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**Assessment Report**

describing

**Ground exploration mapping**

At the

**Curie Property**

Curie 1-16      YC42866-YC42881

NTS 106E/02  
Latitude 65°13'N, Longitude 134°50'W  
in the Mayo Mining District  
Yukon Territory

Prepared by and for  
Cash Minerals Limited

by

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February 2008

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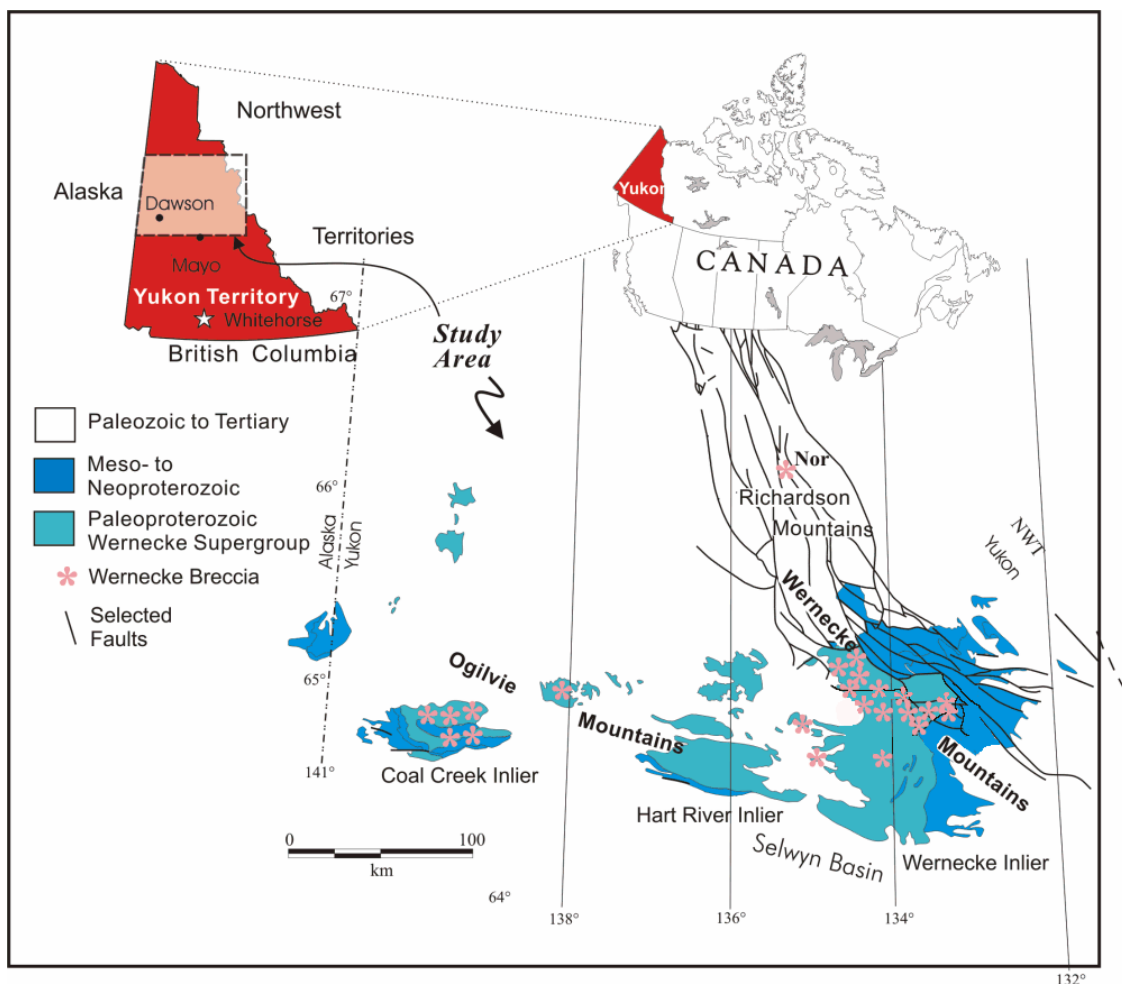
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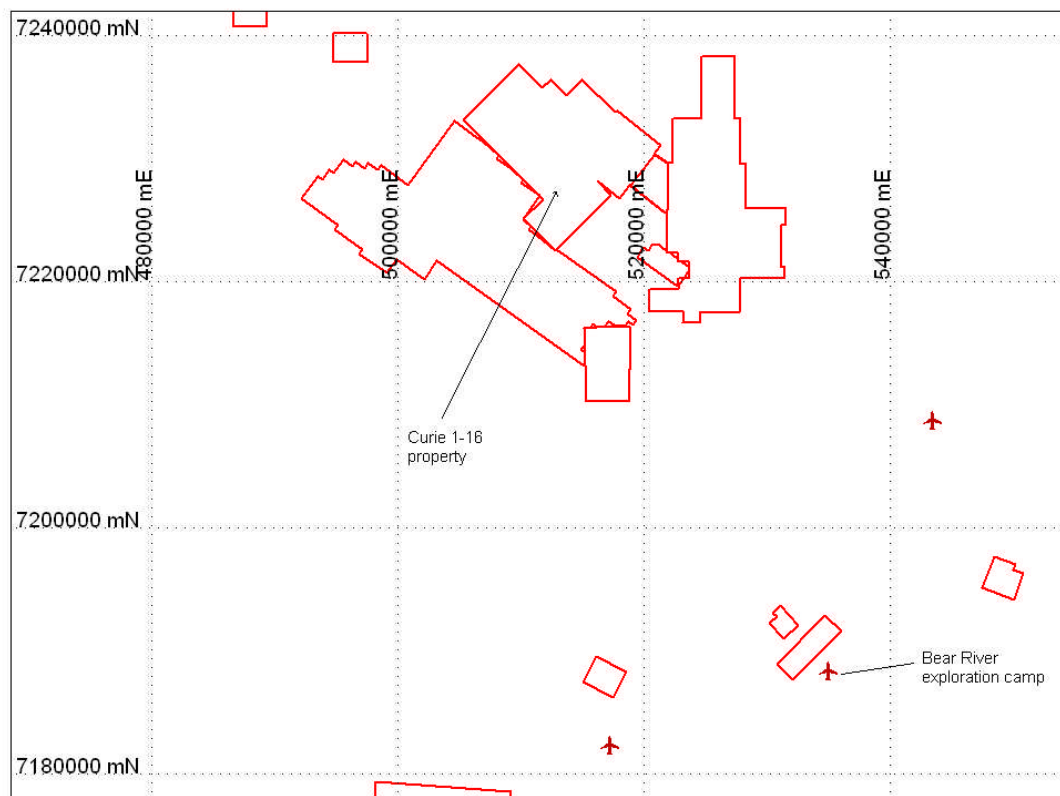
Measurements and grid locations included in the report are in UTM NAD83, zone 8, unless otherwise stated

