EL 6629 "MT. OSBORNE EAST"
BROCKS CREEK AREA NT
ANNUAL AND FINAL RELINQUISHMENT REPORT
YEAR ENDING 25 OCTOBER 1991

Distribution:

NTDME, DARWIN
DOMINION MINING LTD, DARWIN
DOMINION MINING LTD, PERTH

DD/AD52/08/406/113

NB-EL6629

N R BURN
DEC 1991

CONTENTS

FIGURES

Fig. No.	Title	Scale	Drawing No.
1.	EL 6629 MT. OSBORNE EAST TENEMENT LOCATION	1:50,000	2P-T6

LIST OF TABLES

LIST OF PLATES

Fig. No.	Title	Scale	Drawing No.
1.	EL6629 - MAGNETIC CONTOURS	1:25,000	2A-Pa31
2.	EL 6629 FACT GEOLOGY AND GEOCHEMISTRY	1:10,000	2P-G9

1. SUMMARY

This report details the exploration activities (1990-91) completed on EL 6629 by Dominion ending 25 October 1991.

The licence, comprising one (1) one minute block, was granted to Dominion Gold Operations Pty Ltd on 23 November 1989 for a period of two (2) years. Surrender of this licence was effective 25 October 1991.

Exploration activities during the 1990 field season consisted of airborne geophysical interpretation, aerial photography interpretation, mapping at 1:10000 scale, continuous scree/lag sampling (48 samples) and soil sampling.

Work in Year 2 by Dominion consisted of re-interpretation of previous data, follow-up sampling of geochemical anomalies located in Year 1, and some further extended mapping and sampling. Maximum anomalous result was 41 ppb Au.

The failure to detect significant anomalies worthy of further follow-up resulted in the decision to surrender the Exploration Licence.

2. LOCATION AND TENURE

A review of aeromagnetic data purchased by Dominion indicated the area located between Cosmo Howley and Woolwonga offered potential for classic Pine Creek Style epigenetic gold mineralization. Application for Exploration Licence 6629 was lodged on the basis of this conclusion.

