

# Technical Report on the Kaoko Copper-Silver Property in Northwest Namibia



for  
**INV Metals Inc.**

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**Front Cover Photo:** INV Drillhole INVD-14, Omatapati

**Source of Figures:** All figures were generated from ArcGIS utilizing INV Metals' database or are photos taken by INV Metals' personnel, with the following exceptions:

Figure 7-1: Gray, D.R., Foster, D.A., Goscombe, B.D., Passchier, C.W., and Trouw, R.A.J., 40Ar/39Ar thermochronology of the Pan-African Damara Orogen, Namibia, with implications for tectonothermal and geodynamic evolution, in *Precambrian Research* 150 (2006) pp 49-72

Figure 7-4: Teck Resources Internal Document, 2009: NW Namibia Copper – Cu-Ag, Kaokoland, Namibia

Figure 9-10: Kendall, C.G.St.C., 02 December 2011, Sequence stratigraphy: Template for “conceptual models” used to interpret depositional systems - beauty but not truth?: Retrieved from <http://www.sepmstrata.org/Power-Point-Lectures/OsloKendall.ppt>

Figures 9-11, 9-12: McClung, C.R., 2012, Geologic significance of the Okohongo Horizon: a basin analysis of the Neoproterozoic Kaoko Belt, NW Namibia: unpublished INV Exploration Namibia (Pty) Ltd. company report, 50 pp.

Note: All maps are current as of the date of this report, unless otherwise noted.

## 1. SUMMARY

This report has been prepared for INV Metals Inc. ("INV Metals") in order to provide an update, to be filed on SEDAR, of INV Metals' exploration activities at the Kaoko, Namibia copper-silver project as at March 21, 2012. The Kaoko property consists of 10 Exclusive Prospecting Licenses ("EPL") encompassing approximately 7,360 km<sup>2</sup> that a Namibian subsidiary of Teck Resources Limited (collectively "Teck") acquired by the staking of open ground, and seven EPLs, totalling 1,367 km<sup>2</sup>, acquired by the staking of open ground by the Namibian subsidiary of INV Metals, in the Kunene region of northwest Namibia.

INV Metals is an international mineral resource company focused on the acquisition, exploration and development of base and precious metal projects in Brazil, Namibia and Canada. Currently, INV Metals' primary assets are: (1) its option to acquire 50% of the Rio Novo property, located in Brazil, (2) its option to acquire 50% of the Kaoko property, located in Namibia, and (3) its 100% owned Itaporã gold properties, located in Brazil.

This Technical Report conforms to National Instrument 43-101 ("NI 43-101") Standards of Disclosure for Mineral Projects. Mr. Robert Bell, P. Geo., CEO of INV Metals and a qualified person, has visited the property numerous times, most recently in October 2011.

INV Metals gained access to the 10 Teck EPLs through an option – joint venture agreement (the "Agreement"), dated July 30, 2009 and made effective October 28, 2009, that forms part of a series of transactions with Teck. Under the terms of the Agreement, INV Metals can earn an initial 50% interest in the Kaoko property by making exploration expenditures of \$7 million over four years, with a commitment to fund a minimum of \$CDN 3 million over the first two years. This commitment has been met and with approximately \$4.6 million in expenditures to date, INV Metals will most likely vest its 50% interest in the property in 2012.

The Kaoko property is underlain by the Damara Supergroup, a geological environment considered analogous with the African Copperbelt in Zambia and the Democratic Republic of the Congo ("DRC"), and the Kalahari Copperbelt of Botswana. It has been interpreted that the Katanga Supergroup, host to the African Copperbelt deposits, and the Damara Supergroup evolved simultaneously and perhaps contiguously as part of an extensive intra-cratonic rift system that extended over Western Gondwana during the period 800 to 500 million years ago. The African Copperbelt is one of the greatest sediment-hosted stratiform copper-cobalt provinces in the world and includes a number of world-class deposits that contain greater than 10 million tonnes of copper.

The Kaoko property covers an area as large as the Zambian Copperbelt and significant copper mineralization typical of African Copperbelt style mineralization has been identified, indicating that the property has exceptional potential for the discovery of a new copper belt. At the Okohongo deposit, INV Metals defined an inferred resource of 10.2 million tonnes grading 1.1% copper and 17.8 g/t silver using a 0.3% copper cut-off. The property includes an estimated 200 kilometres of the horizon that hosts the Okohongo deposit (the "Okohongo Horizon") and the majority of the ~200 known copper showings at Kaoko occur along this horizon. At the Okozonduno target, located approximately 40 kilometres southwest of the Okohongo deposit, INV Metals intersected 20.0 metres grading 1.2% copper and 24.6 g/t silver, including 7.0 metres grading 2.8% copper and 59.6 g/t silver. An extensive soil geochemical survey is in progress to evaluate the Okohongo Horizon which is frequently poorly exposed or completely covered with surficial sediments.

Mineralization is also hosted in other geological units above and below the Okohongo Horizon. At the Omatapati target, stockwork veins and disseminations of chalcopyrite, bornite and chalcocite occur within dolomites and siltstones above the Okohongo Horizon. At Omatapati, INV Metals intersected 19.0 metres grading 2.0% copper and 119.8 g/t silver, including 5.0 metres grading 6.4% copper and 410.3 g/t silver.

Given the multitude of targets and mineralizing environments present on such a huge property, the author considers the potential to be high for the discovery of a world-class, low cost copper deposit or for multiple deposits similar to Okohongo that could be processed by a central plant. Additional work is recommended, including carrying out metallurgical test work on the Okohongo deposit, further target generation via the extensive ongoing geochemical survey, basin analysis, and the evaluation of numerous other copper targets on the property.

## **2. INTRODUCTION**

### **2.1. TERMS OF REFERENCE**

This report has been prepared for INV Metals in order to provide an update, to be filed on SEDAR, of INV Metals' exploration activities at the Kaoko, Namibia copper-silver project as at March 21, 2012. The Kaoko property consists of 10 EPLs encompassing approximately 7,360 km<sup>2</sup> that a Namibian subsidiary of Teck acquired by the staking of open ground, and 7 EPLs, totalling 1,367 km<sup>2</sup>, staked by the Namibian subsidiary of INV Metals, in the Kunene region of northwest Namibia.

INV Metals is an international mineral resource company focused on the acquisition, exploration and development of base and precious metal projects in Brazil, Namibia and Canada. Currently, INV Metals' primary assets are: (1) its option to acquire 50% of the Rio Novo property, located in Brazil, (2) its option to acquire 50% of the Kaoko property, located in Namibia, and (3) its 100% owned Itaporã gold properties, located in Brazil.

Mr. Keith Webb, P. Geo., Country Manager, Namibia for INV Metals and a qualified person, has visited the property numerous times, as has Mr. Robert Bell, P. Geo., CEO of INV Metals and a qualified person, most recently in October 2011. Mr. Webb was appointed INV Metals' Namibian Country Manager effective October 1, 2011, and worked on and visited the property numerous times since joining INV Metals in May 2011, most recently in late October 2011.

### **2.2. SOURCES OF INFORMATION**

Much of the background information is updated from previous reports titled "Technical Report on Recent Exploration at the Kaoko Copper-Silver Property in Northwest Namibia" dated June 15, 2011, prepared by Messrs. Scott Jennings and Robert Bell, and "Technical Report On The Okohongo Copper-Silver Project In Northwest Namibia" dated July 28, 2011, prepared by Messrs. Philip John Hancox and Sivanesan Subramani of Caracle Creek International Consulting (Proprietary) Limited ("CCIC"). Technical information in those reports was derived from a variety of sources, including internal Teck reports and presentations, technical articles in scientific publications, and data generated by INV Metals' exploration activities since late October, 2009. All documents used in the preparation of this report are listed in Section 19, References.

## 2.3. UNITS OF MEASURE

Throughout this report, common measurements are in metric units, with linear measurements in millimetres (mm), centimetres (cm), metres (m) or kilometres (km). Metal contents are given as parts per billion (ppb), parts per million (ppm), grams per tonne (g/t) or percentage (%). Ages of various rock units are given in millions of years before present (Ma) or billions of years before present (Ga). All currencies are in Canadian dollars unless otherwise denoted.

Other abbreviations used in this report include:

FOH: “foot of hole” (the length of a drill hole)

Ag: silver

Au: gold

Cu: copper

K: potassium

Th: thorium

U: uranium

## 3. RELIANCE ON OTHER EXPERTS

This report has been prepared for INV Metals. The information, conclusions, opinions, and estimates contained herein are based on:

- Information available at the time of preparation of this report,
- Assumptions, conditions, and qualifications as set forth in this report, and
- Data, reports, and other information supplied by Teck and other third party sources.

For the purpose of this report, the author has relied on ownership information provided by Teck. Mr. David Smuts, a lawyer based in Windhoek, Namibia, provided a positive title opinion dated October 21, 2009.

Except for the purposes legislated under provincial securities laws any use of this report by any third party is at that party’s sole risk.

## 4. PROPERTY LOCATION AND DESCRIPTION

### 4.1. PROPERTY LOCATION

The property is located in the Kunene Region of northwest Namibia in southwestern Africa (Figures 4-1 and 4-2). It extends approximately 75 km in an east-west direction and 200 km in a north-south direction, within the region bounded by Universal Transverse Mercator (UTM) coordinates 293747E-474559E and 8027088N-7828724N in UTM Zone 33K. Note that all figures in this report are oriented north upwards unless otherwise indicated.

Figure 4-1: Location Map of Namibia and Kaoko

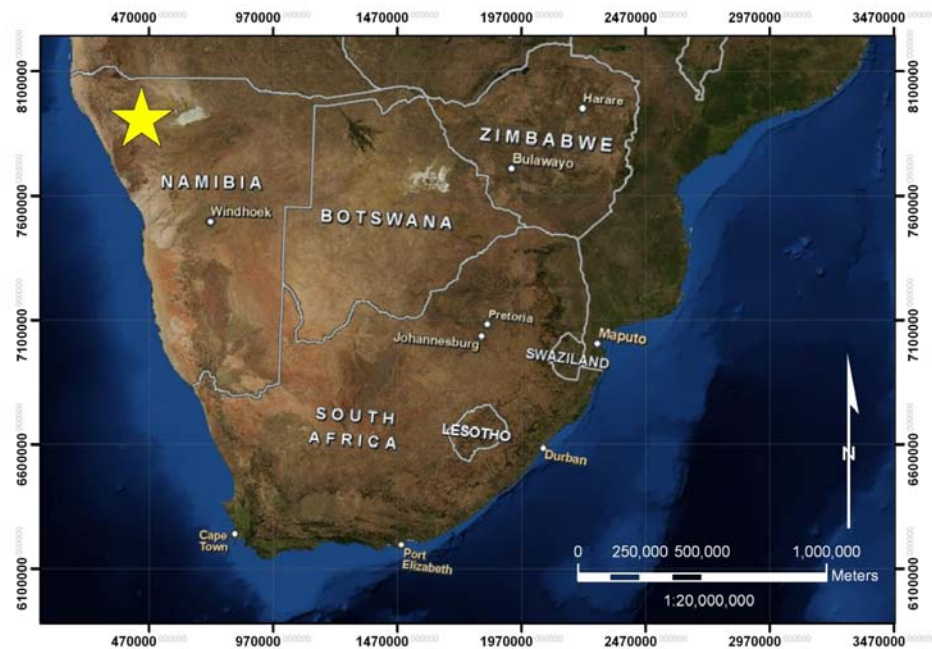
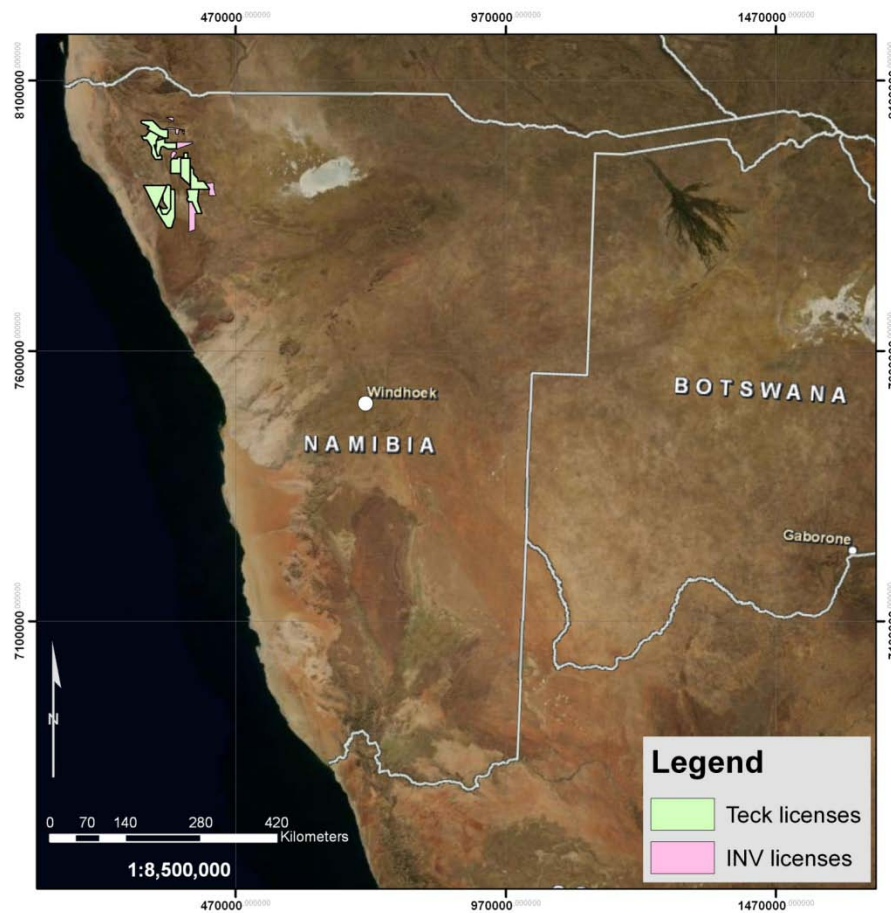


Figure 4-2: Location Map of Kaoko Property





#### 4.2. PROPERTY DESCRIPTION

The Kaoko Property is comprised of 17 EPLs that cover about 8,728 km<sup>2</sup> in the Kunene region of northwestern Namibia (See Table 4-1). The Company gained access to 10 of the EPLs through the Agreement and seven additional EPLs by staking of open ground. Originally the Agreement included 11 EPLs but it was amended in January 2012 to exclude the Pioneer EPL.

Title to the 10 EPLs is held by Teck Namibia Ltd and to the other seven EPLs by INV Metals' Namibian subsidiary. In order to retain the property the company must demonstrate to the Ministry of Mines and Energy ("MME") to be working towards completing the work programs laid out in the relevant application (i.e. original or renewal) that is required to be awarded an EPL. Namibian mining law allows officers of the MME a great deal of discretion when it comes to decisions regarding tenure. As a practical matter, it is extremely rare for a license renewal not to be granted so long as the applicant has carried out a reasonable exploration program. A fixed fee, the amount of which is determined by the size of the license, must be paid on an annual basis. Annual fees for the ten optioned EPLs amount to Namibian \$78,000 and for the seven staked claims Namibian \$21,000. A quarterly report detailing work and expenditures must be submitted to the MME for each EPL. A biannual environmental report must be submitted to the Ministry of Environment and Tourism ("MET") and an environmental contract must be signed prior to being awarded the EPL. Six of the EPLs held under the Teck agreement were subject to renewal as of March 5, 2011; these have all been granted two year renewals. The remaining four EPLs under the Teck agreement expire on April 26, 2012 and can then be renewed for another two years. Renewal applications for these four EPLs were submitted on January 25, 2012. Two of the renewal applications did not include claim reductions, while 25% reductions were made on EPL's 3685 and 3687. Six of the INV Metals' staked EPLs expire on January 18, 2014 and the seventh on June 6th, 2014, and can then be renewed. The EPLs are all located on public land.

There are no known environmental liabilities on the property; there are no known tailings ponds, waste deposits or significant improvements on this largely undeveloped property. Formal permits are not required but the MME must be notified of any surface disturbances including drilling. Before being granted an EPL the applicant must submit their program to the MET and sign an environmental contract.

The EPLs are in good standing and all permits required to work the property are in place. The known mineral prospects are all well contained within the confines of the claim boundaries.

**Table 4-1: Property Details**

<b>EPL</b>	<b>Name</b>	<b>Staked By</b>	<b>Area (ha)</b>	<b>Date Issued</b>	<b>Status</b>	<b>Renewal application date</b>	<b>2nd Renewal Expiry</b>
3349	Oruvandjai	Teck	67,857	06/03/2006	Renewed to 05/03/13	05/12/2012	05/03/2013
3350	Okatumba	Teck	60,320	06/03/2006	Renewed to 05/03/13	05/12/2012	05/03/2013
3351	Okambonde	Teck	65,213	06/03/2006	Renewed to 05/03/13	05/12/2012	05/03/2013
3352	Epunguwe	Teck	74,243	06/03/2006	Renewed to 05/03/13	05/12/2012	05/03/2013
3354	Sesfontein	Teck	68,745	06/03/2006	Renewed to 05/03/13	05/12/2012	05/03/2013
3357	Otjiheke	Teck	58,781	06/03/2006	Renewed to 05/03/13	05/12/2012	05/03/2013
3683	Obias	Teck	98,515	27/04/2007	Renewed to 26/04/12	26/01/2012	26/04/2014
3685	Onganga	Teck	72,999	27/04/2007	Renewed to 26/04/12	26/01/2012	26/04/2014
3686	Oruvero	Teck	96,631	27/04/2007	Renewed to 26/04/12	26/01/2012	26/04/2014
3687	Ozombombo	Teck	72,755	27/04/2007	Renewed to 26/04/12	26/01/2012	26/04/2014
4540	Otukaru	INV	4,874	19/01/2011	Granted to 18/01/2014	18/10/2013	18/01/2018
4541	Orotjitombo	INV	11,970	19/01/2011	Granted to 18/01/2014	18/10/2013	18/01/2018
4542	Otjongava	INV	1,719	19/01/2011	Granted to 18/01/2014	18/10/2013	18/01/2018
4543	Ondjete	INV	20,770	19/01/2011	Granted to 18/01/2014	18/10/2013	18/01/2018
4544	Omevameu	INV	8,939	19/01/2011	Granted to 18/01/2014	18/10/2013	18/01/2018
4545	Okawerongo	INV	26,435	19/01/2011	Granted to 18/01/2014	18/10/2013	18/01/2018
4557	Khowarib Schlucht	INV	62,034	07/06/2011	Granted to 06/06/2014	06/03/2014	06/06/2019
	<b>Total</b>		<b>872,800</b>				

#### 4.3. AGREEMENT WITH TECK RESOURCES LIMITED

The Kaoko option and joint venture agreement is part of a transaction between INV Metals and Teck that involved the issuance of 2,875,929 INV Metals shares to Teck, the transfer of INV Metals' ~20% indirect interest in the Santa Fé – Iporá nickel laterite deposits in Goiás State, Brazil to Teck, a similar option agreement of Teck's Rio Novo copper-precious metals project in the Carajás mining district of Brazil, and an umbrella agreement linking all of the documents together. The effective date of the agreement is October 28, 2009.

INV Metals holds an option to earn an initial 50% interest in the Kaoko project by spending \$7 million over 4 years, with \$3 million of committed expenditures over the first two years. This commitment has been met. INV Metals acts as the operator during its earn-in period. Upon INV Metals vesting at 50%, a joint venture is formed and Teck becomes the operator. Teck may elect up to 60 days after the fourth anniversary to earn an additional 10% interest in the project (for a 60% interest) by funding \$7 million in expenditures over two years. In addition, if INV Metals had contributed to joint venture costs after the formation of the joint venture (i.e. between the time that INV Metals has expended \$7 million and Teck's election to increase its interest), Teck would fund an additional amount equal to two times 20% of such contributions by INV Metals to the joint venture (this amount is provided in order to credit INV Metals for its share of joint venture costs incurred with respect to the 10% interest in the project that Teck is earning). If Teck earns the additional 10% interest, it may then elect to earn an additional 5% interest, to have a final project interest of 65%, by funding \$21 million in expenditures over the next four years.

If Teck does not elect to increase its interest to 60% then INV Metals would have the option to elect, within 30 days, to earn an additional 10% interest in the project (for a 60% interest) by funding a further \$7 million over two years in which case INV Metals would continue as the operator.

If INV Metals earns a 60% interest Teck would have a third option to elect, within 30 days, to earn back an additional 20% interest to have a final project interest of 60% interest by:

- a) making an initial cash payment to INV Metals of \$7 million;
- b) funding additional expenditures of \$14 million over three years; and
- c) making an additional optional cash payment to INV Metals of \$3.5 million, such payment to be made prior to the end of the three year period in order to vest.

#### 4.4. NAMIBIA OVERVIEW

The Republic of Namibia is a vast, sparsely populated country (population 2.1 million) situated along the south Atlantic coast of Africa between 17 and 29 degrees south (Figures 4-1 and 4-2). With its surface area of 824,268 km<sup>2</sup>, Namibia is the 31<sup>st</sup> largest country in the world. It stretches for about 1,300 km from south to north and varies from 480 to 930 km in width from west to east. Namibia, previously known as South West Africa, is bordered by South Africa in the south, Angola and Zambia in the north and Botswana and Zimbabwe in the east. The oldest desert in the world, the Namib Desert, stretches along the entire west coast of the country, while the Kalahari Desert runs along its southeastern border with Botswana. The country is demarcated into 13 regions, namely the Caprivi, Kavango, Kunene, Omusati, Ohangwena, Oshana and Oshikoto regions in the north, the Omaheke, Otjozondjupa, Erongo and Khomas Regions in the central areas, and the Hardap and Karas regions in the south. The capital city is Windhoek.

Namibia was a German colony from 1884 to 1915 after which it was occupied by South Africa during World War I and administered as a mandate until after World War II, when it annexed the territory. In 1966 the Marxist South-West Africa People's Organization (SWAPO) launched a war of independence (mainly along the Angolan – Namibian border) for the area that became Namibia, but it was not until 1988 that South Africa agreed to end its administration in accordance with a UN peace plan for the entire region. Namibia has been governed by SWAPO as a constitutional democracy since the country won independence in 1990. Hifikepunye Pohamba was elected president in November 2004 in a landslide victory replacing Sam Nujoma who led the country during its first 14 years of self rule. Mr. Pohamba was re-elected in November 2009 (this section is largely derived from the World Bank, <http://web.worldbank.org> and from the CIA World Factbook).

#### 4.5. NAMIBIAN MINING ACT

In Namibia, all mineral rights are vested in the state. The Minerals (Prospecting and Mining) Act of 1992 regulates the mining industry in the country. Policy has been designed to facilitate and encourage the private sector to evaluate and develop mineral resources. The Mining Rights and Mineral Resources division in the Directorate of Mining is usually the first contact for investors, as it handles all applications for and allocation of mineral rights in Namibia. Several types of mining and prospecting licenses exist, outlined briefly below:

##### 1.0 Non Exclusive Prospecting Licenses (NEPL)

Valid for 12 months, these licenses permit prospecting non-exclusively in any open ground not restricted by other mineral rights. Prospectors must furnish the Mining Commissioner details of all samples removed from an NEPL area.

##### 2.0 Exclusive Reconnaissance Licenses (ERL)

These licenses allow the holder an exclusive and preferential right over an area, to a maximum size of two one-by-one degree squares, for six months. ERLs are generally non-renewable and non-transferable, though they may be renewable under special circumstances. Fees are N\$ 500 per quarter degree square or part thereof. The holder is obliged to keep all relevant prescribed records and submit at the end of the term a report setting out an evaluation of the prospects in the area, and other geological data and information, along with expenditures and other financial declarations.

##### 3.0 Exclusive Prospecting License (EPL)

Individual EPL's can cover areas not exceeding 1,000 km<sup>2</sup> (100,000 ha) and are valid for three years, with two renewals of two years each. Under exceptional circumstances they may be renewable for further periods. Two or more EPL's can be issued for more than one mineral in the same area. A geological evaluation and work plan (including estimated expenditure commitments) along with an environmental impact assessment report are a prerequisite prior to issuing of the licenses. The EPL holder must submit quarterly and annual reports. Fees are N\$ 1,000 per 10,000 ha or part thereof, subject to a minimum of N\$ 2,000.

#### 4.0 Mineral Deposit Retention Licenses (MDRL)

These allow successful prospectors to retain rights to mineral deposits which are uneconomical to exploit immediately. MDRL's are valid up to five years and can be renewed for a period not exceeding two years, subject to limited work and expenditure obligations. Fees are N\$ 5,000.

#### 5.0 Mining Licenses (ML)

Mining Licenses can be awarded to Namibian citizens and companies registered in Namibia. They are valid for the life of mine or an initial 25 years, renewable up to 15 years at a time. Applicants must have the financial and technical resources to mine effectively and safely.

Prior to mining licenses being issued, all applicants are required to complete an environmental contract with the MET. Environmental impact assessments must be made with respect to air pollution, dust generation, water supply, drainage/waste water disposal, land disturbance and protection of fauna and flora.

Detailed quarterly and annual reports on all relevant aspects of operations must be submitted. Fees are N\$ 1,000 in respect of a mine earning gross annual revenues of up to N\$ 10 million, and N\$ 5,000 for revenues in excess of N\$ 10 million.

The minimum tax rate on a mining company is 25%. Most mining companies pay between 25 – 40%, with diamond mines taxed at 55%. Corporate tax of 40% applies to profits from non-mining activities. Allowable tax deductions for mining companies are as follows:

- All pre-production exploration expenditures are fully deductible in the first year of production
- Subsequent exploration expenditures are not ring fenced and are fully deductible in the year they occur, so that profits from existing operations can be used to fund exploration in any part of the country
- Initial and subsequent development costs (including start-up capital and loan finance) are fully deductible in equal instalments over three years
- Contributions to a fund for restoring the environment are fully deductible

Royalties to the State Revenue Fund are payable on exports of certain rough or semi processed minerals:

- 10% on rough and uncut precious stones
- 5% on rough or unprocessed dimension stone
- 2-3% on any other mineral which can be economically processed in Namibia

In December 2009 Namibia established a state-owned mining company, Epangelo Mining, to take part in the country's exploration and mining industry, with the intent of looking at all strategic minerals including diamonds, uranium, gold and copper. Initial funding will come from the government but various private and state-owned mining companies have apparently asked to partner with the new organization.

The Namibian Ministry of Mines and Energy announced on May 10, 2011 that the Cabinet declared certain minerals, including copper, strategic minerals. As such, the Cabinet decided that the right to own licenses for strategic minerals should be issued to a State-owned company. However, the Ministry of Mine and Energy stated that existing exploration and mining licenses will not be affected. The State-owned company after receiving approval for licenses for strategic minerals may enter into joint ventures with interested parties for exploration and development.

## **5. ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY**

### **5.1. ACCESS**

From the capital city of Windhoek the property is accessed by a paved two lane highway to the town of Opuwo, the nearest population centre. From Opuwo well-maintained gravel roads (C43 and D3710) lead south into the central block of EPLs. C43 continues on to Sesfontein and the southern block of EPLs. The northern block of EPLs is accessed from Opuwo via D3703 and D3707. A network of four wheel drive tracks branching off from the main arterials provides reasonable access throughout the property. Figure 5-1 shows primary access routes to the property from Opuwo.

### **5.2. CLIMATE**

Namibia has a temperate and subtropical climate characterized by hot and dry conditions with little rainfall along the coast. Temperatures are moderated by the cold Benguela current while periods of winter drought alternate with excessive summer rainfall between November and April with the interior experiencing slightly higher rainfall. Average annual precipitation in the capital city of Windhoek is 360 mm (14 inches) and average temperature ranges are from 6 to 20 degrees Celsius (43 to 68 degrees Fahrenheit) in July to 17 to 29 degrees Celsius (63 to 84 degrees Fahrenheit) in January. These average temperatures are typical of the central plateau which has an average elevation of approximately 1,600 metres. The lower average elevation of the property area results in higher average temperatures. The location of the property in the northern part of Namibia means that seasonal rainfall begins slightly earlier but is of roughly the same magnitude as that recorded for Windhoek.

For the exploration stage, certain field activities can be carried out year-round; however, movement of heavy equipment such as drill rigs is problematic during the rainy season due to deteriorated road conditions. Drilling is typically suspended during the rainy season from December through to March or April.

### **5.3. LOCAL RESOURCES AND INFRASTRUCTURE**

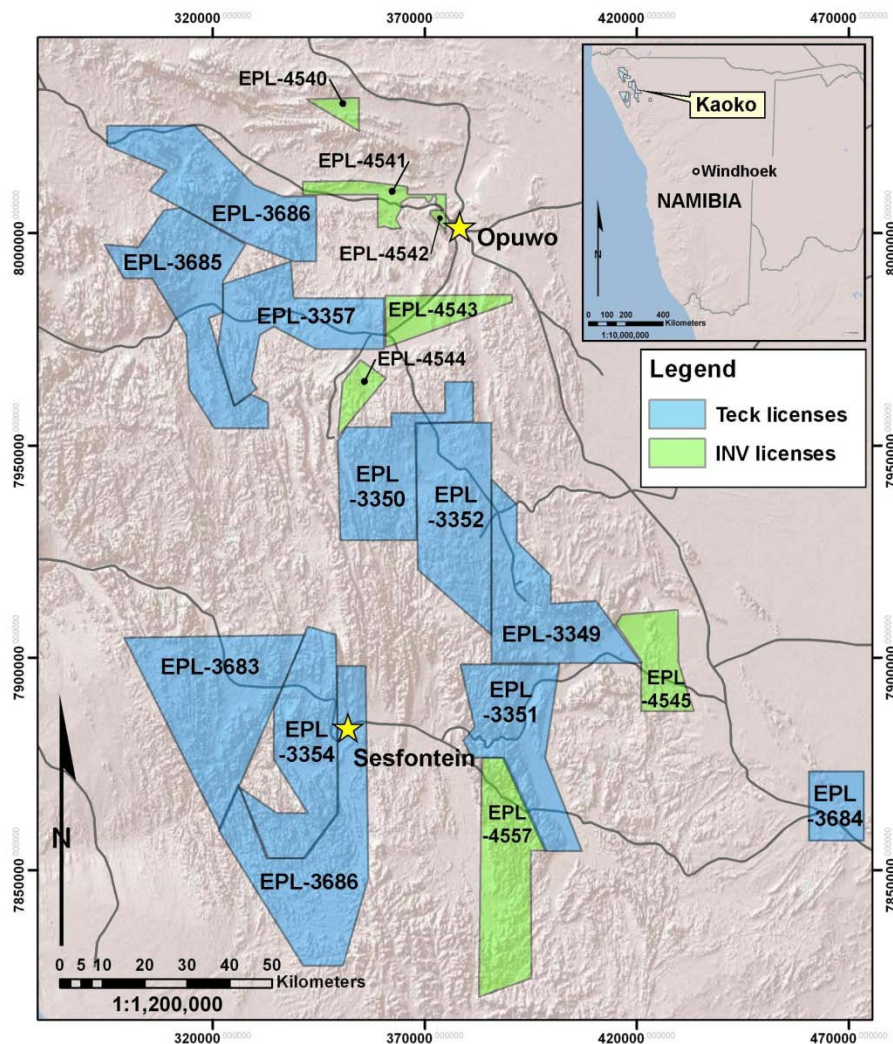
Infrastructure on the property is limited to the network of roads and tracks described in Section 5.1. A number of small villages are present on the property. None of the villages has electricity, running water or sewage facilities. In a straight line, it is about 50 km to the nearest kv power line. Cell phone coverage is sporadic at best. Long distance communication is accomplished via radio, satellite phone or over the internet using the Inmarsat satellite network. Opuwo, the nearest town, is thirty-five km by road east of the northern block of EPLs and fifty km northeast of the central block. Opuwo has a clinic, postal service, grocery stores, gas stations, hotels and is the seat of government for the Kunene region. The paved highway begins at Opuwo and



provides access to the rest of the country. From Opuwo it is 600 km by road to the copper smelter at Tsumeb and 650 km to the deep water port at Walvis Bay. Dundee Precious Metals Inc purchased the Tsumeb smelter from Weatherly International plc in January 2010.

The property is large enough to sustain the facilities required for a mining operation, tailings disposal, etc. There are numerous locations sufficient for either leach pads or tailings ponds. Sufficient water can be obtained for the exploration stage by drilling water bores; however, at this point it is not known whether sufficient water to sustain a mining operation is available on the property. Opuwo is a regional centre and therefore a source of unskilled labour and supplies, though Windhoek is a better source. Skilled labour for the most part would be required to be brought in from other jurisdictions. Equipment and supplies are more readily available locally, and if specialized items are not available in Namibia, it is likely they can be procured regionally, e.g. from South Africa, Zambia or Botswana.

**Figure 5-1: Property Access**

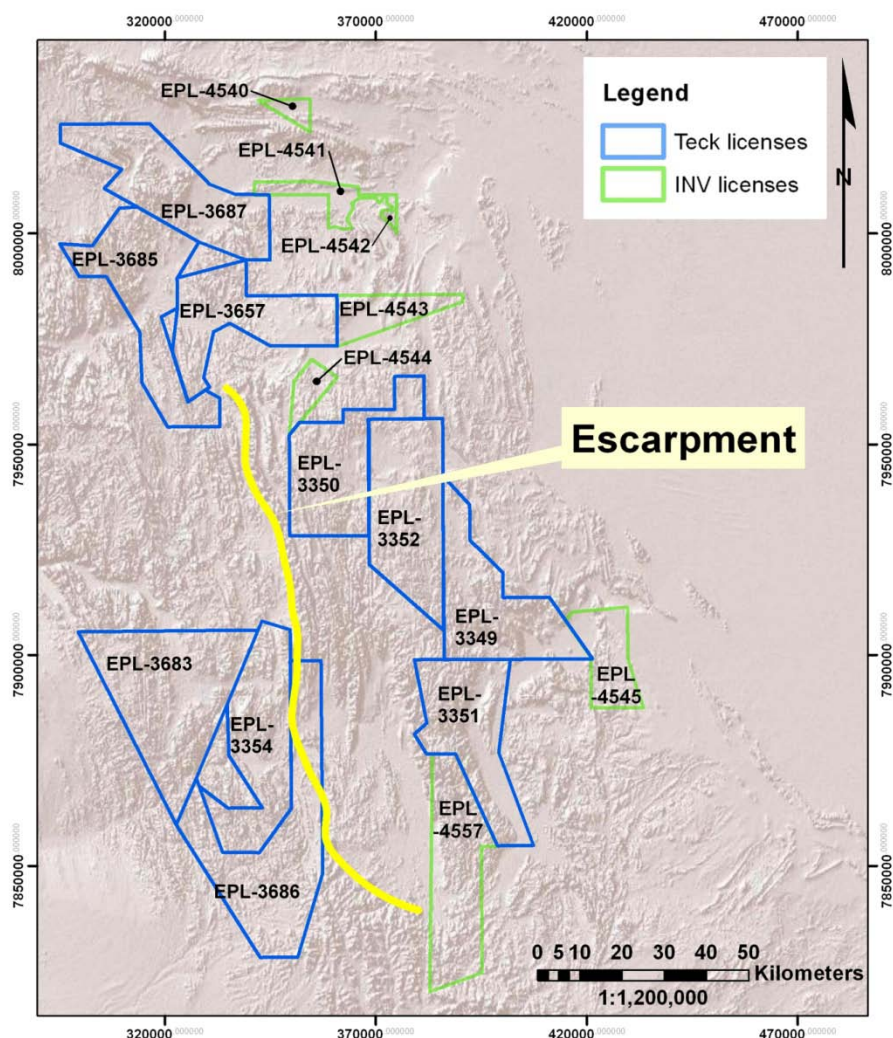


## 5.4. PHYSIOGRAPHY

The region is characterized by a series of north-northwest trending ridges and valleys as illustrated in Figure 5-2. The central and southern EPL blocks are separated by an escarpment that traces the Sesfontein thrust fault and may exhibit up to 400 metres of relief. West of the escarpment valley floor elevations are generally less than 1,000 metres. East of the escarpment elevation generally decreases from north to south. Valley floor elevations range from around 1,500 metres in the north to less than 1,000 metres in the south. Ridge top elevations vary from over 1,700 metres in the north to around 1,200 metres in the south.

Vegetation is dominated by thorny brush of various types. Mopani trees are locally common. Vegetation is thickest along perennial watercourses. Overall vegetation density ranges from sparse to moderate depending on local soil conditions and on the season. During the rainy season (November through April) trees and brush appear green and lush. Valley floors may be covered with high grass. During the dry season many of the trees and much of the brush lose their leaves. No permanent running water exists on the property although flash floods are common during the rainy season.

**Figure 5-2: Shuttle Radar Image of Kaoko Property Area**





## 6. HISTORY

The similarities in stratigraphy, geochronology, tectonic environment, metamorphic grade and deformation between the Kaoko area and the African Copperbelt have been observed since the 1960's. Known copper showings in the Sesfontein-Opuwo areas of northwestern Namibia ("Kaokoland") were recognized as potential Copperbelt analogues by Goldfields, Anglo, African Selection Trust and others in the late 1960's. These companies carried out the first regional stream sediment surveys in Kaokoland in the early 1970's. The independence war in Kaokoland from the mid 1960s to the mid 1980's led to the abandonment of exploration interest in the region (Allen, C.R., 2004). In order to put this historic work in the context of the various copper targets that were previously explored, additional details of some of this historic work are included in Section 7.5 where considered relevant to the copper target being described.

At some unknown date Bantu Mining intersected up to 59 metres of 1.52% copper in the Otjitombo area just northwest of the Kaoko property.

Early 1990's: Anglo American Base Metals, operating as Erongo Minerals, was active in the region in the early 1990s. Erongo drilled forty-one 20 metre percussion holes at 50 metre spacing in eight fences and two deeper percussion holes for a total of 1,050 metres on what is now EPL 3352.

1990-1995: Rio Tinto Zinc (RTZ) worked in the region mainly focusing on the Tsongoari barium-lead-zinc occurrence to the west of Kaoko.

1997-2000: Mount Isa Mines (MIM) was active in areas to the north and northwest of Kaoko. On two of the existing EPLs, 3352 and 3357, MIM drilled 30 holes totalling 2,304 metres.

In 2004, Teck Cominco Namibia (TCN), a subsidiary of Teck Cominco Limited (now Teck) initiated a study of the potential of the Kaokoland area. In November, 2004 the Ministry of Mines and Energy granted TCN two Exclusive Reconnaissance Licenses (ERL), ERLs 43 and 51, totalling 23,513 km<sup>2</sup> for a period of six months. Regional traverses and a heavy mineral stream sediment sampling program (792 samples) were completed. TCN purchased high resolution magnetic and radiometric coverage of the area (approximately 23,000 km<sup>2</sup>) from the Geological Survey of Namibia (GSN) and completed a preliminary evaluation of the data.

In 2005, TCN compiled and digitized an extensive geochemical database of earlier work from open file reports housed at the GSN. All stream sediment sample data was incorporated into a single ArcGIS data base that included defined drainage basins derived from the Digital Elevation Model (DEM) for Namibia. As a "proof of concept" exercise, David Broughton from the Colorado School of Mines, an expert consultant with several years of recent experience in the Zambian Copperbelt, examined the lithology and alteration associated with numerous copper showings in the field and in drill core provided by the GSN. TCN geologists completed a preliminary field and desktop study of the basin architecture. Internal growth faults and sedimentary facies were examined in order to delineate the most prospective parts of the basin. TCN contracted a geophysical consultant to produce a detailed analysis of the airborne magnetic and radiometric database. Prior to the expiration date of the ERLs TCN applied for six EPLs located within the ERL boundaries. The applications were granted in March of 2006. Additional EPLs were then added to bring the total to eleven.

From 2006 to 2008 TCN carried out extensive exploration including geological mapping at various scales, gradient array and pole-dipole induced polarization (“IP”) geophysical surveys, stream sediment and base of slope soil sediment geochemical surveys, and percussion, reverse circulation (“RC”) and diamond drilling. For corporate reasons following the economic downturn in late 2008, Teck solicited joint venture partners and INV Metals entered into the Agreement with Teck in late 2009.

Since becoming operator of the project in November 2009, INV Metals has completed various geological, geochemical and geophysical surveys followed by RC and diamond drilling.

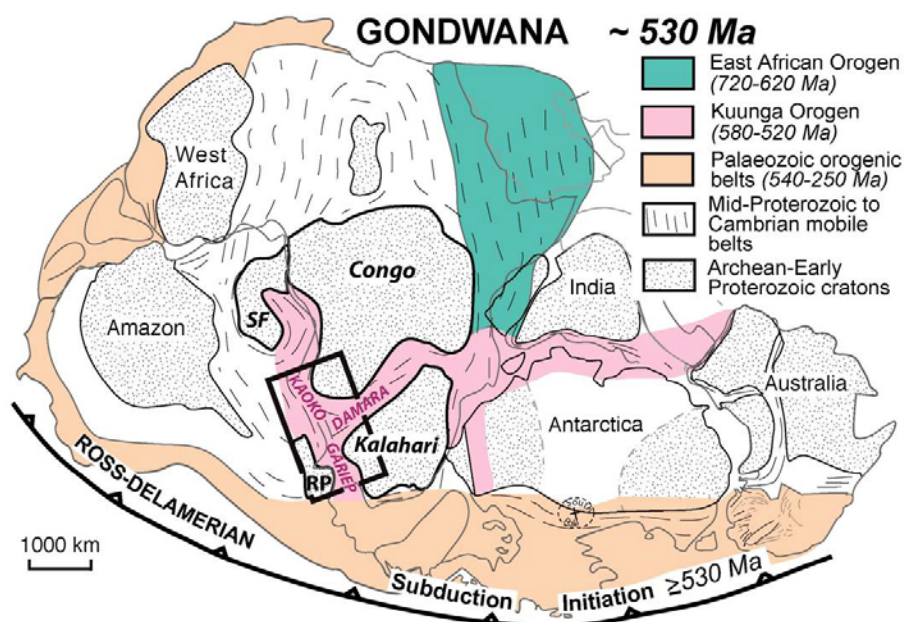
There are no historical mineral resources or mineral reserves on the property, and there has been no commercial production, though there are a number of small pits and trenches from which locals have collected copper oxide minerals for sale as specimens.

## 7. GEOLOGICAL SETTING and MINERALIZATION

### 7.1. REGIONAL GEOLOGY

Southern Africa is a mosaic of cratons separated by a network of Neoproterozoic to Cambrian Pan-African orogenic belts that record the amalgamation of Gondwana from 580 to 530 Ma. The assembly of Gondwana involves 580 to 550 Ma suturing of the Congo and Rio de la Plata cratons followed by amalgamation of the Kalahari-Antarctic cratons to 530 Ma (Gray et al. 2008). In Namibia the Pan-African orogeny is represented by the Damara Orogen. Figure 7-1 provides a map of the Gondwana supercontinent at the end of Neoproterozoic and beginning of Cambrian time showing the extent of the Kuunga Orogeny, the earlier East African Orogeny, and the continental margin Ross-Delamerian Orogeny. The black rectangle outlines the area of the Damaran Orogen in Namibia (from Gray et al. 2008). Note that RP = Rio de la Plata and SF = Sao Francisco.

**Figure 7-1: Gondwana Supercontinent**



The Damara Orogen consists of three arms, the Kaoko Belt where the Kaoko project is located, the Damara Belt and the Gariep Belt. They converge at an inferred triple junction near Swakopmund on the Namibian coast. The Kaoko Belt trends north-northwest paralleling the coast and extends into Angola. The Damara Belt trends east-northeast across north-central Namibia, into Botswana and extends into Zambia connecting with the Lufilian Arc and the Zambezi Belt and continuing through to the Mozambique Belt as the Kuunga Orogeny. The southwestern end of the Damara Belt goes offshore and reappears along coastal southern Namibia as the Gariep Belt.

The Kaoko Belt and Copperbelt of Zambia share a common structural alignment and geodynamic history within this zone (Woodhead, J. 2007). Rocks involved in the Damara Orogen include those of the Damara Supergroup. The Damara Supergroup contains metasedimentary rocks deposited, like the Katangan in Zambia, during the development of a late Proterozoic continental rift – passive margin following the breakup of the supercontinent Rodinia. The Damara rocks lie unconformably on early Proterozoic basement rocks of the Epupa and Huab Complexes. Deposition of the Damara Supergroup is poorly dated, spanning a period between about 770 Ma and 600 Ma.

In the Kaoko Belt the Swakop Group overlies the Nosib Group west of the Sesfontein thrust fault. East of the fault where Nosib age sediments were deposited in half-grabens on the basin margin the Group is overlain by more carbonate rich units of the Otavi Group. Regionally, two diamictite horizons and correlated turbiditic carbonates are recognized within the succession. These are interpreted as glaciogenic (largely glaciomarine) in origin but may also record renewed periods of extension along rifted carbonate platforms.

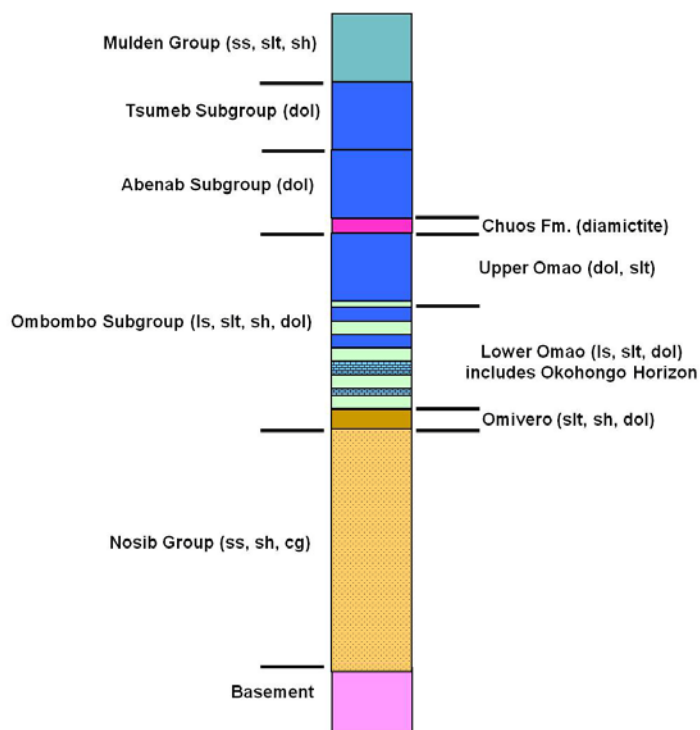
## **7.2. LOCAL and PROPERTY GEOLOGY**

The Kaoko Belt consists of four structural zones. From east to west they are the Eastern Kaoko Zone (EKZ), the Central Kaoko Zone (CKZ), the Western Kaoko Zone (WKZ) and the Southern Kaoko Zone (SKZ). The Kaoko Copper Project area covers parts of the Eastern Kaoko Zone and the Central Kaoko Zone.

The Eastern Kaoko Zone is bounded on the west by the Sesfontein Thrust and on the east by a major anticlinal ridge which marks the end of the Kaoko Belt and the beginning of the Northern Platform characterized by gently folded Otavi Group carbonates and overlying Mulden Group pelites. The Otavi Group is comprised of the Tsumeb, Abenab and Ombombo Subgroups. The Eastern Kaoko Zone comprises predominantly Nosib and Otavi Group metasediments and minor metamorphic basement rocks which are progressively less deformed as the platform margin in the east is approached. The Mulden Group, a pelitic molasse, overlies the Otavi Group carbonates and outcrops in the southwestern part of the Eastern Kaoko Zone. Lower greenschist metamorphic grade characterizes Damara age rocks of the EKZ. The Central Kaoko Zone is bounded on the east by the Sesfontein Thrust, on the west by the Purros Lineament, and is characterized by large, eastward verging folds of early-Proterozoic metamorphic basement and Damara metasediments. Both the Central and Western Kaoko Zones are characterized by deep basin and slope facies overlying an Archean to Mesoproterozoic basement mosaic that experienced intense deformation at greenschist to upper-amphibolite metamorphic grade (Knupp, 2005).

Figure 7-2 is a stratigraphic column for the project area. Note ss=sandstone, slt=siltstone, sh=shale, dol=dolostone, ls=limestone, and cg=conglomerate.

