450001

DIAL RANGE

REPORT OF EXPLORATION PROGRESS ON E.L. 24/73

PERIOD ENDING JUNE, 1976.

J.R. Chapman
Project Geologist.

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450002

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1. INTRODUCTION

This report covers operations carried out between May, 1975 and June, 1976.

Previous diamond drilling within the Dial Mine Grid failed to intersect any base metal mineralization (1975 Annual Report) and work on the grid was temporarily suspended to allow a regional appraisal of the Exploration Licence to be made. Areas of potential have been delineated and a program of follow-up geological, geochemical and ground geophysical exploration is planned and it is anticipated that this will generate new diamond drill targets.

2. SUMMARY OF WORK COMPLETED

2.1. Reconnaissance

Geology - Cambrian rocks were mapped on a scale of 1:10000 and abandoned prospects and areas of stream sediment anomalism were inspected.

Geochemistry - A total of 127 stream sediment and 157 soil samples were taken. Soil geochemistry included uncontrolled sampling, and sampling at 50 metre intervals of tracks and reconnaissance lines. 97 rock chip samples were also analysed.

2.2. Detailed Exploration

A small grid (total 500 line metres) in the Whiskey Creek area was cut, mapped, soil sampled and surveyed by fluxgate magnetometer.

3. RECONNAISSANCE EXPLORATION - GENERAL GEOLOGICAL/GEOCHEMICAL REVIEW

(Refer to Maps 4090 and 4092)

The Cambrian sequence within the Exploration Licence is thought to have a similar geological development to that of S.W. Tasmania and as such presents a permissive environment for the presence of base metal sulphide deposits. Regional mapping has not changed this view but has led to a better understanding of the Cambrian stratigraphy and limited the area considered to have discovery potential.

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Lobster Creek Volcanics. The Lobster Creek Volcanics consist predominantly of porphyritic keratophyre (but includes a diorite body) and was previously considered to form the lowest exposed member of the Cambrian sequence. They were thought to represent a meridinal volcanic arc within the Dial Trough and were tentitively correlated with rocks of the Mt. Read Volcanic Arc of S.W. Tasmania.

Pennzoil work however, involving petrographic examination and study of field relationships, suggests that these rocks are probably intrusive and were emplaced during middle to late Cambrian times.

The total sequence of porphyries includes the Minnow Keratophyre and some rocks mapped as Kerrison Volcanics (Devonport 1 mile sheet) but these are now thought to form a series of consanguineous intrusive bodies.

Although the keratophyres contain disseminated pyrite no evidence has been found of massive sulphide accumulations.

Cateena "Mudstone". The rocks of this formation consist mainly of fine to medium grained sediments, acid to intermediate volcanics, coarse pyroclastics and tuffs. The Dial Mine Grid is situated over volcanic rocks of this formation as are most of the abandoned cupriferous (?) pyrite workings and prospects in the Dial Range.

Strong folding, faulting and rapid lateral facies change, together with limited outcrop, has hampered the gaining of an understanding of the internal stratigraphic relationships of the Cateena. It does appear however that the volcanic rocks are limited to the lower parts of the formation. This volcanism is considered possibly contemporaneous to that of the Mt. Read Volcanic Arc and does present a permissive environment for the formation of massive sulphide deposits.

Four broad areas of occurrence of permissive volcanic rocks have been indicated. These are; i) the Dial Mine Grid and its environs, ii) an area extending south of the grid to Hardstaff Creek, iii) north east of the grid in the Whiskey Creek area, and iv) areas east of the Leven River.

Three additional geochemically anomalous areas , outside those of the Grid and the Whiskey Creek area, have been found within the volcanics.

1) South of the grid, anomalous soil sample results reaching 170 ppm Cu and 330 ppm Pb occur along a southward trend of 1300 metres strike length. Gossanous pyroclastics occur as float and a grab sample of this material assayed 500 ppm Cu, 400 ppm Pb and 340 ppm Zn.

2) In the vicinity of Russells Creek Adit, 1.7 Km south of the grid, Cu values of 170 ppm were obtained in the soils, but the extent of the anomaly is yet to be determined.

3) An area of pyroclastics 2 Km east of the Leven River and east south east of the grid has returned anomalous rock chip sample results with the highest value being 5000 ppm Pb and 5200 ppm Zn.

