16. EAST PTILOTUS (EL 2369)

16.1 Introduction

The East Ptilotus prospect is presently the most advanced regional prospect within the NFM exploration tenements of the Tanami region, excluding the Granites and Dead Bullock Soak lease areas.

During 1989 rock chip sampling at East Ptilotus located an area of strongly gold and arsenic anomalous ferruginous and cherty rocks, with a strike extent in excess of 2.5km, and markedly similar to the gold and arsenic anomalous lithologies at Mt. Ptilotus.

Further exploration during 1990 and 1991 delineated four main zones of gold mineralisation. The two western zones were tested by costeaning, RC and diamond drilling. The anomalous zones to the east were subsequently tested by costeaning together with geophysical surveys (EM and magnetics), RAB and follow-up RC drilling. Results from this work clearly indicated potentially economic mineralisation was present at East Ptilotus.

Work completed during the second half of 1991 included RAB drilling, IP survey, magnetics and re-mapping of costeans.

Gold mineralisation delineated to date is associated with pyrite +/- arsenopyrite alteration zones (15% pyrite) within a predominantly massive coarse grained dolerite. These mineralised alteration zones are interpreted to represent shear splays and breccia zones within a larger, bounding regional fault/shear system which strikes north-west.

The mineralised shears, defined by shallow surface drilling, are typically elongate (300 to 500m), subvertical tabular bodies, 10 to 20m wide with an overall grade in the 0.5 - 2.0 g/t range. Intersections, within these shears indicate zones of narrower higher grade mineralisation (2-10g/t) are present within the plane of mineralisation and alteration envelope.

16.2 Work Undertaken

Work completed during 1992 includes:

- extension and reinterpretation of ground magnetometer and induced polarisation surveys over the prospect
- 106 RAB holes for a total advance of 3300 metres and 795 samples assayed
- 41 RC holes,including extension holes,for an advance of 2662 metres and 4922 samples assayed
- 1 Diamond hole for an advance of 158 metres and 186 samples
- 64 reconnaissance style infill Aircore/RAB drill holes to the south and east
- reinterpretation of results and geology

The objectives of the reporting period were completed as scheduled. However the original program of three diamond holes was ammended to one diamond hole and 41 RC holes (including extension holes).

The program was ammended as the interpreted south dipping alteration zone between 22700 and 22800E was shown to be a subvertical zone parallel to the defined southern subvertical zone and therefore no intersection target existed at depth.

The RC drilling program was added in order to further test the distribution of grade within the planes of mineralisation and test for optimum drilling direction(s).

The aircore drilling program was initially planned on a 500x500 AMG grid. However, due to the slow penetration rate of the air coring and inadequate rig setup, this was amended to an approximate 1800mx900m AMG grid straddling the existing reconnaissance vacuum drilling.

The aircore drilling and sampling method was proven to be a valuable technique. However, as presently configured, the rig has several shortcomings which should be attended to prior to its redeployment in 1993.

16.3 **Results**

Extension of Ground Magnetometer and Induced Polarisation Survey

Survey results were prejudiced by surficial concentration of maghemite in the case of magnetic data and electrical conditions within the weathered ground profile in the case of induced polarisation measurements. The consultant geophysicist's report is included with the appendices.

The reconnaissance aircore RAB drilling was designed to test the presence of any further gold and/or arsenic mineralisation south or east of the East Ptilotus prospect. Evaluation of the results shows no indication of previously unknown gold or arsenic mineralisation,beneath the thick(upto 55metres) blanket of Tertiary drainage sediments.

Peak BLEG values of 17.4,2.71,3.96,1.23 and 1.14 ppb Au cluster immediately south of the known East Ptilotus mineralisation and are therefore interpreted to represent gold from this mineralisation (see figure in text).

Infill RAB Drilling

The infill RAB drilling program was designed to test previously untested geochemically anomalous zones and also help define trends of mineralisation where further information would aid drilling. The significant results of this program are listed in the appendices.

