

***New Queensland code document on  
NORM safety & health standards  
– A simplified, risk-based approach  
to control at mine sites***

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# HISTORICAL BACKGROUND

Australia has 30%+ of world's known uranium reserves

QLD's *major* uranium deposits worth *ca.* AUD\$10 billion

No current QLD code (exploration / mining / processing)

Past history of mining & processing uranium at Mary Kathleen between 1956 to 1982 yielding just under 9000 tonnes uranium oxide concentrate

(REE deposit with Uranium /  
Delivered, separate study around geology  
& environmental conditions in rehab ponds)



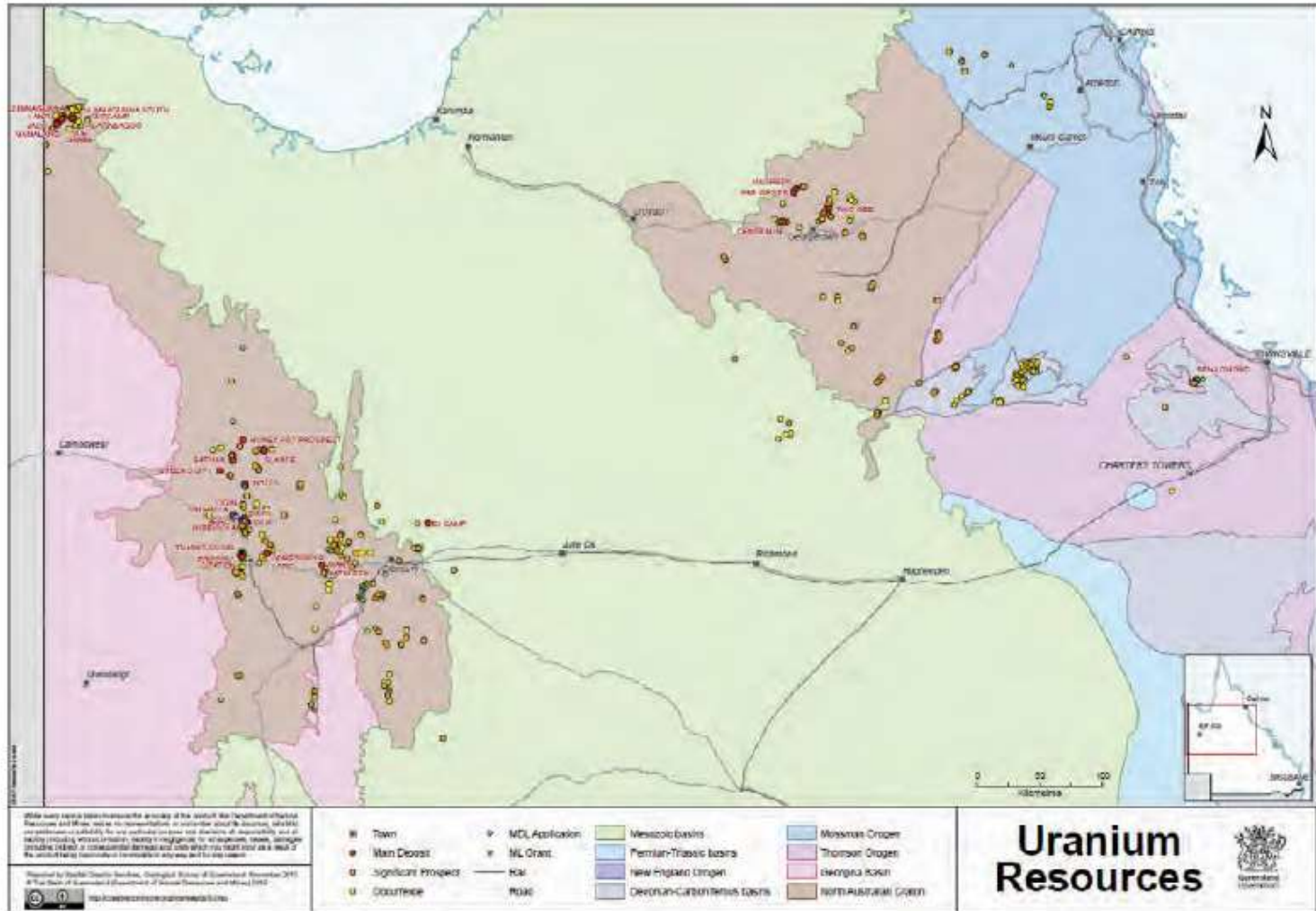
# QLD URANIUM DEPOSITS & PROJECTS (1)