**Figure 7-2: Kaoko Belt Stratigraphic Column**



The two groups most important to mineralization on the property are the Nosib Group and the overlying Ombombo Group.

The Damara Supergroup commences with the Nosib Group, a package of (meta-) sandstones, conglomerates and siltstones that has been informally subdivided into lowermost conglomerate-sandstone, middle siltstone-dominant, and uppermost sandstone-conglomerate sequences. The total thickness ranges to more than 1,000 metres. The Nosib Group comprises a series of prominent exposures of feldspathic quartzite to arkose, conglomerate and shale, commonly expressed as elongate to rounded hills with a strong potassium channel radiometric signature. The Nosib Group unconformably overlies the basement to the north and south, and is commonly preserved as open synclines or monoclines.

In general, the Ombombo Subgroup of the EKZ consists of interbedded clastic and carbonate rocks, with (probably regional) variations in clastic grain size. It is comprised of a lower 'Omivero' shale and mixed, fine clastic unit overlain by a carbonate-dominated 'Upper and Lower Omao' succession. A siltstone within the Lower Omao that is often carbonaceous and pyritic and may host copper mineralization was designated the Horseshoe Member by TCN and has been renamed the Okohongo Horizon by INV Metals. These four units of the Ombombo Subgroup are part of the informal stratigraphy that emerged from TCN geological mapping programs. The lower units of the Ombombo appear to be semi-conformable with the underlying Nosib in the central EKZ and show a similar asymmetry, possibly thinning towards the northeast. The Omivero shale is restricted in outcrop to the Epunguwe and Okohongo areas and locally to the flanks of adjacent Nosib anticlines to the south. However, this lower part of the stratigraphy, including the Okohongo Horizon, is recessively weathered and frequently covered by scree-alluvium (or calcrete) and thus may have a wider occurrence than mapped.

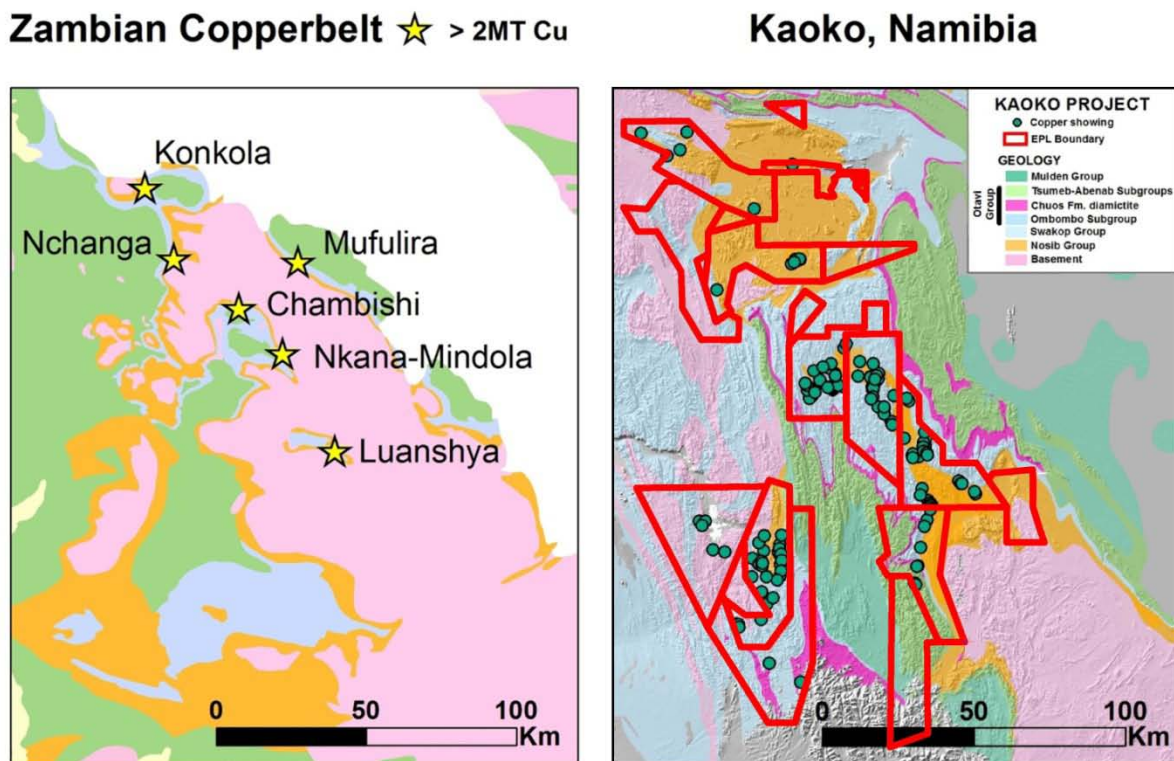


### 7.3. COMPARISONS TO THE AFRICAN COPPERBELT

The fundamental elements that together comprise the geological setting and mineral potential of the Kaoko Belt include its tectonic history, stratigraphy, stratigraphic position and style of known mineralization and alteration assemblages. All show important similarities to the Zambian Copperbelt and some suggest affinities with mineralization west of the Zambian Copperbelt *sensu stricto* (e.g. Kansanshi) and with mineralization in the DRC. See Figure 7-3 for a side by side comparison of the Zambian Copperbelt and the EKZ of the Kaoko Belt.

Note that the maps in Figure 7-3 are at the same scale, with the same colour coding for equivalent rock units. In Zambia about 90% of the mineralization and deposits (yellow stars) are located in a narrow rock sequence at the contact between an underlying red bed sequence (shown as orange) and overlying shales (shown by the blue and green colours). The majority of the ~200 copper prospects on the Kaoko property, shown as dark green coloured circles, occur close to the equivalent contact (between the orange and the blue).

**Figure 7-3: Comparison of Zambian Copperbelt to Kaoko Property**

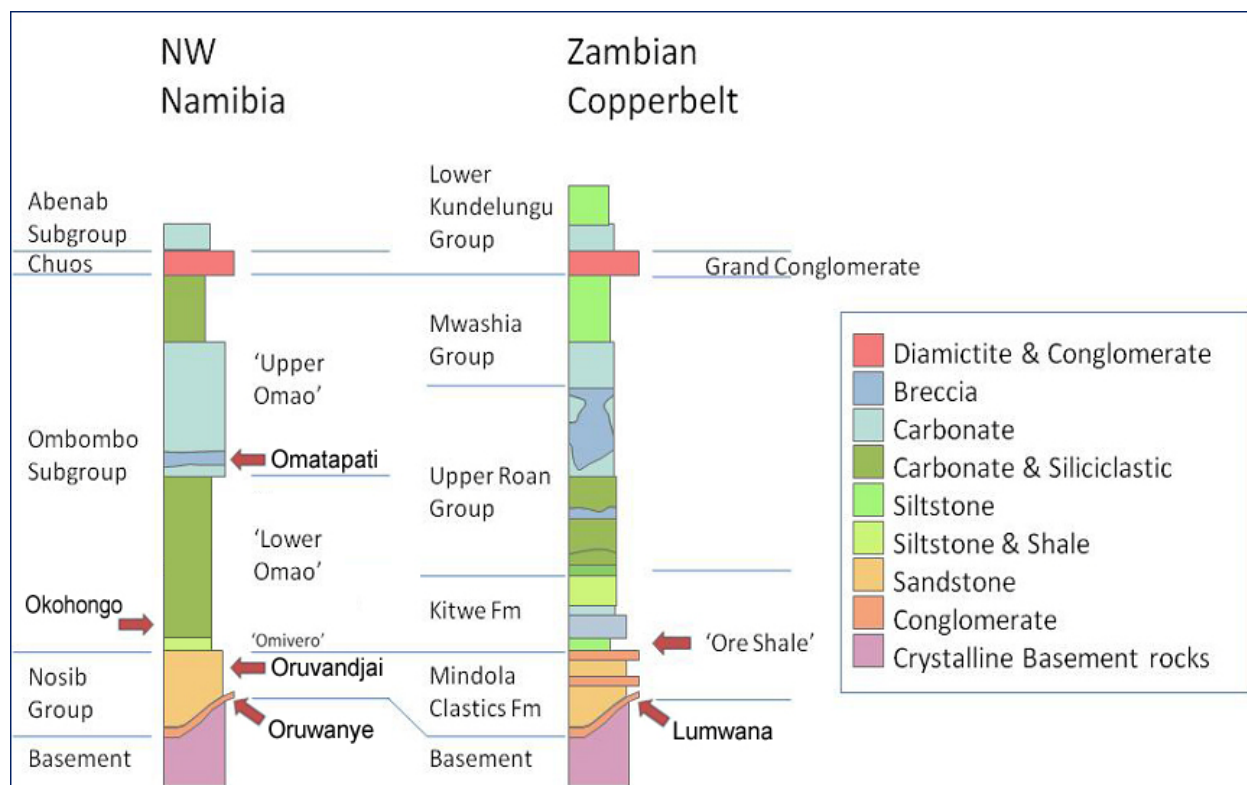


The overall stratigraphic package and thickness, comprising rift-stage red bed clastics, sag-phase platform carbonates and clastics and evaporites, and uppermost diamictite-carbonate sequence indicative of renewed extension, is fundamentally similar, and favourable for the formation of Zambian-type deposits. The Nosib sandstones represent a viable metal source, substantial stratigraphic thickness changes are evident within the Nosib and point to the existence of important rift-stage faults, there is evidence for at least localized evaporitic deposits favourable for brine generation, and the basin clearly underwent a major tectonic and

undoubtedly hydrologic-diagenetic event during Chuos time, which may have been an important mechanism for brine circulation (Broughton, 2005).

TCN geologists established that the “Ore Shale” horizon in Zambia is roughly equivalent, in terms of its position relative to the Nosib redbeds, to the siliciclastic units in the Lower Omapo, now referred to by INV Metals as the Okohongo Horizon. The conglomerate that marks the top of the Nosib in some areas is analogous in both a sedimentologic and tectono-stratigraphic sense to conglomerates that occur immediately underneath the Zambian Ore Shale, and that occur at the transition between the Lower and Upper Roan. Such conglomerates are significant because they mark important tectonic events in the basin history, specifically the initial stages of a major subsidence, which can provide accommodation space for the quiescent accumulation of organic-rich, reducing siltstones and shales. There is an interpreted total strike length of about 200 linear kilometres of the Okohongo Horizon on the property, which constitutes a highly favourable regional exploration target. The basal Ombombo sequence compares lithostratigraphically with the Upper Roan in Zambia, and regionally may have the potential to host Congo-style dolomite-hosted mineralization. The uppermost part of the Ombombo Group (below the Chuos diamictite) would be stratigraphically equivalent to the upper Mwashia sequence in Zambia where carbonaceous phyllites are a known ore host, but these rocks have not been seen (Broughton, 2005). Figure 7-4 illustrates the equivalence of Kaoko Belt stratigraphy with that of the Zambian Copperbelt, and the general stratigraphic setting of various prospects.

**Figure 7-4: Comparison of Zambian Copperbelt Stratigraphy with EKZ Stratigraphy**



As outlined above the features that the two belts have in common are numerous and significant. However, the Kaoko Belt is not an exact analogue of the African Copperbelt. The differences are arguably as important to recognize as the similarities. Understanding the differences may

point toward the use of a somewhat different set of exploration strategies. Four features of the African Copperbelt not shared with the Kaoko Belt are discussed below.

- (1) Ore shale mineralization in Zambia and Copperbelt mineralization in the DRC is primarily a copper-cobalt system. To date significant amounts of cobalt have not been recognized in Kaoko Belt mineralization. Copper mineralization in the Kaoko Belt is more typically associated with silver. It may be important to note that in Zambia the arenite hosted systems such as Mufulira tend to carry very little cobalt compared to the ore shale hosted systems.
- (2) In Zambia much of the overburden consists of saprolite with a reasonably well-developed soil cover. As a result overburden transport is minimal. Soil geochemistry works well as an exploration tool as it tends to directly reflect bedrock. In the drier climate of northwest Namibia overburden is much more likely to be transported either by water during seasonal flash floods or by wind. Transported overburden, extensive calcrete development and thin to non-existent soil combine to limit the utility of conventional soil geochemistry in the Kaoko Belt.
- (3) In the Zambia Copperbelt sediment hosted copper deposits are largely distributed around the margins of the Kafue Anticline. Dips are relatively steep. In the EKZ of the Kaoko Belt TCN mapping and drilling indicates significantly shallower dip angles, particularly in the Lower Roan equivalent rocks of the Nosib, Omivero and lower Lower Omaso. Fifteen to thirty degrees is common. The typical geometry of a stratabound sediment hosted deposit is that of a relatively thin but laterally extensive sheet. The generally low dip angles of the EKZ suggest that the area may be particularly favourable for the discovery of shallow, perhaps leachable, deposits conducive to open pit mining.
- (4) Unlike the situation in Zambia, mapping in the Kaoko Belt has not identified Neoproterozoic or early Paleozoic mafic intrusive bodies.

#### 7.4. EXPLORATION IMPLICATIONS

The sedimentary and tectonic framework of the Damaran succession within the EKZ has many of the essential ingredients for developing a sediment-hosted copper deposit. Significantly, it shares several common characteristics with the Zambian Copperbelt, including the geodynamic history of basin development and the broad details of its sedimentary fill. Within this setting, a close relationship should exist between the early rift-phase siliciclastic architecture of the basin, a vertical transition from oxidized, basal red beds to reduced shales, and ultimately the occurrence of copper mineralization. These fundamental characteristics determine the location of rift-related stratigraphic and structural traps for focusing basinal fluids and a chemical environment for the precipitation of metals in the sediment-hosted copper ore system.

The basic structural element of a rift is generally considered to be a half-graben resulting from characteristic extensional asymmetries. In cross-section hangingwall onlap and increasing bed dips towards the bounding fault result in a characteristic wedge-shaped sediment accumulation.

In addition, the lateral decay of fault throws towards fault tip zones cause the sediment fill to thin laterally, resulting in a scoop-shaped basin fill in plan-view. In typical rift settings, individual fault strands are offset in a step-over or en-echelon geometry. These offset or accommodation zones commonly stand at higher elevations than the intervening rift basins, and may localize larger

than average drainages, resulting in large sediment input zones, ultimately forming subsurface highs that may be recognizable with magnetic, gravity, deep resistivity or seismic data.

With this analogue in mind, the following settings are considered favourable for the localization of sediment-hosted copper deposits in the EKZ:

- Proximity to the intersection, offset or termination of fundamental northwest-southeast trending basement faults that could localize Nosib pinch-outs or thinning of stratigraphy against basement structures, and anticlines during inversion. The latter may be evident as anomalous basement magnetic features overlain by 'magnetically transparent' Ombombo carbonates and Nosib siliciclastics. Favourable structures are those that coincide with the margins of exposed Nosib antiforms.
- Proximity to fundamental northeast-southwest structures adjacent to basement culminations, or antiforms, particularly with indications of angular unconformities similar to the above. Potentially favourable structures are those along the margins of the Kamanjab Inlier, Opuwo block and Nosib antiformal inliers.
- Proximity to the stratigraphic boundary between oxidized Nosib siliciclastics and the overlying reduced grey-shales and/or dolomitic siltstones of the Ombombo Subgroup.

The distribution of known copper occurrences in the EKZ suggests their broad distribution follows the above structural and stratigraphic settings. This known mineralization can be used to confirm and extrapolate favourable structures under cover.

Additional criteria that may be necessary to form sediment-hosted copper deposits include the presence, or former presence, of organic-rich rocks and sulfate- and halite-bearing evaporates within the succession. Carbonaceous shales serve as a strong in-situ reductant or a source of early mobile reductant (e.g. natural gas, sour gas and oil), while evaporites are an important source of sulphur and saline brines for metal transport (Woodhead, 2007).

## 7.5. MINERALIZATION

Teck and INV Metal's exploration activities have led to the identification of approximately 200 copper ± silver showings (see Figures 9-1 and 9-2 for locations). There are several styles of mineralization on the property:

- 1) In the first reducing shale-siltstone horizon within the Lower Omapo Formation above the Nosib sandstone. This horizon hosts the vast majority of the showings on the property (see Figures 7-3 and 9-2), and has been informally referred to as the Okohongo Horizon, as the Okohongo deposit occurs in this setting
- 2) In the second reducing shale-siltstone horizon located at the contact between the Lower and Upper Omapo Formations above the Okohongo Horizon. The best examples of mineralization at this horizon are Otjohorowara, Otjite and Omatapati
- 3) In the Nosib sandstones as disseminated chalcopyrite and chalcocite, with the best examples being the Oruvandjai and Epunguwe targets
- 4) As disseminated and stringer mineralization within shear zones along the unconformable contact between basement granites and the basal Nosib Formation conglomerates. The Oruwanye and Otjokavare targets are the only showings of this type
- 5) Identified throughout the stratigraphic column, the property is spotted by numerous occurrences of cross-cutting, quartz-carbonate-barite-chlorite-hematite-copper oxide-bearing veins.



## 7.5.1. OKOHONGO HORIZON - HOSTED MINERALIZATION

### 7.5.1.1. OKOHONGO DEPOSIT

Copper mineralization at Okohongo is concentrated in a dark-grey to grey-green phyllitic siltstone-shale interbedded with dolomite of the Lower Omao Formation that is conformably sandwiched between the underlying red beds of the Nosib Group and overlying carbonates of the Lower and Upper Omao Formations (the “Okohongo Horizon”). It would appear that the Okohongo Horizon is the first (lowest) redox boundary within the stratigraphic column, and thus mineralization appears to have formed similar to that in the Central African Copperbelt, with fluids precipitating copper out of solution when they interact with the first reducing horizon. Figure 7-5 below is an interpretive cartoon model of the Okohongo mineralization.

The stratigraphic package as a whole is involved in a series of relatively open north-south trending folds which extend eastward for approximately four km before Nosib sandstone again crops out in the core of an anticline. However, within the package the Omivero and Lower Omao show evidence of strong, disharmonic folding and ductile shearing in outcrop and in core. Northwest trending shear zones cut across the generally north-south strike and often host copper mineralized quartz veins containing diopside, chrysocolla, shattukite and malachite locally associated with the lead molybdate, wulfenite. While spectacular, this quartz-vein hosted mineralization probably has limited tonnage potential.

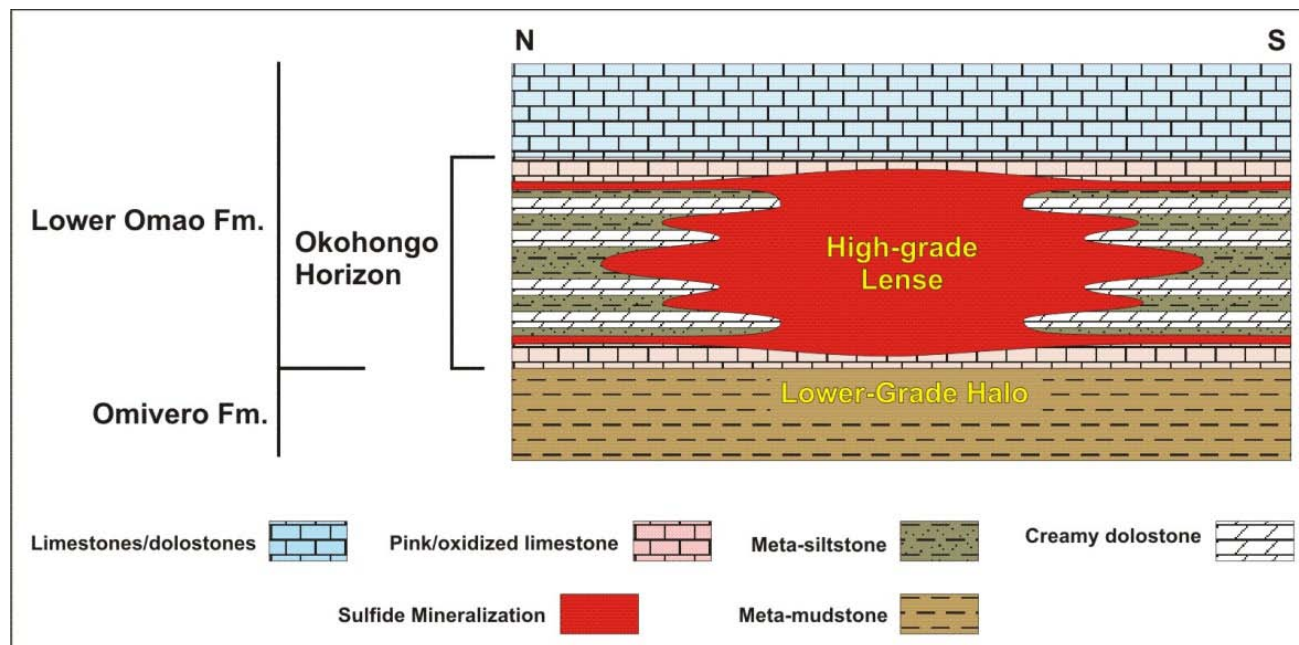
INV Metals’ along with Teck’s previous drilling has intersected a north-south trending, near surface zone of copper-silver mineralization that extends, including the lower grade narrower distal portions, over 1,000 metres in strike length and up to 700 metres down dip, with a shallow easterly dip of approximately 20 degrees. The thickness of the mineralized zone varies. Sections of the copper zone reach thicknesses of 20-30 metres, and locally up to 45 metres; more than double that of most stratiform copper deposits in the Central African Copperbelt of Zambia and the DRC as well as the Kalahari Copperbelt of Botswana and central Namibia. Reported intersection lengths are interpreted to be approximate true widths. The gentle dip is in strong contrast to much of the steeply dipping copper mineralization in the established Central African and Kalahari Copperbelts and is optimal for open pit mining.

The mineralization at Okohongo is variably oxidized to a vertical depth of at least 200 metres. Chrysocolla and malachite are the principal oxide copper minerals, along with minor amounts of azurite, shattukite, plancheite, and cuprite. Variable amounts of remnant chalcocite occur as unoxidized kernels within dominantly oxidized mineralization, increasing within increasing depth. Several holes were analyzed for acid soluble (oxide) copper to determine the percentage of total copper mineralization that would be amenable to potential recovery by an acid leach extraction process. From this limited work it appears that approximately 70 to 75% of the total copper is potentially soluble (Table 7-1).

**Table 7-1: Total Copper vs. Soluble Copper**

Hole No.	From (m)	To (m)	Width (m)	Total Copper %	Soluble Copper %	% of Total Copper that is Soluble
INVR-001	47	74	27	2.8	2.1	73
including	47	60	13	3.6	2.6	74

**Figure 7-5: Interpretation of Okohongo Mineralization**



At Okohongo TCN drilled 1,594 metres in nine diamond drill holes, one RC hole and one percussion hole drilled for water (see Table 7-2). INV Metals has drilled 84 RC holes and 5 diamond drill holes totalling 12,361.5 metres (see Table 7-3) in and around the Okohongo deposit, targeting:

- Strike extensions to the south and north
- The eastern limb of the syncline
- The down dip extension
- A series of TerraNotes Ltd. (“TerraNotes”) “anomalies” located to the south of the deposit
- The “Mystery Trench” as well as the area between it and the deposit

In 2011 CCIC was contracted to do a maiden resource estimation of the Okohongo deposit. The initial inferred resource estimate at the Okohongo deposit totals 10.2 million tonnes grading 1.12% copper and 17.75 g/t silver, at a 0.3% copper cut-off grade, and contains 114,046 tonnes of copper and 5.8 million ounces of silver in situ (see Section 14). The inferred resource is compliant with NI 43-101. Although the resources is based on only three Teck diamond drill holes and 21 INV Metals RC holes, subsequent drilling has indicated that the resource is not likely to get much larger. A few weakly anomalous intersections were encountered within the TerraNotes (see Section 9.4) anomalies to the south, in particular in INVR-53, but this mineralization could not be traced due to structural complexities. The so called Mystery Trench (see Figure 7-6) exposes Okohongo Horizon mineralization that looks similar to the deposit, but is located off the trend of the deposit, and appears to be an isolated zone that does not connect to the deposit. Several significant intersections in and around the Mystery Trench were encountered in holes 80, 83 and 84 which could add some tonnage to the global figure.

Figure 7-7 shows the location of the drillholes in the immediate vicinity of the deposit, while Figure 7-8 shows the location of the regional holes targeting extensions. The cluster of 2010 drill holes shown in pink on Figure 7-8 are within the deposit, as shown in detail in Figure 7-7.

**Figure 7-6: Mystery Trench**



In 2011 four diamond drill holes were completed to test the down-dip extension of the resource. Toward the south end of the resource the stratigraphy is atypical for the area. INVD-017 appears to have not intersected the Okohongo Horizon, where the underlying Omivero Formation comprises a mixed package of interbedded limestone and shale before passing into Nosib quartzites. In this hole chrysocolla and chalcocite were observed in dolomite breccia between 214.25 and 217.75 metres. The eight metre intersection from 208-216 metres graded 0.7% copper and 45 g/t silver, including three metres at 1.3% copper and 96 g/t silver. This breccia sits four metres above the Nosib contact at 221.50 metres. Located roughly 200 metres to the south, INVD-018 is very similar but seems to have at least some Omivero Formation schist beneath the interbedded limestone and schist; the best intersection is only two metres (from 190-192 metres) at 0.4% copper and 15 g/t silver.

Located roughly 100 metres north of drillhole 17, INVD-19 intersected variably mineralized (malachite, azurite, chrysocolla, and plancheite-shattuckite) cream coloured dolomite within a zone of well developed quartz veining from 114 - 131.30 metres, with six metres grading 0.53% copper from 120 metres. A second zone of copper oxide (chrysocolla, malachite) mineralization occurs within limestone/dolomite breccias and dark shale between 220.70- 226.00 metres; nine metres from 218 metres graded 0.54% copper and 15 g/t silver.

INVD-20, located 200 metres north of drill hole 17, intersected limited mineralization associated with a 0.3 cm siderite vein at 113.20 metres (chalcocite), and as isolated patches of hydrated copper oxide at 229.50 metres and between 237.75-238 metres, approximately 20 metres above the Nosib Group contact in a sequence of interbedded limestone and shale of the lower Omivero Formation. Hematite and K-feldspar alteration, with associated specularite, is well developed within sections of this unit, particularly towards the Nosib contact.

This drilling appears to cut off the economic limits of the deposit at depth.



Figure 7-7: Location of Drilling at the Okohongo Deposit

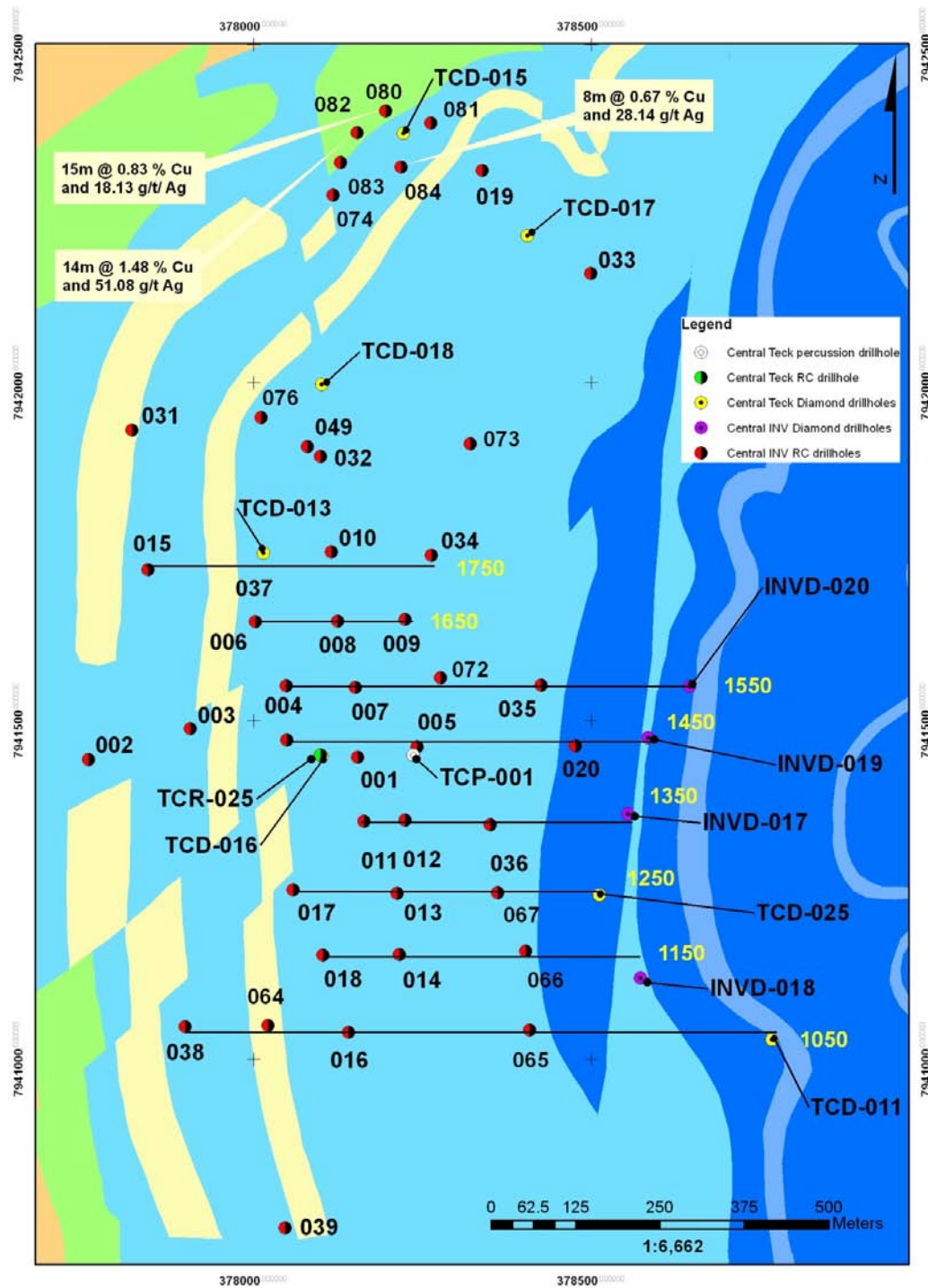
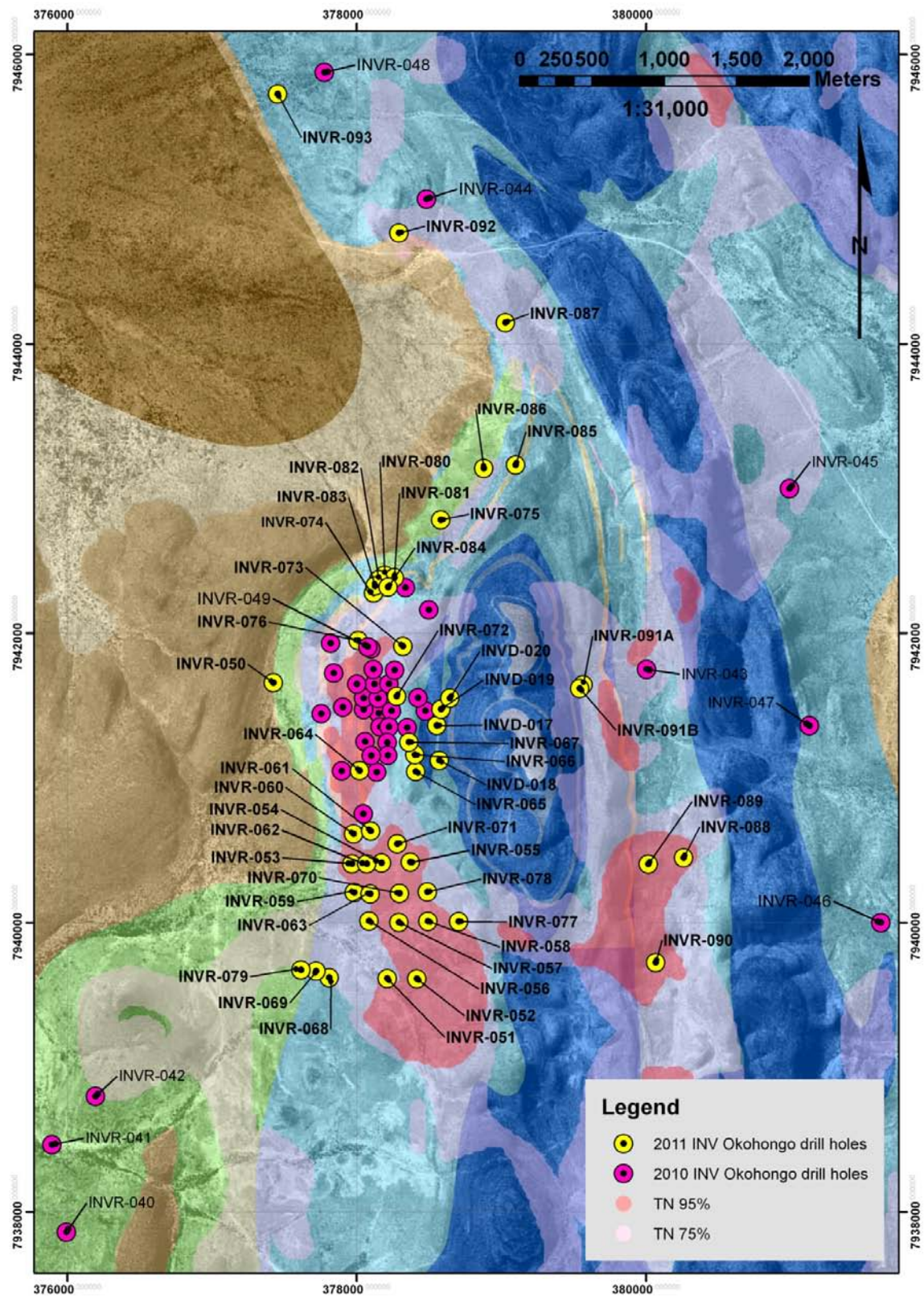


Figure 7-8: Regional Drilling Around the Okohongo Deposit



**Table 7-2: Teck Drill Results at Okohongo**

<b>Drill Hole</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Width (m)</b>	<b>Cu %</b>	<b>Ag g/t</b>	<b>FOH (m)</b>
TCD-013	104.0	126.6	22.6	1.0		153.78
including	104.0	110	6.0		20.9	
TCD-015	28.0	33	5.0	1.2		133
including	31.8	35.3	3.5		20.9	
TCD-016	35.9	61.2	25.3	1.93	32.3	158.44
including	35.9	49.3	13.4	2.59	40.8	
TCP-001	102.0	108.0	6.0	1.1		153
including	100.0	110.0	10.0		13.8	

**Table 7-3: INV Metals Drill Results at Okohongo and Surrounding Region**

	<b>Hole No.</b>	<b>FOH (m)</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Width (m)</b>	<b>Copper %</b>	<b>Silver g/t</b>
	INVR-001	280	47	74	27	2.8	49.1
including			47	60	13	3.6	66.4
	INVR-002	94	Insignificant				
	INVR-003	190	Insignificant				
	INVR-004	112	24	48	24	1.7	31.6
	INVR-005	160	75	86	11	1.5	6.5
			98	106	8	0.9	10.4
	INVR-006	88	20	65	45	2.0	27.1
including			26	31	5	3.0	19.2
including			57	62	5	4.5	58.4
	INVR-007	112	83	89	6	1.7	23.7
	INVR-008	130	26	30	4	0.5	12.1
			90	95	5	0.6	11.3
	INVR-009	148	109	114	5	0.4	5.0
	INVR-010	148	37	38	1	1.0	11.5
	INVR-011	100	40	46	6	2.3	38.9
			57	76	19	1.1	20.4
	INVR-012	118	69	86	17	1.0	13.9
including			75	83	8	1.4	25.0
			95	98	3	2.0	26.0
	INVR-013	118	42	46	4	2.5	25.4
			78	90	12	2.4	43.7
	INVR-014	118	74	89	15	1.1	15.7
including			85	88	3	3.9	53.5

	Hole No.		From (m)	To (m)	Width (m)	Copper %	Silver g/t
	INVR-015	88	Insignificant				
	INVR-016	133	Insignificant				
	INVR-017	70	52	56	4	1.3	9.2
	INVR-018	88	45	47	2	0.5	2.5
	INVR-019	88	Insignificant				
	INVR-020	220	191	196	5	1.1	22.1
	INVR-031	153	Insignificant				
	INVR-032	181	44	45	1	0.9	4.1
	INVR-033	189	Insignificant				
	INVR-034	195	Insignificant				
	INVR-035	207	153	156	3	0.7	21.2
			176	182	6	0.8	14.9
	INVR-036	200	128	130	2	0.7	7.8
			155	165	10	1.1	18.6
including			160	164	4	1.6	27.1
	INVR-037	147	38	69	31	1.8	40.6
including			38	53	15	2.8	67.7
and			38	51	13	3.1	77.5
			64	69	5	2.5	42.7
			82	83	1	2.1	54.3
	INVR-038	99	30	33	3	0.5	14.8
	INVR-039	93	Insignificant				
	INVR-040	129	Insignificant				
	INVR-041	99	Insignificant				
	INVR-042	117	Insignificant				
	INVR-043	210	Insignificant				
	INVR-044	177	Insignificant				
	INVR-045	189	Insignificant				
	INVR-046	138	Insignificant				
	INVR-047	189	Insignificant				
	INVR-048	150	Insignificant				
	INVR-049	180	Insignificant				
	INVR-050	174	Insignificant				
	INVR-051	78	Insignificant				
	INVR-052	138	Insignificant				
	INVR-053	72	29.0	32.0	3.0	0.60	1.30
including			30.0	31.0	1.0	1.29	2.40
	INVR-054	84	Insignificant				

	Hole No.		From (m)	To (m)	Width (m)	Copper %	Silver g/t
	INVR-055	126	Insignificant				
	INVR-056	54	Insignificant				
	INVR-057	79	Insignificant				
	INVR-058	138	117.0	118.0	1.0	0.20	0.15
	INVR-059	62	Insignificant				
	INVR-060	72	11.0	12.0	1.0	0.22	2.10
	INVR-061	83	Insignificant				
	INVR-062	42	Insignificant				
	INVR-063	36	Insignificant				
	INVR-064	85	37.0	38.0	1.0	0.28	2.40
	INVR-065	199	Insignificant				
	INVR-066	210	146.0	150.0	4.0	0.46	4.90
	INVR-066		155.0	158.0	3.0	0.43	11.77
			178.0	180.0	2.0	1.11	27.60
	INVR-067	198	133.0	136.0	3.0	1.57	25.20
including			134.0	135.0	1.0	4.19	65.40
			138.0	139.0	1.0	0.60	6.60
			159.0	167.0	8.0	0.51	9.94
including			162.0	163.0	1.0	1.54	26.70
	INVR-068	91	Insignificant				
	INVR-069	162	Insignificant				
	INVR-070	66	Insignificant				
	INVR-071	90	Insignificant				
	INVR-072	168	101.0	104.0	3.0	0.38	7.23
including			102.0	103.0	1.0	0.84	17.80
	INVR-073	218	Insignificant				
	INVR-074	132	Insignificant				
	INVR-075	42	Insignificant				
	INVR-076	180	Insignificant				
	INVR-077	246	Insignificant				
	INVR-078	120	Insignificant				
	INVR-079	144	Insignificant				
	INVR-080	56	2.0	25.0	23.0	0.61	12.69
including			7.0	17.0	10.0	1.04	23.20
and			7.0	10.0	3.0	1.48	27.67
	INVR-081	126	Insignificant				
	INVR-082	78	14.0	41.0	27.0	0.85	28.55



	Hole No.		From (m)	To (m)	Width (m)	Copper %	Silver g/t
including			23.0	37.0	14.0	1.48	51.08
and			24.0	35.0	11.0	1.71	62.57
and			24.0	28.0	4.0	2.67	94.73
	INVR-083	72	Insignificant				
	INVR-084	95	53.0	65.0	12.0	0.51	20.12
including			53.0	57.0	4.0	0.95	49.43
	INVR-085	216	Insignificant				
	INVR-086	133	Insignificant				
	INVR-087	228	Insignificant				
	INVR-088	102	Insignificant				
	INVR-089	178	Insignificant				
	INVR-090	212	Insignificant				
	INVR-091A	42	Insignificant				
	INVR-091B	78	Insignificant				
	INVR-092	240	Insignificant				
	INVR-093	222	Insignificant				
	INVD-07	78	Not sampled				
	INVD-017	232.8	208.00	216.00	8.00	0.71	45.4
including			213.00	216.00	3.00	1.33	96.0
	INVD-018	236.7	190.00	192.00	2.00	0.42	14.8
	INVD-019	241.9	120.00	126.00	6.00	0.53	0.4
including			124.00	125.00	1.00	1.43	0.3
			218.00	227.00	9.00	0.54	15.3
including			220.00	226.00	6.00	0.70	20.2
	INVD-020	260.1	237.00	238.00	1.00	1.38	1.6
<b>TOTALS</b>	<b>89 holes</b>	<b>12,361.5 m</b>					

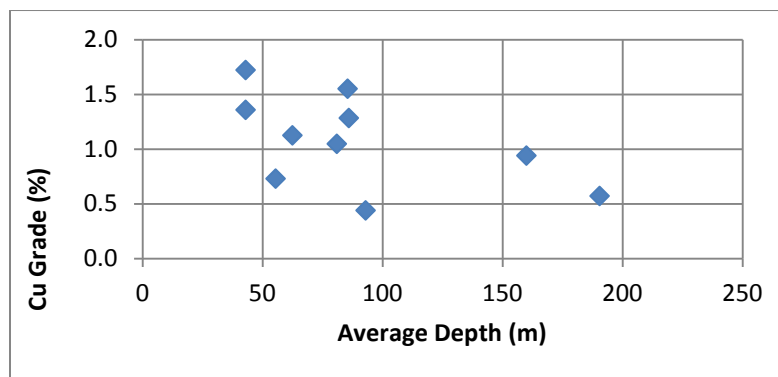
Some basic metallurgical test work is currently being conducted in order to advance the Okohongo deposit. Murray Hill, a consulting metallurgist based in Perth Australia, was contracted to oversee and guide this work. As a first step, the mineralogy of the deposit is being determined by QEMSCAN (QEMSCAN is an abbreviation for Quantitative Evaluation of Minerals by Scanning Electron Microscopy) at CSIRO in Perth on composited RC intersections of the deposit. The results of the mineralogical study will determine the actual metallurgical tests (e.g. gangue acid consumption, amenability to leaching) to be conducted.

Ten RC mineralized intersections have been chosen for this test work, which cover down dip and lateral variations within the deposit. The list of samples selected is given in Table 7-4. A plot of copper grade against depth shows a negative correlation with a general decrease in grade with depth (Figure 7-9). A plot of silver grade against copper grade (Figure 7-10) shows a strong correlation between copper and silver grades. The location information is shown in Figure 7-11.

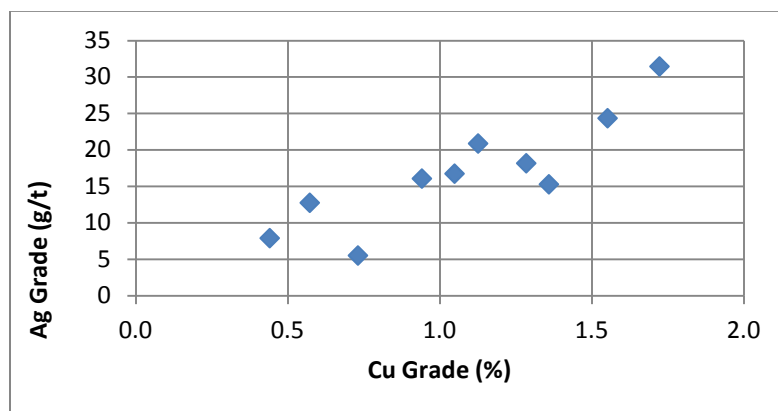
**Table 7-4: Okohongo Deposit Metallurgical Test Samples**

Hole	Depth (m)		New Compositated Sample Number	Av. Cu%
	From (m)	To (m)		
INVR-007	82	90	INVR-007-82-90	1.28
INVR-008	89	97	INVR-008-89-97	0.44
INVR-011	39	47	INVR-011-39-47	1.72
INVR-011	56	69	INVR-011-56-69	1.13
INVR-012	74	88	INVR-012-74-88	1.05
INVR-013	39	47	INVR-013-39-47	1.36
INVR-014	81	90	INVR-014-81-90	1.55
INVR-017	50	61	INVR-017-50-61	0.73
INVR-020	187	194	INVR-020-187-194	0.57
INVR-036	154	166	INVR-036-154-166	0.94

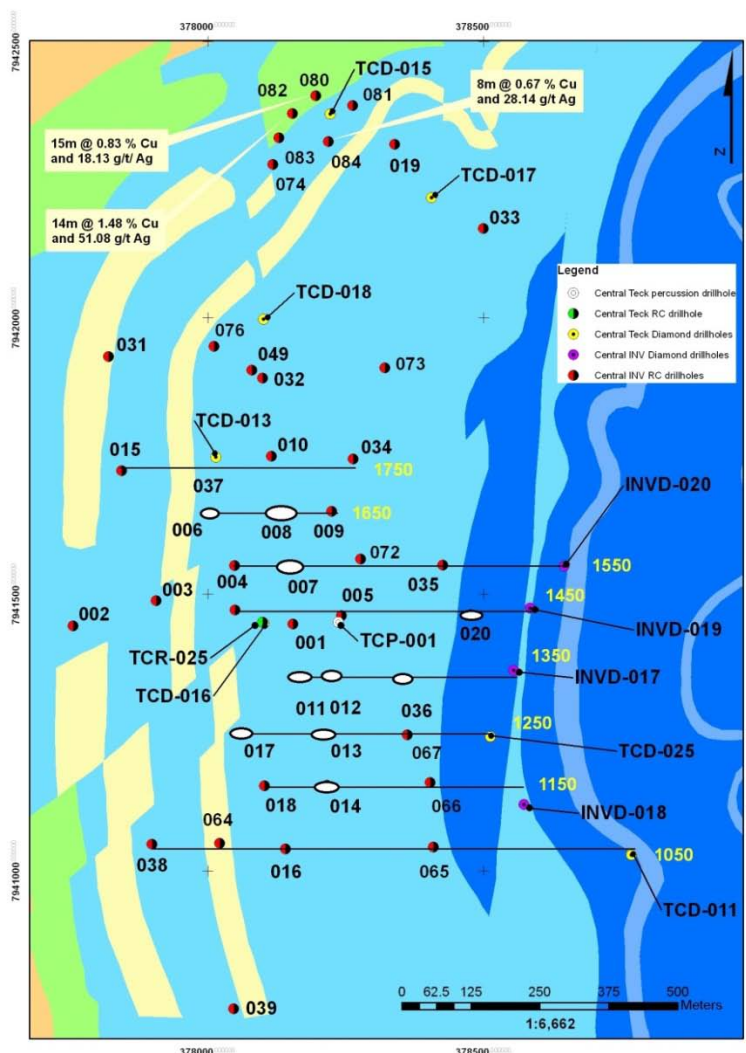
**Figure 7-9: Copper vs. Depth for Metallurgical Test Samples**



**Figure 7-10: Copper vs. Silver for Metallurgical Test Samples**



**Figure 7-11: Location of Metallurgical Test Samples (White Ovals)**



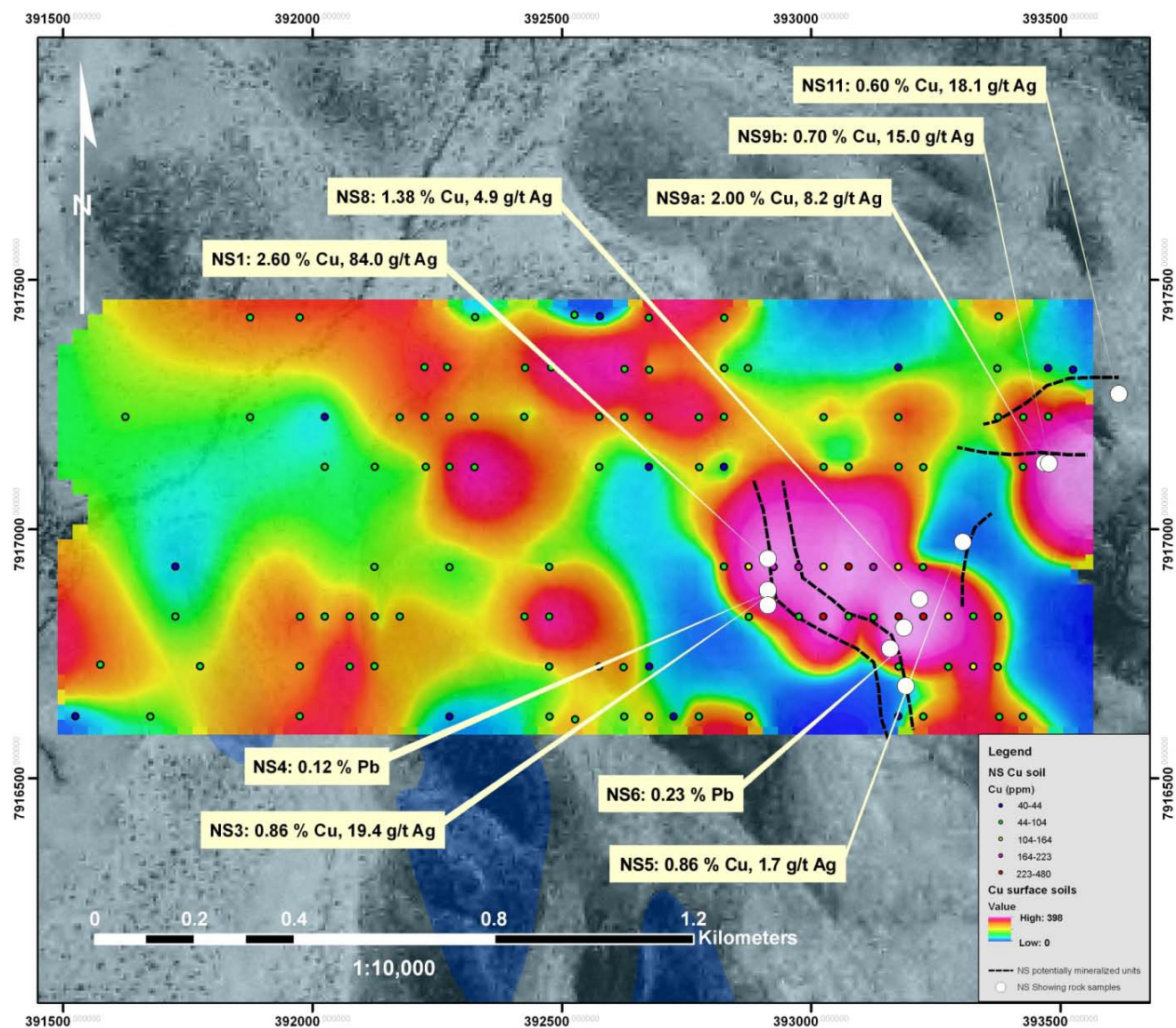
#### 7.5.1.2. NS

The NS showing is located approximately 28 kilometres southeast of the Okohongo deposit. Copper mineralization consists of fine to coarse disseminated chalcocite and fracture fill malachite within interbedded chloritic schists and dolomites of the Okohongo Horizon. The mineralized zone has been traced discontinuously in outcrop over a potential strike length of 1.2 kilometres, with multiple mineralized horizons developed within a package up to 10 metres in width. Complex interference folding related to dome and basin deformation and extensive calcrete cover make an assessment of the true dimensions of the zone problematic at this time. Twelve rock grab samples were collected which returned copper values ranging from weakly anomalous to 2.6% and silver values from 1.7 to 84 grams per tonne (see Table 7-5 and Figure 7-12).

