000

955001

PROJECT A-80-82

DISC 69

81-1572.

RELINQUISHMENT REPORT

DELORAINE

EXPLORATION LICENCE 2/80

TASMANIA

P. JONES, J. SUPPREE

JUNE 1981

REPORT 246

CONTENTS

TABLES

002

955003

FIGURE

APPENDICES

ENCLOSURES

Project Location

SUMMARY AND CONCLUSIONS

The Deloraine Exploration Licence was staked to examine potential for carbonate hosted lead/zinc/silver deposits.

Exploration Licence 2/80, of 512 square kilometers, was granted to Amoco Minerals Australia Company for a period of six months from July 10, 1980. Renewal of the tenement is subject to Mines Department approval.

The tenement is approximately 50 kilometers south of Devonport and 15 kilometers west of Deloraine and has good access.

There are minor scattered occurrences of basemetals from in and around the tenement all of which have been subjected to limited exploration programs. Cygnatrex Pty Ltd in 1974-75 carried out a more intensive program looking for both gold and basemetals

within the prospective Gordon Limestone sequence. Amoco followed up in detail a number of their prospects.

Precambrian basement sediments are overlain by Cambrian tuffaceous sediments which are localized within basinal structures. These are in turn overlain by a sequence of Ordovician to Devonian shallow marine sediments containing the prospective Gordon Limestone unit. Permo-carboniferous glacio-fluviatile rocks lie unconformably on this sequence and have been blanketed by both Jurassic and Tertiary basic volcanics.

Amoco conducted an initial detailed literature search on previous mining and exploration within the tenement. Field work commenced with an orientation program of soil sampling over one of the anomalous ones. Following this, two zones were gridded and sampled and a further two were rockchip sampled. Assay results failed to outline any significant zones of possible economic interest.

RECOMMENDATIONS

No work is recommended as the tenement has limited potential for significant carbonate lead/zinc deposits. It is recommended Exploration Licence 2/80 be relinquished.

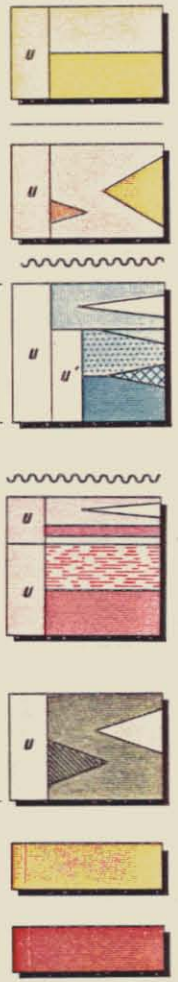
DESCRIPTION OF THE PROPERTY AND OWNERSHIP

Exploration licence 2/80 (EL 2/80) has an area of 512 square kilometers, and was granted to Amoco Minerals Australia Company for a period of six months from July 10, 1980. Renewal of the tenement for a further period of six months was granted by the Mines Department after approval of previous work and proposed program.

LOCATION AND ACCESS

EL 2/80 is situated in the central north of Tasmania some 50 kilometers south of Devonport and 15 kilometers west of Deloraine Access within the area is good with a number of roads and farm tracks servicing the tenement. (Figure 1)

The tenement is favorably located with respect to population centers, power, water and transport facilities.



HOLOCENE

Alluvium, sand, gravel and talus.

PLEISTOCENE

Till, fluvioglacial, periglacial and associated deposits.

Errosional surface.

TERTIARY

Non–marine sequences (light); marine limestone (dark); basalt and related igneous rock types (orange).

Low angle unconformity.

TRIASSIC

PERMIAN

UPPER CARBONIFEROUS

Fluvio–lacustrine sequences of sandstone, siltstone, mudstone (light) with carbonaceous sequences indicated (dark). Fresh water sequence with some coal measures. — UPPER

Upper glacio–marine sequence of pebbly mudstone, pebbly sandstone and limestone. Fresh water sequence with some coal measures. — PARMEENER SUPER–GROUP

Lower glacio–marine sequence of pebbly mudstone, pebbly sandstone, minor limestone, Tasmanite oil shale and basal tillite. — LOWER

Unconformity attributed to Tabberabberan Orogeny.

LOWER DEVONIAN – SILURIAN

Some quartzwacke sequences (dark) and siltstone–shale sequences (light) indicated; Devonian limestone–siltstone (horizontally lined over–print). — ELDON GROUP AND CORRELATES; SPERO BAY GROUP.

ORDOVICIAN

Limestone sequence. — JUNEE GROUP AND CORRELATES.

Siliceous terrestrial conglomerate, marine quartzwacke and siltstone.

PRECAMBRIAN

Metamorphic rocks. Pelitic sequences (dark); metaquartzite sequences (light) with some platy quartzite units indicated (vertically lined over–print); amphibolite (diagonally lined over–print). Garnet bearing rocks are indicated (g).

TERTIARY

Basalt and related rock types.

JURASSIC

Dolerite and related rock types.

