



Ramblings at the Mines and Wines

Sept 20th 2007



Choose your own topic :

Lindsay G – gave me the **GREEN** light to say :

- Nick you can swear - (no bloody option really)
- you can abuse the Minister (*but do not tell him I told you*)
- ridicule the Govt at will
- do not mention uranium
- and promote your new company Carpentaria Exploration as much as you like

Usual Disclaimer :

all these views are my personal views - and I have been out of the Country for the last 4 years so I am not really up to date.

So if I offend I'll have to buy you a beer or 2



So tonight's topic

Exploration today

- are we doing it in the right places ?
- are we doing it properly ??

Rugby

Red Tape

CURLING



Rugby

A HOT TOPIC



Australia is in a bit of bother as :

Daily Mail Headline

“Gregan in doubt for next game after questioned by French Police”







Rugby

Notice two rare events

1. Spare seat
2. Wales scoring a try





Another Rare Event



GOLDEN OLDIES WELLINGTON 2006



Red Tape



Red Tape

“Many of the State’s existing mines and reserves are expected to be significantly diminished over the next few years. For example, several existing metalliferous mines will close within the next 10 years and there are currently few proposed developments to replace them. **It takes approximately 10 to 15 years from discovery to development** for most major greenfields mining projects. Without a significant new discovery in NSW, in the near future Cadia may be the only major metalliferous mine operating in the State. Exploration, particularly in greenfield sites, will be crucial to achieving the 2020 vision. “



Why is this accepted as the norm ?



Red Tape

Rapid development tales :

Mirabela Nickel :

- Discovered Santa Rita in late 2004
- BFS completed mid 2007
- Estimate commissioning plant 2Q 2009



4.5 years from discovery to production

Statistics :

- Measured and Indicated – 89 million tonnes grading 0.57% Ni, 0.14% Cu
- Inferred – 15.2 million tonnes grading 0.51% Ni, 0.14% Cu
- Est 16,000 tpa nickel in concentrate

Why can't we do this here ?



Red Tape

Laws and Regulations and Policies JUST to Explore in NSW

| LAWS | Total | Separate Laws |
|-------------------------------------|-------|----------------------|
| General Commercial and Property law | | 9 |
| Employment and OHS | | 14 |
| Environmental and Planning | | 39 |
| REGULATIONS | | |
| | Total | Separate Regulations |
| General Commercial and Property | | 3 |
| Employment and OHS | | 12 |
| Environmental and Planning | | 29 |
| POLICY | | |
| Separate Policies | | 10 |
| Including Australian Standards | | 11 |



Red Tape

AND THAT WAS JUST TO EXPLORE

I DID NOT COUNT THE NEXT LOT
REQUIRED TO DEVELOP AND MINE

Mining is not a orphan

“FOOD” for thought



Red Tape

Imported Food Control Act 1992 Act No. 221 of 1992 as amended

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Imported Food Control Act 1992

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55 Pages in all
Estimated : 18,000 words



Red Tape

Imported Food Control Act 1992
Act No. 221 of 1992 as amended

Thankfully : it has the definition of FOOD

But an amazingly circular one
And very open ended

food includes:

(a) any substance or thing of a kind used or capable of being used as **food** or drink by human beings; or

(b) any substance or thing of a kind used or capable of being used as an ingredient or additive in, or substance used in the preparation of, a substance or thing referred to in paragraph (a); or

(c) any other substance or thing that is prescribed;

whether or not it is in a condition fit for human consumption, but does not include a therapeutic good within the meaning of the *Therapeutic Goods Act 1989*



Red Tape

UTOPIA :

- all levels of Government colluded to reduce and simplify
 - Laws, regulations and policy
- had the same overall laws / regulations across States / Territories
- had all Mining related issues in one Department
- did not change their name every election
- Govt' did not employ young rabid environmental scientists with limited or no experience

To see what can be done fairly simply – look at what changed a nation and ultimately the world.

Lincoln's Gettysburg Address

Nov 19 1863



Four score and seven years ago our fathers brought forth on this continent a new nation, conceived in Liberty, and dedicated to the proposition that all men are created equal. Now we are engaged in a great civil war, testing whether that nation, or any nation, so conceived and so dedicated, can long endure. We are met on a great battle-field of that war. We have come to dedicate a portion of that field, as a final resting place for those who here gave their lives that that nation might live. It is altogether fitting and proper that we should do this.

But, in a larger sense, we can not dedicate—we can not consecrate—we can not hallow—this ground. The brave men, living and dead, who struggled here, have consecrated it, far above our poor power to add or detract. The world will little note, nor long remember what we say here, but it can never forget what they did here. It is for us the living, rather, to be dedicated here to the unfinished work which they who fought here have thus far so nobly advanced. It is rather for us to be here dedicated to the great task remaining before us — that from these honored dead we take increased devotion to that cause for which they gave the last full measure of devotion — that we here highly resolve that these dead shall not have died in vain — that this nation, under God, shall have a new birth of freedom — and that government of the people, by the people, for the people, shall not perish from the earth.



