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EL 418

MYPONGA

PROGRESS AND FINAL REPORTS TO LICENCE SURRENDER FOR THE PERIOD 15/9/1978 TO 7/5/1979

Submitted by
Uranerz (Australia) Pty Ltd
1979

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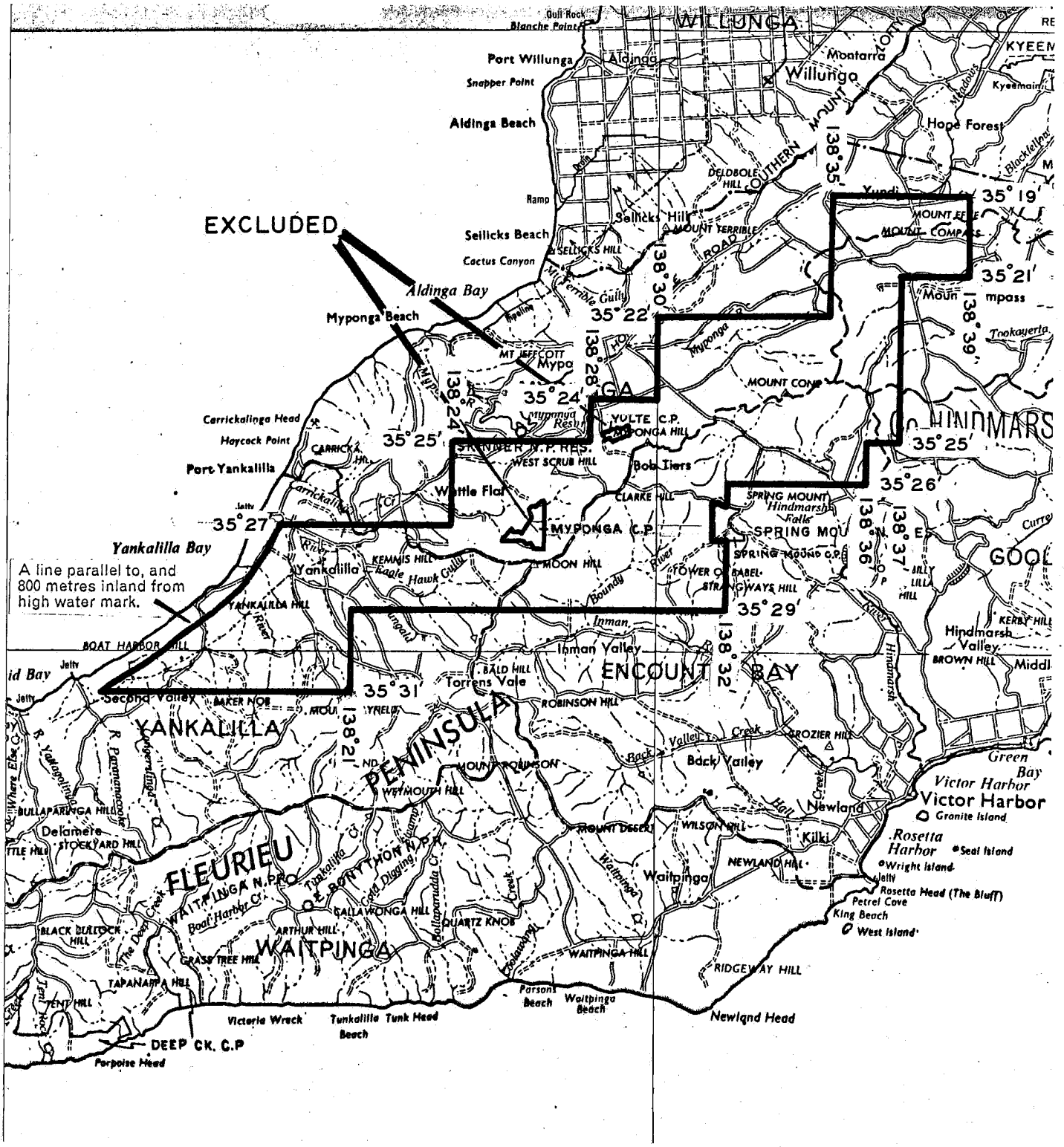
Government of South Australia
Primary Industries and Resources SA



SCALE 1:250 000

KILOMETRES 5 0 5 10 15 20 25 KILOMETRES

APPLICANT: URANERZ AUSTRALIA PTY LTD

D.M.: 457 / 77

AREA: 254 Square kilometres

1: 250000 PLANS:

BARKER

SURRENDERED

LOCALITY: MYPONGA AREA - FLEURIEU PENINSULA

EXPIRY DATE: 16-9-79

E.L. No.: 418

3367

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TENEMENT HOLDER: URANERZ AUSTRALIA PTY. LTD

REPORTS:

PONTIFEX and ASSOCIATES PTY. LTD
Mineralogical report no. 2463
Rock samples
250G8 819- 822 Petrographic Descriptions
25oGb 823- 827 Brief Descriptions of Minerals Present. (pgs.6-11)

Selected photomicographs of accomapny
Mineralogical report No. 2464
(No Plans)

REPORT:
PONTIFEX AND ASSOCIATES PTY. LTD. 1978
Mineralogical report No. 2464
Petrographic Descriptions
Drill Core samples (16)
C7 101 to C7 132)
27th September 1978 (pgs. 12-45)

Selected photomicographs
to Accompany
Mineralogical report 2464

(No Plans) (pgs.46-72)

REPORT:
JONES, W.R. 1979
First Quarterly report on Exploration
over E.L. 418. Myponga area, South Australia
covering the period
15th September 1978 to 14th December 1978 (pgs.46-72)

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REPORT:
URANERZ AUSTRALIA (PTY.) (LTD) 1979 (Letter)
ADAMEK, P.

Thirty - two samples - driill hole no.
- depth metres.
Myponga Uranium Prospect.
Samlpe data and contractors reports
Attached to letter. (pgs. 73-76)
(No Plans)

REPORT:
URANERZ AUSTRALIA 1979 (Letter)

MORETE, S.

Letter dated 20thJune 1979
enclosed following plans showing
hole locations,
Lithological and radiometic profile. (pg 77)

Plans:
Map 1
250-571 Wild dog E.L. 418 Interpretation Geology. (3367-1)
Map 2
250-4551 Wild Dog Myponga MD . 1 (3367-2)
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250-4552 Wild Dog, Myponga MD 2. (3367-3)
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250-4553 Wild Dog, Myponga MD 3 (3367-4)

REPORT:
MORETE, S. 1979

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South Australian Department of Mines
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Pontifex & Associates Pty. Ltd.

TEL. 332 6744
A.H. 31 3816

26 KENSINGTON ROAD, ROSE PARK
SOUTH AUSTRALIA

P.O. BOX 91, NORWOOD
SOUTH AUSTRALIA 5067

MINERALOGICAL REPORT NO. 2463

22nd September, 1978

TO: Mr. J. Jordan,
Uranerz Australia Pty. Ltd.,
P.O. Box 17,
PARKHOLME, S.A. 5043

COPY TO: The Chief Geologist,
Uranerz Australia Pty. Ltd.,
P.O. Box 201,
SUBIACO, W.A. 6008

YOUR REFERENCE: Order no. 5020

MATERIAL: Rock samples

IDENTIFICATION AND WORK REQUESTED:
250G8819 to 822 Petrographic description
250G8823 to 827 Brief description of minerals present

SAMPLES & SECTIONS: Held awaiting your collection

PONTIFEX & ASSOCIATES PTY. LTD.

PETROGRAPHIC DESCRIPTIONS

COMMENTS

Considering the four rocks petrographically described:

G8819 is a granulitic-facies (regionally), metamorphosed pelitic-quartzose sediment

G8822 is a meta-sediment of similar grade, originally with less clays and more quartz

G8821 is a granulite, of similar original grade to 8819 and 8822; it may be interpreted as a meta-impure dolomite or meta-basic igneous rock, but the apparent original facies of 8819 and 8822 indicate the former

G8820 may be interpreted as a contact metamorphosed, retrograded (and K-Si metasomatised) equivalent of 8821.

250G8819 : fine; (?plagioclase) biotite sillimanite quartz gneiss; sillimanite very extensively retrograded to sericite fine muscovite and minor pale biotite; accessory magnetite and rutile

This rock has a fine gneissic texture. Predominantly quartzose layers about 10 mm thick, consist of fairly continuous but 'loose' granuloblastic quartz and minor scattered dark brown biotite, within a matrix of sericite mixed with extremely fine diffuse quartz and muscovite. To a large extent this sericite replaces prisms and fibrous clusters of sillimanite, and possibly some original felspar.

Intercalated layers are dominated by sericite and fine muscovite, largely replacing sillimanite, and with minor remnants of sillimanite prisms remaining. Sillimanite is also partly replaced by pale greenish-brown biotite. Minor granulose quartz is also present.

Accessory oxidised (and hydrated)magnetite and rutile, lesser smaller crystals of zircon are scattered.

25068820 : massive, stressed and recrystallised, quartz microcline scapolite-epidote rock; minor carbonate, sphene and apatite; (contact metamorphosed and/or meta-somatised dolomite

This rock consists of a somewhat heterogeneous granulose aggregate of essential epidote microcline and scapolite. These are intricately aggregated but the grain size varies from 0.5 mm in some areas to 2 mm in others. Microcline tends to be rather more locally aggregated and possibly metasomatic. Scapolite commonly occurs as coarse irregular poikiloblastic plates enclosing abundant inclusions of smaller epidote crystals.

Quartz (20%) occurs locally in stressed allotriomorphic mosaics recrystallised and mobilised into local veinlets, intergrown with fine granulated epidote.

Minor, coarse patchy carbonate is locally intergranular. Single crystals of sphene up to 0.5 mm are quite abundant (5%), and randomly scattered. Trace apatite crystals of this size are also present.

This appears to be a contact metamorphic rock, conceivably of an original impure dolomite (or basic igneous rock in which scapolite and/or epidote substitutes for plagioclase). The quartz and potash felspar may be introduced from an acid intrusive, or a remobilised impurity in the original facies.

25GB821 : hornblende, plagioclase, pyroxene granulite; diopside selectively retrograded to fine uralitic amphibole

This is a massive rock with a fairly homogeneous, essentially granuloblastic texture. It consists of essential plagioclase, very dark brown hornblende and retrograded pyroxene. The plagioclase has an oligoclase composition, and with the exception of turbid patches of intense sericitisation it is unaltered. Hornblende is unaltered. Original pyroxene crystals are pseudomorphically replaced by extremely fine green to bluish-green uralitic hornblende.

Accessory apatite and oxidised magnetite are scattered.

This is a regionally metamorphosed, granulite facies rock, but recrystallisation has been so complete that it is not possible to be sure if the original facies was an aluminous dolomite, or a basic igneous rock.

Conceivably it represents a higher metamorphic grade of the same formation as GB820. Or in other words, GB820 may be the equivalent of this rock GB821, but retrograded and metasomatised by (lower grade) contact metamorphism.

25068822 : (magnetite) sillimanite garnet quartzite (or fine grained granulite)

This is a fairly homogeneous, massive, granuloblastic rock, average grain size about 0.5 mm. It consists predominantly of quartz, with subordinate evenly scattered garnet (30%), and minor scattered prisms of sillimanite (10%), commonly aligned through the otherwise granulose aggregate. The 'spicules' referred to on your submission sheet are sillimanite.

Minor, small, oxidised magnetite crystals (5 - 7%) are also disseminated.

This rock is interpreted as a granulite-facies, metamorphosed, pelitic fine quartz sand (or psammite).

Pontifex & Associates Pty. Ltd.

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26 KENSINGTON ROAD, ROSE PARK
SOUTH AUSTRALIA

P.O. BOX 91, NORWOOD
SOUTH AUSTRALIA 5067

MINERALOGICAL REPORT NO. 2464

27th September, 1978

TO: Mr. R. Kitch,
Uranerz Australia Pty. Ltd.,
P.O. Box 17,
PARKHOLME, S.A. 5043

COPY TO: The Chief Geologist,
Uranerz Australia Pty. Ltd.,
P.O. Box 201,
SUBIACO, W.A. 6008

YOUR REFERENCE: Order No. 5014

MATERIAL: Drill core samples (16)

IDENTIFICATION: 250 C7101 to C7132
(not consecutive)

WORK REQUESTED: Petrographic Description

SAMPLES & SECTIONS: Returned to you with this report

PONTIFEX & ASSOCIATES PTY. LTD.

COMMENTS

This suite was petrographically examined in some detail to answer questions on composition and mode of occurrence of uranium minerals, nature and genesis of host rocks and possible relationship of this genesis to uranium mineralisation. Trace to accessory opaques occur in many samples, but only 2 polished sections were examined at this stage.

The following is a summary of the investigation, and selected photomicrographs of the uranium mineralisation are appended.

ROCK TYPES

All samples consist predominantly of fairly coarse plagioclase and biotite, with lesser sericitised k-spar and rare quartz also forming part of the essential rock fabric. Various, much finer alteration phases and accessory minerals occur sporadically in minor abundance.

The plagioclase (and sericitised k-spar) generally form a more or less granuloblastic (locally polygonal), variable to xenoblastic granular aggregate; the biotite may be fairly random and more or less intergranular tending toward similar alignment. Rocks with this texture are called 'granulites', without necessarily implying granulite facies metamorphism.

In rocks where a layering is evident, and/or in which biotite is commonly aligned to produce a foliation, combined with the granulose fabric (which may also be elongated), the rock name 'gneiss' is used.

There appears to be no textural basis which alone may be used to isolate rock groups within the suite. On a compositional basis however, at least two major groups may be isolated.

Group 1

Samples C7101, 7102, and 7132 consist largely of essential plagioclase (of sodic oligoclase possibly to albite composition, i.e. about Ab_{90}). These three samples also contain essential biotite (as in group 2), but this biotite is greenish-khaki (rather than distinctly brownish) and is free of rutile inclusions (which are abundant in group2). Also fine specularite is dispersed through the biotite, accessory ilmenite and/or oxidised magnetite is scattered. Minor quartz may form part of the essential aggregate.

There is no positive evidence of primary uranium oxide phases, however accessory zircon (possibly including the uranium species cyrtolite), and/or possible thorite; also relict radioactive haloes and apatite are disseminated, at least in 7101.

Group 2

The remaining rocks in the suite appear to represent the one essential group, but with some variants within it. This is characterised by essential granuloblastic to near-polygonal plagioclase mosaic (Ab_{90}), and minor to subordinate brown biotite crowded with minute rutile needles (sagenitic rutile). The plagioclase is generally unstressed. Quartz is absent from the essential fabric.

Minor potash felspar (10 - 25%) formed part of the original aggregate but this is always, completely and selectively, pseudomorphically replaced by fine muscovite/sericite. Patches of microcrystalline quartz crowded with fine biotite has the same mode of occurrence, as this altered k-spar.

These may also replace former k-spar, but there are no relict textures to prove this.

Both types of alteration represented in these patches appear to have taken place after, or in the latter stages of formation of the essential rock aggregate, since the fine alteration minerals penetrate fissures and cleavages in otherwise unaltered, adjacent plagioclase.

Variants in this group are 7105 and 7106. These are quite pink in hand specimen, and contain a generally higher relative abundance of plagioclase than in other samples.

Variations in the fine crystalline alteration phases noted above, are that samples 7109, 7112, 7114, 7115, 7124, contain the selectively sericitised k-spar. In 7110, 7118, 7121, 7122, 7126 and 7128, the alteration patches of this type consist of the microcrystalline quartz + fine biotite, and this latter sub-group also tends to be more foliated (gneissic) rather than granulose.

CONSIDERATION OF GENESIS of these rocks needs to account (amongst other factors), for the abnormally high concentration of albitic plagioclase, and paucity of quartz; and to a lesser extent, the anomalously abundant titaniferous and uraniferous accessory phases (see below).

In igneous terms, group 1, which contain about 10% quartz ?may represent a metamorphically reconstituted granodioritic facies, or group 1 may be a metasediment only partly influenced by plagioclase enrichment which dominates group 2.

The formation of group 2 rocks almost certainly involved enrichment in soda, manifest in abundant, new albitic plagioclase. This probably occurred by a process of pervasive metasomatic replacement of a former rock of unknown composition, but at the expense of former more calcic-plagioclase and of former quartz. Enrichment in titanium and uranium, accompanied the influx of soda.

A far less likely alternative, is that group 2 rocks may be a primary, igneous albitite-type facies, metamorphically reconstituted in an essentially closed system. Minor titaniferous phases are highly characteristic of albitites, however the abundant biotite through the rocks is not consistent with such a genesis. Indeed there is no primary igneous rock characterised by essential sodic plagioclase and biotite, minor potash felspar, and no quartz.

URANIUM MINERALISATION (see appended photomicrographs)

Extensively oxidised characteristically spherulitic grains of pitchblende, and pseudo-cubic grains of uraninite occurs in samples 7105, 7106, 7109, 7121, 7126, 7128. These grains are generally < 0.5 mm, and occur in accessory abundance, but possibly up to 20% in 7128. The identification is largely based on characteristic relict textures, since only traces of these original phases remain, in pseudomorphous, ill-defined replacement materials which may be collectively called 'gummite'. This includes ?uraniferous limonite and clays of unknown composition. No specific secondary uranium minerals were identified. Poorly defined brownish ?marcasite and trace radiometric galena partly replaces uraninite-pitchblende in 7128.

These grains occur variably as individuals, in clusters, or coalesced into aggregates; generally at random within coarser plagioclase and biotite, rarely in the 'secondary' microcrystalline quartz-micas replacement patches.

These grains or relicts, are typically surrounded by relict haloes, and the secondary materials migrate along syneresis fractures around each primary grain, and along adjacent fissures in the host rock.

OTHER ACCESSORY PHASES

Accessory zircon occurs in some samples; it is somewhat clouded with strong radioactive haloes, and may be the uraniferous variety cyrtolite, or possibly the thorium equivalent, thorite.

A characteristically turbid yellow (in thin section) high relief phase is common in samples 7106, 7109, 7112, 7114, 7115. It is commonly composite with uraninite in samples containing that phase, and fairly commonly associated with biotite. In other rocks it occurs alone. The optical properties indicate that this is sphene, however the yellow colour is anomalous; (indeed in colour alone it is rather like yellow rutile or possible brannerite.) Its identity may need to be checked.

Accessory monazite occurs in 7121, 7122, 7124.

Trace tourmaline in some samples where it accompanies muscovite/sericite pseudomorphs after k-spar.

- - -

G7101 continued :

These grains are clearly inherently radioactive.

These relicts of the high relief grains are difficult to positively identify, because of their altered nature, small size and sparse abundance. However they seem almost certainly to be zircon, possibly the uraniferous variety cyrtolite; or thorite.

The yellowish-brown material with or without a core of this 'zircon' would appear to be 'oxidised gummite', representing relict radioactive haloes.

C7102 : (quartz) biotite, plagioclase gneiss; accessory fine Fe and Ti oxides, apatite, zircon, with altered turbid radioactive haloes

This rock also consists essentially of a fairly homogeneous granuloblastic aggregate of plagioclase, of oligoclase composition, crowded with a similar abundance of biotite, commonly oriented throughout. It differs from C7101 in having minor (fairly coarse single crystals of quartz as part of the essential aggregate), it lacks the patches of microcrystalline quartz.

Accessory phases are scattered throughout and these have similar abundance and composition as in C7101. They consist of hematite, as martite pseudomorphs after small magnetite crystals, fine specularite through biotite, several clouded apatite grains, and oxidised titaniferous granules associated with the iron oxides.

Very small (0.05 mm) crystals of probable cyrtolite, with turbid alteration haloes, are scattered, but less abundant than in C7101.

C7105 : roughly banded (biotite) K-spar, quartz, plagioclase gneiss (or 'granulite'); accessory thorite and/or zircon; 'gummite' pseudomorphs after uraninite-pitchblende; gummite rims around these oxidised uranium minerals and intergranular along fissures

This rock is vaguely banded on a scale of about 10 mm but otherwise has an inequigranular granoblastic to xenomorphic granular mosaic texture. It is dominated by pinkish plagioclase of sodic-oligoclase to albite composition. Individual crystals of this plagioclase have an irregular to subhedral form; they range in size from 0.3 to 3 mm, and are commonly stressed with bent twinning.

Quartz (10 - 12%) occurs in anhedral grains up to 1.5 mm, as inclusions within or intergranular between the plagioclase aggregate. This quartz is very largely restricted to one of the poorly defined layers. Potash felspar (10 - 12%) is also more or less intergranular, it is more widespread than quartz, but more abundant in some layers than in others. (This is highlighted on the stained offcut.)

Biotite (5 - 7%) is randomly scattered; it is darker brown than in the two preceding samples and contains minute rutile needles (also absent from 7101 and 7102.)

Accessory phases have a random distribution.

C7105 continued :

Single somewhat clouded grains of cyrtolite or thorite, metamict altered to virtually isotropic, occur independently in plagioclase.

Clusters of indistinct finer opaque material, mixed with 'waxy looking', diffuse yellowish-brownish-khaki, secondary alteration material, are all collectively identified as 'gummite' (2 - 3%). At several sites this material characteristically partly fills roughly cubic-voids which are interpreted to have formed from original uraninite. Elsewhere this gummite more or less encrusts darker yellowish brown, and vaguely cubic-form replicas, varying to a spherulitic form. These replicas are identified as uraninite-pitchblende.

'Gummite' also locally invades fissures (some radiating syneresis type), intergranular margins, and cleavages in adjacent silicate minerals.

The fine hematite and magnetite grains seen in C7101 are absent.

C7106 : roughly banded biotite plagioclase gneiss 'granulite'; accessory very small grains of uraninite with intergrown yellow ?sphene; commonly altered to 'gummite'; also rare altered spheroids of pitchblende; all in discontinuous thin layers

This rock consists predominantly of an inequigranular granuloblastic aggregate of pink plagioclase of albitic composition (Ab_{92}), some apparently grading to sodic oligoclase. Biotite is scattered more or less intergranular, and is crowded with abundant minute needles of rutile. It is relatively concentrated and similarly aligned in one band 15 mm wide and in a patchy layer, where it forms about 20%, elsewhere its mode is about 5%.

Accessory radioactive phases are scattered, more or less in poorly defined layers, most abundant in biotite deficient zones. These generally measure up to 1 mm in maximum dimension. They consist of:-

(1) black-opaque uraninite (1%), relatively unaltered and commonly with intergrown yellowish lamellar crystals of ?sphene*, and in polished section seen to be crowded with abundant minute (2 x 50 micron) lamellae of this same mineral

(2) black-opaque uraninite crystals extensively oxidised, (1-2%), i.e. surrounded by rims of yellowish-brownish 'gummite', varying to virtual complete replacement by this material. The gummite migrates locally along intergranular boundaries, fissures and radial syneresis cracks surrounding the original uraninite.

(3) this same gummite replaces small (0.1 mm) spherulitic pitchblende bodies (<1%)

(4) several grains of turbid yellow ?sphene (<1%), up to 1 mm occur independently but in a line with the altered uraninite grains.

* The identity of this ?sphene is discussed in comments at beginning of this report.

C7109 : biotite albitic plagioclase massive gneiss, or 'granulite'; minor potash felspar crystals selectively completely sericitised; accessory granular yellow ?sphene, associated with altered uraninite generally associated with biotite; rare apatite, zircon

This is a massive, very vaguely layered, coarse grained (1 - 7 mm) aggregate, composed mainly of plagioclase. The grains are variably anhedral to subhedral with the gross texture xenomorphic, gradational to granuloblastic. Twin extinction angles indicates a sodic oligoclase to albite composition (about Ab_{90}), and it is unaltered.

The plagioclase contains rare, bleb-like inclusions of quartz, and rare quartz is interstitial. Accessory irregular flakes of quite coarse (7 - 10%) biotite, are scattered, more or less interstitially. These are crowded with abundant, ultrafine needles of criss-crossing rutile. Also they are commonly accompanied by almost equally coarse, (up to 0.5 x 2 mm), granular crystals of yellowish ?sphene (3%), as seen in C7106. Rarely this forms complex composite grains with black opaque to yellowish-brown altered uraninite (1%), also as in C7106. These grains are located within biotite. Trace minute grains of altered uraninite, including rare spherulitic pitchblende forms are scattered. Trace small crystals of zircon are also present. Apatite (2%) occurs in localised fine grained clusters near some biotite.

.../

C7109 continued :

A characteristic feature of this rock is that some 20% of felspar crystals, randomly scattered as part of the essential aggregate, are totally pseudomorphically replaced by fine muscovite/sericite. These are intergrown with and form sharp contacts with adjacent completely unaltered plagioclase, although sericitic alteration does penetrate fissures and cleavages in those. Also these muscovite/sericite patches enclose unaltered plagioclase.

The original felspar must have a different composition (and genesis) to the predominant rock-forming plagioclase. Almost certainly it was potash felspar.

C7110 : biotite-plagioclase gneiss; minor selective and incipiently pervasive replacement by fine quartz-untwinned plagioclase-biotite; accessory tourmaline

This rock has a gross banded, foliated, and granulose texture. Most of it consists of a fine to medium grained, roughly granuloblastic aggregate of plagioclase (sodic oligoclase), with a similar abundance of commonly oriented biotite throughout.

Rare bands of relatively much coarser plagioclase crystals (7 mm) with only minor biotite, are intercalated.

Poorly defined, generally irregular and elongate patches of microcrystalline rather diffuse quartz and/or untwinned plagioclase mosaic, crowded with correspondingly very fine biotite is more or less intergranular to the plagioclase mosaic. These locally coalesce, and associated networks of fine micas penetrate fissures and cleavages in surrounding, coarser, otherwise relatively unaltered plagioclase.

This fine mosaic material is a 'replacement' phase, partly selective, and incipiently pervasive. It may be due to metamorphic recrystallisation, possibly it is of external origin. It appears to be the equivalent of the muscovite/sericite replicas after K-spar in 7109, 7112, 7114 and 7115.

Accessory crystals of authigenic tourmaline are present, but there is no evidence of the ?sphene, and uraninite seen in the three preceding samples.

C7112 : biotite plagioclase massive gneiss or granulite; minor k-spar completely selectively replaced by muscovite/sericite + trace tourmaline; accessory disseminated yellow ?sphene

This rock is dominated by a random, essentially granuloblastic aggregate of unaltered plagioclase of sodic oligoclase to albite composition. Minor pale biotite (10 - 15%) occurs in irregularly branching but generally commonly oriented 'foliae' through this aggregate. The biotite is accompanied by minor muscovite, and it commonly carries ultrafine needles of rutile.

Small (0.1 mm) accessory crystals of yellow ?sphene, as recorded in previous descriptions, are disseminated mainly through the plagioclase, and not selectively accompanying biotite as in 7109. There is no evidence of uranium oxides.

Potash felspar crystals, completely pseudomorphically replaced by fine muscovite/sericite $\pm$ clays and rarely with associated tourmaline, occur at random through the plagioclase aggregate to form about 7% of the rock.

C7114 : biotite plagioclase massive gneiss or granulite; minor k-spar completely selectively replaced by muscovite/sericite; accessory scattered yellow ?sphene granules, trace tourmaline

This rock also consists mainly of a massive to vaguely layered and quite coarse, more or less granuloblastic aggregate of plagioclase of about Ab_{90} composition. Some crystals contain minute bleb-like inclusions of quartz and accessory quartz (5%) is interstitial. Biotite (20%) occurs throughout in branching crude foliae, and scattered individual crystals. This carries ultrafine rutile needles.

Accessory (1 - 2%), small (0.1 mm and less) grains of yellowish ?sphene are disseminated, mainly through the plagioclase.

About 20% of the aggregate consists of rather irregular, coarse potash felspar crystals up to 10 mm, now completely, pseudomorphically replaced by fine muscovite and sericite. Rare relict inclusions of quartz, plagioclase and biotite remain. Replicas of original crystal structure are locally preserved. These alteration micas penetrate fissures and intergranular boundaries in adjacent, otherwise unaltered plagioclase. Trace tourmaline occurs in some patches of sericite.

C7115 : as for 7109 (but with trace zircon and no apatite)

The texture composition and alteration characteristics of this sample are so similar to 7109 (also 7112 and 7114) that a separate full description is not warranted.

The plagioclase aggregate contains about 10% scattered titaniferous biotite. Muscovite/sericite replicas after about 15% of individual potash felspar crystals are scattered, with relict crystallographic fabric preserved.

Yellowish ?sphene crystals tend to be coarser (up to 0.5 x 2 mm) than in previous samples (except perhaps in 7109). They are scattered mainly as individuals, but locally accompany biotite. Trace zircon with alteration haloes is present; apatite is absent.

C7118 : biotite plagioclase gneiss;
minor crystals selectively replaced
by muscovite/sericite and microcrystalline
quartz-biotite mosaic

This rock contains combined essential features shown in the group (7109, 7112, 7114, 7115) and in sample C7110. It consists of a layered granuloblastic aggregate of plagioclase (about Ab_{90}), with titaniferous biotite (30%) commonly oriented throughout to form a partial foliated fabric in the otherwise granulose aggregate.

Some 10 - 15% of individual potash felspar crystals are partly altered to fine muscovite/sericite, as seen in replicas in the group noted above; but this alteration grades in the one patch (or replica) into diffuse microcrystalline quartz mosaic crowded with fine muscovite and biotite (as in 7110). A beard-like fringe of fine pale biotite surrounds some of these alteration patches.

Trace zircon with alteration rims are present, but sphene is absent (which differs from the samples cited above.)

C7121 : coarse plagioclase-biotite schistose-gneiss; extensively invaded by microcrystalline quartz-biotite; accessory fine granular monazite, roughly spherulitic ?limonite-clay-?gummite replicas after ?pitchblende; trace zircon

This rock has a rather irregular gneissic texture, and is fairly extensively altered. Original (metamorphic) phases are slightly wavy, variably continuous foliae of coarse biotite and abundant relicts of quite coarse plagioclase alternating in bands. The biotite carries ultrafine rutile needles.

Layers of both composition are fairly extensively invaded by diffuse microcrystalline quartz mosaic crowded with extremely fine secondary biotite ± minor equally fine muscovite and clays. This secondary biotite is particularly abundant along fissures through coarse plagioclase.

Accessory minerals are ;-

(1) several small (0.2 mm) grains of monazite (or possible xenotime), within the quartz/biotite alteration mosaic, also within coarser biotite

(2) irregularly subrounded, some spherical and oval voids clustered within coarser biotite also within the later quartz and finer biotite domains. These are filled by ultrafine 'clay', and yellowish-brown alteration materials. They are interpreted to be after pitchblende as in 7105 and 7106, but they appear to be less abundant than in those two samples.

(3) trains of limonitic 'spots' in clays, similar to the rounded-spherulitic replicas in (2), occur locally along cleavages in the coarser biotite, forming about 2% of the whole rock. These are tentatively identified as oxidised pitchblende with somewhat wider distribution than in other samples.

(4) trace minute zircon crystals are also present.

C7122 : biotite-plagioclase gneiss; minor scattered patches of diffuse-microcrystalline quartz and secondary biotite; trace monazite and zircon

This rock may be compared with 7110 and 7118; also the secondary alteration compared with that in C7121. It consists essentially of a fine to medium, more or less granuloblastic aggregate of plagioclase, with an extensive, roughly schistose network of biotite (25 - 30%), of similar crystal size throughout. The biotite contains ultrafine rutile needles.

Irregular replacement patches (10 - 15%) scattered through the aggregate consist of diffuse microcrystalline quartz crowded with extremely fine secondary biotite. This biotite in particular is widespread along cleavages, and through intergranular areas in the essential plagioclase aggregate. Some networks of this biotite in the fine quartz suggest relict cleavages, which may be after k-spar.

Trace, very small monazite and zircon crystals in biotite are the only accessory minerals.

C7124 : biotite-plagioclase granulite,
minor irregular patches of muscovite/sericite
replicas after potash felspar;
rare trace monazite and zircon

This rock consists of a fairly homogeneous granuloblastic aggregate of plagioclase (Ab_{90}), average size about 1 mm, with minor (30%) biotite evenly but generally randomly disposed, more or less along intergranular contacts. The biotite is crowded with abundant, minute rutile needles.

Irregular, and generally larger (1.5 x 3 mm) patches of fine muscovite/sericite (15 - 20%), are interpreted as completely, selectively altered potash felspar; some of these enclose unaltered plagioclase. These alteration micas, locally penetrate adjacent unaltered plagioclase.

Trace, minute monazite and zircon crystals are present.

Accessory microcrystalline quartz + fine biotite is locally intergranular to the plagioclase aggregate.

C7126 : (quartz) biotite plagioclase gneiss, with minor patches of microcrystalline quartz + fine biotite; accessory poorly defined oxidised pitchblende-uraninite scattered

This sample has a combined, somewhat heterogeneous granulose and foliated texture. Fairly coarse granuloblastic aggregates of plagioclase, + minor quartz (<10%) on the same scale, also contain essential fairly coarse biotite, essentially as in 7124. However foliae dominated by coarse biotite are also present.

Patches and lenses of microcrystalline quartz and fine biotite (20%), are drawn out along the foliation, integrated with coarser plagioclase and biotite to generally confuse the continuity of texture and composition. Some of these grade into lenses of clays after the fine micaceous replicas reported in other samples.