Legend

Reproduced from the Burnie and Launceston 1 : 250 000 Geologic series

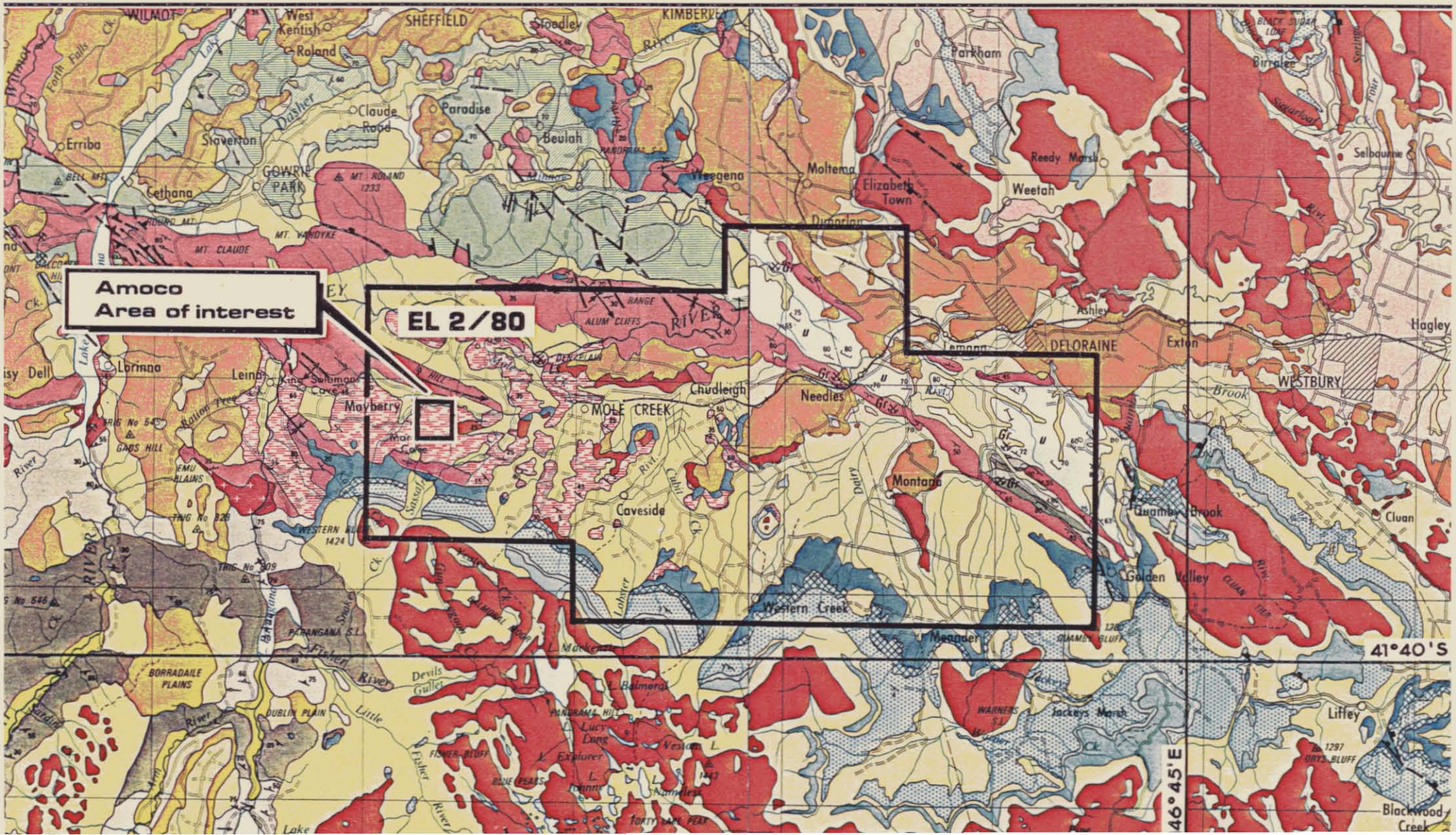
5 cm

Magnetic Declination 13°

Deloraine EL 2/80 Location & Geology

955011 Figure 1

0 10 km



HISTORY AND EXPLORATION TO DATE

There are only minor scattered occurrences of basemetals known in and around the tenement. These are related to granitic intrusives such as the Doleoath Granite (hosting tin, wolfram and bismuth) and the nearby Dove Granite (hosting minor lead/zinc/copper mineralization and hematite mineralization).

The tenement area had been subject to four previous basemetal exploration programs. During 1974-1975 Cygnatrex initially explored the western area of EL 2/80 looking for Carlin type gold deposits. This being unsuccessful they reorientated their program to evaluate the lease for its lead/zinc potential.

The northeast of EL 2/80 was covered in a reconnaissance geochemical survey by Comalco in 1979.

Union Oil Development Corporation investigated copper/zinc anomalism at Kentish Hill on the eastern margin of EL 2/80 in 1975.

Geochemical surveys by Cygnatrex defined several basemetal anomalies; one of which, near Mayberry, required follow-up geochemical sampling by Amoco to further define the anomalism.

REGIONAL GEOLOGY

Large blocks of Precambrian sediments form the basement complexes in both northwest and central Tasmania. During the Cambrian period volcanic piles and marine sediments accumulated around these cratons hosting such volcanogenic deposits as Rosebery, Mt. Lyell and McIntosh (Que River). Overlying these rocks is a sequence of Cambrian to Permian basinal sediments. This sequence hosts the Renison, Cleveland and the Mt. Bishoff orebodies in the west of Tasmania.

The above units were intruded by granites during the Cambrian and Devonian Carboniferous times. Tin mineralization was associated with the later intrusions.

During the Jurassic and Tertiary periods the sequence was intruded and blanketed by extensive sheet dolerites and basalts.

Recent fluviatile and Pleistocence glacial erosion has produced the present topography.

GEOLOGY OF THE TENEMENT

The oldest rocks within the tenement are Precambrian pelitic and metaquartzitic sequences parallelling the Cambrian unfossiliferous turbidites forming a basement high running diagonally from central north to the southeast of the tenement area. These sediments indicate a relatively deep water environment. (Figure 1)

This sequence is unconformably overlain by Ordovician to Devonian shallow to deep water synclinal basinal sediments with east/west axial trends. The Ordovician Mt. Zeehan Conglomerate equivalent occurs in the north traversing diagonally to the southeast and is manifest by siliceous terrestrial conglomerates, marine quartzwackes and siltstones. This is overlain by the Moina Sandstone correlate comprised predominantly of tubicolar quartzites and siltstones. This in turn is overlain by the Gordon Limestone typically dense, blue, grey in weathered

outcrops, unfossiliferous massively bedded, and sometimes sheared. Shaley horizons occur sporadically as to very fossiliferous, biohermal (reefal) sections. Karst topography is developed locally on limestone hills and collapse structures (as found at Zeehan) are common. The Gordon Limestone is overlain conformably by the Siluro-Devonian shallow marine fossiliferous quartzites sandstones and quartzwackes.

The southern portion of the tenement has Permo-Carboniferous glacial, shallow marine, and fluviatile sandstone siltstone, mudstone shale and coal horizons uncomformably overlying the Cambrian to Devonian basinal sediments.

Both the southern and northern areas of the tenement were blanketed by both Jurassic and Teritary basic volcanism. The Jurassic dolerite was injected as multiple sheets whereas the Tertiary basic volcanics occurred as extensive flood basalts.

Extensive Pleistocene and Quaternary erosion and deposition has produced the present topography. The glacial and fluvial sediments blanket much of the prospective Gordon Limestone sequence.

The Deloraine area has been severely disturbed by the Paleozoic Tabberaberan orogeny causing intensive north-south compressional forces generating complex east-west trending synclines pitching gently to the east. Further folding caused rupture, overthrusting and finally tear faulting. The Permian and younger rocks have not been affected by this compression at all. Post Permian faulting appears to be attributable to the Jurassic intrusive dolerites causing uplift, doming and faulting.

WORK CONDUCTED BY AMOCO

Work conducted during the period July 1980 to July 1981 initially involved a detailed report by R. Curtis (Consulting Geologist) on previous mining and exploration within Amoco's tenements at Deloraine and their pending Exploration Licence Macquarie Harbour. The potential of the area was assessed as limited, although a number of anomalies required examination in greater detail.

The extensive geochemical coverage by Cygnatrex Pty. Ltd. resulted in the Mayberry area being defined as an anomalous lead/zinc zone. Cygnatrex failed to follow up a number of the responses at Mayberry and Amoco designed the initial program on detailing these anomalies.

