EXPLORATION LICENCE 24253
NEUTRAL JUNCTION PROJECT

SIXTH ANNUAL REPORT
FOR THE PERIOD
7 APRIL 2010 – 6 APRIL 2011

Barrow Creek, Alcoota
1:250,000 Map Sheets

Registered titleholder: Mithril Resources Limited

Operator: Bowgan Minerals Limited
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SUMMARY

The Neutral Junction Project consists of a single exploration licence EL 24253, located 280 km north of Alice Springs.

Exploration on EL24253 is operated under a joint-venture agreement, between Bowgan Minerals Limited, MegaHindmarsh Pty Limited and the original tenement manager Mithril Resources Limited. Bowgan Minerals Limited is the current operators of the Neutral Junction Project.

Work completed during this reporting period included; the completion of 95.6 line kilometres of geophysical (magnetometer) surveys on-ground in 3 defined target areas, completion of flora and regolith mapping concurrently during surveying and completion of a review of geophysical and geological data generated during the previous reporting period.

A heavy rain event in the Barrow Creek area on the 19th of December caused cancellation of the field program four days before the scheduled date for field work conclusion at the Neutral Junction Project. Heavy rainfall in the Barrow Creek area also forced the cancellation of a proposed field visit during March 2011.

Two exploration models are currently being investigated by Bowgan Minerals Limited on EL24253. The first, aims to explore for unconformity-related uranium at the contact between the Early Proterozoic basement rocks and the overlying sedimentary rocks of the Late Proterozoic Georgina basin sequence. The second, aims to explore for gold and base-metals in association with fault re-activations (Alice Springs orogeny) within the prominent NW-SE trending magnetic/structural trend that occurs within EL24253.

Geophysical survey data from the 2010 program is currently being processed and interpreted. Based on the exploration completed to date, further exploration work involving more detailed geophysical surveying is proposed to be completed within 4 target areas within EL24253 during the 2011-2012 reporting period.

An application for an extension to EL24253 (post anniversary No.6) was lodged during the reporting period, with approval currently pending.
1. INTRODUCTION

The Neutral Junction Project is located 280 km north of Alice Springs, Northern Territory on the Barrow Creek (SF53-6) and Alcoota (SF53-10) 1:250 000 map sheets (Figure 1). Access to the district is via the Stuart Highway and a network of graded station tracks.

This is the sixth annual tenement report for the Neutral Junction Project, and details all mineral exploration activities undertaken by Bowgan Minerals Limited during the reporting period on EL 24253. Work completed during this reporting period included; completion of 95.6 line kilometres of geophysical (magnetometer) surveys on-ground in 3 defined target areas, completion of flora and regolith mapping concurrently during surveying and completion of a review of geophysical and geological data generated during the previous reporting period.

A heavy rain event in the Barrow Creek area on the 19th of December caused cancellation of the field program four days before the scheduled date for field work conclusion at the Neutral Junction Project. Heavy rainfall in the Barrow Creek area also forced the cancellation of a proposed field visit during March 2011.

2. TENEMENT DETAILS

2.1 Tenure

Mithril Resources Limited is the registered titleholder of the exploration licence as detailed in Table 1. The licence lies within the Neutral Junction, Stirling Downs and Mt Skinner Pastoral Leases.

Table 1: Neutral Junction Project Tenement Details

<table>
<thead>
<tr>
<th>Tenement</th>
<th>Name</th>
<th>Tenement Holder</th>
<th>No. of graticular blocks</th>
<th>Date Granted</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL 24253</td>
<td>Neutral Junction</td>
<td>Mithril Resources Limited</td>
<td>454 (1,433 sq km)</td>
<td>7/4/2005</td>
</tr>
</tbody>
</table>

The Neutral Junction Project is operated under a joint-venture agreement, between Bowgan Minerals Limited (Bowgan), MegaHindmarsh Pty Limited (Mega) and the original tenement manager Mithril Resources Limited (Mithril).

