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Report EEE 95/2

EL 7987 - ELKEDRA
FINAL REPORT

by:

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of

EUPENE EXPLORATION ENTERPRISES PTY. LTD.

000 Elkedra SF53-7
Barrow Creek SF53-6
000 Murray Downs 5855
Elkedra 955
George Creek 6055

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Darwin NT

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1. INTRODUCTION (modified after Moloney, 1994)

The Elkedra Dome project area is located 1050 kilometres south - south-east of Darwin in the Northern Territory (Figures 1 and 2). Tennant Creek, the nearest population centre of any significance, is 180 kilometres to the north - north-west, and Alice Springs is 320 kilometres to the south - south-west.

The Stuart Highway passes 50 - 130 kilometres to the west of the area, and the Sandover Highway (unsealed) passes 40 - 70 kilometres to the south of the area. Access to the project area from the Stuart Highway is via the Ali Curung Road and onto Murray Downs Station (Figure 2), which is near the western limit of the area. Elkedra Station is at the eastern limit, while Ammaroo Station is near the southern limit.

The project area is over 80 kilometres long and up to 50 kilometres wide (Figure 3). The area of Exploration Licence 7987 was approximately 750 square kilometres.

The area was selected by Eupene Exploration Enterprises Pty. Ltd. following a review of the geology of the area which revealed marked geological similarities between the felsic volcanics in the early Proterozoic Hatches Creek Group and the similar rocks in the Drummond Basin in central Queensland. There, several significant exposed epithermal-style gold deposits (Wirralie, Pajingo, Yandan, Twin Hills) have been located over the past 9 - 10 years between Charters Towers and Clermont - a remarkable feat given the extent of prospector activity throughout that region over the preceding 115 year since the discovery of gold at Charters Towers in 1872.

The catalyst of these discoveries was, to a large extent, the BLEG/BCL analytical technique for the detection of trace amounts of gold in stream sediment and soil samples.

The success of this technique in the Drummond Basin, in contrast to conventional prospecting for gold, is attributed to the fine grain size of the gold in the epithermal deposits - nominally 10-50 microns. Such gold is rarely identifiable during panning.

Consequently, the absence of known gold mineralisation in the volcanics of the Hatches Creek Group cannot be used to rule out the presence of economic concentration of gold, especially in view of the low grade of regional metamorphism (greenschist), which has affected the area and which is unlikely to have resulted in remobilisation and aggregation of ultra-fine gold to a size detectable by panning.

Prior to acquiring the area, EEE's investigations showed that this technique had not been systematically applied to exploration of the Hatches Creek Group despite what appears to be favourable drainage characteristics in much of the Davenport province. Some BLEG sampling had been conducted in the

western portion of the province, but this was well away from most of the inferred eruptive centres of felsic volcanism which are concentrated in the south-eastern half of the province.

Though its wholly owned subsidiary, Luina Pty. Ltd., Eupene Exploration Enterprises Pty. Ltd. (EEE) therefore secure exploration title to 235 blocks which cover much of the felsic volcanic sequences in the Wauchope Sub-group of the Hatches Creek Group. EEE and Luina prepared a background report (Goulevitch, 1992), and proceeded to promote the area and the concept throughout the exploration industry in Australia which the aim of divesting interest in the property in return for funding of the exploration programme to be conducted by EEE. During this time information came to hand that a BLEG survey was conducted over the area of EL 7987 by BHP Gold in 1990 while the area was part of an application for exploraton licenses. The results of this work are not available on public record in the open files of the Northern Territory Department of Mines and Energy (NT DME), as the applications were withdrawn before grant. Reports from a third party are that survey largely achieved only negative results for gold.

Despite this, a partner for the area was found, and an agreement was entered into with Terra Firma Resources on 1 May 1994, which over a 6 year period was to give Terra Firma Resources a 100% interest in the project in return for funding of an exploration programme conducted by EEE. In early 1995 however, Terra Firma advised Luina that they would be unable to proceed with the agreement because they were unable to obtain the expected funding for their stock market listing. As a result they withdrew from the agreement without funding any further exploration. Efforts were made to interest other parties in the project, and a heads of agreement was entered into with Zephyr Minerals NL in March 1995 in order to meet the expenditure requirements of the Licence. The principal of Luina and EEE were in the process of winding down their activities in the Northern Territory, and were not in the position to continue efforts to find a partner when shortly after Zephyr advised that they would not continue with the arrangement because they were over-committed on other projects. The EL was therefore surrendered. The only work conducted on the Licence was during the first year of title by Luina PL. This is reported by Moloney (1994) and forms the basis for this final report.

This report details initial exploration carried out in April-May 1994, which had as its aims:-

Conduct preliminary geological reconnaissance of EL 7987
Select specific traverses relative to access
Search volcanic sequences for evidence of epithermal gold mineralisation:

- Chalcedonic silica veins/caps
- Colloform silica veins

- Carbonate/barite/gypsum replacement textures in veins
- Hydrothermal alteration zones:
  - silica caps
  - argillic alteration
  - illite-sericite alteration
  - propylitic (epidote-calcite-chlorite)alteration

Collect samples:

- Representative rock suite
- Sample interesting outcrop selectively:
  - veins
  - alteration
- Soil sample (BCL) interesting area
- Stream sediment sample, -3mm 2kg BLC

2. SUMMARY

Following an extensive literature search, EEE embarked upon a regional geological reconnaissance programme. Quartz veining and areas of alteration were investigated and sampled. Three anomalous areas have been generated. These anomalies are low order. This programme has given encouragement for further significant gold mineralisation to be found.

3. CONCLUSIONS

Low-density sampling of the Newlands Volcanics has revealed 3 broad, low magnitude gold anomalies. Further work will be required to evaluate these zones. Further geological reconnaissance will also be required to bring to light any more anomalies in EL 7987.

Landsat imagery shows areas worthy of further investigation by virtue of their similarity to the larger anomaly in Whisky Camp Anticline.

4. TENURE

Exploration

Exploration License 7987 of 235 blocks was granted (Appendix VI) on 10 May 1993 for a period of 6 years. A minimum expenditure covenant of $45,000 was proposed. The location of the title is shown on Figure 3 and in Appendix VI.

The EL was granted to Luina Pty. Ltd. Which is owned by Eupene Exploration Enterprises. The application includes a statement to the effect that it is neither EEE's intention nor desire to participate in ultimate ownership of the

project. This would jeopardise EEE's reputation as independent geological consultants. Luina is merely being used as a vehicle to ultimately divest all interest in the title to the participating client over the life of the title provided EEE manages and conducts the bulk of the exploration on the title.

On 1 May 1994, an agreement between Luina Pty. Ltd. And Terra Firma Resources Joint Venture (TFR) was signed, appointing TFR managers of EL7987 and EEE field operators. This agreement stated that TFR shall hold 100% of the project by Year 6, on an annually increasing percentage basis provided that EEE is retained as field operators and certain expenditure commitments are adhered to during the life of the project. The agreement was terminated by TFR in early 1995 because of a lack of funds, and the EL was subsequently surrendered after efforts to find another partner were unsuccessful.

Land

The land covered by EL 7987 is included in three pastoral leases viz. PL881 NT Portion 2286 - Murray Downs Station, PL1000 NT Portion 3431 - Elkedra Station, and PL791 NT Portion 1290 - Ammaroo Station. An Aboriginal land claim has been loged over a stock route which cuts 9 blocks in the southern part of the EL 7987. If granted, Aboriginal consent to exploration on the affected blocks may be required. Alternatively they may be surrendered, which would have very little effect on the exploration potential of the remaining 226 blocks.

5. REGIONAL GEOLOGY - HATCHES CREEK GROUP (from Goulevitch, 1992)

Description

The geology of the Hatches Creek Gro up has been describe by Blake et al., (1987) in an overall review of the geology of the Davenport Province. This province extends over four 1:250,000 sheet areas, and the geology of each of these sheet areas has been described by Walley and Simons (1987, Frew River), Wyche and Simons (1987, Bonney Well), Stidolph et al./ (1988, Elkedra), and Haines et al./ (1991, Barrow Creek).

According to Blake et al./ (1987), two major stratigraphis units, the Warramunga Group and Hatches Creek Group, and several granitic intrusions crop out in the Davenport Province. The Warramunga Group, which hosts the Au-Cu-Bi rich ironstones at Tennant Creek, are the oldest (1870 Ma) rock exposed, and these are overlain unconformably by the Hatches Creek Group.

The Hatches Creek Group crops out extensively. It is an ensialic sequence at least 10 kilometres thick of sediments and bimodal volcanic rocks. The oldest

volcanic rocks were probably erupted about 1810-1820 Ma ago. The main sedimentary rocks in the sequence confirm that deposition occurred under fluviatile to shallow marine conditions. Some rapid deposition is indicated and isopach evidence shows that some faulting probably took place during deposition (Figure 6). Felsic and mafic volcanics, and granophyre and dolerite/gabbro sills are interlayered with the sedimentary rocks. The felsic volcanics are predominantly lavas and ignimbrites with lesser bedded tuffs and agglomerates which establish that the volcanism was essentially sub-aerial. Blake et al., (1988) divide the Hatches Creek Group into three sub-groups - the Ooradidgee, Wauchope and Hanlon Sub-groups. The first two contain substantial volcanic components.

Some time after deposition, but before granite emplacement at 1660 Ma, the Hatches Creek Group was deformed by two episodes of folding as well as strike-slip and reverse faulting, and was metamorphosed mainly to greenschist facies.

Shallow-marine Cambrian sediments of the Georgina Basin occur around the margins of the province and onlap the older sequences.

Known mineralisation in the Hatches Creek Group includes gold, which is confined to the lower part of the Ooradidgee sub-group in the Kurundie and Kurinelli areas in the northern part of the province. Tungsten has been produced from the Hatches Creek field in the central part of the province and fron the Wauchope and Mosquito Creek fields in the north-west. Minor base metal mineralisation occurs in the Hatches Creek tungsten field and Elkedra region (Figure 5).

A small silver-lead show is indicated on tenure maps within the bounds of EL 7987. This is the only reported mineralisation within the licence area.

Discussion

On the basis of the geology described by Blake et al., (1988), gross similarities have been recognised between the geology of the Hatches Creek Group and that of the Drummond Basin sequence in central Queensland. The Drummond Basin was described in detail by Olgers (1972), and summarised by Day et al., (1982) as follows: -

> "The Drummond Basin contains Late Devonian and Early Carboniferous sediments which were deposited mainly west but also east of the Anakie Inlier on a basement of early and mid-Palaeozoic metamorphics and granite. Olgers (1972) recognised three distinc cycles of sedimentation separated by minor eperogenic movements associated with volcanism. Deposition was continental except for a brief marine incursion in Late Devonian time when the Mount Wyatt Formation was laid down. West of

the Ankie Inlier, fluviatile clastics were deposited in a narrow subsiding basin .....".

Similarities between the Hatches Creek Group and Drummond Basin Sequence include: -

- an intrasontinental, possibly back-arc basin, setting;
- extensive sub-aerial felsic volcanism;
- three recognisable cycles of volcanism and sedimentation with volcanism marking the onset of the first two cycles and sedimentation dominating the third;
- fluviatile and/or shallow-water lacustrine or marine conditions dominating during sedimentation;
- auriferous rocks as the basement to the volcano-sedimentary sequences;
- syndepositional faulting;
- post-volcanism subsidence/marine transgression

Since the discovery of epithermal gold mineralisation in the Drummond Basin sequence some 9-10 years ago, much additional investigation has been conducted. Some of this work indicates that preservation of fragile "high level" epithermal systems, (often including very well preserved sinters) which are associated with the sub-aerial felsic volcanics, resulted from the fact that the region suffered gradual subsidence and fluviatile and shallow-marine or lacustrine sedimentation shortly after the cessation of volcanism. This rapidly buried and thereby protected the epithermal system from the destructive effects of erosion. The shallow-marine and lacustrine sediments in the Hatches Creek Group, particularly in the upper Wauchope Sub-group, and to a lesser extent in the Ooradidgee Sub-group could conceivably have done the same to any epithermal systems associated with the felsic volcanics in the underlying sequence.