A bombadier mounted Jackro 200 power auger was used to bedrock sample the zones where weak shallowly augered responses were obtained by Cygnatrex previously. However, the rough terrain, numerous sink holes, caves, thick vegetation and steep ground precluded sampling in a number of the areas.

A geochemical orientation program was conducted over one narrow anomalous zone. (Table 1). As the auger penetrated deeper into the soil horizon, lead values decreased in both cases and the zinc values increased dramatically in one case and in the other rose slightly then dropped. All soil samples were taken close to bedrock at 20 meter intervals along grid lines. Samples were sent to ComLabs in Adelaide where the -80 mesh fraction was analysed for copper, lead, zinc and silver. Analysis for the basemetals was by AAS after hydrochloric acid digestion.

TABLE 1 - GEOCHEMICAL ORIENTATION RESULTS

Location	Sample No.	Depth (m)	Pb	Zn	Cu	Ag
Line 5340E/5080N	29952	1.5	1150	610	12	* -1
"	29953	3	530	770	16	-1
"	29954	4.5	620	700	20	-1
"	29955	6	680	740	20	-1
"	29956	7.5	680	680	22	-1
"	29957	8.5	440	400	18	-1
Line 5380E/5080N	29958	2	1150	730	22	-1
"	29959	4	1000	1600	30	-1
"	29960	4.5	680	2150	16	-1

* -1 Denotes less than 1. Values in ppm

019

Two of the four separate coincident lead/zinc responses previously delineated by Cygnatrex were gridded and sampled. (Enclosures 1, 2) Sufficient outcrops occurred over the other two Cygnatrex anomalies to permit rock chip sampling.

The westernmost anomaly centred on Cygnatrex station F132 had three lines totalling 660 meters, staked 40 meters apart with stations every 20 meters along line. Line 5000E returned a small nebulous, 50 by 30 meter anomaly assaying 1.45% lead + 0.27% zinc + 11 g/t silver. This appears to be coincident with brecciated, calcite healed calclutites and calcarenites

The narrow anomalous area around station F378 was gridded with two short lines totalling 200 meters, staked 40 meters apart with stations every 20 meters along line. Cygnatrex's narrow anomalous zone was duplicated at a greater depth assaying 0.11% lead + 0.07% zinc. These weakly anomalous values maybe related to the drainage as it mirrors the topography, however, deeper sampling using the Jackro auger was thought to negate this effect. The results may also be due to slight brecciation within the massive limestones as found at F123.

The two small anomalies defined by Cygnatrex east of F378; stations F294, 295 and F284, were rock chip sampled and scanned for ten separate elements. (Table 2). The basemetal and noblemetal elements were very low for the calclutites and slightly higher for the brecciated calclutite observed at F294. Here lead, zinc and copper values were from two to ten times background.

TABLE 2 - MINERAL SCAN RESULTS (TEN ELEMENTS)

Sample No.	Pb	Zn	Ag	Cu	Cd	Sb	Sn	Au	Co	Bi
36052 (F284) Calclutite	12	60	2	4	-1	-4	-4	-0.05	-4	-4
36054 (F295) Calclutite	8	34	4	6	-1	-4	-4	-0.05	-4	-4
36055 (F294) Breccia	155	270	4	20	-1	-4	-4	-0.05	-4	-4

Note -4 denotes less than 4 etc. Values in ppm

Assay results failed to outline any significant zones of possible economic interest.

021

EXPLORATION POTENTIAL

It is considered that the licence area has limited potential for the discovery of massive lead/zinc/silver sulfide deposits.

The prospective horizon, the Gordon Limestone, is very dissimilar to that observed at Zeehan, being very clean, massive, unmineralized platform or shelf carbonates.

Signed _____ FOR

P.A. JONES, J. SUPPREE

AMOCO MINERALS AUSTRALIA COMPANY

EXPENDITURE FOR THE YEAR ENDED JUNE 30, 1981

EXPLORATION LICENCE 2/80

Salaries and Wages	1,744.79
Supplies	100.13
Supplies - maps	-
Cookery	191.00
Field Office Rent	-
Field Supplies	-
Freight	-
Travel & Entertainment	309.67
Communications	47.30
Drilling	-
Consultants/Contractors	8,286.07
Assays	34.70
Legal Fees	35.00
Equipment Rental	-
Equipment Operation & Maintenance	153.60
Property Payments	1,673.36
Outside Services	-
	12,575.62
Overhead	3,066.07
	$15,641.69

T.J. CONQUEST
ACCOUNTANT

APPENDIX 1

ASSAY RESULTS - SOIL SAMPLING PROGRAM

Appendix 1

ASSAY RESULTS - SOIL SAMPLING PROGRAM

Anomaly F378

Line	Co-ord	Sample No.	Pb ppm	Zn ppm	Cu ppm	Ag ppm
5340E/	5120N	29967	115	250	20	1
	5100N	29965	190	300	22	-1 *
	5060N	29968	60	150	20	-1
	5040N	29969	50	175	22	-1
5380E/	5160N	29971	55	120	16	1
	5140N	29970	70	170	18	-1
	5120N	29964	110	170	16	-1
	5100N	29963	100	260	20	-1
	5080N	29958	1150	730	-	-
	5060N	29961	260	240	24	1
	5040N	29962	60	170	20	-1

* -1 denotes less than 1.

Anomaly F132

Line	Co-ord	Sample No.	Pb ppm	Zn ppm	Cu ppm	Ag ppm
4960E/	5180N	29972	36	90	16	1
	5160N	29973	55	130	22	-1 *
	5140N	29974	235	210	18	-1
	5120N	29975	85	190	20	-1
	5100N	29976	110	240	20	-1
	5080N	29977	90	270	16	-1
	5060N	29978	165	340	16	2
	5040N	29979	1550	970	26	-1
	5020N	29980	150	610	18	-1
	5000N	29981	80	180	20	-1
	4980N	29982	70	170	16	-1
	4960N	29983	75	250	16	-1
	4940N	29988	20	80	4	1
	4920N	29989	24	10	4	1

* -1 denotes less than 1.

Anomaly F132

Line	Co-ord	Sample No.	Pb ppm	Zn ppm	Cu ppm	Ag ppm
5000E/	5140N	29996	65	130	16	-1 *
	5120N	29995	155	200	26	-1
	5100N	29994	40	120	12	-1
	5080N	29993	90	190	28	1
	5060N	29992	115	320	20	-1
	5040N	29991	195	290	22	-1
	5020N	29990	730	320	20	1
	5000N	29966	1.45%	2700	90	11
	4980N	29987	40	14	4	-1
	4960N	29986	48	420	20	1
	4940N	29985	65	280	18	-1
	4920N	29984	60	100	16	-1
5040E/	5120N	29997	940	580	28	-1
	5100N	29998	80	260	28	-1
	5080N	29999	90	240	26	-1
	5060N	30000	48	125	26	-1
	5040N	36060	55	145	22	-1
	5020N	36061	70	165	24	-1
	5000N	36062	20	12	8	-1
	4980N	36063	16	55	6	-1
	4960N	36064	105	280	30	-1
	4940N	36065	70	260	26	-1

* -1 denotes less than 1.