Bowgan is the current operators of the Neutral Junction Project which involves the expenditure of $167,000 by August 2011 to obtain a 33.3% interest, with 33.3% ownership being retained by the original tenement managers Mithril, the other 33.3% being retained by the previous tenement managers MegaHindmarsh.

This expenditure requirement was met by Bowgan during January 2011.
2.2 Native Title Parties and Aboriginal Heritage
In August 2006, Mega Hindmarsh Pty Limited convened a meeting with Central Lands Council (CLC) representatives and registered native title claimants at Tara Community Hall. Site visits were conducted by local native title representatives and CLC staff (including an anthropologist) and site clearances issued. A number of areas of significance were identified during this visit, combined with sites identified by previous AAPA surveys.

After detailed discussion with native title holders and the CLC, Mega Hindmarsh Pty Limited planned its exploration program so that these sites are avoided. Bowgan Minerals Limited will conduct exploration according to this current agreement.

2.3 Consultation with Pastoralists
The station managers at Neutral Junction, Stirling Downs and Mount Skinner pastoral stations were contacted by Bowgan Minerals Limited before commencement of field exploration on EL24253.

All aspects of the program were discussed in detail with management and staff at each pastoral station before commencement of field work and on-going discussions were conducted during the course of, and at the completion of field program.
Figure 1: Neutral Junction project (EL 24253), showing the originally granted tenement outline year 2005 and location features (after Lennartz, 2006).
3. REGIONAL GEOLOGY

The Neutral Junction Project consists of a single tenement; EL24253 located at the boundary of the Arunta Inlier to the south and the Tennant Creek Inlier/Davenport Province to the north. The contact between these tectonic blocks constitutes a wide northwest-southeast trending corridor which includes intensely folded and faulted rock types of both provinces (Lennartz, 2006).

The immediate tenement area is covered by flat-lying Neoproterozoic-aged Georgina Basin sediments (Adelaidean Central Mt Stuart Formation) which rest unconformably above steeply inclined and deformed/metamorphosed Palaeoproterozoic-aged metasediments. These rocks exhibit amphibolite-grade metamorphism and occur largely under shallow cover. The metasedimentary package includes the prospective Hatches Creek Group (HCG) which hosts the Home of Bullion mine as well as other prospects. Proterozoic-aged granites (radiometrically-anomalous) have intruded along the northwest-southeast structural trend and outcrop in the Barrow Creek area immediately north-west of EL24253 as well as in the south-east, in the Adnera Hill and Tomahawk Range areas (on Mount Skinner station).

Previous modelling of the depth of the HCG metasediments by the NTGS indicates that a major fault forms the western margin of the Georgina Basin. The depth of the basin sediments in the southern half of the EL24253 increases from less than 100 m to greater than 1 km from west to east over a distance of less than 500 m. This suggests a major crustal discontinuity, which could provide a pathway for migrating mafic magma.

This fault bounds the HCG in the northern half of EL 24253 and further towards the north-west of the tenement the fault approximately coincides with the Strzeleckie nickel sulphide occurrence.

4. PREVIOUS EXPLORATION

Historically, limited prospecting and small-scale mining has been reported in the local area for copper, lead silver, nickel, tin, tantalum, tungsten, molybdenum and mica (NTGS, 1991). The largest mining operation occurred at Home of Bullion mine site where copper ore was extracted (6,100 tonnes) between 1923 and 1951.

Aerial surveying (magnetics) was completed by NT Geological Survey on N-S oriented 500 metre line-spacing at 100 metres height during 1981.

Uranium exploration was carried out in the district by Otter Exploration (1977) and C.R.A. Exploration (1978).
In 1977, Otter undertook exploration in the Mt Ida region. Trace amounts of uranium mineralisation (maximum 215 ppm) were discovered in micro-gneisses adjacent to pegmatite bodies in Lower Proterozoic metasediments and intrusive granite bodies.

