



SYNDICATED METALS LIMITED

**MOUNT ISA URANIUM**  
**INFORMATION MEMORANDUM**

Syndicated Metals Limited

Date: September 2011

## 1. Introduction

The focus of exploration for Syndicated Metals Ltd (Syndicated Metals) is in northwest Queensland, Figure 1 where the company is concentrating on three main projects: Mount Remarkable, Kalman and Carpentaria Zinc, Figure 2. Geologically these projects lie within the mineral-rich, Proterozoic Mount Isa Inlier.

The projects are prospective for copper, uranium, molybdenum, lead, zinc and rhenium. Past exploration was apparently limited to drainage geochemistry and locally soil sampling. Although some mining has occurred within Syndicated Metals' projects there has been limited drilling of known uranium mineralisation.

This report summarises the available information on the known uranium prospects, most of which are at the very early stages of exploration. With the exception of the ground acquired from Altona Mining Limited (Altona Mining), formerly Universal Resources Limited in August 2010, there has been no uranium exploration over these projects since the early 1980s. The uranium prospects discussed were originally identified by CRA Exploration (CRAE) from a regional airborne radiometric and aeromagnetic survey.

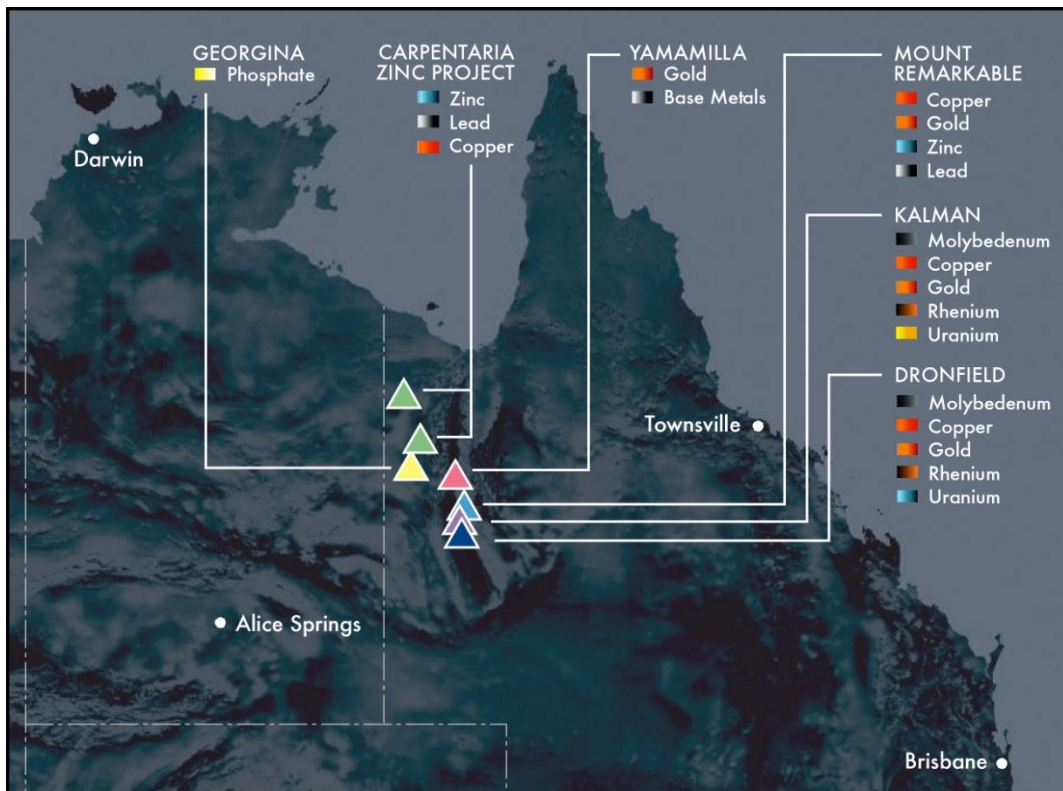


Figure 1, Location of Syndicated Metals' Projects

## 2. Mount Remarkable Project

Syndicated Metals has demonstrated the prospectivity of the Mount Remarkable project for copper and gold by defining indicated and inferred resources<sup>1</sup> at Barbara of 2.6Mt at 2.1% copper and 0.2g/t gold.

Geologically the project covers part of the Kalkadoon-Leichardt belt of the Mesoproterozoic, Mount Isa Inlier, composed of Leichardt Metamorphics, Magna Lynn Metabasalts, Argylla Formation, Ballara Quartzite and the Corella Formation. These rocks are intruded by the Wonga Granite and dolerite dykes. Structurally the area is dominated by the Little Beauty Syncline which is cross-cut by a number of northeast-trending faults. To the south the major regional, northeast-trending Wonga Fault juxtaposes the Wonga Granites to the south against the Argylla and Corella Formations to the north.

The company has compiled all geological and mineral exploration data covering the Mount Remarkable project. This work has indicated that there is also clear potential for uranium deposits. There are a number of targets that have been identified however large areas remain unexplored.

The Mount Remarkable project was covered by CRAE combined airborne radiometric and aeromagnetic survey during the 1980s. Several anomalies were followed-up however these failed to meet CRAE's criteria and the company relinquished the ground. Further coverage was gained from Mount Isa Mines Ltd's (MIM) open range survey and an in-fill aeromagnetic/radiometric survey by Syndicated Metals in 2007 shows strong north-trending uranium enriched lithological units throughout the project.

The company considers the Mount Remarkable project to be under-explored for uranium. Elsewhere in the Mount Isa Inlier recent discoveries indicate that there is considerable potential for further discoveries.