APPENDIX 2

DELORAINE/MACQUARIE HARBOR REPORT by R. Curtis

028

R. CURTIS & ASSOCIATES
CONSULTING GEOLOGISTS

955029

C/- Geoffrey Hughes (Export) Pty. Ltd.
A M P Centre, 13th Floor,
50 Bridge Street, Sydney,
N S W. 2000 Australia

Telegrams Mistahugh Sydney
Telex. AA25078

Telephone (02) 232 8188

Principal
R. Curtis, B.Sc, Ph.D, M.Aus.I.M.M., F.G.S.
Phone Priv.: 440 8670

EXPLORATION POTENTIAL FOR MISSISSIPPI VALLEY TYPE LEAD-ZINC DEPOSITS IN EL2/80, DELORAINE

Prepared for
AMOCO MINERALS AUSTRALIA COMPANY

R. Curtis
November 1980

SUMMARY

A review is given of previous exploration within and around Amoco's EL2/80 at Deloraine, and EL9/80 Macquarie Harbour, Tasmania, in an exercise to assess the licence areas for Mississippi Valley type mineralization.

In the Deloraine area the Ordovician *Gordon Limestone* is up to 1000m thick, and geochemical soil and rock chip sampling surveys of much of the outcrop area by previous workers defined several anomalies. One of the anomalies, near Mayberry, requires further work.

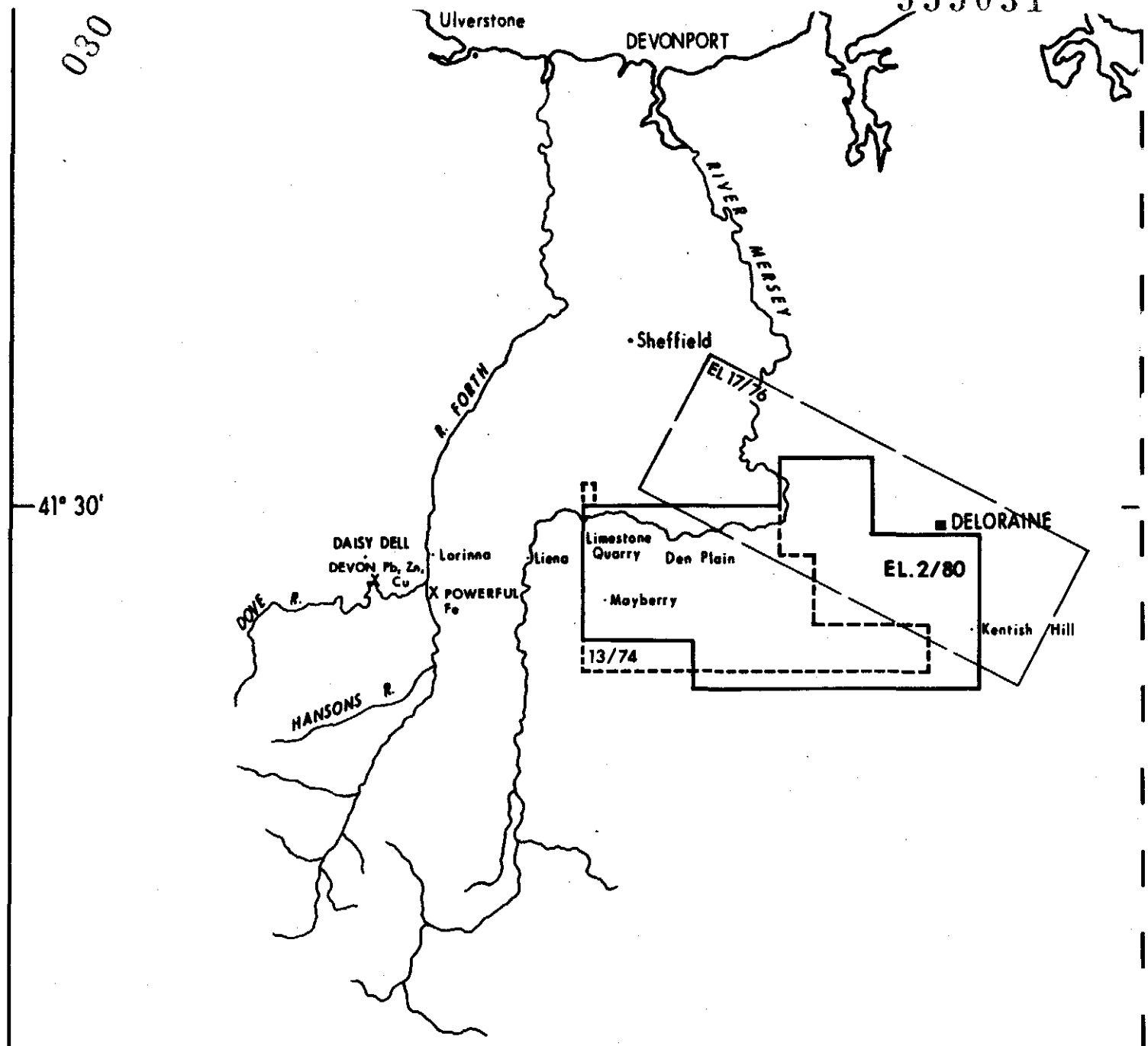


FIGURE 1

R. CURTIS & ASSOCIATES

AMOCO EL.2/80

DELORAINE, Tasmania

Scale 1 : 500,000	Author
Date October, 1980	Plan No.

031

R. CURTIS & ASSOCIATES

EXPLORATION POTENTIAL FOR MISSISSIPPI VALLEY TYPE LEAD-ZINC DEPOSITS IN EL2/80, DELORAINE

1. EL2/80, DELORAINE

Mines Department library records were examined to assess the potential of the Ordovician Gordon Limestone for Mississippi Valley type lead/zinc deposits in Amoco's EL2/80 near Deloraine, Northern Tasmania (Figure 1).

It was found that the area has been the subject of only four previous base metal exploration programmes. Cygnatrex Pty Ltd held EL13/74 during 1974/75, exploring initially for Carlin type gold deposits. This was not successful and the programme was "reorientated to an evaluation of the Pb/Zn potential of the area".

The north eastern part of EL2/80 was covered in a reconnaissance geochemical survey by Comalco in EL7/76, relinquished in July, 1979.

