December 2020 Quarterly Activities Report

29 January 2021

Highlights

- **Significant value added to Angela Uranium Project in Northern Territory of Australia:**
  - **Successful proof of concept *U-pgrade™* testwork program completed**
  - **Acid consumption reduced by approximately 77% from 104 kg of acid per tonne of ore to 24 kg/t, demonstrating significant potential operating cost savings**
  - **Significant potential environmental benefits arising from the *U-pgrade™* process rendering the leach tailing inert**
  - **These outcomes are a further indication of the potential value that *U-pgrade™* can add to Marenica assets**
  - **Mineral resource updated to JORC 2012 – 30.8 Mlb at 1,310 ppm U_3O_8**
- **Capital raising of $5.4 million, before costs, completed**
  - **Share Purchase Plan raised $2.8 million**
  - **Back to Back Placement to professional and sophisticated investors raised $2.6 million**
  - **Strong support from Directors and Management who contributed $455,000 to the SPP and Placement**
  - **Marenica fully funded to undertake aggressive exploration and development programs for at least 18 months**

Significant value added to Angela Uranium Project, Northern Territory of Australia

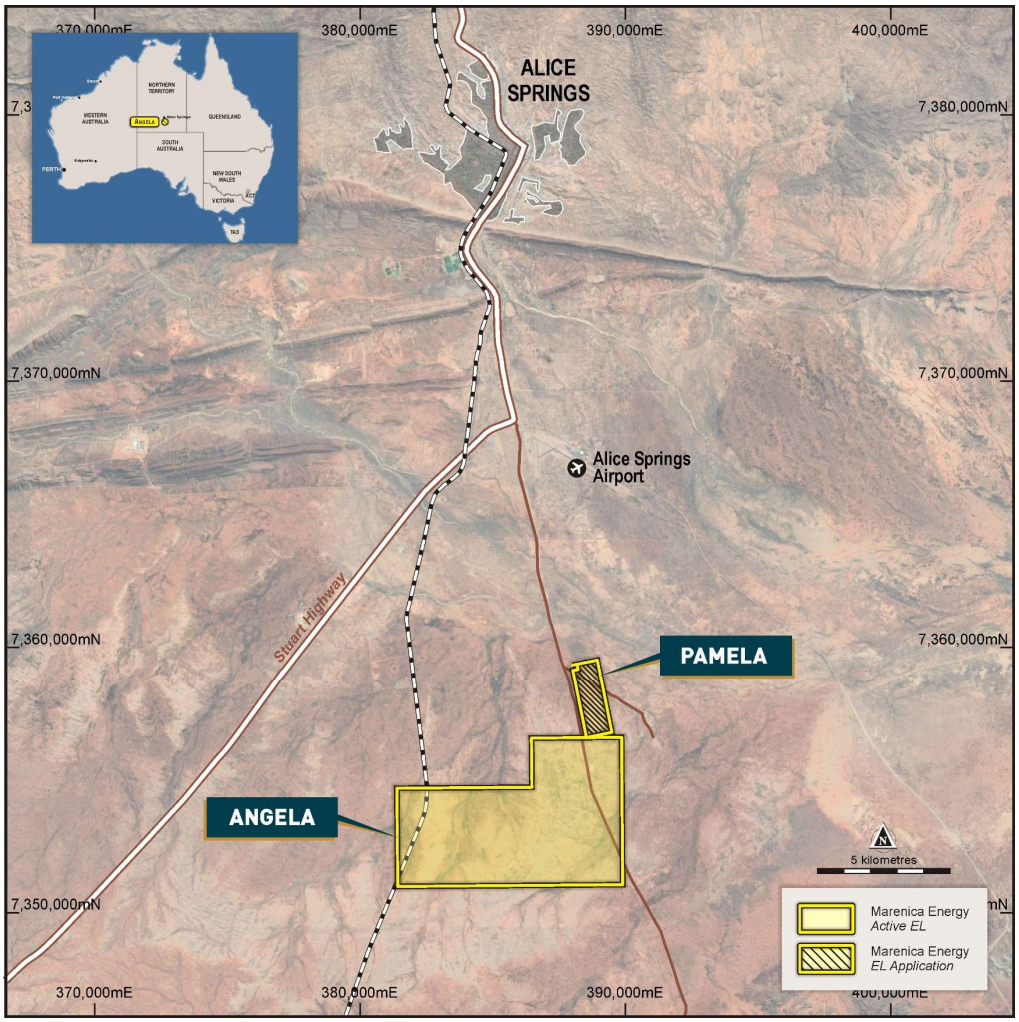
During the quarter the Company announced outstanding results from a proof of concept metallurgical testwork program, achieved through application of Marenica's proprietary ***U-pgrade™*** beneficiation process to an ore sample from Marenica's Angela Uranium Project in the Northern Territory of Australia.