In 1978, C.R.A.E. recognised the potential for uranium occurrence in the Arunta Complex basement and at the unconformity with the overlying Central Mount Stuart Formation. Magnetic and radiometric surveys were completed with ground follow-up (stream sediment sampling) in the northern portion of EL24253.

Exploration for base metals was conducted by Kennecott Exploration (1966), Department of Mines and Water Resources (1968), Alcoa Australia Ltd. (1983) and Otter Exploration (1989). In 1980, C.R.A.E. collected approximately 20 samples over the area within the northern part of EL 24253. These samples were analysed for base metals however, uranium was not included in the suite.

Previous work for wolfram, tantalum and tin was conducted by BHP Minerals Ltd (early 1980’s) and R.B. Mining (1981).

Exploration for diamonds was undertaken by C.R.A.E. in 1977.

4.1 Discussion
The area is prospective for nickel, copper and cobalt in sulphides hosted by mafic intrusions. Two nickel sulphide occurrences (Prospect D and Strzeleckie) occur to the north-west of EL24253. These occurrences are mapped as being within amphibolites associated with HCG metasediments (Fowler, 2006).

Mafic intrusions have not been located at/near surface by exploration conducted to date within EL24253. However, outcrops of the prospective HCG stratigraphy in association with a major fault provided the basis for follow up of the Prospect D and Strzeleckie nickel sulphide occurrences along strike in the south-east direction.

From a continental scale it is apparent that EL 24253 is on major magnetic and gravity breaks as well as major lineament trends. Prospect D and Strzeleckie also occur on or near the regional magnetic break with prospect D occurring at an inflection point.

Mapped outcrops of HCG with amphibolites are restricted to three areas on the Barrow Creek 1:250,000 Sheet. The prospect D and Strzeleckie occurrences are associated with two of the outcrops with the third outcrop occurring in EL 24253 in the Main Target Zone (denoted as ‘Target Area A’).
5. EXPLORATION BY JOINT-VENTURE PARTNERS

5.1 2005-06 Exploration by Mithril Resources Limited
In June 2005, geological mapping and reconnaissance geochemical surveying was conducted to explore for nickel associated with any extensions of the HCG, in association with possible mafic intrusions. Geological mapping failed to confirm nickel prospectivity in the area. Outcrops examined within EL24253 did not contain any mafics and HCG units were not identified further to the south in the Springs Range area, as was expected. Gabbroic float was identified in one stream draining an escarpment composed of uplifted Georgina Basin sediments, but the source of the float was not successfully located further upstream. This led to the conclusion that the alluvial gravels incised by the current stream may have been deposited by a stream draining a different area.

The reconnaissance geochemical survey collected 27 samples of magnetic lag fractions, returning the highest nickel value of 67 ppm and highest copper value of 24 ppm. None of the elements assayed show any significant trends, which did not encourage further nickel exploration on EL24253 by Mithril Resources.

Whilst assays were not greatly anomalous, the generally elevated concentrations for elements such as Ni and Cr were indicative of the potential occurrence of mafic lithologies in the areas sampled. Mafic rocks may be present at shallow depth below cover in these areas. Hence, there is a possibility of a uranium occurrence associated with a ‘reducing’ trap near mafic rock types.

5.2 2006-09 Exploration by MegaHindmarsh Pty Limited
A reconnaissance geological survey was undertaken in August 2006. Following this, geological and geophysical ground surveying was completed in selected exploration areas by Hindmarsh staff between September-November 2006 and in April 2007. Hawke Geophysics Pty Ltd was contracted to review and interpret geophysical data in order to identify anomalies.

The primary mineralisation model considered was for unconformity-related uranium in the proximity of the contact between Palaeoproterozoic HCG metasediments and the younger overlying Neoproterozoic sediments (Stuarts Range group) of the Georgina Basin sequence. Identification of a potential chemical trap, such as a cross cutting dolerite, magnetite-rich intrusive or graphitic shale, was also used as a targeting criteria.

