

# MARKET RELEASE

4<sup>th</sup> July 2013

## **ROCKLANDS COPPER PROJECT (CDU 100%)**

## MASSIVE COARSE NATIVE COPPER AGGLOMERATES BEING UNEARTHED NEAR SURFACE IN CENTRAL LAS MINERALE

# HIGH-GRADE CHALCOCITE SUITABLE FOR DIRECT SHIPPING ORE IS BEING EXCAVATED FROM LAS MINERALE STARTER PIT ESTIMATED GRADES RANGE FROM 20-60% COPPER

(based on visual estimates - confirmed with XRF analysis)



Figure 1: Examples of separate large coarse native copper agglomerates currently being unearthed at the Las Minerale Starter Pit, just 15-20m below surface. Image to the left shows zone of high-grade native copper and cuprite that has been mapped at the base of the pit for over 25m. The image to the right shows soft sooty chalcocite crystals (blue-grey colour) falling out of voids within the coarse native copper like confetti down the face of the excavation...it is thought that during exploration drilling, much of this soft sooty chalcocite washed out of the vuggy drill-core due to high pressures required to maintain water returns during drilling, and has not been included in assay results. Native copper contains 99.65% Cu, cuprite contains 88.8% Cu and chalcocite contains 79.85% Cu.





Figure 2: Native copper masses and agglomerates exposed on the base of the Las Minerale Starter Pit.





Figure 3: Left image shows interpreted contact between chalcocite (grey-blue - right), and green-clays (green-grey - left), that hosts massive agglomerates of native copper (red-orange - centre), the largest of which are individually estimated to contain hundreds of tonnes of native copper metal. The image to the right shows a close-up of the agglomerates that consist of dendritic fingers and nuggets that break up relatively easily and without incident during mining.

Massive Coarse Native Copper Agglomerates Being Unearthed Near Surface in Central Las Minerale

Large agglomerates of native masses are being unearthed in central Las Minerale associated with an interpreted contact between high-grade chalcocite ore and moderate to high-grade green clays thought to be decomposing dolerites (see figure 3). The geological contact is interpreted to exist along the entire length of the Las Minerale central zone, including in stacked sequences in some areas.

The native copper agglomerates also occur in east-west faults that cross-cut the main ore direction and appear to have played an important role in the enrichment process.

In addition to the large masses, smaller native copper nuggets, dendritic fingers and plate-like sheets occur throughout the area being accessed, ranging in size from 5-200mm.

Associated with some of the native copper masses is a soft sooty form of chalcocite that literally falls out of voids associated with the native copper like confetti as the excavators rip into the masses that break apart with surprising ease (see figure 1 (right image) on front page).

The company previously mined a sample of coarse native copper ore from a small section of the native copper zone within the Las Minerale orebody directly above and adjacent to the area where the large native copper masses have been identified. The ore is required to ensure commissioning of the crushing circuit tests all possible ore types.

Due to interest from several parties to obtain Rocklands Ore well before the process plant is fully operational, and due to recent activity in the trading in the Company's securities, a decision has been made to obtain additional native copper ore for the commissioning process, with the view to generating early sales of native copper metal.



The high-grade coarse native copper zone (>40mm in copper nugget size), is capped by a high-grade native copper zone (<40mm in copper nugget size), and other oxide copper species including cuprite, chalcocite, malachite and azurite.

### Native Copper Stockpile Inventory to 17th April, 2013;

### <u>COARSE NATIVE COPPER ORE - 3,100 TONNES</u> <u>ESTIMATED 12-15% CuEq</u> <u>NATIVE COPPER ORE - 7,300 TONNES</u> ESTIMATED 8-10% CuEq

The next phase of mining at Las Minerale is expected to add significantly to native copper ore inventories.

Ore grades in areas above the coarse native copper zone are higher than predicted by the resource model, which for the most part has been expected by the Company. Significant quantities of additional ore that was NOT originally included as ore in the mining schedule, has also been diverted to stockpiles for later processing that was previously destined for the waste dumps. Average grades of the high-grade oxide zone that does not include native copper is estimated at 5-8% CuEq, with localised areas returning grades as high as 20% CuEq.

