COLLABORATIVE DRILLING REPORT
Round 1

EL's 24841 & 25710

MURPHY PROJECT

December 2009

David Esser

Ph: 07 3369 4000
Email: david.esser@bondimining.com.au

CONTENTS

FIGURES

TABLES

APPENDICES

EXECUTIVE SUMMARY

This report describes the Murphy Project tenement history, exploration rationale, commodities sought, regional geology, exploration conducted, results and conclusions.

Global Discovery Pty Ltd originally applied for EL's 24694 and 24841, and they were granted in February and August 2006. Both tenements were then acquired from them by Canon Investments Pty Ltd (a wholly owned subsidiary of the Canadian company, Buffalo Gold Limited). Canon Investments Pty Ltd originally applied for EL's 25708, 25709 and 25710, and they were granted in August 2007. EL's 24694, 24841, 25708, 25709 and 25710 were subsequently acquired by Murphy Uranium Pty Ltd which is a 100% owned subsidiary of Bondi Mining Limited (Bondi). EL's 26138, 26139 and 26140 were applied for by Canon Investments Pty Ltd and when they were granted in December 2007 they were transferred to Murphy Uranium Pty Ltd. This report is concerned with tenements EL 24841 and 25710.

In December 2008 a Letter of Agreement was signed between Bondi and Japan Oil, Gas and Metals National Corporation (JOGMEC) wherein JOGMEC can earn a 51% undivided interest in the project by funding AUD $3 million in exploration over four years. Bondi is the operator of the exploration program.

Bondi Mining's objective is to explore for and discover unconformity hosted uranium mineralisation, (Jabiluka style) and sandstone hosted uranium mineralisation (Westmoreland style) undercover, within the highly prospective and under-explored, Proterozoic age, Southern McArthur Basin, adjacent to the Murphy Inlier. The exploration rationale used by Bondi is to acquire high quality airborne magnetic and radiometric data (100m line spacing), complete a detailed interpretation, define and rank likely lithological and structural targets, and then test those targets with a combination of alpha track etch cups (which detect radon gas), surface soil geochemistry, reconnaissance RAB / aircore drilling and geochemical sampling, down hole gamma surveys and finally RC/ diamond drilling of the most favourable anomalies. While uranium is the focus of our exploration we realise there is good potential for other commodities on the Murphy project including Cu, Ni, Au and phosphate mineralisation, and analyse for them as well.

An RC / diamond drill program comprising four drill holes for a total of 1160.5m at target UC19 was completed in June to July 2009, to test strong geochemical soil anomalies, alpha track cup anomalies, gamma log and geochemical anomalies from the RAB / Aircore drilling and also conceptual geology and geophysical modelling. Hole MURD002 intersected Cainozoic mudstone and chert to a depth of 10m; medium grained quartzites of the Westmorland Conglomerate to 54m; a coarse grained, gabbroic dyke to 202.25m; highly silicified quartzites of the Westmorland Conglomerate to 385.4m; a coarse grained gabbroic dyke to 541.25m; and silicified quartzites of the Westmoreland Conglomerate to the end of hole at 556.1m.

The alteration intersected in MURD002 comprises hematisation within the upper Westmorland unit; hematisation, and chlorite alteration in the upper gabbro; intense silicification, quartz – sericite alteration and minor clay alteration, moderate hematisation within the intermediate quartzite; chloritisation, strong 'brick red' hematisation and associated carbonate veining to brecciation, within the lower gabbro, and intense silicification and hematisation in the lower quartzite.

MURD002 intersected significant uranium and copper mineralisation in the lower mafic intrusive. The copper mineral is dominantly bornite, which is up to 30% in narrow bands several cm wide and often strongly fractured to brecciated. The mineralised interval included 99m at 1260 ppm Cu and 14.2ppm U between 405 to 504m, including 2m at 1% Cu and 85ppm U from 447m.

An RC / diamond drill program comprising three drill holes for a total of 553m at target UC17 was completed in August 2009, to test strong geochemical soil anomalies (coincident U and Pb), alpha track cup anomalies, and favourable stratigraphy adjacent to the Emu Fault. MURD005 intersected Cainozoic mudstone to 60m; and sandstones, possibly from the Westmorland Conglomerate, to 102m. Alteration consisted of weak hematisation. The only significant uranium occurred between 0 – 2m assaying 2.8ppm U in iron pisolite and shallow soil. MURD006 intersected Cainozoic mudstone, siltstones, and chert to 84m; and Westmorland Conglomerate sandstone, with interbedded siltstone, and mudstone to 270.5m. Notable alteration included moderate, to strong hematisation with minor chlorite in sandstones of the Westmorland Conglomerate. The interval 249 – 250m returned an assay of 12.8ppm U, within sandstone. MURD007 intersected Cainozoic mudstone, and chert to 111.5m; Westmorland conglomerate quartzite, and mudstones to 115.5m; mafic intrusive to 120.3m, dark grey siltstone to 175.3m, and coarse grained, hematitic granite to 180.5m. The unconformity, between the Meso - Proterozoic Westmoreland Conglomerate and the Palaeo-Proterozoic metasediments is at approx 120m. Substantial faulting, to brecciation was intersected between 115m and 137m which is probably due to the Emu Fault Zone.

Note: The UC17 drilling was not part of the Round 1 Collaborative Drilling grant, but is included as the MURD006 and MURD007 were also submitted to the NTGS core storage facility.

1 INTRODUCTION

Bondi Mining Limited, through its wholly owned Australian subsidiary Murphy Uranium Pty Ltd, is the holder of EL's 24841 and 25710. The licences are located west of the Westmoreland Uranium Field and forms part of Bondi's Murphy Project targeting uranium deposits about the Murphy Inlier in the Northern Territory. The Murphy Project currently comprises ELs 24694, 24841, 25708, 25709, 25710, 26138, 26139 and 26140 and ELA 27379. Refer to **Figure 1** for the location map.