The NS soil geochemical anomaly that led to the discovery consisted of consecutive anomalous soil samples along 250 metres of one line, with copper values ranging from 86 to 226 ppm.

Follow up prospecting of this anomaly led to the discovery of the NS showing. To better assess its potential, an infill Niton XRF soil sampling program was initiated. Infill soil samples were collected at 50 metre intervals on lines spaced 100 metres, to cover 500 metres north and 500 metres south of the discovery line. This sampling defined a strong northwest trending soil geochemical anomaly developed over 650 metres of strike in the southeastern portion of the grid with copper values ranging from 87 to 293 ppm. The anomaly is discontinuously developed for a further 500 metres under partial soil and calcrete cover to the northwest, suggesting a potential for 1.2 kilometres of strike length within the main trend. Soil values up to 196 ppm copper at the extreme east end of the infill grid, in conjunction with rock chip assays up to 2% copper and 8.2 grams per tonne silver in the same area, indicates a second zone of mineralization may be present, potentially representing mineralization on the second reducing horizon at the Lower – Upper Omapo Formation contact. This will need testing by extending the soil grid to both the east and south.

**Figure 7-12: Rock Sampling Plotted on Copper in Soil Geochemistry at NS**



**Table 7-5: NS showing rock sample assays and locations**

Sample	Easting	Northing	Cu (ppm)	Cu %	Ag (g/t)
NS1	392913	7916940	> 10,000	2.60	84.0
NS2	392913	7916874	4,040	0.40	11.3
NS3	392913	7916877	8,610	0.86	19.4
NS4	392913	7916847	783		2.6
NS5	393304	7916974	8,600	0.86	1.7
NS6	393158	7916760	337		2.0
NS7	393186	7916802	2,830	0.28	9.4
NS8	393217	7916859	> 10,000	1.38	4.9
NS9A	393468	7917132	> 10,000	2.00	8.2
NS9B	393477	7917131	6,960	0.70	15.0
NS10	393190	7916685	1,060	0.11	2.5
NS11	393617	7917271	6,020	0.60	18.1

#### **7.5.1.3. OKOZONDUNO**

Okozonduno is located four kilometres northwest of the northwestern end of the Oruvandjai target area. Mineralization at Okozonduno appears to be hosted by the Okohongo Horizon and consists of malachite-chrysocolla-chalcocite  $\pm$  covellite along the eastern side of a west-dipping monocline. This is confirmed by graded bedding textures, where a Nosib Group quartzite pinch-out appears to represent the termination of a half-graben along a scissor-fault. The host schist contains copper oxides over a minimum width of five to ten metres and is largely covered with calcrete. The showing is associated with a large fifty metre by seventy metre system of cross cutting quartz veins developed in the hinge of a fold. Quartz veins carry malachite, chrysocolla, plancheite and diopside.

A rudimentary soil geochemical survey, consisting of 11 sample localities, led to the discovery of previously unknown sub-outcropping mineralized siltstone to the east of the known mineralized horizon. If estimates are correct, this could make the mineralized horizon roughly 15 metres thick. Immediately south of the outcropping mineralization, massive chalcocite along the intersection between two major quartz veins makes for an impressive showing that has been exploited by the local people.

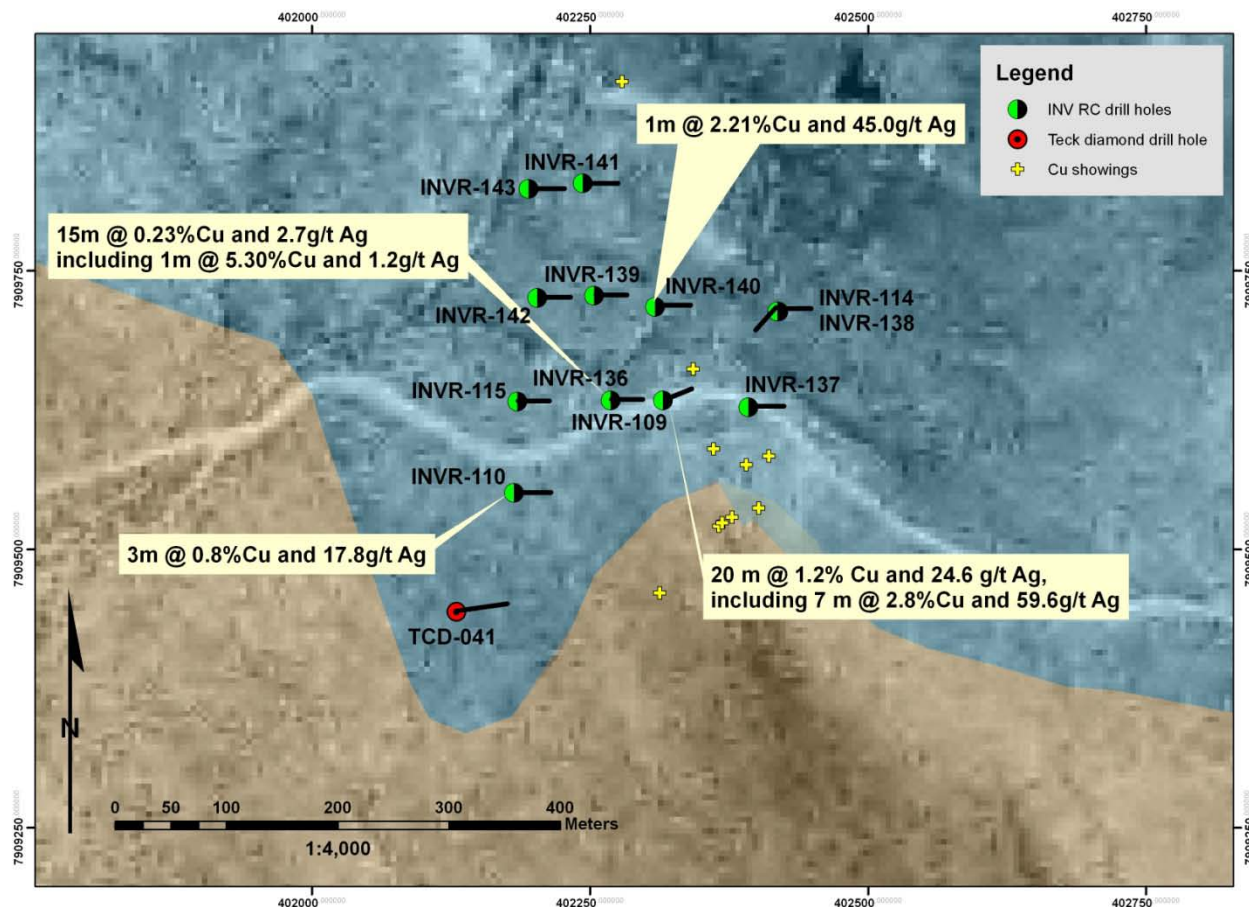
In 2008 TCN covered this showing with a gradient array IP survey that identified a discrete north-northwest trending chargeability anomaly measuring approximately 600 metres by 200 metres. TCN followed the gradient array survey with a pole-dipole IP line across chargeability anomaly. TCN drill hole TCD-041 tested the anomaly and explained it by intersecting interlayered black pyritic shale and dolostone of the Okohongo Horizon. The chargeability anomaly appears to be unrelated to the surface mineralization. Neither Omivero shale and limestone nor Nosib Group sandstone and siltstone were mineralized in TCD-041. Outcropping mineralization was not drill-tested down-dip or along strike by TCN.



During the first phase of INV Metals' drilling, four RC holes were completed (see Figure 7-13). INVR-109 intersected 20 metres at 1.15% copper and 24.4 g/t silver, including seven metres at 2.82% copper and 60 g/t silver, which in turn included three metres at 5.88% copper and 102 g/t silver (Table 7-6). Mineralization is hosted by the Okohongo Horizon, but associated with the quartz breccia targeted from surface. The high grade mineralization is in a quartz-rich intersection from 38-42 metres while the remainder is in siltstones and dolostones.

Follow up drilling in late 2011 was designed to test possible north-northwest structurally controlled mineralization to the northwest of INVR-109, as well as possible shale-hosted mineralization to the north of the same hole and potential extensions to a newly identified mineralized shale in the footwall to the INVR-109 mineralization (Figure 7-13). Hole INVR-136, which was drilled to undercut hole INVR-109, intersected 15 metres at 0.23% copper and 2.7 g/t silver over 15 metres, including 1 metre at 5.3% copper. No further work is planned at the Okozonduno target at this time.

**Figure 7-13: Drillholes and Geology at Okozonduno**





**Table 7-6: INV Metals Drill Results at Okozonduno**

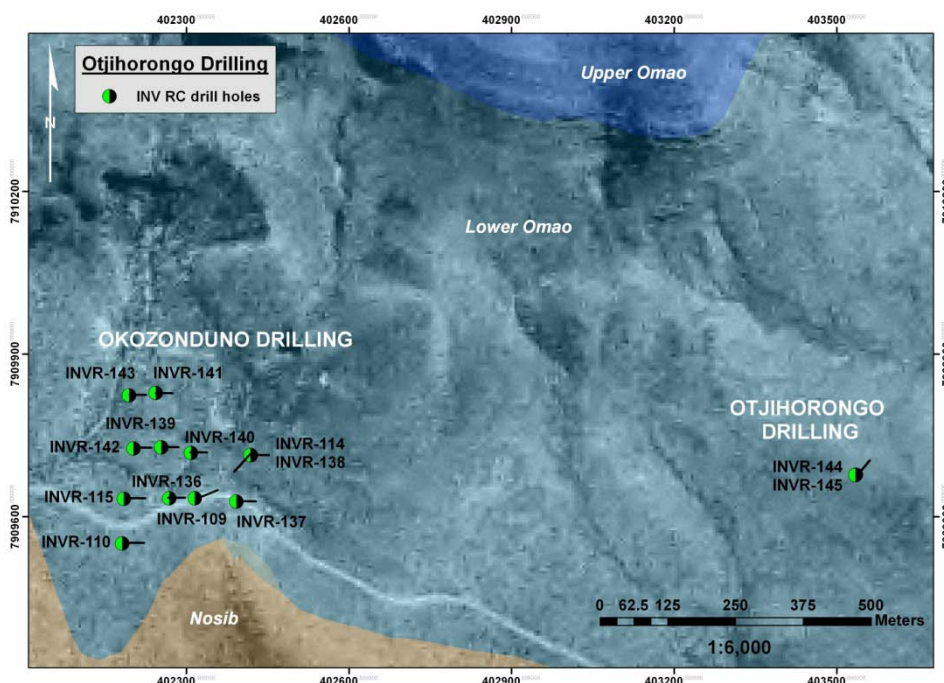
Target	Hole	FOH (m)		From (m)	To (m)	Width (m)	Cu %	Ag g/t
Okozonduno	INVR-109	102		25.0	45.0	20.0	1.15	24.41
			including	38.0	45.0	7.0	2.82	59.56
			and	38.0	42.0	4.0	4.68	82.23
			and	38.0	41.0	3.0	5.88	102.60
Okozonduno	INVR-110	114		90.0	93.0	3.0	0.80	17.83
			including	91.0	92.0	1.0	1.14	25.70
Okozonduno	INVR-114	137		Insignificant				
Okozonduno	INVR-115	126		93.0	96.0	3.0	0.23	8.27
Okozonduno	INVR-136	120		44.0	59.0	15.0	0.23	2.70
			including	57.0	58.0	1.0	5.30	1.20
Okozonduno	INVR-137	111		Not sampled				
Okozonduno	INVR-138	150		Not sampled				
Okozonduno	INVR-139	162		No significant values				
Okozonduno	INVR-140	150		38.0	39.0	1.0	2.21	45.00
Okozonduno	INVR-141	199		152.0	155.0	3.0	0.24	3.80
Okozonduno	INVR-142	147		No significant values				
Okozonduno	INVR-143	169		Not sampled				
<b>TOTALS</b>	<b>12 holes</b>	<b>1,687 m</b>						

#### 7.5.1.4. OTJIHORONGO

The Otjihorongo target area is located ~ one kilometre east of the Okozonduno area. The target, as at Okozonduno, is copper mineralization in the Okohongo Horizon (malachite after chalcopryrite and chalcocite) that, at Otjihorongo, is exposed in two historical pits some 100 metres apart. Outcrop is poor with extensive talus and calcrete cover. Teck's gradient array IP did not show any chargeable targets near the mineralized shows at surface, but identified an anomaly measuring 200 metres by 300 metres located 300 metres to the southeast of the showings. This anomaly was covered with pole-dipole IP and tested by Teck drillhole TCP-013, which explained the chargeability anomaly as pyrite at forty metres and forty-three metres and graphitic shale from fifty-two metres to seventy-one metres.

In January 2012 INV Metals drilled two RC holes under the showings (Figure 7-14). No significant values were recorded with a hand-held Niton, but low-grade mineralization in hole INVR-145 has been submitted for assay, the results of which are not currently available.

**Figure 7-14: Drillholes and Geology at Otjijhorongo**



#### 7.5.1.5. OKARIVIZO

The Okarivizo (also referred to as the “Road Show”) target area is located fifteen kilometres northwest of the northwestern end of the Oruvandjai target area. Okarivizo mineralization is hosted in upward-fining, dark grey-green siltstone schist and altered light-grey to creamy and pink dolostone of the Okohongo Horizon exposed by a road grader. Mineralization occurs as chalcocite in open-space-fill quartz veins, with malachite forming in cross-cutting and foliation parallel veinlets, as well as impregnations of the host rock. The width of mineralization in the siltstone is between 5 metres and 10 metres and sporadic in the dolostone. Strike extent is unknown.

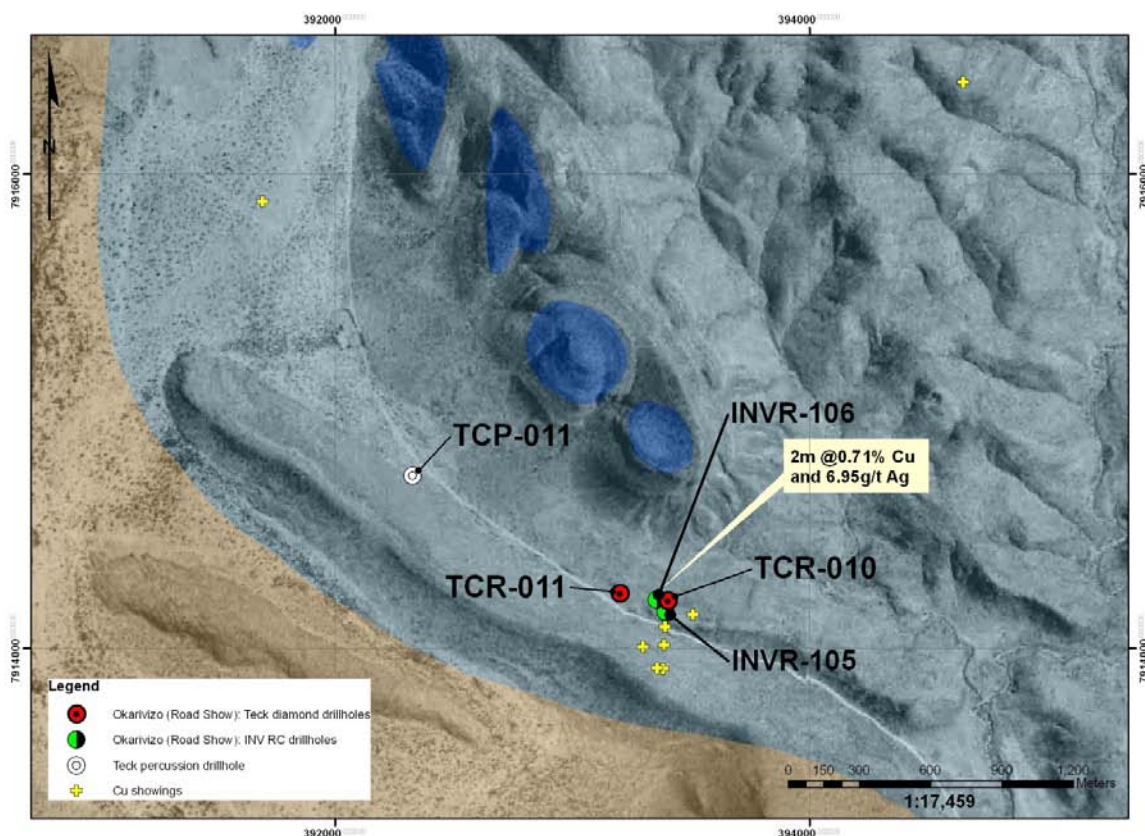
TCN tested the Okarivizo target with two RC holes in 2008 but failed to intersect visible copper mineralization. It is worth noting that in spite of intense sericite and clay alteration, and pyrite pseudomorphs, samples of these holes were not analyzed.

Two RC holes were drilled by INV Metals (Figure 7-15) with INVR-105 intersecting only intermittent pyrite and INVR-106 cutting 0.71% copper over 2 metres (Table 7-7).

**Table 7-7: INV Metals Drill Results at Okarivizo**

Target	Hole	FOH (m)		From (m)	To (m)	Width (m)	Cu %	Ag g/t
Okarivizo	INVR-105	168		Insignificant				
Okarivizo	INVR-106	186		52.0	54.0	2.0	0.71	6.95
<b>TOTALS</b>	<b>2 holes</b>	<b>354 m</b>						

**Figure 7-15: Drillholes and Geology at Okarivizo**



#### 7.1.5.6. OKAKUYU-OKAKUYU SOUTH-OKAKUYU FAR SOUTH

The main Okakuyu - Okakuyu South target area is located in the Okohongo Horizon along the western limb of the same large Nosib Group exposure that hosts Oruvandjai mineralization on its eastern limb. Copper oxide mineralization (chrysocolla and malachite) is exposed along a strike length of 400 metres on both sides of a syncline. TCN collected two rock samples that carry copper values of 3.9% and 1.3%. Silver values for the same samples are 18.3 g/t and 1.6 g/t, respectively. Four kilometres to the southeast a second showing in Nosib quartzite has been designated Okakuyu Far South. At that location TCN collected two selected rock samples that carry 22.6% and 6.3% copper with accompanying silver values of 894 g/t and 72.7 grams per tonne.

Mineralization at Okakuyu consists of malachite-stained dark grey, siltstone interbedded with creamy dolomite of the Okohongo Horizon, along the eastern limb of a north-northwest-trending, west-dipping, monoclinical fold. Detailed mapping suggests mineralization is restricted to the hanging wall side of a reactivated normal fault adjacent to the termination of a half-graben. The trace of outcrop showings reveals that the mineralized horizon extends for at least 250 metres along strike. However, the true extent could be much larger as there is poor outcrop exposure.

At Okakuyu South, mineralization occurs as chrysocolla ± malachite hosted by the Okohongo Horizon. Structurally, mineralization occurs along the southern portion of a synclinal structure bound by two reverse faults, possibly representing an extensional duplex. Cross-sections through the area indicate the mineralized horizon is roughly 20 metres in true width. Showings

occur along the eastern limb of a north-northwest-trending, broad, shallow, double-plunging syncline.

INV Metals drilled four holes to test Okakuyu and three to test Okakuyu South. The drill locations are shown on Figure 7-16 and the results are summarized in Table 7-8. No further work is planned for Okakuyu South due to its limited strike extent. Okakuyu will be reviewed thoroughly to determine if any further work is warranted; however it is unlikely as drillhole INVR-122 undercut drillhole INVR-116 and demonstrated that the mineralization has no down-dip potential.

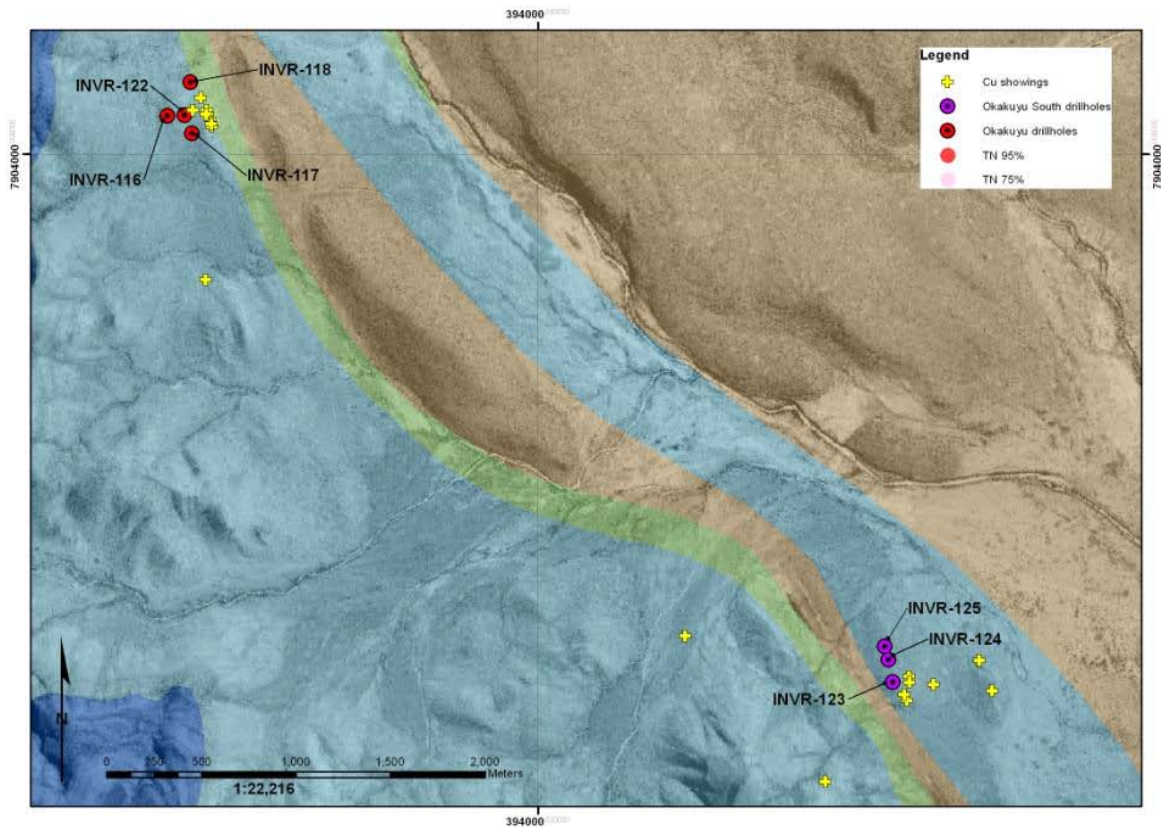
Detailed mapping along the Okakuyu-Okapanda corridor suggests a roughly two kilometre centred spacing between zones of structural favourability and copper mineralization, i.e. half-graben terminations and extensional duplex structures. This corridor occurs along strike with the Okohongo prospect to the north and prospective areas to the south. Continued geological mapping and analysis of the aerial magnetic data might help determine if additional mineralization occurs two kilometres north of Okapanda or south of Okakuyu South.

**Table 7-8: INV Metals Drill Results at Okakuyu and Okakuyu South**

Target	Hole	FOH (m)		From (m)	To (m)	Width (m)	Cu %	Ag g/t
Okakuyu	INVR-116	114		71.0	84.0	13.0	0.70	13.92
			including	71.0	72.0	1.0	1.91	19.10
				77.0	79.0	2.0	2.21	52.20
				83.0	84.0	1.0	1.25	29.20
Okakuyu	INVR-117	126		20.0	24.0	4.0	0.27	2.88
			including	22.0	23.0	1.0	0.63	7.50
				31.0	33.0	2.0	0.17	0.23
				70.0	72.0	2.0	0.22	2.90
Okakuyu	INVR-118	114		27.0	29.0	2.0	0.31	0.28
Okakuyu	INVR-122	174	Insignificant					
<b>TOTALS</b>	<b>4 holes</b>	<b>528 m</b>						
Okakuyu South	INVR-123	201		15.0	17.0	2.0	0.48	7.45
				21.0	31.0	10.0	0.17	1.29
Okakuyu South	INVR-124	42		20.0	27.0	7.0	0.43	10.51
			including	25.0	26.0	1.0	1.26	2.80
Okakuyu South	INVR-125	48		41.0	42.0	1.0	0.12	
<b>TOTALS</b>	<b>3 holes</b>	<b>291 m</b>						



**Figure 7-16: Drillholes and Geology at Okakuyu and Okakuyu South**



#### **6.5.1.7. OKAPANDA**

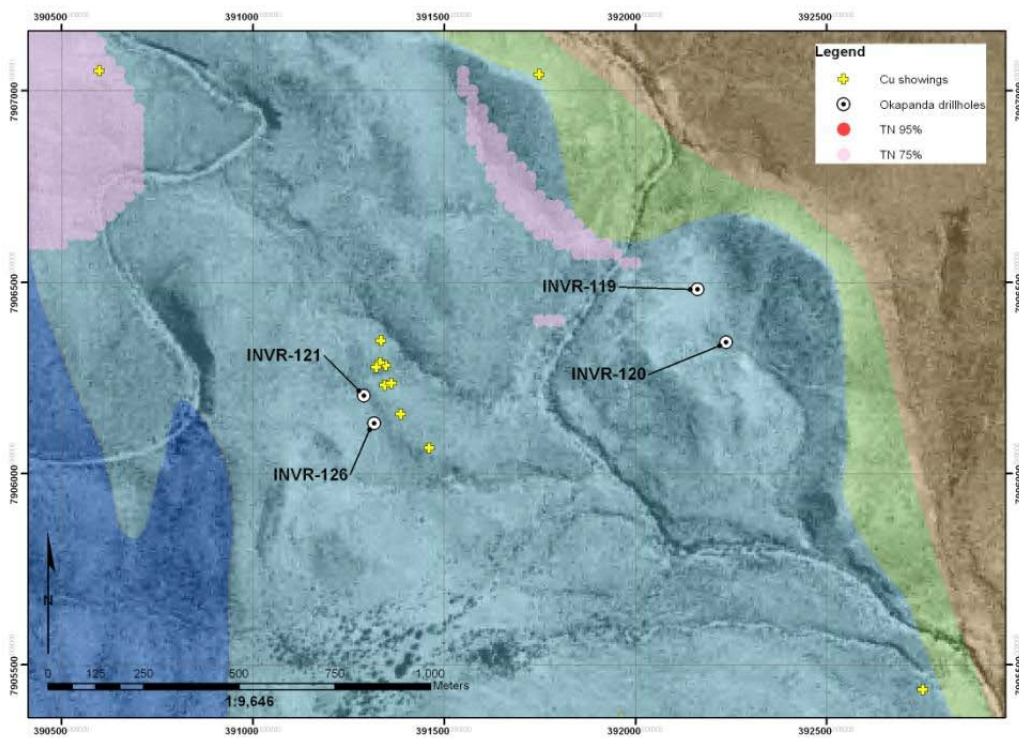
The Okapanda target area is located six kilometres northwest of Okakuyu in the same stratigraphic position. The target is centred on four copper oxide showings located along a total strike length of 1.5 kilometres. TCN covered the area with regional 1:25,000 scale geological mapping and collected six rock samples. The samples range in copper grade from 931 ppm up to 6.4%. Silver grades range from 0.25 to 158 grams per tonne. Mapping by INV Metals geologists confirmed that copper mineralization consists of a malachite-stained, dark grey siltstone and interbedded creamy dolomite of the Okohongo Horizon. The showings occur along the eastern limb of a north-trending, west-dipping, monoclinol to anticlinal fold.

INV Metals drilled four holes; they intersected weak to moderate copper grades, with a best intersection of nine metres grading 0.41% copper (Table 7-9 and Figure 7-17).

**Table 7-9: INV Metals Drill Results at Okapanda**

Target	Hole	FOH (m)		From (m)	To (m)	Width (m)	Cu %	Ag g/t
Okapanda	INVR-119	108		Not sampled				
Okapanda	INVR-120	84		53.0	54.0	1.0	0.64	4.30
Okapanda	INVR-121	98		31.0	36.0	5.0	0.30	5.44
				46.0	55.0	9.0	0.41	3.45
			including	48.0	52.0	4.0	0.74	6.95
Okapanda	INVR-126	90		18.0	20.0	2.0	0.18	0.80
				31.0	35.0	4.0	0.16	0.30
<b>TOTALS</b>	<b>4 holes</b>	<b>380 m</b>						

**Figure 7-17: Drillholes and Geology at Okapanda**



#### 6.1.5.8. OTJOZONGOMBE EAST AND WEST

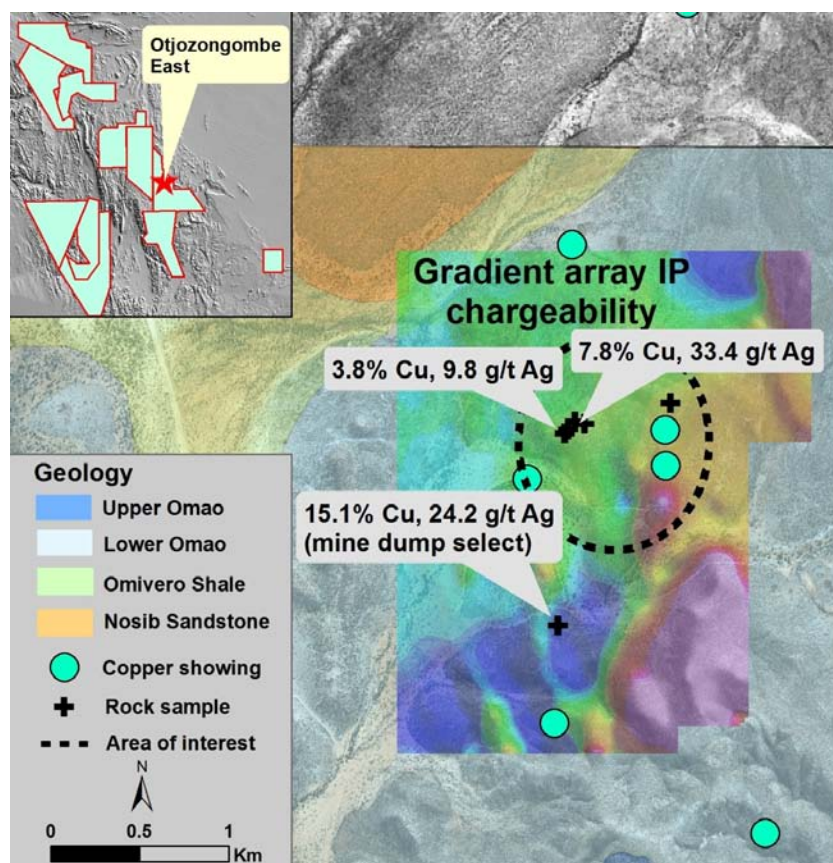
Otjozongombe consists of two zones (east and west); each exposed intermittently over 400 to 500 metre strike lengths, on opposite limbs of an antiform about one kilometre apart. There is no evidence that this target had ever been previously drilled, though it had been trenched.

The Otjozongombe East target area is located approximately five kilometres northeast of Otjozongombe West. In 2008 TCN completed six km<sup>2</sup> of gradient array IP which identified a zone of unexplained chargeability in the Lower Omaso. A reconnaissance visit by TCN geologists in 2005 described a roughly circular zone approximately one kilometre in diameter of potential



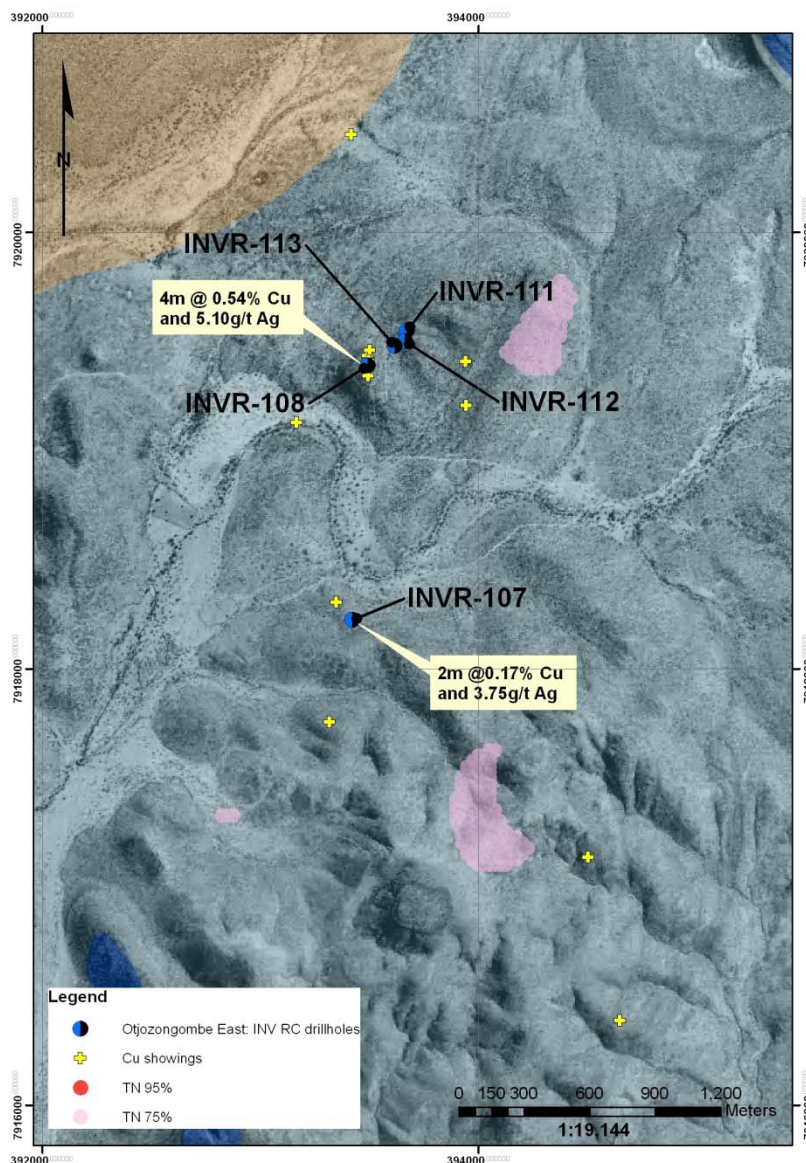
copper mineralization represented by scattered veinlet-hosted copper showings in Lower Omao dolostone. The periphery of this zone is characterized by blebs and veins of calcite in the dolostone country rock suggesting decalcification. The foregoing suggests the possibility of a pipe-like Kipushi or Tsumeb model for Otjozongombe East mineralization. Pits and trenches of uncertain origin within the zone expose copper mineralization in Okohongo Horizon siltstone and shale as well as dolostone breccia comprised of, in addition to dolostone fragments, chalcocite fragments with chalcopyrite cores and coarsely crystalline calcite. Grab samples of this breccia typically assay in the range of 4% copper. Figure 7-18 is an overview of the Otjozongombe East target area showing location, geology, copper showings and gradient array chargeability.

**Figure 7-18: Otjozongombe East Target Area**



Five RC holes were drilled by INV Metals at Otjozongombe East targeting (Figure 7-19) the oxide and sulphide mineralization seen at surface in quartz veins/breccias and grey dolostones. Despite significant mineralization at surface with chalcopyrite in dolostones assay results were generally disappointing (see Table 7-10).

**Figure 7-19: Drillholes and Geology at Otjozongombe East**



The Otjozongombe West target area is centred on two mineral showings in the upper Omivero Formation, just below the Okohongo Horizon. TCN discovered two additional showings in Nosib sandstone outcrop to the west. The best showing extends just over 100 metres along strike, but is mostly covered by calcrete. The style and width of mineralization are only apparent from two trenches assumed to have been excavated by General Mining in the 1970's. High-grade chalcocite, cuprite and associated copper oxides (malachite and chrysocolla) are hosted in quartz-calcite veins in finely brecciated and altered dolostone. Much of the target area is covered by sand leaving open the possibility of further mineralization along strike. A second target may be zones of weak chargeability in the usually highly resistive Nosib sandstone that dips west beneath the Omivero target.

**Table 7-10: INV Metals Drill Results at Otjozongombe East**

Target	Hole	FOH (m)		From (m)	To (m)	Width (m)	Cu %	Ag g/t
Otjozongombe East	INVR-107	114		20.0	22.0	2.0	0.17	3.75
Otjozongombe East	INVR-108	114		5.0	12.0	7.0	0.41	3.41
Otjozongombe East	INVR-111	126		27.0	37.0	10.0	0.19	1.11
			including	34.0	35.0	1.0	0.53	2.40
Otjozongombe East	INVR-112	120		Insignificant				
Otjozongombe East	INVR-113	66		Insignificant				
<b>TOTALS</b>	<b>5 holes</b>	<b>540 m</b>						

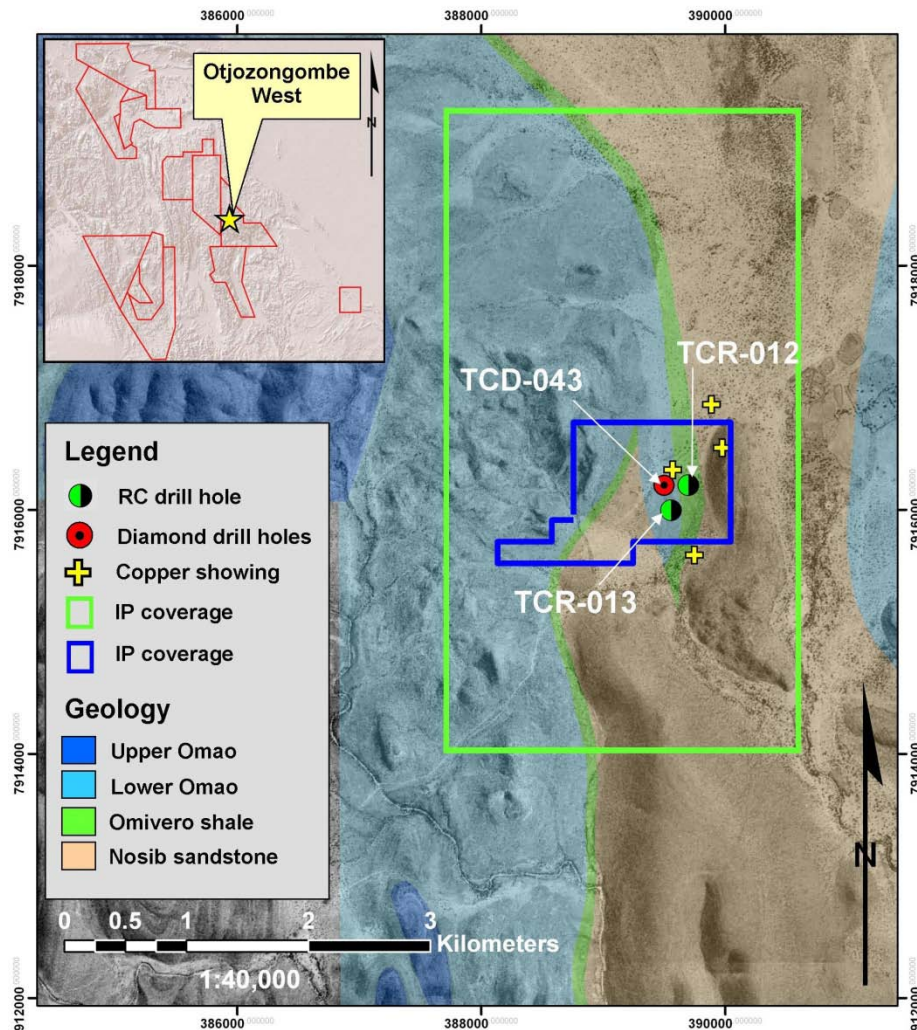
Aside from the trenches attributed to General Mining there is no record of work on the target area beyond regional mapping before TCN took control of the ground. In 2004 TCN covered part of the area with their heavy mineral sediment sampling program. In 2006 TCN included the area in their 1:25,000 scale regional geological mapping program and in 2008 completed 1:5,000 scale mapping of the immediate target area. During the course of both mapping programs nineteen rock samples were collected. The extremely high grades (up to 21% copper) of many of the rock samples reflect their source as select samples from the trenches. Following their mapping campaigns TCN collected 676 soil samples over the area of the showings. The samples were collected on a 200 metre by 25 metre grid comprised of seven east-west lines. TCN continued its exploration program with 16.2 km<sup>2</sup> of gradient array IP and one 3,000 metre long line of pole-dipole IP. Two RC holes and one diamond drill hole totalling 515 metres were drilled in late 2008. The best intercept came from TCD-043 with 2.7 metres of 1% copper and 77.4 g/t silver. Table 7-11 below lists mineralized intercepts from drilling at Otjozongombe West. Figure 7-20 locates the target area, illustrates both gradient array and soil sample coverage and serves as a location map for TCN drillhole collars and copper showings.

**Table 7-11: Teck Drill Results at Otjozongombe West**

Drill Hole	From (m)	To (m)	Width (m)	Cu %	Ag g/t	FOH (m)
TCD-043	58.5	61.2	2.7	1.0	77.4	256.6
TCR-013	112.0	114.0	2.0	0.1	1.7	102



**Figure 7-20: Drillholes and Geology at Otjozongombe West**



#### 7.5.1.9. ONDERA EAST AND WEST

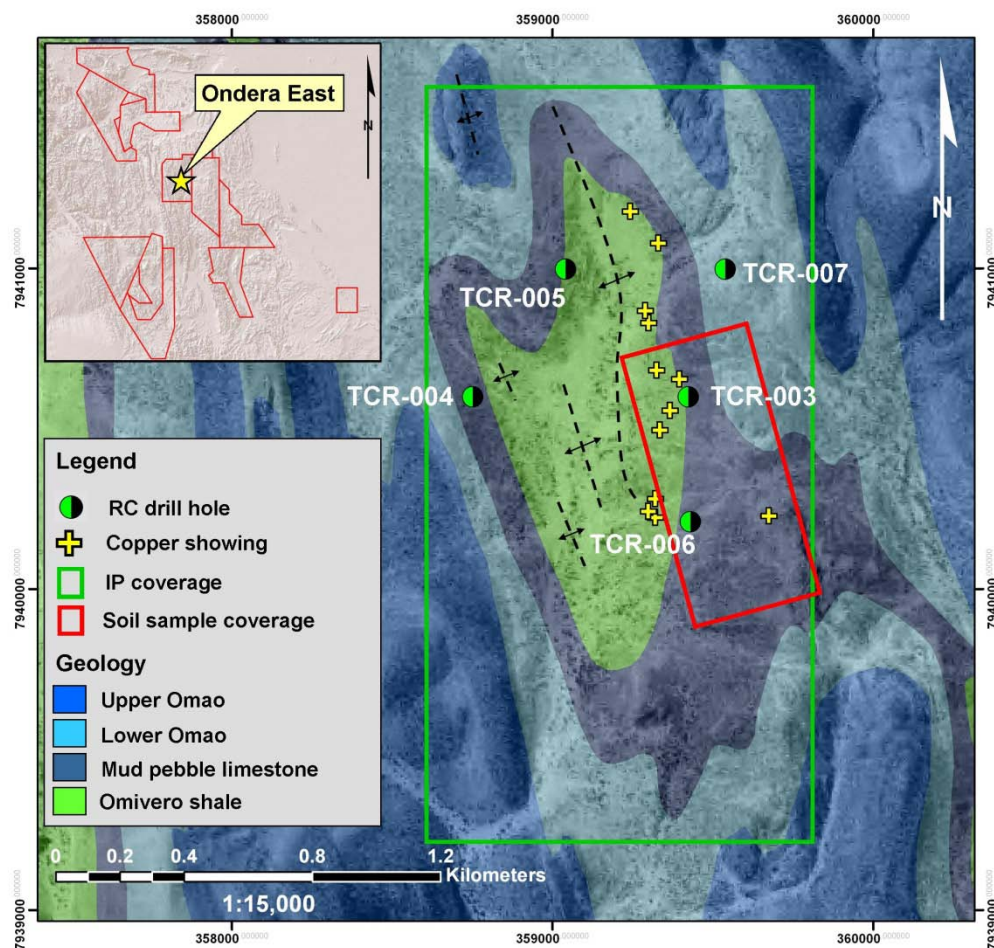
The Ondera East target area comprises twelve copper oxide showings in a unit of light-green to grey shales and siltstones, with interlayered light to pink marls, extending over a strike length of one kilometre on both sides of a moderately folded exposure of Omivero Formation that cores a doubly plunging anticline. In outcrop the style of mineralization is disseminated and stratiform over a width of about 20 metres, but partially remobilized into quartz-chlorite-calcite veins, sub-parallel to and cross-cutting bedding, which itself is folded. Stratigraphically, the mineralization appears to be hosted within the Okohongo Horizon.

