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TIANDA

Tenement holder: Tianda Resources (Australia) Pty Ltd

Operator: Terra Search Pty Ltd
12/120 Briggs St
Welshpool
WA 6106

Title: Final Report for EL 25692 High Black Range

Period: year ending 27 September 2011

Commodities: Uranium, base metals, iron ore

Authors:

geological	expenditure
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Date: 27 September 2011

Mapsheets: Urapunga 1:250,000 Moroak 1:100,000

Datum: GDA 94 zone 53

Executive Summary

Exploration License EL 25692 is located about 25 kilometres north of the Roper River, near the High Black Range. The tenement is entirely with Moroak Station. It has been explored by Tianda Resources (Australia) Pty Ltd for uranium and iron ore since being granted in September 2007. Initial Uranium exploration work completed in the 2008 showed little potential.

The outcrop lithology in the tenement is comprised mostly of Proterozoic Roper River Group sediments, being sandstone and siltstone of the Velkerri, Moroak Sandstone and Kyalla Members of the McMinn Formation. The Sherwin Ironstone Member is sometimes found between the Moroak and Kyalla Members, and was the focus of the iron ore search.

During July 2010, geologists of both Tianda Resources (Australia) Pty Ltd and the consultancy, Terra Search Pty Ltd, worked on the tenement. Exploration was conducted with the assistance of Google Earth imagery, seeking out hilltops that might be ferruginized. Seventeen geochemical samples, about a hundred geological observation points and fourteen outcrops of Sherwin Ironstone Member were recorded. All locations were recorded on Garmin GPSs using GDA94 projection. Data files were exported from the GPSs and processed and displayed with Mapinfo.

Magnetic susceptibility readings were made on fourteen rockchip samples and at another five outcrop locations. These determined the parameter to vary between 0.3 and 310 SI units in the Sherwin Ironstone, with the highest readings being associated with the highest iron concentrations. This variability in the parameter gives an impetus to use ground magnetic survey to assist in mapping the ironstone outcrop.

ICP-OES analysis of the seventeen rockchip samples gave values in the range of 12.7% Fe (in ferruginised sandstone) up to a maximum of 48% in oolitic ironstone. The median grade was 36.6%. Phosphate concentrations were in the range of 0.03% up to 0.36% with a median of 0.09% P

The fourteen outcrops of Sherwin Ironstone Member varied in area from less than 0.1Ha to a maximum of 39 Ha, with a median of 0.1Ha. They were located on or near the tops of hills comprised of Moroak Sandstone Member. In some cases, they were only about half a metre thick, while in one instance, it appeared to be about two metres thick. The outcrops are estimated to contain over two million tonnes of ironstone, of grade ranging from 30% to 48%.

No work was completed in the final year of tender.

Contents

Figures

1 Introduction

The High Black Range tenement, EL 25692, was briefly explored for uranium during July 2008. Ground truthing of the airborne radiometric anomalies gave disappointing results. However, it has more recently become of interest as a play for iron ore deposits of the Roper River Group sediments. In particular, it might have some of the Sherwin Iron Member, a formation common throughout the Roper River area.

The tenement contains gently-dipping Proterozoic sediments of the Roper River Group, comprised within the tenement of Velkerri Formation siltstone, overlain by Moroak Sandstone. These formations stand out as prominent ridges, with the lower ground usually comprised of black Quaternary soils. On the northern margin of the tenement is found a Proterozoic dolerite sill.

Near the northwest of the tenement boundary, the Urapunga 250k geological map shows an admixture of Sherwin Iron Member (Ꝑrz) and Moroak Sandstone (Ꝑrk). The investigation of July 2010 was to determine if patches of the iron member existed within EL 25692, but had not been observed during the Geological Survey mapping.

Inspection of images of the tenement revealed a number of likely areas where the Sherwin Iron Member might be found. These were on possible hilltops mapped as Moroak Sandstone. As the stratigraphy was gently-dipping, (either to the southeast in the southern part of the tenement, or north in the northern part) the iron formation could be expected on the flanks of hills, rather than the top.

2 Location and access

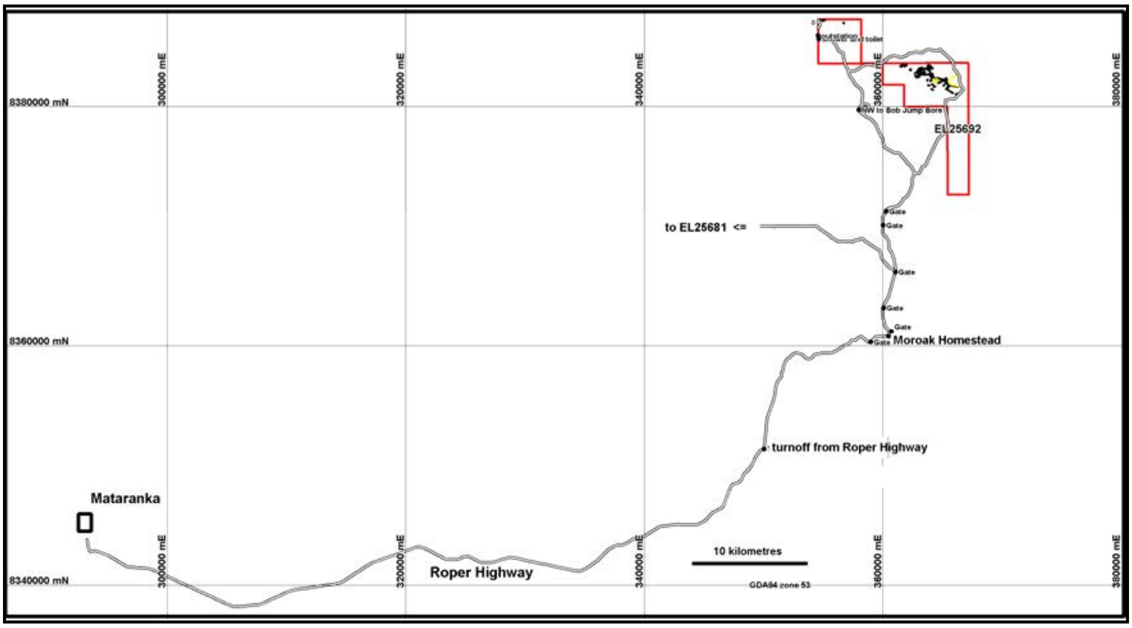


Figure 1 EL25692 High Black Range - access and anomalies

Located on Moroak Station, this exploration license was granted on 5th of September 2007 for six years.

Moraok Station is owned by Tony and Pam Davis, who also own Goondooloo Station. Their postal address is:-

Moroak Station
Roper River Highway
Mataranka 0852 phone (08) 8975 4888

Access to Moroak Station is via the sealed Roper Highway from Mataranka. There is a prominent sign about 60km from Mataranka, crossing the Roper River via a bridge and a number of concrete floodways. It is 18km on dirt road from the Roper Highway to the station homestead. It is about another 20 kilometres northwards on station tracks from the Moroak Homestead to the tenement.

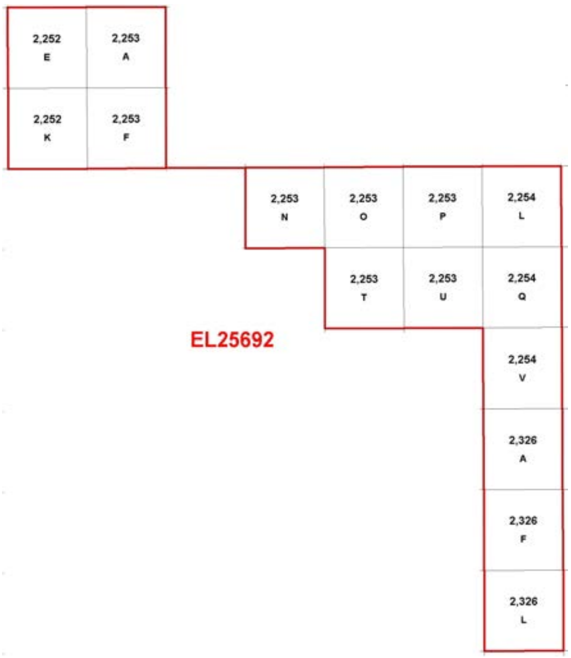
Access to the potential areas was obtained along station tracks. The main route, from Moroak Station all the way north to the tenement has been recently graded. There are no tracks for the last few kilometres, driving was out of the question and it was walked.

Moroak Station has a maintained airstrip and also offers premium accommodation for visitors. The outstation, plotted at the far northwest of the tenement, has a shed and a basic shower and toilet.

Reasonable motel accommodation is available in Mataranka, as is fuel. For provisions, however, it is necessary to travel to Katherine, some 105km NW of Mataranka.

3 Tenement Status

EL 25692 has its boundaries as in Figure 2.



It was initially 30 graticular blocks, covering a total of 99.69 square kilometres. It was granted to Tianda Resources on the 5th of September 2007 for a period of 6 years. In 2009, 15 subblocks were relinquished and there are now altogether 15 graticular blocks, covering a total of 45 square kilometres.

The tenement was relinquished on 29th August 2011

The tenement is a few kilometres northeast of ***High Black Range*** which the Geoscience Australia Gazetteer places at 14°40'S and 133° 39'E.

4 Geology

The geology of EL 25692 is dominated by sediments of the Roper Group, specifically the Velkerri Formation Ᵽrv (mostly siltstone), Moroak Sandstone Ᵽrk. (crossbedded and rippled), the Sherwin Ironstone Member Ᵽrz, and the Kyalla Member Ᵽry (micaceous siltstone to coarse sandstone). The Katherine 250k mapsheet legend is reproduced below…

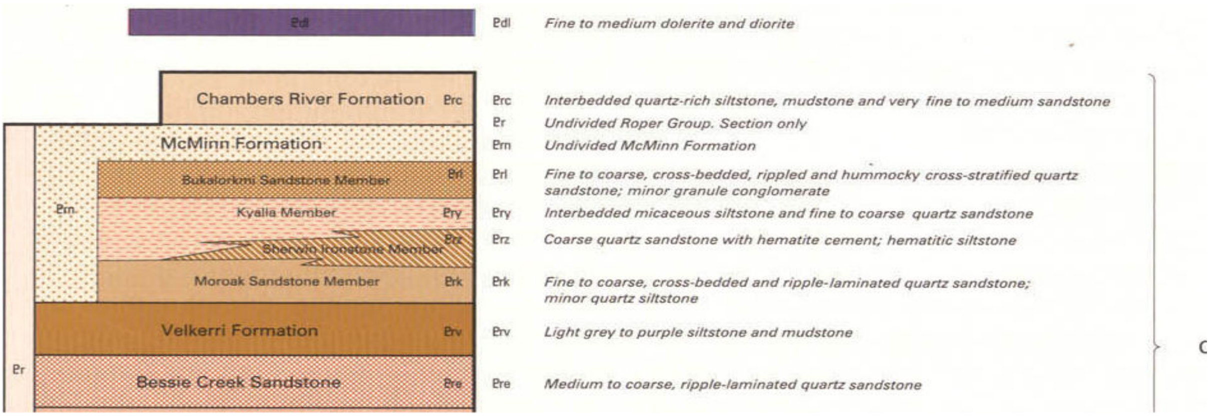


Figure 3 Stratigraphy in EL 25692 (from Katherine 1:250000 geology)

The Moroak Sandstone crops out as prominent ridges on the tenement and elsewhere. Crossbedding and ripplemarks are easily and widely observed. In the northern part of the tenement, the strata dip to the north, while in the east, they dip to the east and southeast.

