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RESOURCES LIMITED

An Introduction to the Balagundi VMS Exploration Project

Location

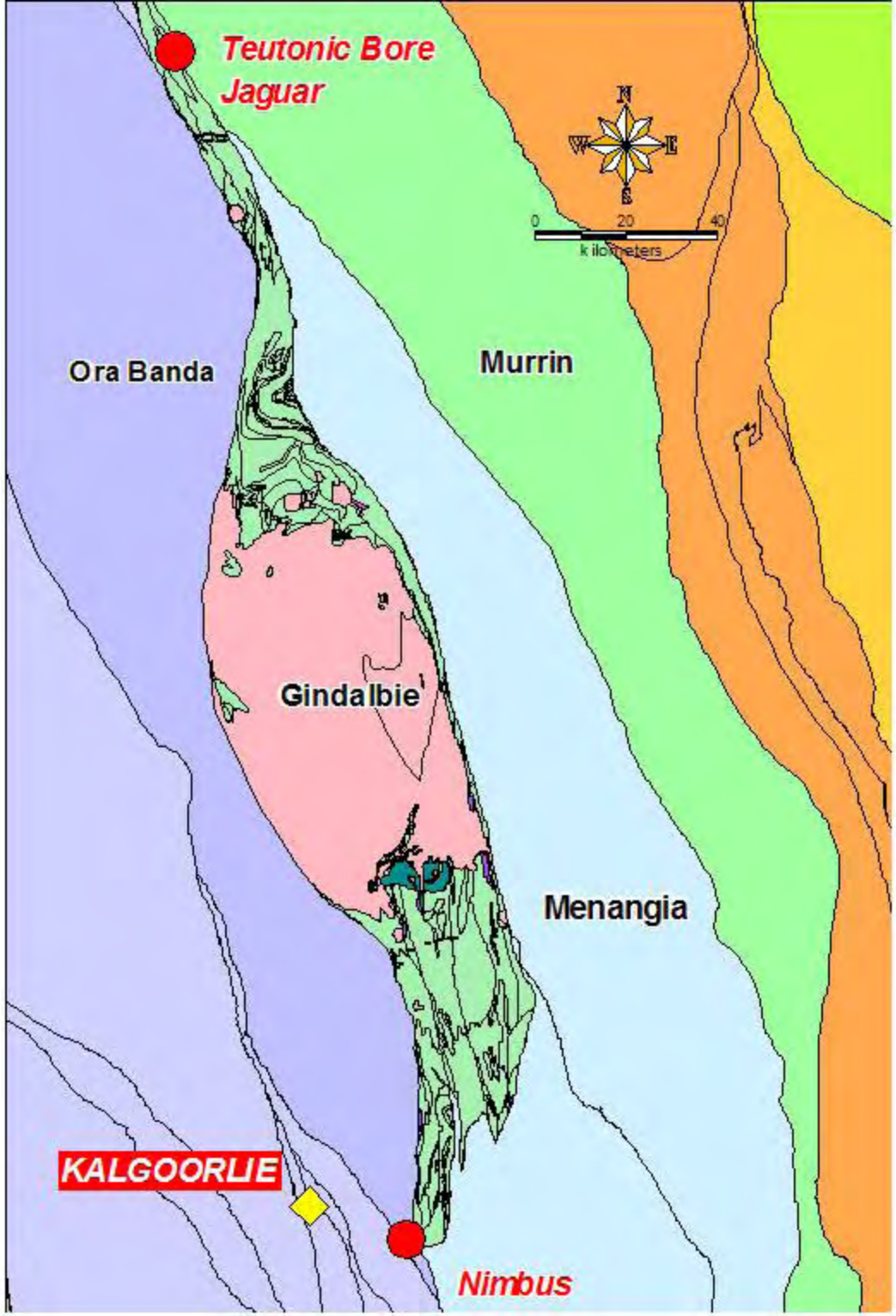
- The Gindalbie Terrane is considered prospective for volcanogenic massive sulphide deposits.

Area

- Pioneer holds 770 square kilometres of tenements that are considered prospective for VMS Mineralisation

Progress

- Initial exploration programs have been very encouraging.
- Pioneer now seeks a JV partner to make the discovery.



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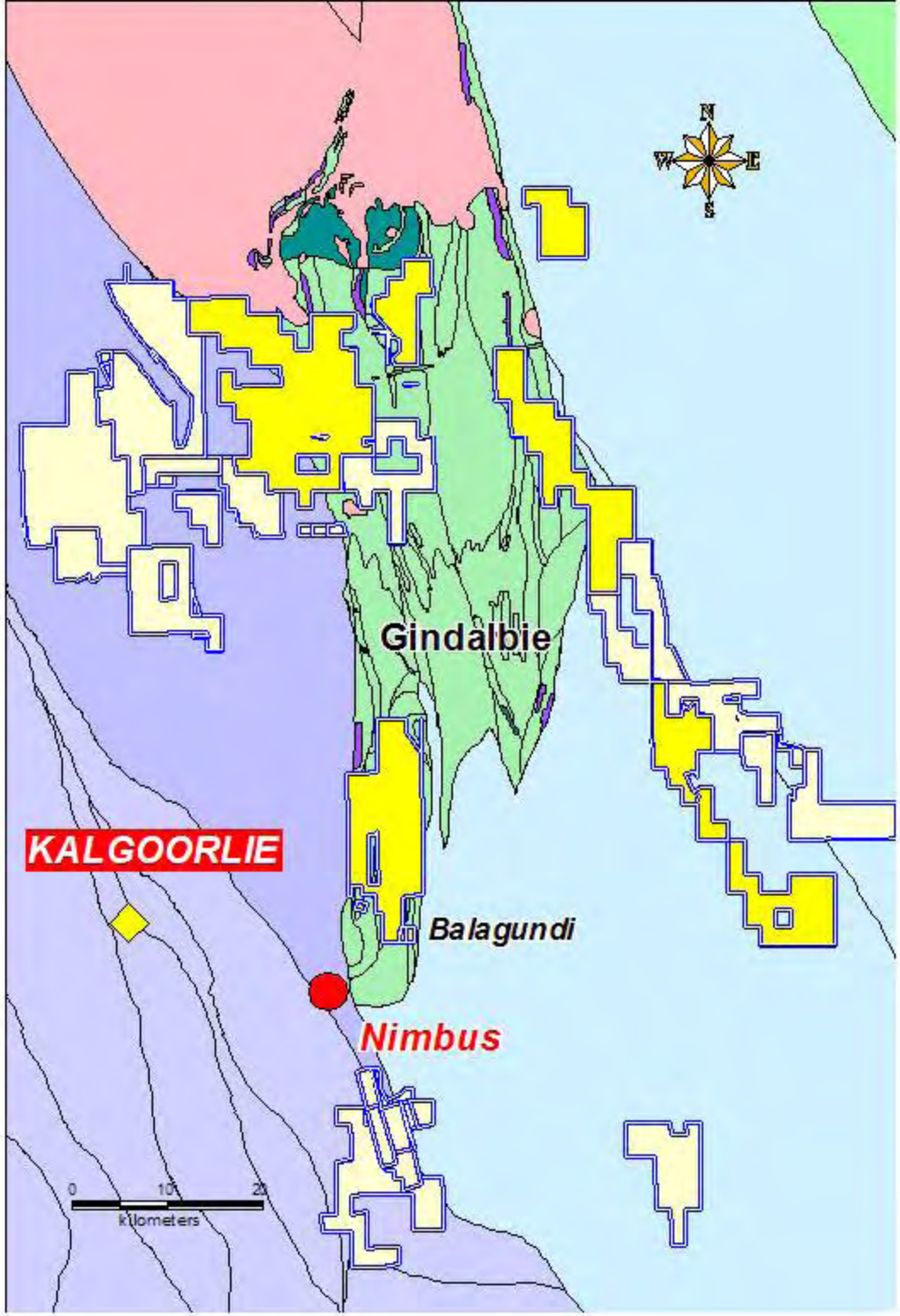
Gindalbie Terrane geological units are considered by the GSWA to be prospective for volcanogenic massive sulphide ("VMS") style copper-lead-zinc deposits.

