

ASX ANNOUNCEMENT

7th August 2009

AMENDED - ARGONAUT TARGETS ADDITIONAL DEPOSITS AROUND KROOMBIT

Argonaut Resources NL (ASX: ARE) is pleased to announce that a program of exploration work targeting additional deposits in the vicinity the company's 100% held Kroombit zinc-copper deposit in Central Queensland will commence on 17 August 2009.

The program will be undertaken by Geo Discovery Group Pty. Ltd. and the first phase of work will involve a field appraisal of 27 previously recorded small-scale historical mines, exploration prospects and mineral occurrences.

The outcome of this program will be the compilation of a short-list of priority targets that warrant further detailed investigation.

The work will cover targets on Argonaut's three granted Mineral Exploration Permits in the Kroombit area (Figure 1). Future work will also contemplate targets on two additional Mineral Exploration Permit Applications (Figure 1), which are subject to impending grant.

Background

Argonaut holds a 100% interest in the Kroombit zinc-copper deposit in Central Queensland via its interest in ML5631 and three surrounding EPMs (Figure 1). Mining on ML5631 is subject to a 2% net smelter royalty, payable to Straits Resources Ltd.

On 11 June 2009 Argonaut announced a maiden Resource Estimation for the Kroombit deposit. *This announcement is included as Appendix 1 and the following references to Mineral Resources and Exploration Potential should be read in conjunction with Appendix 1.*

The Indicated and Inferred Resources at Kroombit comprise:

- **a Zinc Resource of 5.2 million tonnes grading at 1.9% zinc and 0.15% copper** at a cut-off of 1.0% Zn, for 98,800 tonnes of zinc and 7,800 tonnes of copper and
- **a Copper Resource of 0.9 million tonnes at 1.0% copper** at a cut-off of 0.5% Cu for 9,000 tonnes of copper.

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In addition, Exploration Results are reported comprising a **defined Exploration Potential** of between:

- **1 million and 1.5 million tonnes at 1.5% to 2.0% zinc**, and between
- **0.5 million and 1 million tonnes at 0.7% to 1.3% copper**.

Power, road, rail and port facilities are all located within easy reach of the Kroombit Copper-Zinc deposit.

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Sections of information contained in this report that relate to Exploration Results and Mineral Resources were compiled or supervised by Mr Lindsay Owler BSc, MAusIMM who is a Member of the Australasian Institute of Mining and Metallurgy and is a full time employee of Argonaut Resources NL. Mr Owler has sufficient experience which is relevant to the style of mineral deposits 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 Mineral Resources and Ore Reserves". Mr Owler consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.



APPENDIX 1

ASX ANNOUNCEMENT

11th June 2009

MAIDEN RESOURCE ESTIMATE ANNOUNCED FOR QUEENSLAND ZINC-COPPER PROJECT

Argonaut Resources NL (ASX: ARE) is pleased to announce a maiden resource estimate of approximately six million tonnes of zinc and copper mineralisation at the Company's 100% owned Kroombit deposit in Central Queensland. The resource estimates are reported in accordance with the JORC (2004) Code.

The Inferred and Indicated Resources comprise:

- a **Zinc Resource of 5.2 million tonnes grading at 1.9% zinc and 0.15% copper** at a cut-off of 1.0% Zn, for **98,800 tonnes of zinc and 7,800 tonnes of copper**
- a **Copper Resource of 0.9 million tonnes at 1.0% copper** at a cut-off of 0.5% Cu for **9,000 tonnes of copper** and
- for a **total of 16,800 tonnes of copper** from the Zinc Resource model and the Copper Resource model.

The resource estimates announced today were completed by independent geological consultants, Hellman & Schofield Pty Ltd. In addition, Exploration Results are reported comprising a defined Exploration Potential of between:

- **1 million and 1.5 million tonnes at 1.5% to 2.0% zinc**, and between
- **0.5 million and 1 million tonnes at 0.7% to 1.3% copper**.

Argonaut's Managing Director, Mr Graeme Ellis, said the findings confirmed there is **significant potential for additional copper and zinc mineralisation**, both below the existing deposits and around the periphery of the defined resource.

"To safeguard potential extensions to the original deposit, Argonaut holds 100% of two surrounding Mineral Exploration Permits (EPMs) and has applied for a further two EPMS, where it plans to conduct exploration for further base metal deposits. All four areas include prospective geological features and historical zinc and copper mineral occurrences," Mr Ellis said.