## Introduction

The 2007 exploration program was managed by Cash Minerals Ltd. The Curie property is located in the Wernekes Mountains (figure 1) an area of historical Cu-Au-U mineralisation. The work was completed between from Bear River camp south of the property (figure 2).



**Figure 1:** Regional location and geological setting of the Wernekes district.



**Figure 2:** Location of the Curie property and the Bear River exploration camp that acted as a base for the Curie operations.

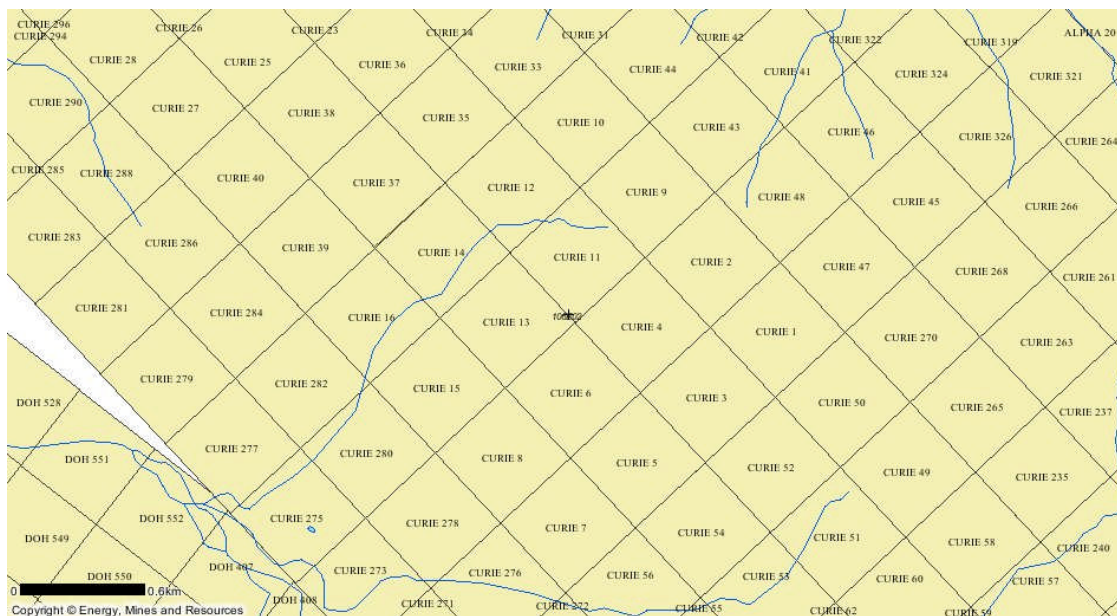
### ***The Property Location, Claim Data and Access***

The property is located in east-central Yukon at latitude 65°13'N and longitude 134°50'W on NTS map sheet 106E02. It comprises of 16 minerals claims covering approximately 320 hectares, see figure 3. The claims were staked under the Yukon Quartz Mining Act and are registered with the Mayo Mining Record in the name of Cash Minerals Ltd.