Yellowish-brown, ill-defined limonitic and gummitic clays replace clusters and some individual spherulitic to pseudo-cubic and irregular voids, are interpreted to be original pitchblende-uraninite as seen in other samples, notably 7105. These have a chaotic distribution mainly through coarse biotite and plagioclase, and form possibly up to 5% of the rock. Less commonly these occur in the finer quartz mosaic.

C7128 : foliated, plagioclase-biotite gneiss, abundant spherulitic individuals, clusters and aggregates of pitchblende, and relatively cubic-form uraninite, randomly scattered and almost completely replaced by 'gummitic, limonitic clays', accessory ?marcasite and radiogenic galena

This rock also consists of a combination of a granulose plagioclase aggregate, and essential intimately intergrown foliae of quite coarse biotite. Minor (10%) small patches of microcrystalline quartz mosaic + fine biotite are scattered; and fine secondary biotite is locally abundant along fissures, cleavages in plagioclase, and intergranular.

Replicas of spherulitic pitchblende as individuals and in clusters, coalescing into aggregates are widespread, and more abundant in this rock (?20%) than in any other sample in the suite. Individually these measure between 0.1 and 0.8 mm across, aggregates of them form areas up to 3 x 5 mm. They occur at random within coarse plagioclase and biotite.

The pseudomorphous alteration products cannot be specifically identified in thin section, but consist of darkish brown and yellowish-brown limonite, limonitic and gummitic clays; also relatively colourless to very pale brownish, yellowish, and rare pale greenish-blue clays. Minor pseudo-cubic rather than spherulitic forms, may be regarded as uraninite rather than pitchblende.

Some biotite and plagioclase grains are also largely broken down to clays.

In polished section, a small vein of marcasite/pyrite occurs locally. Extremely rare relicts of pitchblende and uraninite remain in the alteration products described. Also minute rosettes of brownish ?marcasite and trace ?radiogenic galena largely form some alteration pseudomorphs after pitchblende-uraninite.

C7132 : quartz plagioclase biotite gneiss;
accessory scattered ilmenite, lesser fine
specularite and martite pseudomorphs;
trace zircon

This rock has a homogeneous granuloblastic to xenoblastic aggregate of plagioclase, subordinate greenish-khaki biotite, and minor quartz (15 - 20%). The texture of the plagioclase aggregate does not approach polygonal as in most preceding samples. Also the presence of quartz in the essential coarse aggregate, colour of biotite and absence of rutile from the biotite makes this rock different from most others above.

Minor anhedral to subhedral ilmenite (5 - 7%), and lesser martite replicas after magnetite are scattered. Minute blades of specularite are scattered through the biotite.

A single irregular patch of 'secondary' microcrystalline quartz mosaic, crowded with fine biotite and carrying tourmaline is present.

Trace zircon is the only accessory phase apart from the Fe-Ti oxides.

S E L E C T E D

P H O T O M I C R O G R A P H S

TO ACCOMPANY

MINERALOGICAL REPORT NO. 2464

FOR

URANERZ AUSTRALIA PTY. LTD.

Pontifex & Associates Pty. Ltd.

fig. 1 C7106 length of frame 2.4 mm

Thin section, ordinary light.
Opaque grain is pitchblende. Thin yellow lamellae intergrown are sphene. The yellowish brown material surrounding the corroded-looking crystal outline is 'gummite'.
Clear host mineral is plagioclase.

fig. 2 C7105 length of frame 2.4 mm

Thin section, ordinary light.
Black areas are pitchblende, typically spherulitic in lower right corner, an aggregate of spheroids across top of photo. Turbid, yellowish-brown 'gummitic' alteration phases of unknown exact composition surround the altered pitchblende.
Clear host rock mineral is plagioclase.

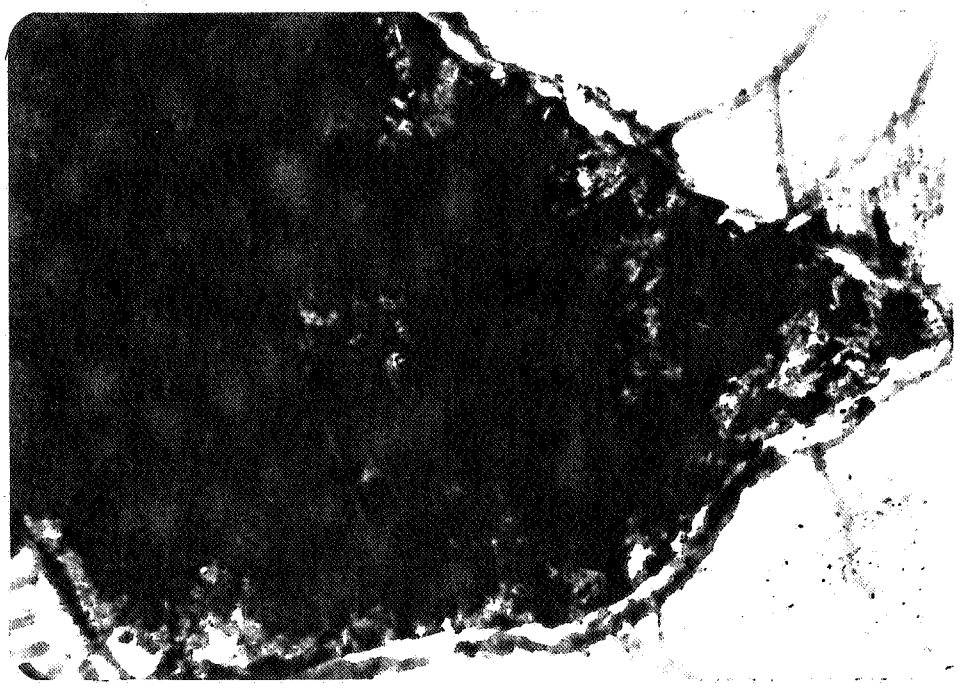


fig. 2

fig. 2

fig. 3 C7106 length of frame 2.4 mm

Thin section, crossed nicola.
Black grain is uraninite, intimately intergrown with yellow sphene - apparently a primary relationship.
Host minerals are coarse unstrained albitic plagioclase.

fig. 4 C7106 length of frame 0.63 mm

Thin section, ordinary light.
Cavity remaining after oxidation of uraninite, now partly filled with oxidised gummite-alteration products.
These migrate along syneresis fissures, typically radially arranged around the original highly radioactive uraninite.
Host rock is plagioclase.

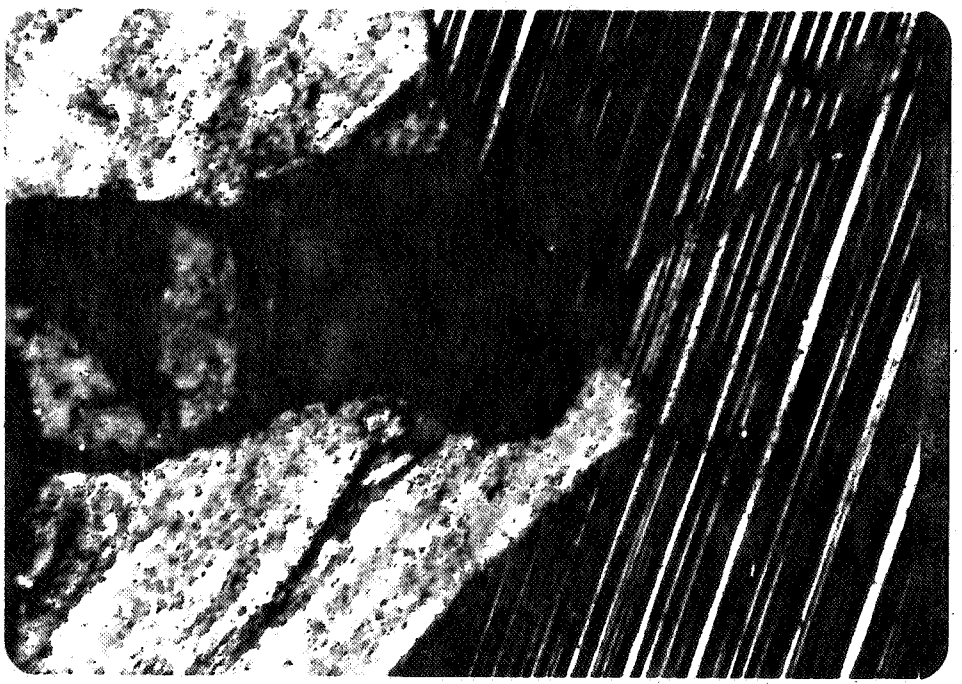


fig. 3

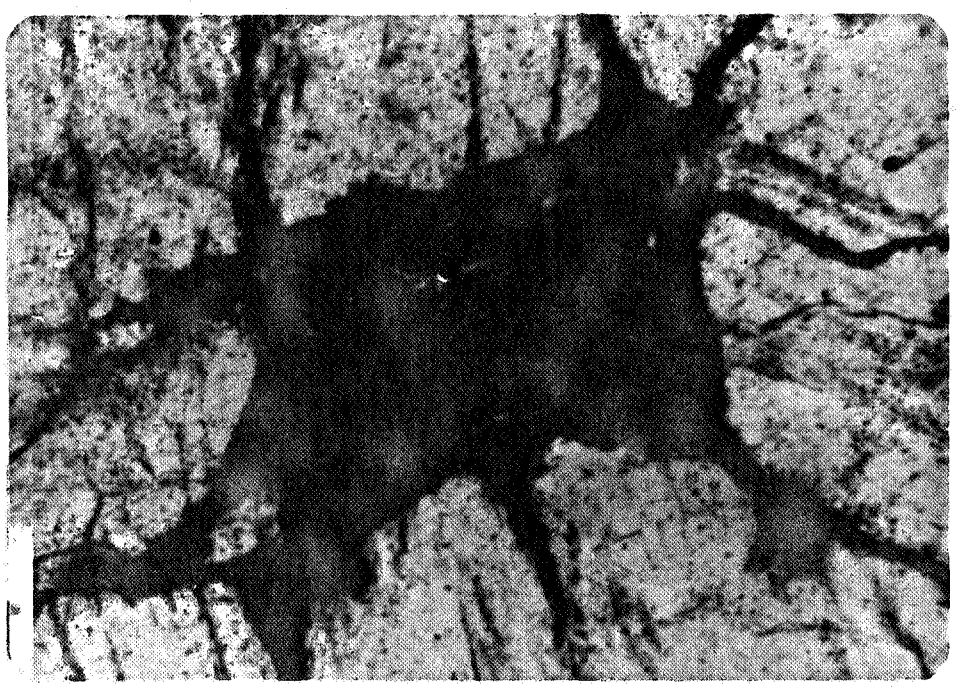


fig. 4

fig. 5 C7106 length of frame 0.63 mm

Thin section, ordinary light.
Shows detail of altered uraninite (near-opaque) intergrown with yellow sphene. This complex, composite grain is almost completely enclosed in brown biotite, showing criss-crossed extremely fine needles of (sagenitic) rutile in lower left of photo.

fig. 6 C7114 length of frame 2.4 mm

Thin section, crossed nicols.
Granuloblastic (polygonal) aggregate of twinned, unstressed albitic plagioclase and lesser brown biotite forms left half of photo. Right side shows fine muscovite/sericite replica after k-spar, showing relict crystal structure. Minor sericite penetrates adjacent intergranular contacts.

fig. 5

fig. 6

fig. 7 C7128 length of frame 2.4 mm

Thin section, ordinary light.
Cluster of spherulitic pitchblende replicas scattered through (clear) plagioclase and brown coarse biotite rock. In left side of photo these are preserved by pale to dark brown turbid 'clays' - probably uraniferous.
In right side of photo the replacement minerals are near-opaque and include remnants of pitchblende, ? marcasite and possibly galena as described.

fig. 8 C7121 length of frame 2.4 mm

Thin section, ordinary light.
Large clear grain is plagioclase. Fine secondary biotite penetrates cleavage partings in the plagioclase. Patch on far right of photo is microcrystalline quartz + fine biotite. Two grains of high relief top right corner are monazite.

fig. 7

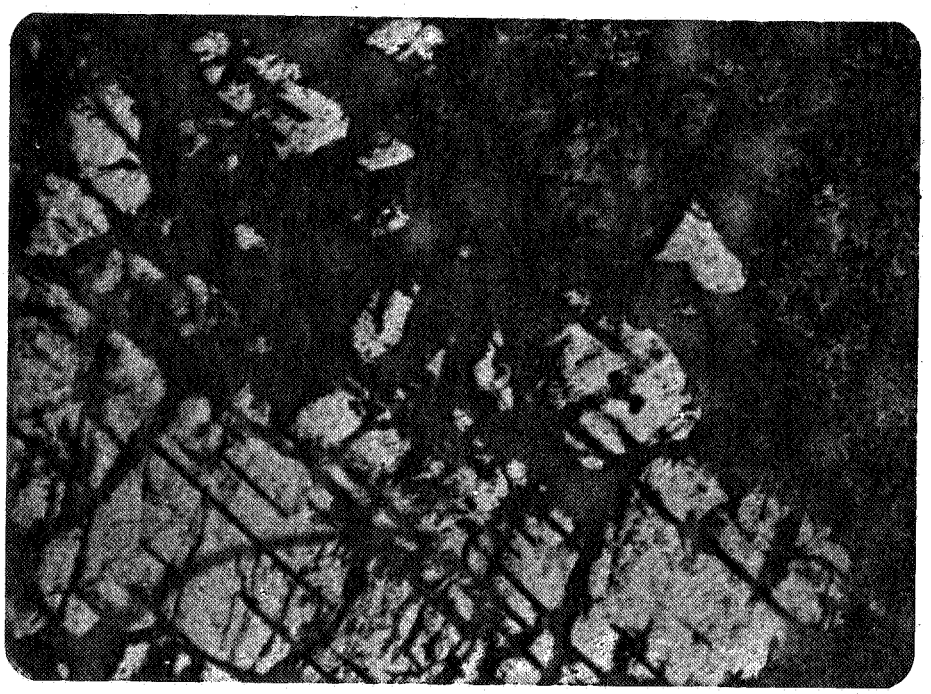


fig. 8

URANERZ AUSTRALIA PTY. LTD.

046

WRJ:YTS

19 December, 1978.

FIRST QUARTERLY REPORT ON

EXPLORATION OVER

EXPLORATION LICENCE NO. 418

MYPONGA AREA, SOUTH AUSTRALIA

covering the period

15 September 1978 to 14 December 1978

compiled

by

W.R. JONES

PERTH

DECEMBER 1978

SUMMARY:

Work during the first quarter of tenure consisted mainly of extensive geological mapping and reconnaissance footborne scintillometry. Other exploration methods used were geochemistry, petrology, gridding and re-logging of core from previous drilling carried out on the Wild Dog Prospect.

TABLE OF CONTENTS:

LIST OF TABLES:

LIST OF FIGURES:

LIST OF APPENDICES:

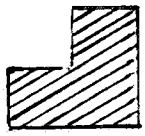
DESCRIPTORS:

VEINLIKE-TYPE/PROTEROZOIC/BAROSSA COMPLEX/EL418/WILD DOG PROSPECT/GRIDDING/MAPPING, GEOLOGICAL/SCINTILLOMETRY, FOOTBORNE/GEOCHEMISTRY; STREAM SEDIMENT, CORE/PETROGRAPHY/MINERALOGY/SI53-13 (6526-I, 6626-IV, 6627-III).

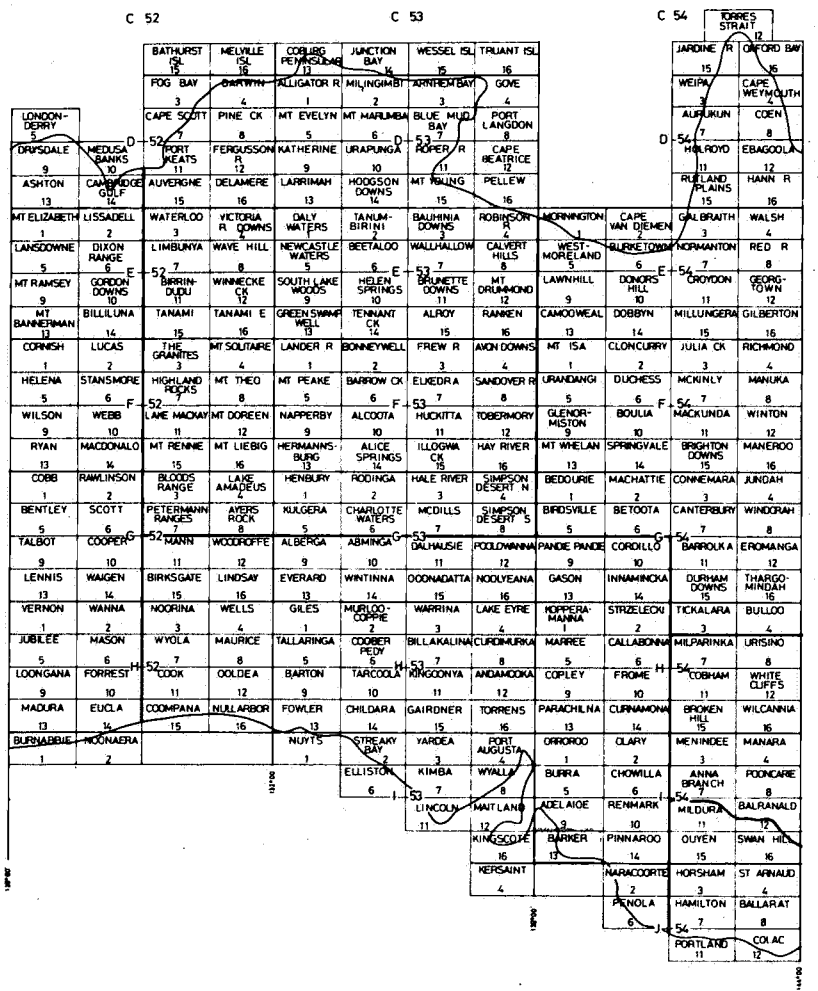
LOCATION MAP

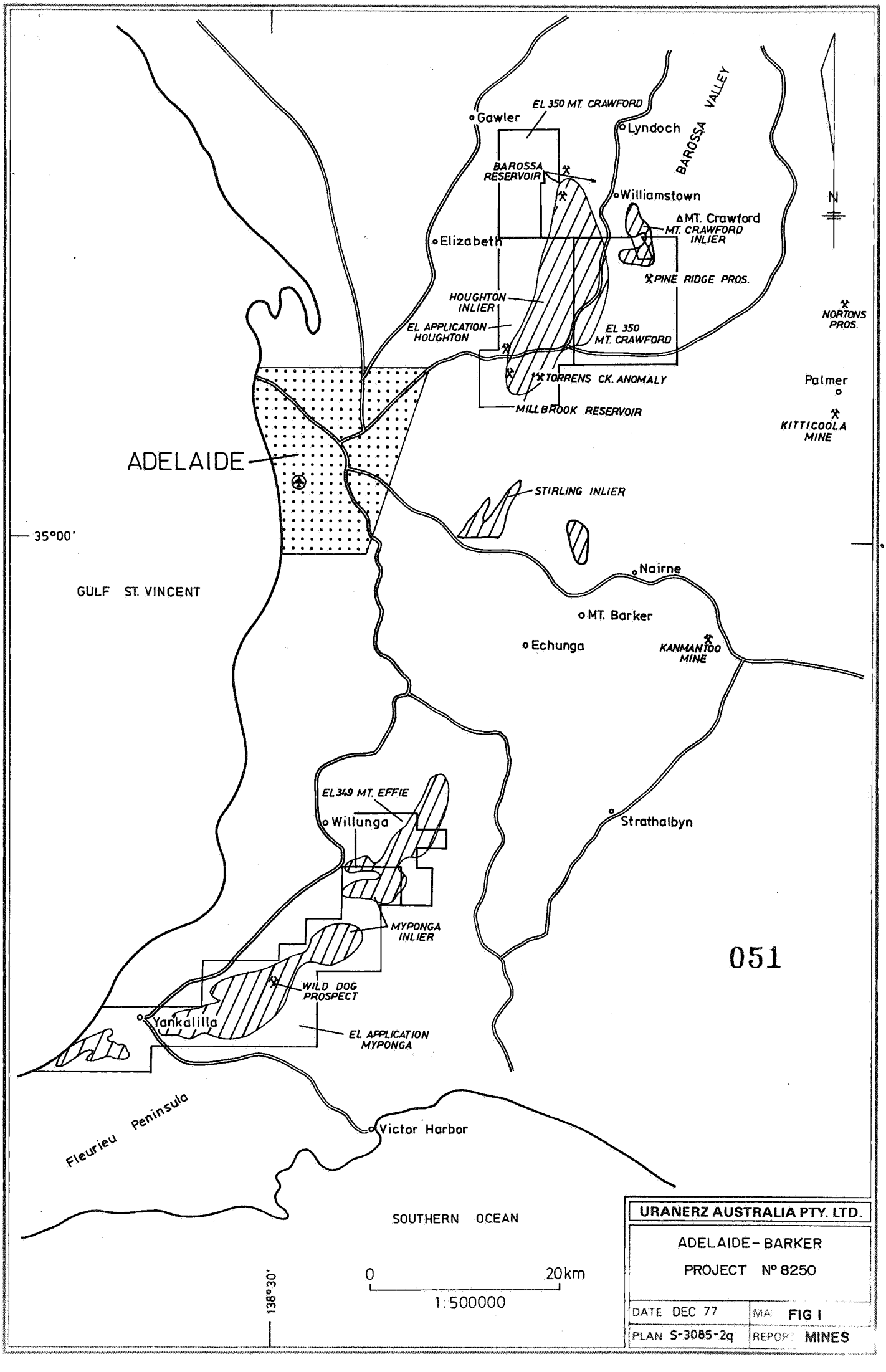
NORTHERN TERRITORY
SOUTH AUSTRALIA

050

	BARKER 	

First quarterly report to The South Australian Department of Mines and Energy for the first year of tenure - EL418.




EL 350 MT. CRAWFORD
Gawler
Lyndoch
BAROSSA VALLEY
BAROSSA RESERVOIR
Williamstown
MT. Crawford
MT. CRAWFORD INLIER
Elizabeth
PINE RIDGE PROS.
HOUGHTON INLIER
EL APPLICATION HOUGHTON
EL 350 MT. CRAWFORD
TORRENS CK. ANOMALY
MILLBROOK RESERVOIR
NORTONS PROS.
Palmer
KITTICOOLA MINE
ADELAIDE
STIRLING INLIER
35°00'
GULF ST. VINCENT
Nairne
MT. Barker
Echunga
KANMANTOO MINE
EL349 MT. EFFIE
Willunga
Strathalbyn
MYPONGA INLIER
WILD DOG PROSPECT
Yankalilla
EL APPLICATION MYPONGA
Victor Harbor
Fleurieu Peninsula
SOUTHERN OCEAN
138°30'
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051
URANERZ AUSTRALIA PTY. LTD.
ADELAIDE-BARKER
PROJECT Nº 8250
DATE DEC 77
MAP FIG 1
PLAN S-3085-2q
REPORT MINES

1. INTRODUCTION: 052

Exploration Licence No. 418 was granted to Uranerz Australia Pty. Ltd. (UAL) for a period of one year, on 15 September 1978. It covers an area of approximately 254 km^2 with the most western boundary being a line parallel to and 800 m inland from the high water mark of Yankalilla Bay, and excludes Myponga Conservation Park and Yulte Conservation Park. This is the first quarterly report for the first year of tenure.

2. LOCATION:

The tenement is situated on the Barker SI 54-13 1:250,000 Sheet and more precisely on the Milang 6627, Yankalilla 6527 and Jervis 6526 1:100,000 Sheets between the following co-ordinates : latitudes $35^{o}19'$ - $35^{o}31'$ S and longitudes $138^{o}12'$ - $139^{o}39'$ E. The area is approximately 60 km south-southwest of Adelaide on the Fleurieu Peninsula and is known as the Wild Dog tenement. Fig. 1.

3. GENERAL GEOLOGY:

Metasediments of early to Mid-Proterozoic age (Barossa Complex) occur as inliers in faulted anticlinal cores to the Late Proterozoic (Adelaidean) sediments of the Adelaide Geosyncline (> 1400 m.y.).

Minor refractory, veinlike-type uranium and thorium occurrences are scattered throughout the Proterozoic basement and cover rocks and high level Tertiary lateritic cappings. A pitchblende deposit has been worked on Wild Dog Creek near Myponga.

4. TARGET:

Veinlike-type uranium deposits.

5. INVESTIGATIONS AND RESULTS:

5.1. Geological Mapping

Detailed geological mapping on a 1:10,000 scale over an area of 245 km^2 was undertaken during the quarter. A total of 40 km^2 of more

detailed mapping on a 1:1,000 scale was carried out over the Wild Dog Prospect.

Mapping commenced around the Little Gorge area south of Yankalilla where a thick sequence of chlorite schists dipping steeply east, becomes gneissic upward with thin interbeds of amphibolites, granite-gneiss and quartzite. The whole sequence is overturned. The Lower Proterozoic/Adelaidean unconformity is exposed on a wavecut platform, south of Little Gorge.

Further mapping revealed an overturned anticlinorium of pre-Permian sediments which has been denuded exposing greenschist facies metasediments of Cambrian and Adelaidean age, unconformably overlying amphibolite facies, schists and gneisses of Lower Proterozoic age.

Detailed mapping of the Barossa Complex outcroping in this tenement continued during the later part of the quarter. The delineation of the albitite units and the basement-cover contact was concentrated upon, and several anomalies were detected. The uranium anomaly on Yankalilla River was revisited but detailed traversing failed to find extensions to the albitite or the radiometric anomaly.

Detailed geological mapping on the Wild Dog Prospect over the 1000 x 400 m grid area indicated that the lithological units trend north-northwest with a general dip of the metamorphic foliation to the west-southwest.

The main lithological unit is a quartz-feldspar-biotite gneiss, often lineated by sillimanite needles. The degree of foliation is variable and the unit is sometimes granulitic.

Leucogneisses (quartz-alkali feldspar granulites) also occur as both concordant and discordant bodies. In the latter instance they merge with biotite-feldspar-quartz pegmatoids. In the leucogneiss unit, a graphic structure is sometimes observed.

Albitites, usually occurring as float were also mapped. A granulitic albite rock with actinolite/epidote and magnetite occurs around the No. 2 lode. Biotite-chlorite-albite rock also occurs in the southwest portion of the grid.

In the western part of the grid a discordant amphibolite (dolerite) cuts through the sequence.

Plans from this mapping programme have not yet been drawn but will be submitted in dyeline and transparency as soon as they become available.

5.2. Footborne Scintillometry

During the geological mapping programme, a SRAT SPP2 scintillometer was used to monitor radioactivity. Around Little Gorge approximately 40 anomalies up to 5 x bg were recorded the majority of which read 1500 cps and are associated with thorium-rich biotite-quartz-feldspar pegmatite lenses. Several highs of up to 6500 cps, associated with albitites or ferruginous quartz veining were also located. More anomalies were found as mapping continued but they were of the pegmatitic variety only and as such do not hold interest. Anomalies will be plotted on plans when drawn and submitted when they become available.

On the Wild Dog Prospect, the surface radiometry has initially been completed at 40 x 10 m centres over the grid area. Contamination from the old mine workings and dumps is evident. Organic-rich soil showed the highest reading of 5000 cps, which decreased to 2500 cps in a 70 cm deep trench. The leucogneisses have high backgrounds of around 250-350 cps.

5.3. Gridding

A grid has been established at Wild Dog Uranium Prospect to maintain control over detailed work to be carried out there. The levelled grid is 1000 x 500 m, uses 40 m centres and is centred about 1,000 m long north-south trending baseline.

No plans are available to show the position of the grid but will be submitted when drawn.

5.4. Petrology

Petrological descriptions of four samples from a calc-silicate suite at Yankalilla Hill outline granulitic facies metasediments exhibition potassium-silicon metasomatism. (Appendix 1). Sixteen core samples submitted for petrographic description were received during the quarter. All samples consist predominantly of fairly coarse plagioclase and biotite, with lesser sericitized feldspar and rare quartz also forming part of the essential rock fabric. Various, much finer alteration phases and accessory minerals occur sporadically in minor abundance. (Appendix 2). The samples revealed numerous occurrences of primary spherulitic pitchblende and uraninite grains within gneisses. Potassium feldspar and quartz are subordinate minerals.

5.5. Diamond Drill Core Logging

Diamond drill core preserved from previous investigations was geologically and radiometrically logged by B. Vels. Twenty-two diamond drillholes (total 809 m) were scanned to attempt to determine the stratigraphy and controls on the distribution of mineralization but no stratigraphic control was recognized.

5.6. Geochemistry

A total of eighty-one, 2 kg bulk sediment samples were collected at an interval of 200 m near the Wild Dog Mine and 400 m distant from the mine. All streams were flooding. The samples were sent to AMDEL and results are shown on Table 1.

Sixteen samples were selected from the core on the basis of elevated radiometric counts and submitted to AMDEL for uranium, thorium and yttrium analysis. The highest result was 5200 ppm U_3O_8 with the remainder being considerably lower. One thorium anomaly of 620 ppm ThO_2 was present. (Table 2).

6. STATEMENT OF EXPENDITURE:

Exploration Licence No. 418

Salaries and Wages	15,022.40
Drilling Contractor	nil
Field operating costs including consumables, rents, vehicle operating and repairs, airfares, freight etc.	18,637.62
Depreciation of vehicles and geophysical instruments, consultants fees, management and distribution of Head Office costs.	nil
	$33,660.02

These expenditure figures cover the period 15.9.1978 to 14.12.1978.

7. OTHER DETAILS:

7.1. Personnel

Exploration Manager---------- Dr. D.O. Zimmerman
Chief Geologist---------- Dr. P. Adamek
Assistant Chief Geologist---------- Mr. J. Borshoff
Project Geologist---------- Mr. R.B. Kitch
Field Geologist---------- Mr. J. Jordan
Field Assistant---------- Mr. A. Poulsen
Field Geologist---------- Mr. B. Vels

7.2. Vehicles

Two UAL long-wheel-base Toyota Landcruisers were used
One Caravan
One Honda 175 XL Motor Cycle

7.3. Instruments

2 SRAT SPP2 scintillometers

7.4. Contractors

AMDEL of Adelaide	-	Assaying
Pontifex & Associates Pty. Ltd.	-	Petrology
Peter Trowbridge Pty. Ltd.	-	Surveyors

TABLE 1 : ORIENTATION STREAM GEOCHEMISTRY - WILD DOG

SAMPLE NO	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 7128 + 40	WD1	Bulk Stream Sed. -10#	110	< 4	24	24	< 4
" + 60	"	"	110	< 4	42	36	< 4
" + 80	"	"	110	6	60	40	< 4
250G 7129 + 40	WD2	"	75	4	18	22	< 4
" + 60	"	"	75	< 4	28	32	< 4
" + 80	"	"	75	< 4	34	32	8
250G 7130 + 40	WD3	"	60	< 4	36	20	< 4
" + 60	"	"	60	4	36	32	4
" + 80	"	"	60	4	34	44	< 4
250G 7131 + 40	WD4	"	100	< 4	48	28	< 4
" + 60	"	"	100	< 4	32	34	< 4
" + 80	"	"	100	< 4	32	40	< 4
250G 7132 + 40	WD5	"	100	6	40	42	< 4
" + 60	"	"	100	< 4	30	34	< 4
" + 80	"	"	100	< 4	28	40	< 4
250G 7133 + 40	WD6	"	70	6	55	38	< 4
" + 60	"	"	70	< 4	60	60	< 4
" + 80	"	"	70	< 4	38	48	< 4
250G 7134 + 40	WD7	"	120	< 4	28	26	< 4
" + 60	"	"	120	< 4	30	28	< 4
" + 80	"	"	120	< 4	38	36	< 4
250G 7135 + 40	WD8	"	150	< 4	44	28	< 4
" + 60	"	"	150	< 4	50	34	< 4
" + 80	"	"	150	4	55	50	< 4

TABLE 1 : Continued.