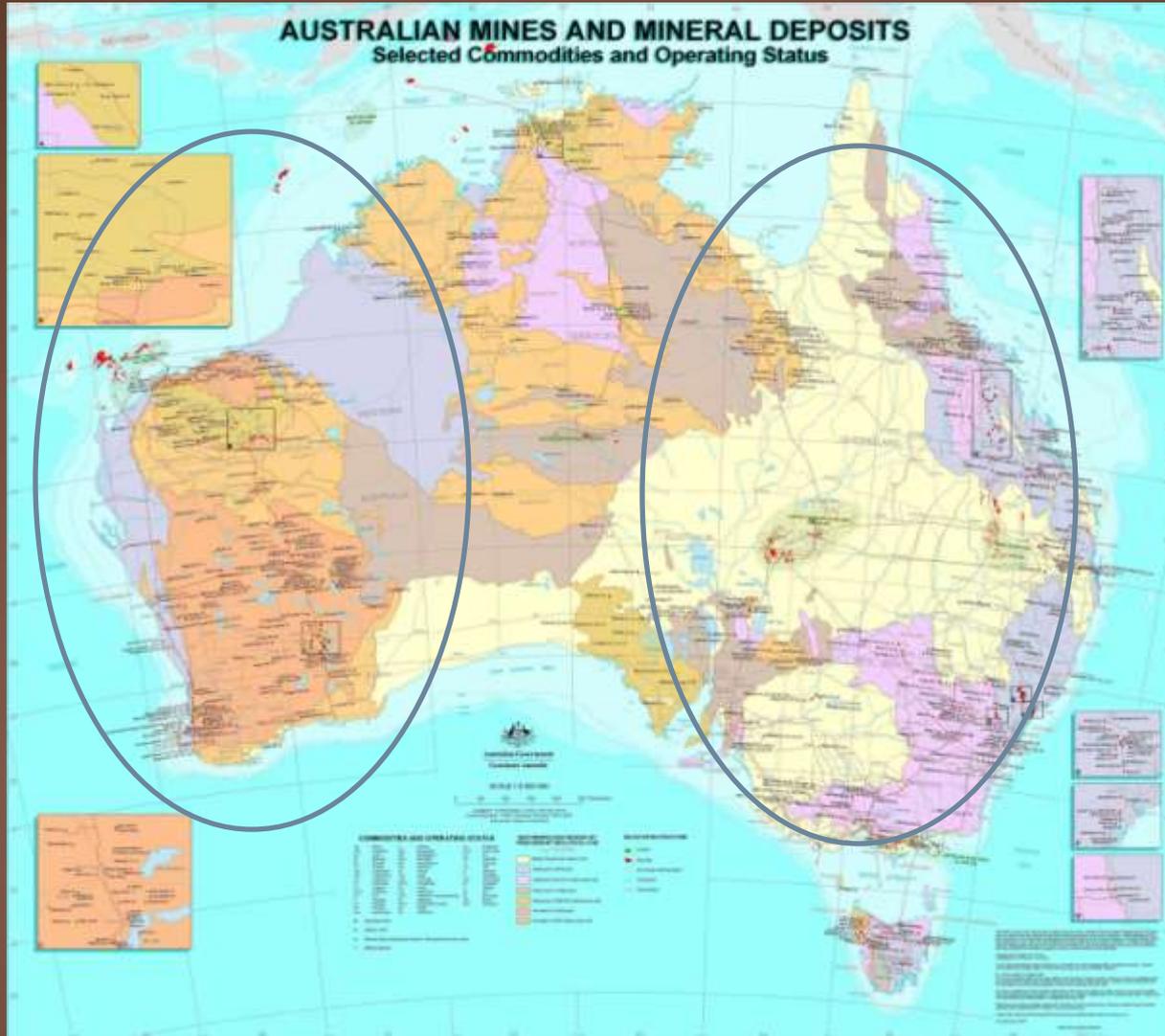
Red Tape

This basically changed the course of history :

- 269 words long - as opposed to the food import act 18,000
- created the US and gave us such cultural icons as :
 - Mac Donalds
 - John Wayne
 - Ronald Reagan
 - Hollywood
 - The Americas Cup
 - The Eagles
 - NTSC and other fantastic standards
 - George W



Exploration today – are we in the right place ?





East v's West

What's the differences :

East

Have the Capital

Good at football /
rugby

Have curling clubs in
Vic, NSW and Qld

Decent law abiding
pubs

Well mineralised

West

Think they are the Capital

Occasionally give the
eastern states a shock
(Buy Rugby teams)

