



# ALKANE EXPLORATION LTD

ABN 35 000 689 216

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**CORPORATE OFFICE:** 129 Edward Street, Perth WA 6000 (PO Box 8178, Perth Business Centre, Perth WA 6849)  
Telephone +61 8 9227 5677 Fax:+61 8 9227 8178 Email: [mail@alkane.com.au](mailto:mail@alkane.com.au)

29 May 2003

Manager Announcements  
Company Announcements Office  
Australian Stock Exchange Limited  
20 Bridge Street  
SYDNEY NSW 2000

Dear Sir,

## PRESENTATION

Attached is a copy of the presentation given to shareholders of the Company immediately following the Annual General Meeting held today.

A copy of this presentation will also be available on the Company's website [www.alkane.com.au](http://www.alkane.com.au).

Yours faithfully,  
for **ALKANE EXPLORATION LTD**

D I Chalmers  
**Technical Director**



**ALKANE EXPLORATION LTD**

ABN 35 000 689 216

# ANNUAL GENERAL MEETING

29 MAY 2003

Continued discovery and development

# CORPORATE PROFILE

- ASX Code ALK (listed since 1969)
- Issued Capital 134m shares
- Cash \$5.0m
- 2002 Loss \$3.4m (write downs)  
Profit (2001 / 2000 /1999 / 1998) (\$530,600 / \$543,00 / \$560,000 / \$404,000)
- No Debt

# CORPORATE SUMMARY

## ALKANE EXPLORATION LTD

Australian Public Listed Company

100%

### PEAK HILL GOLD MINE

150,000 oz gold production

#### SULPHIDE DEVELOPMENT

+ 400,000 oz resource

100%

AUSTRALIAN ZIRCONIA LTD

### DUBBO ZIRCONIA PROJECT

Zirconia production

Yttria-Rare Earth production

Niobium-Tantalum production

## EXPLORATION

### NSW - Lachlan Fold Belt

#### TOMINGLEY PROJECT

- Wyoming Gold 110,000 oz ++

Gold, Nickel-Copper

Porphyry Gold-Copper,

VMS Copper-Lead-Zinc

#### MAJOR JOINT VENTURE

Newcrest

### WA

Nickel-Gold

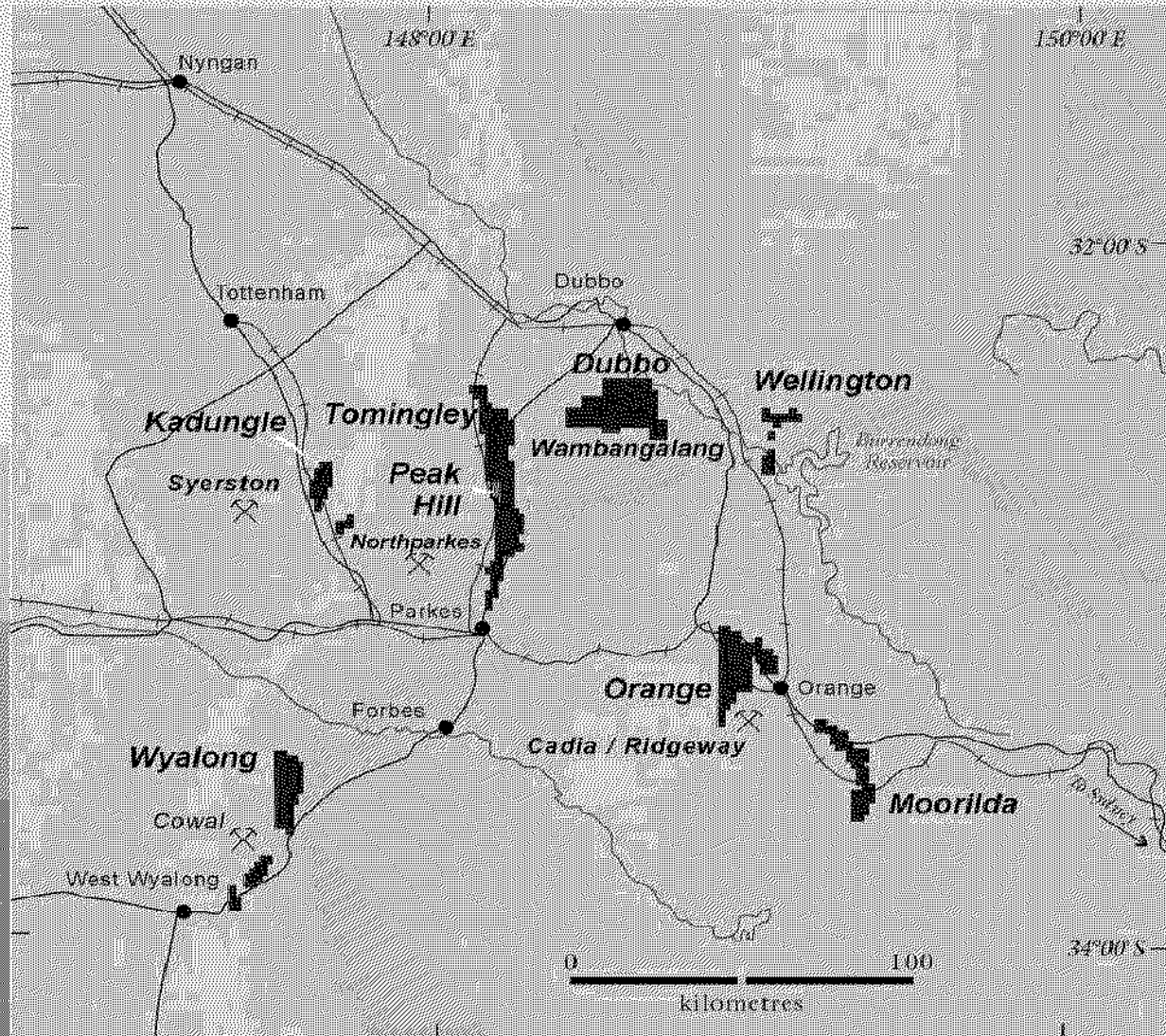
Diamonds

#### MAJOR JOINT VENTURE

Jubilee Mines

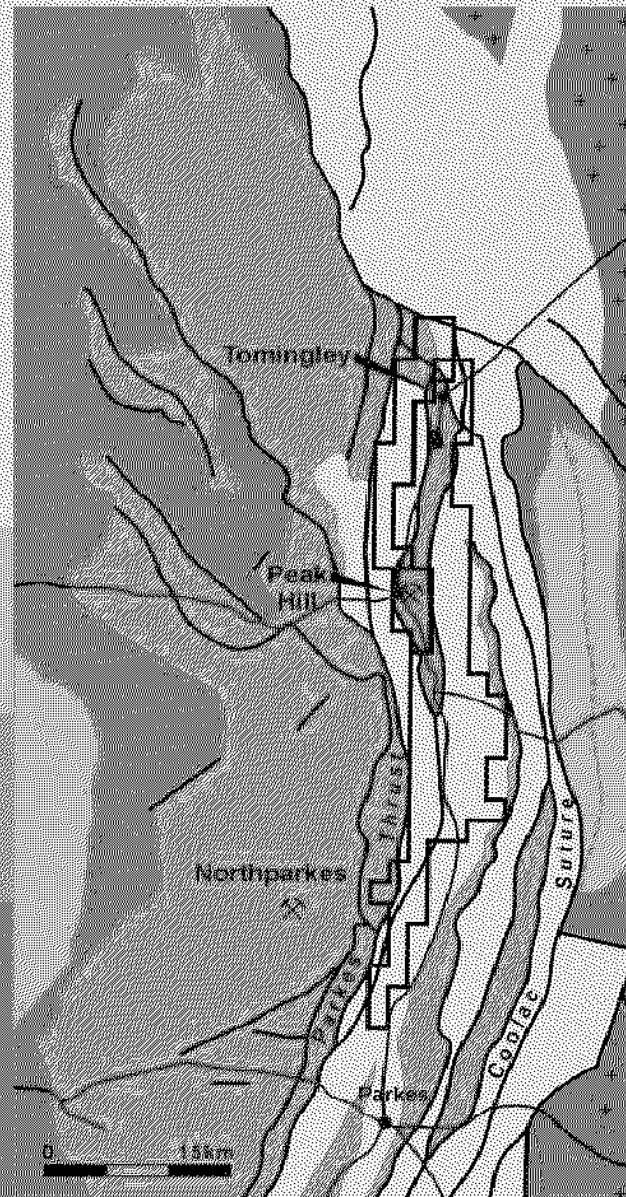


# NSW Tenement Locations

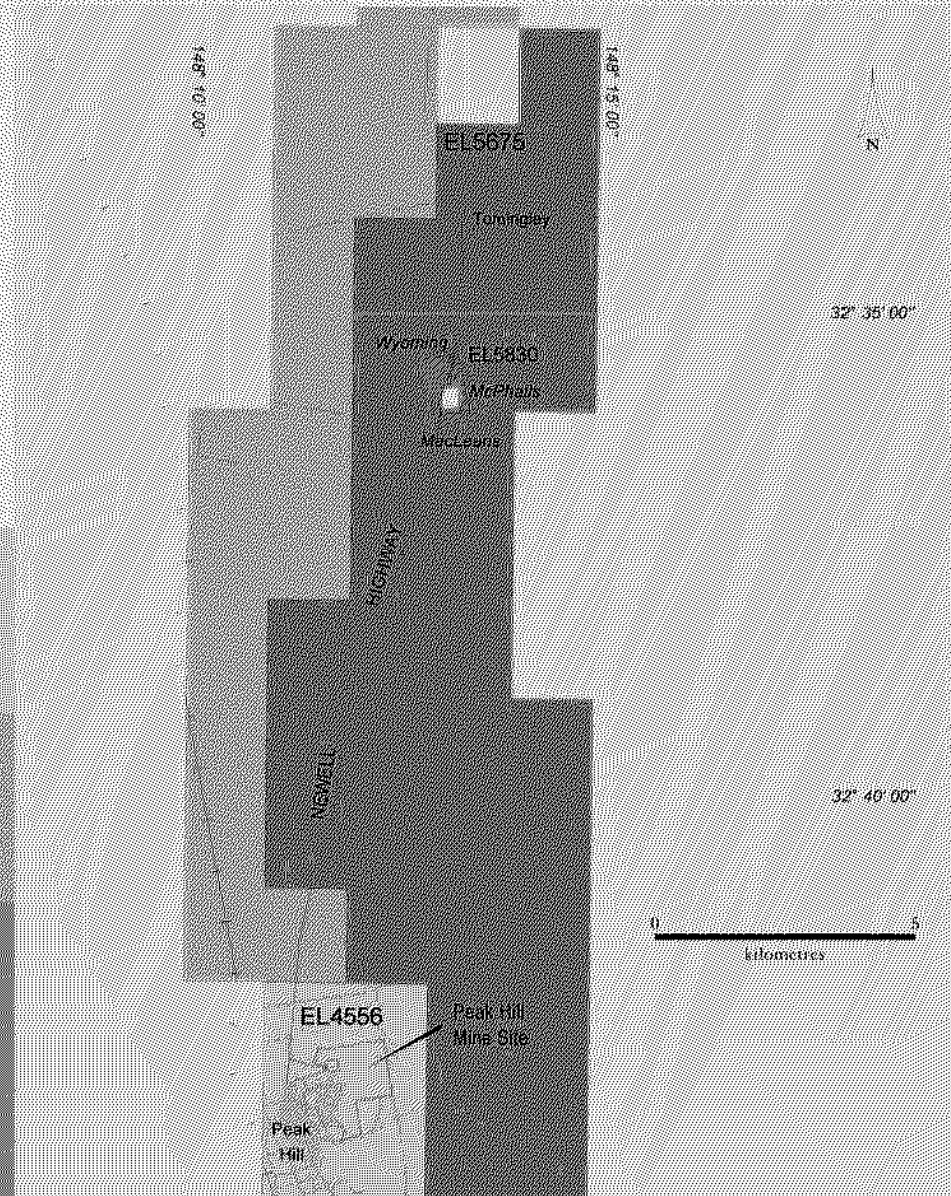
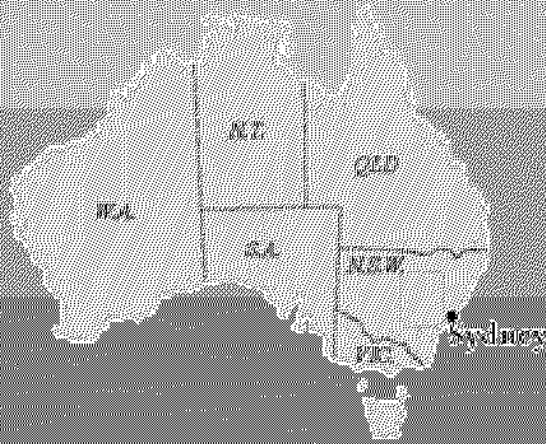