Claim Name	Grant Number
Curie 1-16	YC38921-YC38936

**Table 1:** summary of claim registration information.

The Curie property is located 200km northeast of the Klondike Highway and Silver Trail. Mayo is situated 407km by road north of Whitehorse. The closest road access to the property is at McQuesten Lake which lies 87km by road northeast of Mayo and 10km southwest of the Curie property. From McQuesten Lake the Wind River Trail, an abandoned winter road extends northward towards the Peel Basin. This winter road, the Wind River Trail, passes within 4km of the Pain property. A cat trail branches off the winter road and leads to the Bear River airstrip, a gravel airstrip 45km southeast of the property.



**Figure 3:** Claims map for the Bonnie property.

Access to the property in 2007 was accomplished using a Hughes 500D and Bell 206 helicopter's based at the Bear River camp and operated by Fireweed Helicopters of Whitehorse. Fuel was flown from Mayo to Bear River airstrip using a Britten-Norman Islander operated by Sifton Air of Haines Junction.

### ***Regional***

The first report of Mineralisation in the Wernecke Mountains was the discovery of hematite rich float in gravels by prospectors' enroute to the Klondike Goldfields in 1898. A few copper and gold prospects were and staked prior to the 1960's, but no serious exploration was conducted. After the discovery of the Crest Iron Deposit by California Standard Company Ltd. in 1961, several hematite bodies were staked and briefly explored. This wave of exploration coupled with improved access spurred by construction of the Wind River Trail led to new copper discoveries in the mid 1960's, some of which were drilled or bulldozer trenched (Deklerk and Traynor, 2004)

Uranium was first discovered in the Wernecke Mountains in 1974 at the Igor property by Ogilvie Joint Venture (Chevron Canada Ltd., Marietta Resources International Ltd. and Aquitaine Company of Canada Ltd.) The following summer Wernecke Joint Venture (Chevron and Aquitaine) conducted helicopter borne radiometric reconnaissance throughout the district and staked a number of other properties based on ground radiometric follow up. Most of these occurrences are associated with large iron oxide rich breccias that are informally known as the Wernecke Breccias. Eldorado Nuclear optioned Wernecke Joint Venture's properties and regional exploration rights in 1976. It conducted property and regional exploration in 1976 and 1977 along with a number of other companies, notably Noranda Minerals Ltd. and Pan Ocean Oil Ltd. Wernecke Joint Venture resumed exploration in 1978 after Eldorado Nuclear began to drop its optioned

properties. Systematic Uranium exploration by various parties continued in the Wernecke Mountains until 1982, when uranium prices fell (Eaton and Wober, 2005).

Another wave of regional and property exploration occurred in the mid 1990's when Westmin Resources Ltd. and Newmont Exploration Limited explored some of the Wernecke Breccias for copper and gold using the IOCG model.

### ***Property History***

Historic prospecting has occurred on the Curie 1-16 property, and into many of the properties bounding it. Channel and trenching has occurred along the contours of the hills that make up the property. This work identified a number of uraniumiferous regions, with assays of over 5 wt.% U<sub>3</sub>O<sub>8</sub> (Casselman and Torgerson, 2007).

### ***Physiography and Geomorphology***

The Curie property is located in an alpine setting along the divide between the Bonnet Plume and Wind River drainages. It covers a complex system of ridges, broad glacial valleys and cirques immediately southeast of the Bonnet of the Bonnet Plume Plateau. Local elevations range from 550m near the Bonnet Plume Plateau to 1600m atop a peak at the western edge of the property. There is no commercial timber on the property. Vegetation consists of grasses, moss and buckbrush with scattered clumps of stunted spruce.

The climate in the Wernecke Mountains is typical of northern continental regions with long, cold winters, truncated fall and spring seasons and short, cool summers. Average temperatures in January are about -25°C and in July about 10C. Total annual precipitation is approximately 30cm, mainly occurring as rain during the summer months. Maximum snow pack averages about 40cm. Although summers are relatively mild, arctic cold fronts occasionally cover the area and snowfall can happen in any month. Sunlight ranges from 22hrs per day in late June to approximately six hours per day in late December. The property is relatively snow-free from late May until late September.

### ***Geological Setting***

The Wernecke, Hart River and Coal Creek Inliers are exposed within the Cordilleran fold and thrust belt of northwestern Canada (figure 1) (Thorkelson *et al.* 2005). Deformation associated with Cordilleran orogenesis has largely shaped the modern geological configuration of the region. The Canadian Cordillera formed along the western margin of ancestral North America from the Devonian to the Early Cainozoic (Cook *et al.* 2004). Mesozoic – Cainozoic cordilleran orogenesis resulted in the accretion of several allocthonous and pericratonic terranes that incorporated existing Paleoproterozoic terranes with Paleozoic marginal strata, and lead to the formation of syn-orogenic and post-orogenic igneous and sedimentary successions (Gabrielse *et al.* 1991).