The Rocklands Process Plant has been designed specifically to treat native copper in all fraction sizes expected at Rocklands, with German designed and manufactured alljig® native metal recovery systems included at a cost of more than A\$20m. This same alljig® process plant is used globally by companies for the recovery of primary and native metals including BHP Billiton and Anglo American.

The process plant can treat up to 20% Cu (200kg per tonne Cu) in the form of native copper, whilst concurrently processing oxide, supergene and primary sulphide ores in a continuous, single-circuit copper recovery process flow-sheet.

Test-work carried out by independent laboratories using a full scale pilot plant, based on the Rocklands Process Plant design configuration, recovered 98% of the +1mm native copper fraction and 94.1% of the less than 1mm native copper fraction. Perhaps not surprising when you consider native copper has a density of 8.9 tonnes per cubic metre compared to the waste (gangue) material that has a density of just 2.6 tonnes per cubic metre...a significant difference that makes separation of native copper from the waste using gravity a very simple process.



Figure 4: Above; native copper masses associated with chalcocite exposed in the face of the Las Minerale Starter Pit and below; close-up detail of native copper.



The Rocklands Crushing Circuit consists of a primary Jaw Crusher and two giant Rolls Crushers capable of treating more than 500 tonnes of ore per hour. The crusher is designed to scalp off oversize native copper in the +38mm fraction, with the balance of undersize going to the High Pressure Grinding Rolls (HPGR), then gravity Jig for the balance of native copper removal, prior to proceeding to the remainder of the Mineral Processing Plant, due for commissioning early 2014.

The possibility exists for coarse native copper to be recovered by the crushing circuit well before the rest of the plant is operational.



Figure 5: Native copper masses and agglomerates exposed in the base of the Las Minerale Starter Pit and in the pit wall...left; closeup of nugget mass and right; detailed view of approximately 1.5 metres of exposed native copper mass in the face of the pit wall.



### High-grade Chalcocite Suitable for Direct Shipping Ore (DSO) is Being Excavated From Las Minerale Starter Pit - Estimated Grades Range From 20-60% Copper

In a surprising development, large zones of highgrade chalcocite ore are being mined from the base of Stage 1 of the Las Minerale Starter Pit, at depths approximately 50m above where this style of mineralisation is known to exist and was first expected to be encountered in any great quantity.

Similar material was identified during resource drilling from 50m to over 170m depth, mostly from Reverse Circulation (RC) drilling, but not from the shallow depths now being accessed.

The zones include high percentages of the soft sooty style of chalcocite mineralisation, which is relatively friable and breaks up easily when rubbed between the fingers. It is thought that much of this material was not captured for assay during diamond drilling due to the high pressures required to maintain water returns during drilling of fractured or vuggy rock. It is thought the high water pressure may have washed out much of the soft sooty chalcocite into the surrounding vuggy rock matrix, or was discarded with the water returns and drill spoils rather than being retained within the solid diamond drill core.

Mining studies are currently determining how much of this high-grade chalcocite material is likely to be accessed via the current mining schedule, which is currently excavating the entire starter pit area down to the RL200m bench level (approx. 18m below surface in the centre of Las Minerale).

The high-grade material appears to be wide-spread and estimated to be multiples of the grades indicated in the resource block model for the areas in question, which was subjected to a top-cut for copper grades during the resource estimation process of 23% Cu.

The Rocklands Resource Block Model applies heavy discounts to the calculation of shallow oxide ore due to the often sporadic distribution of copper species in heavily oxidised and/or colluvium based ore profiles, especially within flood-plains, such as occur over central Las Minerale.

The high-grade chalcocite ore is a pleasing bonus in addition to the additional oxide copper ore that has already been mined from above the main ore zones at Las Minerale. Much of this additional ore was NOT



Figure 6: The first stage of mining at Rocklands concentrates on the "Las Minerale Starter Pit". The top image shows the approximate present depth of the Starter Pit, with planned stages 2-4 designed to be completed over 12-18 months. Highgrade chalcocite mineralisation suitable for DSO was not expected to be intersected until stage 3 above.









Figure 8: Native copper masses, sheets and agglomerates exposed on the base of the Las Minerale Starter Pit. Field of view approximately 500mm.

included as ore in the original mining schedule, and has been diverted to stockpiles for later processing rather than being sent to the waste dumps as initially intended.