# Regional Geological Setting

## PARKES - NARROMINE



# Tomingley Gold Project Location



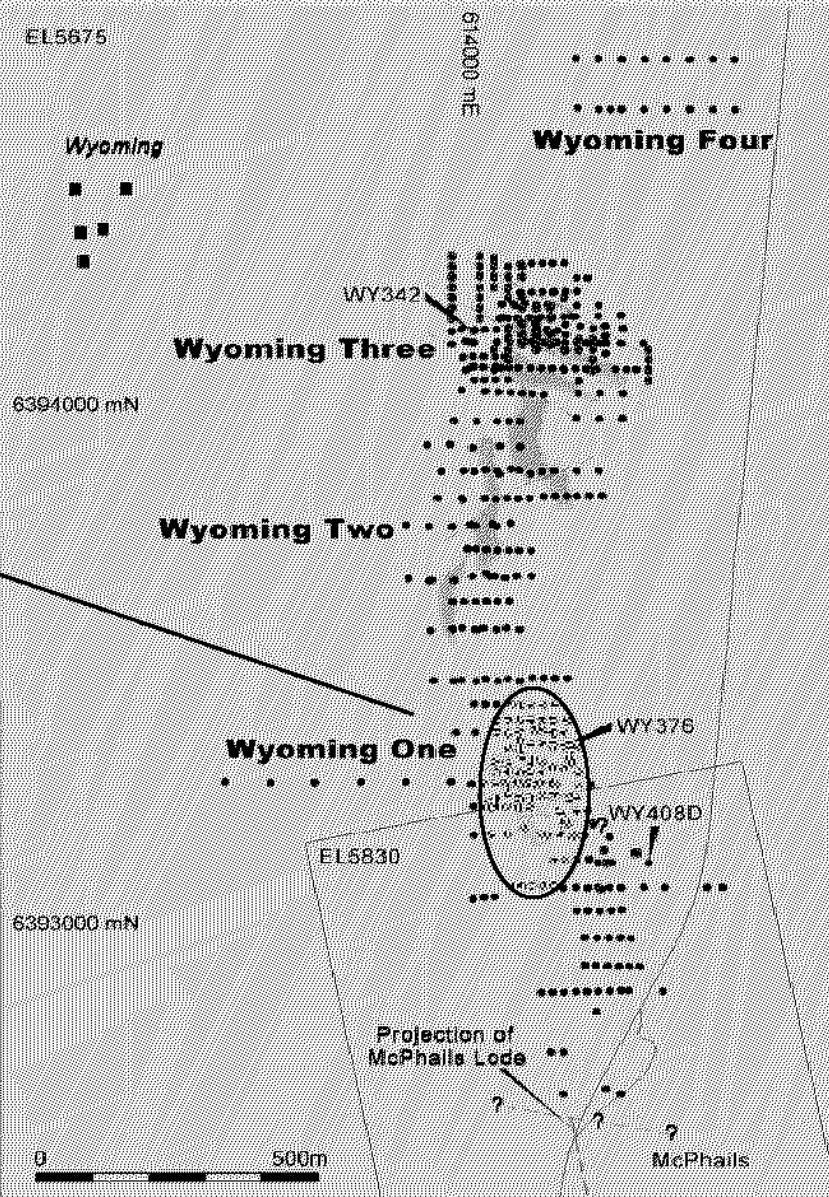
# Wyoming Drillhole Summary

## Wyoming One

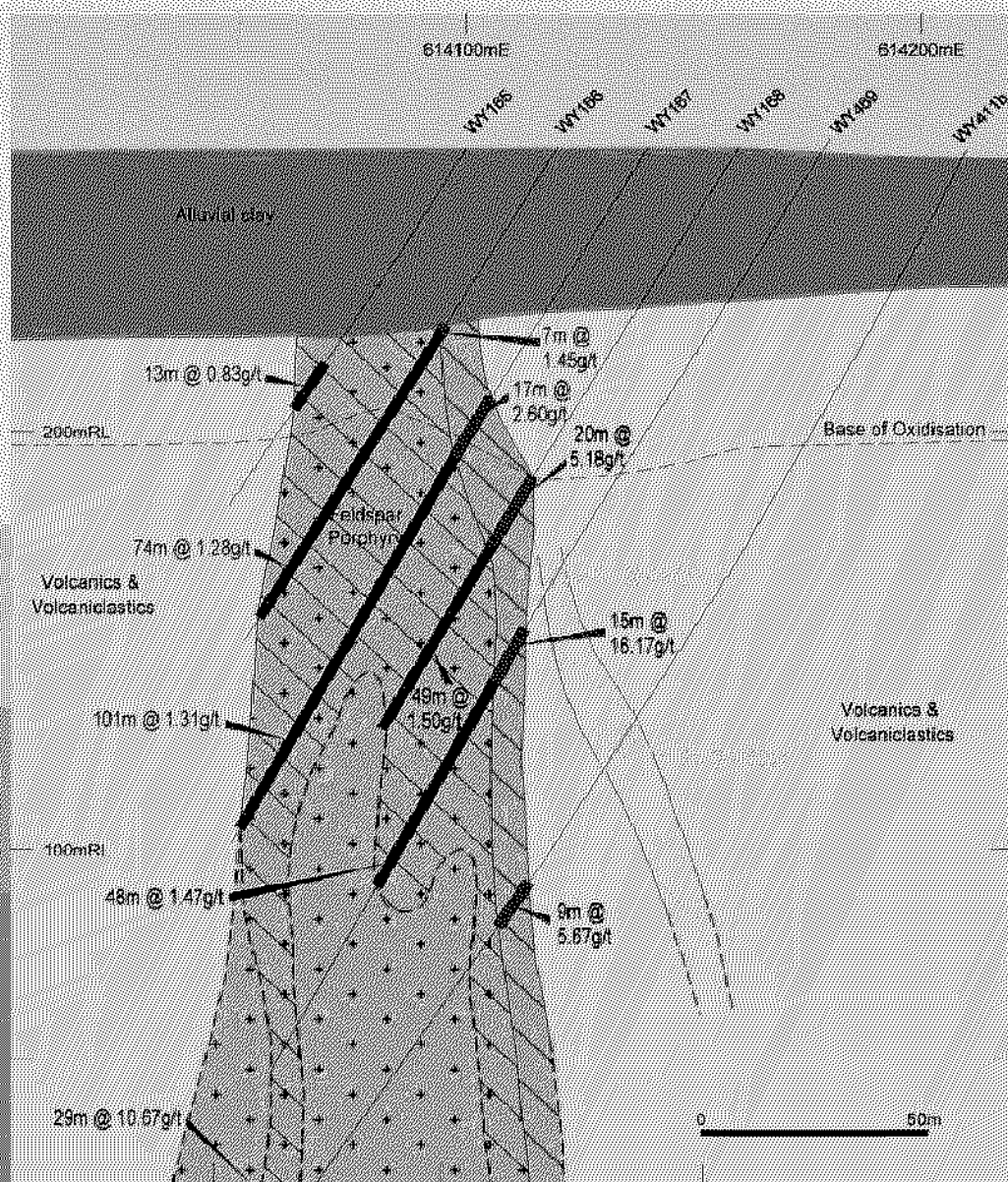
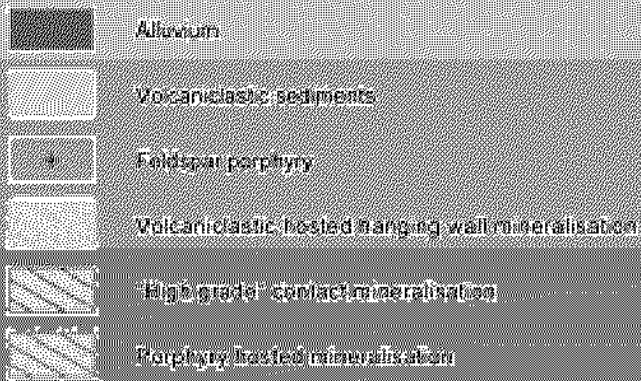
### Drillhole Summary Plan

- Alkane drillholes pre Jan 2003
- Alkane drillholes Jan - 17 April 2003

 Feldspar gneiss



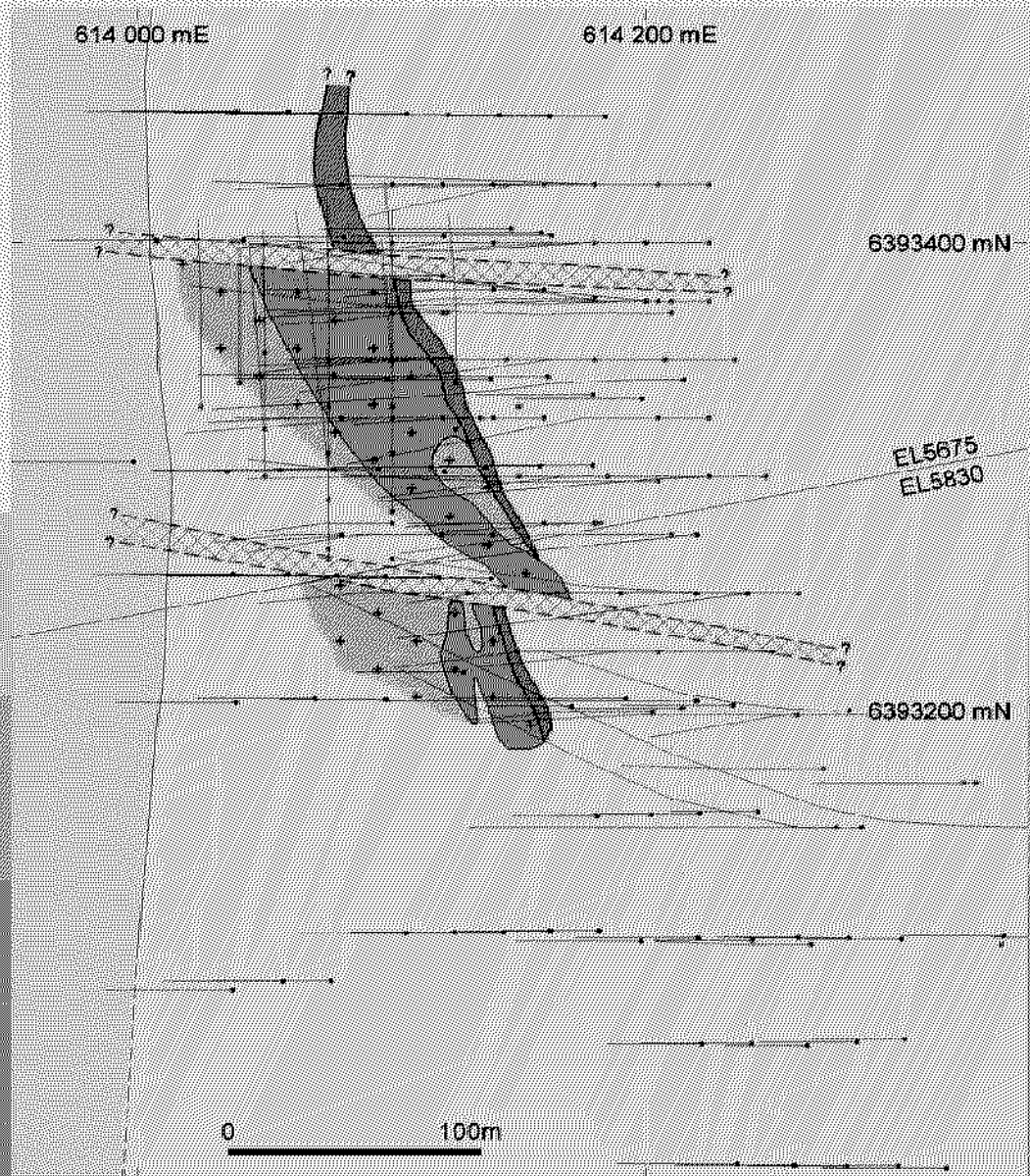
# Wyoming One Section 6393375mN





# Wyoming One Simplified Interpretation

-  Cross structure mineralisation
-  Volcaniclastic hosted hanging wall mineralisation
-  "High grade" contact mineralisation
-  Porphyry hosted mineralisation
-  Pelitic sediments
-  Volcaniclastic sediments
-  Feldspar porphyry
-  Alkane drillhole 911 and 2003
-  Alkane drillhole 2093



