

ASX: RXL

ROX RESOURCES LIMITED



Myrtle Zinc Deposit, NT

Ian Mulholland, Managing Director

AIG Base Metals Symposium 20 June 2011

Competent Person Statement

The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Mr Ian Mulholland BSc (Hons), MSc, FAusIMM, FAIG, FSEG, MAICD, who is a Fellow of The Australasian Institute of Mining and Metallurgy and a Fellow of the Australian Institute of Geoscientists. Mr Mulholland has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Mulholland is a full time employee of the Company and consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Acknowledgements

Information in this paper was gathered by the author, and other workers on the project including James Venables, Helen Tanner and Wally Herrmann. The author is solely responsible for the opinions expressed herein.

Short Case History

- **SEDEX zinc-lead deposit 20km south of McArthur River**
- **Ground explored by MIM and others since 1966, but stratigraphy mis-interpreted – drilling not deep enough**
- **Deeper drilling in 2005 by Anglo American discovered base-metal sulphides below pyritic layers**
- **Rox acquired project from Rio Tinto in 2008**
- **Current Mineral Resource of >40 Mt @ 5% Zn+Pb**
- **Large mineralised system still open – strong analogies to McArthur River deposit**
- **Exploration potential elsewhere on tenements**
- **Earn-in JV with Teck**

Location

- 20km south of McArthur River Pb-Zn mine
- 700km by air from Darwin, 900km by road
- Adjacent to existing mine infrastructure at McArthur River (e.g. airport, road, gas pipeline, port)



Giant Zn Deposits - Australia

McArthur River Basin, Mt Isa Basin

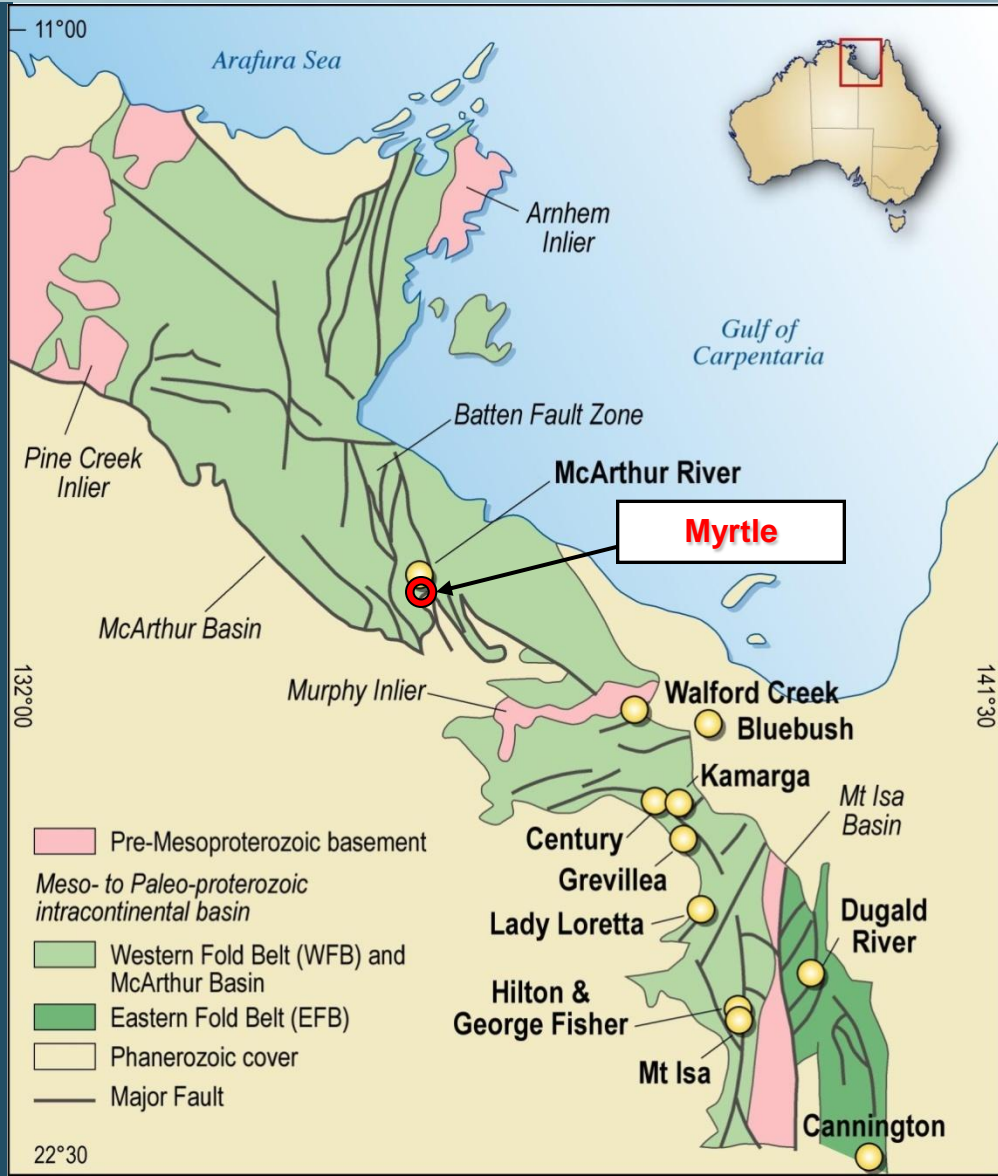
Batten Fault Zone (Trough), Isa Fault Zone

Deposit	Owner	Mt Ore	Mt Pb+Zn
Broken Hill	Perilya, CBH (BHP)	280	51.8
McArthur River	Xstrata	227	30.4
Mount Isa	Xstrata	150	19.5
Hilton	Xstrata	120	20.3
George Fisher	Xstrata	107	17.7
Century	MMG	95	14.1
Dugald River	MMG	48	6.8
Cannington	BHP	44	7.0
Lady Loretta	Xstrata	14	3.1

All owned by MAJORS

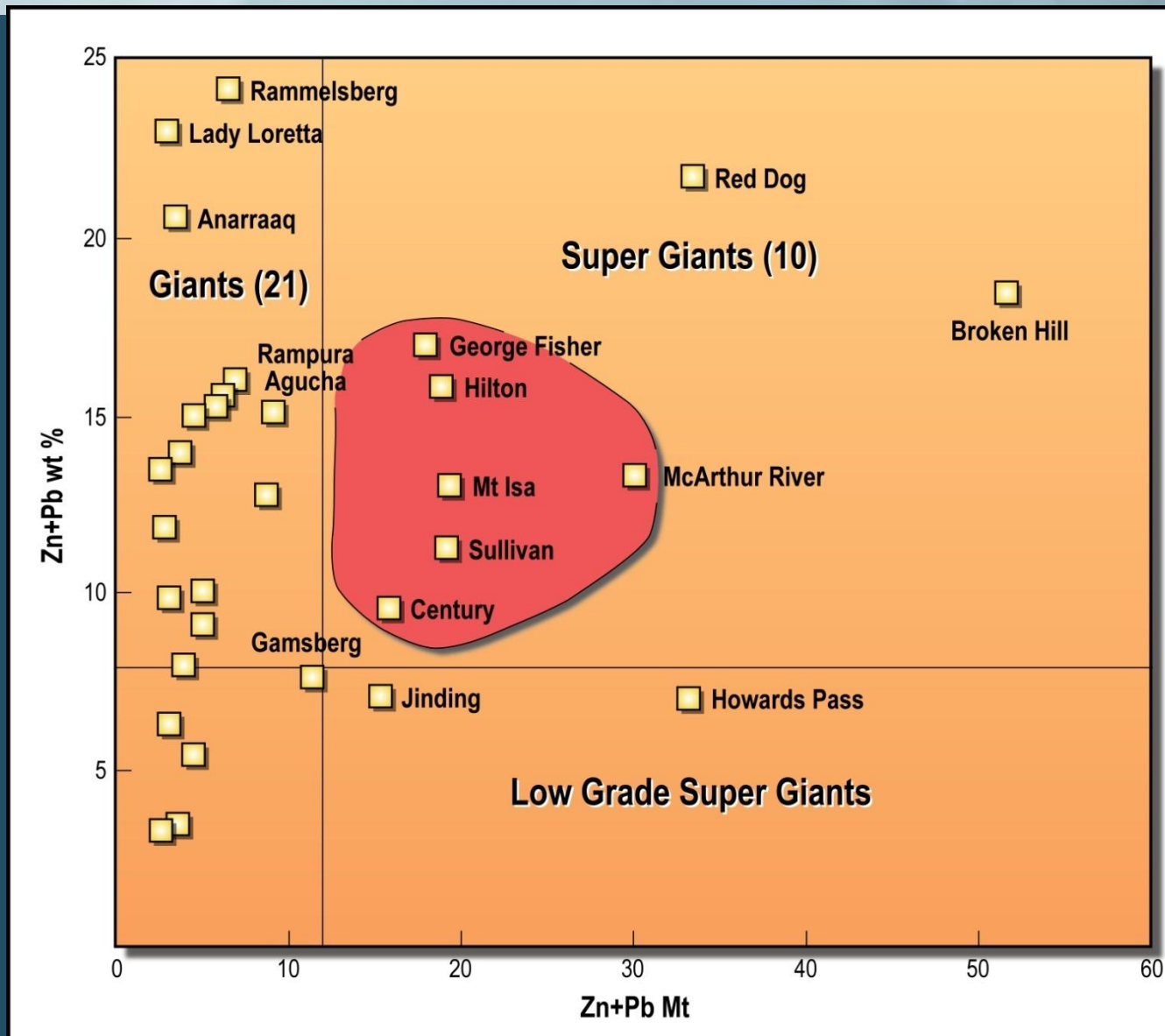
Lack of Exploration in McArthur Basin:

- Aboriginal issues,
- Technical issues with HYC (now solved)
- Relatively recent discovery (1959 vs. 1890)