Argonaut also received highly encouraging results from continuing zinc sulphide flotation tests, which produced a **zinc concentrate grading 58% zinc with an 87% recovery** rate

"Today's results will strongly support Argonaut's plans to establish an open-cut operation at the Kroombit project, located 100 kilometres from Gladstone in Central Queensland" he said.

Resource Estimation

The Inferred and Indicated Resources for zinc and copper mineralisation were estimated by Simon Tear who is an independent geologist and Competent Person under the 2004 JORC Code and is a full-time employee of Hellman & Schofield Pty Ltd.

The findings were based on the results of an extensive drilling program undertaken by Argonaut in 2007-08, comprising 197 reverse circulation drill holes and four diamond drill holes.

Zinc Resource

The zinc resource estimate is reported using a 1% zinc cut-off grade for oxide, transition and sulphide material constrained within the zinc mineralisation wireframe. The resources have been modelled and classified according to the assumption that they will be selectively mined in an open pit.

Global Zinc Resource		1 % Zn cut off		Ave Density = 2.78t/m³	
Category	Tonnes	Zinc %	Copper %	Zn Tonnes	Cu Tonnes
Indicated	4,986,000	1.88	0.15	93,600	7,600
Inferred	172,000	1.79	0.12	3,100	200
Total	5,158,000	1.88	0.15	96,700	7,800
Oxide		1 % Zn cut off		Ave Density = 2.29t/m³	
Category	Tonnes	Zinc %	Copper %	Zn Tonnes	Cu Tonnes
Indicated	756,000	2.08	0.16	157,000	1,150
Inferred	70,000	1.87	0.08	1,300	50
Total	826,000	2.06	0.15	17,000	1,200
Transition		1 % Zn cut off		Ave Density = 2.84t/m³	
Category	Tonnes	Zinc %	Copper %	Zn Tonnes	Cu Tonnes
Indicated	653,000	1.87	0.12	12,200	800
Inferred	30,000	1.70	0.10	500	50
Total	683,000	1.86	0.12	12,700	850
Sulphide		1 % Zn cut off		Ave Density = 2.91t/m³	
Category	Tonnes	Zinc %	Copper %	Zn Tonnes	Cu Tonnes
Indicated	3,578,000	1.84	0.16	65,700	5,600
Inferred	72,000	1.75	0.18	1,300	100
Total	3,650,000	1.84	0.16	67,000	5,700

(minor rounding errors)

Zinc Exploration Potential

Based on Ordinary Kriging of existing drill hole data, Hellman & Schofield has defined Exploration Potential for zinc mineralisation between 1,000,000 and 1,500,000 tonnes at 1.5% to 2.0% Zn. This is peripheral to the currently defined zinc mineralisation wireframe (Figure 2). This potential is based on grades that were generated outside the zinc wireframe using a maximum search distance of 45 metres. This potential mineralisation has had insufficient exploration to define a Mineral Resource. It is uncertain whether further drilling will convert this to a Mineral Resource.

Copper Resource

Additional copper mineralisation constrained within the copper wireframes at depth and outside the zinc mineralisation wireframe is reported at a 0.5% copper cut-off.

Copper Sulphide Resource		0.5 % Cu cut off	Ave Density = 3.22t/m ³
Category	Tonnes	Copper %	Cu Tonnes
Indicated	729,000	1.06	7,700
Inferred	128,000	0.91	1,200
Total	857,000	1.04	8,900

(minor rounding errors)

Copper Exploration Potential

Based on Ordinary Kriging of existing drill hole data, Hellman & Schofield has defined Exploration Potential for copper mineralisation between 500,000 and 1,000,000 tonnes at 0.7% to 1.3% Cu, peripheral to the currently defined zinc and copper wireframes (Figure 3). This potential is based on grades that were generated outside the copper wireframes using a maximum search distance of 45 metres. This potential mineralisation has had insufficient exploration to define a Mineral Resource. It is uncertain whether further drilling will convert this to a Mineral Resource.

Additional Potential at Depth

Additionally, Hellman & Schofield has commented that there is a substantial potential for additional copper and zinc mineralisation at depth beneath the zinc mineralisation wireframe. This is based on a consideration of isolated drill-hole intercepts outside the currently defined zinc and copper mineralisation wireframes and the periphery Exploration Potential.

