

NABARLEK ML (MLN962)

Annual Technical Report for the Period 23/03/14 – 22/03/15

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NABARLEK MINERAL LEASE, WEST ARNHEM LAND, NORTHERN TERRITORY

EXECUTIVE SUMMARY

Nabarlek Mineral Lease North 962 (MLN962) is located in the western portion of the Arnhem Land Aboriginal Reserve, 28km east of the Gunbalanya (Oenpelli) Aboriginal Community and approximately 300km east of Darwin.

MLN962 contains the Nabarlek Uranium Mine which historically produced a total of 24.4 million pounds U_3O_8 at an average grade of 1.84% U_3O_8 (40.5 lb/tonne U_3O_8) between 1978 and 1988.

Uranium Equities Limited (UEQ, the Company) acquired the mineral lease with the purchase of Queensland Mines Pty Ltd in mid-2008. UEQ believes that the region provides outstanding potential to discover additional economic high grade uranium mineralisation in the vicinity of the historical mine.

Field work during the reporting period comprised RC drilling of eight holes for a toal of 1,759m on three target areas, Nabarlek Deeps, Gateway and Boomerang West. No significant results were reported.

In addition to drilling, the Company completed a program of resampling selected drilling (both UEQ and historical) which was anlysed for short wave infrared spectra as part of a program to characterise the alteration pattern at the historical Nabarlek deposit. This work included spectra measured by the NTGS HyLogger of selected historical holes which had been drilled beneath the Nabarlek pit.

This alteration study identified a zone of 'Nabarlek-style' alteration beneath the Oenpelli Dolerite which truncates the deposit. In addition 3D modelling of available geological datasets has recognized possible vectors to mineralisation which have not prebviously been tested and which will be targeted by drilling in the coming reporting period.

To support this drilling program the Company has applied for collaborative funding under the NTGS 'Bringing Forward Discovery' collaborations co-funding drilling proposal.

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1 INTRODUCTION

1.1 Location

Nabarlek Mineral Lease North 962 (MLN962) is located in the western portion of the Arnhem Land Aboriginal Reserve, 28km east of the Gunbalanya (Oenpelli) Aboriginal Community and approximately 300km east of Darwin. It lies within the Alligator River (SD5301) 1:250,000 and the Oenpelli (5573) 1:100,000 Map Sheets.

MLN962 contains the historical Nabarlek Uranium Mine which was discovered by Queensland Mines Pty Ltd (QMPL) in June 1970 via the follow-up of a prominent airborne radiometric anomaly in outcropping basement lithologies.

Nabarlek produced a total of 24.4 million pounds U_3O_8 at an average grade of 1.84% U_3O_8 (40.5 lb/tonne U_3O_8) between 1978 and 1988. Open cut mining was completed in four months and 11 days (one dry season), starting in June 1979 and finishing in October 1979. During this time 546,437t of ore grading 1.84% U_3O_8 and 157,000t of mineralised waste grading 0.05% U_3O_8 was stockpiled.

The processing mill at Nabarlek started operation in June 1980 and continued until 1988, by which time $11,084t U_3O_8$ had been produced (Lally & Bajwah, 2006).



Figure 1: Location Map



1.2 Tenement Status

Mineral Lease North 962 (MLN962) was initially granted on the 23rd March 1979 to QMPL (formerly Queensland Mines Limited).

Following the completion of mining operations, the Mineral Lease remained an asset of QMPL until the company was purchased by Uranium Equities Limited in 2008. The tenement is 1,278.9ha in area and is bounded by exploration licence EL10176 held in a joint venture partnership between Uranium Equities Limited (40%) and Cameco Australia Pty Ltd (60%).

With Uranium Equities Limited assuming ownership and management of the Mineral Lease, an initial Mine Management Plan (MMP) was lodged in May 2008 covering the proposed exploration program and the outstanding legacy rehabilitation obligations. The MMP was approved by the regulatory authorities on 9th September 2008 and a bond lodged with the NT Government. The MMP Authorisation is renewed annually.

1.3 Aboriginal Heritage

The project area lies within the Arnhem Land Aboriginal Reserve and is therefore freehold Aboriginal Land. All personnel entering the project area are required to obtain the appropriate Northern Land Council (NLC) permit.

