KURUNDI PROJECT
(GR-77)

COMBINED ANNUAL REPORT for the period
13 February 2010 to 12 February 2011

Exploration Licenses EL23937
and EL24995

HELD BY
FERRUM CRESCENT LIMITED
(formerly Washington Resources Limited)

OPERATED BY
NORTHERN MINERALS LIMITED
(Uranium Rights)
AND
FERRUM CRESCENT LIMITED
(All other Minerals)

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11/03/2011
SUMMARY

Location: The Kurundi Project (GR-77) comprises tenements EL23937 and EL24995. The tenements are located approximately 400kms NNE of Alice Springs and 100km SE of Tennant Creek. The eastern portion of EL23937 lies on the western edge of Epenarra Station, and EL24995 lies on the western boundary of Kurundi Station.

Geology: The Kurundi Project (GR-77) covers the contact between the western Georgina Basin and the Tennant Creek Inlier on the northern side of the Davenport Range. The regional basement rocks are Proterozoic (1870Ma) deepwater marine interbedded greywacke, siltstone and minor porphyritic felsic volcanics of the Warramunga Group which were moderately to tightly-folded about 1810Ma. The Warramunga Group is intruded by members of the Tennant Creek Supersuite. This includes the Hill of Leaders Granite (Pgb) which outcrops extensively in the northwest of the tenement area. It is a multi-phase, fractionated granite, characterized by large orthoclase phenocrysts up to +5cm in diameter. The Munadgee uranium mine is located on the western side of EL23937. The primary Georgina Basin unit present within the project area is the near-basal Gum Ridge Formation which is known to contain phosphate.

Work Done: No on-ground field work was completed on the project during the reporting period. In October 2010 Northern Minerals acquired the non-uranium rig rights to the tenements EL23937 and EL24995 from Ferrum Crescent. At the time of writing the tenements are being transferred to Northern Minerals.

Results: The eastern portion of EL23937 has been relinquished in 2010 following an assessment of phosphate exploration data collected during 2009, which downgraded the prospectively for phosphate mineralisation within the area.

Conclusions: The uranium potential of the immediate Munadgee Mine area remains untested due to access issues centred on Aboriginal sacred sites. A short diamond drill program is recommended to test these workings. Rock chip sampling, geological mapping and ground radiometrics is also recommended over targets identified to the south of the historical Munadgee uranium prospect which share similar radiometrics and geological settings with Munadgee.
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1.0 SUMMARY

During the reporting period, exploration activities conducted by Northern Minerals Limited (formerly Northern Uranium Limited) targeting uranium on EL23937 and EL24995 were restricted as a result of budgetary constraints and access issues in the immediate vicinity of the Mundagee mine area centred on Aboriginal sacred sites. No field work was conducted and work was limited to reviewing and interpreting existing data.

Recent interpretation of the eastern portion of EL23937 suggest that this area is not underlain by the main phosphate hosting unit in the region, the Wonarah Beds, and are thus considered to have low phosphate potential and were subsequently relinquished during 2010.

This report describes work conducted by Northern Minerals Limited during the reporting period.

2.0 INTRODUCTION

This report details exploration activities conducted on tenements EL23937 and EL24995 between 13 February 2010 and 12 February 2011. The tenements are held by Ferrum Crescent Limited which was formerly known as Washington Resources Limited and exploration work is being undertaken by Northern Minerals Limited pursuant to two agreements relating to the acquisition of the phosphate and uranium rights by Northern Minerals Limited. In October 2010 the non-uranium rights to the Kurundi tenements were acquired by Northern Minerals from Ferrum Crescent Limited. The tenements will be transferred from Ferrum Crescent Limited to Northern Minerals.

3.0 LOCATION, GEOMORPHOLOGY AND ACCESS

The tenements EL23937 and EL24995 lie approximately 400kms NNE of Alice Springs and 100kms SE of Tennant Creek (Figure 1). EL24995 is located on the western boundary of Kurundi Station and EL23937 extends across both Kurundi and Epenarra Pastoral Stations.

Access to EL24995 can be gained via the unsealed Wauchope-Epenarra road past the Kurundi Homestead and then by station tracks east of Kurundi Creek going northwest to the tenement. Access to EL23937 is via the unsealed Wauchope-Epenarra road which passes in an easterly direction along the bottom portion of the tenement. Station tracks give access to the northern and southern portions of the tenement from this road.

