

## **HNC (AUSTRALIA) RESOURCES PTY LTD**

### **BROWNS LEASES**

**MLNs 139-147 and 150-152**

#### **ANNUAL REPORT**

**FOR THE YEAR ENDED 31 DECEMBER 2009**

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## **INTRODUCTION**

During 2009, a grade control drilling program commenced in August to more accurately define the Browns oxide resources. A total of 930 reverse circulation (RC) drill holes were drilled for the grade control. Two samples were collected for metallurgical testing in China and Australia.

Mining of the oxide deposit began on the tenements in 2008 and September saw the first copper production from the Browns Oxide Plant. As Compass Resources were placed in Voluntary Administration, mining ceased in 2009.

## **LOCATION AND ACCESS**

The tenements are located approximately 70 kilometres south of Darwin and adjoin the original mine sites of the Whites and Intermediate (Rum Jungle) Deposits.

Access from Darwin is via sealed roads to Batchelor and thence northward to the tenements via the start of the Litchfield Road. Access is also possible during the dry season by following the old railway line south from Darwin River, then along local dirt roads.

## **TENEMENT DETAILS**

An agreement to acquire the Browns tenements from CRA Exploration was concluded in July 1994, in which Compass Resources NL (75%) and Guardian Resources NL (25%) became the new owners. Following the acquisition of Guardian Resources Pty Ltd in 2006, Compass has effective 100% ownership of the leases.

The Mineral Leases covered by this Report have been renewed until 31 December 2022.

The tenement details are as follows:

<b>Lease Number</b>	<b>Renewed to</b>	<b>Area #</b>
MLN 139	31 December 2022	16.162 hectares
MLN 140	"	16.162 "
MLN 141	"	16.036 "
MLN 142	"	16.010 "
MLN 143	"	16.162 "
MLN 144	"	16.112 "
MLN 145	"	15.757 "
MLN 146	"	15.454 "
MLN 147	"	9.611 "
MLN 150	"	15.934 "
MLN 151	"	14.720 "
MLN 152	"	6.804 "
	<b>Total</b>	<b><u>174.824</u> hectares</b>

# Calculated from imperial unit lease plan.

It should also be noted that Compass Resources NL has become Compass Resources Limited.

## **GEOLOGICAL SETTING**

The Browns deposit lies in the Rum Jungle Mineral Field. The basement geology is dominated by the Archaean Rum Jungle Complex comprising two inliers (the Rum Jungle and Waterhouse domes) of S- and I-type granitoids. These are unconformably overlain by Palaeoproterozoic sedimentary strata forming the base of the Pine Creek Orogen. This sedimentary strata hosts significant deposits of stratiform base metal mineralization and structurally controlled uranium mineralisation.

The Browns Oxide deposit is hosted in weathered Proterozoic Coomalie dolomite and Whites Formation. Beneath the base of oxidation both units dip steeply to the southeast and a large body of stratiform base metal mineralization occurs in the basal shales close to the boundary with the dolomite.

The Proterozoic Zamu Dolerite intrudes both the Whites Formation and base metal mineralization but the majority of the dolerite is to the south of the Oxide Pit.

Close to the base of oxidation the bedding is folded suddenly and becomes almost flat lying. Though some tectonic folding may be involved the majority of this change in bedding dip is in response to preferential weathering and dissolution of dolomite (acid generated from breakdown of sulphides) causing slumping of the shale/dolomite contact and associated base metal gossan.

Erosion in the Tertiary created an uneven topographic surface that has filled with fluvial deposits of Tertiary clays, sands and gravels. These deposits are part of an extensive area of Tertiary valley fill that forms low ridges immediately to the north of the mining leases.

Identification of rock units within the weathered horizon can be problematic. Major element geochemistry often provides a better indication of rock type than geological logging of drill holes and was the primary source of data when developing the geological model.

The Browns-Browns East stratabound base metal sulphide resource occurs at the base of the Whites Formation. Mineralisation extends for 2.5 km along strike essentially from the eastern edge of the historical Whites open cut pit, to the west. Mineralisation occurs on the contact with the Coomalie Dolomite, or through apparent facies change, and away from the contact up to 70 metres within the Whites formation.

## **PREVIOUS EXPLORATION**

Several CRA subsidiaries including Territory Enterprises Pty. Limited (TEP) and Australian Mining and Smelting Company Limited (AM&S) have undertaken extensive drill programmes at this Prospect, culminating with the sinking of a 400' shaft, drilling twenty underground drill holes from two levels and underground sampling programmes in 1967-1969. The underground workings were flooded on the 13<sup>th</sup> May 1969.

A resource figure of 20m tonnes grading approximately 5.6% Pb, 0.19% Cu, 0.11% Co, 0.14% Ni and 0.3% Zn was reported within the tenement by CRA.

Metallurgical studies and testing had also been undertaken on the sulphide ores, the aim of which was to produce both copper and lead concentrates by flotation methods. The results indicated that it was not possible to produce saleable copper and/or lead float concentrates due to the fine grained nature of the sulphide minerals, resulting in "dirty" concentrates.

In 1990 Troy Resources Ltd., which had an option on the tenements undertook metallurgical studies on drill core after drilling five diamond drill holes. This testwork also failed to find a route to separate copper and lead concentrates, however they did establish that "oil agglomeration" may be a potential flotation method to produce a bulk sulphide concentrate.

