

# BLACKTHORN RESOURCES LIMITED

## FOURTH QUARTER ACTIVITIES REPORT

JUNE 2014



**BLACKTHORN  
RESOURCES**

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### KEY POINTS

#### KITUMBA PROJECT, ZAMBIA (Blackthorn Resources 100%)

- Optimised Prefeasibility Study was released on 29 April 2014.
- Blackthorn Resources confirmed that it would commence the Definitive Feasibility Study on the Kitumba Project immediately following finalisation of the planning process. Kitumba Definitive Feasibility Study drilling program commenced during the quarter.
- Kitumba Mining Licence application was submitted on 4 July 2014 (post quarter-end).

#### MUMBWA EXPLORATION, ZAMBIA (Blackthorn Resources 100%)

- IP survey planned for Kakozhi.
- Soil sampling planned for wider Mumbwa tenements.

#### PERKOA PROJECT, BURKINA FASO (Blackthorn Resources 27.3%)

- Blackthorn Resources announced it had reached a non-binding conditional agreement with Glencore to sell its 27.3% equity interest in the Perkoa Project and its interest in adjacent exploration licences in Burkina Faso for up to US\$12 million. The Company will also not be required to contribute its US\$9million share of working capital funding.
- On 16 May 2014, Blackthorn Resources entered into a binding definitive sale and purchase agreement subject to a shareholder vote.
- Subsequent to quarter-end, the Company issued a Notice of Meeting for the Extraordinary General Meeting to be held on 14 August 2014 to allow shareholders to vote on acceptance of the offer from Glencore.

#### BURKINA FASO EXPLORATION (Blackthorn Resources 100%)

- RAB drilling completed at Poa and Guido.

### CORPORATE

- Cash on hand at 30 June 2014 was \$12.5 million.
- On 15 May 2014, the Blackthorn Resources Board announced Mark Mitchell, the Company's Chief Executive Officer had been appointed Managing Director.

## KITUMBA PROJECT, ZAMBIA (Blackthorn Resources 100%)



### **Kitumba Optimised Prefeasibility Study**

The Kitumba Copper Project Optimised Prefeasibility Study (OPFS) results were released to the market on 29 April 2014 following release of preliminary PFS results in September 2013 – refer to the ASX Announcement: “Kitumba Optimised PFS Provides Positive Project Re-Rating”.

The OPFS resulted in significantly enhanced economics and development potential for the Project. Highlights of the OPFS included:

- IRR of 21% and NPV<sub>8</sub> of US\$461m<sup>1</sup>
- C1 cash cost of US\$1.57/lb of copper metal produced with all-in cash costs of US\$1.89/lb
- Copper recovery of 92% with average annual metal production of 58,000tpa
- Annual ore production of 3Mt Run of Mine with average head grade of 2.03% copper
- Underground mine with 11 year life

<sup>1</sup>Real terms, after tax and based on US\$3.50/lb copper price.

<sup>2</sup>Note, the OPFS production target and forecast financial information derived from the production target includes 139kt of inferred mineral resources that is not included in the ore reserve estimated (less than 0.5 % of the production target forecast). There is a low level of geological compliance associated with this inferred mineral resource and there is no certainty that further exploration work will result in the determination of indicated mineral resources or that the production target relating to the inferred resource itself could be realised.

- 31.6Mt LOM production target with 642,000t of contained copper<sup>2</sup>
- Ore reserve increased 18% to 641,000t contained copper and EBITDA US\$2.48 billion<sup>2</sup>
- Project development cost estimated at US\$680m with capital intensity of US\$11,700 per annual tonne of copper produced and a payback of 3.5 years after start of production<sup>2</sup>

Blackthorn Resources has previously indicated that it will actively explore all avenues to realise shareholder value for the Kitumba Project.

To this end, the Company has been in discussion with a number of potential partners with a view to supporting the effective delivery of the DFS and future stages of the Project. These discussions have progressed, with various potential partners undertaking due diligence.