This establishes the Newlands and Arabulja Volcanics and interlayered sediments in the Wauchope Sub-group, and to a lesser extent the Treasure and Edmirringee Volcanics in the Ooradidgee Sub-group, as potential targets for epithermal systems and associated gold mineralisation.

To reduce the search area, initial attention was directed towards the eruptive centres as suggested by Blake et as. (1988) and shown on Figure 3. EL7987 has been selected to encompass the eruptive centres of the Newlands and Arabulja Volcanics in the first instance and the Treasure Volcanics In the second. Criteria used by Blake et al. (1988) to define these eruptive centres were: -

- the thickest parts of the volcanic units;
- coarse pyroclastic deposits

- sequence incorporating felsic lavas (which are unlikely to have flowed far from their source); and
- areas of intensely altered volcanic rocks.

This final point is most important in the context of epithermal systems as it implies that some of the alteration observed by Blake et al. (1988) is hydrothermal in origin rather than the result of metamorphism or weeathering on either Cambrian or Recent land surfaces. This interpretation is supported by another comment by Blake et al. (1988) viz.

> "Although largely altered to clay and sericite (partly as a result of weathering) ....." (p.18).

which again implies a non-weathering aspect to be observed argillic (?) and illitic (?) alteration - alteration types which are common around epithermal systems.

A further observation by Blake et al. (1988) may be interpreted positively in an epithermal context:

> "The (Newlands) volcanism was mostly, if not entirely sub-aerial, and arenites within the volcanic piles are either fluviatile or shallow-marine. Some non-bedded quartzite present locally may represent silicified fumarolic deposits." (p.18)

It is conceivable that this "non-bedded quartzite" is in fact an epithermal "silica cap" or zone of sub-sinter silification perhaps associated with boiling zones.

6. EXPLORATION MODEL (from Goulevitch, 1992)

The general model on which the initial exploration programme has been based is that of volcanic-hosted hot-spring epithermal precious metal mineralisation developed by Buchanan (1981) and expanded by numerous other researchers over the past thirteen years (eg. Berger, 1985; Hollister, 1985).
Other specific geological criteria considered to be important in some Drummond Basin deposits have been incorporated, and the ultimate model for the Elkedra Dome project encompasses the following attributes: -

- Suitable basement rocks as a source for precious metals - in this case the Warramunga Group or alternatively the source which supplied precious metals to the Warramunga Group;
- Sub-aerial felsic intermediate to acid volcanism especially after a major break in sedimentation;
- A high pyroclastic component to promote leaching/circulation by hydrothermal fluids;
- A high water table in the volcanic pile to promote boiling zones at shallow depths and consequent rapid low-temperature deposition of

epithermal mineralisation (precious metals, silica, calcite, adularia), and to deposit sinters on the surface;

- Heat sources to generate fluid convection - hence the emphasis on nearby eruptive centres;
- A fluctuating water table to allow repeated, overprinting episodes of epithermal activity within the same structures with resultant enhancement of the tenor of precious metal content;
- Synsedimentsry faulting to facilitate access of hydrothermal fluids from basement to near-surface environments early in the depositional cycle while active volcanism continued;
- Post-volcanic subsidence and shallow-marine, lacustrine or fluviatile transgression to support an adjacent high water table and to ultimately rapidly bury any epithermal systems and protect them from destruction by erosion prior to the eventual complete lithification of the sequence.

7. SELECTED TARGETS (from Goulevitch, 1992)

Application of the model described above to the Hatches Creek Group identifies several stratigraphis targets. In order of assessed priority these are:

1. Newlands, Arabulja and Strzeleckie Volcanics,
2. Yeeradgi Sandstone, Tinfish Sandstone,
3. Treasure Volcanics,
4. Edmirringee Volcanics,
5. Unimbra Sandstone.

The distribution of each of these units is extensive, and the initial filtering criterion applied to restricted target areas is proximity to eruptive centres of felsic volcanism. At this stage, the interpretation of Blake at al. (1988) reproduced here in Figure 3, is the only guide in this regard.

Concentrating only on the Newlands and Arabulja Volcanics (the Strzelecki Volcanics in the Osborne and Crawford Ranges are unavailable) which are the most favoured stratigraphic sequence, provides a realistically workable area which were secured under EL 7987. Minor extensions allowed incorporation of some Treasure Volcanics in the application and the statutory requirements of EL shape and continuity resulted in the inclusion of some Yeeradgi and Unimbra Sandstones in the vicinity of the interpreted eruptive centres (the Tinfish Sandstone occurs with the Strzelecki Volcanics).

Without extensive ground reconnaissance it was not impossible to refine the target area any further.

Only limited ground reconnaissance was undertaken, but indicated two low-level anomalous areas in the Whisky Camp Anticline, and one in Elkedra

Pound. These areas require further work to determine the extent and tenor of mineralisation.

8. PREVIOUS EXPLORATION

Detailed review of existing file company reports (CR) held by the Northern Territory Departmant of Mines and Energy over the outcrop extent of the Hatches Creek Group in the Davenport Province established that BLEG type geochemical sampling had only been conducted on two former exploration licenses. Both were outside the area considered to be prospective for epithermal precious metal mineralisation.

The literature review was restricted to the periode after 1985 to coincide with the advent of reliable BLEG determination.

Newmont Australia Limited (CR 90/505) conducted a BLEG/stream sediment sampling programme under EL6324 around Wycliffe Creek to the south-west of Devils Marbles (Figure 2) and not reported a maximum BLEG value of 0.008ppb Au. Formal laboratory result sheets were not included in Newmont's report, and it is unclear whether the correct units (ppb vs ppm) have been reported. (We are unaware of any commercial laboratory which is able to accurately determine gold contents below 10ppt in BLEG samples).

Rosequartz Mining Limited (CR 89/350) collected 15 BLEG/stream sediment samples under EL5867 in the Ridgewall Anticline area 20-30 kilometres south-east of Devils Marbles (Figure 2). Basaltic lavas and volcaniclastics of the Edmirringee Volcanics are exposed in this area. The highest result was 0.7ppb Au.

Other explorers who have held title in the area since 1985 have concentrated their efforts on literature searches as well as stream sediment and pan concentrate sampling around existing prospects.

In the area covered by EL7987, a consortium comprised of Messrs Campbell and Barnes and Tennant Creek Gold held EL5565 over the Elkedra Dome and part of the Whysky Camp Anticline in 1988-1989 (CR 89/407). Their objective was reportedly to explore the alluvial potential of the Hatches Creek drainage system. No BLEG sampling was conducted. EL7987 covered both the structures involved.

Between 1988-1992, the Murray Dome area to the west was included in EL5505 held by Meekatharra Minerals Limited (CR 90/292, CR 91/262). Exploration conducted during the period included a photogeological study and pan concentrate sampling which returned results up to 0.47ppm Au. This photogeological study resulted in the definition of five targets, but there is no record of any further work being undertaken. Two of these targets were on

Murray Dome, and one of these was near existing Pb-Zn mineralisation. While no BLEG sampling was reported, some chip samples were collected. One of these, described as quartz-veined rhyodacite contained 0.31ppm Au. EL7987 covered Newlands and Arabulja Volcanics which were define the south-eastern flank of Murray Dome.

It has been determine that BHP Gold completed a helicopter-supported exploration programme over the entire Davenport Province in 1990, whilst the area was still under application for ELs. Approximately 1700 samples were taken, but results were not deemed significant and subsequently BHP Gold dropped the applications for ELs in the area. None of this technical information is available in open file reports held by NT DME.

9. EXPLORATION COMPLETED

Following a literature search of previous exploration in the area, a geological reconnaissance programme was carried out during early May 1994. Extensive regional traversing in two large prospective areas (Elkedra Pound and Whisky Camp Anticline) was undertaken with the main aim of locating areas of extensive alteration and quartz veining. These areas were rock chip sampled, and 3 soil sampling traverses were completed over areas of interest, and stream sediment samples taken.

A Landsat image of the area at 1:100,000 scale was purchased from Geoimage Pty. Ltd. This image is a composite of channels 1, 4, and 7, and shows areas of probable alteration as lighter coloured zones within the darker Newlands Volcanics sequence.

The determination of sample locations was confine to areas of outcrop of the Newlands Volcanics. In the Whisky Camp Anticline this comprises less than 20% of the area potentially underlain by this unit, and in Elkedra Pound approximately 75% of the area of interest, the rest being sandy Quarternary cover. Streams were selected for stream sediment sampling. These samples were screened to -3mm in the field, as were the soil samples. Only active channel sediment was sampled.

A total of 21 soil samples, 24 stream sediment samples and 26 rock chip samples were collected. Stream sediment and soil samples were assayed by Assaycorp Pty. Ltd. for Au by the BLEG method (1.5kg, 24hrs agitated leach, solvent extraction, AAS finish), and for Cu, Pb, Zn, Ag, Ni, Co, Mn, Fe, As, Sb, Bi, Se, Cr, Mo by AAS. Hg assays were analysed by the AAS vapour generation method.

Rock chips were -75um crushed to and analysed by Assaycorp Pty. Ltd. For Au by Fire Assay (AAS (50g), as well as for the elements listed above for stream sediment and soil samples.

Hand speciment comprising a selected suite of rock types which crop out in the region were collected. Eight of these were submitted to Central Mineralogical Services for petrographic descriptions and four were submitted to Amdel in Adelaide for XRD analysis.

This work was completed in 10 field days by an EEE geologist and one field technician. Control was by a combination of GPS and topographic map.

10. RESULTS AND INTERPRETATION

Sample locations are plotted on Map 1 and 2. Result for gold are plotted on Map 3. Analytical result sheets are attached as Appendices I and II. XRD analyses are attached as Appendix III, and petrographic descriptions as Appendix IV.

Considering the wide sample spacing, three very encouraging low order anomalous zones were located. Two areas are in the Whisky Camp Anticline, the third in Elkedra Pound.

The first consists of four stream sediment samples that have assay results from 0.3 to 1.0 ppb Au. Three of these samples (EE49316-49318) drain from one hill of Newlands Volcanics which has a silica capping and a N-S trending zone of metamorphic rocks consisting dominantly of a very fine-grained greenish muscovite (XRD) or sericite. Both the silica cap and the massive muscovite zone may represent area of pervasive hydrethermal alteration. The fourth sample (EE49319) derives from an adjacent low hill about 1.2 kilometres to the SSW. Rock chip sample results showed no significant anomalism. The anomaly coincides with a pale area on Landsat imagery that also indicates a possible zone of alteration.

The second anomalous area consists of two rock chip sample results (EE49255, EE49257) from quartz veins in cleaved porphyritic dacite which has undergone silification. Although gold results were below the detection limit, highly anomalous arsenic results (ie >10 times background) indicate that the potential exists for gold to be associated with sulphides in this zone.

In the third area, a hand specimen (2/90) that was collected from near this anomaly was submitted for petrographic description. It consists of completely sericitised, sheared feldspar phenocrysts in a sheareed mass of kaolinite-sericite (See Photo 3). Because of this alteration and shearing positive identification of the original rock-type is difficult. It has tentatively been termed an andesite, but could range from dacite to andesite. This sheared, altered rock in an anomalous area provides further encouragement for follow-up work.

Results from the Elkedra Pound area were generally discouraging, but as only a low sample density was achieved, the area is considered to still have significant exploration potential.

Results from one regional soil traverse (49333-49339) over a large quartz vein ridge show a slightly elevated Au content (0.2 - 0.3 ppb Au). This anomaly is in the SE corner of Elkedra Pound. Further work will be required to assess its economic potential.

11. EXPENDITURE STATEMENT

Geological Services	$16,330
Field Assistants	$ 2,580
4WD Vehicle	$ 2,618
Camping/Accomodation	$ 910
Consumables	$ 75
Analyses, XRD, Petrology	$ 2,793
Drafting	$ 380
Photocopies, Company Reports	$ 760
Legal Expenses	$ 1,050
Landsat Image	$ 619
EL Rental	$ 2,350
Courier Bags	$ 300
Telephone & Fax	$ 385
Administration (15%)	$ 4,673
	$35,823

The expenditure covenant for Year 1 was $45,000.