Historic work in the area includes a General Mining soil survey over the eastern limb of the Ondera anticline that covered an area of 900 metres by 450 metres with 738 samples in a 50 metre by 10 metre grid. The survey produced a >500 ppm copper anomaly measuring approximately 250 metres by 75 metres in soil underlain by Upper Omao dolostone. A second General Mining soil survey consists of a number of sub-parallel roughly east-west lines covering the axis and western limb of an adjacent Upper Omao cored syncline approximately one kilometre west of the axis of the Ondera anticline.

In 2004 TCN covered the area with a heavy mineral stream sediment survey. Anomalous copper results from that survey highlighted the core of the Ondera anticline. In 2006 the area was included in TCN's regional, 1:25,000 scale geological mapping and reconnaissance sampling program. TCN collected fourteen rock samples. Eight samples carried greater than 1% copper, with three assaying over 10%. In 2007 TCN mapped the area at a scale of 1:5,000, completed a 2.9 km<sup>2</sup> gradient array IP survey and three 1,200 metre pole-dipole IP lines. Later that same year TCN drilled five RC holes totalling 834 metres, returning a best intersection of 0.2% copper over four metres from a drillhole collared on the General Mining copper in soil anomaly. Figure 7-21 locates the target area, shows geology and illustrates drillhole locations, soil sample grid and gradient array IP coverage.

Despite the disappointing results from TCN's first phase drilling the obvious stratiform nature of mineralization at Ondera supports the prospective character of the target area.

**Figure 7-21: Drillholes and Geology at Ondera East**



The Ondera West target area, located six kilometres southwest of Ondera East is similar in that it comprises twenty-four copper oxide showings in a unit of light-green to grey shales and siltstones, with interlayered light to pink marls, extending over a significantly longer strike length of seven kilometres. Mineralization occurs in the Okohongo Horizon, on both sides of a tightly folded and overturned anticlinal Omivero inlier. The style of mineralization is disseminated and



stratiform over a width of up to 20 metres, but partially remobilized into quartz-chlorite-calcite veins that are sub-parallel and crosscut bedding. This target could be structurally thickened on the overturned limbs by folding.

Historic work in the area includes a General Mining soil survey that covers approximately eight km<sup>2</sup> with a series of roughly east-west lines spaced at approximately 250 metres. Individual sample spacing varies but is in the range of fifty to sixty metres. Moderately anomalous (100 to 400 ppm copper) individual samples are scattered throughout the survey. One area underlain by Omivero on the western limb of the anticline and measuring approximately 250 metres by 250 metres stands out as a coherent > 100 ppm copper anomaly. A second area approximately 1.5 km to the south and measuring approximately 1.5 kilometres by 700 metres is less cohesive but still stands out as moderately anomalous in copper. Neither area has been drill tested.

In the 1990's RTZ covered the southern periphery of the Ondera West anticline with a standard minus 80 mesh stream sediment survey. In 2004 TCN did essentially the same thing with its heavy mineral stream sediment program. Both surveys highlighted the same section of the eastern limb as anomalous in copper. TCN covered the target area with regional 1:25,000 scale and detailed 1:5,000 scale geological mapping.

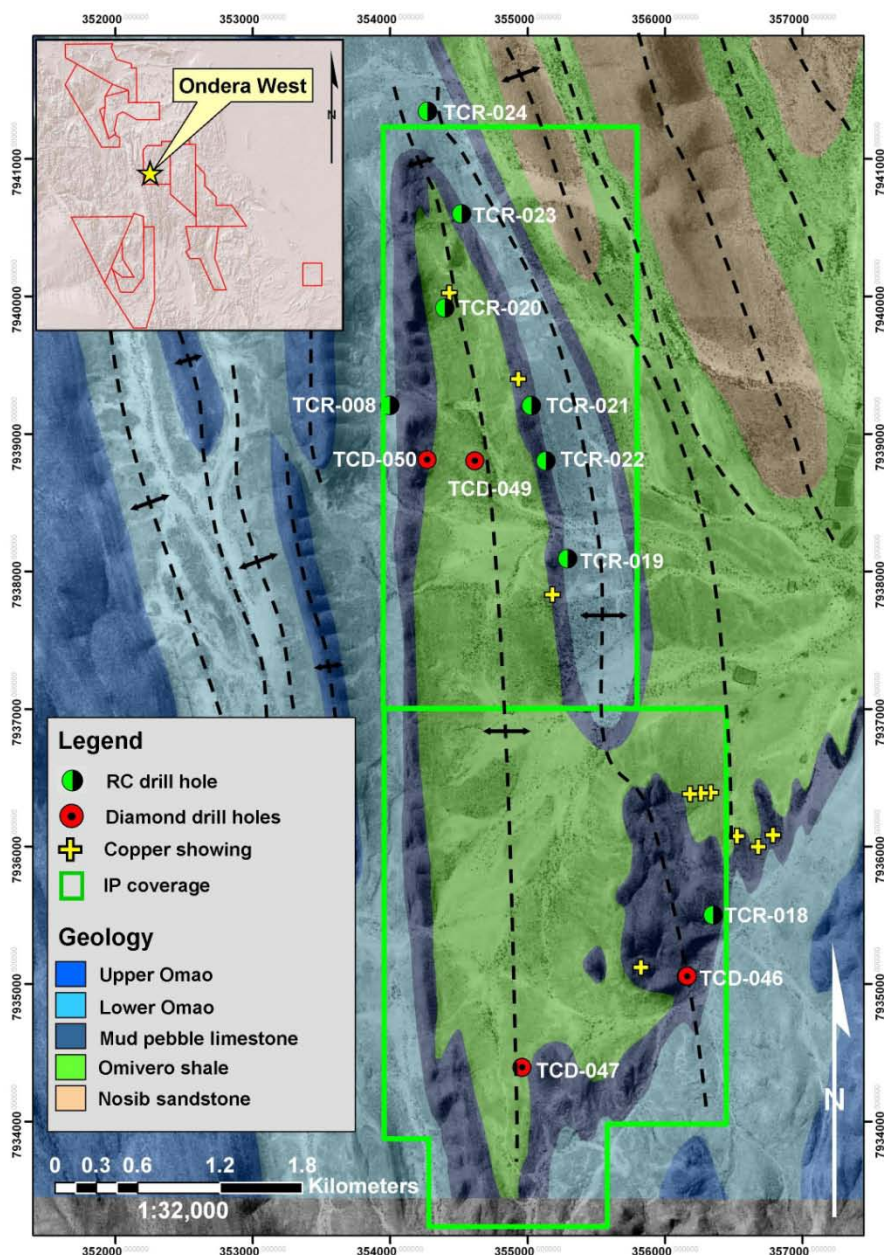
In 2007 TCN covered the Ondera West anticline with 17.6 km<sup>2</sup> of gradient array IP and completed three lines of pole-dipole IP totalling 7,000 metres. TCN drilled one RC hole in 2007. In 2008 TCN drilled seven more RC holes and four diamond drill holes. Seven out of twelve drill holes intercepted weak to moderate copper mineralization over downhole widths of at least two metres. The best intersection was three metres of 0.6% copper and 8.5 g/t silver in drill hole TCR-020. Table 7-12 lists the mineralized intercepts from drilling at Ondera West.

As at Ondera East, the stratiform nature of mineralization at Ondera West supports the prospective character of the target area. In addition much of the area remains to be tested. Figure 7-22 locates the Ondera West target area, shows the geology, illustrates the gradient array IP coverage and serves as a location map for copper showings and TCN drill holes collars.

**Table 7-12: Teck Drill Results at Ondera West**

Drill Hole	From (m)	To (m)	Width (m)	Cu %	Ag g/t	FOH (m)
TCD-046	28.3	30.9	2.6	0.16		218.28
and	94.1	97.8	3.7	0.2		
TCR-018	194.0	202.0	8.0	0.26		210
TCR-019	25.0	31.0	6.0	0.18		210
TCR-020	45.0	48.0	3.0	0.59	8.47	186
and	166.0	170.0	4.0	0.38	2.6	
TCR-021	58.0	60.0	2.0	0.22	3.2	120.5
TCR-023	52.0	54.0	2.0	0.2	2.1	150
TCR-024	136.0	138.0	2.0	0.24	4.5	180.5

Figure 7-22: Drillholes and Geology at Ondera West



#### 7.5.1.10. OKATUMBA

The Okatumba target area is located six kilometres northeast of Ondera East and approximately one kilometre west of C43, the main north-south road. The area is centred on a series of historic trenches that expose copper mineralization in quartz veins and disseminated in Nosib Group quartzite just below the Omivero Formation contact.

Previous work at Okatumba includes two extensive General Mining soil surveys from the 1970s, two General Mining drill holes from the same era, a handful of MIM (5) and TCN (7) rock samples, TCN geological mapping, TCN geophysical surveys and TCN drilling.

Dating from the 1970's General Mining's soil surveys covered much of the Okatumba target area with 4,300 samples collected on a 100 metre by 20 metre grid. To the west an additional 1,113 samples were collected in twenty-three northeast-southwest lines of varying lengths spaced 500 metres apart, sampled every 50 metres. The soil grid identified two areas that are anomalous in copper. In the anomalous areas copper values range from 400 ppm to a maximum of 2,250 ppm. Neither has been drill tested either by General Mining or, later, by TCN. Assay results for General Mining's drill holes are not available.

In 2006 TCN completed regional 1:25,000 scale geological mapping on the Okatumba target area and returned in 2007 for detailed 1:5,000 scale mapping. Also in 2007 TCN completed a 9.25 km<sup>2</sup> gradient array IP survey followed by 6.5 km of pole-dipole IP in two lines. Both gradient array and pole-dipole surveys identified a prominent linear chargeability anomaly at the target area. The pole dipole survey, which extended past the boundary of the gradient array survey, identified a second, parallel chargeability anomaly to the west. The latter anomaly has not been drill-tested.

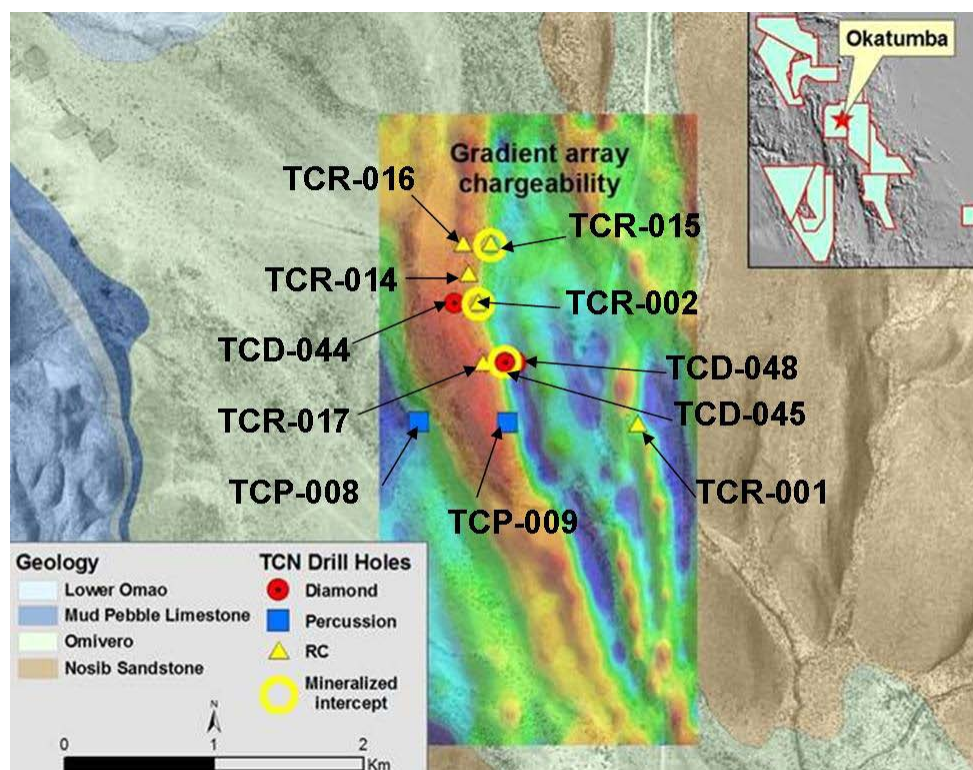
In 2008 TCN drilled 1,827 metres in three diamond drill holes (412 metres), six RC holes (1,085 metres) and two percussion holes (330 metres) drilled for water. Three of the eleven holes intercepted copper-silver mineralization. In TCD-045 and TCR-002 the copper mineralized intercepts also carried significant lead values of 19.86 metres of 0.5 % lead and 23 metres of almost 1% lead, respectively. Table 7-13 below lists mineralized intercepts drilled at Okatumba.

**Table 7-13: Teck Drill Results at Okatumba**

<b>Drill Hole</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Width (m)</b>	<b>Cu %</b>	<b>Ag g/t</b>	<b>FOH (m)</b>
TCD-045	19.7	39.6	19.9	0.26	30.39	87.1
including	22.6	30.3	7.7	0.45	61.21	
TCR-002	6.0	22.0	16.0	0.35	5.06	251
including	10.0	19.0	9.0	0.44	5.62	
TCR-015	37.0	37.0	1.0	0.12	1.8	66

Drill results at Okatumba demonstrate that weak to moderate stratiform copper-silver mineralization extends for at least one kilometre. Based on metal zoning patterns observed in sediment hosted copper systems worldwide, the strong lead mineralization in TCD-045 and TCR-002 suggests that drilling may not have tested the centre of the system. At Okatumba geophysical and geochemical targets remain untested. Figure 7-23 plots drillhole collar locations and illustrates the existing gradient array chargeability on a background of geology and topography. The inset locates Okatumba in the project area.

**Figure 7-23: Okatumba Target Area**



#### 7.5.1.11. HORSESHOE

The Horseshoe area is located between the villages of Oruvandjai and Omatapati, and approximately equal distance, i.e. 130 kilometres between the towns of Kamanjab and Opuwo. The area is centred on a gently folded syncline that plunges shallowly to the northwest. Discontinuous outcrops on the northeast and southwest limbs and around the fold closure expose a carbonaceous, often pyritic siltstone or silty shale that lies approximately 110 metres above the Nosib - Ombombo contact. TNC had referred to this as the Horseshoe member, while INV Metals has now applied the term Okohongo Horizon. Copper mineralization in the Okohongo Horizon at this locality is discontinuously exposed over a strike length of more than two kilometres. It is also mineralized where it is exposed two kilometres to the northwest, five hundred metres to the northeast in a series of tight folds and two kilometres further to the northeast across a broad covered valley. Thirty separate showings were identified in the Horseshoe target area.

In 2007 and early 2008 the area was covered by TNC with a gradient array IP survey and over 14 line km of pole-dipole IP. In 2008 TCN drilled six diamond drill holes totalling 1,244 metres and one percussion hole for water to a depth of 101 metres. Four of the six diamond drill holes intercepted copper mineralization as malachite with minor chalcocite. Table 7-14 lists TNC's drill intersections.



**Table 7-14: Teck Drill Results at Horseshoe**

Drill Hole	From (m)	To (m)	Width (m)	Cu %	Ag g/t	FOH (m)
TCD-034	100.1	104.7	4.6	0.7	18	290
TCD-035	74.9	85.4	10.5	0.4	4	275
including	77.1	79.7	2.6	0.8	13	
TCD-038	23.4	25.5	2.1	0.12		133
TCD-040	91.2	94.2	3.0		79.7	127.2
and	100.7	105.9	5.2	0.19		

Figure 7-24 shows the geology of the target area and the distribution of TCN drill holes. The two best drill holes, TCD-034 and TCD-035, are illustrated in the cross section in Figure 7-25. From outcropping mineralization on the southwestern limb through the drill intersections to outcropping mineralization on the northeastern limb, the cross section indicates a strike length of more than 800 metres of stratabound copper mineralization across the Horseshoe syncline.

INV Metals geologists carried out 1:5,000 scale reconnaissance lithostratigraphic mapping of the area in April, 2010 for the purpose of identifying outcrop exposures of the potentially economically-significant Okohongo Horizon.

Outcrop exposures of mineralization are restricted to small, cross-cutting, fracture-controlled, open-space-filling veins or breccias characterized by quartz, carbonate (calcite  $\pm$  dolomite) and sulphide (chalcopyrite-chalcocite  $\pm$  pyrite) with various iron and copper oxides (malachite  $\pm$  diopside  $\pm$  chrysocolla). Examination of the mineralization indicates that the bulk is restricted to the lithological contact between siltstone (below) and dolostone (above) of the basal Omao Formation, i.e. the Okohongo Horizon. Along these lithological contacts, the schist is typified by disseminated malachite with extensive iron-oxide staining and large cubic hematite pseudomorphs after pyrite, as well as cross-cutting veins and small breccias of quartz, specular hematite, calcite and diopside. By comparison, the overlying dolostone comprises reddish-orange iron oxide-stained, matrix-supported, crackle breccias with a transparent to white coarse-crystalline matrix composed of quartz-calcite  $\pm$  copper oxides and sulphides.

In addition to the known copper showings, a number of new showings were discovered during the course of geological mapping. One new showing is located approximately 1.5 kilometres north-northwest of the Horseshoe Syncline (at UTM South Zone 33K 0407120 7909051). This showing represents a matrix-supported, crackle breccia cemented by milky white quartz  $\pm$  malachite within the carbonates of the lower Omao Formation. East of this unit, the stratigraphic column comprises a thick package of carbonates, while the western side is characterized by an unusually thick package of siltstone that laterally grades into a carbonate-dominated package to the west; thereby suggesting this breccia might represent a syn-sedimentary structure.



Figure 7-24: Teck Drillholes and Geology at Horseshoe

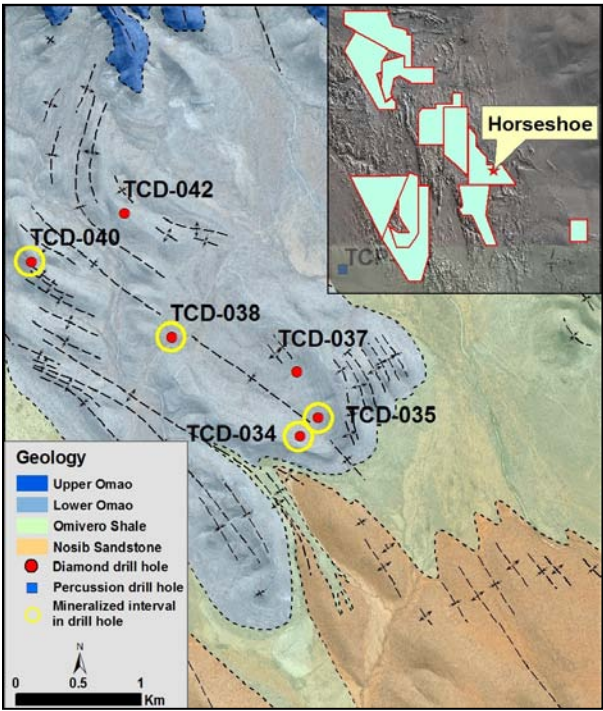
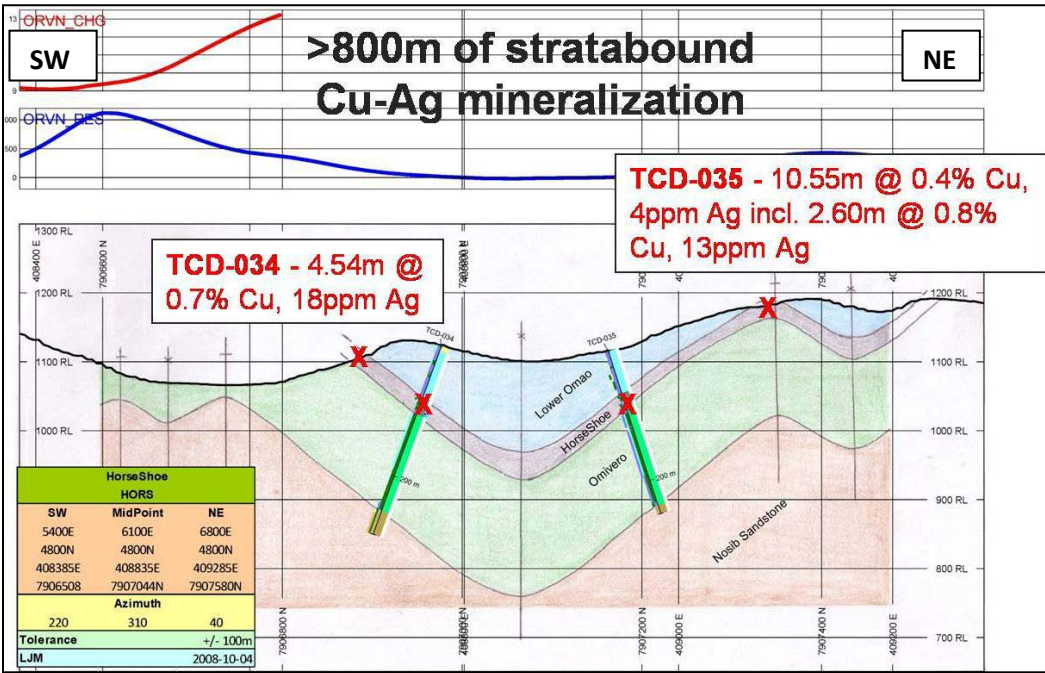


Figure 7-25: Cross Section through the Horseshoe Syncline Looking NW



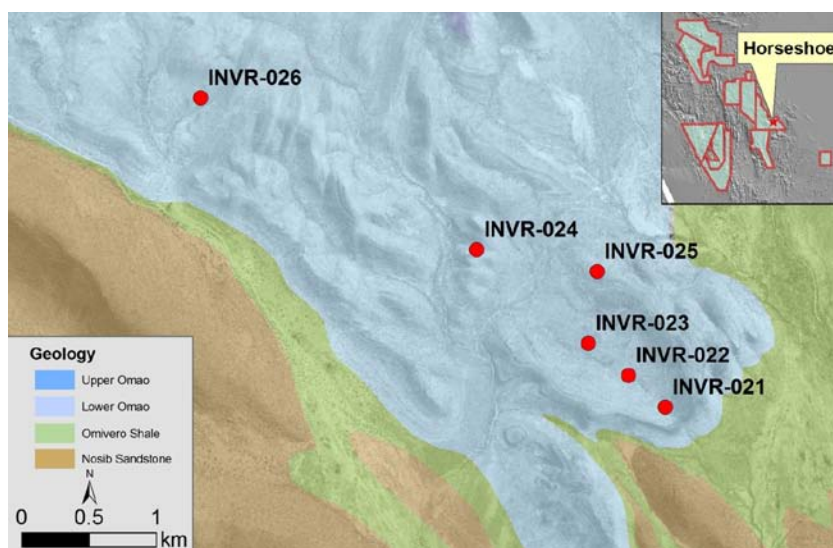
Mineralization at the Horseshoe target appears to be primarily structurally-controlled (i.e. restriction to veins and breccias), while lithologic controls (i.e. contact between dolostone and siltstone) are only locally important.

INV Metals completed six RC holes totalling 847 metres at the Horseshoe target. The drilling confirmed the geological interpretation that the mineralization at Horseshoe occurs within the Okohongo Horizon (Table 7-15). INVR-021 intercepted two metres of 0.3% copper and 5.0 g/t silver from a downhole depth of 59 metres. INVR-022 intercepted four metres of 0.9% copper and 22.2 g/t silver from 128 metres. Eight metres of trace copper-silver mineralization was intercepted in INVR-026 at a downhole depth of 158 metres. Figure 7-26 shows the distribution of the INV Metals RC drill holes drilled at Horseshoe. No further work is planned at the Horseshoe target at the present time.

**Table 7-15: INV Metals Drill Results at Horseshoe**

Target	Hole	FOH (m)	From (m)	To (m)	Width (m)	Cu %	Ag g/t
Horseshoe	INVR-021	100	59.0	61.0	2.0	0.30	5.00
Horseshoe	INVR-022	154	128.0	132.0	4.0	0.90	22.20
Horseshoe	INVR-023	155	No significant values				
Horseshoe	INVR-024	118	No significant values				
Horseshoe	INVR-025	148	No significant values				
Horseshoe	INVR-026	172	No significant values				
<b>TOTALS</b>	<b>6 holes</b>	<b>847 m</b>					

**Figure 7-26: INV Metals Drillholes and Geology at Horseshoe**



#### 7.5.1.12. SESFONTEIN

INV Metals initiated a regional 1:25,000 scale geological mapping program in the Sesfontein area in November, 2009. During the course of that program INV Metals' geologists discovered fifty-five previously unknown copper showings over a strike length of 26 kilometres proximal to the Nosib-Ombombo contact that has produced significant copper-silver mineralization in other parts of the property. This new "prospective zone" is open along strike. Of the fifty-five showings, ten extend over a length of more than 100 metres. Individual showings in host rock vary in width from a few centimetres up to four metres, and in length from spot showings up to 650 metres of discontinuous mineralization in the same lithological unit. Sample locations and selected results are plotted on Figure 7-27. Note that a reconnaissance visit to the southeast determined that the large area of anomalous copper-cobalt in the southwestern part of EPL 3686 (see Figure 9-4) is probably the result of drainage from the Cretaceous Etendeka flood basalts.

Mineralization comprises mainly malachite (after chalcocite and chalcopyrite), with trace amounts of chrysocolla, atacamite and galena hosted in siliciclastic rocks of the Nosib Group and Ombombo Subgroup. Mineralization occurs in milky quartz veins, lenses and as disseminations in the surrounding country rock. Host rock lithology is variable, ranging from quartzite to quartz-sericite, quartz-sericite-chlorite, quartz-chlorite and biotite-chlorite schist, as well as polymictic, but predominantly feldspathic (microcline), conglomeratic quartz-sericite schist. It is not clear at this time if these host rocks are the equivalent of the Okohongo Horizon. Deformation is intense with folds generally exhibiting overturned to recumbent morphologies. A mineralized horizon may be repeated up to three times in one outcrop, and could be very deformed in the schists. As a result, the thickness of the prospective zone can be highly variable.

As is the case in much of the rest of the property the "prospective zone" is 80% to 90% covered by alluvium and recent sediments providing the potential for near-surface mineralization with little or no surface expression.

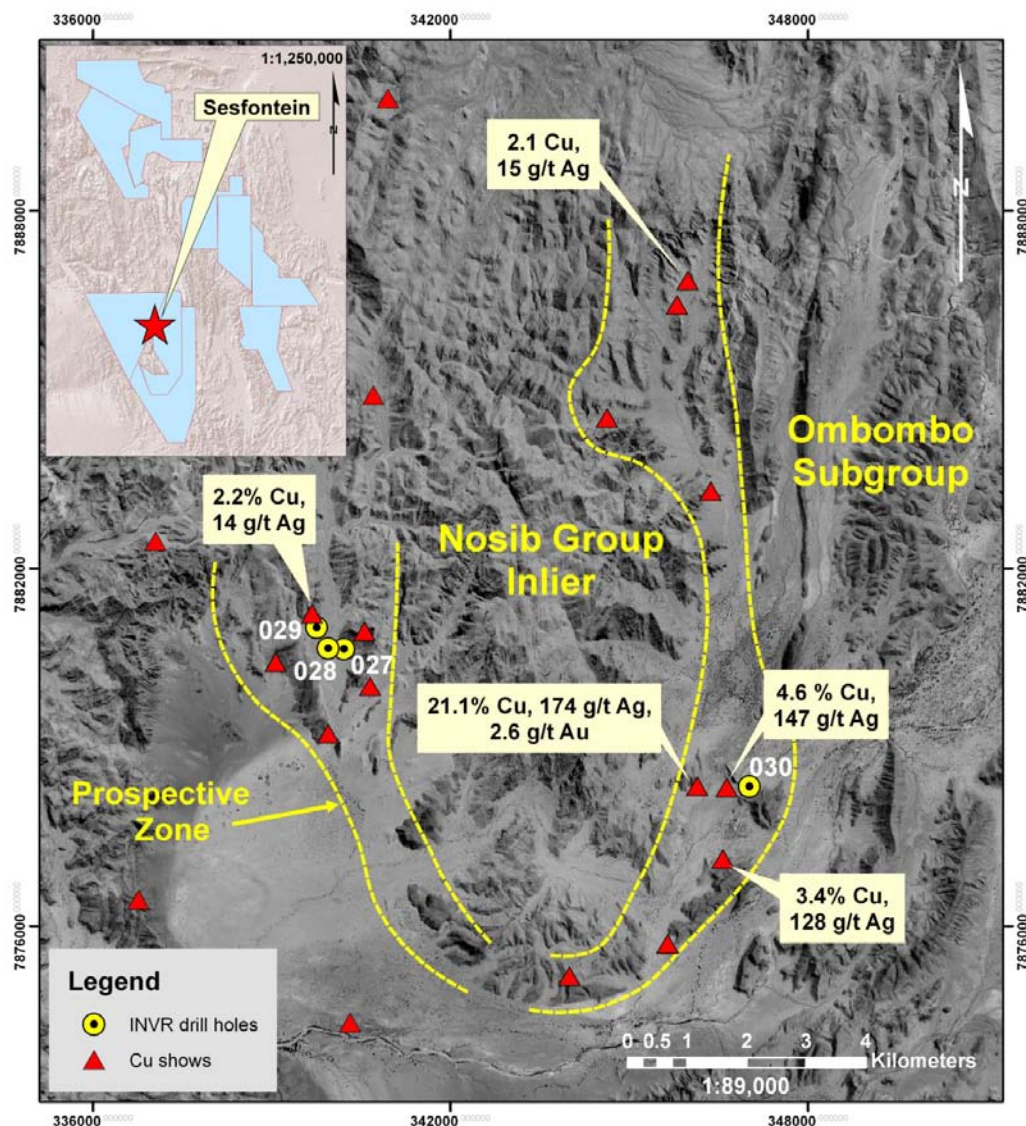
Four RC drill holes totalling 582 metres were completed by INV Metals in the Sesfontein target area (see Table 7-16 and Figure 7-37 for drill hole locations). Drill conditions were not ideal, with one hole being abandoned in difficult overburden. INVR-028 intersected three metres of 0.2% copper and 2.3 g/t silver from a downhole depth of 107 metres. INVR-029 intersected one metre of trace copper and 1.9 g/t silver at 95 metres. These results are clearly not as good as the surface mapping had indicated. Further detailed mapping is required, followed by additional drilling.

**Table 7-16: INV Metals Drill Results at Sesfontein**

Target	Hole	FOH (m)	From (m)	To (m)	Width (m)	Cu %	Ag g/t
Sesfontein	INVR-027	15	Abandoned in overburden				
Sesfontein	INVR-028	249	107.0	110.0	3.0	0.15	2.30
Sesfontein	INVR-029	159	95.0	96.0	1.0		1.90
Sesfontein	INVR-030	159	Insignificant				
<b>TOTALS</b>	<b>4 holes</b>	<b>582 m</b>					



**Figure 7-27: Drill Holes and Prospective Zone at Sesfontein**



## **7.5.2. LOWER OMAO – UPPER OMAO CONTACT - HOSTED MINERALIZATION**

### **7.5.2.1. OTJOHOROWARA**

The Otjohorowara area, located roughly 12 kilometres north of Okohongo, was targeted as the geological and structural setting appeared to be a mirror image of the Okohongo area. The target area is located on the northwest side of the Epunguwe Nosib Group - basement inlier. Otjohorowara displays essentially the same pinch out – growth fault architecture as the Okohongo target area on the southeastern side of the inlier. At Otjohorowara Nosib Group shale pinches out between underlying Nosib conglomerate and overlying Nosib quartzite. In turn, Nosib Group quartzite pinches out against overlying Omivero Formation shale and siltstone. The Omivero thins dramatically as it approaches what has been mapped as a growth fault and then is cut off entirely at the fault. The overlying Lower Omao may also be at least partially cut off at the fault. If the growth fault interpretation is correct the Omivero cut-off reflects a lack of

Omivero deposition east of the fault (and a possible thickness change in the Lower Omao) and therefore a prospective stratigraphic/structural trap for mineralization.

Exposure of the Okohongo Horizon is poor due to being covered by scree from the more resistant, ridge-forming dolostones of the overlying Upper Omao Formation, and to calcrete seeping from the dolostones. However, INV Metals geologists identified two discrete zones (OTJH-1 and 2) of a previously unrecognized horizon of weak to moderate copper-silver mineralization in calcareous siltstone stratigraphically above the Okohongo Horizon, near the contact between the Lower and Upper Omao Formations (see Figure 7-28).

Malachite is the primary copper mineral observed in outcrop. Typically the horizon is discontinuously exposed on a calcrete and scree covered slope beneath a shallow-dipping, thin-bedded, medium brown to salmon colored limestone unit. The overlying limestone unit may account for the calcareous nature of the siltstone. Exposed thickness of the mineralized horizon rarely exceeds one metre, but it is likely that the siltstone extends down section under cover. Pink to buff colored dolostone that is tentatively mapped as the upper carbonate unit of the Lower Omao crops out immediately above the limestone. Based on the presence of discontinuous outcrops of the thin-bedded limestone unit, the prospective siltstone unit is likely to be present throughout the target area. Mineralization, however, appears to be confined to discrete sections of the horizon. At OTJH-1 copper mineralization that can be reasonably assumed to be continuous has been identified over a strike length of 1.4 kilometres.

Four kilometres to the east of OTJH-1, northwest of the main road, the same limestone-siltstone stratigraphy crops out in a calcrete covered slope below pink dolostone in the west dipping limb of a northeast-southwest trending anticline. Weak, discontinuous copper mineralization in calcareous siltstone can be seen in pits and in undisturbed surface outcrop along a strike length of 660 metres ("OTJH-2"). Five hundred fifty metres to the southeast, on the east dipping limb of the anticline, copper mineralization is exposed in a small pit at the same stratigraphic horizon.

Approximately 1,200 metres south of OTJH-1, a third mineralized zone, OTJH-3, consisting of structurally complicated high-grade copper-silver mineralization hosted in a dolostone unit with associated quartz veining was discovered stratigraphically beneath the Okohongo Horizon within the Omivero Formation. OTJH-3 may be analogous with the dolostone and quartz vein hosted high-grade mineralization exposed in pits in the footwall to the Okohongo deposit. One sample selected from a dump adjacent to the pits ran 10.4% copper and 295 g/t silver.

Six RC holes were completed to test soil geochemical anomalies and TerraNotes geophysical anomalies (see Figure 7-29). No significant mineralization was intersected (Table 7-17); the drilling revealed that the area is very structurally complicated with multiple thrust (?) sheets identified. It is important to note that due to access issues the best targets, OTJH-1 and OTJH-2, were not drilled. A single RC drill hole, INVR-96, was drilled beneath the mineralized pits at OTJH-3; however, no mineralization was intersected.



Figure 7-28: Geology at Otjohorowara

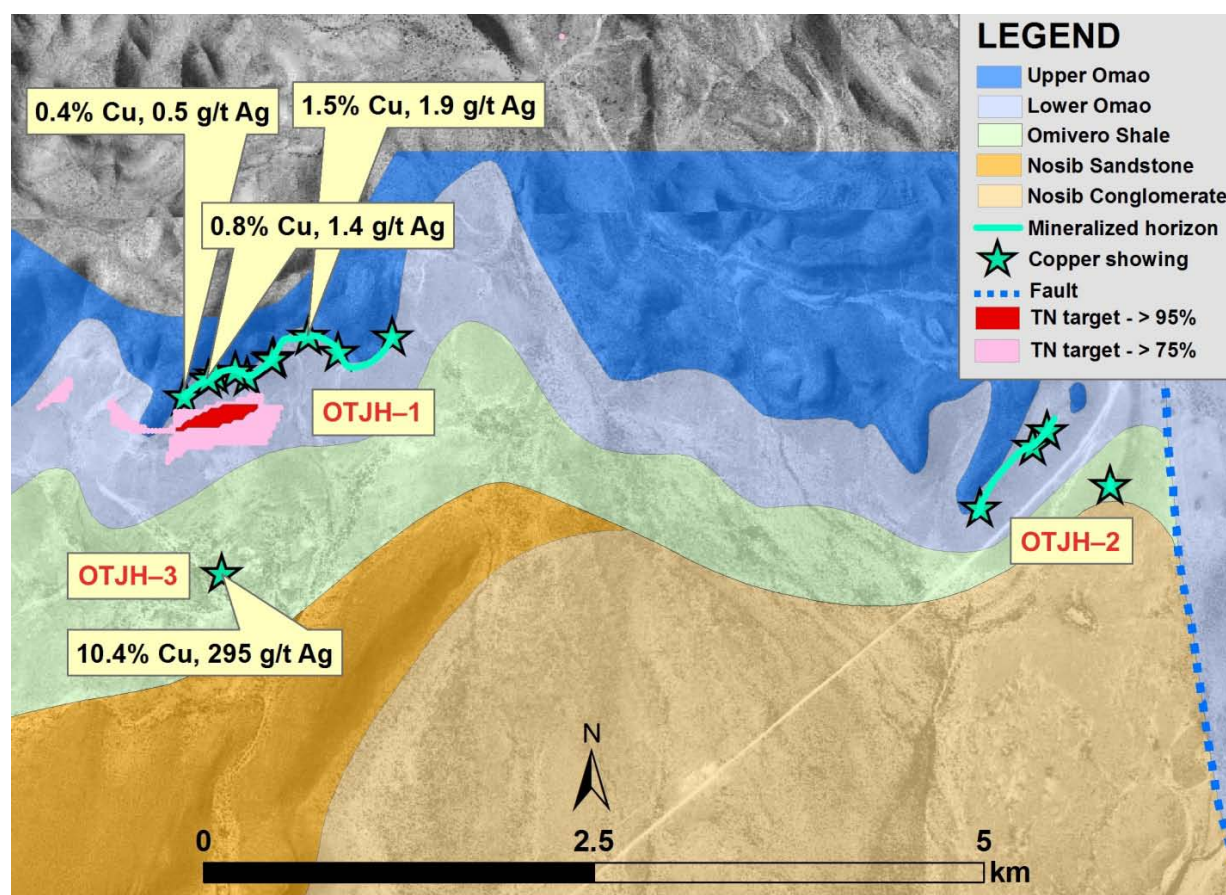
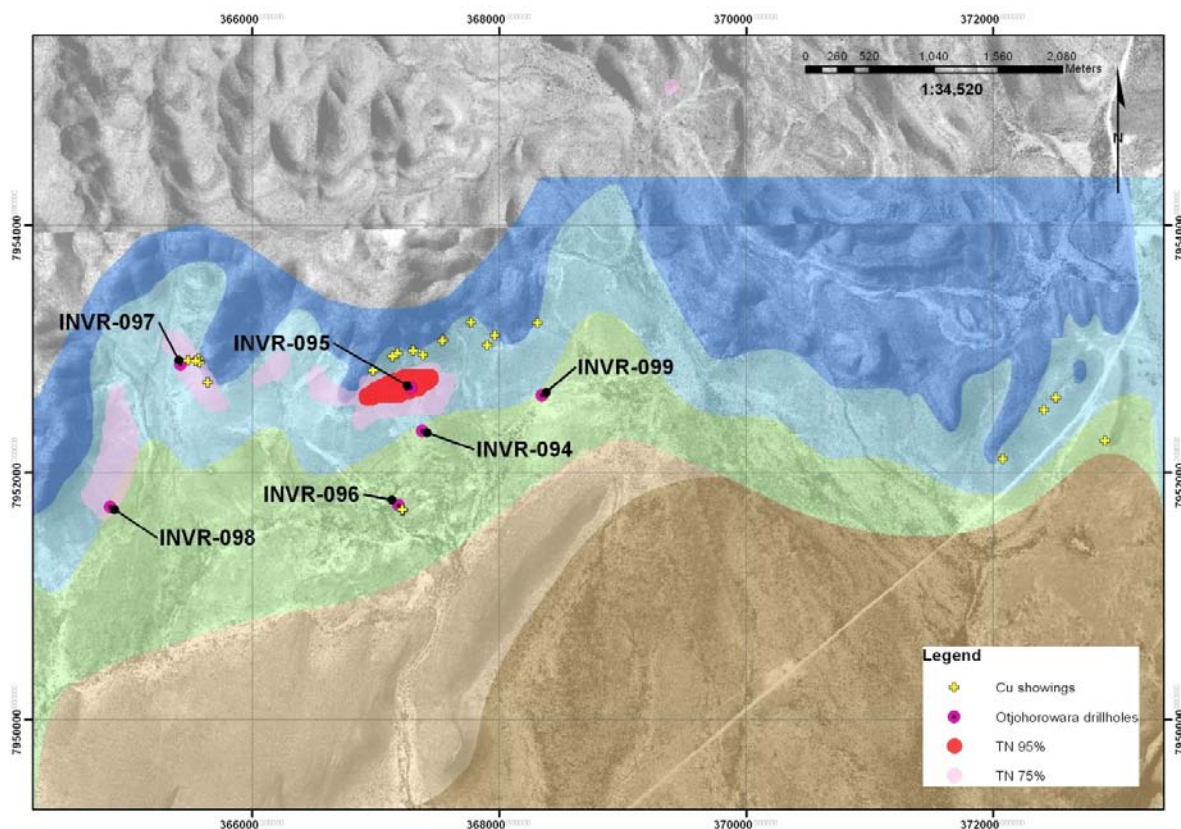


Table 7-17: INV Metals Drill Results at Otjohorowara

Target	Hole	FOH (m)		From (m)	To (m)	Width (m)	Cu %	Ag g/t
Otjohorowara	INVR-094	126		Insignificant				
Otjohorowara	INVR-095	216		Insignificant				
Otjohorowara	INVR-096	78		Insignificant				
Otjohorowara	INVR-097	174		144.0	147.0	3.0	0.20	3.30
Otjohorowara	INVR-098	162		Insignificant				
Otjohorowara	INVR-099	126		Insignificant				
<b>TOTALS</b>	<b>6 holes</b>	<b>882 m</b>						

**Figure 7-29: Drillholes and Geology at Otjhorowara**



#### 7.5.2.2. OTJITE

The Otjite prospect area is located approximately 10 kilometres south to south-southeast of the Okohongo deposit in a region of low undulating hills bound by a deeply incised river valley to the east with numerous occurrences and showings of copper mineralization. Two distinct areas of copper mineralization have been outlined as the East and West showings.

Detailed mapping and sampling of both showings was undertaken by TCN, with only the East showing being tested by diamond drilling. TCN rock sample results are provided in Table 7-18.

**Table 7-18: Teck Rock Sampling at Otjite**

Showing	# of Samples	Cu (%)	Pb (%)	Ag (g/t)
Otjite West	5	1.3 – 4.1	>0.5	1.50 – 6.70
Otjite East (A)	3	2.5 – 4.0	>0.1	5.70 - 195
Otjite East (B)	6	1.6 – 7.4	>2.9	2.70 – 95
Otjite East (C)	11	0.5 – 4.4	nil	7.30 – 477

The best values are from the East showing, with one composite outcrop grab sample containing 7.4% copper, 0.97% lead, and 95 g/t silver. Based on these initial results, TCN tested the East showing with three diamond drill holes; one into each of the occurrences (Table 7-19).

**Table 7-19: Teck Drill Results at Otjite East**

Borehole	Showing	From-To (m)	Width (m)	Cu (%)	Pb (%)	Ag (g/t)
TCD-004	Otjite East (C)	63.0 – 66.1	3.1	0.44	-	1.84
		including	1.0	0.81	0.16	3.90
		83.8 – 84.8	1.0	1.8	-	6.30
		90.7 – 92.5	1.8	0.56	-	5.10
TCD-007	Otjite East (A)	-	-	-	-	-
TCD-010	Otjite East (B)	77.2 – 78.1	0.9	0.31	-	11.2

In 2011 INV Metals personnel completed detailed geologic mapping of the Otjite prospect, which revealed that the mineralization in both areas occurs along the boundary between the Lower Omapo and Upper Omapo Formations. The uppermost portion of the Lower Omapo Formation encompasses a thick, massive, bedded to stromatolitic, light grey to pink, micritic dolostone conformably overlain by a package of interbedded schist and dolostone comprising several cycles of Okohongo Horizon-type lithologies sandwiched between pink to red dolostone. The schist horizons are interbedded with and overlain by dark grey-green, columnar stromatolitic dolostone with diagenetic chert horizons. Transitionally overlying the schist package are dark grey, micritic, algal mats, that rapidly evolve upward into white, micritic dolostone with abundant large (10's cm-sized) columnar and domal stromatolites.

Despite the close proximity of the two showings, they exhibit slightly different although similar styles of mineralization. The West showing is dominated by a 3-4 metre wide zone of sheared to mosaic brecciated rock immediately overlying the package of Okohongo-type schist located near the contact between the Lower Omapo and Upper Omapo Formations, while the East showing is hosted by the schist horizon.

At the West showing, copper mineralization strikes for roughly 1,000 metres with an apparent width of roughly 30 metres. In this area, the mineralization is hosted by dark grey (distal) to pink (proximal), micritic dolostone stratigraphically above the schist. Proximal mineralization consists of numerous copper oxides (i.e. malachite, chrysocolla-shattuckite-plancheite, and diopside), iron oxides, calcite/ferrous dolomite (ankerite/siderite) veins and veinlets, with accessory amounts of mottramite, cross-cutting and filling open spaces in the host rock. In contrast, distal mineralization comprises disseminated, botryoidal to colloform, malachite-chrysocolla infilling open-spaces in creamy-pink, micritic dolostones.

Mapping at the East showing led to the identification of three mineralized regions identified over roughly 800 metres of strike length. Averaging roughly 4-5 metres in width, mineralization principally comprises chrysocolla-shattuckite-plancheite and mottramite with lesser amounts of malachite and diopside occurring as cross-cutting and foliation parallel veins, fracture infills and local impregnations of the schist. Contrary to the dolostone-hosted mineralization of the West showing, the schist-hosted mineralization of the East showing is richer in mottramite with only minor amounts of malachite and diopside observed. While stromatolitic dolomite units are locally crackle brecciated to fractured, disseminated chrysocolla-shattuckite is only occasionally observed.

Three holes were drilled in 2011 by INV Metals at the Otjite West prospect targeting surface mineralization located to the north and south of the Otjite valley (Figure 7-30 and Table 7-20). Unfortunately all three holes collared below the prospective contact between the Lower and Upper Omapo Formations and it was concluded that the mineralized horizon has been eroded

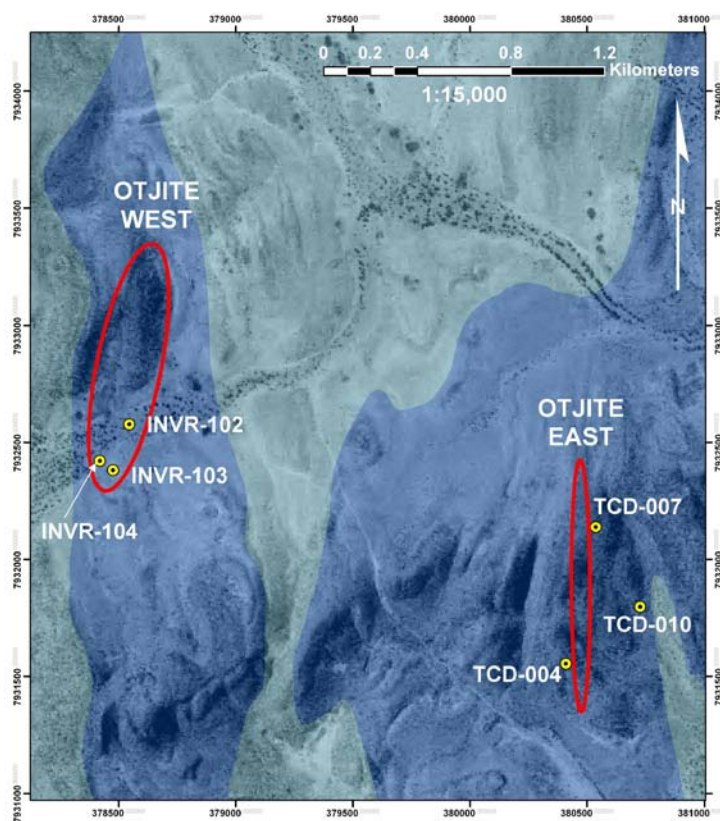


away and does not extend under the east-west striking valley as hoped. INV Metals personnel carried out a review of TCN's drilling at the East showing, and interpreted that: (1) TCD-004 was collared along the anticlinal hinge, stratigraphically below the mineralized horizon; (2) TCD-007 was drilled too far east and too steep to intercept the mineralization; and (3) TCD-010 was drilled at the base of slope too far east of the mineralized horizon. Therefore additional exploration is recommended for the Otjite East prospect.