### **Kitumba Definitive Feasibility Study (DFS)**

The Company confirmed that it had commenced a DFS on the Kitumba Project. The aim of the DFS is to see the value of the Kitumba Project recognised through increasing confidence in the technical and implementation plans. Immediate tasks will be the critical path drilling program and the process to identify a study manager, as well as lodgement of the Mining Licence.

#### ***DFS Proposed Drilling***

Prior to engaging a study manager for the DFS, the Company will be conducting a comprehensive drilling campaign of approximately 12,000m in and around the Kitumba Mineral Resource to aid in the DFS level studies for both the proposed mine and process plant design.

On 17 June 2014 the Company announced that it had commenced the DFS drilling program with three drill rigs, targeting infill drilling for additional resource definition, and further metallurgical, geotechnical and hydrogeological assessment. The drilling program has been designed in consultation with Blackthorn Resources' metallurgical, mining engineering, geotechnical and hydrological consultants.

#### ***Metallurgical Testing***

The Kitumba mineable reserve contains a range of primary and secondary copper minerals, with varying copper grade and mineralogy. The flow sheet presented in the OPFS was selected as the best way to treat this mixed feedstock.

The drilling for the collection of metallurgical samples has therefore been designed with this in mind, to ensure that the right type and volume of samples are collected to enable the impact of orebody variability to be appropriately assessed by the test-work program.

Variability test work on a range of ore blends representing the changing spatial distribution of minerals throughout the deposit is planned to provide data on the range of metallurgical performance expected for the proposed flow sheet.

The proposed test-work program will comprise three discrete phases:

- Phase 1 – Batch Optimisation test work to confirm the optimum grind size and leach parameters for the subsequent variability test work.
- Phase 2 – Batch Variability test-work program on samples selected to represent ROM feed from the mine draw points on a time basis. This will provide information on the expected plant performance over the life of the Kitumba orebody.
- Phase 3 – Pilot Plant program of sufficient duration to evaluate the proposed flow sheet in continuous operation. Minor element deportment and product quality will be assessed. Three representative composites are planned to test operations in years 1 to 4, 5 to 8, and Year 9 to the end of the mine life.

#### ***Geotechnical Drilling***

The geotechnical drilling requirements for the DFS-level assessment are based on the revised sub-level caving mine design presented in the OPFS. The DFS geotechnical drilling program is mainly based on targeting the box cut, development drives and shafts, and cave areas lacking sufficient coverage from previous drilling.

The primary objective of the investigation program is to carry out a drilling, core logging, field and laboratory testing program to collect high quality geotechnical data for detailed design of underground excavations including their size, shape and requirements for support.

### ***Hydrogeological Drilling***

The drilling plan for hydrogeological assessment has been prepared to collect sufficient data for a DFS-level assessment of both the mine dewatering requirements as well as to confirm water supply sources for the operation.

#### **Mine Dewatering**

The aim of the mine dewatering investigation is to predict mine inflow rates and the associated drawdown extents with time. This activity is divided into three sub activities:

- Mine Dewatering Investigation Plan - review the previous studies and evaluate the implications for the underground development
- Mine Dewatering Field Investigation
- Mine Dewatering Numerical Modelling

#### **Borefield Investigation**

The purpose of the Borefield investigation is to determine the potential for groundwater to meet the make-up water requirement as determined in the mine water balance, and includes:

- Groundwater Resource Test Holes
- Test Production Bore Drilling and Testing
- Borefield Numerical Model

### ***Resource Definition***

In addition to the assay results from diamond drill core collected as part of the above investigations, three holes are planned to be drilled specifically for resource definition to further confirm the grade and extent of the Kitumba Mineral Resource model.

#### ***Sterilisation Drilling***

A number of reverse circulation (RC) drill holes are planned at the proposed location of major infrastructure to confirm the absence of significant mineralisation at these locations prior to final mine infrastructure design.

#### **Mining Licence Application**

Subsequent to the end of quarter, the Company lodged an application for a Large-Scale Mining Licence for the Kitumba Copper Project in Zambia. The Mining Licence application is for a 3.0 million tonne per annum underground mine, processing facility and associated infrastructure.