HIGHLIGHTED RAB DRILLING RESULTS		
HOLE No.	**INTERVAL(m)/GRADE(ppm)**	
PRB1295		27+/0.54
	INCL 3 /1.38	
PRB1297		27+/0.58
	INCL 6 /1.53	
PRB1298		27+/0.58
	INCL 6 /1.10	
PRB1307		27+/0.56
	INCL 3 /1.46	
	INCL 3/1.11	
PRB1318		28 /0.82
	INCL 10 /1.97	
PRB1321		15 /0.83
PRB1322		18+/1.15
PRB1328		22 /0.98
	INCL 6 /2.38	

RC Drilling

The RC drilling had three main objectives;

(1) to test known areas of better gold mineralisation for optimum drilling direction(s).

(2) to test the favourable intersection zone of the subvertical and interpreted south dipping alteration zones between 22700E and 22800E.

(3) to test the distribution and grade of mineralisation within the known planes of mineralisation.

The results of these RC drilling programs are presented in the appendices; the more significant results are shown the table which follows.

HIGHLIGHTED RC DRILLING RESULTS			
HOLE No.		**INTERVAL(m)/GRADE(ppm)**	
PRC057EXT			65 /0.71
	INCL	3 /2.07	
	INCL	2 /2.55	
	INCL	6 /1.10	
	INCL	2 /1.32	
	INCL	2 /1.20	
PRC058EXT			14 /1.94
	INCL	6 /3.86	
		67 /0.90	
	INCL	6 /1.52	
	INCL	6 /2.72	
	INCL	4 /1.52	
	INCL	3 /1.76	
PRC064			25 /0.75
	INCL	7 /1.54	
PRC072			27 /4.09
	INCL	8 /8.67	
	INCL	6 /1.54	
	INCL	5 /5.23	
PRC073			31 /0.36
	4 METRES OF NO RETURN THEN		
			12 /1.33
	INCL	5 /3.04	
PRC083			33 /1.02
	INCL	5 /1.52	
	INCL	7 /2.23	
PRC084			55+/1.00
	INCL	12 /2.65	
PRC085			27 /0.87
	INCL	6 /1.38	
	INCL	3 /1.22	
PRC087			17+/0.97
	INCL	5+/2.70	
PRC088			39 /1.32
	INCL	16 /2.57	
PRC091			31 /1.12
	INCL	4 /1.88	
	INCL	9 /1.90	
PRC094			30 /1.00
	INCL	9 /1.46(or 4/2.11)	
PRC096			32 /1.26
	INCL	17 /1.84	

Diamond Drilling

The results obtained in the latest diamond hole EPD004 have been very encouraging, with one spectacular interval containing visible coarse gold, assaying at 0.7m/358.88ppm for a total intersection of 27m/10.18ppm (uncut).Results of the hole are tabulated below.

Table 3 DIAMOND DRILLING HOLE EPD004 - GOLD RESULTS

INTERVAL(m)		LENGTH(m)/GRADE(ppm)
97.00- 99.50		2.50/ 1.38
99.50-101.00		LATER INTRUSIVE DYKE-NON AURIFEROUS
101.00-105.10		4.10/ 1.40
105.10-105.33		LATER INTRUSIVE DYKE-NON AURIFEROUS
105.33-106.78		1.45/ 0.98
106.78-107.30		LATER INTRUSIVE DYKE-NON AURIFEROUS
107.30-115.45		8.15/ 31.57 UNCUT
	INCL	0.70/358.88
		8.15/ 2.47 CUT TO 20ppm
115.45-115.90		LATER INTRUSIVE DYKE-NON AURIFEROUS
115.90-124.00		8.10/ 0.88
	INCL	2.50/ 1.88
GIVING		
97.00-124.00		27.00/ 10.20 UNCUT
		27.00/ 1.40 CUT TO 20ppm

Geology - Discussion

The interpreted geology of the East Ptilotus prospect and surrounding environs has changed only slightly since previous reporting in 1991.