Topographically, the south-western corner of EL24995 and EL23937 overlies part of the Murchison Range with long, steep –sided, narrow to broad, ridges and valleys. Adjacent to the Murchison Range are areas of dissected terrain consisting of low ridges and hills of sedimentary, volcanic and granitic rocks. An erosional, weathered surface with little organised drainage covers the area in the eastern third of the tenement. Kurundi and Whistleduck Creeks are areas of alluvium and may have surrounding areas of dune fields and sand plains.

Elevation ranges from 300m in the eastern region to over 500m in the southwest. The south western and southern ranges display a mostly erosional regime grading to residual in the northwest, to more depositional in the drainage channels in the northeast. All areas can be overlain by Quaternary colluvial and alluvial cover. Intermittent lateritic duricrust and backslope material of uncertain age is also evident, in particular in the central tenement area. The laterite often displays a vermiciform texture and a relatively vuggy matrix. The texture indicates an in-situ lateritic duricrust that has undergone little deflation due to top-loading.
The eastern two thirds of the tenement are characterized by broadly undulating woodland with intermittently spinifex covered plains. Vegetation is generally most dense in drainage areas and an increase in termite mounds can also be observed in these regions.

The southwestern corner is occupied by prominent hills belonging to a portion of the northeastern boundary of the Murchison Range. Skeletal soils and scree form the dominant regolith type over many of the more elevated ridges and ridge slopes. Ridge caps are often outcrop exposures while hill sides generally consist of uphill sourced colluvial material.

The northwestern quadrant of the license is occupied by thinly veneered granite which forms prominent tors in several places. Regolith in areas underlain by granite is of an unconsolidated sandy nature with quartz and feldspar forming the major constituents. A number of large quartz ridges also transect this area.

The major streams of the area are bound by extensive open grasslands and often provide the best access into areas, provided the streams can be crossed if required. Several major streams transect the area with the Kurundi Creek forming the major drainage channel. The latter transects the central licensed area in a southwest to northeast direction. It is in fed by the easterly flowing Granite Creek on its western flank approximately in the center of the license. The Mosquito Creek, situated near the northern boundary of the license, merges with the Kurundi Creek in the Fork Creek Bore area and forms a large floodplain. Whistleduck Creek is located in the southeastern quadrant of the exploration license and flows to the northeast. Steep gullies and gorges drain the Murchison Range while gentle silt filled depressions as well as steeply incised creeks form the main tributaries on the plains.

All streams flow intermittently during the ‘wet’ season which ranges from October to March. Numerous waterholes are located along the individual streams although only few are permanent. Annual rainfall is in the region of 300mm.

4.0 TENURE

The area reported on consists of two Exploration Licences EL23937 and EL24995.

Details of the tenure are shown in Table 1 below. Mining claim MCC968 lies partly on EL23937 and EL24995.

<table>
<thead>
<tr>
<th>Tenement</th>
<th>Grant Date</th>
<th>Expiry Date</th>
<th>Area</th>
<th>Holder</th>
</tr>
</thead>
<tbody>
<tr>
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<td>13 Feb 04</td>
<td>12 Feb 10</td>
<td>58 blocks</td>
<td>Ferrum Crescent Ltd</td>
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<tr>
<td>EL24995</td>
<td>16 Aug 06</td>
<td>15 Aug 12</td>
<td>8 blocks</td>
<td>Ferrum Crescent Ltd</td>
</tr>
</tbody>
</table>

Table 1- Tenement Schedule
Figure 1 – Kurundi Project Area – Location Map
5.0 REGIONAL GEOLOGY

The tenements lie within the Davenport Province on the southern part of the Tennant Creek Inlier as shown in Plate 3. The regional basement rocks are Proterozoic (1870Ma) deepwater marine interbedded greywacke, siltstone and minor porphyritic felsic volcanics of the Warramunga Group which were moderately to tightly-folded about 1810Ma. The Warramunga Group is intruded by members of the Tennant Creek Supersuite. This includes the Hill of Leaders Granite (Pgb) which outcrops extensively in the northwest of the tenement area. It is a multi-phase, fractionated granite and is characterized by large orthoclase phenocrysts up to +5cm in diameter. A coarse-grained biotite granite has also been recorded but may simply represent another phase of the Pgb. The easterly flowing Munadgee Creek and the NW flowing Kurundi Creek mark the southern boundary of the Granite which is otherwise enclosed within Warramunga Group.