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<sup>1</sup> JORC-compliant resources with 1% copper cut-off

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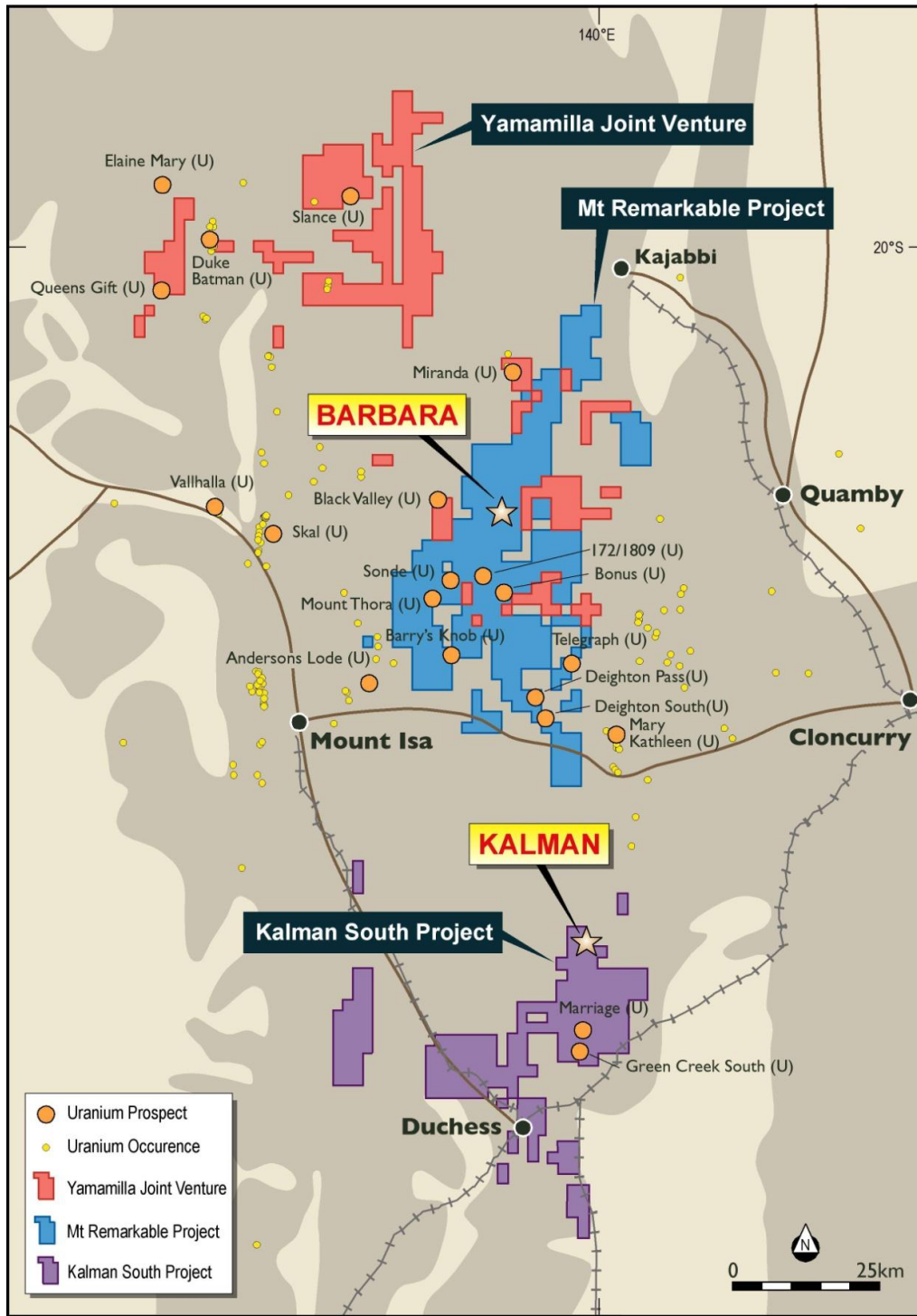


Figure 2, Location of Projects in the Mount Isa Region, with Uranium Projects and Occurrences

## 2.1. Barry's Knob Prospect

The Barry's Knob radiometric anomaly was one of CRAE's early discoveries and is wholly within Syndicated Metals' EPM 15816. It covers an area of complex geology composed of granite with minor mafics covered locally by calcrete with granite soil and scree.

An area of 1,100m by 250m was investigated by CRAE. It is mostly covered by soil or scree with some outcrop. Within the central part of the prospect they undertook detailed geological mapping with shallow auger and rock chip sampling. Of the 11 rock chip samples collected, only three were submitted for analyses, the results of which are shown in Table 1.

Table 1

Barry's Knob Prospect, CRAE's Rock Chip Samples

Sample	Description	U <sub>3</sub> O <sub>8</sub> ppm	Th ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Mo ppm	Ag ppm	P <sub>2</sub> O <sub>5</sub> %	F ppm
787114	Medium-coarse grained granite	590	10	34	200	22	4	4	1	0.13	250
787115	As above	3,419	10	14	710	28	4	4	1	0.11	250
787116	250m north of previous – dark green radioactive rock	4,893	4	4	1,750	12	4	4	1	0.05	150

Selected samples were submitted for petrology, mineralised rock was described as porphyritic granite, completely albitised with an irregular network of fine hornblende, biotite, epidote, carbonate and magnetite.

Radioactivity is said to be associated with sheared/altered coarse grained magnetite-amphibolite bearing granite, possibly a sheared altered variant of the country rock. Electron probe work identified extremely fine uraninite grains occurring as inclusions in silicate minerals and sphene, associated with titaniferous magnetite. Furthermore other fine inclusions of a lead-uranium mineral were tentatively identified as curite (Pb<sub>2</sub>U<sub>5</sub>O<sub>17</sub>.4H<sub>2</sub>O). Accessory allanite was also reported, occurring as relict cores in reddish alteration haloes.