Wernecke Supergroup strata are geographically separated from cratonic North America within a series of Inliers (figure 1); thought to represent large-scale structural culminations that have been preferentially exhumed (Thorkelson *et al.* 2005). Smaller outcrops of Early Proterozoic strata are considered to be the cores of folds produced during late Mesozoic shortening (Laramide orogenesis) (Norris 1984). Surrounding the

inliers are younger Neoproterozoic to Cenozoic rocks that now comprise part of the Mackenzie platform (figure 1) (Thorkelson *et al.* 2005). This sub-region of Cordilleran foreland belt is associated with Neoproterozoic to Paleozoic platformal assemblages (figure 1) (Gordey & Anderson 1993; Norris 1997). This platformal sequence is juxtaposed to the south of the Dawson Fault by the Selwyn Basin (figure 1), a package of basinal strata also of Neoproterozoic to Lower Paleozoic age (Gordey & Makepeace 1999).

The Wernecke Inlier is crosscut by the Richardson fault array (figure 1) (Thorkelson 2000), a series of deep-seated structures that are continuous for over 600 km that mark the boundary between the deformed Cordilleran fold and thrust belt and the relatively undeformed Northern Interior Platform (Delaney 1981; Norris 1997; Thorkelson 2000). This region represents a zone of weakened crust within the North American craton – possibly an Early Proterozoic terrane boundary (Thorkelson 2000) – that has been re-activated during the Late Proterozoic and the Tertiary (Hall & Cook 1998) manifested as strike-slip, thrust and normal faults (Norris 1981; Hall & Cook 1998). To the south, the Richardson Fault Array splays to become the Fairchild Lake Fault (Norris 1981). This fault is a major structure in the Wernecke Inlier that intersects strata of the Wernecke Supergroup (Thorkelson 2000). The Fairchild Lake Fault has been interpreted as a normal fault (with possible minor strike-slip motion) with an east-side-down sense of movement (Thorkelson 2000). Early fault activity occurred during the Middle to Late Proterozoic, given by the differential preservation of Early and Mesoproterozoic strata on adjacent sides of the Fairchild Lake fault (Thorkelson 2000). Fault displacement and erosion associated with the Fairchild Lake Fault could control the configuration of many Proterozoic and Paleozoic successions in the region (Thorkelson 2000).

**The Wernecke Supergroup** is comprised of a roughly 13 km thick package of marine sedimentary and carbonate sediments (Delaney 1981) deposited prior to 1.71 Ga (Thorkelson 2000). The Wernecke Supergroup consists of three major successions known from oldest to youngest as the Fairchild Lake Group, Quartet Group and the Gillespie Lake Group (Delaney 1981; Thorkelson 2000), that are dominated by mudstone, siltstone and dolomite (Thorkelson *et al.* 2001b).

**Fairchild Lake Group (FLG)** sediments represent the oldest supracrustal sedimentary succession within the Cordillera, and forms the basal section of the Wernecke Supergroup (Thorkelson 2000). The lower contact of the Fairchild Lake Group is nowhere exposed, but is thought to be structurally decoupled with the crystalline basement as a result of contractional deformation (Thorkelson 2000). Thorkelson (2000) differentiated the ~ 200 m thick upper FLG (uFLG) from the ~ 4.6 km thick lower FLG on the basis of lithological character. Lower FLG strata are generally composed of weakly to moderately metamorphosed (Thorkelson *et al.* 2003) finely laminated to cross-laminated siltstone, mudstone and fine-grained sandstone with locally intercalated dolomite (Thorkelson 2000). Upper FLG sediments generally consist of monotonous alternating sequences of dolomite and siltstone (Thorkelson 2000).

Fairchild Lake Group strata often exhibit a variably intense slaty cleavage (Thorkelson *et al.* 2003), with local zones of higher strain – often the cores of tight folds – producing chlorite and muscovite-rich phyllite to fine grained chlorite-muscovite-chlorite schist, often with additional chloritoid or garnet porphyroblasts (Thorkelson *et al.* 2003).



**The Quartet Group (QG)**- conformably overlies the uppermost Fairchild Lake Group and represents the middle sequence of the Wernecke Supergroup (Thorkelson 2000; Hunt *et al.* 2005). The ~ 5 km thick sequence has been divided into a basal Q-1 unit and an overlying Q-2 unit by Delaney (1981). Q-1 consists of black carbonaceous shale in conformable with contact with an upward coarsening sequence of intercalated pyritic shale, siltstone and fine grained sandstone termed Q-2 (Delaney 1981). Within the uppermost Q-2 sequence, this fine grained sandstone becomes interlayered with buff-brown weathering silty dolomite; indicating the onset of Gillespie Lake Group sedimentation (Thorkelson 2000).