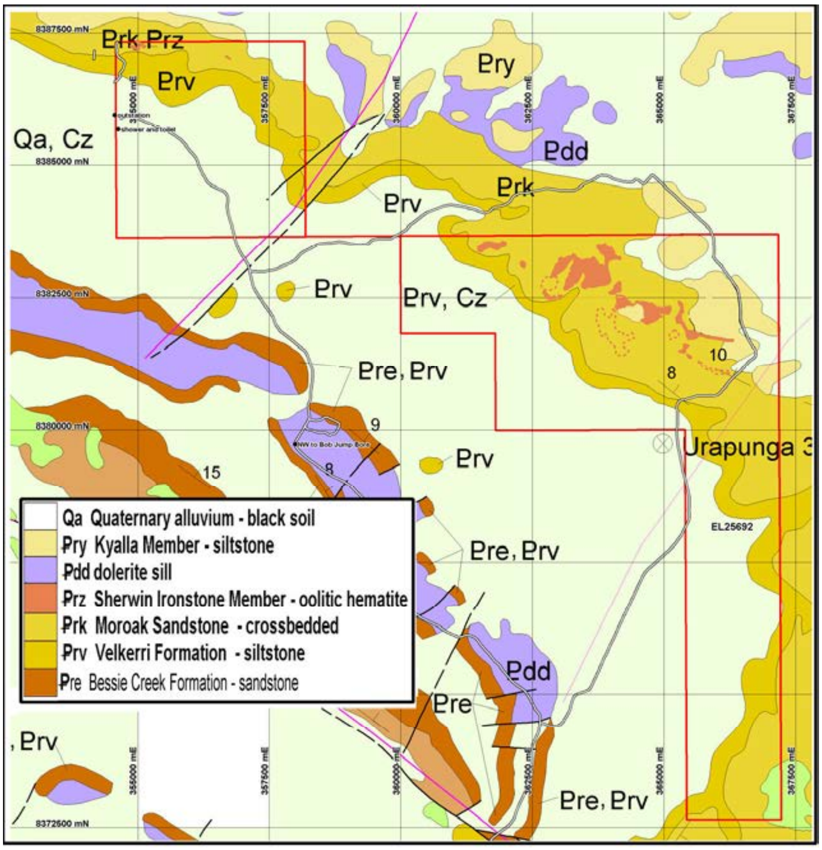


Figure 4 1:250k outcrop geology in EL 25692 NB: the Sherwin Ironstone Member has been added by Tianda

Southeast of the tenement, a dolerite sill **Ꝑdd** intrudes the Bessie Creek Sandstone Ꝑre. To the northwest of the tenement, the Sherwin Ironstone Member was mapped together with Moroak Sandstone, but none was mapped within the tenement as a separate formation. Another dolerite sill, also mapped as **Ꝑdd**, intrudes between the Kyalla Member and Moroake Sandstone northeast of EL25692.

The Sherwin Ironstone Member mapped in Figure 5 is the outcome of Terra Search/Tianda exploration activities in 2010. The remainder of the mapping is from the Urapunga 250k geology, available as Mapinfo files.

5 2008 Exploration Completed

5.1 Exploration Model

Most of the anomalies were believed to be over soil or alluvium, with black soils the most likely explanation. An exception to this was Anomaly 5, which was shown on the 1:250k geological map as being over sandstone.

The soil/alluvium radiometric anomalies were considered of interest due to the presence of lineaments mapped in the geological map and visible on Google Earth images. These lineaments might provide a conduit for uranium-rich waters to reach the surface and be concentrated within organic-rich alluvials.

5.2 Navigation

As with previous areas, all anomalies and the tenement boundary were located with GPS Trackmaker and input to a Garmin GPSmap60 device. The position of some interesting point anomalies were also input so that the sites could be visited on the ground.

The locations of samples, outcrops and photographs have been formatted so that they can be loaded onto any Garmin GPSmap device. This will allow any future explorer to return and unambiguously extend the exploration effort.

5.3 Field Work Undertaken

Field work commenced in the northwest of EL25692 on Anomalies 1 and 2. These were over mapped alluvium, but included an interesting high uranium value, annotated on the map below as U = 90. This is shown on Figure 1, below.

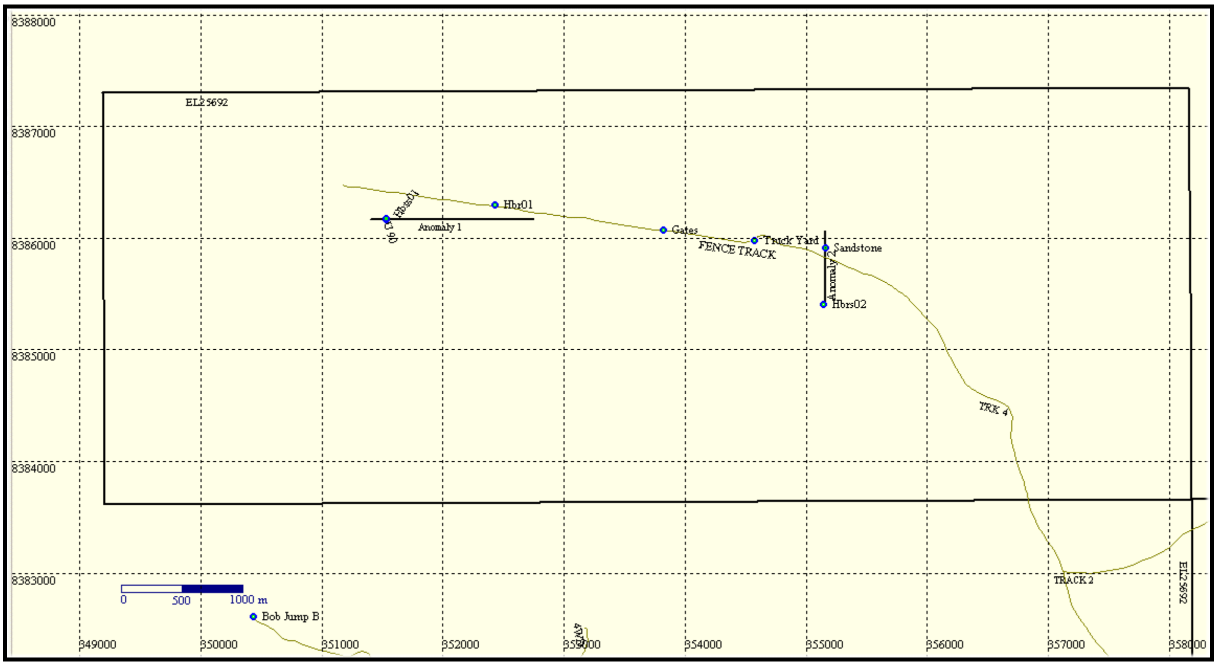


Figure 5 Anomalies 1 and 2: access, location and sample locations

5.3.1 Anomaly 1(along flight line 8386160N)

This anomaly was a short walk from an unmapped fenceline, and walked from west to east. It showed generally uninteresting spectrometer response, but at HBRS01 (351544E 8386158N) was at 210cpm. At this point analysis showed K=0.2%, U=12.6 and Th=6.7ppm. This corresponded to the U=90 anomaly noted on the airborne radiometrics. At this location, a light grey soil was observed, mixed with a goethitic yellow-brown shingle. The subsurface was very hard and rocky.

HBR01 (352444E 8386281N) was a rock chip sample, of a light grey, horizontally-bedded shale immediately beneath the alluvium. The alluvial cover was just a few tens of centimetres thick.

Anomaly 2 (tie line 355160E 8385390N to 8386060N)

At the northern end of this anomaly (355167E 8386004N) a spectrometer determination of the yellow beige clay soil found K=1.7%, U=0.5 and Th=23.7ppm. No sample was taken at this point.

The highest spectrometer counts (167cpm) on this line were at HBRS02 at 355158E 8385392N in grey, powdery soil. Photo 8265 was taken at this location.

Photo 8265 at 355167E 8386004N zone 53L
taking a sample of grey soil

5.4 Anomalies at the southern end of EL25692

The next areas visited were to do with airborne anomalies in the south of the tenement. These were convenient to a major station track and could be approached through untracked grasslands covered in termite mounds.

5.4.1 Anomaly 4 (flight line 8377150N 364840E to 365000E)

Sandstone cobbles were found in the area, which was dominated by clay alluvium.
Sample HBRS03 at 364993E 8377144N was an orange-brown clayey soil with a poor return of –80# sample. It gave a spectrometer analysis of K=0, U= 6.3ppm and Th=12.7ppm.

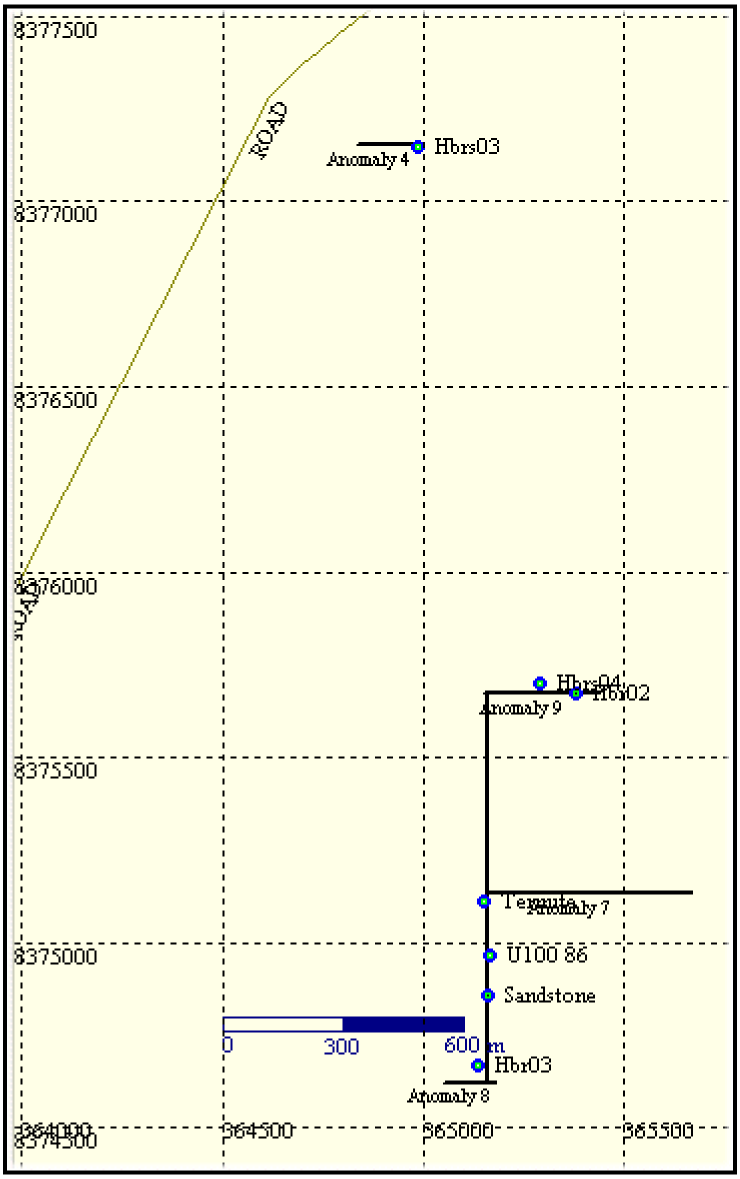


Figure 6 Anomalies and sample locations in southern EL25692

Anomaly 9 (flight line 8375670N 365150E to 365440E)

This anomaly was walked from west to east. It had grey soils, sometimes gravelly or with ferruginous pisolitic lag. High points of around 210 – 220cpm were sampled.