The five major lithological subdivisions are:-

1) MADIGAN BEDS
2) DAVIDSON BEDS
3) BLAKE BEDS?
4) INTRUSIVE DOLERITE
5) LATE INTRUSIVE DOLERITIC DYKES

A text figure is provided showing the interpreted geology for the far eastern and most prospective area of East Ptilotus where the current work program has been carried out.

The Madigan Beds are subdivided into two members. The upper member, consists of bedded pelites grading to quartz-muscovite greywackes,the latter being predominant in the reconnaissance aircore drilling south and east of the prospect area.The lower member is predominantly pelite to graphitic and chloritic schists with inter-bedded cherts. This member would appear to represent a transitional zone from the coarser grained clastic sediments of the Madigan Beds to the finer grained chemical sediments of the Davidson Beds. However, this contact is generally seen as a sheared contact in most instances.

The Davidson Beds consist of graphitic schists and ferruginous cherts and schists, very minor BIFs together with very minor extrusive? mafics. The ferruginous cherts and schists are seen in deeper drilling as sheared, brecciated and quartz veined graphitic and chloritic schists.

The third lithological unit previously reported was possible Blake Beds. Current thinking now would suggest this unit possibly has been intersected under a thin veneer of colluvium east of 23000E bounded by the regional shears. Previous interpretations of spikey magnetics south of the southern shear zone have been disproved as transported maghaemite underlain by Madigan Beds. Further work (petrology and possible multi-element studies) may resolve this questionable,but potentially prospective unit.

The fourth and possibly most important unit consists of early(pre D2), coarse grained dolerite to quartz dolerite sill(s). These dolerites are by far the most prospective lithologies for gold mineralisation recognised to date. However, interpreted stratigraphically-lower Blake Beds or further Davidson Beds are to be targetted during the 1993 exploration programme.

The latest diamond drilling(EPD004) has further added to the geological picture with the recognition of late(post D3?), thin (< 2 metres) fine grained doleritic dykes. These doleritic dykes appear to favour the better mineralised zone, diluting the overall grade.

The major structure of the prospect area is a major, slightly overturned, south west plunging anticline with numerous smaller parasitic folds within. Mapping and drilling shows this fold to have a thickened nose of Davidson Beds and attenuated limbs, together with a major core of dolerite underlain by possible Blake Beds.

The prospect area is then bounded to the north and bisected by an en-echelon set of major west north west regional faults or shears.

Late north north east trending faulting has been interpreted to crosscut these major structures. However the faults would generally appear to have only minor displacements(one to tens of metres) and little influence on mineralisation.

The gold mineralisation at East Ptilotus is intimately associated with alteration zones delineated within the coarse grained dolerite. The typical alteration phases progressing towards the mineralised core are:-

- ACTINOLITE ZONE
- EXTENSIVE AND PERVASIVE CHLORITE ZONE(Au < 0.10ppm)
-CHLORITE CARBONATE ZONE
-BIOTITE ZONE
-PYRITE +/- ARSENOPYRITE ZONE(Au >0.1ppm,Peak 358.88ppm)

Analytical results from the latest diamond drill hole EPD004 have been very encouraging with a narrow but very high grade core(0.7m at 358.88ppm) intersected within a wider lower grade envelope. The envelope has typically, gold values between 0.1-5.0ppm over 27 metres(downhole).