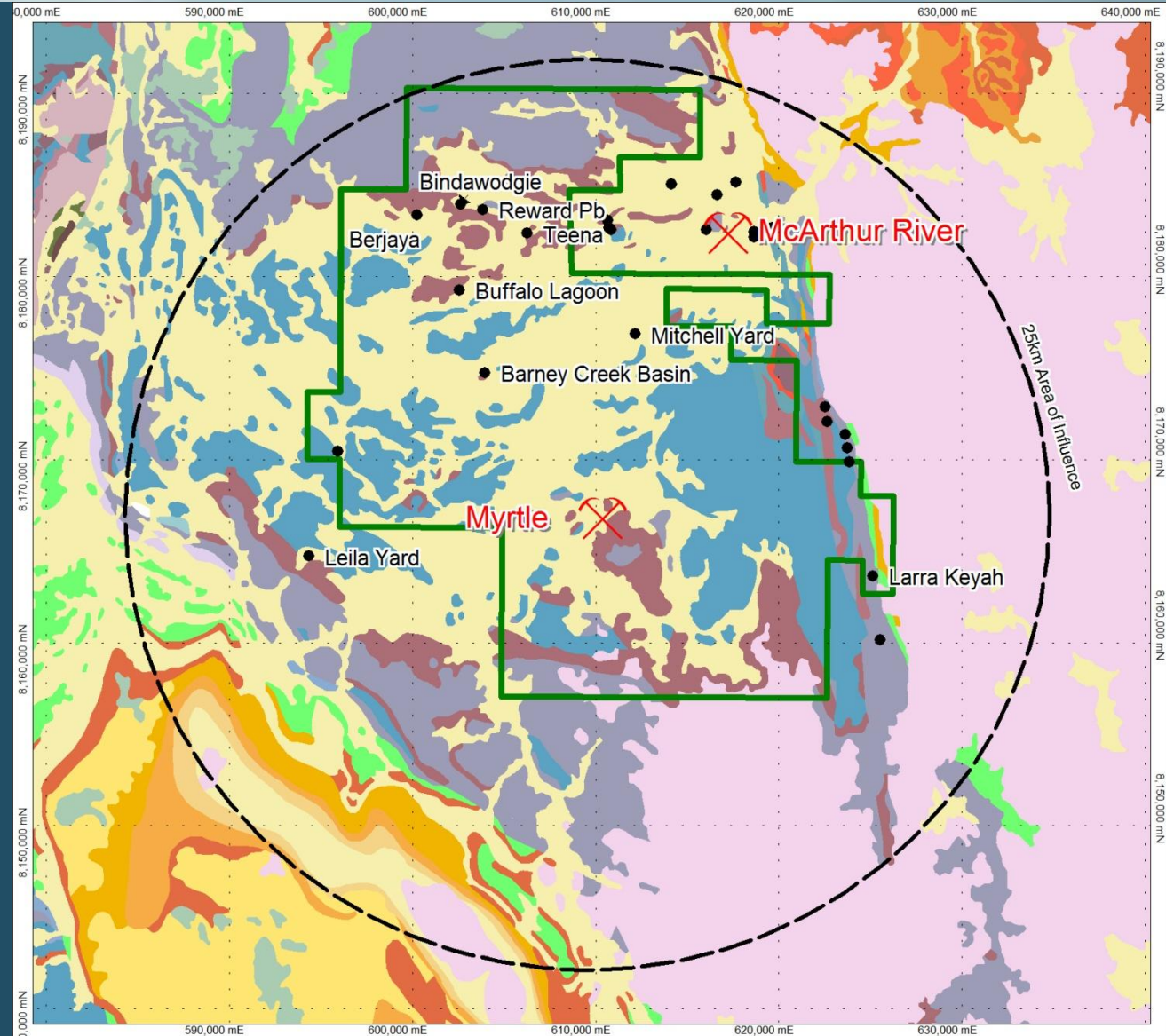
Super Giants of Australia

- 6 of the 10 “Super Giants” are in Australia
- 5 of these are in the Mt Isa-McArthur Basins
- Contain 102 Mt Zn + Pb Metal
- Top ten Australian SEDEX deposits total 173 Mt contained Zn + Pb metal

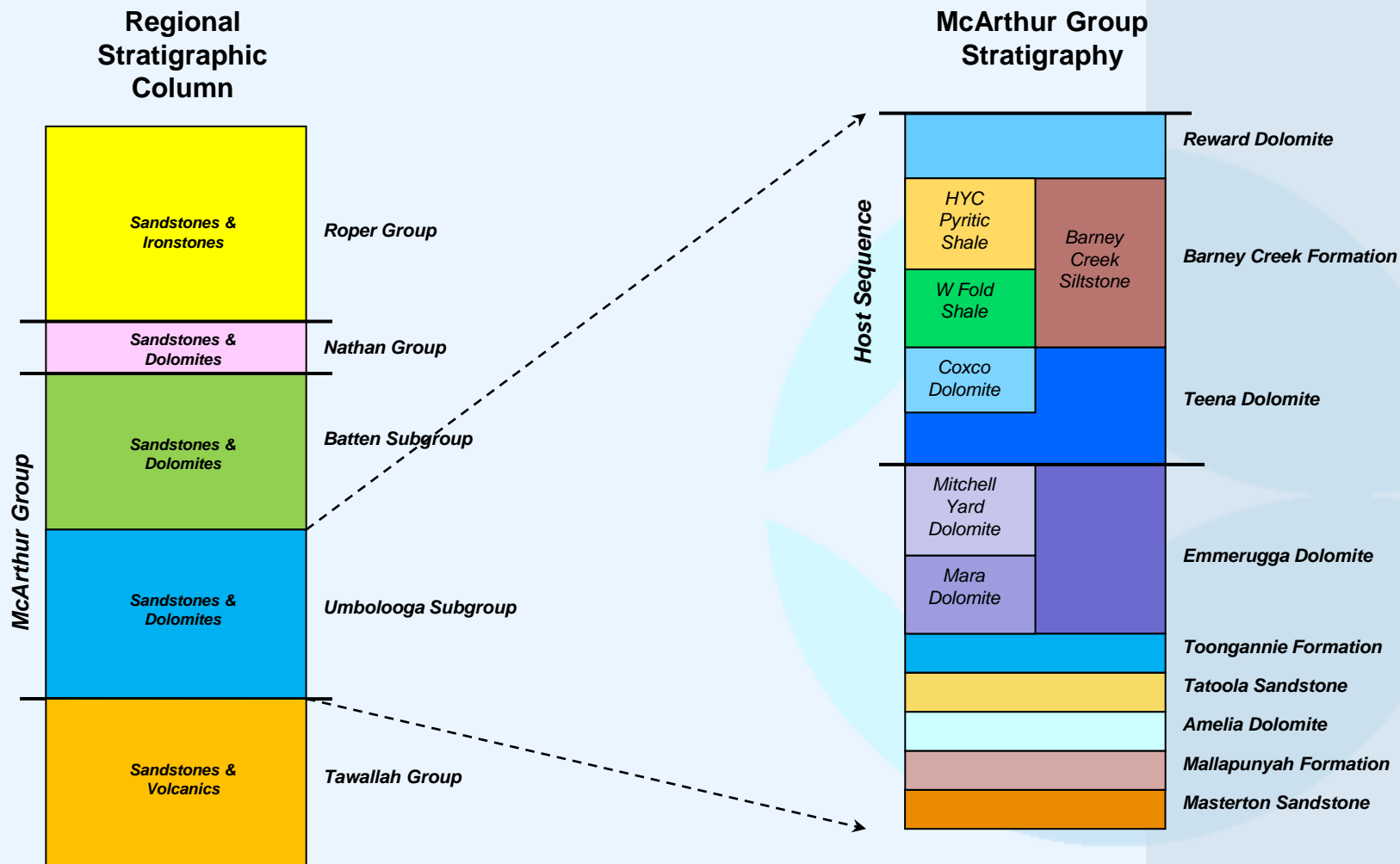


Geology

- McArthur Group Sediments
- SEDEX and MVT style Pb-Zn deposits
- Host rocks (Barney Creek Formation) form a series of sedimentary basins
- McArthur River mine (MIM, now Xstrata):
- Mineral Resource, 227 Mt @ 9.2% Zn, 4.1% Pb, 41 g/t Ag
- 30 Mt contained Zn and Pb
- Ore Reserve, 46 Mt @ 9.6% Zn, 4.2% Pb, 43 g/t Ag



Regional Stratigraphy



Geology Legend

- Bukalara Sandstone
- Polymictic megabreccia
- Hot Springs Member
- Caranbirini Member
- Reward Dolomite
- Barney Creek Formation
- W Fold Shale Member
- Teena Dolomite
- Mitchell Yard Dolomite Member
- Mara Dolomite Member
- Myrtle Shale
- Tooganinie Formation
- Mass flow breccia
- Existing drill hole
- Top of Barney Creek Formation
- Base of Barney Creek Formation
- Fault

MAP LOCATION

Borroloola

McArthur River Mine

Cape Crawford

Geological Features:

- TEM Line
- MY1
- MY2
- MY6
- MY10
- MY11
- MY12
- MY13
- MY14
- MY15
- SW Fold Shale Member
- Teena Dolomite
- Mitchell Yard Dolomite Member
- Mara Dolomite Member
- Myrtle Shale
- Tooganinie Formation
- Mass flow breccia
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- Top of Barney Creek Formation
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- Fault

Approximate Surface Area of Zn - Rich Lenses

Scale: 0 to 2500m

North Arrow

Geological Formations:

- Bukalara Sandstone
- Polymictic megabreccia
- Hot Springs Member
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- Mass flow breccia

Faults:

- WESTERN FAULT
- SHALE CAVE FAULT
- MARLE CREEK FAULT
- EASTERN FAULT

Drill Holes:

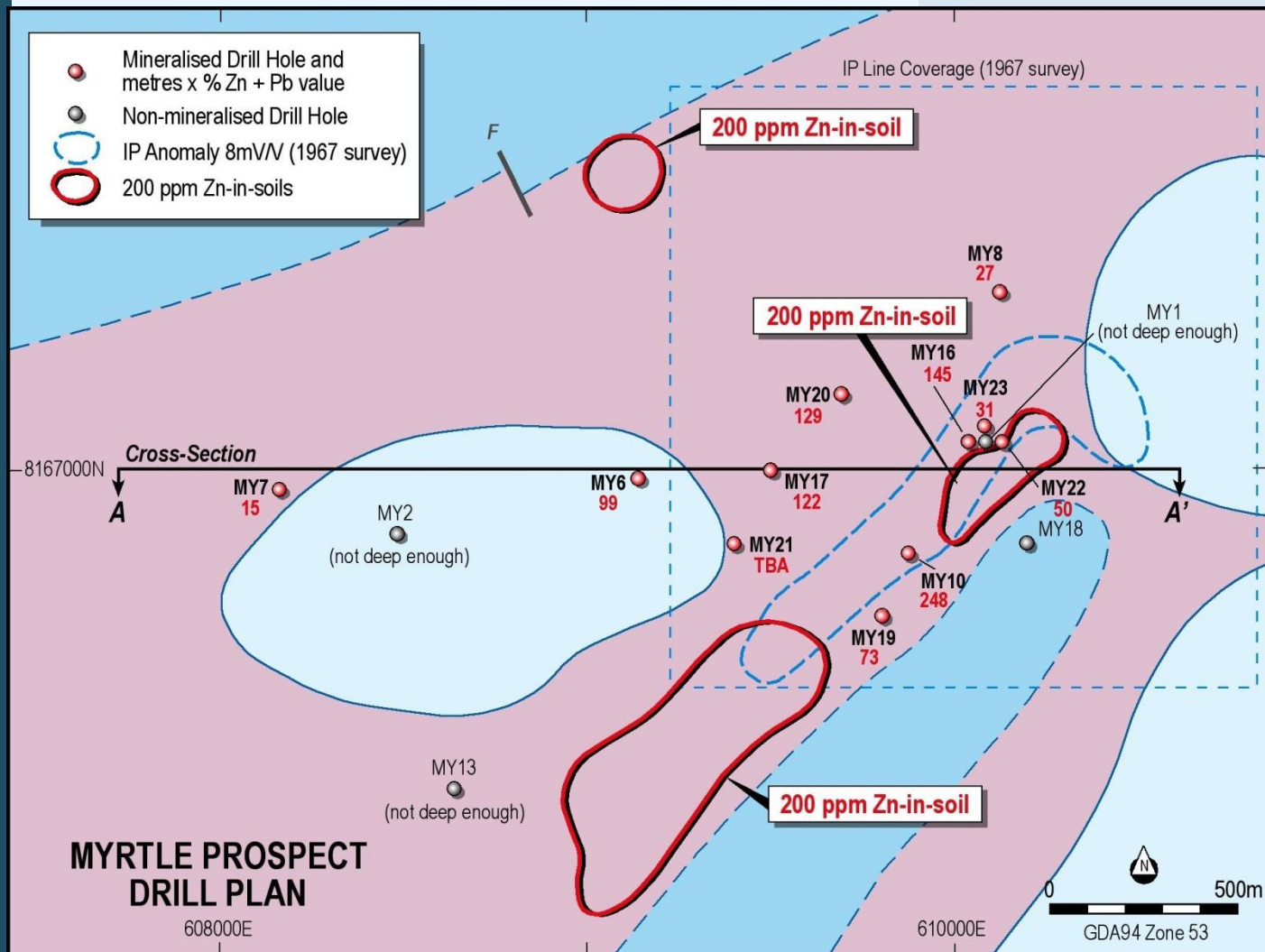
- MY1
- MY2
- MY6
- MY10
- MY11
- MY12
- MY13
- MY14
- MY15

Other Features:

- TEM Line
- Approximate Surface Area of Zn - Rich Lenses
- SW Fold Shale Member
- Teena Dolomite
- Mitchell Yard Dolomite Member
- Mara Dolomite Member
- Myrtle Shale
- Tooganinie Formation
- Mass flow breccia
- Existing drill hole
- Top of Barney Creek Formation
- Base of Barney Creek Formation
- Fault

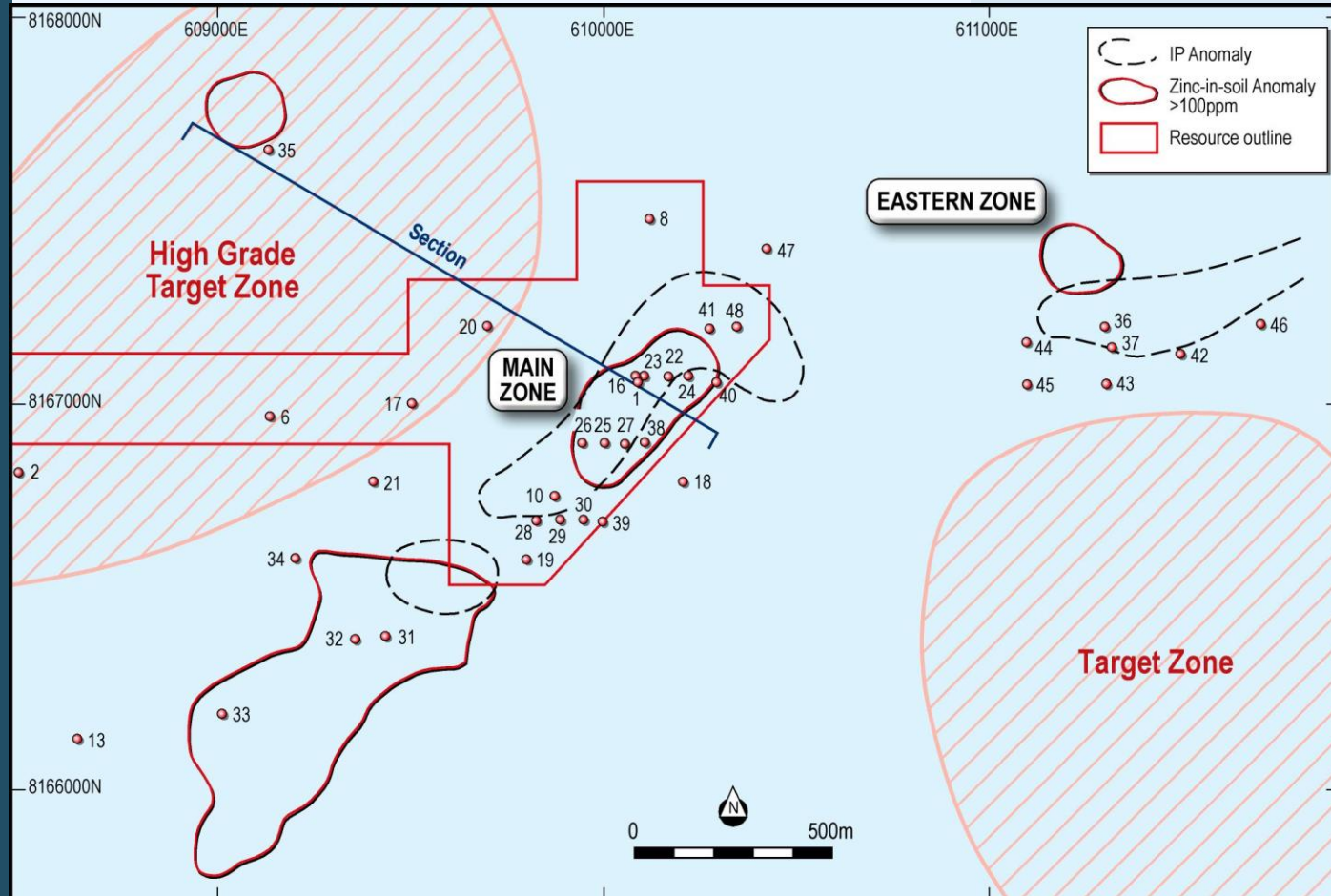
Initial Rox Drilling

- MIM IP anomaly
- MY1 drilled to test IP
- Anglo MY6-15
- Rox MY16-21 drilled adjacent to MY6, 8 and 10
- Mineralisation open strongly to the NW
- Soil anomalies to the south and north

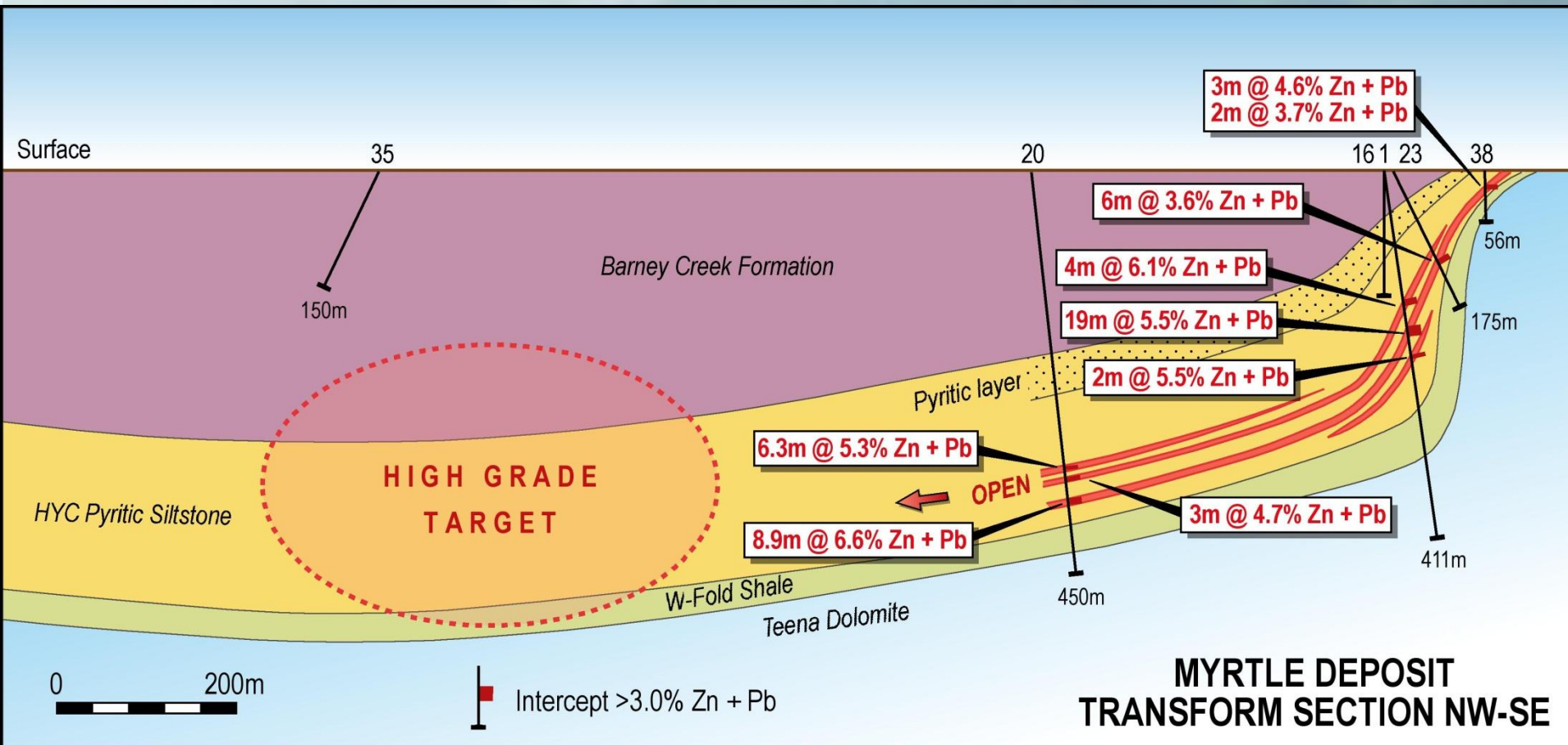


Rox RC Drilling

- RC holes drilled to investigate open pit potential
- Resource restricted by drill coverage
- Discovery of Eastern Zone
- Southern and northern soil anomalies tested – no significant mineralisation
- Hole MYR35 in Upper BCF