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SAMPLE NO	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 7136 + 40	WD9	Bulk stream sed. -10#	120	< 4	50	20	< 4
" + 60	"	"	120	< 4	48	30	< 4
" + 80	"	"	120	6	65	28	< 4
250G 7137 + 40	WD10	"	130	< 4	16	16	< 4
" + 60	"	"	130	< 4	24	26	< 4
" + 80	"	"	130	< 4	32	36	< 4
250G 7138 + 40	WD11	"	80	< 4	110	44	< 4
" + 60	"	"	80	12	80	36	4
" + 80	"	"	80	8	70	40	< 4
250G 7139 + 40	WD12	"	90	< 4	34	20	< 4
" + 60	"	"	90	6	46	28	< 4
" + 80	"	"	90	< 4	30	26	< 4
250G 7140 + 40	WD13	"	130	< 4	48	22	< 4
" + 60	"	"	130	< 4	70	32	< 4
" + 80	"	"	130	8	65	38	< 4
250G 7141 + 40	WD14	"	75	< 4	10	10	< 4
" + 60	"	"	75	< 4	14	12	< 4
" + 80	"	"	75	< 4	24	22	< 4
250G 7142 + 40	WD15	"	150	4	20	22	< 4
" + 60	"	"	150	< 4	30	30	< 4
" + 80	"	"	150	< 4	34	40	< 4
250G 7143 + 40	WD16	"	130	< 4	30	28	< 4
" + 60	"	"	130	< 4	28	28	< 4
" + 80	"	"	130	< 4	44	34	< 4
250G 7144 + 40	WD17	"	100	< 4	22	16	< 4
" + 60	"	"	100	< 4	42	22	< 4
" + 80	"	"	100	6	50	30	< 4

TABLE 1 : Continued

SAMPLE NO.	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 7145 + 40	WD18	Bulk stream sed. -10#	100	< 4	26	12	10
+ 60	"	"	100	4	18	8	< 4
+ 80	"	"	100	4	22	16	4
250G 7146 + 40	WD19	"	120	4	10	12	< 4
+ 60	"	"	120	< 4	6	4	6
+ 80	"	"	120	< 4	4	6	< 4
250G 7147 + 40	WD20	"	170	< 4	22	20	< 4
+ 60	"	"	170	4	34	28	4
+ 80	"	"	170	< 4	36	34	< 4
250G 7148 + 40	WD21	"	150	4	36	22	< 4
+ 60	"	"	150	< 4	85	42	< 4
+ 80	"	"	150	4	90	55	4
250G 7149 + 40	WD22	"	160	< 4	18	10	< 4
+ 60	"	"	160	< 4	24	16	< 4
+ 80	"	"	160	< 4	34	32	< 4
250G 7150 + 40	WD23	"	150	< 4	30	16	< 4
+ 60	"	"	150	< 4	30	18	< 4
+ 80	"	"	150	4	36	26	< 4
250G 7151 + 40	WD24	"	125	< 4	20	12	< 4
+ 60	"	"	125	< 4	55	22	4
+ 80	"	"	125	6	65	28	< 4
250G 7152 + 40	WD25	"	100	< 4	20	20	< 4
+ 60	"	"	100	< 4	24	18	< 4
+ 80	"	"	100	< 4	32	22	4
250G 7153 + 40	WD26	"	100	< 4	20	20	< 4
+ 60	"	"	100	< 4	22	16	< 4
+ 80	"	"	100	4	30	20	< 4

TABLE 1 : Continued

SAMPLE NO	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 7154 + 40	WD27	Bulk Stream sed. -10#	-	4	6	10	4
" + 60	"	"	-	< 4	14	10	< 4
" + 80	"	"	-	< 4	24	16	6
250G 7155 + 40	WD28	"	100	< 4	12	8	< 4
" + 60	"	"	100	< 4	14	8	4
" + 80	"	"	100	< 4	18	18	< 4
250G 7156 + 40	WD29	"	75	< 4	48	32	8
" + 60	"	"	75	< 4	42	24	< 4
" + 80	"	"	75	< 4	46	22	< 4
250G 7157 + 40	WD30	"	100	< 4	20	12	< 4
" + 60	"	"	100	< 4	20	16	6
" + 80	"	"	100	4	26	16	< 4
250G 7158 + 40	WD31	"	170	8	280	65	< 4
" + 60	"	"	170	16	420	95	< 4
" + 80	"	"	170	16	350	100	< 4
250G 7159 + 40	WD32	"	150	< 4	75	18	< 4
" + 60	"	"	150	4	110	30	< 4
" + 80	"	"	150	10	140	44	< 4
250G 7160 + 40	WD33	"	150	< 4	36	12	4
" + 60	"	"	150	< 4	50	18	< 4
" + 80	"	"	150	6	65	32	< 4
250G 7161 + 40	WD34	"	220	< 4	60	14	< 4
" + 60	"	"	220	< 4	50	10	6
" + 80	"	"	220	< 4	34	12	< 4
250G 7162 + 40	WD35	"	100	< 4	22	24	8
" + 60	"	"	100	4	22	20	< 4
" + 80	"	"	100	< 4	28	24	4

TABLE 1 : Continued

SAMPLE NO	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 7163 + 40	WD36	Bulk Stream Sed. -10#	100	< 4	18	8	< 4
" + 60	"	"	100	< 4	55	18	< 4
" + 80	"	"	100	6	95	32	< 4
250G 7164 + 40	WD37	"	200-400	4	190	30	< 4
" + 60	"	"	200-400	8	200	42	< 4
" + 80	"	"	200-400	6	190	50	< 4
250G 7165 + 40	WD38	"	150	4	26	12	< 4
" + 60	"	"	150	4	50	20	< 4
" + 80	"	"	150	4	42	26	< 4
250G 7166 + 40	WD39	"	200-400	< 4	140	30	< 4
" + 60	"	"	200-400	4	180	46	< 4
" + 80	"	"	200-400	8	130	44	< 4
250G 7167 + 40	WD40	"	120	< 4	80	24	< 4
" + 60	"	"	120	< 4	120	36	< 4
" + 80	"	"	120	4	120	46	< 4
250G 7168 + 40	WD41	"	250	< 4	120	22	< 4
" + 60	"	"	250	4	230	50	< 4
" + 80	"	"	250	6	180	46	< 4
250G 7169 + 40	WD42	"	100	< 4	18	10	< 4
" + 60	"	"	100	6	36	22	6
" + 80	"	"	100	< 4	55	30	< 4
250G 7170 + 40	WD43	"	100	< 4	18	10	4
" + 60	"	"	100	< 4	18	14	< 4
" + 80	"	"	100	< 4	34	18	< 4

TABLE 1 : Continued

SAMPLE NO.	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 7171 + 40	WD44	Bulk Stream Sed. -10#	100	< 4	20	14	< 4
" + 60	"	"	100	4	20	16	< 4
" + 80	"	"	100	< 4	28	18	< 4
250G 7172 + 40	WD45	"	100	< 4	18	16	< 4
" + 60	"	"	100	< 4	24	18	< 4
" + 80	"	"	100	6	32	18	< 4
250G 7173 + 40	WD46	"	140	10	150	70	4
" + 60	"	"	140	16	260	120	< 4
" + 80	"	"	140	10	190	90	< 4
250G 7174 + 40	WD47	"	140	< 4	16	6	< 4
" + 60	"	"	140	< 4	46	22	6
" + 80	"	"	140	4	110	44	< 4
250G 7175 + 40	WD48	"	100	< 4	20	24	< 4
" + 60	"	"	100	< 4	18	20	< 4
" + 80	"	"	100	< 4	22	20	8
250G 7176 + 40	WD49	"	130	< 4	34	14	< 4
" + 60	"	"	130	4	75	26	6
" + 80	"	"	130	6	90	42	< 4
250G 7177 + 40	WD50	"	250	< 4	140	26	< 4
" + 60	"	"	250	4	260	50	< 4
" + 80	"	"	250	< 4	120	34	< 4
250G 7178 + 40	WD51	"	200	6	230	34	< 4
" + 60	"	"	200	8	320	65	< 4
" + 80	"	"	200	4	130	38	< 4
250G 7179 + 40	WD52	"	200	< 4	75	26	4
" + 60	"	"	200	< 4	100	34	< 4
" + 80	"	"	200	< 4	55	32	< 4
250G 7180 + 40	WD53	"	200	< 4	120	28	< 4
" + 60	"	"	200	4	140	32	< 4
" + 80	"	"	200	4	130	40	< 4

TABLE 1 : Continued

SAMPLE NO.	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 7181 + 40	WD54	Bulk Stream Sed. -10#	210	< 4	100	22	< 4
" + 60	"	"	210	4	100	26	< 4
" + 80	"	"	210	4	85	26	< 4
250G 7182 + 40	WD55	"	210	< 4	30	4	< 4
" + 60	"	"	210	4	110	26	< 4
" + 80	"	"	210	6	270	55	< 4
250G 7183 + 40	WD56	"	200	< 4	180	36	< 4
" + 60	"	"	200	10	290	55	< 4
" + 80	"	"	200	8	200	48	< 4
250G 7184 + 40	WD57	"	200	4	100	30	< 4
" + 60	"	"	200	4	100	32	< 4
" + 80	"	"	200	6	80	32	< 4
250G 7185 + 40	WD58	"	200	< 4	85	22	< 4
" + 60	"	"	200	4	210	36	< 4
" + 80	"	"	200	< 4	220	48	< 4
250G 7186 + 40	WD59	"	210	4	260	44	< 4
" + 60	"	"	210	8	340	55	< 4
" + 80	"	"	210	< 4	140	32	< 4
250G 7187 + 40	WD60	"	210	< 4	22	8	< 4
" + 60	"	"	210	4	46	16	< 4
" + 80	"	"	210	6	65	18	< 4
250G 7188 + 40	WD61	"	120	< 4	16	10	4
" + 60	"	"	120	< 4	28	20	< 4
" + 80	"	"	120	6	32	24	6

TABLE 1 : Continued

SAMPLE NO.	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 7189 + 40	WD62	Bulk Stream Sed. - 10#	120	< 4	26	18	< 4
" + 60	"	"	120	< 4	24	18	4
" + 80	"	"	120	4	36	18	< 4
250G 7190 + 40	WD63		130	< 4	180	50	< 4
" + 60	"	"	130	10	130	38	< 4
" + 80	"	"	130	< 4	75	32	< 4
250G 7191 + 40	WD64	"	110	< 4	42	14	< 4
" + 60	"	"	110	6	75	26	< 4
" + 80	"	"	110	< 4	70	26	< 4
250G 7192 + 40	WD65	"	110	< 4	28	14	< 4
" + 60	"	"	110	< 4	85	46	< 4
" + 80	"	"	110	4	140	85	< 4
250G 7193 + 40	WD66	"	160	< 4	10	12	< 4
" + 60	"	"	160	< 4	32	16	< 4
" + 80	"	"	160	4	44	26	< 4
250G 7194 + 40	WD67	"	180	< 4	16	10	< 4
" + 60	"	"	180	< 4	28	18	< 4
" + 80	"	"	180	< 4	40	26	< 4
250G 7195 + 40	WD68	"	300-1000	< 4	18	12	< 4
" + 60	"	"	300-1000	< 4	32	18	< 4
" + 80	"	"	300-1000	4	42	24	< 4
250G 7196 + 40	WD69	"	140	< 4	60	20	< 4
" + 60	"	"	140	< 4	65	30	< 4
" + 80	"	"	140	< 4	55	32	< 4

TABLE 1 : Continued

SAMPLE NO.	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 7197 + 40	WD70	Bulk Stream Sed. -10#	160	< 4	65	55	< 4
" + 60	"	"	160	4	60	46	< 4
" + 80	"	"	160	4	55	46	< 4
250G 7198 + 40	WD71	"	250	< 4	26	12	< 4
" + 60	"	"	250	< 4	30	14	< 4
" + 80	"	"	250	4	22	16	< 4
250G 7199 + 40	WD72	"	250-350	4	85	28	< 4
" + 60	"	"	250-350	< 4	80	38	< 4
" + 80	"	"	250-350	< 4	80	50	< 4
250G 7200 + 40	WD73	"	250-350	4	42	18	< 4
" + 60	"	"	250-350	< 4	48	22	< 4
" + 80	"	"	250-350	< 4	50	24	< 4
250G 8801 + 40	WD74	"	80	< 4	18	12	10
" + 60	"	"	80	< 4	16	8	< 4
" + 80	"	"	80	< 4	8	8	6
250G 8802 + 40	WD75	"	120	< 4	22	14	< 4
" + 60	"	"	120	< 4	28	18	4
" + 80	"	"	120	< 4	38	30	< 4
250G 8803 + 40	WD76	"	120	< 4	44	20	6
" + 60	"	"	120	< 4	26	16	< 4
" + 80	"	"	120	< 4	20	12	4
250G 8804 + 40	WD77	"	140	< 4	60	28	< 4
" + 60	"	"	140	12	180	95	< 4
" + 80	"	"	140	20	290	170	< 4

TABLE 1 : Continued

SAMPLE NO.	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 8805 + 40	WD78	Bulk Stream Sed. - 10#	140	< 4	10	14	6
" + 60	"	"	140	< 4	28	16	< 4
" + 80	"	"	140	< 4	40	36	< 4
250G 8806 + 40	WD79	"	90	4	18	28	< 4
" + 60	"	"	90	4	20	20	< 4
" + 80	"	"	90	4	22	24	< 4
250G 8807 + 40	WD80	"	100	< 4	14	10	4
" + 60	"	"	100	< 4	22	14	< 4
" + 80	"	"	100	< 4	34	26	4
250G 8808 + 40	WD81	"	100	< 4	24	12	< 4
" + 60	"	"	100	< 4	36	20	< 4
" + 80	"	"	100	< 4	65	36	< 4
250G 7128 - 80	WD 1	"	110	6	38	44	< 4
250G 7129 - 80	WD 2	"	75	< 4	26	40	< 4
250G 7130 - 80	WD 3	"	60	4	26	44	< 4
250G 7131 - 80	WD 4	"	100	< 4	20	44	< 4
250G 7132 - 80	WD 5	"	100	< 4	28	46	< 4
250G 7133 - 80	WD 6	"	70	< 4	40	48	< 4
250G 7134 - 80	WD 7	"	120	4	42	38	< 4
250G 7135 - 80	WD 8	"	150	6	60	55	< 4
250G 7136 - 80	WD 9	"	120	< 4	32	30	< 4
250G 7137 - 80	WD10	"	130	4	32	38	< 4
250G 7138 - 80	WD11	"	80	8	55	42	< 4
250G 7139 - 40	WD12	"	90	4	34	34	< 4
250G 7140 - 40	WD13	"	130	4	70	55	< 4

TABLE 1 : Continued

SAMPLE NO.	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSIS REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 7141 - 40	WD14	Bulk Stream Sed. -10#	75	< 4	26	34	< 4
250G 7142 - 40	WD15	"	150	4	42	50	< 4
250G 7143 - 40	WD16	"	130	4	50	46	< 4
250G 7144 - 80	WD17	"	100	4	85	50	< 4
250G 7145 - 80	WD18	"	100	4	35	26	< 4
250G 7146 - 80	WD19	"	120	< 4	14	14	< 4
250G 7147 - 80	WD20	"	170	6	46	40	< 4
250G 7148 - 80	WD21	"	150	4	70	55	< 4
250G 7149 - 80	WD22	"	160	4	36	44	< 4
250G 7150 - 80	WD23	"	150	4	42	40	< 4
250G 7151 - 80	WD24	"	125	4	100	55	< 4
250G 7152 - 80	WD25	"	100	< 4	38	34	< 4
250G 7153 - 80	WD26	"	100	6	48	36	< 4
250G 7154 - 80	WD27	"	-	< 4	44	34	< 4
250G 7155 - 80	WD28	"	100	< 4	32	30	< 4
250G 7156 - 80	WD29	"	75	6	46	30	< 4
250G 7157 - 80	WD30	"	100	4	44	36	< 4
250G 7158 - 80	WD31	"	170	8	130	60	< 4
250G 7159 - 80	WD32	"	150	4	80	44	< 4
250G 7160 - 80	WD33	"	150	4	65	38	< 4
250G 7161 - 80	WD34	"	220	< 4	38	20	< 4
250G 7162 - 80	WD35	"	100	< 4	34	38	< 4
250G 7163 - 80	WD36	"	100	< 4	75	40	< 4
250G 7164 - 80	WD37	"	200-400	10	110	48	< 4
250G 7165 - 80	WD38	"	150	< 4	50	40	< 4
250G 7166 - 80	WD39	"	200-400	< 4	65	34	< 4
250G 7167 - 80	WD40	"	120	4	70	44	< 4
250G 7168 - 80	WD41	"	250	< 4	65	36	< 4
250G 7169 - 80	WD42	"	100	4	40	38	< 4
250G 7170 - 80	WD43	"	100	< 4	32	30	< 4

TABLE 1 : Continued

SAMPLE NO.	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 7171 - 80	WD44	Bulk Stream Sed. -10#	100	< 4	34	32	< 4
250G 7172 - 80	WD45	"	100	< 4	42	34	< 4
250G 7173 - 80	WD46	"	140	4	65	55	< 4
250G 7174 - 80	WD47	"	140	8	90	55	< 4
250G 7175 - 80	WD48	"	100	< 4	20	24	< 4
250G 7176 - 80	WD49	"	130	4	65	40	< 4
250G 7177 - 80	WD50	"	250	< 4	55	26	< 4
250G 7178 - 80	WD51	"	200	4	60	26	< 4
250G 7179 - 80	WD52	"	200	4	40	32	< 4
250G 7180 - 80	WD53	"	200	< 4	65	34	< 4
250G 7181 - 80	WD54	"	210	6	65	30	< 4
250G 7182 - 80	WD55	"	210	< 4	95	34	< 4
250G 7183 - 80	WD56	"	200	< 4	75	32	< 4
250G 7184 - 80	WD57	"	200	< 4	55	34	< 4
250G 7185 - 80	WD58	"	200	4	70	32	< 4
250G 7186 - 80	WD59	"	210	4	65	24	< 4
250G 7187 - 80	WD60	"	210	4	65	26	< 4
250G 7188 - 80	WD61	"	120	< 4	36	28	< 4
250G 7189 - 80	WD62	"	120	< 4	32	26	< 4
250G 7190 - 80	WD63	"	130	< 4	44	36	< 4
250G 7191 - 80	WD64	"	110	< 4	48	38	< 4
250G 7192 - 80	WD65	"	110	6	85	70	< 4
250G 7193 - 80	WD66	"	160	6	60	50	< 4
250G 7194 - 80	WD67	"	180	4	80	55	< 4
250G 7195 - 80	WD68	"	300-1000	4	70	50	< 4
250G 7196 - 80	WD69	"	140	< 4	40	40	< 4

SAMPLE NO.	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SIUT.	U	Th	Y	Mo
250G 7197 - 80	WD70	Bulk Stream Sed. - 10#	160	4	44	55	< 4
250G 7198 - 80	WD71	"	250	4	34	45	< 4
250G 7199 - 80	WD72	"	250-350	4	75	70	< 4
250G 7200 - 80	WD73	"	250-350	4	42	45	< 4
250G 8801 - 80	WD74	"	80	4	24	30	< 4
250G 8802 - 80	WD75	"	120	6	50	53	< 4
250G 8803 - 80	WD76	"	120	< 4	28	35	< 4
250G 8804 - 80	WD77	"	140	14	210	150	< 4
250G 8805 - 80	WD78	"	140	6	65	55	< 4
250G 8806 - 80	WD79	"	90	6	30	34	< 4
250G 8807 - 80	WD80	"	100	< 4	46	38	< 4
250G 8808 - 80	WD81	"	100	6	48	48	< 4

TABLE 2 : ANALYSES OF CORE SAMPLES - WILD DOG

SAMPLE NO.	LOCATION	DESCRIPTION OF SAMPLE	ANALYSES REQUIRED (ppm)		
			U_3O_8	ThO_2	Y
250C 7104G	Myponga, Wild Dog No. 2, DDH 5 4.9 m	biotite-feldspar-gneiss	95	36	18
250C 7107G	DDH 6 11.6 m	feldspar-biotite-granulite	140	620	240
250C 7108G	DDH 6 14.6 m	"	24	32	40
250C 7111G	DDH 7 4.6 m	very broken biotite-feldspar-gneiss/ 2^{o}. U-min.	560	42	60
250C 7113G	DDH 7 8.8 m	feldspar-biotite-gneiss/foot-wall rock	240	44	26
250C 7116G	DDH 7 11.0 m	feldspar-biotite-gneiss, spotted by soft footwall rock	150	32	14
250C 7117G	DDH12 2.1 m	feldspar-biotite-gneiss/footwall rock	44	16	38
250C 7119G	DDH12 11.9 m	feldspar-biotite-gneiss/spotted by soft chlorite	130	28	20
250C 7120G	DDH13 5.6 m	feldspar-biotite-gneiss with chlorite spots	1050	30	38
250C 7123G	DDH20 5.2 m	mylonitic zone with talc & U-min. in biotite gneiss	5200	16	140

TABLE 2 : Continued

SAMPLE NO.	LOCATION	DESCRIPTION OF SAMPLE	ANALYSES REQUIRED (ppm)		
			U_3O_8	ThO_2	Y
250C 7125G	DDH20 7.6 m	biotite-feldspar-gneiss with chlorite spots footwall rock	36	46	18
250C 7127G	DDH20 4.0 m	sheared talceous biotite-gneiss with chlorite spots and U-Min.	3200	110	200
250C 7129G	DDH20 4.3 m	biotite-feldspar-gneiss, chlorite spotted footwall rock	1250	95	130
250C 7130G	DDH20 4.6 m	boitite-feldspar-gneiss, chlorite spotted footwall rock	380	34	55
250C 7131G	DDH20 5.8 m	boitite-feldspar-gneiss, chlorite spotted	560	65	65
250C 7103G	DDH 5 3.0 m	boitite-feldspar-gneiss	130	75	24

URANERZ AUSTRALIA PTY. LTD.

245 Churchill Avenue, Subiaco, 6008, Western Australia

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Cables: Uranerz Australia

073

PA:GN

5th January, 1979

The Director General,
South Australian Department
of Mines and Energy,
191 Greenhill Road,
PARKSIDE S.A. 5063

Dear Sir,

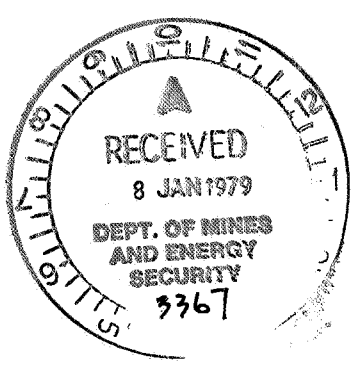
On August 17th, 1978 a request was made by Uranerz Australia Pty.Ltd. to sample some diamond drill core from the Myponga Uranium Prospect. Thirty-two samples were subsequently collected and submitted for geochemical and petrological analysis.

The sample data and the contractors' reports are attached to this letter to complete the commitment as arranged prior to the sampling being permitted.

The prospect occurs in EL 418 which was granted on September 15th, 1978. Further discussion of the analyses will therefore appear in the course of normal reporting requirements for this tenement. If possible, confidentiality of this information would be appreciated until expiry of the tenement.

Yours faithfully,
URANERZ AUSTRALIA PTY.LTD.

P. Adamek
Chief Geologist



Encl.

SAMPLE NRS.			DRILL HOLE NO.	DEPTH - METRES
250 C.	7101	P	5	2.7
"	7102	P	5	2.8
"	7103	G	5	3.0
"	7104	G	2	4.9
"	7105	P	6	11.0
"	7106	P	6	14.7
"	7107	G	6	11.6
"	7108	G	6	14.6
"	7109	P	10	10.0
"	7110	P	7	4.0
"	7111	G	7	4.6
"	7112	P	7	8.8
"	7113	G	7	8.8
"	7114	P	7	9.0
"	7115	P	12	11.0
"	7116	G	7	11.0
"	7117	G	12	2.1
"	7118	P	13	5.6
"	7119	G	12	11.9
"	7120	G	13	5.6
"	7121	P	13	5.5
"	7122	P	20	7.6
"	7123	G	20	5.2
"	7124	P	20	4.0
"	7125	G	20	7.6
"	7126	P	20	4.3
"	7127	G	20	4.0
"	7128	P	20	10.0
"	7129	G	20	4.3
"	7130	G	20	4.6
"	7131	G	20	5.8
"	7132	P	7	11.0

N.B. Samples suffixed P denote petrological samples - refer Appendix I

Samples suffixed G denote geochemical samples - refer Appendix II.

amdel
The Australian Mineral Development Laboratories
Flemington Street, Frewville, South Australia 5063
Phone Adelaide 79 1662, telex AA 82520

Winner of Award for Outstanding Export Achievement 1975

Pilot Plant: Osman Place, Thebarton, Sth. Aust.
Phone Adelaide 43 8053
Branch Offices: Perth and Sydney
Associated with: Professional Consultants Australia Pty. Ltd.

Please address all correspondence to Frewville.
In reply quote: AC 3/782/0 - 727/79

15 September 1978

The Director,
Uranerz Australia Limited,
P O Box 17,
PARKHOLME SA 5042

REPORT AC 727/79

YOUR REFERENCE:	Order number 5015
IDENTIFICATION:	As listed
DATE RECEIVED:	21 August 1978

Enquiries quoting AC 727/79 to the Manager please

D. K. Rowley
Manager
Analytical Chemistry Division

per H. Seaman

for Norton Jackson
Managing Director

cc Uranerz
P O Box 201
Subiaco 6008

hjj

AMDEL ANALYTICAL SERVICE REPORT AN 727/79 ORDER 5015 PAGE 1

NATA CERTIFICATE XRF ANALYSIS CODE B1 RESULTS IN PPM

SAMPLE	U3O8	THO2	Y
250 C 7104	95	36	18
250 C 7107	140	620	240
250 C 7108	24	32	40
250 C 7111	560	42	60
250 C 7113	240	44	26
250 C 7116	150	32	14
250 C 7117	44	16	38
250 C 7119	130	28	20
250 C 7120	1050	30	38
250 C 7123	5200	16	140
250 C 7125	36	46	18
250 C 7127	3200	110	200
250 C 7129	1250	95	130
250 C 7130	380	34	55
250 C 7131	560	65	65
250 C 7103	130	75	24
DETN LIMIT	(4)	(4)	(4)

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SM:YTS

20 June, 1979.

Mr. Phillip White
S.A. Department of Mines & Energy,
P.O. Box 151,
EASTWOOD. S.A. 5063.

Dear Mr. White,

In regard to our telephone conversation this morning concerning Uranerz's drilling at Myponga on EL 418. Uranerz drilled three inclined diamond drillholes (MD 1-3) for a total metreage of 201 m.

We have relinquished EL 418 and propose to forward our final report in the near future.

Please find enclosed the following plans showing hole locations, lithological and radiometric profiles.

Map 1 Wild Dog EL 418 Interpretation Geology
250-517

Map 2 Wild Dog, Myponga MD 1.
250-4551

Map 3 Wild Dog, Myponga MD 2.
250-4552

Map 4 Wild Dog, Myponga MD 3.
250-4553

Yours faithfully,
URANERZ AUSTRALIA PTY. LTD.

S. Morete
OFFICE GEOLOGIST

M.T. Dahlkamp
COMPANY SECRETARY

encl.

URANERZ AUSTRALIA PTY. LTD.

SM:SA 31.7.1979

078

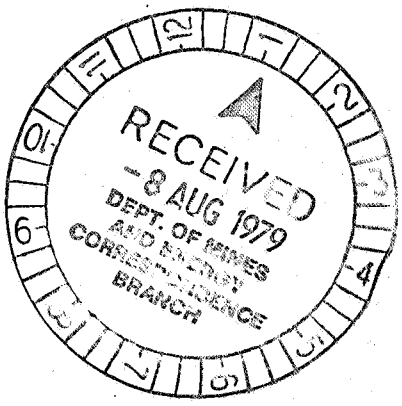
FINAL REPORT ON EL 418

FOR

SOUTH AUSTRALIAN DEPARTMENT OF MINES AND ENERGY

Compiled By

S. Morete



PERTH

JULY 1979

SUMMARY

079

EL 418 covers an area of about 254 km^2 over Proterozoic rocks 60 km south-southwest of Adelaide. The tenement was granted to UAL on 13 September 1978 and relinquished on 7 May 1979.

Exploration mainly involved detailed work in the vicinity of the Wild Dog Prospect. This included geological mapping, radiometric surveying, stream sediment sampling and diamond drilling. In addition, cores of previous drilling at the Wild Dog Prospect were geologically logged, radiometrically surveyed, assayed and studied in thin and polished sections.

Regional work outside of the Wild Dog Prospect included geological mapping and sampling.

No further work is contemplated and the tenement was relinquished.

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1. INTRODUCTION

EL 418 was granted to Uranerz Australia Pty. Ltd. (UAL) for a period of one year on 15 September, 1978. It covers an area of about 254 km^2 with the westernmost boundary being a line parallel to, and 800 m inland from the high water mark of Yankalilla Bay, but excludes the Myponga and Yulte Conservation Parks. EL 418 has been relinquished and this is the final report for this tenement and covers all work carried out during the period of occupancy.

2. LOCATION

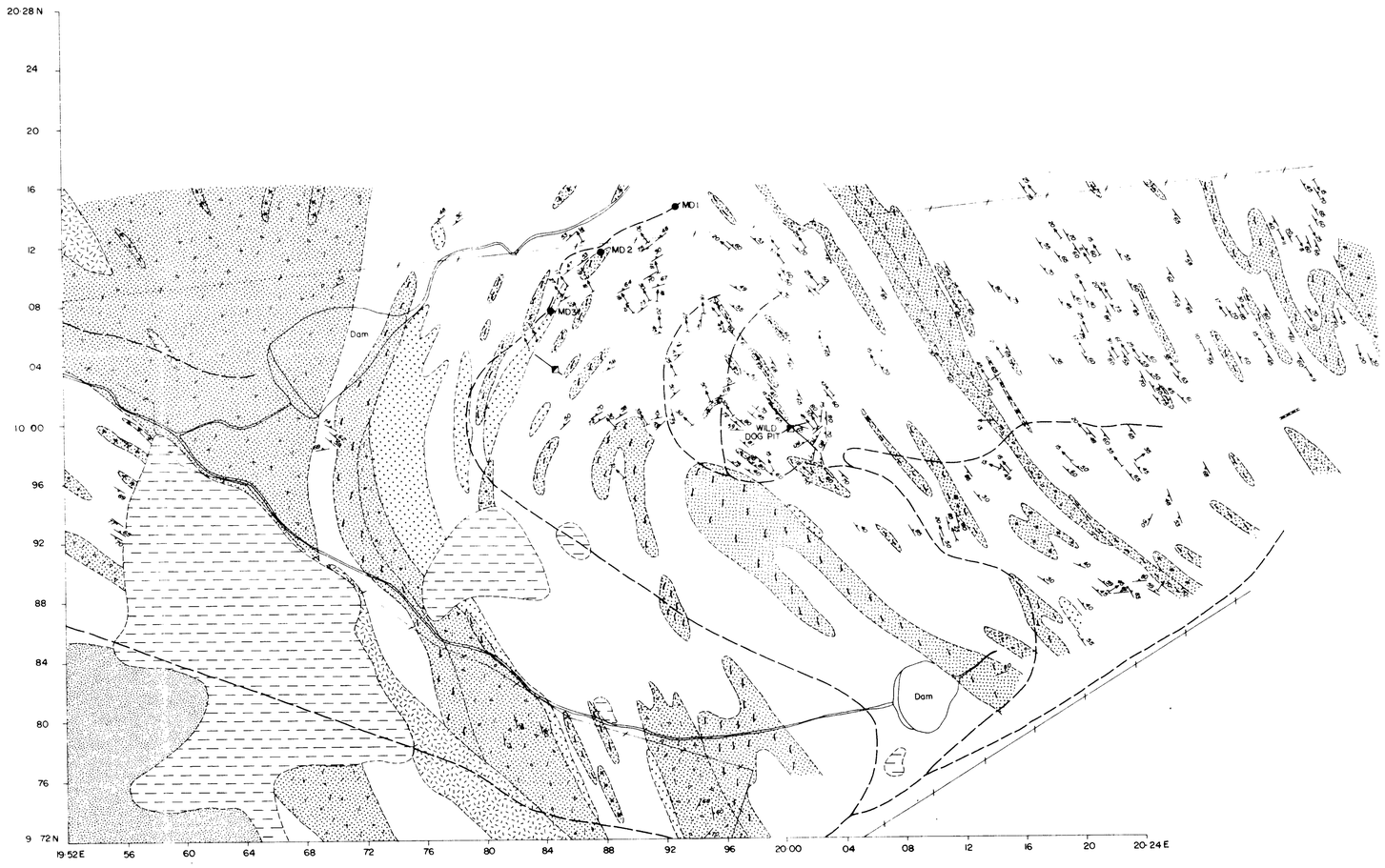
The tenement is situated on the BARKER 1:250,000 Sheet (SI 54-13) and more precisely on the following 1:100,000 Sheets: MILANG 6627, YANKALILLA 6527 and JERVIS 6526, and between the following co-ordinates: latitudes 35°19' - 35°31' S and longitudes 138°12' - 139°39' E (Fig. 1). The area is about 60 km south-southwest of Adelaide on the Fleurieu Peninsula.

3. GEOLOGY

Barossa Complex metasediments of Early to Middle Proterozoic occur as inliers in faulted anticlinal cores to the Late Proterozoic sediments of the Adelaide Geosyncline.

Minor veinlike-type uranium and thorium occurrences are known throughout the Proterozoic basement, cover rocks and Tertiary lateritic cappings. A small pitchblende orebody was worked on Wild Dog Creek near Myponga in the 1950's.

UAL's exploration programme was aimed at locating veinlike-type uranium deposits.