**The Gillespie Lake Group (GLG)**- conformably overlies the upper Quartet Group and represents the uppermost layer of the Wernecke Supergroup as ~ 4 km of shallow water sediments (Delaney 1981). Delaney (1981) subdivided the GLG into seven conformable units known from bottom to top as units G-TR and G-2 to G-7. The basal G-TR unit is delineated from the upper QG on the pronounced increase in the abundance of buff-weathering dolomite that appear as distinctive alternating bands of dolomite and siltstone (Thorkelson 2000). The remainder of the succession (units G2-G7, of Delaney, 1981) is composed of orange-weathering dolomite and silty dolomite sediments; interpreted as deposition in a shallow to intertidal environment (Thorkelson 2000).

**Wernecke Breccia (WBX)**- Voluminous hydrothermal activity occurred in the Yukon during the Early to Middle Proterozoic, that resulted in the formation of extensive zones of fragmental rocks within the Wernecke Supergroup, termed the Wernecke Breccia (figures 1) (Thorkelson *et al.* 2001b). Brecciation occurred in the Wernecke inlier and 300 km to the west in the Coal Creek inlier, hosted predominantly within strata of the Wernecke Supergroup (Figure 1) (Thorkelson *et al.* 2001b). Breccia bodies are present as numerous curvilinear belts over an area of ~ 48,000 km<sup>2</sup> (figure 1) (Archer & Schmidt 1978; Delaney 1981; Bell 1986b; Lane 1990; Wheeler & McFeely 1991; Thorkelson 2000).

Wernecke Breccia typically consists of variably metasomatised angular to sub-angular clasts, surrounded by a matrix of hydrothermal minerals (Thorkelson *et al.* 2001b). Specular hematite is abundant both within fractures and as disseminations within most breccia occurrences (Thorkelson 2000; Thorkelson *et al.* 2001b)

Breccia clasts are sourced predominantly from Wernecke Supergroup dolomites, siltstones, slates, phyllites and schists (Thorkelson 2000). Where brecciation has intersected the Bonnet Plume River intrusions, breccias contain locally abundant igneous clasts. Megaclasts and clasts of volcanic material are found at one locality (Slab occurrence) where brecciation engulfed the Slab volcanics (Thorkelson 2000). Breccia matrix is generally composed of milled and small fragments of clasts and wall rock, cemented by abundant hydrothermally precipitated minerals including: hematite, quartz, carbonate, chlorite, feldspar and mica (Thorkelson 2000; Thorkelson *et al.* 2001b).

Metasomatism associated with the Wernecke Breccia was initiated before and concluded after the main breccia forming event, and is commonly preserved as metasomatic aureoles overprinting breccia and surrounding country rock (Thorkelson *et al.* 2001b). Metasomatic effects are variable regionally, but typically result in the overprinting of clasts and matrix via the precipitation of a range of minerals including: hematite (earthy and specular), magnetite, dolomite, siderite, chlorite, titanite, brannerite and chalcopyrite (Thorkelson *et al.* 2001b).

U-Pb dating of titanite produced an age of ~ 1.6 Ga for the earliest phase of brecciation (Thorkelson *et al.* 2001b). Although this event is recognized as the dominant breccia forming event, at least two other phases of hydrothermal activity occurred at 1.38 and 1.27 Ga (Thorkelson *et al.* 2005).

**Bonnet plume River intrusions (1.71 Ga)**- The Bonnet Plume River intrusions represent the oldest intrusive rocks in the Yukon (figure 1) (Thorkelson 2000; Thorkelson *et al.* 2001b). Intrusion occurred in the form of short dikes and stocks of fine to medium-grained diorites and gabbros (with minor syenite and anorthosite) (Thorkelson *et al.* 2001a) that invaded the Wernecke Supergroup (Delaney 1981; Norris & Dyke 1997; Thorkelson 2000). This intrusive relationship allows the Bonnet Plume River Intrusions to constrain the minimum age of Wernecke Supergroup deposition and preceding Wernecke basin formation (Thorkelson *et al.* 2001a). Dating of zircon obtained from several Bonnet Plume River Intrusions samples yielded U-Pb ages of ~ 1.71 Ga, providing a lower bracket age for Wernecke Supergroup deposition of > 1.71 Ga (Thorkelson *et al.* 2001a).

The Bonnet Plume River Intrusions are predominantly found as clasts and enclaves – millimeters to hundreds of meters in length – within breccia bodies that formed during voluminous hydrothermal-phreatic activity at ca. 1.6 Ga (Thorkelson *et al.* 2001b). These events lead to the development of regional zones of fragmental rock known as the Wernecke Breccia (Laznicka & Edwards 1979; Bell 1986b; Laznicka & Gaboury 1988). Bonnet Plume River Intrusions also show an association with normal faulting that probably represents syn-magmatic extensional faulting within the Wernecke Mountains (Thorkelson *et al.* 2001a).

