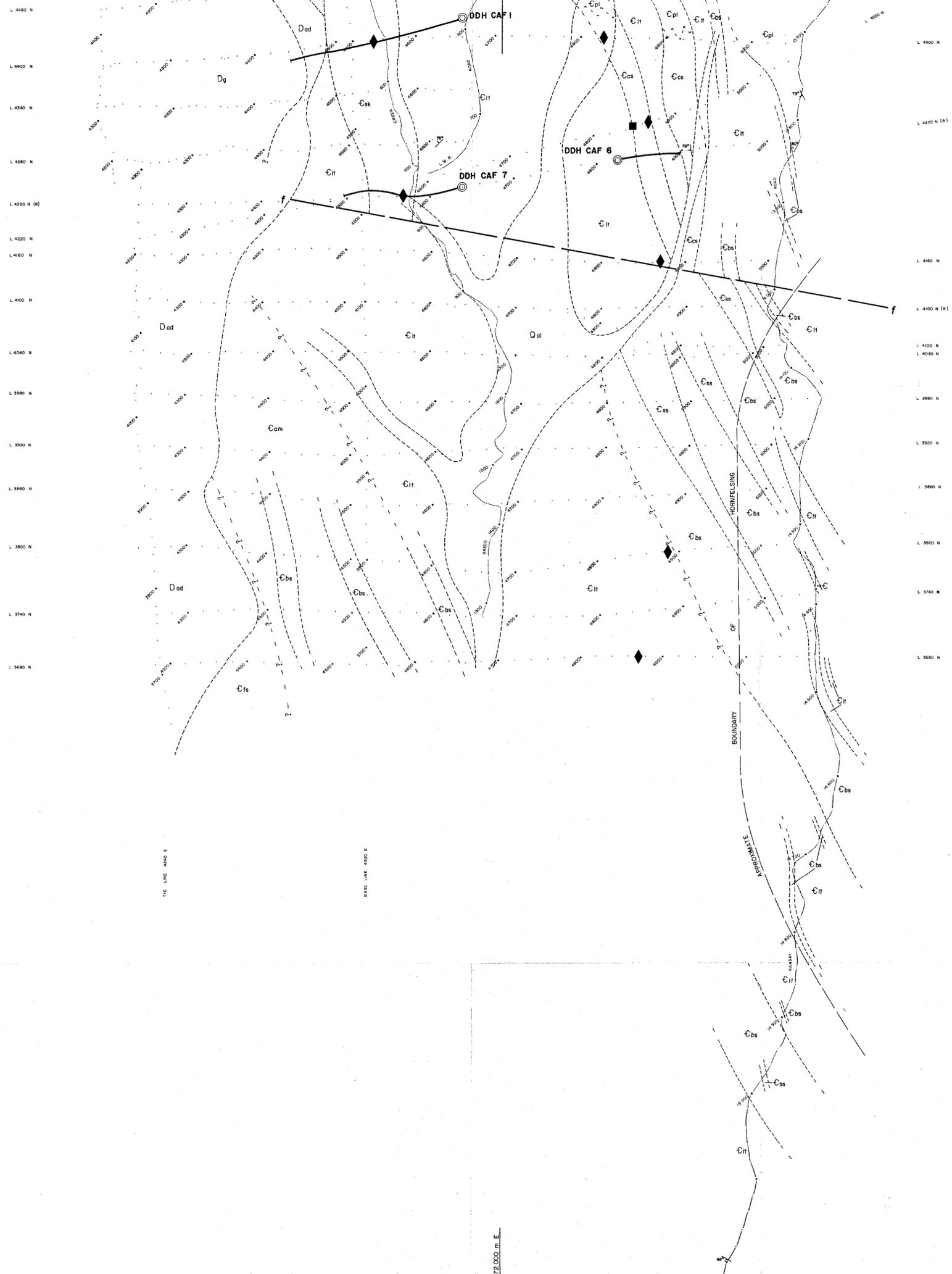


639206



83-1907

<b>COMSTAFF PROPRIETARY LIMITED</b>	
RAMSAY GRID - CAF, SOUTHERN EXTENSIONS	
DRILLHOLE LOCATION PLAN	
033	
COMPILED	GEODRAFT
DRAWN	DATE
GEODRAFT	19/3/82
AMENDED	
SCALE	1 : 2500
PLAN No	TAS/2/2860



### GEOLOGICAL LEGEND

<span style="border: 1px solid black; padding: 2px;">Qal</span>	alluvium, river gravels
<span style="border: 1px solid black; padding: 2px;">D to</span>	tourmaline-quartz mineralization
<span style="border: 1px solid black; padding: 2px;">Dad</span>	porphyritic adamellite, microgranite
<span style="border: 1px solid black; padding: 2px;">Dg</span>	biotite-quartz-feldspar granite
<span style="border: 1px solid black; padding: 2px;">Csk</span>	skarn including ferrochlorite-dioside-garnet-vesuvianite-magnetite assemblages
<span style="border: 1px solid black; padding: 2px;">Ccs</span>	calc-silicate altered sediments, including chert, calcarenite, pelite with minor skarn alteration
<span style="border: 1px solid black; padding: 2px;">Cfs</span>	metasomatised quartz-feldspathic sandstone, siltstone with minor calc-silicate altered pelite, carbonaceous shale
<span style="border: 1px solid black; padding: 2px;">Cam</span>	amphibolised volcanoclastic lithic wacke sandstone, siltstone, minor basalt
<span style="border: 1px solid black; padding: 2px;">Cpl</span>	pelitic sediments including chert, meta calcarenite, argillite
<span style="border: 1px solid black; padding: 2px;">Css</span>	siltstone, argillite
<span style="border: 1px solid black; padding: 2px;">Cst</span>	volcanoclastic lithic wacke sandstone, siltstone, argillite with minor basalt
<span style="border: 1px solid black; padding: 2px;">Cbs</span>	basalt, dolerite, microgabbro

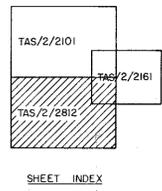
**ELECTROMAGNETIC RESPONSES**

<span style="display: inline-block; width: 10px; height: 10px; background-color: black; margin-right: 5px;"></span>	pulse electromagnetic response - strong
<span style="display: inline-block; width: 10px; height: 10px; border: 1px dashed black; margin-right: 5px;"></span>	pulse electromagnetic response - weak
<span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></span>	crone electromagnetic response - strong
<span style="display: inline-block; width: 10px; height: 10px; border: 1px dashed black; margin-right: 5px;"></span>	crone electromagnetic response - weak
<span style="display: inline-block; width: 10px; height: 10px; border: 1px dotted black; margin-right: 5px;"></span>	max-min electromagnetic response

<span style="border-bottom: 1px dashed black; width: 20px; display: inline-block; margin-right: 5px;"></span>	geological boundary
<span style="border-bottom: 1px dotted black; width: 20px; display: inline-block; margin-right: 5px;"></span>	geological boundary - inferred
<span style="border-bottom: 1px dashed black; width: 20px; display: inline-block; margin-right: 5px;"></span>	geological boundary - highly tentative
<span style="display: inline-block; width: 10px; height: 10px; border-left: 1px solid black; border-right: 1px solid black; margin-right: 5px;"></span>	strike and dip of bedding - facing known
<span style="display: inline-block; width: 10px; height: 10px; border-left: 1px solid black; border-right: 1px solid black; margin-right: 5px;"></span>	strike and dip of bedding - facing unknown
<span style="display: inline-block; width: 10px; height: 10px; border-left: 1px solid black; border-right: 1px solid black; margin-right: 5px;"></span>	strike of vertical bedding
<span style="display: inline-block; width: 10px; height: 10px; border-left: 1px solid black; border-right: 1px solid black; margin-right: 5px;"></span>	strike and dip of overturned strata - facing known
<span style="border-bottom: 1px dashed black; width: 20px; display: inline-block; margin-right: 5px;"></span>	fault - inferred
<span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; border-radius: 50%; margin-right: 5px;"></span>	diamond drillhole location showing direction drilled

5 394 000 m N



639207  
 5 cm  
**83 - 1907** <sup>3/8</sup>

<b>COMSTAFF PROPRIETARY LIMITED</b>	
RAMSAY GRID - CAF, SOUTHERN EXTENSIONS	COMPILED G.F.P.
GEOLOGICAL INTERPRETATION PLAN	DRAWN G.EODRAFT DATE 6/8/82
027	SCALE 1 : 2500
	PLAN NO TAS/2/2812



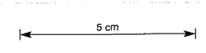
DDH CAF 6 (SECTION)

DDH CAF 6 (PLAN)

CAF GRIDLINE 4220 N (R)