These results were achieved by removal 84% of the acid consuming mineral (calcite), prior to acid leaching, commensurate with a 77% reduction of acid consumption and resulting operating cost reduction. In addition, ***U-pgrade™*** isolated the calcite mineral component of the ore, removed it before the leach circuit and allowed it to be reused after the leach circuit, thereby neutralising the acid and precipitating soluble metals in the leach tail, rendering the leach tail inert and providing a significant environmental benefit to the project.

These outcomes are positive for the economics of the Angela Uranium Project, as they demonstrate the potential to significantly reduce operating costs thereby, potentially enabling Angela to become economically viable at a significantly lower uranium price than previously estimated. These results also demonstrate the broader potential application of ***U-pgrade™***.

Marenica acquired Angela because of the potential benefits it thought was possible through applying ***U-pgrade™*** to the Angela ore. This potential has now been demonstrated.

Figure 1 – Location of Angela



Technical Discussion

Acid consumption during the uranium leach processing stage of the Angela ores was estimated to be approximately 100 to 120 kg/t (as H_2SO_4), based on metallurgical due diligence completed prior to Marenica acquiring the project and prior to testwork for the application of ***U-pgrade™***. At an acid price of $400/t ($0.40/kg) (i.e. the acid price at the time of undertaking the testwork), acid cost would be a substantial component of operating costs for the project. High acid cost has historically been a major impediment to the potential development of the Angela project.

The bulk of the calcite (84% of the total minerals present) was rejected prior to the leach stage. A standard set of leach conditions were applied to:

i) the pre-calcite removal sample (i.e. without application of ***U-pgrade™***), and

ii) the post-calcite removal sample (i.e. with application of ***U-pgrade™***),

to determine the expected reduction in acid consumption.

The results, summarised in Table 1 show that the removal of calcite reduced acid consumption from 104 kg of acid per tonne of ore to 24 kg/t, i.e. a difference of 80 kg/t, and at $0.40/kg for acid, this equates to a significant reduction in operating costs.

Table 1 Pre and Post Calcite Removal Leach Result Summary

Sample	Mass (%)	Acid Consumption (kg/t of sample)	Acid Consumption (kg/t of feed)	U_3O_8 Extraction from Sample (%)
Pre calcite removal	100	104	104	93.0
Post calcite removal	91	26	24	95.8
Nett Difference	**9**	**78**	**80**	**2.8**

Removal of most of the calcite had a positive effect on the uranium leach extraction, in this case increasing by 2.8%.

There is also a significant environmental benefit from removal of the calcite, since the calcite stream could be used to neutralise the acid in the leach tailings prior to disposal. This would result in the leach residue being rendered inert as a result of all acid being destroyed and all soluble metals precipitated.

This proof-of-concept program concluded that:

- removal of the bulk of the acid consuming calcite mineral could be achieved with minimal uranium losses,
- uranium extraction in the leach could be increased by removal of calcite, and
- the calcite reject could be used to render the leach tailings inert, providing significant potential environmental benefit for the project.