Ground magnetic and radiometric surveys were undertaken with readings taken at 10m intervals on lines spaced either 20m or 40m apart. A clear north-south

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magnetic trend is evident with discrete magnetic highs of up to 1,400nT above background that correlate with zones of elevated radioactivity. A north-south radiometric trend ( $>125\text{cps}^2$ ) is also recognized with readings above 300cps occurring in discontinuous elongate zones, up to 20m wide.

Strongly anomalous values of  $>2,000\text{cps}$  occur over an area of approximately  $25\text{m}^2$  in the centre of the surveyed grid. This zone appears to sit in an interpreted fault segment, possibly bounded by two northwest-southeast faults. Previous mapping of this locality indicated the presence of shearing and brecciation.

Auger holes were drilled at 10m intervals on lines 50m apart in the southern half of the area and 100m apart in the northern half. A sample was taken from the bottom of each auger hole. Although most of the magnetic and radiometric anomalies were verified by elevated bottom-of-hole values, there was no attempt made to test the trend further by closer spaced lines and/or auger holes. This particularly applies to the northern half where the line spacing was 100m.

However an area 400m long and up to 30m wide, extending south from the centre, recorded elevated values of uranium, including a zone 200m by 15m with uranium values above 100ppm and a peak value of 200m, Figure 3.

To the north of the main anomaly there are several smaller isolated highs, where the lines were 100m apart; at this spacing it is possible that a target could have been missed, especially as the ground radiometrics indicated a reasonably strong continuous zone extending across the northern part of the prospect.

The location of the highest uranium rock chip values of 4,893ppm  $\text{U}_3\text{O}_8$  in sample 787116 remains untested.

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<sup>2</sup> cps – counts per second, as recorded on a scintillometer

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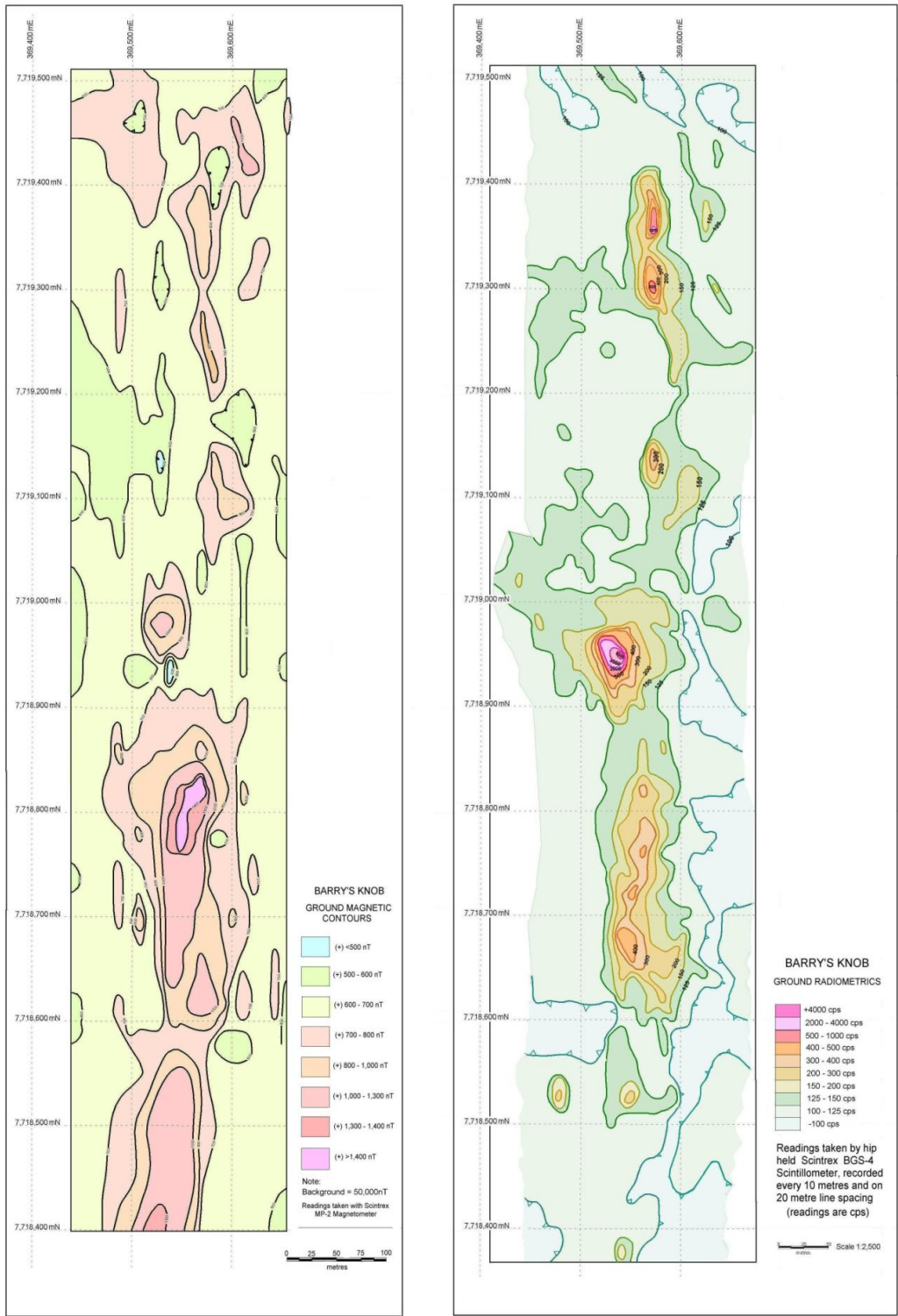


Figure 3, Barry's Knob Magnetics and Radiometrics

The Barry's Knob prospect warrants further exploration to investigate the:

- presence of uraninite and possibly curite,
- overall mineralised trend particularly the central zone, interpreted as a cross faulted block where a thickening seems to occur.
- area of the highest  $U_3O_8$  (4,893ppm) and lead (1,750ppm) analyses has not been sampled,
- auger anomalies were not drill tested.