## MUMBWA EXPLORATION, ZAMBIA (Blackthorn Resources 100%)

A program of Fixed Loop Electro Magnetic (FLEM) survey was completed over the Kitumba deposit during Q2 CY2014. The FLEM survey was conducted to ascertain whether the system could successfully identify mineralised zones in and around Kitumba, with a view to using the system at the Kakozhi prospect. The trial confirmed that the conductor was difficult to detect from surface using Fixed Loop EM and Moving Loop EM.

The decision was therefore made to carry out an Induced Polarisation (IP) survey at Kakozhi rather than

EM, where the target is supported by soil geochemistry. The program was initiated in early July 2014. (Refer Fig. 1) Targets identified by the IP survey will be followed up with targeted drilling during the current drilling season.

In addition to the IP survey the Company has also initiated an extensive soil geochemical survey to cover previously untested areas within the wider Mumbwa tenement package. (Fig 2)

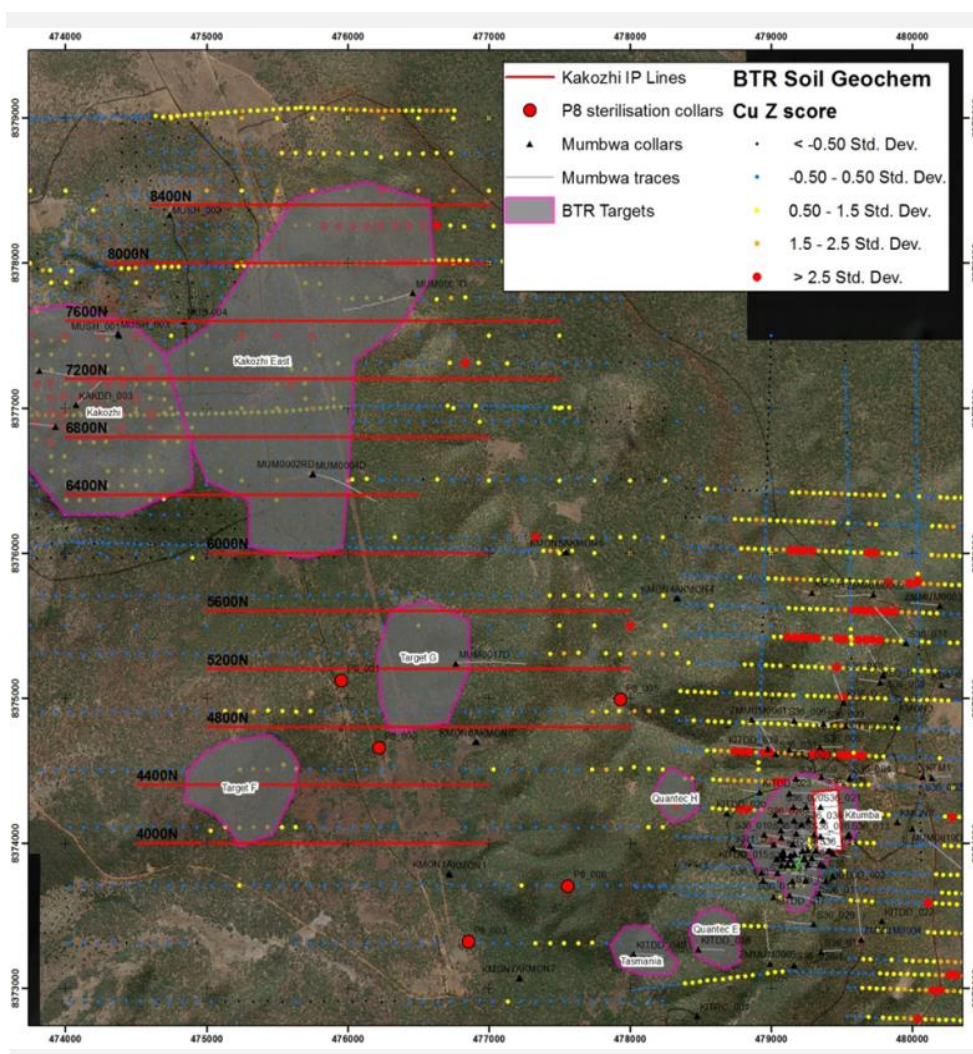


Figure 1: Proposed IP lines – Kakozhi

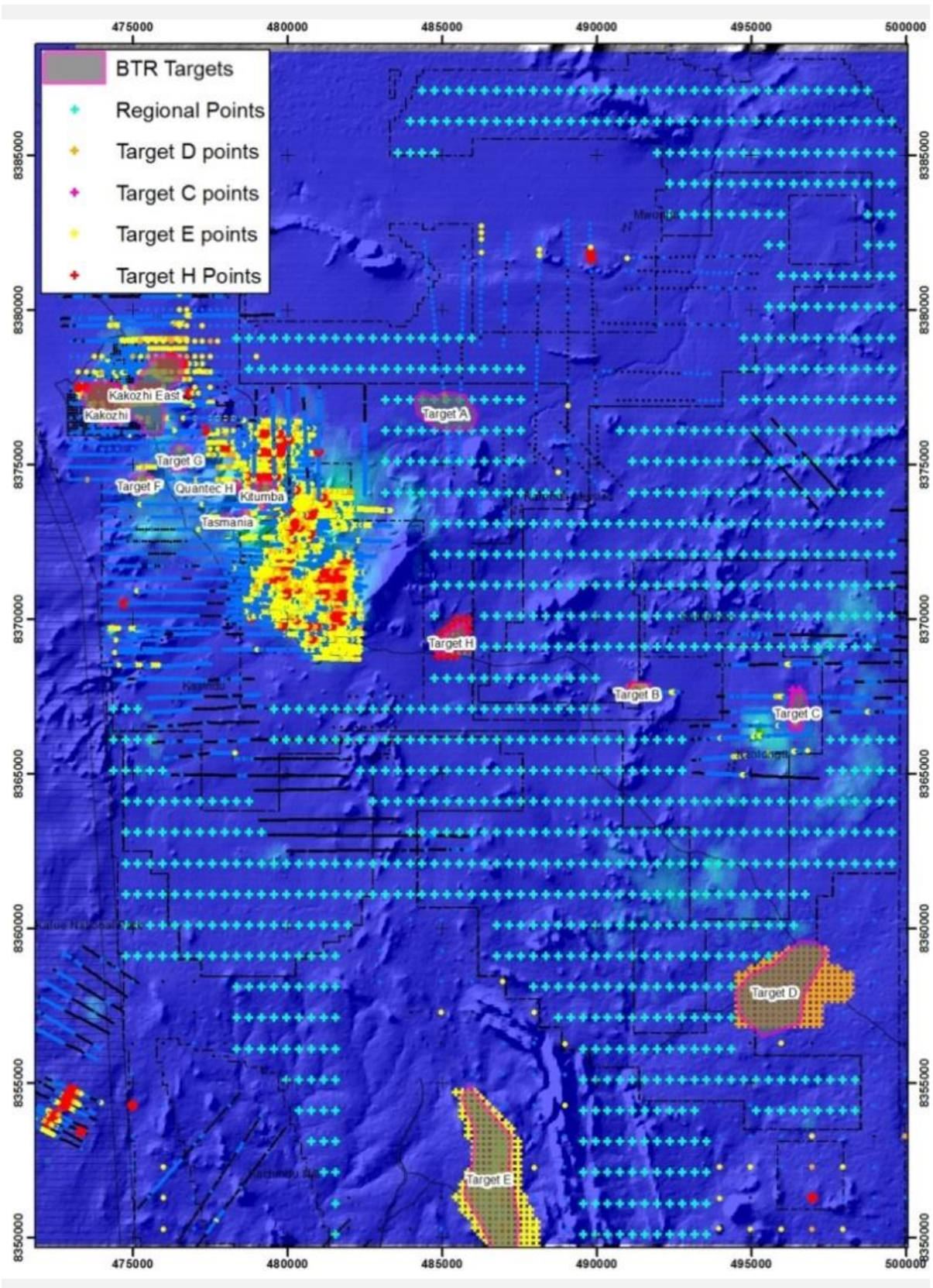
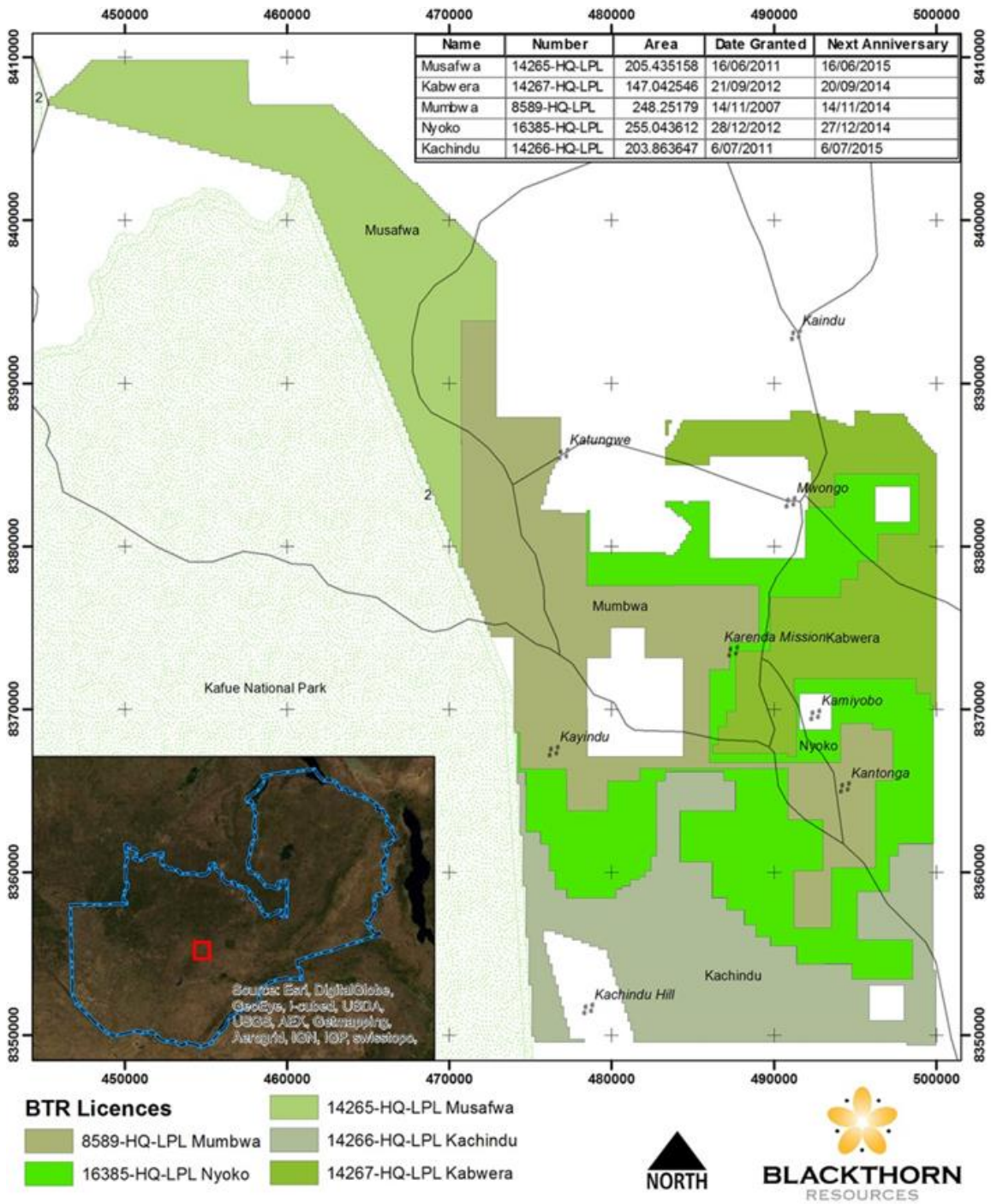