These results have been achieved from a proof of concept testwork program. The Company is encouraged by the potential to further increase calcite removal and at the same time further reduce uranium losses through a detailed optimisation testwork program.

Angela Uranium Project - Mineral Resource Update

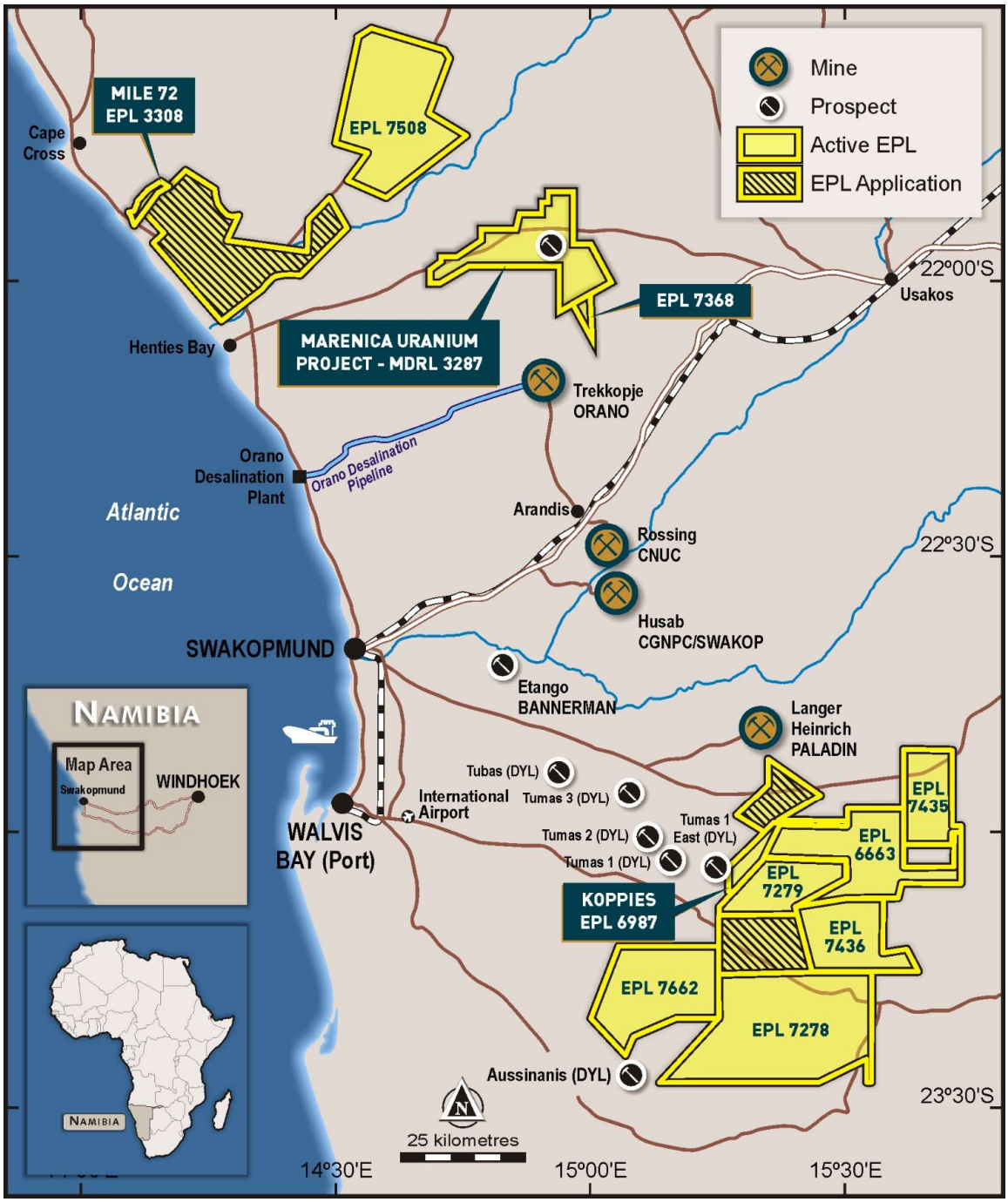
During the quarter, the Angela Uranium Project JORC Mineral Resource Estimate was updated from JORC 2004 to JORC 2012.