Target style includes Teutonic Bore and Nimbus Mines.



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Pioneer holds 770 square kilometres of tenements that are considered prospective.

Other tenements held by Pioneer are prospective for gold or nickel

Question: If the Gindalbie Terrane is geologically similar to the Canadian Superior and Slave Provinces, why are there not more VMS deposits here?

- Less Outcrop: evidence buried ?
- Deep weathering – evidence removed ?

Modern Exploration recognises these issues and uses vectors which may lead to a discovery.

Pioneer has completed:

3,486 site geochemical survey – very low detection level analyses;

PIMA analysis from pre-existing RAB drilling – alteration halos;

Fact mapping and geochemistry, looking for fertile rock analogies - ie flat REE felsic volcanics;

10 RC holes at the Trapdoor Prospect drilled, two holes intersected weak malachite (copper) mineralisation.

Positive Vectors:

HFS element plots show a volcanic island arc calc-alkaline magmatic affinity.

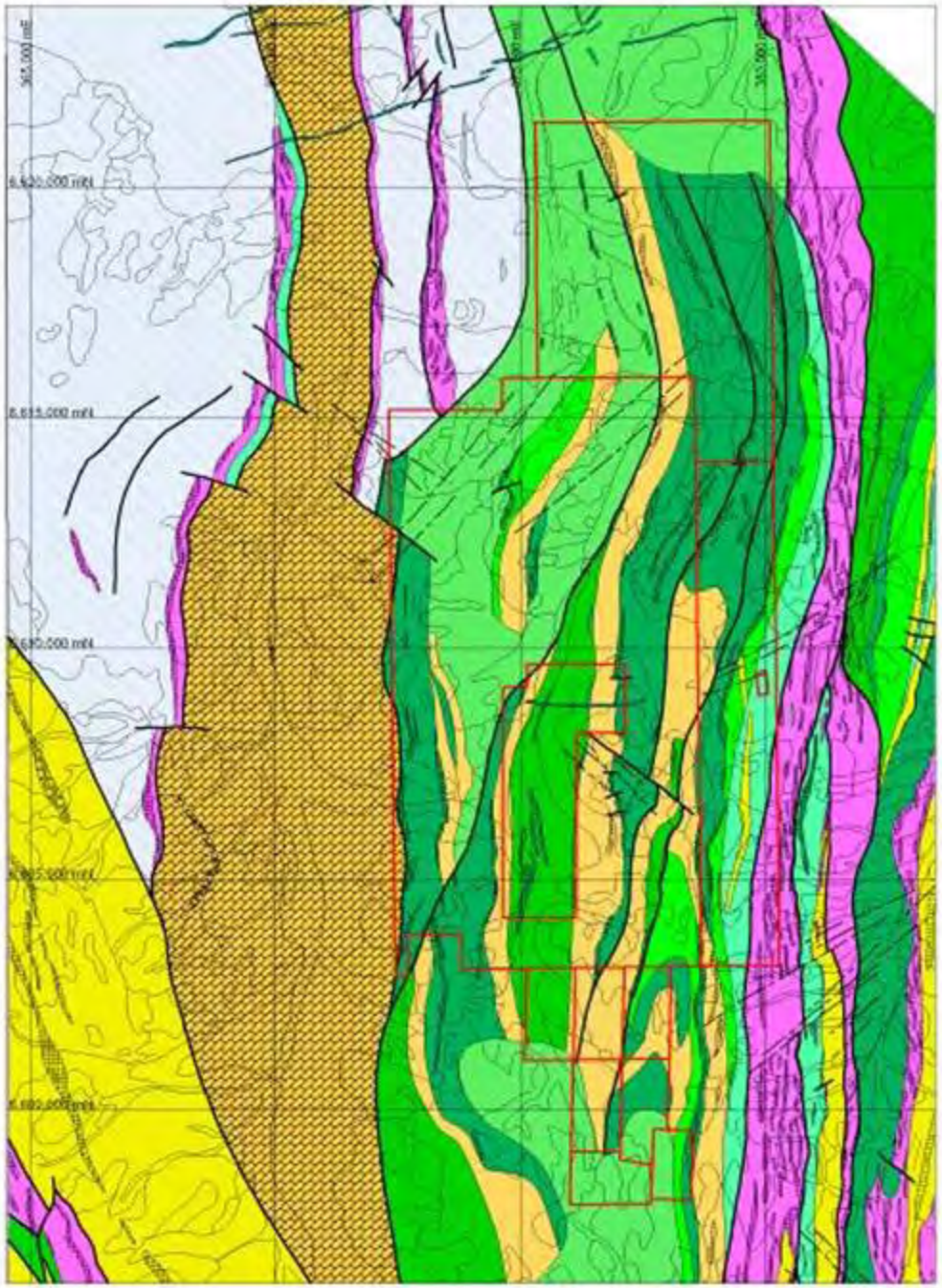
Normalized RE and ERE plots for **the Western and Middle flows** are flat.