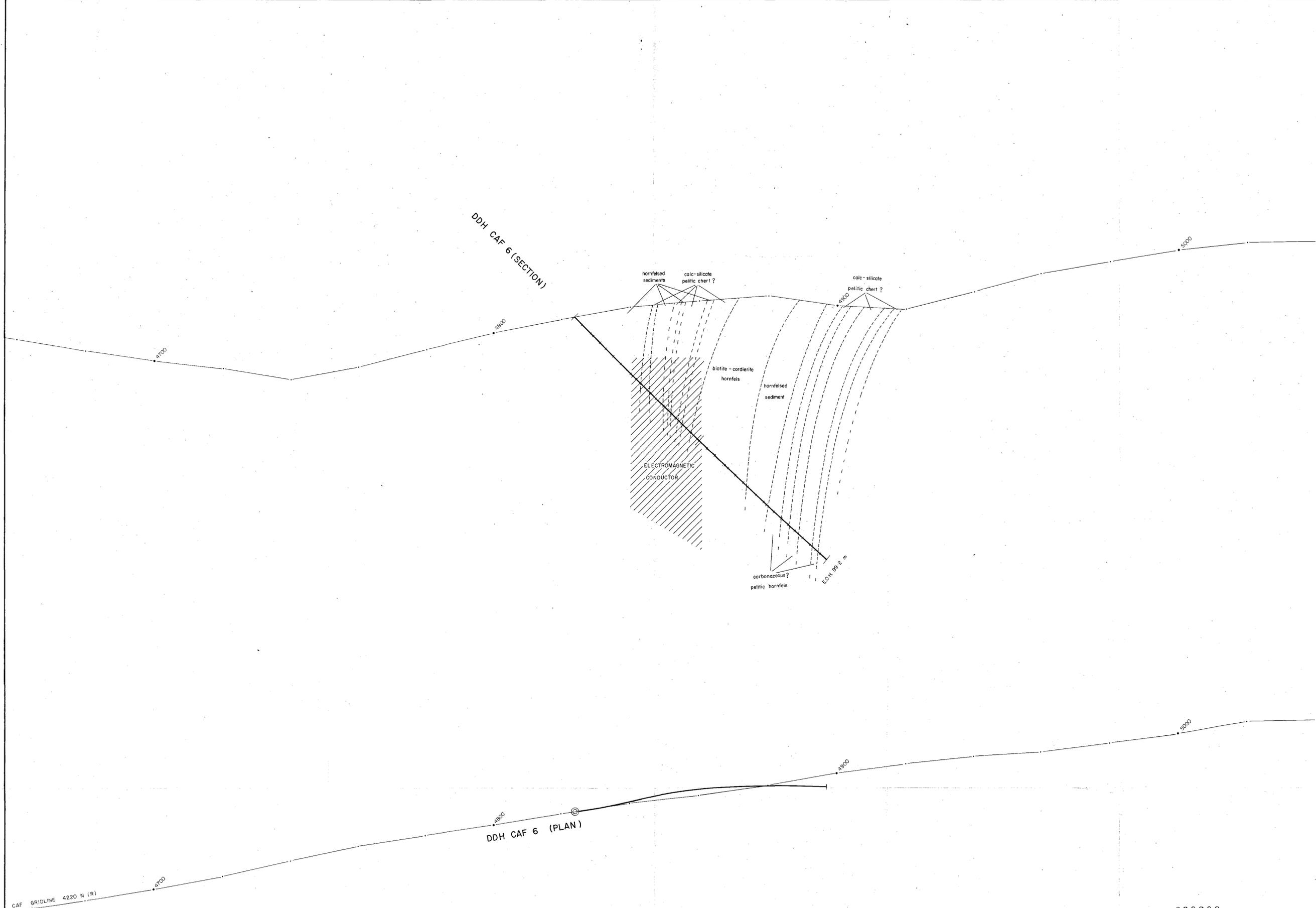
E.M.  
Conductor

639208



83-1907 1  
33

COMSTAFF PROPRIETARY LIMITED		COMPILED	N.P.G.
RAMSAY GRID - CAF		DRAWN	DATE
PLAN & SECTION OF DRILLHOLE DDH CAF 6		AMENDED	
GEOLOGICAL DETAILS 034		SCALE	1 : 500
		PLAN No.	TAS/2/2923



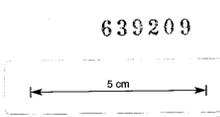
DDH CAF 6 (SECTION)

DDH CAF 6 (PLAN)

CAF GRIDLINE 4220 N (R)

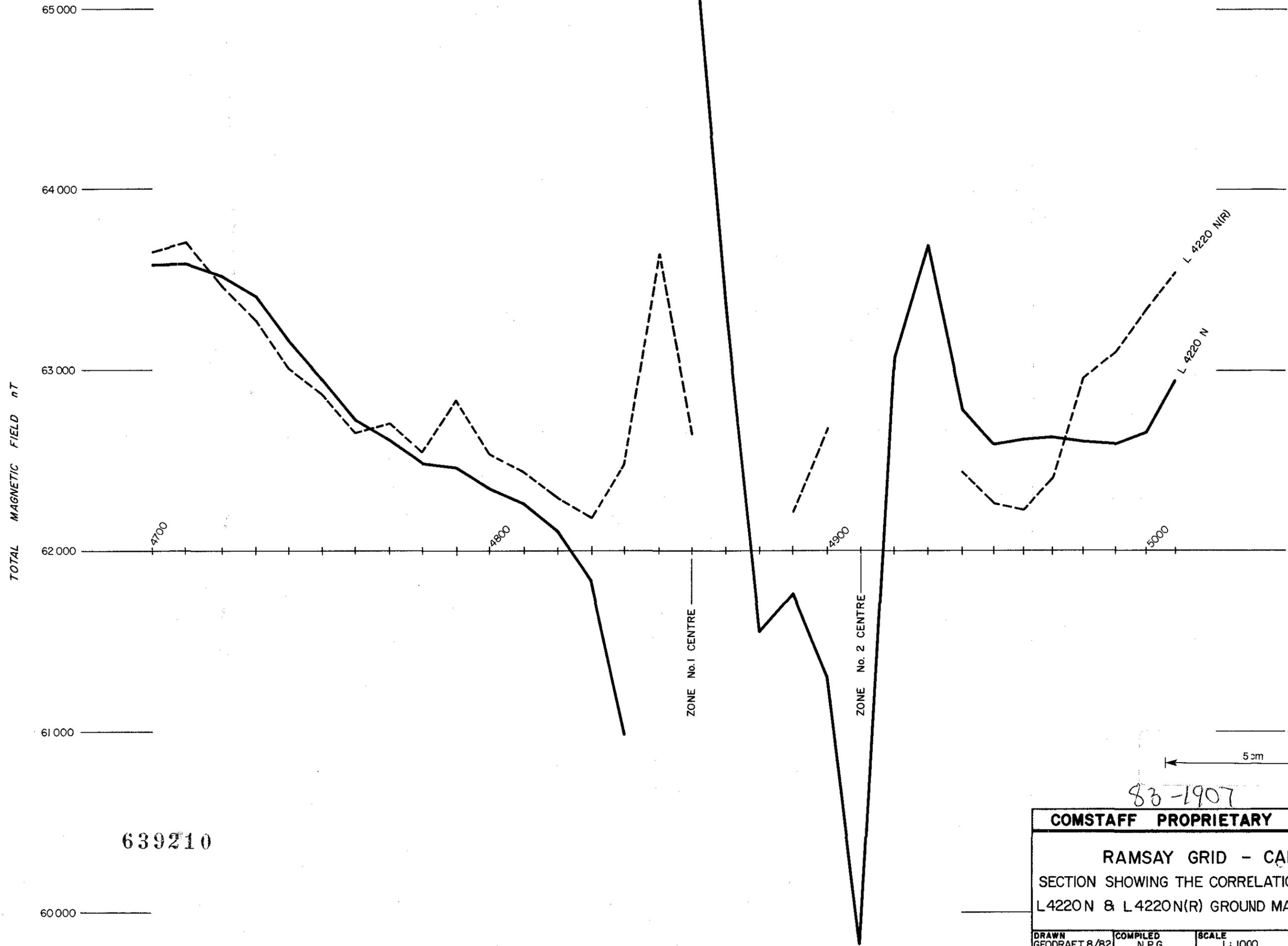
ELECTROMAGNETIC CONDUCTOR

89.2 m



83-1907-1

<b>COMSTAFF PROPRIETARY LIMITED</b>	
RAMSAY GRID - CAF PLAN & SECTION OF DRILLHOLE DDH CAF 6 GEOLOGICAL INTERPRETATION	
COMPILED N. P. G.	DATE 7/82
DRAWN GEO DRAFT	AMENDED
SCALE 1 : 500	PLAN NO. TAS/2/2983