Do not have a curling
centre

Skimpies

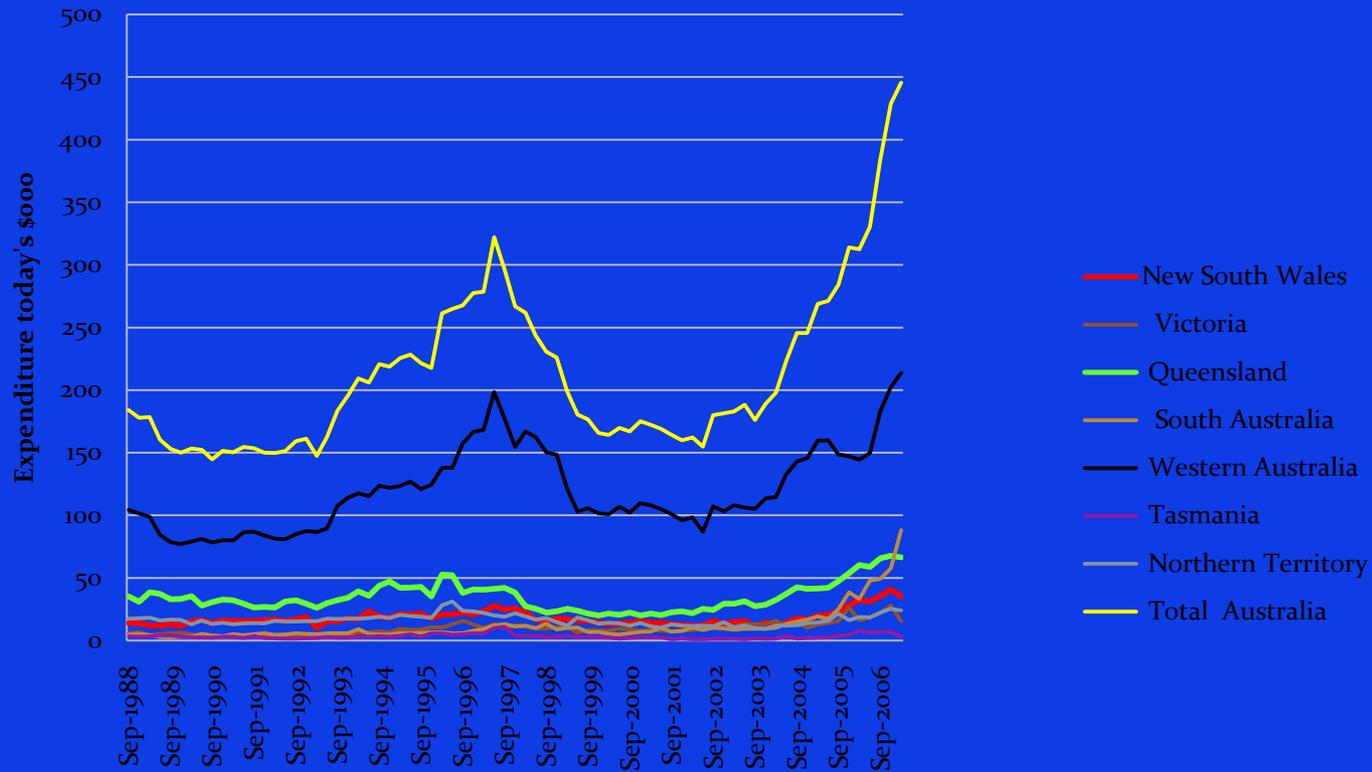
Well mineralised

A day at the beach in Aberystwyth





Australian Exploration - Minerals

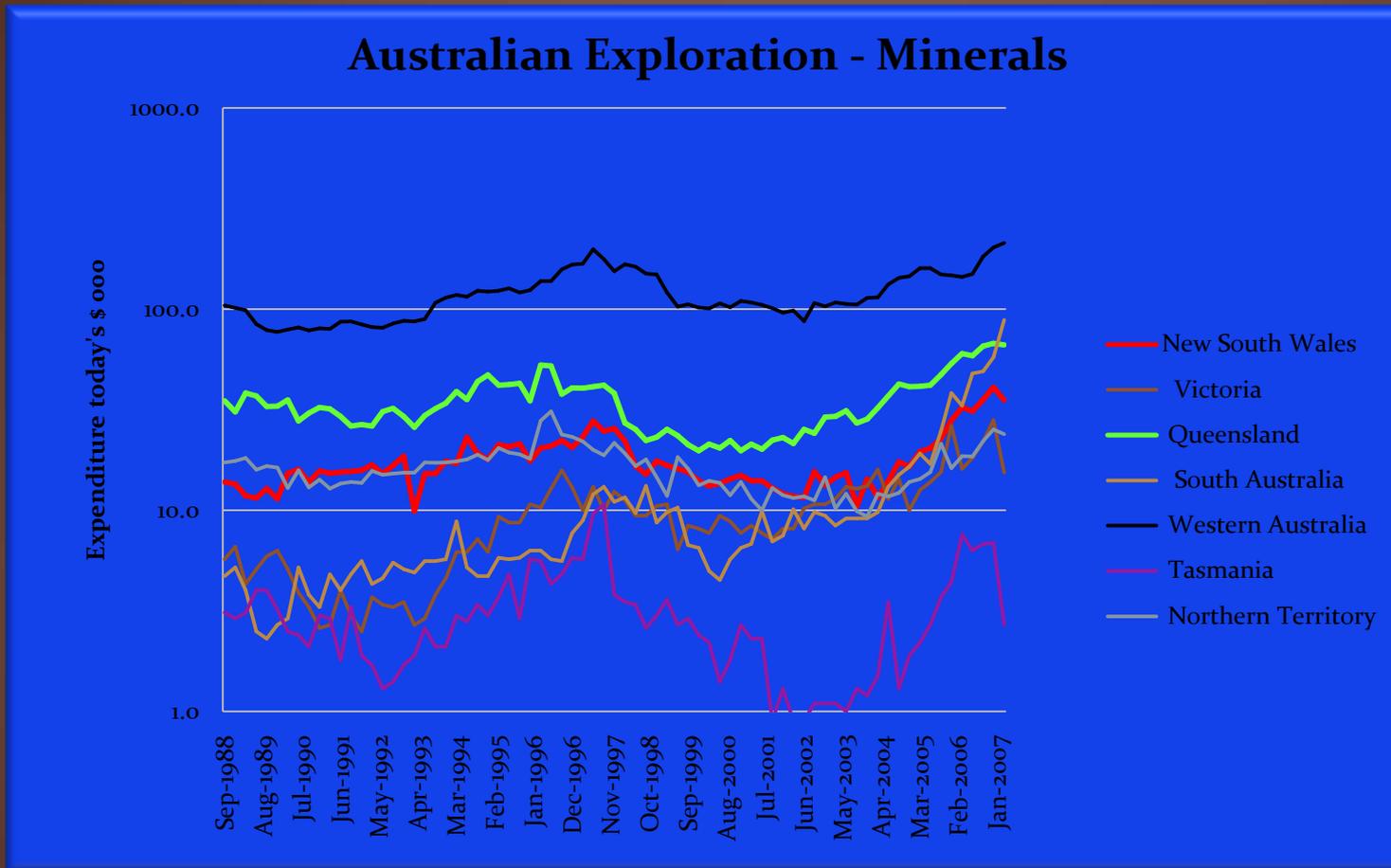


Source ABS



The Geophysicist view

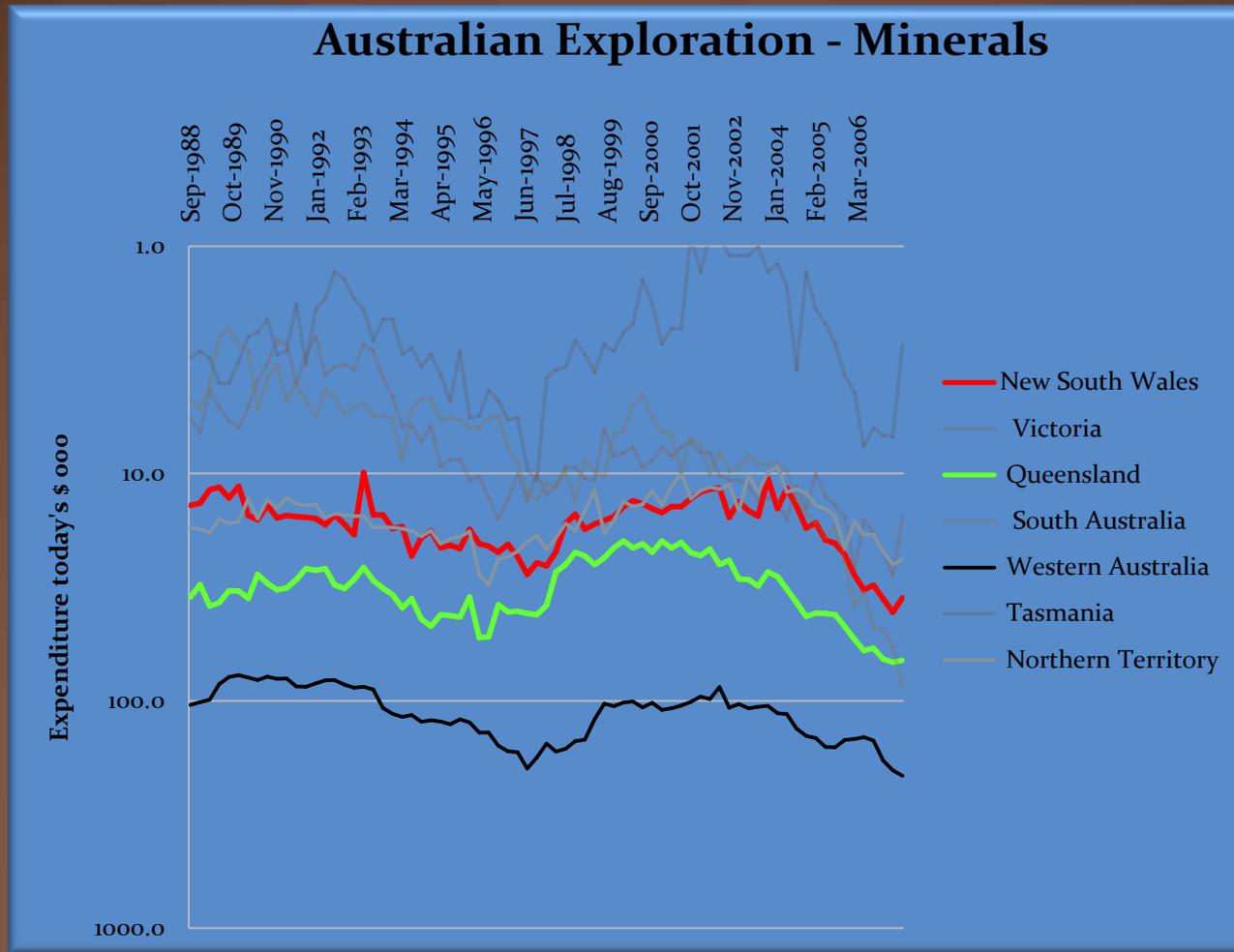
AND The Preferred View by NSW and Queensland Govt'