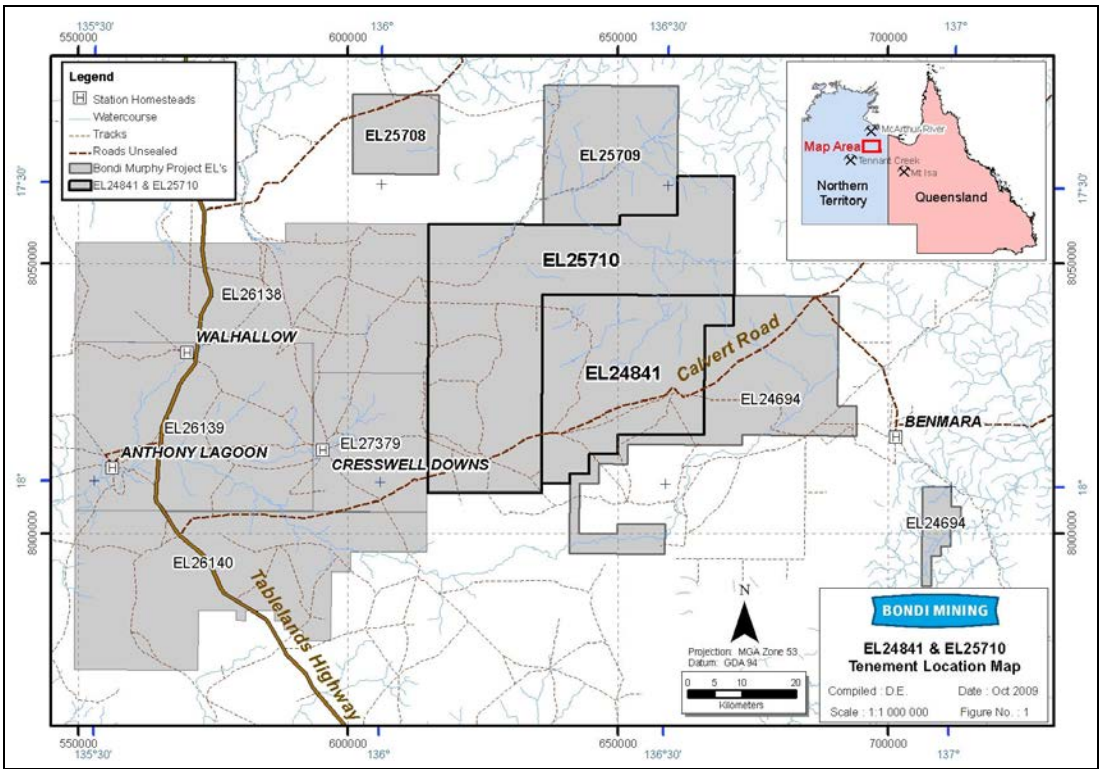

Figure 1 - Location Map showing Murphy Project

This report describes the drill program conducted at target UC19 which was partially funded by a $100,000 grant from the NTGS, as part of the *'Bringing Forward Discovery'* initiative, and also drilling at the UC17 target, which was sole funded by the Bondi – JOGMEC joint venture.

2 LOCATION & ACCESS

EL's 25708, 25709 and 25710 are located approximately 130km west of the NT - QLD border and 170km south east of the McArthur River mine in eastern NT, see **Figure 2**. The licence covers four 1:250,000 map sheets; Wallhallow, Burnette Downs, Calvert Hills and Mount Drummond. Access is via the Barkly Highway from Mt. Isa, to the Barkly Roadhouse, then via the Tablelands Highway to the Calvert Hills Road. Access around the project area is via graded station roads and tracks. An alternative access can be gained via Cape Crawford to the north via the Tablelands highway, or from the east by the Calvert Hills Rd which crosses the border near Wollogorang.

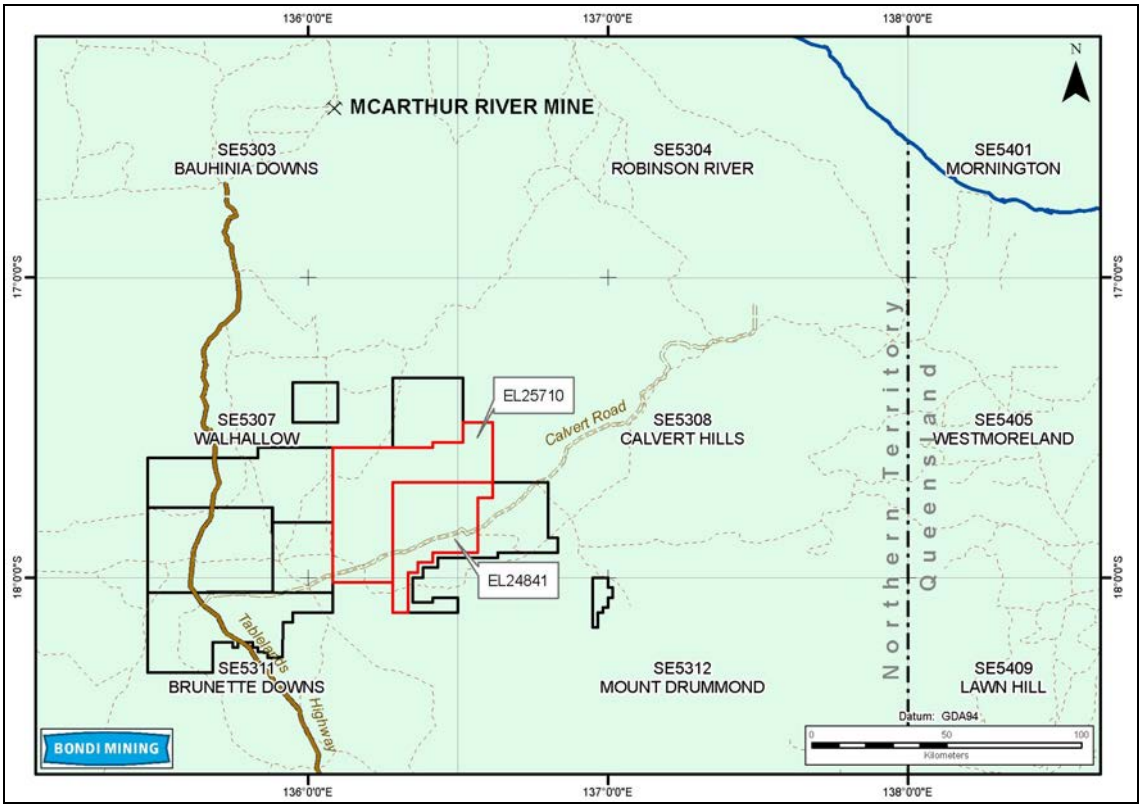

Figure 2 - Tenement Location Map Showing 1:250,000 Geological Map Sheets

3 TENURE

Tenement details for the eastern EL's, where the Round 1 Collaborative Drilling program was conducted are shown below in **Table 1.** Refer to **Figure 1** for the EL location.

Table 1: Tenement details

Exploration Licence No.	No. Blocks	Area (km^2)	Grant Date	Expiry Date
EL 24694 EL 24841	270 276	(880) (900)	28/2/2006 1/8/ 2006	27/2/2012 31/7/2012
EL 25708 EL 25709 EL 25710	74 190 500	(240) (622) (1637)	29/8/2007 29/8/2007 29/8/2007	28/8/2013 28/8/2013 28/8/2013

4 REGIONAL GEOLOGY

The Murphy Project area is located on the western end of the Murphy Inlier. The inlier is referred to as the Murphy Tectonic Ridge and represents a belt of lower Proterozoic basement that separates the middle Proterozoic McArthur Basin to the north and the middle Proterozoic Lawn Hill Platform - South Nicholson Basin to the south. Refer to **Figure 3**. The oldest rocks in the region are the lower Proterozoic Murphy Metamorphics, which form the basal unit of the Murphy Inlier, and consist of isoclinally folded greenschist facies metasediments; typically quartz-feldspar-mica schists and gneiss with minor graphitic units. The Murphy Metamorphics form the core of the Murphy Tectonic Ridge and only outcrop in the NT portion of the inlier. The Cliffdale volcanics unconformably overlay the Murphy Metamorphics and are made up of a series of felsic volcanic and volcaniclastic rocks. The Cliffdale volcanics are only found at the eastern end of the inlier. Both the metamorphics and volcanics are intruded by granites and adamellites of the Nicholson Granite Complex which constitutes the majority of the rocks found in the inlier.