Barrington Chert. This is a thick monotonous sequence of chert and siliceous siltstone that shows no evidence of any contemporaneous volcanic activity.

Numerous stream sediment and soil geochemical anomalies occur within the cherts but inspection and follow up sampling in these areas has shown no obvious cause for the anomalies. It is assumed that they are due to high background values from certain sedimentary horizons.

A small manganiferous iron oxide deposit was discovered 500 metres north of Mt. Lorymer but this is not considered of any significance.

Motton Spillite. The Motton Spillite occurs as large homogenous sheet like bodies. Although pillow lavas have been reported from north of the Exploration Licence these rocks contain numerous xenolith of Barrington Chert and are thought to be partly intrusive.

This unit gives high background geochemical values, especially copper, and maximum stream sediment and soil sample results of 160 ppm Cu and 220 ppm Cu respectively are not considered of significance.

Middle to Upper Cambrian rocks include Radfords Creek "Mudstone", Appelbee Volcanics and Gog Range Greywacke. The sediments are generally coarse to fine grained with fine grained greywackes predominating, some of which are turbidites. The environment of deposition of these rocks is considered unsuitable for the formation of massive sulphides and interest is restricted to occasional tuffaceous horizons. (Appelbee Volcanics).

Geochemical response from these rocks has generally been poor.

Ordovician. The Ordovician rocks within the Dial Range consist dominantly of conglomerates and coarse sandstones. Minor mineralization has only been recorded from these rocks in Tasmania.

Reconnaissance soil sampling has detected anomalous copper results from conglomerates, considered to be Ordovician, near Walloa Creek, and these warrant further investigation. Soil samples contained a maximum of 680 ppm Cu while a slightly gossanous conglomerate from the area assayed 780 ppm Cu. The anomaly occurs at the base of the conglomerate in unconformable contact with Cambrian tuffs.

An isolated boulder of conglomerate containing galena, and assaying 2900 ppm Pb and 3200 ppm Zn, was found on the western fall of Hardstaff Creek and it is suspected to have also been derived from the Ordovician which outcrops higher upslope.

4. DETAILED EXPLORATION - WHISKEY CREEK GRID

A small grid near Whiskey Creek was cut and sampled following the discovery of some weathered gossan outcropping next to the Sundial road. Rock chip samples from the outcrop returned maximum values of 1830 ppm Pb and 1010 ppm Zn, but soil sampling of the grid failed to produce any definitive anomalies.