The main target area (‘Target Area A’) consisted of a window of HCG, surrounded by an exposed Paleozoic/Neo-Proterozoic unconformity with the overlying Stuarts Range sediments. A detailed program of geological mapping and magnetometer surveying on 400m spacing (N-S lines) was conducted which failed to identify any occurrence of dolerite and/or graphitic shale units within Target Area A. Several magnetically anomalous zones were identified in other
areas by subsequent surveys. These were interpreted to be located 650-800m below surface, precluding further work.

Spectrometer surveying (using the Exploranium GR 320 instrument with a 1.8 litre crystal) identified one area containing anomalous uranium concentration of 12.5ppm eU (402910mE, 7604000mN). This area was later identified as ‘Target Area B’. The interpretation of all geological and geophysical data by was completed by geophysical consultant Phillip Hawke.

During 2008, spectrometer surveying (GR320) was conducted Target Area A and prospective areas on Mt Skinner station interpreted from previous airborne survey (NTGS). In Target Area B, scintillator and magnetometer surveys explored the gamma anomaly (12.5 ppm eU) detected by previous radiometric surveys.

Soil sampling was conducted around an outcrop in Target Area A identified by previous mapping to containing boudined texture (steeply-plunging) within isoclinally folded metasediments. In Target Area B, soil and stream sediment sampling was completed in two prospective areas north of the 12.5 ppm eU geophysical anomaly.

Geological mapping was conducted in Main Target zone, Mt Skinner and Target Area B. Rock samples (highly magnetic pebbles) collected from Target Area B were submitted for petrological examination.

In the Main Target Zone and Mt Skinner areas, a program of preliminary ground spectrometer surveying failed to identify any significant radiometric anomalies. Geochemical (soil) sampling targeting a small boudined outcrop of HCG in the Main Target zone confirmed the presence of elevated base metal values, but no anomalous uranium or thorium values.

In Target Area B, ground spectrometer surveying showed a N-S striking zone of elevated radiometric values over a strike length of 3-4 km. This anomaly was interpreted to be continuous northward from the previous 12.5 ppm eU. Magnetic surveying confirmed the presence of a number of sub-parallel zones containing elevated magnetic response within the northern part of the anomalous zone detected by radiometric surveying. Soil sampling in two areas showed elevated uranium (up to 2.4ppm U) and base metal (15.6ppm Co, 6.6ppm Mo, 20.2ppm Ni, 79ppm V, 21ppm Zn) values within the vicinity of the radiometric/magnetic anomaly.

Geological mapping identified N-S trending thrust faulting, a prominent landscape feature continuous along the western flank of the radiometric anomaly. Petrology of samples of strongly magnetic iron-rich pebbles failed to confirm the presence of primary magnetite, but the strong magnetism was interpreted to be associated with secondary/supergene-style magnetite emplacement (Pontifex, 2007).
6. EXPLORATION BY BOWGAN MINERALS LIMITED

6.1 Previous Reporting Period (August 2009 – April 2010)
A total of 48.6 line kilometres of magnetic surveying were completed in 3 target areas; Mount Skinner, Railway Corridor and Tara based on previous geophysical interpretation of NTGS regional TMI and radiometric survey data. This reconnaissance program confirmed the occurrence of discrete and strongly magnetic targets in all three target areas examined. No further magnetic surveying was conducted in Target Area B (previously explored radiometric/magnetic anomaly) during this reporting period. Literature review has discounted potential for occurrence of phosphates within the Buggy Camp Swamp area, in the south-eastern corner of EL24253.

6.2 Current Reporting Period (May 2010 – April 2011)
Tasks completed by Bowgan Minerals Limited at the Neutral Junction project (EL24253) during the current reporting period included;

- review of previous exploration work completed on EL24253,
- completion of 95.6 line-kilometres of ground magnetic surveys,
- completion of flora and regolith mapping concurrently during each survey,
- geological mapping and selective outcrop sampling,
- collation, processing and interpretation of geophysical dataset (on-going).