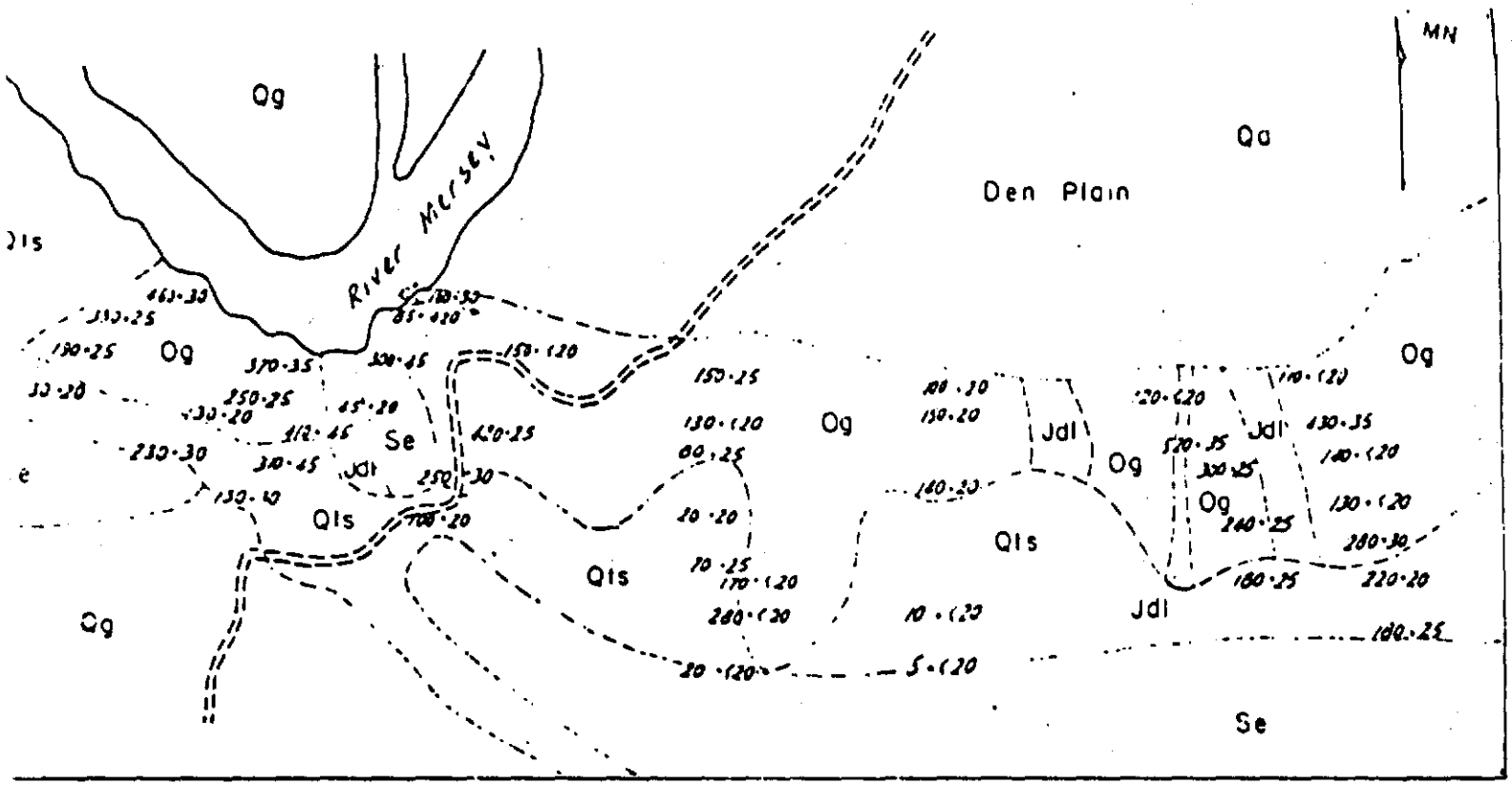
Programmes in EL25/70(?) and EL15/75 (Union Oil Dev. Co. 1975),investigated CU/Zn anomalism at Kentish Hill on the eastern margin of EL2/80 (Figure 1).

Apart from the work by Cygnatrex Pty Ltd the reports available are brief, uninformative and of minimal value.

1.1. PREVIOUS EXPLORATION

There is no record of visible Pb/Zn mineralization having been found in the area covered by EL2/80.

The most comprehensive exploration programme over the area was carried out by Cygnatrex Pty Ltd who soil sampled all the Gordon Limestone outcrops within EL13/74 (Figure 1). The final report on the licence submitted to the Tasmanian Mines Department is appended in full (Appendix No. 1) and the following merely describes the more significant results of the exploration.



PHASE II GEOCHEMISTRY IN THE DEN PLAIN AREA

Scale - 1 5000

50 0 50 100 150 200 250 Metres

LEGEND:

Qa	Recent alluvium
Qg	Till, Talus & residual soil
Qls	Talus (siliceous sedimentary origin)
Se	Eldon Group (Silurian)
Og	Gordon Limestone (Ordovician)

Approx geological boundary

Direction & dip of strata

Strike of vertical foliation

Vehicle track

100·40 Zn Pb Geochemical sample location

5 cm

Figure 3

R. CURTIS & ASSOCIATES

AMOCO - EL2/80

Den Plain Area

Geochemistry

Scale 1:5000 | Author

Date November 1980 | Plan No.

In the search for Carlin type gold mineralization Cygnatrex chose the area on the basis of "the closest available limestone terrain to a known intrusive". This intrusive is the Devonian Dolcoath Granite near Moina, 13 kms west of the western boundary of EL2/80.

The Dolcoath Granite is host to small tin, wolfram and bismuth deposits and is responsible for a number of similar deposits in the intruded Proterozoic and Cambrian sediments (Sheffield 1" to 1 mile Geological Map).

