GEOPHOTO MINERALS REPORT 1971/44

E.L.6/68 - NORTH EAST TASMANIA

PRELIMINARY DIAMOND DRILLING
UPPER SCAMANDER ANOMALY

PREPARED BY

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FOR

TEXINS DEVELOPMENT PTY. LIMITED

I.R. MORTIMORE
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INTRODUCTION

The Upper Scamander Anomaly lies approximately 16 miles to the S.W. of St. Helens being reached by a Forestry Commission road to within one mile and by track over the final short distance.

Its position was initially established during the regional stream geochemical programme conducted over the whole exploration licence.

Its limits were later delineated during rock and soil geochemical work over gridded areas.

A preliminary I.P. survey carried out late in 1969 revealed weak but distinct anomalies coinciding with the geochemically anomalous areas.

Subsequent to limited geological work being completed to eliminate the possibility of lithological sources being responsible for the copper values, it was proposed that an exploratory drill hole be drilled to test the area of peak geochemical values and I.P. response.

The relevant details of the above work are included in Geophoto Minerals Reports 1970/1, 1970/1A and 1970/1B.

Upper Scamander D.D.H.1 was drilled in mid-1970 attaining a depth of 90 feet before a number of problems resulted in the abandonment of this hole.

A second hole was drilled during April/May, 1971 from the previous site on a similar bearing and depression.

UPPER SCAMANDER D.D.H. 2

Co-ordinates of Collar: 106 feet from 3,400 ft. N.E. (I.P. Line 2) on bearing 355°.

Bearing: 069° Depression: 60°

Projected depth: 700 feet.

The bearing and depression of this hole were dictated by the only structural control (geological) apparent during mapping, i.e. bedding striking between 330° and 340° and dipping steeply westwards.

A complete core log is included in the report covering the drill records.

In brief, the hole encountered grey quartzites to a depth of 75 feet below which siltstones, mudstones and shales were seen to alternate to 380 feet. Quartzites were then dominant to 415 feet succeeded by mudstones, approaching shale in character, which continued to 466 feet with occasional siltstone beds. Quartzites were again encountered between 466 feet and 501 feet, with shales reappearing below this depth.

The hole was terminated at 684 feet.

The shales generally show a finely laminated structure parallel to the bedding although sections of featureless mudstone are common. The shales are often spotted due to partial recrystallisation. Over the lower 50 feet the shales appear micaceous but no clear indications of a contact zone being close were apparent. It was anticipated granites would be encountered before the 700 feet depth was reached, since the drill site was located approximately 400 feet above the granite/metasediment contact as seen 3,000 feet to the west.

The quartzites are clean, only occasionally appearing micaceous or chloritic. No sedimentary characteristics are retained.

The rocks encountered over the total depth were generally well jointed, often with evidence of limited movement apparent with grooving of joint planes. Movement is further evident in the brecciated nature of the shales and/or quartzites at certain horizons.

These brecciated sections are characterised by numerous quartz and/or chlorite veinlets and vugs. These are randomly oriented with no apparent control. Similar veins and vugs are common throughout the core at various depths, associated with quartzites and silicified sections within the shales and siltstones. Occasionally, particularly with the quartzites and less so with the shales, the silica appears to have been "sweated" out of the rock.

The mineralisation is limited with no significant intersections encountered. Minor pyrite, with trace or minor amounts of chalcopyrite, is associated with many joint planes over the total 684 feet. Chloritic and quartz veins and vugs often carry similar mineralisation. Isolated veinlets of chalcopyrite and galena are apparent in the predominantly quartzite sections between 380 feet and 405 feet, and 458 feet and 501 feet. Cleavage planes within the shales occasionally carry chalcopyrite.

A total of 258'3" of core and 17 sludge samples were anlaysed for Cu, Pb, Zn and Ag with certain horizons randomly selected for analysis for Cd.

Geochemical results substantiated observations during the core logging with only weak values being recorded.

Peak values, over five feet intervals, were 520 p.p.m. Cu, 300 p.p.m. Pb and 1,150 p.p.m. Zn, these being recovered from the quartzite sections between 380 feet and 405 feet, and 458 feet and 501 feet.

CONCLUSIONS

Upper Scamander D.D.H. 2 failed to encounter any intersections which could be inferred as being significant.

Sulphide mineralisation in trace or minor amounts was present. This may account for the weak I.P. response registered during the geophysical survey although the extent of this mineralisation, in its minor amounts, is continuous virtually throughout the core rather than confined to the lower 400 feet to 500 feet as indicated in the I.P. work.

Indications are that if economic ore-bodies do exist in this prospect area, they will be siliceous lodes occurring in fissures, shears or joints.

The drill hole results cannot be said to prove or disprove any previously held views on the potential of this prospect. They have certainly downgraded it to a certain degree but they cannot be regarded as conclusive.