Additional Potential for Mineralisation in Untested Areas

RC drilling rig access to certain areas central and peripheral to the main zinc-copper resource area was restricted. All of the areas where access was restricted are in the vicinity of historical mine workings including two areas with adits (targeting copper) and an area adjacent to several small pits and shafts (Figure 4). Infill drilling using appropriate equipment and environmental management is planned for these areas.

The results of four diamond core holes twinning four RC holes suggests that the diamond drill core contains higher overall zinc grades for the intercepts, implying that the RC data is slightly understating the zinc values. It should be noted that this conclusion is based on limited data. Bivariate analysis of the individual samples shows that the twinned RC holes have an average grade of 2.76% Zn whilst the diamond holes have an average grade of 3.17% Zn.

Metallurgy

Preliminary flotation test-work was undertaken by HRL Testing using samples sourced from Argonaut's 2007 RC drilling samples. Zinc sulphide flotation tests on a sample with a zinc head grade of 2.31% Zn succeeded in producing a zinc concentrate grading 58% Zn at 87% recovery.

Further zinc flotation test-work was undertaken by Optimet Laboratories using samples sourced from 2008 diamond core. Initial tests by Optimet succeeded in producing a zinc concentrate grading 55.4% Zn at 87% recovery from a master zinc sulphide composite sample with a head grade of 2.25% Zn.

The ability to produce a high-grade zinc concentrate from a diamond core composite sample with a grade of 2.25% Zn is very encouraging.

Building on the Maiden Resource

Hellman & Schofield has identified significant Exploration Potential around the periphery of the defined zinc and copper resources.

Mr Ellis said that building on the maiden resource through additional resource drilling would be a key focus for Argonaut as it advances its exploration program at Kroombit.

"We also plan to supplement the project's principal resource by conducting exploration for similar base-metal deposits in areas within trucking distance of the initial deposit," he said.

"To supplement the Company's 100% held EPMs 15733 and 15734, Argonaut has recently applied for two additional EPMs (Figure 1) covering further base-metal targets defined by previous exploration.

"Building on the existing resource base and an increasing knowledge of the geological terrain through additional resource drilling and the exploration of neighbouring prospects is a logical next step as the Company continues its comprehensive development of the Kroombit project."

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The data in this report that relates to Mineral Resources and Exploration Results for the Mt Kroombit Deposit is based on information evaluated by Mr Simon Tear who is a Member of The Australasian Institute of Mining and Metallurgy (MAusIMM) and who has sufficient experience 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 (the "JORC Code"). Mr Tear is a full-time employee of Hellman & Schofield Pty Ltd and he consents to the inclusion in the report of the Mineral Resource in the form and context in which they appear.

The resource estimate is based on a total of 16,972 assays from 201 drill holes completed by Argonaut within the past two years. Drilling has consisted of predominantly RC with some minor diamond drilling. Drill hole spacing is a nominal 25m by 25m but locally drops to 20m on cross section lines. A 1m composite interval for the drill hole assay data was used in conjunction with constrained Ordinary Kriging modelling to generate resource estimates for the deposit. Maximum search distances used for copper and zinc are 45 metres with 16 minimum data required for Indicated and 8 for Inferred with data required in 4 and 2 octants, respectively. Zinc mineralisation was defined by a single wireframe. The copper wireframes were based on a series of quartz hematite zones within which the copper mineralisation largely occurs. These are outside the zinc mineralisation wireframe. Density is based on 173 samples from four diamond drill holes and was modelled using inverse distance weighting on average density values assigned to the RC coded geology.