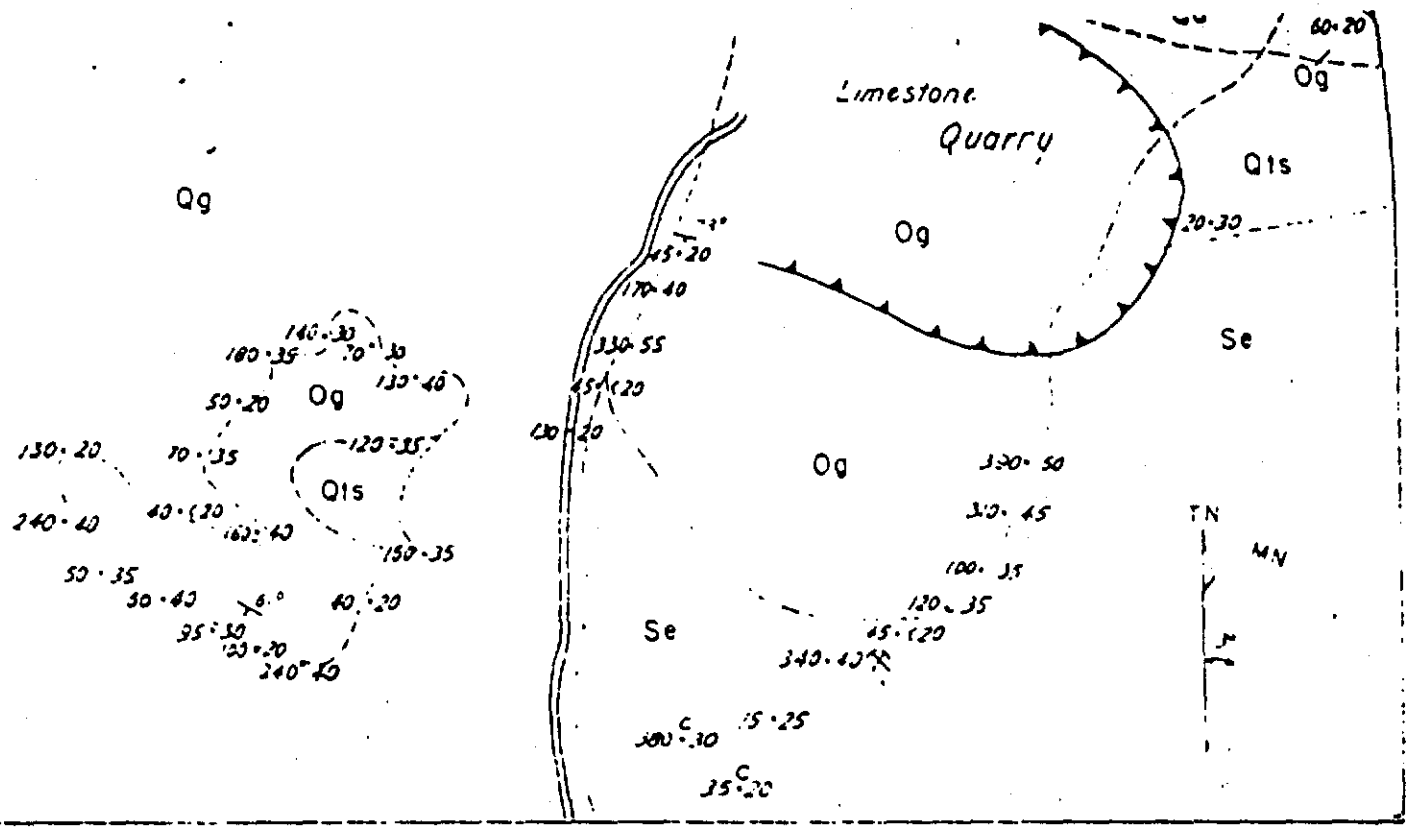
The nearby Dove Granite, which contains minor Pb/Zn/Cu mineralization at the Devon Prospect and hematite mineralization at the Powerful Prospect, was originally thought to be Devonian but is now regarded as Cambrian.

Although the Gordon Limestone in the Moina area is contact metamorphosed by the Dolcoath Granite, no base or precious metal mineralization has been recorded in it.

After regional soil sampling on a 400m by 100m grid Cygnatrex isolated four areas which required follow up work, and these areas were named Mayberry, Den Plain, Limestone Quarry and Mersey Hill (Figure 2).

Further closer spaced sampling eliminated all but the Mayberry area as worthy of continued exploration. . At Den Plain no evidence of alteration or mineralization was found in the anomalous area, which comprised dark grey limestones with pink argillaceous beds, all having a weakly developed axial plane cleavage (Figure 3).

At Limestone Quarry above background zinc values are associated with the contact between Silurian sandstones and the Gordon Limestone (Figure 4), while at Mersey Hill zinc values appear to be related to calcite veining of dolerite intruded, well bedded limestones.



PHASE II GEOCHEMISTRY IN THE LIMESTONE QUARRY AREA

Scale - 1 5000

50 0 50 100 150 200 250 Metres

LEGEND

Qa	Recent alluvium
Qg	Till, Talus & residual soil
Qts	Talus (siliceous sedimentary origin)
Se	Eldon Group (Silurian)
Og	Gordon Limestone (Ordovician)

Approx. geological boundary

Direction & dip of strata

Unsealed road

Stream

c, X Costean, Mine shaft

100·40 Zn Pb Geochemical sample loca

5 cm

Figure 4

R. CURTIS & ASSOCIATES	
AMOCO - EL2/80	
LIMESTONE QUARRY GEOCHEMISTRY	
Scale 1:5000	Author
Date	Plan No.

035

The area sampled at Mayberry comprises limestone hills and deep valleys with one narrow, flat-bottomed valley leading westward from the centre.

A follow-up geochemical survey on a 100m by 25m grid defined two prominent, coincident lead/zinc anomalous zones. These zones are outlined in Plan 1, Sheets 1 and 2 of the plans accompanying the final report appended to this account.

On Plan 1, Sheet 2, the areas on which further geochemical work was done have been outlined. The results of this work confirmed the previously established trends and was described by Cygnatrex as follows:-

"These results show anomalous zones for zinc and coincident zones for lead:

(i) A discontinuous zone between stations F369 and F225 with peak lead-zinc values at F295 and F284 following the brecciated axis of a syncline.

(ii) A zone extending from stations F300 to F378 following a limestone ridge, continuing down the central valley, then forking at F378 and continuing towards F132 in one direction and F126 in the other".

The first zone, between F369 and F225 (Plan 1, Sheets 1 and 2);

"runs parallel with a ridge of limestone which has been brecciated, foliated and fractured then healed with calcite. The ridge crest appears to be the axis of a titled south-east plunging syncline".

Two costeans were cut across the high spots in this zone and the highest lead and zinc values were found to coincide with zones of brecciated limestone, healed by dolomite/calcite (Plan 3, Sheets 1 and 2, Pg 28).

Three individual high spots in the zone between F300 and F132 were further investigated by detailed geochemical soil sampling (Plan 1, Sheet 2). In the westernmost area on a low hill of outcropping limestone, the programme

> "was successful in locating a lead-zinc anomaly registering 5400 Pb and 1900 ppm Zn. This is the highest lead reading and second highest zinc reading obtained in the project, and as the results were not available until the field programme was terminated, no investigation of its source has been made" (Plan 2, Sheet 2, Figure 2).

Auger sampling in the ground around F378 reaffirmed that this area, located on the floor of the central valley, is highly anomalous (Plan 2, Sheet 2, Figure 36).

No further work was carried out on these anomalies since Cygnatrex believed the results;

> "demonstrated that the anomalous lead-zinc values are associated with the brecciated zones within the limestone. The lead-zinc values within this brecciated material are sporadic. Although outcrop is extensive, no visual signs of metal concentration were seen.
>
> It is concluded that the anomalous lead-zinc values obtained during this investigation reflect base metal fixation in fracture zones within the Gordon Limestone. The source of metal ions was probably the limestone itself, the ions being leached from the fractured host rock at some depth, and precipitated within the calcite-healed fracture zones at localities where suitable Eh-pH conditions prevailed.
>
> No evidence of hydrothermal activity was found in the area, and no alteration zones were seen".