The northern margin of the Murphy Inlier is unconformably overlain by the Westmoreland Conglomerate, which is the oldest unit in the middle Proterozoic Tawallah Group, and marks the base of the southern portion of the McArthur Basin. The Westmoreland Conglomerate is made up of four sub-units;

(i) A basal volcanic derived (sourced from the underlying Cliffdale volcanics) conglomerate-breccia that grades up into a pebbly quartz sandstone;

(ii) An upward fining, coarse to medium grained ferruginous sandstone;

(iii) A coarse polymictic conglomerate and minor pebbly sandstone, which can be reverse faulted directly on the Cliffdale Volcanics; and

(iv) A porous, crossbedded, coarse grained quartz sandstone, with minor conglomerate bands and laminated tuffaceous siltstone in the lower part.

The Seigal Volcanics lie conformably on top of the Westmoreland Conglomerate and consist of massive and amygdaloidal tholeiitic basaltic lavas with minor interbedded siltstones and sandstones. A thin shale bed is commonly found at the base of the Seigal Volcanics and marks the hiatus between deposition of the Westmoreland Conglomerate and the start of volcanism. The middle to upper Tawallah Group consists of interbedded sediments and volcanics. Sediments and volcanics of the McArthur Group lie unconformably over the Tawallah Group.

The southern margin of the Murphy Inlier is unconformably overlain by several belts of Lawn Hill Platform in addition to sediments of the south Nicholson Basin, which unconformably covers the Lawn Hill Platform successions. A thin unit of coarse sandstone and conglomerate, the Wire Creek Sandstone, marks the base of the Lawn Hill Platform in places and is conformably overlain by the Peters Creek Volcanics; a massive sequence of alternating basalt, rhyolite and rhyodacites with minor sediments. Both units can be found lying unconformably on the Murphy Inlier and are considered equivalents to the Tawallah Group in the McArthur basin. The Peters Creek Volcanics are unconformably covered by the Fickling Group, a sequence of conglomerates, sandstones, siltstones and dolomites.

The Fickling Group belongs to the Lawn Hill Platform and in the area of the Murphy Inlier is unconformably covered by shallow marine sediments of the South Nicholson Basin referred to as the South Nicholson Group. This group is also found lying unconformably over the western end of the Murphy Inlier or over the Benmara Beds, which can lie unconformably between the South Nicholson Group and the Murphy Metamorphics. The Benmara Beds are also a middle Proterozoic Tawallah Group equivalent and consist of a mixed rhyolite, trachyte, sandstone and conglomerate package.

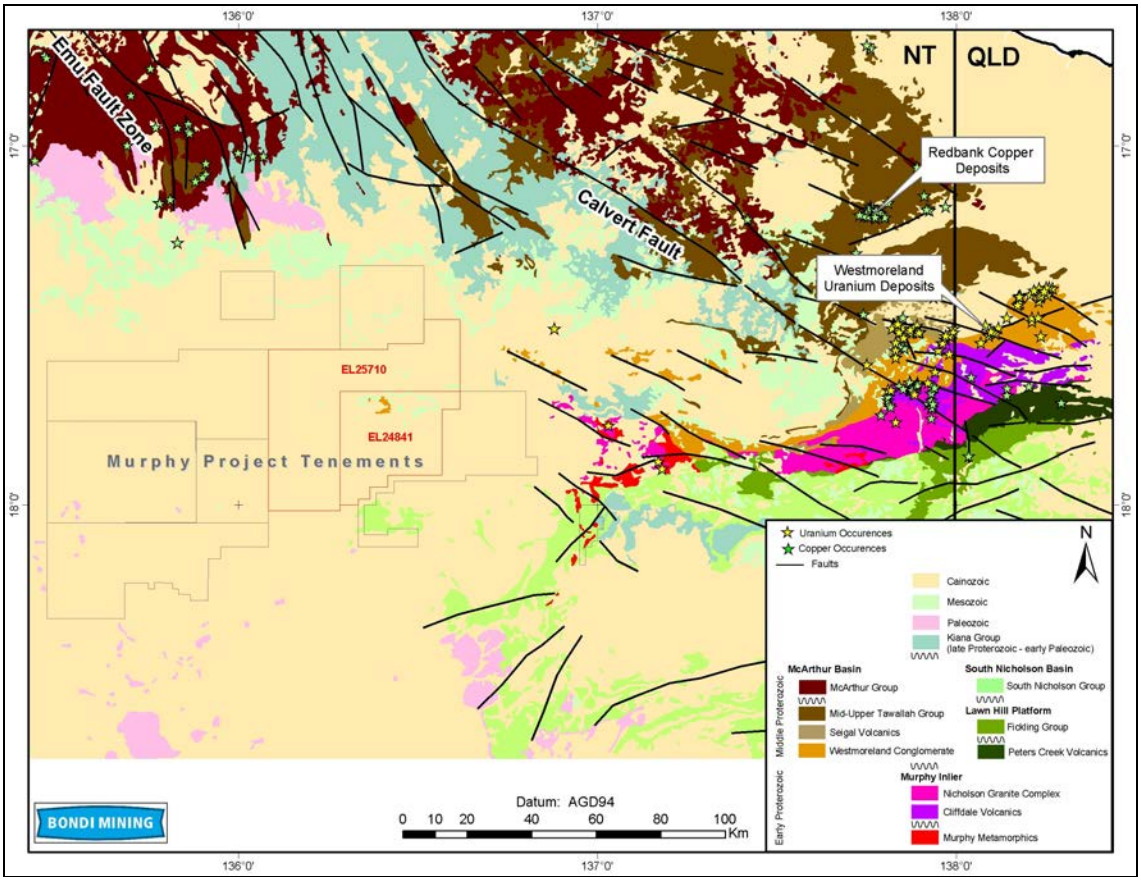

Figure 3 - Simplified regional geology

Phanerozoic cover consists of mostly early to middle Cambrian sediments and basalts, and Cainozoic sediments. Outcropping of Proterozoic rocks in the project area suggests that within EL's 25708, 25709 and 25710 the Phanerozoic cover is not thick, although the airborne magnetics suggest that the Cambrian Georgina Basin limestone and Antrim Plateau Basalt become thicker to the west.

Structurally, the region is cut by a dominantly NW trending series of faults and joints paralleling the Calvert fault. Possible NNW trending extensions of the Emu Fault also pass through the west side of the region under the Phanerozoic cover. A second set of NE trending faults can also be seen paralleling the structural trend of the Murphy Tectonic Ridge. Both sets of faults commonly consist of high angle normal and reverse faults whose intersection appears to form structural blocks displaying horizontal movement and/or tilting. Lateral movement is also common in the NW trending structures. Numerous mafic, commonly doleritic, dykes parallel the faulting and are thought to be cogenetic with the mid Proterozoic volcanics of the Tawallah Group.

Small stratabound disseminated lead – zinc ± copper occurrences, associated with carbonaceous units are found within both the McArthur and Lawn Hill Platform – South Nicholson Basins. Copper mineralisation occurs as unconformity related and breccia pipe occurrences in the region. The latter deposit type forms sub-economic deposits in the Redbank area (**Figure 3**) which were mined on a small scale in the post war era. Minor tin occurrences have also been found around the Nicholson Granite Complex.