The earlier geological work carried out prior to the 1970 drilling was limited in its scope, mainly designed to eliminate the existence of geological features which may constitute lithological sources of the copper concentrations. None were established but at the same time no structural controls or secondary products indicative of mineralisation were encountered. The selection of the drill hole site, bearing and depression were based on the one structural feature which was apparent, i.e. bedding.

The hole was sited to best test the anomaly on the data (geological, geochemical and geophysical) then on hand. This must be considered to have been inadequate on all three accounts and consequently the drilling programme premature.

Based on a review of the current data, more ground work must be done to supplement these results before any selection of further drill targets is considered.

It has been suggested that the background copper values within this area of Mathinna Beds, enclosed on three sides by Devonian granites, may be greater than the 15 p.p.m. Cu which was established during the earlier geochemical stream sediment programme. If this were the case, then the zone of anomalous values, while still apparent, would not represent such a significant target for further exploratory work.

Should this background value be higher than normally found associated with the Mathinna Beds, the causes for this phenomenon must be sought in the close proximity of the granitic rocks. A single soil sample (A33) recovered from the granites to the north-east yielded a moderately high copper value (165 p.p.m.) suggesting these granites may carry a high copper content. If this content was mobilised during the intrusion, it may have passed from the igneous mass into the overlying sdeiments. This would result in these sediments carrying an increased copper background value and the granite contact zone possibly showing a depletion in its copper content.

This theory could be tested by a soil and rock geochemical programme conducted across the contact zones of the Mathinna Beds, the Devonian 'tin' granites and the Devonian adamellites. Samples taken at closely spaced intervals perpendicular to the contact would, if the above hypothesis is valid, show an increase in copper values within the Mathinna Beds as the contact was approached while the granites would probably show a decrease as their contacts with the metasediments were approached.

If such a depletion in copper values was established within the granite contact zone compared with areas further toward the centre of

the igneous mass, then it may also be possible to obtain an indication of the amount of copper (tonnage) which has passed into the Mathinna Beds either in a disseminated form or concentrated into a lode channel.

With this investigation into the background values and the source of the copper mineralisation, more intensive geological work should be carried out over the prospect area to determine whether the copper is present in a disseminated form or has been concentrated into narrow lode channels. If the latter is the case, then mapping may reveal the controlling factors in this concentration process.

The area is one of limited outcrop with steep slopes covered by scree. However, the numerous creeks and gullies should provide sufficient outcrop, together with the often rocky ridge tops, to obtain the necessary information to orientate a V.L.F. or I.P. programme. Additional geochemical work may be required. Based on the combined results of this exploratory work, a drilling programme on well defined targets may be justified.

A large area of anomalous copper values exists in a geological environment of Silurian Mathinna Beds with mineralising tin granites of Devonian age forming an arc to the north. This has now been investigated by geochemical and geophysical methods and preliminary drilling. Future work must expand on this ground work with the establishment of restricted targets for subsurface exploration. A more complete evaluation of the potential of this area will then be feasible.

I.R. MORTIMORE,
December, 1971.

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APPENDIX

Geochemical Laboratory Reports

Upper Scamander D.D.H. 2, Core and Sludge Samples

Lab. Sheets 671/1, 671/2, 671/3

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GEOCHEMICAL LABORATORY REPORT

FIELD SHEET No. 006412-16 PROJECT No.: EL.6/68 - UPPER SCAMANDER ANOMALY DDH 2

LAB. SHEET No.: 671/1 SAMPLE TYPE: D.D.H./CORE DATE: 29th June, 1971.

	SAMPLE No.	LAB. No.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Cd ppm
	645'0"-652'6"	71-F-3165	35	70	100	4	
	661'6"-666'6"	71-F-3166	70	70	90	4	
006412	666'6"-668'6"	71-F-3167	45	50	75	4	
	668'6"-676'0"	71-F-3168	35	60	95	2	
	676'0"-681'0"	71-F-3169	50	80	105	4	
	681'0"-684'0"	71-F-3170	110	90	125	4	BLD
	591'0"-594'0"	71-F-3171	50	70	105	4	
	594'0"-599'0"	71-F-3172	25	70	110	4	
	601'0"-604'0"	71-F-3173	120	160	140	4	
006413	604'0"-610'3"	71-F-3174	70	60	95	4	
	635'0"-640'0"	71-F-3175	95	80	105	4	
	640'0"-645'0"	71-F-3176	40	70	105	2	
	530'4"-535'4"	71-F-3177	145	50	95	2	BLD
	535'4"-540'4"	71-F-3178	40	70	110	4	
	540'4"-545'4"	71-F-3179	30	50	115	4	
006414	545'4"-550'4"	71-F-3180	40	70	105	4	
	555'4"-565'4"	71-F-3181	25	60	110	4	
	568'8"-574'8"	71-F-3182	35	60	130	2	
	475'4"-480'4"	71-F-3183	50	20	40	BLD	
	480'4"-485'4"	71-F-3184	10	20	30	BLD	
	485'4"-490'4"	71-F-3185	20	20	35	BLD	BLD
006415	490'4"-495'4"	71-F-3186	10	20	30	BLD	
	495'4"-500'4"	71-F-3187	25	30	40	BLD	
	525'4"-530'4"	71-F-3188	50	70	90	2	
006416	395'4"-400'4"	71-F-3189	30	80	155	2	
	400'4"-405'4"	71-F-3190	55	60	260	2	

METHODS:

Cu, Pb, Zn, Ag by G.R.C. No. 101

Cd by G.R.C. No. 107 (Random Selection)

B.L.D. = Below Limit of Detection

NATA

This laboratory is registered by the National Association of Testing Authorities, Australia. The tests reported herein have been performed in accordance with its terms of registration.