Zn -Ag-Tl-Sb gossans and paragonitic alteration zones at **Red Bluff Dam.**

Cu-Pb-Ag-Bi-Mo-Sn-bearing anomalies for the **Eastern Felsics**

PIMA-defined sericite- and chlorite-bearing alteration zones, with paragonitic muscovite and Fe rich chlorite signatures consistent with proximal VMS alteration

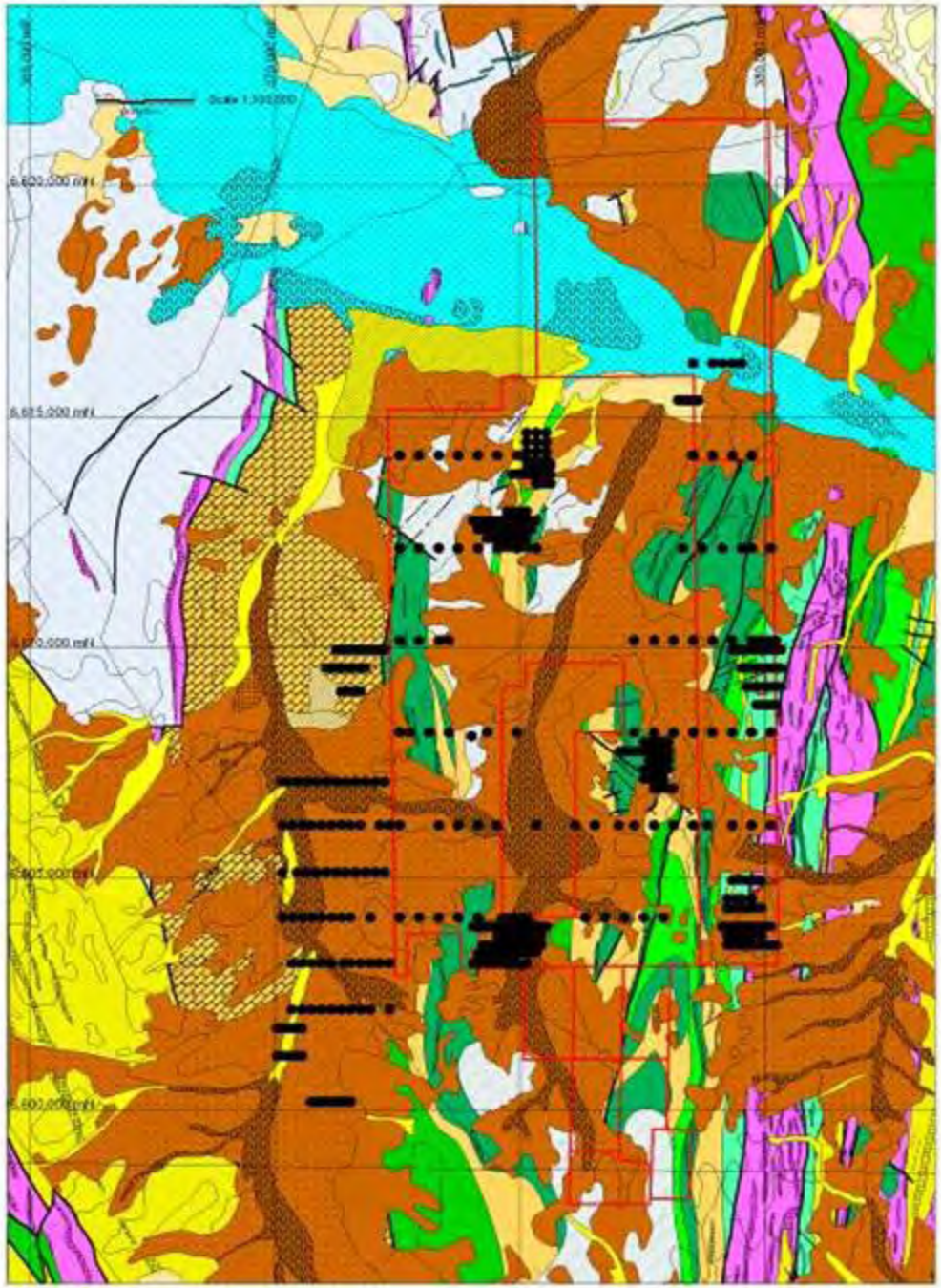
4m at 3.2% Cu returned in drilling, in albite-altered, probably distal alteration assemblages **(Redback)**.



Solid Interpreted Geology

Bimodal mafic volcanics and felsic lavas and derived clastics
Mafic sills
Thrust repetition of stratigraphy

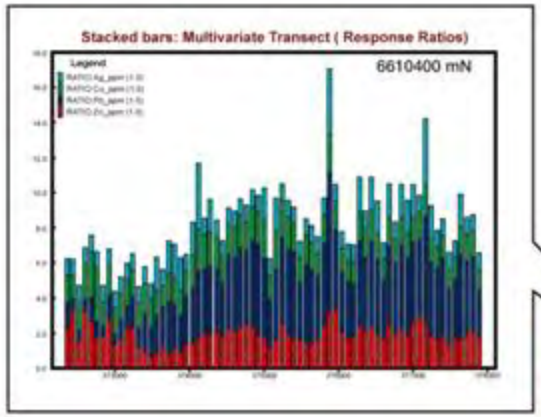
Solid Geological Interpretation based on aeromagnetic imagery and rock lithologies from RAB drilling spoil.

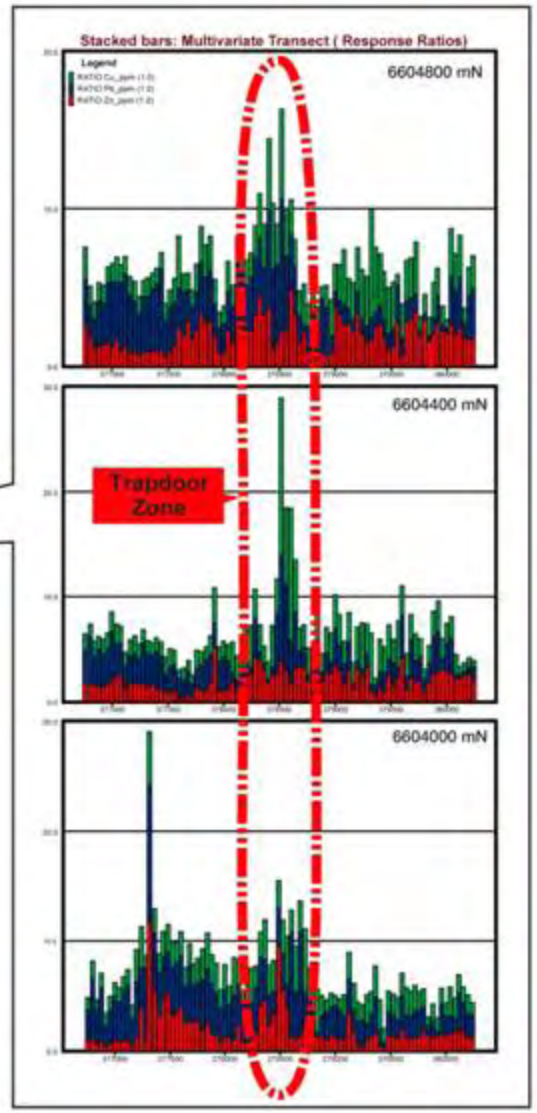


Historic drilling

Targeted gold, however re-assaying old chips has produced useable geochemistry.