Deposit Features



Same Stratigraphy
as McArthur River

Series of Stacked
Sulphide Lenses

Open Pit
Potential

Myrtle Resource



- **43.6 Mt @ 4.1% Zn, 0.9% Pb***
(3% Zn+Pb cut-off)

- Indicated 5.8 Mt @ 3.6% Zn, 0.9% Pb

- Inferred 37.8 Mt @ 4.2% Zn, 1.0% Pb

- **2.2 Mt contained Zn + Pb metal (4.8 B lbs)**

- **15.3 Mt @ 5.5% Zn, 1.4% Pb***
(5% Zn+Pb cut-off)

- Indicated 1.2 Mt @ 5.4% Zn, 1.4% Pb

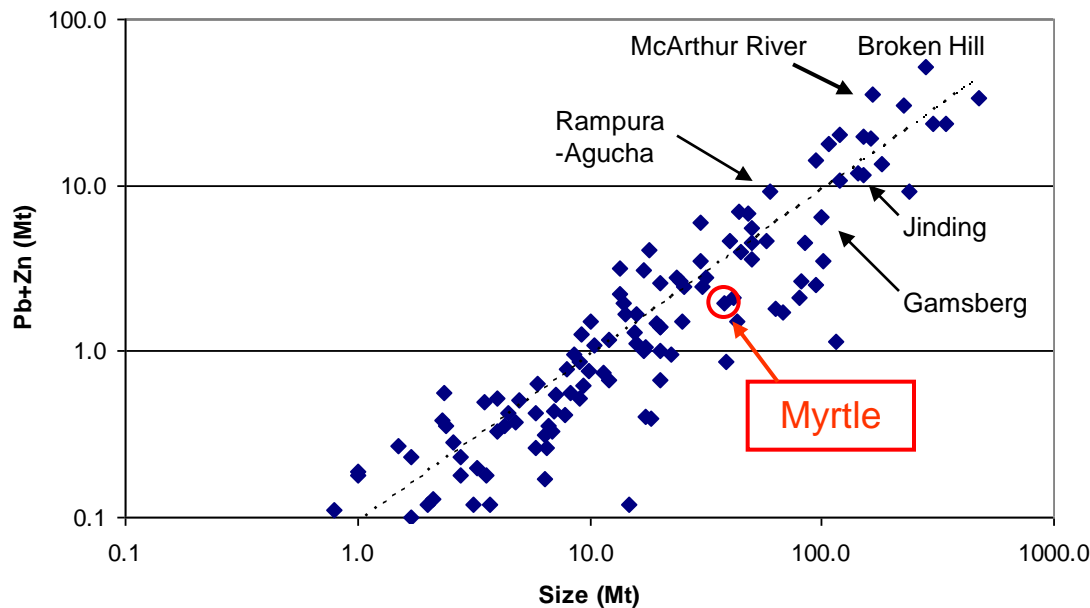
- Inferred 14.1 Mt @ 5.5% Zn, 1.4% Pb

* There may be small rounding errors due to the use of significant figures.
Cross-section polygonal resource estimation method used.



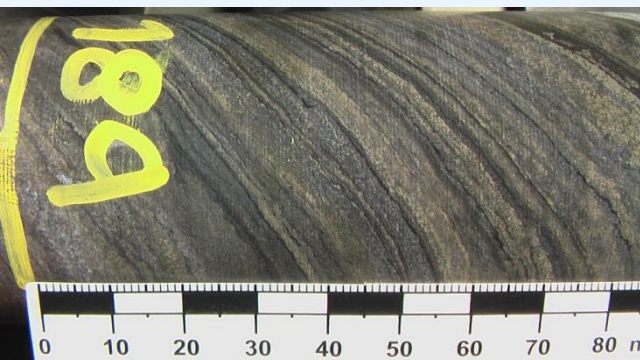
Myrtle Resource Ranking

**Sedex Deposits
Size-Grade Relationship**



- Sedex Deposits are >50% of world's Zn reserves
- Only 15 Sedex deposits worldwide (out of 136) are >10 Mt contained Pb-Zn
- Myrtle is currently ranked **~#40** in the world
- **Already in the top 1/3 of deposits worldwide**

Data from Leach et. al. 2000, Econ. Geol. 100th Anni Vol., p 561-607.



Stratigraphic Column

Myrtle Stratigraphic Column



Reward Dolomite
(75-115m, average 95m)

Upper Barney Creek Fm
(120-370m, av 230m)

Black Pyritic SSL

HYC Pyritic Shale Member
(17-108m, av 60m)

W-Fold Shale Member
(25-155m, av 62m)

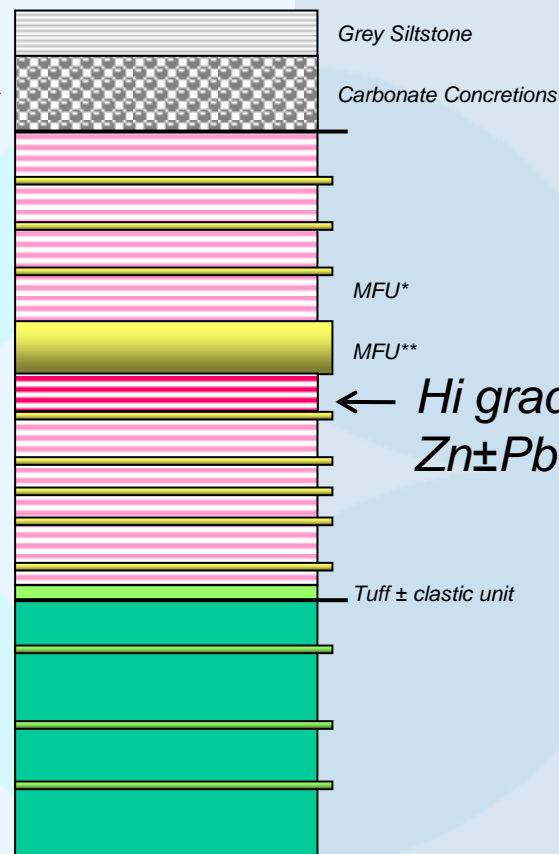
Teena Dolomite
(130m+)

~0.5% Zn

100m

Scale

Myrtle Mineralisation



Well-developed carbonate concretions at base of Upper BCF

Variably mineralised dolomite
(3-5 mass flow units between
Upper BCF & MFU**)

Marker MFU (3-6 fining upwards
cycles)

Highest grade Zn±Pb±Ag

Variably mineralised dolomite
(5 mass flow units between
MFU** & W-Fold Shale)

Green sericitic tuff marker at
top of W-Fold Shale

Several thin mass flow units
within the W-Fold Shale

Grey Siltstone

Carbonate Concretions

MFU*

MFU**

Hi grade
Zn±Pb

Tuff ± clastic unit

20m

Scale

Teena Dolomite

Relict bedding & stylolite



“Coxco” crystals/needles



W-Fold Shale Member

Slump fold, blocky dolomite beds,
hematite alteration



Green bedded siltstone with pink
dolomite altered concretions

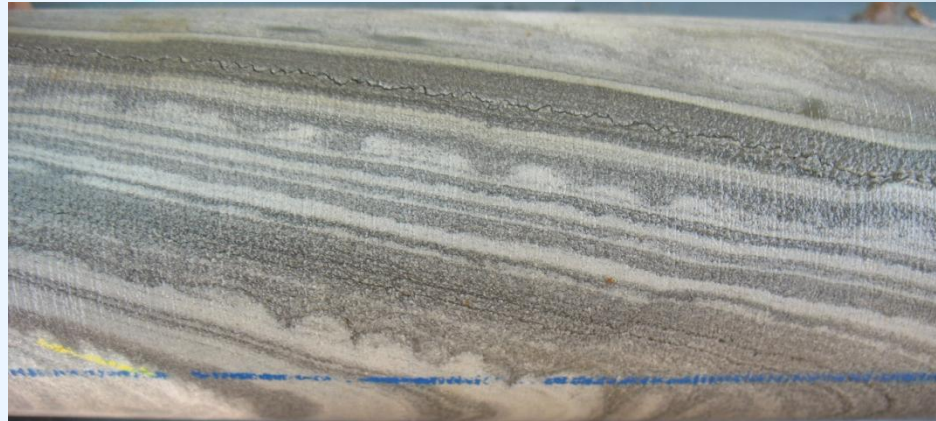


Mass Flow Units

Basal pebble to granule-sized angular breccia fining uphole (downhole to RHS)



Flame structures in sandstone & siltstone (downhole to RHS)