Ray W. Gardner

Chief Chemist

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GEOCHEMICAL LABORATORY REPORT

FIELD SHEET No.: 006416-20 PROJECT No.: EL.6/68 - UPPER SCAMANDER ANOMALY DDH

LAB. SHEET No.: 671/2 SAMPLE TYPE: D.D.H./CORE DATE: 29th June, 1971.

	SAMPLE No.	LAB. No.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Cd ppm
006416	455'4"-460'4"	71-F-3191	50	120	150	2	
	460'4"-465'4"	71-F-3192	270	300	1150	4	20
	465'4"-470'4"	71-F-3193	25	30	50	2	
	470'4"-475'4"	71-F-3194	25	40	30	2	
006417	365'4"-370'4"	71-F-3195	170	90	210	4	
	370'4"-375'4"	71-F-3196	80	70	150	2	
	375'4"-380'4"	71-F-3197	120	80	410	4	10
	380'4"-385'4"	71-F-3198	520	30	230	4	
	395'4"-390'4"	71-F-3199	270	50	150	2	
	390'4"-395'4"	71-F-3200	35	160	240	4	BLD
006418	310'4"-315'4"	71-F-3201	65	70	90	4	
	325'4"-330'4"	71-F-3202	30	40	70	2	
	330'4"-335'4"	71-F-3203	30	50	80	2	
	350'4"-355'4"	71-F-3204	310	240	330	4	
	355'4"-360'4"	71-F-3205	480	50	330	4	
	360'4"-365'4"	71-F-3206	215	180	740	4	15
006419	240'4"-245'4"	71-F-3207	30	70	120	2	
	265'4"-270'4"	71-F-3208	20	90	125	4	
	270'4"-275'4"	71-F-3209	30	70	110	4	BLD
	295'4"-300'4"	71-F-3210	30	60	80	4	
	300'4"-305'4"	71-F-3211	230	100	200	4	
	305'4"-310'4"	71-F-3212	90	90	200	4	BLD
006420	225'4"-230'4"	71-F-3213	30	40	85	2	
	230'4"-235'4"	71-F-3214	35	40	95	2	
	235'4"-240'4"	71-F-3215	30	60	105	2	BLD

METHODS:

This laboratory is registered by the National Association of Testing Authorities, Australia. The tests reported herein have been performed in accordance with its terms of registration.

Ray W. Gerdsmeyer

Chief Chemist

809012

GEOCHEMICAL LABORATORY REPORT

FIELD SHEET No.: 006421 PROJECT No.: EL.6/68 - UPPER SCAMANDER ANOMALY DDH 2

LAB. SHEET No.: 671/3 SAMPLE TYPE: DDH/SLUDGE DATE: 29th June, 1971.

SAMPLE No.	LAB. No.	Cu ppm	Ni ppm	Co ppm	Pb ppm	Zn ppm	Ag ppm
0' - 5'4"	71-F-3216	170	50	BLD	40	145	43
5'4"- 15'4"	71-F-3217	220	65	BLD	35	175	37
15'4"- 25'4"	71-F-3218	80	30	BLD	20	60	9
25'4"- 35'4"	71-F-3219	65	20	5	20	50	10
35'4"- 45'4"	71-F-3220	330	160	70	45	135	14
45'4"- 55'4"	71-F-3221	220	60	90	25	90	16
55'4"- 65'4"	71-F-3222	310	95	35	30	240	34
65'4"- 75'4"	71-F-3223	120	50	25	50	110	9
75'4"- 85'4"	71-F-3224	140	60	20	50	145	14
85'4"- 95'4"	71-F-3225	160	55	20	45	150	13
95'4"-105'4"	71-F-3226	130	40	20	50	140	7
115'4"-125'4"	71-F-3227	150	55	35	40	130	7
125'4"-135'4"	71-F-3228	170	40	15	50	130	5
135'4"-145'4"	71-F-3229	50	45	40	45	105	3
145'4"-155'4"	71-F-3230	120	70	65	55	200	10
155'4"-165'4"	71-F-3231	60	50	30	40	100	4
165'4"-175'4"	71-F-3232	50	40	25	45	90	3

METHODS:

Cu, Ni, Co, Pb, Zn, Ag by G.R.C. No. 1

Chief Chemist

Ray W. Gerlach