**Slab Volcanics (1.71 Ga?)**-The Bonnet Plume River Intrusions are often considered to have a possible co-magmatic extrusive equivalent known as the Slab Volcanics (figure 1) (e.g. Thorkelson 2000; Thorkelson *et al.* 2001a; Thorkelson *et al.* 2005). The Slab volcanics comprise of a sequence of ~ 40 mafic to intermediate thin lava flows, preserved entirely as clasts, including one 250 m thick megaclast (Thorkelson *et al.* 2001a). This megaclast is hosted within an expansive zone of Wernecke breccia; present within schist and metasediment of the Fairchild Lake Group (Thorkelson *et al.* 2005).

### ***Regional Mineralisation***

Sixty-five Wernecke breccia bodies within the Wernecke and Ogilvie Mountains have been identified to host prospective IOCG style mineralisation (Archer & Schmidt 1978; Deklerk & Traynor 2005). Mineralisation occurs both within breccia, and in the surrounding rock, as disseminations and veins that record multiple phases of mineralisation (Hunt *et al.* 2005). Common IOCG phases include: magnetite, hematite, chalcopyrite, pitchblende, brannerite, cobaltite and gold (not visible but reports in assay with copper) (Hunt *et al.* 2005).

Mineralised Wernecke breccia appears to show similarities with mineralized breccia associated with the giant Olympic Dam deposit (Thorkelson *et al.* 2005). This correlation is significant for paleogeographic reconstructions that link Australia and Laurentia during the early Proterozoic (e.g. Bell & Jefferson 1987; Dalziel 1991; Moores 1991; Thorkelson *et al.* 2001b; Betts *et al.* 2008).

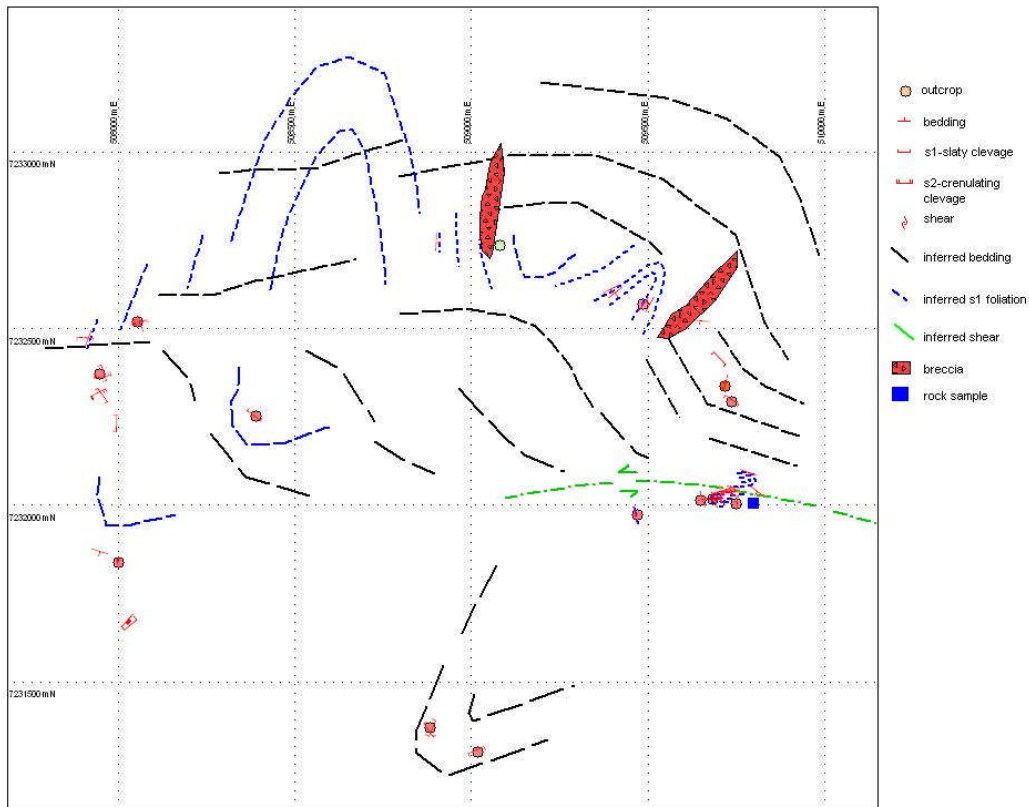
The mineralisation is commonly copper-gold and less frequently uranium and cobalt. This mineralisation occurs in four of styles: (1) disseminations in albite-quartz-pyrite-chalcopyrite veinlets/replacement veins within sedimentary clasts in the Werneckes Breccia and as rare massive sulphide clasts, (2) disseminations and blebs in breccia matrix, locally forming the entire matrix, (3) as blebs up to 5cm across or disseminations in calcite-chlorite-muscovite-pyrite-chalcopyrite-hematite  $\pm$  magnetite, quartz-hematite-pyrite-chalcopyrite and calcite  $\pm$  chalcopyrite veins that cross-cut breccia and the Werneckes Supergroup and (4) as blebs or disseminations in quartz-chalcopyrite  $\pm$  feldspar  $\pm$  muscovite  $\pm$  hematite veins that are parallel to and cross-cut calcareous layers in siltstone (Hunt *et al.* 2005).