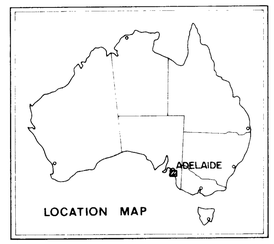


N

- MD1 Drillhole
- Fence
- Track
- Shaft
- Dam
- Creek

- Joints
- Schistocity (metamorphic differentiation)
- Dominant cleavage
- Plunge of lineation
- Plunge of fold axis
- Plunge of fold axis of schistocity
- Geological boundary
- Fault

- Lateritic cover
- Permian glacifluvial sands
- Amphibolite (meta-dolerite)
- Albitite
- Quartz - feldspar - biotite gneiss (common country rock) with interlayers of:
  - Quartz - feldspar - biotite granulite
  - Feldspar - quartz - pegmatite (pegmatoid)
  - Quartz - (potasic) - feldspar - granulite (leucogneiss)
- Quartz vein



LOCATION MAP

0 50 100 150 200m
1:2000

3367-1

URANERZ AUSTRALIA PTY. LTD.

WILD DOG EL 418

PROJECT 8250

INTERPRETATION GEOLOGY

COMPILED: BV	DATE:	TENEMENT:	MAP Nº: 1
DRAWN: CV	DATE: APR. 79	PLAN Nº: 250-517	REPORT Nº: MINES
LAST REVISION:		SCALE: 1:2000	PROJECT Nº: 250
T.C. TO BONN:		REF: 154-13	

URANERZ AUSTRALIA PTY. LTD.

HOLE N°	MD1	CO-ORD	10.145 N 19.930 E
PROSPECT	Wild Dog, Myponga	PROJECT	8250/418
COMMENCED	6-12-78	COMPLETED	9-12-78
DEPTH	60,2 m	DIP	70°
BEARING	to the South	HOLE TYPE	DDH
LOGGED BY	B. Bels	DATE	12-12-78
COL. ELEVATION		MAP N°	Hundred of Myponga
WATER TABLE			

Water sampling results : U_3O_8 (ppb)____ Va (ppb)____ TDS (ppm)____

HOLE N°		CO-ORD	
PROSPECT		PROJECT	
COMMENCED		COMPLETED	
DEPTH		DIP	
BEARING		HOLE TYPE	
LOGGED BY		DATE	
COL. ELEVATION		MAP N°	2 (MINES)
WATER TABLE		PLAN N°	250-4551

Water sampling results : U_3O_8 (ppb)____ Va (ppb)____ TDS (ppm)____

SRAT SPP2 [cps] bg/140 structure

m | % Rec | Gamma Log Cps | Assays | Degree Ox (Strong, Mod, Weak) | Lithology | Description

no core recovery

5.35 — start

no foliation

felspar - quartz - biotite granulite, coarse grained with large biotite spots the biotite are mostly weathered, some quartz-lenses, like augens

metam. foliation

qz - fp - bi gneiss with pegmatoids layers, pink feldspars (k-fp) and quartz augen (rare) and weathered biotite

some parts with biotite spots

many chlorite aggregates (with talc) replacing biotite

strongly jointed

flexo faults (with slickensides)

pegmatoids layers in fine to coarse grained gneiss

qz - fp - bi gneiss or granulites, fine to coarse grained partly with biotite spots or larger pink coloured feldspar augen retrograd metamorphosed biotite to phlogopite, chlorite on joints, some feldspar are replaced by chlorite etc. strongly weathered zone after structural events

joints with mica staining, no foliation in feldspar rich parts

coarse grained qz - fp - granulite (leucogneiss), probably pink k-feldspar interlayered by qz-fp-bi granulites

some parts are yellow (retrograd weathered) metamorphosed feldspars, foliation stained by mica/chlorite etc.

banded

qz-k-fp-bi gneiss

foliation

coarse grained qz - fp - granulite (leucogneiss) probably pink k-feldspar interlayered by qz - fp - bi granulite

joints

fine to medium grained qz-fp-bi gneiss with partly granulitic texture very broken zone

only partly banded

qz - fp - granulite (leucogneiss) or pegmatoids with interlayered qz-fp-bi gneiss

and stg. mineralisation on joints (chlorite etc.)

medium grained qz-fp-bi granulites with qz-kfp pegmatoids layers

no cleavage no mut. foliation

weak metam. fol.

on joints weathering

qz-fp-bi gneiss with some bands of qz-fp-pegmatoids and pure biotite layers. granulitic texture in some parts

qz-fp-(bi) pegmatoid, pink k-feldspars

quartz - feldspar - biotite granulite totally weathered: feldspar replaced by kaolin and chlorite biotite, in some parts more than 70% are retrograd metamorphosed to phlogopite typical chlorite spotted gneiss „footwall rock"

large haematite/ilmenite crystalls (55mm)

60.20 m

GAMMI Readings [cps]

Total count	Th	U
320	3	8
460	2	9
560	4	9
640	3	13
320	3	13
400	3	13
400	3	10
320	3	10
360	4	9
300	4	10
300	3	8
400	3	10
300	3	10
380	4	11
370	5	15
370	5	8
300	3	9

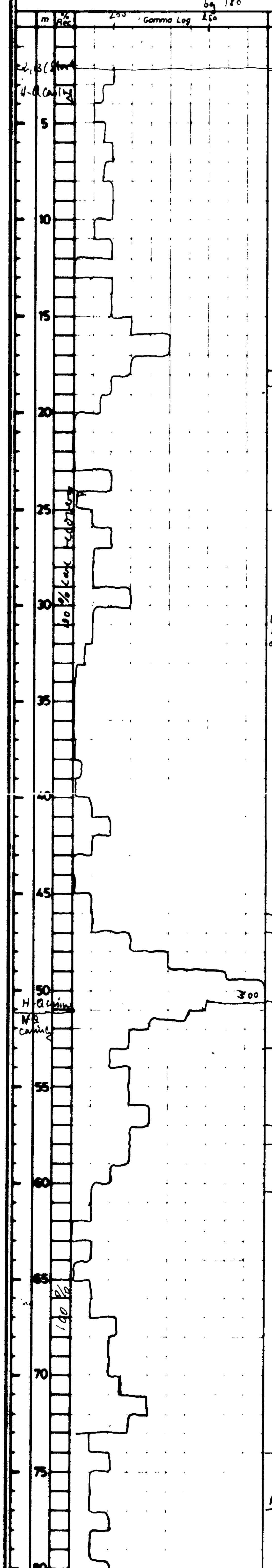
33672

URANERZ AUSTRALIA PTY. LTD.

HOLE Nº	MD 2	CO-ORD	10,115 N / 19,880 E
PROSPECT	Wild Dog, Myponga	PROJECT	8250 / 418
COMMENCED	13/12/78	COMPLETED	17/12/78
DEPTH	80,5	DIP	70
BEARING	to the South	HOLE TYPE	DDH
LOGGED BY	B. Vels	DATE	19/12/78
COL. ELEVATION		MAP Nº	Hundred of Myponga
WATER TABLE			

Water sampling results: U_3O_8 (ppb) ____ Va (ppb) ____ TDS (ppm) ____

m	% Rec.	Gamma Log	Assays	Degree Ox (Strong / Med / Weak)	Lithology	Description



Casing notes: 2, 3 (Start); H-Q casing; HQ casing (50 m); NQ casing. % Rec.: 90 % core recovery; 100 %; 80,5 m: 0,5

~2–18 m — Assays: // well banded; // strongly jointed (chlorite and limonite on joints); faulted and sheared; / banded
qz-fs-biotite gneiss
in banded portions fine to medium grained, fine white and black banded
in some spotted parts coarse grained or with chlorite-biotite spots
some k-fs-qz pegmatoids crosscutting the banding, or parallel to the metamorphic layers
pegmatoidic interlayers (~16 m)

~18 m — qz-fs-granulite (leucogneiss)

~18–25 m — Assays: with chlorite and limonite on joints
fs-qz-chlorite/biotite gneiss
weak banded, with chlorite-biotite spots
very talceous
no whole core only rock chips → jointed and faulted

~25–46 m — Assays: with chlorite and limonite on joints; // well banded
fs-qz-chlorite/biotite gneiss, medium to coarse grained
fine layered, in 10 cm scale folded
some parts are green/black and white spotted and other parts are regular banded
leucogneiss interlayers
chlorite and phlogopite retrograd metamorphosed
some parts are coarse grained (fs-qz) with biotite spots
fs-qz-chlorite/biotite gneiss
no „footwall rock"
qz-fs-granulite (leucogneiss) interlayers (~41 m)

~46–47 m — qz-fs-granulite (leucogneiss)

~47–51 m — Assays: chlorite
fine grained qz-bi-fs-gneiss
some pink fs-layers
some retrograd weathered (metamorphosed) biotite

~51–53 m — qz-fs-granulite (leucogneiss) with qz-fs-biotite interlayers

~53–57 m — Assays: in a 10 cm scale folded
fine grained qz-bi-fs gneiss
sometimes with granulitic texture
and cut by pink K-fs pegmatoids
with biotite spots
bi retrograd metam. to phlogopite + chlorite

~57 m — Assays: // chlorite
almost pure biotite, to qz-fs-bi gneiss

~58–61 m — qz-fs-granulite (leucogneiss) with some biotite interlayers

~61–74 m — Assays: // joints with chlorite; with sec. minerals on joints
fs-qz-biotite gneiss, medium grained
with pegmatoidic interlayers
biotite partly replaced by chlorite
quartz-k-fs-pegmatite (pegmatoids)
only 10 cm 10, crosscutting the gneissocity

~74–77 m — qz-fs-granulite (leucogneiss)
with some pink K-fs
and some biotite-chlorite spots

~77–80,5 m — qz-fs-bi gneiss, fine grained
on top some pink feldspar interlayers

HOLE Nº		CO-ORD	
PROSPECT		PROJECT	
COMMENCED		COMPLETED	
DEPTH		DIP	
BEARING		HOLE TYPE	
LOGGED BY		DATE	
COL. ELEVATION		MAP Nº	3 (MINES)
WATER TABLE		PLAN Nº	250-4552

Water sampling results: U_3O_8 (ppb) ____ Va (ppb) ____ TDS (ppm) ____

3367-3

URANERZ AUSTRALIA PTY. LTD.

HOLE N°	MD 3	CO-ORD	10.075 N / 19.845 E
PROSPECT	Wild Dog Myponga	PROJECT	8250/418
COMMENCED	9-12-78	COMPLETED	21-12-78
DEPTH	60.2m	DIP	70°
BEARING	to the South	HOLE TYPE	DDH
LOGGED BY	B. Vels	DATE	21-12-78
COL. ELEVATION		MAP N°	Hundred of Myponga
WATER TABLE			

Water sampling results : U_3O_8 (ppb) ____ Va (ppb) ____ TDS (ppm) ____

HOLE N°		CO-ORD	
PROSPECT		PROJECT	
COMMENCED		COMPLETED	
DEPTH		DIP	
BEARING		HOLE TYPE	
LOGGED BY		DATE	
COL. ELEVATION		MAP N°	4 (MINES)
WATER TABLE		PLAN N°	250 - 4553

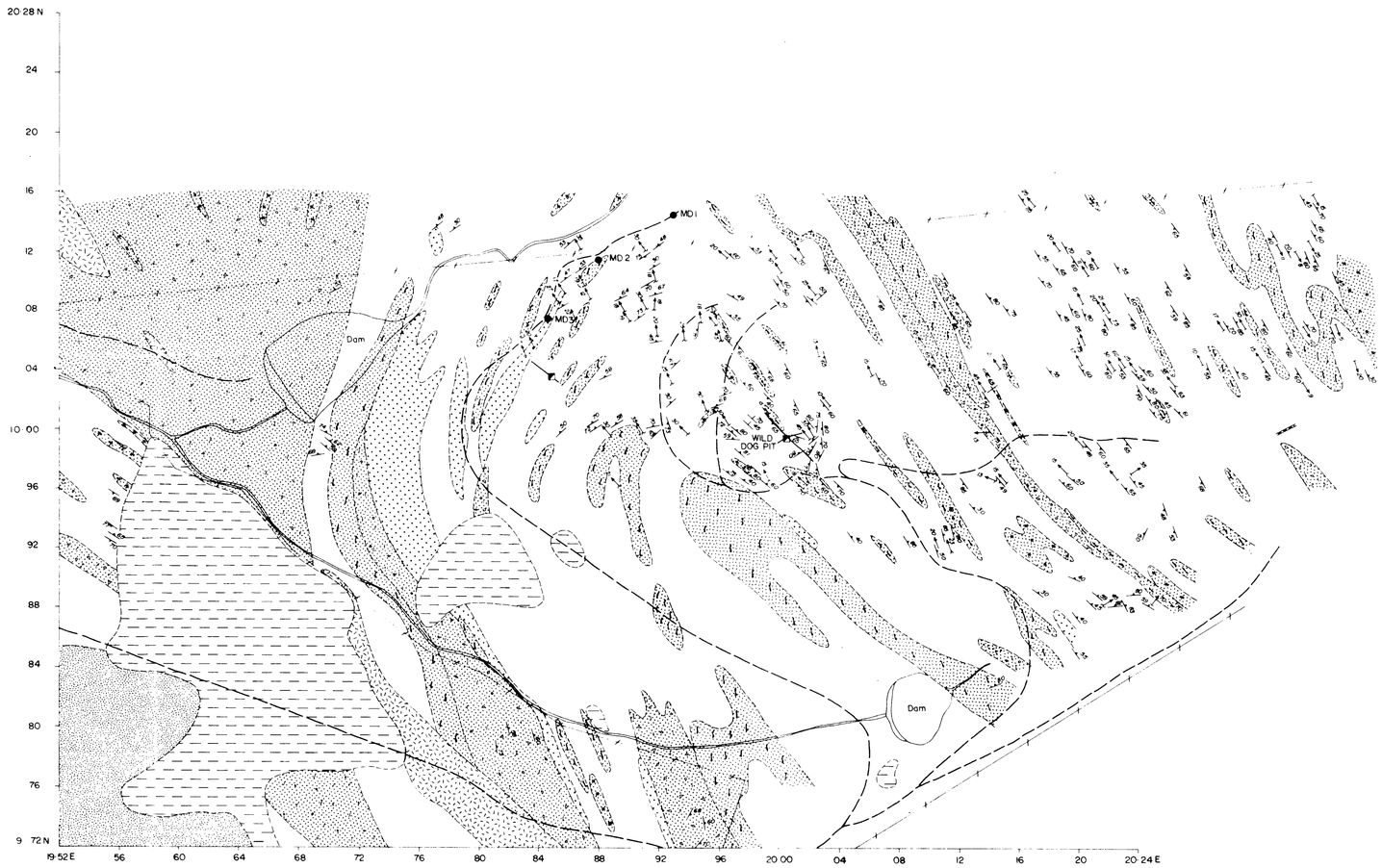
Water sampling results : U_3O_8 (ppb) ____ Va (ppb) ____ TDS (ppm) ____

SRATSPP2 bg 180-200cps

m	Rec %	Gamma 80 200 300 250	Structure	Degree Ox	Lithology	Description
0		GAMI TC: 3200 SU:60 ΔU:4 Sth:5 Sth:6 2.900 1.800 800 350 280	sheared and brecciated	Usec (oxidized breccia)		quartz-albite (pink feldspar) granulite with biotite spots "albitite"
5			jointed			quartz-feldspar-(k-fp) granulite (leucogneiss) with gneiss interlayers (3,90 - 4,30m)
			sheared			fine grained well banded (black-pink) qz-bi-fp gneiss (with k-fp (pink) and white feldspars) in some part a fp-granulite (pink) with spotted by biotite aggregates albite? some green minerals too!
10						qz-k-fp-granulite (leucogneiss) with biotite spots fine grained well banded (black-pink) qz-bi-fp-gneiss (with k-fp) and pegmatoid cutting the layering
15		300 350				coarse grained quartz-k-fp-granulite (leucogneiss)
						qz-fp-bi gneiss well banded coarse grained qz-k-fp-granulite (leucogneiss)
20			good core no faults or joints			well banded, fine to medium grained black and white layered qz-fp-bi gneiss with some pink fp (k-fp?) spots or even some fp-layers chlorite quite common some parts fine grained with granulite texture
25		GAMI TC: 450 SU:8 ΔU:6 Sth:4 ΔTh:2 450				fine grained qz-biotite-feldspar gneiss with strongly metamorphic foliation in every directions some fp-rich parts with coarse grained crystalls with green chlorite as sec. (retrograd) mineral
30						well banded, fine to medium grained black and white layered qz-fp-bi gneiss with pink k-fp-crystalls (coarse grained) in some spots or in selected layers chlorite quite common
35						qz-k-fp-granulite (leucogneiss)
						qz-fp-bi gneiss, fine layered well banded fine to medium grained with chlorite and phlogopite as retrograd metamorphic minerals Hematite - Ilmenite
45			strongly jointed			qz-fp-bi gneiss, strongly weathered most of the fp and biotites are weathered, some are replaced by the minerals (chlorite, phlogopite etc) "footwall rock"
50			chlorite actinolite on joints			some pink feldspars still to be seen qz-fp-biotite gneiss, k-fp (pink) as spots actinolite as layer in the rocks or as stain on joints
55						to the depth more k-fp-(pink) layers in the gneiss
60		60.2m				chlorite hematite nests and chlorite spots footwall?
65						
70						
75						
80						
85						
90						
95						
100						

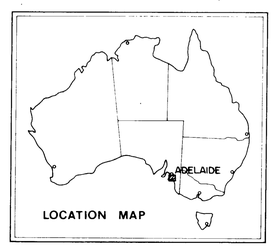
m	Rec %	Gamma Log	Assays	Degree Ox	Lithology	Description
				Strong Mod Weak		

33674



N

- MD1 Drillhole
- Fence
- Track
- Shaft
- Dam
- Creek
- Joints
- Schistocity (metamorphic differentiation)
- Dominant cleavage
- Plunge of lineation
- Plunge of fold axis
- Plunge of fold axis of schistocity
- Geological boundary
- Fault
- Lateritic cover
- Permian glacifluvial sands
- Amphibolite (meta-dolerite)
- Albitite
- Quartz - feldspar - biotite gneiss (common country rock) with interlayers of:
  - Quartz - feldspar - biotite granulite
  - Feldspar - quartz - pegmatite (pegmatoid)
  - Quartz - (potasic) - feldspar - granulite (leucogneiss)
- Quartz vein



LOCATION MAP

25 0 50 100 150 200m

1:2000

3367-5

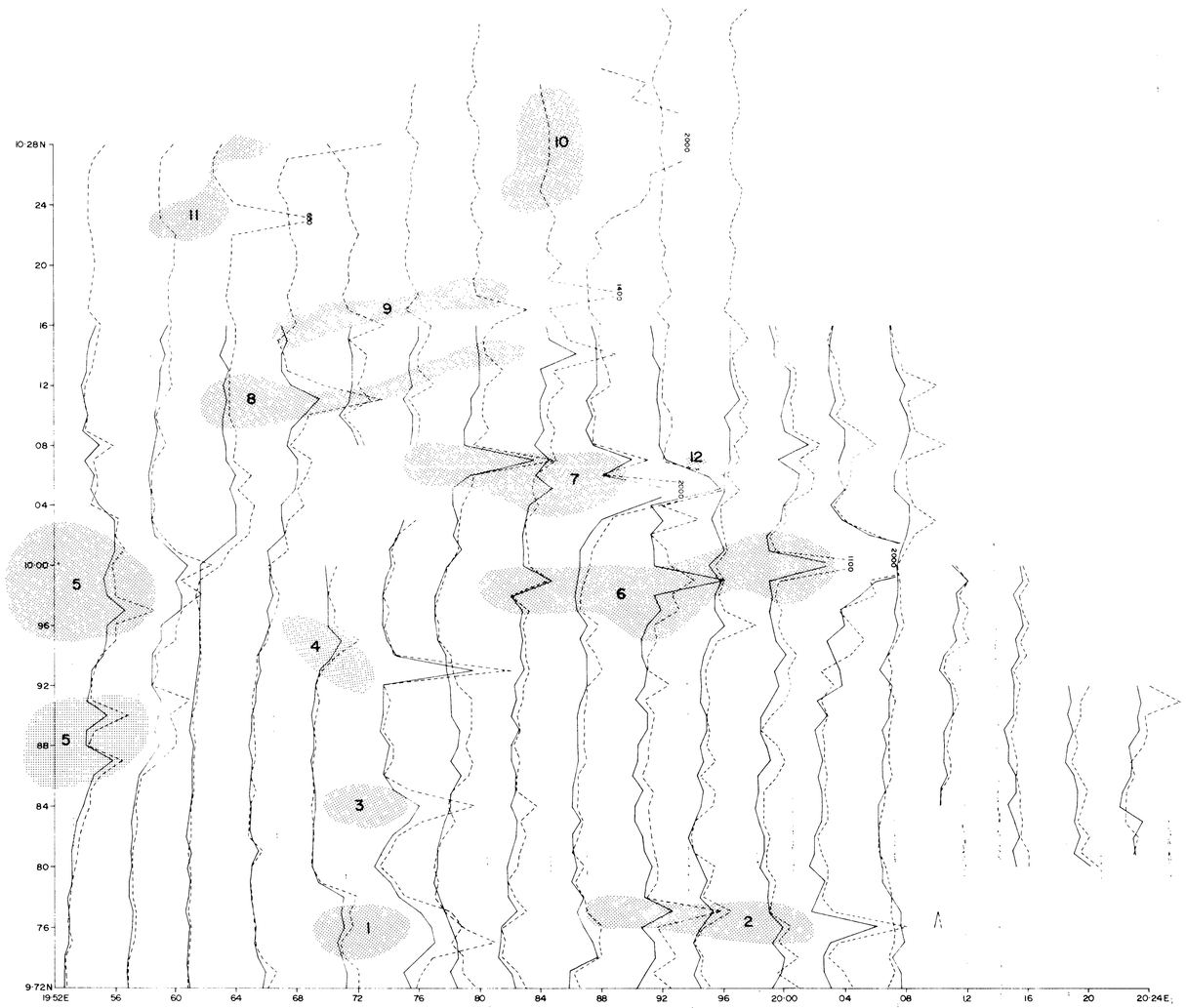
URANERZ AUSTRALIA PTY. LTD.

WILD DOG EL 418

PROJECT 8250

INTERPRETATION GEOLOGY

COMPILED: BV	DATE:	TENEMENT:	MAP NO: 1
DRAWN: CV	DATE: APR. 79	PLAN NO: 250-517	REPORT NO: MINES
LAST REVISION:		SCALE: 1:2000	PROJECT NO: 250
T.C. TO BONN:		REF: 154-13	



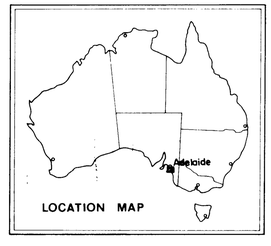
Anomaly

3 Anomaly number (not ranking)

----- SRAT reading in hole

——— SRAT reading on the ground

N



20 0 20 100 200m

1:2000

3367-6

URANERZ AUSTRALIA PTY. LTD.

RECEIVED
9 AUG 1979
DEPT. OF MINES AND ENERGY SECURITY
3367

WILD DOG AREA EL418

PROJ 8250

SRAT PROFILES

COMPILED: AP	DATE: JAN 79	TENEMENT:	MAP Nº: 2
DRAWN: RE	DATE: APR 79	PLAN Nº: 250-1535	REPORT Nº: MINES
LAST REVISION:		SCALE: 1:2000	PROJECT Nº: 250
T.C. TO BONN:		REF: I 54-13	

URANERZ AUSTRALIA PTY. LTD.

3367-7

HOLE N°	DDH 2	CO-ORD	10757N / 10193E
PROSPECT	Lode No 2 Area	PROJECT	Wild Dog Mine
COMMENCED	5-4-54	COMPLETED	12-4-54
DEPTH	115'6" ≙ 35,1 m	DIP	45°
BEARING	080° Dispersed 45°	HOLE TYPE	DD H
LOGGED BY	B. Vels	DATE	8-8-78
COL. ELEVATION		MAP N°	Hundred Myponga, Sec 75
WATER TABLE			4 S. -254

Water sampling results: U_3O_8 (ppb) ____ Va (ppb) ____ TDS (ppm) ____

HOLE N°	DDH 1	CO-ORD	10700 N 10275 E
PROSPECT	Lode No 2 Area	PROJECT	Wild Dog Mine
COMMENCED	10-3-54	COMPLETED	25-3-54
DEPTH	87'9" ≙ 26,7 m	DIP	45°
BEARING	070° Dispersion 45°	HOLE TYPE	DDH
LOGGED BY	B. Vels	DATE	8-8-78
COL. ELEVATION		MAP N°	Hundred Myponga, Sec 75
WATER TABLE		PLAN N°	4S-254 250-4519

Water sampling results: U_3O_8 (ppb) ____ Va (ppb) ____ TDS (ppm) ____

3 MINES

SRAT SPP2 [bg 70 cps]

m	% Rec	50 70 Gamma log [cps]	Assays / Structure	Degree Ox (Strong / Mod / Weak)	Lithology	Description
5	95		massive		P O P	feldspar - biotite - quartz - pegmatoid with pink feldspars the biotite content is concentrated in veins in weathered parts the biotite is diplotaxitical to phlogopite with Hämatite between feldspar crystals
10	95		massive		P	biotite - feldspar - pegmatoid the biotite content is better distributed
	90		biotite layers 40°		P	biotite schist with some pegmatoidic layers (pink feldspars)
15	95		gneissic foliation		P	biotite - feldspar gneiss with some more schistose parts and some pegmatoidic interlayers fine to medium grained with phlogopite after biotite some quartz veins and many joints with limonit on them some faults with slickensides
20	90		biotite layers dip 30 - 65°		P	feldspar - biotite pegmatoid (pink feldspars)
	90				P	feldspar - biotite granulite (with some blue quartz)
25	95		biotite layers		P	medium grained feldspar - biotite gneiss poorly banded feldspar - biotite pegmatoid
	90				P	medium grained feldspar - biotite gneiss with some pegmatoidic layers the biotite content is growing to the bottom
30	95		gneissic foliation		P	fine to medium grained biotite - feldspar - gneiss only few phlogopites chloritisation in the core part with higher calcite
	90		biotite layers < 65°		Ch	
35					T	

35,1 m

m	% Rec	50 70 Gamma log [cps]	Assays / Structure	Degree Ox (Strong / Mod / Weak)	Lithology	Description
					P	surface weathered
5	90		massive		P	feldspar - biotite granulite with some pegmatoidic layers poorly banded, but never a gneissic texture coarse to medium grained with coarse pink feldspars (some red) some biotite in weathered haritons are now phlogopites
10					P	
15	95		gneissic layering < 35°		P	biotite - feldspar - gneiss with some pegmatoidic haritons limonite joints
20	90				P	at the bottom more feldspar - biotite - gneiss
	90				P	Coarse, pink feldspar pegmatoid with some coarse laths of quartz and biotite
25	95				P	coarse grained feldspar - biotite - quartz gneiss with banding and pink feldspars
					P	feldspar - biotite pegmatoid with some coarse grained feldspar - biotite gneiss layers with pink feldspars

26,7 m

URANERZ AUSTRALIA PTY. LTD.

3367-8

HOLE N°	DDH 19	CO-ORD	10838 N / 10830 E
PROSPECT	Lode No 1	PROJECT	Wild Dog Mine
COMMENCED		COMPLETED	22-2-55
DEPTH	300 ft ≙ 91,2 m	DIP	20°
BEARING	240° Depression 20°	HOLE TYPE	DDH
LOGGED BY	B Vels	DATE	2-8-78
COL. ELEVATION		MAP N°	Hundred Myponga, Se 75 US-254
WATER TABLE			

Water sampling results : U_3O_8 (ppb) ____ Va (ppb) ____ TDS (ppm) ____

SRAT SPP2 [bg 50cps]

HOLE N°	DDH 3	CO-ORD	10770 N / 10237 E
PROSPECT	Lode No 2	PROJECT	Wild Dog Mine
COMMENCED	26-3-54	COMPLETED	1/4/54
DEPTH	80 ft ≙ 24,3 m	DIP	45°
BEARING	078° Depressed 45°	HOLE TYPE	DDH
LOGGED BY	B. Vels	DATE	2-8-78
COL. ELEVATION		MAP N°	Hundred Myponga, Se 75
WATER TABLE		PLAN N°	US-254 250-4520

Water sampling results : U_3O_8 (ppb) ____ Va (ppb) ____ TDS (ppm) ____

SRAT SPP2 [bg 50]

4 MINES

Gamma Log [cps]

Description

- fine-medium grained biotite-feldspar gneiss
  pink albites are sometimes strongly weathered and replaced
- Coarse grained feldspar-biotite-quartz pegmatoid
  with albites and K-feldspars
  some blue quartzes, the biotite content is concentrated in flecces
  the lower part is medium grained
  the biotites are weathered and sometimes retrograd metamorphosed to phlogopite
- fine-medium grained biotite-feldspar gneiss
  on joints limonite
  some parts with granulitic texture
- biotite-feldspar gneiss with heavily feldspatised (pink albite) partion
  some feldspars are soft and decomposed by chlorite and sericite (green-grey spots)
- some parts with granulitic texture
- biotite-feldspar-gneiss
  with some pegmatoidic layers
  with continuous gradation to the biotite-feldspar gneiss
  the higher cps-values are always controlled by limonitic joints
  the texture varies from real gneissic to granulitic or pegmatoidic
- quartz-feldspar-biotit gneiss, medium grained
- biotite-feldspar-gneiss with many intercalations of higher metamorphosed (larger) pegmatoidic layers concordant with blue quartz
- with large clots of pink albite
- biotite-feldspar granulite
- biotite-feldspar gneiss
  with some coarse grained pegmatoidic horizons
  the biotites are retrograd metam. to phlogopite
  the weathered feldspars are decomposed by green-grey chlorite and sericite
- granulitic texture at the bottom
- quartz-biotite-feldspar-granulite
  the upper part with greenish spots of allanite (rare-magnesium mineral up to 3 mm ø)
  the lower part lighter, with continuous transition to the biotite-feldspar-gneiss
- biotite-feldspar-gneiss with continuous transition to granulitic texture
  more increasing feldspar content (pink albites)
- the deeper part more granulitic texture (large pink albites and medium grained matrix)
- feldspar-biotite pegmatoid
- feldspar-biotite granulite
  in the upper part light with aggregates of biotite
  in the lower part dark with dispersed biotites (no favour direction)
  some clots of feldspars
  the biotites are retrograd metamorphosed to phlogopite and some feldspars to green-grey spots (chlorite)
- biotite-feldspar-granulite, coarse grained (allanite) even grained, no favour layering
- strongly weathered feldspar (pink albites and K-feld.) biotite pegmatoid
- biotite-feldspar-granulite
  with large feldspars in some horizons
  biotite layers without favour direct.
- feldspar-quartz-biotite granulite with epidote(?)
  the rock is spotted by green weathered epidote and pink feldspars
- dark, fine to medium grained biotite-feldspar-granulite
  no preferring layering
  some pink feldspars are coarse grained
- feldspar-biotite-quartz-pegmatoid with continuous gradation to upper an well to lower part
- weak banded biotite-feldspar-gneiss
  with beginning of granulitic texture medium to coarse grained

- Strong weathered biotite schist
- biotite schist - well banded
  with retrograd metamorphosed biotite to phlogopite
- biotite gneiss
  some parts are biotite-feldspar-gneiss
  well banded
  some biotites are retrograd metamorphosed to phlogopite
  continuous gradation
- feldspar-biotite-pegmatoid
  with some granulitic parts
  pink albite
  most of the biotites are now phlogopite
- continuous gradation to biotite-feldspar-gneiss
  with pegmatisid portions
  poorly bounded
  little Limonite on joints
- continuous gradation
  pink feldspar pegmatoid
  with spots of phlogopited biotit and chlorite
  continuous gradation
- feldspar-biotite-gneiss (pink albites)
  cont. gradation pegmatised
- fine grained feldspar-biotite-granulite
  with some gneissic features
  K-Feldspars
  Albites (pink)

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[redacted] 3367-9

HOLE N°	DD 8	CO-ORD	10 801 N / 10678 E
PROSPECT	Lode No1 (NW Lode)	PROJECT	Wild Dog Mine
COMMENCED	27-5-54	COMPLETED	16-6-54
DEPTH	133' 3" ≙ 40,5 m	DIP	60°
BEARING	146° Depression 60°	HOLE TYPE	DDH
LOGGED BY	B. Vels	DATE	9-8-78
COL. ELEVATION		MAP N°	Mundi Mundi 9, Sec 75 US-254
WATER TABLE			

Water sampling results: U_3O_8 (ppb) ___ Va (ppb) ___ TDS (ppm) ___
> RH 7 SPP 2 [bis 50 cps]

HOLE N°	DDH 4	CO-ORD	10 735 N / 10254 E
PROSPECT	Lode No 2	PROJECT	Wild Dog Mine
COMMENCED	20-4-54	COMPLETED	23-4-54
DEPTH	84' ≙ 25,5 m	DIP	45°
BEARING	070° Depression 45°	HOLE TYPE	DDH
LOGGED BY	B. Vels	DATE	9-8-78
COL. ELEVATION		MAP N°	Mundi Mundi 9, Sec 75
WATER TABLE		PLAN N°	US-254