**Table 7-20: INV Metals Drilling at Otjite West**

Target	Hole	FOH (m)	From (m)	To (m)	Width (m)	Cu %	Ag g/t
Otjite West	INVR-102	42	Insignificant				
Otjite West	INVR-103	24	Insignificant				
Otjite West	INVR-104	42	Insignificant				
<b>TOTAL</b>	<b>3 holes</b>	<b>108 m</b>					

**Figure 7-30: Drillholes and Geology at Otjite East and West**



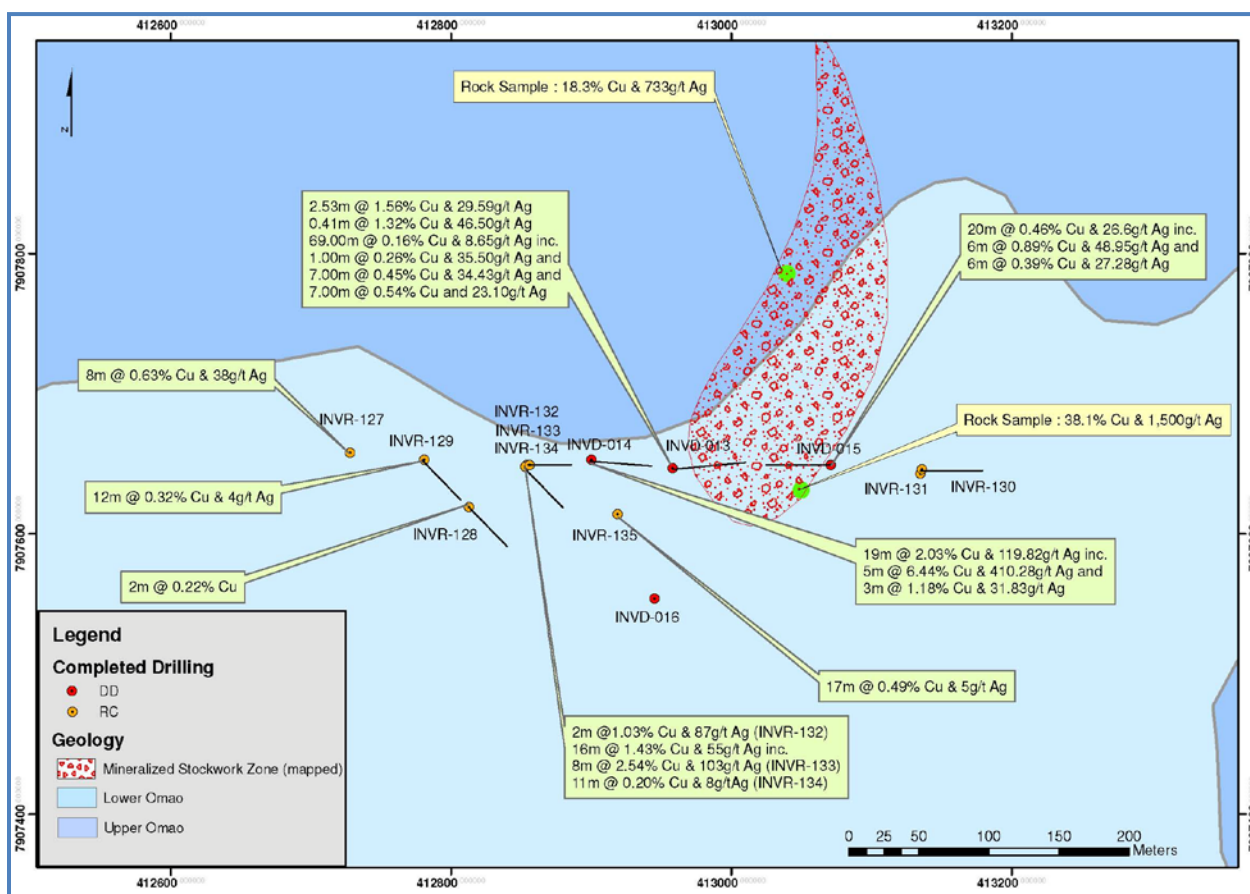
### 7.5.2.3. OMATAPATI

At the Omatapati target, detailed 1:1,000 scale geological mapping was completed by INV Metals geologists. The Omatapati copper showing is hosted by the prospective contact between the Lower and Upper Omao Formations (a similar setting to the OTJH1 and 2 prospects at Otjohorowara). It is hosted in partially brecciated and veined dolostone along a 450 metre long

zone on the eastern limb of a syncline, and is up to 120 metres wide at its southern extension, where it is entirely covered by a thin veneer of calcrete. In 2008 TCN geologists visited the area and collected four selected samples that returned values ranging from 18.3 % copper and 733 g/t silver to 38.1% copper and 1,500 g/t silver. Two rock samples collected two kilometres west at approximately the same stratigraphic position returned copper values of 3.5% and 4.3% with accompanying silver values of 9.3 g/t and 2 grams per tonne (Figure 7-32).

The first phase drilling at Omatapati was comprised of four diamond drill holes, INVD-13 to 16 (see Figure 7-31 and Table 7-21).

**Figure 7-31: Drillholes and Geology at Omatapati**



The drilling was highly encouraging as it intersected broad widths of disseminated bornite, chalcopryite, and chalcocite, as well as stringers and veinlets of malachite and bands of semi-massive chalcocite (see cover photo of hole INVD-14). Note that in some sections there was a fair amount of core loss, suggesting local cavities due to faulting (?) in a karst-like setting. Adjustments were made to the grades to compensate for the core loss (see footnote to Table 7-21).

Phase 2 drilling comprised 9 RC holes drilled in late 2011 (Figure 7-31 and Table 7-22). The highlight of this program is hole INVR-133, a vertical drill hole located 50 metres to the west of INVD-14, that intersected 16 metres grading 1.4% copper and 55 g/t silver from 74 metres



depth, including 5 metres at 3.4% copper and 120 g/t silver. Several planned holes could not be completed due to topography and will require a diamond drill to access the sites.

**Table 7-21: INV Metals Phase One Drill Results at Omatapati**

Hole	Length (m)		From (m)	To (m)	Width (m)	Cu %	Ag g/t	Adjusted for core loss*	
								Cu %	Ag g/t
INVD-13	169.8		13	24	11	0.52	13.3	0.36	10.0
		including	13.0	15.5	2.5	1.56	29.6	0.92	15.9
			34	103	69	0.16	8.7	0.16	8.6
		including	34	35	1	0.56	35.5	0.56	35.5
		and	74	93	19	0.40	22.9	0.40	22.9
		and	100	103	3	0.17	1.3	0.17	1.3
INVD-14	250.8		31	50	19	2.03	119.8	1.63	93.4
		including	33	38	5	6.44	410.3	5.02	312.3
		and	47	50	3	1.18	31.8	1.18	31.8
INVD-15	169.8		72	92	20	0.46	26.6	0.46	26.6
		including	74	80	6	0.89	49.0	0.89	49.0
		and	85	91	6	0.39	27.3	0.39	27.3
INVD-16	85.9	Insignificant							
<b>4 HOLES</b>	<b>676.3 m</b>								

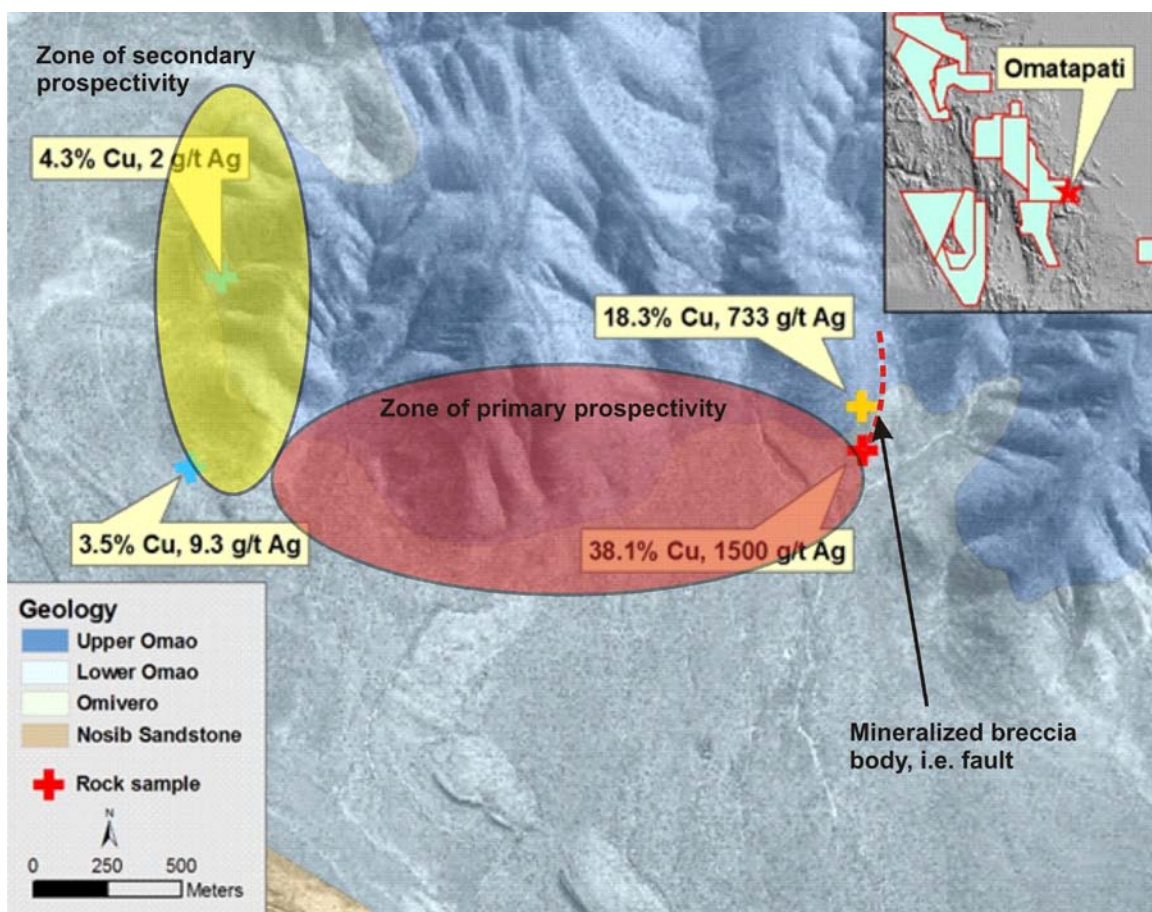
*\*Core recovery was variable in certain portions of the breccia zone due to faulting; values in this column assume copper and silver grades of zero for lost core, i.e. if in a given sample core recovery was 75%, the values used are 75% of the analytical results for the sample. This methodology provides a conservative estimate of the graded intervals.*

An internal review of the results to date concluded that the Omatapati prospect may not represent a late mineralized hydrothermal breccia body, but rather structurally-controlled to stratiform mineralization with similarities to the Otjohorowara prospect. The cross-cutting breccia body may represent the original, northwest-dipping (?) growth fault that was reactivated and mineralized (?) during basin inversion, while as yet undiscovered stratiform mineralization may occur west of the breccia as suggested by the two rock samples collected roughly two kilometres to the west (see Figure 7-32). This could explain the absence of mineralization in diamond drillhole 16, but also suggests that diamond drillholes 13, 14 and 15 drilled an oblique section through a mineralized fault. As such, the Omatapati prospect might represent stratiform copper mineralization and may remain open down dip and to the west. Note that the nature of the mineralization at Omatapati is such that the geometry remains unknown, hence the relationship between core lengths reported and true widths is not known at this time.

**Table 7-22: INV Metals Phase Two Drilling at Omatapati**

Hole	EOH (m)	Azimuth	Dip		From	To	Width	Cu %	Ag g/t
					(metres)				
INVR-127	147	0	-90		77	85	8	0.63	38
				Including	82	83	1	2.13	99
INVR-128	171	140	-65		44	46	2	0.22	1
INVR-129	195	140	-60		56	68	12	0.32	4
				Including	59	61	2	0.65	2
INVR-130	144	90	-60		77	78	1	0.51	8
INVR-131	188	0	-90		Not sampled				
INVR-132	165	90	-60		70	72	2	1.03	87
				Including	70	71	1	1.61	134
INVR-133	153	0	-90		74	90	16	1.43	55
				Including	76	84	8	2.54	103
				Including	77	82	5	3.37	120
INVR-134	150	140	-60		68	72	4	0.20	4
				Including	70	71	1	0.30	17
					77	88	11	0.20	8
				Including	79	81	2	0.31	16
INVR-135	144	0	-90		11	28	17	0.49	5
<b>9 HOLES</b>	<b>1,457 m</b>			Including	16	18	2	1.13	3

**Figure 7-32: Potential Prospective Zones at Omatapati**



### **7.5.3. STRUCTURALLY CONTROLLED, NOSIB GROUP - HOSTED MINERALIZATION**

#### **7.5.3.1. ORUVANDJAI**

The Oruvandjai area, adjacent to the Horseshoe target, is located between the villages of Oruvandjai and Omatapati, and approximately equal distance, i.e. 130 kilometres, between the towns of Kamanjab and Opuwo. From the village of Oruvandjai the target area extends for more than ten kilometres southeast to the boundary of EPL 3354. The area is underlain by Nosib Group sandstone, grit and minor conglomerate. The primary target at Oruvandjai is disseminated copper mineralization hosted in Nosib Group siliciclastic rocks. Intermittent copper oxide staining and associated disseminated sulphide are exposed on both sides of an interpreted synformal valley that separates two blocks of Nosib Group quartzite. On the west side of the valley intermittent copper-silver mineralization is exposed over a strike length of 2.5 kilometres from the Oruvandjai North showing through the Patrick's Face disseminated sulphide showing to a series of trenches south of Patrick's Face. On the east side of the valley disseminated blebs of chalcocite and associated copper oxide staining extend for approximately 300 metres in Nosib Group sandstone to form Gilbert's showing. Copper-silver mineralization at Gilbert's showing occurs in the upper few metres of quartzite beneath a capping dolostone unit. The mineralization style at Oruvandjai may be analogous to the arenite hosted deposits of the Zambian Copperbelt such as Mufulira (335 million tonnes at 3.3% copper) and Chibuluma West.

Apart from the excavation of a few unattributed trenches there is no record of any significant previous work done in the Oruvandjai area. In 2006 TCN covered the area with regional 1:25,000 scale geological mapping and completed seven km<sup>2</sup> of gradient array IP. Detailed mapping and prospecting in 2007 resulted in the discovery of many new showings. In 2008 TCN continued to map, completed an additional 35 km<sup>2</sup> of gradient array IP and 16.7 km of pole-dipole IP in six northeast-southwest lines. TCN collected 494 base-of-slope soil samples around several of the large, northwest-southeast trending ridges that expose Nosib quartzite and disseminated copper mineralization. Finally in 2008 TCN drilled 2,481 metres in nine diamond drill holes (1,547 metres), six RC holes (839.5 metres) and two percussion holes (94 metres) drilled for water.

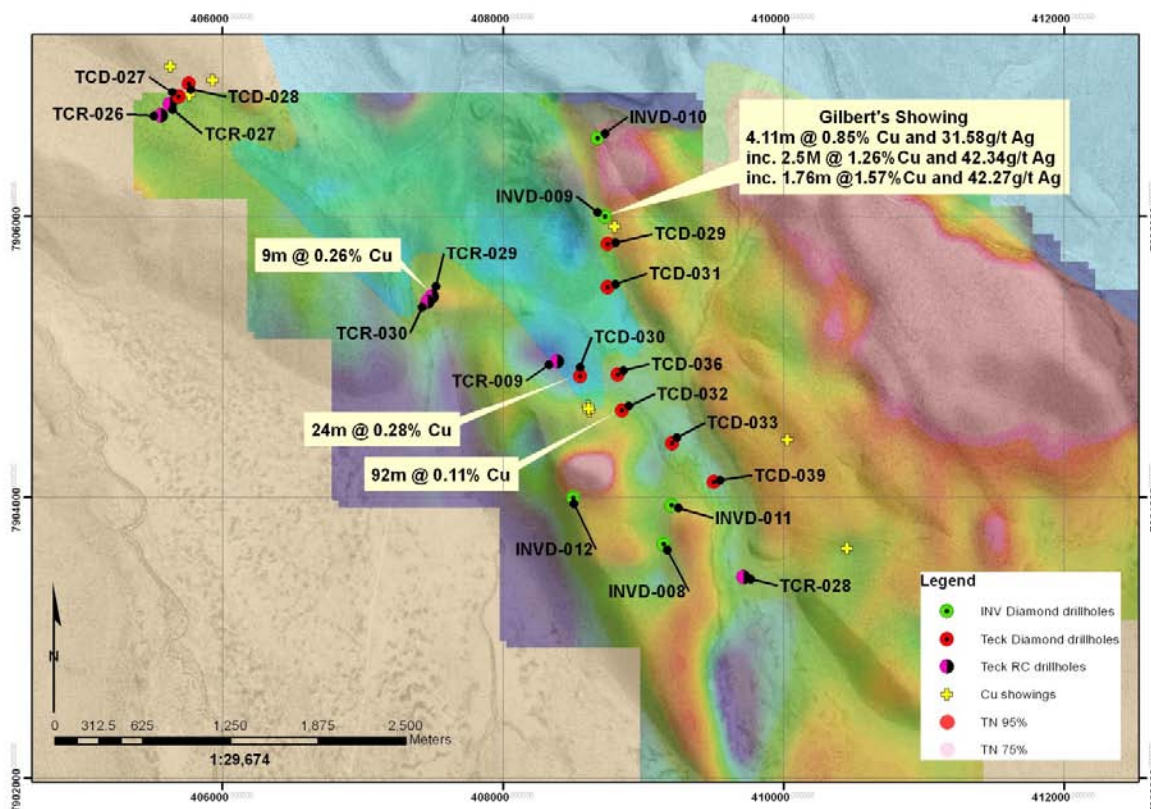
Several of the holes contained anomalous copper values over tens of metres. TCD-028, for example, averaged 545 ppm copper over fifty-one metres. However, only four of the seventeen holes carried significant mineralization. Table 7-23 lists mineralized intercepts from TCN's Oruvandjai drilling.

In 2011 INV Metals drilled five diamond drill holes to test mineralization at Gilbert's showing, associated IP anomalies, and IP anomalies that were interpreted to be potentially related to the Patrick's Face mineralization (see Figure 7-33). Only one drillhole intersected minor chalcocite at Gilbert's showing (see Table 7-24); none of the IP anomalies was explained. It is possible the IP anomalies are due to increased porosity within the Nosib Group quartzites and therefore more contained ground water.

**Table 7-23: Teck Drill Results at Oruvandjai**

<b>Drill Hole</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Width (m)</b>	<b>Cu %</b>	<b>Ag g/t</b>	<b>FOH (m)</b>
TCD-030	27.0	51.0	24.0	0.28		246.56
including	34.0	43.6	9.6	0.55	5.77	
and	202.8	214.0	11.2	0.16	9.1	
TCD-032	35.0	126.5	91.5	0.11		312.51
including	50.5	65.8	15.3	0.22		
including	50.5	54.9	4.4	0.45	17.67	
and	120.6	126.5	5.9	0.4	6.7	
TCR-029	61.0	70.0	9.0	0.26	3.07	150
TCR-030	92.0	94.0	2.0	0.44	8.05	150

**Figure 7-33: Drillholes and IP at Oruvandjai**



**Table 7-24: INV Metals Drill Results at Oruvandjai**

Target	Hole	FOH (m)	From (m)	To (m)	Width(m)	Cu %	Ag g/t
Oruvandjai	INVD-008	250.72	Insignificant				
Oruvandjai	INVD-009	120.60	14.10	18.21	4.11	0.85	31.6
			14.85	17.35	2.50	1.26	42.3
			15.59	17.35	1.76	1.57	42.3
Oruvandjai	INVD-010	59.25	Insignificant				
Oruvandjai	INVD-011	163.54	Insignificant				
Oruvandjai	INVD-012	254.08	Insignificant				
<b>TOTALS</b>	<b>5 holes</b>	<b>848.19 m</b>					

Following the drilling, a review of all data generated by both Teck and INV Metals was completed at Oruvandjai. It was concluded that the Patrick's Face mineralization is restricted to sheared and veined Nosib Group quartzites along a presumed growth fault. At Gilbert's showing mineralization occurs along the western side of a west-dipping monocline near the top of the Nosib quartzites. The quartzites appear to represent a series of river channel and levee deposits in a shallow marine or lake environment, i.e. transitional sub-aerial (deltaic) to shallow



marine environments. Channel-fill deposits are marked by small (~five metres wide), trough cross-bedded conglomerates with anomalous malachite  $\pm$  chrysocolla. It would appear that copper bearing fluids travelled along these channel-fill deposits, probably due to improved permeability and porosity, depositing copper where a reducing environment was encountered. Adjacent to the channels, minor amounts of copper-bearing fluid appear to have leaked out into the surrounding levee deposits or shallow marine sands producing the disseminated chalcocite.

Based on this interpretation, tonnage potential is clearly limited and no further work is warranted at Oruvandjai.

#### 7.5.3.2. EPUNGUWE

Located roughly five kilometres north-northwest of the Okohongo deposit, the Epunguwe prospect represents a northwest, roughly three kilometre by half kilometre trend of soil anomalies, as well as copper mineralization exposed at the surface and in trenches along a significant syn-sedimentary, basinal growth fault. The Epunguwe mineralization is structurally-controlled and hosted by conglomerates of the basal Nosib Group and intermediate to upper portions of the Lower Omao Formation.

The obvious exposed mineralization has attracted the attention of other exploration groups since the 1970s. Previous work includes General Mining soil surveys from the 1970s, MIM drilling in the late 1990s and, most recently, TCN mapping, sampling, geophysics and drilling.

General Mining collected 369 soil samples on a 50 metre by 10 metre grid in the vicinity of the trenches and another 470 samples spaced 50 metres apart in nineteen northeast-southwest lines every 500 metres for seven km along the Nosib-Ombombo Subgroup contact. In the late 1990s MIM drilled 710 metres in nine closely spaced drill holes in two northeast-southwest trending fences. Their target was the down-dip extension of copper-silver mineralization exposed in trenches that straddle the Nosib Group-Ombombo Subgroup contact. One MIM drill hole intercepted significant mineralization (see hole KAP-130 in Table 7-25).

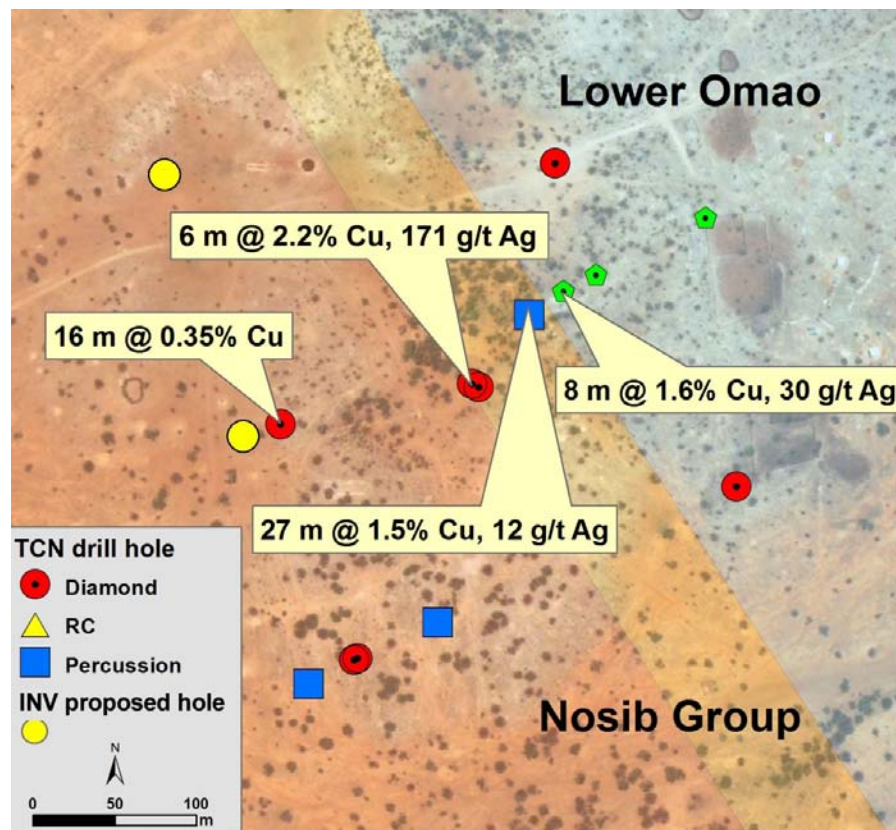
The Epunguwe area was included in TCN's 2006 regional 1:25,000 scale geological mapping program. In 2006 TCN completed a 9.25 km<sup>2</sup> gradient array IP survey that covered exposed mineralization at Epunguwe. Aside from mapping the Nosib-Ombombo contact neither chargeability nor resistivity display features that readily explain mineralization intercepted in Epunguwe drilling. TCN's detailed 1:5,000 scale geological mapping covered Epunguwe in 2007. In 2007 TCN drilled seven diamond drill holes totalling 1,092 metres and three percussion holes for water totalling 276 metres (see Figure 7-34). Four of the ten holes, including one of the percussion holes, intercepted significant copper-silver mineralization. Two of the mineralized holes contained two distinct mineralized zones separated by fifteen to twenty metres of barren rock. The dominant host rock at Epunguwe is described as Nosib conglomerate at or near the contact with overlying Ombombo Subgroup rocks. Omivero and Lower Omao siltstone and Lower Omao dolostone also host mineralization. Table 7-25 lists mineralized intercepts from TCN's drilling (holes TCD-xx) at Epunguwe as well as one MIM hole (KAP-130).

INV Metals will be compiling all of the data from this prospect in 2012 to determine if further drilling is warranted.

**Table 7-25: Teck and MIM Drill Results at Epunguwe**

Drill Hole	From (m)	To (m)	Width (m)	Cu %	Ag g/t	FOH (m)
TCD-019	19	41.6	22.6	0.34	3.2	65.1
including	19.9	31.4	11.5	0.49	4.7	
and	55.8	65.1	9.3	1.64	122.6	
including	55.8	61.8	6.0	2.23	171.4	
TCD-021	10.0	42.0	32.0	0.14	2	81.34
including	22.0	26.6	4.6	0.37	5.4	
and	59.9	78.2	18.3	0.72	13.6	
including	61.0	65.3	4.3	1.84	37.9	
TCD-023	107.3	123.5	16.2	0.35		175.8
including	107.3	108.3	1.0	1.89	17.1	
TCP-002	0	27.0	27.0	1.47	11.7	45
including	0	21.0	21.0	1.76	14.1	
including	0	8.0	8.0	2.8	18.9	
KAP-130	0	20.0	20.0	0.94	14.1	75
including	1	9.0	8.0	1.58	30	

**Figure 7-34: Drillholes and Geology at Epunguwe**



### 7.5.3.3. OKANGURA

The Okangura target occurs roughly four kilometres south-southwest of the Okohongo deposit. It is comprised of three showings (North, Central and South) exposed over a 3 kilometre length.

In the early 1990's, MIM dug a series of trenches along the entire extent of the prospect followed by the drilling of three RC holes at the North showing, one at the Central showing, and seven at the South showing. The best result was from drillhole KAP- 147 at the North showing, intersecting 9 metres at 0.38% copper and 1.0 g/t silver.

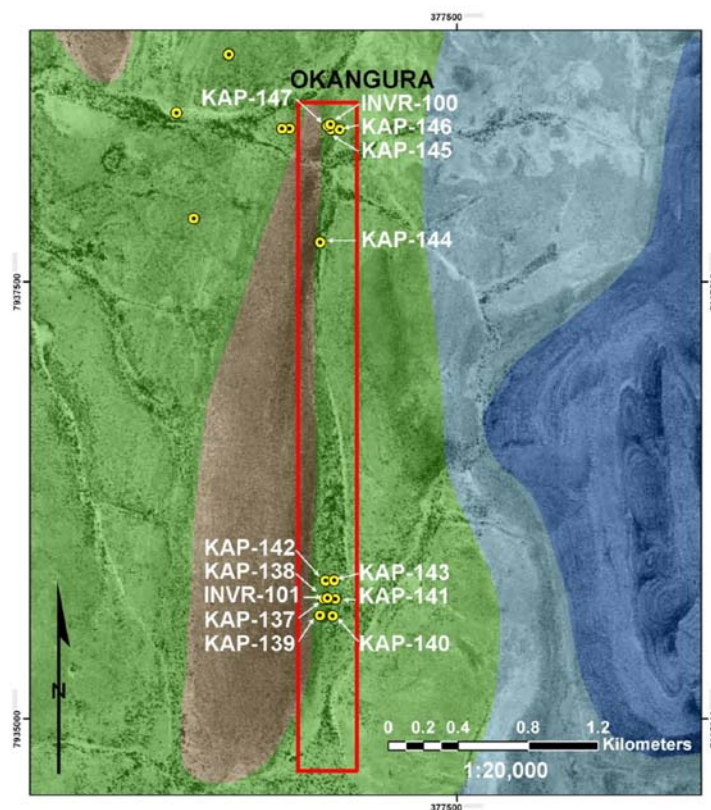
An examination of several showings by INV Metals geologists revealed that copper oxides are restricted to a near vertical, north-south trending shear zone separating arenites and purple schist of the uppermost Nosib Group and Omivero Formation. Where mineralization is hosted by the Omivero Formation it is localized along the faulted contact with the Nosib Group and looks very similar to the Okohongo discovery trench. Copper oxides consist of chrysocolla, shattuckite, and malachite with accessory diopside along foliation planes, fracture surfaces and veins in light grey-green schist overlain by a pink dolomite horizon. Distal to the mineralization, roughly 50 metres, the host rock grades into basal purple schist with reduction spotting overlain by a red dolomite horizon. Elsewhere in the prospect, near vertical east-west striking veinlets to veins of chrysocolla and malachite are hosted by the arenaceous rocks of the Nosib Group. The proximity of the mineralization to the arenaceous rocks of the Nosib Group and red dolomite horizon, suggest that the mineralization is hosted along the contact between the Nosib and Otavi Groups or an equivalent horizon to the mineralization at Gilbert's Face. Although subcrops of pyritic, grey-green siltstone-shale of the Okohongo Horizon were identified roughly 70 metres east of the Nosib-Otavi Groups contact, they are barren.

Two RC drill holes were subsequently drilled by INV Metals into the North and South showings; no anomalous copper values were encountered, showing that the prospects have no down-dip extent (Table 7-26 and Figure 7-35).

**Table 7-26: INV Metals Drill Results at Okangura**

Target	Hole	FOH (m)		From (m)	To (m)	Width (m)	Cu %	Ag g/t
Okangura	INVR-100	42		Insignificant				
Okangura	INVR-101	90		Insignificant				
<b>TOTALS</b>	<b>2 holes</b>	<b>132 m</b>						

**Figure 7-35: Drillholes and Geology at Okangura**



#### **7.5.3.4. MANUELA**

The Manuela target is located equal distance between the villages of Omungunda and Otjiu, approximately 85 kilometre southwest of Opuwo. Regional and detailed geological mapping of the target area was undertaken by INV Metals geologists in March 2010 at a scale of 1:10,000 and 1:5,000, respectively.

The Manuela target area is dominated by a north-south trending array of anastomosing shear zones, which separate Swakop Group rocks in the west from Nosib Group and Epupa Complex rocks to the east. These structures are a northward extension of the 'Sesfontein Thrust'. The Sesfontein Thrust is recognized as a major crustal structure thought to have been initiated as a west-dipping growth fault, with shallow water and platformal sequences of the Nosib Group and overlying Ombombo Subgroup deposited to the east, and the basinal rocks of the Swakop Group deposited in deeper water to the west. A westward increase in metamorphic grade towards and across the fault indicates significant reactivation as a reverse/thrust fault during basin inversion.

The stratigraphy of the Manuela target comprises a highly deformed lower Damaran (i.e. Nosib Group) sequence of highly deformed fault scarp/volcaniclastic conglomerate, phyllite/schist, dolostone and quartzite overlying an extensive complex of granitic gneiss that make up the basement complex.

During the course of routine regional and detail mapping, four distinctly different styles of copper mineralization were observed, and comprise: 1) quartz and copper oxide veins; 2) malachite-stained schist; 3) stratabound (?) mineralization; and 4) mineralized shear zones.

Mineralized quartz copper oxide veins consist of cross-cutting or foliation parallel, open-space-filling, milky white quartz veins with intergrowths of malachite. Although volumetrically less important, two other types of mineralized quartz veins have been observed. They are translucent to milky white, open-space-filling quartz, malachite, azurite, and diopside, iron oxide veins that display good box work textures and quartz-calcite veins and breccia matrices of crackle breccias in a blue dolostone.

Malachite-stained schist consists of a thin malachite veneer or “painting” observed on the underside of some chloritic phyllite/schist overhangs and does not appear to be economically significant. Despite this, locally in the vicinity of areas displaying stratabound mineralization, these “paintings” do appear to show a close spatial association with primary and secondary faults and thrusts, suggesting malachite “painting” could be related to fluid movement along secondary structures.

The mapping program identified a previously unrecognized zone of dolostone-hosted stratabound mineralization. This mineralization consists of malachite-stained surface outcrops, fractures and joints derived from the weathering of sulphides (i.e. chalcocite, covellite and chalcopyrite) in open-space-filling veins, breccias or more rarely as dissemination in the host rock.

At UTM South Zone 33K 326266, 7971409 granitic gneisses of the basement complex contain a copper-oxide stained, sheared/fractured, silicified and altered zone that parallels the foliation of the gneisses. The shear zone measures roughly 450 metres in length by 30 metres in width before being uncomfortably truncated by the metasedimentary rocks of the Nosib Group.

A six hole, 1,310 metre, diamond drill program was completed at the Manuela target. The drilling tested a few of the surface copper showings and a number of IP anomalies and returned no significant values of copper (Table 7-27 and Figure 7-36). Most of the IP anomalies were explained by the presence of disseminated pyrite, pyrrhotite and minor chalcopyrite.

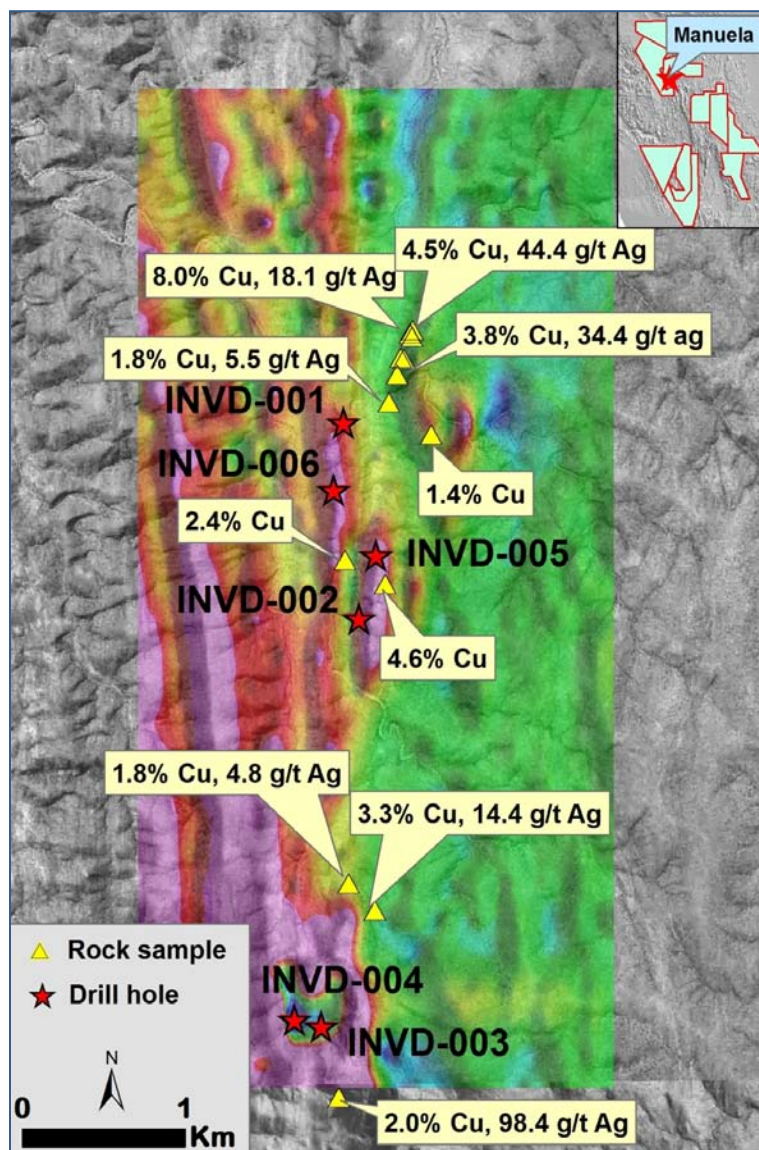
A thorough review of the drill program, including drill core lithogeochemistry, was carried out, and concluded that further work, albeit lower priority, is warranted at Manuela. Most of the drill holes were targeted at IP anomalies, irrespective of geological setting, and were inadvertently drilling in stratigraphy of the lower Omuhiva Formation, a Nosib Group equivalent. Drill hole INVD-05 appears to have tested the appropriate horizon, but probably too far south and therefore may have intersected the distal equivalent of the target.



**Table 7-27: INV Metals Drill Results at Manuela**

Target	Hole	FOH (m)	From (m)	To (m)	Width (m)	Cu %	Ag g/t
Manuela	INVD-001	250	No significant values				
Manuela	INVD-002	200	No significant values				
Manuela	INVD-003	300	No significant values				
Manuela	INVD-004	150	No significant values				
Manuela	INVD-005	207	No significant values				
Manuela	INVD-006	203	No significant values				
<b>TOTALS</b>	<b>6 holes</b>	<b>1,310 m</b>					

**Figure 7-36: Drillholes, Mineral Showings and IP at Manuela**



## 7.5.4. BASEMENT - HOSTED MINERALIZATION

### 7.5.4.1. ORUWANYE

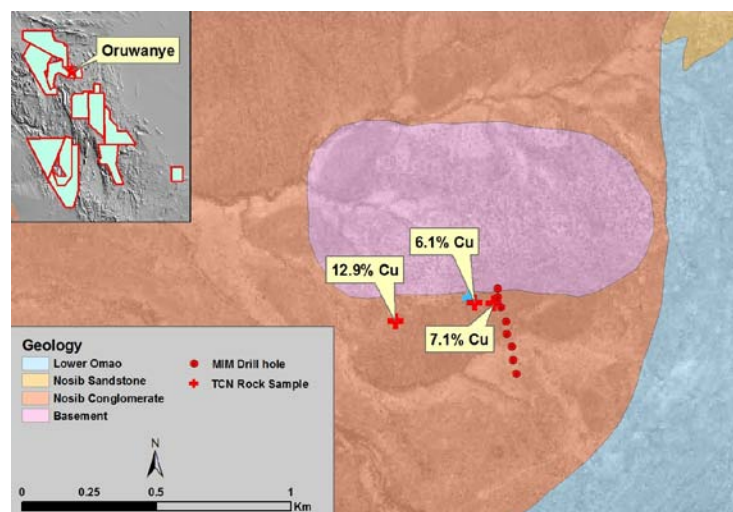
The Oruwanje area is located approximately 10 kilometres west of the Kaoko-Otavi village site or roughly 45 kilometres southwest of Opuwo. Regional geological mapping of the area was undertaken in March 2011 by INV Metals geologists at a scale of 1:10,000. The Oruwanje target area is centred on a group of high-grade copper showings exposed in shallow pits excavated in Nosib conglomerate near the contact with a small basement inlier.

The stratigraphy of the Oruwanje area comprises a similar stratigraphic sequence to the remainder of the property, which is characterized by moderately deformed conglomerates, arkosic/sub-arkosic to quartzites, phyllites/schists and dolostones that overlie a heterogeneous basement complex.

Copper mineralization in the Oruwanje area primarily consists of copper oxides  $\pm$  sulphides in two to four metre thick shear zones and quartz veins. Analogous to the other showings and prospects in the property, chrysocolla and malachite dominate the oxides observed, while trace amounts of azurite and diopside were locally observed in quartz veins. Where encapsulated by quartz veins, chalcopyrite and lesser bornite  $\pm$  chalcocite dominate the sulphides present. Two morphological and mineralogical styles were identified; mineralized shear zones and mineralized quartz veins. During regional 1:25,000 scale geological mapping TCN geologists collected five rock samples at and in the vicinity of the showings. Assay results are listed in Table 7-28.

Outcrops of the mineralized shear zone are restricted to the southern contact between the basement and subarkosic quartzite. Copper oxides occur as fine disseminations throughout the rock, coating on fracture and foliations surfaces, as well as cross-cutting veinlets. All copper mineralization is restricted to boudinaged, compositionally banded, sheared to mylonitic rock with both basement orthogneiss and Nosib Group arkosic protoliths identified. Along strike, this unit has been traced for at least 600 metres to the east before disappearing under cover, while the western boundary is cross-cut by a northwest-trending shear zone that can be traced for roughly 350 metres before also disappearing under a perennial stream bed.

**Figure 7-37: Drillholes and Geology at Oruwanje**



**Table 7-28: Teck Rock Sampling at Oruwanye**

Sample ID	Source	Sample Type	Sample Dimension	Cu %	Ag g/t	Au g/t
14722	Pit	Outcrop composite	4x2x1.5 metres	8.96	85	9.92
14721	Outcrop	Outcrop composite	50x5 metres	12.95	323	0.488
14619	Pit	Pit composite		7.07	74.2	0.39
14621	Outcrop	Outcrop linear chip	20 metres	6.08	32.2	0.125
14620	Outcrop	Outcrop composite		0.54	5.5	0.025

Prior to TCN's work MIM drilled eight holes totalling 750 metres in the immediate area of the showings. One drill hole collared in the basement, inclined south at 60 degrees and was drilled to a depth of fifty metres. The remainder collared in Nosib conglomerate, were inclined to the north at 69 degrees, and were drilled to a depth of one hundred metres. Drill holes collars were spaced fifty metres apart. Three of the holes intercepted moderately anomalous copper values ranging from 133 to 2,131 ppm copper at downhole depths between seventy and ninety metres. The target at Oruwanye is disseminated copper mineralization. Because the showings appear to be near the Nosib-basement contact instead of at the top of the Nosib or in the Lower Omao Okohongo Horizon as is seen to the south at, for example, the Okohongo and Oruvandjai target areas, there is the possibility of a genetic affinity with the Lumwana deposit in northwestern Zambia. Figure 7-37 shows the location of the target area, the local geology, MIM drill collars and TCN rock samples.

Based on the geological setting, no further work is recommended at this time.

## **8. MINERAL DEPOSIT TYPES**

The primary target type at Kaoko is stratiform sediment-hosted copper  $\pm$  cobalt  $\pm$  silver deposits similar to those located in the African Copperbelt of the DRC and Zambia. The Neoproterozoic, 700 kilometre long by <100 to 150 kilometre wide Copperbelt hosts one of the world's greatest concentrations of such deposits, totalling more than half of the world's mineable cobalt, and includes world-class deposits that individually contain greater than 10 million tonnes of copper, including Kolwezi, Tenke-Fungurume, Konkola-Chililabombwe, Nchanga, Nkana, and Mufulira. If sub-economic occurrences are included the total copper content of the host Katangan basin is almost 200 million tonnes. Mineralization is associated with iron, and sometimes with anomalous nickel, uranium, gold, platinum group elements, molybdenum, vanadium, tellurium, arsenic, and thorium. The ore is mainly comprised of disseminated sulphide minerals forming stratiform orebodies hosted in fine-grained siliciclastic or dolomitic sedimentary rocks (Cailteux et al, 2005).

A copper deposit at Kaoko could be either arenite-hosted in Nosib Group quartzites (i.e. a Mufulira sub-type); shale-siltstone-dolomite hosted within the Ombombo Subgroup, situated between the Nosib and the overlying Abenab Subgroup carbonates (and hence be a Lower Roan sub type); or hosted in vuggy and porous dolomites of the Abenab (not common in the Zambian Copperbelt, but known in the DRC and common elsewhere). Exploration at Kaoko to date has identified examples of the first two styles of mineralization. The Oruvandjai prospect is hosted in the Nosib Group, with mineralization over core intervals of up to 90 metres, while the Okohongo deposit and the vast majority of copper prospects on the property are hosted in the

overlying shales, siltstones and dolostones of the Lower Omao Formation, either within the Okohongo Horizon or at the Lower Omao- Upper Omao Formation contact (e.g. Otjohorowara and Omatapati).

Schneider and Seeger (1992, Mineral Resources of Namibia) provide a summary of known styles of copper mineralization hosted in the Damara Supergroup lithologies of Kaokoland-Kamanjab region, in both the Nosib and the Abenab formations. Only a handful of these showings have been demonstrated by mapping, trenching, or drilling to be stratabound in any significant way (Allen, 2005). Although the first three showings/deposits listed below are located up to 250 km (Tzamin) from the Kaoko Project area they are relevant because of their stratigraphic position in Lower Roan equivalent Nosib Group rocks and because of their Copperbelt style disseminated mineralization.

- (1) Tzamin 228 at the eastern extremity of the Kamanjab Inlier. A resource of 200 Kt grading 1.9% copper and 56 g/t silver over an average thickness of 1.7 metres has been defined by 26 holes totalling 4,500 metres over an area of 1,400 by 350 metres. Mineralization is present as chalcocite and bornite in purple grey Nosib sandstones transitioning into Chuos diamictite (?) and Tsumeb dolomites (?) and in some holes occurs at multiple horizons. Regional maps at 1:500,000 suggest the Nosib is rapidly pinching out against the basement Kamanjab granites; that the Nosib is truncated by Tsumeb Formation dolomites; and that the mineralization may be contained in a small paleobasin (Allen, 2005)
- (2) Vaalwater 283. Disseminated copper along 800 metres of Nosib-Abenab contact, with a best intercept 0.32% copper over 3 metres. The showing is located on the north margin of the Kamanjab within an elliptical window with the Nosib seemingly pinching out beneath the much thicker Abenab (Allen, 2005).
- (3) Naaupoort 511. Located on the southern margin of the Kamanjab where basal conglomerates of the Nosib pinch-out between basement lithologies and overlying Ugab limestone. Best drill intercept is 5 metres @ 1.4% copper (Allen, 2005).

The following occurrences are located within the EKZ of the Kaoko Belt.

- (4) 10 kilometres southwest of Ombombo, where two to four metre thick beds of mineralized Nosib quartzites gave grades (oxidized and enriched) of 1.4 - 4.9% copper. This showing lies within 50 metres of the projected Abenab contact (Allen, 2005). Note that TCN geological mapping would place the nearby contact as being with the Ombombo Subgroup.
- (5) MIM drilled disseminated copper mineralization in conglomerate and sandstone at the top of the Nosib Group at the OU and Grid 1 areas located 75 kilometres northeast of the Kaoko Project. Drill hole KAPD87 returned the best drill results at OU with 3.95 metres at 1.05% copper and 18.8 g/t silver. At Grid 1 two holes, OMD1 and OMD6, returned 5.3 metres of 2.08% copper and 6.5 metres grading 1.93% copper, respectively.

Sediment-hosted stratiform copper (SSC) deposits are comprised of relatively thin (metre-scale) copper sulphide-bearing zones that conform closely, but not exactly, to lithological layering. SSC deposits commonly occur in low-latitude, evaporite containing basins with marine or large-

scale lacustrine rocks immediately overlying continental red beds, and in isolated non-red units within the continental red-bed sequences themselves. Although deposits are known from basins ranging in age from early Proterozoic to Tertiary, by far the majority of economic SSC mineralization occurs in mid to late Proterozoic and late Paleozoic basins. SSC deposits are the products of evolving basin scale, or at least sub-basin-scale, fluid flow systems.