The Kurundi Anticline lies in the south west corner of the tenements and the nose of the McLaren Syncline wraps around its northern side. This marks the northern boundary of the Wauchope Fold Belt. This area is composed of the Hatches Creek Group. The Hatches Creek Group is composed of shallow water sedimentary rocks (arenites, felsic and mafic volcanic, siltstone, mudstone, shale, carbonates and possible evaporates) deposited sometime between 1810Ma and 1640Ma. Quartz arenites usually occur as ridges and lithic or feldspathic arenites often have a clay or micaceous matrix and are recessive. The three subgroups of the Hatches Creek Group (Hanlon Subgroup, Wauchope Subgroup and Ooradidgee Subgroup) are present in the tenements.

Several late mafic and aplitic dykes as well as pegmatites intrude the Hill of Leaders granite and can be inferred in the aeromagnetics. These may form an important association with wolframite and scheelite mineralization in the Mosquito Creek Tungsten Field. Large linear and curvilinear quartz and quartz hematite veins appear to define the contacts of the major granite phases. The veins often display cataclastic breccia clasts up to decimeter scale suggesting a relatively high level of emplacement.

Middle Cambrian shallow marine and sub-aerial sediments including siltstones, micaceous arenites and minor grit and conglomerate phases overlie the earlier lithologies in the northeast. The region has undergone poly-phase deformation (NTGS) and been moderately- tightly folded (especially obvious in the Murchison Ranges to the south). Regional northwest – southeast trending shear zones inferred by the NTGS transect the south western quadrant of the tenement. The more intense deformation appears to have affected the Ooradigee group with several intense zones of shearing evident on the ground and backed by linear features on the aeromagnetics. Some of the contacts with the Hatches Creek Group may in fact be structural.

A large structure is evident on the aeromagnetics with a southeast – northwest trend crossing the Hill of Leaders granite in the vicinity of the old tungsten mines. It is expressed as a linear magnetic low trending over several kilometres. Warping of lithologies associated with late granite intrusions may have occurred locally and affected orientations of the regional structures locally. The strength of these signatures is relative to the size and distance from the intrusive bodies.

Late brittle faults with a roughly north-northwest to north orientation offset lithologies by tens of meters. This is particularly evident in the HCG sediments where drainage channels often exploit these fault zones.
6.0 LOCAL GEOLOGY – MUNADGEE PROSPECT AREA

6.1 Lithology

Four distinct rock packages have been recognized in the Munadgee area namely, the Warramunga Group, volcanics of unspecified origin, the Hill of Leaders granite suite and the overlying Hatches Creek Group. The Hill of Leaders granite forms an elongate body trending sub parallel to the regional NW –SE strike. It appears to be of relative uniform composition and is traversed by several late dykes and structures.

Warramunga Group sediments are situated in an anastomosing belt, wedged between the Hill of Leaders granite to the NE and the younger Hatches Creek Group sediments to the southwest. HCG sediments dominate the southwestern corner of the area investigated. Several conglomerate outliers have been mapped although the main contact between the former and Warramunga sediments appears to be faulted. Volcaniclastics with an unspecified grouping dominate the southeastern extension of the Warramunga sedimentary package. The NTGS has placed the volcanics into a suite younger than the Hill of Leaders granite, however aeromagnetic and structural data indicates that they are heavily deformed and folded and precede the granitoid. Minor volcanic units are present elsewhere in the Warramunga Group and it is likely that the lithologies belong to this rock suite.

In the immediate Munadgee vicinity volcanic and sedimentary lithologies dominate. A northwest to north-northwest trending extensive quartzite ridge delineates the southwestern contact of volcanic units with sedimentary rocks. The volcanics have been identified by petrological work as feldspathic porphyry intrusives, however locally there is some evidence to suggest that the rocks may be of volcaniclastic origin, mainly in the form of textural evidence near the mine.

Hatches Creek Group conglomerate and sandstone overlie the older lithologies 400m southeast of the main anomalous area. The sediments form part of an unconformity surface in this area.

On second vertical derivative aeromagnetic imagery, a circular zone of diffuse magnetic anomalism is apparent centered approximately 1km east of the Munadgee workings. This has been inferred to be an unexposed granitoid with dimensions of approximately 3 x 2km with a NW-SE long axis. The depth of the intrusion below the current surface is unknown. A relatively shallow depth of emplacement (3-4km depth) is suggested by the large amount of cataclastic brecciation found in peripheral quartz veining.