Water sampling results: U_3O_8 (ppb) ___ Va (ppb) ___ TDS (ppm) ___
SRAT SPP 2 [bis 70 cps]

5 MINES 250-4521

m	Rec %	0 70 Gamma Log [cps]	Assays	Structure	Degree Ox (Strong / Mod / Weak)	Lithology	Description
0	91		gneissic foliation				Surface weathered dark coloured, banded, medium grained feldspar - biotite gneis
5	80		massive some poor banded horizons				medium to coarse grained feldspar - biotite pegmatoid with pink coarse feldspar poor banded gneissic horizons with chlorite and phlogopite as weathering product
10	71		gneissic foliation				medium grained, well banded, dark feldspar - biotite - quartz - gneiss with some coarse grained pink feldspar and pegmatoidic horizons to the bottom more weathered and stronger chloritized.
15							fine to medium grained biotite - feldspar - quartz - granulite with pegmatoidic horizons very strong limonitic joints and faults
20	90						mylonite with green chlorite spotts
25							medium grained biotite - feldspar - quartz granulite, strongly weathered or altered most of the biotites are retrograd metamorphosed to phlogopite and chlorite some pegmatoidic horizons (pink feldspar) some mylonitic ? or talcous horizons quartz-veins (blue quartz) the talc ore is spotted with green nests of chlorite "footwall rock" brecciated and weathered parts are very rough and porous. actinolite ?
30	90						
35			poorly banded				
40							
40,5 m							
45							
50							
55							
60							
65							
70							
75							
80							
85							
90							
95							
100							

m	Rec %	0 70 Gamma Log [cps]	Assays	Structure	Degree Ox (Strong / Mod / Weak)	Lithology	Description
0	70		gneissic foliation				biotite - feldspar - gneis dark, medium grained quartz veined parallel to gneissic foliation
5	45		poor banded up to 70°	75°			feldspar (pink) biotite - quartz granulite, medium grained joints are limonitic
10	80						some pegmatoidic horizons with coarse grained pink feldspars and quartz.
15			poor banded horizons up to 45° <60°				feldspar - quartz - biotite - pegmatoid Coarse grained pink feldspar, some small horizons are medium grained and poor banded
20	85						fine grained, light feldspar - quartz - biotite - granulite with some gneissic and pegmatoidic horizons many joints are stained limonite and talc
25							
25,5 m							
30							
35							
40							
45							
50							
55							
60							
65							
70							
75							
80							
85							
90							
95							
100							

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HOLE N°	DDH 14	CO-ORD	10645N / 10813E
PROSPECT	Lode No 1	PROJECT	Wild Dog Mine
COMMENCED	8-3-54	COMPLETED	10-3-54
DEPTH	51'6" ≈ 15,7 m	DIP	90°
BEARING	Depression 90°	HOLE TYPE	DDH
LOGGED BY	B. Vels	DATE	8-8-78
COL. ELEVATION		MAP N°	Hundred Myponga, Sec 75 US-254
WATER TABLE			

Water sampling results: U_3O_8 (ppb) ___ Va (ppb) ___ TDS (ppm) ___

SRAT SPP2 [bg 50cps]

HOLE N°	DDH 5	CO-ORD	10800N 10237E
PROSPECT	Lode No 2	PROJECT	Wild Dog Mine
COMMENCED	28-4-54	COMPLETED	18-5-54
DEPTH	81' ≈ 24,6 m	DIP	45°
BEARING	— Depression 45°	HOLE TYPE	DDH
LOGGED BY	B. Vels	DATE	8-8-78
COL. ELEVATION		MAP N°	Hundred Myponga, Sec 75
WATER TABLE		PLAN N°	US-254 250-4522

Water sampling results: U_3O_8 (ppb) ___ Va (ppb) ___ TDS (ppm) ___

SRAT SPP2 [bg 70cps]

6 MINES

m	% Rec.	Gamma Log [cps]	Assays/Structure	Degree Ox	Lithology	Description
0						weathered at surface
			25-50° L	Strong Mod Weak		fine grained feldspar-biotite-quartz gneiss, well banded (white and black)
						some layers are brown to red (limonite on joints parallel to foliation
						some weathering products like phlogopite and chlorite
10	85		massive			feldspar-biotite-quartz-pegmatoid coarse grained, with pink and yellowish feldspars
						feldspar-biotite-quartz granulite fine grained (pink feldspars)
			massive			with some pegmatoitic horizons
15						some white fine grained quartz-veined parts may be metamorphosed sandstones
15'7"						
20						
25						
30						
35						
40						
45						
50						
55						
60						
65						
70						
75						
80						
85						
90						
95						
100						

m	% Rec.	Gamma Log [CPS]	Assays/Structure	Degree Ox	Lithology	Description
	60					weathered biotitic gneiss
		C7101P				
		C7103G 95ppm U3O8 P	< 50°	Strong Mod Weak		biotite-feldspar gneiss, coarse to medium grained highly biotitic, very dark with limonitic joints
	80		L	poor yellow sec U-min. along joints		weathered biotites to phlogopite and chlorite
5		C7104G 130ppm U3O8 P	≈L			strongly limonitisized, perhaps on fault some movement, not to seen - rock is strongly weathered
		C7102P				
						fine grained feldspar-biotite-quartz granulite with pink feldspars
10			massive no foliation			and some pegmatitic horizons with increasing of the granulite very fresh rock, unweathered
						limonitisation along quartz-veins
						white fine grained some parts seem to be metamorphosed arkoses
15	90		only few joints			poor layered biotite rich layers
						some strong metamorphosed phlogopite after biotite
20			massive			
24,85 m						
25						
30						
35						
40						
45						
50						
55						
60						
65						
70						
75						
80						
85						
90						
95						
100						

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3367-11

HOLE N°	DDH 6	CO-ORD	10230 E / 10830N
PROSPECT	Lode No 2	PROJECT	Wild Dog Mine
COMMENCED	16-8-54	COMPLETED	23-8-54 (?)
DEPTH	91'4" ≈ 27,8 m	DIP	45°
BEARING	N65°E Depressed 45°	HOLE TYPE	DDH
LOGGED BY	B. Vels	DATE	9-8-78
COL. ELEVATION		MAP N°	Hundred Myponga, Sec 75 US-254
WATER TABLE			

Water sampling results: U_3O_8 (ppb) ____ Va (ppb) ____ TDS (ppm) ____

SRAT JPP2 [5] 70cps

HOLE N°	DDH 15	CO-ORD	10580N / 10695E
PROSPECT	Lode No 1 (West of)	PROJECT	Wild Dog Mine
COMMENCED	15-3-54	COMPLETED	24-3-54
DEPTH	97' ≈ 29,5 m	DIP	90°
BEARING	- / dep. 90°	HOLE TYPE	DDH
LOGGED BY	B. Vels	DATE	9-8-78
COL. ELEVATION		MAP N°	Hundred Myponga Sec 75
WATER TABLE		PLAN N°	US-254

Water sampling results: U_3O_8 (ppb) ____ Va (ppb) ____ TDS (ppm) ____

SRAT JPP2 [5] 80cps

7 MINES 250-4523

m	Rec %	Gamma Log [cps]	Assays	Degree Ox	Lithology	Description
0		30 70		Strong Mod Weak		surface weathering biotite-feldspar granulite, soft, coarse grained and with biotite dominance some biotite rich layers are bounded with gneissic foliation the core is spotted by pink feldspars, green chlorite and actinolite nests most of the biotite are altered to phlogopite joints are stained by limonite and on faults some talc too
5	85		poor banded T+L L T			
10		C7105P Up C7107G 140ppm U_3O_8 620ppm ThO_2 300cps	Sec. U. minerals L yellow green } U min. granerite (Ref. Rep. 59/50)	Us+Up		pink feldspar-biotite granulite, with very rich at pink feldspar, medium grained, no pegmatoid. some parts with poor banding and gneissic foliation yellow sec. U. minerals on shears, fractures in coarse grained feldspar-rock in association with limonite, talc and chlorite many fractures and mylonitic shears pegmatoidal horizon
15	90	C7106P Up C7108G 64ppm U_3O_8	L+T L	Us+Up		
20			poor banded L			grey to light biotite-feldspar-quartz granulite fine grained, poor banded horizons quartz veined many joints and faults and mylonitic shears weathered hornblende? in biotite rich horizons (medium grained) higher countervalues most of the biotites are trapped metamorphosed to phlogopite and chlorite the lower part looks like the beginning of "footwall rock" (?)
25	80		poor/banded L			
27,8 m						
30						
35						
40						
45						
50						
55						
60						
65						
70						
75						
80						
85						
90						
95						
100						

m	Rec %	Gamma Log (cps)	Assays	Degree Ox	Lithology	Description
0		0 70		Strong Mod Weak		surface weathered feldspar-biotite-granulite with fine grained dark and medium grained pink (feldspar rich) horizons the biotite mostly retrogr. metamorph. as phlogopite with limonitic joints and faults some pegmatoidic horizons (pink feldspar) and some gneissic textures too (in biotite rich layers) fault with slickensides and talc-limonite stained plains medium grained, dark biotite-feldspar-granulite with phlogopite and chlorite after biotite „Footwall rock"? medium to coarse grained light or pink feldspar-biotite-granulite with some pegmatoidic layers pink feldspar spotted coarse grained pink feldspar-biotite pegmatoid with some small poor banded layers
5	80		poor banded L			
10			massive L+T L			
15			poor banded biotite rich layers			
20			massive L+T L			
25			massive poor banded			
29,1 m						
30						
35						
40						
45						
50						
55						
60						
65						
70						
75						
80						
85						
90						
95						
100						

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3367-12

HOLE N°	DDH 16	CO-ORD	11 000 E / 10600 N
PROSPECT	Lode No 1	PROJECT	Wild Dog Mine
COMMENCED		COMPLETED	
DEPTH	316'6" ≙ 96,2 m	DIP	45°
BEARING	270° Depression 45°	HOLE TYPE	DDH
LOGGED BY	B. Vels	DATE	8-8-78
COL. ELEVATION		MAP N°	Hundred Myponga, Sec 7 S US 254
WATER TABLE			

Water sampling results : U_3O_8 (ppb) ____ Va (ppb) ____ TDS (ppm) ____

SRAT SPP2 [bg 60 cps]

HOLE N°	DDH 9	CO-ORD	10 800 N / 10678 E
PROSPECT	Lode No. 1	PROJECT	Wild Dog Mine
COMMENCED		COMPLETED	
DEPTH	91' ≙ 27,7 m	DIP	90°
BEARING	dep. 90°	HOLE TYPE	DDH
LOGGED BY	B. Vels	DATE	8-8-78
COL. ELEVATION		MAP N°	Hundred Myponga, Sec 7 S
WATER TABLE		PLAN N°	US-254 250-4525

8 MINES

Water sampling results : U_3O_8 (ppb) ____ Va (ppb) ____ TDS (ppm) ____

SRAT SPP2 [bg 60 cps]

m | Rec. % | Gamma Log [cps] | Assays | Degree Ox (Strong / Mod / Weak) | Lithology | Description

- 0–5 m: gneissic foliation, biotitic layers 40–70° dip
- Coarse grained feldspar-biotite-gneiss, with pink feldspars. Some parts well banded, other part more granulitic; some pegmatoidic horizons of 10 cm in the core. In weathered and sheared part poor core recovery. Some biotites are replaced by chlorite and phlogopite. The pegmatoidic horizons show normally quartz with blue colour. Strongly limonitisized faults also many joints with limonite and slickensides.
- 25–30 m: coarse grained feldspar-biotite-quartz pegmatoid; two fault directions, most of the planes are limonitisized
- 30–35 m: feldspar-biotite-gneiss with blue quartz, with some pegmatoidic layers and some unlayered horizons (granulite), mostly well banded
- 35–40 m: feldspar-quartz-biotite-pegmatoid, some quartz-feldspar pegmatoid layers
- 40–45 m: with a biotite-feldspar-quartz granulite layer (ø 50 cm), with pink feldspars, white quartz and some weathered biotite (to chlorite)
- fine grained feldspar-quartz-biotite-gneiss, quartz veined and some green minerals (diopsite), with some chloritic spots
- 45–50 m: feldspar-quartz-biotite pegmatoid, pink feldspars, some blue quartz, fine grained
- feldspar-biotite-quartz granulite, quartz veined; some coarse pink feldspars
- 50–55 m: feldspar-biotite-quartz pegmatoid with pink feldspars and nests of retrograd weathered biotite to phlogopite
- 55–60 m: feldspar-biotite-quartz granulite, fine grained, some banded horizons but no gneissic texture
- 60–65 m: feldspar-quartz pegmatoid with medium grained feldspars and some nests of biotite
- 65–70 m: fine grained feldspar-quartz-biotite granulite with some layered horizons
- feldspar-quartz-pegmatoid (fine to medium grained)
- 70–75 m: fine grained feldspar-biotite-quartz granulite, some layered horizons
- medium to coarse grained biotite-feldspar-quartz gneiss with spotted chlorid parts, some weathered phlogopites, some outwashed (leached) horizons
- "footwall rock" 2
- medium grained feldspar (pink)-biotite-pegmatoid
- 80–85 m: biotite-feldspar granulite with spots of chlorite to the bottom increasing weathering, medium grained
- biotite-(chlorite)-feldspar-granulite, most of the biotites are weathered to chlorite or / and phlogopite. The chlorite are greenish and spotted over the core, most of the feldspars are pink, some red, some banded horizons but no gneissic texture
- 85–90 m: hämatite-mineralisation and some very limonitized weathered parts, some pegmatoidic layers (up to 5 cm), the core is partly leached during drilling (no soft of the rock)
- "footwall rock"

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3367-13

HOLE N°	DDH 13	CO-ORD	
PROSPECT	Locke No 1	PROJECT	Wild Dog Mine
COMMENCED	8-3-54	COMPLETED	10-3-54
DEPTH	51'6" ≈ 15,7 m	DIP	90°
BEARING	90° depression	HOLE TYPE	DDH
LOGGED BY	B. Vels	DATE	7-8-78
COL. ELEVATION		MAP N°	Hundred Myponga, Sec 75 US-254
WATER TABLE			

Water sampling results: U_3O_8 (ppb) ____ Va (ppb) ____ TDS (ppm) ____

SRAT SPP2 (bg 50cps)

15,7 m

Gamma Log (cps)

Description

weathered gneiss, soil cover

fine-grained banded feldspar-biotite-gneiss becoming with depth more a biotite-feldsp.-gneiss with some pure biotite layers and some white biotite spotted granulitic parts

darker medium grained biotite-feldspar-gneiss
Shears are U-mineralised and mylonitised
many joints and faults with Limonite
near mineralisation pure biotite layers
with retrograd metamorphosed zones (chlorite, phlogopite)
the mineralised part is very soft and weathered

chlorite-biotite-feldspar-gneiss
the biotites are replaced by chlorite and phlogopite
the dark rock is chloritic spotted. „Foot wall rock"

medium grained (at bottom fine grained)
feldspar-biotite gneiss

HOLE N°	DDH 12	CO-ORD	1060 N / 1085 E
PROSPECT	Locke No 1	PROJECT	Wild Dog Mine
COMMENCED	4-3-54	COMPLETED	8-3-54
DEPTH	43" ≈ 13,1 m	DIP	45°
BEARING	270°, depression 45°	HOLE TYPE	DDH
LOGGED BY	B. Vels	DATE	7-8-78
COL. ELEVATION		MAP N°	Hundred Myponga, Sec 75
WATER TABLE		PLAN N°	US-254 250-4526

Water sampling results: U_3O_8 (ppb) ____ Va (ppb) ____ TDS (ppm) ____

SRAT SPP2 (bg 50cps)

13,1 m

Gamma Log (cps)

Description

highly weathered gneiss
feldspar-biotite gneiss
medium to coarse-grained
with green chloritic spots
feldspar-quartz pegmatoid (with blue quartz)

feldspar-chlorite-biotite-gneiss
the biotite is retrograd metamorphosed to phlogopite „foot wall rock"
the chlorite content is concentrated in greenish spots
the U mineralisation (greenish-yellow secondary minerals) are controlled by biotite (also chlorite and phlogopite) rich layers or grid joints and movements, to be noticed in contact to replaced feldspars (chlorite?, some kaolinite and other retrograde metamorphosed material). Some weathered crystals are replaced by Limonite!

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3367-14

HOLE N°	DDH 20	CO-ORD	Underground
PROSPECT	Lode No 1	PROJECT	Wild Dog Mine
COMMENCED		COMPLETED	20/1/55
DEPTH	40'0" ≙ 12,2m	DIP	45° Depressed
BEARING	235° / Dep 45°	HOLE TYPE	DDH
LOGGED BY	B. Vels	DATE	4-8-78
COL. ELEVATION		MAP N°	Hundred Myponga, Sec 75 US 254
WATER TABLE			

Water sampling results: U_3O_8 (ppb) ____ Va (ppb) ____ TDS (ppm) ____
SRAT SPP2 [by 50]

HOLE N°	DDH 11	CO-ORD	10630N / 10820E
PROSPECT	Lode No 1	PROJECT	Wild Dog Mine
COMMENCED	1-3-54	COMPLETED	3-3-54
DEPTH	56' 8" ≙ 17,2m	DIP	90°
BEARING	1 Depression 90°	HOLE TYPE	DDH
LOGGED BY	B. Vels	DATE	7-8-78
COL. ELEVATION		MAP N°	Hundred Myponga Sec 75
WATER TABLE		PLAN N°	US-254 250-4527

Water sampling results: U_3O_8 (ppb) ____ Va (ppb) ____ TDS (ppm) ____
SRAT SPP2 [by 50cps]

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HOLE N°	DDH 17	CO-ORD	11032 N / 10527 E
PROSPECT	Lode No 1	PROJECT	Wild Dog Mine
COMMENCED		COMPLETED	9-9-54
DEPTH	200' 3" ≙ 60,9 m	DIP	45°
BEARING	146° / depression 48°	HOLE TYPE	DDH
LOGGED BY	B. Vels	DATE	9-8-78
COL. ELEVATION		MAP N°	Hundred Myponga, Sec 75
WATER TABLE			US - 254

Water sampling results : U_3O_8 (ppb) ___ Va (ppb) ___ TDS (ppm) ___

SRAT SPP2 [Log 60cps]

HOLE N°	DD 18	CO-ORD	10 765 N / 10 701 E
PROSPECT	Lode No 1	PROJECT	Wild Dog Mine
COMMENCED		COMPLETED	22-10-54
DEPTH	150' ≙ 45,6m	DIP	65°
BEARING	148° / depression 65°	HOLE TYPE	DDH
LOGGED BY	B. Vels	DATE	9-8-78
COL. ELEVATION		MAP N°	Hundred Myponga, Sec 75
WATER TABLE		PLAN N°	US - 254 250-4528

Water sampling results : U_3O_8 (ppb) ___ Va (ppb) ___ TDS (ppm) ___

SRAT SPP2 [Log 60cps]

m | % REC | 30 70 Gamma Log (cps) | Assays | Structure | Degree Oz (Strong, Mod, Weak) | Lithology | Description

- surface weathered
- biotite - feldspar - granulite, medium grained with some coarse grained pegmatoidic layers
- most of the feldspars are pink
- in the upper part some 5cm thick horizons of biotite schist
- pegmatoidic layer
- poor quartz veined
- core very broken, many joints and faults with talc along the planes
- to the bottom the granulite becomes more and more pegmatoidic texture
- feldspar - biotite - pegmatoid, with pink coarse grained feldspars (with talc on joints)
- feldspar biotite - granulite, medium grained with coarse grained pegmatoidic interlayers
- joints with talc and limonite
- some Malachite occurs on joints too
- feldspar - biotite - pegmatoid, very broken
- fine to medium grained dark biotite - feldspar quartz granulite,
- on joints talc and limonite
- some mineralized fault with slickensides
- on joints and fractured core yellow uranium minerals (sec. min. scale) in fractures
- some portions poorly bonded
- the biotite are partly weathered and replaced by chlorite and phlogopite
- some pegmatoidic horizons
- coarse grained feldspar-biotite-pegmatoid with large crystalls of pink feldspars and aggregates of Hematite
- medium to coarse grained feldspar-biotite-quartz granulite
- quartz-veined (some with blue crystalls)
- some parts of the core show pink feldspar spotts and some parts are pegmatoidic
- rhyodacit metamorphosed parts with chlorite and phlogopite
- Hematite near quartz veins
- some very poor Pyrite and Malachite-mineralisation on joints
- parts of the core are spotted with blue quartz crystalls and pink feldspars
- strong pegmatized horizons
- very weathered and leached feldspar-biotite-quartz-granulite, medium to coarse grained with phlogopite, chlorite and some aggregates of Hematite "footwall rock" ?

m	% REC	30 70 Gamma Log (cps)	Assays	Structure	Degree Oz (Strong, Mod, Weak)	Lithology	Description
							surface weathered rock with lot of biotite
			poor banded				feldspar - biotite - quartz pegmatoid poor banded partiont
							fine to medium grained feldspar - biotite - quartz - granulite with some highly pegmatitized horizons quartz veined (some blue crystalls) (coarse grained) the core is spotted with pink feldspars and white to blue quartz
				massive			
			poor banded horizons				feldspar - biotite - quartz pegmatite with poor banded parts of biotite richer content
							quartz veined fault and joints with slickensides and limonite
				massive			fine grained biotite - feldspar granulite with some pink coarse grained feldspar and white quartz crystalls
							limonite stained joints strongly quartz veined (blue quartz)
							mylonite (chlorite, limonite, talc, phlogopite)
							fine to medium grained weathered and leached biotite - feldspar - quartz granulite with green chlorite spotts and phlogopite "footwall rock" ?
				massive			fine to medium grained feldspar - biotite - quartz - granulite with horizons of pegmatoidic texture and some poor banded horizons
							"footwall rock"
							in nests and spotts chlorite and phlogopite
							quartz - veined (with some blue quartz)
			some banded horizons				joints are stained with limonite the core is very rough because he is weathered and leached and in some parts only coarse grained crystalls are remaining

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3367-16

HOLE N°	DDH 22	CO-ORD	Underground
PROSPECT	Lode No 1	PROJECT	Wild Dog Mine
COMMENCED		COMPLETED	22/12/55
DEPTH	40'3" ≙ 12,2m	DIP	0°
BEARING	235° / Depression 0°	HOLE TYPE	DDH
LOGGED BY	B. Vels	DATE	4-8-78
COL. ELEVATION		MAP N°	Hundred of Nyponga, Sec 75 US 254
WATER TABLE			

Water sampling results: U_3O_8 (ppb) ___ Va (ppb) ___ TDS (ppm) ___

SRAT SPP2 [6g 50cps]

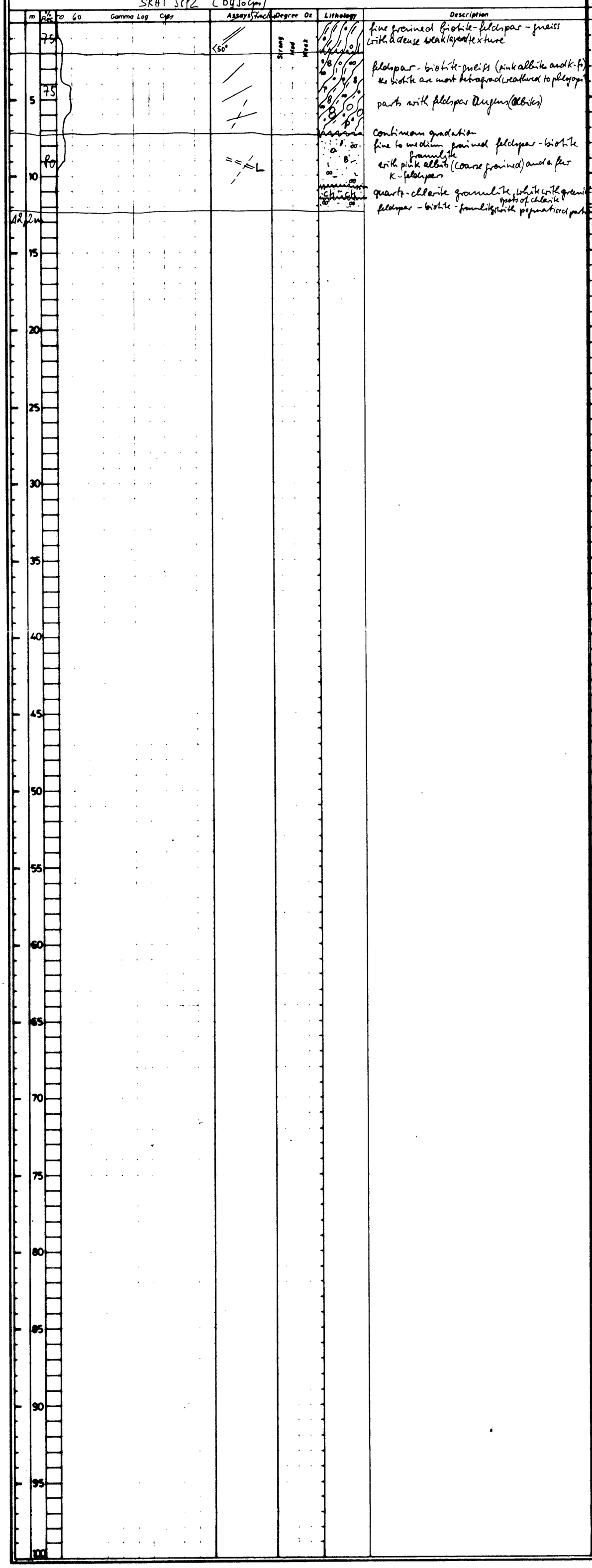
HOLE N°	DDH 21	CO-ORD	Underground
PROSPECT	Lode No 1	PROJECT	Wild Dog Mine
COMMENCED		COMPLETED	22/5/55
DEPTH	40'0" = 12,2m	DIP	65°
BEARING	235° / Depression 65°	HOLE TYPE	DDH
LOGGED BY	B. Vels	DATE	4-8-78
COL. ELEVATION		MAP N°	Hundred of Nyponga, Sec 75
WATER TABLE		PLAN N°	US 254

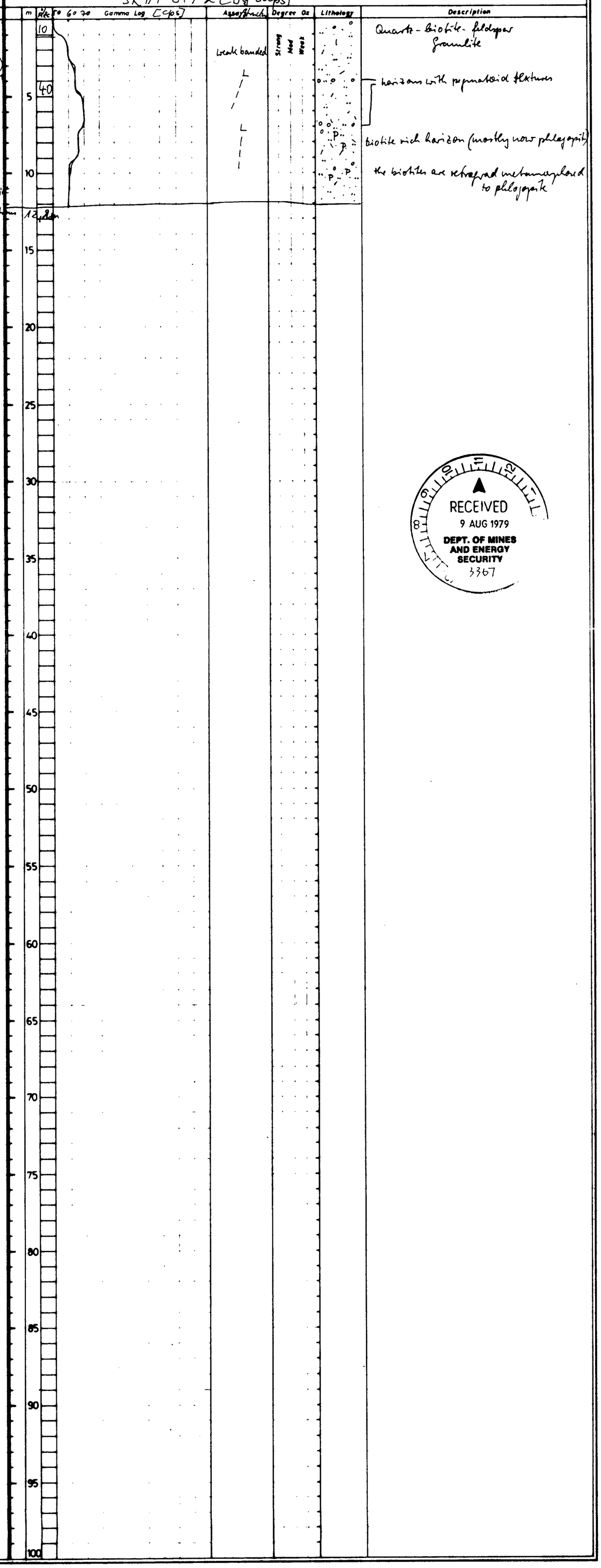
Water sampling results: U_3O_8 (ppb) ___ Va (ppb) ___ TDS (ppm) ___

SRAT SPP2 [6g 50cps]

12 MINES

250-4529





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3367-17

HOLE N°	DH10	CO-ORD	10580 W / 10795E
PROSPECT	Lode No 1	PROJECT	Wild Dog Mine
COMMENCED	12-2-54	COMPLETED	22-2-54
DEPTH	86'8" ≈ 26,3 m	DIP	45°
BEARING	090 / depressed 45°	HOLE TYPE	DDH
LOGGED BY	B. Vels	DATE	4-8-78
COL. ELEVATION		MAP N°	Hundred Nyppanya Sec 78 US-287
WATER TABLE			

Water sampling results: U_3O_8 (ppb) ____ Va (ppb) ____ TDS (ppm) ____

SRAT SPP2 [6 of 50 cps]

HOLE N°	DDH 7	CO-ORD	10 600 W / 10815 E
PROSPECT	Lode No 1	PROJECT	Wild Dog Mine
COMMENCED	23-2-54	COMPLETED	26-2-54
DEPTH	70'1" ≈ 21,3 m	DIP	Vertical 50° 13
BEARING	000	HOLE TYPE	DDH MINES
LOGGED BY	B. Vels	DATE	4-8-78
COL. ELEVATION		MAP N°	Hundred Nyppanya Sec 78
WATER TABLE		PLAN N°	US-287 250-4524

Water sampling results: U_3O_8 (ppb) ____ Va (ppb) ____ TDS (ppm) ____

SRAT SPP2 [6 of 50 cps]

Soil and weathered gneiss
biotite-feldspar gneiss with up to 2 cm thick layers of pure biotite, some coarse pink feldspars (albite) and muscovite rich horizons
weathered biotite-feldspar gneiss, coarse grained, dark biotite dominant to break by hand, talc coated fractures and chlorite spots
at the bottom chlorite spots replacing weathered feldspars
biotite-feldspar-gneiss with weathered feldspars, replaced by greenish chlorite
the high spots are controlled by pale grey-green decomposed feldspars in connection to biotite rich layers "footwall rocks"
some parts are strongly limonitized
the lower part is not layered, the minerals are concentrated in aggregates of biotite i.e. coarse grained feldspar-biotite gneiss
feldspar biotite pegmatoid, pink, coarse grained
feldspar-biotite-gneiss mostly pink feldspars the biotite layering becoming clearer by leaching and weathering the rock is very porous
at the bottom medium grained (more granulitic texture
dense, fine grained feldspar-quartz-biotite gneiss with epidote, many joints
feldspar-biotite-gneiss with pegmatoidic horizons
some pink feldspar rich parts are becoming up to 5 cm, normally these parts are concordant
the biotite are sometimes to coarse metamorph to phlogopite, mainly near joints and faults

C7109P uraninite

C7110P
C7111G 560 ppm U_3O_8
C7113G 240 ppm U_3O_8
C7112P
C7114P
C7115P
C7116G 150 ppm U_3O_8

Soil and weathered rock
fine grained feldspar(albite)-biotite-gneiss with sed. layering (bedding)
some parts with strong feldspar-mineralisation
biotite-feldspar gneiss, mineralised
strongly sheared, biotite rich, brecciated, yellow U-min (sulphur mineral)
feldspar-biotite-gneiss, spotted by soft decomposed, replaced by green-grey chlorite
joints and faults are weakly mineralised (sec yellow U-min)
some biotite showing the beginning of retrograd metamorphism to phlogopite
horizon with large pink feldspars
pegmatoidic horizon with continuous footwall rocks to topper and lower layers
horizons with granulitic texture on shears and joints "footwall rocks" sec U-minerals (sometimes together with limonite)
pegmatoidic horizon

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3367-18

HOLE N°	M D 1	CO-ORD	10.145 N 19.930 E
PROSPECT	Wild Dog, Myponga	PROJECT	8250/418
COMMENCED	6-12-78	COMPLETED	9-12-78
DEPTH	60,2 m	DIP	70°
BEARING	to the South	HOLE TYPE	DDH
LOGGED BY	B. Vels	DATE	12-12-78
COL. ELEVATION		MAP N°	Hundred of Myponga
WATER TABLE			