Mineralization is hosted within a variety of sedimentary rock types, including shale, siltstone, sandstone, conglomerate, and dolomite, which typically form a reducing facies that either overlies (Kupferschiefer type) or occurs within (red bed type) oxidized hematite-bearing red bed sequences. Kupferschiefer type deposits can have exceptional size because the host rocks are very widespread, deposited during marine transgression over the red bed sequence. Many red bed type deposits are areally restricted, and have tabular or roll-front geometries.

The African Copperbelt is hosted in metasedimentary rocks of the Neoproterozoic Katangan Supergroup, which underwent greenschist to amphibolite facies metamorphism during the Pan-African Lufilian orogeny. The Katangan Supergroup records the development of a major Neoproterozoic intracontinental to passive margin basin, broadly associated with breakup of the Rodinian supercontinent. Continental arkosic to arenaceous sandstones and conglomerates ("red beds") of the lower part of the Lower Roan Group record basal rift-phase sedimentation, and were deposited unconformably on an early (~1.8 to 2.0 Ga) to late (~880 Ma, maximum age of Roan sedimentation) Proterozoic metamorphic and granitic basement.

The thickness of the basal Lower Roan red bed package varies considerably, from zero to approximately 1,000 metres, due to syn-sedimentary fault control on sediment accumulation. Subsequent transgression and development of a shallow marine mixed carbonate-clastic-evaporite platform is recorded by the deposition of the "Ore Shale", the uppermost Lower Roan, and the overlying Upper Roan Group. The ore shale is a regionally correlated fine-grained and commonly carbonaceous metasilstone-mudstone, and represents the first (lowermost) major reducing lithology within the basal Katangan sequence, and hence is akin to the Kupferschiefer. It developed due to marine transgression coincident with regional linkage of earlier basin- and sub-basin bounding faults, and marks a readily identifiable change from highly variable stratigraphic thicknesses and lateral facies distributions in its footwall, to broadly "layer-cake" stratigraphy in its hangingwall. The ore shale often lies without apparent unconformity or hiatus upon a remarkably continuous metres-thick bed of arkosic conglomerate. The Upper Roan appears to have contained extensive evaporitic sediments, however the evaporites were dissolved leaving only breccia complexes (largely stratabound but in places diapiric) and anhydrite to mark their former presence. The overlying Mwashia Group grades upward from a carbonate-rich base to a dominantly siliciclastic sequence, culminating locally in starved, black shale conditions. Mafic volcanic rocks are present in the lower Mwashia in western Zambia. The Mwashia Group is overlain by diamictites, shales, siltstones, and carbonate rocks of the Lower and Upper Kundelungu Groups. The base of the Lower Kundelungu Group is marked by a diamictite, the Grand Conglomerate, constrained in age by dates from overlying and underlying volcanic rocks to ~735-760 Ma, and thereby correlated with Sturtian diamictites worldwide. The base of the Upper Kundelungu Group is marked by a second, thinner diamictite (Petite Conglomerate), which pre-dates Lufilian folding and may correlate with Marinoan (~600 Ma) diamictites worldwide. An igneous event occurred throughout the African Copperbelt in Mwashia to Lower Kundelungu time (~735 to 760 Ma) and resulted in the emplacement of numerous gabbro sills in the Zambian Copperbelt, and extrusive rocks in the northwestern Lufilian Arc. The coincidence of widespread igneous activity and diamictite deposition at approximately 750 Ma indicates that the Katangan basin was tectonically, thermally, and probably hydrologically active during this time.



The Zambian SSC copper ± cobalt deposits occur dominantly within the Lower Roan Subgroup at several stratigraphic levels, with about 60 percent of the ore derived from the ore shale (e.g. Konkola, Nkana, Nchanga lower ore body). The remaining ore occurs in metasandstones at several stratigraphic levels proximal (~200 metres) to the ore shale (e.g. Mufulira, Chibuluma, Nchanga upper orebody). The reductant in these arkosic to quartz arenaceous host rocks was probably provided by mobile hydrocarbons, and the orebodies generally have geometries consistent with former hydrocarbon traps. Mineralization is locally present in Upper Roan dolomites, but does not form orebodies. However, the deposits of the Congolese Copperbelt to the northwest occur within algal dolomites and dolomitic siltstones thought to be equivalent to the Zambian Upper Roan. Carbonaceous metasilts (phyllites) of the Mwashia and Lower Kundelungu host predominantly post-metamorphic vein-type ores both within (Lufua and Lonshi deposits) and outboard of (Kansanshi deposit) the Zambian Copperbelt.

## 9. EXPLORATION

Through a program of stream sediment sampling, regional geological mapping and basic prospecting, TCN geologists identified dozens of either poorly documented or previously unknown copper-silver showings throughout the property. As of this writing ~200 separate showings have been identified through the exploration activities of INV Metals and Teck.

Copper mineralization occurs in five main styles (see Figure 7-4 for stratigraphic setting):

- 1) In the first reducing shale-siltstone horizon within the Lower Omapo Formation above the Nosib sandstone. This horizon hosts the vast majority of the showings on the property, and has been informally referred to as the Okohongo Horizon, as the Okohongo deposit occurs in this setting
- 2) In the second reducing shale-siltstone horizon located at the contact between the Lower and Upper Omapo Formations above the Okohongo Horizon. The best examples of mineralization at this horizon are Otjohorowara, Otjite and Omatapati
- 3) In the Nosib sandstones as disseminated chalcopryite and chalcocite, with the best examples being Oruvandjai and Epungwe
- 4) As disseminated and stringer mineralization within shear zones along the unconformable contact between basement granites and the basal Nosib Formation conglomerates. The Oruwanyane and Otjokavare targets are the only showings of this type
- 5) Identified throughout the stratigraphic column, the property is spotted by numerous occurrences of cross-cutting, quartz-carbonate-barite-chlorite-hematite-copper oxide-bearing veins.

Surface showings are largely dominated by secondary copper species (malachite, antlerite, chrysocolla, diopside, chalcocite, etc.), are for the most part stratabound, and include disseminated, veinlet, breccia and vein ore styles. Where hypogene sulphide minerals (chalcopryite, bornite and chalcocite) have been identified, these commonly display disseminated ore textures. Although some degree of supergene copper leaching and enrichment is likely, the relatively low amount of pyrite and abundance of carbonates in the host rocks limit the degree of supergene copper mobility. Figure 9-1 shows the distribution of copper showings on the property.

Throughout the property the Okohongo Horizon is >90% covered by thin veneers of colluvium, calcrete and/or alluvium. The horizon tends to be recessively weathered, and the more resistant

footwall Nosib Group quartzites and hangingwall Omapo Formation dolostones tend to form prominent ridges on either side, which result in the horizon frequently being covered by scree or calcrete weeping from the dolostones. In many places target stratigraphy is covered by alluvial valleys hundreds of metres to kilometres across, providing the potential for near-surface mineralization with effectively no surface expression.

Although exposure of target stratigraphy is discontinuous, stratigraphically comparable mineral showings have been identified over strike lengths of hundreds of metres to kilometres at numerous locales. The widths of mineralized zones are highly variable, pinching and swelling both along strike and up and down-dip and can attain widths of several tens of metres locally. At Okohongo for example, well mineralized drill intersections are up to 45 metres thick, interpreted to be close to true width. In several cases growth faults (commonly reactivated as reverse faults) and/or Nosib Group quartzite pinch-outs have been identified and appear to influence distribution and grade of mineralization. These structural/stratigraphic traps are analogous to those identified in the Zambian Copperbelt.

To aid exploration focus, the copper showings have been classified as discrete target areas shown in Figure 9-2.

**Figure 9-1: Kaoko Copper Showings**

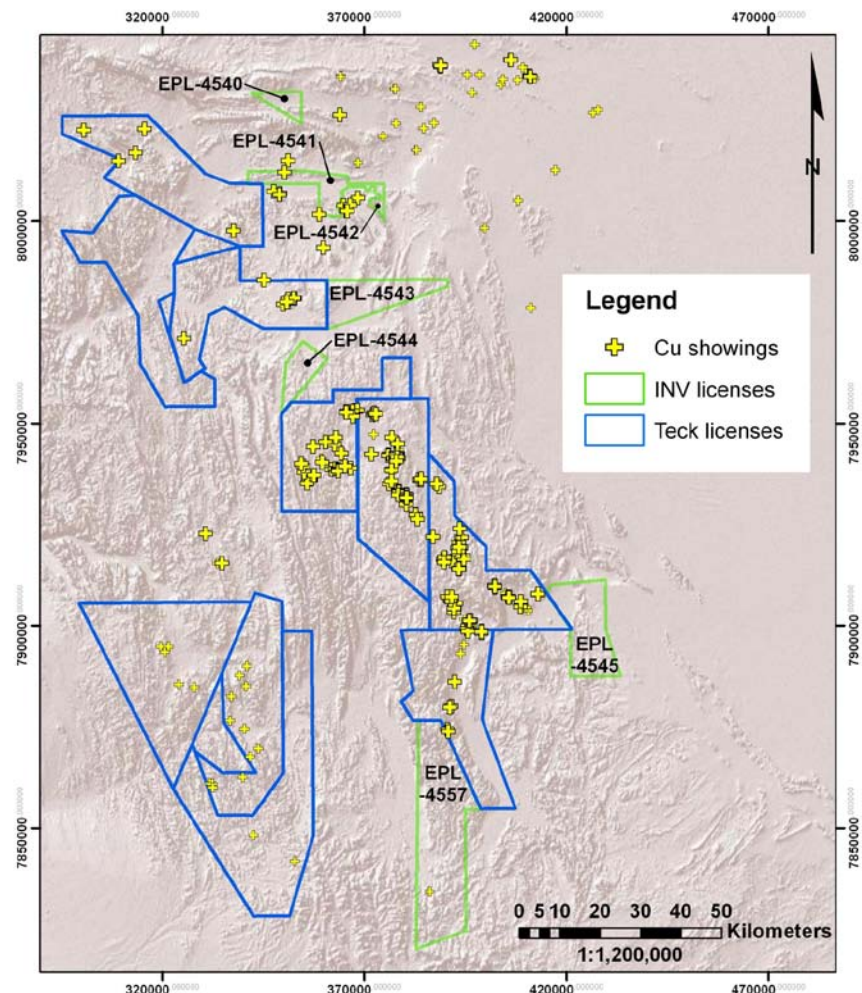
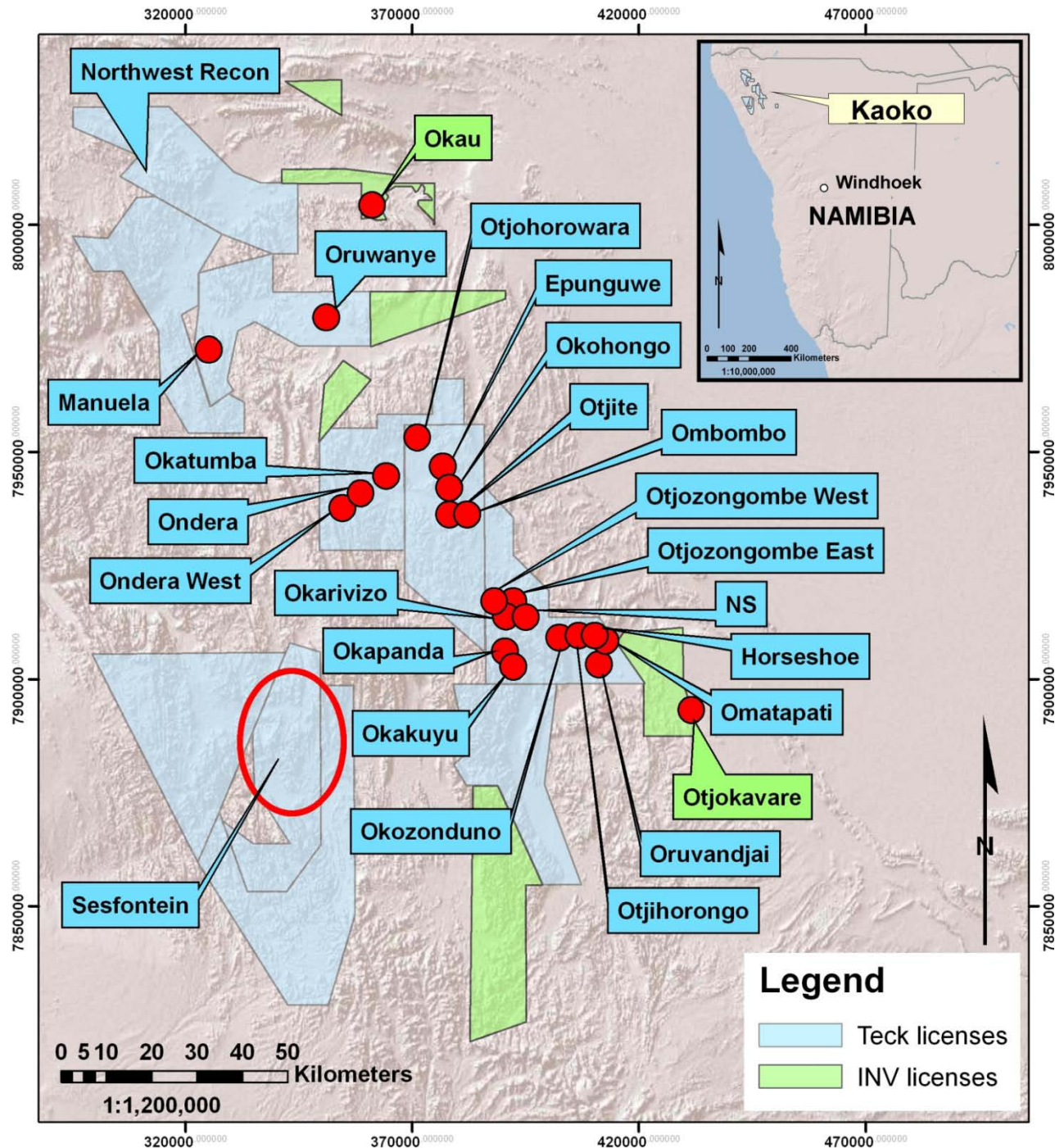


Figure 9-2: Kaoko Target Areas





### 9.1. EXPLORATION BY TECK

The property has been mapped at various scales depending on the priority of the area. TCN's methodology consisted of first pass mapping at a scale of 1:25,000 followed by mapping at 1:5,000 in areas of interest.

TCN's geochemical sampling at Kaoko began with regional stream sediment sampling and reconnaissance level rock sampling. Positive results defined areas of interest which were initially followed up by more detailed rock sampling. Further geochemical surveys consisted of soil sediment sampling and base of slope soil sampling at selected target areas.

In the course of exploration TCN undertook two major stream sediment sampling programs. In 2004 the company carried out an extensive heavy mineral stream sediment sampling program collecting 792 samples over what is now the central part of the project (Figure 9-3). In 2008 a second program collected 755 samples on the southern block of licenses (Figure 9-4). During the first program heavy mineral concentrates were separated from the sample using heavy liquids at Analytical Laboratory Services in Windhoek and shipped to the Teck Cominco in-house laboratory in Vancouver for analysis, while samples collected during the second program were analyzed at ALS Chemex laboratory in Johannesburg, South Africa.

TCN's base-of-slope soil sampling program was undertaken in 2008 in the Oruvandjai target area as an experiment to find a way of quickly evaluating the vast areas of Nosib Group quartzite that could potentially host copper mineralization. The technique might also be called contour sampling. It assumes that a soil sample taken at a particular topographic contour will capture the geochemical signature of rock and soil above that contour. On the Kaoko project TCN collected 494 base of slope soil samples spaced approximately 100 metres apart for almost fifty kilometres. The method was effective at identifying previously known areas of Nosib Group-hosted copper mineralization.

Magnetic and IP surveys are two geophysical techniques that are applicable to exploration for sediment-hosted copper deposits. Teck's methodology consisted of first pass gradient array IP surveys followed by pole-dipole IP in areas of interest. The assumption is that the IP surveys penetrate deep enough to see through the oxidized zone into fresh rock where sulphides could be expected. Geophysical methods such as IP, EM, magnetics and gravity are unlikely to be successful in directly targeting secondary copper mineralization. The IP surveys were contracted to Gregory Symons Geophysics of Windhoek, Namibia. Figure 9-5 shows the areas that have been covered by Teck's IP surveys.

Further details of TCN's exploration are included in the descriptions of the various showings provided in Section 7.5, in order to give context to the results. These descriptions also include the results of various IP surveys carried out by TCN at some of the targets, and for completeness, results of TCN's drilling. Note that only significant intersections are tabled; ones not included had negligible to weakly anomalous copper and/or silver values. Although TCN's drill holes were typically drilled perpendicular to the dip of the hosting lithological units, there was insufficient drilling to determine the relationship between reported core intervals and true widths of the mineralization.

Figure 9-3: Copper Results from Teck's Heavy Minerals Stream Sediment Survey

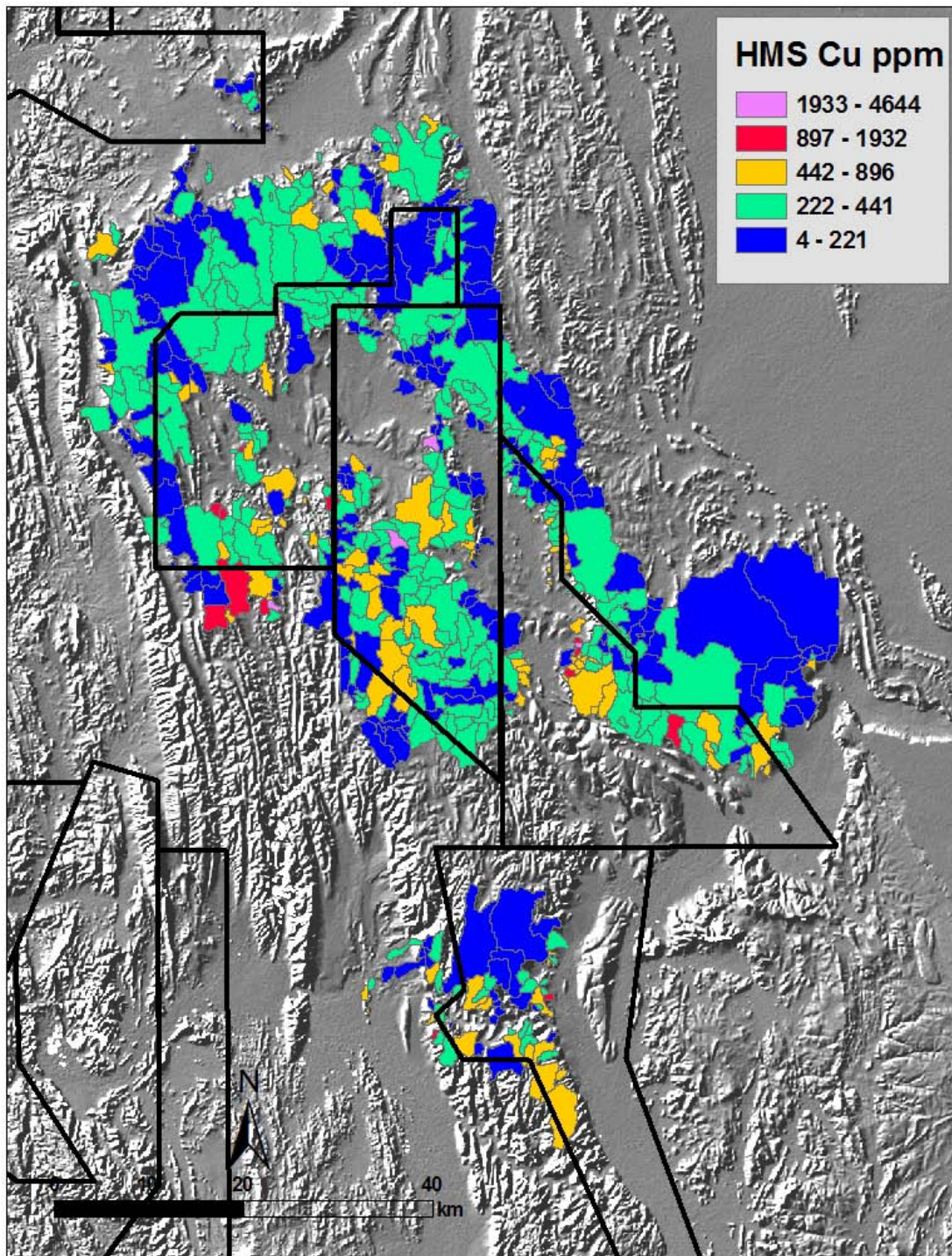
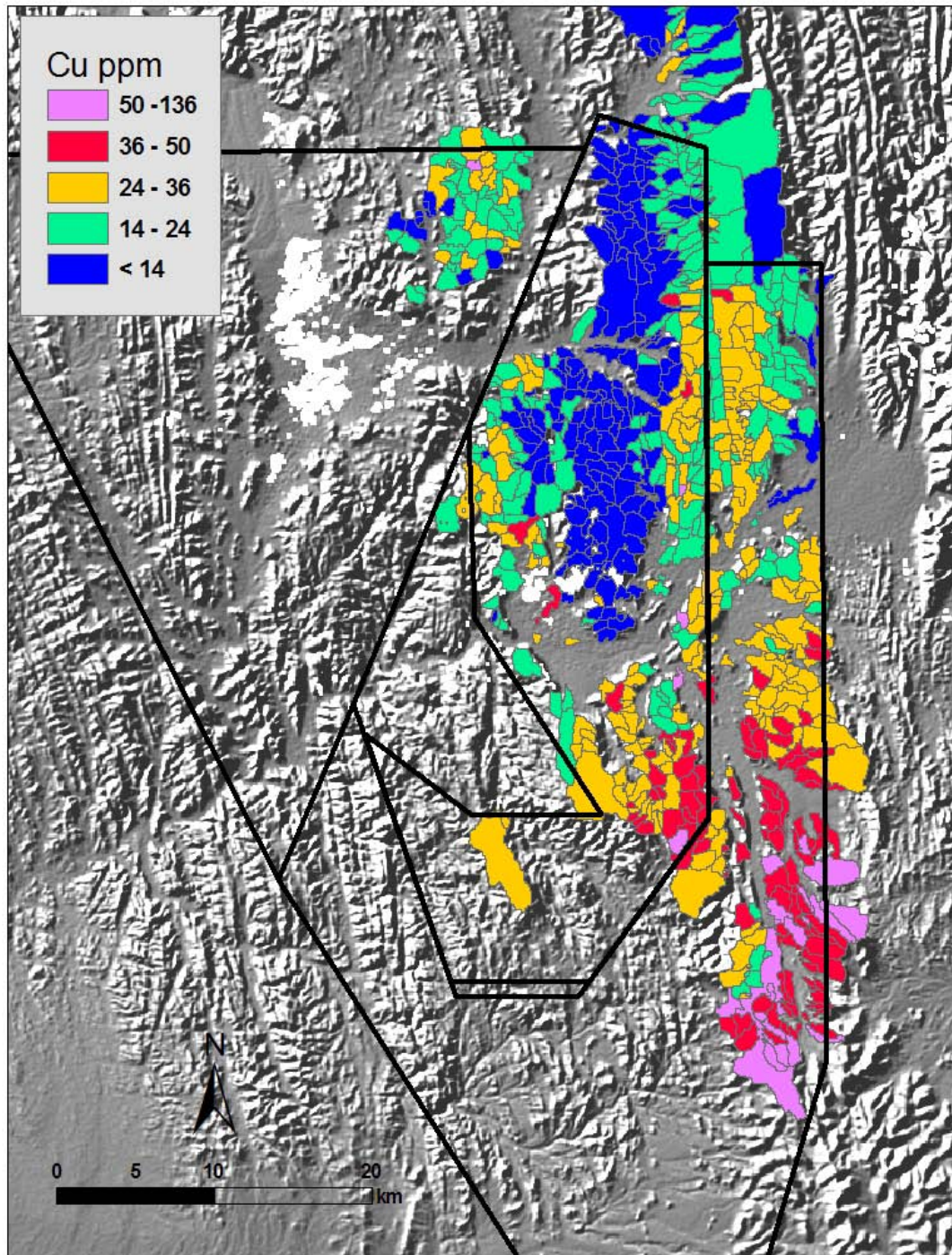


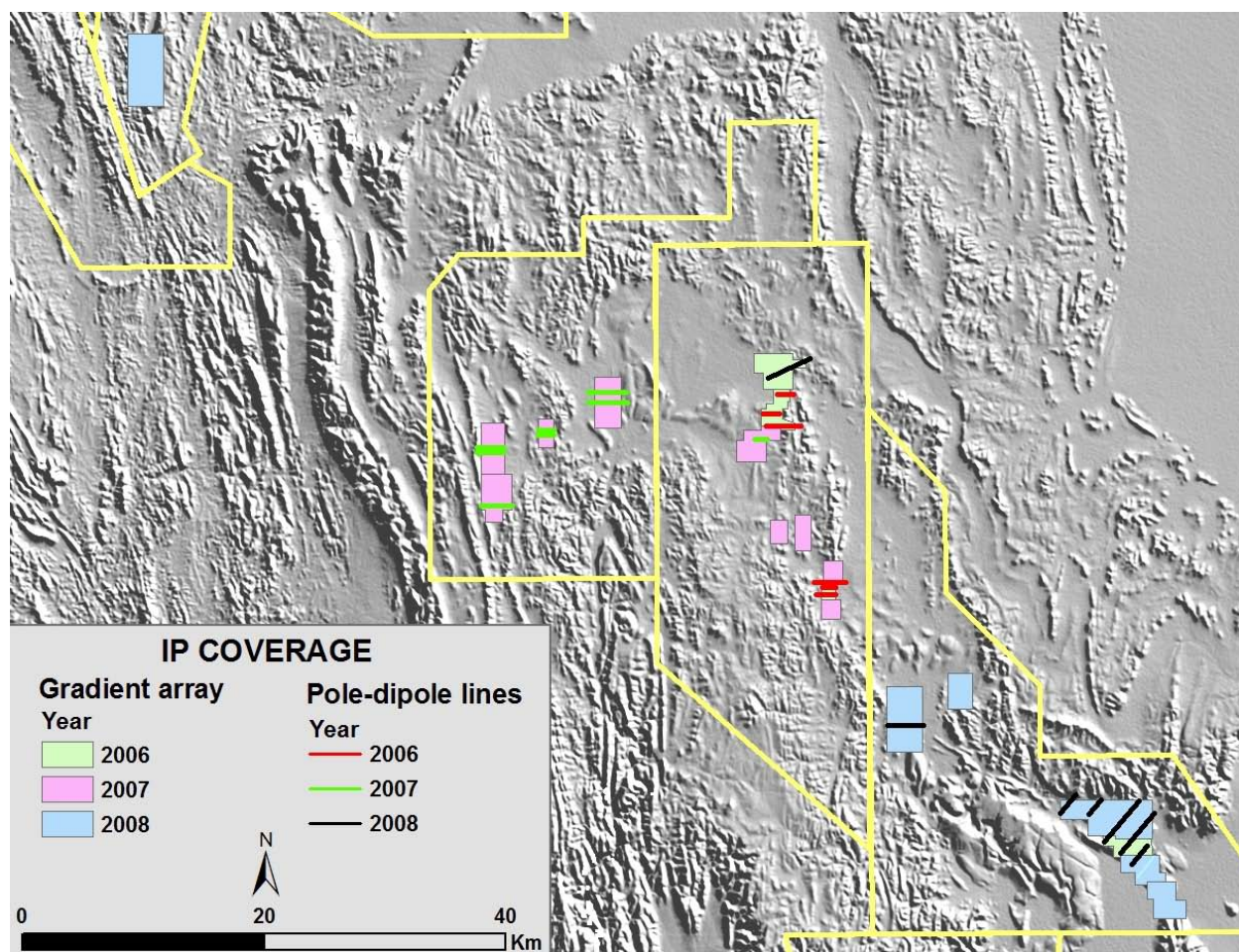


Figure 9-4: Copper Results from Teck's Southern Block Stream Sediment Survey





**Figure 9-5: IP Survey Coverage by Teck**



## **9.2. GEOLOGICAL SURVEYS BY INV METALS**

INV Metals personnel have mapped most of the significant showings at varying scales, with the intent of determining whether drilling is warranted, and if so, to make recommendations on drillhole collar locations. This work is summarized in Section 7.5, Mineralization. The following sections describe reconnaissance geological surveys and interpretations done on a more regional scale.

### **9.2.1. Northwest Reconnaissance (EPLs 3685 and 3687)**

VP3 Geoservices (Pty) Ltd. ("VP3") of Cape Town, South Africa, was contracted to carry out a reconnaissance geological survey in order to map and prospect for the source of copper in stream sediment anomalies identified as per Section 9.3.1 (Figure 9-14). The field work was performed between March 4<sup>th</sup> and 16<sup>th</sup> 2011. Eighteen sample sites of >50 ppm copper were selected for this first-pass assessment. Five sites were not accessed and the program was cut short by heavy rains in the project area.

Of the thirteen selected anomalous stream sediment sample sites assessed, five were found to be associated with mineralized outcrop of limited extent. The remaining sites do not appear to

be associated with any outcropping mineralized lithologies. It was recommended that the areas upstream of those anomalous sites have very low exploration potential and do not warrant further work.

Although no significant mineralization was found near any of the sample sites, the stream sediment sampling program appears to have been successful in that the higher anomalous values (>70 ppm copper) are invariably downstream of some nearby copper mineralization in outcrop.

The copper mineralization that was found is always within a carbonate unit in the Nosib Group rocks excepting for the anomalous copper values (but no visible copper minerals) in a very fractured and limonite stained sericitic schist unit at one site.

It is important to note that the five sample sites that were not accessed include the highest copper value site from the entire stream sediment survey, a value of 586 ppm copper. It is strongly recommended that further efforts be made to investigate the source of this anomaly, as it is almost certainly associated with visible copper mineralization – the determination of the extent and nature of which requires a field visit.

A carbonatite shown on government geology maps within EPL 3357 was visited along with Mr. Reiner Elmies, who has considerable rare earth element experience. The field visit found that the carbonatite, interpreted on the basis of a magnetic anomaly, is actually a magnetite bearing pyroxenite. Analysis of samples from this intrusion with a Niton indicated no anomalous base or rare earth elements hence no further work is required.

### 9.2.2. INV Metals Staked Claims

A brief field assessment of licences EPL4540 – 45 and 4557 (see Figure 9-1 for claim locations) was undertaken by INV Metals geologists in September 2011. On the maps, main units of significance are Nosib Formation (orange and brown), Lower Omapo (light blue) and Upper Omapo (darker blue), and basement (pink).

**EPL 4540** - The license is located roughly 35 kilometres north-northwest of Opuwo almost solely within river drainage immediately south of Onyarakaha Mountain. Access is generally good along unmaintained dirt tracks that run throughout and immediately north of the license. The EPL is located within the Steilrandberg Syncline, north of the Opuwo Lineament, along the northern boundary of the Neoproterozoic Opuwo Inlier of the Kaoko Belt. It is underlain by siliciclastic rocks of the Nosib Group in the south with progressively younger siliciclastics and carbonates of the Ombombo and Abenab Subgroups to the north. Despite the absence of reported copper mineralization in the license area, copper showings have been identified in similar stratigraphic horizons to the east and southeast of the license. Due to the overall lack of outcrop, combined with restriction of the license to a river drainage system, it is recommended that either a regional stream sediment sampling or a regional soil geochemistry program (i.e. one kilometre line spacing with 500 metre sample spacing) be undertaken.

**EPL 4541/4542** - Located approximately 16 kilometres west of Opuwo, license 4541 is transected by district road D3703 that passes through the villages of Okarikwa and Orontjitombo. Access is good along the well maintained district road with numerous unmaintained dirt tracks branching off throughout the license area. The claims are located along the eastern boundary of the Neoproterozoic Opuwo Inlier of the Kaoko Belt. Specifically, the license is located along the southern margin, and transects, the Opuwo Lineament, a major

transcontinental shear zone cutting across the Kaokoland Belt. The licenses are reportedly underlain by granitic gneisses of the Khoabedus Group in the southwest and west, with siliciclastic rocks of the Nosib Group localized to the central portion of the license and progressively younger siliciclastics and carbonates of the Ombombo Subgroup restricted to the east.

The EPLs encircle the Otjitombo zinc-lead and Okalikwa copper-silver-gold prospects (Figure 9-6) to the east, north and west. The Otjitombo zinc-lead  $\pm$  copper-gold deposit, currently being explored by Namibia East China Non Ferrous (Pty) Ltd., comprises a series of base metal anomalies in hydrothermally altered dolostones located along the contact between the Lower and Upper Omaso Formations (?) folded into northeast-striking folds. The known mineralization is 650 metres in length with a dispersion halo over 50-250 metres.

INV Metals discovered two copper showings, Okau and Okau NE, 7.5 kilometres southwest of the Otjitombo deposit. Grab samples carried up to 0.75% and 0.58% copper, respectively. The Okau showing comprises a variably thin (1-4 metres thick), northeast-trending (>450 metres), tectonized (brecciated to sheared), black dolostone exhibiting occasional malachite-staining and enveloped by dark grey schist. In detail, the dolostone consists of a black, micritic, laminated dolomitic rock transected by numerous white, sparry, calcite, tourmaline (?), ferric calcite veins and iron-oxide filled veins and vugs. Located roughly 3.5 kilometres northeast of the Okau prospect, the Okau NE prospect comprises crackle to mosaic brecciated, milky white quartz and iron quartz veined Nosib Group rocks and brown to tan, dolostone beds enveloped by a dark grey schist and cross-cut by veins ( $\pm$  iron oxides, malachite and sulphides) that share numerous similarities with the Okau prospect. It is interpreted that the Okau showings might represent a southwesterly continuation of the Otjitombo prospect.

This area clearly has excellent potential and requires further exploration leading up to a drill program.

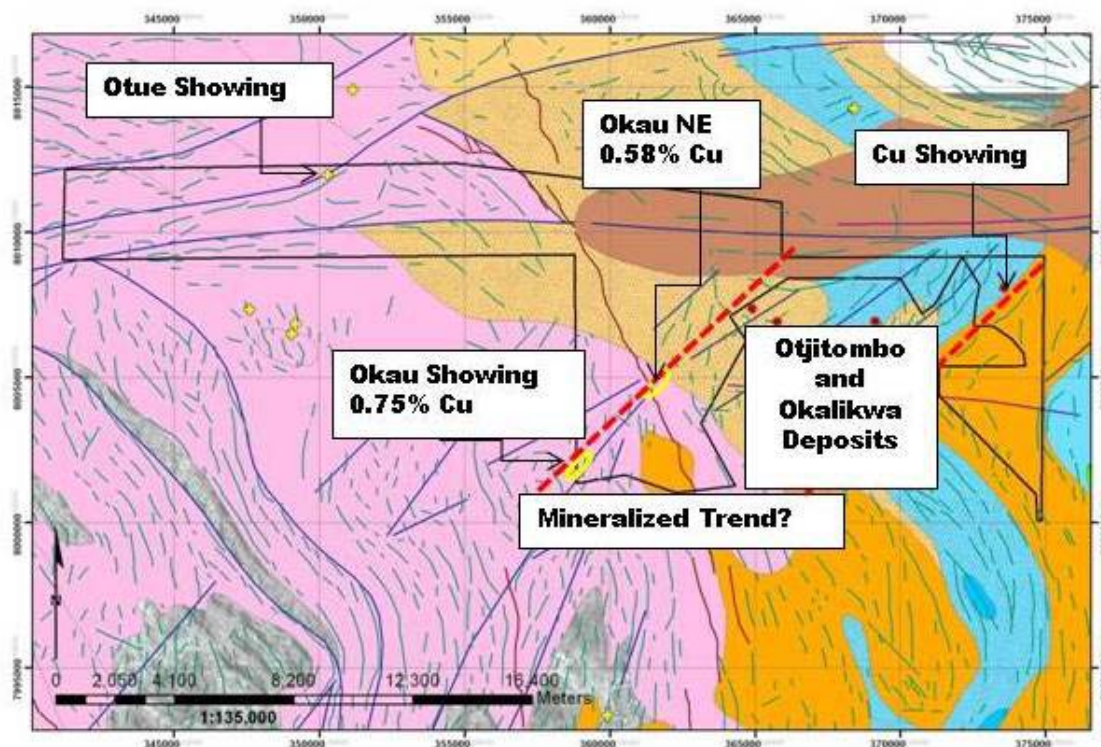
**EPL 4543** – The EPL, located about 23 kilometres south to southwest of Opuwo, is transected by two well-maintained district roads, D3707 and D3710, which access the villages of Kaoko Otavi and Orumena, respectively. Access to the license area is generally good along numerous unmaintained dirt tracks branching off throughout the license area.

The EPL is located along the eastern margin of the Opuwo Lineament, on the eastern boundary of the Neoproterozoic Opuwo Inlier of the Kaoko Belt. It is underlain by siliciclastic rocks of the Nosib Group in the extreme northwest with progressively younger siliciclastics and carbonates of the Ombombo Subgroup dominating the western and central portions of the license. The eastern margin of the license is dominated by a regional scale, north-south syncline characterized by metasedimentary rocks of the Chuos Formation, in the west, east through to the Tsumeb Subgroup in the core of the syncline.

There are two reported copper occurrences, Sanitatas and Okatumba, near the village of Kaoko Otavi, however, neither of these occurrences could be located (Figure 9-7). The Sanitatas showing is reported to occur as chrysocolla veins in basement gneisses of the Khoabedus Group, while the Okatumba showing reportedly occurs as malachite and barite lenses in the basal Nosib Group.



Figure 9-6: Geology of EPLs 4541 and 4542

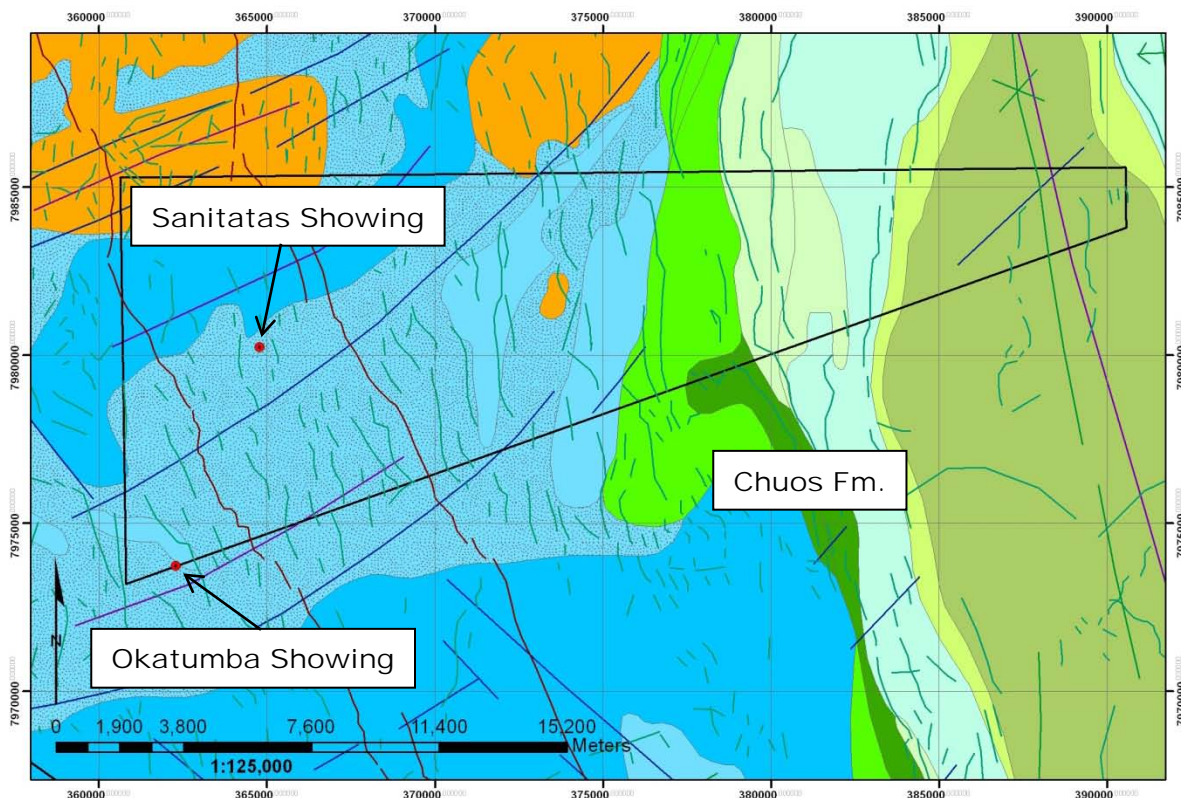


Along the southeastern-central boundary of the license, outcrops of Chuos Formation Rapitan-type banded iron formation (BIF) are present. In this locality, the BIF comprises a 10 to 15 metre thick package of black, iron-manganese oxide coated, laminated, chert-rich, ferruginous metasedimentary rock, i.e. proto-iron formation horizons interbedded with two or three ferruginous shale horizons. Along fresh surfaces, the laminated ferruginous rocks are characterized by bands of white to black chert and purple-red hematite with euhedral crystals of magnetite disseminated within the hematitic bands.

Immediately south of EPL 4543, the Chuos Formation is being explored for iron ore by Australian based Avonlea Minerals Limited.

Further work should include clarification and confirmation of the two copper showings by a thorough examination of the MME library. Elsewhere within the license, it is recommended that exploration for copper mineralization might comprise an initial program of stream sediment sampling to define targets for more detailed exploration. No further exploration for iron ore is recommended.

**Figure 9-7: Geology of EPL 4543**



**EPL 4544** – Located roughly 13 kilometres south of Kaoko Otavi or 47 kilometres southwest of Opuwo, access to the license is possible along a poorly maintain district road, D3705, which skirts the western edge of the license. Characterized by gently sloping hills and incised river valleys, direct access to the license area is restricted to footpaths originating at the villages of Omevameu and Ongango.

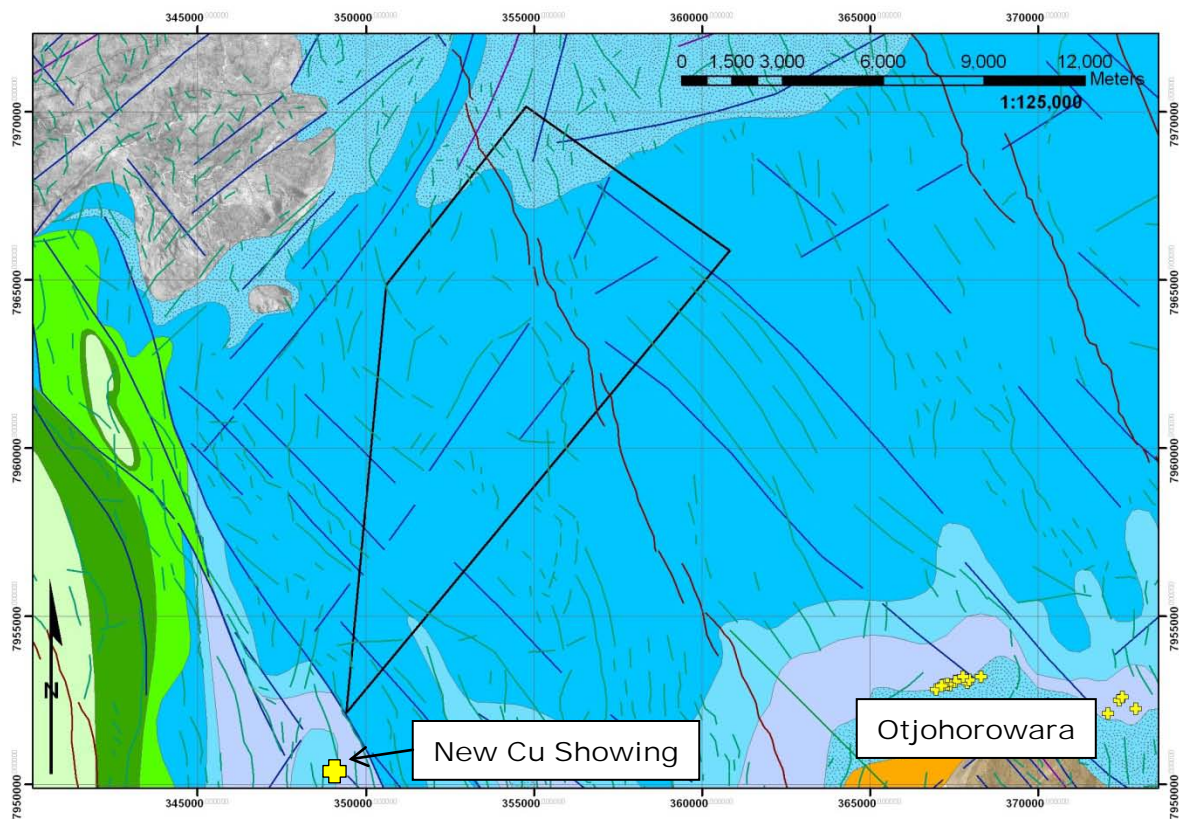
The EPL is located along the southwestern margin of the Neoproterozoic Opuwo Inlier of the Kaoko Belt. The license is underlain by progressively younger carbonates of the Ombombo Subgroup deformed along a series of northwest-trending tight folds. While the exact stratigraphic position of the rocks appears to be restricted to the units directly overlying the Okohongo Horizon, lithologic evaluations indicate numerous outcrop exposures of the contact between the Lower and Upper Omao Formations may exist throughout the license. This is the contact that hosts mineralization at both Otjohorowara and Omatapati. The areas considered to have the best exploration potential are located along the structural trend northwest of the Otjohorowara showings (Figure 9-8).

Although no copper showings were identified within the boundaries of the license, a quartz-chrysocolla showing was discovered immediately southwest of the license boundary.

It is recommended that a stream sediment sampling program be undertaken to identify targets for more detailed prospecting and geologic mapping.



**Figure 9-8: Geology of EPL 4544**



**EPL 4545** - The licence, located approximately 100 kilometres north of Kamanjab, with the village of Otjokavare situated along the southeastern boundary of the license, is easily accessed directly from the main highway, C35, between Kamanjab to Rucana. Access is limited to a few poorly maintained district roads and a number of unmaintained dirt tracks along the southern and extreme northern boundaries of the license. Topographically, the southern through northern-central portions of the license are characterized by gently sloping hills and dissected valleys, while a large river valley transects the northeastern and northwestern regions. For the majority of the license area access is limited to traversing sandy river beds and footpaths.

The EPL is located along the northern margin of the Mesoproterozoic Kamanjab Inlier of the Kaoko Belt. The license is underlain by basement gneisses and granites that belong to the Khoabedus Group and Fransfontein Suite unconformably overlain by siliciclastic rocks of the Nosib Group with progressively younger siliciclastics and carbonates of the Ombombo Subgroup dominating the northwestern and northeastern portions of the license.