Figure 2: Proposed Soil Geochemical Sampling





## PERKOA PROJECT, BURKINA FASO (Blackthorn Resources 27.3%)

### Perkoa Project Update

On 16 May 2014, the Company entered into a legally binding definitive agreement with Glencore to sell its 27.3% share of the Perkoa Project for US\$10 million. The agreement, which is subject to the approval of Blackthorn Resources' shareholders (other than Glencore who are not eligible to vote on the transaction), will also include the sale of Blackthorn Resources' interest in the Northern Tenement exploration licences in Burkina Faso for US\$2 million.

In addition to receiving US\$12 million cash for the sale, Blackthorn Resources will not be required to contribute its US\$9 million share of the US\$30 million working capital funding requirement for the Perkoa Project announced in August 2013, or to contribute further funding requirements of the project, and it will cease to guarantee its respective proportion of the project's US\$20 million Working Capital Facility Agreement.

Earlier in the year Glencore announced the results of its business plan review of the project. In response to difficult operating conditions at Perkoa, the open pit operations were suspended and as a result the expanded project plan was replaced by a revised business plan proposed by Glencore and agreed by Blackthorn Resources. This followed a period of intensive due diligence undertaken by Blackthorn Resources to verify the information provided by the Glencore revised business plan.

On 14 July 2014, the Company released the Notice of Meeting seeking shareholder approval for the sale of its interest in the Perkoa Project and the adjacent exploration licences in Burkina Faso to Glencore at an Extraordinary General Meeting (EGM) to be held on 14 August 2014.

The Notice of Meeting was accompanied by an Independent Expert's Report (IER) as required in accordance with the ASX Listing Rules. The Independent Expert has concluded that the transaction is fair and reasonable to shareholders, which supports the Directors' unanimous recommendation (other than the Glencore nominee on the board of Blackthorn

Resources, Mr Peter Kalkandis, who is not voting on the transaction) that the sale is in the best interests of shareholders.

Completion of this transaction will ensure that the Company gets value for its existing investment in the Perkoa Project. Should the sale transaction not be approved by shareholders at the EGM, the Company will either face a significant dilution of its existing interest in the Perkoa Project to meet its share of outstanding working capital funding requirements, or will seek to raise funds via a potentially significantly dilutive capital raising. The proceeds from this transaction will provide cash to enable the Company's management to focus on the future, including securing the development pathway of its core asset, the Kitumba Copper Project in Zambia.

### Mining Operations/Production

Underground mining operations continued in line with the revised business plan production targets which were agreed with Glencore earlier this year. Overall ROM production rates (ore produced) were slightly below the revised business plan targets (and those as assumed in the IER), but consistent with previous quarter.

Development and stoping operations continued using Nantou Mining personnel whilst awaiting the remobilisation of the contractor development crews. ROM production was supplemented by approximately 20,000 tonnes of open pit ore which was recovered from previously shot material. The open pit ore was mined to ensure sufficient ore was available to feed the process plant. At the end of the quarter all stockpiled material had been processed through the plant.

The process plant performed to plan, with both throughput and recoveries meeting expectations. Overall zinc production was higher than the previous quarter due to the higher mill through put compared to previous quarter, in accordance with the revised business plan and in line with normal ramp up schedules as the plant moves towards full capacity.

## PERKOA PRODUCTION (100% basis)

| DESCRIPTION                            | UNIT | JUNE<br>2014<br>QUARTER<br>(3 mths<br>Actual) | MARCH<br>2014<br>QUARTER<br>(3 mths<br>Actual) | QUARTER-<br>ON-<br>QUARTER<br>Change | CY2014<br>YTD<br>(6 mths<br>Actual) | CY 2014<br>YTD<br>Revised<br>Business<br>Plan<br>6 mths | Full Year<br>Revised<br>Business<br>Plan |
|--|------|---|--|--------------------------------------|-------------------------------------|---|--|
| TOTAL ORE<br>PRODUCED                  | t    | 128,747                                       | 129,830  | -1%                                  | 258,577                             | 290,846   | 602,927                                  |
| Underground<br>Ore Produced            | t    | 107,233                                       | 102,040  | 5%                                   | 209,273                             | 263,056   | 575,137                                  |
| Milled Tonnes                          | DMT  | 149,326                                       | 133,313  | 12%                                  | 282,639                             | 274,603   | 615,211                                  |
| Zinc<br>Concentrate<br>Produced        | DMT  | 34,088  | 33,440   | 2%                                   | 67,528                              | 65,440  | 137,248                                  |
| Lead<br>Concentrate<br>Produced        | DMT  | 565   | 510  | 11%                                  | 1,075                               | 713   | 1,041                                    |
| Zinc Metal<br>Contained                | DMT  | 17,451  | 16,556   | 5%                                   | 34,007                              | 33,334  | 70,674                                   |
| Lead Metal<br>Contained                | DMT  | 271   | 245  | 11%                                  | 516                                 | 311   | 442                                      |
| Silver Metal in<br>Lead<br>Concentrate | Kg   | 3,519   | 2,823  | 25%                                  | 6,342                               | 4,647   | 7,510                                    |