Water sampling results : U_3O_8 (ppb) ___ Va (ppb) ___ TDS (ppm) ___

HOLE N°		CO-ORD	
PROSPECT		PROJECT	
COMMENCED		COMPLETED	
DEPTH		DIP	
BEARING		HOLE TYPE	
LOGGED BY		DATE	
COL. ELEVATION		MAP N°	14 MINES
WATER TABLE		PLAN N°	250-4551

Water sampling results : U_3O_8 (ppb) ___ Va (ppb) ___ TDS (ppm) ___

SRAT SPP2 Expect bg/40 structures

GAMMA Readings [cps]

Total count	Th	U
320	3	8
460	2	9
560	4	9
640	3	13
320	3	13
400	3	13
400	3	10
320	3	10
360	4	9
300	4	10
300	3	8
400	3	10
300	3	10
380	4	11
370	5	15
370	5	8
300	3	9

m	Lithology	Description
0–5		no core recovery; start
5–10		no foliation; feldspar-quartz-biotite granulite, coarse grained with large biotite spots the biotite are mostly weathered, some quartz-feldspar veins like angens
10–15		metam. foliation; qz-fs-bi gneiss with pegmatoids layers, pink feldspars (k-fs) and quartz augen (rare) and weathered biotite; some parts with biotite spots; many chlorite aggregates (with talc) replacing biotite
15–20		strongly jointed; few faults (with slickensides)
20–25		pegmatoids layers in fine to coarse grained gneiss
25–30		joints with mica staining; no foliation in feldspar rich parts; qz-fs-bi gneiss or granulites, fine to coarse grained partly with biotite spots or larger pink coloured feldspar augen retrograd metam. and biotite to phlogopite, chlorite on joints, some feldspar are replaced by chlorite etc. strongly weathered zone after structural events
30–35		coarse grained qz-fs-granulite (leucogneiss) probably pink k-feldspars interlayered by qz-fs-bi granulites. some parts are yellow (retrograd weathered) metamorphosed feldspars (stained by mica/chlorite etc.)
35–40		banded; foliation; joints; only partly banded; qz-k-fs-bi gneiss; coarse grained qz-fs-granulite (leucogneiss) probably pink k-feldspars interlayered by qz-fs-bi granulites; fine to medium grained qz-fs-bi gneiss with partly granulitic texture very broken zone
40–45		and. str. minerals on joints (chlorite etc.); qz-fs-granulite (leucogneiss) or pegmatoids with interlayered qz-fs-bi gneiss
45–50		no cleavage no met. foliation; medium grained qz-fs-bi granulites with qz-k-fs pegmatoids layers
50–55		weak metam. fol. on joints weathering; qz-fs-bi gneiss with some bands of qz-fs-pegmatoids and pure biotite layers. granulitic texture in some parts
55–60		qz-fs-(bi) pegmatoid, pink k-feldspars; quartz-feldspar-biotite granulite totally weathered: feldspar replaced by kaolin and chlorite; biotite, in some parts more than 70% are retrograd metamorphosed to phlogopite; typical chlorite spotted gneiss "footwall rock"
60–65		large haematite/ilmenite crystalls (5 mm)
65–100		

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3367-19

HOLE Nº	MD 2	CO-ORD	10,115 N / 19,880 E
PROSPECT	Wild Dog, Myponga	PROJECT	8250 418
COMMENCED	13/12/78	COMPLETED	17/12/78
DEPTH	80,5	DIP	70
BEARING	to the South	HOLE TYPE	DDH
LOGGED BY	R. Vels	DATE	19/12/78
COL. ELEVATION		MAP Nº	Hundred of Myponga
WATER TABLE			

Water sampling results: U_3O_8 (ppb) ____ Va (ppb) ____ TDS (ppm) ____

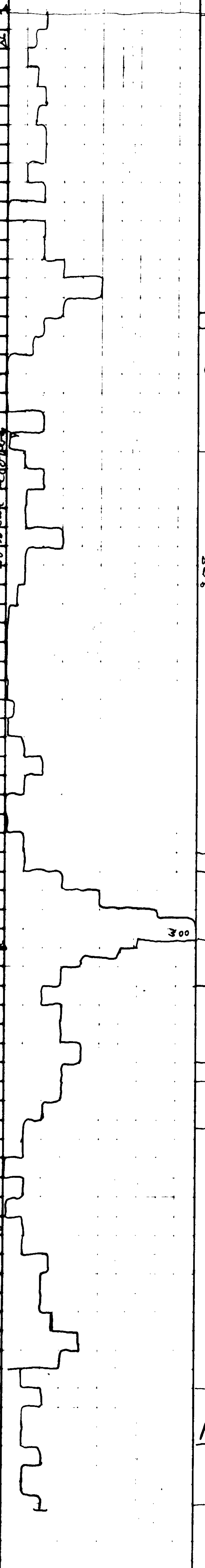
HOLE Nº		CO-ORD	
PROSPECT		PROJECT	
COMMENCED		COMPLETED	
DEPTH		DIP	
BEARING		HOLE TYPE	
LOGGED BY		DATE	
COL. ELEVATION		MAP Nº	15 MINES
WATER TABLE		PLAN Nº	250 - 4552

Water sampling results: U_3O_8 (ppb) ____ Va (ppb) ____ TDS (ppm) ____

Columns: m | % Rec | Gamma Log | Assays | Degree Ox (Strong / Med / Weak) | Lithology | Description

Gamma log scale: 250 · bg 180 · 150

Depth annotations: 2,8 (Start) · H-Q casing · 60 % core recovery · 300 · HQ casing · NQ casing · 100 % · 80,5



Assays / structure notes:
- // well banded
- // strongly jointed (chlorite and limonite on joints)
- faulted and sheared
- / banded
- with chlorite and limonite on joints
- with chlorite and limonite on joints
- // well banded
- chlorite
- // in a 10cm scale folded
- // chlorite
- // joints with chlorite
- with sec. minerals on joints

Description:

qz - fs - biotite gneiss
in banded portions fine to medium grained, here white and black banded
in some spotted parts coarse grained or with chlorite - biotite spots

some k-fs - qz pegmatoids crosscutting the banding, or parallel to the metamorphic layers

pegmatoidic interlayers

qz - fs - granulite (leucogneiss)

fs - qz - chlorite / biotite gneiss
weak banded, with chlorite - biotite spots
very talceous
no little core only rock chips → jointed and faulted

fs - qz - chlorite / biotite gneiss,
medium to coarse grained
fine layered, in 10 cm scale folded
some parts are green / black and white spotted and other parts are regular banded
leucogneiss interlayer
chlorite and phlogopite retrograd metamorphosed
some parts are coarse grained (fs - qz) with biotite spots

fs - qz - chlorite / biotite gneiss
no „footwall rock"

qz - fs - granulite (leucogneiss) interlayer

qz - fs - granulite (leucogneiss)

fine grained qz - bi - fs - gneiss
some pink fs - layers
some retrograd weathered (metamorphosed) biotite

qz - fs - granulite (leucogneiss)
with qz - fs - biotite interlayers

fine grained qz - bi - fs gneiss
sometimes with granulitic texture
and cut by pink k - fs pegmatoids with biotite spots
bi retrograd metam. to phlogopite + chlorite

almost pure biotite, to qz - fs - bi - gneiss

qz fs - granulite (leucogneiss)
with some biotite interlayers

fs - qz - biotite gneiss, medium grained
with pegmatoidic interlayers
biotite partly replaced by chlorite

quartz - k - fs - pegmatite (pegmatoids)
only 10 cm to, crosscutting the gneissosity

qz - fs - granulite (leucogneiss)
with some pink k - fs
and some biotite - chlorite spots

qz - fs - bi gneiss, fine grained
on top some pink feldspar interlayers

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3367-20

HOLE N°	MD 3	CO-ORD	10.075 N / 19.845 E
PROSPECT	Wild Dog, Myponga	PROJECT	8250/418
COMMENCED	9-12-78	COMPLETED	21-12-78
DEPTH	60.25m	DIP	70°
BEARING	to the South	HOLE TYPE	DDH
LOGGED BY	B. Vels	DATE	21-12-78
COL. ELEVATION		MAP N°	Hundred of Myponga
WATER TABLE			

Water sampling results : U_3O_8 (ppb) ____ Va (ppb) ____ TDS (ppm) ____

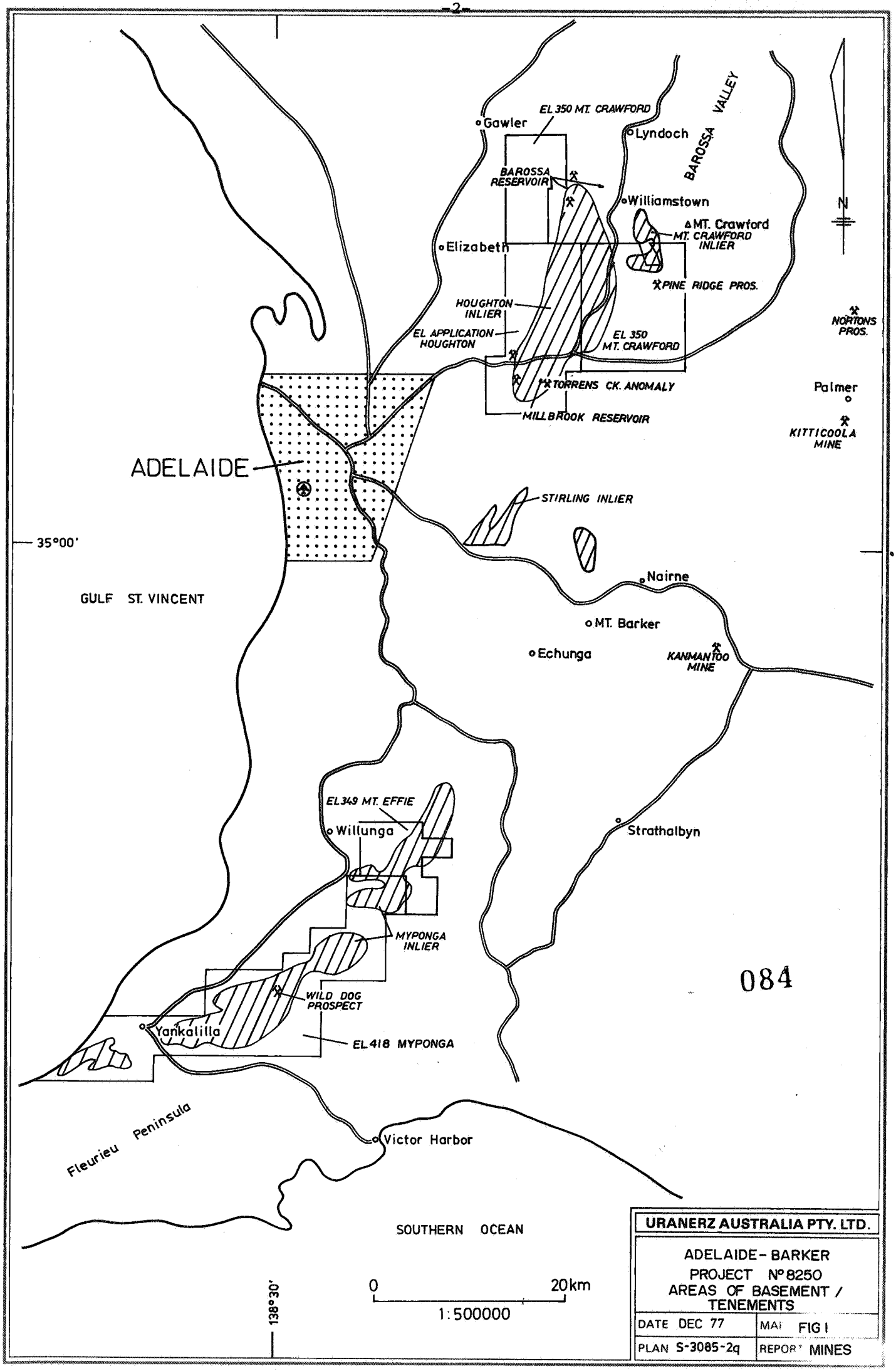
HOLE N°		CO-ORD	
PROSPECT		PROJECT	
COMMENCED		COMPLETED	
DEPTH		DIP	
BEARING		HOLE TYPE	
LOGGED BY		DATE	
COL. ELEVATION		MAP N°	16 MINES
WATER TABLE		PLAN N°	250 - 4553

Water sampling results : U_3O_8 (ppb) ____ Va (ppb) ____ TDS (ppm) ____

SRATSPP2 bg 180-200cps

m	Rec %	Gamma 360g	Assay	Degree Ox	Lithology	Description
0		GAMI TC: 3200 SU:6 SU:5 SU:4 SU:6 2.900 1.800 800 350 280	sheared and brecciated	Usec (oxidized in breccia)		quartz-albite (pink feldspar) granulite with biotite spots albitite
5			jointed			quartz-feldspar-(k-fp) granulite (leucogneiss) with gneiss interlayers (3,90 - 4,30m)
			sheared			fine grained well banded (black-pink) qz-bi-fp gneiss (with k-fp (pink) and white feldspars) in some part a fp-granulite (pink) with spotted by biotite aggregates albite? some green min veins too!
10						qz-k-fp-granulite (leucogneiss) with biotite spots fine grained well banded (black-pink) qz-bi-fp-gneiss (with k-fp) and pegmatoid cutting the layering
		300 350				coarse grained quartz-k-fp-granulite (leucogneiss)
15						qz-fp-bi gneiss well banded coarse grained qz-kfp-granulite (leucogneiss)
20			good core no fault or joints			well banded, fine to medium grained black and white layered qz-fp-bi gneiss with some pink fp (k-fp?) spots or even some fp-layers chlorite quite common some parts fine grained with granulite texture
25		GAMI TC: 450 SU:9 SU:4 SU:6 SU:2 450				fine to grained qz-biotite-felspar gneiss with strongly metamorphic foliation in every directions some fp-rich parts with coarse grained crystalls with green chlorite as sec. (retrograde) mineral
30						well banded, fine to medium grained black and white layered qz-fp-bi gneiss with pink k-fp-crystalls (coarse grained) in some spots or in selected layers chlorite quite common
35						qz-k-fp-granulite (leucogneiss)
						qz-fp-bi gneiss, fine layered well banded fine to medium grained with chlorite and pleochroitic as retrograd metamorphic minerals Hematite-Ilmenite
40						
45			strongly jointed			qz-fp-bi gneiss, strongly weathered most of the fp and biotites are weathered, some are replaced by the minerals (chlorite, pleochroitic etc) "footwall rock"
50			chlorite actinolite on joints			some pink feldspars still to be seen qz-fp-biotite gneiss, k-fp (pink) as spots actinolite as layer in the rocks or as stain on joints to the depth more k-fp-(pink) layers in the gneiss
55						chlorite hematite nests and chlorite spots footwall?
60						
60.25m						
65						
70						
75						
80						
85						
90						
95						
100						

m	Rec %	Gamma Log	Assays	Degree Ox	Lithology	Description
				Strong Mod Weak		



084

URANERZ AUSTRALIA PTY. LTD.	
ADELAIDE - BARKER PROJECT N° 8250 AREAS OF BASEMENT / TENEMENTS	
DATE DEC 77	MAP FIG 1
PLAN S-3085-2q	REPORT MINES

4. INVESTIGATIONS AND RESULTS

085

4.1 Geological Mapping

This mapping programme was initiated to supplement the limited knowledge available and to delineate prospective horizons where further efforts could be concentrated. About 270 km^2 were mapped using 1:10,000 aerial photo enlargements.

The Lower Proterozoic metasediments and the unconformably overlying Adelaidean and Cambrian sequences, are folded into a tight regional anticlinorium, overturned and thrust-faulted to the west. Flat-lying unconsolidated Permian fluvio-glacials, Tertiary sands and gravels, and Quaternary alluvium/colluvium blanket the older rocks. The basement was subdivided into a thick lower sequence of granitic gneiss and granulite, a transition zone of high sodic feldspathic gneiss and albitite (including the Houghton Diorite) that grades upward into a thin sequence of crenulated quartz-feldspar augen chlorite schist. These share a faulted or unconformable contact with the Adelaidean Burra Group. Quartz-feldspar leucogneiss is common throughout the gneissic units. Remobilization of granitic material has formed biotite-quartz-potash feldspar pegmatoids at all levels and discordant amphibolites (dolerite dykes) transect the basement.

4.2 Footborne Scintillometry

A SRAT SPP-2 scintillometer was used to monitor radioactivity during the course of geological mapping. Several anomalies were located and sampled.

4.3 Wild Dog Prospect

4.3.1 Gridding

A levelled grid 1000 x 500m oriented east-west and pegged at 40m centres (total 10 line-km) was surveyed to provide control for detailed work. This survey was contracted to Peter Trowbridge Pty. Ltd. of Dulwich.

4.3.2 Detailed Geological Mapping

Detailed mapping over the grid recognized a series of metasediments trending northwest and dipping northeast (Map 2). The main lithologies consist of sillimanite-biotite-quartz-feldspar gneiss, quartz-alkali feldspar leucogneiss and magnetite-epidote-actinolite albitite. Discordant lenses of biotite-quartz-feldspar pegmatoids and hornblende amphibolite (metadolerite dykes) transect the sequence.

Metamorphic foliation usually parallels the cleavage, but does not always conform with bedding. Structural mapping north of the No. 1 Lode suggests a northwest-plunging anticlinal structure. However, the fact that the Houghton Diorite is not involved in this tends to suggest that a fault separates the diorite from the western limb of a postulated anticline. The north-dipping planar shear zone hosting the mineralization seems to post-date the folding episode and the metamorphic growth of the silicate minerals.

A near-vertical fracture or shear between No. 1 and No. 2 Lodes may have some bearing on the distribution of mineralization.

4.3.3 Footborne Scintillometry

Footborne scintillometry was carried out over the grid with readings at 10m intervals. This work delineated a more prospective zone in the northwest quadrant (Map 3). An additional survey along north-south lines was carried out in this area. A description of the anomalies encountered is given in Table 1.

4.3.4 Diamond Drill Core Logging

Previous work by the South Australian Mines Department had involved 22 diamond drillholes totalling 809m. The core from this drilling was geologically and radiometrically re-logged at the Mines Department Core Library in order to

establish a mine stratigraphy and define factors that controlled mineralization. The mineralized structures consist of multiple sub-parallel shear zones that dip to the north and transgress the gneissic foliation. Drillhole logs are shown on Maps 3-13.

4.3.4.1 Petrography

Sixteen samples were taken from the core to aid in logging and the identification of radioactive phases. These samples were submitted to I. Pontifex & Associates of Rose Park and their report is attached as Appendix 1. Several samples contained oxidized pitchblende and uraninite.

4.3.4.2 Geochemistry

Sixteen core samples collected from radiometric highs related to zones of shearing, were assayed for uranium, thorium and yttrium by AMDEL of Frewville. The results are listed in Table 2. The highest assays were 5200 ppm U_3O_8, 620 ppm Th O_2 and 240 ppm Y.

4.3.5 Diamond Drilling

Three diamond drillholes were designed to test possible extensions of the mineralization along the north-dipping shear known from the Wild Dog pit and to check the probability of additional mineralized bodies. The holes were sited 50m apart along a track near the bottom of the valley, directly down-dip of the known mineralization. MD2, in a direct line from No. 1 Lode, went to 80.5m while MD1 and MD3, west and east respectively of MD2, were both 60.25m deep (Map1). The positioning of the holes was negatively influenced by the decision of the Mines Department which prohibited any drilling outside the existing tracks. The contractor was Boring Enterprises of Hahndorf. Core recovery was 100% using both NQ and HQ sizes. The holes were logged using a Mt. Sopris 1000 logger. Radiometric anomalies were discovered in all three holes and are summarized in Table 3. Drillhole logs are shown on Maps 14-16.

4.3.6 Stream Sediment Survey

An orientation stream sediment survey was carried out over an area containing the known mineralization.

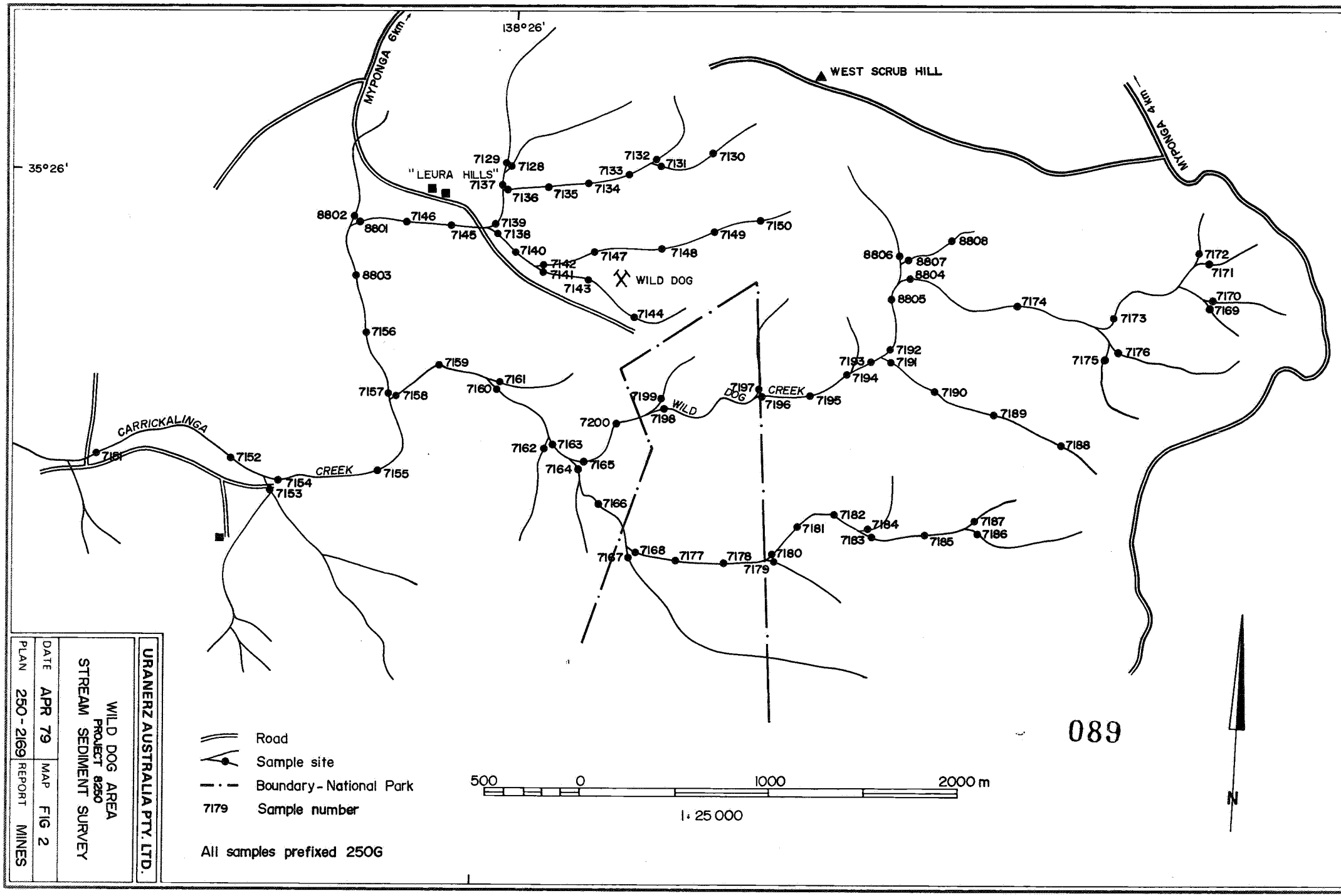
A total of 81 two-kilogram stream sediment samples were collected at an interval of 200 m near the mine and 400 m distant from the mine. The distance between samples was designed to test the dispersion of uranium and optimize the sampling density. Unfortunately, all streams were flowing, so that samples had to be dried before treatment.

The samples were sent to AMDEL where they were split into the -80, -60+80, -40+60, -20+40 mesh size fractions to test which fraction gave the best contrast for uranium. Each fraction was analyzed for uranium, thorium, yttrium, molybdenum (XRF), copper, lead, zinc, cobalt, nickel, iron manganese (AAS) and phosphorus (spectrophotometry). The results are given in Appendix 2 and the sample locations and geochemical plots in Figures 2-7.

results not included ?

4.4 Sampling

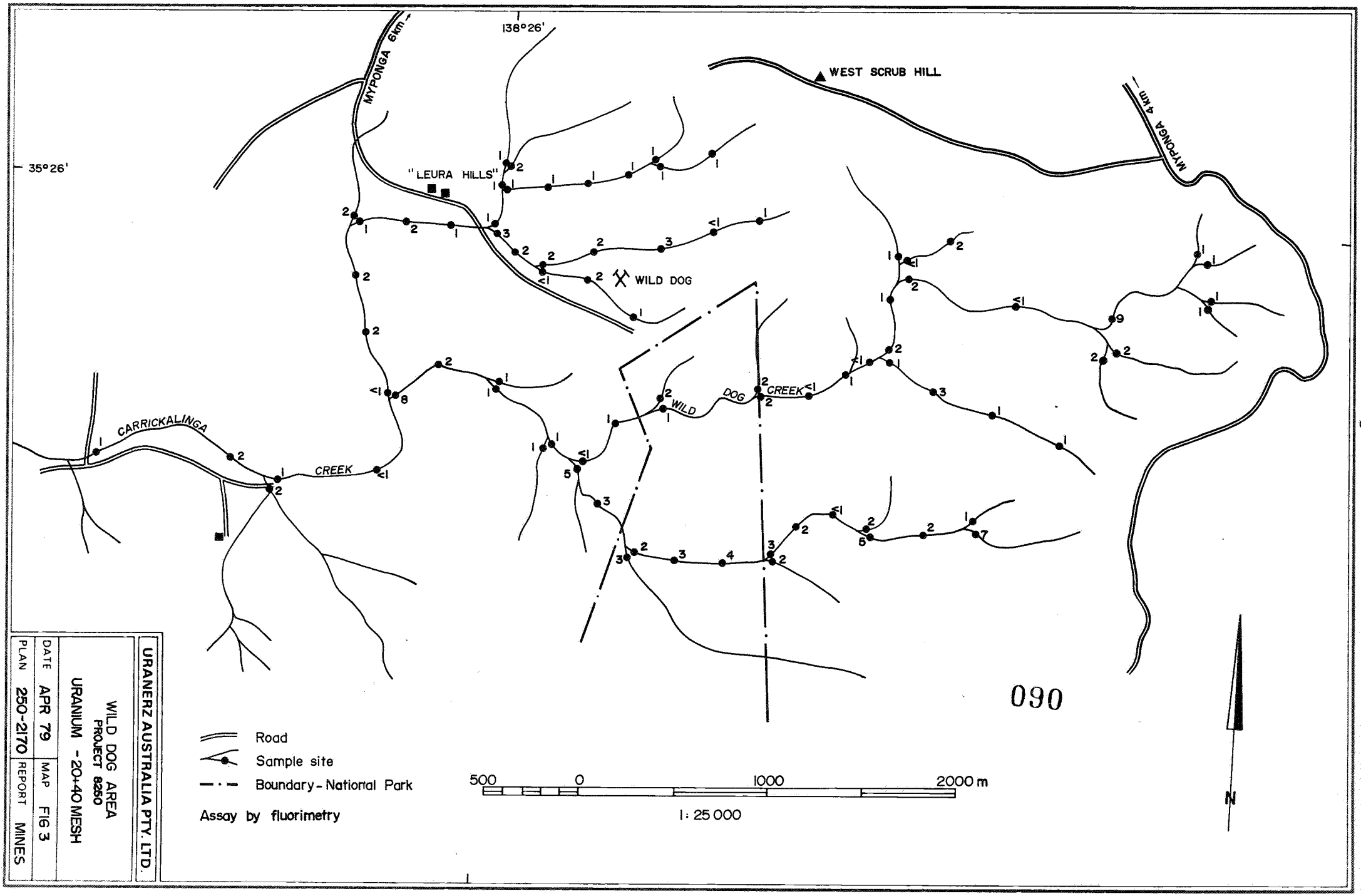
During the initial stages of mapping around Yankalilla Hill, a number of scintillometric anomalies were encountered. Only one anomaly proved to be due to uranium. Three samples from this rock (a molybdenite biotite-oligoclase albitite from Yankalilla River) ranged in uranium content from 580 - 270 ppm. The remaining samples contained anomalous thorium content to a maximum of 1.31%. Yttrium was compatible with thorium.

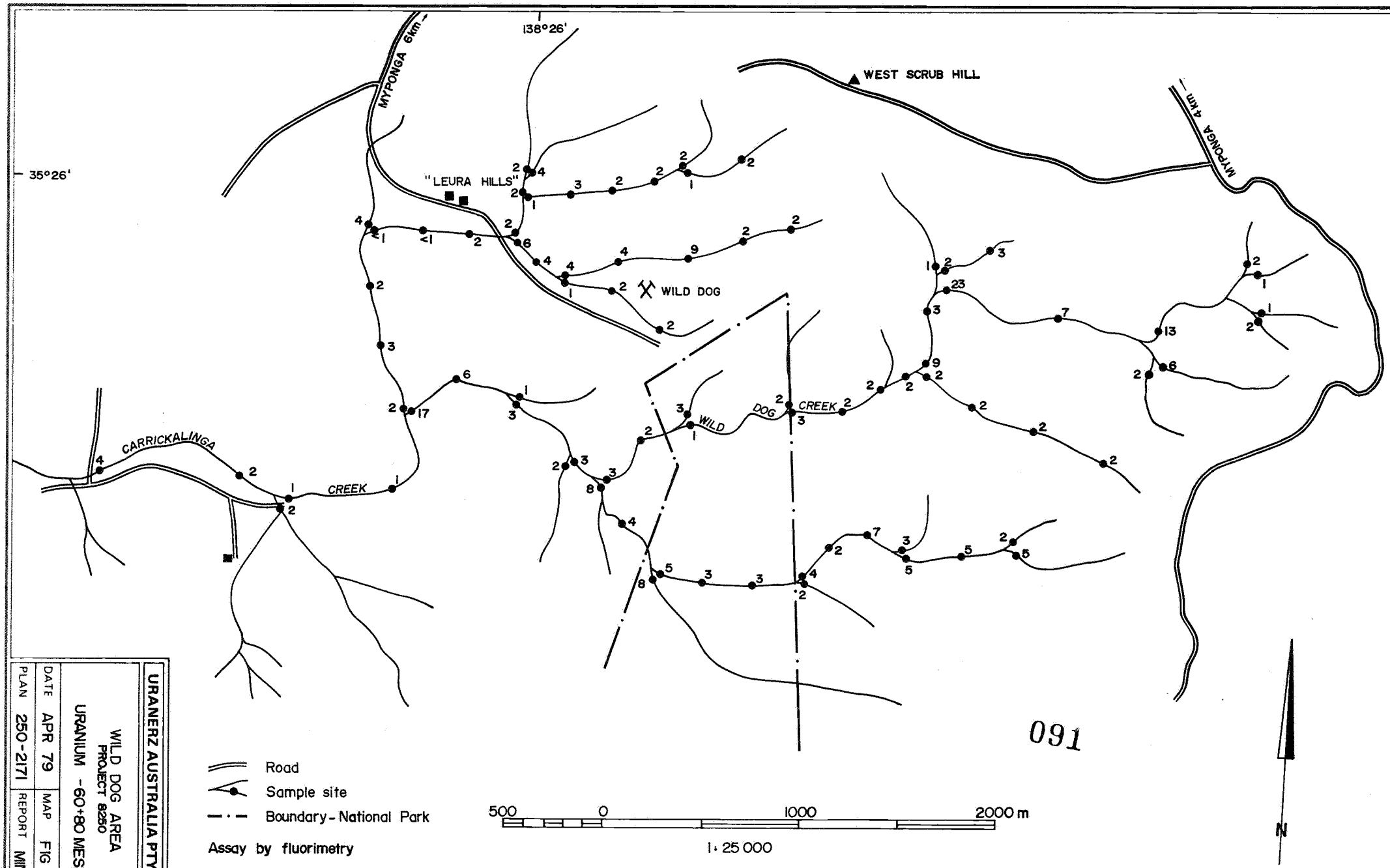


URANERZ AUSTRALIA PTY. LTD.