Are'nt Log Scales Great



GEOLOGISTS VIEW (From Qld and NSW)



Negative log - and ignore what is not worth commenting on as it does not fit the model



Does this expenditure convert to discovery ?

Using ABARE April 2007 data for :

Uranium, Copper, Gold, Lead / Zinc / Silver, Nickel Projects

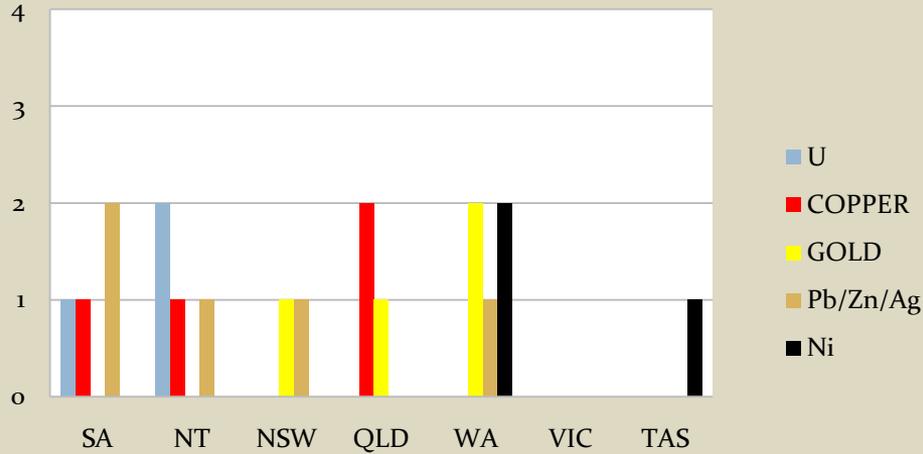
Split into :

- Projects that were committed and were NOT expansions
Assumption : these were greenfield discoveries
- Projects that were committed and expansions
- Possible Projects
- Possible expansions