Regolith Interpretation based on aeromagnetic and radiometric imagery.

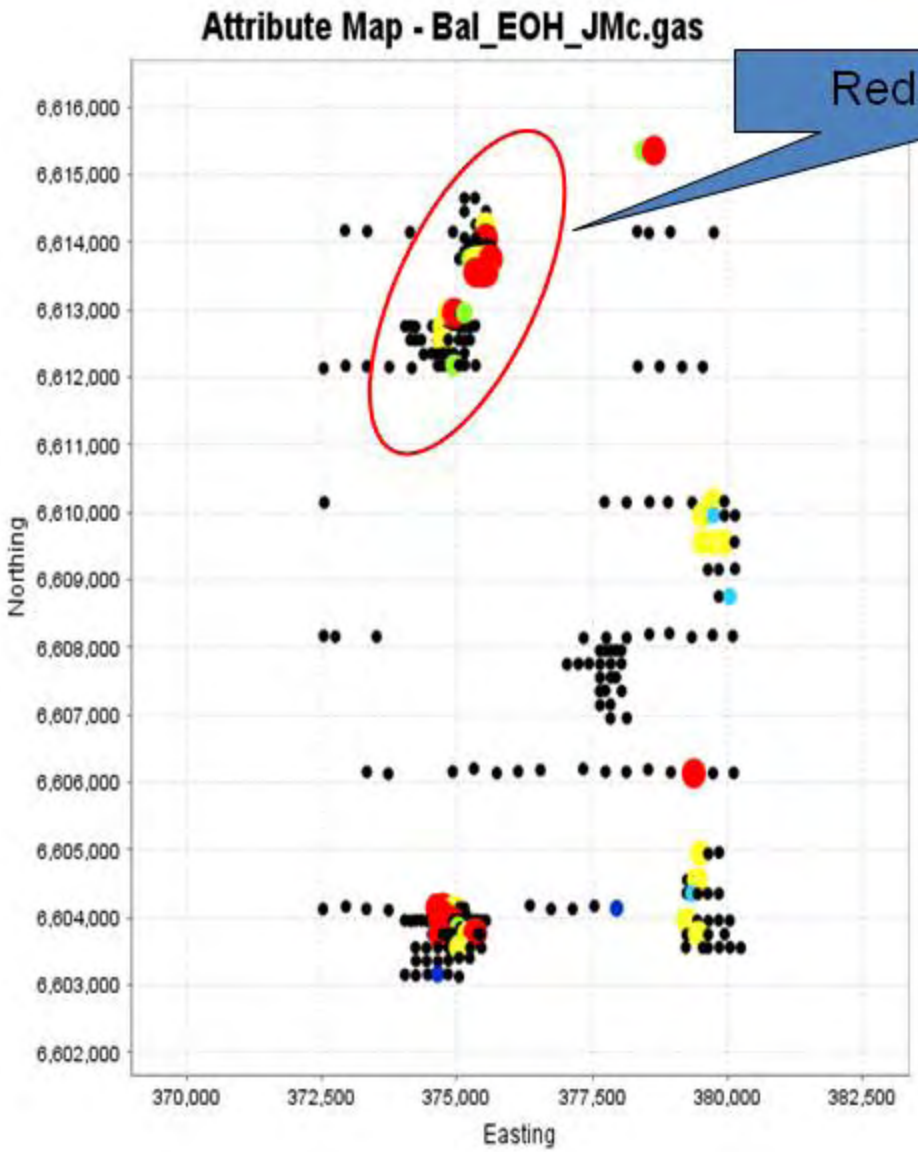


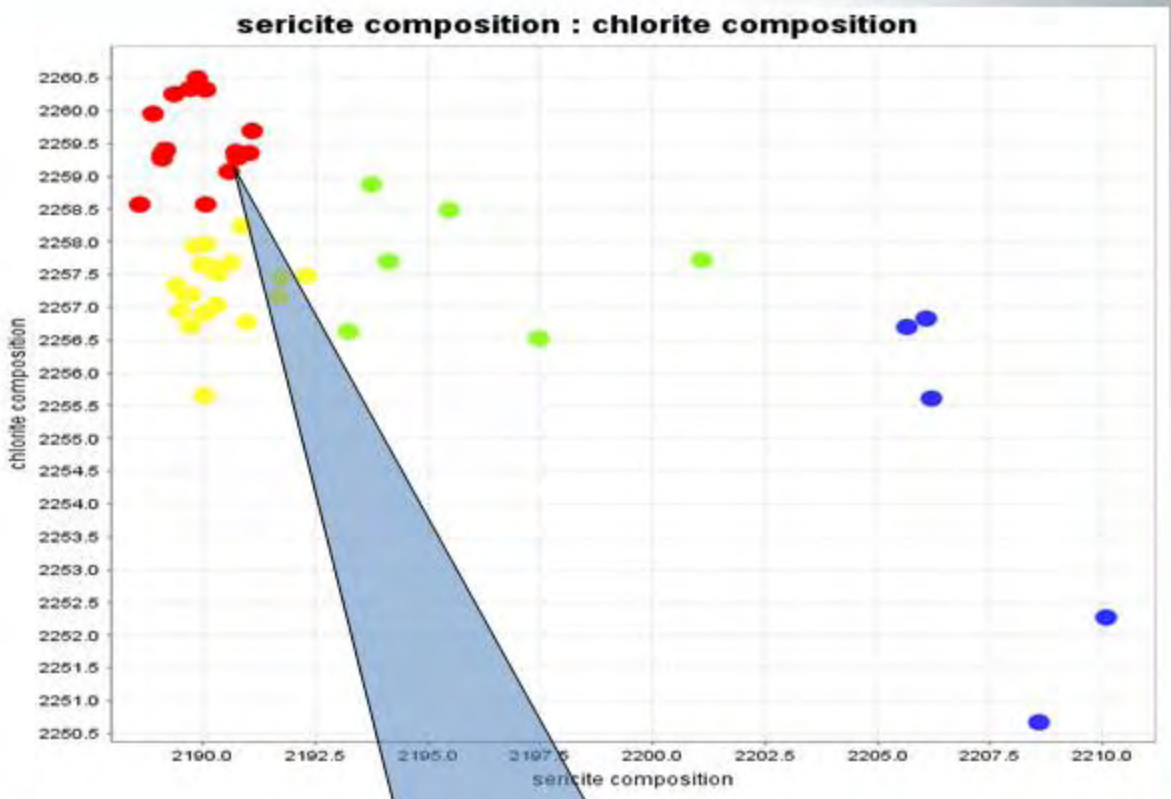


New Multi-element Geochemistry

Very low detection level auger sampling completed. While the purpose was to generate trace element anomalies, base metal anomalies are evident.