12. REFERENCES

Berger, B.R., 1985, Geologic-geochemical features of hot-spring precious metal deposits in *Geological characteristics of sediment - and volcanics-hosted disseminated gold deposits - search for an occurrence model* ed. E.W. Tooker, U.S.G.S. Bull. 1646, 47 - 53.

Blake, D.H., Stewart, A.J., Sweet, I.P., and Hone, I.G., 1987, Geology of the Proterozoic Davenport Province, central Australia. *Bur. Miner. Res. Geol. & Geophys. Bull. 226.*

Buchanan, L.J., 1981, Precious metal deposits associated with volcanic environments in the south-west, *Arizona Geol. Soc. Digest, XIV, 237-242.*

Day, R.W., Whitaker, W.G., Murray, C.G., Wilson, I.H., Grimes, K.G., 1983, Queensland Geology - A companion volume to the 1;2,500,000 scale geological map (1975). *Geol. Surv. Qld., Publ. 383.*

Goulevitch, J., 1922, The Elkedra Dome Project - A Proterozoic Epithermal Gold Target in the Northern Territory. *Eupene Exploration Enterprises Pty. Ltd. Report (unpubl.), 14 pp., 7 figs., 3 appendices.*

Haines, P.W., Bagas, L., Wyche, S., Simons, B., and Morris, D., 1991, 1:250,000 Geological Map Series explanatory notes, Barrow Creek SF 53-6. *N.T. Geol. Surv.*

Hollister, V.F., 1985, Models of precious metal epithermal deposits in *Discoveries of epithermal precious metal deposits. ed. V.F. Hollister, ix-xiv, SME-AIME, New York, 169 pp.*

Moloney, N., 1994, EL 7987 - ELKEDRA. First Annual Report. *EEE Report No. EEE94/34.*

Olgers, F., Geology of the Drummond Basin, Queensland. *Bur. Miner. Res. Geol. & Geopgys., Bul. 132.*

Stidolph, P.A., Bagas, L., Donnellan, N., Walley, A.M., Morriss, D.G., and Simons, B., 1988, 1:250,000 Geological Map Series explanatory notes, Elkedra SF53-7. *N.T. Geol. Surv.*

Walley, A.M., and Simons, B.A., 1987, 1:250,000 Geological Map Series explanatory notes, Frew River SF53-3. *N.T. Geol. Surv.*

Wyche, S., and Simons, B., 1987, 1:250,000 Geological Map Series explanatory notes, Bonney Well SF53-2. *N.T. Geol. Survey.*

FIGURE 1

(from Blake et al., 1988)

Fig. 1. Tectonic setting.

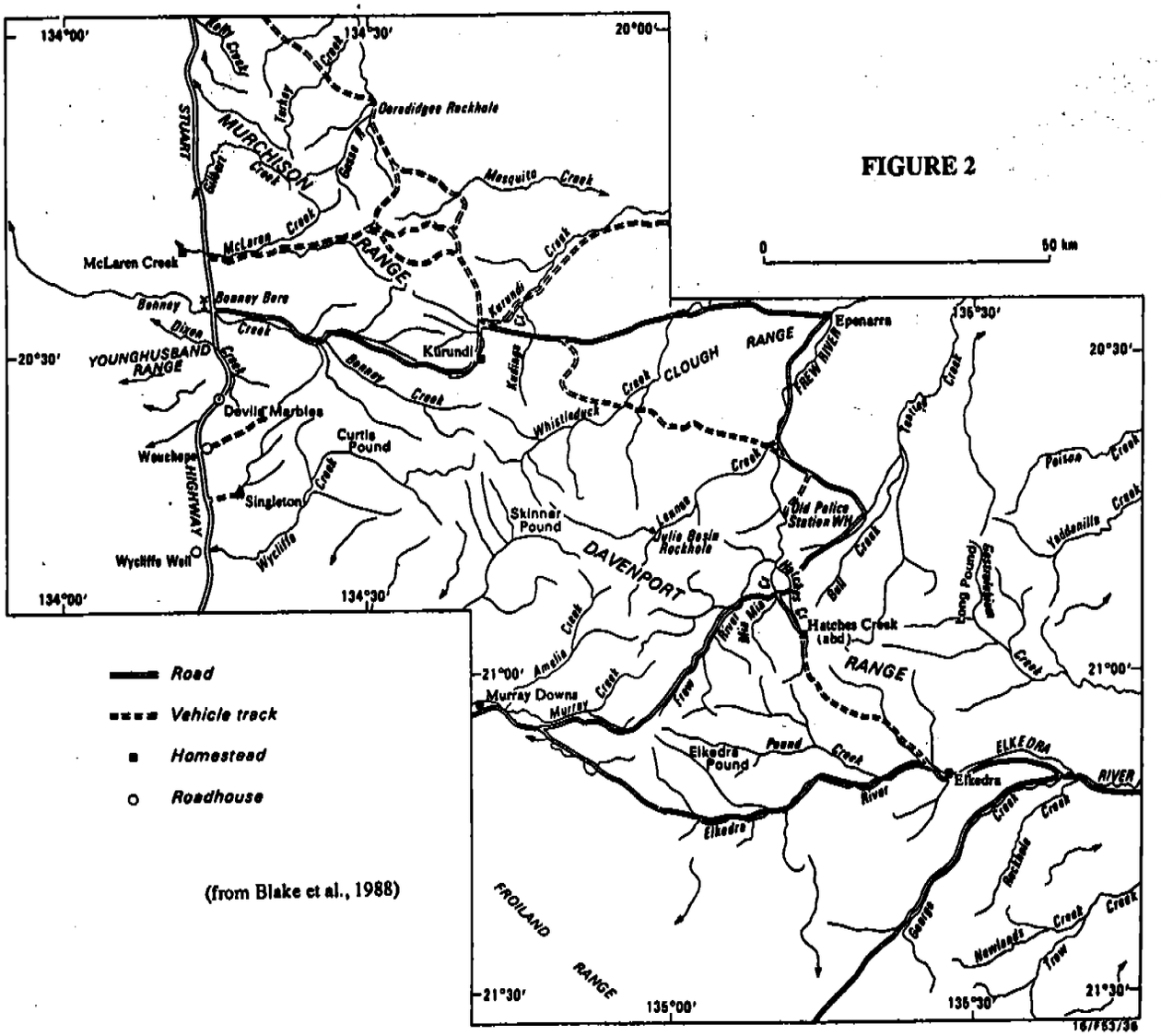
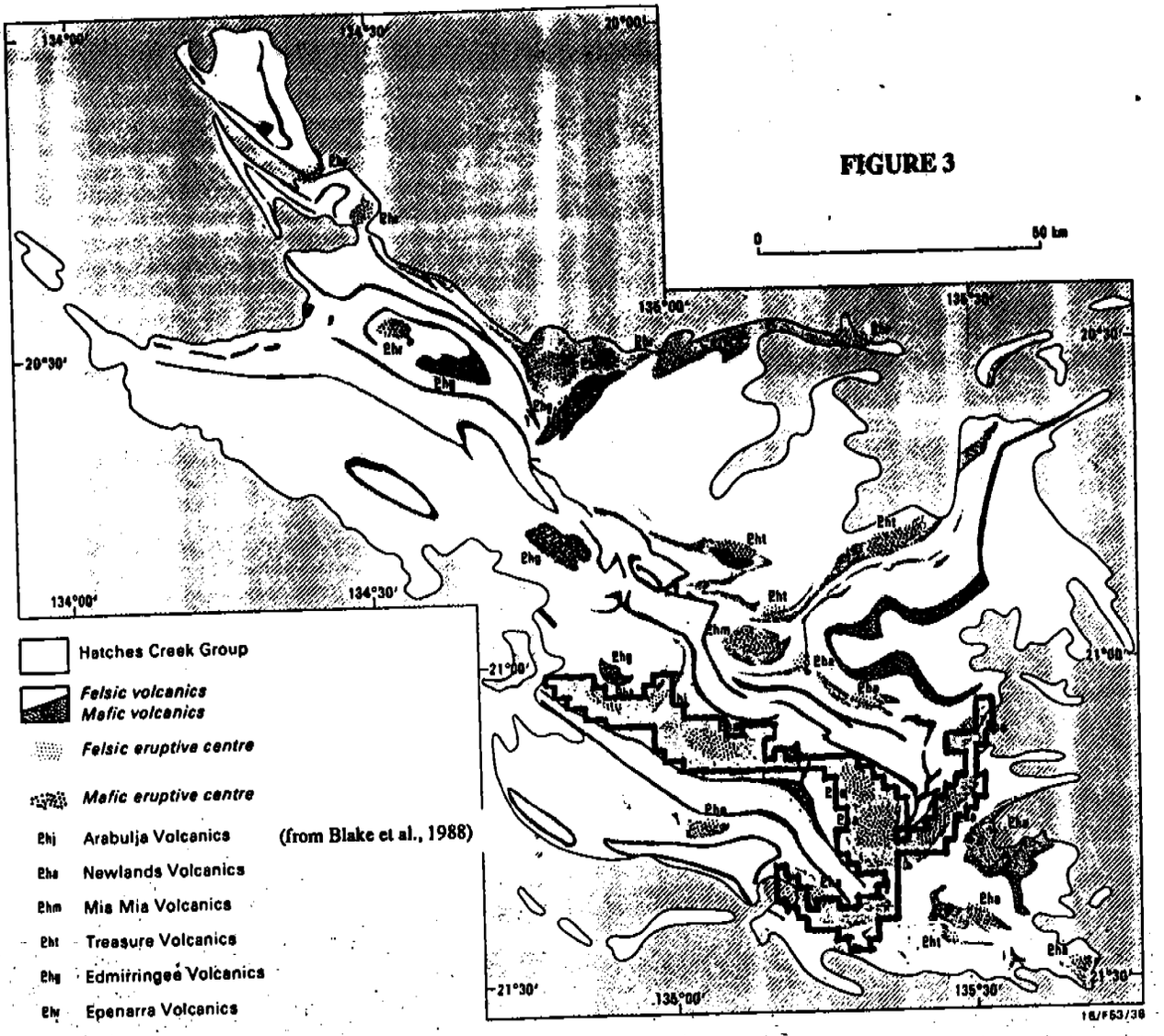


FIGURE 2

(from Blake et al., 1988)

Fig. 2. Locality map.

FIGURE 3



Distribution of felsic and mafic volcanics of the Hatches Creek Group and inferred major eruptive centres.

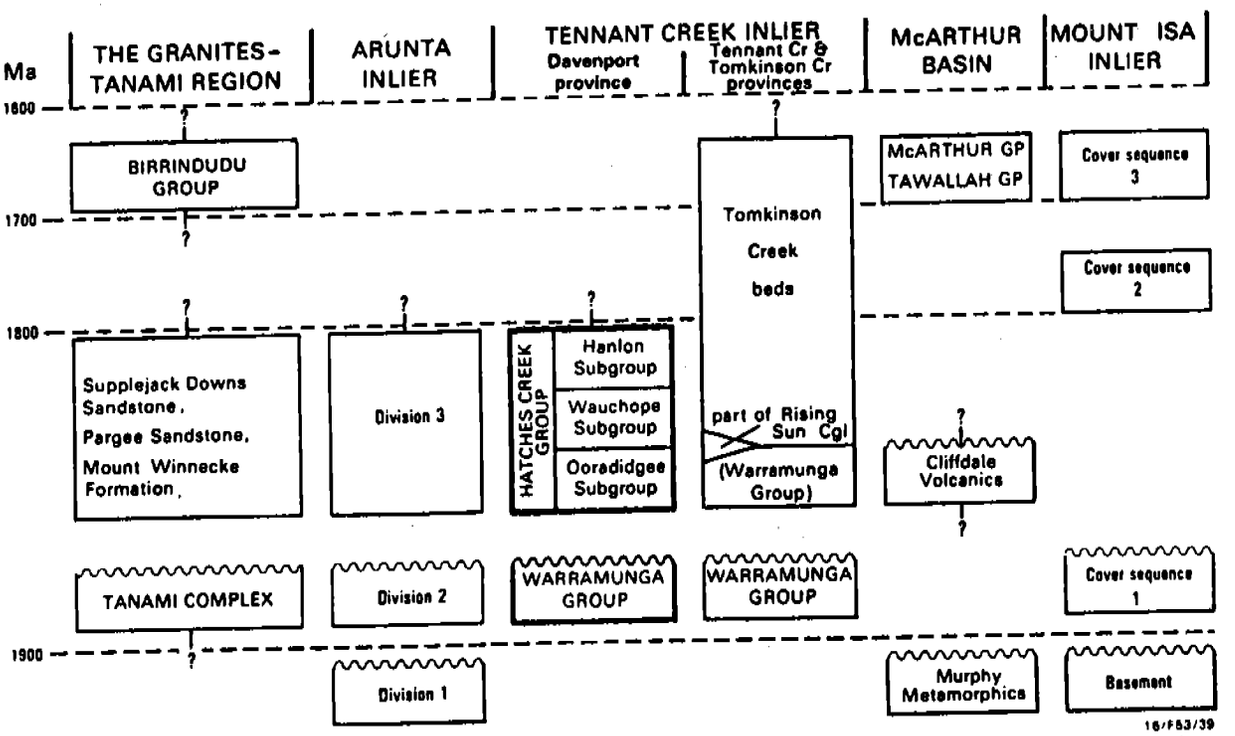


FIGURE 4 Stratigraphic correlation chart for the Proterozoic of the Davenport province and nearby regions.