- Only exploration allowed until October 2012
- Uranium Mining Implementation Committee (UMIC) Report:
  - Delivered March 2013 with an extensive OHS chapter;
  - Public expect highest OHS standards (perception vs. fact); and,
  - All OHS action points were delivered for 30 May 2014.

Four main regional uranium occurrences explored:

- McArthur Basin (North west of Mount Isa to Gulf; e.g. Westmoreland)
- Mount Isa Province (70Km W, N & E; e.g. Mary Kathleen & Valhalla)
- Gilberton Basin (near Georgetown; e.g. Maureen)
- Charters Towers Province (West of Townsville; e.g. Ben Lomond)

# QLD URANIUM DEPOSITS & PROJECTS (2)

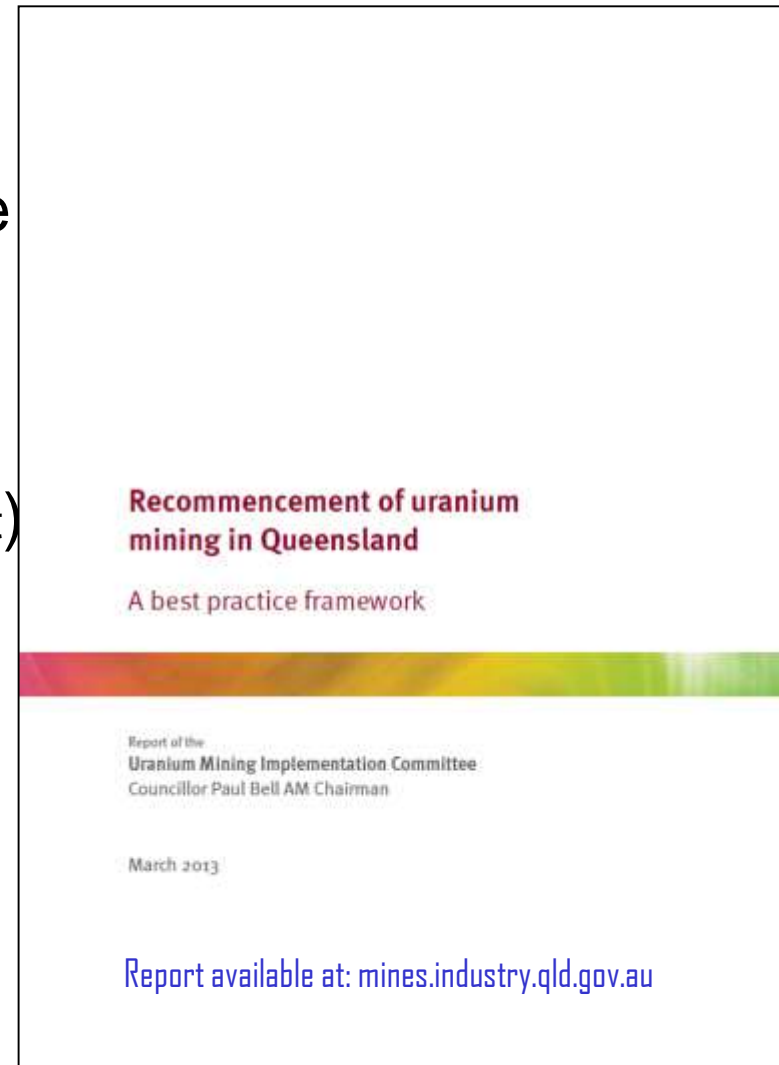


New detailed maps available September 2014

# UMIC REPORT OHS ACTION POINTS (1)

Five Major Outcomes in total:

- ✓ Current law & regime suitable
- ✓ Specialist Inspector team formed & expertise updated (incl. coordinated industry engagement)
- ✓ Formalise arrangements with Radiation Safety Unit of QHealth (e.g. joint on-site 'RMP' audits & off-site Incident response)
- ✓ Support ANRDR & input data



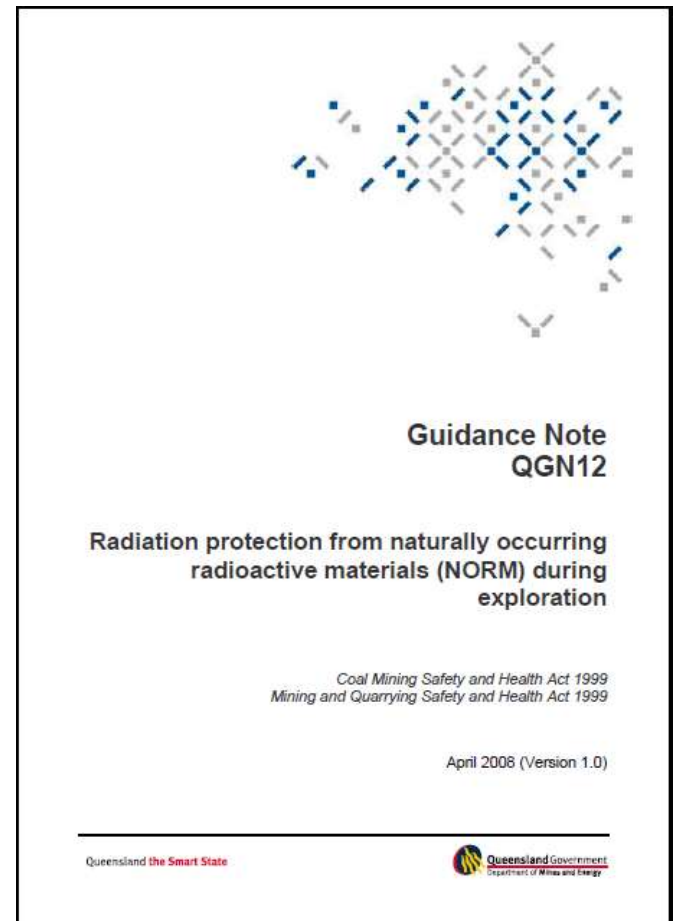
# UMIC REPORT OHS ACTION POINTS (2)

- ✓ Development of 3 new Codes on Radiation Protection from NORM in Exploration, Mining & Processing

(to replace QGN12 just on exploration only)