The region is best known for the uranium deposits at Westmoreland (Refer to **Figure 3**); notably the Redtree deposit (12,600t U_3O_8), the Junnagunna deposit (5,300t U_3O_8) and the Huarabagoo deposit (3,000t U_3O_8). Mineralisation in these deposits occurs as sandstone hosted uranium within the upper sandstone unit of the Westmoreland Conglomerate, directly below the contact with the Seigal Volcanics, and shows a strong association with fault hosted mafic dykes and sills. Minor mineralisation is also found within other units of the Westmoreland Conglomerate and in shear zones at the unconformity between the Cliffdale Volcanics and Westmoreland Conglomerate. Clusters of minor uranium occurrences area can be found to the west and east of the Westmoreland area, along the northern margin of the Westmoreland Conglomerate. To date only minor unconformity type uranium mineralisation has been found at the unconformity between the Murphy Metamorphics and the Westmoreland Conglomerate.

5 SUMMARY OF PREVIOUS WORK

A comprehensive review of previous mineral exploration was carried out and an outline is presented here. Important information gained from this review includes the following;

First recorded work in the area was by Mount Isa Mines in 1956 and consisted of crude airborne radiometric surveys. The results of this work located the Westmoreland deposits and most likely all of the significant outcropping occurrences.

There was a distinct hiatus in exploration between 1963- 1970, reflecting a slump in the global demand for uranium; the post war proliferation of nuclear weapons had slowed and the nuclear power industry was still in its infancy.

A second wave of exploration commenced in the 1970's as the demand for uranium for use in nuclear power stations increased. Many of the companies were also operating in the Alligator Rivers region, at the northern end of the Pine Creek fold belt, and much of their focus was on this area after the discovery of significant deposits at Jabiluka, Ranger, Nabarlek and Koongarra. The similarity between the two areas was known, however at this time the nature of the Alligator Rivers deposits was poorly understood and exploration was targeted toward roll front and sandstone hosted uranium deposits in both areas. By the time unconformity type uranium deposits were understood, uranium exploration restrictions were in place and work did not resume in the area until recently.

More detailed radiometric surveys have been carried out. This work has revealed many outcropping anomalies related to brecciation, quartz veining (silicification) and iron-metasomatism (ferruginisation) associated with faulting in the Nicholson granite and Murphy Metamorphics. None of these anomalies appear to warrant follow-up work, however they indicate that processes associated with the formation of unconformity type uranium deposits have been active in the early Proterozoic basement.

The region has been explored for gold, base metal (sedex type deposits) and kimberlite hosted diamonds by several major companies. No significant gold or base metal discoveries were made. A large number of diamonds were recovered from Ashton's Creswell prospect outside the licence and the area is currently under a ERL.

An airborne GEOTHEM survey carried out by BHP targeting unconformity U-Au-PGE deposits indicated the usefulness of input EM surveys in targeting unconformity uranium deposits under cover. In particular the ability to locate basement conductors related to graphite in fault zones or clay alteration. Part of the BHP survey covers the current EL.

The western covered region of the Murphy Inlier has the potential to host an unconformity type uranium deposit at depth

A list of the ATPs and ELs previously covering area about EL 24841 is provided in **Table 2.**

Table 2: Previous tenements over EL's 25708, 25709 and 25710

Licence	Company
ATP 444	MIM
ATP 983	Carpentaria Exploration Company
ATP 3401	ESSO Australia
EL 122	Noranda Australia
EL 886 & EL 887	T.W. Cawley and R.A. Weston
EL 1339	AAR Ltd/Otter Exploration "Coolibah" JV
EL1427	Mines Administration/Otter Exploration "Bowgan Creek" JV
EL 1253	Mines Administration/Union Oil JV
EL1234	Mines Administration/ESSO Australia JV
EL 2232	Amoco Minerals
EL 4392 & 4438	Stockdale
EL 4352	Ashton Mining
EL 6836	Carpentaria Exploration Company
EL 7222 & 7223	MIM
EL 8997, 8998, 9163 & 9660	BHP

6 PREVIOUS EXPLORATION BY BONDI AND BUFFALO GOLD

6.1 Summary of Work Completed to December 2007

Buffalo Gold Ltd acquired the Murphy tenements in 2006 and conducted the following exploration:

- A comprehensive review and assessment of previous mineral and diamond exploration work
- An airborne EM and magnetic survey
- A mineral assessment and target selection by Douglas Haynes Discovery Pty Ltd comprising
- Compilation of public domain geological, geochemical and geophysical data;
- An interpretation of the geological and structural data for the region;

A geophysical and geochemical interpretation of available data, incorporating the airborne EM survey.
Selection of potential target areas

After Bondi Mining Ltd acquired the Murphy Project from Buffalo Gold in 2007 the following exploration was conducted:

- Ground and helicopter reconnaissance
- Alpha track etch surveys (UC6, 7, 8, 14, 16, 19, 22)
- Airborne magnetic and radiometric survey covering EL 24841, 25709 and part of EL 25710 (October 2007)

A detailed account and assessment of the 2007 work has been presented in the 2007 Annual Report by D. Hedger.

6.2 Summary of Work Completed to December 2008

In the 2008 period, Bondi carried out programs designed to test some of the targets defined by the assessment of all the previous work to July 2007. Work comprised the following.

- Alpha Track Etch surveys (regional surveys, UC15, 17, 23 and extensions)
- RAB Drilling for uranium (163 holes for 8446m)
- RAB Drilling for phosphate (26 holes for 1214m)
- Down hole gamma log surveys
- 'Hychip' Pima Survey report
- Ionic leach soil sampling (UC17, 19, 24, 25, 26)

6.3 Summary of Work Completed to June 2009

In the 2009 period, Bondi conducted the following exploration to test anomalies and geological targets defined during 2008:

- Ionic leach soil sampling (UC17, 24, 25 infill & extensions)
- Airborne magnetic and radiometric survey covering EL's 26138, 26139, 26140, 25708, the western part of EL 25710 and the eastern part of EL 24694 (April - May 2009)

7 COLLABORATIVE DRILLING PROGRAM

7.1 U19 Drilling

An RC / diamond drill program comprising four drill holes for a total of 1160.5m at target UC19 was completed in June – July 2009. The drilling was designed to test strong geochemical soil anomalies (ionic leach soils), geophysical anomalies (alpha track etch counts), gamma log and geochemical anomalies from the RAB / Air core drilling and also conceptual geology. Refer to Figure 4 for the drill hole locations, Figure 5 for a drill section and Table 3 for the drilling statistics. This program was partially funded by a '$100,000 Collaborative Drilling grant' from the Northern Territory Government.