## 2.2. Bonus Prospect

The Bonus prospect was found during the follow-up of one of CRAE's airborne geophysical anomalies. It is situated in a 2.5km wide belt of north-striking Corella Formation rocks that are fault bounded in the east against the Argylla Formation and also unconformably overlie the Argylla Formation to the west. The geology was mapped on a local grid over an area of 275m by 100m, Figure 4.

The country rocks are reported to consist of a complex, interbedded sequence of variably-metasomatised, often carbonate-rich siltstones, biotite-chlorite schists and feldspathic quartzites. Interbedded within this sequence are small pods of siliceous, brecciated rock and minor conglomerate beds and lenses of marble.

Fourteen samples were submitted for petrographic description however none were analysed. Radioactivity is said to be associated with steeply-plunging siliceous boudins commonly in chloritic schist and finely banded calc-silicate. Petrography indicated that the siliceous material varies from a fine grained quartzite to a very fine grained albite-carbonate rock.

The only radioactive - brannerite - was recognised in thin section, although at several locations possible surface occurrences of carnotite were noted. Accessory oxidised chalcopyrite and lesser pyrite were identified in a very fine grained sericite, potassium-feldspar rock, which is radioactive in outcrop.

Orientation soil sampling was carried out on two lines, 50m apart with samples taken at five metre or 10m intervals. The results confirmed the presence of anomalous uranium, copper and to a lesser extent lead, over the radioactive lithology.

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Most of the Bonus prospect was covered by a scintillometer survey with anomalous readings up to seven times the background level of 200cps, Figure 4. The anomaly was tested by a single, diamond drill hole, drilled to the west with a declination of 50°, Figure 5. Interestingly, the peak values of the radiometric anomaly (1,340-1,450cps) are about 60m grid-south of the diamond hole and therefore remain untested.

The drill hole intersected a sequence of mineralised siliceous siltstones and chloritic schists in the upper part of the hole, from 12.2m to 41.0m with an estimated true thickness of 15.5m. Core samples were analysed for copper, lead, zinc, silver and uranium. The best intersection was 1m of 365ppm U<sub>3</sub>O<sub>8</sub> from 24.2m. For further intercepts from the hole see Table 2.

The radioactive mineralisation appears to be within a zone of elevated copper values, which represents a prospective horizon approximately 20m wide. It also shows that copper is a possible geochemical pathfinder for uranium.

It has been suggested that the uranium mineralisation is present in a northerly-plunging fold. It is believed that there is substantial scope for further mineralisation at the Bonus prospect.

Table 2

Bonus Prospect, Summary of Drill Intersections

From m	To m	Interval m	U <sub>3</sub> O <sub>8</sub> ppm	Cu ppm	Pb ppm	Zn ppm	CPS	Comments
21.1	22.2	1.0		690	30		160-200	Brecciated fine grained calc-silicate
22.2	23.2	1.0	53	780	85		160-250	Albite, carbonate rock, quartz vein
23.2	24.2	1.0	12	200	20		425	
24.2	25.2	1.0	365	65	85	15	200-250	Fine grained brecciated meta-siltstone
32.2	33.2	1.0	177	260	40	5	375 max	Pink fine grained carbonate-albite rock
33.2	34.2	1.0	259	290	60	5	410 max	
34.2	35.2	1.0	130	495	35	5	500 max	
35.2	36.2	1.0	165	180	45	5	450 max	
36.2	37.2	1.0	53	145			375 max	
37.2	38.2	1.0	177	120	40	10	340 max	
40.3	41.4	1.1	41	730	35		225 max	
41.4	43.4	2.0	11	570	40		150	Marble, minor chalcopyrite, interbedded schist/shale

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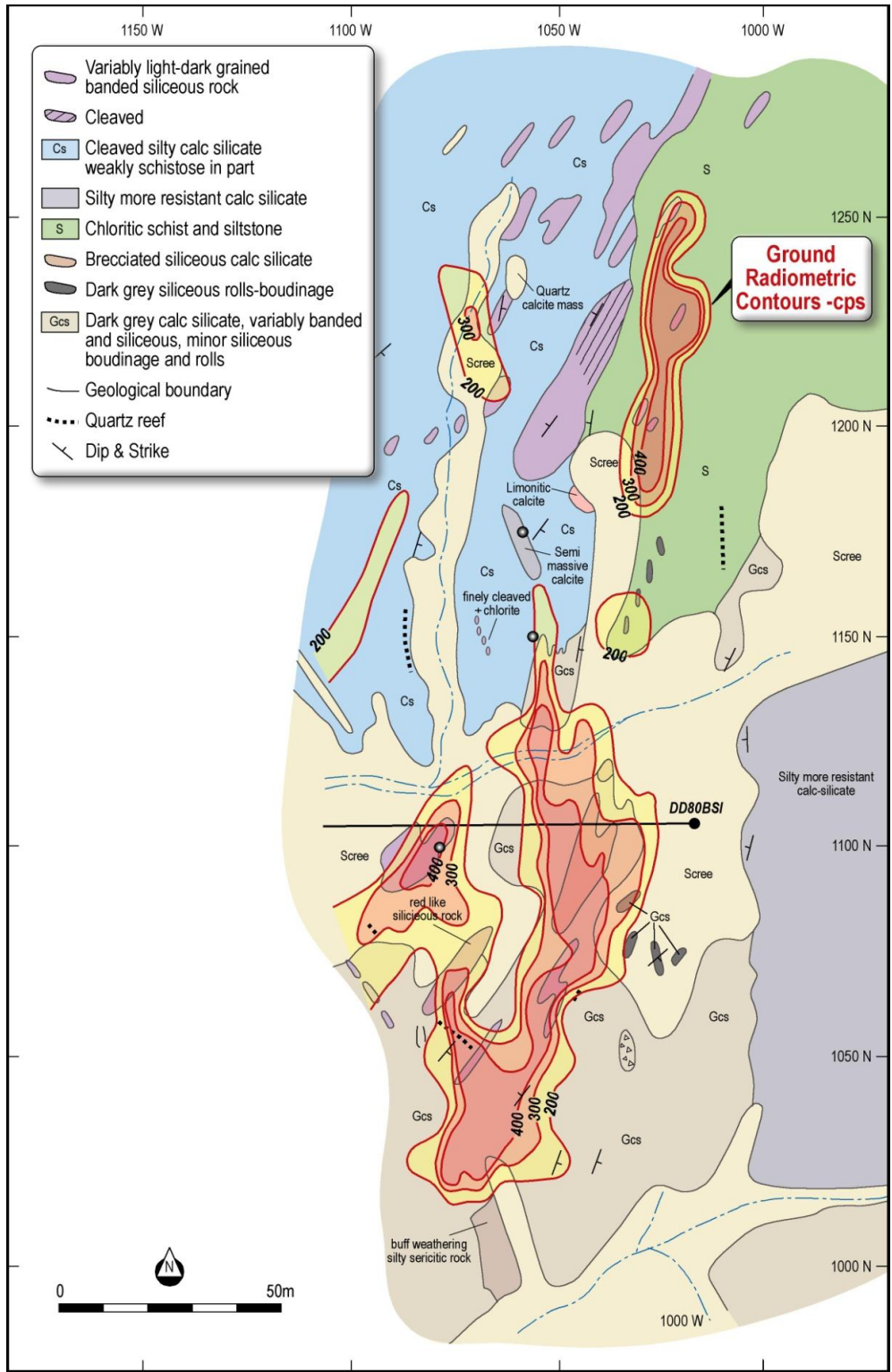