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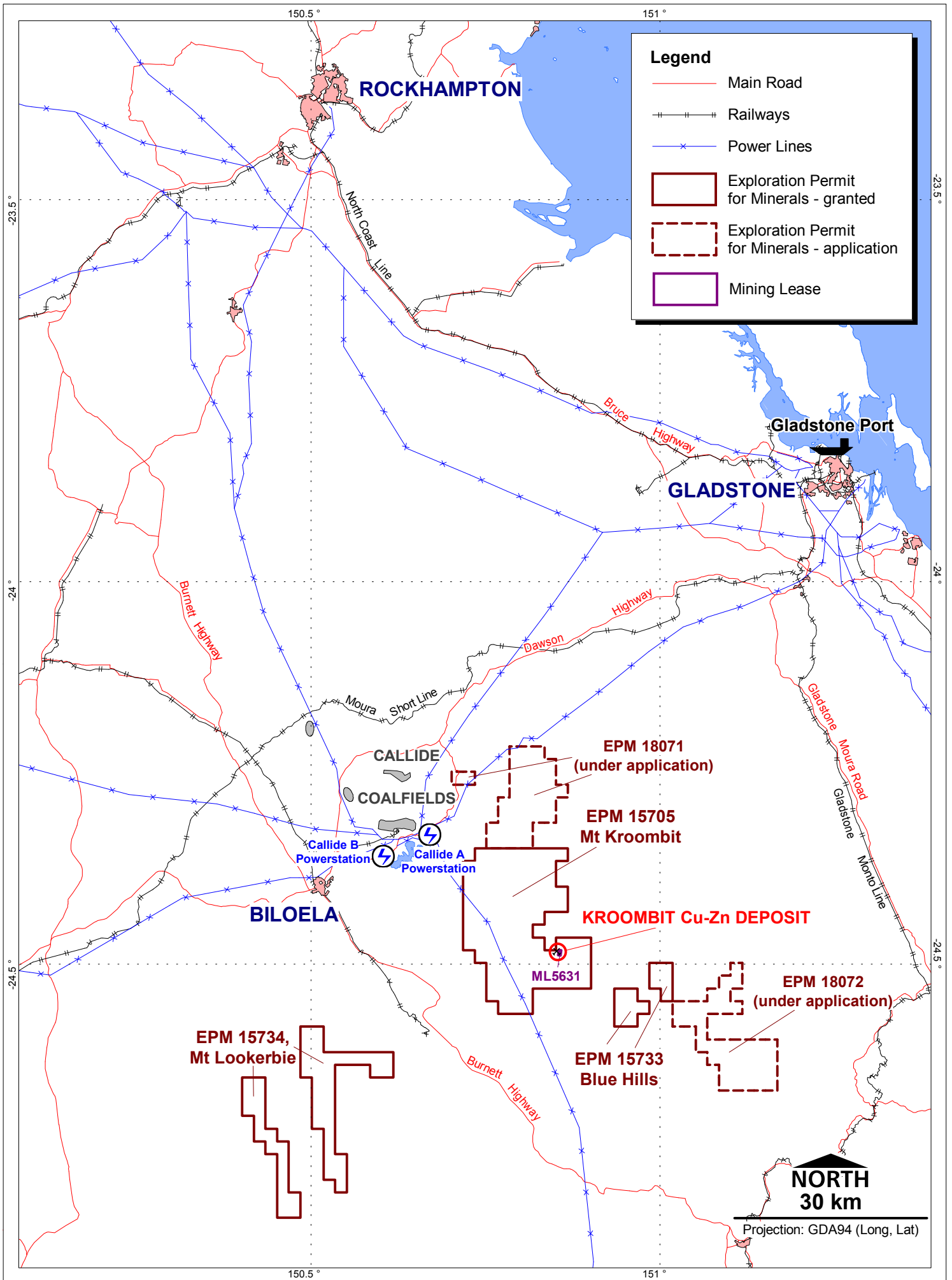
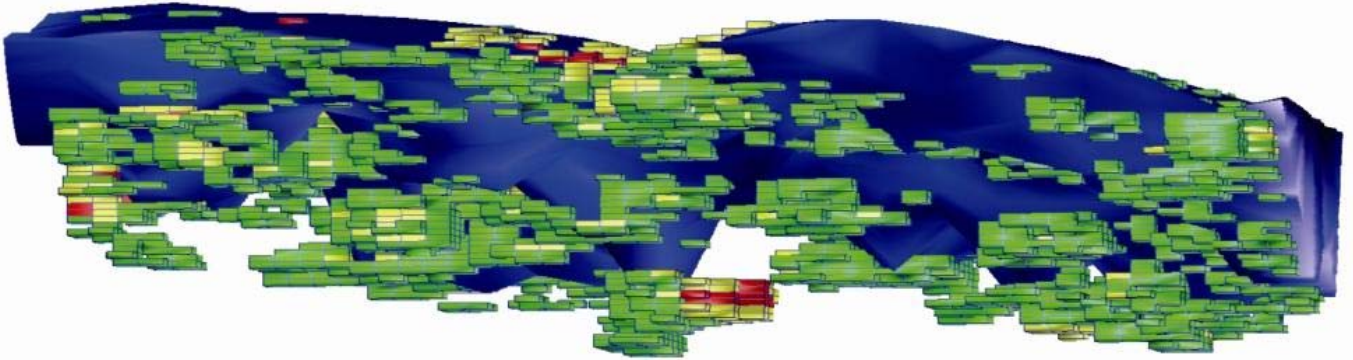