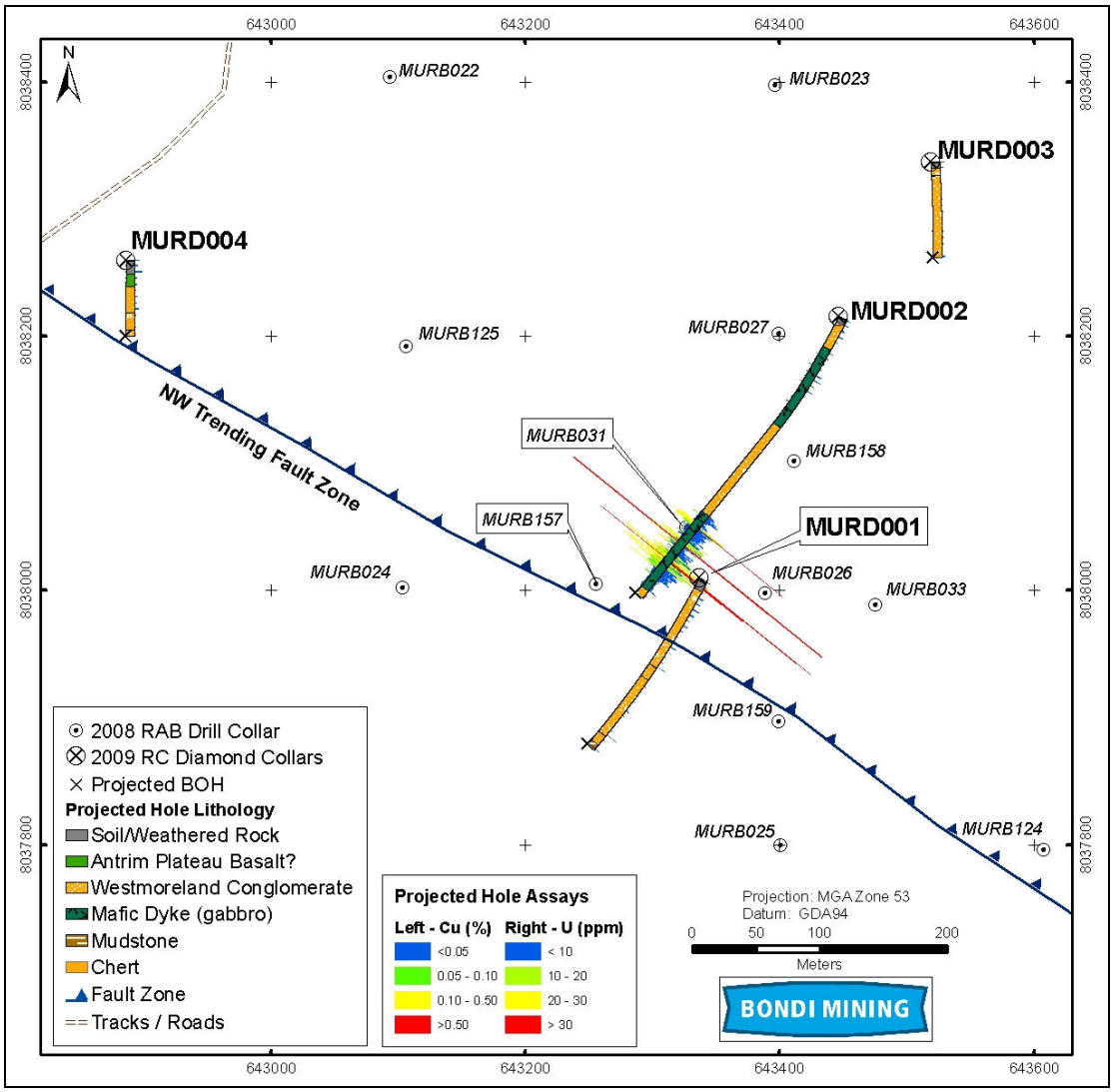

Figure 4 - Location of UC 19 drill holes and projected drill hole traces

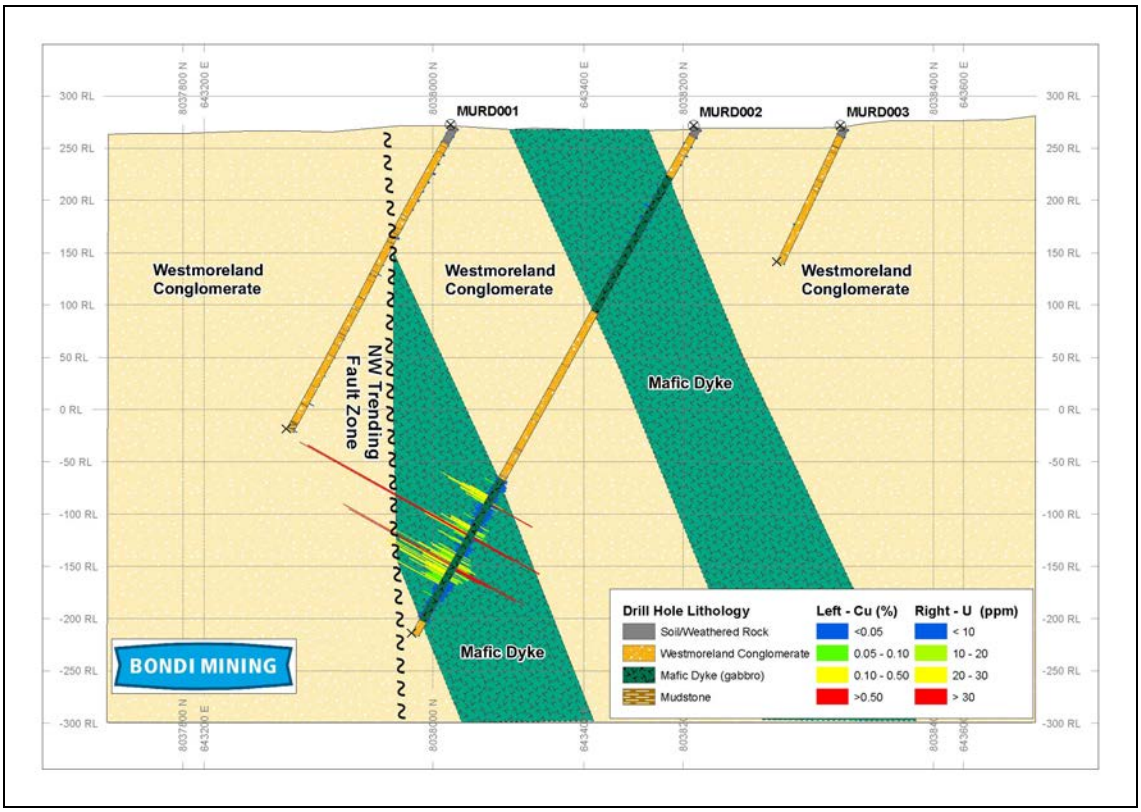

Figure 5 - Drill Cross-section with MURD001, 002 and 003 and interpreted geology

Table 3: UC19 Drilling Statistics

HOLE No.	EASTING (m)	NORTHING (m)	DIP	AZIMUTH (grid)	RC (m)	NQ (m)	Total (m)
MURD001	643337	8038010	-60^0	208.1^0	102	229.4	331.4
MURD002	643447	8038216	-60^0	208.1^0	101.5	454.6	556.1
MURD003	643519	8038337	-60^0	177.1^0	150	nil	150
MURD004	642886	8038260	-60^0	185.1^0	96	27	123
TOTALS	·	·			**449.5**	**711**	**1160.5**

7.2 Drilling Results

7.2.1 Geology

MURD001 was planned targeting a shallow eU_3O_8 anomaly, and the major NW trending fault at UC19. This hole was drilled to a depth of 331.4m, comprising a 102m RC precollar, and a 229.4 NQ diamond tail. Lithologies intersected in MURD001 include: Cainozoic fine grained mudstone (now clay) from a depth of 17m, then quartz arenites (quartzite) of the Upper Proterozoic Westmoreland Conglomerate formation (Westmoreland Conglomerate), to the end of the hole at 331.4m. The NW fault zone was intersected between approximately 120m to 168m, and is described as a broad zone of brittle cataclastic faulting comprising a series of smaller scale brittle shears, and fault gouges within the quartzite. The majority of this hole

contained varying degrees of hematisation, with minor sericite, and clay alteration. This hole was gamma probed, open hole within the precollar, but was not probed through the fault zone due to a blockage in broken ground. MURD001 was terminated in unmineralised fine to medium grained quartz arenites of the Westmorland Conglomerate.