(from Blake et al., 1988)

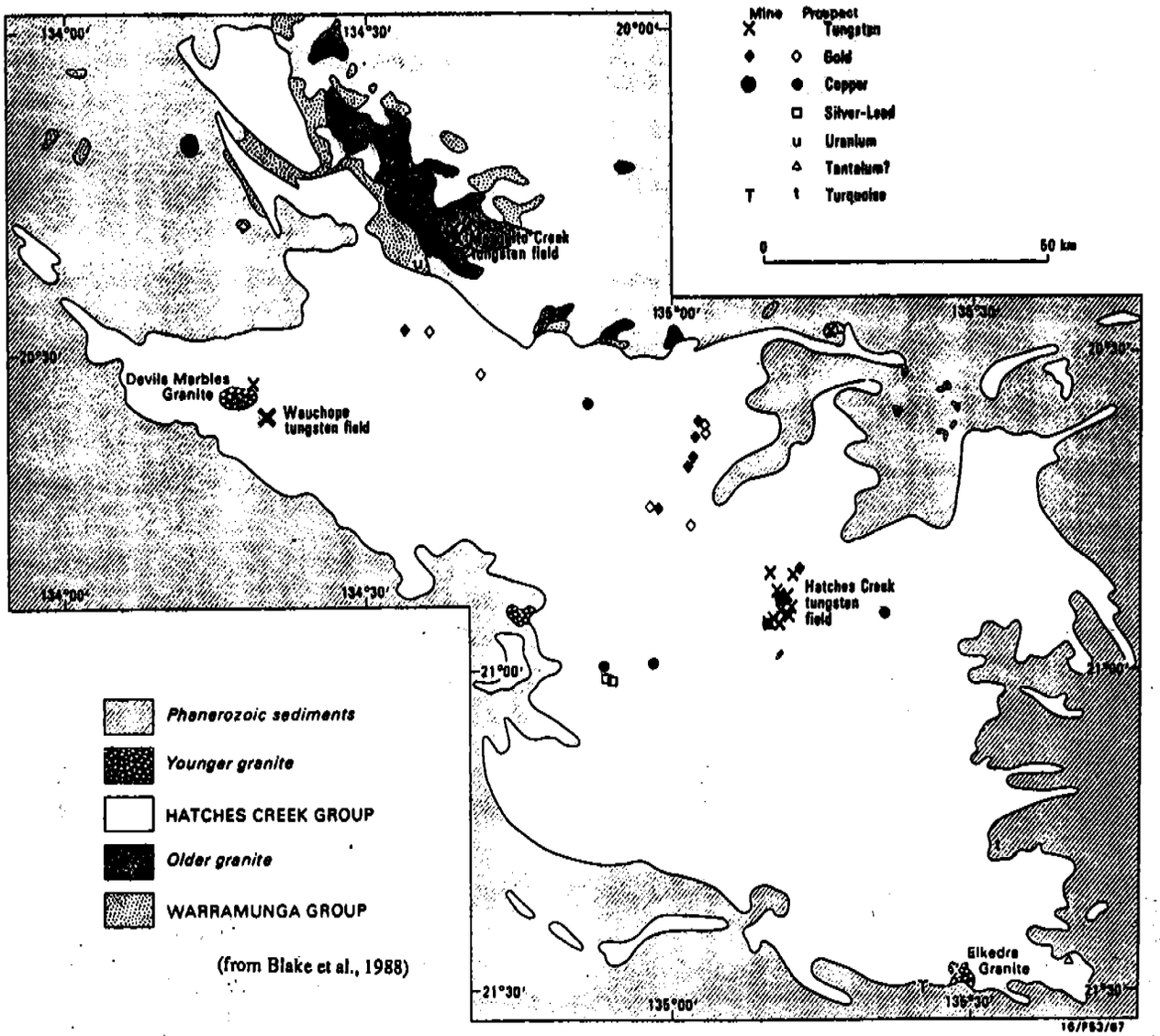
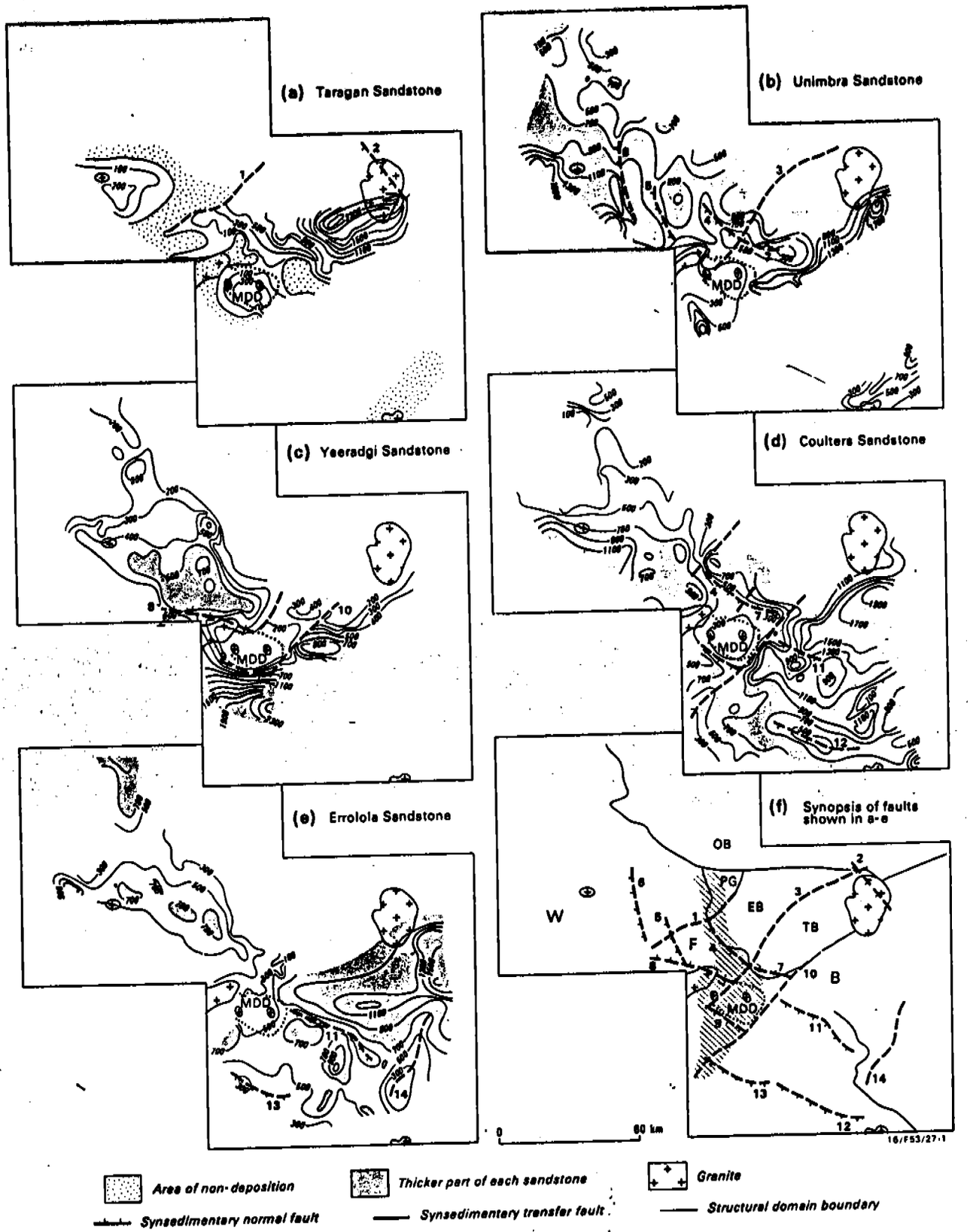


FIGURE 5 Distribution of mineral deposits in the Davenport province.



Isopach maps for Taragan Sandstone, Unimbra Sandstone, Yeeradgi Sandstone, Coulters Sandstone, and Errolola Sandstone of the Hatches Creek Group, and synopsis of synsedimentary faults.

FIGURE 6 (from Blake et al., 1988)

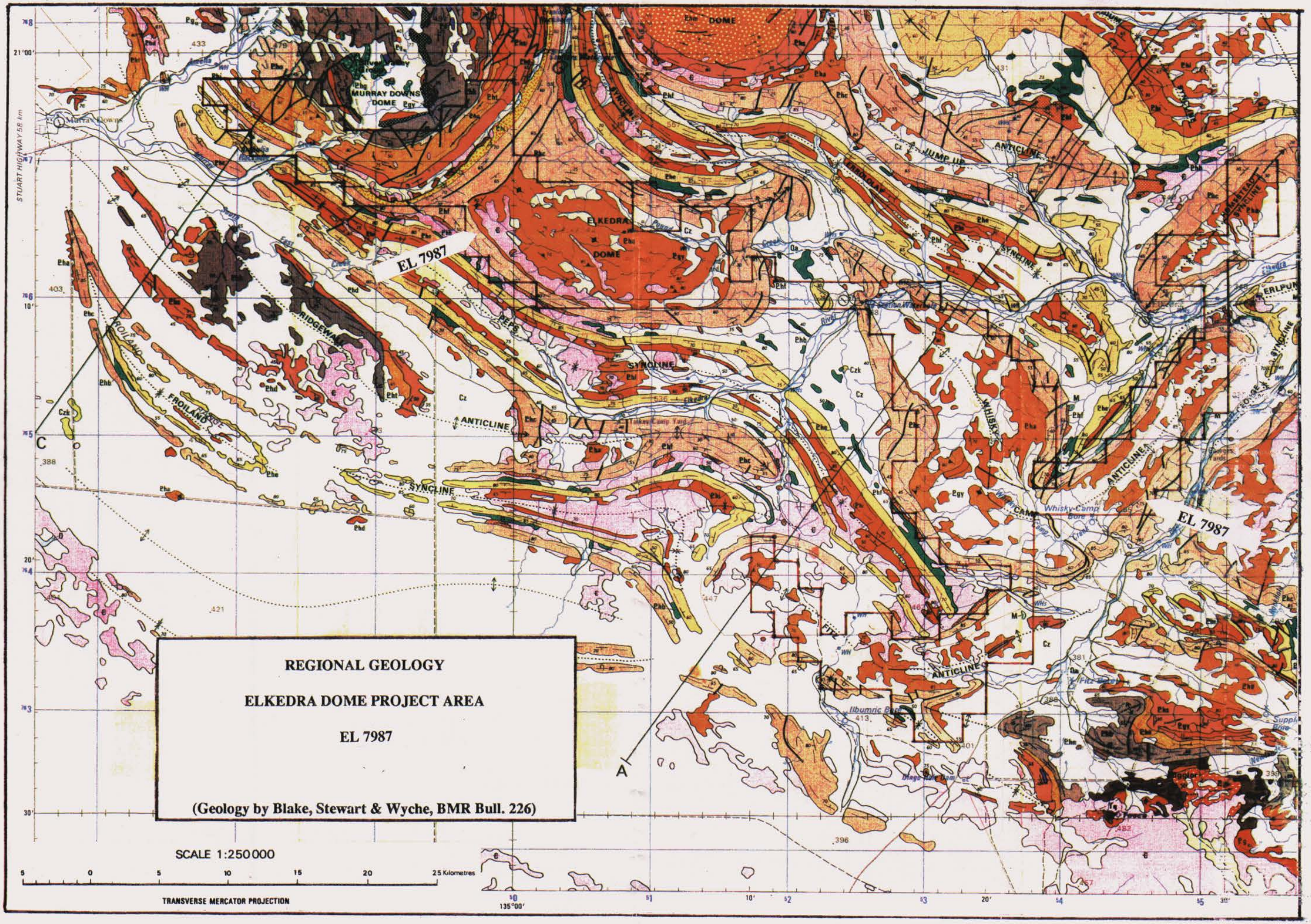

REGIONAL GEOLOGY
ELKEDRA DOME PROJECT AREA
EL 7987
(Geology by Blake, Stewart & Wyche, BMR Bull. 226)
SCALE 1:250 000
5 0 5 10 15 20 25 Kilometres
TRANSVERSE MERCATOR PROJECTION
EL 7987
EL 7987
ELKEDRA
DOME
MURRAY DOWNS
DOME
DOME
RIDGEWAY
SYNCLINE
ANTICLINE
SYNCLINE
ANTICLINE
SYNCLINE
ANTICLINE
ANTICLINE
ANTICLINE
WHISKY
STUART HIGHWAY 58 km
A
C
135°00'