PIMA - Sericite-Chlorite Compositions

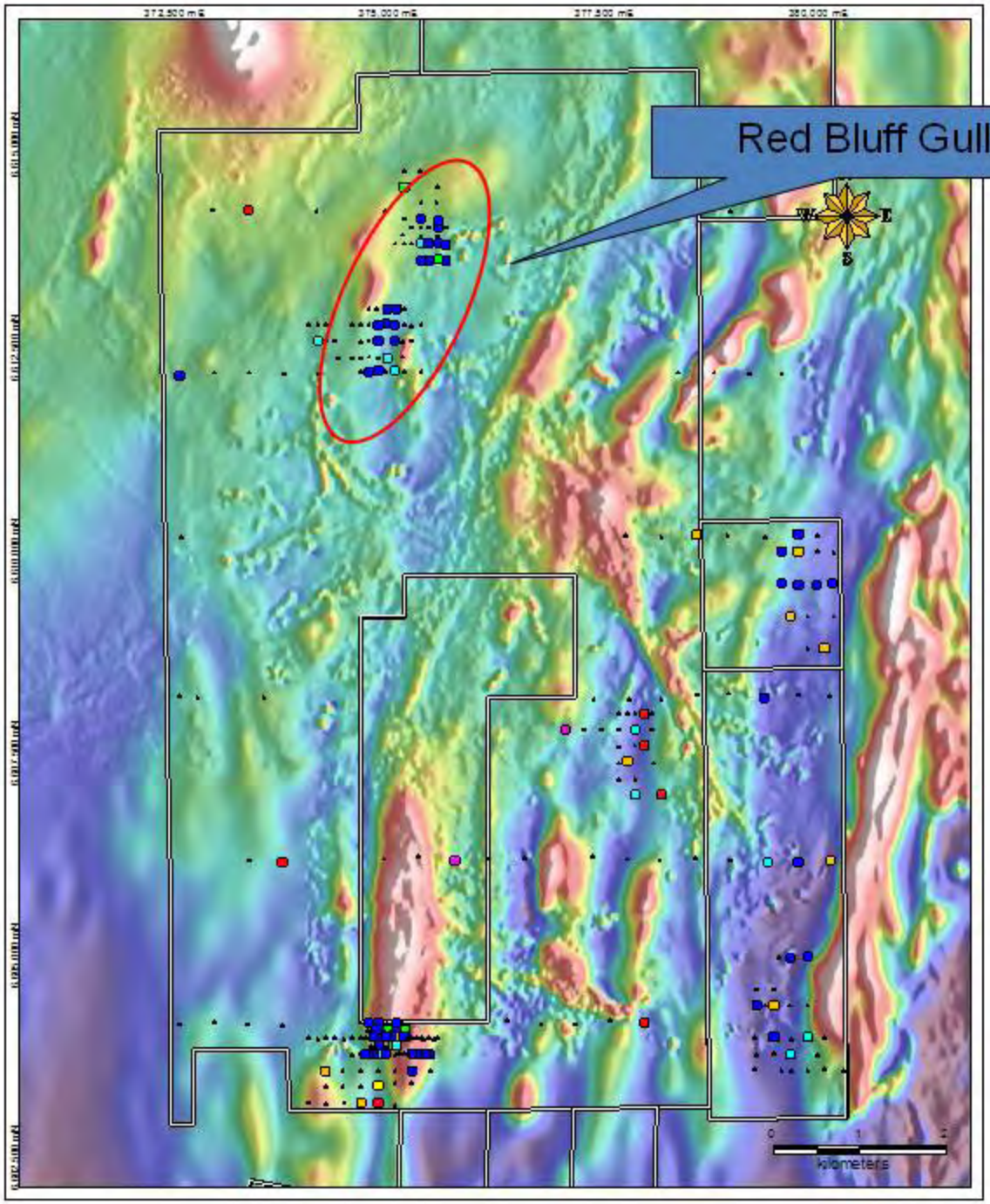




Highly acid alteration-proximal to VMS discharge zone

End of hole PIMA:

Sericite Composition



End of hole Sericite composition

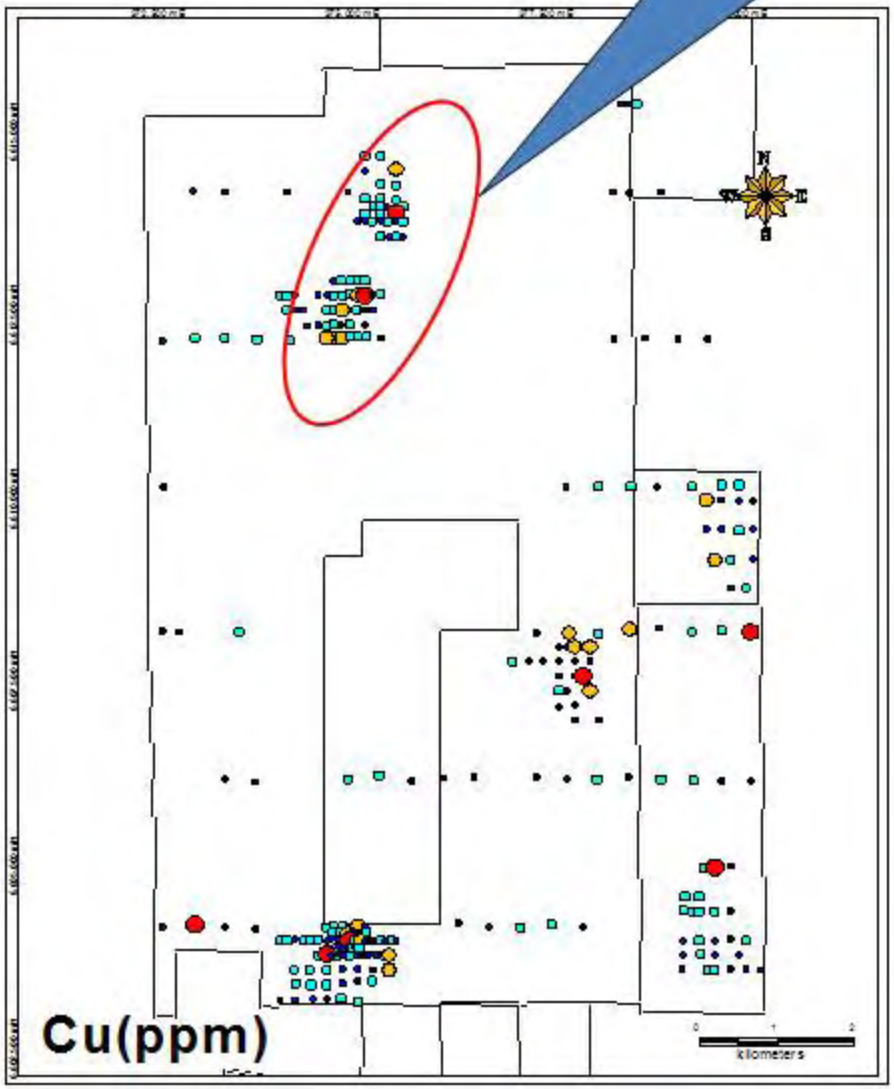
2,215 to 2,230	(2)
2,208 to 2,215	(7)
2,204 to 2,208	(10)
2,200 to 2,204	(2)
2,196 to 2,200	(5)
2,192 to 2,196	(11)
2,180 to 2,192	(54)
No sericite	(180)

