

**EXPLORATION LICENCE 23605**  
**AT MOLINE NORTHERN TERRITORY**

**REPORT FOR THE FIRST YEAR OF TENURE**  
**ENDING 19<sup>TH</sup> MARCH 2004**

**Prepared for Mr M Teelow**

**By**

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## **1. INTRODUCTION.**

Exploration Licence 23605 is situated in the Ranford Hill 1:100,000 sheet area (Sheet 5370), some 50km northeast of Pine Creek township, and approximately 250km by road southeast of Darwin (Figure 1).

The tenement was granted to Mr Michael Teelow for a six year term commencing 19<sup>th</sup> March 2003. It comprises 19 one minute square graticular blocks, with a combined area of approximately 63 square kilometres, from which is excluded Mineral Lease MLN 1095 which covers most of the area of past mining activities (Figure 2).

Access is gained from various mining tracks connecting to the sealed Kakadu Highway, which traverses the northwest corner of the tenement.

In terms of topography the area is undulating to moderately hilly, and has a well-defined drainage system into O'Neil and Eureka Creeks which drain northwards into the Mary River. Vegetation consists of open savannah woodlands typical of the region. Rock outcrop and sub-outcrop is extensive, with transported soils and alluvium restricted to narrow belts along the principal drainage channels.

## **2. PREVIOUS EXPLORATION AND MINING HISTORY.**

The area under the current Exploration Licence, and the enclosed Mineral Lease, have been the subject of significant gold prospecting, exploration, open pit and underground mining since the 1880's. The principal episodes in this history, up to 1995, are summarised in Table 1, and have been reported in more detail in Orridge, 1996.

Between 1996 and 2001, the area was largely included in EL8555, and was explored by Northern Gold NL under an option agreement with titleholder M. Teelow. Work during this period included regional and infill geochemical soil sampling, and rock chip sampling, with RC percussion drilling at two prospects, namely Low Chinese in the southeast, and Moline North to the northwest of the old Moline open pit. No potentially economic grades and widths of mineralisation were intersected by the drilling (Mottram 1998 & 1999).

## **3. FEATURES OF THE GEOLOGY AND MINERALISATION.**

The main features of the regional geological setting are shown on the published Ranford Hill 1:100,000 scale Geological Series sheet: the relevant portion of this map is included as Figure 3.

The tenement area is underlain entirely by low-grade metamorphosed argillites and arenites assigned to the Mount Bonnie and Burrell Creek Formations in the upper section of the Early Proterozoic sedimentary sequence of the Pine Creek Orogen. The original sediments were shales, mudstones and greywackes of turbidite sedimentary facies, now represented by slates, phyllites and meta-greywackes of greenschist metamorphic facies. In the extreme southeast superimposed thermal metamorphism around the Mt Davis Granite has produced compact hornfels (eg. at Low Chinese Prospect).

The major structures consist of gently southeast-plunging isoclinal folds, overturned to the northeast, and with steeply southwest-dipping axial plane cleavage. The cores of the anticlinal structures are occupied mainly by meta-argillites of the Mount Bonnie Formation, the intervening synclinoria being formed by greywacke-dominant Burrell Creek Formation (Figure 3).

Gold and base-metal mineralisation is widespread through the entire area, and shows distinct variations in metallogenesis, relating in part to zoning around the peripheries of the granite intrusions, and in part to the composition of the host metasediments and the structural controls. The northwestern areas are characterised by sulphidic, relatively base-metal-rich gold deposits, emplaced along northwesterly (Moline trend) or near northerly (Hercules trend) shear zones (or combinations of these two trends as at Tumbling Dice), hosted by dominantly metapelitic formations. In the extreme southeast (eg Low Chinese) gold and gold-copper mineralisation occurs in systems of small east-dipping quartz veins. The central area (as at High Chinese) is characterised by gold in sulphide-poor quartz reefs, and discordant quartz vein systems, hosted by both metagreywackes and phyllites.