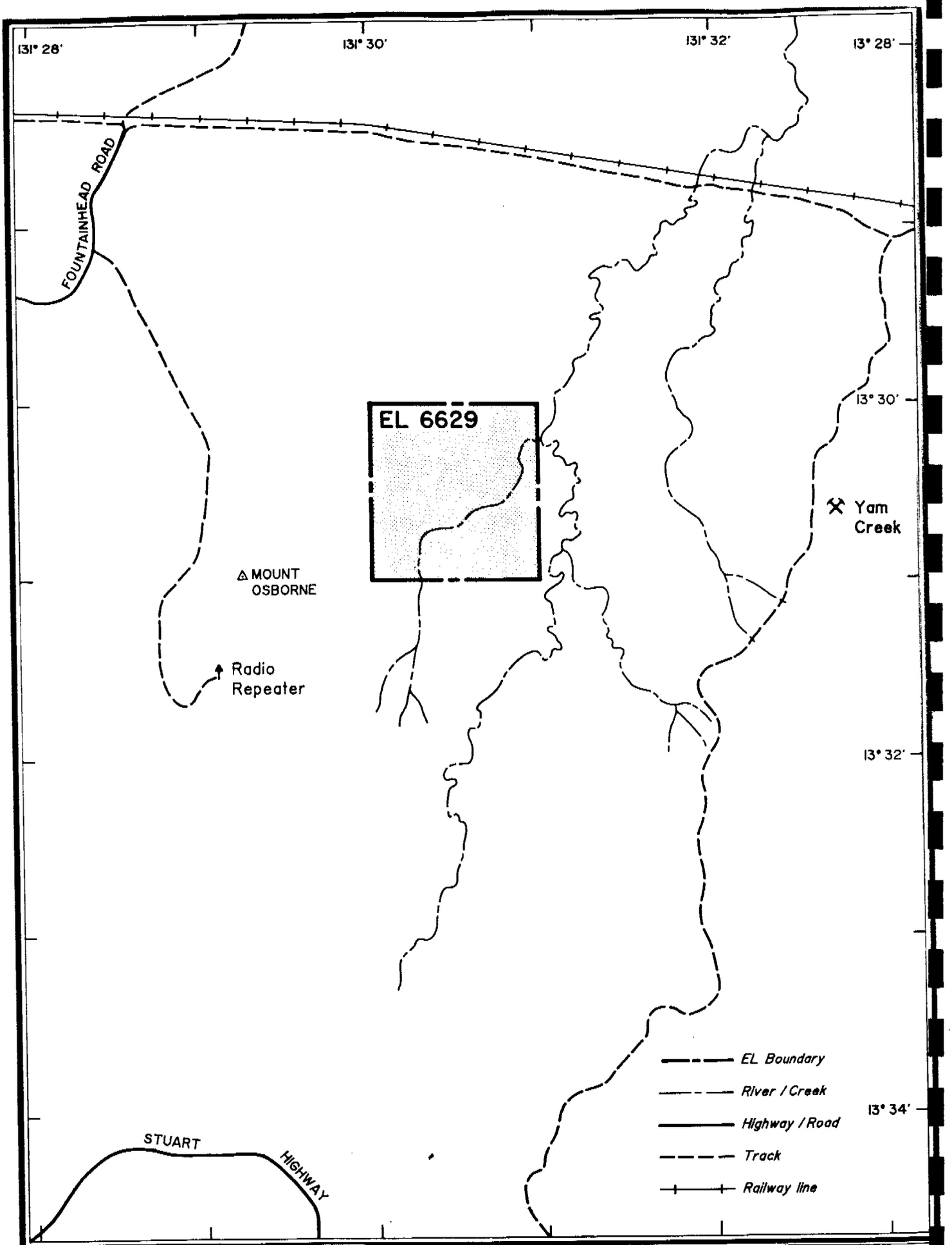
EL 6629 is located 160km south of Darwin, off the Fountain Head road toward the Mt. Osborne Repeater station and consists of one (1) minute block totalling approximately 330 hectares. The tenement lies between latitudes 13°30'S and 13°31'S, and longitudes 131°30'E and 131°31'E. See Fig. 1.

Access is via the Stuart Highway and the sealed Fountain Head road. Climatically, Mt. Osborne East experiences a wet season (November to April) and a dry season (May to October). Average annual rainfall is 1249mm and the mean temperature is approximately 28°C.

Local relief is generally rugged ranging from 100 to 170m above sea level.

EL 6629 comprising 1 block was granted to Dominion Gold Operations Pty Ltd on 23 November 1989 for a period of two (2) years. Cessation of this licence was effective 25 October 1991.