In 1994 Compass/Guardian completed a programme of 20 holes of reverse circulation drilling, and in 1995 completed 19 diamond drill holes. In 1996 a 117 R/C drill hole programme was undertaken. This work was all done to further determine the tenor and limits of the mineralisation in the top 100 metres of the deposit. During 1997, twenty four diamond drill holes including 17 deeper holes were completed, and in 1998 an additional 61 RC drill holes were completed at Browns. Eight holes were also completed along strike at Browns East, within EL 4880. In September 1999, a bulk sample pit was started and metallurgical test work commenced later that year on sulphide ores removed from that pit. In 2000 a series of 6 diamond drill holes were completed for geotechnical studies and 3 percussion holes were twinned with diamond holes. A series of percussion holes were drilled for magnesite evaluation.

In 2001 two deep diamond drill holes were completed, together with ore resource studies.

In 2002, seven diamond drill holes and two reverse circulation percussion drill holes were completed.

In late 2003-early 2004 Phelps Dodge/Red Metal alliance completed three drill holes (two abandoned due to excessive deviation) in the tenements. These holes did not intersect mineralisation and they have withdrawn from the joint venture without retaining any equity,

In the last quarter of 2004, independent contractors Hellman and Schofield Pty Ltd completed a new resource estimate of the Browns Deposit. This resulted in a significant increase in the copper and lead grades together with a good definition and separation of lead and copper rich lenses. Also during 2004, a series of eight percussion drill holes was completed to obtain oxide ore samples for metallurgical test work.

During 2005, 62 RC holes (2041m) were completed, these were planned to more fully define the oxide resource. A further 19 RC holes were drilled in 2006 to gain information on the extent and grade of zinc mineralisation. There were also 4 diamond drill holes completed in 2006 – two to define mineralisation and two shallower holes for metallurgical test work.

A grade control program of RC drilling totalled 2478m over 56 holes to estimate ore grades in the location of the preliminary mining phase. A further 4654m of RC drilling helped constrain the Browns oxide resource and 4597.1m of diamond drilling was completed for the Browns sulphide feasibility study.

In 2008, the RC drillings were conducted by the Adelaide-based drill contractors Underdale Drillers Pty Ltd using an Investigator Mk10 drilling rig. Diamond drilling was also carried out by Underdale using a Hydrill rig. 5 diamond drill holes (08BD01 to 08BD05) were completed at a total of 1356m to penetrate the Browns sulphide deposit, and 15 RC holes (08BD06 to 08BD20) were completed at a total of 589m, to confine the northern extent and depth of the Browns oxide deposit. Another 2 further RC drill holes, 08EX01 and 08EX02, were completed at the end of the drilling season for grade control. 3 RC holes were drilled to sterilise for mining infrastructure and gain extra geological knowledge; 08WB03, 08WB05 and 08BS12. No ore grade mineralisation was found in these holes.

In 2008, Compass Resources began extensive geological mapping on its tenements at Rum Jungle that included the Browns mining leases. This has improved the understanding of the surface geology in the area and has contributed to the ongoing review of the geology and controls on mineralisation. Evaluation of historical data has continued throughout the year and is being collated in a central database. This has also helped more accurately define the Browns oxide and sulphide ore bodies.

## **WORK COMPLETED DURING 2009**

During 2009, RC drilling at Browns was conducted by the NT-based drill contractors Johannsen Drilling Pty Ltd using an Edson drilling rig. No diamond drilling was conducted during 2009.

All RC sampling was carried out, put into bags, and then sent for analysis. Wet samples which could not be split were treated by hand. Samples were assayed by Amdel using the following technique:

- \* Samples were pulverised to 85% passing 75 microns or better.
- \* A four acid “near-total” digest was used followed by ICP-AES (OG62) analysis for Cu, Pb, Zn, Co, Ni, Ag, Mn, Fe, S, Mg, Ca, and U.
- \* Samples with higher uranium values (>150ppm U) were re-analysed by XRF for U and Ti.
- \* Radioactivity was measured for each sample with a GR 110 scintillometer or a SPP2 scintillometer on site.

All of the hole-collars were surveyed using a DGPS instrument.

Extensive geological mapping of the Compass owned tenements at Rum Jungle began in 2008 that included the Browns mining leases. This has improved the understanding of the surface geology in the area and has contributed to the ongoing review of the geology and controls on mineralisation.



Evaluation of historical data has continued throughout the year and is being collated in a central database. This has also helped more accurately define the Browns oxide and sulphide ore bodies.

## **PLANS FOR 2010**

A large amount of drilling data has been gathered this season to improve the resource status of the Browns Sulphide project. A complete review of all data will occur over the wet season with the plan to fully define known mineralisation and explore prospective targets both adjacent and along strike.

The Browns Sulphide project is currently undergoing feasibility studies which include archaeological, hydrogeological, metallurgical and geotechnical works.

Continued drilling, geological mapping, reviewing of historical logging, generating 3D models and resource definition work will continue to support the feasibility studies.

A drilling plan has been finished to definite the mineralization of the Browns Sulphide.

To better understand the geology of the Browns area, a geophysical survey is planned for 2010. It will include the Browns, Area 55, Mt Fitch and the Old Rum Jungle area.

It is anticipated expenditure will exceed \$50,000.