FIGURE 7

Appendix I
Rock Chip Sample Assay Results

ASSAYCORP PTY LTD

A.C.N. 052 982 911

174 Ward Street, Pine Creek, N.T. 0847

P.O. Box 41, Pine Creek, N.T. 0847

Telephone (089) 76 1262

Facsimile (089) 76 1310

ASSAY CODE: AC 13821

Eupene Exploration Enterprises

Distribution

John Goulevitch

Client Reference: 70

Project :

Cost Code:

Date Received: 16/05/1994

Number of Samples: 26

EC 7987
Elkedra Rock chips

Sample Preparation

Analysis	Analytical Technique	Precision & Accuracy	Detection Limit	Data Units
Au	FA50	Acc. ± 15%	1	ppb
Cu	AAS/MA-3	Prec. ± 10%	1	ppm
Pb	AAS/MA-3	Prec. ± 10%	2	ppm
Zn	AAS/MA-3	Prec. ± 10%	1	ppm
Co	AAS/MA-3	Prec. ± 10%	1	ppm
Ni	AAS/MA-3	Prec. ± 10%	2	ppm
Ag	AAS/MA-3	Prec. ± 10%	0.5	ppm
Mn	AAS/MA-3	Prec. ± 10%	2	ppm
Fe	AAS/MA-3	Prec. ± 10%	20	ppm
As	AAS/MA-3	Prec. ± 10%	1	ppm
Sb	AAS/MA-3	Prec. ± 10%	1	ppm
Bi	AAS/MA-3	Prec. ± 10%	1	ppm
Se	AAS/MA-3	Prec. ± 10%	1	ppm
Hg	COLD/VAP	Prec. ± 10%	0.5	ppm
Cr	AAS/MA-3	Prec. ± 10%	5	ppm
Mo	AAS/MA-3	Prec. ± 10%	5	ppm

Authorisation: Ray Wooldridge

Report Dated: 25/05/1994

ASSAYCORP PTY LTD
A.C.N. 052 982 911
174 Ward Street, Pine Creek, N.T. 0847
P.O. Box 41, Pine Creek, N.T. 0847
Telephone (089) 76 1262
Facsimile (089) 76 1310

ASSAY CODE: AC 13820

Sample	Au (ppb)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ag (ppm)	Ni (ppm)	Co (ppm)	Mn (ppm)
49301	0.3	7	3	23	<0.5	15	9	64
49302	<0.1	8	6	25	<0.5	24	10	100
49303	<0.1	11	<2	42	<0.5	14	15	93
49304	0.4	8	5	48	<0.5	14	10	120
49305	0.2	10	<2	33	<0.5	13	10	140
49306	<0.1	10	4	25	<0.5	12	8	116
49307	<0.1	8	2	30	<0.5	14	10	105
49308	<0.1	9	3	25	<0.5	13	9	110
49309	<0.1	7	2	28	<0.5	11	8	84
49310	<0.1	78	<2	43	<0.5	12	8	100
49311	<0.1	10	4	36	<0.5	12	9	115
49312	<0.1	7	18	34	<0.5	11	7	100
49313	<0.1	8	7	27	<0.5	34	7	81
49314	<0.1	10	13	26	<0.5	39	7	64
49315	<0.1	7	4	29	<0.5	11	6	87
49316	1.0	9	<2	31	<0.5	10	7	91
49317	0.7	10	<2	24	<0.5	9	5	62
49318	0.3	22	3	48	<0.5	11	7	70
49319	0.8	31	12	43	<0.5	12	7	84
49320	<0.1	10	<2	40	<0.5	12	8	108
49321	0.3	9	<2	45	<0.5	14	9	151
49322	<0.1	11	<2	32	<0.5	10	7	82
49323	<0.1	9	<2	33	<0.5	13	7	76
49324	0.2	11	<2	41	<0.5	16	13	182
49325	0.2	10	<2	29	<0.5	11	7	91

ASSAYCORP PTY LTD
A.C.N. 052 982 911
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P.O. Box 41, Pine Creek, N.T. 0847
Telephone (089) 76 1262
Facsimile (089) 76 1310

ASSAY CODE: AC 13820

Sample	Fe (ppm)	As (ppm)	Sb (ppm)	Bi (ppm)	Se (ppm)	Hg (ppm)	Cr (ppm)	Mo (ppm)
49301	2.20%	2	<1	<1	<1	<0.5	17	<5
49302	1.70%	2	<1	<1	<1	<0.5	12	<5
49303	2.15%	3	<1	<1	<1	<0.5	<5	<5
49304	1.95%	3	<1	<1	<1	<0.5	6	<5
49305	1.75%	3	<1	<1	<1	<0.5	14	<5
49306	1.85%	2	<1	<1	<1	<0.5	16	<5
49307	2.10%	2	<1	<1	<1	<0.5	6	<5
49308	1.60%	2	<1	<1	<1	<0.5	17	<5
49309	1.75%	2	<1	<1	<1	<0.5	11	<5
49310	1.90%	7	<1	<1	<1	<0.5	10	<5
49311	1.95%	2	<1	<1	<1	<0.5	11	<5
49312	1.90%	1	<1	<1	<1	<0.5	12	<5
49313	1.45%	1	<1	<1	<1	<0.5	27	<5
49314	1.90%	2	<1	<1	<1	<0.5	35	<5
49315	1.65%	2	<1	<1	<1	<0.5	10	<5
49316	1.65%	2	<1	<1	<1	<0.5	11	<5
49317	1.40%	2	<1	<1	<1	<0.5	12	<5
49318	1.60%	3	<1	<1	<1	<0.5	8	<5
49319	2.25%	3	<1	<1	<1	<0.5	12	<5
49320	2.00%	4	<1	<1	<1	<0.5	13	<5
49321	2.70%	3	<1	<1	<1	<0.5	13	5
49322	1.90%	2	<1	<1	<1	<0.5	13	<5
49323	2.20%	3	<1	<1	<1	<0.5	12	6
49324	2.70%	4	<1	<1	<1	<0.5	13	<5
49325	1.95%	1	<1	<1	<1	<0.5	13	<5

ASSAYCORP PTY LTD
A.C.N. 052 982 911
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Telephone (089) 76 1262
Facsimile (089) 76 1310

ASSAY CODE: AC 13820

Sample	Au (ppb)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ag (ppm)	Ni (ppm)	Co (ppm)	Mn (ppm)
49326	0.4	13	<2	36	<0.5	17	12	114
49327	<0.1	9	<2	32	0.5	12	9	97
49328	0.2	9	3	38	0.7	11	10	96
49329	<0.1	8	<2	21	<0.5	9	5	67
49330	<0.1	14	<2	31	0.5	15	10	100
49331	<0.1	6	<2	32	0.6	15	9	86
49332	<0.1	7	<2	33	<0.5	11	7	84
49333	<0.1	15	<2	32	<0.5	17	12	169
49334	<0.1	15	<2	31	<0.5	15	11	146
49335	0.2	11	<2	29	0.5	15	12	145
49336	0.3	14	<2	33	<0.5	14	12	124
49337	<0.1	15	<2	34	<0.5	14	10	160
49338	0.3	9	<2	26	<0.5	13	10	139
49339	0.2	10	<2	27	<0.5	11	8	91
49340	<0.1	11	<2	30	<0.5	14	9	88
49341	<0.1	17	<2	37	<0.5	12	10	94
49342	<0.1	11	<2	42	0.5	14	11	122
49343	<0.1	10	<2	30	<0.5	25	14	153
49344	<0.1	8	2	25	<0.5	23	10	118
49345	<0.1	10	<2	34	<0.5	22	10	63

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A.C.N. 052 982 911
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P.O. Box 41, Pine Creek, N.T. 0847
Telephone (089) 76 1262
Facsimile (089) 76 1310

ASSAY CODE: AC 13820

Sample	Fe (ppm)	As (ppm)	Sb (ppm)	Bi (ppm)	Se (ppm)	Hg (ppm)	Cr (ppm)	Mo (ppm)
49326	2.85%	2	<1	<1	<1	<0.5	11	<5
49327	2.35%	3	<1	<1	<1	<0.5	13	<5
49328	2.00%	2	<1	<1	<1	<0.5	10	<5
49329	1.40%	<1	<1	<1	<1	<0.5	14	<5
49330	2.05%	1	<1	<1	<1	<0.5	9	<5
49331	2.25%	<1	<1	<1	<1	<0.5	7	<5
49332	2.10%	1	<1	<1	<1	<0.5	10	<5
49333	2.40%	1	<1	<1	<1	<0.5	11	<5
49334	2.25%	1	<1	<1	<1	<0.5	10	<5
49335	2.50%	2	<1	<1	<1	<0.5	11	<5
49336	2.55%	1	<1	<1	<1	<0.5	12	<5
49337	2.40%	1	<1	<1	<1	<0.5	13	<5
49338	2.10%	1	<1	<1	<1	<0.5	13	<5
49339	2.00%	1	<1	<1	<1	<0.5	13	<5
49340	2.25%	2	<1	<1	<1	<0.5	14	<5
49341	2.40%	1	<1	<1	<1	<0.5	13	<5
49342	3.00%	1	<1	<1	<1	<0.5	10	<5
49343	2.75%	1	<1	<1	<1	<0.5	20	<5
49344	2.40%	2	<1	<1	<1	<0.5	15	<5
49345	3.00%	2	<1	<1	<1	<0.5	16	<5

Appendix II
Stream Sediment & Soil Sample Assay Results

ASSAYCORP PTY LTD
A.C.N. 052 982 911
174 Ward Street, Pine Creek, N.T. 0847
P.O. Box 41, Pine Creek, N.T. 0847
Telephone (089) 76 1262
Facsimile (089) 76 1310

ASSAY CODE: AC 13820

Eupene Exploration Enterprises

Distribution
John Goulevitch

Client Reference: 70
Project :
Cost Code:

Date Received: 16/05/1994
Number of Samples: 45

Sample Preparation

EL 7987
Elkedra Streams and Soils

Analysis	Analytical Technique	Precision & Accuracy	Detection Limit	Data Units
Au	BLEG/2Kg	Prec. ± 15%	0.1	ppb
Cu	AAS/MA-3	Prec. ± 10%	1	ppm
Pb	AAS/MA-3	Prec. ± 10%	2	ppm
Zn	AAS/MA-3	Prec. ± 10%	1	ppm
Ag	AAS/MA-3	Prec. ± 10%	0.5	ppm
Ni	AAS/MA-3	Prec. ± 10%	2	ppm
Co	AAS/MA-3	Prec. ± 10%	1	ppm
Mn	AAS/MA-3	Prec. ± 10%	2	ppm
Fe	AAS/MA-3	Prec. ± 10%	20	ppm
As	AAS/MA-3	Prec. ± 10%	1	ppm
Sb	AAS/MA-3	Prec. ± 10%	1	ppm
Bi	AAS/MA-3	Prec. ± 10%	1	ppm
Se	AAS/MA-3	Prec. ± 10%	1	ppm
Hg	COLD/VAP	Prec. ± 10%	0.5	ppm
Cr	AAS/MA-3	Prec. ± 10%	5	ppm
Mo	AAS/MA-3	Prec. ± 10%	5	ppm