HBRS04 at 365294E 8375691N gave a spectrometer analysis at the surface of K=0.5, U=10.1 and Th=12.7. A second analysis at 10cm depth gave K=0.5%, U=13.6ppm and Th=8.2ppm. This was a grey, gravelly soil in an open, grassy area in the midst of savannah woodland.

HBR02 is a goethitic shale in grey soil, taken at 365389E, 8375664N. Analysis returned K=0.7%, U=11.2ppm and Th=9.8ppm.

Anomaly 7 (flight line 8375130N 365160E to 365670E)

No high counts were found on line, though just north of it, up to 220cpm were seen but not recorded. The entire line was grey soils, sometimes with pisolitic lag. Savannah grassland plus eucalyptus with abundant termite mounds.

Photo 8273 is of a giant termite mound at 365158E 8375103N.

Photo 8273 at 365158E 8375103N zone 53L
giant termite nest

These termite mounds are dense throughout the area, sufficiently so that they are an obstacle to driving through the region. Inevitably, in driving offroad, some of these mounds are destroyed. One has to consider whether such destruction is justified by driving rather than walking through the landscape.

Anomaly 6 (tie line 365160E from 8374620N to 8375670N)

On this anomaly, particularly close attention was paid to an airborne radiometric high at 365173E 8374958N where a value of U=100.86 was sought. Upon reaching this point, walking in ever-increasing spirals failed to reveal any ground anomaly, just grey soil with quite uninspiring readings.

Rock sample HBR03 was taken at 365140E 8374663N and is 10-15cm diameter sandstone scree with ferruginous lag giving 140cpm. The spectrometer analysis was K=0. U=10.1ppm and Th = 5.4ppm.

At the southern end of Anomaly 6 (near Anomaly 8) there was sandstone scree and the count rate was around 190cpm. Grey soils were found north of HBR03, with elevated count rates of 180-200cpm from 8375300N to 8375600N. At the very north of the line, there were low counts around 140cpm.

Anomaly 8 (flight line 8374620N between 365050E and 365180E)

Sandstone scree was found at the western end of the line with count rates of 190-200cpm, which declined to 150 – 170cpm at the eastern end. I walked down both sides (a little to the north and to the south) of the anomaly without excitement.

Anomaly 5 (flight line 8383200N 362970E to 363620E)

This anomaly was in the northern part of the Exploration License. Access proved difficult, with tracks (particularly along the north side) being hard to find and follow. Reconnoitring the tracks in the area showed an area of perhaps 50 square kilometres without any mapped access. The map below shows the south-eastern portion of the tenement, with the area devoid of track access highlighted in yellow. The anomaly is shown with a red ellipse.

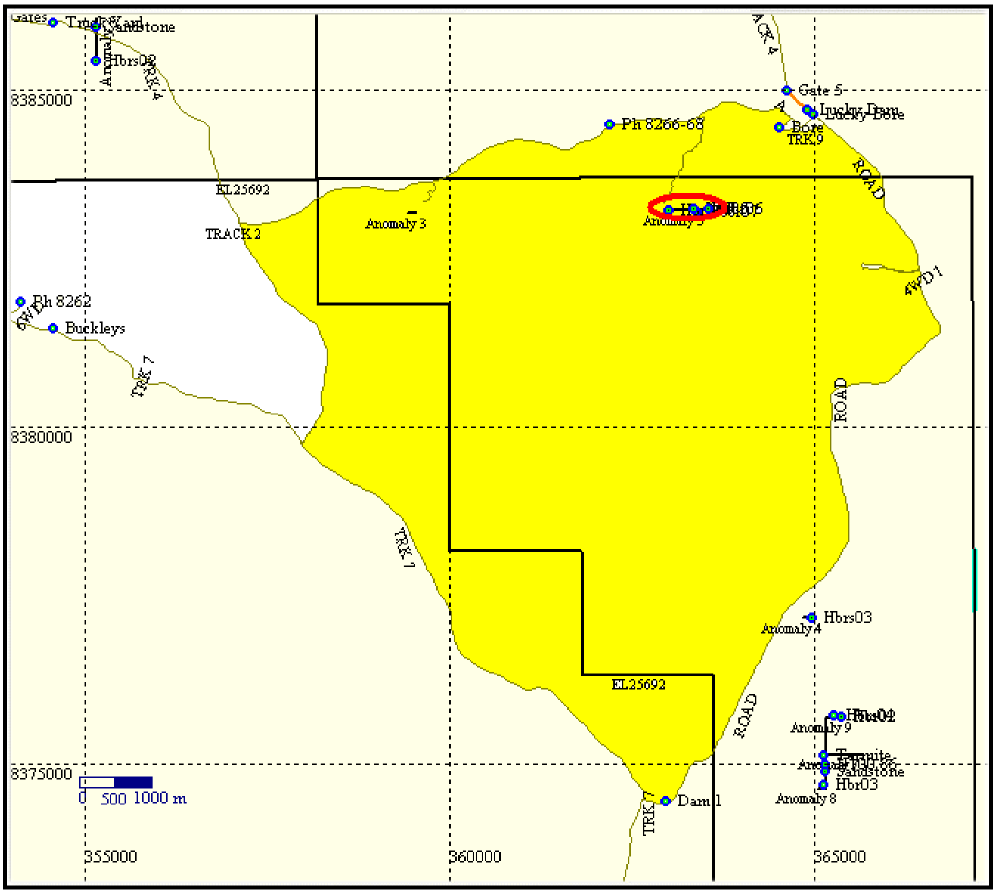


Figure 7 EL 25692 High Black Range: yellow area without access; anomaly in red

Anomaly 5 was finally accessed by bush-bashing about 2.5km from the nearest track, then walking through spinifex and rock for the last several hundred metres to the anomaly.

Why the concern with getting the vehicle so close to the anomaly? Sometimes the spectrometer unexpectedly needs reinitialisation, requiring a Cs137 source and particularly an external 12V power source. For the latter there is no substitute for the rather cumbersome Toyota Landcruiser.

The anomaly was mapped as being over sandstone, which was found to be indeed the case in the field. It was walked from west to east, slightly to the north of the line, then back again, 60 – 80m to the south. This allows for the situation where the airborne instrument is gathering radiation from sources to one side of the flight line. Both traverses were entirely over a coarse-grained sandstone with red hematite cement. The vegetation was spinifex in rocky outcrops with eucalyptus savannah woodland. Point uranium contents were in the range of 12 – 25ppm according to spectrometer determinations.

HBR04 at 363029E 8383197N gave K=0, U=25.4ppm and Th = 7.3ppm. The sample was taken from an extensive outcrop of coarse-grained red sandstone with hematite cement.

HBR05 at 363362E 8383200N gave K=0.8%, U=18.3ppm and Th=12.4ppm from 190cpm. It was also a coarse grained sandstone with hematite cement and occurred as a flat-dipping pavement, as shown in photos 8274 and 8275, below.

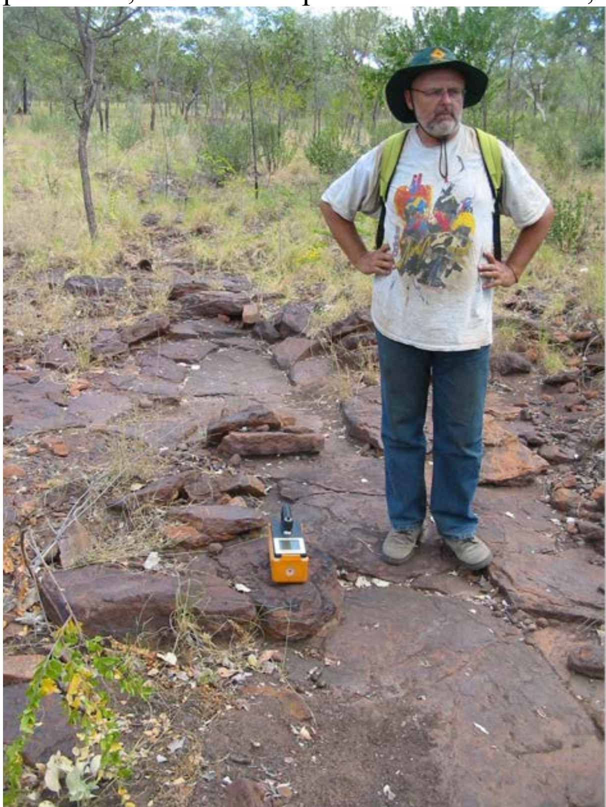


Photo 8274 at 363362E 8383200N zone 53L
red sandstone pavement
K0.8 U18.3 Th12.4

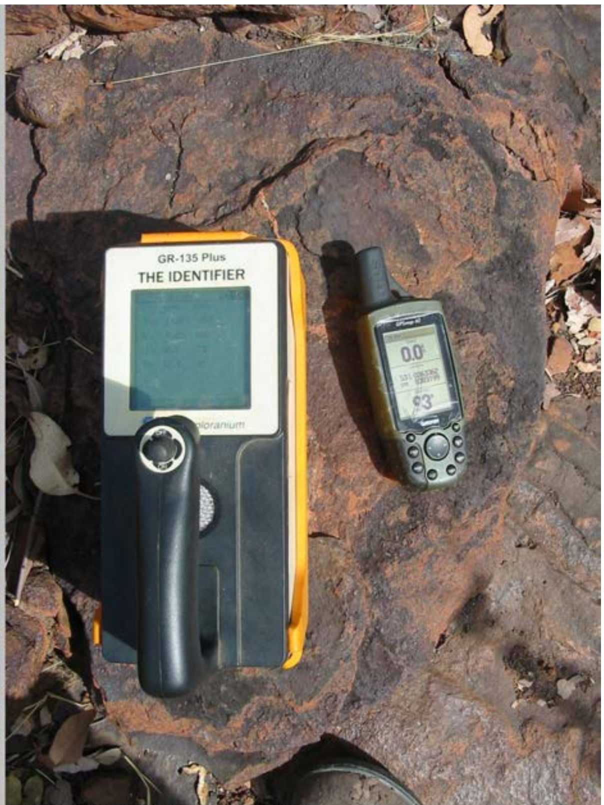


Photo 8275 at 363362E 8383200N zone 53L
red sandstone pavement
K0.8 U18.3 Th12.4

HBR06 was also a dark red sandstone with hematite cement, also with a count rate of 190cpm. It was taken at 363577E and 8383204N and gave a spectrometer analysis of K=0.8%, U=12.9ppm and Th=8.3ppm.

HBR07 was taken on the return traverse at 363399E 8383159N, ie about 40 metres south of the flight line. It was also taken from a ferruginous sandstone and gave analysis of K=0.3%, U=15.6 and Th=3.7.

Anomaly 3 (flight line 8383160N from 359420E to 359550E)

This minor anomaly, near the northern boundary of the eastern sector of the tenement, was mapped as being in alluvium. It was accessed after Anomaly 5, though mercifully a shorter journey was necessary through the savannah to the proximity of the line.

The anomaly was walked from east to west and then back again about 50m south of the traverse. 150 – 160cpm was recorded all the way. It wasa grey sandy loam soil with savannah vegetation and abundant termite mounds.

6 2010 Exploration Completed

During early July, Tianda geologists visited each of EL 25681 Roper River and 25692 High Black Range for a day. They were seeking to establish the presence of the Sherwin Ironstone Member on the tenements. The task was remarkably easy, with ironstone formations being discovered exactly where they were anticipated, and on the first try. Three ironstone outcrops were mapped and eight geological observation points were recorded. A longer, return visit was planned for later in the month.