The JORC 2012 Mineral Resource Estimate is 30.8 Mlb of U_3O_8 at a grade of 1,310 ppm U_3O_8 (see Table 2), all in the Inferred category. The project is the most developed asset in a package of assets acquired by Marenica in December 2019.

Exploration Update

In Namibia, Marenica holds ten granted tenements which make up the largest land package for nuclear fuel minerals in the country (see Figure 2).

Figure 2 – Marenica's tenements in the Erongo Region of Namibia

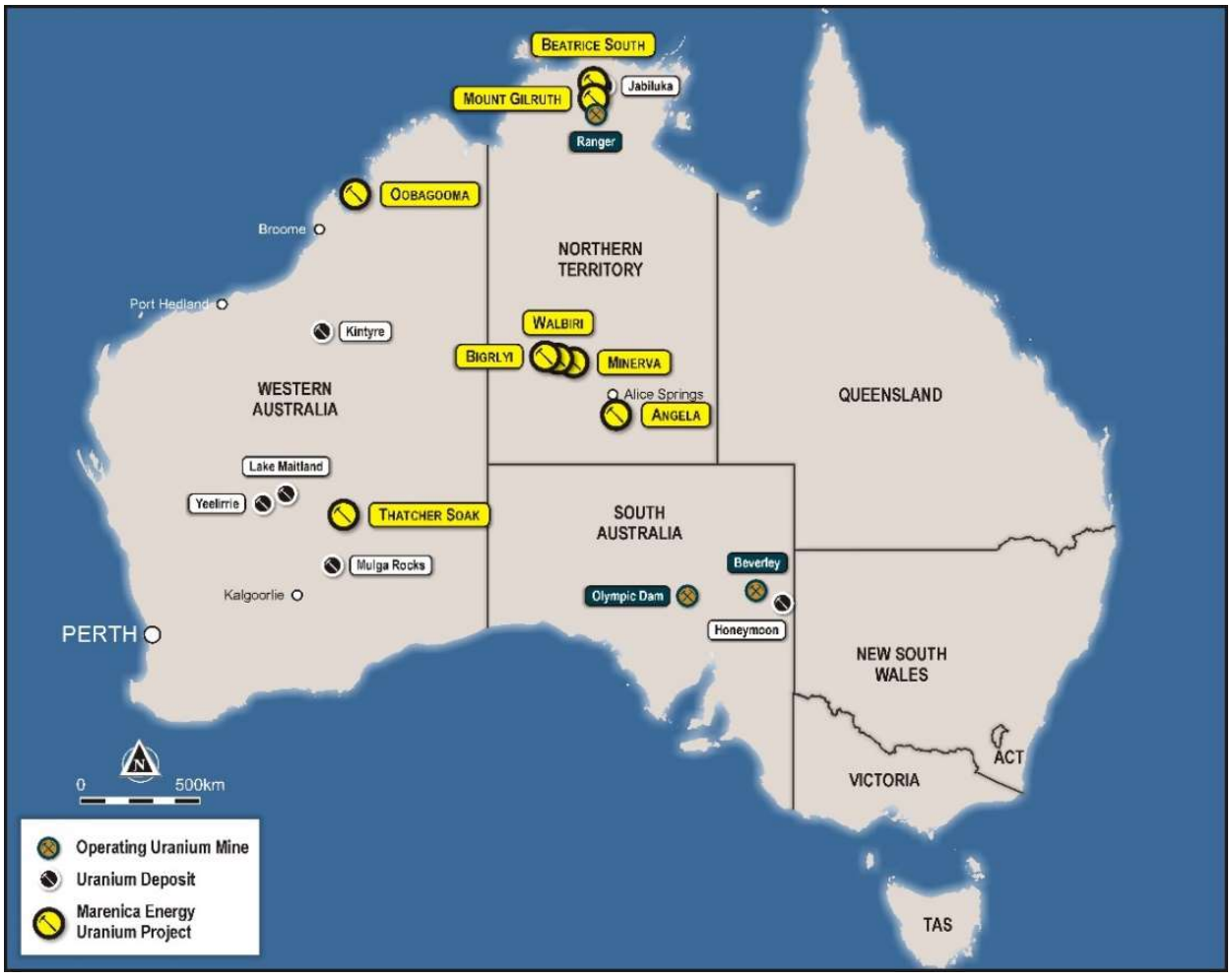


Marenica's approach to exploration in Namibia has included geophysics to identify the outline and expected depth of palaeochannels, from which drill targets are identified and subsequently drilled. The options for geophysics are ground based or airborne, but due to previous funding limitations ground based geophysics namely, horizontal loop electromagnetics ("HLEM") has been used. The Company would prefer to use Airborne geophysical surveys ("Airborne EM") due to their efficiency in covering large areas in a significantly shorter period of time compared to HLEM. Provided a suitable supplier can be contracted and government approvals granted, the Company will undertake Airborne EM surveys.

Whilst the Airborne EM contract discussions and approvals are progressing during early 2021; the Company will continue to explore using HLEM. HLEM survey's recommenced in late January 2021 and follow-up drilling will commence once HLEM results have been received and interpreted.

In Australia, Marenica owns uranium projects which contain 48.4 Mlb U_3O_8 of high-grade mineral resources (see Table 2 and Figure 3). The Company will continue with its studies on these projects.

Figure 3 – Location of Marenica's Australian Tenements



Well Supported Capital Raising

During the quarter Marenica raised a total of $5.4 million (before costs).

The Company raised $2.8 million from a Share Purchase Plan ("SPP") and a back-to-back placement to professional and sophisticated investors raised a further $2.6 million ("Placement").