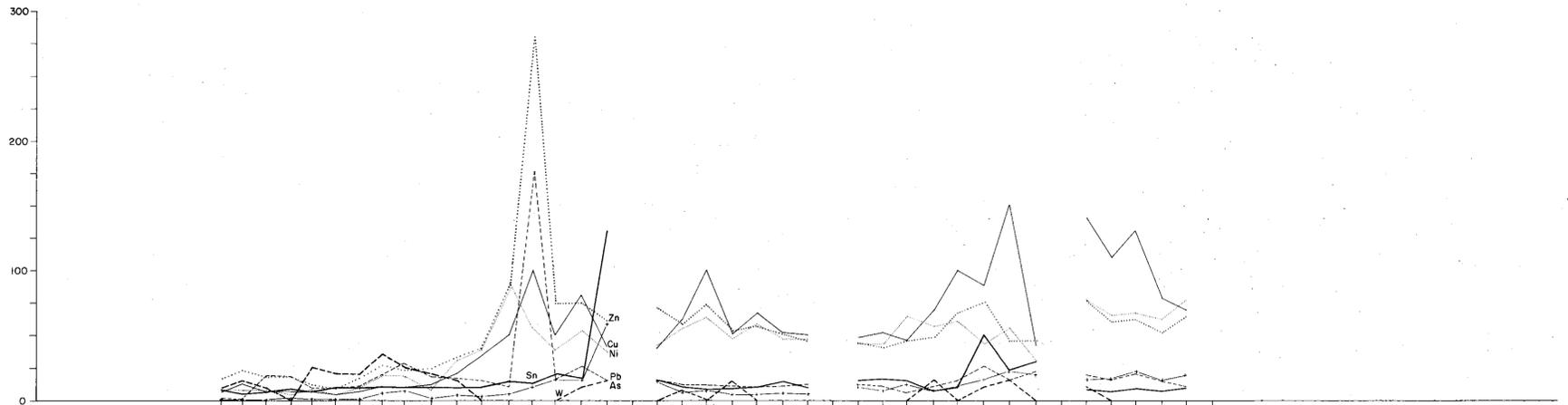


639210

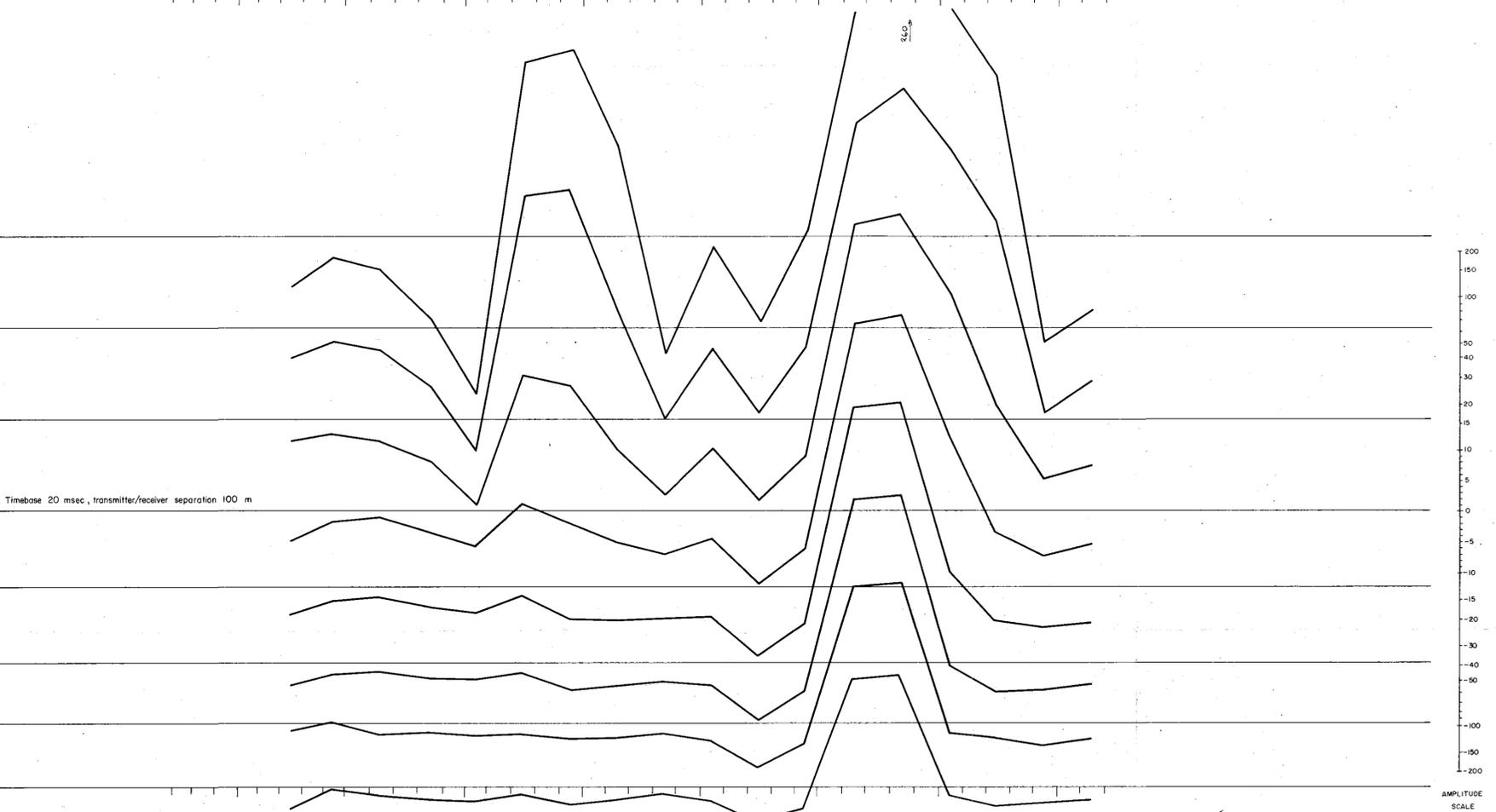
83-1907

<b>COMSTAFF PROPRIETARY LIMITED</b>			
RAMSAY GRID - CAF 036			
SECTION SHOWING THE CORRELATION BETWEEN			
L4220 N & L4220N(R) GROUND MAGNETICS			
DRAWN GEODRAFT 8/82	COMPILED N.P.G.	SCALE 1 : 1000	TAS/2/2968