Permission to explore over Aboriginal Freehold land is gained via Exploration Agreements with the relevant Traditional Owners under the Commonwealth *Aboriginal Land Rights (NT) Act.*

QMPL had both an exploration agreement and a settlement deed with the NLC. QMPL was specifically given the right to undertake exploration on MLN962 pursuant to the Nabarlek Settlement Deed (clauses 3.4 and 3.5) and in accordance with the applicable provisions of the Exploration Agreement.

Upon purchase of the Mineral Lease, Uranium Equities Limited provided a verbal undertaking to the NLC to adhere to the requirements set out in the existing QMPL agreements and to also initiate discussions to re-negotiate the Exploration Agreement to be more in keeping with those for the surrounding Uranium Equities Limited-Cameco Joint Venture tenements.

Legislation requires that all sacred, cultural and heritage sites are initially documented by the Traditional Owners and NLC Anthropologists and Archaeologists prior to exploration commencing. This information is then utilised to determine 'No-Go' areas.

Prior to issuing the Nabarlek Mineral Lease to QMPL, six sites were identified and surveyed by the Northern Territory Lands Branch surveyors to obtain their protection under the legislation of the time. One of the surveyed sites, Gabo Djang or Green Ant site, is located immediately south-west of the Nabarlek Pit. QMPL retained confidential records of ten other sites in the vicinity and ensured that mine staff did not intrude on those areas. These areas remain 'No-Go' areas for Uranium Equities Limited personnel.

Uranium Equities Limited liaises with the Traditional Owners each year to discuss future exploration activities and have developed a strong professional relationship, which includes employment in exploration and rehabilitation activities.

1.4 Access

Access to the site is via the unsealed and seasonal Oenpelli – Maningrida road from Cahill's Crossing at the East Alligator River to the 'Three Ways' intersection to the Coburg Peninsula. From there, access is via the old Nabarlek Mine access road to the Mineral Lease. There is good vehicular access throughout the Mineral Lease due to pre-existing mine infrastructure.



Access to site is also possible using a light plane direct from Darwin, to land on the allweather sealed airstrip at the Nabarlek Mineral Lease. Uranium Equities Limited has established a semi-permanent field camp adjacent to the airstrip (Figure 2).



Figure 2: Aerial View of Nabarlek

2 PROJECT GEOLOGY

2.1 Conceptual Model

The primary focus of exploration on the Nabarlek ML is for the discovery of a high grade Nabarlek-style uranium deposit. Nabarlek is an unconformity-associated uranium deposit whereby mineralisation is concentrated within structural zones, spatially associated with a regional unconformity between flat-lying siliciclastic basinal sediments and the underlying metamorphic basement rocks.

The highly prospective nature of the Alligator Rivers Region for this type of mineralisation is demonstrated by the presence of economic uranium deposits not only at Nabarlek, but also at Ranger, Jabiluka and Koongarra.

In addition to uranium, significant gold, platinum and palladium resources are present at existing uranium occurrences within the Alligator Rivers Uranium Field (Ranger, Jabiluka, Koongarra and Coronation Hill/South Alligator Valley-style deposits) suggesting that economic mineralisation of gold and PGE's (Platinum Group Elements) associated with economic or sub-economic Uranium may also be present within the project area.

2.2 Geological Setting

The Nabarlek Mineral Lease is located within a small embayment on the northern edge of the Arnhem Land Plateau and comprises gently undulating terrain of red-yellow coloured lateritic soils and transported sands.

Outcrop within the Mineral Lease area is poor, with most of what is known of the geology having been derived from drilling within the Mineral Lease and mapping in the old open pit.

The oldest rocks are a sequence of Early-Proterozoic metamorphosed sediments (semipelites), schists and amphibolites termed the Myra Falls Metamorphics. This unit is considered to be stratigraphically equivalent to the Cahill Formation in the western part of the Alligator Rivers Uranium Field and forms the host lithologies of the Nabarlek Deposit.