Viriathus Capital and Cumulus Wealth were joint lead managers to the two-tranche Placement. In the first tranche the Company used its available placement capacity under ASX Listing Rules 7.1 and 7.1A to raise $2.25 million. The second tranche of $350,000 was approved by shareholders at a general meeting of shareholders held on 21 January 2021. The bulk of the second tranche was an investment by the directors and management of the Company, bringing the total input into the SPP and Placement by directors and management to $455,000, clearly demonstrating a strong belief in the Company. Directors and management now own 6.6% of the Company.

Completion of the capital raising allows Marenica to aggressively increase exploration activities on its extensive uranium tenement package in Namibia and to add value to the Australian uranium assets.

These activities can be undertaken with the knowledge that the Company is fully funded to undertake the proposed activities for at least the next 18 months.

COVID-19

Restrictions imposed as a result of COVID-19 have impacted exploration activities in Australia and Namibia. Namibia lifted its "state of emergency" on 17 September 2020, with all movement restrictions removed, however, it is mandatory to wear a mask in public and there are limits on numbers of people in gatherings. The restrictions are currently not limiting movement to the exploration sites.

Ground based exploration in Australia continues to be impacted by travel restrictions imposed by state and territory governments, that have generally been applied at short notice, impacting on planning. The Company is currently undertaking desktop exploration analysing historical data.

Expenditure

The Group incurred exploration expenditure of $138,336 during the quarter.

Payments to Related Parties

During the quarter, the Company paid directors' fees to the non-executive directors and salary plus superannuation to the managing director, which totalled $97,850.

Authorisation

This report was authorised for release by the Board of Marenica Energy Limited.