Figure 4, Bonus Prospect, Geology and Radiometric Contours

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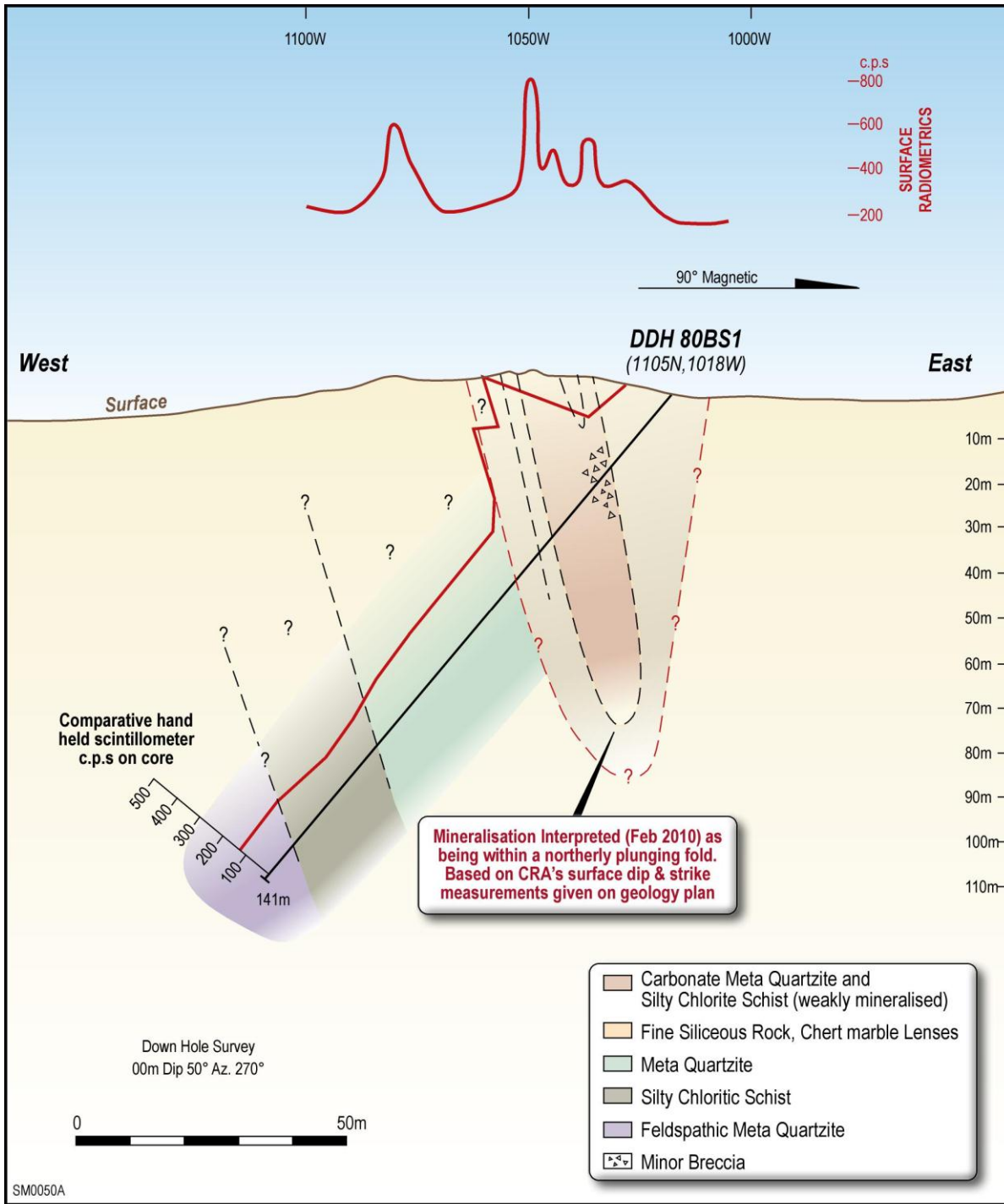


Figure 5, Bonus Prospect, Drill Section, CRAE's DDH80BS1

### 2.3. Deighton Pass Prospect

The Deighton Pass uranium prospect was discovered by CRAE in the early 1980s during exploration in the area around the former Mary Kathleen mine. The prospect was followed up by Altona Mining who undertook detailed ground radiometric surveys over the Deighton Pass, Deighton Pass South and Telegraph prospects and followed-up the anomalies with rock chip sampling. Altona Mining identified a 1,600m long radiometric feature, Figure 6 defined by the 400cps contour that follows a northeast-trending ridge located within a regional fold closure. The ridge is composed of well-foliated, dark grey carbonaceous shale with clast-supported breccias, quartz-haematite void in-fill, iron-rich bands and an irregular vein system.

