

Operator: Crossland Strategic Metals Ltd

# **Chilling Project**

COMBINED ANNUAL REPORT for the period 9 November 2013 to 8 November 2014

ELs 24557 and 25077

Tenement Holders: Crossland Mines Pty Ltd

Melville P January 2015

#### **Summary**

This report covers the period 9 November 2013 to 8 November 2014. During this period, the project comprised three exploration licences, ELs 24557, 25076 and 25077. In September 2014, EL 25076 was surrendered and a Final Report for the licence was lodged with NTDME in November 2014. Crossland Strategic Metals Limited (formerly Crossland Uranium Mines Limited) has been exploring the region for uranium and other commodities since 2004.

No field-based work was carried out on the tenements over the period covered by this report. The ongoing adverse financial climate, which has greatly affected the availability of funds for the junior exploration industry, continues to have a severe impact on Crossland's ability to carry out effective exploration. The amount of financial support that the company has managed to achieve in the last few years has been principally directed towards the pre-feasibility and scoping studies related to its Charley Creek REE Project in Central Australia.

From the beginning of activities to the end of 2014, Crossland has expended approximately \$5.23 million on the Chilling project. From the results of the exploration activities carried out over this period, the company believes that there remains a potential for the discovery of base metal, gold and uranium deposits.

In October 2014, an aerial and ground inspection was made of disturbed areas within the now surrendered Chilling ELs 22738, 25076 and 25078 for the purpose of compiling a Rehabilitation Report for NTDME.

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# **Bibliographic Data**

Report Title	Combined Annual Report for Chilling Project for the period 9 November 2013 to 8 November 2014	
Author	P Melville	
Tenement / Project	Chilling	
<b>Tenement Number</b>	ELs 24557 and 25077	
Tenement Holder	Crossland Mines Pty Ltd	
Operator	Crossland Strategic Metals Limited	
Commodities	Base Metals, Uranium and Gold	
1:250 000 MapSheet	Pine Creek (SD5208)	
1:100 000 MapSheet	Reynolds River (5071), Daly River (5070)	

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#### **1** Introduction

The Chilling project licences were applied for, or in two cases acquired by purchase, over a period of several years commencing in late 2003. Eventually, the project comprised seven tenements stretching from the southern parts of Litchfield National Park to the Wingate Mountains south of the Daly River, a distance of over 150 km.

The initial exploration strategy was to explore for uranium, given the geological setting of the region and the results of historical exploration dating back to the late 1960s. In the later years of the project's life, the emphasis switched to exploration for base metals within EL 22738 and for gold in EL 25076.

Due mainly to the downturn in the junior exploration industry, and the resulting lack of available exploration funding, Crossland has been unable to finance any on-going exploration on the project area since the commencement of 2012. Since that time, Crossland's management have acquired some funding although this has been utilised to assist in the progression of the Charley Creek REE project, where preliminary environmental and scoping studies have been recently completed.

Since the previous Annual Report submission, two licences ELs 22738 and 25076 have been surrendered.

## 2 Location and General Description

The remaining licences comprising the Chilling Project are located in the Daly River region, and centred approximately 120 km south of Darwin. The original group of tenements formed a north-south trending swathe of land running from the southern part of Litchfield Park in the north to the Wingate Plateau in the south.

The nearest settlement is Daly River, which comprises an aboriginal community (Nauiyu), police station and hotel. The region has several tourist facilities.

#### **3 Tenure Details**

The Chilling Project as of 31 December 2014 consists of ELs 24557 and 25077. Crossland Strategic Metals Limited is the operator of the licence package. See Table 1 for a summary of tenement details and Figure 1 for the location of the current and recently surrendered project licences.

• EL24557 (Mount Thomas). Purchased by Crossland from Aldershot Resources. The licence was granted on 7 December 2005 comprising 20 blocks or 66.51 km<sup>2</sup> for a period of 6 years. Waivers of Reduction were successful with the 20 blocks being retained to the end of the initial term of the licence in December 2011. On the 28 May 2012 and again on 17 June

2014, DME approved the 2 year renewals of tenure and allowed retention of the 20 blocks. The tenement is scheduled to expire on 6 December 2015.