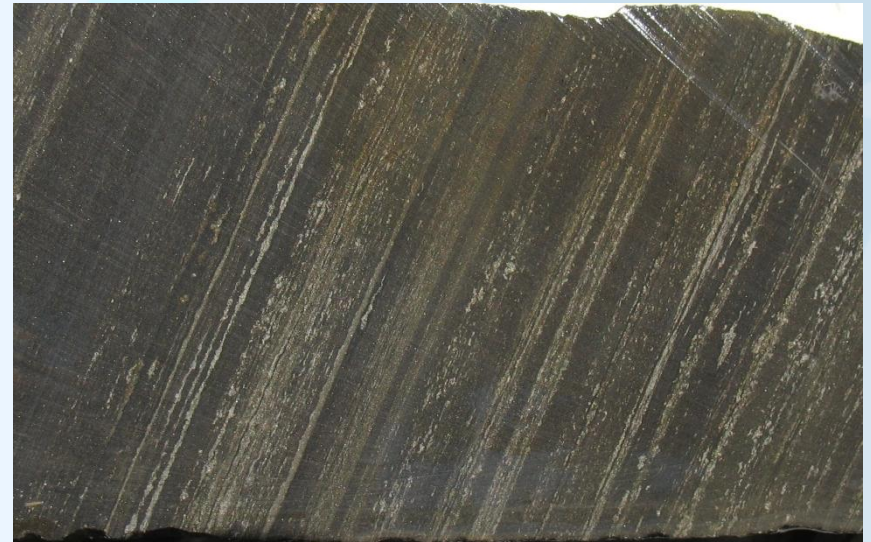


HYC Pyritic Shale Member

Nodular Carbonate style sphalerite,
note pyritic stylolite

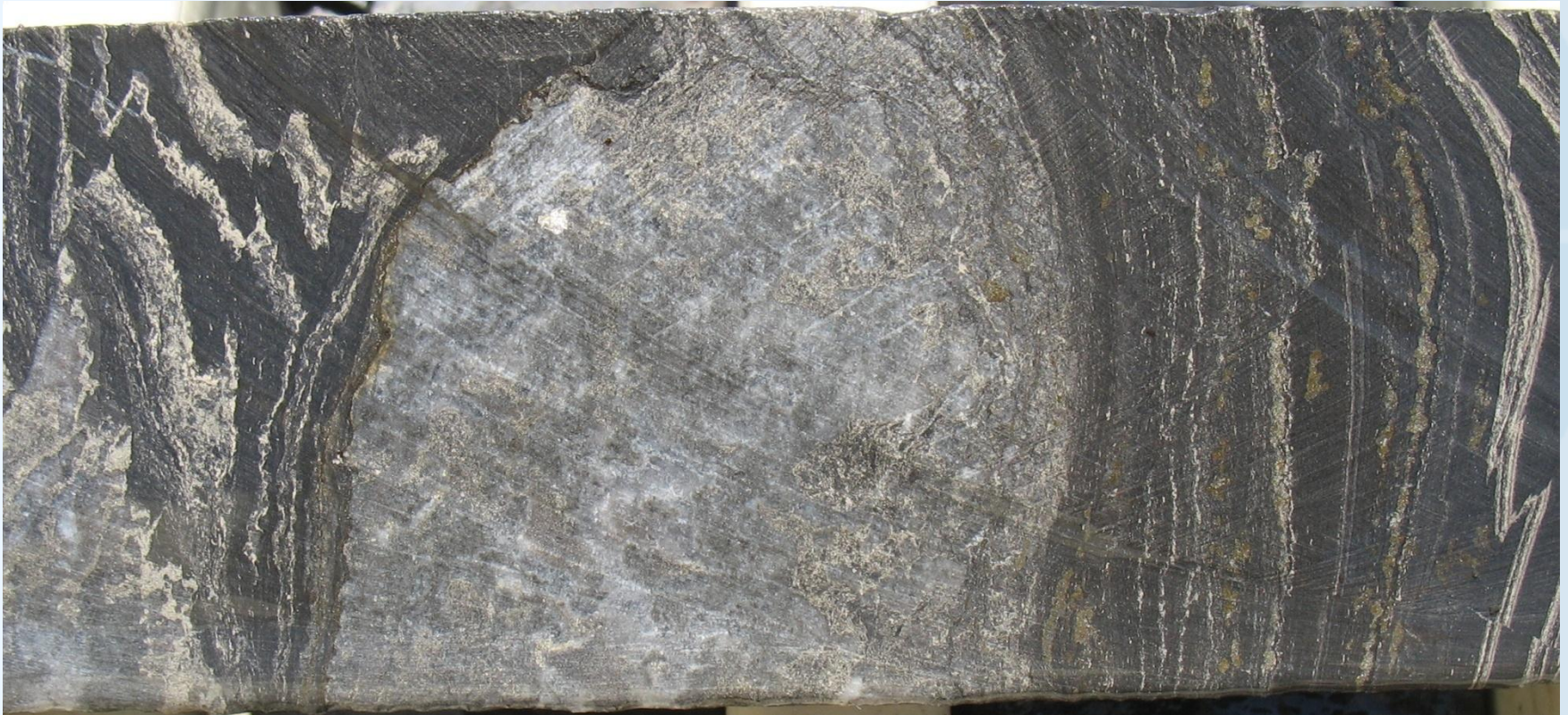


Laminated style pyrite-sphalerite



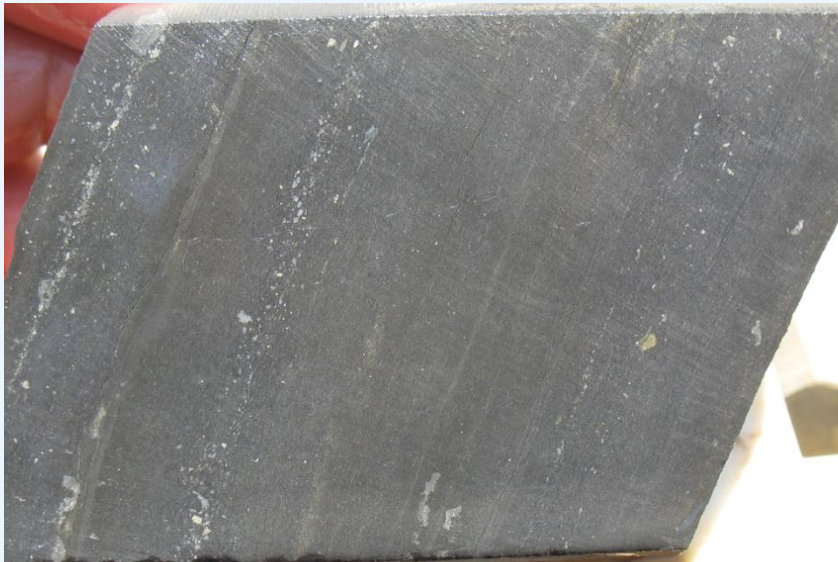
HYC Pyritic Shale Member

Dolomite clast mineralised with sphalerite, and laminated sphalerite-pyrite-galena



Upper Barney Creek Formation

Bedded siltstone with pyrite & sphalerite

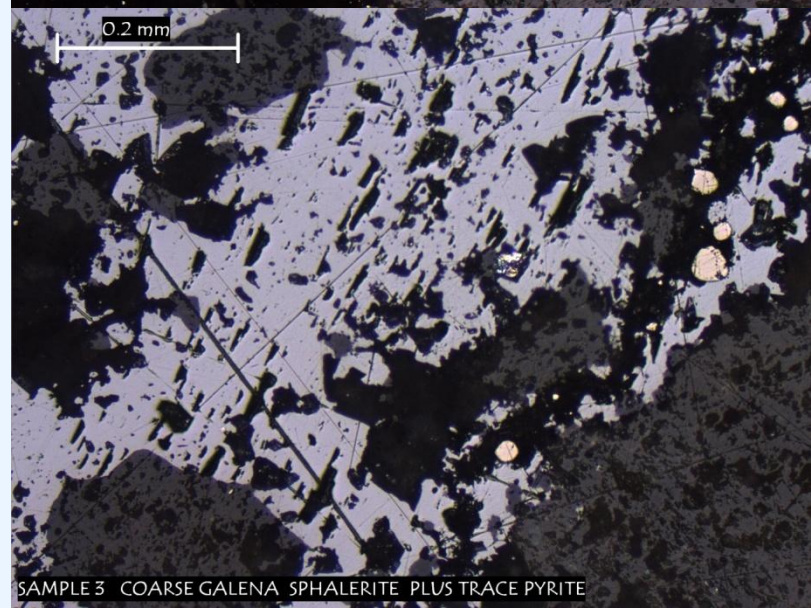
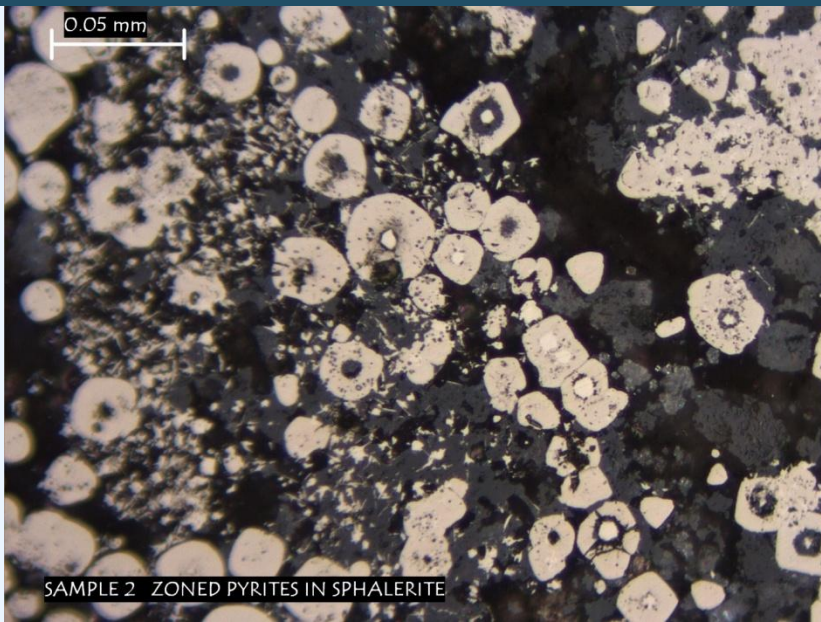
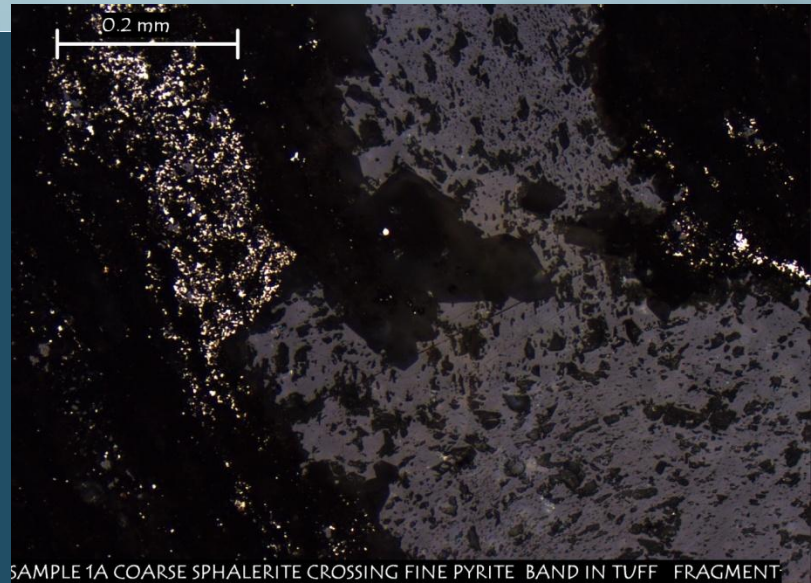