WILD DOG AREA
PROJECT 8250
STREAM SEDIMENT SURVEY

DATE	APR 79
MAP	FIG 2
PLAN	250-2169
REPORT	MINES


138°26'
35°26'
MYPONGA 6km
MYPONGA 4km
WEST SCRUB HILL
"LEURA HILLS"
WILD DOG
WILD DOG CREEK
CARRICKALINGA CREEK
090
Road
Sample site
Boundary - National Park
Assay by fluorimetry
500 0 1000 2000 m
1:25 000
N
URANERZ AUSTRALIA PTY. LTD.
WILD DOG AREA
PROJECT 8250
URANIUM - 20+40 MESH
DATE APR 79
MAP FIG 3
PLAN 250-2170
REPORT MINES

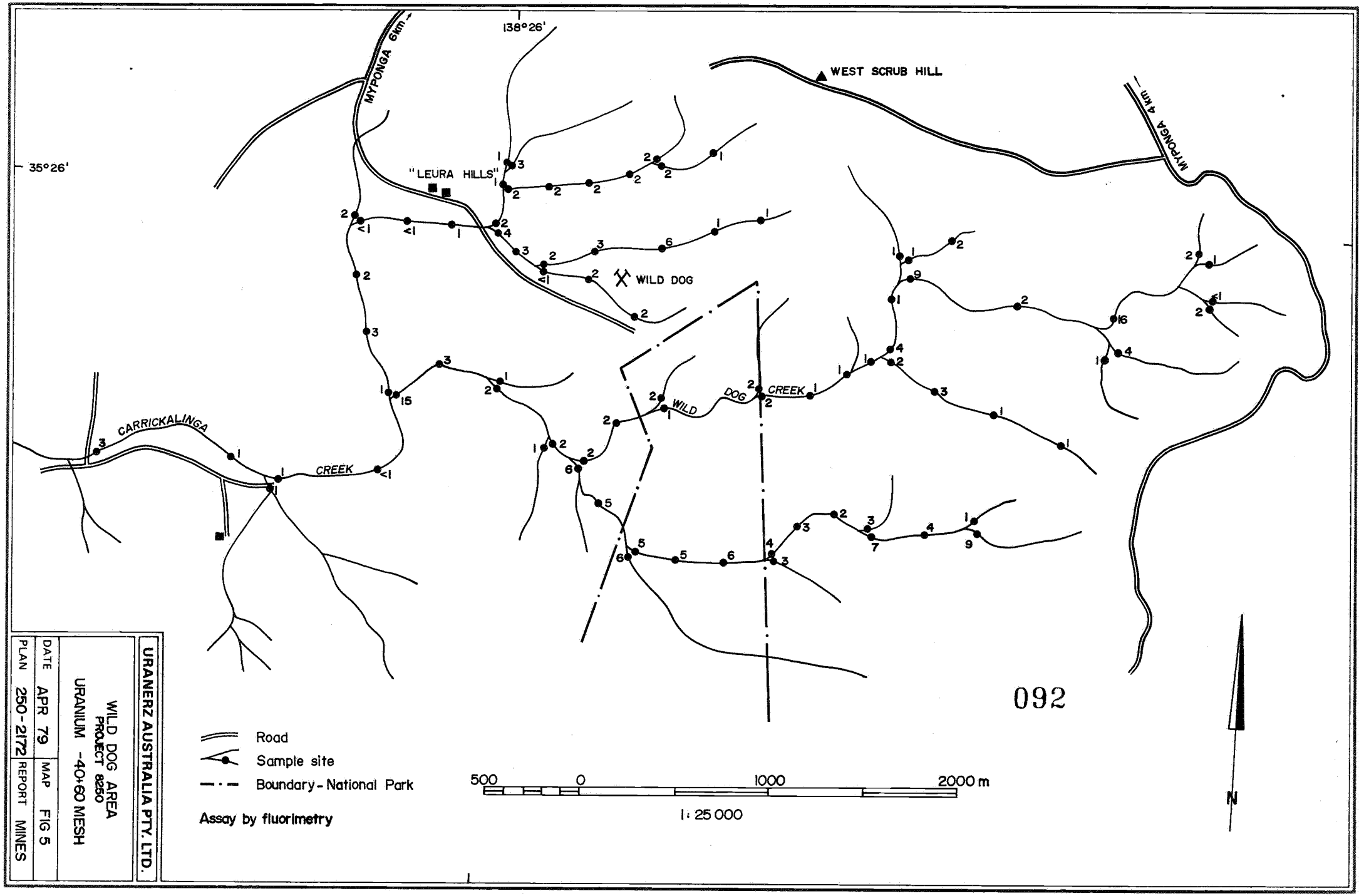


URANERZ AUSTRALIA PTY. LTD.

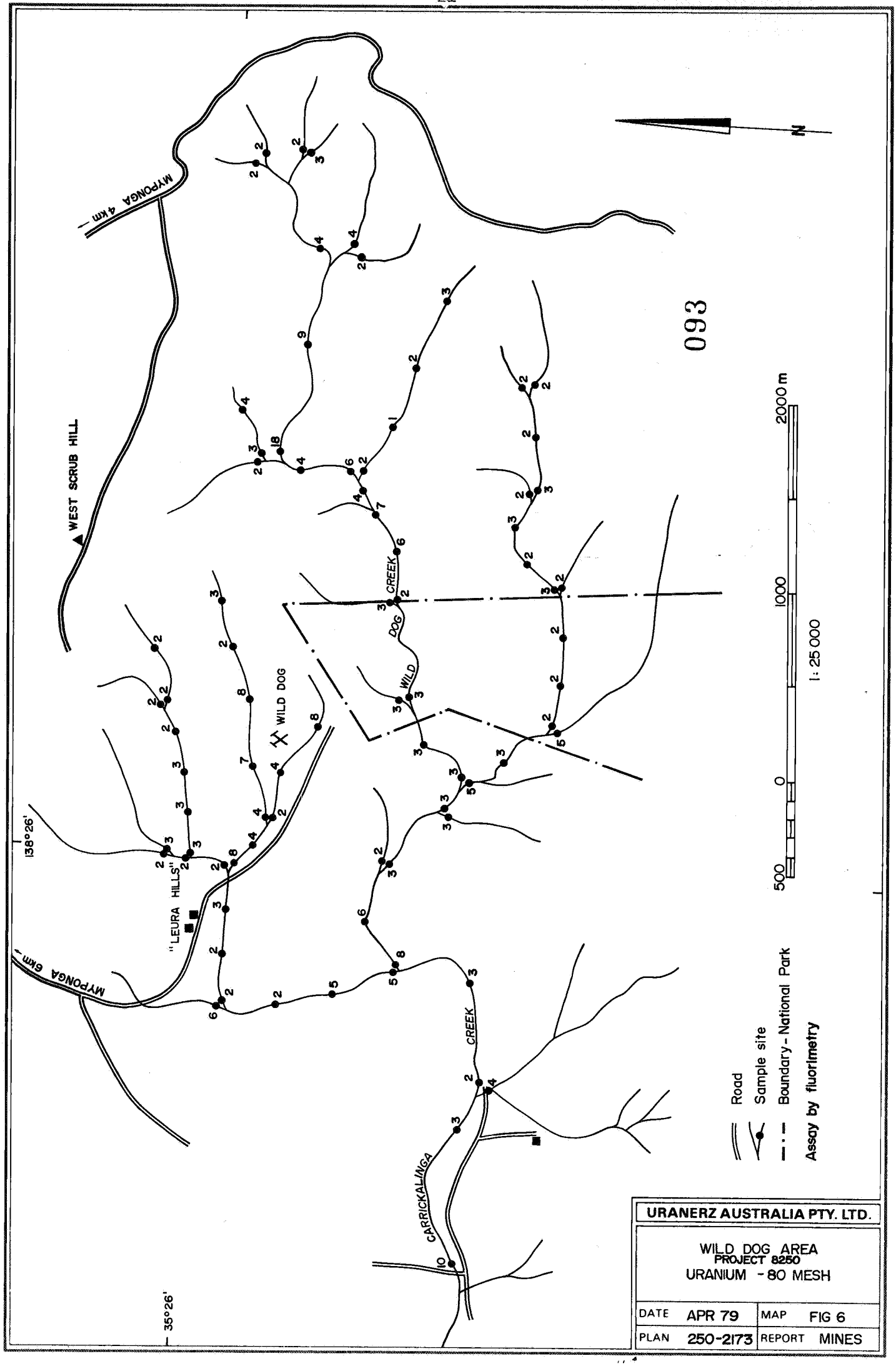
WILD DOG AREA
PROJECT 8250
URANIUM -60+80 MESH

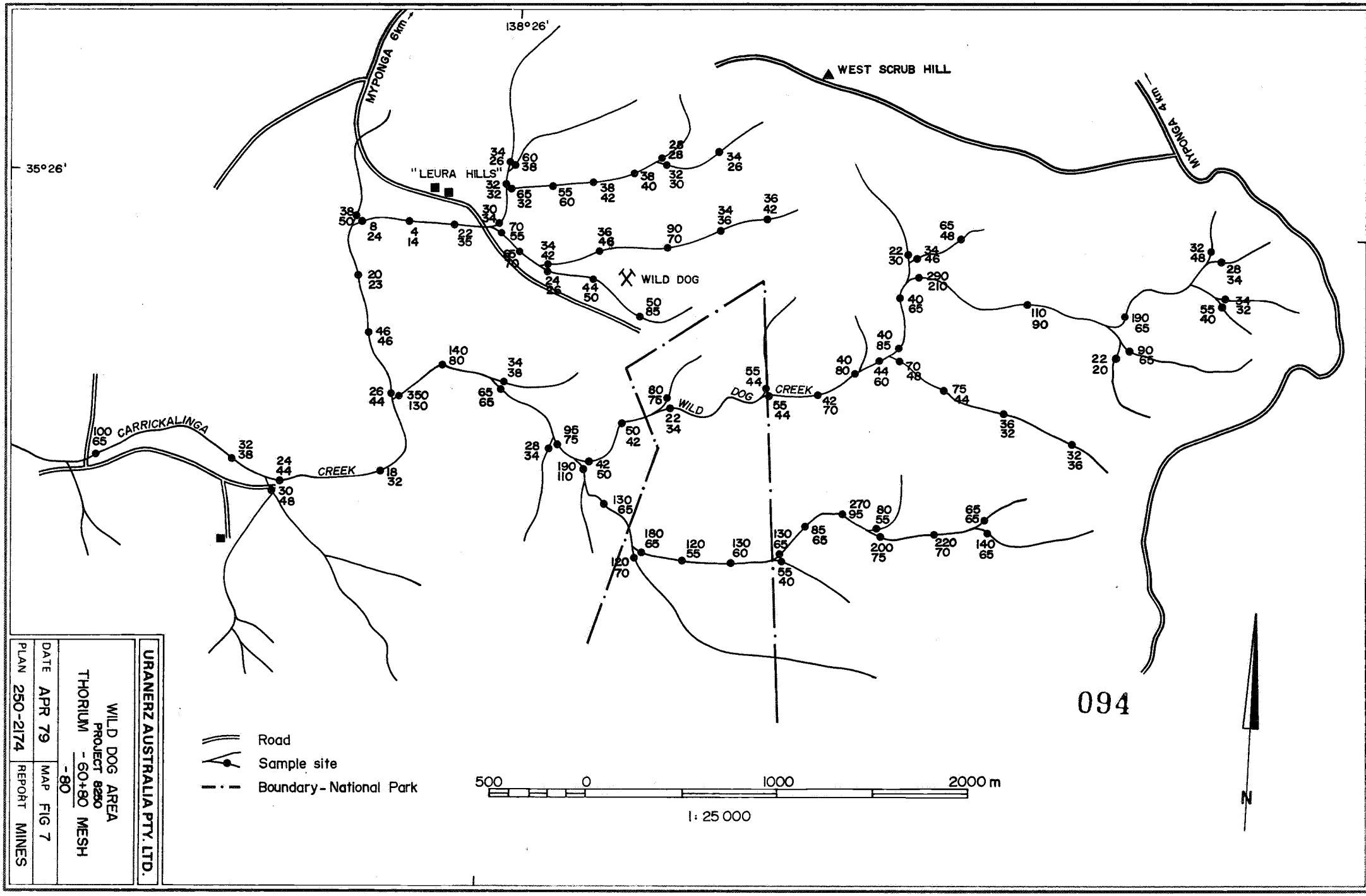
PLAN	DATE	MAP
250-2171	APR 79	FIG 4

REPORT MINES



URANERZ AUSTRALIA PTY. LTD.	WILD DOG AREA PROJECT 8250 URANIUM -40+60 MESH	DATE APR 79	MAP FIG 5
		PLAN 250-2172	REPORT MINES


MYPONGA 4 km
WEST SCRUB HILL
WILD DOG
WILD DOG CREEK
"LEURA HILLS"
MYPONGA 6km
CARRICKALINGA CREEK
138°26'
35°26'
093
N
2000 m
1000
0
500
1: 25 000
Road
Sample site
Boundary - National Park
Assay by fluorimetry
URANERZ AUSTRALIA PTY. LTD.
WILD DOG AREA
PROJECT 8250
URANIUM - 80 MESH
DATE APR 79
MAP FIG 6
PLAN 250-2173
REPORT MINES



URANERZ AUSTRALIA PTY. LTD.	
WILD DOG AREA PROJECT 8250 THORIUM -60+80 MESH -80	
DATE APR 79	MAP FIG 7
PLAN 250-2174	REPORT MINES

095

5. FUTURE PROGRAMME

No further work will be carried out on the tenement. On 7 May 1979 UAL relinquished EL 418.

6. STATEMENT OF EXPENDITURE:

Salaries and Wages	29,989.13
Drilling Contractor	12,457.68
Field operating costs including consumables, rents, vehicle operating and repairs, air-fares, freight, etc.	29,188.58
Depreciation of vehicles and geophysical instruments, consultants fees, management and distribution of Head Office costs	9,312.60
	$80,947.99

7. OTHER DETAILS

7.1 Personnel

The following personnel were involved in work on EL 418:

Geologist-in-Charge : R.B. Kitch
Geologist : B. Vels
Geologist : J. Jordan
Field Assistant : A. Poulsen

7.2 Instruments

2 SRAT SPP-2 scintillometers
1 Mt. Sopris 1000C portable gamma ray logger

7.3 Vehicles and Equipment

2 Toyota Landcruisers
1 caravan
1 Honda 175 XL motorcycle

TABLE 1 : Details of Scintillometric Anomalies over the Wild Dog Prospect

Note: East-west trending anomalism is probably associated with fault structures, while north-south and northwest-southeast trends would be lithological in origin.

ANOMALY I

Co-Ordinates: 9.77-9.72/19.68-19.74 (not closed off to the south).

Background: 100 cps.

Values: Surface values of 200-250 cps over at least 250m^2 up to 450 cps in shallow hole.

Remarks: Pebbles of biotite-quartz feldspar leucogneiss were reported on the surface, but the anomaly is due probably to the quartz-feldspar pegmatoidal veinlets which underlie this surficial material.

ANOMALY II

Co-Ordinates: 9.76-9.78/19.87 to 9.75-9.77/20.02.

Background: 100-140 cps.

Values: Anomaly 160-300 on surface, up to 400 in a shallow hole. Elongate anomaly of 1200m^2.

Remarks: This anomaly has not been followed up. There is a weak spatial association with Anomaly I in an east-west (fault-controlled) direction.

ANOMALY III

Co-Ordinates: 9.84/19.72.

Background: 50-100 cps.

Values: 200 cps on the surface, up to 360 cps in a shallow hole.

Remarks: Strong anomaly of small dimensions, yet to be followed up. Possible north-south trending association with Anomalies I and IV.

Table 1 (Cont'd.)

ANOMALY IV

Co-Ordinates: 9.95/19.68 to 9.93/19.72

Background: 50-100 cps.

Values: 140-400 cps on surface and up to 500 cps in shallow holes.

Remarks: A narrow, well-defined anomaly in a northwest-southeast trend, yet to be followed up.

ANOMALY V

Co-Ordinates: 9.95-10.03/19.52
9.95-10.00/19.56
8.87 & 9.90/19.52
9.88 - 9.91/19.56
9.88 - 9.91/19.56

Background: 50 cps south of the anomalies up to 100 cps northwards.

Values: 150-250 on surface.

Remarks: An area of low level anomalism, due probably to a series of small biotite-quartz-feldspar pegmatoidal rocks within a leucogneiss of similar composition. Selected outcrops read up to 700 cps, which is very common for this lithology Source of radioactivity is probably thorium.

ANOMALY VI

Co-Ordinates: 9.99/19.80 to 9.97-10.02/20.00

Background: 100-150 cps in south.

Values: 200-2000 cps on surface.

Remarks: An elongate east-west trending anomaly extending west of and including No. 1 Lode. The surface values do not increase appreciably in a shallow hole. In fact, the value often decreases, suggesting some form of surficial contamination down-slope of the mine. The anomaly obviously requires detailed infill work.

Table 1 (Cont'd.)

ANOMALY VII 099

Co-Ordinates: 10.07/19.76 to 10.04-10.07/19.88

Background: 100-150 cps south of anomaly.

Values: 400 cps to 1700 cps on surface.

Remarks: A narrow, elongate, east-west trending anomaly extending west of and including No. 2 Lode. The anomaly strongly warrants detailed infill traversing.

ANOMALIES VIII & IX

Co-Ordinates: VIII - 10.10-10.12/19.64 to 10.14/19.80
IX - 10.16/19.68 to 10.18/19.80

Background: 150-200 cps.

Values: 200-300 cps on surface up to 1400 cps in small holes.

Remarks: Two narrow parallel anomalies trending east-west and 40m apart. Follow-up of part of Anomaly VIII gave Gam-1 values up to 600 cps with 9 cps on the thorium channel and 100 cps on the uranium channel. Obviously a uranium source. Outcrop was reported to be biotite-quartz-feldspar gneiss with bands of coarse-grained feldspar.

A brief follow-up of Anomaly IX indicated a thorium source within quartz-feldspar-biotite gneiss.

ANOMALY X

Co-Ordinates: 10.24-10.32/19.84

Background: 150 cps.

Values: 2000 cps in shallow pit.

Remarks: A pronounced north-south elongated anomaly which extends for 80m but has no east-west component. Follow-up revealed a coarse-grained leucogneiss within soil. The Gam-1 spectrometer gave a total count maximum of 2600 cps with 100 cps on the integral uranium channel and 50 cps on the integral thorium channel, suggesting that the instrument was not well calibrated, but indicating a thorium source.

Table 1 (Cont'd.)

100

ANOMALY XI

Co-Ordinates: 10.23/19.60
10.28/19.64

Background: 150 cps.

Values: 650-1400 cps.

Remarks: Two close-spaced anomalies of limited extent, both emanating from soil containing weathered biotite-quartz-feldspar gneiss. The anomalies proved to be due to a thorium source using the Gam-1.

During mapping of the grid area, several spot highs were also found. Most of these were rapidly discounted as thorium anomalies.

Only one high appears to have a uranium source.

ANOMALY XII

Co-Ordinates: 10.07/19.94

Background: 100-150 cps.

Values: 1250 cps maximum.
Gam - integral U:34, Th:3.

Remarks: Possible extension of VII in potash-feldspar-biotite gneiss.

Table 2 : Details of Wild Dog Core Samples taken from SADME Core Library

DDH No.	Depth (m)	Results in ppm			Lithology
		U_3O_8	Th O_2	Y	
5	4.9	95	38	18	Biotite-fspar gneiss
6	11.6	140	620	240	Biotite-fspar granulite
6	14.6	24	32	40	" " "
7	4.6	560	42	60	Biotite-fspar gneiss, 2^o U
7	8.8	240	44	26	" " "
7	11.0	150	32	14	" " "
12	2.1	44	16	38	" " "
12	11.9	130	28	20	" " "
13	5.6	1050	30	38	" " " with chlorite
20	5.2	5200	16	140	Mylonitic zone with talc & 2^o U
20	7.6	36	46	18	Biotite-fspar gneiss
20	4.0	3200	110	200	Sheared talc-biotite gneiss with chlorite, 2^o U
20	4.3	1250	95	130	Biotite-fspar gneiss & chl.
20	4.6	380	34	55	" " " " "
20	5.8	560	65	65	" " " " "
5	3.0	130	75	24	Biotite-fspar gneiss

Assays by AMDEL using XRF

Table 3 : Details of Diamond Drilling at Wild Dog Prospect

Drillhole No.	Depth (m)	Azimuth	Inclination	Radiometric Anomalies				Lithology
				From (m)	To (m)	Width (m)	eU_3O_8 ppm	
MD 1	60.25	140°	70°	29.5	30.9	1.4		Breccia zone, biotite gneiss
MD 2	80.50	140°	70°	13.0	16.5	3.5	192	Pegmatoid in biotite gneiss
				46.5	47.5	1.0	165	Breccia zone in biotite gneiss
MD 3	60.25	140°	70°	1.10	4.00	2.9	904	Brecciated albitite
TOTAL	201.00							

APPENDIX 1

Mineralogical Report No. 2464

by

Pontifex & Associates Pty. Ltd.

Pontifex & Associates Pty. Ltd.

012

TEL. 332 6744
A.H. 31 3816

26 KENSINGTON ROAD, ROSE PARK
SOUTH AUSTRALIA

P.O. BOX 91, NORWOOD
SOUTH AUSTRALIA 5067

MINERALOGICAL REPORT NO. 2464

27th September, 1978

TO: Mr. R. Kitch,
Uranerz Australia Pty. Ltd.,
P.O. Box 17,
PARKHOLME, S.A. 5043

COPY TO: The Chief Geologist,
Uranerz Australia Pty. Ltd.,
P.O. Box 201,
SUBIACO, W.A. 6008

YOUR REFERENCE: Order No. 5014

MATERIAL: Drill core samples (16)

IDENTIFICATION: 250 C7101 to C7132
(not consecutive)

WORK REQUESTED: Petrographic Description

SAMPLES & SECTIONS: Returned to you with this report

PONTIFEX & ASSOCIATES PTY. LTD.

COMMENTS

This suite was petrographically examined in some detail to answer questions on composition and mode of occurrence of uranium minerals, nature and genesis of host rocks and possible relationship of this genesis to uranium mineralisation. Trace to accessory opaques occur in many samples, but only 2 polished sections were examined at this stage.

The following is a summary of the investigation, and selected photomicrographs of the uranium mineralisation are appended.

ROCK TYPES

All samples consist predominantly of fairly coarse plagioclase and biotite, with lesser sericitised k-spar and rare quartz also forming part of the essential rock fabric. Various, much finer alteration phases and accessory minerals occur sporadically in minor abundance.

The plagioclase (and sericitised k-spar) generally form a more or less granuloblastic (locally polygonal), variable to xenoblastic granular aggregate; the biotite may be fairly random and more or less intergranular tending toward similar alignment. Rocks with this texture are called 'granulites', without necessarily implying granulite facies metamorphism.

In rocks where a layering is evident, and/or in which biotite is commonly aligned to produce a foliation, combined with the granulose fabric (which may also be elongated), the rock name 'gneiss' is used.

There appears to be no textural basis which alone may be used to isolate rock groups within the suite. On a compositional basis however, at least two major groups may be isolated.

Group 1

Samples C7101, 7102, and 7132 consist largely of essential plagioclase (of sodic oligoclase possibly to albite composition, i.e. about Ab_{90}). These three samples also contain essential biotite (as in group 2), but this biotite is greenish-khaki (rather than distinctly brownish) and is free of rutile inclusions (which are abundant in group2). Also fine specularite is dispersed through the biotite, accessory ilmenite and/or oxidised magnetite is scattered. Minor quartz may form part of the essential aggregate.

There is no positive evidence of primary uranium oxide phases, however accessory zircon (possibly including the uranium species cyrtolite), and/or possible thorite; also relict radioactive haloes and apatite are disseminated, at least in 7101.

Group 2

The remaining rocks in the suite appear to represent the one essential group, but with some variants within it. This is characterised by essential granuloblastic to near-polygonal plagioclase mosaic (Ab_{90}), and minor to subordinate brown biotite crowded with minute rutile needles (sagenitic rutile). The plagioclase is generally unstressed. Quartz is absent from the essential fabric.

Minor potash felspar (10 - 25%) formed part of the original aggregate but this is always, completely and selectively, pseudomorphically replaced by fine muscovite/sericite. Patches of microcrystalline quartz crowded with fine biotite has the same mode of occurrence, as this altered k-spar.

These may also replace former k-spar, but there are no relict textures to prove this.

Both types of alteration represented in these patches appear to have taken place after, or in the latter stages of formation of the essential rock aggregate, since the fine alteration minerals penetrate fissures and cleavages in otherwise unaltered, adjacent plagioclase.

Variants in this group are 7105 and 7106. These are quite pink in hand specimen, and contain a generally higher relative abundance of plagioclase than in other samples.

Variations in the fine crystalline alteration phases noted above, are that samples 7109, 7112, 7114, 7115, 7124, contain the selectively sericitised k-spar. In 7110, 7118, 7121, 7122, 7126 and 7128, the alteration patches of this type consist of the microcrystalline quartz + fine biotite, and this latter sub-group also tends to be more foliated (gneissic) rather than granulose.

CONSIDERATION OF GENESIS of these rocks needs to account (amongst other factors), for the abnormally high concentration of albitic plagioclase, and paucity of quartz; and to a lesser extent, the anomalously abundant titaniferous and uraniferous accessory phases (see below).

In igneous terms, group 1, which contain about 10% quartz ?may represent a metamorphically reconstituted granodioritic facies, or group 1 may be a metasediment only partly influenced by plagioclase enrichment which dominates group 2.

The formation of group 2 rocks almost certainly involved enrichment in soda, manifest in abundant, new albitic plagioclase. This probably occurred by a process of pervasive metasomatic replacement of a former rock of unknown composition, but at the expense of former more calcic-plagioclase and of former quartz. Enrichment in titanium and uranium, accompanied the influx of soda.

A far less likely alternative, is that group 2 rocks may be a primary, igneous albitite-type facies, metamorphically reconstituted in an essentially closed system. Minor titaniferous phases are highly characteristic of albitites, however the abundant biotite through the rocks is not consistent with such a genesis. Indeed there is no primary igneous rock characterised by essential sodic plagioclase and biotite, minor potash felspar, and no quartz.

URANIUM MINERALISATION (see appended photomicrographs)

Extensively oxidised characteristically spherulitic grains of pitchblende, and pseudo-cubic grains of uraninite occurs in samples 7105, 7106, 7109, 7121, 7126, 7128. These grains are generally < 0.5 mm, and occur in accessory abundance, but possibly up to 20% in 7128. The identification is largely based on characteristic relict textures, since only traces of these original phases remain, in pseudomorphous, ill-defined replacement materials which may be collectively called 'gummite'. This includes ?uraniferous limonite and clays of unknown composition. No specific secondary uranium minerals were identified. Poorly defined brownish ?marcasite and trace radiometric galena partly replaces uraninite-pitchblende in 7128.

These grains occur variably as individuals, in clusters, or coalesced into aggregates; generally at random within coarser plagioclase and biotite, rarely in the 'secondary' microcrystalline quartz-micas replacement patches.

These grains or relicts, are typically surrounded by relict haloes, and the secondary materials migrate along syneresis fractures around each primary grain, and along adjacent fissures in the host rock.

OTHER ACCESSORY PHASES

Accessory zircon occurs in some samples; it is somewhat clouded with strong radioactive haloes, and may be the uraniferous variety cyrtolite, or possibly the thorium equivalent, thorite.

A characteristically turbid yellow (in thin section) high relief phase is common in samples 7106, 7109, 7112, 7114, 7115. It is commonly composite with uraninite in samples containing that phase, and fairly commonly associated with biotite. In other rocks it occurs alone. The optical properties indicate that this is sphene, however the yellow colour is anomalous; (indeed in colour alone it is rather like yellow rutile or possible brannerite.) Its identity may need to be checked.

Accessory monazite occurs in 7121, 7122, 7124.

Trace tourmaline in some samples where it accompanies muscovite/sericite pseudomorphs after k-spar.

- - -

G7101 continued :

These grains are clearly inherently radioactive.

These relicts of the high relief grains are difficult to positively identify, because of their altered nature, small size and sparse abundance. However they seem almost certainly to be zircon, possibly the uraniferous variety cyrtolite; or thorite.

The yellowish-brown material with or without a core of this 'zircon' would appear to be 'oxidised gummite', representing relict radioactive haloes.

C7102 : (quartz) biotite, plagioclase gneiss; accessory fine Fe and Ti oxides, apatite, zircon, with altered turbid radioactive haloes

This rock also consists essentially of a fairly homogeneous granuloblastic aggregate of plagioclase, of oligoclase composition, crowded with a similar abundance of biotite, commonly oriented throughout. It differs from C7101 in having minor (fairly coarse single crystals of quartz as part of the essential aggregate), it lacks the patches of microcrystalline quartz.

Accessory phases are scattered throughout and these have similar abundance and composition as in C7101. They consist of hematite, as martite pseudomorphs after small magnetite crystals, fine specularite through biotite, several clouded apatite grains, and oxidised titaniferous granules associated with the iron oxides.

Very small (0.05 mm) crystals of probable cyrtolite, with turbid alteration haloes, are scattered, but less abundant than in C7101.

C7105 : roughly banded (biotite) K-spar, quartz, plagioclase gneiss (or 'granulite'); accessory thorite and/or zircon; 'gummite' pseudomorphs after uraninite-pitchblende; gummite rims around these oxidised uranium minerals and intergranular along fissures

This rock is vaguely banded on a scale of about 10 mm but otherwise has an inequigranular granoblastic to xenomorphic granular mosaic texture. It is dominated by pinkish plagioclase of sodic-oligoclase to albite composition. Individual crystals of this plagioclase have an irregular to subhedral form; they range in size from 0.3 to 3 mm, and are commonly stressed with bent twinning.

Quartz (10 - 12%) occurs in anhedral grains up to 1.5 mm, as inclusions within or intergranular between the plagioclase aggregate. This quartz is very largely restricted to one of the poorly defined layers. Potash felspar (10 - 12%) is also more or less intergranular, it is more widespread than quartz, but more abundant in some layers than in others. (This is highlighted on the stained offcut.)

Biotite (5 - 7%) is randomly scattered; it is darker brown than in the two preceding samples and contains minute rutile needles (also absent from 7101 and 7102.)

Accessory phases have a random distribution.

C7105 continued :

Single somewhat clouded grains of cyrtolite or thorite, metamict altered to virtually isotropic, occur independently in plagioclase.

Clusters of indistinct finer opaque material, mixed with 'waxy looking', diffuse yellowish-brownish-khaki, secondary alteration material, are all collectively identified as 'gummite' (2 - 3%). At several sites this material characteristically partly fills roughly cubic-voids which are interpreted to have formed from original uraninite. Elsewhere this gummite more or less encrusts darker yellowish brown, and vaguely cubic-form replicas, varying to a spherulitic form. These replicas are identified as uraninite-pitchblende.

'Gummite' also locally invades fissures (some radiating syneresis type), intergranular margins, and cleavages in adjacent silicate minerals.

The fine hematite and magnetite grains seen in C7101 are absent.

C7106 : roughly banded biotite plagioclase gneiss 'granulite'; accessory very small grains of uraninite with intergrown yellow ?sphene; commonly altered to 'gummite'; also rare altered spheroids of pitchblende; all in discontinuous thin layers

This rock consists predominantly of an inequigranular granuloblastic aggregate of pink plagioclase of albitic composition (Ab_{92}), some apparently grading to sodic oligoclase. Biotite is scattered more or less intergranular, and is crowded with abundant minute needles of rutile. It is relatively concentrated and similarly aligned in one band 15 mm wide and in a patchy layer, where it forms about 20%, elsewhere its mode is about 5%.

Accessory radioactive phases are scattered, more or less in poorly defined layers, most abundant in biotite deficient zones. These generally measure up to 1 mm in maximum dimension. They consist of:-

(1) black-opaque uraninite (1%), relatively unaltered and commonly with intergrown yellowish lamellar crystals of ?sphene*, and in polished section seen to be crowded with abundant minute (2 x 50 micron) lamellae of this same mineral

(2) black-opaque uraninite crystals extensively oxidised, (1-2%), i.e. surrounded by rims of yellowish-brownish 'gummite', varying to virtual complete replacement by this material. The gummite migrates locally along intergranular boundaries, fissures and radial syneresis cracks surrounding the original uraninite.

(3) this same gummite replaces small (0.1 mm) spherulitic pitchblende bodies (<1%)

(4) several grains of turbid yellow ?sphene (<1%), up to 1 mm occur independently but in a line with the altered uraninite grains.

* The identity of this ?sphene is discussed in comments at beginning of this report.

C7109 : biotite albitic plagioclase massive gneiss, or 'granulite'; minor potash felspar crystals selectively completely sericitised; accessory granular yellow ?sphene, associated with altered uraninite generally associated with biotite; rare apatite, zircon

This is a massive, very vaguely layered, coarse grained (1 - 7 mm) aggregate, composed mainly of plagioclase. The grains are variably anhedral to subhedral with the gross texture xenomorphic, gradational to granuloblastic. Twin extinction angles indicates a sodic oligoclase to albite composition (about Ab_{90}), and it is unaltered.

The plagioclase contains rare, bleb-like inclusions of quartz, and rare quartz is interstitial. Accessory irregular flakes of quite coarse (7 - 10%) biotite, are scattered, more or less interstitially. These are crowded with abundant, ultrafine needles of criss-crossing rutile. Also they are commonly accompanied by almost equally coarse, (up to 0.5 x 2 mm), granular crystals of yellowish ?sphene (3%), as seen in C7106. Rarely this forms complex composite grains with black opaque to yellowish-brown altered uraninite (1%), also as in C7106. These grains are located within biotite. Trace minute grains of altered uraninite, including rare spherulitic pitchblende forms are scattered. Trace small crystals of zircon are also present. Apatite (2%) occurs in localised fine grained clusters near some biotite.