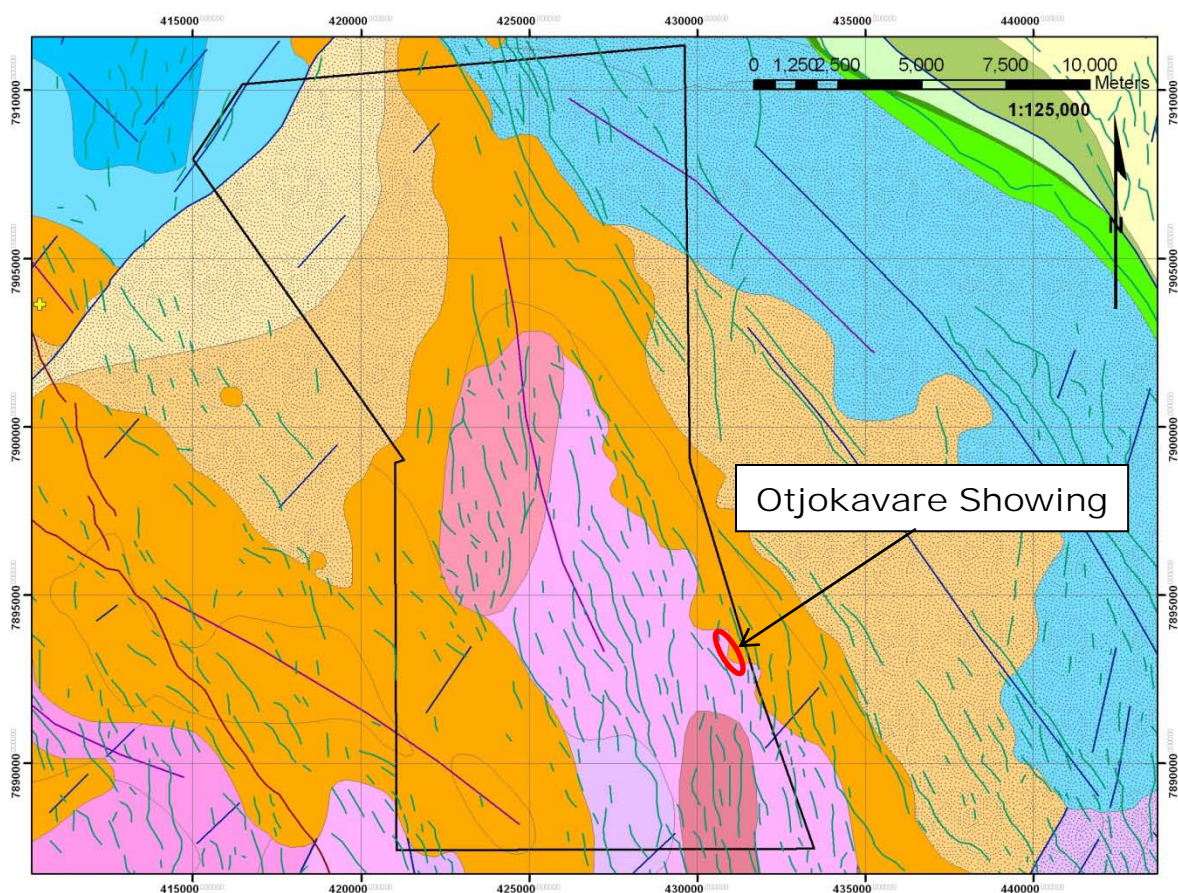
A preliminary geologic assessment suggests the license may overlie a north-northwest-trending, fault-bound block of basement rocks, i.e. paleo-horst, on-lapped by metasedimentary rocks characteristic of the lower and intermediate portions of the Nosib Group. Analogous to the basal conglomerates at Oruwanje, these conglomerates are characterized by an upward-fining sequence of mineralogical and textural immature sedimentary rocks attesting to their proximity to the basement and associated bounding structure, i.e. a growth fault.

A copper showing occurs along the outskirts of Otjokavare village (Figure 9-9). The copper mineralization is restricted to a roughly one metre thick horizon located along the contact between the basal conglomerates of the Nosib Group and the basement gneisses and was traced for up to 450 metres to the north. This suggests that the mineralization occurs along a growth fault, similar to the Oruwanye target. The northern end of the showings was found to consist of massive to stringer quartz veins with copper oxides, purple fluorite and abundant iron-oxides. Grab samples ranged from 0.32 to 0.52% copper and 12 to 21 g/t silver.

In spite of this, the presence of the Ombombo Subgroup along the northern extremities of the license implies the existence of the prospective Okohongo Horizon.

A soil geochemical survey on one km spaced lines with 500 metre sample spacing along the eastern, northwestern and northeastern portions of the license is recommended to identify targets for more detailed prospecting and geologic mapping.

**Figure 9-9: Geology of EPL 4545**



**EPL 4557** – Located roughly 50 kilometres east-southeast of Sesfontein, the western boundary of the license is easily accessible along a well maintained district road, D3706. Access to the heart of the license area is difficult and limited to a few local dirt tracks or river beds that dissect or cross-cut the mountainous terrain. In accordance, access is largely restricted to footpaths and helicopter support.



The EPL is located along the western margin of the Mesoproterozoic Kamanjab Inlier of the Kaoko Belt. The license is underlain by highly folded and possibly faulted, progressively younger carbonates of the Abenab and Tsumeb Subgroups, as well as in the Mulden Group. In the south, the license is underlain by the flood basalts and laterites belonging to the Early Cretaceous Etendeka Group.

A copper occurrence shown on government maps was visited. Green coloured amygdales in Etendeka volcanics were identified in the area of the reported occurrence and it was concluded that this was most likely zeolite as opposed to malachite.

The northern portion of the licence is considered to have potential for copper mineralization and requires further work. Due to the difficult access and extreme topographic variability of the area, it is recommended that a stream sediment sampling program be undertaken to identify targets for more detailed prospecting and geologic mapping.

### 9.2.3. Basin Analysis

A detailed study of the property and the Kaoko Belt as a whole is presently being undertaken by INV Metals in an attempt to better define the geology and stratigraphy of the area, with a view to better understanding the controls on the mineralization for target prioritization and generation.

The study is a multidisciplinary basin analysis of the Kaokoland region through a regional and outcrop-based stratigraphic, structural, geochemical, and remote sensing evaluation to define and characterize the attributes important to the identification of sedimentary-hosted, stratiform copper deposits.

Specific objectives are to:

- gain a better understanding of the stratigraphic column in order to define the most prospective horizons to host copper (currently believed to be the Okohongo Horizon and the contact between the Lower and Upper Omaso Formations)
- gain a better understanding of the basin architecture (there are abundant reactivated faults & monoclinial folds)
- understand thin skin deformation vs. basin inversion
- identify important fluid pathways (fluids move to regions of lower pressure, i.e. the hangingwall)

The study includes the following components:

- 1) Regional geology to define structural trends, including:
  - a) Stratigraphy to recognize potential facies changes across and along faults and the distance from the surface to favourable horizons
  - b) Location and determination of zones of anomalous fracturing and shearing high in the Omaso Formation sequence that may potentially reflect faulting at depth
- 2) Geophysical techniques and remote sensing, including:
  - a) Aerial magnetic interpretation to define structural architecture and stratigraphy of the basin and potential fluid pathways
  - b) Assessing mineralized zones spatially associated with faulting. In areas such as Epunguwe the faults themselves are mineralized
  - c) Integration of geophysical techniques (particularly aeromagnetics) with remote sensing (i.e. satellite imagery, aerial photos) and geological mapping

3.) Geological mapping of structurally favourable areas. The structural geometry and history of the area is a key priority for future understanding and exploration

4.) Soil geochemical surveys of structurally and geologically favourable areas. Soil geochemical sampling and interpretation will be integrated with geological mapping, remote sensing and geophysical techniques

Understanding basin stratigraphy and sequences is of fundamental importance. Developed in the later part of the 1970's by the Exxon Production and Research Company (Payton, 1977), the concept of *sequence stratigraphy*<sup>1</sup> rests upon the identification and characterization of *sequences*<sup>2</sup> and *transgressive surfaces*<sup>3</sup>, enabling the stratigraphic record of sedimentary basins to be analyzed and placed into distinct *systems tracts*<sup>4</sup>. Systems tracts comprise a predictable succession of facies-dependant depositional units developed as a consequence of sea-level change, and are characterized by cyclical beds termed *parasequences*<sup>5</sup>. Therefore, every depositional sequence is the record of one cycle of relative sea level rise and fall, resulting in depositional sequences exhibiting a predictable internal structure of surfaces and systems tracts.

While several systems tracts models exist, the four systems tract model (Fig. 9-10) is probably the easiest to employ and understand. In this model, all sequences contain the following systems tract: from oldest to youngest, *falling-stage systems tract*<sup>6</sup>, *lowstand systems tract*<sup>7</sup>, *transgressive systems tract*<sup>8</sup>, and *highstand systems tract*<sup>9</sup>, which are bounded by important surfaces termed:

- Transgressive surface (ts) – A prominent marine flooding surface separating the lowstand systems tract and the overlying transgressive systems tract. Represents the first major flooding surface to follow the sequence boundary.

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<sup>1</sup> A framework of genetically related stratigraphic facies that were deposited during specific phases of the relative sea-level cycle and are represented in the rock record as three-dimensional facies assemblages. They are defined on the basis of bounding surfaces, position within a sequence, and parasequence stacking pattern (Van Wagoner et al., 1990).

<sup>2</sup> A stratigraphic unit composed of a relatively conformable succession of genetically related strata bounded at its top and base by unconformities or their correlative conformity.

<sup>3</sup> Abrupt lithological junctions that separate layered clastic and carbonate sedimentary strata into genetically related packages or system tracts.

<sup>4</sup> Specific three-dimensional facies assemblages of common genetic origin, associated with unconfined geometric architecture & interpreted as formed during phases of a relative sea-level cycle.

<sup>5</sup> Specific sequence of bedding that grades in a particular manner, i.e. coarsening-upward, and that stack in a characteristic manner, i.e. thickening-upwards.

<sup>6</sup> Includes all the regressional sedimentary deposits that accumulated after the onset of a relative sea-level fall and before the start of the next relative sea-level rise. This systems tract is the product of a forced regression, which should not be confused with the sediments deposited during a normal regression, and is sandwiched between the underlying sequence boundary and overlying Lowstand Systems Tract.

<sup>7</sup> Composed of sedimentary deposits that accumulates after the onset of relative a sea-level rise. This systems tract lies directly on the upper surface of the Falling Stage Systems Tract and is capped by the transgressive surface formed when the sediments onlap onto the shelf margin.

<sup>8</sup> Comprises sedimentary deposits that accumulate from the onset of coastal transgression until the time of maximum transgression of the coast. This systems tract lies directly on the transgressive surface (TS) formed when sediments onlap the underlying LST and is overlain by the maximum flooding surface (mfs) formed when marine sediments reach their most landward position.

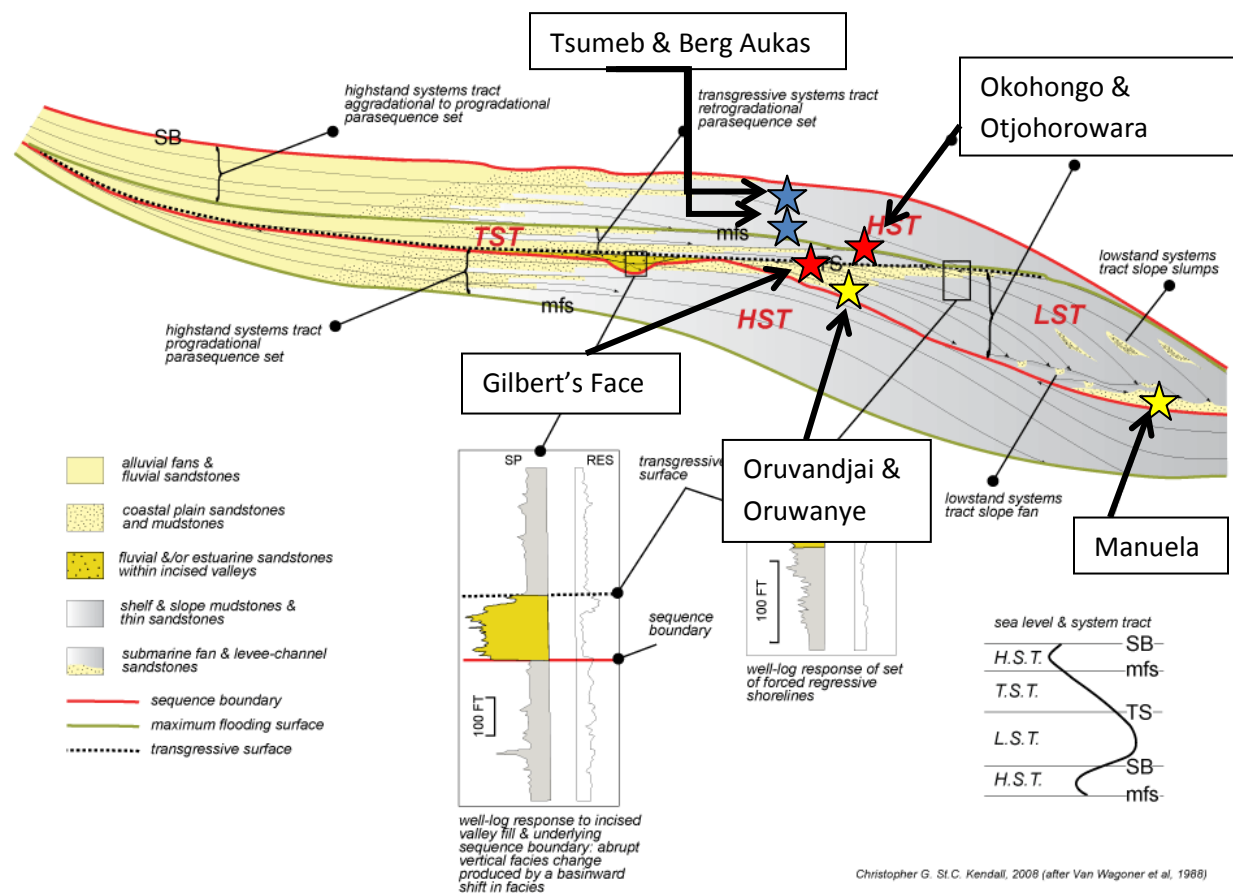
<sup>9</sup> Constituting the progradational sedimentary deposits that form when sediment accumulation rates exceed the rate of increase in accommodation space. This systems tract denotes the upper systems tract of a stratigraphic sequence, and lies directly on the maximum flooding surface (mfs) and is capped by a sequence boundary.

- Maximum flooding surface (mfs) - marks the transition from underlying retrogradational stacking parasequences of the transgressive systems tract to overlying aggradational or progradational stacking parasequences of the highstand systems tract. Marks the deepest water facies within a sequence and is commonly displays evidence of condensation or slow deposition, such as abundant burrowing, hardgrounds, mineralization and fossil accumulations.
- Sequence boundary or unconformity (SB) – A surface that separates older sequences from younger ones, commonly an unconformity (indicating subaerial exposure), but in limited cases a correlative conformable surface. A sequence boundary is an erosional surface that separates cycles of deposition.

In short, as adapted from the University of Georgia Stratigraphy Lab's Online Guide to Sequence Stratigraphy (<http://strata.uga.edu/sequence/index.html>), a sequence begins with a relative sea-level fall (falling-stage systems tract; FSST), sedimentation may be characterized by temporary subaerial exposure of the shelf environment allowing rivers to incise/ cut into the shelf and deposit sediment on the slope as submarine fans and wedges leading to the formation of an unconformity or sequence boundary (Van Wagoner et al., 1990). The FSST is subsequent followed by a slow rise in sea-level (lowstand systems tract; LST) that often results in total or partially infilling of incised valleys that were cut into the Highstand Systems Tract, and other earlier deposits, during the FSST. This is followed by a relatively rapid rise in sea-level (transgressive systems tract; TST) that is characterized by flooding of the shelf area, as well as little sedimentation on the slope and within the basin, results in the formation of a maximum flooding surface. Maximum flooding surfaces form as sea-level reaches its maximum level leading to clastic sediment starvation in the basin, a time period when a variety of deposits, (i.e. metalliferous black shales, phosphatic nodule beds, ironstones and mineralized algal breccias) may be deposited (Moles and Ruffell, 1993). During the succeeding period, characterized by a decreasing rate of sea-level rise (highstand systems tract), carbonate reefs or fluvio-deltaic sands may prograde towards the basin centre.

Figure 9-10 is a schematic 'depositional' sequence illustrating the location of various Kaoko copper prospects with respect to systems tracts. Abbreviations used are: LST – lowstand systems tract; TST – transgressive systems tract; HST – highstand systems tract; SB – sequence boundary; TS – transgressive surface; mfs – maximum flooding surface.

**Figure 9-10: Schematic Depositional Sequence**




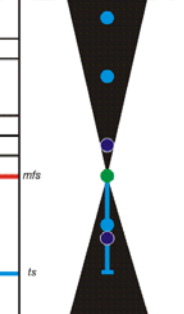
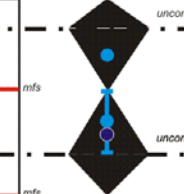

Note on Figure 9-10 that:

- 1) Structurally-controlled prospects, e.g. Oruvandjai and Oruwanye, occur along the 'base' of the sequence within the LST
- 2) Copper prospects hosted by the Nosib Group, e.g. Gilbert's Face, occur along the transgressive surface or the boundary between the LST and TST
- 3) Copper prospects hosted by the Ombombo Subgroup, e.g. the Okohongo deposit, occur along the maximum flooding surface along the boundary between the TST and HST
- 4) Polymetallic, carbonate-hosted deposits, e.g. Tsumeb and Berg Aukas occur within the HST

In Figures 9-11 and 9-12 the stratigraphic position of base metal prospects and deposits in northern Namibia is correlated with a stratigraphic analysis of the Damara Supergroup. A clear sedimentological and stratigraphic control on the location of base metal mineralization becomes obvious. Most of the sediment-hosted prospects (e.g. Okohongo, Otjohorowara) appear to be associated with the maximum flooding surface, while the structurally-controlled prospects (e.g. Oruvandjai, Oruwanye) appear to be associated with lowstand systems tract deposits. Furthermore, all of the polymetallic, carbonate-hosted Tsumeb-type deposits appear to display a close association with the highstand systems tract carbonates of the Abenab and Tsumeb Subgroups.



**Figure 9-11: Stratigraphic Summary of the Upper Damara Supergroup of Northern Namibia**

GROUP	FORMATION	LITHOLOGY	DEPOSITIONAL ENVIRONMENT	SEQ. STRAT.	SEQ. NUM.	MINERALIZATION	GRADED BEDDING SETS	
Mulden	Owambo	Slate, marl, sandstone, limestone & dolostone	Molasse	HST	7			
	Kombat	Slate, phyllite & sandstone		TST				
	Tschudi	Arenite & subgreywacke		LST		Tschudi (Cu)		
Tsumeb	Hüttenberg	Dolostone	Shallow carbonate platform	HST	6	Kombat (Cu-Pb)		
		Dolostone & shale						
		Dolostone & chert				Tsumeb & Tsumeb West (Pb-Cu-Zn-Ag-Cd-Ge-As)		
	Elandshoek	Dolostone & chert						
		Dolostone				MVTs (Pb-Zn)		
	Maieberg	Dolostone	Deep to shallow-shelf/ platform	TST		Abenab (V)		
		Limestone	Deep-shelf/ platform			Khusib Spring (Pb-Cu-Zn-Ag-Cd-Ge-As) & MVTs (Pb-Zn-Fe)		
	Ghaub	Shale/ diamictite	Glacial	LST				
Abenab	Ombaatjie/ Auros	Shale	Shallow-shelf	FSST	5	Abenab West (Zn-Pb-V)		
		Dolostone & limestone	Shallow-shelf/ platform	HST				
		Limestone & dolostone	Deep to shallow-shelf/ platform					Berg Aukas (Zn-Pb-V) & MVTs (Pb-Zn)
	Gruis/ Gauss	Dolostone	Deltaic to shallow-shelf/ platform	LST to TST				
		Rasthof/ Berg Aukus	Dolostone	Deep to shallow-shelf/ platform	HST			
	Chuosi	BIF/ shale/ diamictite	Glacial	LST	4			
Ombombo	Okakuyu	Conglomerate	Deltaic to shallow-shelf	FSST				
		Sandstone						
		Shale	Shallow-shelf mudflat					

Note that Figure 9-11 represents the upper portion of the Upper Damara Supergroup in northern Namibia, while Figure 9-12 represents the lower half; Figure 9-11 should be “stacked” on top of Figure 9-12, but had to be separated to make legible.

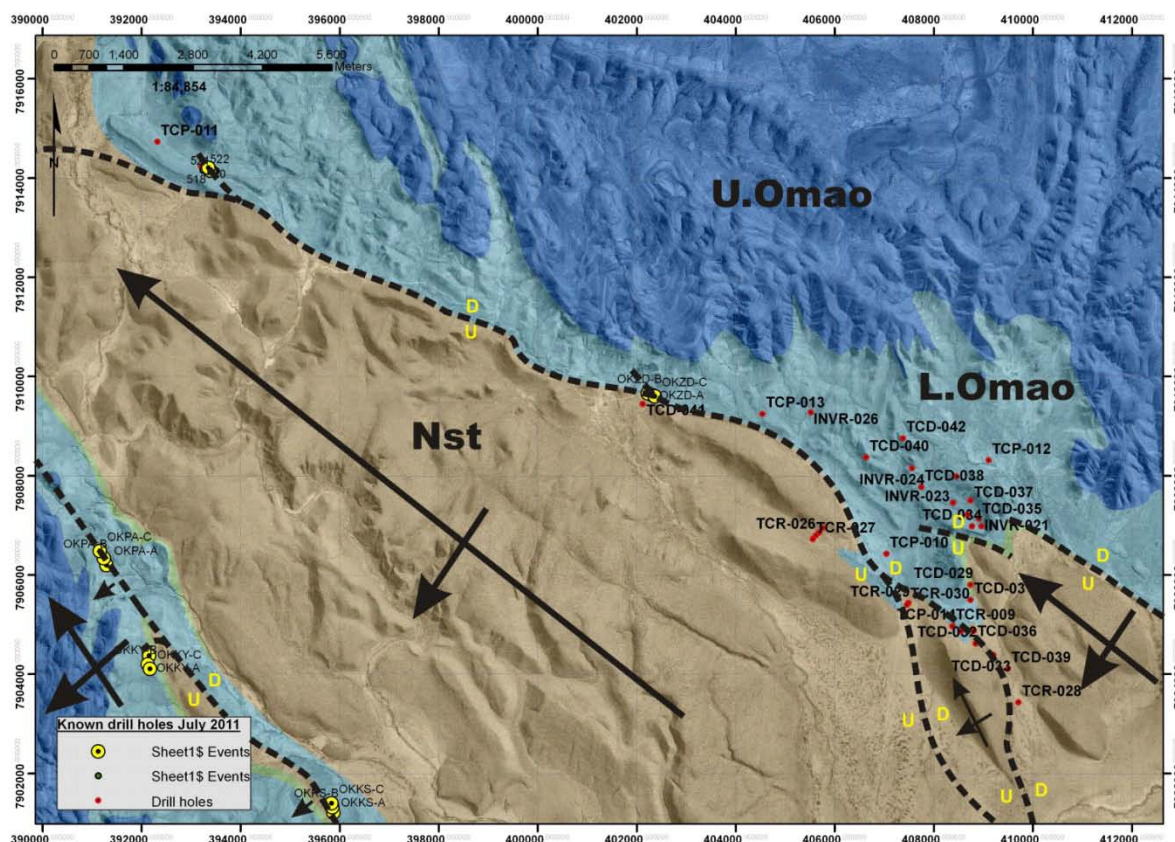
In terms of structure, conceptually, exploration should focus on the Lower Omapo Formation and the contact between the Lower and Upper Omapo Formations, on the hangingwall side of reactivated normal faults – the west side of the monoclinical folds. Basin analysis of the Oruvandjai area (Figure 9-13) reveals that the Nosib Group quartzites do not conform to an anticline, as previously thought, but actually form a series of west-dipping monoclines. Based on this interpretation, exploration in the Oruvandjai area was in the less prospective footwall whereas the more prospective hangingwall (e.g. Okakuyu) needs to be revisited.

**Figure 9-12: Stratigraphic Summary of the Lower Damara Supergroup of Northern Namibia**

GROUP	FORMATION	LITHOLOGY	DEPOSITIONAL ENVIRONMENT	SEQ. STRAT.	SEQ. NUM.	MINERALIZATION	GRADED BEDDING SETS
Ombombo	Upper Omao	Limestone/ dolostone	Shallow carbonate platform	HST	3		

- Stratiform, sediment-hosted Cu deposit
- Structurally-controlled, stratiform, sediment-hosted Cu deposit
- Volcanogenic/ Volcanic-hosted Massive Sulfide deposit
- Polymetallic, carbonate-hosted Tsumeb-type deposit
- Carbonate-hosted Mississippi Valley-type deposit
- Structurally-controlled, stratiform V deposit

**Figure 9-13: Basin Architecture of the Oruvandjai Area**



### 9.3. GEOCHEMICAL SURVEYS BY INV METALS

#### 9.3.1. Stream Sediment Geochemical Survey

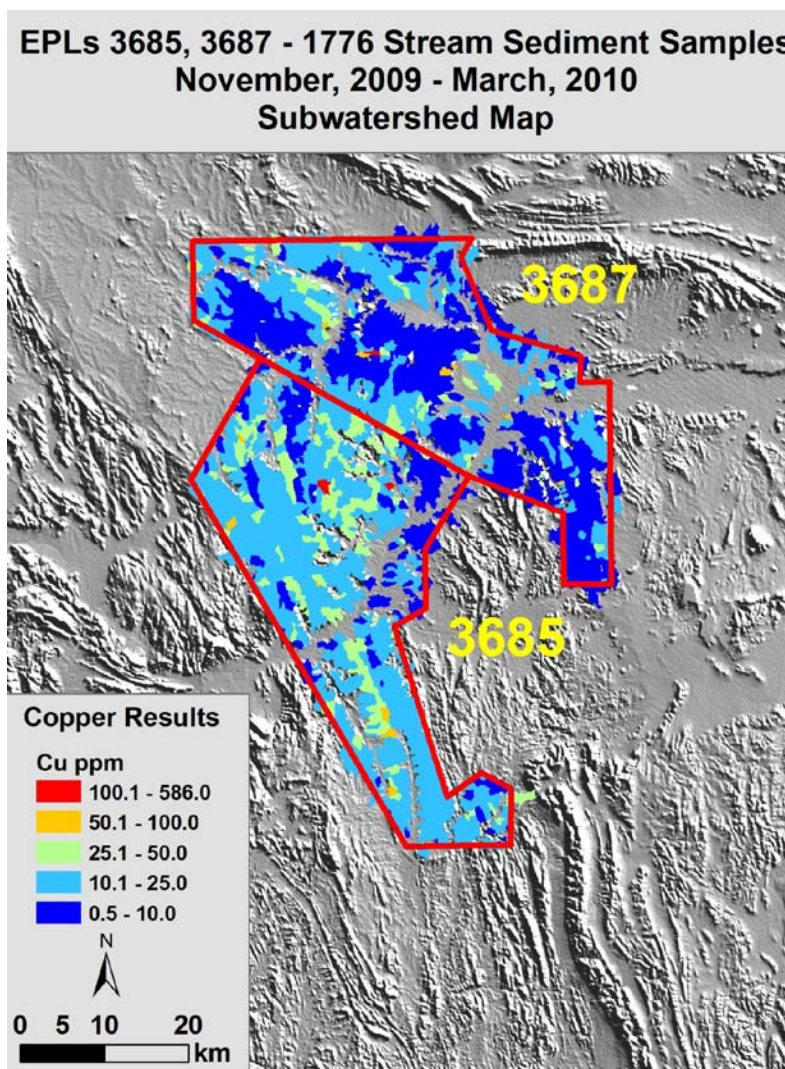
From November, 2009 through March, 2010 INV Metals contracted Ebenhaezer Rautenbach of Windhoek, Namibia, to carry out a stream sediment sampling program over EPLs 3685 and 3687 in the northwest part of the property. Rautenbach collected a total of 1,776 stream sediment samples. Samples from this program were analyzed at ALS Chemex's laboratory in Johannesburg, South Africa. This survey outlined a number of sub-basins with anomalous copper values that were followed up by VP3 as per Section 9.2.1. Figure 9-14 shows the copper results of the survey (note that this figure shows the EPLs as originally staked, when the survey was done, and does not reflect reductions in size in 2012).

INV Metals' proposed stream sediment sample sites were derived using ArcHydro, an ArcGIS program that identifies streams and produces a map of the catchment areas or sub-watersheds represented by each sample based on a Digital Elevation Model (DEM). The SRTM digital elevation model with a 90 metre pixel resolution was used. The ArcHydro analysis was carried out under contract to INV Metals by Eric Erickson of Spokane, Washington, a GIS specialist working with Ascent GIS of 915 W. 2<sup>nd</sup> Avenue, Suite 5, Spokane, Washington 99201. After samples were collected at the actual sample sites, as opposed to proposed sites, the data was re-processed using ArcHydro. A shape file based sub-watershed map was produced and results of the analyses were appended to the shape file.



Sample sites were selected from 2<sup>nd</sup> and 3<sup>rd</sup> order streams every 1.5 to 2 kilometres along the flow path. If possible, samples were collected where hydrological conditions form a natural sediment trap. Each sample site consists of three to five separate sub-sites in the stream within 1-2 metres of each other. Two samples were collected from each site. Samples from each sub-site were composited to form a single sample that was sieved in the field to <180 microns. A second sample was collected at the same site and sieved to <75 microns. Sufficient sample is collected at each site to provide approximately one kilogram of the <180 micron size fraction and approximately 200 grams of the <75 micron size fraction after sieving. The <75 micron size fraction samples were analyzed at the ALS Chemex laboratory in Johannesburg for 35 elements by ICP-AES (ALS Chemex method ME-ICP41) using an aqua regia digestion. The <180 micron size fraction was retained as an archive sample. Most ALS Chemex laboratories are registered or are pending registration to ISO 9001:2000, and a number of analytical facilities have received ISO 17025 accreditations for specific laboratory procedures.

**Figure 9-14: Copper Results from INV Metals' Stream Sediment Survey on EPLs 3685 and 3687**





### 9.3.2. Okohongo Soil Sediment Geochemical Survey

After completing the 2010 first phase Okohongo drill program INV Metals geologists collected 1,119 soil samples to test for potential extensions of mineralization along strike. Each sample was collected from a 30 cm deep pit, sieved to minus 180 microns and analyzed in the field using a Niton portable XRF. The survey defined the strike extents of the deposit, although, in many areas the appropriate horizon was not available for sampling due to the presence of transported soil/sand cover or calcrete.

### 9.3.3. Regional Soil Sediment Geochemical Survey

Consulting exploration geochemist Dave Heberlein of Vancouver, British Columbia was contracted in February 2011 to carry out satellite image based geochemical landscape interpretation of parts of the property. The objective of that study was to identify regolith domains with similar geochemical characteristics and to make recommendations for appropriate surface geochemical methods to explore the Kaoko project as a whole.

This work was followed up with a field visit carried out between May 2<sup>nd</sup> and 10<sup>th</sup>, and included site visits to nine areas where soil geochemical surveys are planned for 2011. The purposes of the site visit were to ground truth the original landscape interpretation, to examine soil profiles and surficial deposits, to develop a sampling and analytical methodology for both covered and residual areas; and finally to recommend a geochemical exploration program for each target area based on the local regolith domains.

Overall the interpretation was found to be accurate with most of the mapped regolith domain boundaries occurring within a few tens of metres of their true positions in the field. Across the different target areas surficial materials were found to be quite similar in nature. Most of the areas visited are represented by two cover types, colluvium and sheet wash, or local transitions in between them (colluvial sheet wash).

In colluvium fringing topographic highs, the surface is distinguished by rock and commonly calcrete fragments. Colluvial soils are typically rubbly and lack any significant profile development. Where observed in creek banks, road cuts and borrow pits, the soils tend to be grey in colour and have high fines content.

Soils in sheet wash areas are quite different to the colluvial soils. Sheet wash soils are typically red, red-brown or orange in colour due to their relatively high iron oxide contents. They are poor in rock fragments (except in transitional areas with colluvium) and tend to have coarse-fine sand, silt and clay texture. Exposures observed in road cuts and stream banks typically have a 20-30 cm silty surface layer, which is interpreted to be aeolian dust. Pebble layers from periodic flash flood events are also quite common.

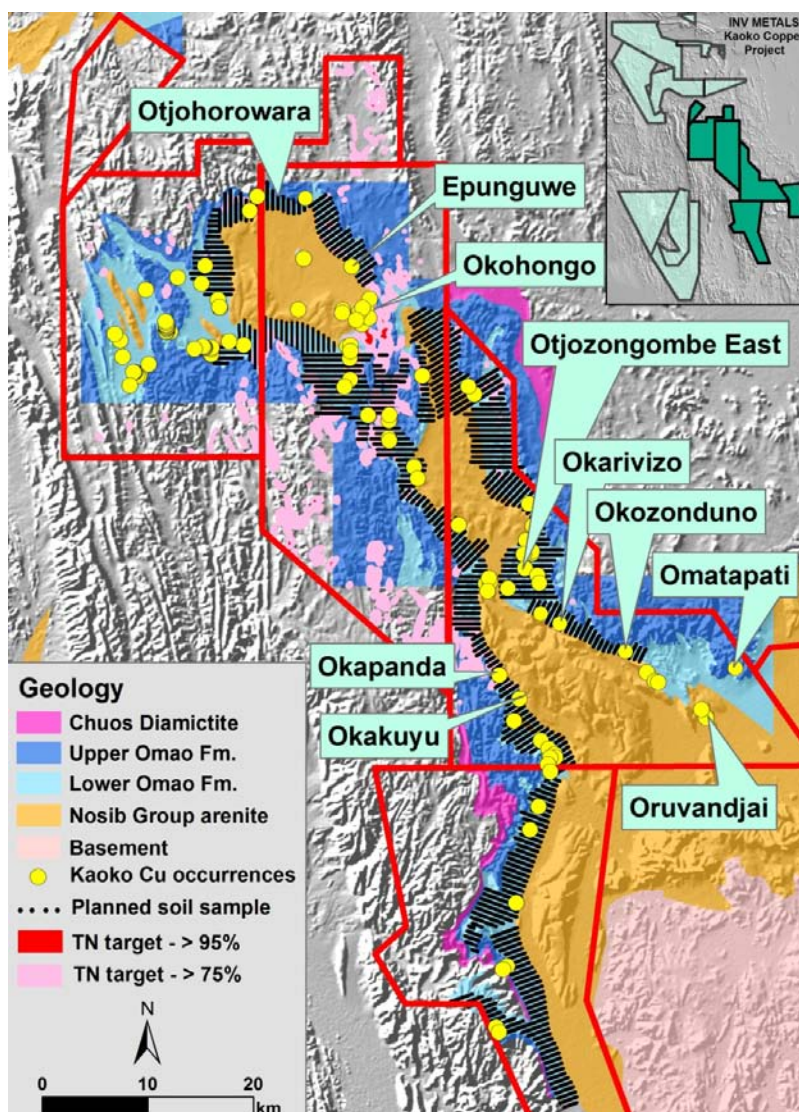
The surficial deposits over the majority of the proposed soil grids are thin and relatively uncomplicated for soil geochemistry. In areas dominated by colluvial cover (>90%), it was recommended to use standard soil geochemistry on a 500 by 50 metre grid utilizing a handheld Niton XRF for analysis and to analyze every other sample by ICP-MS using a partial leach digestion. In areas dominated by transported cover a combination of soil pH and ICP-MS/partial leach digestion -63 micron fraction was recommended.

Soil samples are collected at 50 metre stations along 500 metre spaced lines with each station individually recorded by GPS. Field duplicates are collected every 20 samples. The soil lines were laid out to cover the entire Lower Omao Formation around the margins of the three main Nosib inliers, centrally located within EPLs 3349 – 3352.

During collection of soil samples a one metre square is cleared to a depth of 10 cm to avoid contamination. Within this cleared area a 30 cm<sup>2</sup> block is excavated to a depth of 20 cm below surface. Material from this hole is sieved to -0.5 mm to obtain a 0.5 kg sample which is placed in zip lock plastic bags with the samples' unique number labelled on it.

The original program envisioned the collection of approximately 18,000 samples over the interpreted location of the Okohongo Horizon (see Figure 9-15). An additional 900 samples will be collected to cover a magnetic anomaly that underlies the contact between the Upper and Lower Omao Formations at depth, to the northwest of Otjozongombe West.

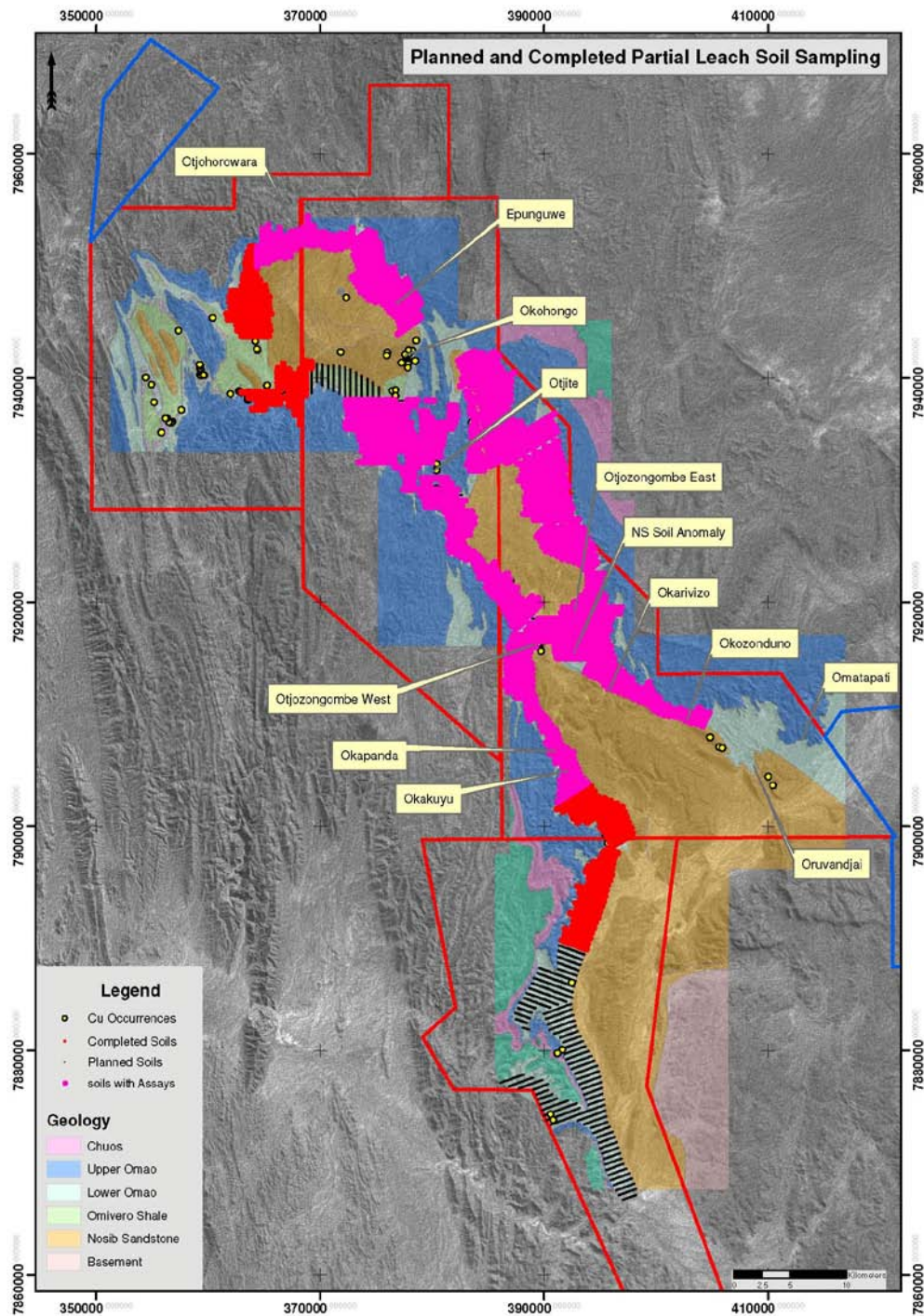
**Figure 9-15: Copper Showings, Geology, TerraNotes Anomalies, and Soil Geochemical Survey over Central Portion of Kaoko Property**





As of the date of this report, approximately 15,500 samples have been collected, of which 7,900 have been submitted for analysis. Results for approximately 6,100 of the samples submitted are now available. Figure 9-16 shows the coverage completed to date and for which areas the analyses are available.

**Figure 9-16: 2011 - 2012 Soil Sampling Program**



Since interpretation is ongoing as the data becomes available, results will not be discussed in this report, other than to note that two significant copper in soil anomalies were identified in the field by Niton analysis. A field visit indicated that the stronger soil anomaly (up to 3,000 ppm copper) is the result of downhill dispersion to the west of trenching at the Otjozongombe East showing. The second soil anomaly, located about two kilometres to the southwest, led to the prospecting discovery of the NS showing (see Section 7.5.1.2).

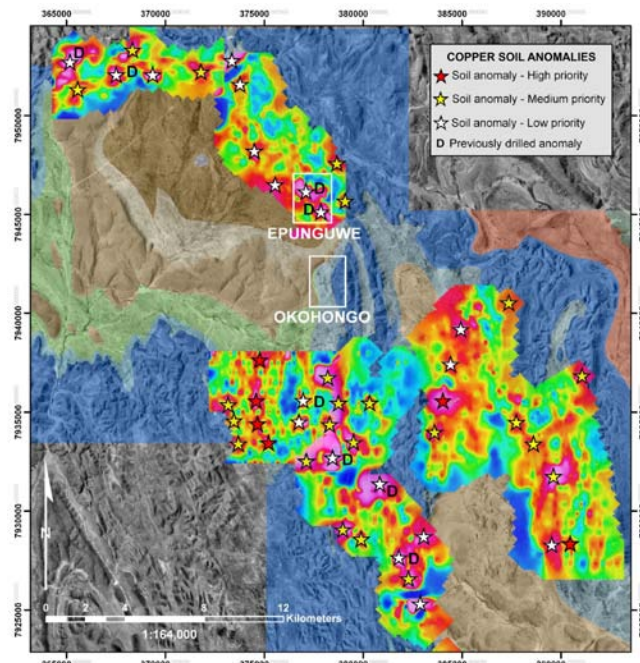
An early stage evaluation of chemical analyses for soil samples from the Otjohorowara area and southwards to Okohongo, on samples with >300 ppm copper, suggests a fairly well defined mineral zonation away from mineralization in non-Nosib Group lithologies, and indicates a number of potentially significant anomalies. Figure 9-17 shows contoured copper values in this area with the anomalies prioritized.

The main observations include:

- samples with high copper also have higher concentrations of lead and silver
- samples with higher copper, lead and silver may also have higher concentrations of vanadium, uranium and molybdenum. These elements may also spike surrounding samples that have increased copper concentrations (i.e. close to, but not in, high-copper samples causing a vanadium, uranium and molybdenum halo)
- close to copper anomalies a depleted potassium and aluminum halo often forms
- close to copper anomalies barium increases, forming an enriched-barium halo (in some cases only on one side of the copper anomaly)
- Iron, arsenic and scandium rise around copper anomalies (halo?), regardless of the concentration of copper. It is important to note that manganese does not tend to change in concentration proximally or distally to copper anomalies

This program is ongoing and is expected to continue to generate new targets.

**Figure 9-17: 2011 Contoured Copper in Soil, Otjohorowara – Okohongo Area**





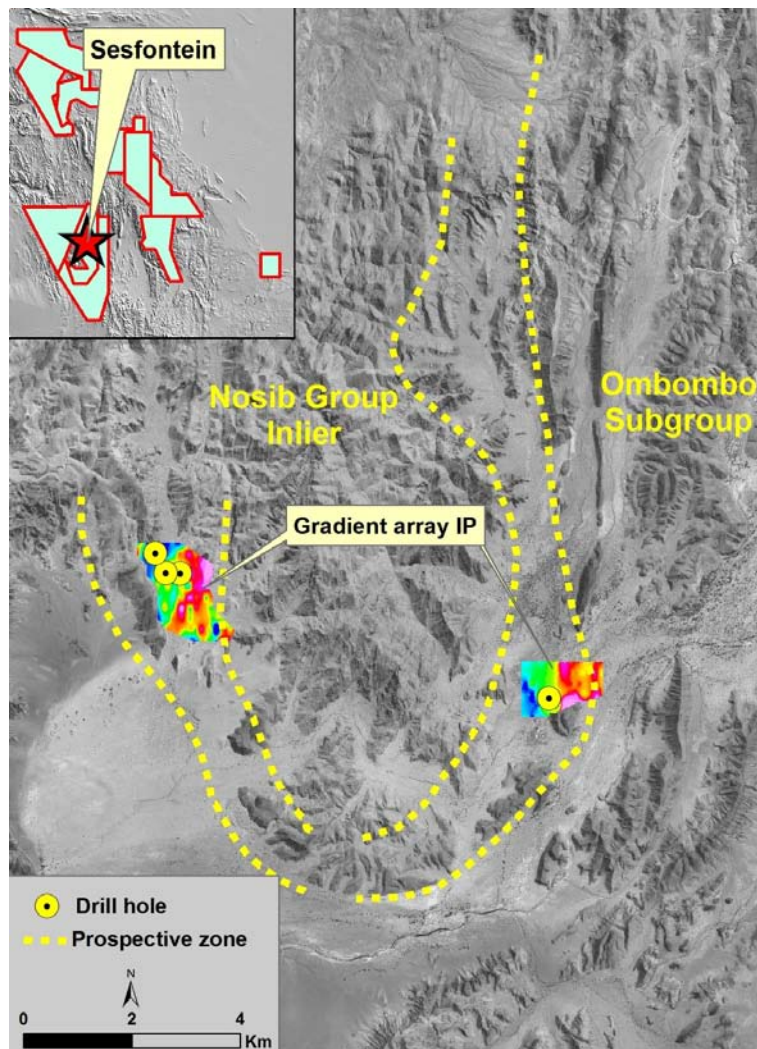
#### 9.4. GEOPHYSICAL SURVEYS BY INV METALS

At the Manuela target, INV Metals contracted G. Symons Geophysics (“Symons”) of Windhoek, Namibia to carry out 10.2 line kilometres of pole-dipole IP in five lines in order to outline the sub-surface geometry of several discrete chargeability anomalies identified in an earlier gradient array IP survey. The pole-dipole survey was completed in mid-October 2010.

In May of 2010 gradient array IP surveys were completed by Symons on contract to INV Metals over two areas at Sesfontein totalling 3.5 km<sup>2</sup>. The chargeability anomalies shown on Figure 9-18 were not explained by subsequent drilling.

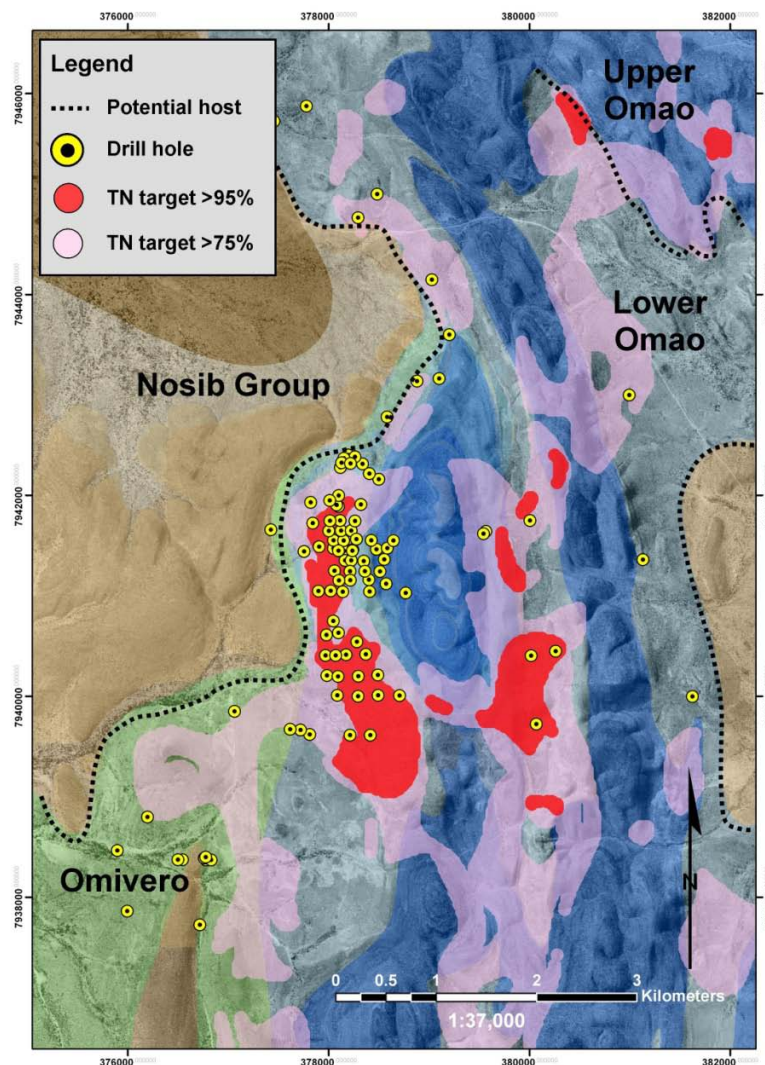
At the Oruvandjai target area Symons was contracted to complete two gradient array IP surveys totalling 11.7 km<sup>2</sup> and 10.15 line kilometres of pole-dipole IP in four lines. These surveys were completed in November, 2010. In April 2011 Symons completed an additional 4.3 line kilometres of pole-dipole IP at the Oruvandjai target area.