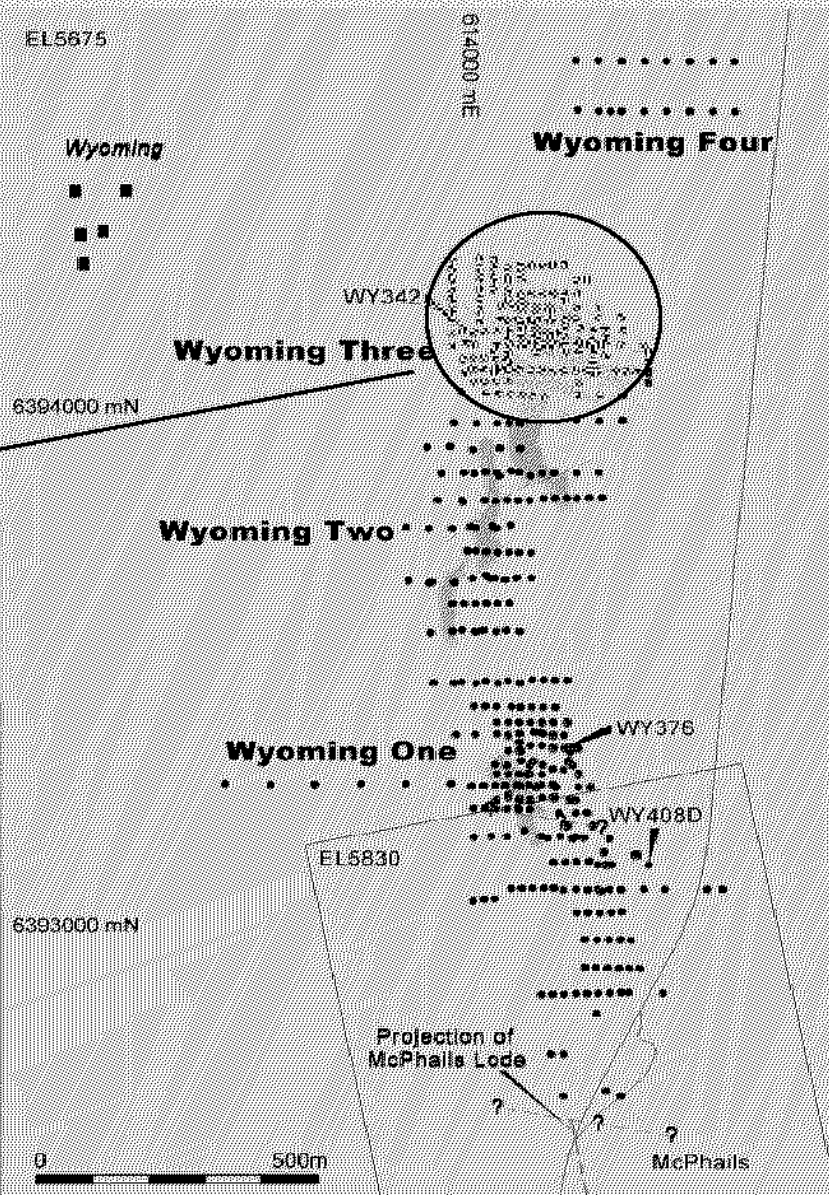
# Wyoming Drillhole Summary

## Wyoming Three

### Drillhole Summary Plan

- Alkane drillholes pre Jan 2003
- Alkane drillholes Jan - 17 April 2003

 Feldspar gneiss



# Wyoming Three 200mRL Interpretation

## Legend



Mineralized zone



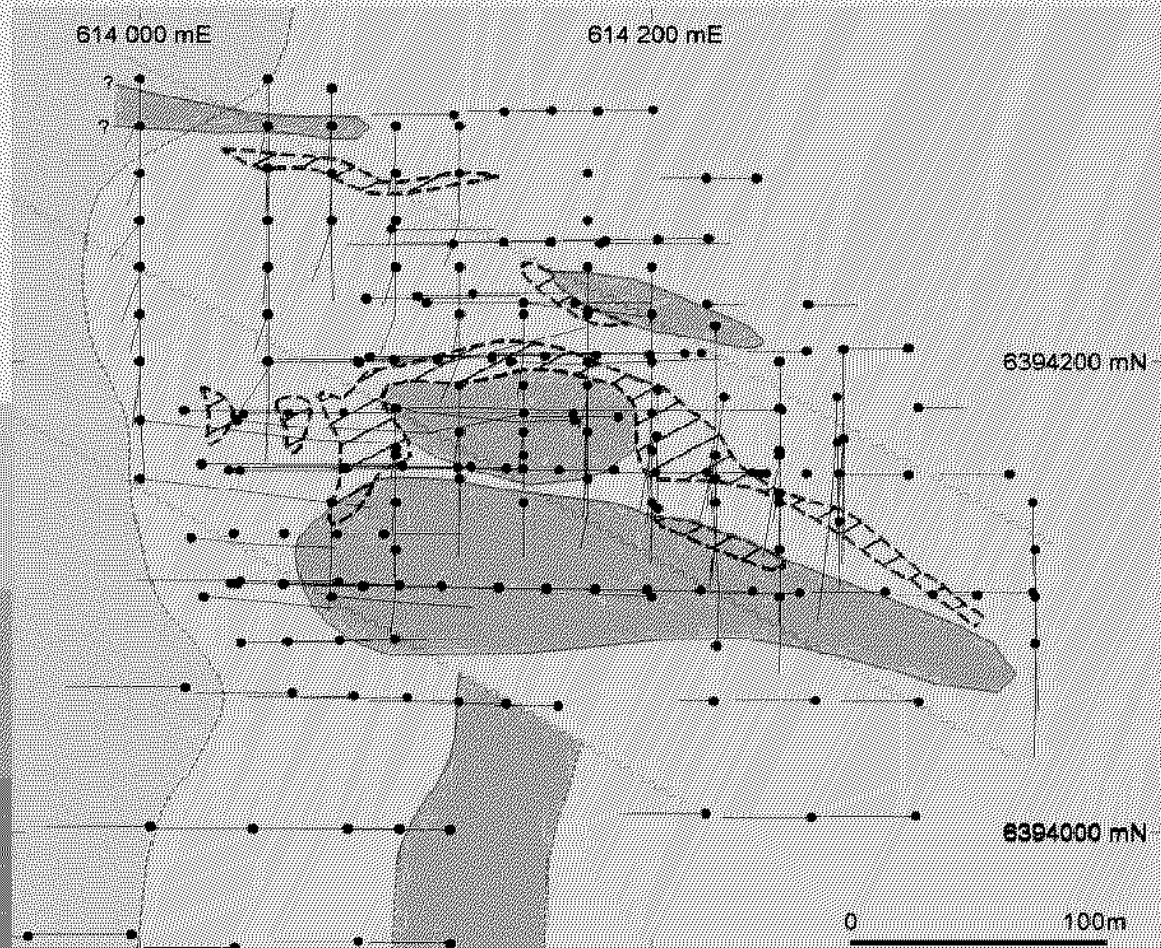
Pelitic sediments



Volcaniclastic sediments



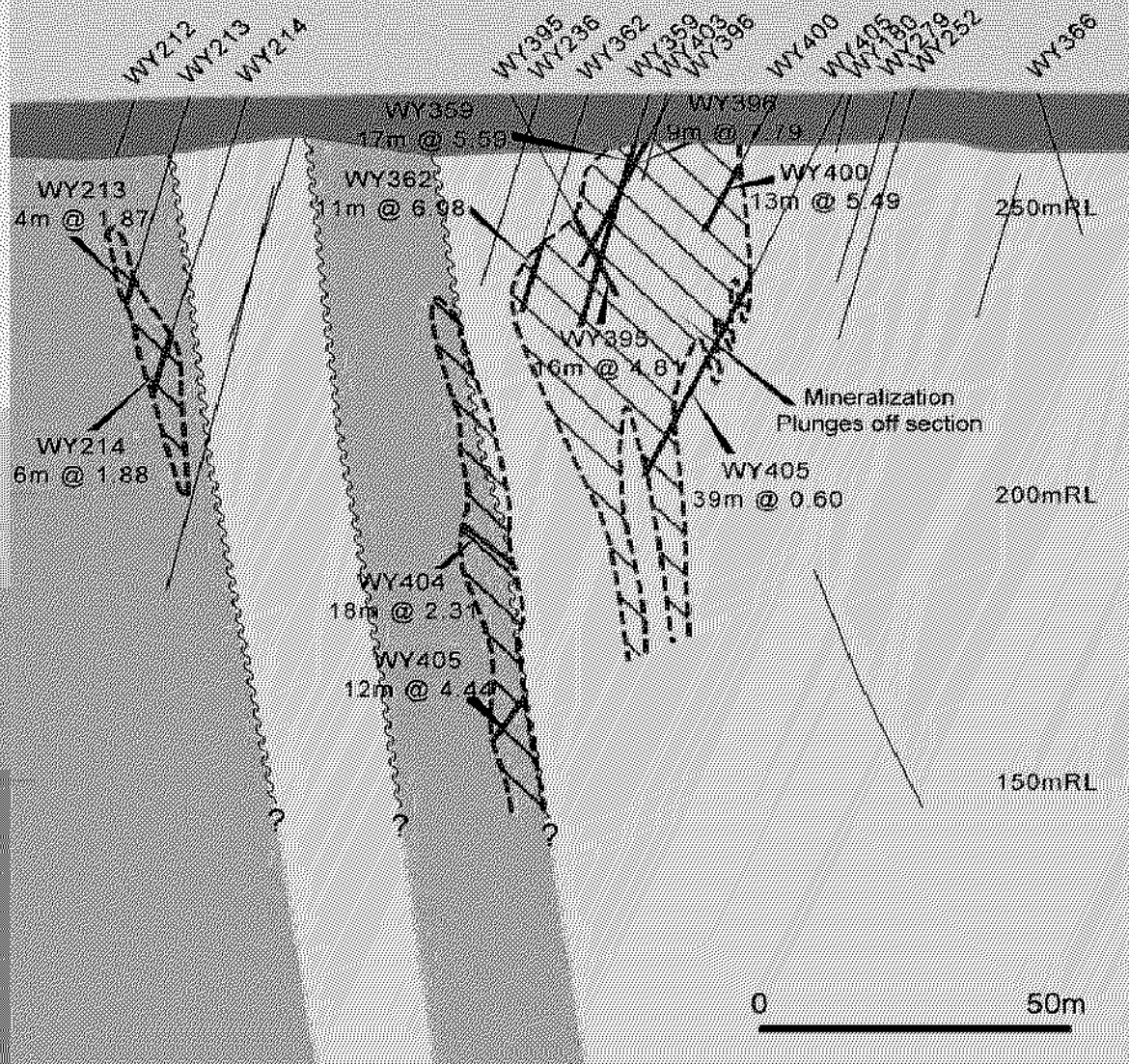
Feldspar porphyry



# Wyoming Three Idealised Oblique Section

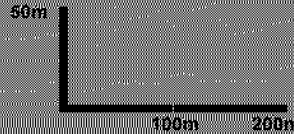
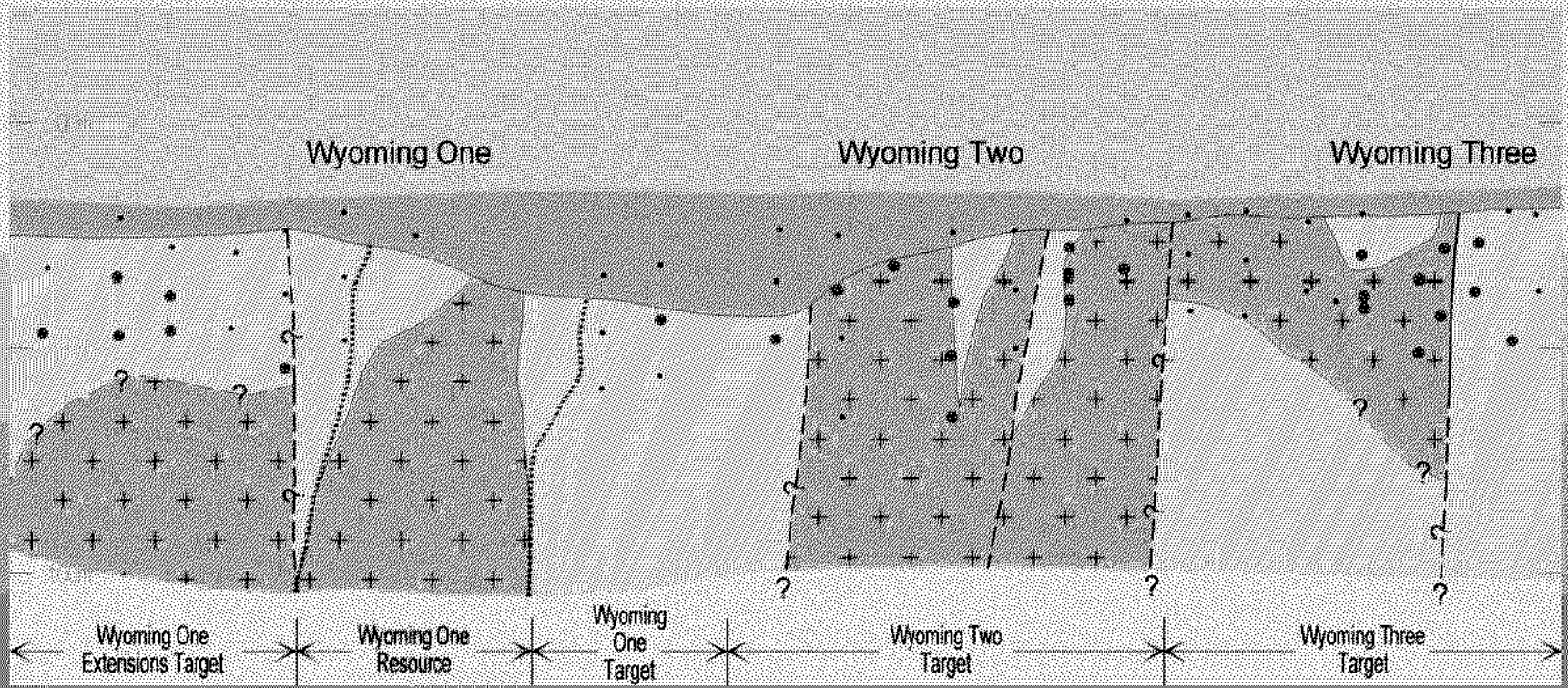
## Legend