Carbonate concretion with sphalerite in centre

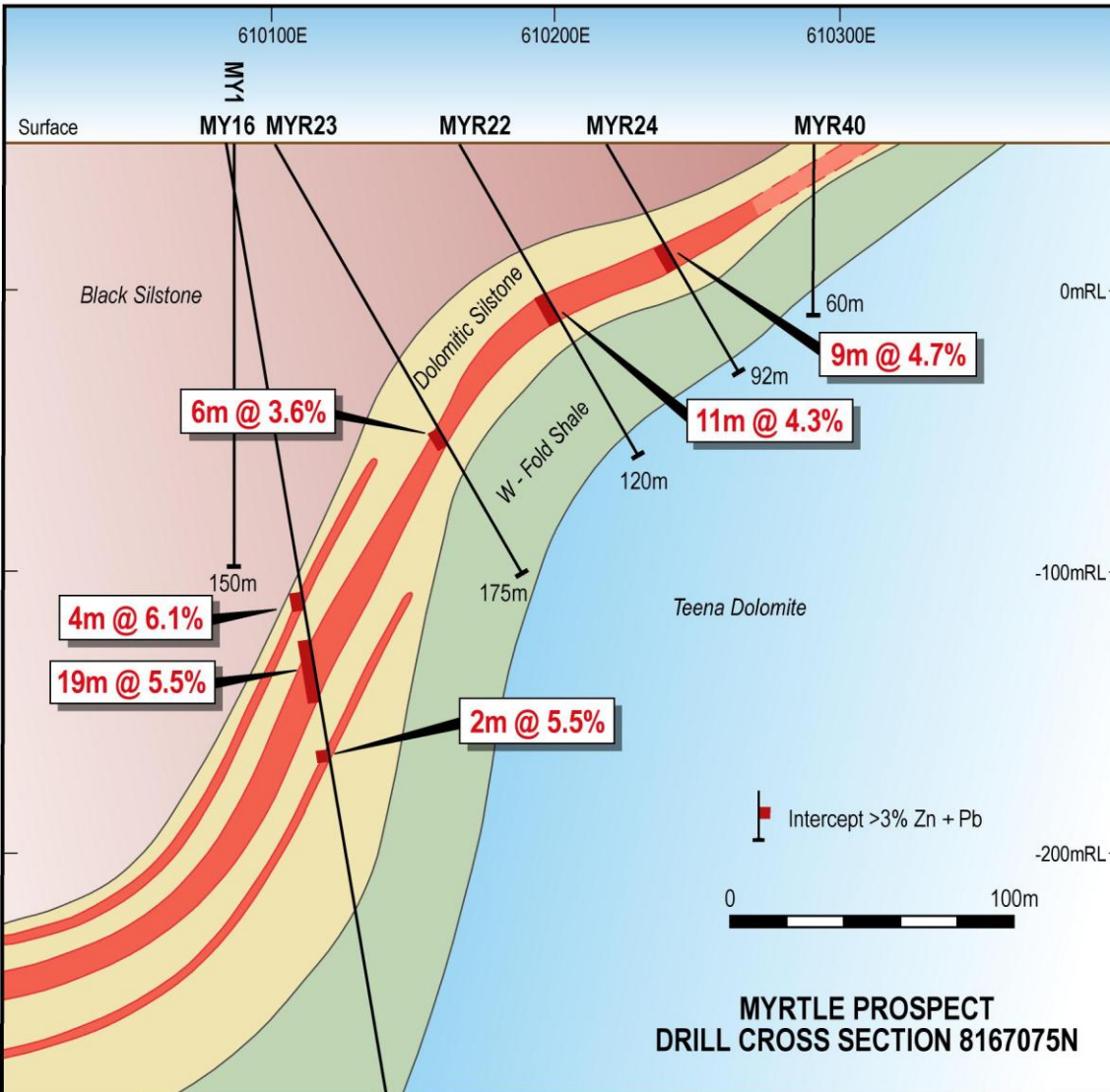


Sphalerite and Galena

- Two phases of sulphide mineralisation:
 - 1) Fine-grained pyrite and sphalerite
 - 2) Later replacive sphalerite, galena and pyrite associated with later carbonate alteration (dolomitisation) during diagenesis