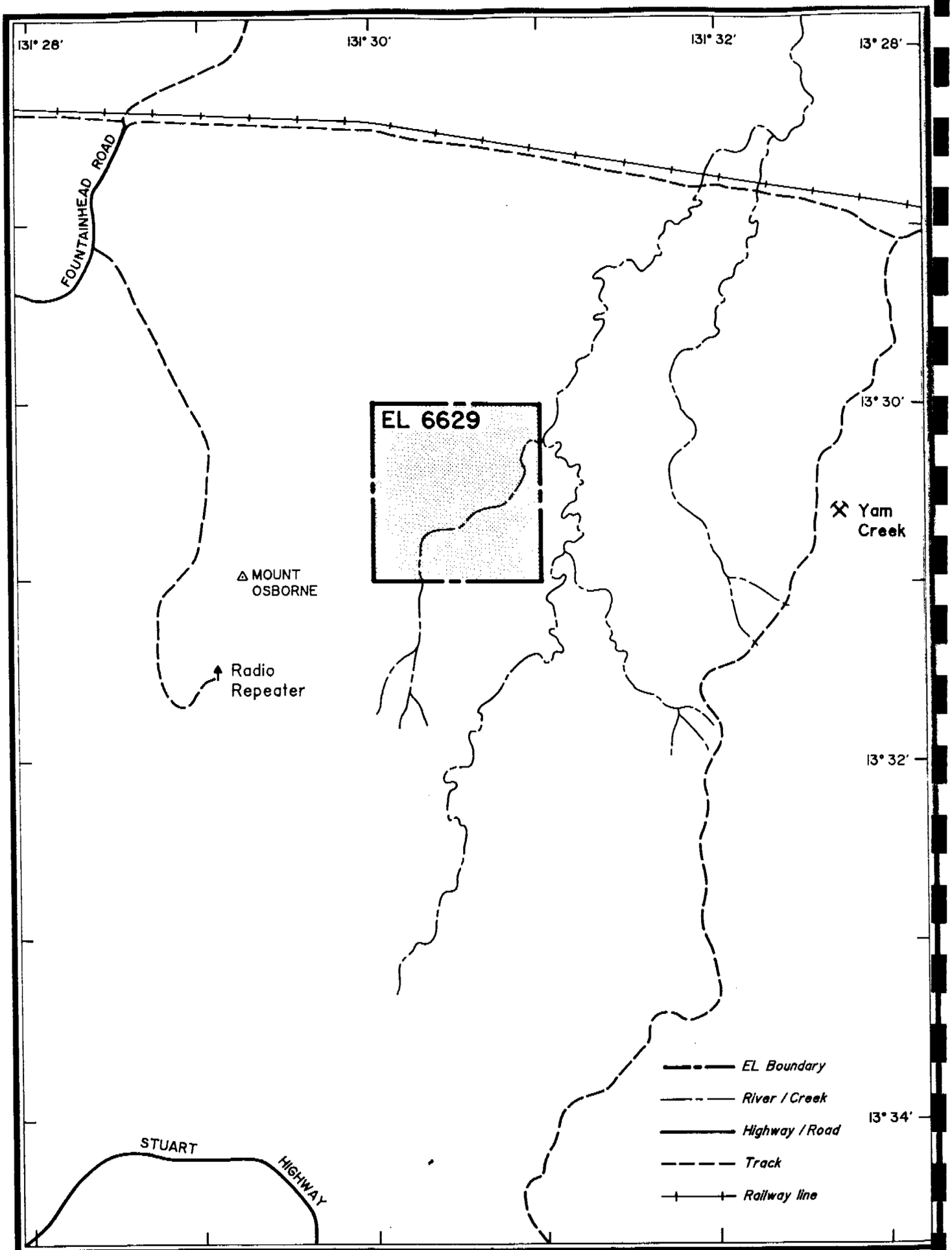
The area covered by EL 6629 was previously held under EL 5043 (Oceania Exploration and Mining Ltd) and EL 4219 (Nobelex Ltd).



EL 6629 - MT OSBORNE EAST TENEMENT LOCATION

PROJECT				STATE	N.T.
ORIGINATOR	N.B.	Date NOV. 90	DRAWN C.S.D.S.	Date	NOV. 90
SCALE	1:50 000	FIGURE No: /		PLAN No:	2P-T6