-  Mineralized zone
-  Alluvium
-  Volcaniclastic sediments
-  Feldspar porphyry



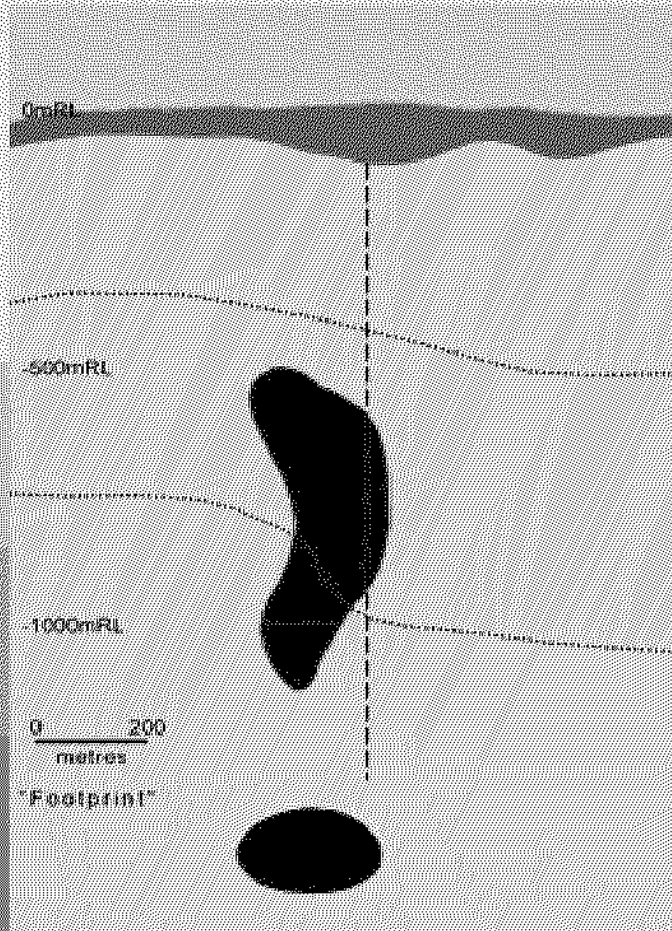
# TOMINGLEY GOLD PROJECT

## Longitudinal Section - Wyoming



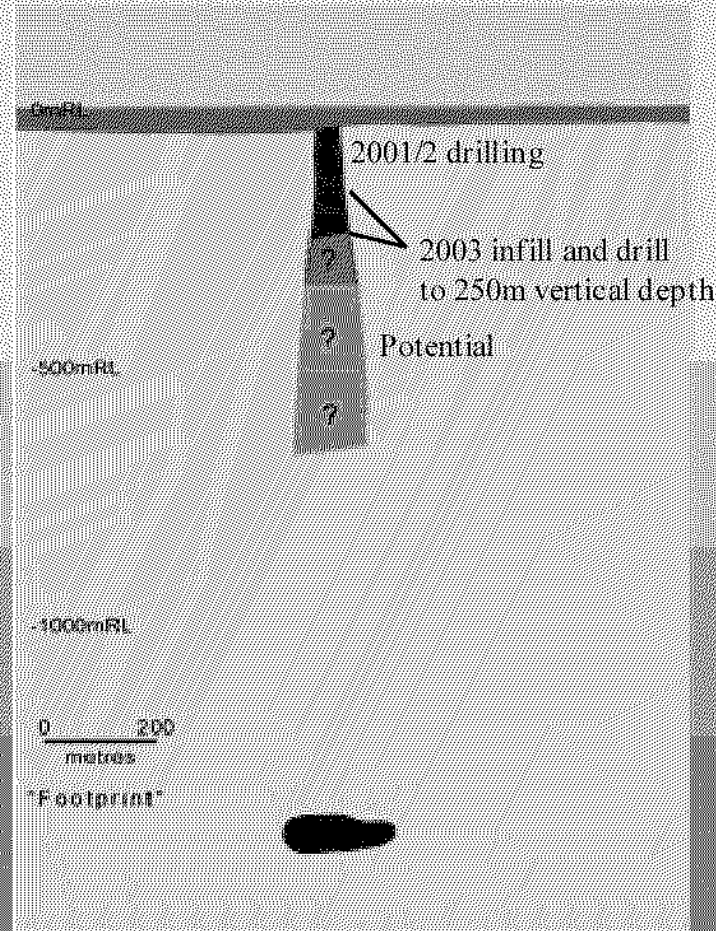
# TOMINGLEY GOLD PROJECT

## Ridgeway Section



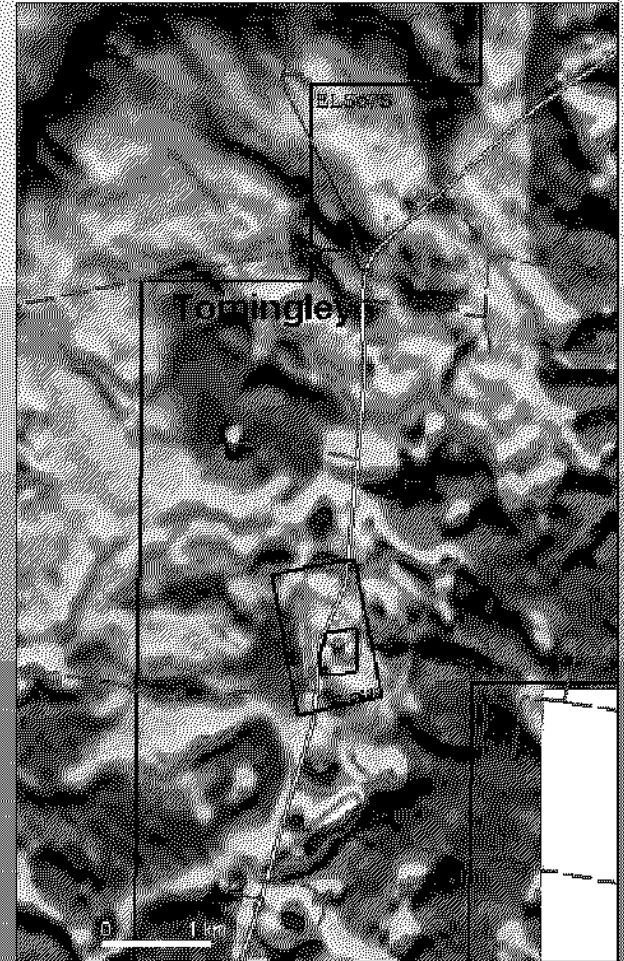
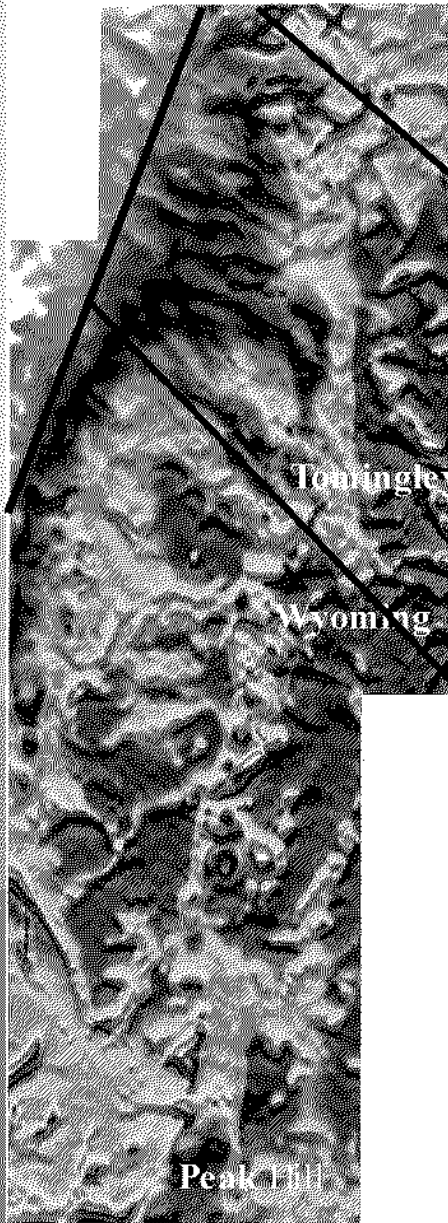
41 million tonnes @ 2.4g/t Au 0.75 Cu 3.2Moz

## Wyoming One Section



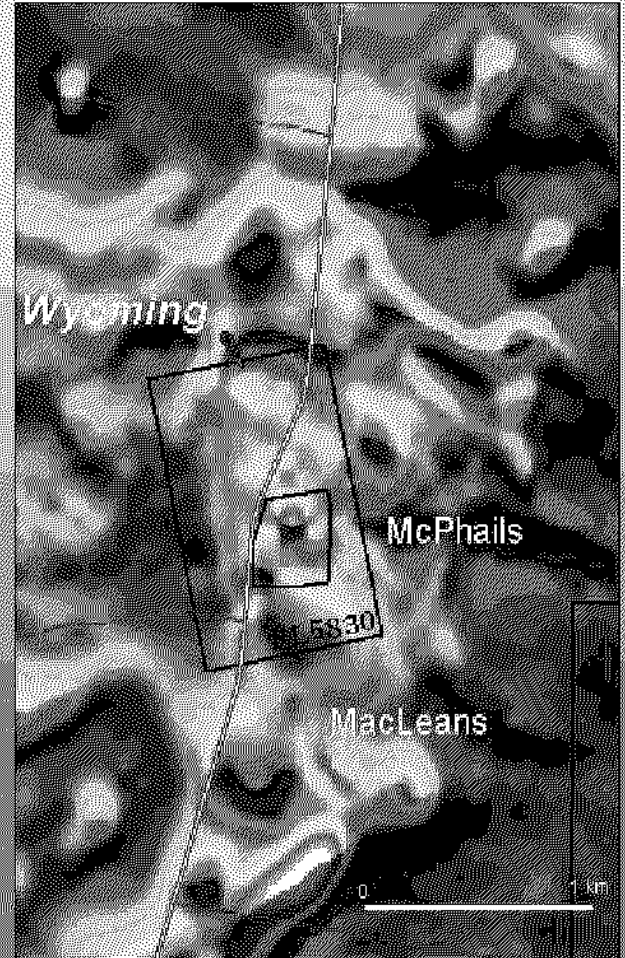
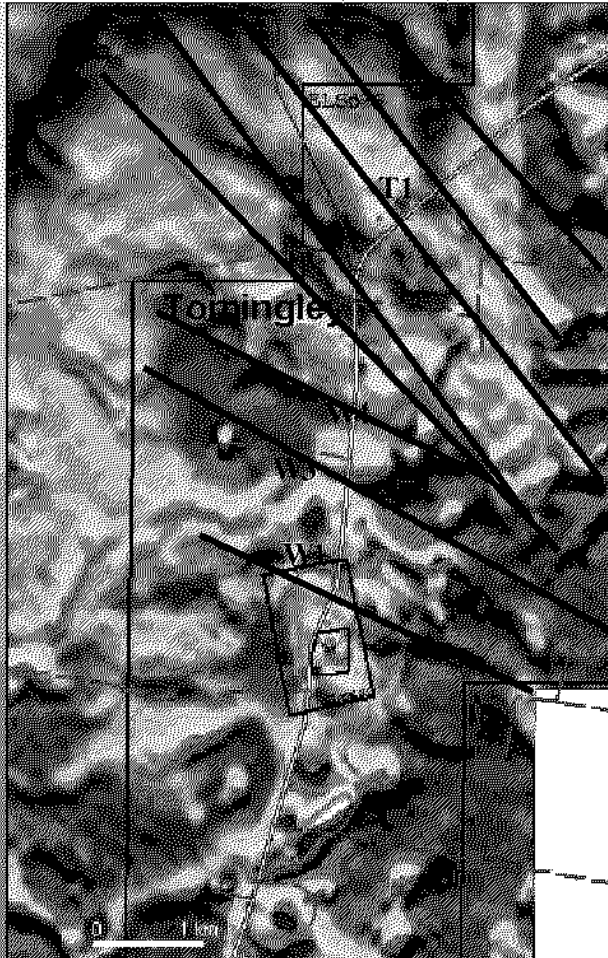
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# Tomingley Project Aeromagnetic Images