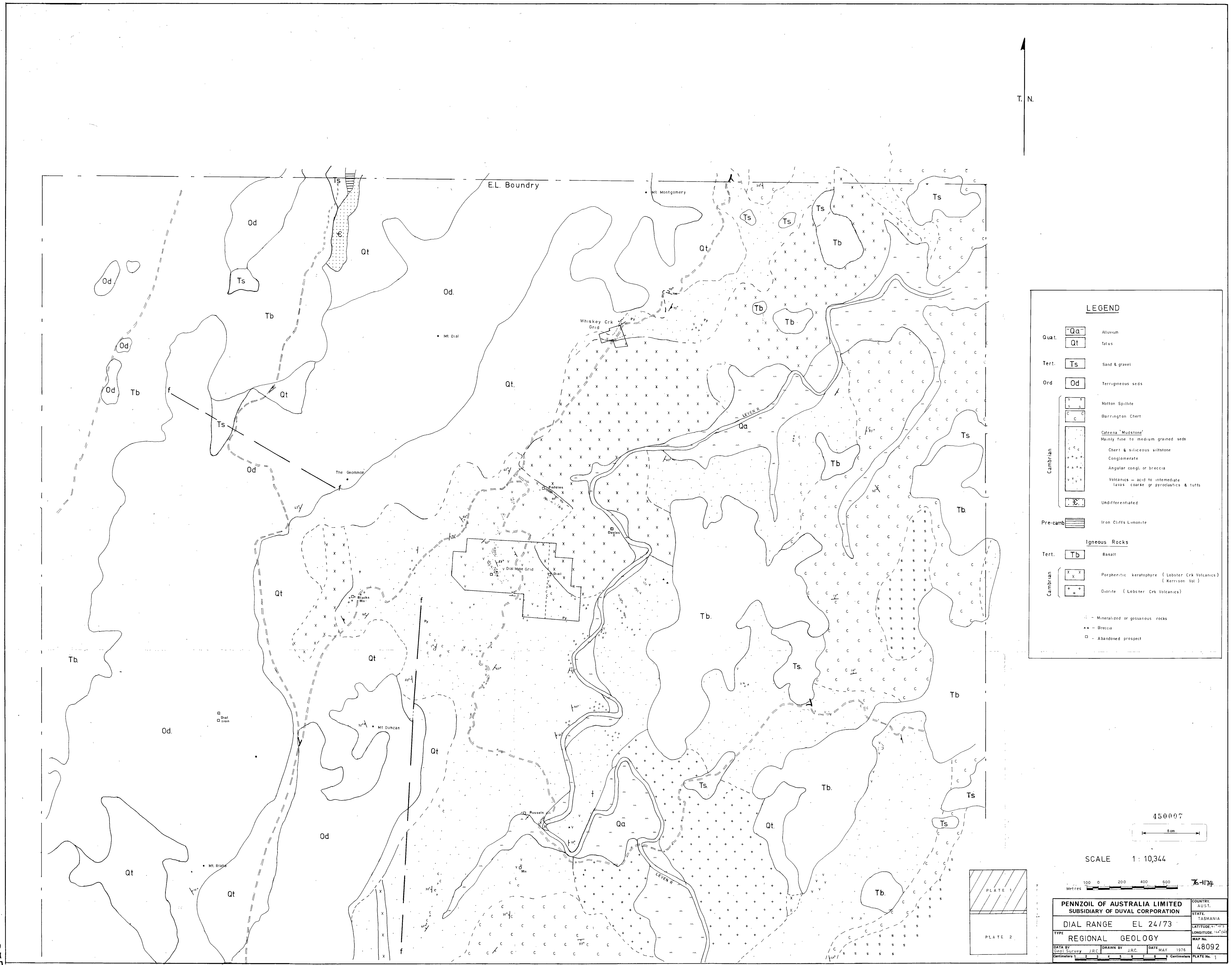
The gossan occurs within the Cateena "Mudstone", consisting at this locality of laminated pyritic siltstone, coarse grained sediments, tuff and possibly rhyolite, at the contact with Lobster Creek keratophyre. Mapping and a magnetometer survey delineated the contact, which appears to cut obliquely across the apparent strike of the Cateena rocks.

The results obtained here are inconclusive and further geochemical/ geophysical work is required.

5. CONCLUSION AND FUTURE PLANS FOR 1976

It has been established that the areas considered of greatest base metal potential occur associated with volcanic rocks of the Cateena "Mudstone". These have now been delineated. Geochemical anomalies occurring within these areas are scheduled for follow up exploration. This will consist of mapping and soil sampling of grid lines. Promising areas will be surveyed using Magnetic Induced Polarization.

Diamond drilling is anticipated during the next field season testing targets derived from the proposed program and will include further holes on targets within the Dial Mine grid.


T. N.
E.L. Boundry
Mt Montgomery
Mt Dial
Whiskey Crk Grid
The Gnomon
Dial Mine Grid
Dial
Davies
Blacks Mn
Mt Duncan
Dial Iron
Russels
Mt Riana
LEVEN R.
LEGEND
Quat.
Qa Alluvium
Qt Talus
Tert.
Ts Sand & gravel
Ord
Od Terrigineous seds
Cambrian
Motton Spillite
Barrington Chert
Cateena 'Mudstone'
Mainly fine to medium grained seds
Chert & siliceous siltstone
Conglomerate
Angular congl. or breccia
Volcanics — acid to intemediate lavas coarse gr pyroclastics & tuffs
€ Undifferentiated
Pre-camb
Iron Cliffs Limonite
Igneous Rocks
Tert.
Tb Basalt
Cambrian
Porpheritic keratophyre (Lobster Crk Volcanics) (Kerrison Vol)
Diorite (Lobster Crk Volcanics)
– Mineralized or gossanous rocks
– Breccia
– Abandoned prospect
PLATE 1
PLATE 2
450007
5 cm
SCALE 1 : 10,344
Metres 100 0 200 400 600
76-1174
PENNZOIL OF AUSTRALIA LIMITED
SUBSIDIARY OF DUVAL CORPORATION
DIAL RANGE EL 24/73
TYPE REGIONAL GEOLOGY
DATA BY Geol Survey JRC
DRAWN BY J.R.C.
DATE MAY 1976
COUNTRY. AUST.
STATE. TASMANIA
LATITUDE. 41°10'S
LONGITUDE. 146°02'E
MAP No. 48092
PLATE No. 1