Authorisation: Ray Wooldridge
Report Dated: 25/05/1994

ASSAYCORP PTY LTD
A.C.N. 052 982 911
174 Ward Street, Pine Creek, N.T. 0847
P.O. Box 41, Pine Creek, N.T. 0847
Telephone (089) 76 1262
Facsimile (089) 76 1310

ASSAY CODE: AC 13821

Sample	Au (ppb)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Co (ppm)	Ni (ppm)	Ag (ppm)	Mn (ppm)
49251	<1	42	12	17	8	56	<0.5	279
49252	<1	20	6	6	4	30	<0.5	155
49253	<1	22	6	4	4	33	<0.5	197
49254	<1	22	<2	3	4	40	<0.5	128
49255	<1	30	<2	6	7	27	1.1	196
49256	<1	21	<2	4	4	32	<0.5	106
49257	<1	19	<2	5	6	28	<0.5	140
49258	<1	16	<2	5	4	30	<0.5	103
49259	<1	3	<2	4	6	13	<0.5	17
49260	<1	18	<2	<1	3	35	<0.5	104
49261	<1	16	5	2	4	29	<0.5	86
49262	<1	20	<2	3	6	33	<0.5	157
49263	<1	19	6	10	5	34	<0.5	100
49264	<1	18	8	6	6	33	<0.5	81
49265	<1	20	<2	<1	3	41	<0.5	110
49266	<1	20	<2	<1	5	27	<0.5	64
49267	<1	31	<2	13	6	50	<0.5	174
49268	<1	18	<2	7	6	32	<0.5	140
49269	<1	18	<2	3	4	33	<0.5	120
49270	<1	22	<2	3	4	33	<0.5	99
49271	<1	18	<2	2	4	31	<0.5	91
49272	<1	23	<2	2	5	41	<0.5	112
49273	<1	18	<2	3	5	33	<0.5	90
49274	<1	20	<2	2	4	36	<0.5	103
49275	<1	19	<2	2	4	23	<0.5	103

ASSAYCORP PTY LTD
A.C.N. 052 982 911
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P.O. Box 41, Pine Creek, N.T. 0847
Telephone (089) 76 1262
Facsimile (089) 76 1310

ASSAY CODE: AC 13821

Sample	Fe (ppm)	As (ppm)	Sb (ppm)	Bi (ppm)	Se (ppm)	Hg (ppm)	Cr (ppm)	Mo (ppm)
49251	2.90%	14	<1	1	<1	<0.5	102	12
49252	1.25%	6	<1	<1	<1	<0.5	40	<5
49253	1.95%	4	<1	2	<1	<0.5	56	8
49254	1.65%	2	<1	<1	<1	<0.5	71	<5
49255	3.35%	110	1	11	<1	<0.5	38	5
49256	1.40%	10	<1	2	<1	<0.5	42	6
49257	1.90%	65	<1	1	<1	<0.5	46	<5
49258	1.50%	3	1	<1	<1	<0.5	50	<5
49259	8000	<1	<1	<1	<1	<0.5	15	<5
49260	1.35%	2	<1	<1	<1	<0.5	58	5
49261	1.25%	2	<1	<1	<1	<0.5	42	<5
49262	3.20%	1	<1	<1	<1	<0.5	55	9
49263	1.60%	5	<1	1	<1	<0.5	55	5
49264	1.60%	7	<1	1	<1	<0.5	41	<5
49265	1.55%	2	<1	<1	<1	<0.5	74	<5
49266	1.50%	1	<1	2	<1	<0.5	48	<5
49267	2.40%	8	<1	<1	<1	<0.5	77	10
49268	1.90%	5	<1	<1	<1	<0.5	22	<5
49269	1.55%	2	<1	<1	<1	<0.5	56	7
49270	1.60%	2	<1	<1	<1	<0.5	50	6
49271	1.40%	2	<1	<1	<1	<0.5	50	6
49272	1.80%	3	<1	<1	<1	<0.5	66	6
49273	1.55%	2	<1	<1	<1	<0.5	58	<5
49274	1.55%	2	<1	<1	<1	<0.5	54	6
49275	1.55%	3	<1	<1	<1	<0.5	56	5

ASSAYCORP PTY LTD
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Telephone (089) 76 1262
Facsimile (089) 76 1310

ASSAY CODE: AC 13821

Sample	Au (ppb)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Co (ppm)	Ni (ppm)	Ag (ppm)	Mn (ppm)
49276	<1	22	<2	<1	5	39	<0.5	111

ASSAYCORP PTY LTD
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Telephone (089) 76 1262
Facsimile (089) 76 1310

ASSAY CODE: AC 13821

Sample	Fe (ppm)	As (ppm)	Sb (ppm)	Bi (ppm)	Se (ppm)	Hg (ppm)	Cr (ppm)	Mo (ppm)
49276	1.60%	2	<1	<1	<1	<0.5	44	<5

Appendix III
XRD Analyses

amdel

A.C.N. 008 127 802

Amdel Limited
Mineral Services Laboratory
31 Flemington Street
Frewville SA 5063
AUSTRALIA

Telephone (08) 372 2883
Facsimile (08) 379 6623
Telex AA82520

PO Box 338 Torrensville SA 5031

25 May 1994

Mr John Goulevitch
Eupene Exploration Enterprises Pty Ltd
Suite 4
9 Woods Street
DARWIN NT 0800

REPORT G389/94
MINERALOGY OF 4 ROCK SAMPLES

YOUR REFERENCE:	Order No. 808798
SAMPLE IDENTIFICATION:	7/5, 49266, Ch/Nd, SS/Pa
MATERIAL:	4 rock samples
DATE RECEIVED:	23 May 1994
WORK REQUIRED:	Semi-quantitative mineralogy by XRD
Investigation and Report by:	Michael Till

Keith Henley

Dr Keith J Henley
Manager, Mineral Services Laboratory

The results contained in this report relate only to the sample(s) submitted for testing. Amdel Ltd accepts no responsibilities for the representivity of the sample(s) submitted.

hk

MINERALOGY OF 4 ROCK SAMPLES

1. INTRODUCTION

Four rock samples were received from Mr J Goulevitch of Eupene Exploration Enterprises Pty Ltd, Darwin with a request for identification of the minerals present.

2. PROCEDURE

The samples were pulverised and analysed by X-ray diffraction.

3. RESULTS

The minerals detected are listed in the table below.

	7/5	49266	Ch/Nd	SS/Pa
Quartz		D	SD	D
Muscovite	D		D	Tr
Kaolinite				Tr
Rutile				Tr

Semi-quantitative Abbreviations

D = Dominant. Used for the component apparently most abundant, regardless of its probable percentage level.

CD = Co-dominant. Used for two (or more) predominating components, both or all of which are judged to be present in roughly equal amounts.

SD = Sub-dominant. The next most abundant component(s) providing its percentage level is judged above about 20.

A = Accessory. Components judged to be present between the levels of roughly 5 and 20%.

Tr = Trace. Components judged to be below about 5%.

Appendix IV
Petrographic Descriptions

Central Mineralogical Services

8 Bradshaw Avenue, Crafers, S.A. 5152
Telephone (08) 370 9779 Fax (08) 370 9788
International: Telephone + 618 370 9779 Fax + 618 370 9788

3 June 1994

Mr J Goulevitch
Eupene Exploration Enterprises Pty Ltd
Suite 4, 98 Woods Street
DARWIN N.T. 0800

REPORT CMS 94/5/15

YOUR REFERENCE: P.O. No. 808799

DATE RECEIVED: 23 May 1994

SAMPLE NO'S: As per report

SUBMITTED BY: J. Goulevitch

WORK REQUESTED: Petrology

H.W. Fander, M.Sc.

REPORT CMS 94/5/15

Eight rock samples were received for petrographic study; thin sections were prepared and examined, and offcuts were given K-stain tests to assist with identification and classification. The rocks are described in the accompanying sheets.

Three of the rocks are recognisably igneous, though one is sheared and altered and thus difficult to classify. A further three have been classified as hornfelses on the basis of textures and composition; two of these are thought to be metasediments though one may be a metatuff, and the third (2/10) is believed to be of igneous origin.

The remaining two rocks are modified sediments of clastic (49261) or at least partly clastic (SS/Pa) origin.

SAMPLE NO: 2/10 **(T.S. 64214)**

CLASSIFICATION: Quartz-Mica Hornfels.

COMPOSITION: Dominantly interlocking quartz grains and small, random pale phlogopite flakes. Scattered larger, rounded quartz grains and finer quartz-mica mosaics, representing ?phenocrysts.

FABRIC: Typical granular hornfelsic textures, fine-to medium-grained; faint preferred fabric, possibly inherited from primary rock.

MINOR MINERALS: Fine leucoxene-rutile. Goethite-stained micas in some pseudomorphs. Trace apatite. Possible cordierite developed in places.

INTERPRETATION/COMMENTS: Believed to be a contact-metamorphosed felsic igneous rock such as a porphyritic rhyolite, but complete recrystallisation has obliterated critical features and other interpretations are possible, depending on field data.

SAMPLE NO: 2/90 **(T.S. 64215)**

CLASSIFICATION: Sheared, Argillised Porphyritic ?Andesite.

COMPOSITION: Completely sericitised, sheared feldspar phenocrysts in a sheared mass of kaolinite-sericite, fine secondary quartz and small Fe oxide grains. Streaks of kaolinite-sericite.

FABRIC: Preferred, semi-schistose fabric due to shearing, perhaps superimposed on pre-existing flow-orientation. Originally fine-grained groundmass.

MINOR MINERALS: Larger oxidised magnetite crystals throughout. Traces of euhedral apatite.

INTERPRETATION/COMMENTS: Clearly of igneous origin, with an inferred intermediate to basic composition (absence of primary quartz, abundant magnetite) and with fine-grained porphyritic fabric. Trace element geochemistry may be helpful in further interpretations. It is tentatively termed an andesite but could range from dacite to andesite.

SAMPLE NO: Rh/Da (T.S. 64216)

CLASSIFICATION: Porphyritic Felsite (Rhyolite)

COMPOSITION: Stubby phenocrysts of incipiently to partly sericitised albite, a few corroded quartz phenocrysts, and dark biotite crystals, in a fine-grained felsitic groundmass of quartz intergrown with K-feldspar. (K-stain test positive).

FABRIC: Random orientation of phenocrysts and of groundmass, which is fine-grained and uniform with typical felsitic textures. No shearing.

MINOR MINERALS: Ultrafine magnetite throughout, and scattered larger crystals. Trace apatite. Subparallel microfractures with chlorite.

INTERPRETATION/COMMENTS: A relatively fresh, unsheared rock. The fabric is suggestive of a minor intrusive rather than an extrusive rock. Composition verges on that of a trachyte-paucity of free quartz.

SAMPLE NO: SS/Pa (T.S. 64217)

CLASSIFICATION: Quartzite (?)

COMPOSITION: Scattered, subrounded, fine-to medium-sand sized quartz grains in a matrix of silt-sized quartz grains with a cloudy, cherty cement. Whole rock is cloudy, with poorly-defined textures and components.

FABRIC: Generally fine-grained, with vague preferred fabric - possibly bedding. Smaller grains are angular/splintery, but boundaries merge with cement.

MINOR MINERALS: Small particles of dense, opaque leucoxene throughout, generally weakly Fe-stained.

INTERPRETATION/COMMENTS: Could be a mixed chemical and clastic siliceous sediment, or perhaps an altered and possibly reworked vitric tuff with clastic quartz grains. Rather featureless. K-stain test negative.