Figure 2 - Areas of Zinc Exploration Potential

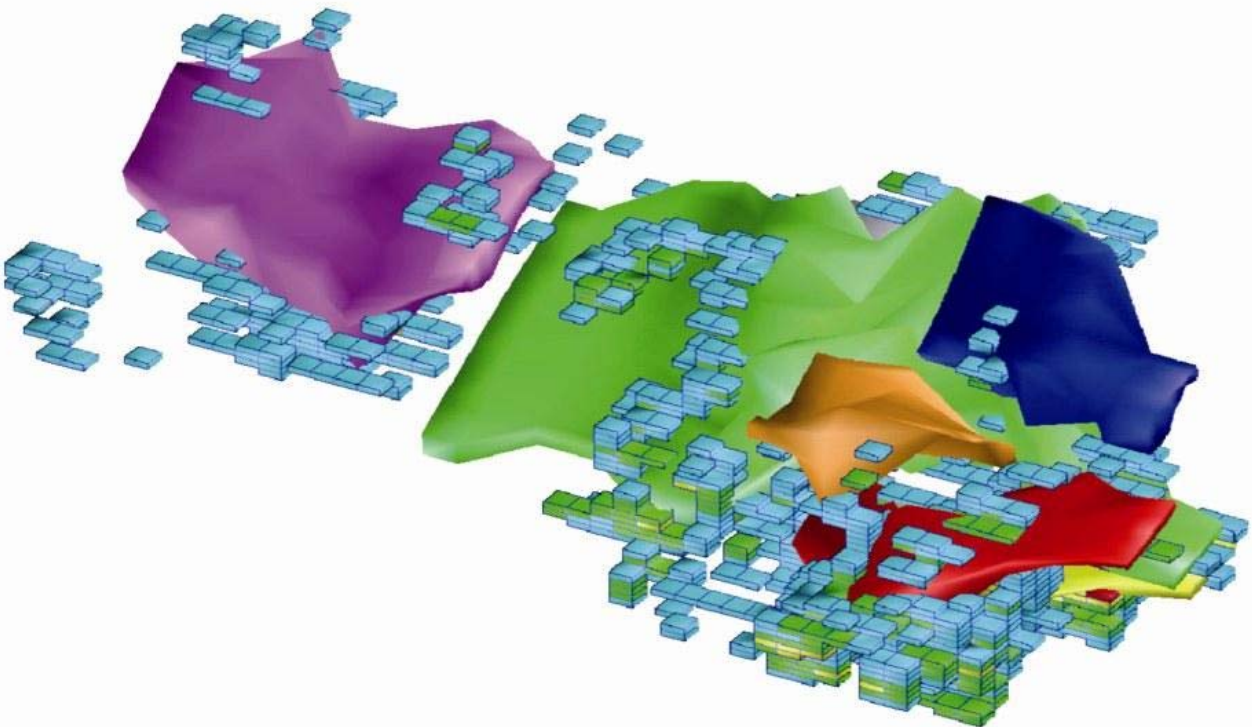
This figure shows the zinc wireframe referred to in the text in blue plus blocks from the zinc block model generated by unrestrained Ordinary Kriging of the drill data that fall outside the zinc wireframe. These blocks constitute areas of zinc Exploration Potential.