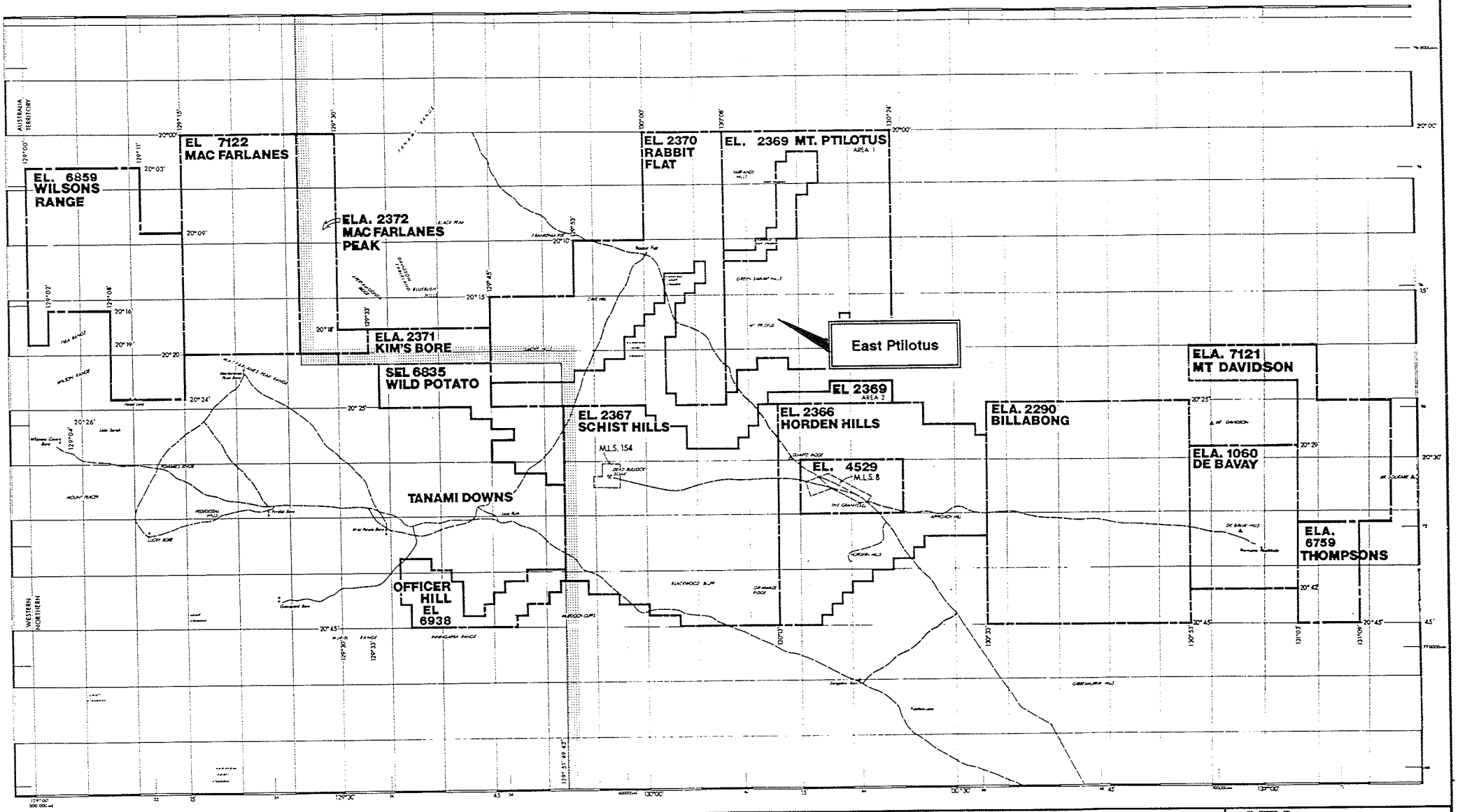
The lower grade mineralised envelope with the higher grade core,on cross-section 22300E, clearly shows a steep southerly dip and an approximate true width of 25-30 metres.

Comparison of results from holes PRC052 and 053 to holes PRC072 and 073 indicates the optimum drilling direction is to the north.