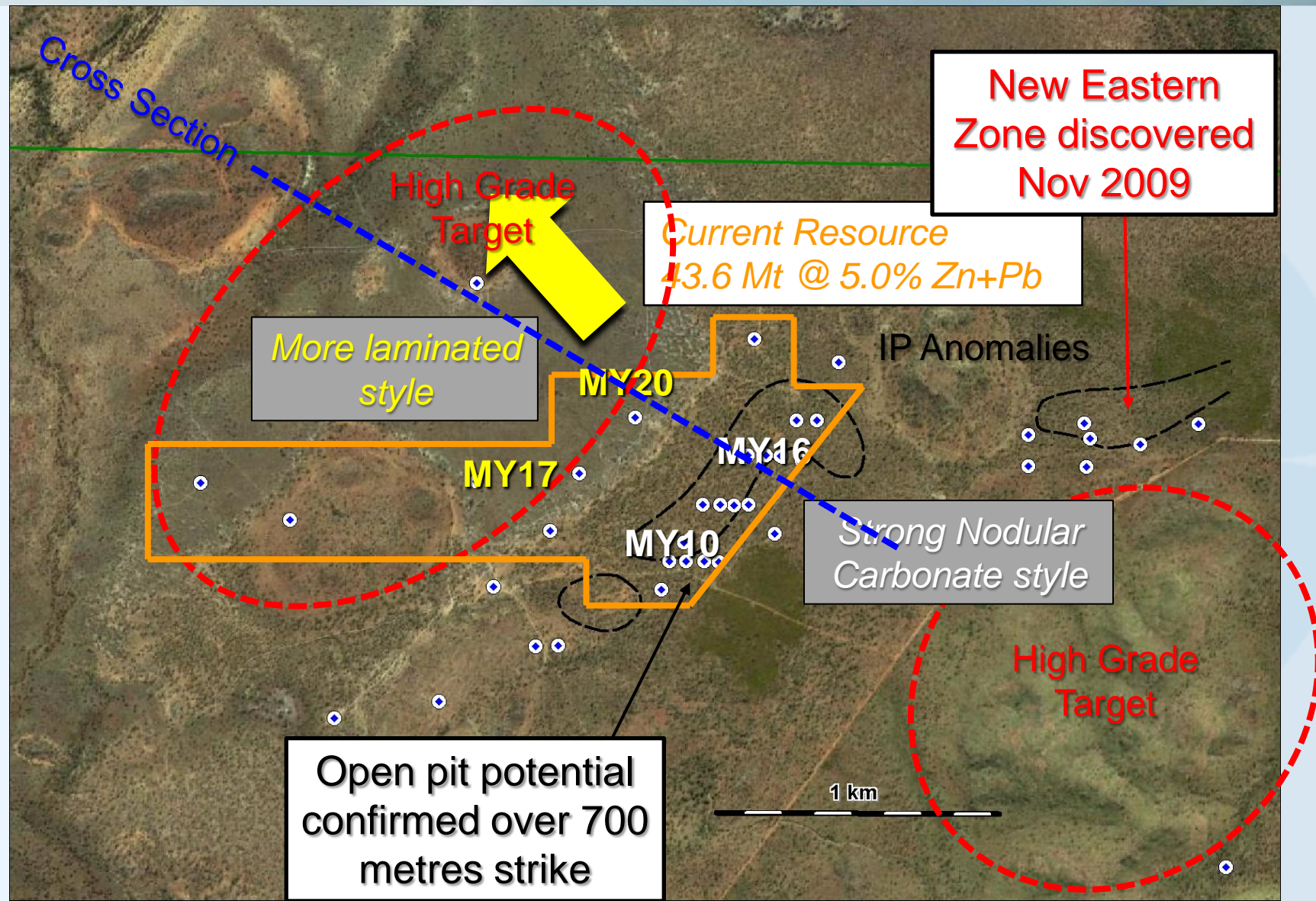


Potential Indicators

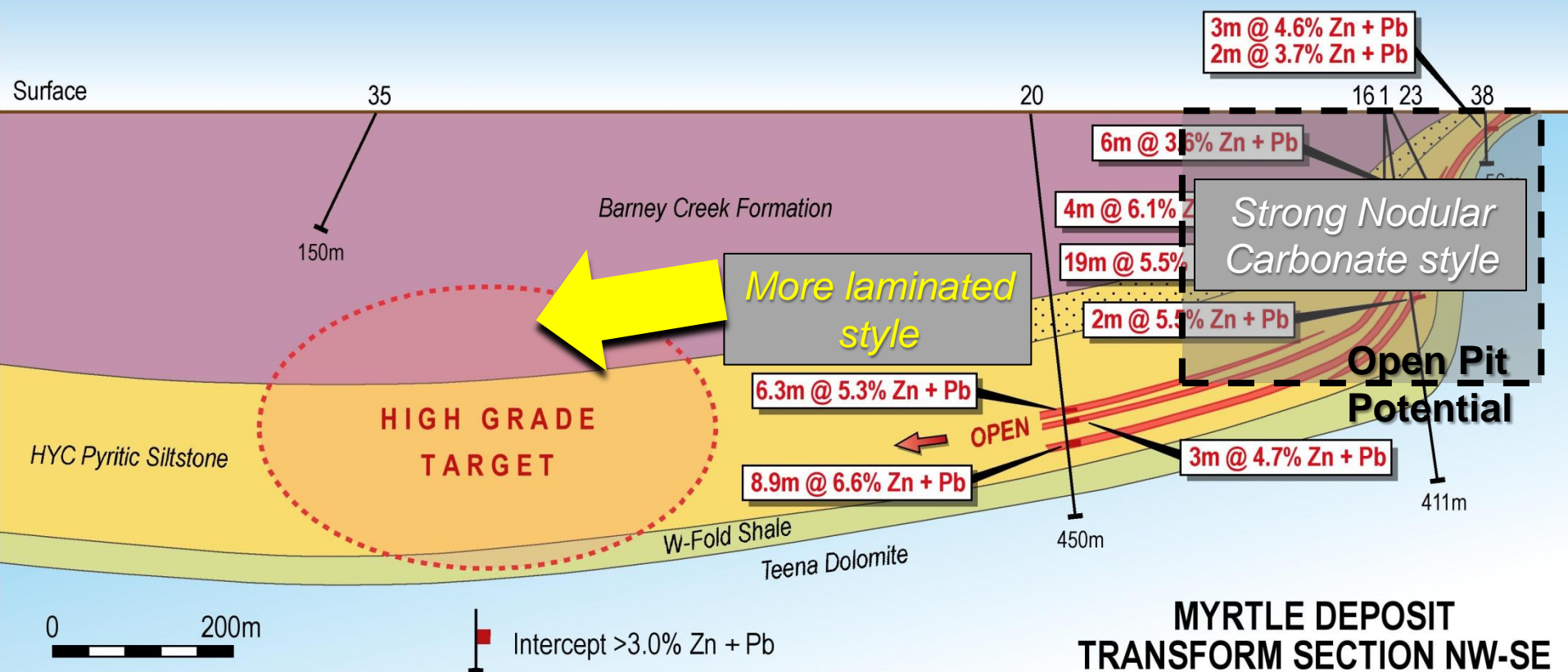


- Thickness of sedimentary package is increasing to the north-west
- Thickness and grade of sulphide horizons is also increasing to the north-west and into the basin
- Mineralisation contains distinct Nodular Carbonate
- Dips are flattening out towards NW indicating bottom of sub-basin

Myrtle Basin Potential



Myrtle Basin Potential



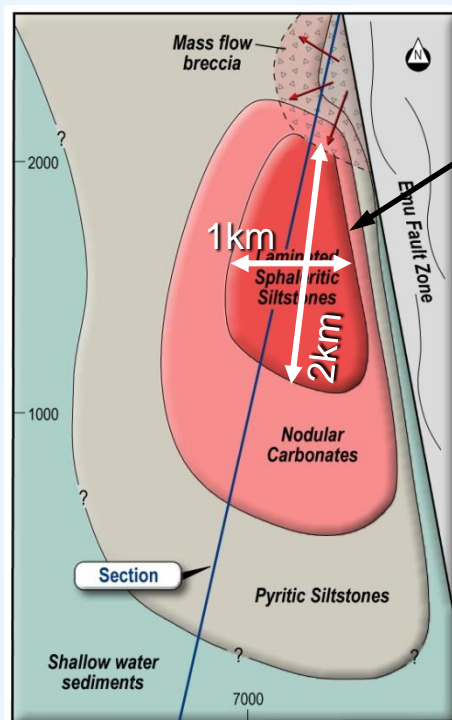
McArthur River Model

After Ireland et. al.*

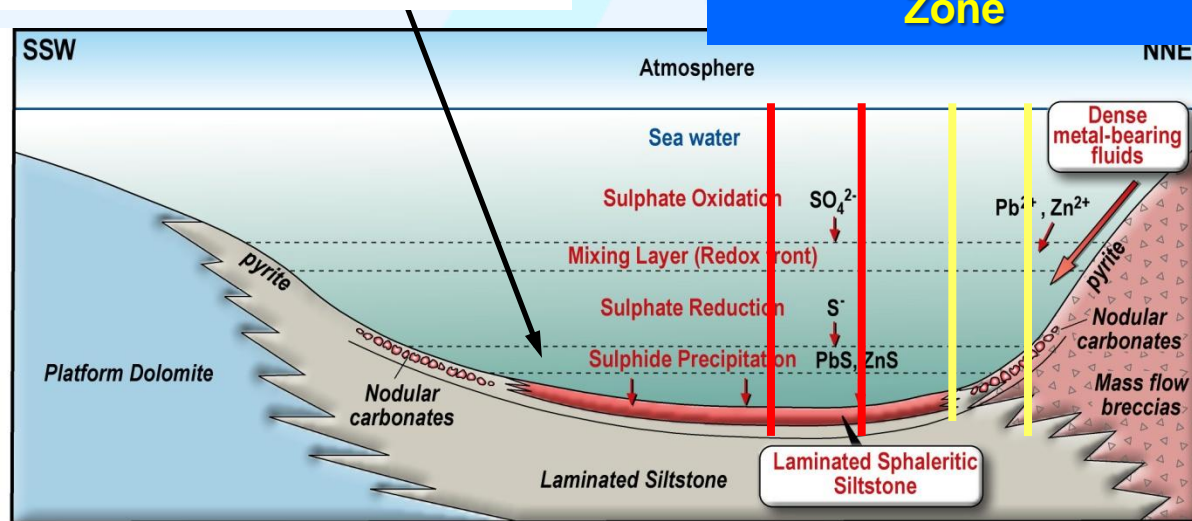
New drill holes to test
High Grade Target

Central Zone of High
Grade (1 x 2km)
surrounded by Nodular
Carbonate Zone

Existing drill holes
located in fringe
Nodular Carbonate
Zone



Plan



Section

2km

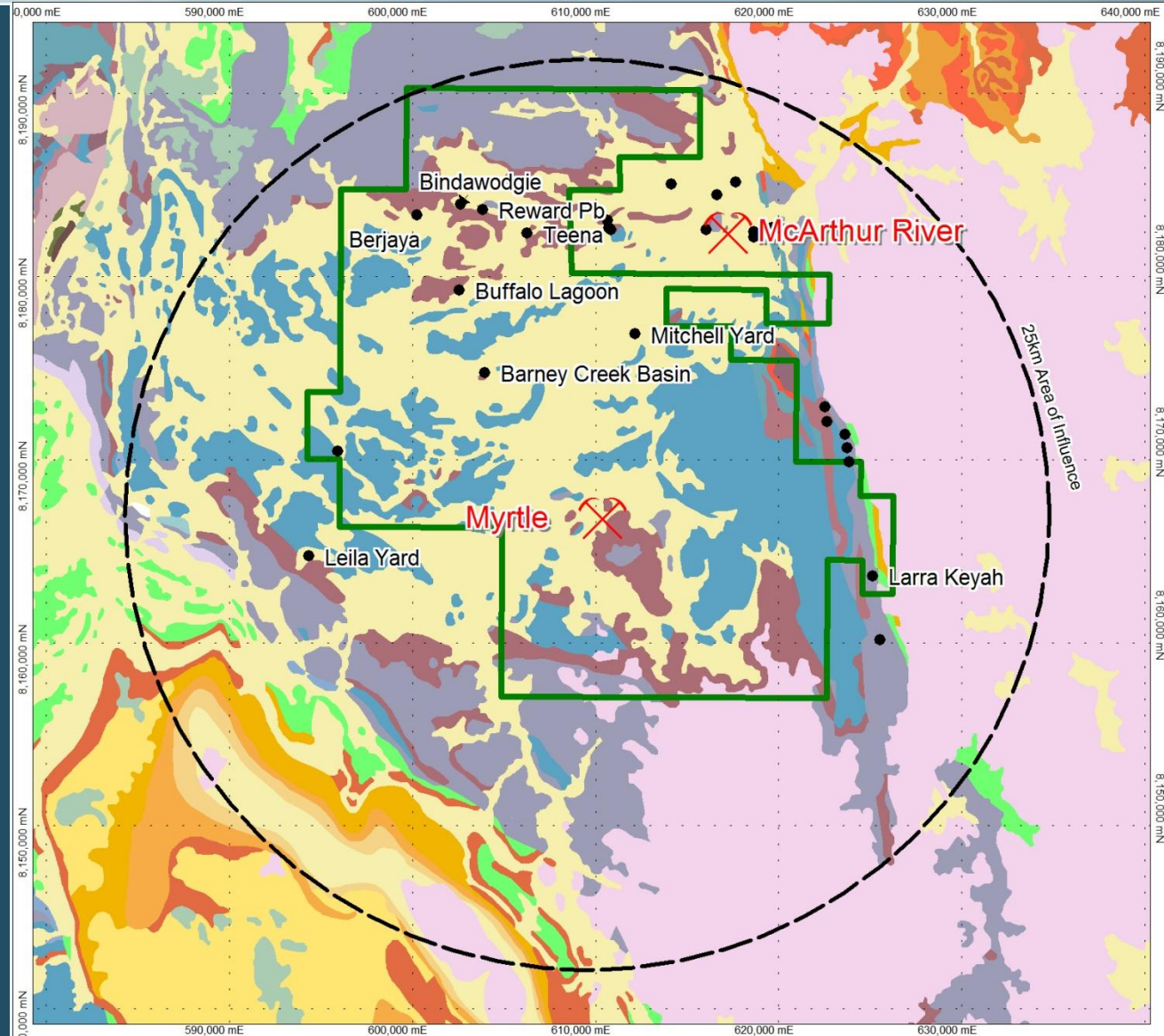
* Ireland et. al., 2004, *Econ Geol.* v.99, p 1687-1709, Figures 13 and 18

Joint Venture

- Teck is world's 2nd largest Zinc producer → production expertise
- US\$9B Mkt Cap → Financial strength → long term funding
- Minimum spend of \$1M, including 2,000 metres of drilling (will be completed in 2011)
- \$15M to earn 70% over 8 years
- \$5M to earn initial 51% over 4 years
- 25km radius Area of Influence
- Teck want to investigate “all prospects”, not just Myrtle → long term involvement