The exploration field program focussed on completion of magnetic surveying, mapping and sampling, with a total of 95.6 line kilometres of ground surveys being completed in the Adnera Hill (Deep Bore), Railway Corridor and Tara target areas (Table 2, Figure 5, Appendix). No exploration field work was completed in Target Area B during the reporting period however.

All surveying was conducted on-foot, using a G-856AX Memory-Mag Proton Precession Magnetometer (Geometrics Inc.). A second G-856AX Magnetometer unit was operated in base-station mode over the duration of the magnetic surveying program. All lithological, soil and vegetation mapping was completed concurrently during surveying which included selective sampling and photographing of outcrop all for the purpose of geochemical analysis and/or detailed interpretation.

6.2.1 Adnera Hill (Deep Bore) Program
Geophysical surveying and mapping was conducted to further examine 4 out of the 6 pre-existing magnetic targets (NJM013-016, Figure 2) that were originally explored during the February 2010 program.

Seven traverses were conducted at target NJM013, originally examined by 2 preliminary traverses conducted in February 2010. Surveys confirmed several discrete (sub-parallel) magnetic bodies located at depth, which generally conformed to the NNW-SSE regional trend observed with the NTGS data.
Highest magnetic contrasts at target NJM013 were up to 600nT, identified on the main magnetic body between traverses 7568700mN to 7568000mN. Surface mapping confirmed the occurrence of scattered quartz gravels at surface in the northern-most traverses, which is currently interpreted to be of volcanic genesis and considered to be unrelated to the magnetic bodies (possibly HCG?).

Nine traverses were conducted at NJM016 and two traverses were conducted at NJM015 (each examined by 2 preliminary traverses conducted in February 2010). Surveys confirmed targets to correspond with two separate discrete (sub-parallel) magnetic bodies located at depth, both which appear to conform to the regional NNW-SSE trend observed on the NTGS data. Highest magnetic contrasts (up to 300nT) were identified around 7568000mN for NJM015. It is important to note that areas where surficial haematite gravels were mapped around targets NJM015-016 have a significantly 'spikey' magnetic response that has partially masked the deeper discrete structure in a number of the magnetic traverses since examined.

Four traverses were conducted at target NJM014, which was examined by 2 preliminary traverses in February 2010. Surveys confirmed a single discrete magnetic body at depth, which generally conformed to the NNW-SSE regional trend observed on the NTGS data. Highest magnetic contrasts (up to 600nT) were identified between traverses 7567700mN to 7567400mN. The traverses have identified a steepening in the magnetic profiles towards the south, which suggests that the magnetic body is becoming shallower towards that direction. Surface mapping confirmed the occurrence of scattered quartz gravels at surface in some areas of NJM014 which appears unrelated to the deeper magnetic body.

No additional surveys were conducted to further test targets NJM011-12.

Conclusions of the November-December 2010 program at Adnera Hill are as follows;

● Magnetic traverses correlate well with previous surveys, will allow for geophysical modeling and interpretation for all targets examined,
● Highest magnetic contrast occurs in southern-most targets NJM013 and NJM014 (up to 600nT+ difference between mag peak and background),
● Shallow 'spikey' magnetic signatures identified in traverses at targets NJM015-016, interpreted to be the result of surficial gravels (mag-haematite?) as opposed to being a discrete magnetic zone or structure,
● Mapping identified coarse quartz, volcanic fragments, haematitic gravels at surface, currently interpreted to be unrelated to deeper discrete magnetic bodies,
● Surface mapping has identified a correlation between regolith and vegetation,
● Surface mapping has identified complex and variable soil distribution for many target areas (interaction between residual and transported regoliths identified), which adds complexity to the design of any follow-up geochemical sampling in the Adnera Hill area.
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Figure 2: Adnera Hill (Deep Bore) area on EL24253, showing location of designated targets over magnetic (NTGS TMI) data (Hawke, 2006). Interpreted position of the NW-SE trending Ooralingie Fault is marked in blue.