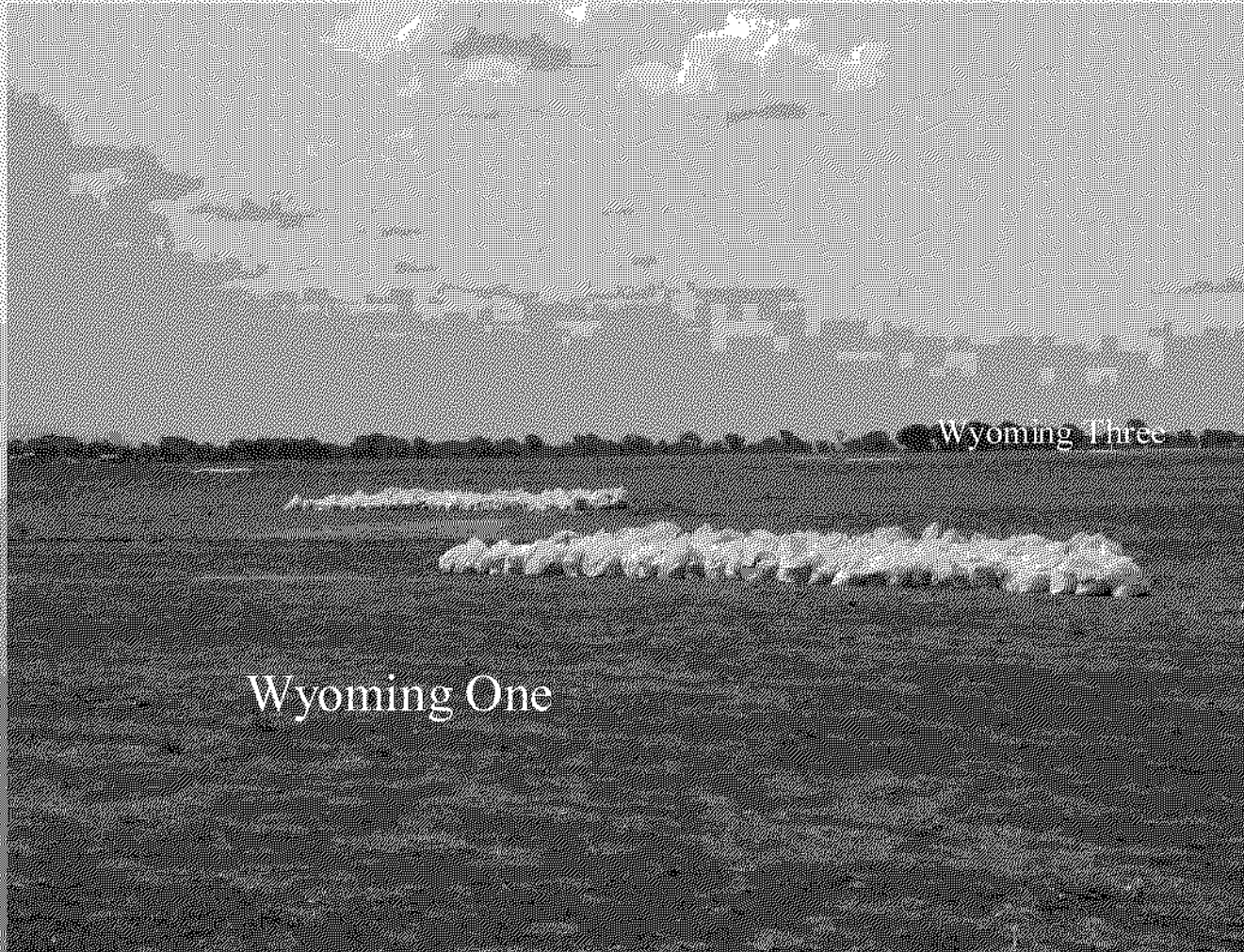
# Tomingley Gold Project

## Aeromagnetic Image



# Tomingley Gold Project

## Wyoming Prospect – December 2002



# Tomingley Gold Project

## Wyoming Prospect WY376



Rimas Kairaitis

Terry Ransted

# Tomingley Gold Project

Wyoming Prospect – March 2003



# Tomingley Gold Project

Wyoming One Prospect – April 2003



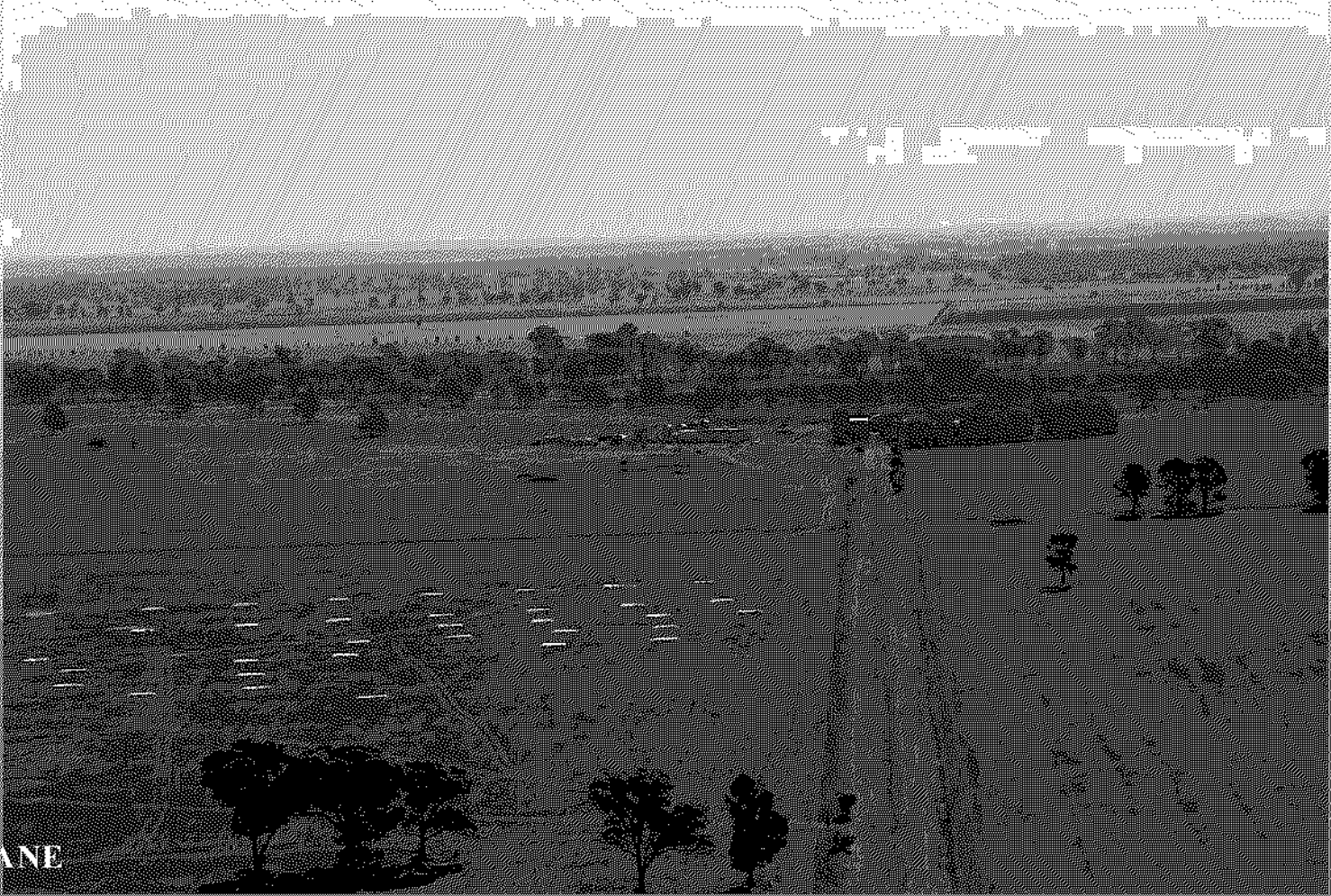
# Tomingley Gold Project

Wyoming Prospect – April 2003



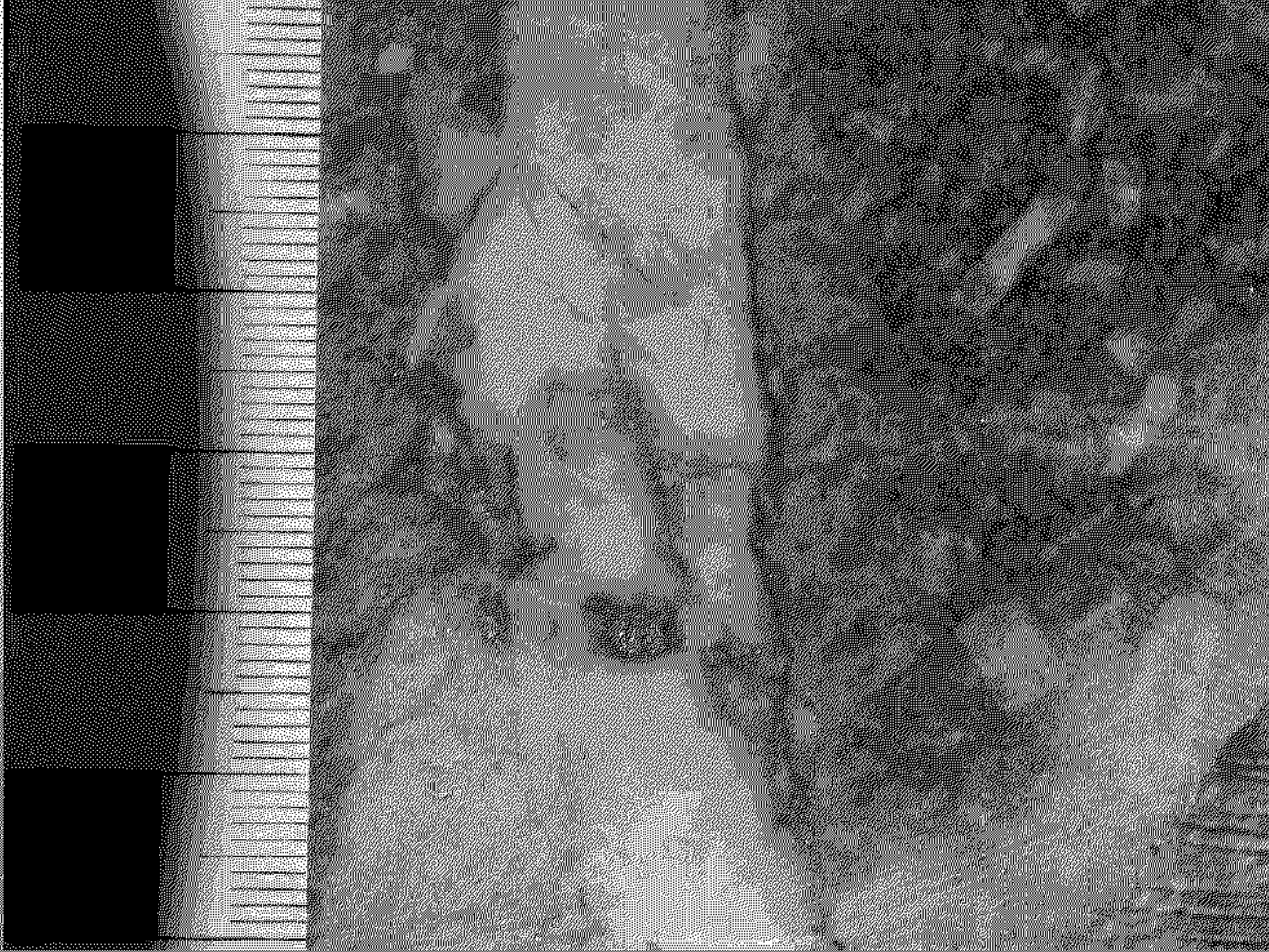
# Tomingley Gold Project

Wyoming Three Prospect – April 2003



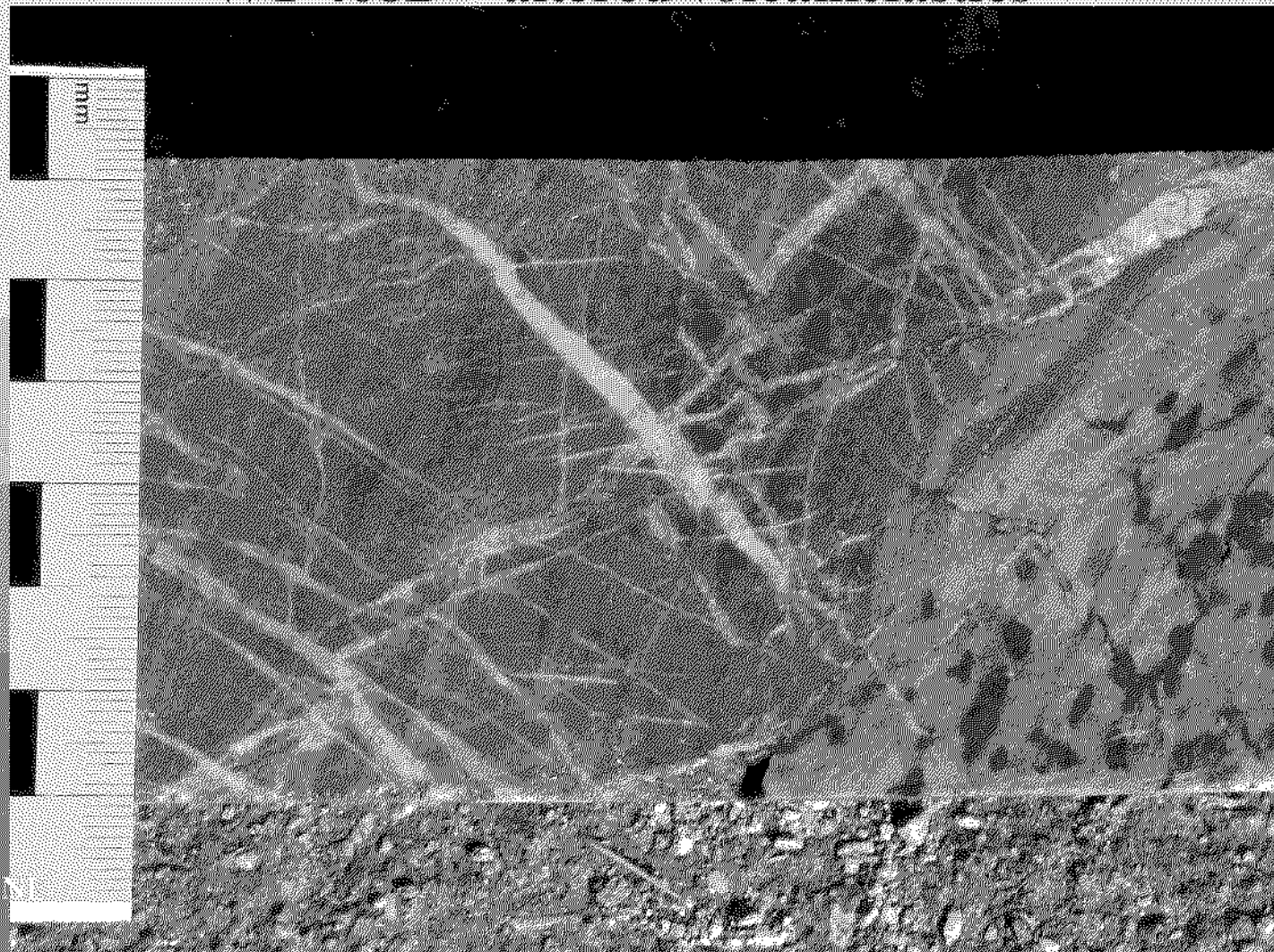
# Tomingley Gold Project

WY 411D – vg in porphyry



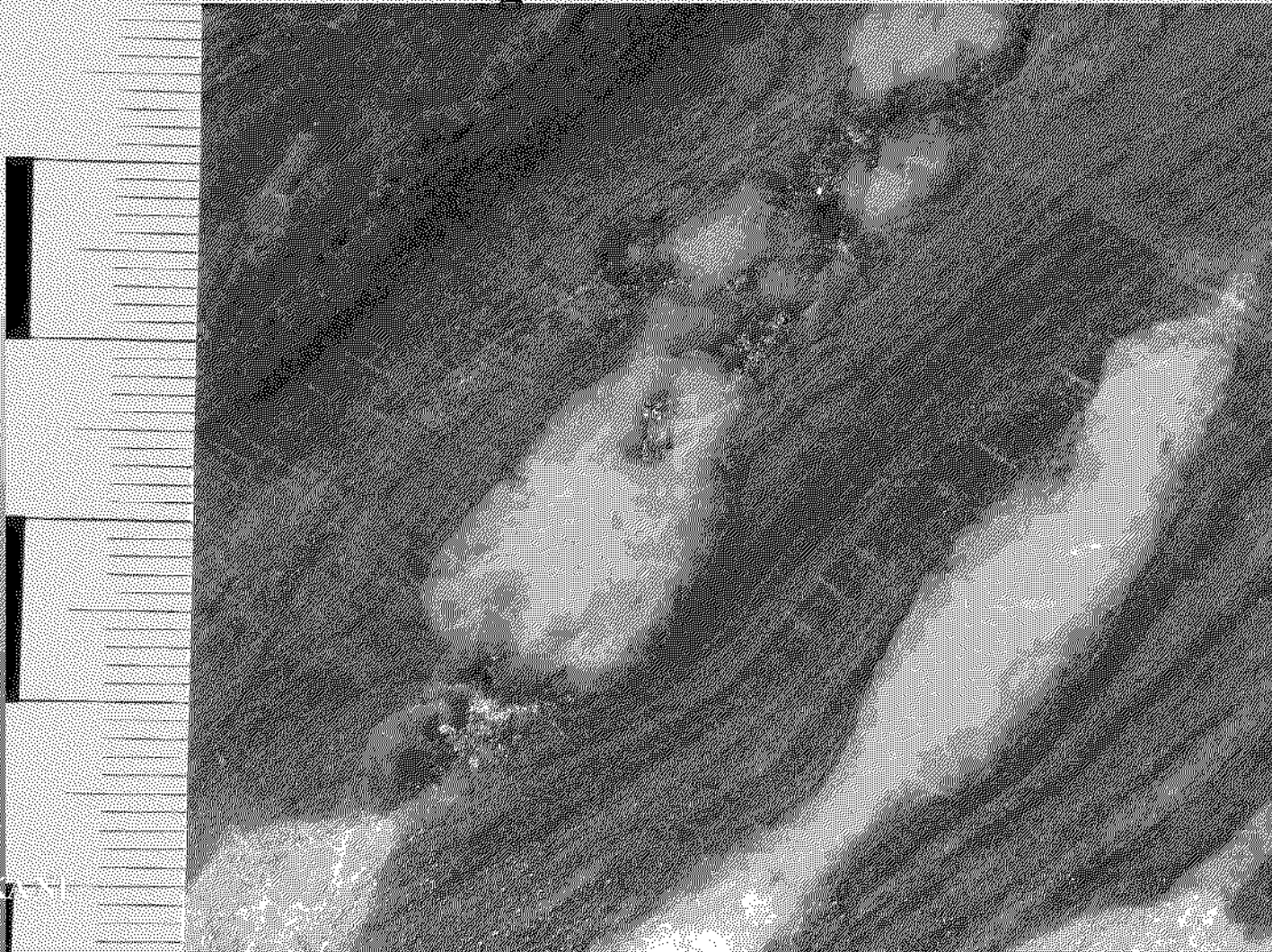
# Tomingley Gold Project

WY 468D – altered volcaniclastics



# Tomingley Gold Project

WY 468D – vg in altered volcaniclastics



# TOMINGLEY GOLD PROJECT

## Selected 2003 Wyoming One Drill Results

|         |                   |                        |
|---------|-------------------|------------------------|
| WY 411D | 22m @ 10.66g/t Au | incl 2m @ 107.5g/t Au  |
| WY 469  | 81m @ 4.26g/t Au  | incl 13m @ 16.44g/t Au |
| WY 471  | 54m @ 3.80g/t Au  | incl 6m @ 12.66g/t Au  |
| WY 478  | 120m @ 3.85g/t Au | incl 12m @ 21.20g/t Au |
| WY 481  | 156m @ 1.71g/t Au | incl 15m @ 7.02g/t Au  |
| WY 482  | 39m @ 3.47g/t Au  | incl 6m @ 15.06g/t Au  |
| WY 483  | 18m @ 7.96g/t Au  | incl 6m @ 21.30g/t Au  |
| WY 484D | 65m @ 1.95g/t Au  | incl 9m @ 5.27g/t Au   |
| WY 497  | 99m @ 4.30g/t Au  | incl 6m @ 18.20g/t Au  |