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Table 2 – Uranium Mineral Resources

Deposit	Category	Cut-off (ppm U_3O_8)	Total Resource Tonnes (M)	Total Resource U_3O_8 (ppm)	Total Resource U_3O_8 (Mlb)	Marenica's Share Holding	Marenica's Share Tonnes (M)	Marenica's Share U_3O_8 (ppm)	Marenica's Share U_3O_8 (Mlb)
AUSTRALIA									
100% Holding									
Angela	Inferred	300	10.7	1,310	30.8	100%	10.7	1,310	30.8
Thatcher Soak	Inferred	150	11.6	425	10.9	100%	11.6	425	10.9
100% Held Resource Total			**22.3**	**850**	**41.7**	**100%**	**22.3**	**850**	**41.7**
Bigrlyi Joint Venture JORC 2004									
Bigrlyi Deposit	Indicated	500	4.7	1,366	14.0				
	Inferred	500	2.8	1,144	7.1				
Bigrlyi Deposit Total		**500**	**7.5**	**1,283**	**21.1**	**20.82%**	**1.55**	**1,283**	**4.39**
Sundberg	Inferred	200	1.01	259	0.57	20.82%	0.21	259	0.12
Hill One JV	Inferred	200	0.26	281	0.16	20.82%	0.05	281	0.03
Hill One EME	Inferred	200	0.24	371	0.19				
Karins	Inferred	200	1.24	556	1.52	20.82%	0.26	556	0.32
Bigrlyi Joint Venture Total			**10.2**	**1,049**	**23.5**	**20.82%**	**2.07**	**1,065**	**4.86**
Walbiri Joint Venture									
Joint Venture	Inferred	200	5.1	636	7.1	22.88%	1.16	636	1.63
100% EME	Inferred	200	5.9	646	8.4				
Walbiri Total		**200**	**11.0**	**641**	**15.5**				
Malawiri Joint Venture									
Malawiri JV	Inferred	100	0.42	1,288	1.20	23.97%	0.10	1,288	0.29
Joint Venture Resource Total			**21.6**	**847**	**40.2**		**3.34**	**923**	**6.77**
Australia Resource Total			**43.9**	**848**	**81.9**		**25.6**	**859**	**48.4**
NAMIBIA									
Marenica JORC 2004									
Marenica	Indicated	50	26.5	110	6.4				
	Inferred	50	249.6	92	50.9				
Marenica	**Total**	**50**	**276.1**	**94**	**57.3**	**75%**	**207.1**	**94**	**43.0**
MA7 JORC 2004									
MA7	Inferred	50	22.8	81	4.0				
MA7	**Total**	**50**	**22.8**	**81**	**4.0**	**75%**	**17.1**	**81**	**3.0**
Namibia Resource Total			**298.9**	**93**	**61.3**		**224.2**	**93**	**46.0**

The Company confirms that the Mineral Resource Estimates for Thatcher Soak, Bigrlyi, Sundberg, Hill One, Karins, Walbiri and Malawiri have not changed since the annual review included in the 2020 Annual Report. The Company is not aware of any new information, or data, that effects the information in the 2020 Annual Report and confirms that all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed.

The Company confirms that the Mineral Resource Estimate for Angela has not changed since the ASX announcement of 9 November 2020. The Company is not aware of any new information, or data, that effects the information in the ASX announcement and confirms that all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed.

The Mineral Resource Estimate for the Bigrlyi, Marenica and MA7 in the table above were prepared and first disclosed under the 2004 Edition of the Australian Code for the Reporting of Exploration Results, Minerals Resources and Ore Reserves (JORC Code 2004). They have not been updated since to comply with the 2012 Edition of the Australian Code for the Reporting of Exploration Results, Minerals Resources and Ore Reserves (JORC Code 2012) on the basis that the information has not materially changed since it was last reported. A Competent Person has not undertaken sufficient work to classify the estimate of the Mineral Resource in accordance with the JORC Code 2012; it is possible that following evaluation and/or further exploration work the currently reported estimate may materially change and hence will need to be reported afresh under and in accordance with the JORC Code 2012.