No other company has explored the Gordon Limestone in the Deloraine area.

Comalco, in exploring EL17/76 (Figure 1) investigated three stream sediment geochemical anomalies and one weak base metal occurrence in the Deloraine area.

The stream sediment anomalies are all in the Owen Conglomerate equivalents at the base of the Ordovician and near the contact with underlying Cambrian or Pre-Cambrian. Tin and wolfram anomalism occurs at Punches Terror, 12 kms west north west of Deloraine; gold anomalism was found at Native Top, 8 kms south of Deloraine; copper cobalt and silver anomalism occurs at Beefeater Hill, 4 kms west north west of Deloraine; and copper anomalism occurs at Kentish Hill, 9 kms south south east of Deloraine (Figure 2).

Follow up work failed to define any significant reasons for the anomalism at Native Top and Punches Terror. However, minor disseminated copper was found at Kentish Hill, and the anomalism at Beefeater Hill was related to quartz veining, regarded as insignificant by Comalco.

Previous to Comalco's work 6 shallow diamond drill holes had been put down in the Kentish Hill area in a search for gold in basic volcanics. ? No records ? of this drilling could be found. Later, Union Oil Development Co. gridded and sampled the area, known locally as Grubbs Property, and found the weak copper anomalism.

038

4. RECOMMENDATIONS

4.1 EL2/80 - DELORAINE

The extensive geochemical coverage by Cygnatrex Pty Ltd over most of the area now covered by Amoco's EL2/80 resulted in the Mayberry area being defined as an anomalous lead/zinc zone. The anomalism was demonstrated in most cases to occur along fold axes in zones where the limestones had been brecciated, foliated and fractured, then healed with calcite. No mineralization was observed visually.

Two of the Mayberry anomolies were not followed up to a stage where they could either be satisfactorily abandoned or found worthy of continued exploration.

The westernmost anomaly occurred on a low hill of outcropping limestone and was never revisited after the field sampling, even though highly anomalous results were recorded (Plan 2, Sheet 2, Figure 2).

Auger sampling on the floor of the central valley gave high anomalous lead/zinc values and it was not confirmed whether these accumulations were related to bedrock or drainage.

It is recommended therefore that:

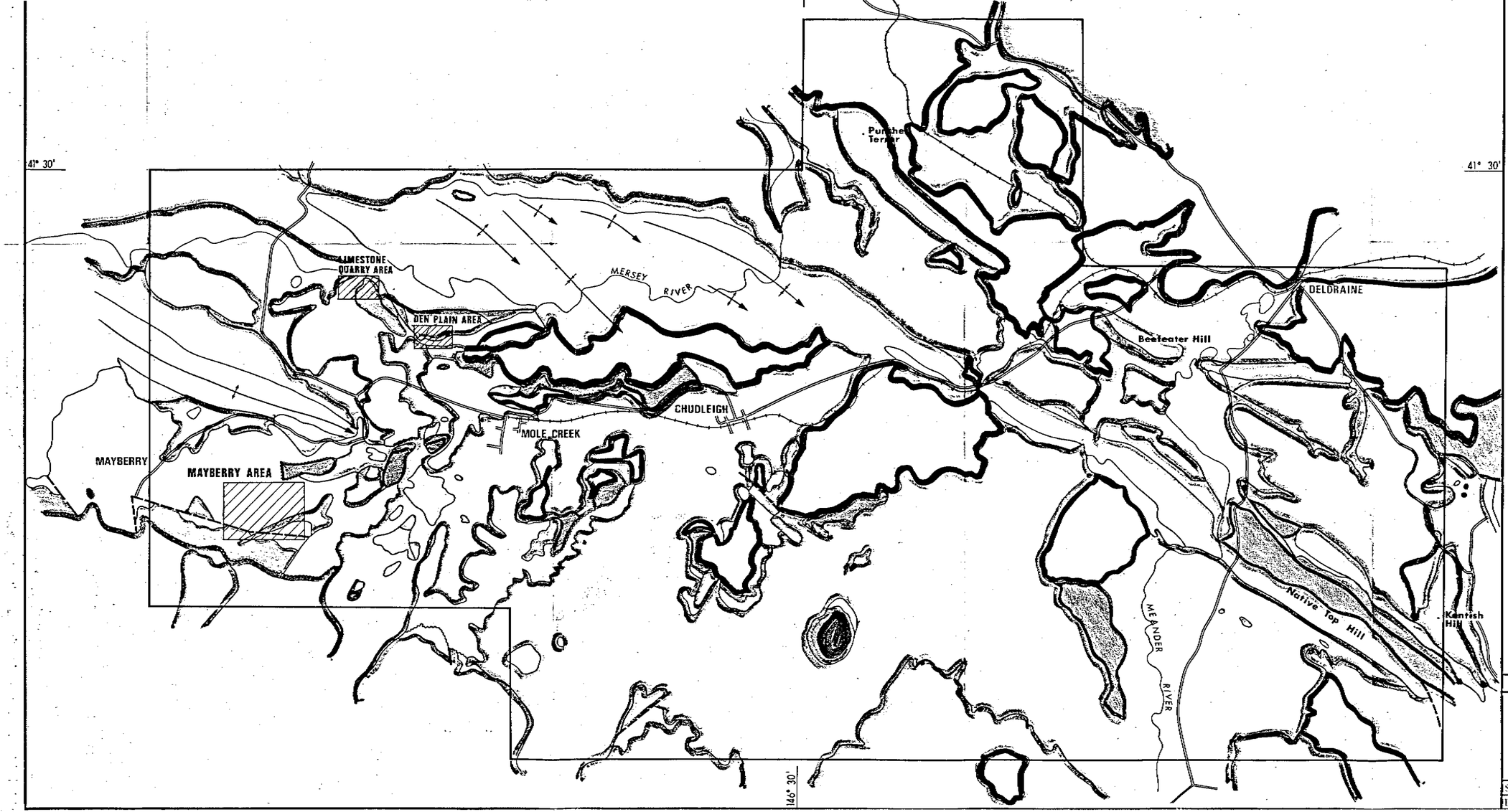
(i) The westernmost anomaly centred on station F132 (Plan 1, Sheet 2 and Plan 2, Sheet 2, Figure 2) be mapped and resampled in an attempt to relate the geology and high geochemistry.

(ii) The anomalism in the central valley around station F378 be further investigated by augering to bedrock (Plan 1, Sheet 2 and Plan 2, Sheet 2, Figure 3b).