**Figure 9-18: Location of the IP Survey at Sesfontein**



In early 2011 TerraNotes, a Canadian geophysical consulting firm, was engaged to compile and interpret the magnetic, radiometric and structural data over the Kaoko property, with an emphasis on seeking any distinct geophysical signatures over known zones, particularly Okohongo, in order to identify new targets with similar signatures. The intent of this program was to develop a new tool that might enable INV Metals to rapidly identify high potential areas within the 200 km of the favourable Okohongo horizon that occurs on the property. TerraNotes identified several Okohongo-like geophysical signatures in close proximity to the known Okohongo mineralization, located to the south and south-east of the known mineralization in areas with no previous drilling. Potential target areas were classified as either 75% similar (pink) in signature to Okohongo or 95% similar (red) as shown on Figure 9-19. In addition, a 95% similar signature was identified in close proximity to copper showings at Otjohorowara which remain to be drilled (Figure 7-28). Unfortunately mineralization intersected in the TerraNotes anomaly immediately south of the Okohongo deposit could not be traced due to structural complexities.

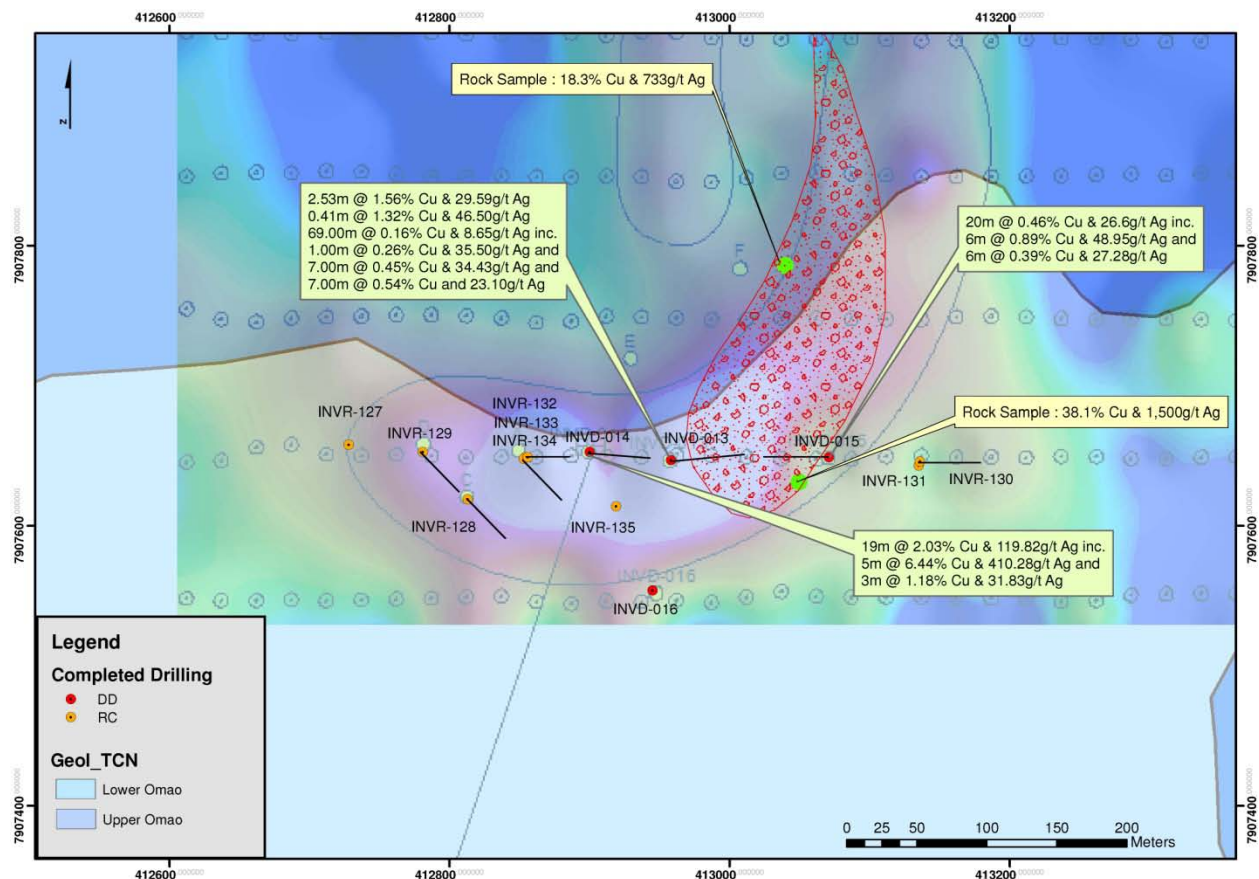
**Figure 9-19: Drilling Plotted on Geology and TerraNotes Anomalies**



At the Omatapati target, INV Metals contracted Symons to carry out an IP and ground magnetic survey. This work was completed between October 11<sup>th</sup> and October 19<sup>th</sup>, 2011. Initially ground magnetic data was collected on six lines, one kilometre in length and spaced 100 metres apart. After that a line of detailed pole - dipole IP was collected on one line using 50 metre dipole spacing and 25 metres moves, with n=1 to 8. Then a gradient array/ mise-a-la-masse survey was performed on six lines (0.5 km<sup>2</sup>). One current electrode was anchored in borehole INVD-014 at 32-33 metres in the high-grade mineralization and the other electrode was situated at infinity to the south of the grid to carry out 10.2 line kilometres of pole-dipole IP in five lines in order to outline the sub-surface geometry of several discrete chargeability anomalies identified in the earlier gradient array IP survey.

A large resistivity anomaly was identified at depth in the central eastern portion of the pole-dipole line. This was traced out in the gradient array as an easterly dipping north to northwest trending zone. Analysis of the pole-dipole anomaly with the boreholes plotted suggests that it is likely related to talc development within an anhydrite-rich zone. A mise-a-la-masse plot (Figure 9-20) suggests it well defines the known mineralization.

**Figure 9-20: Mise-a-la Masse Anomaly Plotted under Omatapati Geology and Drilling**





## 10. DRILLING

### 10.1. DRILLING BY PREVIOUS EXPLORERS

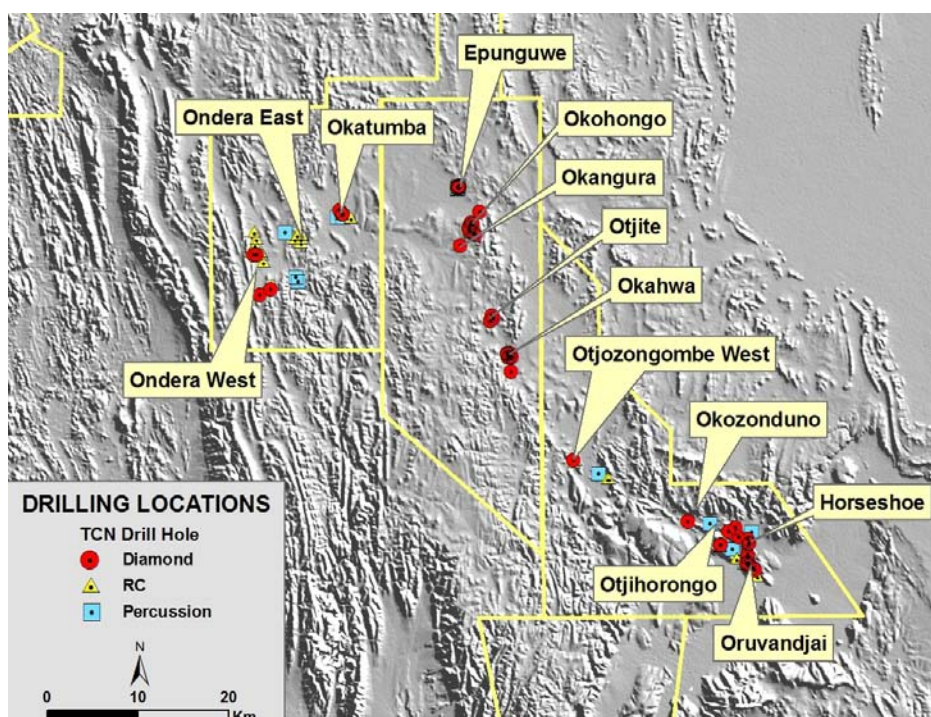
As outlined in Section 6, History, and in the descriptions of various prospects given in Section 7.5, there has been some drilling by previous explorers including MIM, Anglo, RTZ, and others. However this information is incomplete and difficult to compile and what the author is aware of is included in those two sections, where they are more beneficial to the reader to understand the scope of previous work at various copper targets described.

### 10.2. DRILLING BY TECK

TCN's drilling totals 15,202.5 metres and includes a combination of diamond drilling (9,009.4 metres in 50 holes), RC drilling (4,668.5 metres in 30 holes) and percussion drilling for water (1,524.6 metres in 14 holes) at 13 distinct target areas, over a northwest-southeast extent of ~68 kilometres. Table 10-1 summarizes Teck's drilling details. In 2007 diamond drilling was contracted to Major Drilling, P.O. Box 11639, Klein Windhoek, Namibia. Reverse circulation drilling was contracted to Kamanjab Drilling, Farm Arendsnes, P.O. Box 132, Kamanjab, Namibia. In 2008 diamond drilling was contracted to Guenzel Drilling, 52 Hidipo Hamutenya Street, Office 8, P.O. Box 4261, Vineta, Swakopmund, Namibia. Reverse circulation drilling was contracted to Booyesen Transport and Drilling, P.O. Box 337, Gobabis, Namibia.

Figure 10-1 shows the distribution of TCN's drilling across the property. Drilling was typically oriented to orthogonally intersect stratigraphy and therefore core lengths are interpreted by TCN to be close to true widths. However, there has been insufficient drilling to understand the geometry of the mineralized zones and therefore the relationship between core lengths of mineralized intercepts and true widths is not known at this time.

**Figure 10-1: Location of Teck's Drilling**





**Table 10-1: Summary of Teck's Drill Programs**

HOLE NUMBER	TYPE	TARGET	FOH (m)	AZIMUTH	DIP
TCD-001	Diamond	Okahwa	60.3	99.9	-61.4
TCD-002	Diamond	Okahwa	34.5	94.9	-79.6
TCD-003	Diamond	Okahwa	111.2	91.4	-70.6
TCD-004	Diamond	Otjite	121.0	91.6	-70
TCD-005	Diamond	Okahwa	210.4	101.7	-89.7
TCD-006	Diamond	Okahwa	60.9	101.9	-79.9
TCD-007	Diamond	Otjite	120.4	270	-70
TCD-008	Diamond	Okahwa	84.9	90	-69.5
TCD-009	Diamond	Okahwa	120.3	360	-89
TCD-010	Diamond	Otjite	508.4	360	-90
TCD-011	Diamond	Okohongo	265.1	267.7	-79.9
TCD-012	Diamond	Okangura	56.0	273.8	-79.8
TCD-013	Diamond	Okohongo	153.8	267.8	-49.5
TCD-014	Diamond	Okohongo	166.1	260.3	-81
TCD-015	Diamond	Okohongo	133.0	308.2	-59.9
TCD-016	Diamond	Okohongo	158.4	271.1	-71
TCD-017	Diamond	Okohongo	188.1	311.1	-79.4
TCD-018	Diamond	Okohongo	154.3	270.5	-70
TCD-019	Diamond	Epunguwe	65.1	360	-90
TCD-020	Diamond	Epunguwe	253.0	360	-90
TCD-021	Diamond	Epunguwe	81.3	360	-90
TCD-022	Diamond	Epunguwe	56.9	65	-45
TCD-023	Diamond	Epunguwe	175.8	65	-45
TCD-024	Diamond	Epunguwe	525.1	245	-60
TCD-025	Diamond	Okohongo	221.9	270	-80
TCD-026	Diamond	Epunguwe	230.1	245	-60
TCD-027	Diamond	Oruvandjai	110.1	226	-65
TCD-028	Diamond	Oruvandjai	102.8	40	-63
TCD-029	Diamond	Oruvandjai	73.7	40	-60
TCD-030	Diamond	Oruvandjai	246.6	229	-60
TCD-031	Diamond	Oruvandjai	105.6	40	-60
TCD-032	Diamond	Oruvandjai	312.5	220	-60
TCD-033	Diamond	Oruvandjai	251.1	216	-61.5
TCD-034	Diamond	Horseshoe	289.7	212	-70.5
TCD-035	Diamond	Horseshoe	274.7	72.5	-69.5

HOLE NUMBER	TYPE	TARGET	FOH (m)	AZIMUTH	DIP
TCD-036	Diamond	Oruvandjai	228.0	215	-78.8
TCD-037	Diamond	Horseshoe	298.6	49	-70
TCD-038	Diamond	Horseshoe	133.0	360	-90
TCD-039	Diamond	Oruvandjai	116.7	216	-82
TCD-040	Diamond	Horseshoe	127.2	38	-69
TCD-041	Diamond	Okozonduno	221.3	80	-50.5
TCD-042	Diamond	Horseshoe	121.9	214	-70.1
TCD-043	Diamond	Otjozongombe West	256.6	91	-60
TCD-044	Diamond	Okatumba	200.4	92	-73
TCD-045	Diamond	Okatumba	87.1	90.5	-60.6
TCD-046	Diamond	Ondera West	218.3	256	-58.1
TCD-047	Diamond	Ondera West	347.4	360	-90
TCD-048	Diamond	Okatumba	124.5	90	-60
TCD-049	Diamond	Ondera West	395.3	270	-60
TCD-050	Diamond	Ondera West	50.3	270	-60
TCP-001	Percussion	Okohongo	153.0	360	-90
TCP-002	Percussion	Epunguwe	45.0	360	-90
TCP-003	Percussion	Epunguwe	80.0	360	-90
TCP-004	Percussion	Epunguwe	151.0	360	-90
TCP-005	Percussion	Ondera East	175.0	360	-90
TCP-006	Percussion	Ondera East	90.0	360	-90
TCP-007	Percussion	Ondera East	113.6	360	-90
TCP-008	Percussion	Okatumba	210.0	360	-90
TCP-009	Percussion	Okatumba	120.0	360	-90
TCP-010	Percussion	Oruvandjai	84.0	360	-90
TCP-011	Percussion	Okarivizo	102.0	360	-90
TCP-012	Percussion	Oruvandjai	101.0	360	-90
TCP-013	Percussion	Otjihorongo	90.0	360	-90
TCP-014	Percussion	Oruvandjai	10.0	220	-60
TCR-001	RC	Okatumba	150.0	360	-90
TCR-002	RC	Okatumba	251.0	360	-90
TCR-003	RC	Ondera East	249.0	270	-70
TCR-004	RC	Ondera East	180.0	360	-90
TCR-005	RC	Ondera East	150.0	90	-70
TCR-006	RC	Ondera East	125.0	360	-90
TCR-007	RC	Ondera East	130.0	360	-90
TCR-008	RC	Ondera West	150.0	270	-80

HOLE NUMBER	TYPE	TARGET	FOH (m)	AZIMUTH	DIP
TCR-009	RC	Oruvandjai	143.5	220	-60
TCR-010	RC	Okarivizo North	150.0	180	-60
TCR-011	RC	Okarivizo North	90.0	180	-60
TCR-012	RC	Otjozongombe west	102.0	90	-70
TCR-013	RC	Otjozongombe west	156.0	90	-60
TCR-014	RC	Okatumba	198.0	90	-70
TCR-015	RC	Okatumba	66.0	90	-70
TCR-016	RC	Okatumba	210.0	90	-70
TCR-017	RC	Okatumba	210.0	90	-70
TCR-018	RC	Ondera West	210.0	270	-60
TCR-019	RC	Ondera West	210.0	270	-60
TCR-020	RC	Ondera West	186.0	270	-60
TCR-021	RC	Ondera West	120.5	270	-60
TCR-022	RC	Ondera West	115.0	270	-60
TCR-023	RC	Ondera West	150.0	270	-60
TCR-024	RC	Ondera West	180.5	270	-80
TCR-025	RC	Okohongo	90.0	270	-70
TCR-026	RC	Oruvandjai	133.0	360	-90
TCR-027	RC	Oruvandjai	131.0	360	-90
TCR-028	RC	Oruvandjai	132.0	360	-90
TCR-029	RC	Oruvandjai	150.0	360	-90
TCR-030	RC	Oruvandjai	150.0	360	-90

### 10.3. DRILLING BY INV METALS

As at March 21, 2012, INV Metals has drilled 20 diamond and 146 RC holes totalling 23,242 metres. Details of the drilling are provided in Table 10-2. Diamond drilling was chosen in areas deemed too rugged for an RC rig to access, or for holes drilled to depths beyond the capacity of an RC rig, e.g. deep down-dip tests of the Okohongo deposit. Reverse circulation drilling was the preferred method for first pass drilling of the majority of the targets, given its much faster drilling speed and lower contract cost than diamond drilling. Overall, the intersections reported are considered to be approximately close to true width, as the rigs were oriented as close to perpendicular to the interpreted strike and dip as possible. The main exception to this is the results for Omatapati. The nature of the mineralization at Omatapati is such that the geometry remains unknown, hence the relationship between core lengths and true widths is not known at this time.

For results and interpretation of the drilling to date, please refer to Section 7.5, Mineralization. This allows the drill results to be put in context with the geological description of each target.

During RC drilling each metre was sampled and split by means of a cone splitter mounted below the cyclone into two representative samples, one weighing approximately 30 kilograms and a smaller sample weighing approximately 5 kilograms. Both samples were collected directly from the splitter. The large sample was collected in a clean, unused plastic polyweave bag. The small sample was collected in a clean, unused transparent plastic bag. The downhole depth of the sample was pre-written on each bag.

Any one metre interval of chips containing visible mineralization is selected for analysis. During the 2011 RC drilling campaign, every second one metre interval of chips was analyzed by Niton XRF with samples running greater than 1,000 ppm copper selected for analysis. There is an inherent degree of imprecision when sampling RC chips, as any given one metre sample may cross lithological boundaries or mineral contacts; however, it is the opinion of the author that there are no material factors that impact on the accuracy and reliability of the results. Sampling in this matter appears to be just as representative as that in diamond drilling. For example, INV Metals' first hole, which undercut Teck's diamond drill hole 16, had virtually identical thicknesses, while INV Metals' copper values were slightly higher.

**Table 10-2: Summary of INV Metals' Drill Programs**

HOLE NUMBER	TYPE	TARGET	FOH (m)	AZIMUTH	DIP
INVR-001	RC	Okohongo	280.0	270	-63
INVR-002	RC	Okohongo	94.0	270	-65
INVR-003	RC	Okohongo	190.0	270	-63
INVR-004	RC	Okohongo	112.0	270	-65
INVR-005	RC	Okohongo	160.0	270	-65
INVR-006	RC	Okohongo	88.0	270	-65
INVR-007	RC	Okohongo	112.0	270	-70
INVR-008	RC	Okohongo	130.0	270	-70
INVR-009	RC	Okohongo	148.0	270	-70
INVR-010	RC	Okohongo	148.0	270	-70
INVR-011	RC	Okohongo	100.0	270	-69
INVR-012	RC	Okohongo	118.0	270	-70
INVR-013	RC	Okohongo	118.0	270	-70
INVR-014	RC	Okohongo	118.0	270	-70
INVR-015	RC	Okohongo	88.0	270	-65
INVR-016	RC	Okohongo	133.0	270	-70
INVR-017	RC	Okohongo	70.0	270	-70
INVR-018	RC	Okohongo	88.0	270	-70
INVR-019	RC	Okohongo	88.0	320	-70
INVR-020	RC	Okohongo	220.0	270	-60
INVR-021	RC	Horseshoe	100.0	300	-85
INVR-022	RC	Horseshoe	154.0	0	-90



HOLE NUMBER	TYPE	TARGET	FOH (m)	AZIMUTH	DIP
INVR-023	RC	Horseshoe	155.0	0	-90
INVR-024	RC	Horseshoe	118.0	0	-90
INVR-025	RC	Horseshoe	148.0	50	-65
INVR-026	RC	Horseshoe	172.0	0	-90
INVR-027	RC	Sesfontein	15.0	90	-65
INVR-028	RC	Sesfontein	249.0	90	-65
INVR-029	RC	Sesfontein	159.0	90	-65
INVR-030	RC	Sesfontein	159.0	285	-65
INVR-031	RC	Okohongo	153.0	270	-80
INVR-032	RC	Okohongo	181.0	270	-75
INVR-033	RC	Okohongo	189.0	315	-65
INVR-034	RC	Okohongo	195.0	270	-80
INVR-035	RC	Okohongo	207.0	270	-80
INVR-036	RC	Okohongo	200.0	270	-65
INVR-037	RC	Okohongo	147.0	270	-80
INVR-038	RC	Okohongo	99.0	270	-85
INVR-039	RC	Okohongo	93.0	270	-75
INVR-040	RC	Okakura	129.0	270	-70
INVR-041	RC	Okakura	99.0	270	-70
INVR-042	RC	Okakura	117.0	90	-70
INVR-043	RC	Okohongo	210.0	0	-90
INVR-044	RC	Okohongo	177.0	240	-65
INVR-045	RC	Okohongo	189.0	90	-70
INVR-046	RC	Okohongo	138.0	90	-70
INVR-047	RC	Okohongo	189.0	0	-90
INVR-048	RC	Okohongo	150.0	240	-65
INVR-049	RC	Okohongo	180.0	315	-75
INVR-050	RC	Okohongo	174.0	0	-90
INVR-051	RC	Okohongo	78.0	270	-70
INVR-052	RC	Okohongo	138.0	270	-70
INVR-053	RC	Okohongo	72.0	270	-70
INVR-054	RC	Okohongo	84.0	270	-70
INVR-055	RC	Okohongo	126.0	270	-70
INVR-056	RC	Okohongo	54.0	270	-70
INVR-057	RC	Okohongo	79.0	270	-70
INVR-058	RC	Okohongo	138.0	270	-80
INVR-059	RC	Okohongo	62.0	270	-70

HOLE NUMBER	TYPE	TARGET	FOH (m)	AZIMUTH	DIP
INVR-060	RC	Okohongo	72.0	270	-70
INVR-061	RC	Okohongo	83.0	270	-70
INVR-062	RC	Okohongo	42.0	270	-70
INVR-063	RC	Okohongo	36.0	270	-70
INVR-064	RC	Okohongo	85.0	270	-70
INVR-065	RC	Okohongo	199.0	270	-70
INVR-066	RC	Okohongo	210.0	270	-70
INVR-067	RC	Okohongo	198.0	270	-70
INVR-068	RC	Okohongo	91.0	90	-70
INVR-069	RC	Okohongo	162.0	90	-70
INVR-070	RC	Okohongo	66.0	270	-70
INVR-071	RC	Okohongo	90.0	270	-70
INVR-072	RC	Okohongo	168.0	270	-70
INVR-073	RC	Okohongo	218.0	270	-70
INVR-074	RC	Okohongo	132.0	270	-70
INVR-075	RC	Okohongo	42.0	315	-70
INVR-076	RC	Okohongo	180.0	270	-70
INVR-077	RC	Okohongo	246.0	270	-70
INVR-078	RC	Okohongo	120.0	270	-70
INVR-079	RC	Okohongo	144.0	270	-70
INVR-080	RC	Okohongo	56.0	315	-70
INVR-081	RC	Okohongo	126.0	315	-70
INVR-082	RC	Okohongo	78.0	315	-70
INVR-083	RC	Okohongo	72.0	315	-70
INVR-084	RC	Okohongo	95.0	315	-70
INVR-085	RC	Okohongo	216.0	315	-70
INVR-086	RC	Okohongo	133.0	315	-70
INVR-087	RC	Okohongo	228.0	225	-60
INVR-088	RC	Okohongo	102.0	0	-90
INVR-089	RC	Okohongo	178.0	90	-60
INVR-090	RC	Okohongo	212.0	110	-60
INVR-091A	RC	Okohongo	42.0	90	-60
INVR-091B	RC	Okohongo	78.0	90	-60
INVR-092	RC	Okohongo	240.0	224	-60
INVR-093	RC	Okohongo	222.0	224	-70
INVR-094	RC	Otjohorowara	126.0	180	-70
INVR-095	RC	Otjohorowara	216.0	180	-70

HOLE NUMBER	TYPE	TARGET	FOH (m)	AZIMUTH	DIP
INVR-096	RC	Otjohorowara	78.0	140	-70
INVR-097	RC	Otjohorowara	174.0	270	-70
INVR-098	RC	Otjohorowara	162.0	90	-70
INVR-099	RC	Otjohorowara	126.0	140	-70
INVR-100	RC	Okangura	42.0	250	-70
INVR-101	RC	Okangura	90.0	270	-60
INVR-102	RC	Otjite West	42.0	0	-90
INVR-103	RC	Otjite West	24.0	0	-90
INVR-104	RC	Otjite West	42.0	0	-90
INVR-105	RC	Okarivizo (Road Show)	168.0	230	-60
INVR-106	RC	Okarivizo (Road Show)	186.0	230	-60
INVR-107	RC	Otjozongombe East	114.0	0	-90
INVR-108	RC	Otjozongombe East	114.0	0	-90
INVR-109	RC	Okozonduno	102.0	70	-60
INVR-110	RC	Okozonduno	114.0	90	-60
INVR-111	RC	Otjozongombe East	126.0	0	-90
INVR-112	RC	Otjozongombe East	120.0	230	-60
INVR-113	RC	Otjozongombe East	66.0	73	-60
INVR-114	RC	Okozonduno	137.0	220	-70
INVR-115	RC	Okozonduno	126.0	90	-60
INVR-116	RC	Okakuyu	114.0	90	-60
INVR-117	RC	Okakuyu	126.0	90	-60
INVR-118	RC	Okakuyu	114.0	90	-60
INVR-119	RC	Okapanda	108.0	0	-90
INVR-120	RC	Okapanda	84.0	0	-90
INVR-121	RC	Okapanda	98.0	0	-90
INVR-122	RC	Okakuyu	174.0	90	-60
INVR-123	RC	Okakuyu South	201.0	75	-60
INVR-124	RC	Okakuyu South	42.0	75	-60
INVR-125	RC	Okakuyu South	48.0	75	-60
INVR-126	RC	Okapanda	90.0	0	-90
INVR-127	RC	Omatapati	147.0	0	-90
INVR-128	RC	Omatapati	171.0	140	-65
INVR-129	RC	Omatapati	195.0	140	-60
INVR-130	RC	Omatapati	144.0	90	-60

HOLE NUMBER	TYPE	TARGET	FOH (m)	AZIMUTH	DIP
INVR-131	RC	Omatapati	188.0	0	-90
INVR-132	RC	Omatapati	165.0	90	-60
INVR-133	RC	Omatapati	153.0	0	-90
INVR-134	RC	Omatapati	150.0	140	-60
INVR-135	RC	Omatapati	144.0	0	-90
INVR-136	RC	Okozonduno	120.0	90	-60
INVR-137	RC	Okozonduno	111.0	90	-60
INVR-138	RC	Okozonduno	150.0	90	-60
INVR-139	RC	Okozonduno	162.0	90	-60
INVR-140	RC	Okozonduno	150.0	90	-60
INVR-141	RC	Okozonduno	199.0	90	-60
INVR-142	RC	Okozonduno	147.0	90	-60
INVR-143	RC	Okozonduno	169.0	90	-60
INVR-144	RC	Otjihorongo	126.0	61	-50
INVR-145	RC	Otjihorongo	132.0	0	-90
INVD-001	Diamond	Manuela	250.0	270	-75
INVD-002	Diamond	Manuela	200.0	90	-50
INVD-003	Diamond	Manuela	300.0	90	-55
INVD-004	Diamond	Manuela	150.0	90	-80
INVD-005	Diamond	Manuela	207.0	90	-55
INVD-006	Diamond	Manuela	203.0	90	-60
INVD-007	Diamond	Okohongo	78.0	270	-65
INVD-008	Diamond	Oruvandjai	250.7	74	-65
INVD-009	Diamond	Oruvandjai	120.6	70	-68
INVD-010	Diamond	Oruvandjai	59.3	0	-90
INVD-011	Diamond	Oruvandjai	163.5	25	-50
INVD-012	Diamond	Oruvandjai	254.1	0	-90
INVD-013	Diamond	Omatapati	169.8	90	-60
INVD-014	Diamond	Omatapati	250.8	90	-60
INVD-015	Diamond	Omatapati	169.8	270	-50
INVD-016	Diamond	Omatapati	85.9	90	-70
INVD-017	Diamond	Okohongo	232.8	268	-70
INVD-018	Diamond	Okohongo	236.7	271	-72
INVD-019	Diamond	Okohongo	241.9	276	-70
INVD-020	Diamond	Okohongo	260.1	279	-76
		<b>TOTAL</b>	<b>23,242</b>		



## 2010

In 2010 INV Metals completed 49 RC holes totalling 7,074 metres at three target areas (Okohongo, Horseshoe and Sesfontein), and 1,310 metres of diamond drilling at the Manuela target area (Table 10-3). In addition one short diamond drill hole was completed at Okohongo in order to twin RC hole INVR-06 which had intersected 2% copper over 45 metres. The drilling was completed in two phases. The first phase, all RC, was contracted to Gecko Drilling (Pty) Ltd. of Walvis Bay, Namibia, and was conducted between April 30 and June 11, 2010. The second phase program was comprised of one diamond drill and one RC drill, both contracted to Major Drilling Namibia Pty Ltd., based in Windhoek, Namibia. The RC drilling was conducted between October 24 and November 26, 2010, while the diamond drilling was completed between November 8<sup>th</sup> and December 3<sup>rd</sup>, 2010.

**Table 10-3: Summary of INV Metals' 2010 Drilling**

TARGET	RC		DIAMOND		TOTALS	
	HOLES	METRES	HOLES	METRES	HOLES	METRES
Okohongo	39	5,645.0	1	78.0	40	5,723.0
Horseshoe	6	847.0			6	847.0
Sesfontein	4	582.0			4	582.0
Manuela			6	1,310.0	6	1,310.0
<b>TOTALS</b>	<b>49</b>	<b>7,074.0</b>	<b>7</b>	<b>1,383.0</b>	<b>56</b>	<b>8,462.0</b>

## 2011 - 2012

In 2011 INV Metals completed 95 RC drill holes totalling 11,961 metres at 11 target areas (see Table 10-4), and 13 diamond drill holes totalling 2,495.9 metres at the Okohongo, Omatapati and Oruvandjai target areas. The drilling was completed in two phases. The first phase, carried out with two diamond drill rigs and one RC rig, was contracted to Drillcon and Ferrodrill respectively, and was conducted between May and October, 2011. The second phase program was comprised of one RC drill, contracted to Ferrodrill, based in Windhoek, Namibia and was conducted between November 15<sup>th</sup> and 14<sup>th</sup> December 2011. In early 2012 Ferrodrill returned to the property between January 18<sup>th</sup> and January 21<sup>st</sup> in order to deepen holes INVR-141 and 143 at Okozonduno by a total of 65 metres, and drill two holes at Otjijhorongo for a total of 258 metres (INVR-144, 145).

**Table 10-4: Summary of INV Metals' 2011 - 2012 Drilling**

	RC		DIAMOND		TOTALS	
TARGET	HOLES	METRES	HOLES	METRES	HOLES	METRES
Okohongo	45	5,667.0	4	971.5	49	6,638.5
Oruvandjai			5	848.2	5	848.2
Omatapati	9	1,457.0	4	676.2	13	2,133.2
Otjohorowara	6	882.0			6	882.0
Okangura	2	132.0			2	132.0
Otjihorongo	2	258.0				258.0
Otjite West	3	108.0			3	108.0
Okarivizo	2	354.0			2	354.0
Otjozongombe East	5	540.0			5	540.0
Okozonduno	12	1,687.0			12	1,687.0
Okapanda	4	380.0			4	380.0
Okakuyu	4	528.0			4	528.0
Okakuyu South	3	291.0			3	291.0
<b>TOTALS</b>	<b>97</b>	<b>12,284.0</b>	<b>13</b>	<b>2,495.9</b>	<b>110</b>	<b>14,779.9</b>

## 11. SAMPLE PREPARATION, ANALYSES AND SECURITY

During RC drilling each metre of sample was split by means of a cone splitter mounted below the cyclone into two representative samples, one weighing approximately 30 kg and a smaller sample weighing approximately 5 kilograms. Both samples were collected directly from the splitter. The large sample was collected in a clean, unused plastic polyweave bag. The small sample was collected in a clean, unused transparent plastic bag. The downhole depth of the sample was pre-written on each bag. Samples to be analyzed were identified during drilling by hand held XRF. Once a sample was chosen for analysis it was assigned a unique sample number. A pre-printed paper sample ticket was placed in the smaller 5 kg sample bag and the sample number was written on the outside of the bag. Provision was made for later insertion of duplicates, blanks and certified standards by the preparation laboratory.

Samples to be analyzed were transported by INV Metals employees to Analytical Laboratory Services located in Windhoek, Namibia, at 71 Newcastle Street, Northern Industrial Area, for sample preparation. The samples were fine enough to not require crushing. A 200 g split of the sample was produced with a riffle splitter and pulverized using a Siebtechnik (Germany) pulverizer (250 cc bowl, hardened carbon steel rings) until 85% of the sample passed 75 microns. A quartz blank was passed through the pulverizer between every sample. The pulverized sample was then split in a riffle splitter to 50 grams. Using predetermined sample numbers employees of Analytical Laboratory Services inserted duplicates, certified standards and blanks every twenty samples in order to monitor contamination and accuracy of the analyses. Each 100-sample sequence contains eighty-five routine samples, five duplicates, five

certified standards and five blanks. The 50 gram pulverized samples were packaged in labelled zip-lock plastic bags. A pre-printed paper sample ticket showing the unique sample number was placed inside each bag.

Diamond drill core samples to be analyzed are identified during the core logging process and are generally one metre in length unless obvious lithological control is noted or high grade mineralization is encountered in which case sample length can be reduced or increased in increments of 25 centimetres. These samples are marked on the core and a unique sample number from a pre-printed sample ticket book is inserted at the end of the sample run to ensure no samples are missed at the cutting and bagging stage. Space in the sample sequence is left at this stage for the insertion of blank, duplicate and standard material. Blanks are inserted during sampling while duplicate and the selected standard reference material are inserted at the prep facility prior to shipping. Blanks, duplicates and standards are inserted every 20 samples with blanks starting at 00, standards at 05 and duplicates at 12 within the number sequence. Following the halving of the drill core, the samples are collected in a clean, unused, transparent plastic bag. The corresponding sample ticket from the core box is inserted into the sample bag to ensure the correct sample number is assigned, as the ticket books are often out of sequence. The downhole depth of each sample is hand written in a specific file and also in a spreadsheet tracking every hole.

Once core samples are cut and bagged they are sealed in polyweave sacks and transported to the INV Metal office in Windhoek at 24 Robert Mugabe Avenue. The appropriate laboratory sample preparation and analysis requisitions are prepared and the samples are transported by INV Metals staff to Analytical Laboratory Services located in Windhoek, Namibia, at 71 Newcastle Street, Northern Industrial Area, for sample preparation. Preparation of the samples consisted of drying, crushing to 90% < 2 mm and pulverizing 1000 g using a carbon steel mill until 85% of the sample passes 75 microns. The pulverized sample is then split to 100 grams. The 100 g pulverized samples are packaged in zip-lock plastic bags with a pre-printed sample ticket showing the unique sample number placed in the bag.

Activation Laboratories (Actlabs Namibia (PTY) Ltd) personnel picked up the prepared samples (RC or diamond drill) at the Analytical Laboratory Services office in Windhoek and transported the samples to their Windhoek office, located at 267 Cobalt Street, Prosperita. Samples were shipped via SDV Logistics by Activation Laboratories personnel to Activation Laboratories Ltd. located at 1336 Sandhill Drive, Ancaster, Ontario for analysis. Activation Laboratories has ISO/IEC 17025:2005 accreditation. After a four acid "near total" digestion, samples were analyzed for 35 elements using a Varian Vista ICP. Samples containing >100 g/t silver were re-analyzed using a 30 g sample subjected to fire assay with a gravimetric finish. Overlimit samples containing >10,000 ppm copper or >5,000 ppm lead were subjected to sodium peroxide fusion and acid dissolution followed by ICP/OES analysis. This provides the total copper value, including both sulphide and oxide. Samples from several holes were also analyzed for acid soluble copper. The soluble copper values were determined by leaching a 0.5 gram sample with 50 ml of 5% sulphuric acid for 60 minutes using an orbital shaker. The leached samples were then diluted to 100 ml volumetrically with purified water, filtered, then analyzed by ICP-OES. To verify the acidity of the leach solutions, the pH was measured on selected samples with varying copper and calcium contents.

Core and chip recovery was typically excellent and in managements' opinion there are no material factors that impact on the accuracy and reliability of the results.

All soil samples are given a unique identifying number and analysed at the field camp by a hand held “Niton” XRF. Once analysed by Niton, the samples are packed 50 at a time into polyweave sacks which are then sealed and transported to INV Metals’ office in Windhoek. Samples are then unpacked and every second sample (odd numbered) is set aside and packed 100 at a time into 20 litre snap lock, lidded plastic bins. Bins are accordingly labelled with the sample numbers they contain and are then shipped from Windhoek to Acme Analytical Laboratories in Vancouver (1020 Cordova St East, Vancouver, BC) by Transworld Cargo, a Namibian based courier company in Windhoek. Samples are then dried at 60°C and sieved to -230 mesh. Aqua-regia digest is then undertaken on a 15 g split of the sieved sample with a 53 element ICP-MS finish.

In August 2010 independent consulting firm Scott Wilson Roscoe Postle Associates Inc. of Toronto was contracted to carry out a review of INV Metals’ quality assurance – quality control program and procedures, and advised that the procedures in place meet or exceed industry standards.

The author is satisfied that industry standard methodologies were utilized by Teck and INV Metals in all aspects of sample collection, preparation, shipment, chain of custody and quality assurance and control.

## **12. DATA VERIFICATION**

INV Metals has conducted independent sampling of the property both via stream geochemical surveys and RC drilling over a number of widely dispersed areas. INV Metals’ RC hole INVR-01 can be considered a twin of TCN’s diamond hole 16 as it was a relatively close undercut.

INV Metals’ geologists on site carry out rigorous reviews of the data, producing a variety of plots in order to recognize any issues with reproducibility or accuracy of results obtained from the commercial laboratories. This work involves a careful evaluation of the analyses of INV Metal’s reference samples, duplicates and blanks. The QA-QC spreadsheets, along with original data, is then thoroughly reviewed and verified by INV Metal’s Qualified Person, Mr. Keith Webb. INV Metals uses industry standard procedures to detect potential analytical problems. If the laboratory results for an INV Metals reference standard are plus or minus three standard deviations of the mean value of the certified value, or, if consecutive reference standard values are equal to plus or minus two standard deviations of the mean value, then the samples associated with that standard are requested to be re-analyzed by the laboratory. In addition, five to ten percent of all drill samples are submitted for an external check analysis to a secondary laboratory, usually ALS Chemex’s lab located in Johannesburg, South Africa.

The author is satisfied with all aspects of the quality of the data contained in this report.

## **13. MINERAL PROCESSING AND METALLURGICAL TESTING**

No mineral processing or metallurgical testing has been conducted on the property; other than for the Okohongo deposit samples which are currently undergoing testing with no results yet available (see Section 7.5.1).



## 14. MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

In 2011 CCIC was contracted to do a maiden resource estimation of the Okohongo deposit. The initial inferred resource estimate at the Okohongo deposit, effective as of March 31, 2011, totals 10.2 million tonnes grading 1.12% copper and 17.75 g/t silver, at a 0.3% copper cut-off grade, and contains 114,046 tonnes of copper and 5.8 million ounces of silver in situ. The inferred resource is compliant with NI 43-101. CCIC is an independent geological consulting firm with significant expertise and experience with African sedimentary copper deposits and has offices in Canada, South Africa and Zambia. CCIC determined that based on the geological data and information presented in their report there is sufficient information about the location, size, geological characteristics and continuity of the deposit to declare an inferred resource at the Okohongo deposit. An independent NI 43-101 Technical Report in support of this resource estimate was prepared by CCIC and is available on INV Metals' website and on SEDAR.

The parameters used by CCIC in their resource estimation include the following:

1. The inferred resource estimate for the Okohongo copper-silver deposit was completed in June 2011 by CCIC on behalf of INV Metals and is effective as at March 31, 2011.
2. Mineralization at the Okohongo deposit is hosted in siltstones and dolostones of the Lower Omaso Formation. Mineralogy is predominantly copper oxides dominated by malachite and chrysocolla, with increasing sulphide minerals at depth, dominated by chalcocite.
3. Database integrity was assessed by CCIC.
4. The drillhole database used in the estimation is based on the results of INV Metals' 2010 RC drill program totalling 5,645 metres and Teck's previous diamond drill program totalling 1,594 metres. Sample recovery was considered within industry norms for INV Metals' drill programs. CCIC did not access recovery logs for the Teck drilling.
5. Drilling was carried out in sections perpendicular to the strike of the mineralization with drill holes spaced variably along sections 100 metres apart. The maximum depth of resource drilling is approximately 200 metres.
6. Density was assigned as 2.45 g/dm<sup>3</sup> (grams per cubic decimetre) based on CCIC's extensive database of rock densities from similar deposits in the Central African Copperbelt and was benchmarked against other mining companies operating within similar geological settings.
7. Wireframes were generated using Datamine Studio™ on cross-sectional interpretations based on geology and grade. The mineralised envelope was classified as low grade, between 0.3 and 0.5% copper and high grade, above 0.5% copper.
8. Ordinary kriging was selected as the method for estimation using the Datamine Studio™ Estima process. The parent cell size for the model construction was 25 metres x 50 metres x 5 metres in the X (dip), Y (strike) and Z (across strike) directions, respectively. This was determined by considering the average drill spacing together with optimization of the kriging variance.
9. The mineral resource has been classified and reported in accordance with NI 43-101. Resource classification is based on confidence in the geological continuity, drill spacing and geostatistical analysis.

The Namibian Ministry of Mines and Energy announced on May 10<sup>th</sup> 2011 that the Cabinet declared certain minerals, including copper, strategic minerals. As such, the Cabinet decided that the right to own licenses for strategic minerals should be issued to a State-owned company. However, the Ministry of Mine and Energy stated that existing exploration and mining licenses

will not be affected. Nonetheless this announcement has created some uncertainty as to its potential future impact on resource development.

## **15. ADJACENT PROPERTIES**

Teck is the only major western company that holds claims in the Kaoko area. All of the surrounding properties are either held by small, local Namibian companies or individuals, by Avonlea Minerals Limited, or by Chinese or Russian interests.

## **16. OTHER RELEVANT DATA AND INFORMATION**

No other relevant data or information is available.

## **17. INTERPRETATION AND CONCLUSIONS**

The Kaoko property is located within a geological environment considered analogous with the African Copperbelt that hosts numerous sediment-hosted copper deposits in Zambia and the DRC. The discovery of the Okohongo deposit by INV Metals has demonstrated that the property has the potential to host significant copper mineralization. The 8,728 km<sup>2</sup> Kaoko property, which is larger than the entire Zambian Copperbelt, covers approximately 200 linear kilometres of the Okohongo Horizon that in turn hosts approximately 200 copper showings. It is the opinion of the author that the property has the size and potential not only to host a copper deposit, but possibly multiple deposits.

Given that the property has about 10 to 20% outcrop exposure at best, the potential under cover is considered excellent to host mineralization similar to that discovered cropping out or exposed in old pits and trenches. INV Metals considers the data collected to date reliable, but at an early stage of exploration on a property of this size, there will be a great range in data density. The data density across the property, depending on the target, ranges from no data to data requiring in-fill to achieve adequate data density.

INV Metal's exploration program to date has exceeded its original objective of advancing the various targets, as a result of defining an inferred resource at the Okohongo deposit, intersecting significant thicknesses and grades of copper-silver mineralization at the Omatapati and Okozonduno prospects, and by identifying new targets such as NS and by identifying new geochemical copper anomalies in areas previously unexplored.

The primary risk to the project relates to title, as some of the EPLs will require the granting by the MME of additional extensions, and potential changes to the Mining Act with respect to government statements about strategic metals.

The author is confident that as some target areas inevitably are downgraded, new ones will be identified, and that the potential to make an economic discovery on the property is high, as it is rare to have a property that essentially covers an entire belt with so many high-potential copper targets.

## 18. RECOMMENDATIONS

The 2012 exploration program includes the following components:

- Completion of the ongoing soil geochemical survey
- Expansion of the soil geochemical survey to include the Lower Omas Formation to the west of the present survey (e.g. structurally controlled Nosib inliers within EPL 3350)
- Completion of the basin analysis
- Completion of the metallurgical test work on the Okohongo deposit
- Drilling at Omatapati, Otjohorowara, NS, Otjite and possibly Epunguwe
- Mapping and drill target generation on the INV Metals staked claims
- Mapping and drill target generation based on results from the ongoing geochemical soil sampling
- Re-evaluation and target generation within the southern claim block

INV Metals has approximately \$2.4 million left to spend in order to earn its initial 50% interest. This amount has been budgeted for 2012 (Table 18-1).

**Table 18-1: 2012 Budget**

Activity	CDN\$
Soil and stream sampling	\$300,000
Geological mapping	\$150,000
Drilling and analyses	\$1,850,000
Property maintenance, reporting	\$100,000
<b>TOTAL</b>	<b>\$2,400,000</b>

Additional drilling and programs will be results based, contingent on drill results from this recommended program.

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## 20. DATE AND SIGNATURE PAGE

This report titled "Technical Report on the Kaoko Copper-Silver Property in Northwest Namibia" and dated March 21, 2012, was prepared by and signed by the following author:

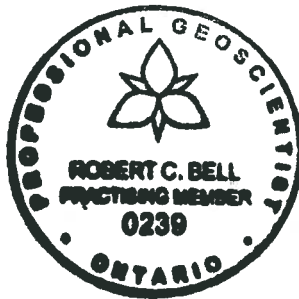
SIGNED AND SEALED

**Robert C. Bell, B.Sc., P. Geo**

**Chief Executive Officer, INV Metals Inc.**

**Dated at Toronto, Canada**

**March 21, 2012**





## 21. CERTIFICATE OF ROBERT BELL

### CERTIFICATE OF

Robert. C. Bell, Chief Executive Officer of INV Metals Inc.

to accompany the report entitled

### **Technical Report on the Kaoko Copper-Silver Property in Northwest Namibia, dated March 21, 2012**

I, Robert C. Bell, residing at 2158 Grenville Drive, Oakville, Ontario, do hereby certify that:

1. I am a graduate of the University of Western Ontario, London, Ontario, with an Honours B.Sc. Geology 1980.
2. I am a registered Professional Geologist of the Province of Ontario (Membership No: 0239) and a Fellow of the Society of Economic Geologists.
3. I have been practicing my profession for a period of more than 30 years with specific involvement in mineral exploration for gold and base metal deposits.
4. I am a Qualified Person under National Instrument 43-101 of the Canadian Securities Administrators for this specific purpose of preparing this Technical Report on a copper-silver property in Namibia.
5. I have visited the property multiple times, most recently in October 2011.
6. I am responsible for all Sections of the report.
7. I am not independent of INV Metals Inc. for the purposes of NI 43-101.
8. I have had no involvement in the Kaoko property prior to INV Metals entering into its agreement with Teck.
9. I have read NI 43-101 and Form 43-101F1 and have prepared the Technical Report in compliance with NI 43-101 and Form 43-101F1 and in conformity with generally accepted Canadian mining industry practices.
10. As of the date of the Certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Signed and sealed this 21<sup>st</sup> day of March, 2012.



**R. C. Bell, B.Sc., P. Geo**  
Chief Executive Officer, INV Metals Inc.