MURD002 was planned as a step out from MURD001 targeting the planar intersections of the NW trending fault, and the unconformity between the Westmorland Conglomerate and the underlying Murphy Inlier. This hole was drilled to a depth of 556.1m, comprising a 101.5m precollar, and 454.6m NQ diamond tail. Lithologies intersected in MURD002 include: Cainozoic aged fine grained mudstone (now clay) and chert to a depth of 10m; medium grained quartzites of the Westmorland Conglomerate to 54m; a coarse grained, anorthite phyric gabbroic dyke to 202.25m; highly silicified Westmorland Conglomerate quartzites to 385.4m; a coarse grained gabbroic dyke to 541.25m; and silicified Westmoreland Conglomerate quartzites to the end of hole at 556.1m. This hole was terminated due to extremely difficult drilling conditions caused by broken ground in the lower gabbro and very hard and abrasive, silicified quartzite, resulting in hole collapse and loss of water circulation. The unconformity was not intersected, although the discovery of two substantial mafic dykes makes this hole very crucial for future interpretation. Alteration intersected in this hole includes: hematisation within the upper Westmorland unit; hematisation, and chlorite alteration in the upper anorthite phyric gabbro; intense silicification, minor clay alteration, and hematisation within the intermediate Westmorland; strong brick red hematisation and associated carbonate veining / brecciation, and chloritisation of the lower gabbro, and intense silicification and hematisation in the lower Westmorland. This hole was gamma probed to the end of hole, within NQ rods. Brick red hematisation and calcite veining is coincident with notable anomalism in eU3O8 values within the lower altered gabbro. Chalcocite copper mineralisation was clearly visible in the carbonate veins in the intensely hematitic zones of the lower gabbro.

MURD003 was an RC only hole aimed at testing the dip of the upper gabbroic dyke intersected in MURD002. The depth of this hole was limited to 150m of RC rods. As the dyke was not intersected by 150m the dyke it is interpreted to have a dip steeper than 60 degrees to the North. This hole was also testing an Ionic Leach soil geochemistry anomaly. Lithologies intersected include: Cainozoic aged fine grained mudstone to 21m, including minor Cambrian Antrim Plateau Basalt near the base; then medium grained sandstone of the Westmorland conglomerate to 150m. Minor hematite alteration was noted in the Westmorland, but no notable mineralization was detected during down hole gamma survey.

MURD004 was planned targeting the planar intersection of the upper gabbro intersected in MURD002 and the NW trending major structure. This hole was drilled to a total depth of 123.1m, comprising a RC precollar to 96m, and a diamond tail to 123.1m. Lithologies intersected include: Cainozoic fine grained mudstone to 22m; Cambrian Antrim Plateau Basalt to 42m; and fine to medium grained Westmorland sandstones and quartzites to 123.1m EOH. This hole was terminated early due to lack of alteration and mineralization.

Refer to **Appendix 1** for the RC / diamond drill hole lithology logs and **Appendix 2** for core photography for MURD001, 002 and 004.

7.2.2 Down hole Radiometrics

A down-hole 27mm gamma probe, winch and accessories were hired from AUSLOG to probe all the drill holes. Full logs and profiles showing gamma response, total count and SP were prepared and are attached as in **Appendix 3**. Holes MURD002, 003 and 004 were surveyed to the end of hole; however, MURD001 was blocked at approx 100m.

7.2.3 Magnetic Susceptibility

Magnetic susceptibility readings were selectively taken at 1m and 2m intervals on MURD002 to determine which rock types have appreciable magnetite. It was discovered that the lower mafic intrusive body, which has strong hematite – carbonate alteration has suffered magnetite destruction, compared with the upper mafic intrusive. Refer to **Appendix 4** for magnetic susceptibility reading for MURD002.

7.2.4 Sampling and Assaying

(i) RC and core sampling:

A 12% split of the total sample (approx 1.5 – 2 kg) from each metre drilled was composited over 2m throughout the RC precollar. The first 2m of the hole, and one 2m sample every 10m, was collected down the hole regardless of whether the total counts were two times background or not. For example the following intervals were collected: 0 – 2m, 8 – 10m, 18 – 20m. If the samples were two times background, or approximately 400 cps (counts per second) a 2m composite sample was collected. The 2m composite samples weighed between 3 – 4 kg.

Core sampling was conducted every 10th metre down the hole whether gamma log values were anomalous or not, however in areas of high gamma log values and also intense carbonate – chlorite – hematite alteration sampling was more intensive. The most anomalous core occurred between 407 – 500m in MURD002, within an altered gabbroic sill. Each sample comprised half core, cut perpendicular to the dominant foliation or bedding.

(ii) Duplicates and Standards:

Duplicate samples of the RC were collected every 20th sample. For example BOM00020, -040, -060. No duplicate samples of the core were collected as that would mean all the core from that interval would be consumed during the analysis. Blanks were inserted into the batch every 50th sample, adjacent to the standards.
The blanks and standards used were prepared by Ore Research and Exploration Pty. Ltd.

(iii) Analysis:

All samples were submitted to ALS in Mt Isa, road freighted to Townville where they were dried, crushed and pulverised (80% less than 75 micron). The pulps were then air freighted to Brisbane where they are being analysed by 'total' or four acid digest with an ICP AES finish (method ME - ICP61) for a suite of 30 elements. Using the same digest uranium will be analysed by ICP MS (method ME - MS62) with a detection limit of 10 ppb U.

7.2.5 Assay Results

Three batches comprising a total of 376 samples (TV09083790, TV09084325 and TV09096788) were received in August and September. These include sampling from holes MURD005 to 007, which were drilled on tenement EL 25710 and holes MURD008 to 010 which were drilled on EL 24694. Refer to **Appendix 5** for assays results from batches TV09083790, TV09084325, TV09096788; and for the best assay results from MURD002 see **Table 4**

MURD002 is the only drill hole with significant uranium and copper mineralisation. The best mineralisation coincided with the highest gamma log values, and most intense carbonate veining and hematite alteration, as uranium and copper mineralisation appear to be synchronous, or at least within the same intervals. The copper mineral is dominantly chalcocite, which is up to 30% in narrow bands several cm wide and often strongly fractured to brecciated.

Table 4: Best uranium and copper mineralization in MURD002

HOLE	FROM	TO	INTERVAL	U3O8 PPM	Cu PPM
MURD002	405	504	99m	14.2	1260
MURD002	480	480.5	0.5m	107	6670
MURD002	447	449	2m	85	1%

8 PHASE 2 DRILLING

The phase two drilling comprises the Round 1 Collaborative Drilling funded UC19 drilling, the UC17 drilling, located approximately 25km to the ENE from UC19, and also three RC holes drilled at UC25. Only the UC17 drilling will be described in this section of the report.