### ***Property Geology***

Mapping in the Curie properties was focused around the previously worked Deer showing. The region has been heavily trenched in the past, although erosion has covered a lot of possible exposure in the trenched area.

The mapped area, figure 4, hosts strongly deformed sediments, with an east-northeast trend on the structures. The sediments observed in the region are fine to medium grained with textural laminations, representing bedding. These sediments are strongly chlorite altered in small regions, with muscovite and structurally controlled albite veins. A strongly deformed area in the east has the strongest intensity chlorite alteration. To the east banded scapolitic bearing calc-silicates are observed with common parasitic folds preserved. Near the contacts between the calc-silicates and the chloritic altered sediments outcrops of Fe-carbonate and chlorite carbonate hydrothermal breccias occur as minor discrete outcropping zones.

The bedding in the region is commonly deformed in the region pervasively by a northeast trending  $S_1$  slaty foliation, and a later east-northeast trending shearing. The bedding is characterized by textural laminations, commonly with open asymmetric folds. The slaty cleavage is easily distinguished as axial planar to the folds observed in the bedding. In the eastern region of the mapped area is an east to northeast trending shear on the strongly chloritic sediments. Albite veins parallel to the shear fabric are observed axial planar to the folds near the shear region.



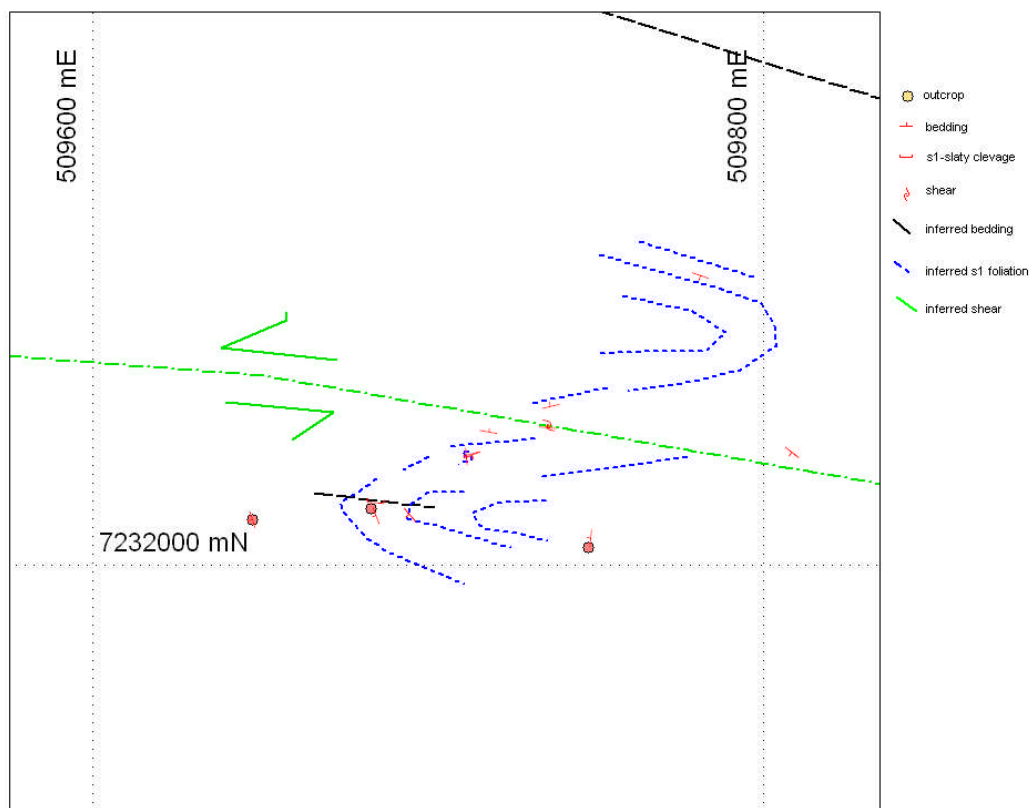
**Figure 4:** Structural interpretation of the mapped region proximal to the Deer target. The background lithology is variably altered chlorite sediments.