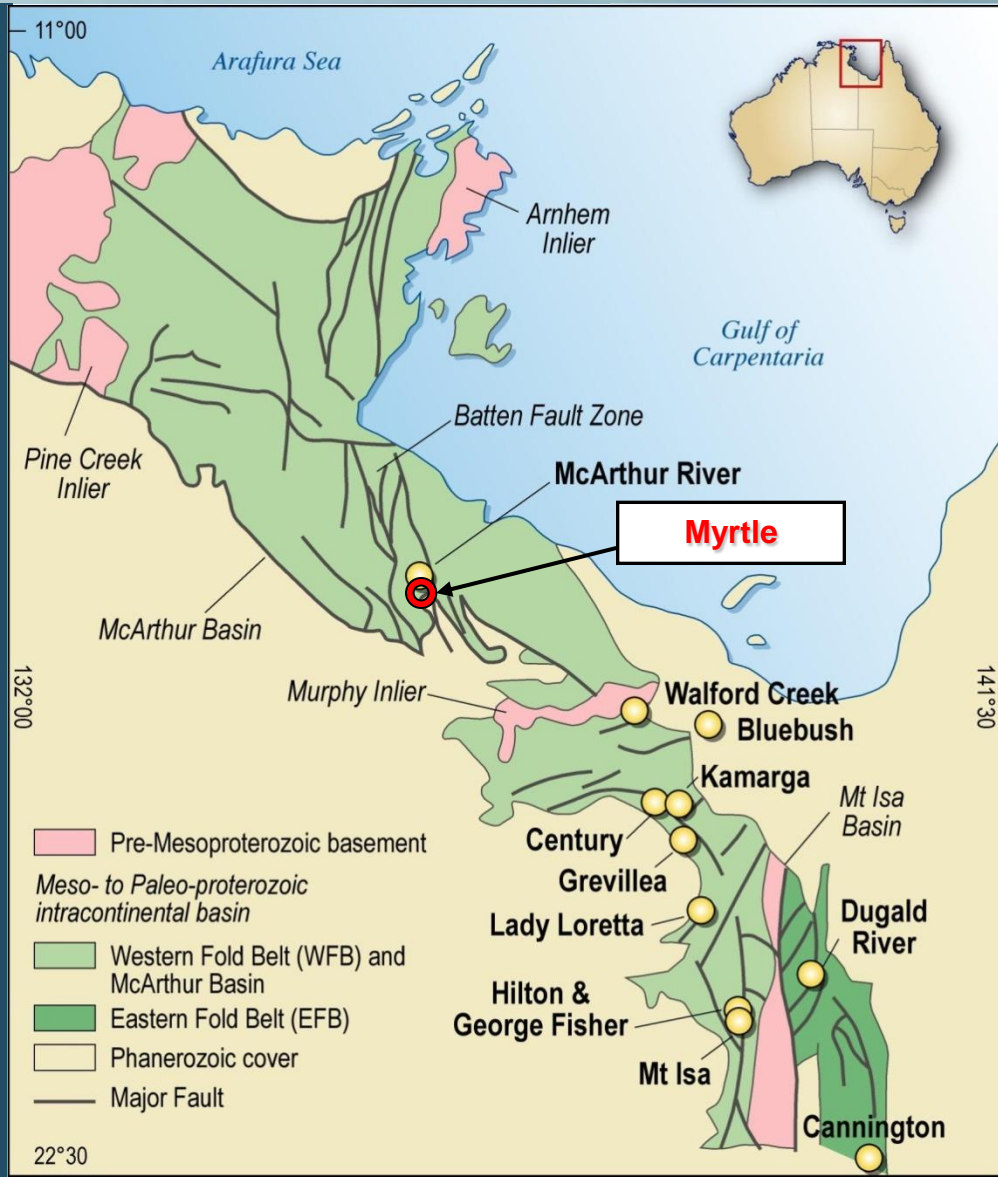
Exploration Potential

- Early (1960's) drill holes at Myrtle (MY1 & 2) were drilled short of target
- Anomalous Zn values in holes MY1 & 2 led to follow-up by Anglo in 2004-2005 and discovery of Myrtle
- Other prospects on the tenement also have shallow anomalous Zn values – need to be followed up



Giant Zn Deposits - Australia

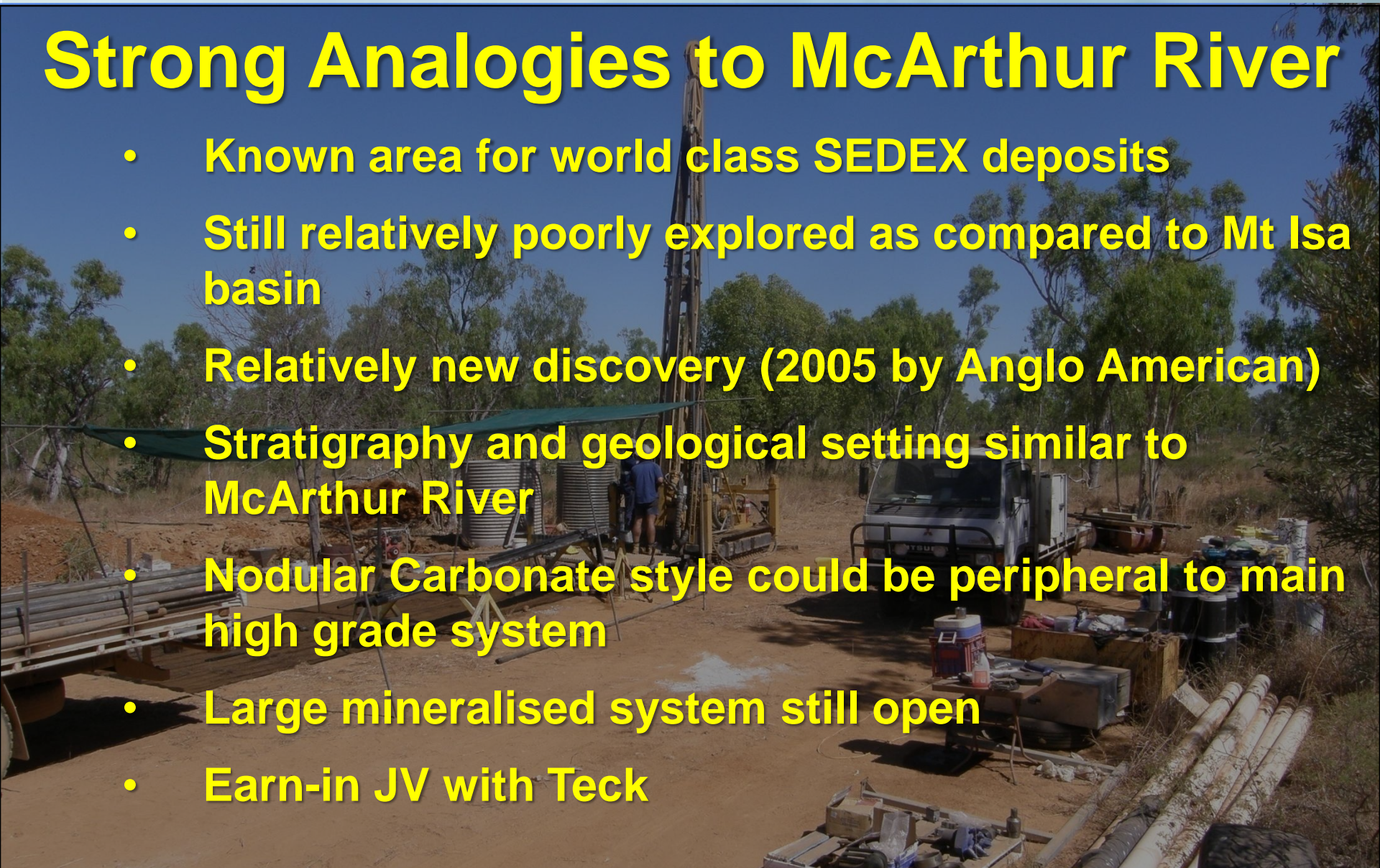
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Myrtle (target)	Rox/Teck	+100	+10
Century	MMG	95	14.1
Dugald River	MMG	48	6.8
Cannington	BHP	44	7.0
Myrtle (current)	Rox/Teck	44	2.2
Lady Loretta	Xstrata	14	3.1



Summary

Strong Analogies to McArthur River

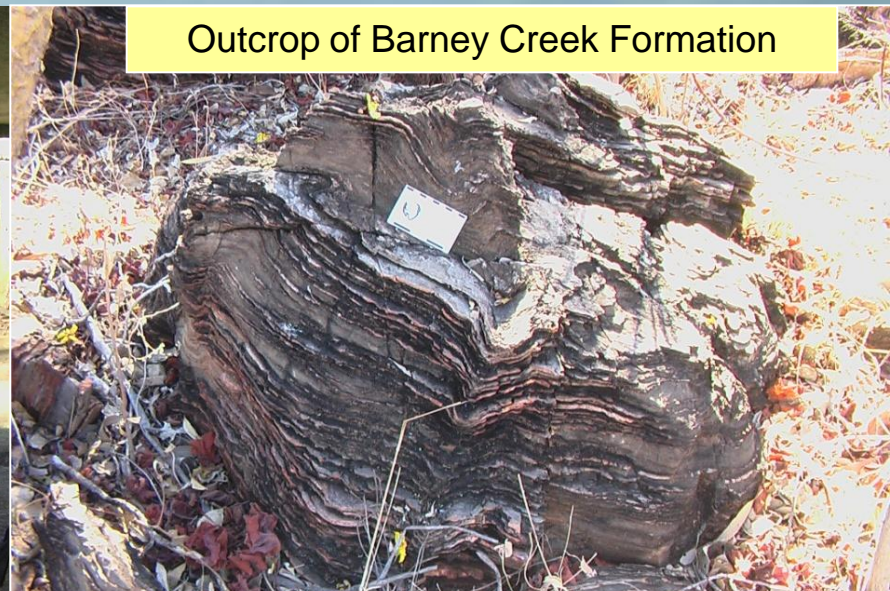
- Known area for world class SEDEX deposits
- Still relatively poorly explored as compared to Mt Isa basin
- Relatively new discovery (2005 by Anglo American)
- Stratigraphy and geological setting similar to McArthur River
- Nodular Carbonate style could be peripheral to main high grade system
- Large mineralised system still open
- Earn-in JV with Teck



Questions?



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Outcrop of Barney Creek Formation



Reward Dolomite Breccia