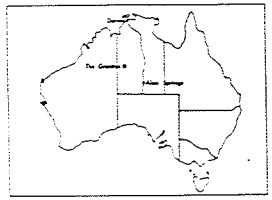
A geological cross-section of line 22300E, also shows the alteration zone dipping steeply to the south and located adjacent to the sheared contact between the chloritic dolerite and clastic sediments of the Madigan Beds.This section clearly demonstrates the 1:1 ratio between gold mineralisation and the highly altered, leucocratic portion of the major doleritic body.

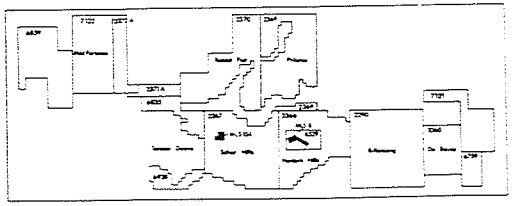
16.4 **Plans**

Drawing No.	Title	Scale
300-1461	East Ptilotus Interpretive Geology Sht 10	1:1000
300-1462	East Ptilotus Interpretive Geology Sht 11	1:1000
40-1021	Bleg/Laterite Geochemistry Sht I16	1:25000
40-1022	Bleg/Laterite Geochemistry Sht I17	1:25000
300-1289A	East Ptilotus RC Drilling Assay Cross Section	1:500
300-1475A	East Ptilotus RC Drilling Assay Cross Section 22650E	1:500
300-1603A	East Ptilotus RC Drilling Assay Cross Section Oblique 1, Centred 22280E	1:500
300-1604A	East Ptilotus RC Drilling Assay Cross Section Oblique 2, Centred 22320E	1:500



LOCATION MAP





LEGEND

NORTH FLINDERS MINES LIMITED

Tanami Reconnaissance : Northern Territory

EL LAYOUT

Fig. 16.1

Drg. No. 20-1

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Tanami Reconnaissance : Northern Territory.