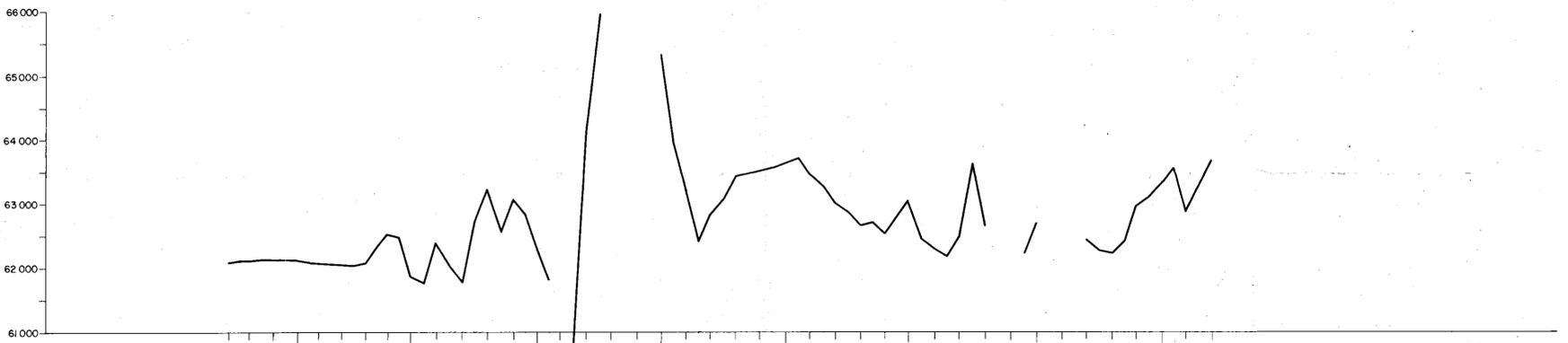
GEOCHEMISTRY  
ppm



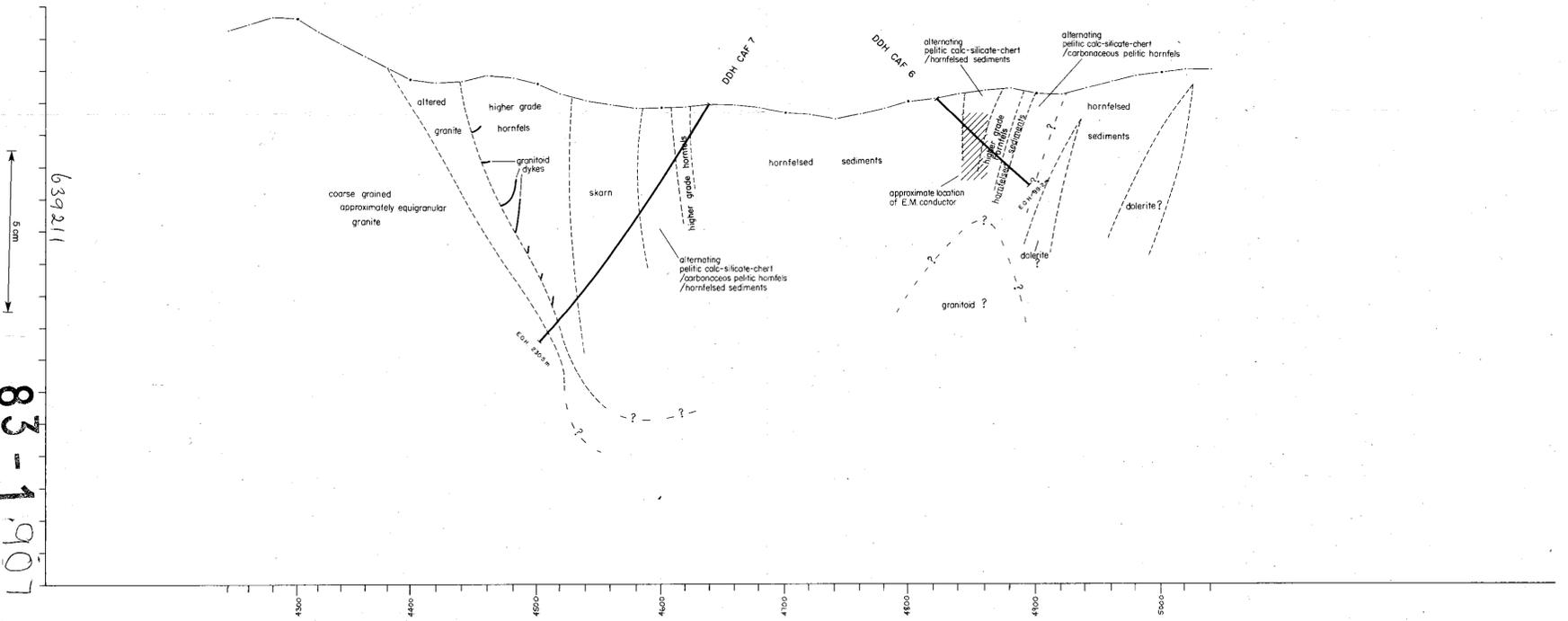
PULSE ELECTRO-MAGNETICS



GROUND MAGNETICS  
nT



TOPOGRAPHY & GEOLOGY



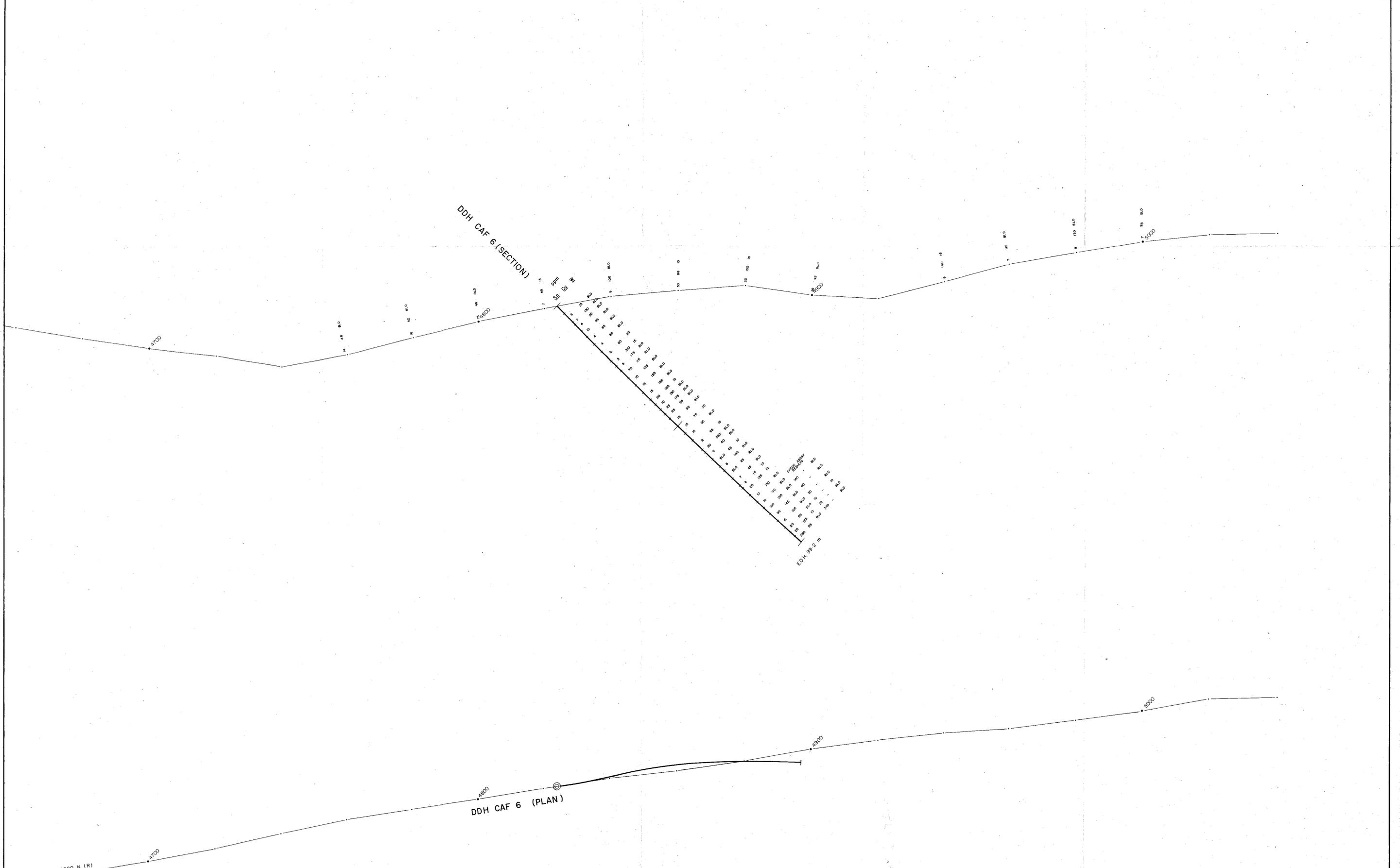
COMSTAFF PROPRIETARY LIMITED  
RAMSAY GRID - CAF  
COMPOSITE SECTION OF LINE 4220 N  
TOPO, MAG, PEM, GEOCHEM, GEOLOGY  
DATE 5/3/82  
DRAWN BY G.F.P.  
G.E.P.  
SCALE 25/8/82  
PLAN NO. 1:2500  
TAS/2/2822