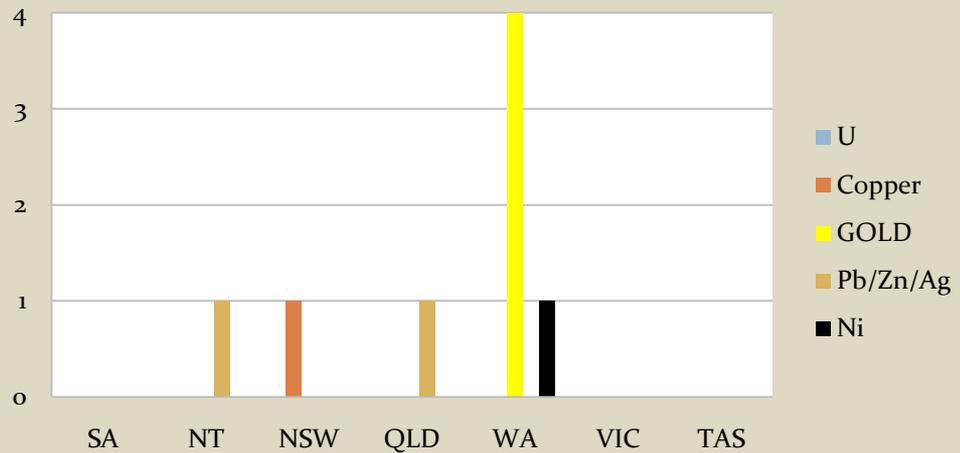
Projects April 2007

Committed New Mines



Equates to greenfield discoveries

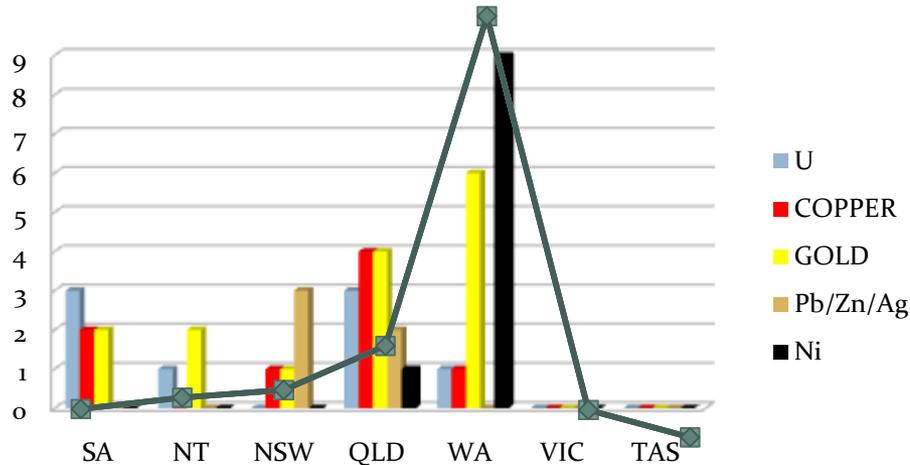
Committed Expansions / Redevelopment



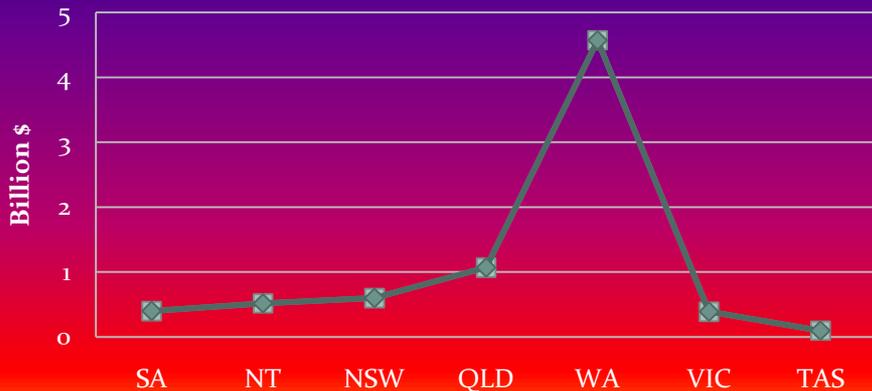


Projects April 2007

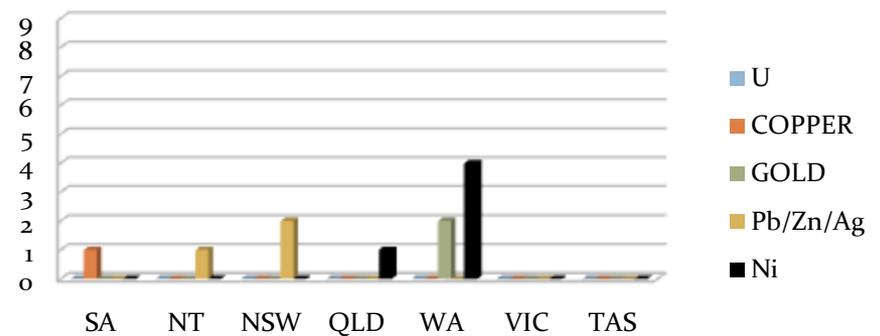
Possible New Mines



Exploration expenditure 1997 - 2007



Possible Expansions / Redevelopment



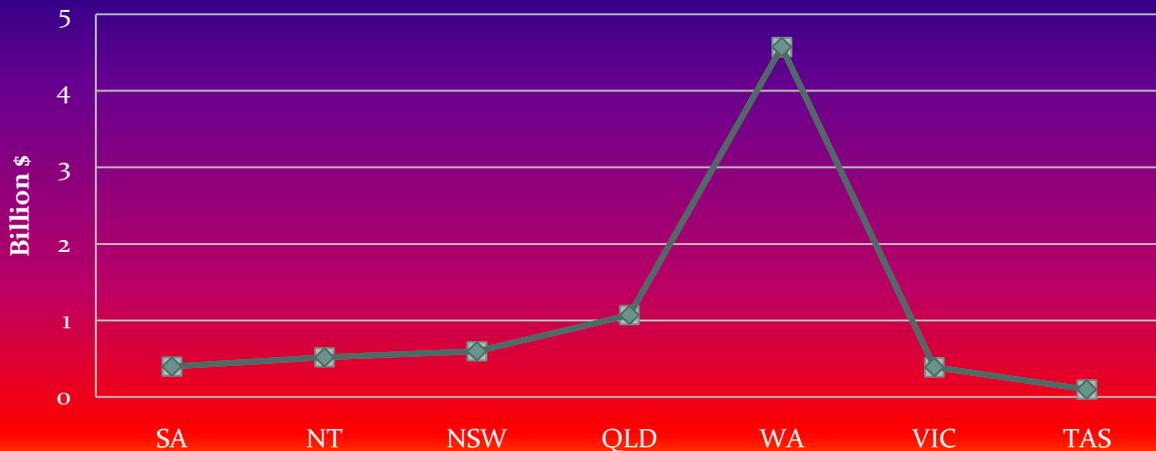


Total Projects April 2007



Uranium
Gold
Lead / Zinc / Silver
Copper
Nickel

Exploration expenditure 1997 - 2007



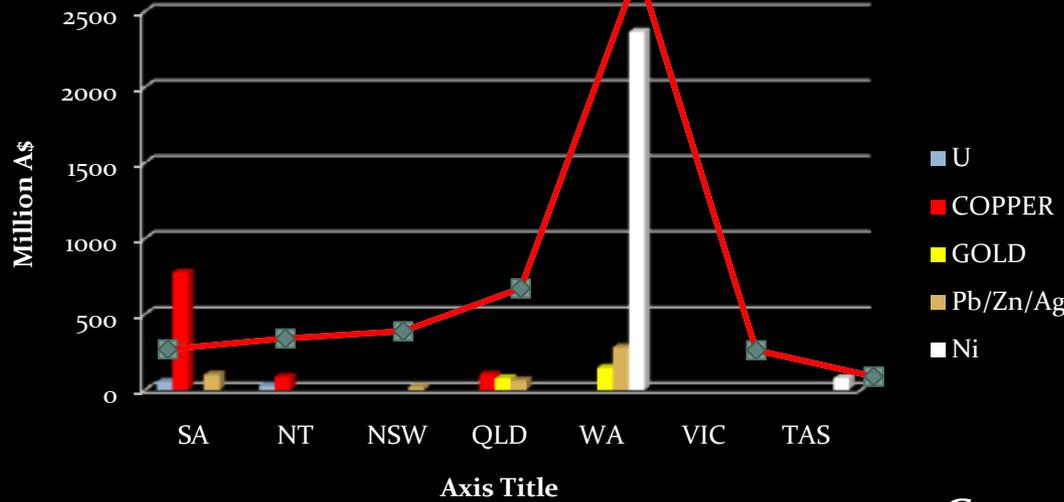
Total expenditure in last 10 years only

Assumption :
Time frame to discover new projects



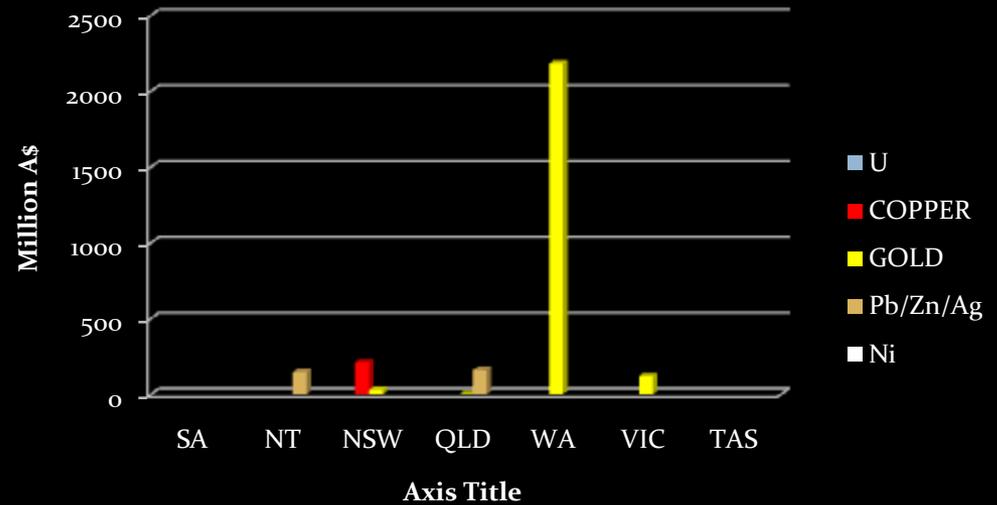
Expenditure on Projects April 2007

Committed New Projects



Dominated by Ravensthorpe

Committed Expansions





Are we in the right place ?

NSW and Qld :

- has world class deposits – e.g. Mt Isa, Mt Morgan, Cadia, Broken Hill
- relatively limited expenditure on exploration
- only limited recent success
- not saturated (e.g. WA) – still ground available
- good data
- ease of access to data

WAITING TO HAPPEN

Are we in doing it right ?

Getting harder to find

- not so obvious - geology