Figure 3: Geological Framework of the Nabarlek Region

The Myra Falls Metamorphics are faulted against the Nabarlek Granite which has been intersected in two deep drillholes beneath the Nabarlek Deposit (Wilde and Wall, 1987). This granite also outcrops a few kilometres to the northeast of MLN962 on the adjacent exploration licence EL10176 (Figure 3).

Mid-Proterozoic, shallow-dipping Mamadawerre Sandstone (Kombolgie Formation) unconformably overlies the sequences described above, forming an extensive inaccessible plateau to the immediate north, west and south of the Mineral Lease (Figure 3).

Drilling in the pit environs has revealed that the Mamadawerre Sandstone forms extensive subcrop areas blanketing the basement geology. Between 10 and 50m of sandstone and basal conglomerate sequences occur beneath the current land surface in areas covered by soils and transported sands. These cover sequences (both transported and in-situ) would effectively obscure mineralisation that may occur at the unconformity position or associated with a structural zone.

The metamorphic basement sequences in the Mineral Lease area have been intruded by the late stage Oenpelli Dolerite, which comprises a significant part of subcropping lithologies found immediately north of the open pit site. In the Ponds Prospect, the Oenpelli Dolerite forms a shallow southerly dipping 250m thick dolerite dyke that also forms the base of mineralisation in the Nabarlek Pit.

Mineralisation at Nabarlek is believed to be at least partially controlled by the Nabarlek Shear Zone, which forms a NW–SE trending structure through the Mineral Lease. The Nabarlek Shear Zone may provide the important favourable structural focus for mineralisation.

Recent drilling has revealed that the dolerite may also intrude through the overlying Mamadawerre Sandstone sequence and has been found to sill along the regional unconformity between basement sequences and the overlying Mamadawerre Sandstone.



Like the surficial transported sediments and subcropping Mamadawerre Sandstone, the dolerite has the potential to mask the surface expression of any additional mineralisation and structural zones.

2.3 Previous Investigations

QMPL discovered surficial uranium mineralisation in the Nabarlek region in June 1970 from following up of an intense airborne radiometric anomaly.

Initial exploration work included trenching, mapping, scintillometer surveys and rock chip sampling. The program quickly moved to exploration and resource drilling, which was completed in December 1971. The majority of this drilling concentrated on delineating the Nabarlek orebody with only minimal exploration work conducted on the remainder of the Mineral Lease.

Following government approvals, the Nabarlek Mine was operated by QMPL from 1978 until 1988. Mining was conducted in one campaign of 143 days duration in the dry season and the ore was stockpiled on a custom built impermeable pad. The mill was built through the following wet season and milling of the stockpiled ore commenced in 1980. A total of 606,700t of ore was milled to produce 11,084t of U_3O_8 . During this process 2.3Mt of waste rock material was temporarily stockpiled and 595,900t of tailings material was deposited in the mined out pit.

No exploration activities occurred within the Mineral Lease during the period of 1973 to 1981. Exploration work did resume in 1981, with geochemical soil and track etch radon surveys conducted over parts of the Mineral Lease. Drilling was conducted from 1983 to 1984 targeting eight anomalous zones identified from the surveys.

No further exploration work on MLN962 was conducted until 1994, when Afmeco Mining and Exploration Pty Ltd (AFMEX) conducted a program of percussion drilling with diamond tails around the margins of the Mineral Lease.

Following this program, there has been no additional work carried out on MLN962 prior to Uranium Equities Limited involvement in 2008. However a number of airborne surveys have been conducted over the Mineral Lease as part of wider regional surveys conducted by Cameco Australia Pty Limited, including radiometrics, magnetics, hyperspectral and electromagnetic (GEOTEM/TEMPEST) surveys.



3 WORK COMPLETED BY UEL IN PREVIOUS YEARS

3.1 2008 Field Season

Uranium Equities began exploring MLN962 in 2008. The work program completed during the first year consisted predominantly of an extensive process of compiling and validating available datasets for the project area with field operations consisting of limited reverse circulation (RC) and aircore drilling campaigns.

Drilling operations were restricted to disturbed areas within the Nabarlek mine/mill perimeter fence. RC drilling focused on the Nabarlek Pit environs, while aircore drilling tested strike extensions of the Nabarlek Shear.