.../

C7109 continued :

A characteristic feature of this rock is that some 20% of felspar crystals, randomly scattered as part of the essential aggregate, are totally pseudomorphically replaced by fine muscovite/sericite. These are intergrown with and form sharp contacts with adjacent completely unaltered plagioclase, although sericitic alteration does penetrate fissures and cleavages in those. Also these muscovite/sericite patches enclose unaltered plagioclase.

The original felspar must have a different composition (and genesis) to the predominant rock-forming plagioclase. Almost certainly it was potash felspar.

C7110 : biotite-plagioclase gneiss; minor selective and incipiently pervasive replacement by fine quartz-untwinned plagioclase-biotite; accessory tourmaline

This rock has a gross banded, foliated, and granulose texture. Most of it consists of a fine to medium grained, roughly granuloblastic aggregate of plagioclase (sodic oligoclase), with a similar abundance of commonly oriented biotite throughout.

Rare bands of relatively much coarser plagioclase crystals (7 mm) with only minor biotite, are intercalated.

Poorly defined, generally irregular and elongate patches of microcrystalline rather diffuse quartz and/or untwinned plagioclase mosaic, crowded with correspondingly very fine biotite is more or less intergranular to the plagioclase mosaic. These locally coalesce, and associated networks of fine micas penetrate fissures and cleavages in surrounding, coarser, otherwise relatively unaltered plagioclase.

This fine mosaic material is a 'replacement' phase, partly selective, and incipiently pervasive. It may be due to metamorphic recrystallisation, possibly it is of external origin. It appears to be the equivalent of the muscovite/sericite replicas after K-spar in 7109, 7112, 7114 and 7115.

Accessory crystals of authigenic tourmaline are present, but there is no evidence of the ?sphene, and uraninite seen in the three preceding samples.

C7112 : biotite plagioclase massive gneiss or granulite; minor k-spar completely selectively replaced by muscovite/sericite + trace tourmaline; accessory disseminated yellow ?sphene

This rock is dominated by a random, essentially granuloblastic aggregate of unaltered plagioclase of sodic oligoclase to albite composition. Minor pale biotite (10 - 15%) occurs in irregularly branching but generally commonly oriented 'foliae' through this aggregate. The biotite is accompanied by minor muscovite, and it commonly carries ultrafine needles of rutile.

Small (0.1 mm) accessory crystals of yellow ?sphene, as recorded in previous descriptions, are disseminated mainly through the plagioclase, and not selectively accompanying biotite as in 7109. There is no evidence of uranium oxides.

Potash felspar crystals, completely pseudomorphically replaced by fine muscovite/sericite $\pm$ clays and rarely with associated tourmaline, occur at random through the plagioclase aggregate to form about 7% of the rock.

C7114 : biotite plagioclase massive gneiss or granulite; minor k-spar completely selectively replaced by muscovite/sericite; accessory scattered yellow ?sphene granules, trace tourmaline

This rock also consists mainly of a massive to vaguely layered and quite coarse, more or less granuloblastic aggregate of plagioclase of about Ab_{90} composition. Some crystals contain minute bleb-like inclusions of quartz and accessory quartz (5%) is interstitial. Biotite (20%) occurs throughout in branching crude foliae, and scattered individual crystals. This carries ultrafine rutile needles.

Accessory (1 - 2%), small (0.1 mm and less) grains of yellowish ?sphene are disseminated, mainly through the plagioclase.

About 20% of the aggregate consists of rather irregular, coarse potash felspar crystals up to 10 mm, now completely, pseudomorphically replaced by fine muscovite and sericite. Rare relict inclusions of quartz, plagioclase and biotite remain. Replicas of original crystal structure are locally preserved. These alteration micas penetrate fissures and intergranular boundaries in adjacent, otherwise unaltered plagioclase. Trace tourmaline occurs in some patches of sericite.

C7115 : as for 7109 (but with trace zircon and no apatite)

The texture composition and alteration characteristics of this sample are so similar to 7109 (also 7112 and 7114) that a separate full description is not warranted.

The plagioclase aggregate contains about 10% scattered titaniferous biotite. Muscovite/sericite replicas after about 15% of individual potash felspar crystals are scattered, with relict crystallographic fabric preserved.

Yellowish ?sphene crystals tend to be coarser (up to 0.5 x 2 mm) than in previous samples (except perhaps in 7109). They are scattered mainly as individuals, but locally accompany biotite. Trace zircon with alteration haloes is present; apatite is absent.

C7118 : biotite plagioclase gneiss;
minor crystals selectively replaced
by muscovite/sericite and microcrystalline
quartz-biotite mosaic

This rock contains combined essential features shown in the group (7109, 7112, 7114, 7115) and in sample C7110. It consists of a layered granuloblastic aggregate of plagioclase (about Ab_{90}), with titaniferous biotite (30%) commonly oriented throughout to form a partial foliated fabric in the otherwise granulose aggregate.

Some 10 - 15% of individual potash felspar crystals are partly altered to fine muscovite/sericite, as seen in replicas in the group noted above; but this alteration grades in the one patch (or replica) into diffuse microcrystalline quartz mosaic crowded with fine muscovite and biotite (as in 7110). A beard-like fringe of fine pale biotite surrounds some of these alteration patches.

Trace zircon with alteration rims are present, but sphene is absent (which differs from the samples cited above.)

C7121 : coarse plagioclase-biotite schistose-gneiss; extensively invaded by microcrystalline quartz-biotite; accessory fine granular monazite, roughly spherulitic ?limonite-clay-?gummite replicas after ?pitchblende; trace zircon

This rock has a rather irregular gneissic texture, and is fairly extensively altered. Original (metamorphic) phases are slightly wavy, variably continuous foliae of coarse biotite and abundant relicts of quite coarse plagioclase alternating in bands. The biotite carries ultrafine rutile needles.

Layers of both composition are fairly extensively invaded by diffuse microcrystalline quartz mosaic crowded with extremely fine secondary biotite ± minor equally fine muscovite and clays. This secondary biotite is particularly abundant along fissures through coarse plagioclase.

Accessory minerals are ;-

(1) several small (0.2 mm) grains of monazite (or possible xenotime), within the quartz/biotite alteration mosaic, also within coarser biotite

(2) irregularly subrounded, some spherical and oval voids clustered within coarser biotite also within the later quartz and finer biotite domains. These are filled by ultrafine 'clay', and yellowish-brown alteration materials. They are interpreted to be after pitchblende as in 7105 and 7106, but they appear to be less abundant than in those two samples.

(3) trains of limonitic 'spots' in clays, similar to the rounded-spherulitic replicas in (2), occur locally along cleavages in the coarser biotite, forming about 2% of the whole rock. These are tentatively identified as oxidised pitchblende with somewhat wider distribution than in other samples.

(4) trace minute zircon crystals are also present.

C7122 : biotite-plagioclase gneiss; minor scattered patches of diffuse-microcrystalline quartz and secondary biotite; trace monazite and zircon

This rock may be compared with 7110 and 7118; also the secondary alteration compared with that in C7121. It consists essentially of a fine to medium, more or less granuloblastic aggregate of plagioclase, with an extensive, roughly schistose network of biotite (25 - 30%), of similar crystal size throughout. The biotite contains ultrafine rutile needles.

Irregular replacement patches (10 - 15%) scattered through the aggregate consist of diffuse microcrystalline quartz crowded with extremely fine secondary biotite. This biotite in particular is widespread along cleavages, and through intergranular areas in the essential plagioclase aggregate. Some networks of this biotite in the fine quartz suggest relict cleavages, which may be after k-spar.

Trace, very small monazite and zircon crystals in biotite are the only accessory minerals.

C7124 : biotite-plagioclase granulite,
minor irregular patches of muscovite/sericite
replicas after potash felspar;
rare trace monazite and zircon

This rock consists of a fairly homogeneous granuloblastic aggregate of plagioclase (Ab_{90}), average size about 1 mm, with minor (30%) biotite evenly but generally randomly disposed, more or less along intergranular contacts. The biotite is crowded with abundant, minute rutile needles.

Irregular, and generally larger (1.5 x 3 mm) patches of fine muscovite/sericite (15 - 20%), are interpreted as completely, selectively altered potash felspar; some of these enclose unaltered plagioclase. These alteration micas, locally penetrate adjacent unaltered plagioclase.

Trace, minute monazite and zircon crystals are present.

Accessory microcrystalline quartz + fine biotite is locally intergranular to the plagioclase aggregate.

C7126 : (quartz) biotite plagioclase gneiss, with minor patches of microcrystalline quartz + fine biotite; accessory poorly defined oxidised pitchblende-uraninite scattered

This sample has a combined, somewhat heterogeneous granulose and foliated texture. Fairly coarse granuloblastic aggregates of plagioclase, + minor quartz (<10%) on the same scale, also contain essential fairly coarse biotite, essentially as in 7124. However foliae dominated by coarse biotite are also present.

Patches and lenses of microcrystalline quartz and fine biotite (20%), are drawn out along the foliation, integrated with coarser plagioclase and biotite to generally confuse the continuity of texture and composition. Some of these grade into lenses of clays after the fine micaceous replicas reported in other samples.

Yellowish-brown, ill-defined limonitic and gummitic clays replace clusters and some individual spherulitic to pseudo-cubic and irregular voids, are interpreted to be original pitchblende-uraninite as seen in other samples, notably 7105. These have a chaotic distribution mainly through coarse biotite and plagioclase, and form possibly up to 5% of the rock. Less commonly these occur in the finer quartz mosaic.

C7128 : foliated, plagioclase-biotite gneiss, abundant spherulitic individuals, clusters and aggregates of pitchblende, and relatively cubic-form uraninite, randomly scattered and almost completely replaced by 'gummitic, limonitic clays', accessory ?marcasite and radiogenic galena

This rock also consists of a combination of a granulose plagioclase aggregate, and essential intimately intergrown foliae of quite coarse biotite. Minor (10%) small patches of microcrystalline quartz mosaic + fine biotite are scattered; and fine secondary biotite is locally abundant along fissures, cleavages in plagioclase, and intergranular.

Replicas of spherulitic pitchblende as individuals and in clusters, coalescing into aggregates are widespread, and more abundant in this rock (?20%) than in any other sample in the suite. Individually these measure between 0.1 and 0.8 mm across, aggregates of them form areas up to 3 x 5 mm. They occur at random within coarse plagioclase and biotite.

The pseudomorphous alteration products cannot be specifically identified in thin section, but consist of darkish brown and yellowish-brown limonite, limonitic and gummitic clays; also relatively colourless to very pale brownish, yellowish, and rare pale greenish-blue clays. Minor pseudo-cubic rather than spherulitic forms, may be regarded as uraninite rather than pitchblende.

Some biotite and plagioclase grains are also largely broken down to clays.

In polished section, a small vein of marcasite/pyrite occurs locally. Extremely rare relicts of pitchblende and uraninite remain in the alteration products described. Also minute rosettes of brownish ?marcasite and trace ?radiogenic galena largely form some alteration pseudomorphs after pitchblende-uraninite.

C7132 : quartz plagioclase biotite gneiss;
accessory scattered ilmenite, lesser fine
specularite and martite pseudomorphs;
trace zircon

This rock has a homogeneous granuloblastic to xenoblastic aggregate of plagioclase, subordinate greenish-khaki biotite, and minor quartz (15 - 20%). The texture of the plagioclase aggregate does not approach polygonal as in most preceding samples. Also the presence of quartz in the essential coarse aggregate, colour of biotite and absence of rutile from the biotite makes this rock different from most others above.

Minor anhedral to subhedral ilmenite (5 - 7%), and lesser martite replicas after magnetite are scattered. Minute blades of specularite are scattered through the biotite.

A single irregular patch of 'secondary' microcrystalline quartz mosaic, crowded with fine biotite and carrying tourmaline is present.

Trace zircon is the only accessory phase apart from the Fe-Ti oxides.

APPENDIX 2

Stream Sediment Geochemistry,

Wild Dog Prospect

TABLE 1 : ORIENTATION STREAM GEOCHEMISTRY - WILD DOG

SAMPLE NO	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 7128 + 40	WD1	Bulk Stream Sed. -10#	110	< 4	24	24	< 4
" + 60	"	"	110	< 4	42	36	< 4
" + 80	"	"	110	6	60	40	< 4
250G 7129 + 40	WD2	"	75	4	18	22	< 4
" + 60	"	"	75	< 4	28	32	< 4
" + 80	"	"	75	< 4	34	32	8
250G 7130 + 40	WD3	"	60	< 4	36	20	< 4
" + 60	"	"	60	4	36	32	4
" + 80	"	"	60	4	34	44	< 4
250G 7131 + 40	WD4	"	100	< 4	48	28	< 4
" + 60	"	"	100	< 4	32	34	< 4
" + 80	"	"	100	< 4	32	40	< 4
250G 7132 + 40	WD5	"	100	6	40	42	< 4
" + 60	"	"	100	< 4	30	34	< 4
" + 80	"	"	100	< 4	28	40	< 4
250G 7133 + 40	WD6	"	70	6	55	38	< 4
" + 60	"	"	70	< 4	60	60	< 4
" + 80	"	"	70	< 4	38	48	< 4
250G 7134 + 40	WD7	"	120	< 4	28	26	< 4
" + 60	"	"	120	< 4	30	28	< 4
" + 80	"	"	120	< 4	38	36	< 4
250G 7135 + 40	WD8	"	150	< 4	44	28	< 4
" + 60	"	"	150	< 4	50	34	< 4
" + 80	"	"	150	4	55	50	< 4

TABLE 1 : Continued.

SAMPLE NO	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 7136 + 40	WD9	Bulk stream sed. -10#	120	< 4	50	20	< 4
" + 60	"	"	120	< 4	48	30	< 4
" + 80	"	"	120	6	65	28	< 4
250G 7137 + 40	WD10	"	130	< 4	16	16	< 4
" + 60	"	"	130	< 4	24	26	< 4
" + 80	"	"	130	< 4	32	36	< 4
250G 7138 + 40	WD11	"	80	< 4	110	44	< 4
" + 60	"	"	80	12	80	36	4
" + 80	"	"	80	8	70	40	< 4
250G 7139 + 40	WD12	"	90	< 4	34	20	< 4
" + 60	"	"	90	6	46	28	< 4
" + 80	"	"	90	< 4	30	26	< 4
250G 7140 + 40	WD13	"	130	< 4	48	22	< 4
" + 60	"	"	130	< 4	70	32	< 4
" + 80	"	"	130	8	65	38	< 4
250G 7141 + 40	WD14	"	75	< 4	10	10	< 4
" + 60	"	"	75	< 4	14	12	< 4
" + 80	"	"	75	< 4	24	22	< 4
250G 7142 + 40	WD15	"	150	4	20	22	< 4
" + 60	"	"	150	< 4	30	30	< 4
" + 80	"	"	150	< 4	34	40	< 4
250G 7143 + 40	WD16	"	130	< 4	30	28	< 4
" + 60	"	"	130	< 4	28	28	< 4
" + 80	"	"	130	< 4	44	34	< 4
250G 7144 + 40	WD17	"	100	< 4	22	16	< 4
" + 60	"	"	100	< 4	42	22	< 4
" + 80	"	"	100	6	50	30	< 4

TABLE 1 : Continued

SAMPLE NO.	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 7145 + 40	WD18	Bulk stream sed. -10#	100	< 4	26	12	10
+ 60	"	"	100	4	18	8	< 4
+ 80	"	"	100	4	22	16	4
250G 7146 + 40	WD19	"	120	4	10	12	< 4
+ 60	"	"	120	< 4	6	4	6
+ 80	"	"	120	< 4	4	6	< 4
250G 7147 + 40	WD20	"	170	< 4	22	20	< 4
+ 60	"	"	170	4	34	28	4
+ 80	"	"	170	< 4	36	34	< 4
250G 7148 + 40	WD21	"	150	4	36	22	< 4
+ 60	"	"	150	< 4	85	42	< 4
+ 80	"	"	150	4	90	55	4
250G 7149 + 40	WD22	"	160	< 4	18	10	< 4
+ 60	"	"	160	< 4	24	16	< 4
+ 80	"	"	160	< 4	34	32	< 4
250G 7150 + 40	WD23	"	150	< 4	30	16	< 4
+ 60	"	"	150	< 4	30	18	< 4
+ 80	"	"	150	4	36	26	< 4
250G 7151 + 40	WD24	"	125	< 4	20	12	< 4
+ 60	"	"	125	< 4	55	22	4
+ 80	"	"	125	6	65	28	< 4
250G 7152 + 40	WD25	"	100	< 4	20	20	< 4
+ 60	"	"	100	< 4	24	18	< 4
+ 80	"	"	100	< 4	32	22	4
250G 7153 + 40	WD26	"	100	< 4	20	20	< 4
+ 60	"	"	100	< 4	22	16	< 4
+ 80	"	"	100	4	30	20	< 4

TABLE 1 : Continued

SAMPLE NO	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 7154 + 40	WD27	Bulk Stream sed. -10#	-	4	6	10	4
" + 60	"	"	-	< 4	14	10	< 4
" + 80	"	"	-	< 4	24	16	6
250G 7155 + 40	WD28	"	100	< 4	12	8	< 4
" + 60	"	"	100	< 4	14	8	4
" + 80	"	"	100	< 4	18	18	< 4
250G 7156 + 40	WD29	"	75	< 4	48	32	8
" + 60	"	"	75	< 4	42	24	< 4
" + 80	"	"	75	< 4	46	22	< 4
250G 7157 + 40	WD30	"	100	< 4	20	12	< 4
" + 60	"	"	100	< 4	20	16	6
" + 80	"	"	100	4	26	16	< 4
250G 7158 + 40	WD31	"	170	8	280	65	< 4
" + 60	"	"	170	16	420	95	< 4
" + 80	"	"	170	16	350	100	< 4
250G 7159 + 40	WD32	"	150	< 4	75	18	< 4
" + 60	"	"	150	4	110	30	< 4
" + 80	"	"	150	10	140	44	< 4
250G 7160 + 40	WD33	"	150	< 4	36	12	4
" + 60	"	"	150	< 4	50	18	< 4
" + 80	"	"	150	6	65	32	< 4
250G 7161 + 40	WD34	"	220	< 4	60	14	< 4
" + 60	"	"	220	< 4	50	10	6
" + 80	"	"	220	< 4	34	12	< 4
250G 7162 + 40	WD35	"	100	< 4	22	24	8
" + 60	"	"	100	4	22	20	< 4
" + 80	"	"	100	< 4	28	24	4

TABLE 1 : Continued

SAMPLE NO	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 7163 + 40	WD36	Bulk Stream Sed. -10#	100	< 4	18	8	< 4
" + 60	"	"	100	< 4	55	18	< 4
" + 80	"	"	100	6	95	32	< 4
250G 7164 + 40	WD37	"	200-400	4	190	30	< 4
" + 60	"	"	200-400	8	200	42	< 4
" + 80	"	"	200-400	6	190	50	< 4
250G 7165 + 40	WD38	"	150	4	26	12	< 4
" + 60	"	"	150	4	50	20	< 4
" + 80	"	"	150	4	42	26	< 4
250G 7166 + 40	WD39	"	200-400	< 4	140	30	< 4
" + 60	"	"	200-400	4	180	46	< 4
" + 80	"	"	200-400	8	130	44	< 4
250G 7167 + 40	WD40	"	120	< 4	80	24	< 4
" + 60	"	"	120	< 4	120	36	< 4
" + 80	"	"	120	4	120	46	< 4
250G 7168 + 40	WD41	"	250	< 4	120	22	< 4
" + 60	"	"	250	4	230	50	< 4
" + 80	"	"	250	6	180	46	< 4
250G 7169 + 40	WD42	"	100	< 4	18	10	< 4
" + 60	"	"	100	6	36	22	6
" + 80	"	"	100	< 4	55	30	< 4
250G 7170 + 40	WD43	"	100	< 4	18	10	4
" + 60	"	"	100	< 4	18	14	< 4
" + 80	"	"	100	< 4	34	18	< 4

TABLE 1 : Continued

SAMPLE NO.	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 7171 + 40	WD44	Bulk Stream Sed. -10#	100	< 4	20	14	< 4
" + 60	"	"	100	4	20	16	< 4
" + 80	"	"	100	< 4	28	18	< 4
250G 7172 + 40	WD45	"	100	< 4	18	16	< 4
" + 60	"	"	100	< 4	24	18	< 4
" + 80	"	"	100	6	32	18	< 4
250G 7173 + 40	WD46	"	140	10	150	70	4
" + 60	"	"	140	16	260	120	< 4
" + 80	"	"	140	10	190	90	< 4
250G 7174 + 40	WD47	"	140	< 4	16	6	< 4
" + 60	"	"	140	< 4	46	22	6
" + 80	"	"	140	4	110	44	< 4
250G 7175 + 40	WD48	"	100	< 4	20	24	< 4
" + 60	"	"	100	< 4	18	20	< 4
" + 80	"	"	100	< 4	22	20	8
250G 7176 + 40	WD49	"	130	< 4	34	14	< 4
" + 60	"	"	130	4	75	26	6
" + 80	"	"	130	6	90	42	< 4
250G 7177 + 40	WD50	"	250	< 4	140	26	< 4
" + 60	"	"	250	4	260	50	< 4
" + 80	"	"	250	< 4	120	34	< 4
250G 7178 + 40	WD51	"	200	6	230	34	< 4
" + 60	"	"	200	8	320	65	< 4
" + 80	"	"	200	4	130	38	< 4
250G 7179 + 40	WD52	"	200	< 4	75	26	4
" + 60	"	"	200	< 4	100	34	< 4
" + 80	"	"	200	< 4	55	32	< 4
250G 7180 + 40	WD53	"	200	< 4	120	28	< 4
" + 60	"	"	200	4	140	32	< 4
" + 80	"	"	200	4	130	40	< 4

TABLE 1 : Continued

SAMPLE NO.	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 7181 + 40	WD54	Bulk Stream Sed. -10#	210	< 4	100	22	< 4
" + 60	"	"	210	4	100	26	< 4
" + 80	"	"	210	4	85	26	< 4
250G 7182 + 40	WD55	"	210	< 4	30	4	< 4
" + 60	"	"	210	4	110	26	< 4
" + 80	"	"	210	6	270	55	< 4
250G 7183 + 40	WD56	"	200	< 4	180	36	< 4
" + 60	"	"	200	10	290	55	< 4
" + 80	"	"	200	8	200	48	< 4
250G 7184 + 40	WD57	"	200	4	100	30	< 4
" + 60	"	"	200	4	100	32	< 4
" + 80	"	"	200	6	80	32	< 4
250G 7185 + 40	WD58	"	200	< 4	85	22	< 4
" + 60	"	"	200	4	210	36	< 4
" + 80	"	"	200	< 4	220	48	< 4
250G 7186 + 40	WD59	"	210	4	260	44	< 4
" + 60	"	"	210	8	340	55	< 4
" + 80	"	"	210	< 4	140	32	< 4
250G 7187 + 40	WD60	"	210	< 4	22	8	< 4
" + 60	"	"	210	4	46	16	< 4
" + 80	"	"	210	6	65	18	< 4
250G 7188 + 40	WD61	"	120	< 4	16	10	4
" + 60	"	"	120	< 4	28	20	< 4
" + 80	"	"	120	6	32	24	6

TABLE 1 : Continued

SAMPLE NO.	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 7189 + 40	WD62	Bulk Stream Sed. - 10#	120	< 4	26	18	< 4
" + 60	"	"	120	< 4	24	18	4
" + 80	"	"	120	4	36	18	< 4
250G 7190 + 40	WD63		130	< 4	180	50	< 4
" + 60	"	"	130	10	130	38	< 4
" + 80	"	"	130	< 4	75	32	< 4
250G 7191 + 40	WD64	"	110	< 4	42	14	< 4
" + 60	"	"	110	6	75	26	< 4
" + 80	"	"	110	< 4	70	26	< 4
250G 7192 + 40	WD65	"	110	< 4	28	14	< 4
" + 60	"	"	110	< 4	85	46	< 4
" + 80	"	"	110	4	140	85	< 4
250G 7193 + 40	WD66	"	160	< 4	10	12	< 4
" + 60	"	"	160	< 4	32	16	< 4
" + 80	"	"	160	4	44	26	< 4
250G 7194 + 40	WD67	"	180	< 4	16	10	< 4
" + 60	"	"	180	< 4	28	18	< 4
" + 80	"	"	180	< 4	40	26	< 4
250G 7195 + 40	WD68	"	300-1000	< 4	18	12	< 4
" + 60	"	"	300-1000	< 4	32	18	< 4
" + 80	"	"	300-1000	4	42	24	< 4
250G 7196 + 40	WD69	"	140	< 4	60	20	< 4
" + 60	"	"	140	< 4	65	30	< 4
" + 80	"	"	140	< 4	55	32	< 4

TABLE 1 : Continued

SAMPLE NO.	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 7197 + 40	WD70	Bulk Stream Sed. -10#	160	< 4	65	55	< 4
" + 60	"	"	160	4	60	46	< 4
" + 80	"	"	160	4	55	46	< 4
250G 7198 + 40	WD71	"	250	< 4	26	12	< 4
" + 60	"	"	250	< 4	30	14	< 4
" + 80	"	"	250	4	22	16	< 4
250G 7199 + 40	WD72	"	250-350	4	85	28	< 4
" + 60	"	"	250-350	< 4	80	38	< 4
" + 80	"	"	250-350	< 4	80	50	< 4
250G 7200 + 40	WD73	"	250-350	4	42	18	< 4
" + 60	"	"	250-350	< 4	48	22	< 4
" + 80	"	"	250-350	< 4	50	24	< 4
250G 8801 + 40	WD74	"	80	< 4	18	12	10
" + 60	"	"	80	< 4	16	8	< 4
" + 80	"	"	80	< 4	8	8	6
250G 8802 + 40	WD75	"	120	< 4	22	14	< 4
" + 60	"	"	120	< 4	28	18	4
" + 80	"	"	120	< 4	38	30	< 4
250G 8803 + 40	WD76	"	120	< 4	44	20	6
" + 60	"	"	120	< 4	26	16	< 4
" + 80	"	"	120	< 4	20	12	4
250G 8804 + 40	WD77	"	140	< 4	60	28	< 4
" + 60	"	"	140	12	180	95	< 4
" + 80	"	"	140	20	290	170	< 4

TABLE 1 : Continued

SAMPLE NO.	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 8805 + 40	WD78	Bulk Stream Sed. - 10#	140	< 4	10	14	6
" + 60	"	"	140	< 4	28	16	< 4
" + 80	"	"	140	< 4	40	36	< 4
250G 8806 + 40	WD79	"	90	4	18	28	< 4
" + 60	"	"	90	4	20	20	< 4
" + 80	"	"	90	4	22	24	< 4
250G 8807 + 40	WD80	"	100	< 4	14	10	4
" + 60	"	"	100	< 4	22	14	< 4
" + 80	"	"	100	< 4	34	26	4
250G 8808 + 40	WD81	"	100	< 4	24	12	< 4
" + 60	"	"	100	< 4	36	20	< 4
" + 80	"	"	100	< 4	65	36	< 4
250G 7128 - 80	WD 1	"	110	6	38	44	< 4
250G 7129 - 80	WD 2	"	75	< 4	26	40	< 4
250G 7130 - 80	WD 3	"	60	4	26	44	< 4
250G 7131 - 80	WD 4	"	100	< 4	20	44	< 4
250G 7132 - 80	WD 5	"	100	< 4	28	46	< 4
250G 7133 - 80	WD 6	"	70	< 4	40	48	< 4
250G 7134 - 80	WD 7	"	120	4	42	38	< 4
250G 7135 - 80	WD 8	"	150	6	60	55	< 4
250G 7136 - 80	WD 9	"	120	< 4	32	30	< 4
250G 7137 - 80	WD10	"	130	4	32	38	< 4
250G 7138 - 80	WD11	"	80	8	55	42	< 4
250G 7139 - 40	WD12	"	90	4	34	34	< 4
250G 7140 - 40	WD13	"	130	4	70	55	< 4

TABLE 1 : Continued

SAMPLE NO.	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSIS REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 7141 - 40	WD14	Bulk Stream Sed. -10#	75	< 4	26	34	< 4
250G 7142 - 40	WD15	"	150	4	42	50	< 4
250G 7143 - 40	WD16	"	130	4	50	46	< 4
250G 7144 - 80	WD17	"	100	4	85	50	< 4
250G 7145 - 80	WD18	"	100	4	35	26	< 4
250G 7146 - 80	WD19	"	120	< 4	14	14	< 4
250G 7147 - 80	WD20	"	170	6	46	40	< 4
250G 7148 - 80	WD21	"	150	4	70	55	< 4
250G 7149 - 80	WD22	"	160	4	36	44	< 4
250G 7150 - 80	WD23	"	150	4	42	40	< 4
250G 7151 - 80	WD24	"	125	4	100	55	< 4
250G 7152 - 80	WD25	"	100	< 4	38	34	< 4
250G 7153 - 80	WD26	"	100	6	48	36	< 4
250G 7154 - 80	WD27	"	-	< 4	44	34	< 4
250G 7155 - 80	WD28	"	100	< 4	32	30	< 4
250G 7156 - 80	WD29	"	75	6	46	30	< 4
250G 7157 - 80	WD30	"	100	4	44	36	< 4
250G 7158 - 80	WD31	"	170	8	130	60	< 4
250G 7159 - 80	WD32	"	150	4	80	44	< 4
250G 7160 - 80	WD33	"	150	4	65	38	< 4
250G 7161 - 80	WD34	"	220	< 4	38	20	< 4
250G 7162 - 80	WD35	"	100	< 4	34	38	< 4
250G 7163 - 80	WD36	"	100	< 4	75	40	< 4
250G 7164 - 80	WD37	"	200-400	10	110	48	< 4
250G 7165 - 80	WD38	"	150	< 4	50	40	< 4
250G 7166 - 80	WD39	"	200-400	< 4	65	34	< 4
250G 7167 - 80	WD40	"	120	4	70	44	< 4
250G 7168 - 80	WD41	"	250	< 4	65	36	< 4
250G 7169 - 80	WD42	"	100	4	40	38	< 4
250G 7170 - 80	WD43	"	100	< 4	32	30	< 4

TABLE 1 : Continued

SAMPLE NO.	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SITU.	U	Th	Y	Mo
250G 7171 - 80	WD44	Bulk Stream Sed. -10#	100	< 4	34	32	< 4
250G 7172 - 80	WD45	"	100	< 4	42	34	< 4
250G 7173 - 80	WD46	"	140	4	65	55	< 4
250G 7174 - 80	WD47	"	140	8	90	55	< 4
250G 7175 - 80	WD48	"	100	< 4	20	24	< 4
250G 7176 - 80	WD49	"	130	4	65	40	< 4
250G 7177 - 80	WD50	"	250	< 4	55	26	< 4
250G 7178 - 80	WD51	"	200	4	60	26	< 4
250G 7179 - 80	WD52	"	200	4	40	32	< 4
250G 7180 - 80	WD53	"	200	< 4	65	34	< 4
250G 7181 - 80	WD54	"	210	6	65	30	< 4
250G 7182 - 80	WD55	"	210	< 4	95	34	< 4
250G 7183 - 80	WD56	"	200	< 4	75	32	< 4
250G 7184 - 80	WD57	"	200	< 4	55	34	< 4
250G 7185 - 80	WD58	"	200	4	70	32	< 4
250G 7186 - 80	WD59	"	210	4	65	24	< 4
250G 7187 - 80	WD60	"	210	4	65	26	< 4
250G 7188 - 80	WD61	"	120	< 4	36	28	< 4
250G 7189 - 80	WD62	"	120	< 4	32	26	< 4
250G 7190 - 80	WD63	"	130	< 4	44	36	< 4
250G 7191 - 80	WD64	"	110	< 4	48	38	< 4
250G 7192 - 80	WD65	"	110	6	85	70	< 4
250G 7193 - 80	WD66	"	160	6	60	50	< 4
250G 7194 - 80	WD67	"	180	4	80	55	< 4
250G 7195 - 80	WD68	"	300-1000	4	70	50	< 4
250G 7196 - 80	WD69	"	140	< 4	40	40	< 4

SAMPLE NO.	LOCATION	DESCRIPTION OF SAMPLE	SRAT READINGS (cps)	ANALYSES REQUIRED (ppm)			
			SIUT.	U	Th	Y	Mo
250G 7197 - 80	WD70	Bulk Stream Sed. - 10#	160	4	44	55	< 4
250G 7198 - 80	WD71	"	250	4	34	45	< 4
250G 7199 - 80	WD72	"	250-350	4	75	70	< 4
250G 7200 - 80	WD73	"	250-350	4	42	45	< 4
250G 8801 - 80	WD74	"	80	4	24	30	< 4
250G 8802 - 80	WD75	"	120	6	50	53	< 4
250G 8803 - 80	WD76	"	120	< 4	28	35	< 4
250G 8804 - 80	WD77	"	140	14	210	150	< 4
250G 8805 - 80	WD78	"	140	6	65	55	< 4
250G 8806 - 80	WD79	"	90	6	30	34	< 4
250G 8807 - 80	WD80	"	100	< 4	46	38	< 4
250G 8808 - 80	WD81	"	100	6	48	48	< 4