## **EXPLORATION, BURKINA FASO (Blackthorn Resources 100%)**

### **Base Metals Exploration**

During the quarter, the Company resumed RAB drilling to follow-up IP geophysical anomalies on Poa and Guido licences. The drilling program also included some infill holes on previously drilled RAB lines.

This expenditure incurred during the quarter ensured that the Company met its minimum exploration expenditure requirements to keep the licences in good standing. This was one of the conditions precedent for the sale of these exploration licences to Glencore as part of the agreement for Blackthorn Resources to sell its equity interest in the Perkoa Project. Only limited exploration works were undertaken on the Seboun and Sepaogo permits. The Poa, Guido, Seboun and Sepaogo exploration licences surround the Perkoa zinc mine.

### **Poa and Guido**

Three prospects located along strike of the Perkoa zinc deposit, consisting of the Perkoa North-East and Semapoun West on the Guido permit, and AF1 on the Poa permit, were drilled.

A total of 576 shallow vertical RAB holes totalling 3,956 metres were drilled on these three prospects and 643 samples collected for base metals assays to be completed at ALS laboratory in South Africa. The assays results are expected in August.

### **Seboun and Sepaogo**

Limited exploration activities were undertaken on the Seboun and Sepaogo permits. Line cutting was completed on two prospects on these permits in preparation for follow up of selected priority VTEM targets by IP geophysics.

## CORPORATE

### Available Cash Funds

As at 30 June 2014, the Company had cash on hand of \$12.5 million.

Exploration and evaluation expenditure incurred during the quarter on the Mumbwa Project and Burkina Faso Exploration programs totalled \$0.8 million. In addition, during the quarter the Company incurred administration expenses totalling \$0.9 million, net of interest received.

Expenditure to be incurred in the next quarter on exploration and evaluation activities is forecast to be \$4.6 million. The increase in expenditure costs over the previous quarter reflects the commencement of the Kitumba DFS drilling program as previously announced.

Expenditure to be incurred on administration expenses, net of interest received, is forecast to be \$1.5 million. The increase in the next quarter is principally due to various one-off costs including expenses associated with the divestment of the Perkoa assets and the EGM of shareholders to be held in August.

### Director Appointment

On 15 May 2014, the Board announced Mark Mitchell, the Company's Chief Executive Officer, had been appointed Managing Director.

### Issued Capital

Issued capital at 30 June 2014 was:

- 164,285,950 ordinary shares (listed);
- 150,000 employee options, with exercise price \$1.63, expiring 27 June 2015 (unlisted);
- 2,660,000 employee options, with exercise price \$0.25, expiring 31 May 2017 (unlisted).

**Should you require further information please contact:**

**Mark Mitchell**  
**Managing Director/Chief Executive Officer**  
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## TENEMENTS SUMMARY