639212

83-1907 31

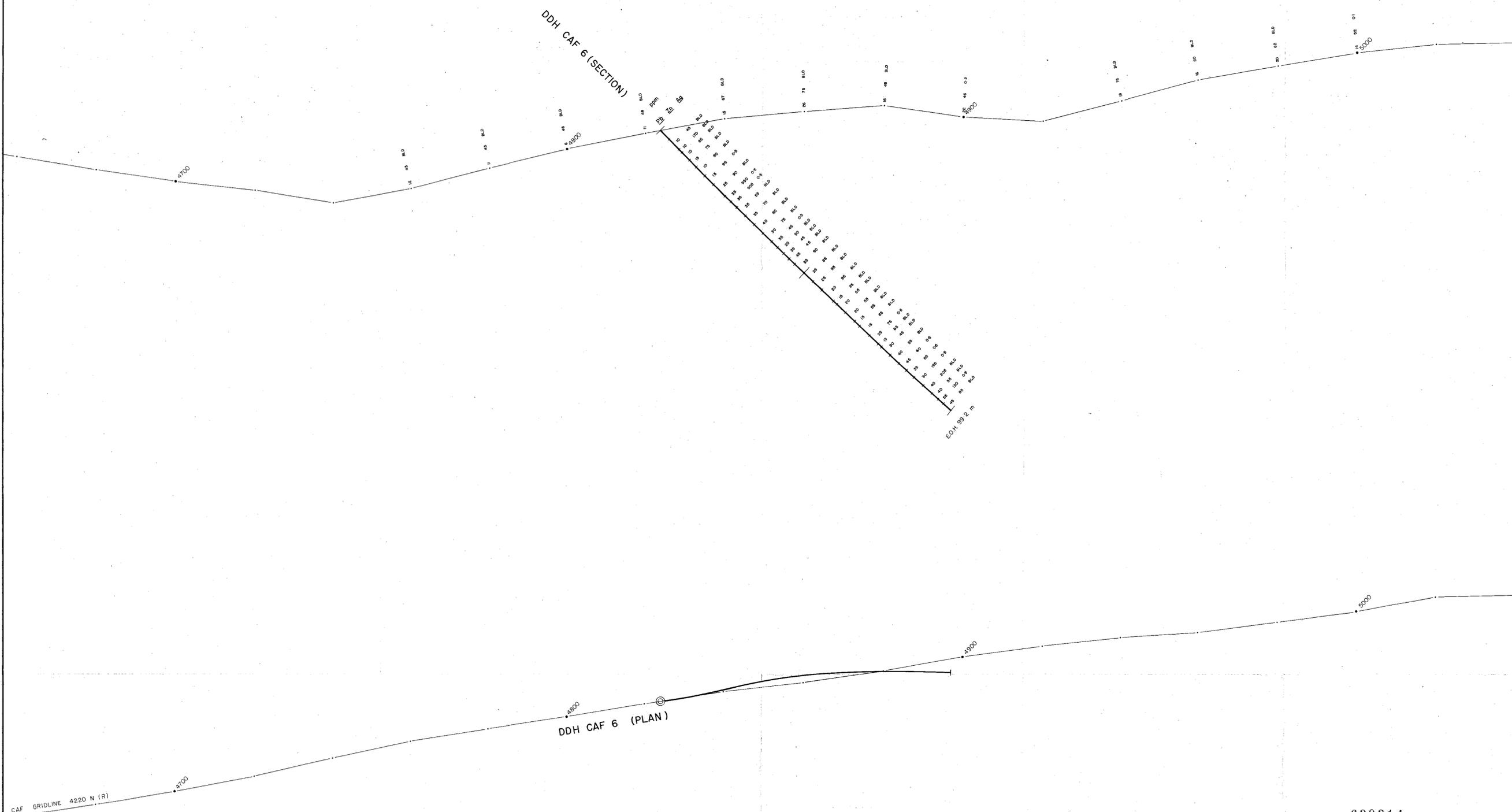
<b>COMSTAFF PROPRIETARY LIMITED</b>	
RAMSAY GRID - CAF	COMPILED A.H.
PLAN & SECTION OF DRILLHOLE DDH CAF 6	DRAWN GEODRAFT DATE 7/82
MAGNETIC SUSCEPTIBILITY PROFILE	AMENDED
038	SCALE 1 : 500
	PLAN No. TAS/2/2978



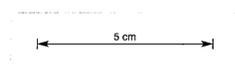
689213

83-1907, 1

COMSTAFF PROPRIETARY LIMITED	
RAMSAY GRID - CAF	
PLAN & SECTION OF DRILLHOLE DDH CAF 6	
GEOCHEMICAL RESULTS FOR Sn,Cu,W	
039	
COMPILED	GEOGRAFT
DRAWN	DATE
GEOGRAFT	5/82
AMENDED	
SCALE	1 : 500
PLAN No.	TAS / 2 / 2939



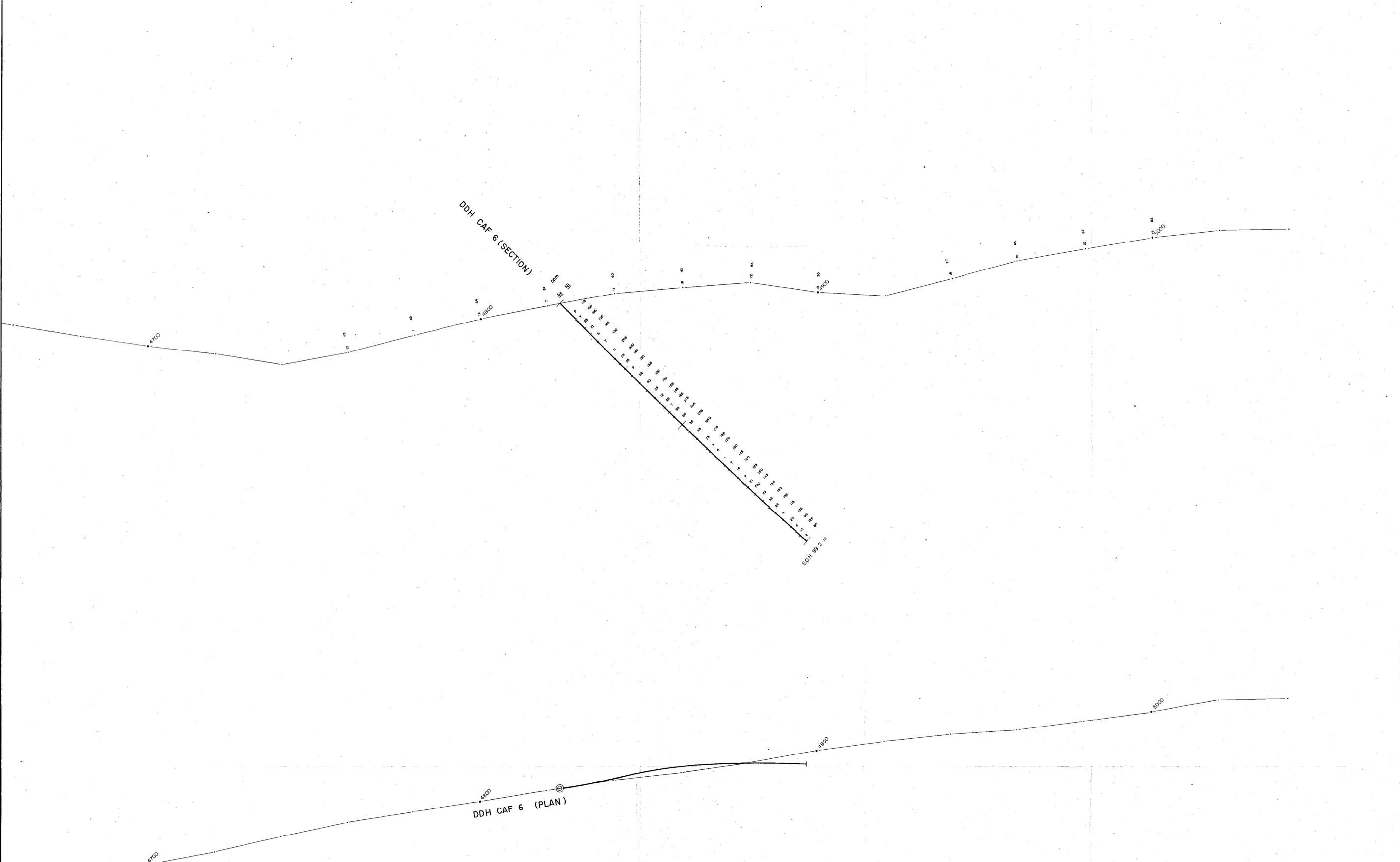
639214



83-1907-1

<b>COMSTAFF PROPRIETARY LIMITED</b>	
RAMSAY GRID - CAF	
PLAN & SECTION OF DRILLHOLE DDH CAF 6	
GEOCHEMICAL RESULTS FOR Pb, Zn, Ag.	
040	
COMPLETED	GEOGRAFT
DRAWN	DATE
GEOGRAFT	5/82
AMENDED	
SCALE	1 : 500
PLAN NO.	TAS/2/2940





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33

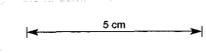
<b>COMSTAFF PROPRIETARY LIMITED</b>	
RAMSAY GRID - CAF	
PLAN & SECTION OF DRILLHOLE DDH CAF 6	
GEOCHEMICAL RESULTS FOR As, Ni	
COMPILED	GEO DRAFT
DRAWN	DATE
GEO DRAFT	5/82
AMENDED	
SCALE	1 : 500
PLAN NO.	TAS / 2 / 2942



DDH CAF 7 (SECTION)