The 400cps contour defines a semi-continuous anomaly along the entire length of the ridge, with a maximum width of about 150m but could be narrower after allowing for down-slope movement of debris. At the 500cps contour the anomaly breaks into three parts each being between 100m and 250m in length. There are sporadic readings that exceed 1,000cps.

A total of 12 of the 18 rock samples analysed showed values >118ppm with the highest value of 446ppm, taken from the carbonaceous shale with haematite-limonite veining.

### 2.4. Telegraph Prospect

The Telegraph uranium anomaly was originally identified in the early 1980s, it was found to have been caused by low-grade uranium mineralisation associated with a micro-diorite. Surface samples as high as 5,700ppm  $U_3O_8$  were recorded from spectrometer readings. Two holes were drilled to the west of these anomalous readings both of which intersected the micro-diorite with the best intersection of 0.3m of 955ppm  $U_3O_8$ .

Four of the nine rock samples collected by Altona Mining returned between 236ppm and 955ppm  $U_3O_8$  with weakly elevated rare earth elements (REEs) and titanium. The 300cps contour from a scintillometer survey has defined a 50m long anomaly with peak readings up to 500cps.

The main uraniferous zone is about 250m long and up to 10m wide. Uranium is present as fine grains of uraninite and brannerite with possible davidite and allanite. With the exception of brannerite, this mineral association is similar to that found at the former Mary Kathleen mine.

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Whilst the anomaly is not large, the presence of uranium, its mineralogical similarities to the Mary Kathleen deposit and the presence of the micro-diorite means that the prospect requires further investigation.

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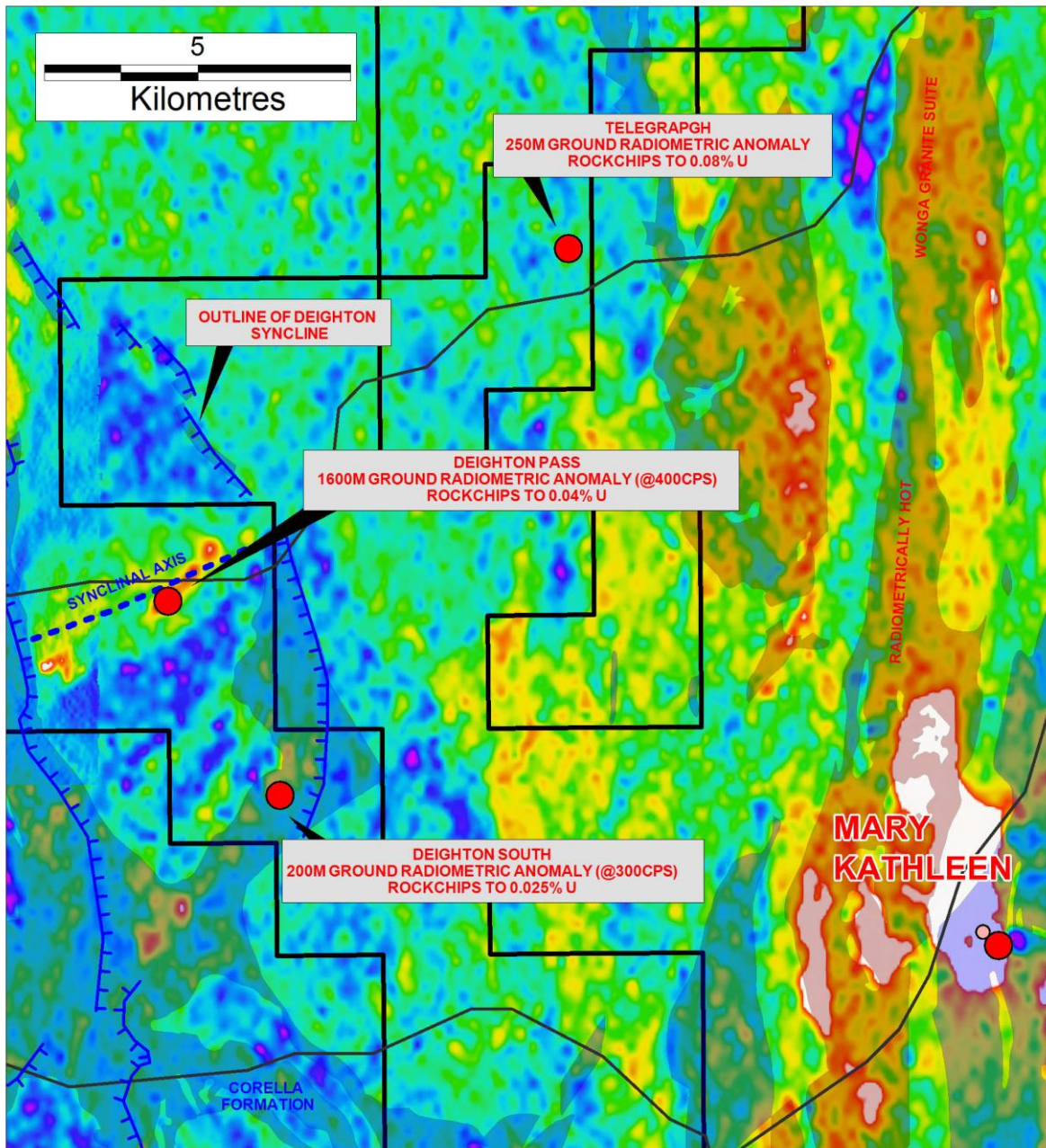


Figure 6, Deighton Pass – Telegraph Area, Radiometrics and Uranium Prospects

### 3. Kalman Project

The Kalman project within EPM 14369 contains several copper, gold, molybdenum and uranium prospects and covers nine kilometres of the highly prospective Pilgrim Fault. It is noticeable that much of the historical exploration in the area has been limited, typically to stream sediment and soil sampling. The main minerals targeted were: copper, lead, zinc, silver and gold. During the early 1980s a CRAE airborne radiometric survey identified the Marriage and Green Creek prospects, both are clearly visible on radiometric imagery.