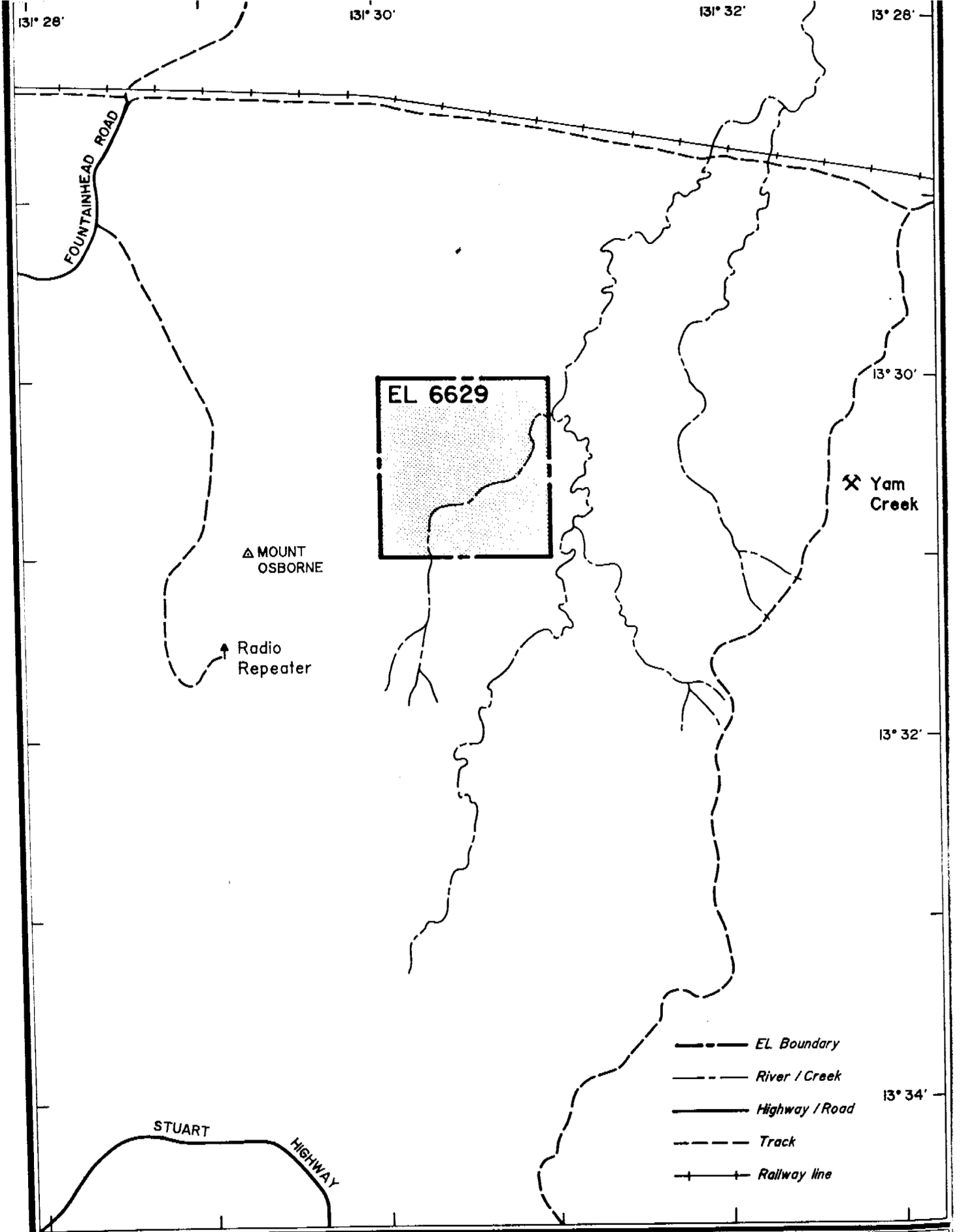
Dominion Mining Limited



EL 6629 - MT OSBORNE EAST TENEMENT LOCATION

PROJECT				STATE	N.T.
ORIGINATOR	N.B.	Date NOV. 90	DRAWN C.S.D.S.	Date	NOV. 90
SCALE	1:50 000	FIGURE No: 1		PLAN No:	2P-T6

Dominion Mining Limited



EL 6629 - MT OSBORNE EAST TENEMENT LOCATION

PROJECT				STATE	N.T.
ORIGINATOR	N.B.	Date NOV. 90	DRAWN C.S.D.S.	Date	NOV. 90
SCALE	1:50000	FIGURE No: /		PLAN No:	2P-T6

Dominion Mining Limited

3 GEOLOGY

3.1 Regional Geology

The geology of the Pine Creek Basin has been well documented by the BMR [(Wallace et al (1985), Needham, et al (1980)].

The Early Proterozoic sequence was deposited by alternating shallow marine and continental environments in an intracratonic basin setting. Following intrusion by conformable sills, a major period of deformation and regional metamorphism, related to granite intrusion, produced a series of tight, upright folds.