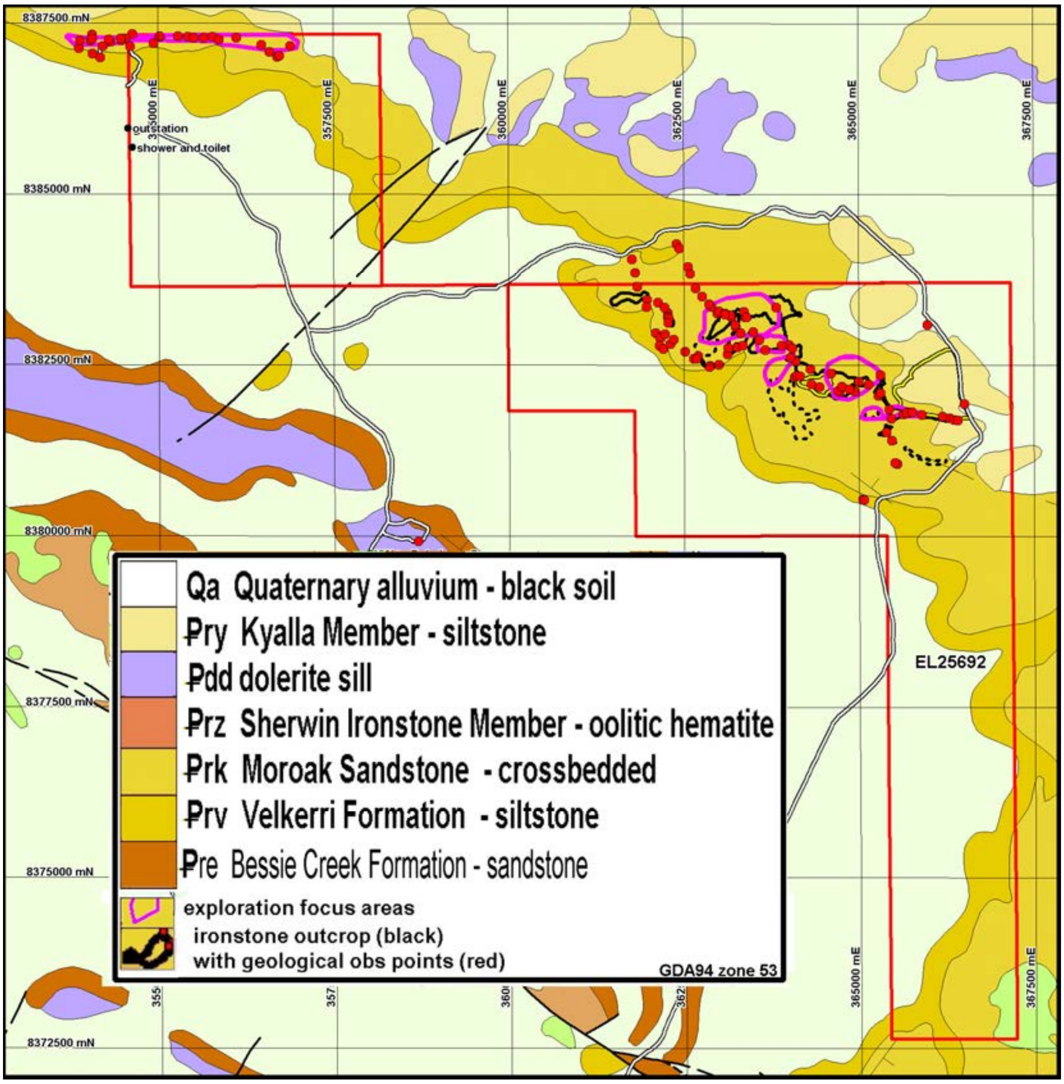


Figure 8 EL 25692 Field work undertaken July 2010 – detail in Figures 6 and 11

6.1 *Exploration Model*

The Sherwin Ironstone Member is a hematite-cemented sandstone or oolite, precipitated in lagoon conditions which were facies-equivalent to either the Moroak Sandstone or Kyalla Formation. As such, the Iron Member is not necessarily a layer-cake stratum, but can exist side-by-side the other formations. Nevertheless, it is expected to be within the upper the Moroak Sandstone section, or the base of the Kyalla Formation.

The exploration technique was simple: to explore the highest hills which were mapped as Moroak Sandstone. When driving along station access tracks, it was appropriate to stop and then climb to the top of a sandstone outcrop, then look for ironstones.

6.2 Navigation and Mapping

The outcrops were defined in the field by walking around them with a Garmin GPS. In some areas, this process is easy and amenable to producing outlines of the outcrops, while elsewhere it is difficult. Walking through dense vegetation can result in disorientation, losing the outcrop, or finding oneself in the middle of an outcrop when attempting to map its margins. Hand-held GPSs cannot multi-task, so if another feature requires immediate attention, a second GPS is necessary. For this reason two GPSs were carried in the field.

The taking of extensive notes is not possible using a GPS, certainly none are possible in the midst of recording a track. Similarly, only terse comments can be made when recording point data such as lithology, structural information or samples.

Despite these limitations, there are great advantages in using GPSs in field mapping. Point and track data can be downloaded onto a computer during the day or the evening. Rough maps can be prepared immediately and data transfer into Mapinfo format can be done in a few minutes. The position data is accurate within a few metres, rather than guesswork based on photography. Geological base maps can be generated for and loaded into the GPS, so the field geologist will know whether a feature has already been mapped.

Garmin models GPSmap60 and eTrex Vista were used. Both of these store a maximum of 20 tracks and 1000 waypoints, so up to 40 geological boundaries could be recorded before it was necessary to download the data onto a computer. Data handling was done using GPS Trackmaker and also GPS Utility. The latter package has the advantage that tracks and waypoints can be exported as Mapinfo MIF files and imported directly into Mapinfo.

All the maps prepared for this report have used the GPS Utility export feature to create points and line data. This approach has its difficulties, in particular, line data files appear to lose their attributes and each lithology has to be stored as a separate Mapinfo table.

Hand-held GPSs cannot display raster data such as aerial photography, ASTER and geological maps. More sophisticated (and expensive) devices are available that overcome these barriers.

Care needs to be taken when using GPS devices to ensure that they are always set up in the correct projection. For this project, the two GPSs were always set in GDA94.

6.3 Remote sensing

ASTER imagery had been acquired and processed in 2008. The outcrops were overlaid on the True Colour ASTER image in Figure 10, to see if it might be helpful. Some dark streaks outside the northwestern corner of the tenement may be more ironstone outcrop. The ASTER images have a twenty metre pixel size, while the Sherwin Ironstone outcrops encountered in this part of the tenement were of a similar width and might not be expected to reveal themselves. In the eastern portion of the tenement, where the Sherwin Ironstone outcrops are more extensive, the ASTER might be expected to be more successful.

Figure 6 shows the ASTER True Colour image, albeit at an unhelpful scale. Even greatly enlarged, it did not seem useful , whereas the Google Earth image was much more informative.

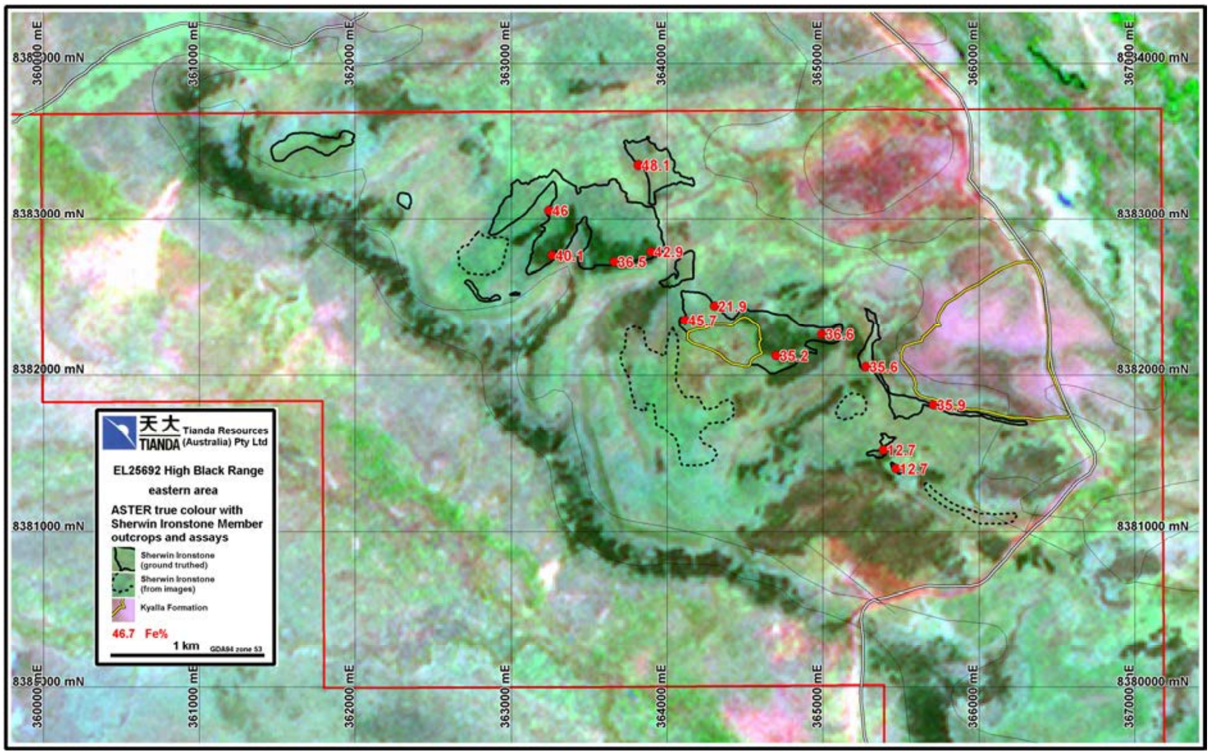


Figure 9 ASTER True Colour image overlain with Sherwin Ironstone outcrop in the eastern portion of EL25692.

As an example, there is a comparison (overleaf in Figure 7) of the Google image with ASTER "discriminate for mapping" (overleaf in Figure 8).

In the field, the ironstone is instantly recognisable as raised, dark brown to black outcrop. It can be clearly seen from some distance away, if there is not too much vegetation. Even on poor quality colour photographic images such as the Google image below, the ironstone is unambiguous. Good quality, low-level, colour aerial photography at 1:10,000 scale (or better) with overlapping coverage could be of great assistance in mapping outcrop.

Figure 10 Google Earth image in the NW of EL25692. Note dark northwestery lineations of ironstone. Pixel size is about 5m.

The ASTER image below used a "discriminant for mapping" algorith for its generation. The algorithm has been developed to resolve various lithologies, but it appears to have failed with this particular situation. The NW-striking ironstone outcrops and lineations have disappeared.