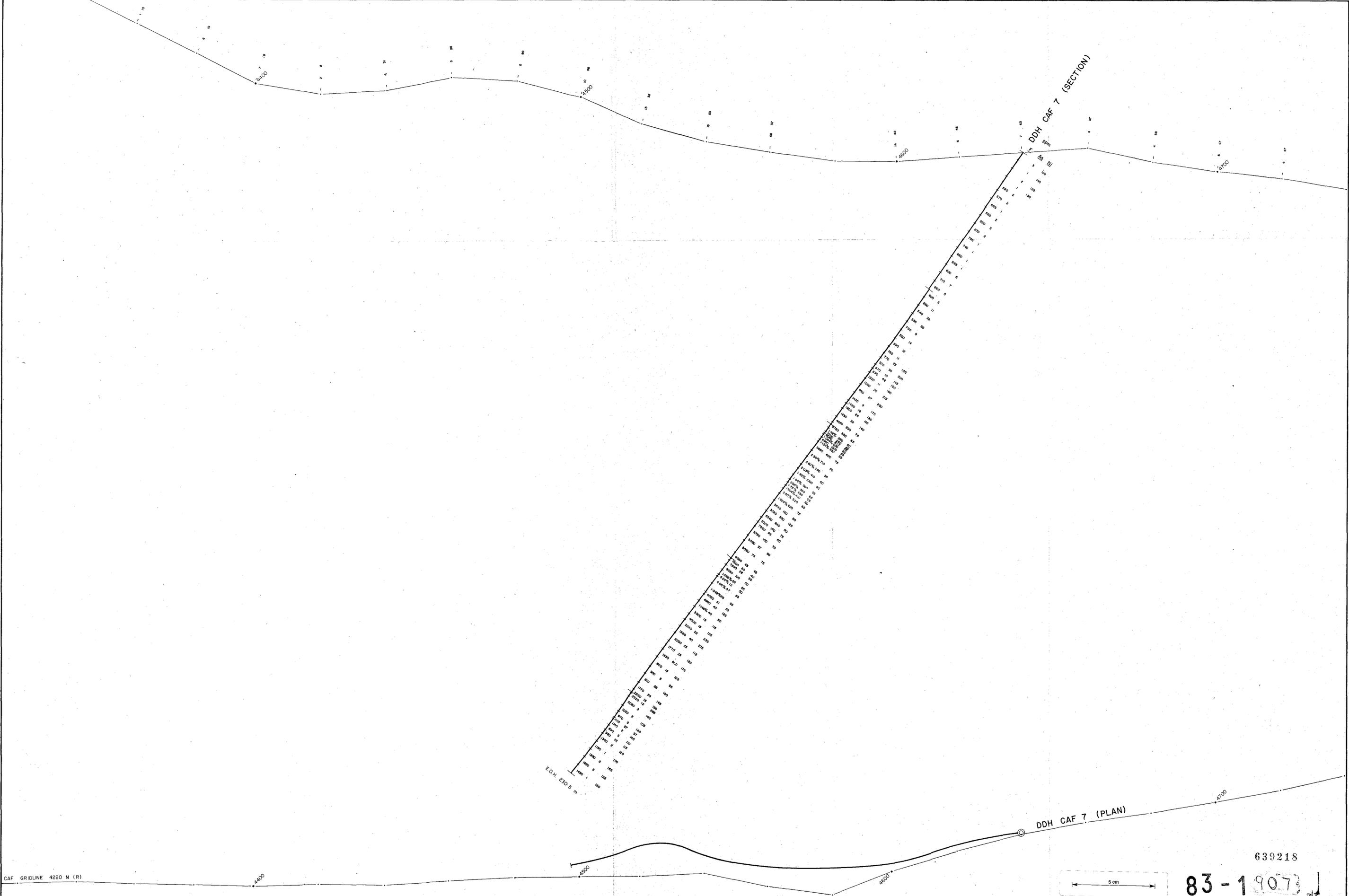
DDH CAF 7 (PLAN)

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83-1907

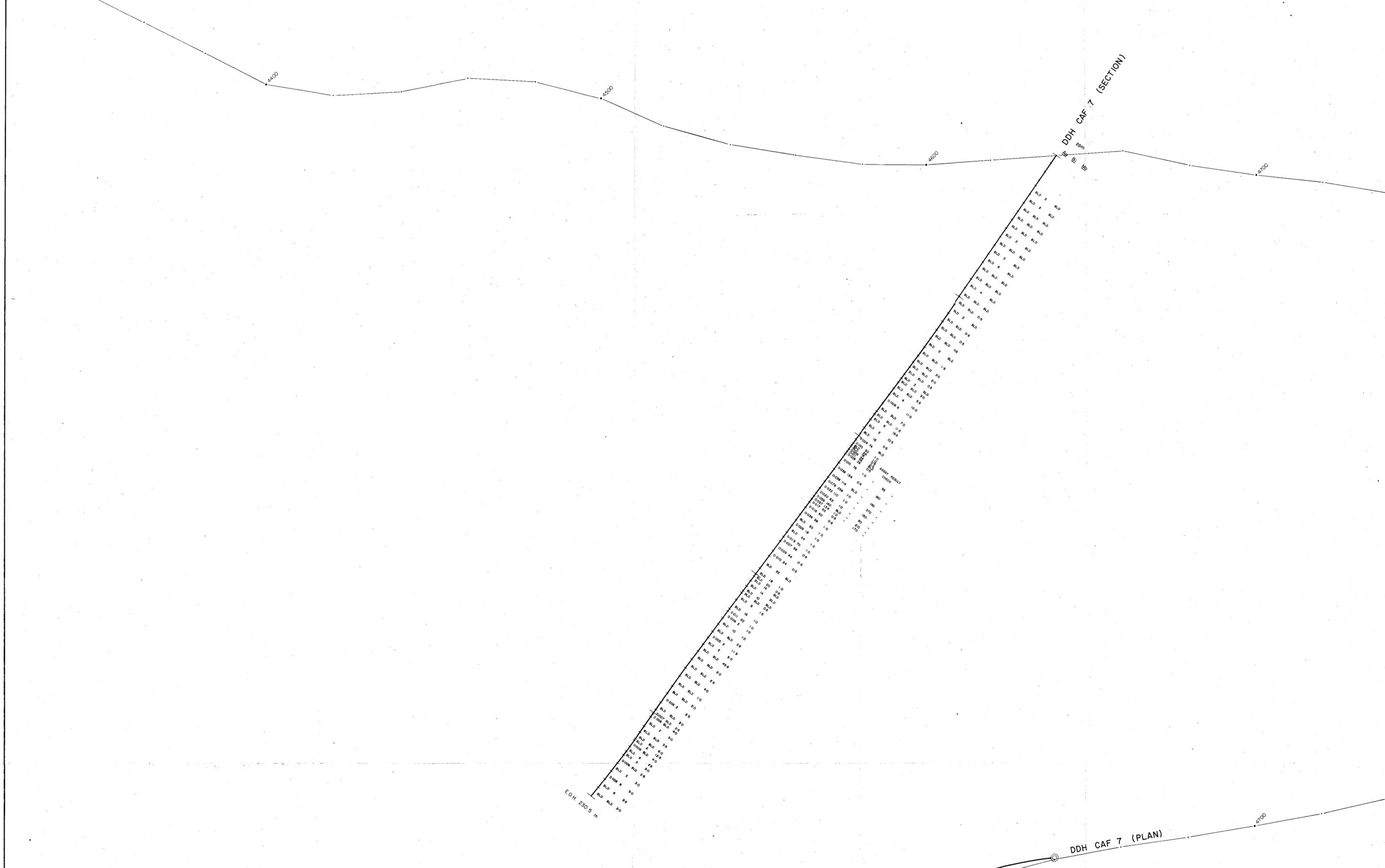
<b>COMSTAFF PROPRIETARY LIMITED</b>	
RAMSAY GRID - CAF	
PLAN & SECTION OF DRILLHOLE DDH CAF 7	
GEOLOGICAL DETAILS 043	
COMPILED N. P. G.	DATE
DRAWN N. P. G.	DATE
AMENDED	
SCALE 1 : 500	
PLAN No. TAS/2/2924	



