

Sedimentology and carbon isotope chemostratigraphy of the Glyde sub-basin, McArthur Basin: Implications for base metals exploration

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#### **Basin analysis**



- What was the metal source?
- What were the fluid pathways and what structural controls existed?
- What was the trap and what its stratigraphic and what its geochemical component?



#### **Basin analysis**







### **Basin analysis – facies analysis \*** Northern Territory Government



FA 1: Supratidal to continental	FA 2: Shallow subtidal to intertidal	FA 3: Subtidal	FA 4: Deep subtidal to slope
n = 3	n = 6	n = 6	n = 4



## **Basin analysis – facies analysis** Rorthern Territory Government



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#### **Basin analysis – Glyde area**





























#### Carbon isotope chemostratigraphy



- easy to use
- successfully applied in Proterozoic basins around the world
- inexpensive (\$50 \$100 per sample)
- rapid sample throughput



# Redox chemistry and more of the Barney Creek Formation



- Iron speciation
- Trace element geochemistry (Mo, U, V)
- Systematic element distribution for distal footprint evaluation
- Rock-Eval pyrolysis









#### **Summary**



- Integrated into the geophysical and deformation fluid flow models will be a basin analysis study
  - Will provide a sedimentological, tectonostratigraphic, sequence stratigraphic, and chemostratigraphic framework
- Part of the basin analysis are also several geochemical projects
  - stratigraphic and spatial identification of metal traps
  - distal footprint assessment
  - thermal maturity



## Thank you

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