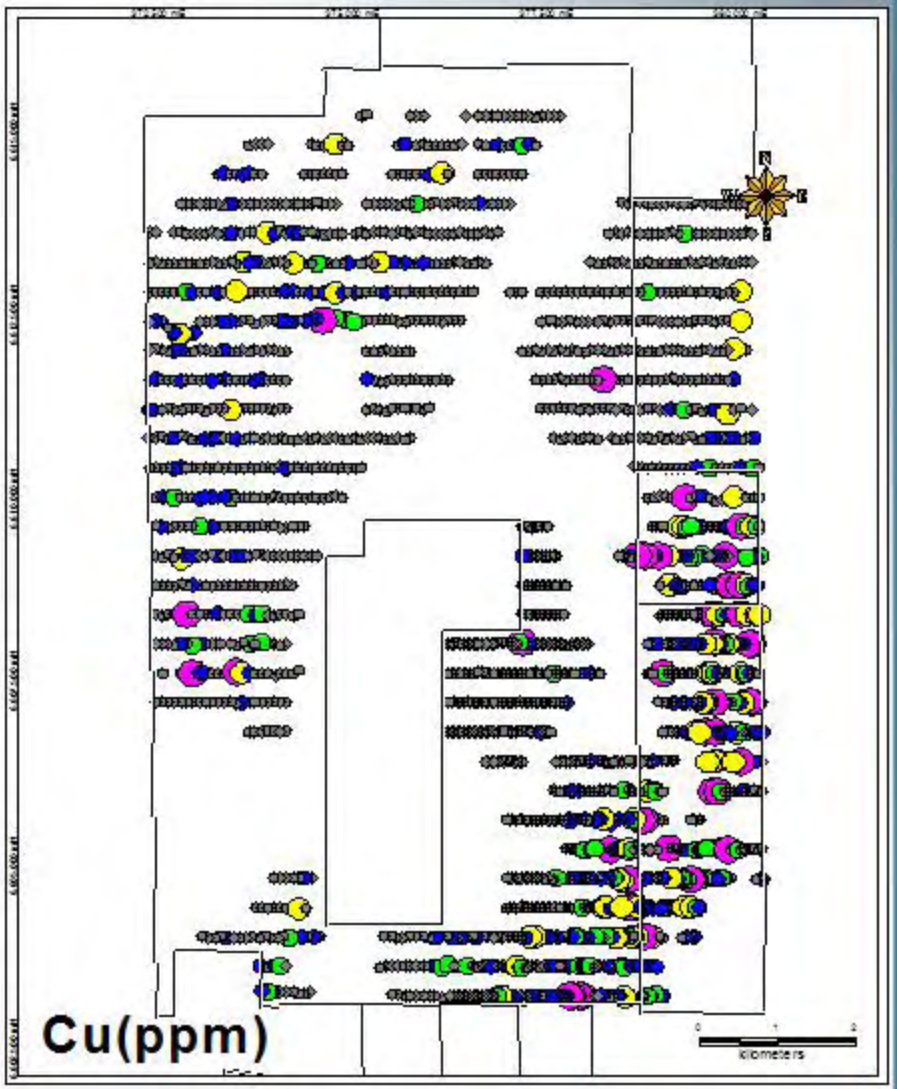
Phengite-distal alteration, alkaline fluids