| WY 505  | 72m @ 3.76g/t Au  | incl 15m @ 11.92g/t Au |

# TOMINGLEY GOLD PROJECT

## Wyoming Development Concept

Total drilling from May 2001 to December 2002 ~ 40,000 m in 363 holes

Total expenditure to December 2002 A\$1.1 million

Further 15,000 m RC and core resource drilling scheduled first half 2003

5,000 m target development aircore drilling planned till June 2003

Revised resource assessment and development scenario September 2003

Further metallurgical work, environmental and pre-feasibility studies

Budget 2003 A\$2.0 million

Target Resource : 500,000 ounces (+1 million??)

Target Production : 75 - 100,000 ounces per year

# PEAK HILL GOLD MINE

High Sulphidation Epithermal Gold Copper System (Ordovician)

Conventional Open Cut Mining, Agglomeration Heap Leach  
Dump Leach of Oxidised Cap

Production Commenced 1996 at Capital Cost \$5 million

Mined 3.385Mt @ 1.91 g/t Au and 1.499Mt @ 0.78 g/t Au

1996-2002 Output 145,000 ounces

Cash Operating Surplus \$14 million

Production 2003 Estimated 5 -10,000 ounces -> cash flow~ \$2m

100,000 to 500,000 ounces in sulphide deposit from 100m to 300m

Oxide mining ceased October 2002 , production continues to 2005



# PEAK HILL GOLD MINE

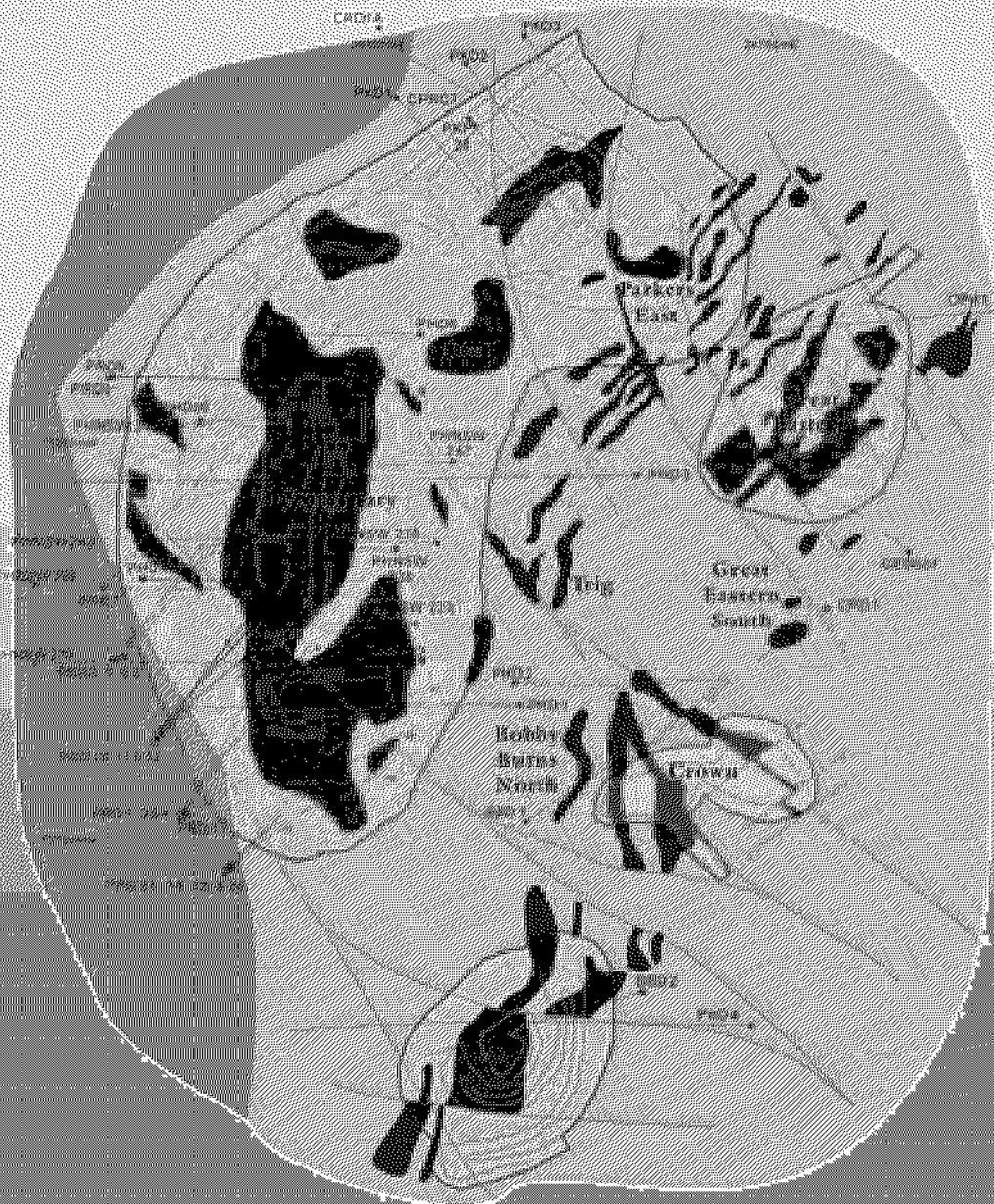


# PEAK HILL SULPHIDE ZONE DRILL LOCATIONS

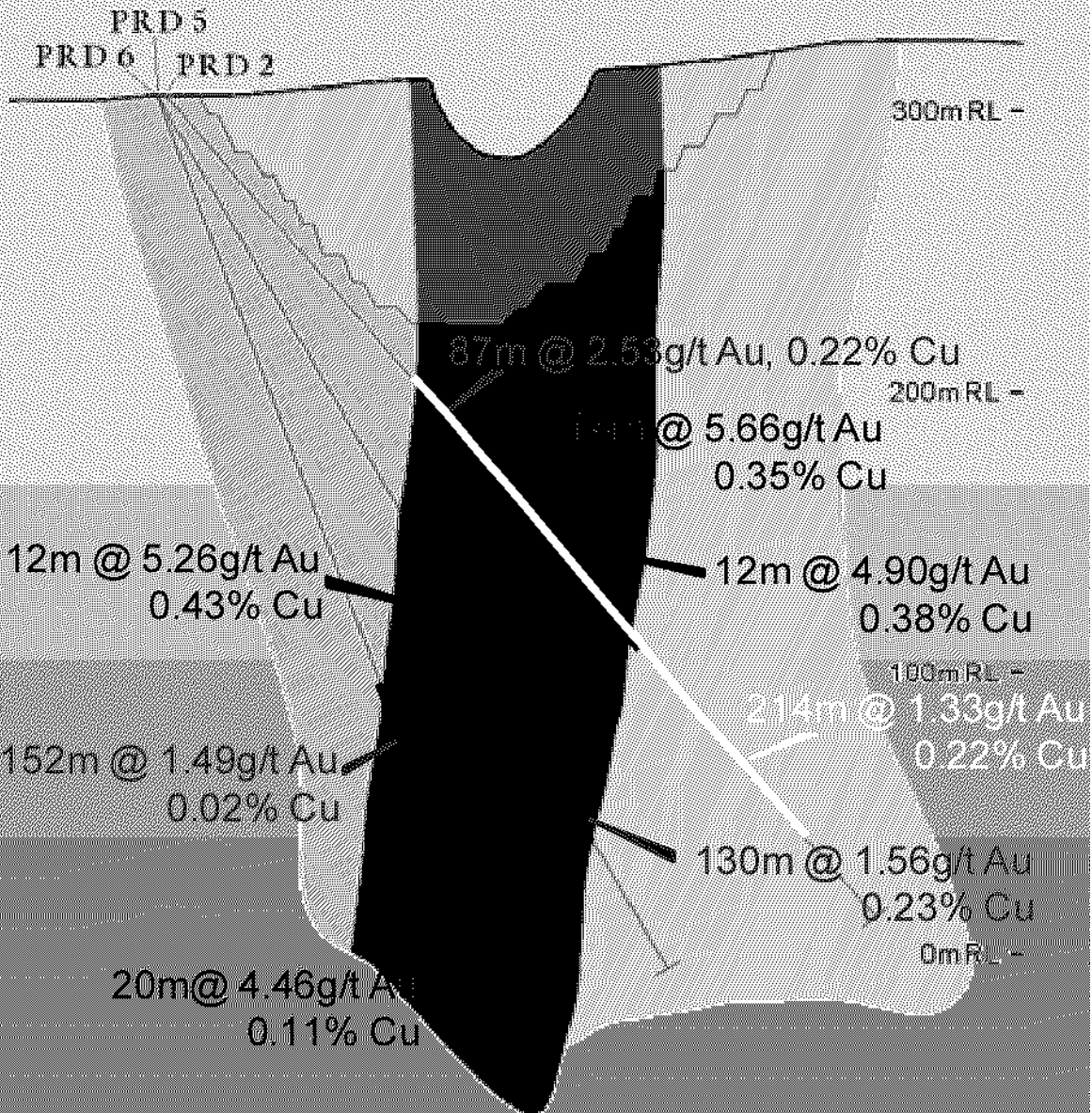
0 200m

## LEGEND





-  Major Ore Zones
-  Argillic alteration
-  Propylitic alteration
-  Oxide Open Pit
-  Drill hole – sulphide target