Significant results were received from the on-site XRF analytical work. Using a 200ppm U_3O_8 cut-off, better intercepts are presented below in Table 1.

Drillhole	MGA_N	MGA_E	Azi	Dec	TD	Intercept (XRF Results)
NMLR015	8638743	317399	225	-60	115	1m @ 588ppm U ₃ O ₈ from 37m
NMLR026	8638256	317847	225	-60	150	17m @ 799ppm U₃O₅ from 65m (inc. 7m @ 1444ppm U₃O₅ from 68m)
NMLR027	8638308	317803	225	-60	126	1m @ 451ppm U ₃ O ₈ from 72m

Table 1: 2008 RC Drilling Intercepts

Further details and discussion on the exploration program can be found in the Annual Technical Report (Williamson 2009).

3.2 2009 Field Season

In June 2009, Uranium Equities commissioned a 797 station gravity survey. The survey was aimed at identifying potentially mineralised structures underneath the cover sediments, particularly associated with offsets of the Nabarlek Shear.

A radon survey was carried out in October 2009. The purpose of the survey was to determine the effectiveness of the technique over the known Nabarlek mineralisation and to try to identify hidden targets beneath cover sequences elsewhere within the Mineral Lease.

The 2009 RC drilling program focused around the historical Nabarlek pit and the north-western edge of the lease. Significant results were received from the on-site XRF analytical work. Using a 200ppm U_3O_8 cut-off, better intercepts are presented below in Table 2.

Table 2: 2009 KC Drilling Intercepts									
Drillhole	MGA_E	MGA_N	Azi	Dec	TD	Intercept (XRF Results)			
NMLR031	317890	8638245	225	-60	202	2m @ 200ppm U ₃ O ₈ from 102m			
NMLR034	317736	8638331	225	-60	170	1m @ 591ppm U ₃ O ₈ from 50m			
NMLR034	317736	8638331	225	-60	170	2m @ 621ppm U ₃ O ₈ from 72m			
NMLR035	317803	8638385	225	-60	160	3m @ 485ppm U ₃ O ₈ from 118m			
NMLR036	317841	8638426	225	-60	208	2m @ 348ppm U ₃ O ₈ from 44m			
NMLR063	317750	8638813	135	-60	94	2m @ 226ppm U ₃ O ₈ from 0m			

Table 2: 2009 RC Drilling Intercepts

Further details and discussion on the exploration program can be found in the Annual Technical Report (Bennett and Williamson 2010).



3.3 2010 Field Season

An extensive aircore program was designed and implemented to broadly cover the mineral lease to delineate areas of near surface anomalism. Based on the aircore drilling three areas were then followed up with RC drilling.

The combination of aircore and RC drilling highlighted the Boomerang, Bullroarer and Clapstick Prospects (Figure 4). Best intercepts are provided below in Table 3 and Table 4 for the aircore and RC drilling respectively.



Figure 4: Prospects and Anomalism at Nabarlek

Drillhole	MGA_E	MGA_N	Azi	Dec	TD	Intercept (XRF Results)			
NMLA098	318595	8641643	0	-90	16	10m @ 120ppm U ₃ O ₈ from 3m			
NMLA320	318984	8641461	0	-90	18	9m @ 400ppm U ₃ O ₈ from 5m (inc.1m @ 1580ppm U ₃ O ₈ from 12m)			

Table 3: 2010 Aircore Drilling Intercepts

Drillhole	MGA_E	MGA_N	Azi	Dec	TD	Intercept (XRF Results)			
NMLR106	317391	8641002	221	-60	100	2m @ 1465ppm U_3O_8 from 55m 1m @ 230ppm U_3O_8 from 60m			
NMLR113	319328	8639773	176	-60	120	4m @ 324ppm U ₃ O ₈ from 60m			
NMLR115	319134	8639815	176	-60	136	11m @ 1138ppm U ₃ O ₈ from 21m 12m @ 791ppm U ₃ O ₈ from 46m (inc. 8m @ 1014ppm U ₃ O ₈ from 46m)			

Table 4: 2010 RC Drilling Intercents

Further details and discussion on the exploration program can be found in the Annual Technical Report (Reed and Bradley 2011).