NB: NJM refers to Neutral Junction ‘magnetic’ target, NJR refers to Neutral Junction ‘radiometric’ targets as originally interpreted from the NTGS regional dataset by Phil Hawke.

Discussion

Exploration conducted to date has been unable to confirm the exact nature of the magnetic bodies delineated by the survey program conducted at Adnera Hill. Initial interpretation of data suggests that the magnetic features may either be gabbroic units, or possibly dolerite intrusives located at depth, which are obscured at surface by the younger sedimentary gravels and sands, and by outcropping sedimentary (Adnera member units) that form the prominent landscape feature known as Adnera Hill. These younger sedimentary rocks consist of sandstone, pebbly sandstone or quartzites of the Late Proterozoic Adnera member (Pusa). Surface mapping has confirmed most units to be either flat-lying, or dipping shallowly towards the west.

Small areas containing scattered quartz fragments (coarse, with a ‘bucky’ texture suggesting a low-temperature genesis), haematite gravels, volcanics and the occasional breccia fragment has been confirmed at surface by mapping on the low-lying plains on either side of Adnera Hill (Plate 1,2). An isolated outcrop of
volcanic rocks (Felsic tuff from E. Proterozoic HCG or Ooradidgee subgroup?) was also identified by mapping between NJM015-016 and contained strong haematite coatings and alteration (Plate 3,4). This is significant, owing to the fact that the occurrence of Felsic tuff is evidence of the near surface occurrence of prospective E. Proterozoic lithology within this part of EL24253. It is important to note, that no evidence of HCG rocks has been confirmed to date by previous explorers further south-east of Spring Range on EL24253.

Surveying of areas containing scattered haematite gravels commonly identified a noisy magnetic response, which appears surficial and not associated with the deeper magnetic bodies that are currently targeted in the Adnera Hill area.

An overview of the magnetic features (NJM011-014) suggests that disruption and offset has occurred within this part of EL24253. Possible disruptions (faulting) can be interpreted from the NTGS regional geophysical dataset, but this appears to be along the NNW-SSE regional structural trend and probably related to movements associated with the Ooralingie Fault. Examination of the data failed to identify any obvious ‘oblique’ structural features however, which may post-dating this fault formation (and also potentially contain mineralization related to the Alice Springs Orogeny).

Preliminary interpretation of magnetic data confirmed that the steepest magnetic contrasts occur in the southern most targets (NJM013 and 014). Both targets are located with the closest proximity to the Ooralingie Fault and also, to a large granite intrusive that occurs immediately south of the EL24253 tenement boundary. It has been suggested that both may have been magnetized as a function of the granite emplacement (pers. comm. Petrick 2010). Importantly, most of the radiometric targets occur with proximity to the unconformity contact with the younger Adnera Hill units (outcropping) located close to the southern tenement boundary. Both NJM013 and NJM014, the co-incident radiometric features and the unconformity contact will be investigated further during the 2011 field campaign. Processing of the geophysical dataset for Adnera Hill (including diurnal corrections) is currently underway.

6.2.2 Railway target; NJM008, NJM008_extension

A total of 19 traverses further tested target NJM008 and 4 traverses further tested target NJM008_extension to compliment the two NE-SW oriented surveys conducted earlier in February 2010 (Figure 3).