Early Proterozoic stratigraphy of the Pine Creek/Adelaide River area is listed in Table 1.

3.2 Local Geology

Within EL6629, outcrop indicates a series of tightly folded greywackes, siltstones and mudstones from the Burrell Creek Formation which trend in a N-NW direction. Minor quartz stockwork trending 010°M has also been observed.

Quartz-carbonate vein breccias, 0.5-2m wide, occur subparallel to inferred photo lineaments and the Hayes Creek Fault directions (020°M).

Minor copper (malachite) workings have been mapped in quartz stockwork subparallel to a major quartz reef which trends 010° over a strikelength of approx. 50-100m.

The southern half of the licence is generally covered by Cenozoic alluvials and black soils with minor residual soil profiles. Photo geological mapping of this area has interpreted a series of NE trending anticlinal and synclinal structures.

TABLE 1

EARLY PROTEROZOIC STRATIGRAPHY OF ADELAIDE RIVER/PINE CREEK AREA

GROUP	FORMATION	MEMBER	LITHOLOGIES	THICKNESS m
	Zamu Dolerite		Massive, medium to coarse grained. Quartz actinolite, tourmaline	
Finniss River	Burrell Creek		Greywacke, siltstone, mudstone, rare chert iron formation and conglomerate	3000
South Alligator	Mt Bonnie	Upper	Mudstone, siltstone, chert, iron formation	100–250
		Lower	Greywacke, mudstone, siltstone, chert, carbonaceous mudstone, rare conglomerate	50–150
	Gerowie Tuff		Chert, mudstone, siltstone, minor carbonaceous mudstone	200–400
	Koolpin	Upper	Carbonaceous mudstone, mudstone, siltstone	50–150
		Middle	Iron formation, mudstone, minor siltstone	130–150
		Lower	Micaceous mudstone, siltstone, minor carbonaceous mudstone	0–250
Mt. Partridge	Wildman Siltstone		Mudstone, phyllite, siltstone, carbonaceous mudstone, sandstone	200–400
	Mundogie Sandstone		Quartzite, arkose, pebble conglomerate, mudstone, siltstone	500

4. 1990-91 EXPLORATION

The EL6629 exploration program included: - air photograph interpretation, airborne geophysics, geological mapping, continuous scree/lag sampling and soil sampling .

4.1 Geophysics

In 1987 and 1988 Aerodata flew a large portion of the Western Pine Creek Basin.

The survey of 22,663 line kilometres was originally commissioned by Golden Plateau NL and completed in May 1988. It was subsequently made available for general sale and Dominion acquired the data in late 1988.

Specifications for the survey were:-

Aircraft	Rockwell Shrike Commander 500S
Magnetometer	Scintrex V201 split beam cesium vapour Resolution: 0.04 nano Tesla Cycle rate: 0.2 seconds Sample interval: 14 metres
Spectrometer	256 channel geometrics exploranium GR800B Processed channels: Total count 0.40 - 3.01 MeV K_{40} 1.37 - 1.56 MeV Bi_{214} 1.67 - 1.86 MeV Th_{208} 3.02 - 6.00 MeV Volume: 33.56 litres Cycle rate: 1.0 second Sample interval: 70 metres
Data Acquisition	Hewlett Packard 9000 series computer Aerodata digital acquisition system
Flight Line Spacing	Traverse lines; 200 metres Tie lines: 5000 metres
Flight Line Direction	Traverse lines: 090 - 270 degrees Tie lines; 000- 180 degrees
Survey Height	70 metres - mean terrain clearance
Navigation	Syledis UHF positioning system

Aerodata supplied Dominion with three sets of aeromagnetic contour maps at scales of 1:10000, 1:25000 and 1:100000. Magnetic contours over EL 6629 are shown in Plate 1.

4.2 Geological Mapping and Geochemistry

Geological mapping of the single block was carried out at 1:10000 scale. See Plate 2.

Seven geological traverses were completed across ridges and residual soil areas with data compiled and integrated with photogeological interpretation. Areas with minor outcrop i.e. southern half, were mapped by dominant scree lithologies to extend the fact geological cover of EL 6629.