# PEAK HILL CROSS SECTION PRD 2, 5, & 6



## LEGEND

-  Major Ore Zone (silica-sulphide)
-  Argillic alteration
-  Propylitic alteration
-  Oxide Open Pit

# PEAK HILL GOLD MINE – OCE

## The Open Cut Experience



# PEAK HILL GOLD MINE – OCE

Alkane's commitment to sustainable development



# PEAK HILL GOLD MINE – OCE

Alkane's commitment to sustainable development



# DUBBO ZIRCONIA PROJECT

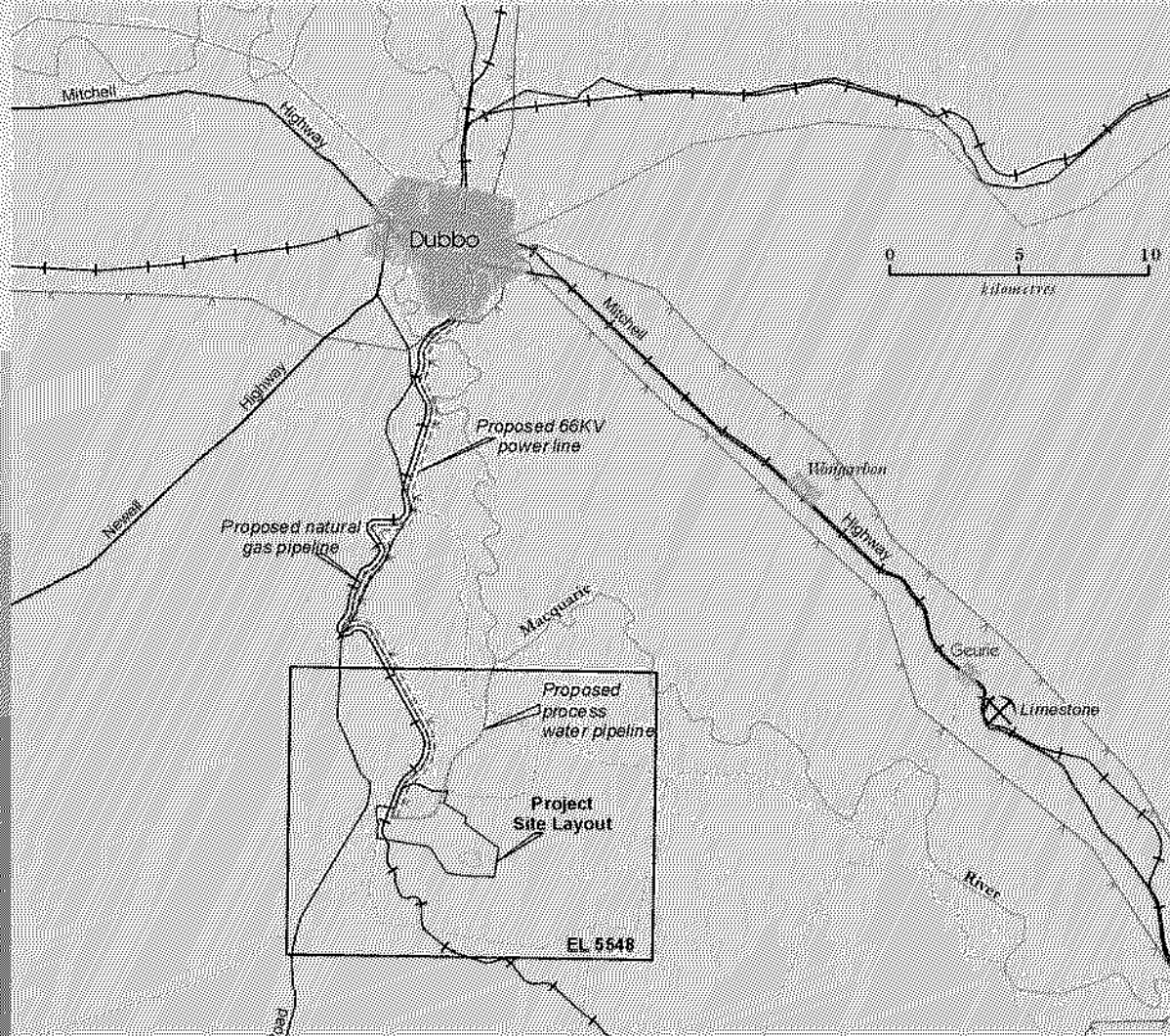
## SUMMARY

- Project based upon large Jurassic aged alkaline volcanic complex with highly metal enriched vertical trachyte intrusive
- One of the worlds largest zirconium, yttrium and niobium resources (+ 100 million tonnes) - also contains significant tantalum and rare earth elements

|                           |                    |                              |
|---------------------------|--------------------|------------------------------|
| • Zirconium metal Zr      | zirconia           | $ZrO_2$ (+HfO <sub>2</sub> ) |
| • Niobium metal Nb        | niobium pentoxide  | $Nb_2O_5$                    |
| • Tantalum metal Ta       | tantalum pentoxide | $Ta_2O_5$                    |
| • Yttrium metal Y         | yttria             | $Y_2O_3$                     |
| • Rare earth elements REE | rare earth oxides  | REO's                        |