At NJM008, surveys provided additional magnetic data on the discrete WNW-ESE trending target. Highest magnetic contrasts (around 120nT) were identified between 413400mE and 413000mE. At NJM008_extension, surveys identified a low magnetic contrast only (around 20-30nT maximum).
A summary of preliminary conclusions for the NJM008 area survey traverses are as follows;

- Magnetic surveying at NJM008/008_west correlated well with preliminary surveys conducted, also correlates well with NTGS regional data (Hawke 2010),
- Surveying of NJM008 identified two distinct magnetic ‘peaks’ within a broader ENE-WSW magnetic body, interpreted to be separated (offset?) by a faulting episode located directly west of Traverse Line 55 (Hawke 2010),
- Modeling of traverse (Line 53) identified magnetic body with a modeled depth of 250m depth, and a calculated magnetic susceptibility of 0.03 (Hawke 2010),
- Magnetic target NJM008 interpreted to be either a mafic lithology or magnetite-bearing sediment (Hawke, 2010),
- Surveying failed to identify any significant magnetic feature in NJM008_extn.
Discussion
Additional surveys conducted at NJM008 identified a large magnetic body of width approximately 550m and depth of approximately 250 metres centred at 7596250mN. Other traverses showed a similar magnetic profile, but a deeper modelled depth of 250-300 metres depth. Surveys conducted to date generally correlate with the NTGS regional magnetic data.

The NJM008 target has an oblique orientation (closer to east-west) when compared to the regional NNW-SSE structure, suggesting that this magnetic body may represent a localised ‘flexure’ within this regional trend. Interpretation of the magnetic data identified a possible occurrence of either a mafic rock type (dolerite dyke or gabbroic intrusive) or a magnetite-bearing sediment (Hawke, 2010).

Along strike of the NJM008 target, discordance in the modelled depth has been interpreted between traverses conducted on the east, compared to the western side of the magnetic body (Hawke 2010). This may represent a faulting episode has occurred within this part of the target, with further exploration of this feature being proposed.

6.2.3 Tara area targets; NJM001 and NJM002
Two magnetic targets (NJM001-2, Figure 4) were interpreted from regional NTGS data by Phil Hawke (2006). The Tara survey program focused on gaining additional data on both targets, owing to unreliability of part of the previous data gathered during the preliminary surveying conducted in February 2010 (equipment tuning problems and incremental weather conditions caused quality control problems with much of the data gathered). A total of 7 traverses were conducted to further test target NJM002, earlier surveyed by 2 preliminary traverses in February 2010. A heavy rain event caused the early conclusion of the Tara survey program before survey traverses could be conducted at NJM001 however.

At NJM002, surveys identified a discrete magnetic body at depth, which generally conformed to the regional NNW-SSE structural trend as observed on the NTGS regional data. Highest magnetic contrasts (up to 300nT) were identified at the northern-most traverse 7618300mN and between traverses 7617900mN to 7617500mN. In traverse 7618300mN, the magnetic contrast is lower (around 150nT). Here, a discrete magnetic ‘spike’ (co-incident magnetic high/low) was identified on the eastern flank of the broader magnetic body. In traverse 7617900mN, a similar discrete ‘spike’ was identified on the western flank of the broader body.

Geological mapping was also completed within the area of outcropping pegmatite (Figure 4), located further west (outside) of EL24253 to explore a possible extension of an interpreted ‘oblique’ structural trend further west of the NJM002 target (Plates 5 to 10).
Figure 4: Tara targets NJM001&2 over regional TMI (NTGS) data (Hawke, 2006). Location of the mapped pegmatite is identified immediately west of the EL24253 tenement boundary.
Conclusions from the Tara field survey program are as follows;

- Surveying provided further detailed magnetic data for the NJM002 target, will allow geophysical modeling to be completed,
- Traverses delineated NNW-SSE regional trend at NJM002, represented by large/wide magnetic zone that is continuous across all traverses,
- Shallow mag high/low ('spike') interpreted between 7617900mN to 7618300mN, highlights possible oblique structural trend,
- Oblique structural trend identified in mineralized pegmatite outcrops directly west of NJM002 (adjacent to the western edge of EL24253),
- Oblique trend at NJM002 currently interpreted as a potential fault 'reactivation' that has the potential to be mineralized.