Paragonite- proximal alteration. acid fluids

Primary Mineralisation: - Copper

Red Bluff Gully





Drill chips

Auger

Primary Mineralisation: - Zinc

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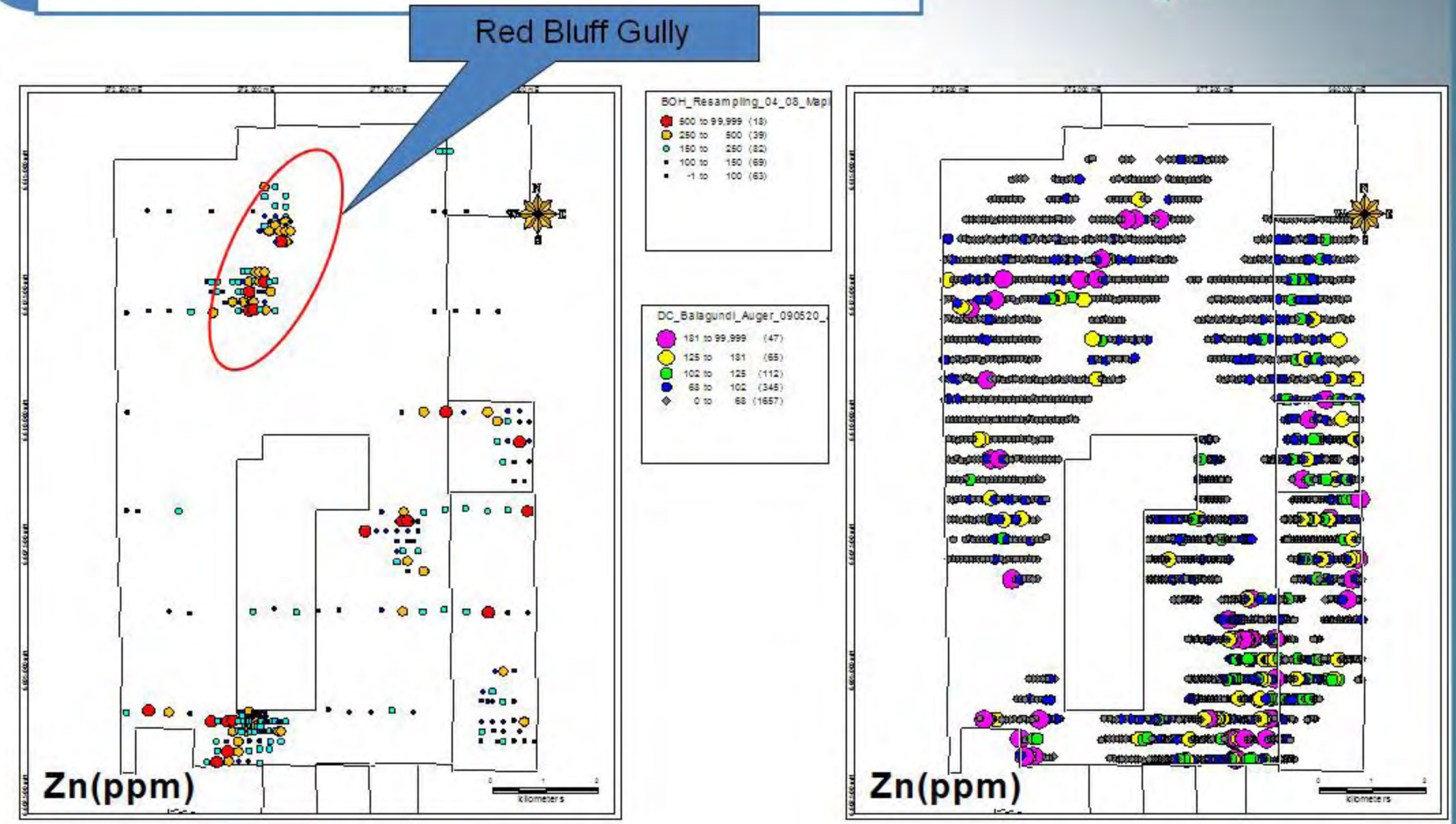


Drill chips

Auger

Proximity Indicator: - Thallium

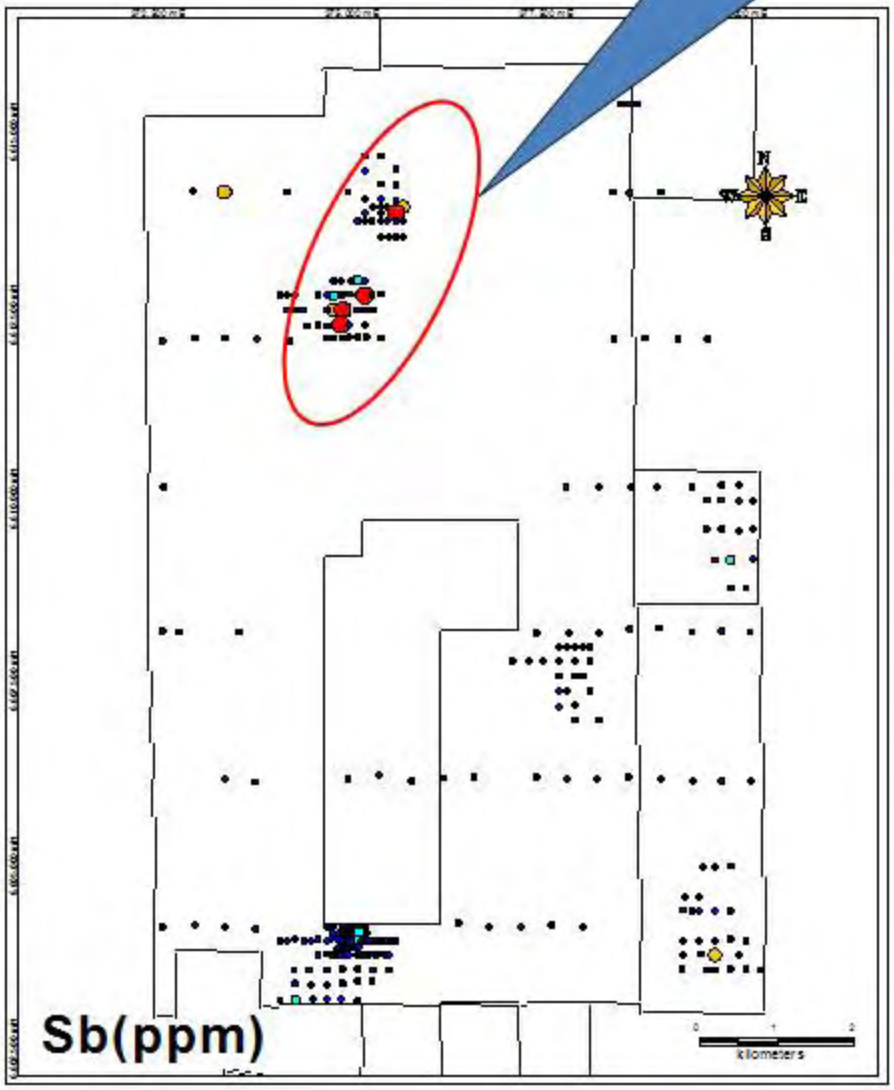
Thallium Ranges

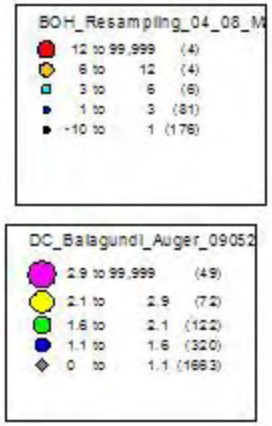
1 to	1,000
0.5 to	1
0.2 to	0.5
0.1 to	0.2
-6 to	0.1