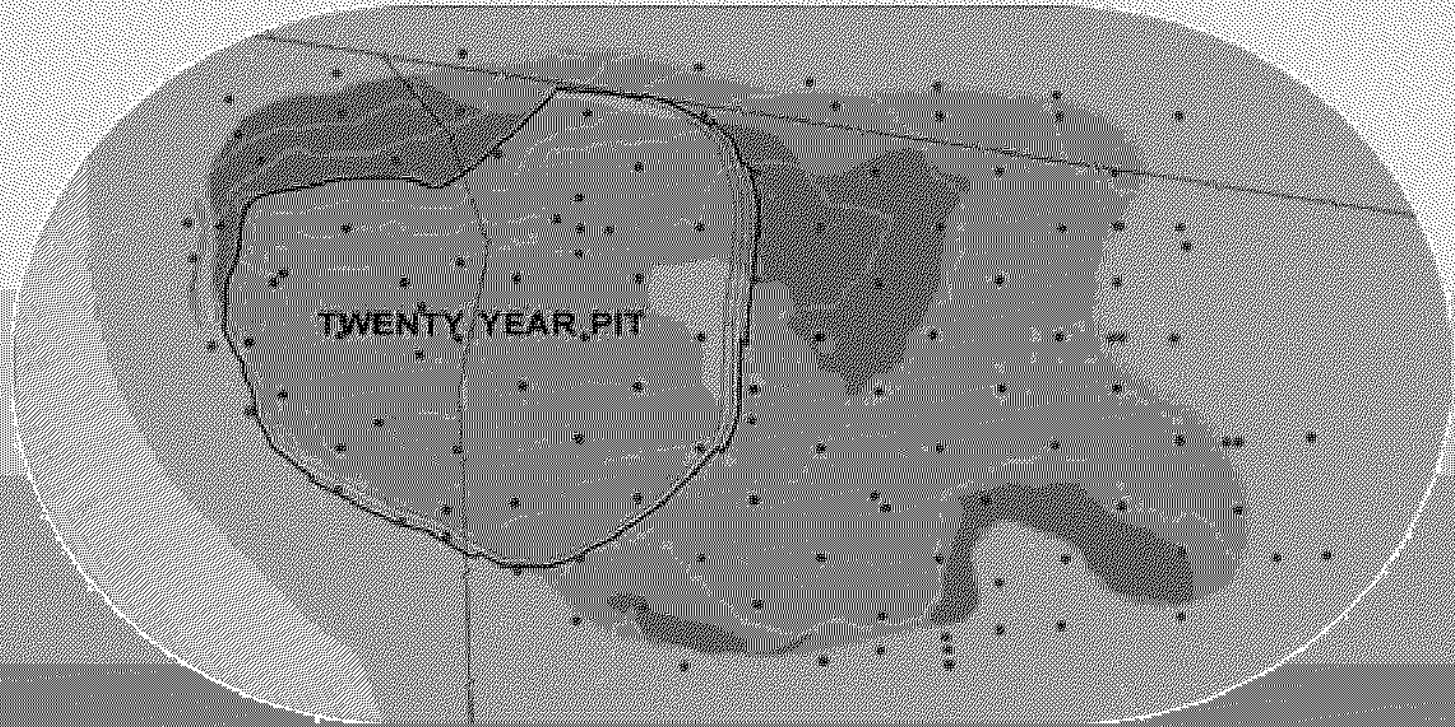
# DUBBO ZIRCONIA PROJECT

## Project Site and Infrastructure Location



# DUBBO ZIRCONIA PROJECT

## Geology & 20 Year Pit



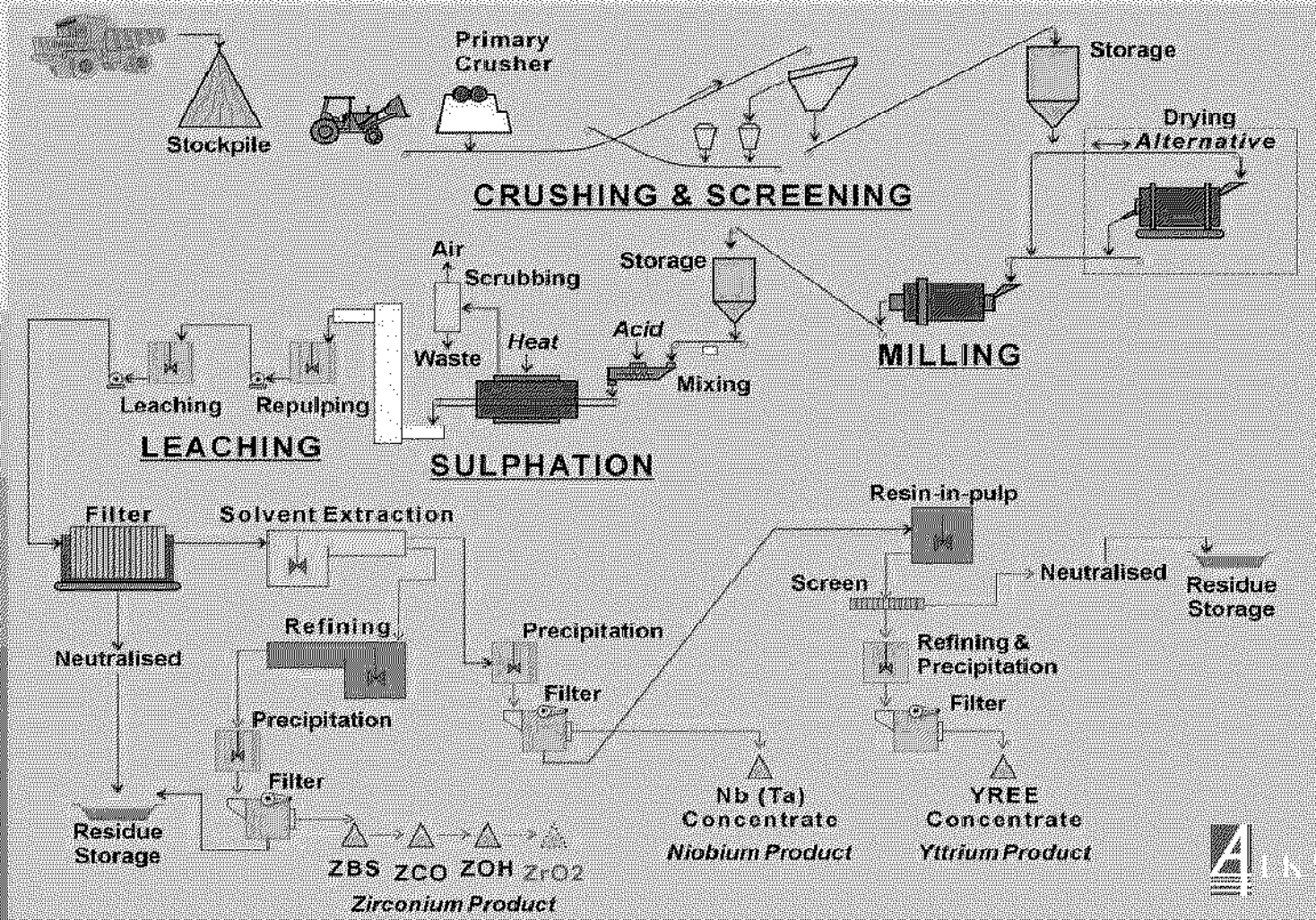
0 200  
metres

- Mineralised Trachyte
- Basalt
- Napperby Formation
- Drill hole collar

# DUBBO ZIRCONIA PROJECT RESOURCES

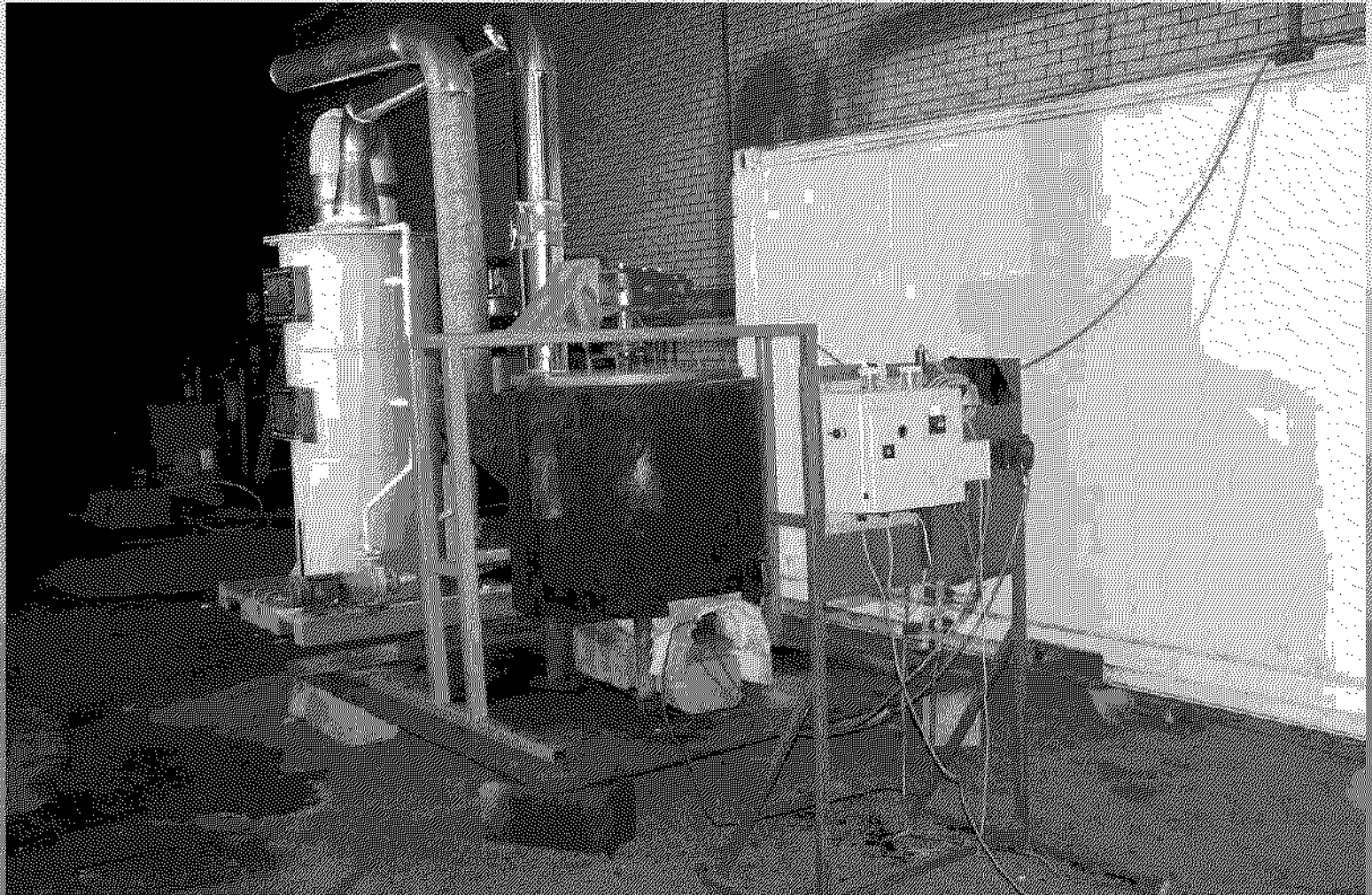
|                                      |   |   |
|--------------------------------------|---|---|
| Measured Resource<br>0 - 55 metres   | : | 35.7 million tonnes grading<br>1.96% $ZrO_2$ , 0.04% $HfO_2$ , 0.14% $Y_2O_3$<br>0.46% $Nb_2O_5$ , 0.03% $Ta_2O_5$<br>and 0.75% REO |
| Inferred Resource<br>55 - 100 metres | : | 37.5 million tonnes at similar grades   |
| TOTAL                                | : | 73.2 million tonnes   |

# DUBBO ZIRCONIA PROJECT PROCESS FLOW SHEET



# DUBBO ZIRCONIA PROJECT

## Mini Pilot Plant - Roaster



# DUBBO ZIRCONIA PROJECT

## Mini Pilot Plant - SX Circuit



# DUBBO ZIRCONIA PROJECT

## INDICATIVE DEVELOPMENT

Conceptual Project at start up 200,000tpa ore processed

|                               |   |
|-------------------------------|---|
| Zirconium products            | 3000 tpa zirconia ( $ZrO_2 + HfO_2$ ) equivalent<br>ZBS Zirconium basic sulphate<br>ZOH Zirconium hydroxide<br>ZCO Zirconium carbonate<br>ZrO Zirconia (calcined) |
| Niobium - tantalum products   | 600 tpa niobium (+Ta )concentrate<br>niobium pentoxide ( $Nb_2O_5 + Ta_2O_5$ )  |
| Yttrium - rare earth products | 1200 tpa yttria - rare earth concentrate<br>yttria and rare earth oxides ( $Y_2O_3 + REO$ )   |

PROJECT LIFE ++ 250 YEARS

# DUBBO ZIRCONIA PROJECT

## INDICATIVE FINANCIALS

Conceptual Project at 200,000tpa – DFS November 2002

|                                   |   |         |           |
|-----------------------------------|---|---------|-----------|
| Production - $ZrO_2$ (+ $HfO_2$ ) | : | 3000tpa | <8% world |
| $Y_2O_3$ + REO                    | : | 1200tpa | <8% world |
| $Ta_2O_5$ / $Nb_2O_5$             | : | 600tpa  | minor     |

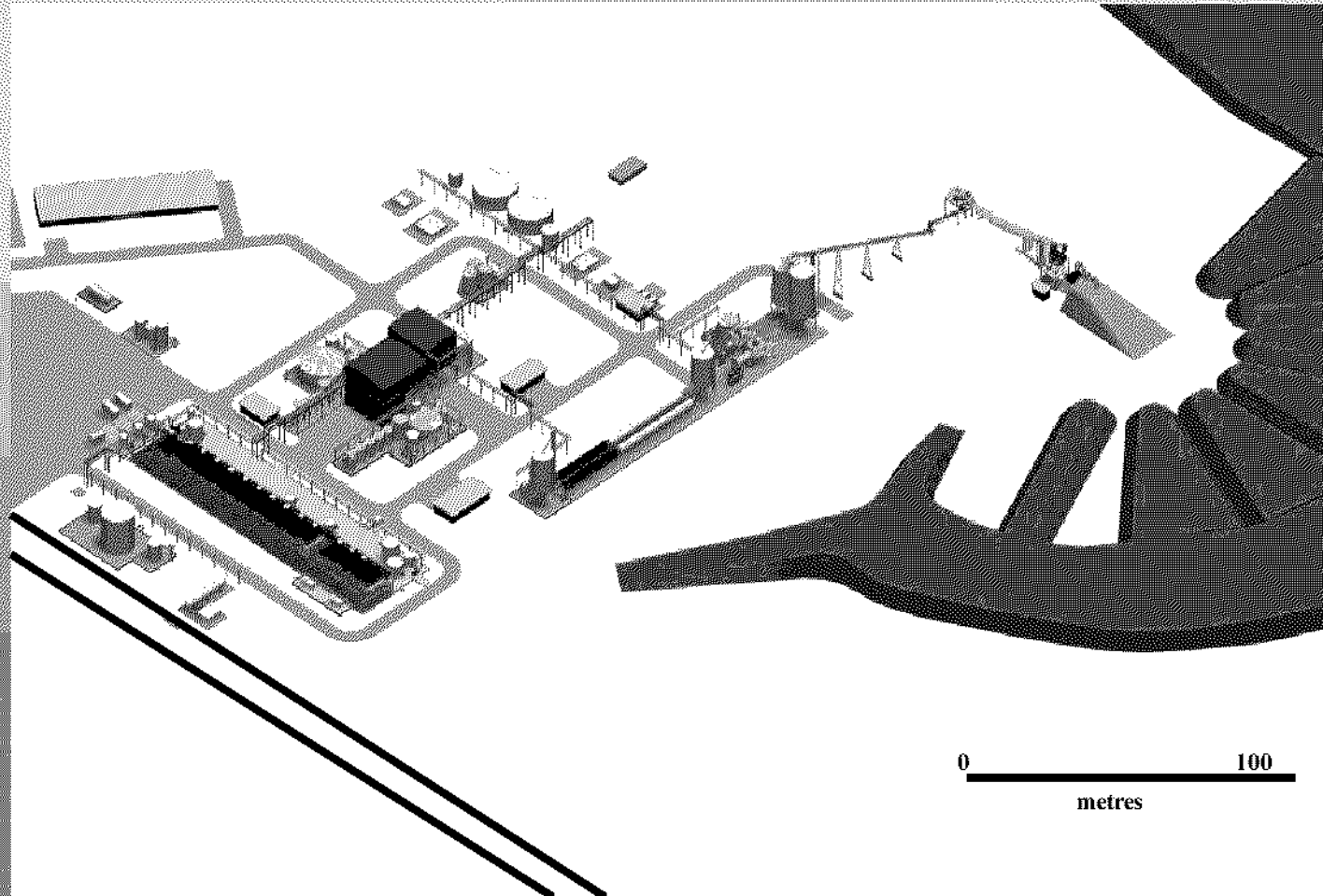
Revenue - \$35.0 to \$50.0 million

Operating Costs - \$30/32 million (base case - reducible)

Capital Costs - \$ 80.0 / 90.0 million (reducible)

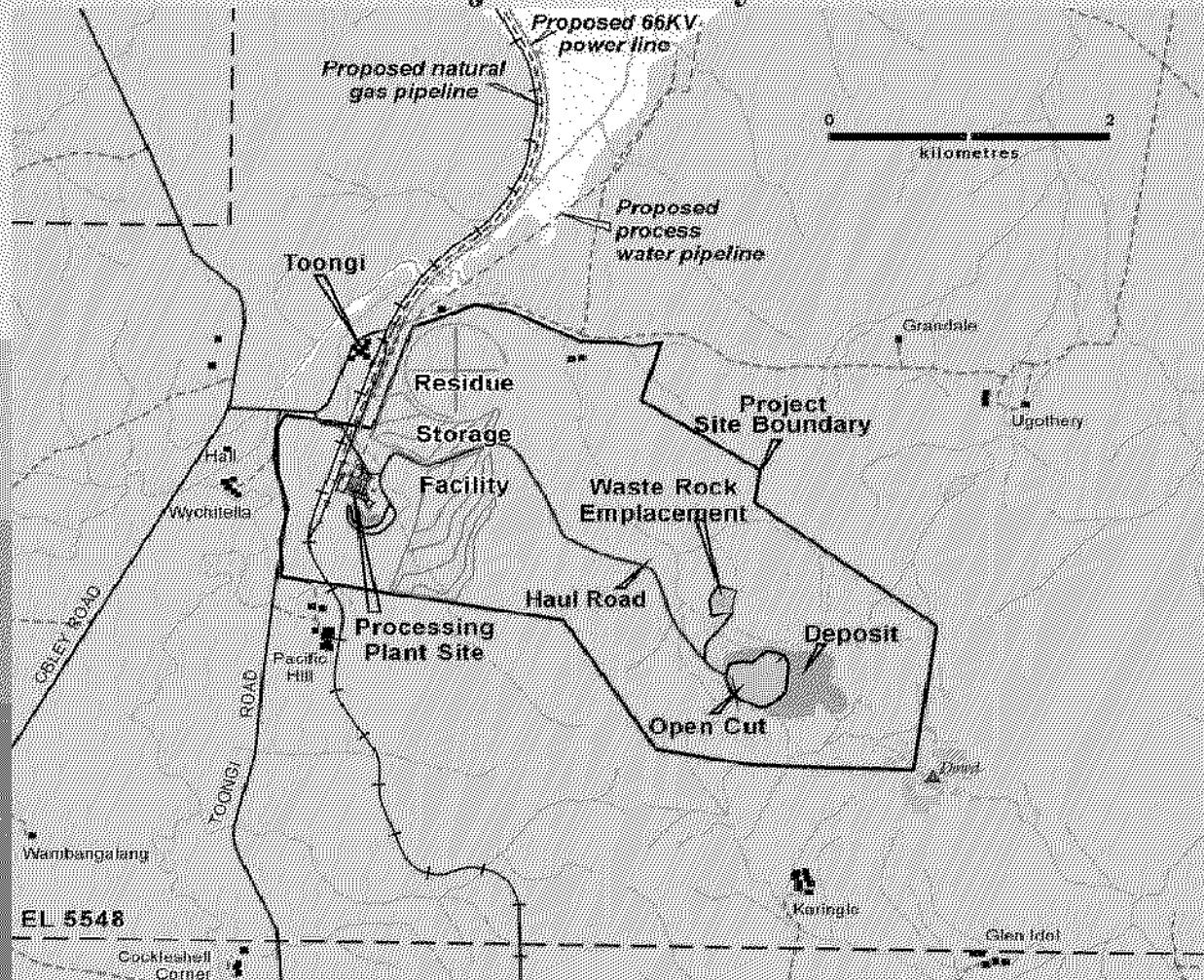
# DUBBO ZIRCONIA PROJECT

## Preliminary Plant Layout



# DUBBO ZIRCONIA PROJECT

## Project Site Layout



# DUBBO ZIRCONIA PROJECT

## Current Summary

Advanced discussions in progress with existing major zirconia producer

Agreement anticipated by the end of June 2003

Incoming party to earn an interest by funding construction and operation of demonstration pilot plant.

Will provide product development technology and existing markets

Will secure development funding

# THE TEAM

## EXPLORATION

Terry Ransted

Rimas Kairaitis

David Meates

Steve Woodham

Chief Geologist

Senior Geologist

Geologist

Field Supervisor

## PRODUCTION

Geoff Meates

Shane Allison

Mike Sutherland

Glen Morgan

General Manager Gold Operations

Operations Manager

Environment Manager

Wet Plant Foreman

## SUPPORT

David Moyses

Karen Brown

CAD – Drafting

Corporate Administration/Accounting