#### **4. WORK CARRIED OUT DURING THE FIRST YEAR'S TENURE.**

The year-one work program was concentrated on High Chinese Prospect. This is taken to include a belt of gold mineralisation, some 5 kilometres in length, and up to 1.5 kilometres width, which extends from near the old Cornwall open pit southeastwards to the Wandie road (Figure 2). Work consisted of a review of previous exploration, prospecting with metal detectors, field geological inspections, and bulldozer excavations at four sites, with the objective of providing a better understanding of the source of the gold (particularly nuggets) and the configuration of the auriferous quartz vein systems.

##### **4.1 Review of Previous Exploration.**

Moline Mine Management explored High Chinese between 1989 and 1991. Their work comprised 1:1000 scale geological mapping, rock-chip sampling and soil sampling, followed up by a substantial costeaning program (51 trenches totalling 2,040 metres) and a small RC drilling program (7 holes for 321 metres). This work was concentrated within

a relatively small rectangle of some 800x300 metres in the 'Ridgetop Area' (Figure 4). The trench sampling indicated widths of up to 30m of low-grade mineralisation, generally below 1g/t Au, with occasional higher values up to 4.4g/t Au, over the 5m sample interval. Overall, the trench sampling appears to define a more or less continuous zone, between 10,000N and 10,700N (local grid system), which averaged 0.51g/t Au across a mean width of 15m. Other apparently less well-defined zones of mineralisation lie to the northeast and southwest of this central zone. Seven RC holes were drilled in this sector, but results were indifferent, the best being 2m @ 2.31 g/t from 19m in BRC98

Compass Resources NL explored at High Chinese under an option agreement with M Teelow in 1995 (Orridge 1996). Soil geochemical sampling for gold was carried out from the southern limits of Moline's soil sampling at 10,000mN, south to 8,400mN. This sector is referred to as the Specimen Hill Area (Figure 4). A soil anomaly, peaking at +400 ppbAu, was outlined along the full length of the survey, and remains open to the south. This anomaly continues the trend of the central mineralised zone found in the trenches in the Ridgetop area to the north. The anomaly was tested by RC drilling on four cross sections with mixed results, including the following:-

9,400N	MCD11	10m @ 6.98 g/t Au from 2.0m.
9,137N	MCD8	14m @ 0.24 g/t Au from 8.0m.
8,600N	MCD18	8m @ 0.74 g/t Au from 28m.
8,400N	MCD20	8m @ 4.05 g/t Au from 00m.

At Paw Paw Prospect, located some 400m west of Specimen Hill, Compass drilled six RC holes, on two cross sections, to test a weakly anomalous zone indicated in trenching by Moline in 1989, and soil sampling by Compass in 1995. The drilling intersected only low values, including the following:-

8,600N	MCD1	6m @ 0.68 g/t Au from 00m, & 6m @ 0.35 g/t Au from 36m.
8,700N	MCD4	14m @ 0.19 g/t Au from 8m.

#### **4.2 Field Exploration During 2003/2004.**

Intensive prospection using metal detectors was carried out over most of the High Chinese area south of the Ridgetop sector. Coarse gold, in the form of slugs, small nuggets and gold/quartz specimens, were discovered at many locations as indicated in general terms on Figure 4. No quantitative information can be derived from this work since indications on the ground clearly show that a large amount of unauthorised and unrecorded metal detecting had been done in the recent past. In qualitative terms the results are important in demonstrating the presence of anomalous gold, on the southwards strike extension of the Compass soil anomaly, to at least 7,800m N (local grid, Figure 4).

Furthermore, coarse-gold anomalies were detected in unexplored ground to the northwest and southeast of Paw Paw Prospect, and in a previously unrecognised soil-covered zone lying some 500m northeast of Specimen Hill.

The results of metal detector prospection were followed up by bulldozer excavation of four sites in the Specimen Hill sector to determine the source of the coarse detrital gold; the site locations are shown in Figure 4. Due to heavy rains in mid December the earthmoving was terminated before completion of the program after a total of 62 hours of bulldozer operation. Geological inspection of the sites indicated the likelihood of three main northwest-trending zones of quartz veining, across a width of about 150 metres. The central zone appears to be the main source of gold nuggets found by metal detecting, and is apparently the same trend of mineralisation as detected by the Moline Gold Mines and Compass trenching and drilling. Additional earthmoving and geological mapping will be required to better resolve these relationships.