A total of 52 continuous scree/lag samples were collected from EL 6629. Procedure for this sampling method was to collect 3-4kg of scree continuously over a 25m interval. Seven lines for 1300m were sampled over irregularly spaced geological traverses and areas of quartz scree. Details are listed below.

LINE	SAMPLE NO	TYPE	LENGTH	NO. OF SAMPLES
1	283542-553	Scree	300	12
2	283554-559	Scree	150	6
3	283560-565	Scree	150	6
4	283566-570	Scree	125	5
5	283601-607 283571-581	Scree Soil	450	7 11
6	283582-590	Scree	225	9
7	283591-593	Scree	75	3
8	283608-622	Soil	375	15
			1850m	**74**

Soil sampling was completed over two lines totalling 550m. Samples were collected as a composite of two sites 12.5m apart, thus giving a 25m spacing.

See Plate 2 for soil and scree sample locations.

All soil samples were assayed by Analabs in Adelaide by analytical technique 334, 30g Aqua Regia with carbon rod finish (DL 0.001 ppm). Scree samples were assayed by Analabs Darwin by method 335, 50g Aqua Regia with AAS finish (DL < 0.012 ppm).

Continuous scree sampling across areas of quartz scree/outcrop returned two anomalous gold values which are described below:-

Sample No.	Assay Au (ppm)	Location (AMG)	Description
283543	0.041	8504 630N 771 445E	Qtz sc, mr. Cu + go, tr Su
283582	0.031	8505 730N 772 070E	Qtz vn sc, r.li, mr. stwk

Soil sampling of areas of residual soil failed to return any anomalous gold mineralization.

4.3 Aerial Photography

During May 1989, Airesearch Mapping Pty Ltd of Darwin, flew the Woolwonga-Cosmo Howley tenements held by Dominion and produced sets of 1:25000 and 1:10000 scale air photos.

The relevant air photo runs are AM521, Runs 5 (No. 037-039) and 6 (No. 069-071) at 1:25000 scale.

4.4 1991 EXPLORATION PROGRAMME

During the 1990 field season, geological mapping with soil and continuous scree sampling was completed over the licence area.

Results from this first pass exploration program detected two low tenor Au anomalies up to 0.041 ppm Au.

Exploration work completed in 1991 included re-interpretation of:

- aerial photography and interpretation
- geophysics and interpretation
- geological mapping
- soil and continuous scree sampling

5. CONCLUSIONS/RECOMMENDATION

Results from the Year 1 exploration programme detected low order Au anomalies. Following review/evaluation of available geophysical and geochemical data in Year 2 it was indicated that prospectivity for significant mineralization was low and no further exploration was warranted. The licence was surrendered effective 25 October 1991.

6. EXPENDITURE

Expenditure covenant for Year 2 was $5,000.

Expenditure for EL 6629, recorded for the 11 months ending 31 October 1991 as given below, is $8,400. Note that some costs e.g. assays are included from the Year 1 exploration programme.

EL 6629 EXPENDITURE YEAR 2 TO 31 OCTOBER 1991

Assays	546
Equipment	225
Salaries & Wages	3373
Travel & Accommodation	201
Vehicles	1511
Camp/Field Supplies	383
Drafting and Computing	220
Office	915
Administration	1026
TOTAL	**$8,400**

7. REFERENCES

Burn, NR, Dec 1990 for Dominion Mining

EL6629 "Mt. Osborne East", Pine Creek District NT

Annual Report 1990. Year One of Tenure.