| CONCESSION                                 | LOCATION     | TENEMENT NUMBER | CURRENT QUARTER | PREVIOUS QUARTER |
|--|--------------|-----------------|-----------------|------------------|
| Perkoa Exploitation Licence <sup>(1)</sup> | Burkina Faso | 07-143          | 27.3%           | 27.3%            |
| Guido Exploration Licence                  | Burkina Faso | 13-118          | 100%            | 100%             |
| Poa Exploration Licence                    | Burkina Faso | 13-119          | 100%            | 100%             |
| Sepaogo Exploration Licence                | Burkina Faso | 11-335          | 100%            | 100%             |
| Seboun Exploration Licence                 | Burkina Faso | 11-336          | 100%            | 100%             |
| Mumbwa Permit                              | Zambia       | 8589-HQ-LPL     | 100%            | 100%             |
| Musafwa Permit                             | Zambia       | 14265-HQ-LPL    | 100%            | 100%             |
| Kachindu Permit                            | Zambia       | 14266-HQ-LPL    | 100%            | 100%             |
| Kabwera Permit                             | Zambia       | 14267-HQ-LPL    | 100%            | 100%             |
| Nyoko Permit                               | Zambia       | 16385-HQ-LPL    | 100%            | 100%             |

1. At 30 June 2014 the Company, through its wholly-owned subsidiary Blackthorn Investments Pty Ltd, effectively held a 27.3% interest in the Perkoa Project. Joint venture partner Glencore held a 62.7% interest, with the remaining 10% held by the State of Burkina Faso.

# CORPORATE INFORMATION

## DIRECTORS

Mike Oppenheimer – Non-Executive Chairman  
Nicki Bowman - Non-Executive Director  
Derek Carter - Non-Executive Director  
Roger Higgins - Non-Executive Director  
Peter Kalkandis - Non-Executive Director  
Mark Mitchell – Managing Director/Chief Executive Officer

## COMPANY SECRETARY

Chris Brown

## OFFICES

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## STOCK EXCHANGE LISTING

Australian Securities Exchange Limited  
ASX Code: BTR

## SHARE REGISTRAR

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Telephone: 1300 850 505 (within Australia)  
Telephone: +61 3 9415 4000 (from overseas)  
Facsimile: +61 3 9473 2500  
Website: [www.computershare.com.au](http://www.computershare.com.au)

## ATTRIBUTION

The information in this report which relates to Production Targets, Forecast Financial Information derived from Production Targets, and Ore Reserves for the Kitumba Project in Zambia is extracted from the announcement entitled 'Kitumba Optimised PFS Provides Positive Project Re-rating' released to ASX on 29 April 2014 which is available on the ASX website at [www.asx.com.au](http://www.asx.com.au) or the BTR website at [www.blackthornresources.com.au](http://www.blackthornresources.com.au). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Production Targets, Forecast Financial Information derived from Production Targets, and Ore Reserves that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

## U.S. OWNERSHIP RESTRICTIONS

The ordinary shares of the Company (the "Shares") have not been, and will not be, registered under the U.S. Securities Act of 1933 (the "U.S. Securities Act") or the securities laws of any state or other jurisdiction in the United States. In addition, the Company has not been registered under the U.S. Investment Company Act of 1940, as amended (the "U.S. Investment Company Act"), in reliance on the exception provided by section 3(c)(7) thereof. Accordingly, the Shares cannot be held at any time by, or for the account or benefit of, any "U.S. person", as defined in Rule 902(k) under the U.S. Securities Act, who is not both a "qualified institutional buyer" ("QIB"), as defined in Rule 144A under the U.S. Securities Act, and a "qualified purchaser" ("QP"), as defined in Section 2(a)(51) of the U.S. Investment Company Act. Any U.S. Person who is not both a QIB and a QP (or any investor who holds Shares for the account or benefit of any U.S. Person who is not both a QIB and QP) is an "Excluded U.S. person". The Company may require an investor to complete a statutory declaration as to whether they (or any person on whose account or benefit it Company may treat any investor who does not holds Shares) are an Excluded U.S. person. The Company may treat any investor who does not comply with such a request as an Excluded U.S. person. The Company has the right to: (i) refuse to register a transfer of Shares to any Excluded U.S. person; (ii) require any Excluded U.S. person to dispose of their Shares; or (iii) take such other action as it deems necessary or appropriate to enable it to maintain the exception from registration under Section 3(c)(7) of the U.S. Investment Company Act. To monitor compliance with these foreign ownership restrictions, the ASX's settlement facility operator, ASX Settlement and Transfer Corporation Pty Limited (ASTC) has classified the Shares as Foreign Ownership Restricted financial products and put in place certain additional monitoring procedures.



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