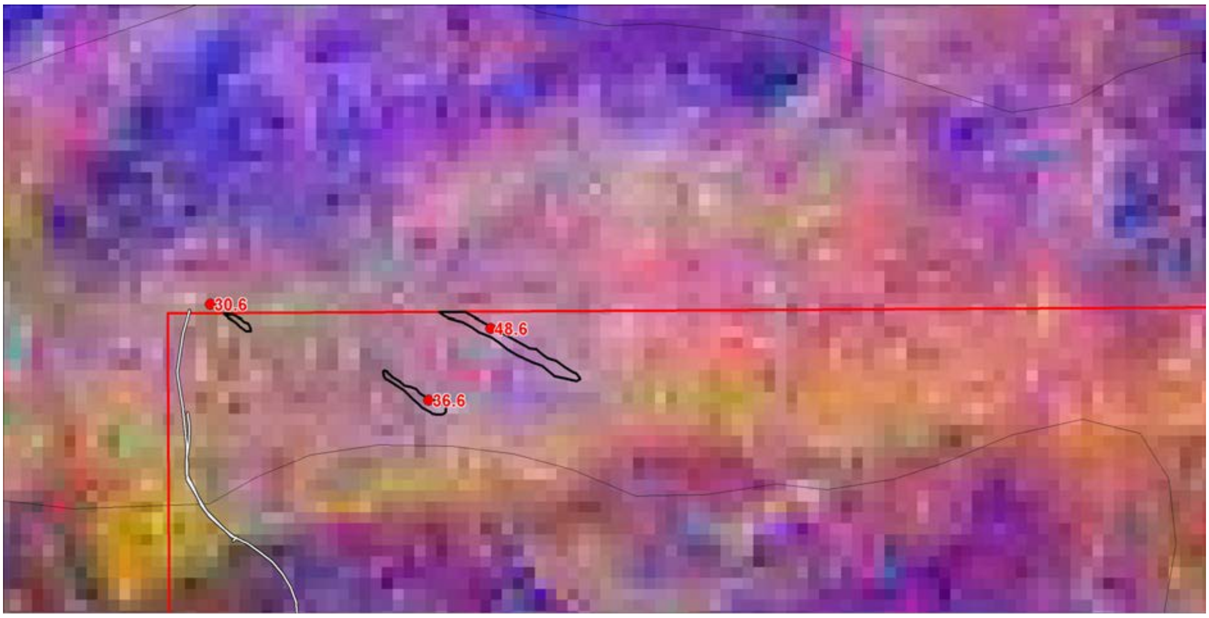


Figure 11 ASTER "discriminant for mapping": lineations have disappeared. Pixel size 20m.

The ironstone outcrops were under grass and tree canopies in any case. Walked traverses across the Moroak Sandstone were undertaken to find possible overlying Sherwin Ironstone.

6.4 *Field Work undertaken in northwestern corner*

Judged from Google Earth image characteristics, a number of (mainly) hilltops were chosen for field investigation. These were visited on July 3rd 2010, with a base in Mataranka, then again on July 11th ,12th and 13th while camping on the tenement.

On July 3rd, two separate hilltops were visited. In each case, significant walks were required to inspect the locations. In the first instance, a small hilltop occurrence of Sherwin Ironstone was encountered. This was at the far northwest of the tenement and indeed the northern tenement boundary passed through a quite small outcrop. The second occurrence was within a patch of vegetation that had been chosen as a likely location from Google Earth imagery. Both outcrops were mapped using GPS by Charles Poynton and sampled by Drs Chen and Wang. Both these outcrops were considered disappointing, as they were comprised of ferruginized sandstone.

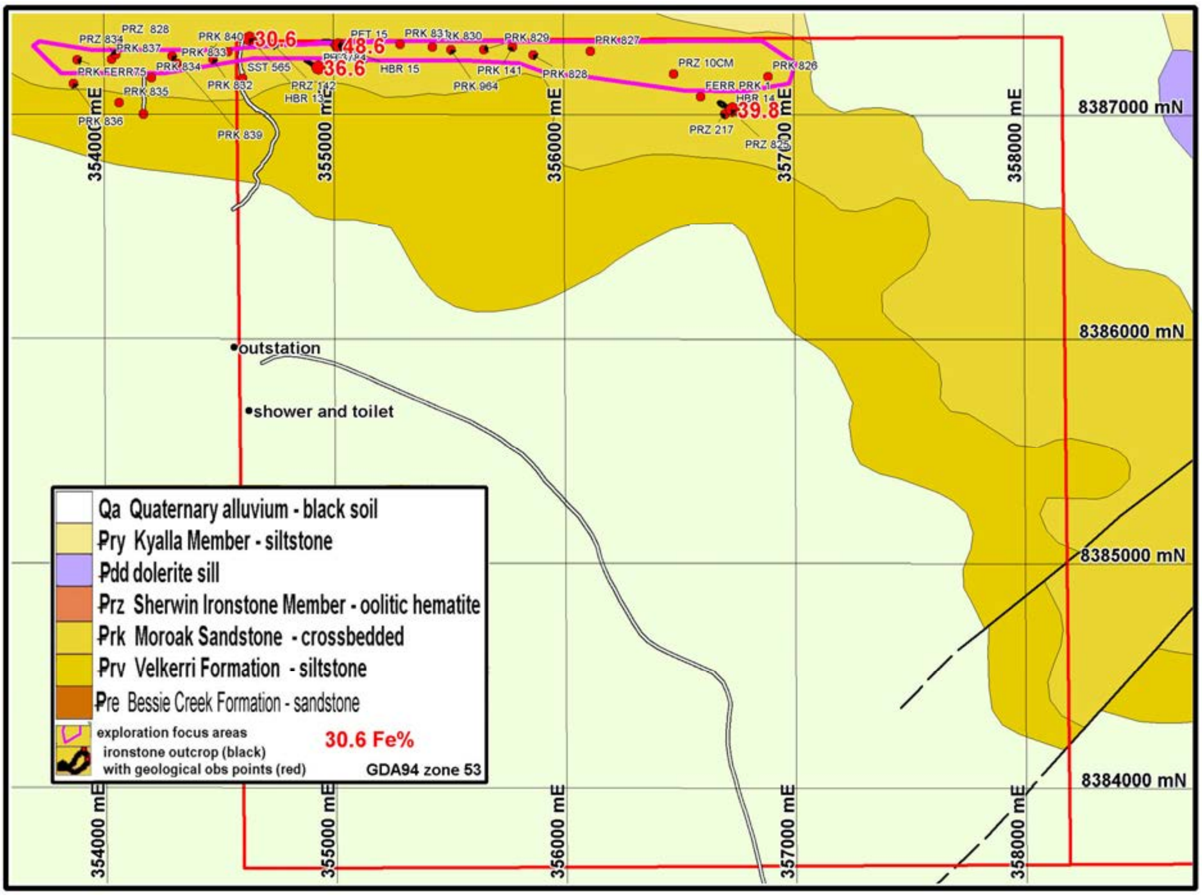


Figure 12 250k geology with Sherwin Ironstone in northwestern area

The return visit was made on July 11th through 13th. A Terra Search Pty Ltd geologist was accompanied by a field assistant and the two quickly visited as many hilltops as possible. Though the Sherwin Ironstone Member was mapped, sampled and had magnetic susceptibility determinations performed, only a very limited attempt was made to map other outcrop boundaries. The only exception was of Kyalla Member siltstone which was found to lie over the Sherwin Iron Member. Otherwise, the focus was on mapping units of commercial interest and not waste time mapping rocks of no economic value.

On July 11th, three Prz Sherwin Ironstone outcrops on top of a hill at the far northwest of the tenement were mapped and sampled. 25 geological observation points were recorded on the GPS as well. The outcrops were usually long, sinuous and arranged *en echelon* obliquely to the strike of the Moroak Sandstone. One of them showed mineralization cracks indicative of formation by rising, iron-rich groundwater. The focus area is outlined in purple on Figure 10 and the Sherwin Ironstone Member is in black. As is apparent on the figure, the ironstones are quite small – usually less than a hundred metres long and maybe ten metres wide. They were also quite thin – only a metre, or even less.

Figure 10 shows a cluster of often-sinuous ironstone outcrops running along a ridge at around 8387500N. The ironstone was comprised of hematite-cemented sandstone. Each of the outcrops had a sample taken and the assay results, in percent, are annotated on Figure 10. The scale of this map is unsatisfactory and a better impression of some of the outcrop is gained in Figure 7. Plate 2 in the Appendix shows the outcrop overlaid on the Google Earth image.

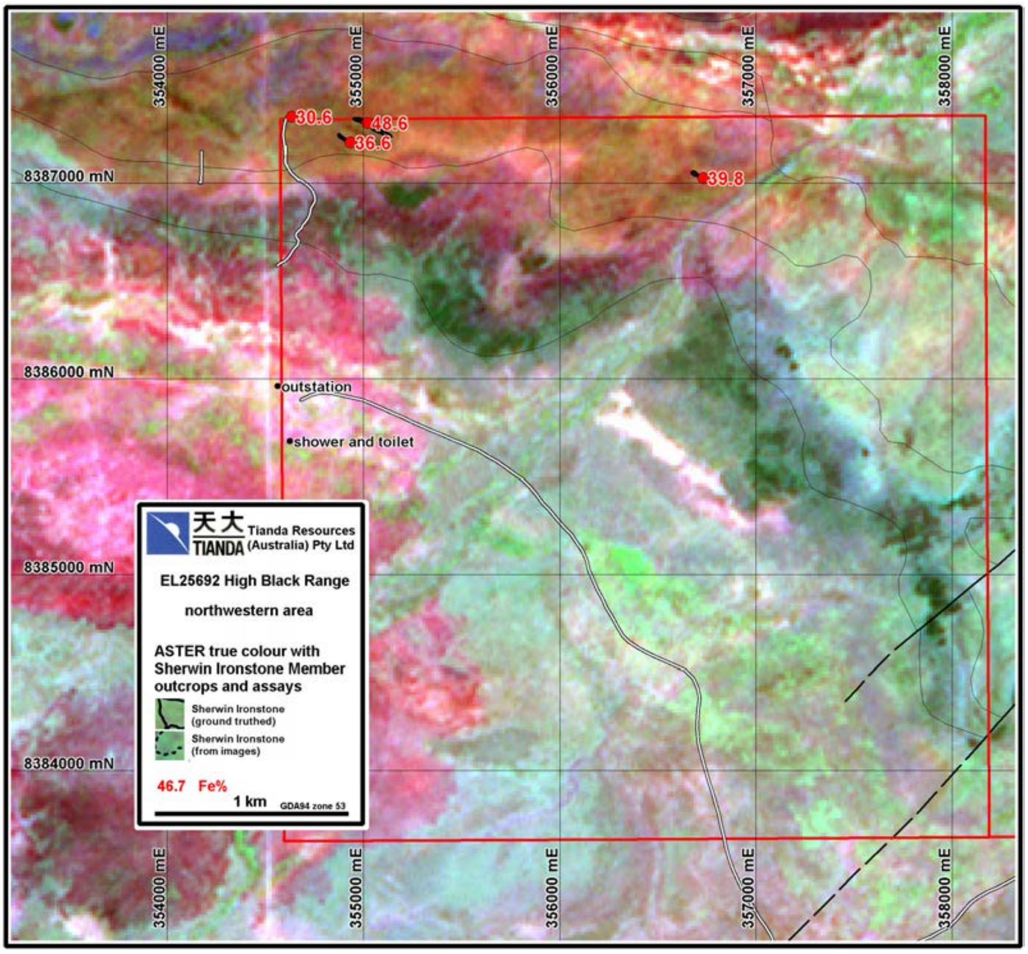


Figure 13 Sherwin Ironstone Member outcrops in the northwest corner of EL25692

Some trouble was taken to record access routes to the outcrops, as there are often rocky inclines, the tracks are not marked on maps and are sometimes difficult to find on the ground. This was particularly true of the eastern part of the tenement, where an east-west route parallel (roughly) to the northern boundary shows little evidence of use.