3.4 2011 Field Season

The main focus for exploration work in 2011 was the Bullroarer, Clapstick and Boomerang Prospects. The RC drilling program undertaken in July 2011 was designed to extend the drill coverage over the Nabarlek-Boomerang Structural Corridor (Figure 4) and to further test the basement anomaly within the Boomerang Prospect. A total of 47 RC drillholes were drilled for 4,935 metres.

Drilling within the Nabarlek-Boomerang Structural Corridor highlighted areas of strong hematite alteration, brecciation and quartz veining. This confirmed that there are complex structures in the area and that they are associated with strong alteration. Anomalous uranium values were also encountered within the Boomerang Prospect extending the known mineralisation. Table 5 shows significant RC results.

Drillhole	MGA_E	MGA_N	Azi	Dec	TD	Intercept (NTEL Lab Results)		
NMLR162	317291	8640829	-	-90	154	3m @ 824ppm U_3O_8 from 97m 2m @ 540ppm U_3O_8 from 116m 5m @ 1610ppm U_3O_8 from 121m		
NMLR173	317256	8640935	-	-90	244	5m @ 632ppm U_3O_8 from 104m 5m @ 554ppm U_3O_8 from 113m 4m @ 371ppm U_3O_8 from 156m 4m @ 352ppm U_3O_8 from 192m		

2014 DC Drilling Intercente

A detailed ground gravity survey over the north western parts of the Nabarlek Mineral Lease was undertaken by Geophysical consultants Atlas Geophysics Pty Ltd in September 2011 with a total of 1,637 gravity stations collected on a 50 x 50m grid pattern. The survey was designed to focus on areas with thin Kombolgie Sandstone cover sequences in the attempt to define basement structures (Figure 5).



Figure 5: Nabarlek ML – Ground Gravity and 2011 Drilling

Further details and discussion can be found in the Annual Technical Report (Reed 2012).



3.5 2012 Field Season

No field work was completed during the 2012 reporting period. Work completed was restricted to office based research and targeting, including;

- Reprocessing and interpretation of recently acquired geophysical datasets to assist with the structural interpretation of the Nabarlek ML;
- Re-logging of all RC drill chips; and
- On-going review of historical geological and geophysical data to generate potential exploration targets.

Further details and discussion on the exploration program can be found in the Annual Technical Report (Williamson 2013).

3.5 2013 Field Season

No field work was completed during the 2013 reporting period. Work completed was restricted to office based research and targeting, including;

- Submission to the NTGS of a 'Bringing Forward Discovery' collaborations co-funding drilling proposal to test the 'Nabarlek Deeps' concept
- 3D modelling of key target areas.

Although the co-funding proposal was approved, the Company was unable to raise sufficient funds at that time to drill the targets. Consequently the co-funding was not taken up.

Further details and discussion on the exploration program can be found in the Annual Technical Report (Williamson 2013).



4 WORK COMPLETED DURING THE CURRENT REPORTING PERIOD

During the reporting period the Company complete an RC drilling campaign targeting the Nabarlek Deeps (the subject of the 2013 co-funding submission), Boomerang West and Gateway targets (Figure 6)



Figure 6: 2014 RC Drilling Location on Aerial Photo

RC drilling contractors Profile Drilling mobilised to site in July and completed a total of eight RC drillholes (NMLR205 – NMLR212) for a total of 1,759m.

Drillhole details are summarised in Table 6 below and RC drill collars, downhole survey and drill logs are provided in Appendices 1, 2 and 3 respectively.