075

T. N.

Mt Lorymer

Kaines Bn

LEVEN R

Tertiary Sol

Conglt

Turbidites

Limonitic

E.L. Boundry

GUNNS PLAINS

LEGEND

Quat.	Qa	Alluvium
	Qt	Talus
Tert.	Ts	Sand & gravel
Ord.	Ol	Gordon Limestone
	Od	Terrigineous seds
Ord ?		Conglomerate (Sprent F.)
Cambrian		Sediments – mainly siltst. & greywacke (Radfords Crk. Mudstone, Gog Range Greywacke)
		Chert & sil siltst.
		Tuffs (Appelbee Vol.)
		Motton Spilite
		Barrington Chert
		Cateena Mudstone Volcanics

Igneous Rocks

Tert.	Tb	Basalt
Dev.	Dd	Dolerite
	Dg	Housetop Granite
Camb		Porpheritic keratophyre

Mineralized or gossanous rocks

Abondoned prospect

45000S

5 cm

SCALE 1 : 10344

PLATE 1

PLATE 2

Metres 100 0 200 400 600

76-1174

74-1045

PENNZOIL OF AUSTRALIA LIMITED
SUBSIDIARY OF DUVAL CORPORATION

DIAL RANGE EL 24/73

TYPE REGIONAL GEOLOGY

DATA BY Geol Survey JRC | DRAWN BY JRC | DATE MAY 1976

Centimeters 1 2 3 4 5 6 7 8 9 Centimeters

COUNTRY. AUST.
STATE. TASMANIA
LATITUDE. 41° 10'S
LONGITUDE. 146° 02'E
MAP No. 48092
PLATE No. 2

920

076

T. N.

△ Mt. Montgomery

△ Mt. Dial

△ The Gnomon

△ Mt. Duncan

△ Mt. Riana

Keddies Ck

Whisky Ck

Parsons Ck

RIVER LEVEN

Allison Ck

Library Ck

Stanton Ck

Revell Ck

Hardstaff Ck

Rogers Ck

Foggs Flat

DIAL GRID

ANOMALOUS RESULTS

SAMPLE	DESCRIPTION	Cu	Mo	Pb	Zn		oz Au	oz Ag
3728	Rock Chip							
3931		730		120	70		<0.2	<2
3932		2550		110	60		<0.2	2
3933		2550		530	370		<0.2	4
3934		1200		120	120		<0.2	2
3935		1250		70	20		0.2	2
3936		600		50	730		<0.2	<2
3937		760		70	30		<0.2	<2
6707		30		390	210		ND	ND
6708		90		2700	1180		ND	4
7461		600		630	80			
7465		820		80	120			
7466		500		400	240			
7467		230		5000	5200			
7476		940		550	30			
7477		190		80	870			
7736		240		80	480			
DRR 10	Stream Sed.	50		60	110			
DRC 2		70		30	90			
DRC 5		70		40	60			
DRC 6		70		50	30			
DR 1		190		10	30			<2
DR 4		70		30	190			<2
DR 6		50		30	140			<2
DR 200		80		20	70			
DR 202		30		30	260			
DR 203		25		30	170			
DR 212		15		20	140			
DR 213		20		30	120			
DR 214		25		20	120			
DR 215		10		10	120			
DR 216		15		20	120			
DR 218		15		30	120			
DR 232		15		10	120			
DR 234		60		20	130			
DR 235								
DR 236		30		30	210			
DR 264		40		120	80			
DR 365		50		60	160			
DR 366		50		40	140			
DR 367		140		40	130			
DR 368		110		60	160			
DR 369		110		60	120			
DR 370		150		60	100			
DR 401		70		50	60			
DR 523		90		50	50			
DR 574		65		50	160			
DR 575		65		90	160			
SR 4	Soil	15		80	60			
SR 9		80		130	160			
DRS 13		30		40	130			<2
DRR 2		100		20	30			<2
DRR 6		90		10	40			<2
DRR 7		120		20	40			2
DRR 8		180		10	60			<2
DRR 9		140		10	40			<2
DRR 10		130		20	40			<2
DR 339		60		120	60			
DR 340		90		130	40			
DR 346		110		60	60			
DR 354		55		40	100			
DR 389		90		40	60			
DR 393		110		30	70			
DR 394		170		30	60			
DR 396		110		30	50			
DR 397		110		30	30			
DR 409		90		80	100			
DR 412		120		250	770			
DR 418		8		10	90			
DR								
DR 511		300		60	10			
DR 522		95		50	50			
DR 523		65		120	70			
DR 524		170		120	30			
DR 525		120		60	50			
DR 526		110		60	50			
DR 536		110		50	10			
DR 537		85		40	10			
DR 564		140		50	60			
DR 565		90		80	40			
DR 566		135		80	30			
DR 562		130		60	10			
DR 563		85		330	30			
DR 568		95		60	30			