The exploration effort in the northwestern part of the tenement was quite disappointing. The ironstones were of very limited area and thickness, and altogether would have contained only a few thousand tonnes of ore.These outcrops 14 to 16 are listed in section 6 – Tonnage and Grade.

6.5 Ground exploration in the eastern area of EL25692

Exploration in the eastern area was more satisfying. Walked traverses across the area resulted in numerous ironstone outcrops being discovered. These were much larger, shallow-dipping exposures that were sampled in several locations. One of them had actually been encountered and sampled during the uranium search in 2008, giving Fe assays in the range 31 – 38%. None of these outcrops appeared on the 1:250k geological mapping.

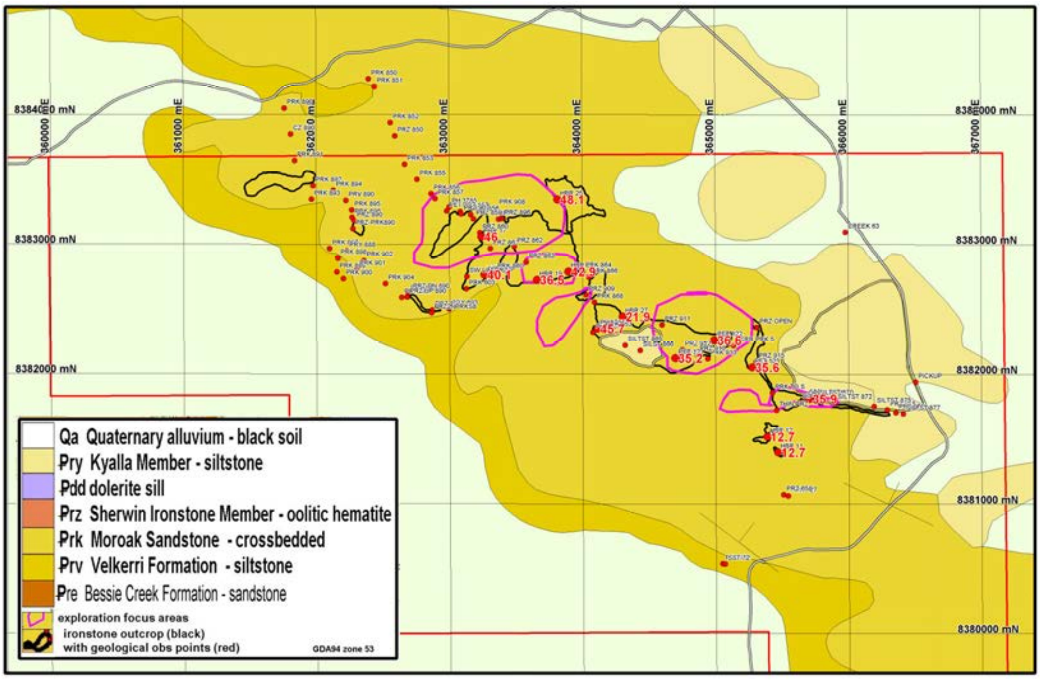


Figure 14 outcrops of Sherwin Ironstone Member at about 8382000N - 8383000N in the eastern part of EL25692

The walked traverses were over rocky ground, covered in spinifex and often under dense tree canopies. The ironstone was visible only from a short distance and the outlines in Figure 11 are the results of two day's work and certainly are not definitive. Nevertheless, ten ironstone outcrops and 72 geological observation points were recorded, while 11 samples were taken for analysis.

Mapping of the outcrops from the current images is unreliable. Nevertheless, inspections of the Google Earth images has revealed a number of discoloured patches which may be additional Sherwin Ironstone. These are indicated on Plate 1 as "possible Prz" and need ground truthing. They could almost double the area of ironstone outcrop.

The difficulties with mapping from the Google Earth images include the 5m pixel size (low level colour aerial photography would be much better), and vegetation cover. Some areas are covered by dense tree canopies, while elsewhere there is quite high spinifex. Walking the area overcomes these problems, though it is not possible to see or identify the lithology from more than a few tens of metres. The present mapping is based on only two, widely separated traverses which could have missed large outcrops very easily.

Vehicle access is, however, quite difficult. Detailed mapping will require close support, so that the geologist is not too many kilometres from food, water and emergency assistance. Getting a vehicle into the area will require cutting or grading an access route. With a base within the mineralised zone, it will be possible to walk closer traverses in exploring the area and to take more samples.

Generally, the dips in the area are shallow and to the northeast. The Sherwin Ironstone often occurs as a dipping pavement on top of the Moroak Sandstone. It may cover large areas, but be only half a metre thick. Such a pavement is visible in Photo 3785 in Plate 3 of the Appendix.

7 Tonnage and Grade

The table below shows estimates of the tonnages in each of the outcrops numbered in Plates 1 and 2. The outcrop areas were all computed by the GPS used in acquisition, accurate to 0.1Ha. The thicknesses are estimates, while the Fe% and P% are from ICP analysis.

EL25692

Outcrop	hectares	thickness	comments	tonnes	Fe%	P%
1	5.4	1		0		
2	0.6			0		
3	0.1			0		
4	39.1	1	ferr oolite	1173000	36 - 46	0.06
5	7.1	1	ferr oolite	213000	48	0.09
6	0.7			0		
7	2.4	0.5	hematitic oolite	36000		
8	17.4	1	ferr oolite	522000	35 - 45	0.09 -0.36
9	9.2		siltstone over Prz	0		
10	69		siltstone over Prz	0		
11	0.3		ferruginous sandstone	0	12.7	0.05
12	6.7	0.5	hematitic oolite	100500	35	
13	0.9		ferruginous sandstone	0	12.7	0.03
14	0.1	1	ferruginous sandstone	3000	48.6	0.27
15	0.1	1	ferruginous sandstone	3000	39.8	0.16
16	0	1	ferruginous sandstone	0	36.6	0.11
17	0.3	1	ferruginous sandstone	9000	30.6	0.09
			total tonnes:	**2059500**		

The concentrations of phosphorus are quite variable and could determine whether or not the mineralization is considered to be iron ore. Most of the tonnage comes from a few outcrops, the thickness of which is estimated at just one metre. Variations in this thickness (or thinness) will make a dramatic difference to the tonnage on the bottom line.

Pattern drilling of the ironstone outcrops, with careful attention to thickness, iron and phosphate content is necessary to have better control on the economic worth of the deposit.

8 Magnetic susceptibility, photography

A magnetic susceptibility meter and a camera were brought on the field operations. The mag sus meter was requested due to three of the tenements being visited were considered to be iron ore prospects. The camera is carried routinely. Some ironstone outcrops and most samples were tested for susceptibility and photographs taken. The positions of all readings were recorded as waypoint data on a GPS.

Sample	zone	mga_E	mga_N	Mag Sus		Fe%
HBR 11	53L	365467	8381400	0.8		12.7
HBR 12	53L	365387	8381520	0.4		12.7
HBR 13	53L	354634	8387339	1.0		30.6
HBR 14	53L	356733	8387025	1.1		39.8
HBR 15	53L	355019	8387307	143.0		48.6
HBR 16	53L	354934	8387209	5.7		36.7
HBR 17	53L	363241	8383059	277.0		46.0
HBR 18	53L	363263	8382766	26.2		40.1
HBR 19	53L	363659	8382725	75.3		36.5
HBR 20	53L	364112	8382351	1.7		45.7
HBR 21	53L	364698	8382124	0.7		35.2
HBR 22	53L	364991	8382262	310.0		36.6
HBR 23	53L	365275	8382053	0.3		35.6
HBR 24	53L	365707	8381811	0.3		35.9
Prk	53L	354297	8387262	4.7		
Prk	53L	354472	8387282	0.35		
Prk	53L	353884	8387245	0.45		
Prz	53L	354058	8387332	0.64		
Prz	53L	354053	8387269	0.75		
Ph 3783	53L	356701	8387006			
Ph 3784	53L	354933	8387205		Prz? Ferr Mgr Sst	
Ph 3785	53L	363000	8383290		Prz? Ferr Mgr Sst	
Ph 3786	53L	363241	8383059		Ferr Oolite Irst Ph3786	
Ph 3787	53L	364078	8382323		Prk Cliff Prz Ferr Oolite Abov	
Ph 3788	53L	364111	8382351		Oolitic Irst	

The magnetic susceptibility showed dramatic variation. High readings were sometimes associated with the highest iron content, as might be expected. However, the highest reading (310, for HBR22) was only accompanied by an Fe assay of 36%. These susceptibility readings and their associated assays are shown on Plates 3 and 4 in the Appendix.

The photography shows ferruginized medium grained sandstone in photos 3783 and 3784. These were both taken in the northwestern corner of the tenement and demonstrate concretionary halos. This is probably due to the iron mineralizing fluids rising through cracks in the Moroak Sandstone. Photos 3786 and 3788 show the oolitic nature of the Sherwin Ironstone, while 3787 is of a Moroak Sandstone cliff, above which is a significant thickness (maybe two or three metres) of Sherwin Ironstone.

These photographs are all shown on Plates 3 and 4 of the Appendix.

9 Discussion

The tenement needs further exploration to look at the several square kilometres of Moroak Sandstone shown of Figure 12 that have not been investigated at all. Areas that require further investigation are shown in Figure 12, outlined in green. Several days of detailed traverses by a geologist are necessary, mapping the new outcrop and sampling.

The elevated magnetic susceptibilities of the iron-rich samples indicates that a ground magnetic survey may be helpful. It should provide an indication of the distribution of Sherwin Ironstone outcrops, particularly those which are thick and have elevated Fe assays. Furthermore, it will indicate whether Kyalla Formation siltstones are underlain by iron formation. Elevated susceptibilities may be due to surface magnetite formed by the hot, reducing environment of bushfires.

Establishing the true thickness of the ironstones is important. Thus far, the numbers have been estimates, but the economic viability of the project requires some accurate determinations of the thickness and grade. Vertical holes need to be drilled through the ironstone to the underlying Moroak Sandstone. These should only be a few metres deep, but an accurate log of the thickness (much better than the nearest metre) needs to be recorded. The areas are usually steep and rocky, utterly unsuited to wheeled rigs and track-mounted rigs would be more appropriate. Blasthole drills may be the most suitable. Frequent, shallow holes should provide the information required: the exact thickness of the formation, and its grade.

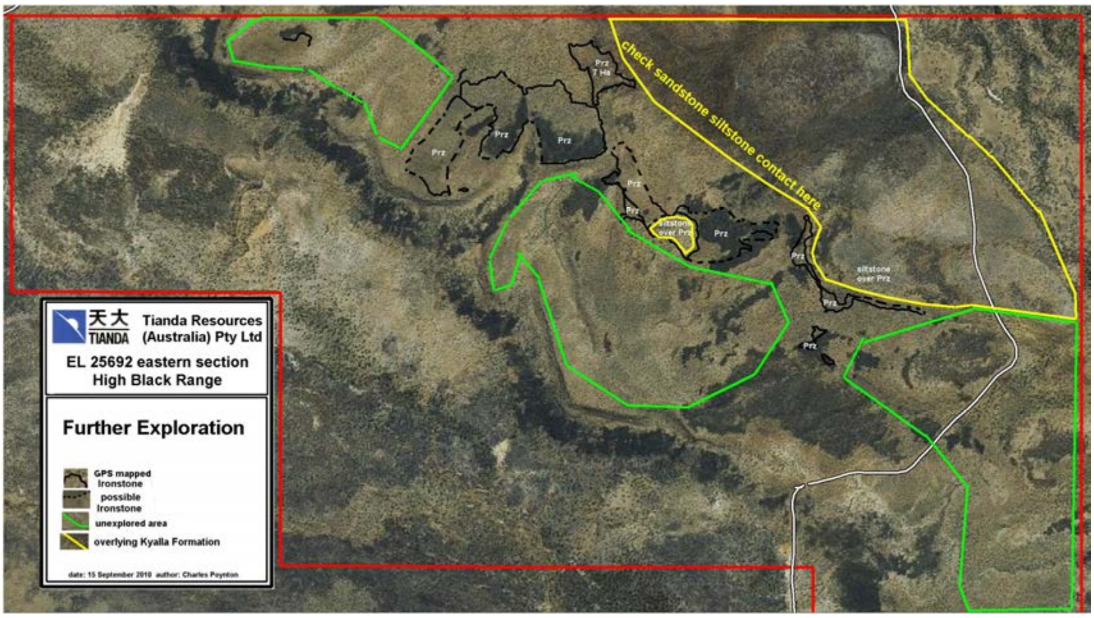


Figure 15 Areas of Moroak Sandstone requiring investigation (green). Continuous lines were GPS mapped, while dotted lines are deduced outcrop boundaries. Kyalla siltstone areas in yellow.