639218

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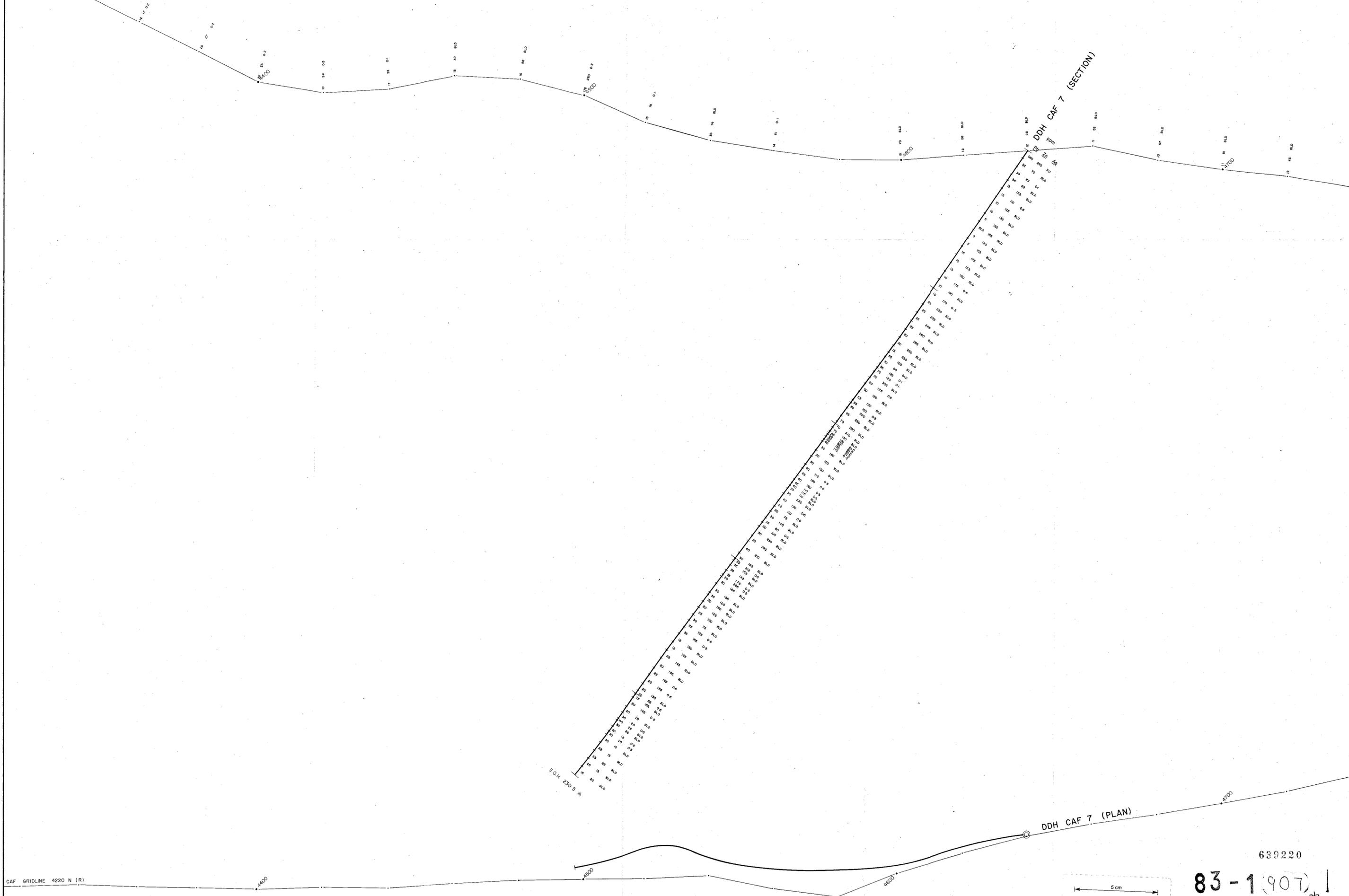
<b>COMSTAFF PROPRIETARY LIMITED</b>	
RAMSAY GRID - CAF	
PLAN & SECTION OF DRILLHOLE DDH CAF 7	
GEOCHEMICAL RESULTS FOR F,As,Ni.	
049	
COMPILED	GEOCRAFT
DRAWN	DATE
GEOCRAFT	5/82
AMENDED	
SCALE	1 : 500
PLAN No.	TAS / 2 / 2946



CAF GRIDLINE 4220 N (R) 4300 4400 4500 4600

639219  
 83-1907 3/3  
 5 cm

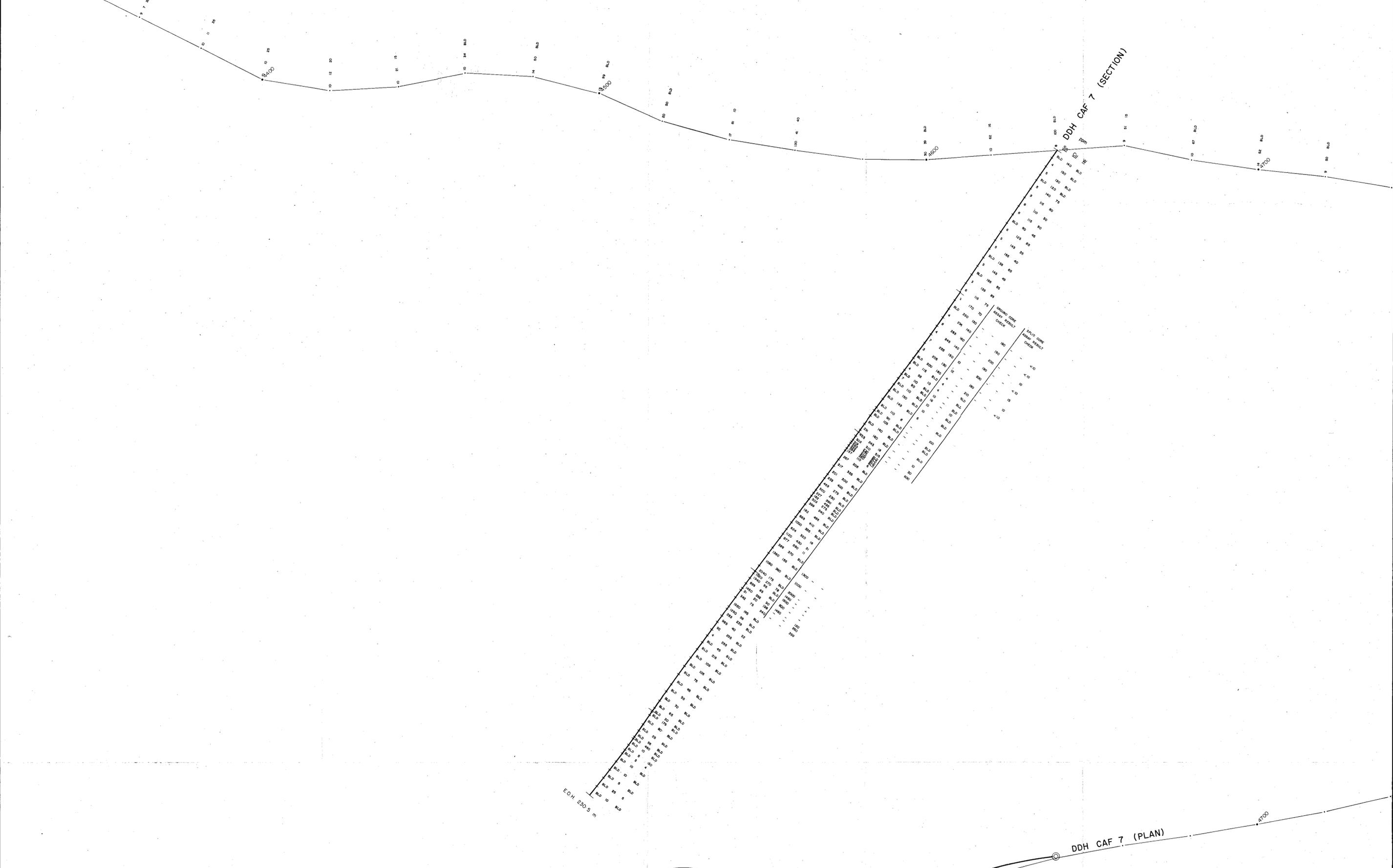
COMSTAFF PROPRIETARY LIMITED	
RAMSAY GRID - CAF	
PLAN & SECTION OF DRILLHOLE DDH CAF 7	
GEOCHEMICAL RESULTS FOR Au, Bi, Mo	
048	
COMPILED	GEODRAFT
DRAWN	DATE
GEODRAFT	5/82
AMENDED	
SCALE	1 : 500
PLAN No	TAS/2/2945



5 cm

639220  
**83-1907**  
 3/3

COMSTAFF PROPRIETARY LIMITED	
RAMSAY GRID - CAF	
PLAN & SECTION OF DRILLHOLE DDH CAF 7	
GEOCHEMICAL RESULTS FOR Pb, Zn, Ag.	
047	
COMPILED	GEODRAFT
DRAWN	DATE
GEODRAFT	5/82
AMENDED	
SCALE	1 : 500
PLAN NO.	TAS / 2/2944



CAF GRIDLINE 4220 N (R)

E.O.H. 230.5 m

DDH CAF 7 (PLAN)