#### **4.3 Expenditures.**

Exploration expenditures during year one of tenure are estimated as follows:-

Bulldozing with fuel and operator, 62 hrs @ \$150	9,300
Prospecting with transport and field provisions, 10 days @ \$250	2,500
Geological services, 7 days @ \$500	3,500
<b>TOTAL</b>	<b>\$15,300</b>

#### **5. PROPOSED PROGRAM FOR THE SECOND YEAR OF TENURE.**

The proposed program will concentrate on the southern portion of the High Chinese Prospect. Field operations will include recovery, re-marking and extension of the old grid survey, geological mapping, soil sampling and completion of the earthmoving program commenced in 2003/2004. Anticipated expenditures are at least \$12,500.

## 6. REFERENCES.

MOTTRAM, N., 1998. EL8555 1996/97 Annual Report, Northern Gold NL. Northern Territory Dpt. of Mines & Energy open file report CR98/344.

MOTTRAM, N., 1999. EL8555 1998/99 Annual Report, Northern Gold NL. Northern Territory Dpt. of Mines & Energy open file report CR99/207.

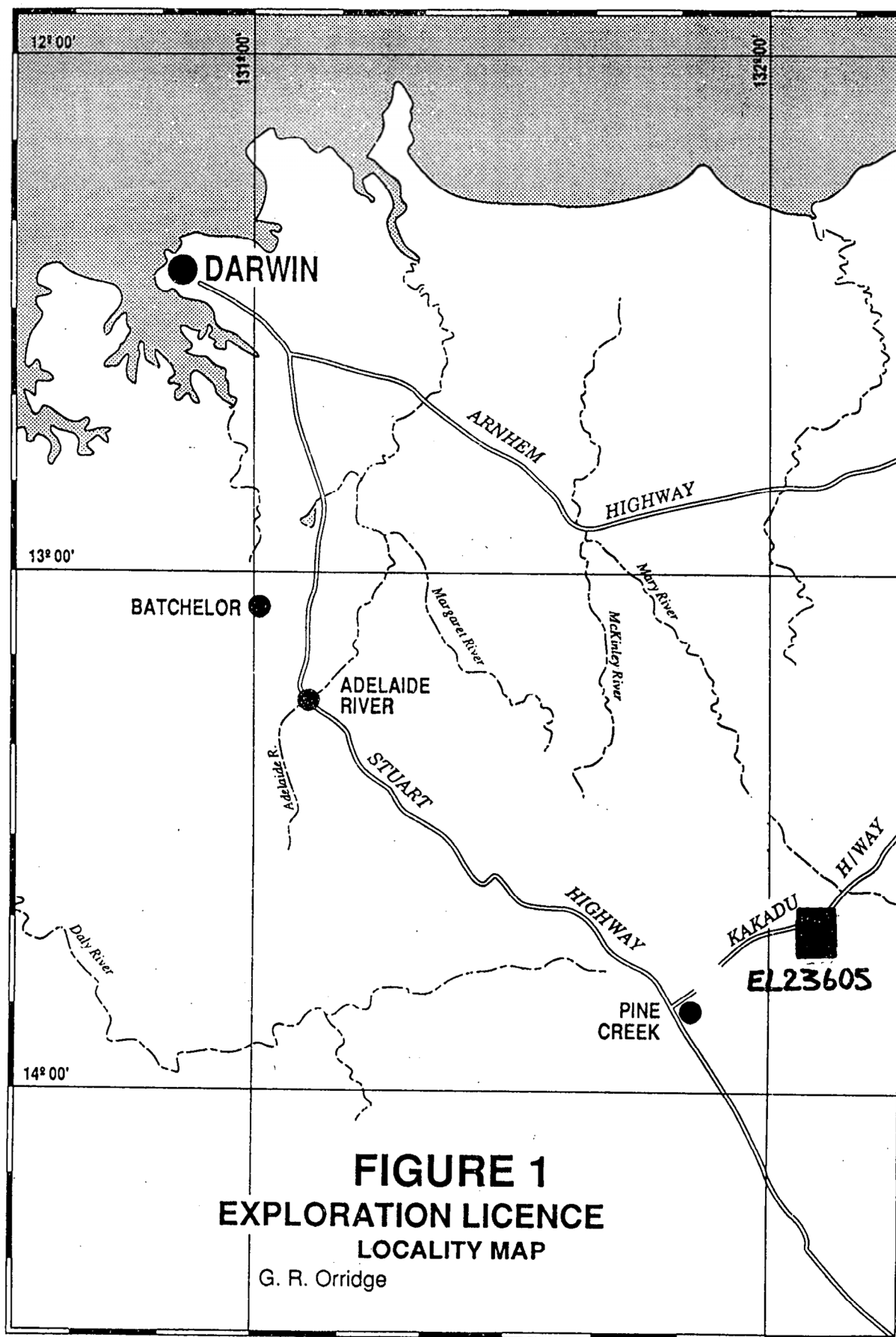
ORRIDGE, G. R. Report on Work Carried Out on Exploration Licence 8555 During the Twelve Months Ending 5<sup>th</sup> April 1996. Northern Territory Dpt. of Mines & Energy open file report CR966/403.