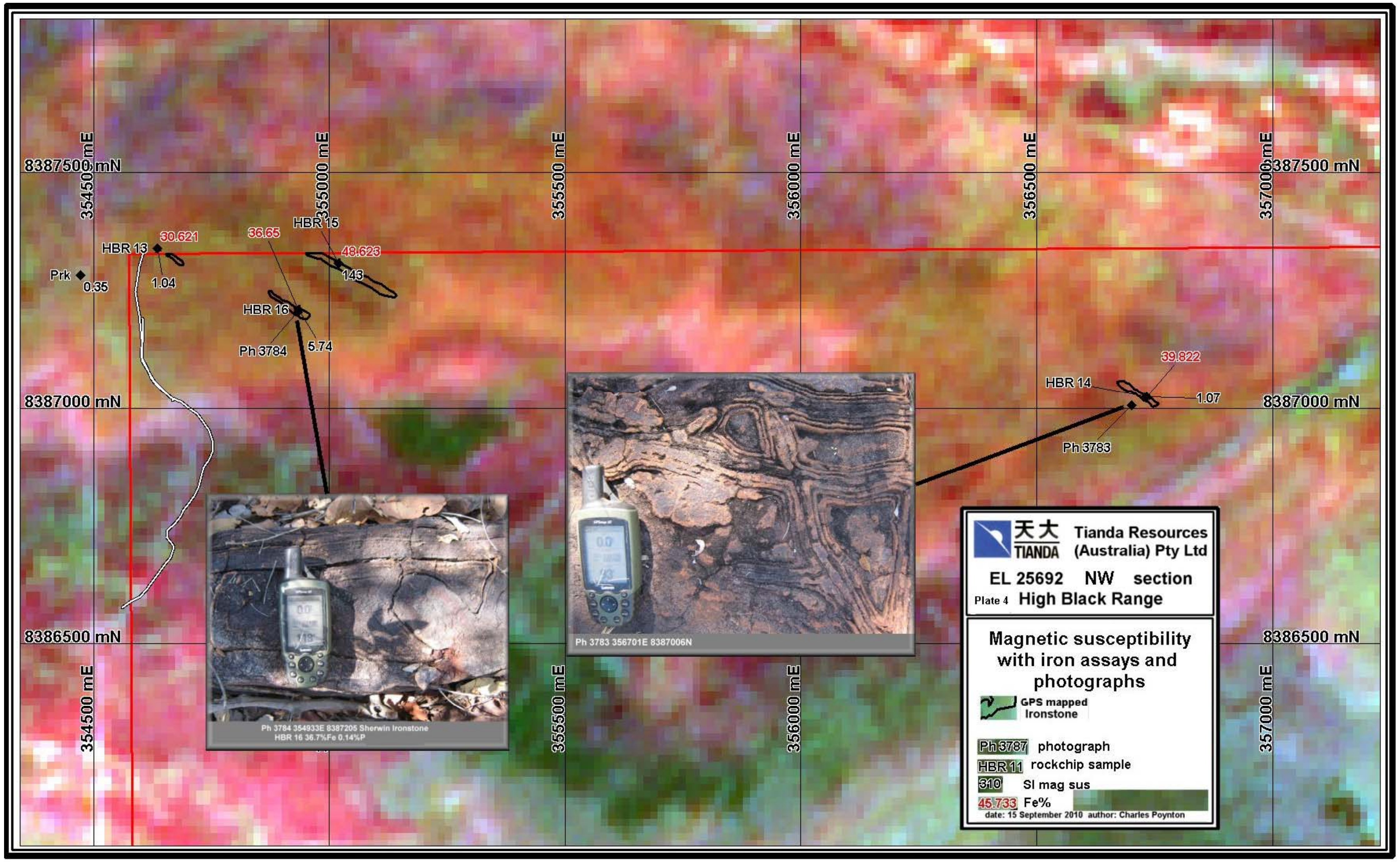
The extensive areas of Kyalla Formation (altogether over 80 Ha) should be investigated to see if they overlie the Sherwin Ironstone. In the easternmost outcrop (number 12 on Plate 1), this appears to be the case. Most of the contact between the Moroak Sandstone and the Kyalla Formation shown in Figure 11 has not been checked for the ironstone

10 Conclusions and Recommendations

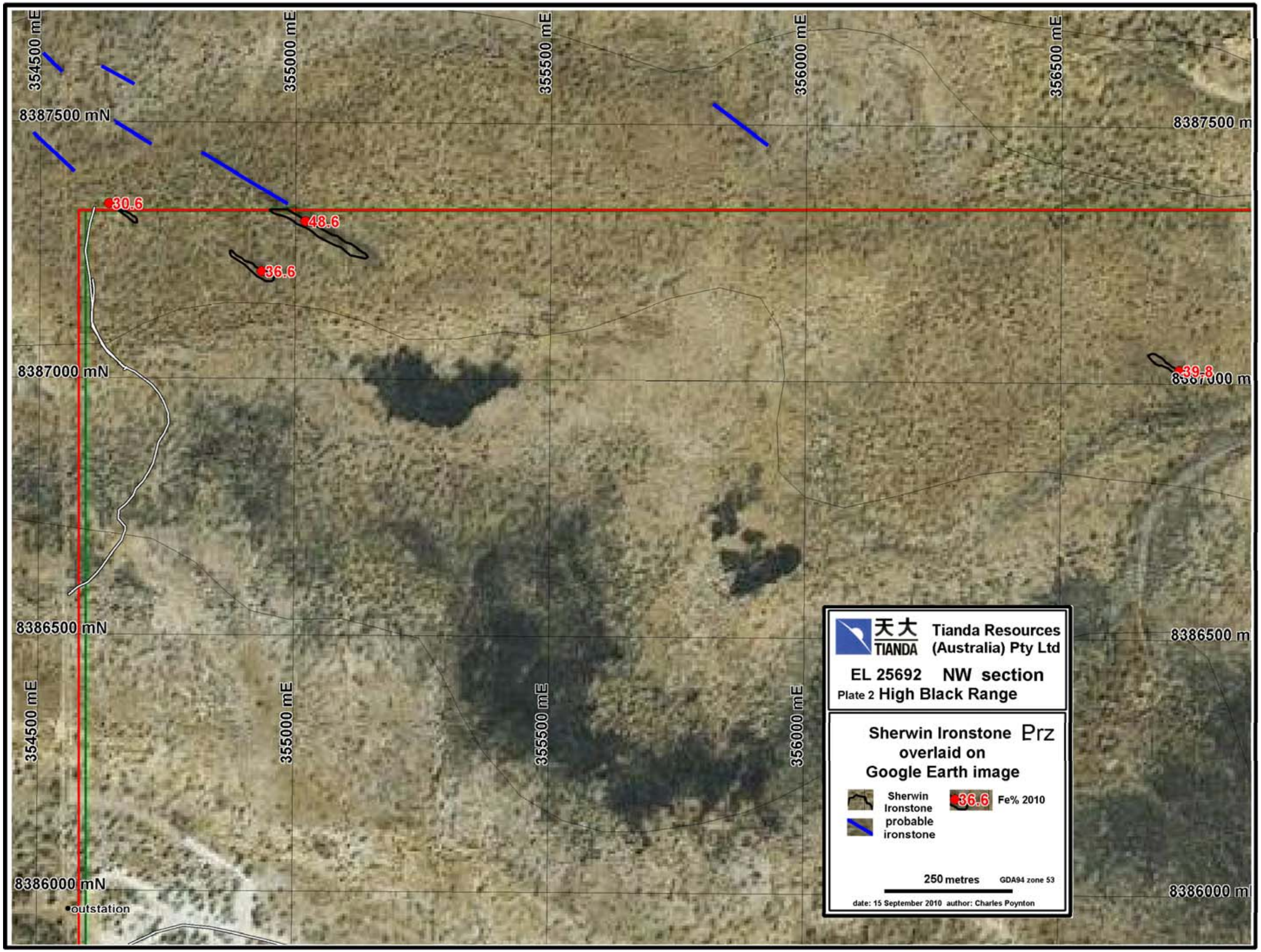
Four days' exploration of EL 25692 revealed numerous occurrences of Sherwin Ironstone Member, hitherto unmapped on the tenement. All of these were overlying Moroak Sandstone which is widespread in the exploration license. The deposits have been observed to be quite thin and sometimes appear to be a ferruginous pavement over the Moroak Sandstone. However, they may be several metres thick in some locations.

Sampling of the ironstone was undertaken at eleven locations and assayed using ICP-OES. Though some outcrops gave disappointing results, many were above 40% and could be considered as iron ore. Over two million tonnes were computed including all the assayed outcrops except those of 12.7%.