FOR KEY SEE PLATE 2

PLATE 1

PLATE 2

450009

5 cm

SCALE : 1 : 10,344

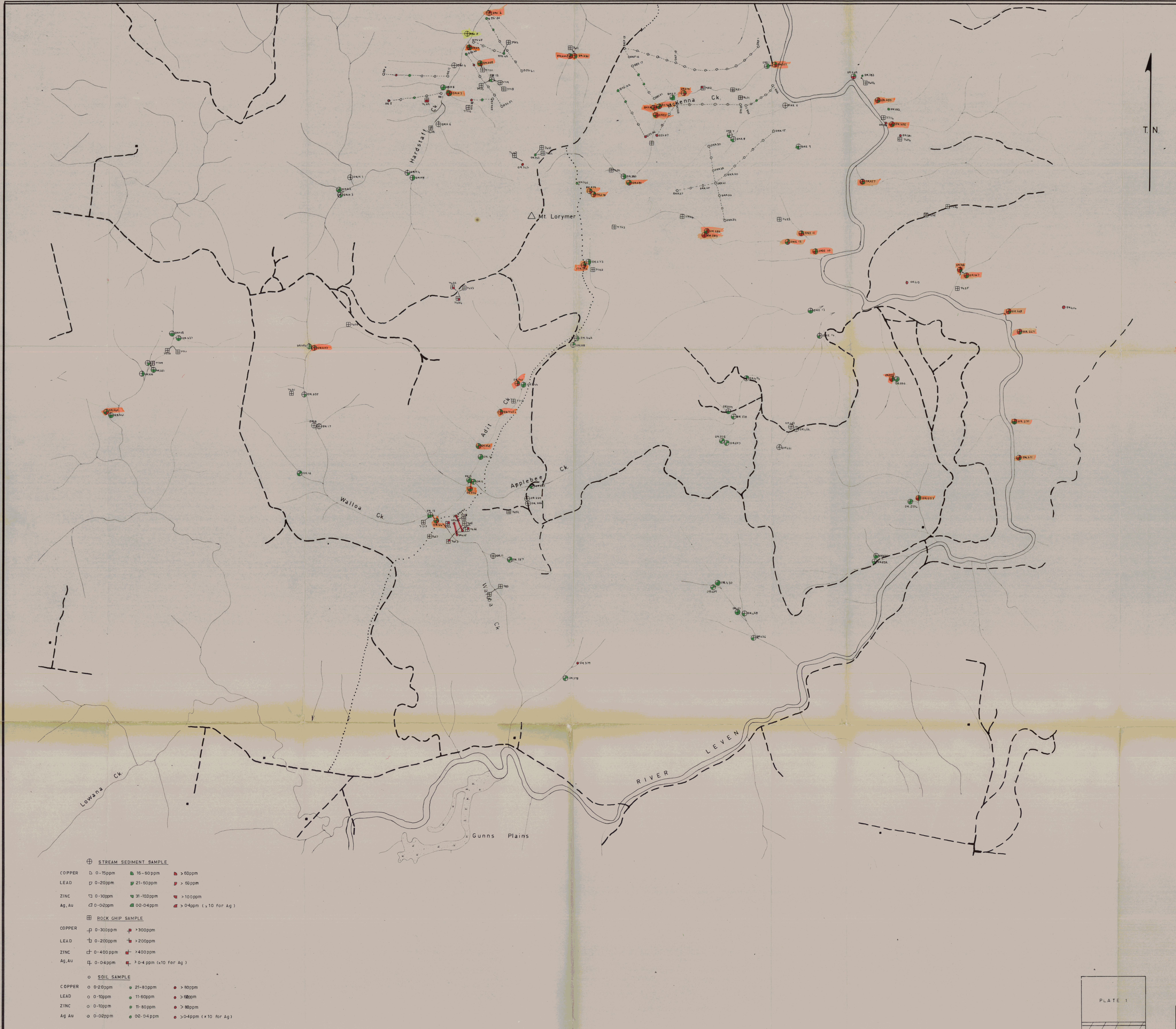
Metres 100 0 200 400 600

46-1174

PENNZOIL OF AUSTRALIA LIMITED SUBSIDIARY OF DUVAL CORPORATION	COUNTRY. AUSTRALIA
DIAL RANGE EL 24/73	STATE. TASMANIA
TYPE REGIONAL GEOCHEMISTRY	LATITUDE. 41°10' S
	LONGITUDE. 146° 00' E
DATA BY / DRAWN BY JPS MCT JRC / DATE APRIL 1976	MAP No. 48090
	PLATE No. 1

073

073



ANOMALOUS RESULTS

SAMPLE	DESCRIPTION	Cu	Mo	Pb	Zn		oz. Au	oz. Ag
7422	Rock Chip	70		370	30		N.D.	
7424		200		330	30		N.D.	N.D.
7429		150		2900	3200		N.D.	N.D.
7453		780		20	60			
7466		500		40	20			
7732		595		20	20		0·4	N.D.
DAC 2	Stream Sed.	70		30	80			
DRE 4		110		70	40			< 2
DRE 5		90		70	30			< 2
DRE 10		50		60	110			< 2
DRE 11		50		80	120			< 2
DRE 12		50		70	100			< 2
DRH 7		80		50	180			2
DRH 9		100		60	110			2
DR 229		60		80	20			
DR 230		80		50	20			
DR 240		30		100	40			
DR 243		50		140	30			
DR 245		30		110	20			
DR 246		80		50	90			
DR 247		40		80	70			
DR 248		40		140	90			
DR 250		80		50	190			
DR 253		25		80	30			
DR 256		140		50	180			
DR 257		120		40	150			
DR 258		50		140	90			
DR 266		160		50	180			
DR 267		160		40	140			
DR 268		120		40	100			