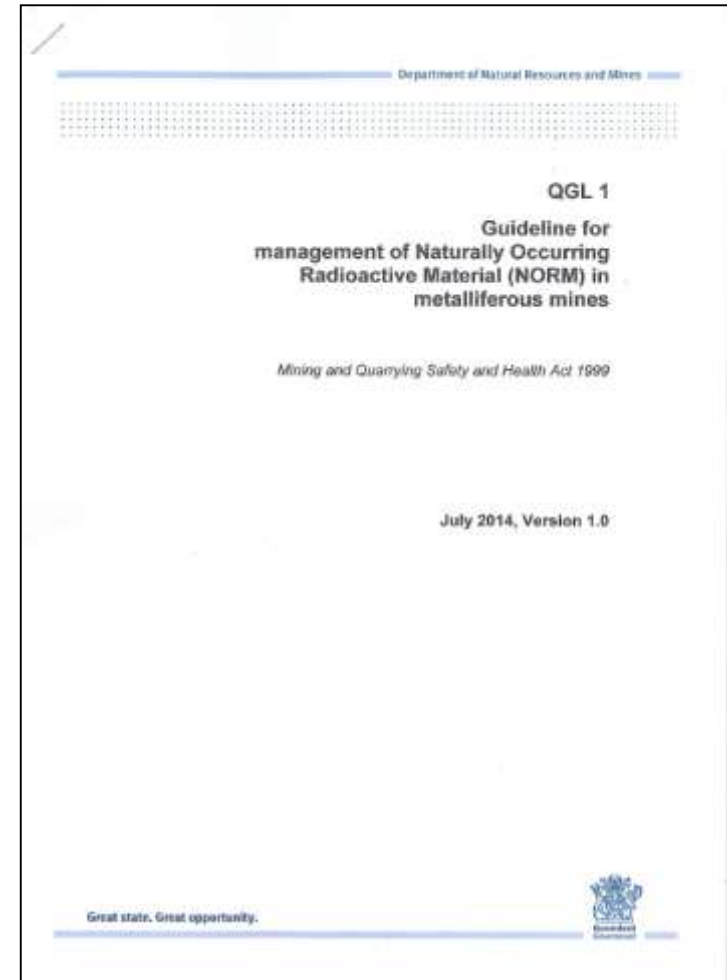
Actually...Delivered *one* code:

- Covering all exploration,
  - Covering all processing, and
  - All mining activities, *i.e.*
    - ✓ In-Situ Recovery (ISR)
    - ✓ Open pit
    - ✓ Underground
- 
- ✓ Input from industry, MI Advisory Committee & other regulators



# CONTENT OF THE NEW CODE (1)

- 17 pages
- Mandatory
- Risk assessment process  
(Hazard identification – Risk analysis –  
Risk reduction – Risk monitoring)
- Common NORM issues &  
proven NORM controls
- Competency
- Delivers a QLD ‘RMP’...



## CONTENT OF THE NEW CODE (2)

- QLD 'Radiation Management Plans' will be:
  - called a 'NORM Management Plan' (NORMMP) in QLD, which has detail that is...
  - aligned with (but not identical to) ARPANSA's RPS 9...
  - aligned broadly with WA's RMP content...
  - to give it a standardised & *auditable* structure...
  - with scopes & minimum content for 15 sections...
  - uses OHS concepts (eg hierarchy of control & RA)...
  - advises on common mining controls & problems...
  - but is not approved.



## CONTENT OF THE NEW CODE (3)

- When would A NORMMP be developed :
  - Always at exploration stage if:
    - uranium is the target mineral
  - Probably at exploration stage if:
    - Other target minerals in an area of known NORM occurrence; Or
    - Other target minerals have known association with NORM, e.g. copper, gold, rare earths, mineral sands

## CONTENT OF THE NEW CODE (4)

- Competency:
  - NORM Awareness course developed
    - For explorers with no radiation experience
    - For RSO's with little occupational hygiene NORM experience
    - For Occupational hygienists with little mining or radiation experience
    - Pilot test completed
- ANRDR:
  - Electronic system to supply monitoring results
  - Secondary protection to QLD workers with NORM exposure

# SUMMARY OF QLD REQUIREMENTS TO MANAGE RADIATION (1)

Overall, QLD treats radiation as any other occupational hygiene issue that a mine must manage and incorporate as an element in its safety & health management system

i.e.

Under *The Mining and Quarrying Safety and Health Act 1999*, the site senior executive has an obligation to develop and implement a safety and health management system, ensuring that all the risks – including exposure to ionising radiation - on site are controlled to an acceptable level. The following schematic summaries the various levels of legislative requirements in relation to controlling ionising radiation on mine sites in Queensland:

# SUMMARY OF QLD REQUIREMENTS TO MANAGE RADIATION (2)