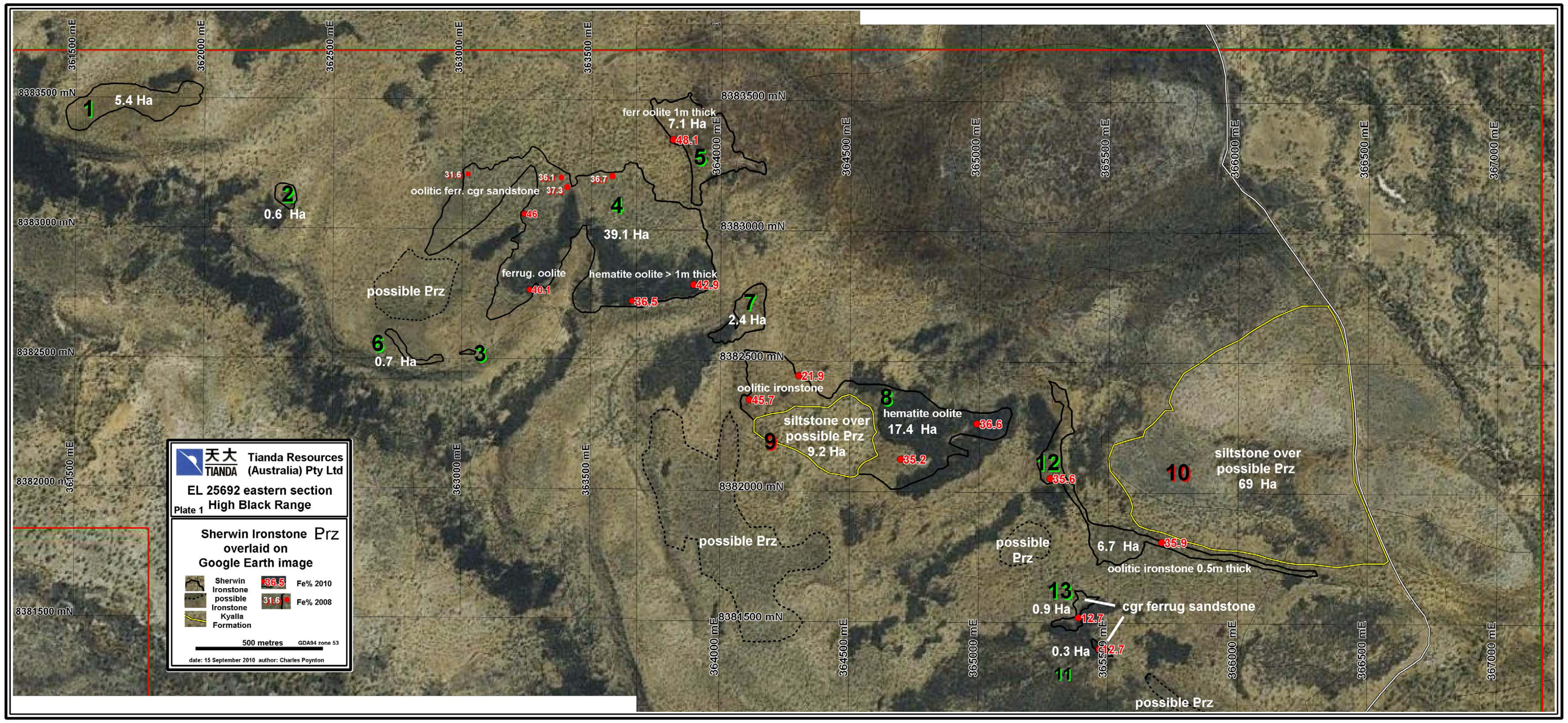
Magnetic susceptibility determinations of rockchip samples showed wide variation in this parameter. It appeared that the richest (>45% Fe) samples gave the highest results, up to 310 SI units, while poor samples gave results of less than 1.0. This outcome needs to be checked on a larger number of samples, and also at some depth. Magnetite enrichment may be a surface effect of bushfires. The variability of magnetic susceptibility suggests that a ground magnetic survey could guide future exploration.


8387500 mN
8387000 mN
8386500 mN
354500 mE
355000 mE
355500 mE
356000 mE
356500 mE
357000 mE
HBR 13
30.621
1.04
Prk
0.35
36.65
HBR 15
48.623
143
HBR 16
Ph 3784
5.74
HBR 14
39.822
1.07
Ph 3783
Ph 3784 354933E 8387205 Sherwin Ironstone
HBR 16 36.7%Fe 0.14%P
Ph 3783 356701E 8387006N
天大 TIANDA
Tianda Resources (Australia) Pty Ltd
EL 25692 NW section
Plate 4 High Black Range
Magnetic susceptibility with iron assays and photographs
GPS mapped Ironstone
Ph 3787 photograph
HBR 11 rockchip sample
310 SI mag sus
45.733 Fe%
date: 15 September 2010 author: Charles Poynton

8384000 mN
8381000 mN
8380000 mN
362000 mE
363000 mE
365000 mE
366000 mE
Ph 3786 363241E 8383059N Ferr Oolite Irst HBR 17 46.0%Fe 0.17%P
mag sus 277
Ph 3787 364078E 8382322N Moroak Sandstone
Cliff overlain by Sherwin Ironstone - Ferruginous Oolite
Ph 3785 363000E 8383290N Prz? Ferr Mgr Sst
Ph 3788 364111E 8382351N Oolitic Irst
HBR 20 45.7%Fe 0.36%P mag sus 1.7
Ph 3785
Ph 3786
HBR 17
46.015
277
HBR 18
40.113
26.22
HBR 19
36.524
75.3
Ph 3787
HBR 20
45.733
1.66
Ph 3788
HBR 22
36.621
310
HBR 21
35.234
0.69
HBR 23
35.566
0.33
HBR 24
35.917
0.26
HBR 12
12.712
0.4
HBR 11
12.743
0.83
Tianda Resources (Australia) Pty Ltd
EL 25692 eastern section
Plate 3 High Black Range
Magnetic susceptibility with iron assays and photographs
GPS mapped Ironstone
possible Ironstone
overlying Kyalla Formation
HBR 11 rockchip sample
310 SI mag sus
45.733 Fe%
Ph 3787 photograph
date: 15 September 2010 author: Charles Poynton



354500 mE
355000 mE
355500 mE
356000 mE
356500 mE
8387500 mN
8387500 m
30.6
48.6
36.6
8387000 mN
39.8
8386500 mN
8386500 m
8386000 mN
8386000 m
outstation
天大 TIANDA
Tianda Resources (Australia) Pty Ltd
EL 25692 NW section
Plate 2 High Black Range
Sherwin Ironstone Prz
overlaid on
Google Earth image
Sherwin Ironstone
probable ironstone
36.6 Fe% 2010
250 metres
GDA94 zone 53
date: 15 September 2010 author: Charles Poynton


Tianda Resources (Australia) Pty Ltd
EL 25692 eastern section
Plate 1 High Black Range
Sherwin Ironstone Ꝑrz overlaid on Google Earth image
Sherwin Ironstone
possible Ironstone
Kyalla Formation
36.5 Fe% 2010
31.6 Fe% 2008
500 metres
GDA94 zone 53
date: 15 September 2010 author: Charles Poynton
1 5.4 Ha
2 0.6 Ha
3
4 39.1 Ha
5
ferr oolite 1m thick
7.1 Ha
6 0.7 Ha
7 2.4 Ha
8 hematite oolite 17.4 Ha
9 siltstone over possible Ꝑrz 9.2 Ha
10 siltstone over possible Ꝑrz 69 Ha
11 0.3 Ha
12 6.7 Ha
13 0.9 Ha
oolitic ferr. cgr sandstone
ferrug. oolite
hematite oolite > 1m thick
oolitic ironstone
oolitic ironstone 0.5m thick
cgr ferrug sandstone
possible Ꝑrz
48.1
31.6
36.1
37.3
36.7
48
40.1
36.5
42.9
21.9
45.7
36.6
35.2
35.6
35.9
12.7
12.7
361500 mE
362000 mE
362500 mE
363000 mE
363500 mE
364000 mE
364500 mE
365000 mE
365500 mE
366000 mE
366500 mE
367000 mE
8383500 mN
8383000 mN
8382500 mN
8382000 mN
8381500 mN

Appendix

Labwest Minerals Analysis	Job No:	ALW000293
Analytical Report	Client Ref:	Written Request 06/08/10
	Client Name:	Terra Search
	Date Reported:	27/08/2010

Sample	zone	mga_E	mga_N	Fe%	P%	Ag_ppm	As_ppm
HBR11	53L	365467.462	8381399.85	12.7	0.05	0.02	3.3
HBR12	53L	365387.05	8381520.35	12.7	0.03	0.01	10.5
HBR13	53L	354634.436	8387339.4	30.6	0.09	0.03	37.6
HBR14	53L	356732.567	8387024.56	39.8	0.16	0.06	65.0
HBR15	53L	355019.298	8387307.03	48.6	0.27	0.06	71.0
HBR16	53L	354934.223	8387208.59	36.7	0.14	0.05	74.0
HBR17	53L	363241.06	8383058.63	46.0	0.17	0.06	24.6
HBR18	53L	363262.939	8382766.19	40.1	0.08	0.04	15.4
HBR19	53L	363659.247	8382725.3	36.5	0.15	0.05	27.9
HBR20	53L	364112.485	8382350.83	45.7	0.36	0.05	117.0
HBR21	53L	364697.663	8382124.31	35.2	0.08	0.03	13.9
HBR22	53L	364991.254	8382261.92	36.6	0.11	0.08	20.6
HBR23	53L	365275.182	8382053.29	35.6	0.07	0.05	8.9
HBR24	53L	365706.798	8381811.01	35.9	0.09	0.03	27.4
HBR25	53L	363814.838	8383346.71	48.1	0.09	0.04	28.9
HBR26	53L	363895.278	8382790.53	42.9	0.12	0.04	45.8
HBR27	53L	364301.863	8382443.48	21.9	0.07	0.04	10.7

Sample	Ba_ppm	Ca_ppm	Co_ppm	Cu_ppm	K_ppm	Li_ppm	Mo_ppm
HBR11	96.5	208	33.3	5.9	312	1.3	2.3
HBR12	12.3	98	15.7	27.9	93	1.0	1.2
HBR13	24.2	207	12.5	3.8	118	3.6	9.3
HBR14	144.3	279	40.7	11.8	232	5.1	7.4
HBR15	241.7	404	23.5	24.2	250	2.6	18.2
HBR16	123.2	421	12.9	6.8	238	2.3	14.0
HBR17	120.8	356	33.9	41.1	161	3.1	16.9
HBR18	199.7	461	14.9	21.7	281	2.5	10.2
HBR19	158.4	541	27.3	30.4	272	1.9	14.8
HBR20	118.8	318	72.1	30.2	205	4.4	11.5
HBR21	205.2	432	14.4	15.8	283	2.3	7.4
HBR22	35.3	593	32.9	54.8	191	1.7	13.1
HBR23	163.5	609	24.6	11.4	235	1.4	2.7
HBR24	100.8	656	32.9	30.7	320	1.7	3.9
HBR25	85.6	401	18.2	5.1	191	1.9	5.6
HBR26	127.4	619	49.3	11.8	317	2.0	18.0
HBR27	214.6	408	20.0	120.7	249	1.5	1.8

Sample	Ni_ppm	Pb_ppm	S_ppm	Se_ppm	Th_ppm	Ti_ppm	U_ppm
HBR11	4	7.6	1147	0.52	3.85	303	4.39
HBR12	5	5.3	292	0.24	4.17	282	4.31
HBR13	5	5.2	822	0.70	6.94	368	10.89
HBR14	13	28.8	800	0.76	6.77	365	8.47
HBR15	8	13.4	692	0.91	6.91	354	12.39
HBR16	5	9.2	445	0.40	8.38	402	10.05
HBR17	11	5.4	323	0.50	6.72	313	9.66
HBR18	10	6.4	242	0.30	8.06	416	7.65
HBR19	10	8.4	228	0.52	9.36	599	9.86
HBR20	8	14.8	227	0.38	8.28	584	9.37
HBR21	5	9.1	296	0.86	10.30	714	8.18
HBR22	7	6.2	257	0.22	7.17	446	9.27
HBR23	6	5.2	484	0.46	8.12	355	10.86
HBR24	10	19.5	282	0.35	7.21	252	7.76
HBR25	5	8.0	292	0.79	8.20	262	8.09
HBR26	7	11.0	459	1.42	9.04	565	8.69
HBR27	5	4.2	311	0.60	7.77	433	7.50

Sample	V_ppm	Y_ppm	Zn_ppm
HBR11	83	8.39	9.1
HBR12	73	9.38	9.3
HBR13	185	11.80	26.0
HBR14	189	12.40	27.2
HBR15	205	14.74	54.9
HBR16	225	13.93	20.3
HBR17	138	36.01	72.8
HBR18	131	17.27	108.7
HBR19	165	24.76	83.8
HBR20	140	28.55	21.4
HBR21	192	15.64	13.0
HBR22	165	19.24	105.1
HBR23	162	16.78	24.7
HBR24	149	12.57	29.8
HBR25	156	20.98	27.0
HBR26	160	19.00	64.6
HBR27	113	15.54	12.0