# TABLE 1

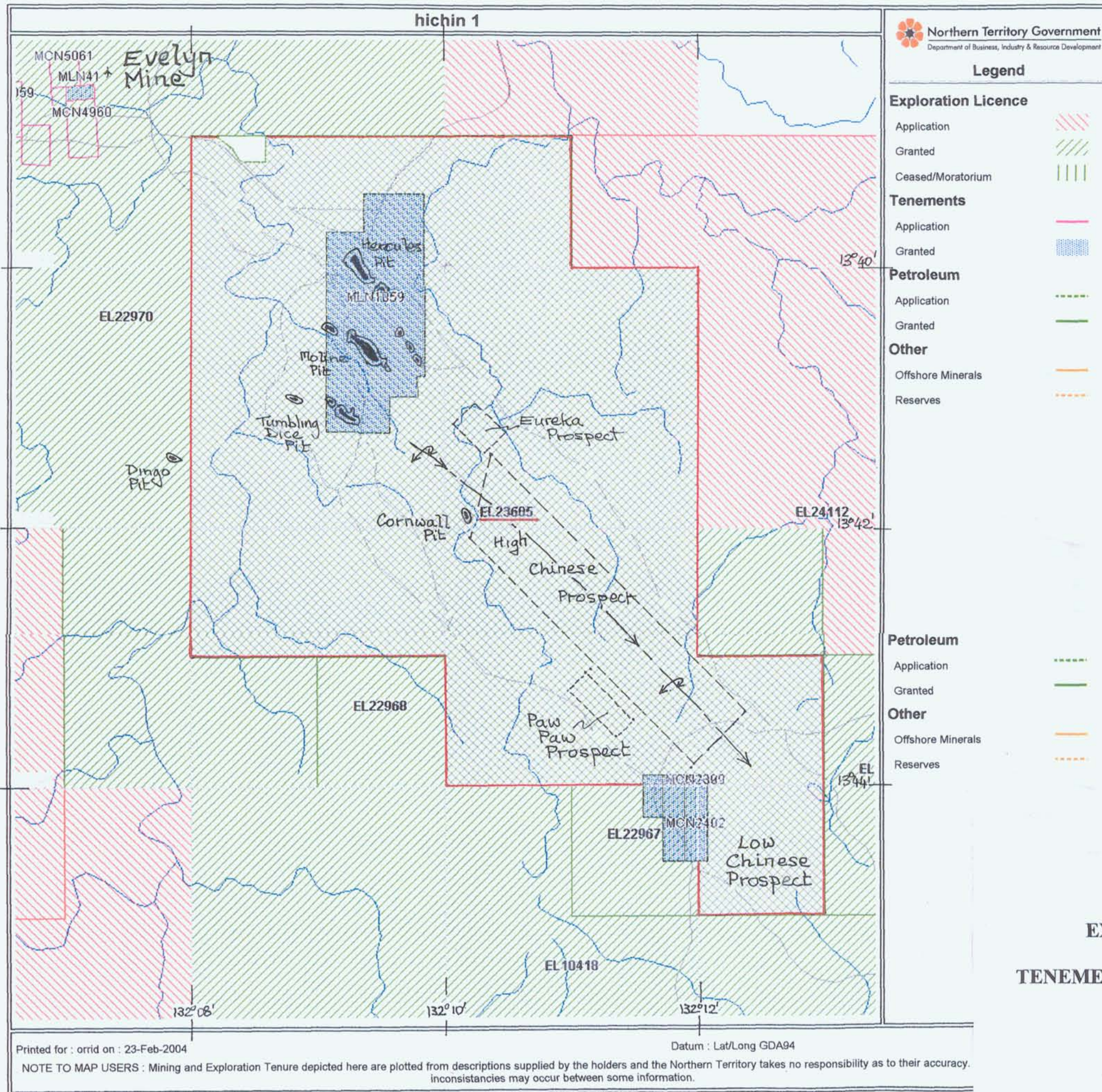
## MOLINE PROJECT AREA - HISTORICAL SUMMARY

<u>PERIOD</u>	<u>COMPANY</u>	<u>EXPLORATION/DEVELOPMENT</u>	<u>PRODUCTION</u>	<u>NOTES</u>
1880's	Chinese miners	Selective mining and crushing by hand	Not recorded	Houschildt's Rush
1891-93	Eureka Gold Mining Co	Mining oxidised ores on eastern lode workings to 66m depth but ending in sulphides which could not be treated.	1891-1900 22,863 oz.	includes cyanidation
1897.	Northern Territory Goldfields Co.			
1934-37	Hercules Gold Mines	Diamond drilling, cleaning out and sampling of 40m and 60m levels. Testing pyritic ore by roasting & cyanidation. Report on Hercules Gold Mine.	98.1% Au recovered	
	CSIRO Kaigoorlie AGGSNA.			
1954	Northern Mines Development NL, Northern Hercules NL.	Diamond drilling. Report by W J Cadwallader. Driving & sampling 90m & 120m levels.	Reserves given as 62,000t @ 50 g/t to 106m depth. Production 27,374 t @ 12.8 g/t recovered, 1954-57.	
1957	United Uranium NL.	Report by E Larsen. Plant at Moline used to treat ores from Evelyn, Mt Diamond and South Alligator area.	No significant reserves at Hercules. Evelyn produced 83,000 t @ 5.8% Pb, 6.1% Zn, 260g/t Ag, 1966-70. Recovered ~ 600 kg. Au from 200,000 t.	
1987	Pacific Goldmines.	Retreatment of Moline Tailings		
1981-90	Greenbushes, Amoco, Cyprus, Arimco & Zinnanda..	Comprehensive regional exploration including geological mapping, rock chip sampling, soil sampling and airborne geophysics. Detailed drilling at Hercules, Moline, School, Tumbling Dice and many other prospects.  Feasibility studies, construction and development	Ore reserves at Hercules and Moline 3.1 million tonne @ 2.5 g/t with 0.5 cutoff. (Jackson, 1987).	
1990-92	Cyprus,	Open pit mining at Hercules, Moline, School, Four, Tumbling Dice/Lay and some 16 other small pits.	Production approximately 1.6 million tonnes averaging 2.14 g/t recovered. Remaining reserves and resources approximately 620,000t @ 2.62 g/t.	
1992-93	Newcrest Mining	Ground magnetic surveys, geological mapping, diamond drilling 3 holes.	No new discoveries.	
1993-94	Aztec	Geological mapping, soil sampling, one diamond drill hole.	No New discoveries.	
1995	Compass Resources NL.	Data collation & review, soil and drainage geochemistry. RC drilling 24 holes, 1200m, at three prospects.	Ore grade intercepts at High Chinese Prospect.	