In the eastern portion of the mapped area large quartz veins and breccias have intruded major inferred structures which form the eastern contact of the volcanic units. Quartz veins fall into three main categories in the immediate Munadgee area:
(i) sheeted vein systems, generally discontinuous but strike extensive and in zones up to 10m wide;
(ii) tension veins, not as extensive, millimetre– to decimetre-scale, cross-cutting the rock package and often containing peripheral breccia clasts;
(iii) large (metre-scale) quartz veins, possibly very early and following original lithological contacts. In the quartzite these veins take on the shape of centimetre- to metre-scale sheeted vein system almost exclusively hosted in the latter.

A late hematite (or potassic) altered quartz porphyry has intruded one of the early large metre-scale quartz veins ~700m SSE of the Munadgee shaft. This rock has a cherty appearance with weakly developed quartz (or altered feldspar) porphyroblasts. It contains a millimetre-scale, grey – clear quartz vein stockwork that is the main host of the known uranium mineralization on the prospect. The dyke has been mapped discontinuously over approximately 200m and forms the main target-style for uranium mineralization in the project area at this stage.
Three major structures transect the Munadgee area (see Figure 3). A sinistral strike-slip fault forms the contact between the Hatches Creek Group and Warramunga Group sediments south of the mapped area. Due to the presence of an unconformity between these two units the attitude of the fault is unknown. In the project area the unconformity surface does not appear faulted with the main structural contact referenced above possibly forming part of an original extensional fault system. A second major structure is located along the contact of the Hill of Leaders granite and the Warramunga Group. This is marked by an extensive quartz breccia ridge and appears to have offset the volcanic units dextrally by approximately 2km. The structure also bounds the northern contact of the inferred small intrusive east of Munadgee.
The third and most important feature is an anatomising fault network that links the forementioned structures in a NW – SE direction. The network forms an approximately 500m wide corridor and transects the southern half and contact of the inferred intrusive as well as the overlying volcano-sedimentary package. Major movement on these structures appears to have been dextral as evidenced by tension vein arrays and folding. All significant uranium mineralization found to date lies within this fault system. All units are steeply (southwest?) dipping in the immediate Munadgee vicinity. The pre – HCG volcano-sedimentary rock package is tightly folded with a steep northerly plunge displayed in some areas. A dominant sinistral movement can be inferred from mapped evidence as well as magnetic linears.

A large scale synformal fold closure has been mapped 1km east of Munadgee, here sandstone and volcanic units are folded about a NW trending fold axial surface. North of Munadgee the western limb of the synform displays dextral (S-shaped) symmetry. A number of parasitic fold closures have been mapped in this region.

In many cases lithologies and early structures are heavily overprinted by a late, steeply northwest striking regional penetrative foliation. This hinders recognition of early contacts, structures and bedding planes on the ground especially in the volcanic units. Note that the tension veins in particular often display some degree of folding as well as the late penetrative foliation overprint. At least a 10% compression of the rock package is inferred from the evidence related to the formation of the penetrative foliation event. Late faults displaying offsets over several metres are evident in the quartzite and larger quartz veins. These appear to be of little economic importance although they should be kept in mind due to their offsetting characteristics in any drilling operations. A flat fabric is also often locally developed in the volcaniclastic unit. This may be an effect of top loading of the now eroded younger Hatches Creek Group.

7.0 **EXPLORATION ACTIVITIES**

No field work was conducted during 2010 on EL23937 and EL24995 as a result of financial constraints limiting Northern Minerals 2010 exploration activities, and as a result of restricted access to the historical Munadgee mining area within the overlapping minerals claim MCC968 arising from the Traditional Owner’s (TO’s) concerns over sacred site protection. Any future work in this area is dependent on successful negotiations between Northern Minerals and the TO’s over access to MCC968 and surrounding areas, whilst ensuring the protection of sacred sites. Northern Minerals holds an option over the mineral claim MCC968 which expires in June 2011. Northern Minerals will require an extension to the option agreement period in order to complete any further significant exploration in the area.

8.0 **REFERENCES**


Stewart, A.J. and Blake, D.H., 1986, 1:100 000 Geological Maps Commentary, Kurundi Region, Northern Territory