- getting deeper - geophysics / geochemistry
- getting less accessible - technology

We need to be better, for example :

- better / effective surface geology
- deep looking exploration – geophysics / geochemistry
- better / faster ore body delineation



Are we in doing it right ?

better / effective surface geology

Where are we today ?

Belief :

We have lost the ability to do basic “grassroot” exploration !

We can produce wonderful images – hyperspectral etc but do we use the data properly ?

Do we use the ancillary data properly ?

- Photos – still a lot of valuable data
- Airborne potential field data – still pattern recognition – where is the 3d ?

Do we get our boots dirty often enough ?



Sadly no – we do not do the basics today – especially Majors



We need hungry ruthless exploration teams teams teams





Willing to go to any extremes





Are we in doing it right ?

deep looking exploration

As the depth of discovery increases so does our reliance on geophysics

Geophysics – a much maligned science :

Quote from Bob Timmins an old mate once said :

**“Geophysics never found a bloody ore body
but once it was found it never lost it”**



2 geophysos at work ??



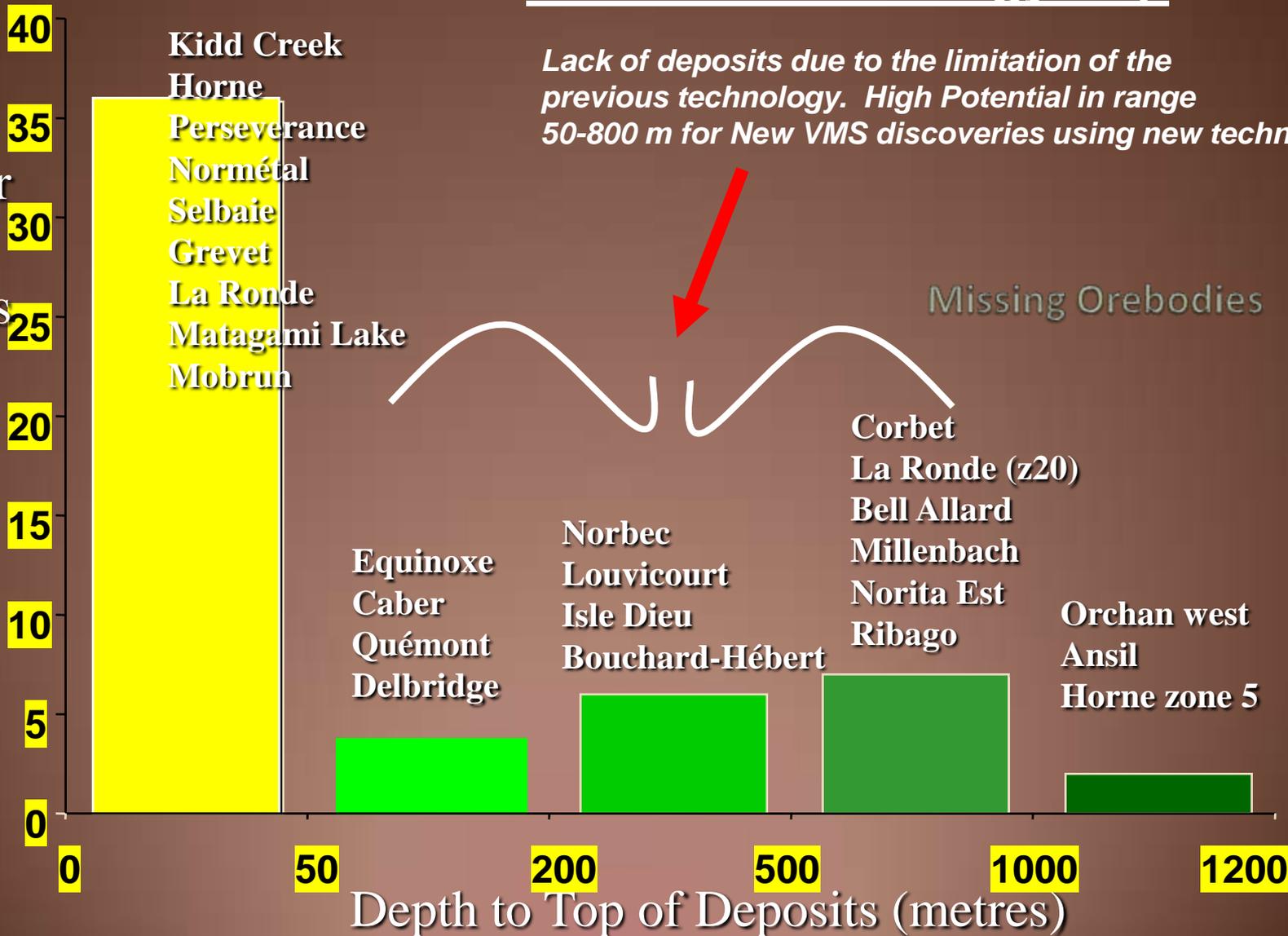
Witch craft helps ???