These two prospects are situated wholly within the ground acquired from Altona Mining in September 2010. A soil sampling programme over part of the project has been completed and the samples were analysed for various elements including uranium. This sampling has identified a previously unknown uranium anomaly, approximately one kilometre in length, with a central high of 20-30ppm. The trend is also associated with gold values ranging from 5ppb to 20ppb with a spot high of 47ppb and a weak copper response. The uranium values from Syndicated metals' soil sampling compare favourably with the Green Creek South and Marriage uranium prospects within the tenement.

#### 3.1. Marriage Prospect

The Marriage prospect is reported to be covered by davidite-bearing scree and pebbles as well as several radiometric hotspots. Two costeans were dug by CRAE in an area where scintillometer readings were greater than 1,000cps. Altona Mining sampled a three centimetre wide vertical veinlet, described as a pink and black granofels, exposed in the wall of one of the costeans. The chip sampling returned  $U_3O_8$  values of 1,721ppm and 2,040ppm over two metres. Background values in the country rock were estimated by CRAE to be around 20ppm.

Although the outcrop in the area was poor, mapping was completed at a scale of 1:2,000 however the correlation of units was made difficult by sparse information.

A scintillometer survey was also completed with readings taken at 10m intervals on lines 50m apart. The 500cps contour clearly identifies two anomalies, Figure 7. A follow-up soil sampling programme was implemented over the anomalous zones defined in the scintillometer survey; with samples taken at 20m intervals on six east-west lines 100m apart.

The soil sampling at both the Marriage and Green Creek South prospects broadly defined uranium anomalies. However the samples were taken on broad-spaced

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lines, many of them taken from an area of colluvium and alluvium. It is therefore possible that there could have been both dilution of the samples by non-radioactive material and/or masking by transported cover.

At the Marriage prospect previous explorers have located some narrow veinlets of davidite, the size of which led them to dismiss the occurrence as having no importance. The broad radiometric response was attributed to scree, which they interpreted as having been derived from narrow veinlets. A more thorough investigation is needed before a final assessment can be made.

There appears to be a correlation between uranium and copper with copper values defining the uranium trend.

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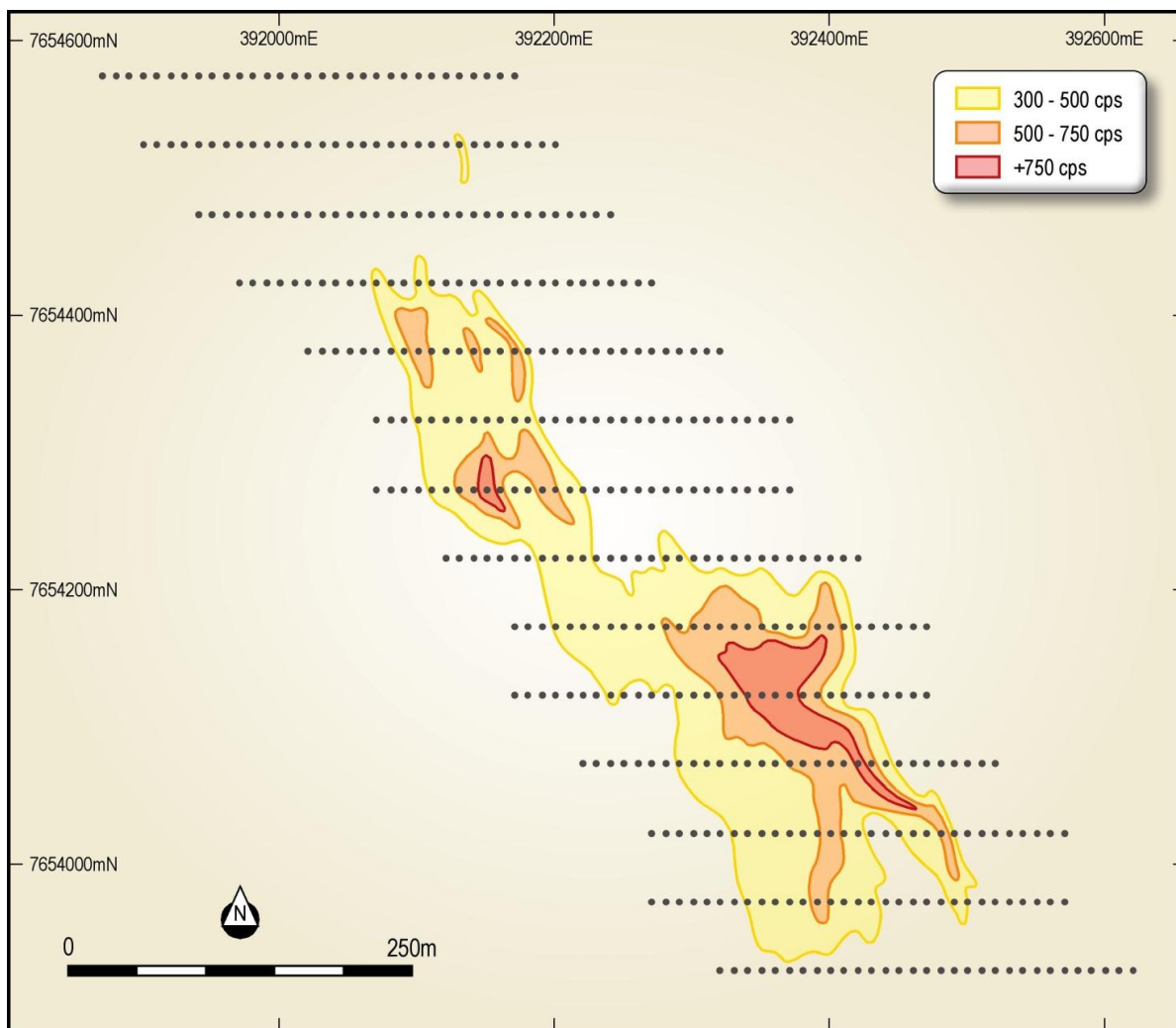