EL 25077 (Litchfield) was granted for a six year term on 9 November 2006 (expiring 8 November 2012). The title originally covered an area of 99 sub-blocks (278.5 km<sup>2</sup>). Subsequent reductions have reduced the area to 24 blocks (73 km<sup>2</sup>). An application to renew the licence for a further 2 years was submitted to DME in late 2012. The renewal was officially approved on 10 May 2013.

An application for a further 2 year renewal was made on 7 November, 2014. Crossland is awaiting a decision from DME.

- EL22738 (Buchanan). Granted on the 15<sup>th</sup> January 2009. Surrendered on the 24<sup>th</sup> January 2014.
- EL 25076 (Allia) was granted on 18th September 2006. Surrendered on the 17th September 2014.

E.L. Number	Grant or Renewal Date	Expiry Date	Current Year of Tenure (as at 8/01/2015)
EL 24557	7/12/2013	6/12/2015	10
EL 25077	09/11/2012	08/11/2014*	8

Table 1. Current Chilling Project Exploration Licences

\* Awaiting decision on application for a two year renewal

Permission was granted by DME in 2008 to allow for a common reporting date on all the Chilling Project tenements.

As a result of the financial difficulties that have faced Crossland in the last few years, the company has made a submission to NTDME in regards to reducing statutory expenditures for the licences and to postpone rentals for a specified period of time. Crossland is awaiting a decision from DME in regards to the above two licences.



Figure 1. Location Map of current and recently surrendered Chilling Project licences

## 4. Target Area and Exploration Rationale

The Chilling Target was identified by Paradigm Geoscience during a study aimed at identifying prospective locations in northern Australia. In the case of Chilling, the target zone was initially restricted to the now surrendered EL 23682. This licence was situated at or close to a locus of important geological features including the Litchfield Province, the Fitzmaurice Mobile Zone, the Pine Creek Orogen and the Daly Basin. Some important intersecting bounding structural features are also present as are an unusual diversity of intrusive rocks, as demonstrated by the airborne radiometrics and magnetics. As knowledge of the region grew, further ground was applied for, specifically to include the mid-Proterozoic Tolmer Group and underlying lower Proterozoic Burrell Creek Formation.

The geological setting of the Chilling project environment suggested that a wide variety of deposit styles could be present. The greater region has historically produced base metals, gold and tintantalum. In the southern part of the project area, gold mineralisation occurs at the historical Fletcher's Gully Mine where incomplete historical records indicate a production of 70 kg (approx 2,250 oz) of gold. Tin, as alluvial concentrations and lode deposits are known from Buldiva, Muldiva and Collia. These are hosted by pegmatites and greisens related to the hydrothermally active Soldiers Creek and Allia granites.

To the north, base metals have been prospected and mined in a meta-sediment / volcanic environment assigned to the basal Burrell Creek formation at Daly River. Isolated occurrences of disseminated lead-zinc sulphides have been found in the carbonate rocks of the Daly Basin, sometimes associated with barite or fluorite. Basic intrusives in the region could have a potential to host nickel-copper or platinoid mineralisation.

Crossland considered that the lower and mid-Proterozoic combination was considered highly prospective for the classic basement-hosted, unconformity-related uranium deposit type. A secondary target would be for structurally controlled deposits within or adjacent to granites. The similarities of the regional geological setting to the Rum Jungle and the Alligator Rivers Uranium Field in the NT were major considerations in the targeting of the region. Base metals and gold became the focus in later years, with most of the exploration effort being concentrated in the southern part of the project area.

The variety of mineral occurrences spread throughout the region illustrates that both source rocks and suitable structurally prepared lithological hosts are present.

#### 5 Geology

The original Chilling Project tenements were covered by three 1:100,000 scale geological maps, which from north to south are the Reynolds River, Daly River and Wingate Mountains sheets. Details as follows :

- NTGS 1:100,000 Wingate Mountains Sheet, published with explanatory notes, in 1989 (Edgoose *et al*, 1989).
- NTGS 1:100,000 Daly River Sheet, published with explanatory notes in 1987 (Dundas *et al*, 1987).
- NTGS 1:100,000 Reynolds River Sheet, published with explanatory notes in 1989 (Pietsch, 1989).