View grid south and slightly up: green blocks = 1-2% Zn, yellow = 2-4% Zn, red = >4% Zn
Blue shape = Zn wireframe

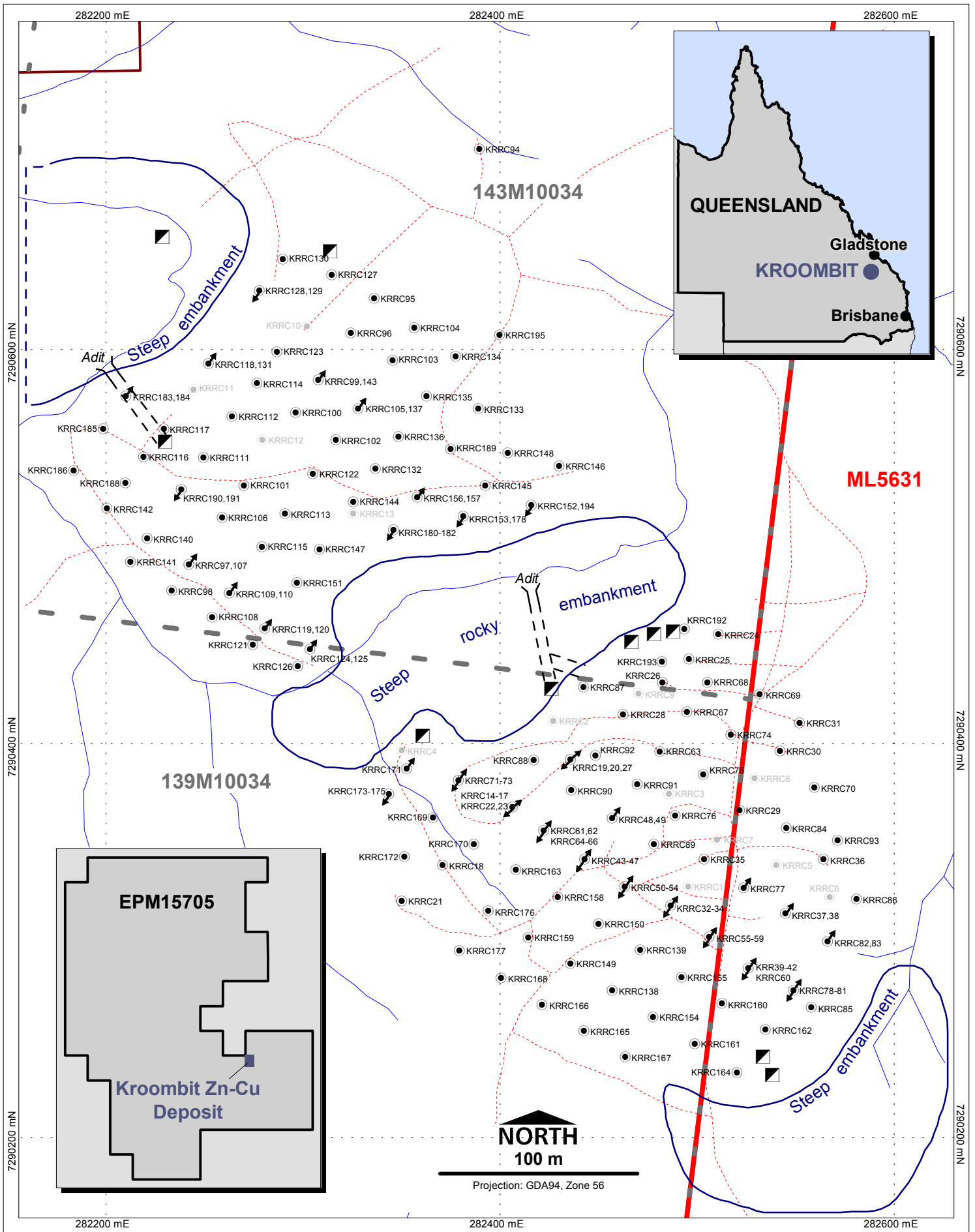
Figure 3 - Areas of Copper Exploration Potential

Figure 3 shows the copper wireframes referred to in the text in various colours plus blocks from the copper block model generated by unrestrained Ordinary Kriging of the drill data that fall outside the copper wireframes. These blocks constitute areas of copper Exploration Potential.



View grid NW and down; cyan blocks = 0.5-1% Cu, green = 1-2% Cu, yellow = 2-3% Cu, red = >3% Cu

Shapes = Cu wireframes



- Legend**
- Complete drillholes
 - ↕ Fan of 5 drillholes
 - ↗ Pair of one vertical and one angle drillhole
 - Previous Argonaut drillholes
 - Shafts
 - Track
 - Argonaut freehold
 - ▭ Future resource drilling areas



**EPM 15705, Kroombit Zn-Cu Deposit
Resource Drilling Program**

Figure 4 Date: 9 June 2009