Figure 7, Marriage Prospect, Radiometric Contours

### 3.2. Green Creek South Prospect

Green Creek South is located approximately three kilometres south of the Marriage prospect and 1.2km west of the Green Creek molybdenum occurrence. At this stage the mineralisation has not been clearly defined but is thought to be composed of davidite, associated with a north-south striking quartz-haematite vein system that is up to 40m wide. The host quartz veins are said to consist of drusy and crustiform quartz, in contrast to the more extensive, massive white quartz in the area.

While sampling, Altona Mining recognized a coating of torbernite on some of the freshly exposed davidite crystals. This area was also mapped at a scale of 1:2,000 however outcrop is poor and it was not possible to correlate geological units.

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Scintillometer surveys were completed over the anomalous areas with readings taken at 10m intervals on east-west lines, 50m apart.

At the Green Creek South prospect the occurrence of torbernite (associated with davidite) may be more widespread than reported. Because of the presence of torbernite, which is an hydrated copper uranyl phosphate mineral, it is possible that copper may be useful in defining the trend of uranium mineralisation at this prospect.

On a broader scale, the uranium image of the Green Creek anomaly, although weaker, appears to extend to the northwest from the current prospect location. This extension does not appear to have been investigated for uranium.

Altona Mining stated that the Green Creek prospect is of some interest because of the:

- association between the scintillometer and uranium-in-soil anomalies,
- presence of possible quartz-haematite veining, over a strike length of 350m and up to 40m wide,
- poor outcrop and extensive transported cover means that the actual extent of the veining and mineralisation could not be readily established and it is quite possible that the occurrence is larger than documented,
- occurrence of locally strong hydrothermal alteration of metasediments and metabasalt with albite, magnetite, haematite, actinolite, epidote and carbonate,
- metasediments commonly display early albitic alteration.

It is possible that auger sampling or RAB/aircore drilling may provide a more accurate method of defining trends as well as validating the effectiveness of soil sampling in identifying further uranium mineralisation. Any trends defined by the auger results could then be tested by percussion drilling.

Table 3

## Definitions

Allanite	Calcium, aluminium Rare Earth Element Hydrated Silicate
Albitised/albitisation	The partial or complete replacement of plagioclase and alkali feldspar by albite, often occurring when water-rich vapour is during the final stages of crystallisation by a granite.
BLEG	Bulk Leach Extractable Gold – low level gold analytical technique
Boudins	Sausage-shaped structures making up a layer of deformed rock.
Brannerite	Uranium mineral – $U_{0.5}Ca_{0.3}Ce_{0.2}Ti_{1.5}Fe^{2+}_{0.5}O_6$ , 33.54% uranium
Brecciated	A rock composed of broken (usually angular) fragments of minerals or rock cemented together in a fine matrix.
Calc-silicate	A rock formed of calcareous and silicate minerals, typically formed from a dirty (impure) limestone
Carnotite	Uranium mineral – $K_2(UO_2)_2(VO_4)_{2.3} \cdot 3(H_2O)$ , 52.77% uranium
Crustiform	Having a crust-like appearance
Colluvium	Weathered material transported by gravity
Curite	Uranium mineral - $Pb_2U_5O_{17.4}H_2O$ , 63.34% uranium
Davidite	Uranium mineral – $La_{0.7}Ce_{0.2}Ca_{0.1}Y_{0.75}U_{0.25}Ti_{15}Fe^{3+}_5O_8$ , 3.2% uranium
Drusy	A cavity in a rock, vein or mineral into which crystals of the minerals forming the rock or vein are projected
Epidote	Rock-forming silicate mineral, commonly green
Metamict	Crystalline minerals that lose their crystal structure due to radioactive destruction
Metasomatised	A metamorphic change frequently caused by late-stage fluids crystallizing granites
Petrographic	A description of rocks in hand specimen or microscopically in thin section
Porphyritic	A texture describing igneous rocks that contain relatively large minerals set in a finer grained ground mass or matrix
REEs	Rare Earth Elements
Rhyolite	Fine grained to glassy acid volcanic rocks, mineralogically similar to granites
Scintillometer	An instrument that measures variations in radioactivity
Scree	The accumulation formed by the (coarse) fragments from the mechanical weathering of rocks and transported by gravity.
Sphene (Titanite)	$CaTiSiO_5$ found as an accessory mineral in acid igneous rocks and in metamorphosed limestones
Torbernite	Uranium mineral – $Cu(UO_2)_2(PO_4)_2 \cdot 11(H_2O)$ , 48% uranium
Uraninite	Uranium mineral – $UO_2$ , 88.15% uranium

#### 4. References

Ewert B, 2010, Renewal Application: EPM 14545 – Murrumba, Altona Mining Ltd

Hronski M, 2010, Summary of Prospective Uranium Occurrences within the Mt Remarkable Project and the Dronfield Joint Venture, Syndicated Metals Ltd, April 2010