8.1 UC17 Drilling:

Drilling at UC17 comprised an E-W fence of vertical RC/ diamond holes across an Ionic Leach geochemistry anomaly and coincident track etch anomaly situated on the NNW trending Emu Fault Zone, over favourable lithologies of interpreted Westmorland Conglomerate, and Siegal Volcanics. A total of three holes were drilled for 265m RC, 244.8m NQ, and 43.2m HQ for a total of 553m. Refer to **Figure 6** for the drill hole locations, **Figure 7** for a drill section and **Table 5** for the drilling statistics. This program was not funded by the '$100,000 Collaborative Drilling grant' from the Northern Territory Government, however, the core was sent to the core storage facility in Darwin as no previous diamond drilling has been completed in this area.

Table 5: UC17 Drilling Statistics

TARGET	HOLE ID.	EASTING (m)	NORTHING (m)	DIP	RC (m)	HQ (m)	NQ (m)	Total (m)
UC17	MURD005	669200	8049701	-90^0	102			102
UC17	MURD006	668790	8049700	-90^0	97	7.6	165.9	270.5
UC17	MURD007	668999	8049698	-90^0	66	35.6	78.9	180.5
TOTALS	·	·	·		**265**	**43.2**	**244.8**	**553**

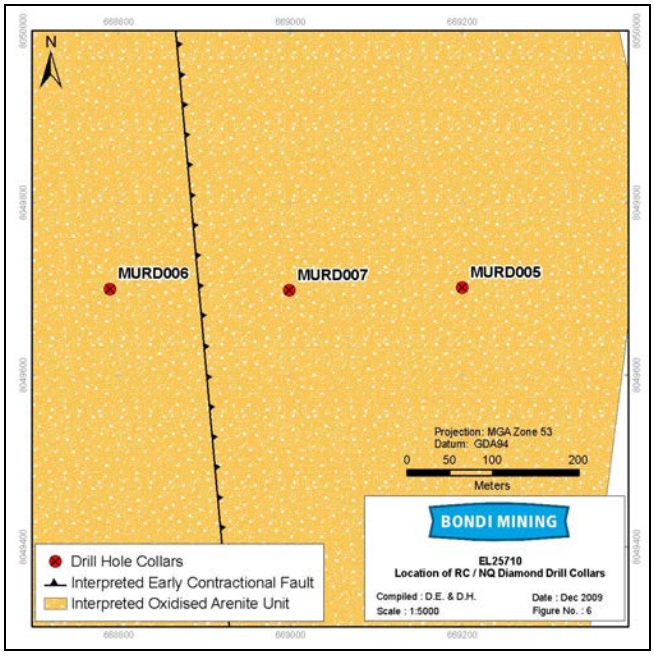

Figure 6 - Location RC / Diamond UC17 drill collars

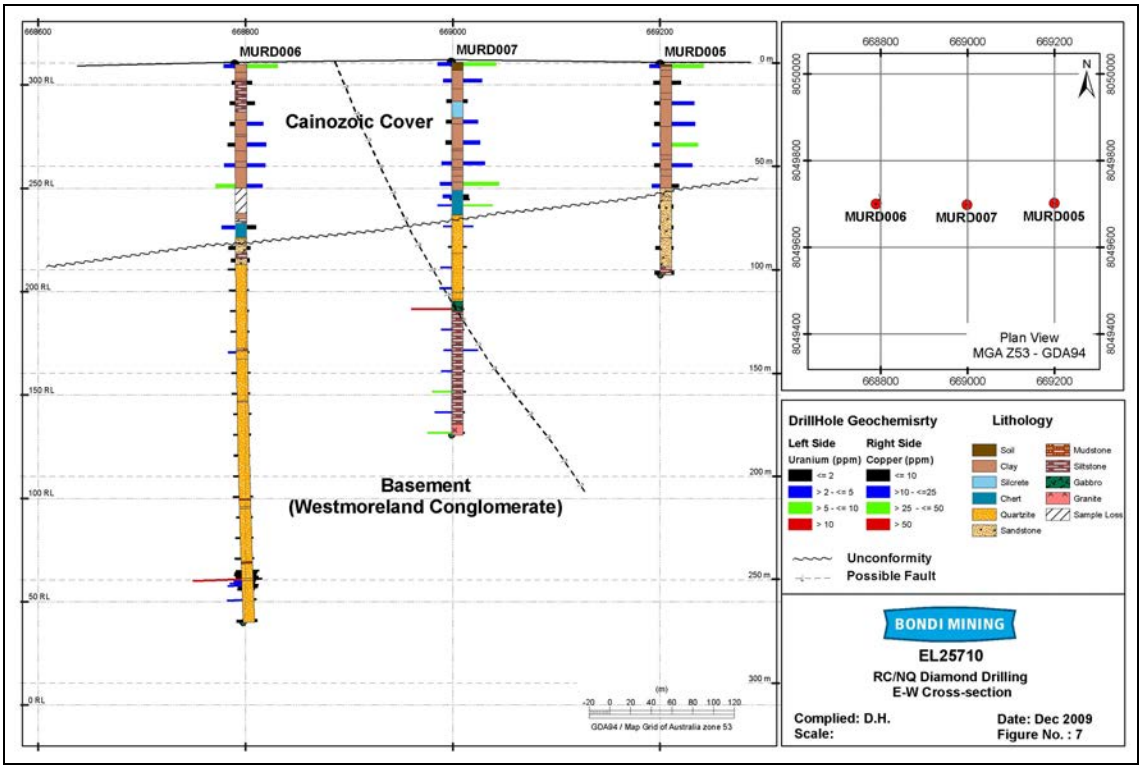

Figure 7 - EW Drill Cross-section and interpreted geology

8.1.1 Geology

MURD005 was planned as a shallow RC only hole targeting the eastern side of the Emu Fault Zone, and was to 'double' as a water bore for further UC17 Diamond drilling. Lithologies intersected include: Cainozoic mudstone to 60m; and sandstones, possibly from the Westmorland Conglomerate, to 102m. Alteration consisted of weak hematisation.

MURD006 was planned to test the centre portion of the Ionic Leach soils geochemistry anomaly on the Western side of the Emu Fault Zone. This hole was drilled to a final depth of 270.5m comprising RC to 97m, HQ to 104.6m, and NQ to 270.5m. Lithologies intersected in MURD006 include: Cainozoic mudstone, siltstones, and chert to 84m; and Westmorland Conglomerate quartzites, with interbedded siltstone, and mudstone to 270.5m. Notable alteration included moderate, to strong hematisation with minor chlorite in sandstones of the Westmorland Conglomerate.

MURD007 was planned to test the Ionic Leach soil geochemistry anomaly proximal to the Western edge of the Emu Fault Zone. This hole was drilled to a final depth of 180.5m, consisting of a RC precollar to 66m, HQ collar to 101.6m, and NQ to 180.5m. Lithologies intersected include: Cainozoic mudstone, and chert to 111.5m; Westmorland Conglomerate quartzite, and mudstones to 115.5m; gabbro(?) to 120.3m, dark grey siltstone to 175.3m (originally logged as basalt), and coarse grained hematitic granite to 180.5m. The unconformity, between the Meso - Proterozoic Westmoreland Conglomerate and the Palaeo-Proterozoic metasediments is at approx 120m between the gabbro and the siltstone as the bedding is at a very low angle to core axis of $<10^0$ in the siltstone. This hole intersected substantial faulting, to brecciation between 115m and 137m which is probably due to the Emu Fault Zone.