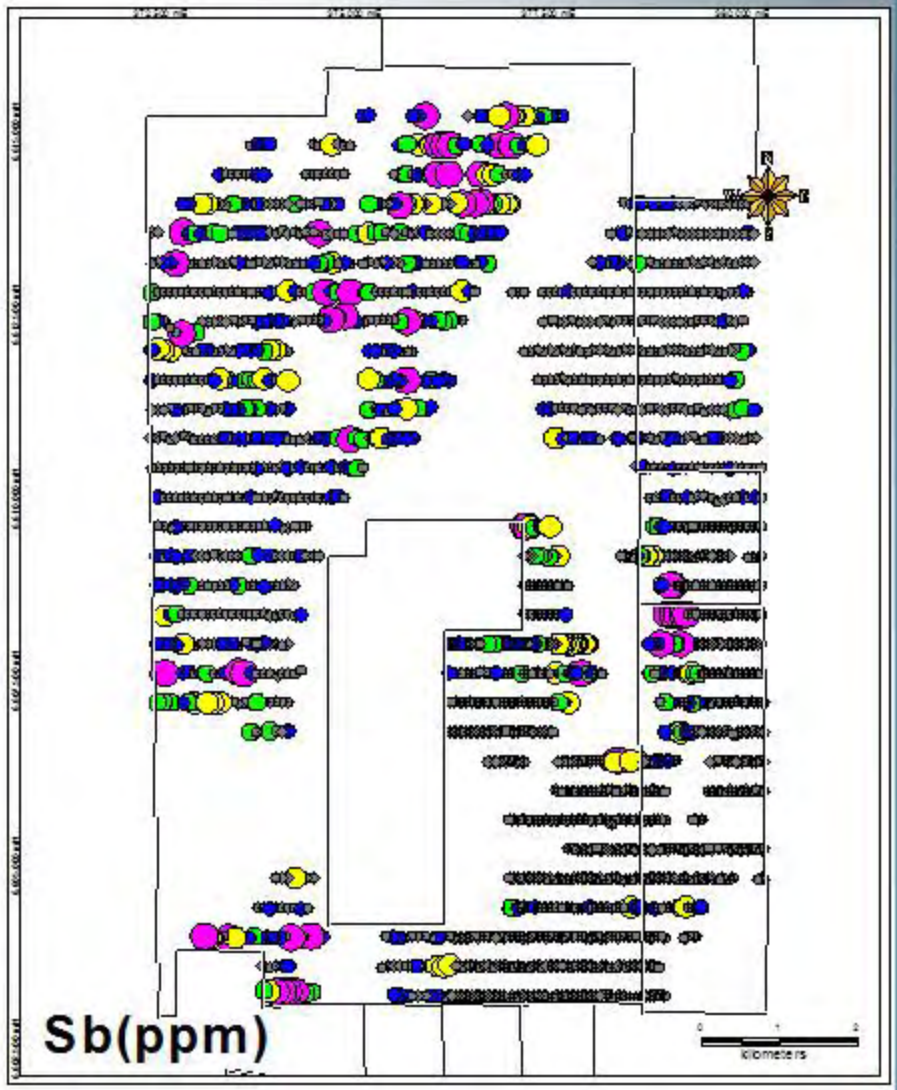
Drill chips **Auger**

Proximity Indicator: - Antimony

Red Bluff Gully

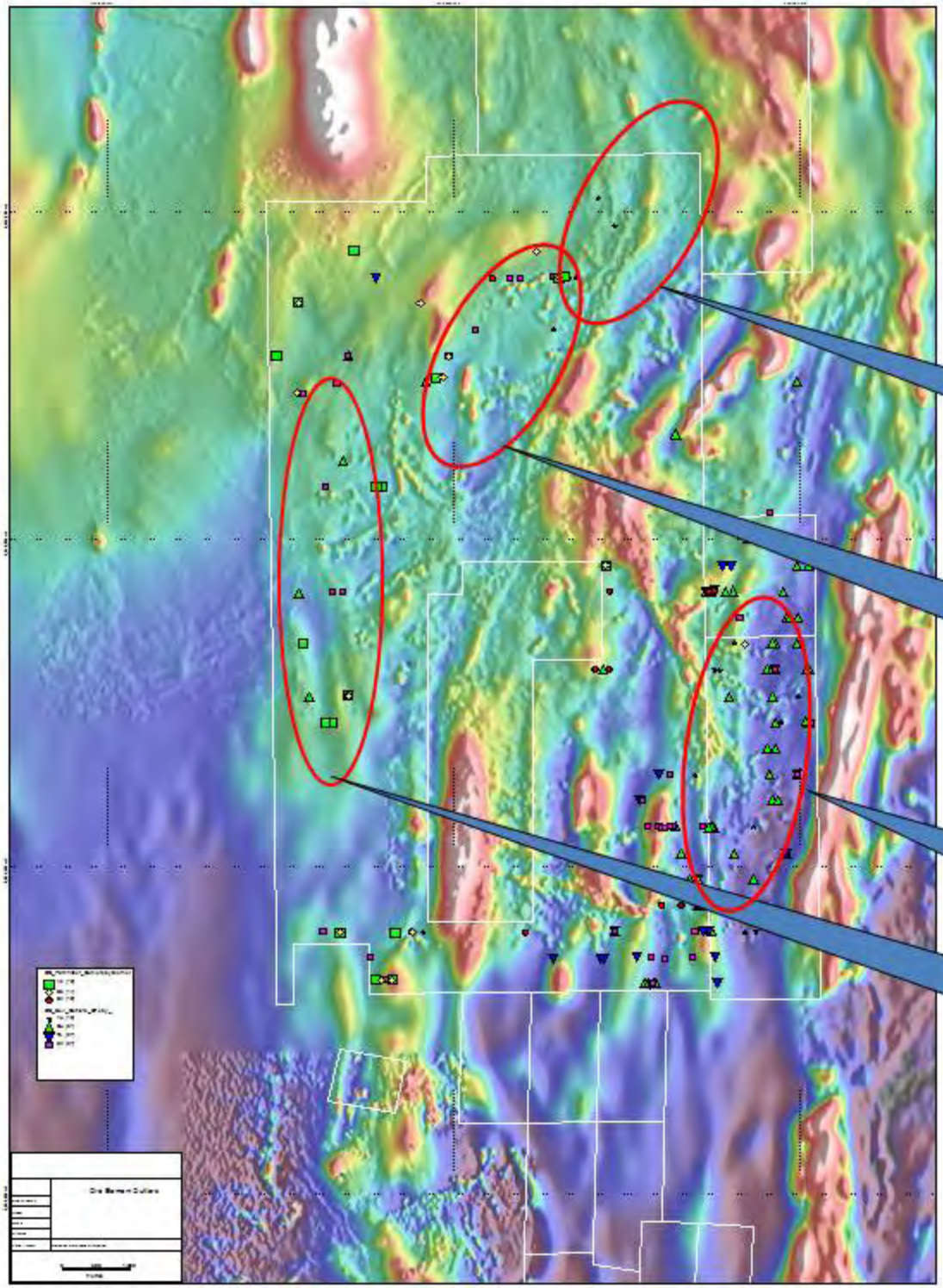






Drill chips

Auger



Exploration Targets

Strike extensions to the Red Bluff Gully acid alteration system

Red Bluff Gully-
Intense acid alteration, proximal Ag-Sn-Th-Sb signature

Base Metal Target-Geochemistry
Very strong Cu-Pb-Bi-Sn anomaly
On the edge of, or under, laterite

Flat REE felsics with anomalous Cu geochemistry:
REQUIRES RAB DRILLING