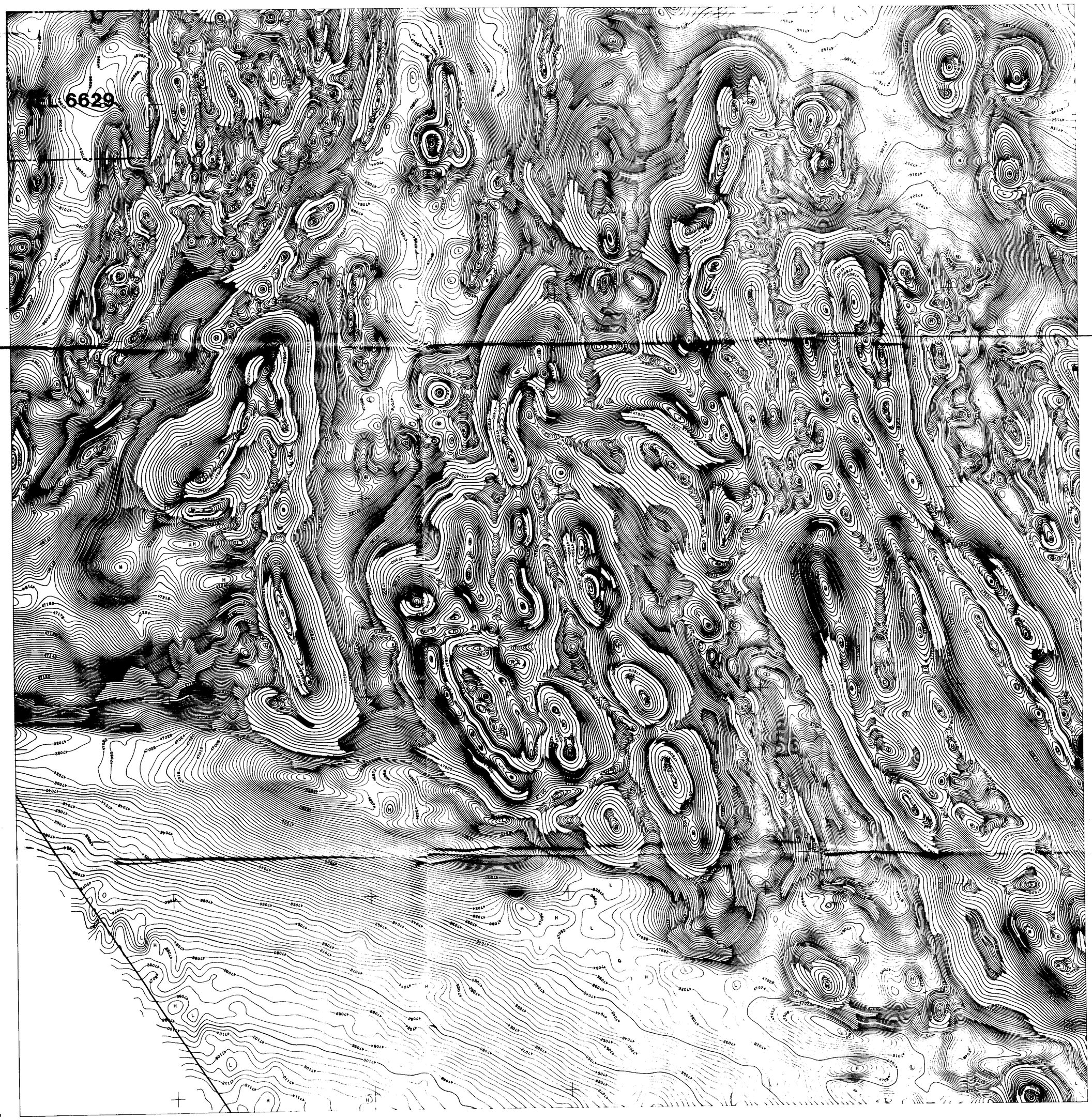
Needham RS, Crick JH & Stuart-Smith PB (1980)

"Regional Geology of the Pine Creek Geosyncline" in proceedings of the International Uranium Symposium. International Atomic Energy Agency, Vienna. p1-22.

Wallace DA, Stuart-Smith PG, Needham RS and Roarty MJ (1985)

"The Geology of the McKinlay River Area, Northern Territory, Australia". Bureau of MIneral Resources. 1:100000 Geological Sheet 5271.