The regional geological setting of the project area is illustrated in Figure 2. The figure was constructed from the 1:250,000 scale geological map of the Northern Territory (Ahmad and Scrimgeour, NTGS 2006).



Figure 2. Project Area Regional Geology

The geology of the two remaining tenements is fairly simple. The oldest rocks present are the intensely folded, generally north-south striking Lower Proterozoic Burrell Creek Formation, consisting of weakly metamorphosed sandstone, siltstone and minor conglomerate. These outcrop over much of the retained area. Basal Tolmer Group Depot Creek Sandstone unconformably overlies the Burrell Creek. The sandstone dips very gently eastwards. There is a small area of Cambrian

rocks occurring along the eastern boundary of the Mount Thomas tenement.

#### 6 Past Exploration Activities

Regional exploration for uranium commenced in the late 1960s / early 1970s. Various companies have explored for the unconformity-style deposit without success although several small occurrences were located, all within the lower Proterozoic. The March Fly (Mount Thomas) uranium prospect was discovered in 1980 by Mobil Energy Minerals Australia, but was inadequately assessed. Total Mining drilled the prospect between 1988 and 1991, providing a wealth of useful data. Crossland followed up in 2008-2009 with a program of mapping , radiometrics and diamond drilling, outlining a small zone of uranium mineralisation. This prospect is located in Crossland's EL 24557. Another uranium occurrence in a similar geological environment, Eccles Prospect ( EL 25077) was discovered by Total and drill tested without much success. At these prospects, the uranium mineralisation is associated with graphitic rocks and thin pegmatitic intrusions and quartz veins. In both cases there is a spatial relationship to the mid-Proterozoic unconformity.

Very minor green and yellow secondary uranium minerals were noted within sheared granite at the MEMA Prospect near Fletchers Gully and near the Collia tin workings.

The Soldiers Creek granite at Collia was the focus of uranium exploration by Planet in the early 1970s and by PNC in the mid 1990s. Vein swarms within the granite were prospected with some exhibiting elevated radioactivity. PNC also looked at alteration features in the granite, specifically large zones of hematisation, which they considered as being similar to the Olympic Dam model where copper - uranium mineralisation is hosted by a hematitic granite breccias.

Also in the same area, widespread base metal and minor uranium anomalism was identified by Crossland within a sequence of hematitic-silicified breccias, carbonates and volcanic (surrendered EL 22738). These rocks occupy a small, closed, basin-like structure within a geologically complex environment. Diamond core drilling in 2011 established the stratigraphy, clarified the structure and discovered vein-hosted lead, zinc and copper sulphides in both granite and basic volcanics.

## 7 Activities For The Reporting Period

No exploration activities were conducted for the reporting period. In the 12 months to date, the company has continued its endeavours to acquire sufficient funding in order to maintain all of its exploration activities and fulfil its obligations in respect of its current landholdings. As has been the case for the past few years, the last 12 months has continued to be a challenge to generate further investment in the company, and to keep the remaining licences of the Chilling project in good standing. As noted, the company has had to reduce its tenement holdings at Chilling with the surrender of two ELs in the past 12 months.

### 8 Conclusions and Recommendations

The continuing efforts over the past 12 months which have been made by management have met with some success. A potential investor is in the process of completing a due diligence, which it is carrying out in view of taking over Crossland's Canadian JV partner's interest. Pancontinental Uranium Corporation ceased to regularly fund its share of exploration funding in late 2011 and this action contributed to Crossland's difficulties in the past few years. The new investor is focussed principally on Crossland's Charley Creek REE resource although it has expressed an interest in the remaining Chilling tenements.

The potential for future exploration activities have been planned and presented to the investor. Crossland believes that there remains viable targets within both the retained and recently surrendered exploration licences.

#### 9 **References**

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