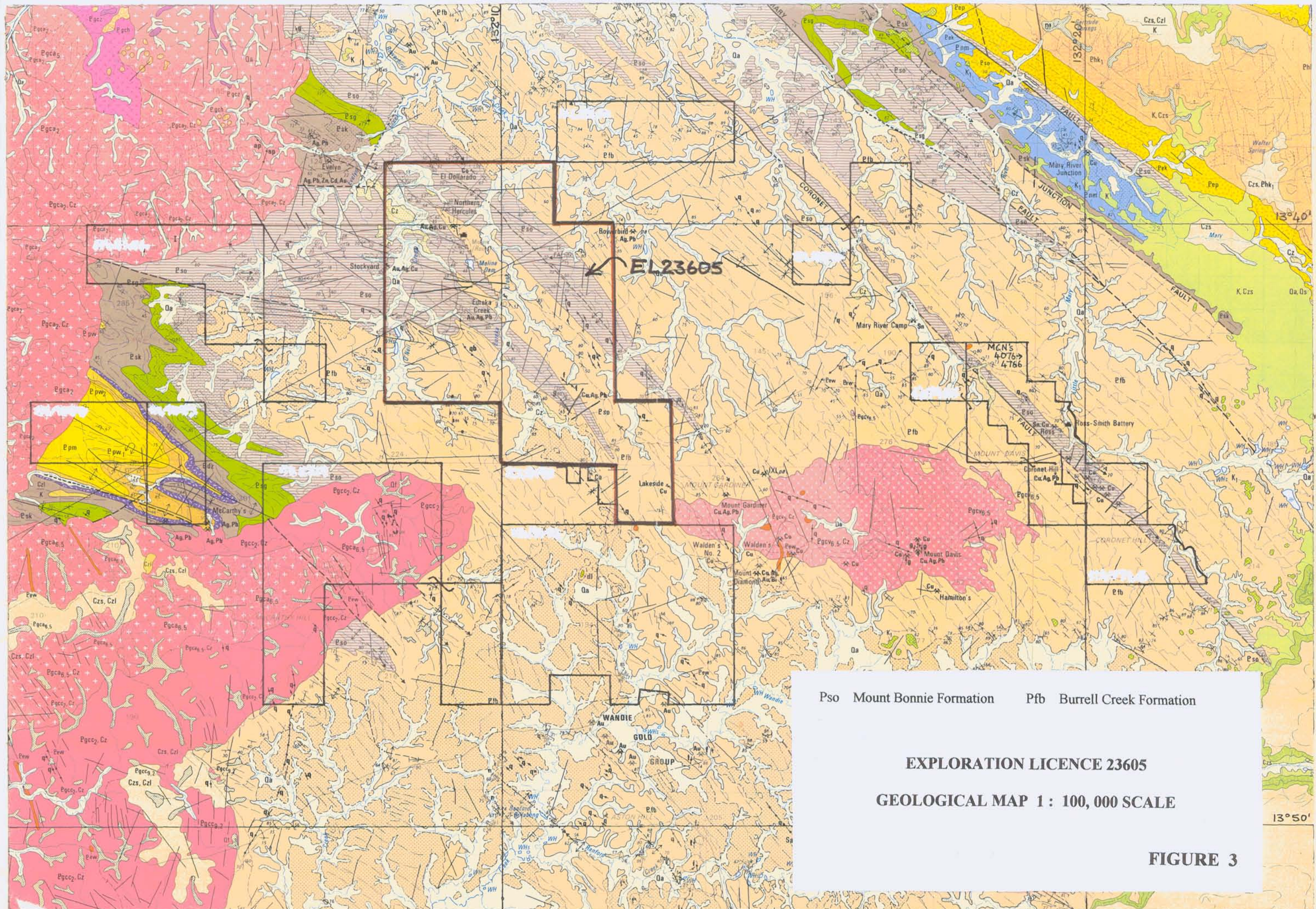


**EXPLORATION LICENCE 23605**  
**TENEMENT AND PROSPECT LOCATION MAP**

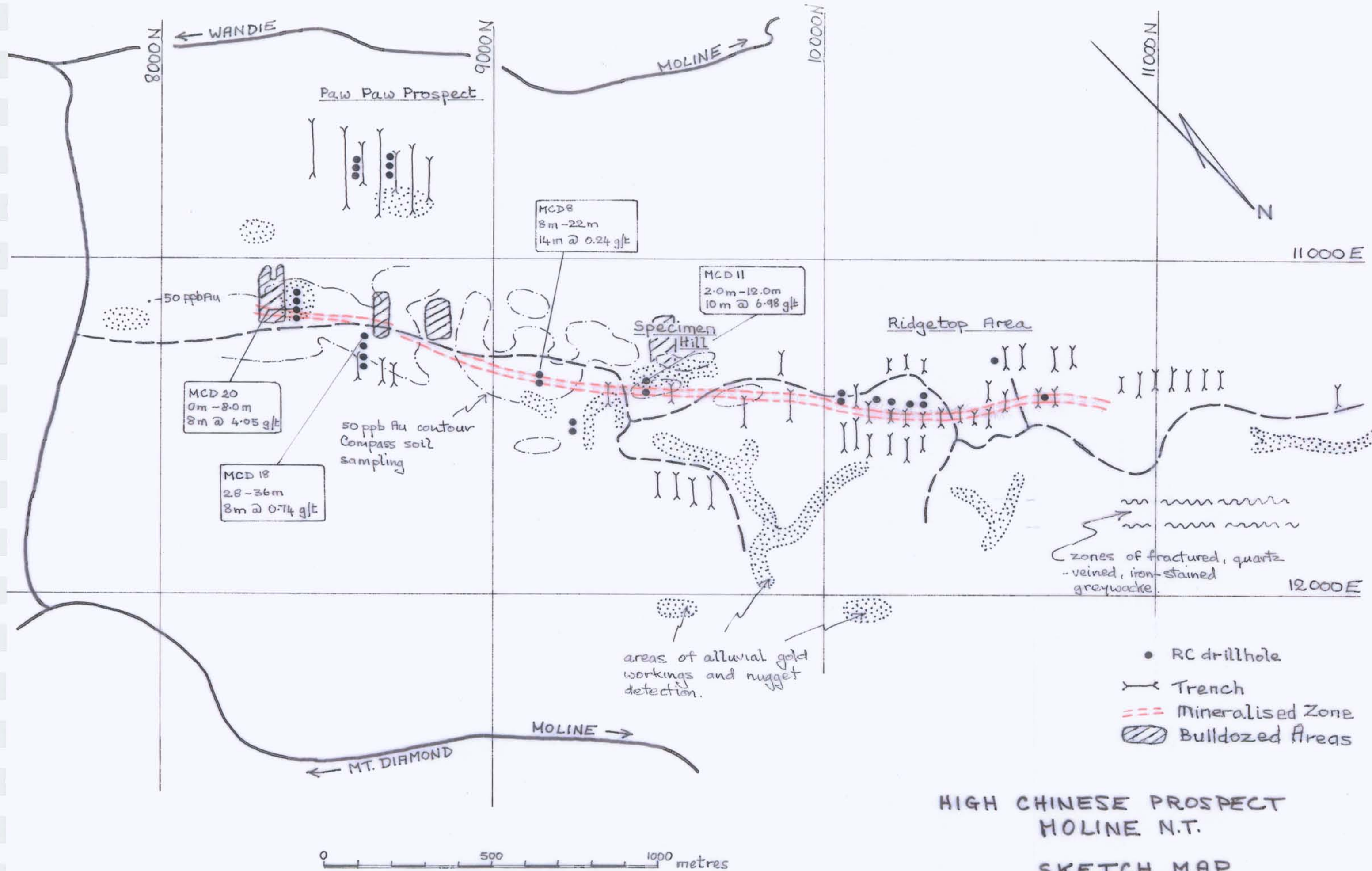
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**FIGURE 2**









HIGH CHINESE PROSPECT  
MOLINE N.T.

SKETCH MAP

G.R. ORRIDGE FEB. 2004

**FIGURE 4**