Discussion
Exploration conducted to date has been unable to confirm the exact nature of the magnetic bodies in the Tara target area. An initial interpretation of geophysical and mapping data suggests that the magnetic features may be either; gabbroic, a dolerite intrusive or magnetite-rich sediments. Importantly, these magnetic features that represent targets NJM001&2 are totally obscured at surface either by Quaternary and Tertiary gravels within the valley floor, or by sedimentary rocks (sandstones and quartzite) that form the prominent in outcrop on both the east and west flanks.

Gabbro was identified in outcrop at the pegmatite area located just outside the tenement boundary immediately west of NJM002 which suggests that there is a good possibility that the magnetic features are associated with a deeper gabbroic intrusive. Samples of mineralized gabbro have been collected from the pegmatite located just outside the western boundary of EL24253 and it is hoped that these may be able to assist in providing some indication of the relative magnetism of this lithology which could help to determine whether the magnetic bodies are likely to be gabbroic.

NJM002 was the only target examined in detail during this reporting period. Here, a large and continuous magnetic body could be interpreted at depth which conformed to the dominant NNE-SSW structural trend. Locally, a much sharper and shallower magnetic feature was also interpreted between the traverses 7618300mN and 7617900mN which suggests the possibility of an oblique, cross-cutting structure trending approximately NNE (strike of 030 degrees?). Detailed geophysical interpretation is currently underway with the dataset.

If confirmed by further interpretation, this oblique structural feature is significant in the fact that it may be evidence of a localized post-genetic brittle deformation which may have overprinted the more regional (ductile?) structural NNW-SSE trend and may represent evidence of an Alice Springs orogeny-related event.
Importantly, mapping of the pegmatite exposures due west of NJM002 identified the occurrence of heavily mineralized veining within old workings and surface exposures that was sub-vertical, with a strike around 030 degrees. These shallow workings were originally mined for Tungsten (pers. comm. Jungala, 2010), which highlights the mineralization potential for base-metals within similarly oriented ‘intersection’ structures within the immediate area.

6.3 Work Program for 2011-12 Reporting Period
Exploration field work is currently scheduled to recommence at EL24253 during the second half of 2011. The following office work is currently on-going:

● Processing and interpretation of magnetic dataset to be conducted by Phil Hawke,
● Collation and presentation of all mapping (soil and vegetation) data,
● Dispatch of selected outcrop samples for analysis and/or petrological examination,
● Presentation of a summary report for all 2010 field work,
● Planning for 2011 exploration program,
REFERENCES


**APPENDIX**

**Table 2: Summary of magnetometer survey and mapping traverses completed on EL24253 (Neutral Junction);**

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Figure 5: EL24253 showing areas explored during the current reporting period.
Appendix

Plate 1: Scattered surface gravels (quartz and haematite) NJM014 area.

Plate 2: Close-up of quartz and haematite gravels fragments at surface in NJM014.
Plate 3: Outcrop of haematite-coated volcanic (tuff?) between NJM015-016.

Plate 4: Outcrop of haematite-coated volcanic (tuff?) between NJM015-016.
Plate 5: Schist and gabbro outcrop within pegmatite area (west Tara).

Plate 6: Close-up of quartz veining within gabbro outcrop, pegmatite area (west Tara). Vein has a north-east strike (030 degrees), which is oblique to regional NNW-SSE trend observed in schist units in Plate 5.
Plate 7: Isoclinal folding in quartz veining, within mineralised gabbro outcrop (Tara west pegmatite area).

Plate 8: Schistose textures within old workings (Tara west pegmatite area).
Plate 9: Pegmatite within schist outcrop (Tara west pegmatite area). Strike of schist units conforms to regional structural trend (strike approximately NNW-SSE).
Plate 10: View towards west across old workings at Tara west pegmatite area. Mining of pale coloured pegmatite has occurred from above the footwall contact with the more competent schist unit.
Plate 11: Local flooding, Stuart Highway on Sunday, 19th December 2010.

Plate 12: Barrow Creek in flood, Stuart Highway on Sunday, 19th December 2010.