SAMPLE NO: 49233 **(T.S. 64218)**

CLASSIFICATION: Hornfels (?Metatuff)

COMPOSITION: Dominantly composed of ultrafine quartz and sericite, as dense, whitish semi-opaque masses, with slightly coarser quartz in bands; very small dark biotite flakes throughout.

FABRIC: Faintly bedded. Some quartz textures suggest derivation from shards. Small lenses of coarser, silt-size material which appears clastic.

MINOR MINERALS: A few detrital muscovite flakes. Traces of authigenic tourmaline. Thin, limonite-stained shear zone.

INTERPRETATION/COMMENTS: Low-grade hornfels, originally possibly a subaqueous ash/tuff with some non-pyroclastic components.

SAMPLE NO: 49261 **(T.S. 64219)**

CLASSIFICATION: Indurated Orthoquartzite.

COMPOSITION: Well-rounded, closely-packed, medium-sand sized quartz grains, cemented by quartz in optical continuity and with thin intergranular films of iron-stained sericite.

FABRIC: All components including cement are strongly stressed, and margins are granulated. Thin breccia zones traverse the rock. Well-sorted/sized.

MINOR MINERALS: Occasional detrital tourmaline, goethite and leucoxene grains.

INTERPRETATION/COMMENTS: Originally a mature orthoquartzite. Well indurated, stressed and incipiently metamorphosed, i.e. verging on a metaquartzite.

SAMPLE NO: 49270 (T.S. 64220)

CLASSIFICATION: Quartz-Feldspar Hornfels (?)

COMPOSITION: Micro-granular intergrowth of quartz, K-feldspar and albite, with scattered subparallel muscovite flakes; about 40% K-feldspar, 30% albite, 30% quartz.

FABRIC: Very uniform fabric with definite preferred orientation and microgranular textures; lacking in igneous characteristics.

MINOR MINERALS: Small magnetite crystals with associated biotite. Rare detritally-rounded grains of zircon.

INTERPRETATION/COMMENTS: Believed to be a metasediment rather than an igneous (i.e. orthodox magmatic) rock, subject to geological circumstances in the field.

SAMPLE NO: 49332 (T.S. 64221)

CLASSIFICATION: Porphyritic Felsite (Rhyolite)

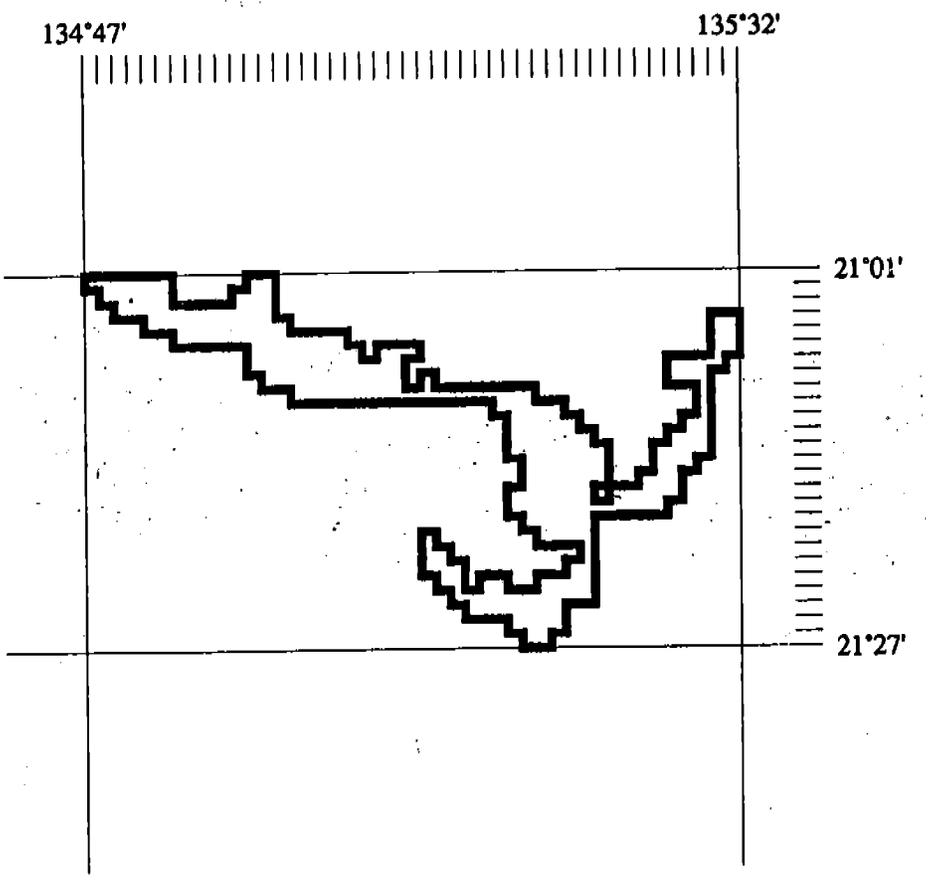
COMPOSITION: Phenocrysts of albite and quartz, smaller phenocrysts of K-feldspar, and many irregular patches of featureless mosaic quartz, in a microcrystalline groundmass of quartz, biotite, K-feldspar and fine muscovite.

FABRIC: Random phenocrysts, up to 3mm across. Groundmass is fine-grained, without flow features, vaguely felsitic, with a few spherulitic textures.

MINOR MINERALS: Accessory zircon and oxide opaques.

INTERPRETATION/COMMENTS: Probably a minor intrusive, not unlike Rh/Da. The irregular mosaic quartz patches are problematical; they may be xenoliths, or quartz-filled cavities - their mode of formation is not apparent.

SECOND SCHEDULE
(Plan of Area)