Previous Technology Gap

Lack of deposits due to the limitation of the previous technology. High Potential in range 50-800 m for New VMS discoveries using new technology

Number of deposits





Mind you there is still hope



The first blast at Voisey's Bay Nickel Mine Sept 2005

Fresh sulphide approx' 6m below surface

All found looking for diamonds



Ore body evaluation resource / reserve



Very important

- currently always done by drilling / assaying / statistical analysis
- can add years to project start up
- thus huge impact on project NPV

We can improve :

- use cross hole seismic to delineate ore body
- RIM
- Radar
- Resistivity
- Bore hole gravity

Huge value in assisting mining



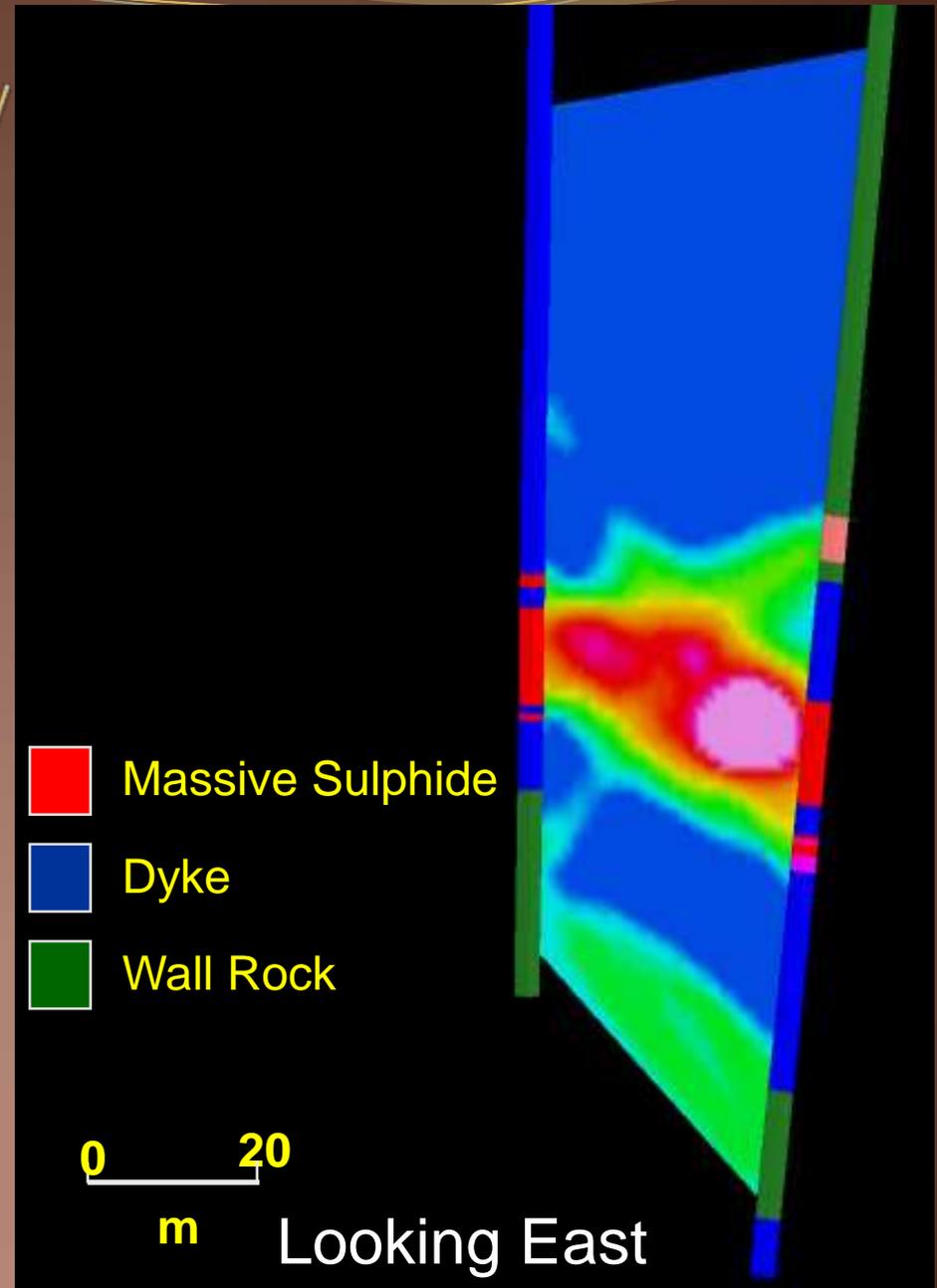
Ore body evaluation resource / reserve

Application of Seismic Tomography

1. Confirms continuity of sulphide between drill holes
2. Identifies general orientation
3. Trials underway for resource evaluation

Value :