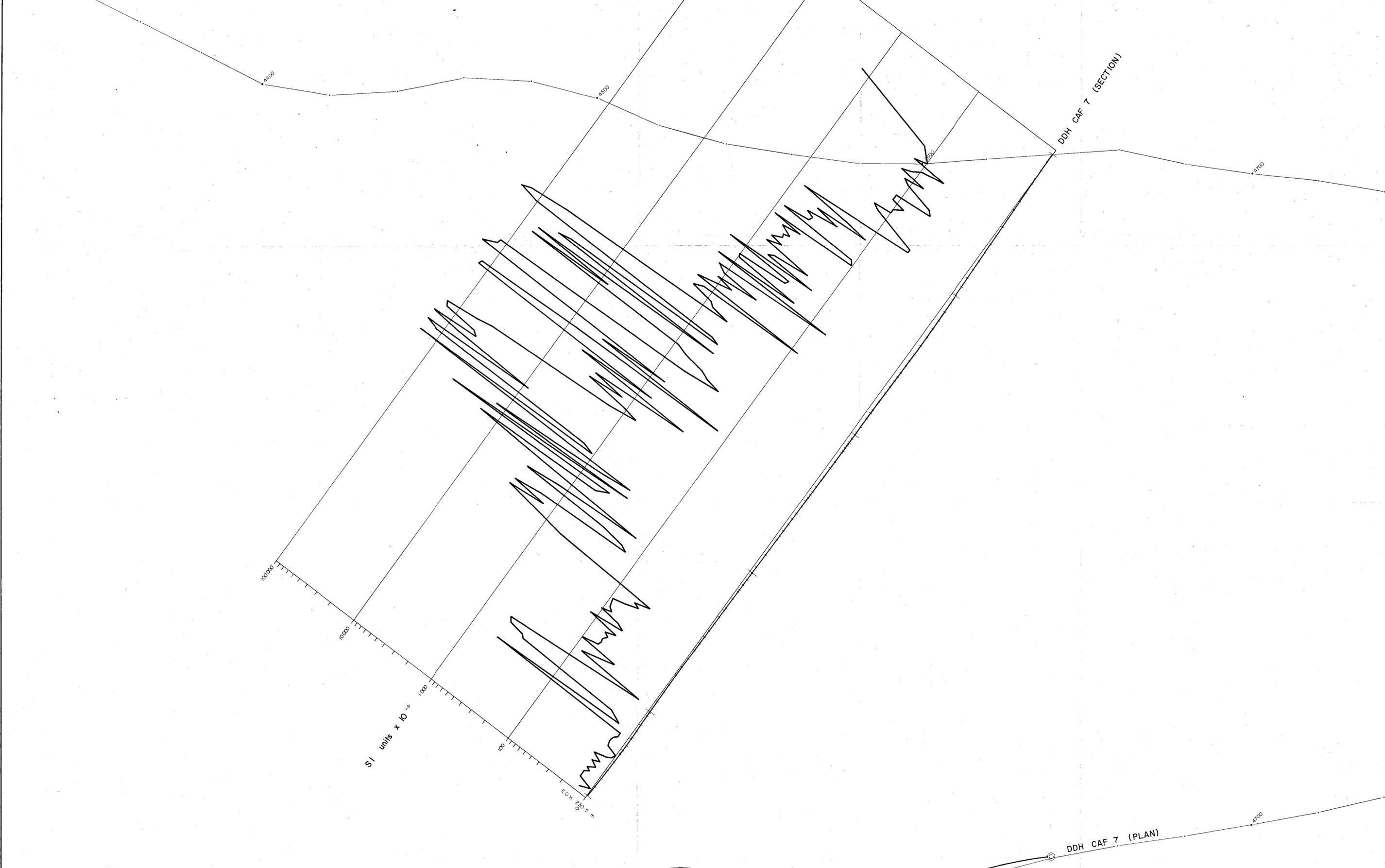
639221

83-1907

**COMSTAFF PROPRIETARY LIMITED**

RAMSAY GRID - CAF  
 PLAN & SECTION OF DRILLHOLE DDH CAF 7  
 GEOCHEMICAL RESULTS FOR Sn,Cu,W  
 046

COMPILED	GEODRAFT
DRAWN	DATE
GEODRAFT	5/82
AMENDED	25/10/82
SCALE	1:500
PLAN NO.	TAS/2/2943

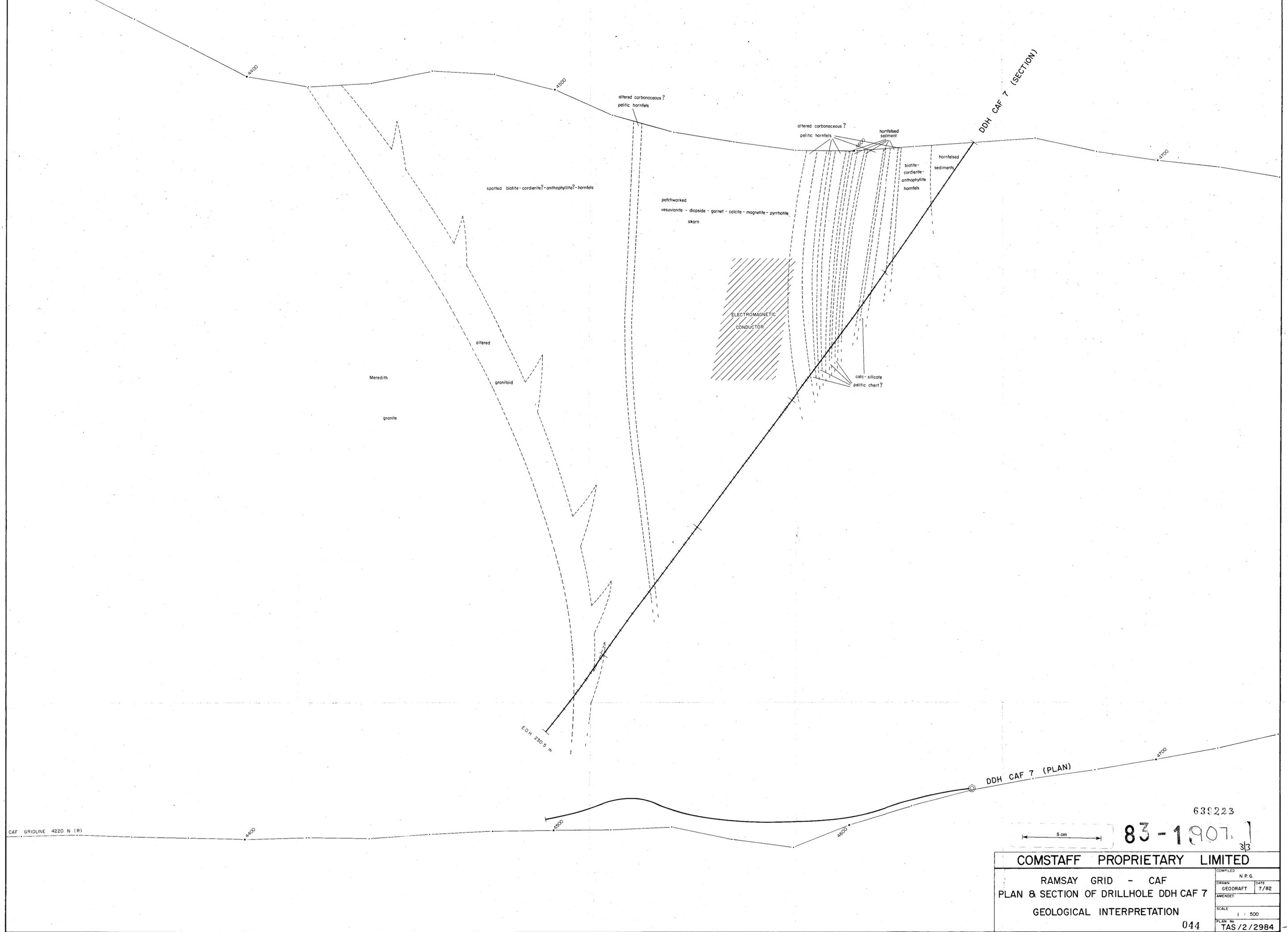


CAF GRIDLINE 4220 N (R)

DDH CAF 7 (PLAN)

639222  
 83-1907-1  
 33

<b>COMSTAFF PROPRIETARY LIMITED</b>	
RAMSAY GRID - CAF	
PLAN & SECTION OF DRILLHOLE DDH CAF 7	
MAGNETIC SUSCEPTIBILITY PROFILE	
COMPILED	A. H.
DRAWN	DATE
GEO DRAFT	7/82
AMENDED	
SCALE	1 : 500
PLAN NO.	TAS/2/2979
045	



CAF GRIDLINE 4220 N (R)

DDH CAF 7 (SECTION)

DDH CAF 7 (PLAN)

EOH 230.5 m



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**83-1907**  
 3/3

<b>COMSTAFF PROPRIETARY LIMITED</b>													
RAMSAY GRID - CAF													
PLAN & SECTION OF DRILLHOLE DDH CAF 7													
GEOLOGICAL INTERPRETATION													
044	<table border="1"> <tr> <td>COMPILED</td> <td>N. P. G.</td> </tr> <tr> <td>DRAWN</td> <td>DATE</td> </tr> <tr> <td>GEO DRAFT</td> <td>7/82</td> </tr> <tr> <td>AMENDED</td> <td></td> </tr> <tr> <td>SCALE</td> <td>1 : 500</td> </tr> <tr> <td>PLAN NO.</td> <td>TAS/2/2984</td> </tr> </table>	COMPILED	N. P. G.	DRAWN	DATE	GEO DRAFT	7/82	AMENDED		SCALE	1 : 500	PLAN NO.	TAS/2/2984
COMPILED	N. P. G.												
DRAWN	DATE												
GEO DRAFT	7/82												
AMENDED													
SCALE	1 : 500												
PLAN NO.	TAS/2/2984												