		Fasting	Northing				Total	A	Assay Results (>0.02% U₃Oଃ)			
Hole No	Prospect	(MGA94Z53)	(MGA94Z53)	RL	Azi	Dec	Depth (m)	From (m)	To (m)	Interval	Grade	
								(111)	(111)	(111)	(70)	
NMLR205	Gateway	315131	8639592	96	45	-60	192		no signifio	cant results		
NMLR206	Gateway	315029	8639471	96	45	-60	252		no signific	cant results		
NMLR207	Nabarlek Deeps	317913	8638966	82	225	-60	348	no significant results				
NMLR208	Nabarlek Deeps	318017	8639085	75	225	-60	346	no significant results				
NMLR209	Boomerang West	316806	8640705	82	225	-60	120	no significant results				
NMLR210	Boomerang West	316761	8641075	80	225	-60	132	no significant results				
NMLR211	Boomerang West	316675	8640992	80	225	-60	138	no significant results				
NMLR212	Nabarlek Deeps	317801	8638870	90	225	-60	231		no signifio	cant results		

Table 6: 2014 RC Drilling Intercepts

The 'Nabarlek Deeps' target was described in Wlliamson (2013) and is related to the recognition that the emplacement of mineralisation at Nabarlek was controlled by the Nabarlek Shear, a NNW trnding structure which cuts the deposit. At depth, the shear and mineralisation are truncated by the Oenpelli Dolerite, which sills beneath the deposit and is thought to be a heat engine for mobilisation of uranium mineralisation. The concept is therefore that the Nabarlek Shear continues deeper into the basement sequences beneath the barrren dolerite, with the potential for more mineralisation on this extension not tested by historical drilling.

Drilling in 2014 was designed to test this position beneath the dolerite with deep angled RC holes (Figure 7).



Figure 7: Nabarlek Deeps, Schematic Cross-section



Drill holes NMLR207 and NMLR208 successfully penetrated the dolerite and intersected variably altered basement. Hole NMLR2012 was abandoned in the dolerite due to excessive caving related to fracturing.

The holes which penetrated the dolerite encountered around 250m of massive dolerite before intersecting metamorphic basement with some zones of weak-minor bleaching and hematite alteration.

Although not mineralised, the presence of bleaching and hematite alteration suggests the fertile Nabarlek structure extends below the dolerite, and further testing along strike of the structure is warranted.

The Gateway and Boomerang West targets are interpreted structures identified from a detailed ground gravity program conducted to the north of the historical mine area. Drilling at both prospects intersected basement with moderate alteration halos.

Estimated uranium values were initially interpreted using a handheld scintillometer. The results are summarised in Table 7 below with no significant results recorded. Scintillomter data is included with this report in Appendix 4.

Hole No	Avg CPS	Max CPS						
NMLR205	77	150						
NMLR206	71	140						
NMLR207	187	400						
NMLR208	163	650						
NMLR209	100	70						
NMLR210	80	100						
NMLR211	78	100						
NMLR212	175	400						

Table 7: Handheld Scintillometer Results

Drill samples were also screened with a Niton Portable XRF Analyser, with 441 readings taken during the programme. Samples were initially composited over four metres with an XRF analysis done. Using a 100ppm U₃O₈ cut-off no significant XRF results were reported. Appendix 5 contains results of all on-site XRF analyses.

42 one metre intervals with above background uranium (determined from the XRF and/or scintillometer analysis) were forwarded to NTEL in Darwin for analysis. Samples were assaved for Ag. As, Bi, Co, Cu, Ni, Pb, Th, U and Zn by ICPMS (NTEL method G422M). Using a 200ppm U_3O_8 cut-off no significant results were reported.

In addition 35 four metre composites were riffle split and sent to Intertek Genalysis in Perth for multi-element analysis (Intertek method 4A/OM20) and fire assay Au, Pt and Pd (method FA50/MS). No significant results were reported.

All Laboratory analyses are included in Appendix 6.



5. CONCLUSIONS AND RECOMMENDATIONS

Drilling during the 2014 season targeted the Nabarlek Deeps concept, and targets at the Gateway and Boomerang West prospects with RC drilling. No significant results were reported.

Field based exploration is planned to continue in the 2015 field season following up targets identified from studies being completed on the alteration signature and structural setting of the Nabarlek orebody.

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Appendix III Appendix IV Appendix V Appendix VI



APPENDIX I

RC Drill Collars



APPENDIX II

Downhole Surveys



APPENDIX III

Drill Logs



APPENDIX IV

RC Drilling – Handheld Scintillometer Results



APPENDIX V

RC Drilling XRF Readings



APPENDIX VI

RC Drilling Laboratory Analyses