GEOCHEMICAL ANOMALY FOLLOW UP

116, 117

BLEG / LATERITE GEOCHEMISTRY

1:25000 Fig. 16.2

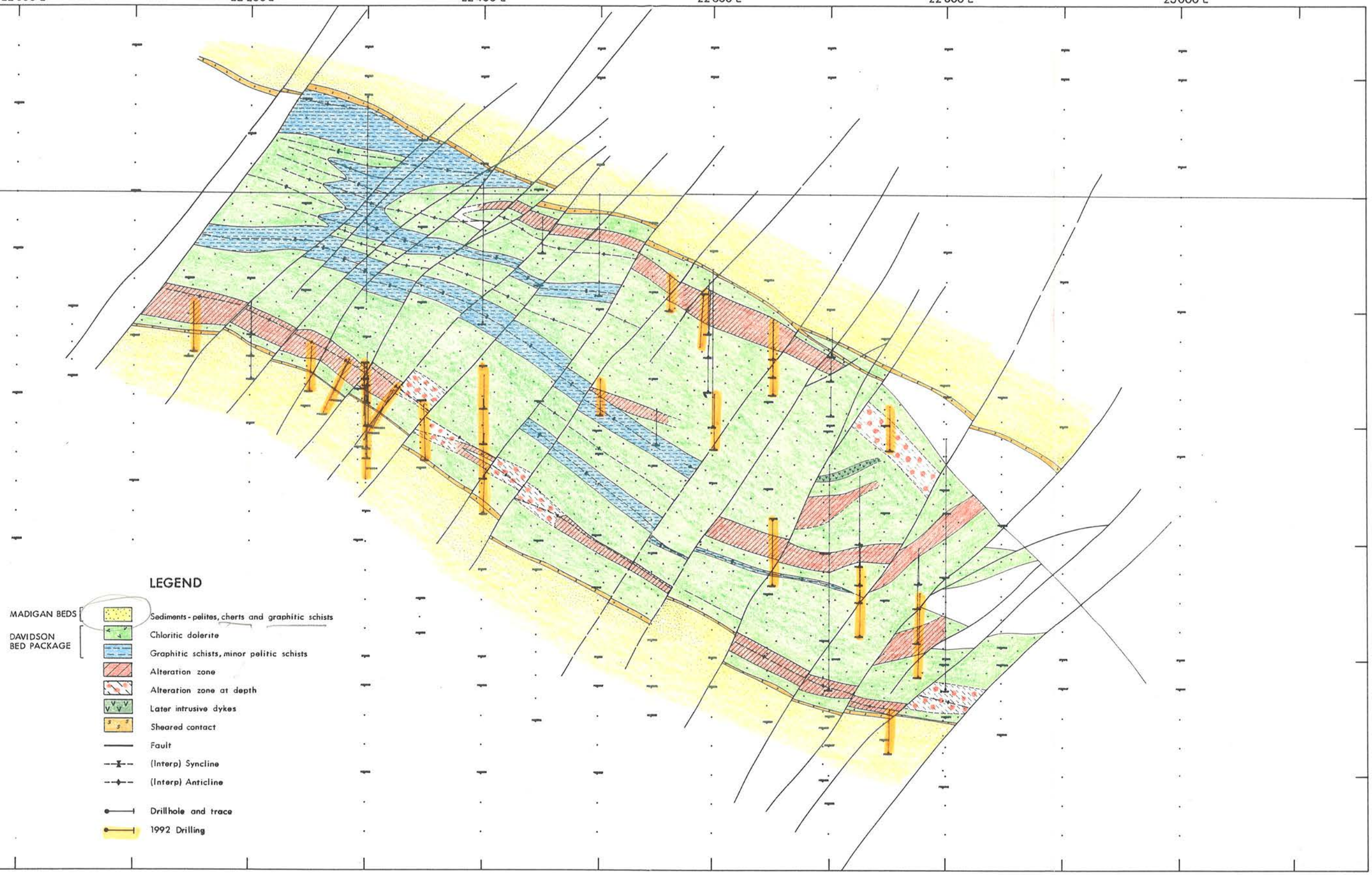
KILOMETRES

0.5 0 0.5 1 1.5 2 2.5

DATA BY		AMENDED	A-9'92-CG
DRAWN	OCTOBER 1990	Drg. Nº	40-1021,22

22 000 E | 22 200 E | 22 400 E | 22 600 E | 22 800 E | 23 000 E

10 100 N
10 000 N
9 900 N
9 800 N
9 700 N
9 600 N
9 500 N



LEGEND

MADIGAN BEDS
- Sediments - pelites, cherts and graphitic schists

DAVIDSON BED PACKAGE
- Chloritic dolerite
- Graphitic schists, minor pelitic schists
- Alteration zone
- Alteration zone at depth
- Later intrusive dykes
- Sheared contact
- Fault
- (Interp) Syncline
- (Interp) Anticline
- Drillhole and trace
- 1992 Drilling

REVISIONS:

SCALE 1:3300

DATA BY	N.F. MINES (AFB)	MAR 93
DRAWN	CARTOGRAPHICS	MAR 93
CHECKED		
APPROVED		
AMENDED		

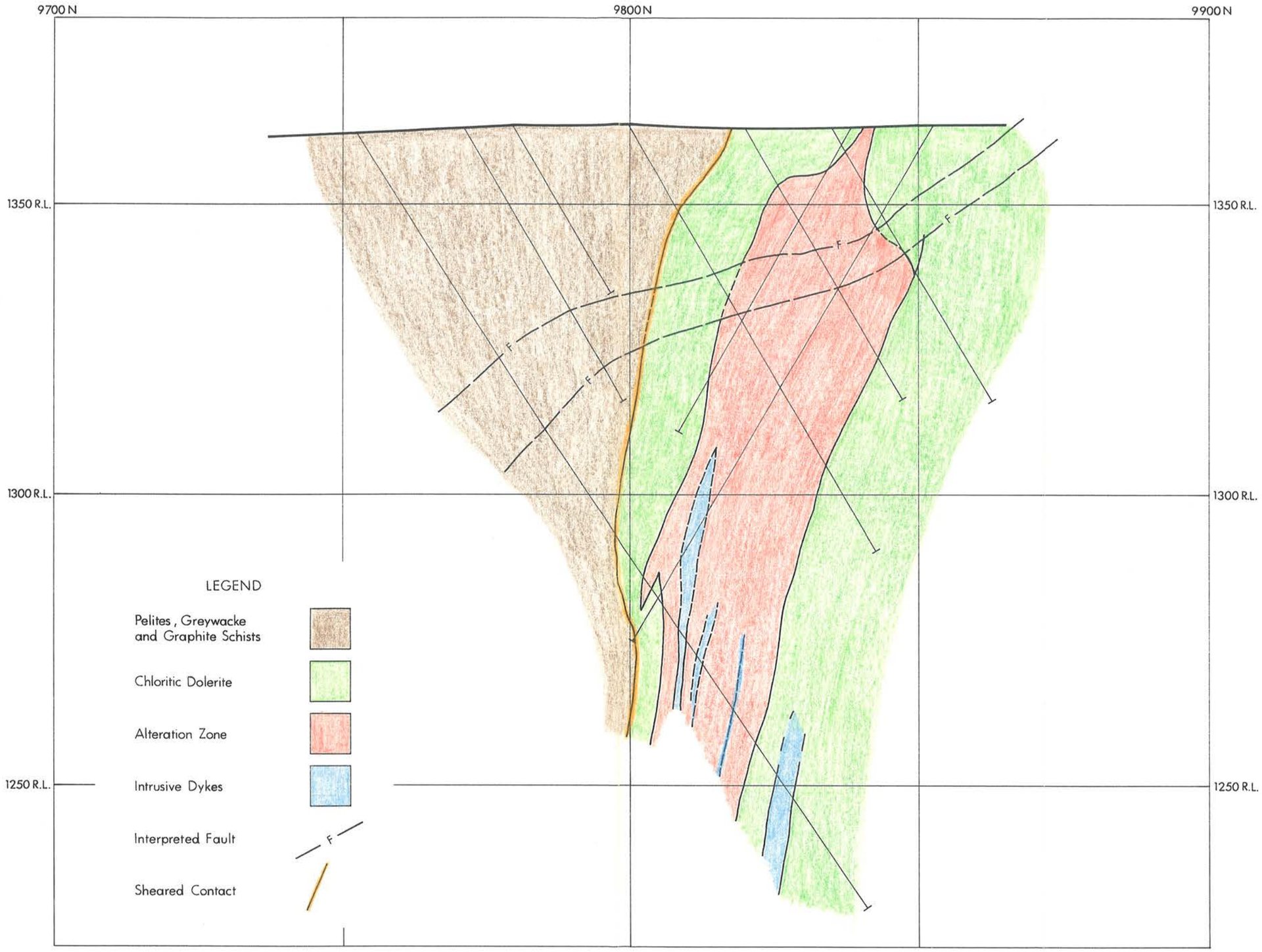
NORTH FLINDERS MINES LIMITED

Tennant Creek : Northern Territory

EAST PTILOTUS
INTERPRETIVE GEOLOGY

PREPARED by CARTO GRAPHICS

Fig 16.3



REVISIONS:

SCALE 1:700

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DRAWN	CARTOGRAPHICS	MAR 93
CHECKED		
APPROVED		
AMENDED		

NORTH FLINDERS MINES LIMITED

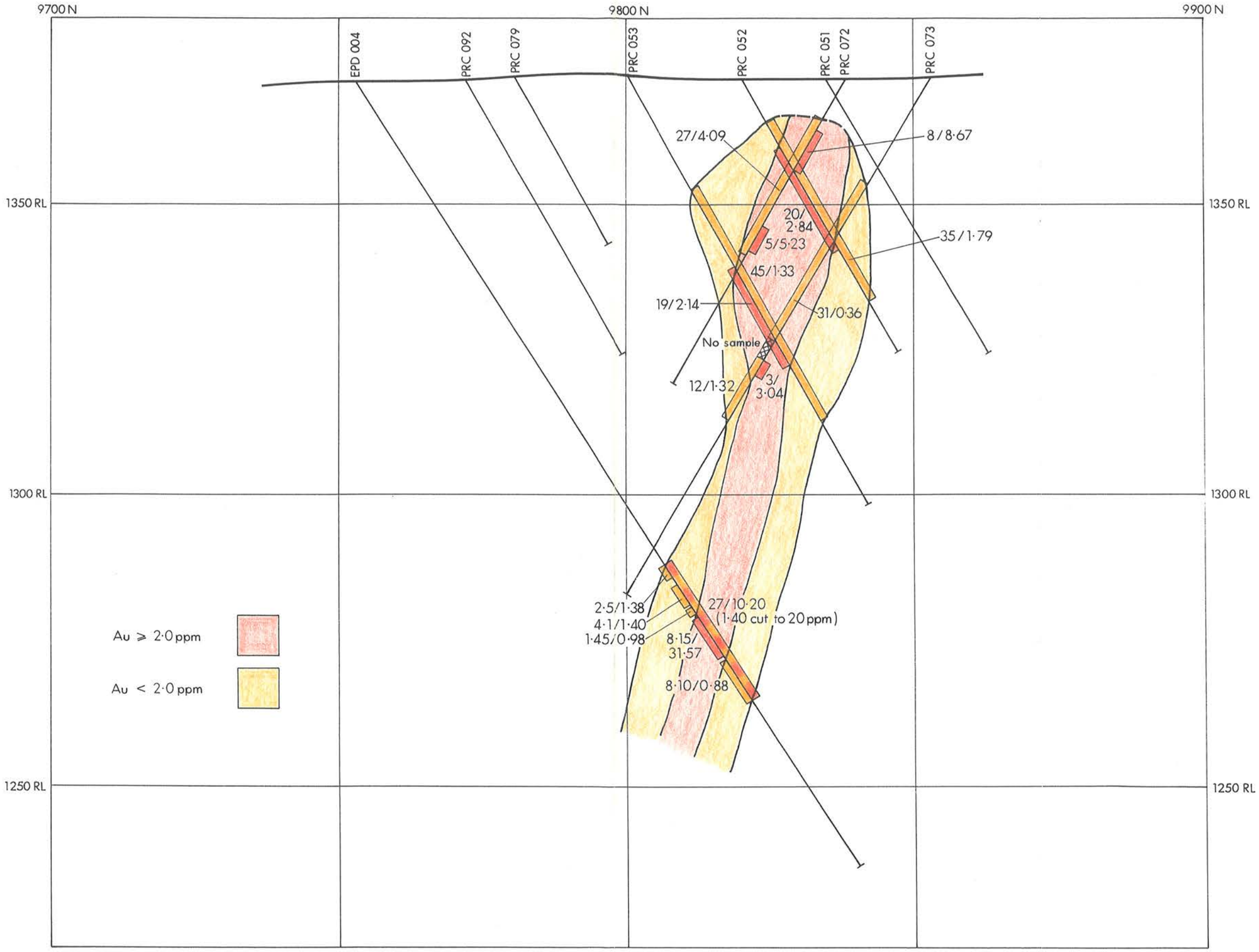
Tennant Creek : Northern Territory

EAST PTILOTUS

RC and DIAMOND GEOLOGY CROSS SECTION 22300E

PREPARED by CARTO GRAPHICS

Fig 15.4



REVISIONS:

SCALE 1:700

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DRAWN	CARTOGRAPHICS	MAR 93
CHECKED		
APPROVED		
AMENDED		

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EAST PTILOTUS

RC and DIAMOND ASSAY CROSS SECTION 22300 E

PREPARED by CARTO GRAPHICS

Fig 15.5