Refer to **Appendix 1** for the RC / diamond drill hole lithology logs and **Appendix 2** for core photography for MURD006 and 007.

8.1.2 Down hole Radiometrics

A down-hole 27mm gamma probe, winch and accessories were hired from AUSLOG to probe all the drill holes. Full logs and profiles showing gamma response, total count and SP were prepared and are attached as in **Appendix 3**. Hole MURD005 was surveyed open hole to 55m where it was blocked. Hole MURD006 was surveyed to the end of hole and MURD007 was surveyed to a depth of 179m.

8.1.3 Magnetic Susceptibility

Magnetic susceptibility readings were selectively taken at 1m and 2m intervals holes MURD005 to MURD007 to determine which rock types have appreciable magnetite. Refer to **Appendix 4** for magnetic susceptibility reading for these drill holes.

8.1.4 Sampling and Assaying

Refer to section 7.2.4, above for a description of the sampling, preparation and analysis of these samples.

8.1.5 Assay Results

Three batches comprising a total of 376 samples (TV09083790, TV09084325 and TV09096788) were received in August and September. These include sampling from holes MURD008 to 010 which were drilled on EL 24694. Refer to **Appendix 5** for assays results from batches TV09083790, TV09084325, TV09096788; and **Table 6** for the best assay results from MURD005 to MURD007.

MURD005 did not return anomalous geochemical. The highest U in this hole was 2.8ppm in the surface sample at 0-2m. This is probably due to the presence of iron pisolite (nodules) in the top 2m.

MURD006 located a small zone of anomalous uranium (up to 12.8ppm) in hematite altered quartzite between 249m-254m. This zone also displayed elevated arsenic, lead and lanthanum. A zone of elevated uranium (up to 5.1ppm) with anomalous zinc (710ppm) was also located higher in the hole at 58m and corresponded to a ferruginous zone just above the Cainozoic unconformity. This thought to be a redox zone in the younger sediments which is scavenging base metals and uranium.

MURD007 intersected a zone of elevated U (up to 10.5ppm), with coincident high Lanthanum, at 119m in brecciate and hematite/chlorite altered quartzite (possible an altered gabbro dyke). This zone may represent the basement unconformity or fault zone. The hole terminated in siltstones which contain U varying between 4 and 6ppm. A strong ferruginous zone in the Cainozoic at 69m (just above the Cainozoic unconformity) returned anomalous zinc (2030ppm) and lead (310ppm). Like the similar zone in MUR006 this thought to be redox zone, which is scavenging base metals.

Table 6: Best uranium and copper assays from UC17 drilling

HOLE	FROM	TO	INTERVAL	U PPM	Cu PPM	Fe%	Lithology
MURD005	0	2	2	2.8	34	13	Pisolite
MURD006	249	250	1	12.8	10	5.4	Sandstone
MURD007	119	120	1	10.6	1	8.7	Unconformity

9 CONCLUSIONS

9.1 UC19 Drilling

An RC / diamond drill program comprising four drill holes for a total of 1160.5m at target UC19 was completed in June – July 2009, to test strong geochemical soil anomalies, alpha track cup anomalies, gamma log and geochemical anomalies from the RAB / Aircore drilling and also conceptual geology:

MURD001 intersected Cainozoic fine grained mudstone from a depth of 17m, then quartz arenites (quartzite) of the Upper Proterozoic Westmoreland Conglomerate formation, to the end of the hole at 331.4m. The NW fault zone was intersected between approximately 120m to 168m and comprises a broad zone of brittle cataclastic faulting with smaller brittle shears, and fault gouges within the quartzite. The majority of this hole contained varying degrees of hematisation, with minor sericite, and clay alteration.

MURD002 intersected Cainozoic mudstone and chert to a depth of 10m; medium grained quartzites of the Westmorland Conglomerate to 54m; a coarse grained, gabbroic dyke, or sill to 202.25m; highly silicified Westmorland Conglomerate quartzites to 385.4m; a coarse grained gabbroic dyke to 541.25m; and silicified Westmoreland Conglomerate quartzites to the end of hole at 556.1m. This hole was terminated due to extremely difficult drilling conditions caused by broken ground in the lower gabbro and very hard and abrasive, silicified quartzite. resulting in hole collapse and loss of water circulation.

The alteration intersected in MURD002 comprises hematisation within the upper Westmorland unit; hematisation, and chlorite alteration in the upper gabbro; intense silicification, quartz – sericite alteration and minor clay alteration and moderate hematisation within the intermediate Westmorland; chloritisation, strong ‘brick red’ hematisation and associated carbonate veining to brecciation, within the lower gabbro, and intense silicification and hematisation in the lower Westmorland conglomerate.

MURD002 intersected significant uranium and copper mineralisation in the lower gabbro. The copper mineral is dominantly chalcocite, which is up to 30% in narrow bands several cm wide and often strongly fractured to brecciated. The mineralised interval included 99m at 1260 ppm Cu and 14.2ppm U between 405 to 504m, including 2m at 1% Cu and 85ppm U from 447m.

9.2 UC17 Drilling

An RC / diamond drill program comprising three drill holes for a total of 553m at target UC17 was completed in August 2009, to test strong geochemical soil anomalies (coincident U and Pb), alpha track cup anomalies, and favourable stratigraphy adjacent to the Emu Fault:

MURD005 intersected Cainozoic mudstone to 60m; and sandstones, possibly from the Westmorland Conglomerate, to 102m. Alteration consisted of weak hematisation. The only significant uranium occurred between 0 – 2m assaying 2.8ppm U in iron pisolite and shallow soil.

MURD006 intersected Cainozoic mudstone, siltstones, and chert to 84m; and Westmorland Conglomerate sandstone, with interbedded siltstone, and mudstone to 270.5m. Notable alteration included moderate, to strong hematisation with minor chlorite in sandstones of the Westmorland Conglomerate. The interval 249 – 250m returned an assay of 12.8ppm U, within sandstone.

MURD007 intersected Cainozoic mudstone, and chert to 111.5m; Westmorland conglomerate quartzite, and mudstones to 115.5m; mafic intrusive (gabbro?) to 120.3m, dark grey siltstone to 175.3m, and coarse grained, hematitic granite to 180.5m. The unconformity, between the Meso - Proterozoic Westmoreland Conglomerate and the Palaeo-Proterozoic metasediments is at approx 120m. Substantial faulting, to brecciation was intersected between 115m and 137m which is probably due to the Emu Fault Zone.

No significant uranium or copper mineralisation was intersected in the drilling at UC17, however the best assay result comprised 1m at 12.8ppm U, 10ppm Cu and 5.4% Fe from MURD006, 249 to 250m.

Appendix 1: **RC / diamond drill hole lithology logs**
(MS excel Spreadsheets)

Appendix 2: **Core photography for MURD001, 002, 004, 006 and 007**
(JPEG Files)

Appendix 3: **RC / Diamond Drilling Gamma Logs**
(MS excel Spreadsheets)

Appendix 4: **Magnetic susceptibility readings**
(MS excel Spreadsheets)

Appendix 5: **RC / Diamond Drilling Assay Results**
(MS excel Spreadsheets)

Appendix 6: **Invoice for Round 1 Collaborative Drilling**
(PDF)