EL7987
235 BLOCKS
757 sq kms

Eupene Exploration Enterprises

	Init	Date
Geologist	N.M.	
Drawn		
Checked		
Approved		

ELKEDRA PROJECT EL 7987

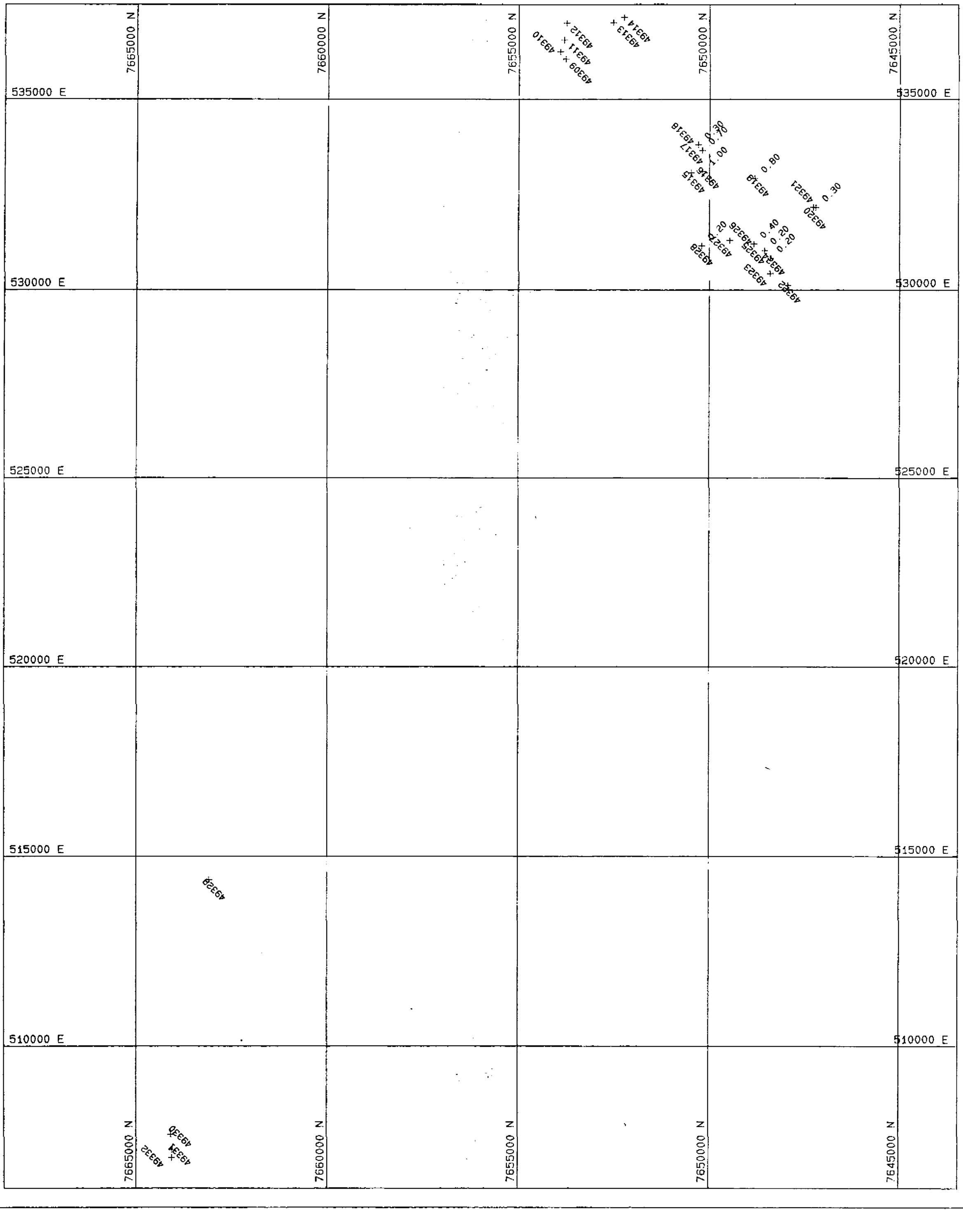
Stream Sediment Sample Locations

Showing Significant Au Results

File .A3STR100

Scale 1 : 100000

Date .09 Jun 1994



Eupene Exploration Enterprises

	Init	Date
Geologist	N.M.	
Drawn		
Checked		
Approved		

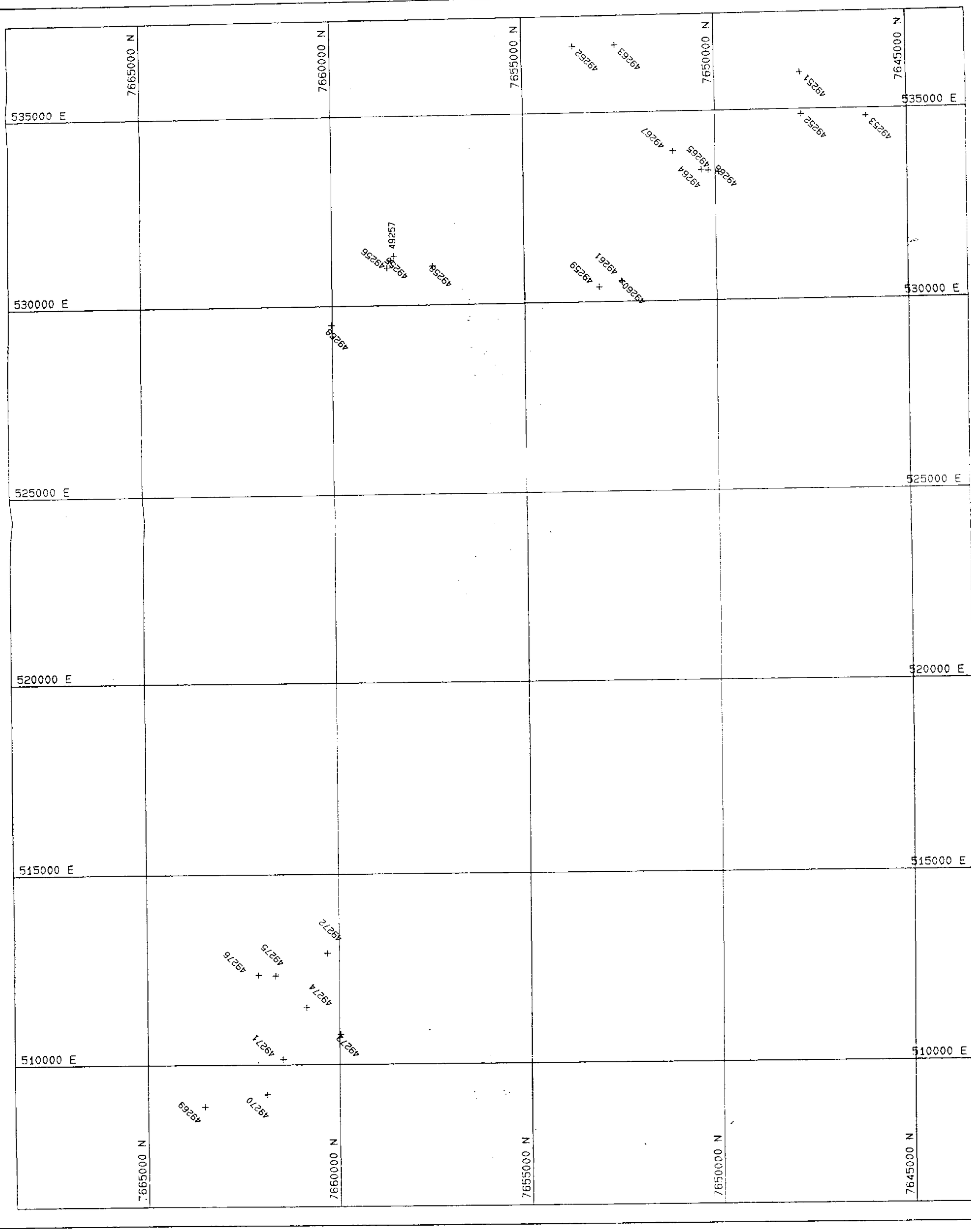
ELKEDRA PROJECT EL 7987

Rock Chip Sample Locations

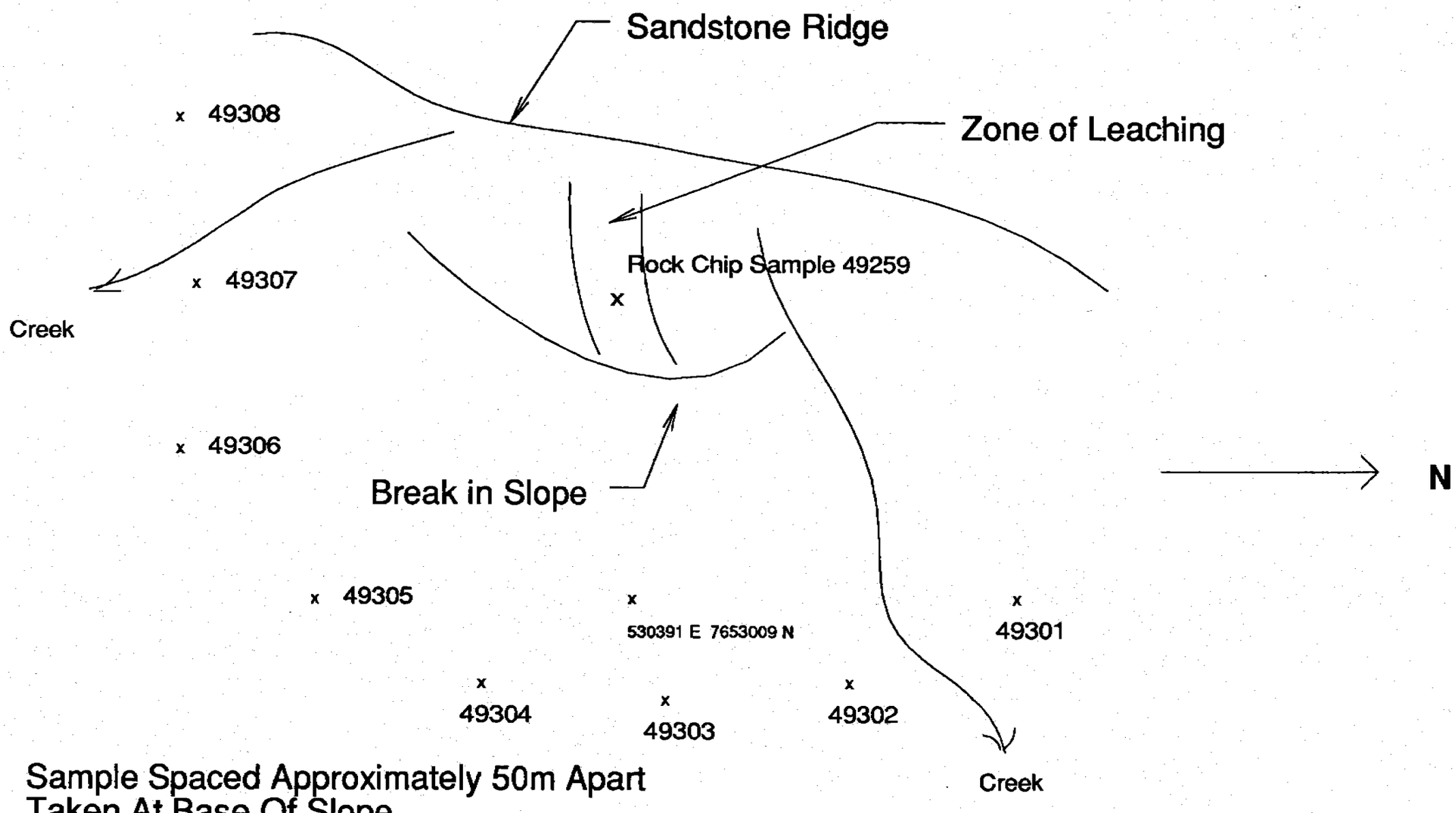
File .A3ROK100

Scale 1 : 100000

Date 09 Jun 1994



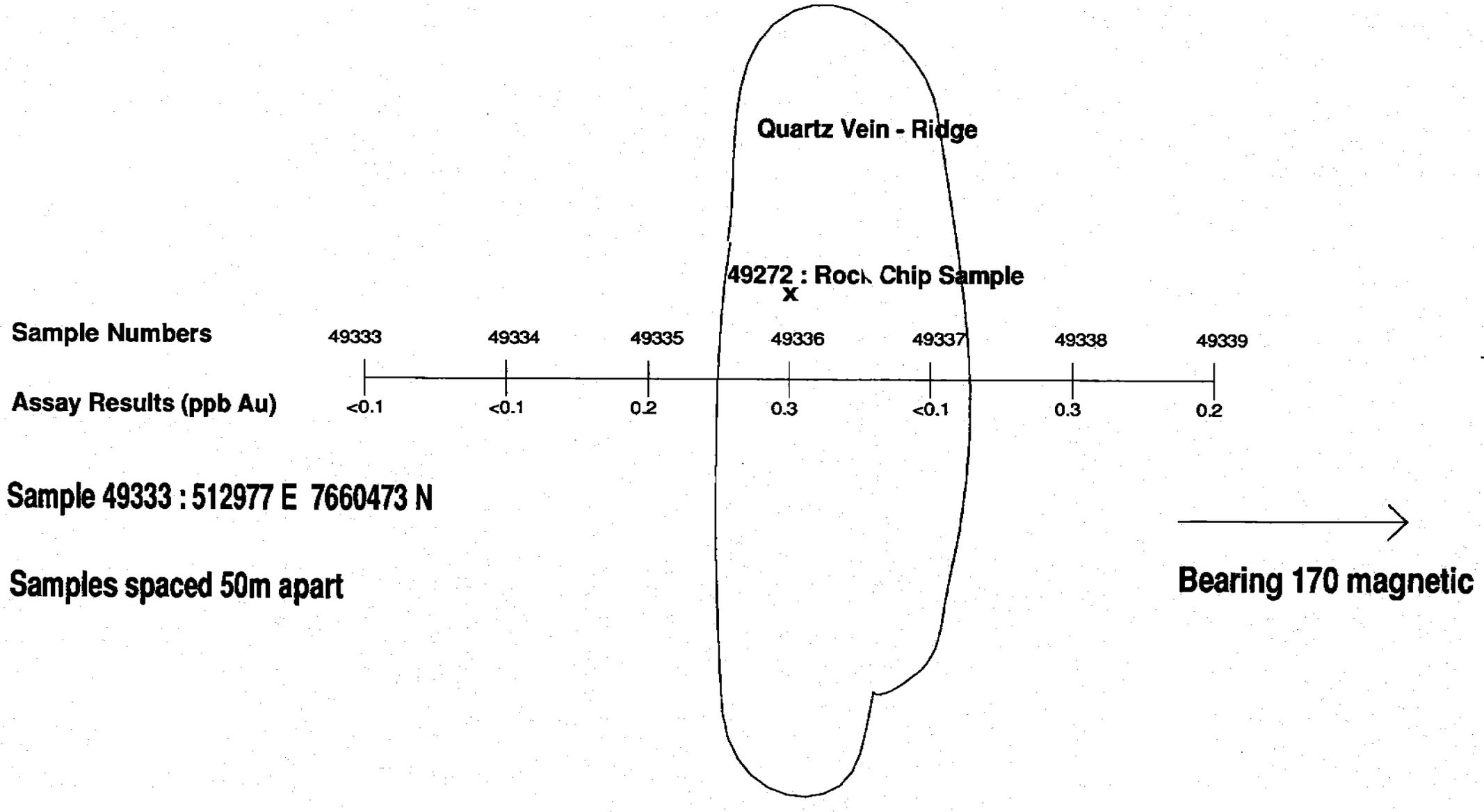
Soil Samples 49301 - 49308 : Locations Relative to Leached Zone



Sample Spaced Approximately 50m Apart
Taken At Base Of Slope

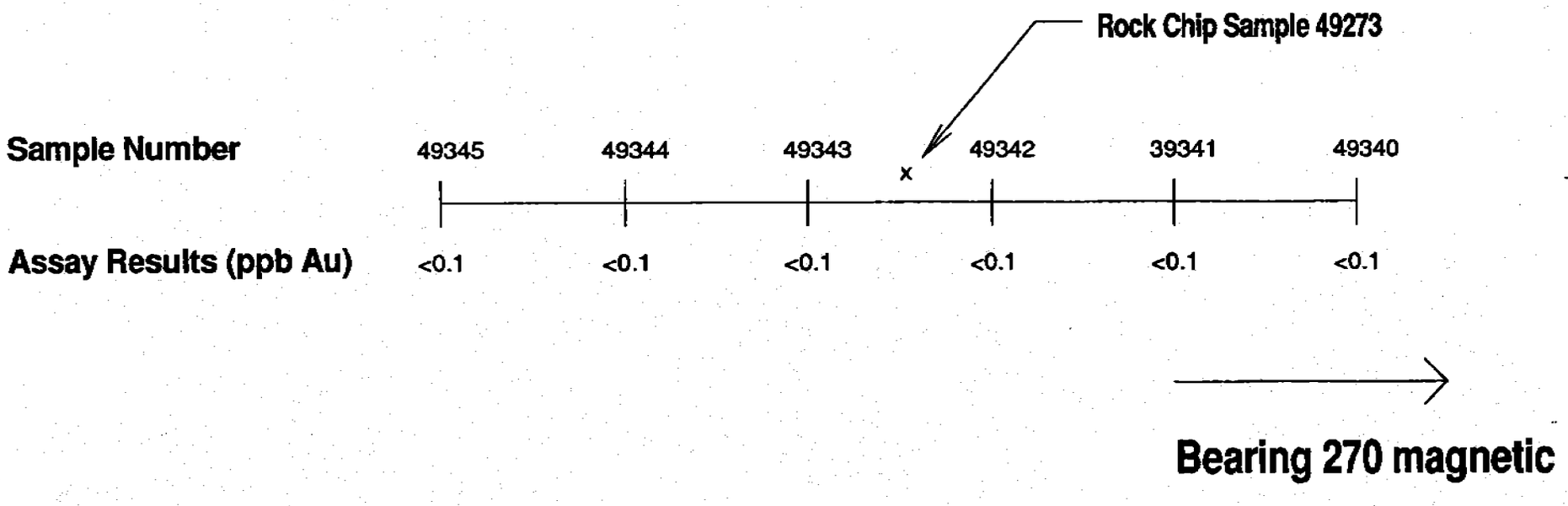
MAP 3

Soil Samples 49333 - 49339 : Location Diagram



MAP 4

Soil Samples 49340 - 49345 : Locations & Results



Sample 49273 : 510780 E 7659967 N

Samples spaced 50m apart

MAP 5