### ***Property Mineralisation and Geochemistry***

The mineralisation on the Curie 1-16 property is focused around the sheared region that has been subject to previous trenching and prospecting. The structural orientation is complex with tectonic fabric folded a number of times over a three metre section. The sediments in the sheared region are intensely chlorite altered with common muscovite. Pegmatite is observed intruding along hinges of folds, with the shear fabric, and only 10cm wide. The pegmatite occurs with planar contacts, though commonly interdigitating along the fabric of the chlorite altered sediments.

Radiometric anomalies are observed in the region planar to the shear fabric, figure 5 where sample 2330 was collected, table 2. These anomalies are 30,000cps above background. No observed U mineralisation was located, although the highest anomalies occur in the most intense chlorite altered regions proximal to the shear zone.

From geological observations of this region the shear zone appears to be part of a larger scale structure that has hosted mineralizing fluids.



**Figure 5:** Geological interpretation of the Deer showing on the Curie 1-16 properties. The background lithology is variably altered chlorite sediments.

Easting	Northing	Sample #	Locality	Sample description
509665	7232115	2330	float	Intensely altered fluid zone with chlorite regions (1-2cm wide) in a medium grained silica rich matrix with minor aggregates of 1mm hematite, 2500cps above background.

**Table 2:** Sample description for sample collected on the Curie 1-16 property.

### ***Discussion and Recommendations***

The Curie property has a number of geological features that require further analysis. Mapping and prospecting throughout the property to identify the continuity of the mineralised structure, along with geophysical surveys. Subsurface analysis is also recommended for structurally controlled regions that have anomalous radiometric signatures.

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***Appendix I***

I, Russell Smits, exploration geologist, with a business and residential address in Vancouver, British Columbia, do hereby certify that:

1. I graduated in 2005 from Monash University with a Bachelor of Science degree, majoring in geology and a Masters degree in Economic Geology
2. From 2005 to present I have been actively engaged in the Mineral Exploration in Australian and Canadian minerals provinces
3. I personally participated and oversaw the fieldwork reported herein

Russell Smits, M.S.c.



## *Appendix II*

Geochemical assay data from ALS Chemex

Analysis type	Element	Units	Lower Detection Limit	Sample # 2330
ME-MS61	Ce	ppm	0.01	43.1
ME-MS61	Co	ppm	0.1	9.9
ME-MS61	Cr	ppm	1	28
ME-MS61	Cs	ppm	0.05	0.64
ME-MS61	Cu	ppm	0.2	6.9
ME-MS61	Fe	%	0.01	2.36
ME-MS61	Ga	ppm	0.05	4.21
ME-MS61	Ge	ppm	0.05	0.09
ME-MS61	Hf	ppm	0.1	0.4
ME-MS61	In	ppm	0.005	0.01
ME-MS61	Ag	ppm	0.01	0.02
ME-MS61	K	%	0.01	0.11
ME-MS61	La	ppm	0.5	21.8
ME-MS61	Li	ppm	0.2	13.1
ME-MS61	Mg	%	0.01	0.87
ME-MS61	Mn	ppm	5	393
ME-MS61	Mo	ppm	0.05	2.59
ME-MS61	Na	%	0.01	0.06
ME-MS61	Nb	ppm	0.1	0.4
ME-MS61	Ni	ppm	0.2	32.1
ME-MS61	P	ppm	10	2020
ME-MS61	Al	%	0.01	1.58
ME-MS61	Pb	ppm	0.5	31.3
ME-MS61	Rb	ppm	0.1	7.5
ME-MS61	Re	ppm	0.002	< 0.002
ME-MS61	S	%	0.01	0.02
ME-MS61	Sb	ppm	0.05	0.79
ME-MS61	Sc	ppm	0.1	1.5
ME-MS61	Se	ppm	1	3
ME-MS61	Sn	ppm	0.2	0.4
ME-MS61	Sr	ppm	0.2	16.4
ME-MS61	Ta	ppm	0.05	0.05
ME-MS61	As	ppm	0.2	1.5
ME-MS61	Te	ppm	0.05	< 0.05
ME-MS61	Th	ppm	0.2	53
ME-MS61	Ti	%	0.005	0.036
ME-MS61	Tl	ppm	0.02	0.07
ME-MS61	U	ppm	0.1	431
ME-MS61	V	ppm	1	10
ME-MS61	W	ppm	0.1	1
ME-MS61	Y	ppm	0.1	18.1
ME-MS61	Zn	ppm	2	23
ME-MS61	Zr	ppm	0.5	12.3
ME-MS61	Ba	ppm	10	100
Au-ICP21	Au	ppm	0.001	0.002
ME-MS61	Be	ppm	0.05	0.16
ME-MS61	Bi	ppm	0.01	0.19
ME-MS61	Ca	%	0.01	0.55
ME-MS61	Cd	ppm	0.02	0.04