- less drilling
- faster assessment
- better project fundamentals





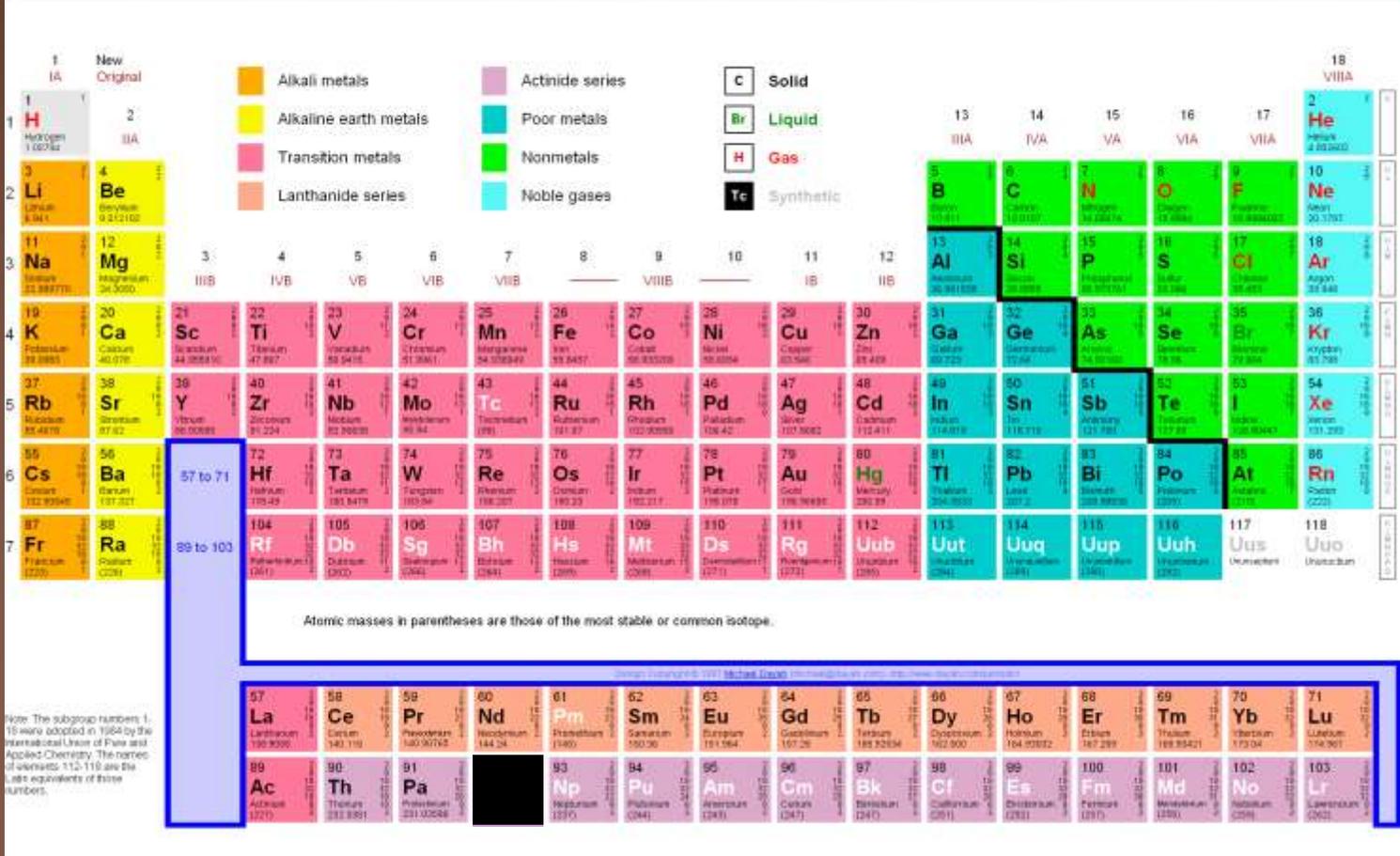
URANIUM AND NSW

What is wrong with the following chart ?



NSW

Periodic Table of the Elements



As 2006 were 117 elements globally accepted except NSW were we have 116



URANIUM AND NSW

My daughters philosophical question :

Dad – if both sides of a conflict asks God for divine assistance who does God go for ?

Applying the the same logic : how can the SA Govt allow uranium mining whilst the NSW Govt does not ? Yet are they not the same party ?

But looking at the act gives us hope



Periodic Table of the Elements

Atomic masses in parentheses are those of the most stable or common isotope.

| | | | |
|-----------|----|-----------|----|
| 85 | 2 | 86 | 2 |
| | 8 | | 8 |
| At | 18 | Rn | 18 |
| | 32 | | 32 |
| Astatine | 18 | Radon | 18 |
| (210) | 7 | (222) | 8 |

Astatine - must be very valuable

- only 1 oz in the world
- and got to be quick as 1/2 life of 8.3 hrs

| | | | | | | | |
|-----------|----|-----------|----|--------------|----|-----------|----|
| 89 | 2 | 90 | 2 | 91 | 2 | 92 | 2 |
| | 8 | | 8 | | 8 | | 8 |
| Ac | 18 | Th | 18 | Pa | 18 | U | 18 |
| | 32 | | 32 | | 32 | | 32 |
| Actinium | 18 | Thorium | 18 | Protactinium | 20 | Uranium | 21 |
| (227) | 9 | 232.0381 | 10 | 231.03588 | 9 | 238.02891 | 9 |
| | 2 | | 2 | | 2 | | 2 |

**Thorium – useful for gas lanterns
burns brightly
Definitely a carbon positive element**

| | | | |
|-----------|----|-----------|----|
| 87 | 2 | 88 | 2 |
| | 8 | | 8 |
| Fr | 18 | Ra | 18 |
| | 32 | | 32 |
| Francium | 18 | Radium | 18 |
| (223) | 8 | (226) | 8 |
| | 1 | | 2 |

Francium – a bit more (1 and a bit oz) but have to be really quick as 1/2 life of 4.8 mins



NSW Govt no where near it



Fed Opposition looking at it



**Qld Govt looking in a bit
(at least you can explore for it)**



Sth Aus Govt right into it



NOW I HAD A DREAM –

The NSW Department got an industry assistance program up and running

It was called

Collaborative Utilization of Resources Linking Industry (and) NSW Government

CURLING





NOW I HAD A DREAM –

In this dream – the Govt realised the booms bust happen and Industry does require support in the good and importantly bad times.

South Australia is testament to this

Queensland is hot on their heels

Perhaps a drilling subsidy to Juniors will increase the exploration support in NSW and bring the exploration dollars in to make those discoveries

So DRONGO was born



NOW I HAD A DREAM – DRONGOS

Drilling Rapidly (for) Oversize NSW Grassroot Orebodies Subsidy

The Government collaborated with industry to promote drilling and more holes were drilled and more discoveries were made and more rural jobs were created and more taxes paid AND

Carpentaria Shares went up and we were all very happy



NOW I HAD A DREAM –

GRAPES

Geophysics Research And Project Expenditure Subsidy

The Government collaborated with industry to promote research and assist novel geophysical programs and more holes were drilled and more discoveries were made and more rural jobs were created and more taxes paid AND

Carpentaria Shares went up and we were all very happy

UNFORTUNATELY IT WAS JUST A DREAM