DR 269		110		50	120			
DR 270		110		40	90			
DR 271		110		40	140			
DR 272		30		70	20			
DR 275		50		110	30			
DR 276		60		150	50			
DR 277		40		100	30			
DR 278		50		70	10			
DR 279		20		190	20			
DR 281		40		150	60			
DR 282		70		80	40			
DR 283		90		140	100			
DR 503		40		30	150			
DR 505		60		40	170			
DE 5	Soil	80		80	90			
DE 7		70		100	120			
DJS 26		10		100	10			
DJS 27		110		60	20			
DJS 47		90		40	20			
DJS 54		110		20	30			
DR 342		70		70	20			
DR 376		80		90	140			
DR 379		130		20	20			
DR 380		30		30	100			
DR 381		50		20	110			
DR 413		160		40	80			
DR 414		220		40	150			
DR 435		250		10	10			
DR 436		220		10	10			
DR 437		480		30	10			
DR 438		120		10	ND			
DR 439		140		10	10			
DR 440		680		40	10			
DR 592		180		20	10			
DR 593		115		20	20			
DR 594		150		20	10			
DR 595		450		10	10			
DR 596		350		20	10			
DR 597		255		20	20			

450010

5 cm

SCALE : 1 : 10,344

Metres 100 0 200 400 600

76-1174

PLATE 1
PLATE 2

PENNZOIL OF AUSTRALIA LIMITED SUBSIDIARY OF DUVAL CORPORATION			COUNTRY. AUSTRALIA
DIAL RANGE EL 24/73			STATE. TASMANIA
TYPE REGIONAL GEOCHEMISTRY			LATITUDE. 41°10'S LONGITUDE. 146°02'E
DATA BY	DRAWN BY J.P.S. M.C.T. J.R.C.	DATE APRIL 1976	MAP No. 48090
			PLATE No. 2