Approximately 33,400 tonnes of high-grade oxide ore has been mined, (not including native copper), with grades estimated at 5-8% CuEq and localised areas returning grades as high as 20% CuEq.

Approximately 60,700 tonnes of low-grade oxide ore has been mined, (not including native copper), with grades estimated at 2-4% CuEq.

To date, over 300,000 tonnes of ore has either been stockpiled or in-situ blasted - the current mining rate is 40,000 tonnes of ore and waste per day.

Yours faithfully

Wayne McCrae Chairman



### **Competent Person Statement**

The information in this report that relates to Exploration Results is based on information compiled by Mr Andrew Day. Mr Day is employed by GeoDay Pty Ltd, an entity engaged, by CuDeco Ltd to provide independent consulting services. Mr Day has a BAppSc (Hons) in geology and he is a Member of the Australasian Institute of Mining and Metallurgy (Member #303598). Mr Day has sufficient experience which is relevant to the style of mineralisation and type of 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 Exploration Results, Mineral Resources and Ores Reserves". Mr Day consents to the inclusion in this report of the information in the form and context in which it appears.

The information in this report insofar as it relates to Metallurgical Test Results and Recoveries, is based on information compiled by Mr Peter Hutchison, MRACI Ch Chem, MAusIMM, a full-time executive director of CuDeco Ltd. Mr Hutchison has sufficient experience in hydrometallurgical and metallurgical techniques which are relevant to the results under consideration and to the activity which he is undertaking to qualify as a Competent Person for the purposes of this report. Mr Hutchison consents to the inclusion in this report of the information, in the form and context in which it appears.

### Rocklands style mineralisation

Dominated by dilational brecciated shear zones, throughout varying rock types, hosting coarse splashy to massive primary mineralisation, high-grade supergene chalcocite enrichment and bonanza-grade coarse native copper. Structures hosting mineralisation are sub-parallel, east-south-east striking, and dip steeply within metamorphosed volcanosedimentary rocks of the eastern fold belt of the Mt Isa Inlier. The observed mineralisation, and alteration, exhibit affinities with Iron Oxide-Copper-Gold (IOCG) classification. Polymetallic copper-cobalt-gold mineralisation, and significant magnetite, persists from the surface, through the oxidation profile, and remains open at depth.

#### Notes on Assay Results

All analyses are carried out at internationally recognised, independent, assay laboratories. Quality Assurance (QA) for the analyses is provided by continual analysis of known standards, blanks and duplicate samples as well as the internal QA procedures of the respective independent laboratories. Reported intersections are down-hole widths.

Au = Gold Cu = Copper Co = Cobalt Zn = Zinc CuEq = Copper Equivalent

#### Copper Equivalent (CuEq) Calculation

The formula for calculation of copper equivalent is based on the following metal prices and metallurgical recoveries:

Copper: \$2.00 US\$/lb; Recovery: 95.00%

Cobalt: \$26.00 US\$/lb; Recovery: 90.00%

Gold: \$900.00 US\$/troy ounce Recovery: 75.00%

#### CuEq = Cu(%) x 0.95 + Co(ppm) x 0.00117 + Au(ppm) x 0.49219

In order to be consistent with previous reporting, the drill intersections reported above have been calculated on the basis of copper cut-off grade of 0.2% Cu, or a copper equivalent grade of 0.35%, with an allowance of up to 4m of internal waste.

The recoveries used in the calculations are the average achieved to date in the metallurgical test-work on primary sulphide, supergene, oxide and native copper zones.

The Company's opinion is that all of the elements included in the copper equivalent calculation have a reasonable potential to be recovered.



### **Disclaimer and Forward-looking Statements**

This report contains forward-looking statements that are subject to risk factors associated with resources businesses. It is believed that the expectations reflected in these statements are reasonable, but they may be affected by a variety of variables and changes in underlying assumptions which could cause actual results or trends to differ materially, including, but not limited to: price fluctuations, actual demand, currency fluctuations, drilling and production results, reserve estimates, loss of market, industry competition, environmental risks, physical risks, legislative, fiscal and regulatory developments, economic and financial market conditions in various countries and regions, political risks, project delays or advancements, approvals and cost estimates.