772500 mE
775000 mE
777500 mE
780000 mE
782500 mE
131°30'
131°32'30"
131°35'
131°37'30"
13°30'
13°32'30"
13°35'
13°37'30"
8505000 mN
8502500 mN
8500000 mN
8497500 mN
8495000 mN
8492500 mN



AIRBORNE SURVEY SPECIFICATIONS

AIRCRAFT	ROCKWELL SHRIKE COMMANDER 500S.
MAGNETOMETER	SCINTREX V201 SPLIT BEAM CESIUM VAPOUR. RESOLUTION: 0.04 nanoTesla. CYCLE RATE: 0.2 second. SAMPLE INTERVAL: 14 metres.
SPECTROMETER	256 CHANNEL GEOMETRICS EXPLORANIUM GR800B. Processed channels : Total Count 0.40 - 3.01 MeV K_{40} 1.37 - 1.56 MeV Bi_{214} 1.67 - 1.86 MeV Tl_{208} 2.41 - 2.80 MeV Cosmic 3.02 - 6.00 MeV VOLUME: 33.56 litres. CYCLE RATE: 1.0 second. SAMPLE INTERVAL: 70 metres.
DATA ACQUISITION	HEWLETT PACKARD 9000 SERIES COMPUTER. AERODATA DIGITAL ACQUISITION SYSTEM.
FLIGHT LINE SPACING	Traverse lines: 200 metres. Tie lines: 5000 metres.
FLIGHT LINE DIRECTION	Traverse lines: 090-270 degrees. Tie lines: 180-360 degrees.
SURVEY HEIGHT	70 metres - mean terrain clearance.
NAVIGATION	SYLEDIS UHF positioning system.

REFERENCE

CONTOUR INTERVAL: 2 nanoTeslas

The magnetic data has had the gradient due to the I.G.R.F model 1985 and secular variation model 1985-1990 removed and has been adjusted for diurnal variation to a constant base value.

Data has been corrected for a system parallax of 1 fiducial and gridded using a 70 metre grid cell.

CLIENT : DOMINION MINING LIMITED

AIRBORNE GEOPHYSICAL SURVEY
PINE CREEK - NORTHERN TERRITORY
1987 - 1988
TOTAL FIELD MAGNETIC CONTOUR MAP

Scale 1:25 000

500 0 500 1000 1500 2000 2500 metres

AUSTRALIAN MAP GRID

flown and compiled by AERODATA HOLDINGS LIMITED

AERODATA

1:25000 SHEET INDEX

5171 II-SE	5271 III-SW	5271 III-SE
5170 I-NE	5270 IV-NW	5270 IV-NE
5170 I-SE	5270 IV-SW	5270 IV-SE

PINE CREEK 5270-IV-NW

SHEET LOCATION

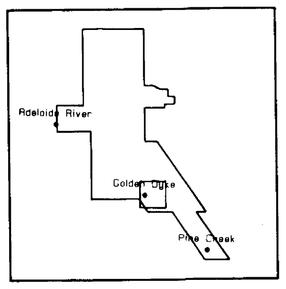


Plate No: 1

Dominion Mining Limited

PROJECT: BROCKS CREEK

PROSPECT: EL 6629 Mt. OSBORNE EAST N.T.

FACT GEOLOGY AND GEOCHEMISTRY

0 100 200 400 600 800 m

ORIGINATOR: N.B.	**SCALE:** 1:10 000
Date: Dec. '90	**DRAWN:** C.S.D.S.
PLATE No: 2	**PLAN No:** 2P-G9

Legend

- Dip and strike
- Quartz vein orientation
- Vertical quartz vein orientation
- Cleavage
- xxxxx Stockwork
- Soil scree contact
- Boundary between transported and residual soil
- E.L. Boundary
- Creeks and drainage
- 283554 Sample Number
- Soil / scree line
- 0.011 Assay (Au ppm)

Abbreviations

bw	brown
cb	Carbonate
Cu	Copper
in.b	interbedded
q	Quartz
rd	red
sc	scree
Sgw	Greywacke
Smd	Mudstone
Ssl	Siltstone
yl	yellow

Insets