The depth of the auger holes in the floor of the central valley suggest it was unlikely drilling reached bedrock. Cygnatrex quote that the samples were taken from an orange-brown clay highly stained by manganese. While scavenging of the lead-zinc ions by manganese from percolating waters is the possible reason for the anomalism, augering to bedrock should be satisfactory in the detection of any bedrock anomalism.

Should either of the above recommended programmes be successful then the course of continued exploration can be plotted at that stage.

If neither of the programmes are successful then it is recommended that EL2/80 be relinquished.



LEGEND

- Quaternary
- Tertiary basalt
- Jurassic
- Permian
- Silurian
- Gordon Limestone
- Owen Conglomerate equivalents
- Cambrian
- Pre-cambrian
- Fold axis
- Fault
- Geochemically anomalous area

5 cm

0 1 2 3 MILES

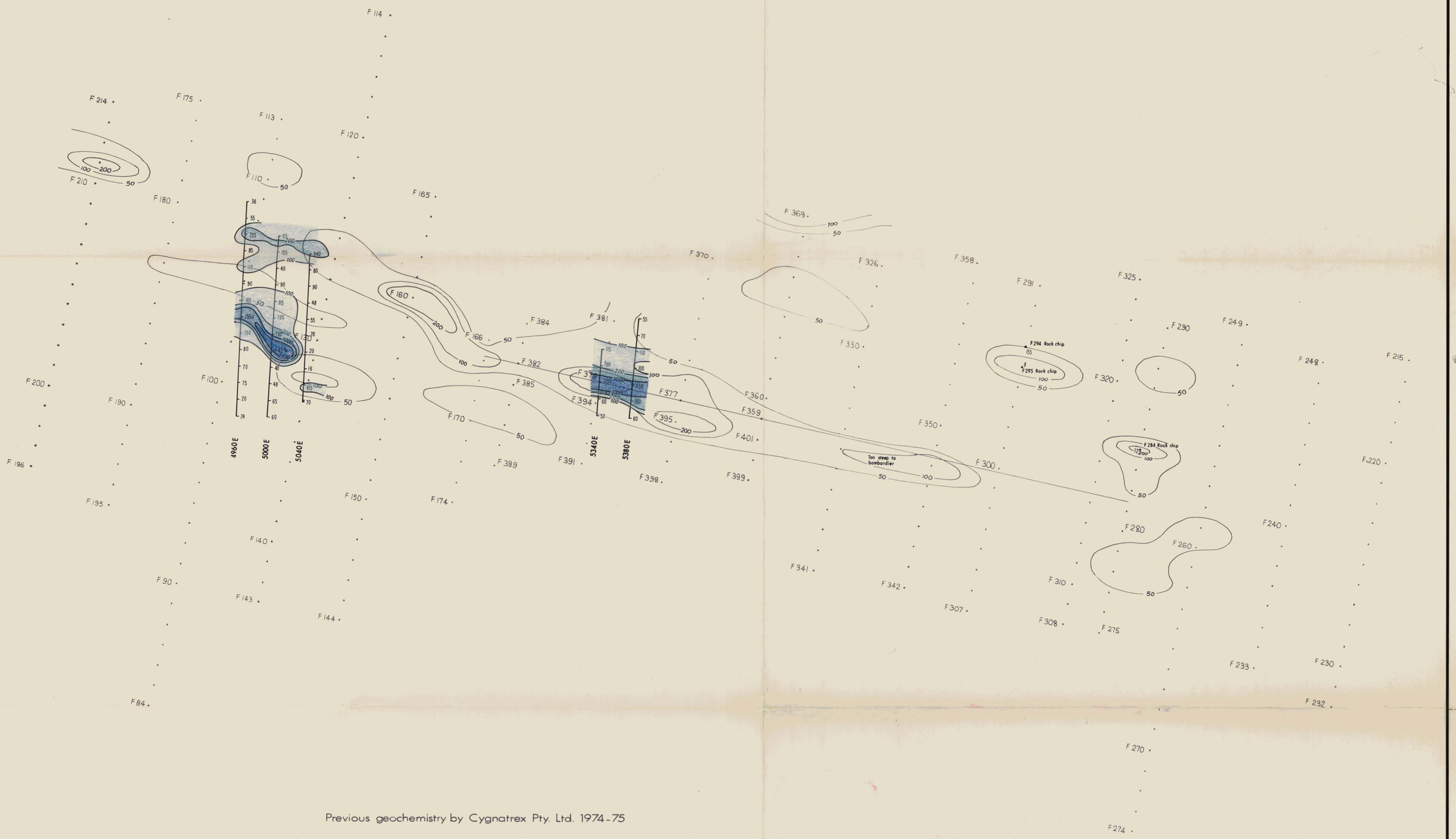
2928 FIG. 2

R. CURTIS and ASSOCIATES

TASMANIA
EL 2/80 – DELORAINE

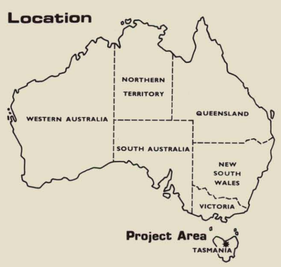
GEOLOGY

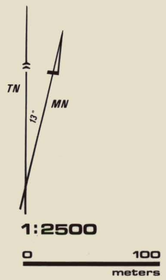
Scale	Author G. S. Tasmania
Date October, 1980	Plan No.



Previous geochemistry by Cygnatrex Pty. Ltd. 1974-75

Location





Received 20-7-81

5 cm

Amoco Minerals Australia Company

955042

Project	GORDON RECONNAISSANCE				Nº A-80-82	
Project Partner						
Mayberry Prospect EL 2/80						
SOIL GEOCHEMISTRY **LEAD**						
Map Ref. ANG	K-55-4	Latitude	41° 35' S	Longitude	146° 30' E	
Surveyed	P. Jones	Date	1981	Scale	1: 2500	
Drawn	Howick	Date	1981	Drawing Nº	M81-1682	

Report 246

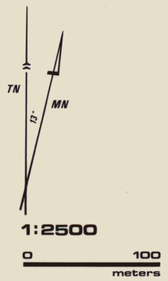
81-1572

2939

Enclosure 1

Previous geochemistry by Cygnatrex Pty. Ltd. 1974-75

Location



Received 20-7-81

5 cm

Amoco Minerals Australia Company

955043

Project	GORDON RECONNAISSANCE				Nº A-80-82	
Project Partner						
Mayberry Prospect EL 2/80						
SOIL GEOCHEMISTRY **ZINC**						
Map Ref. ANG	K-55-4	Latitude	41° 35'S	Longitude	146° 30'E	
Surveyed	P. Jones	Date	1981	Scale	1: 2500	
Drawn	Hovick	Date	1981	Drawing Nº	M81-1683	

Report 246

81-1572

2940

Enclosure 2