Competent Persons Statement

The historical exploration information detailed in this announcement was compiled by David Princep of Gill Lane Consulting. Mr. Princep is a Fellow of the Australasian Institute of Mining and Metallurgy and a Chartered Professional Geologist. Mr. Princep has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration to qualify as a Competent Person as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC 2012). Mr. Princep approves of, and consents to, the inclusion of the information in this announcement in the form and context in which it appears.

Annexure A – Tenement Schedule

Namibia

Number	Name	Company	Interest	Area (km²)
Active Licences				
MDRL 3287	Marenica	Marenica Minerals (Pty) Ltd	75%	321
EPL 3308	Mile 72	Metals Namibia (Pty) Ltd	100%	20
EPL 6663	Arechadamab	Marenica Ventures (Pty) Ltd	90%	379
EPL 6987	Koppies	Manmar Investments One Eight Two (Pty) Ltd	100%	49
EPL 7278	Hirabeb	Marenica Ventures (Pty) Ltd	100%	730
EPL 7279	Ganab West	Marenica Ventures (Pty) Ltd	100%	199
EPL 7368	Trekkopje East	Marenica Ventures (Pty) Ltd	100%	17
EPL 7435	Skilderkop	Marenica Ventures (Pty) Ltd	100%	190
EPL 7436	Amichab	Marenica Ventures (Pty) Ltd	100%	251
EPL 7508	Capri	Marenica Ventures (Pty) Ltd	100%	553
EPL 7662	Namib IV	Marenica Ventures (Pty) Ltd	100%	379
Licence Applications				
EPL 6746	Tumasvlaktes	Marenica Ventures (Pty) Ltd	95%	199
EPL 7507	Autseib	Marenica Ventures (Pty) Ltd	100%	688
EPL 7803	Hotsas	Marenica Ventures (Pty) Ltd	100%	117

Australia

Number	Name	Status	Company	Interest	State
100% Interest					
R38/1	Thatcher Soak	Granted	Africa Uranium Ltd	100%	WA
E04/2297	Oobagooma	Granted	Jackson Cage Pty Ltd	100%	WA
EL25758	Angela	Granted	Jackson Cage Pty Ltd	100%	NT
EL25759	Pamela	Application	Jackson Cage Pty Ltd	100%	NT
ELR 22-33	Minerva	Application	Jackson Cage Pty Ltd	100%	NT
Joint Venture					
ELR 41	Malawiri	Granted	Northern Territory Uranium Pty Ltd	23.97%	NT
ELR 45	Walbiri	Granted	Northern Territory Uranium Pty Ltd	22.88%	NT
ELR 46-55	Bigrlyi	Granted	Northern Territory Uranium Pty Ltd	20.82%	NT
EL 30144	Dingos Rest South	Granted	Northern Territory Uranium Pty Ltd	20.82%	NT
ELR 31319	Sundberg	Granted	Northern Territory Uranium Pty Ltd	20.82%	NT
MCS318-328	Karins	Application	Northern Territory Uranium Pty Ltd	20.82%	NT
MLN 1952	Karins	Application	Northern Territory Uranium Pty Ltd	20.82%	NT
EL 1466	Mount Gilruth	Application	Jackson Cage Pty Ltd	33.33%	NT
EL 3114	Beatrice South	Application	Jackson Cage Pty Ltd	33.33%	NT

About Marenica Energy

Marenica Energy Limited (ASX:MEY) is an Australian Securities Exchange listed company focused on uranium exploration and application of its beneficiation process ***U-pgrade™***.

Marenica has developed a counter cyclical growth strategy to acquire tenements and projects which are suitable for value addition through application of the company's proprietary ***U-pgrade™*** process.

Marenica has a large tenement position in the globally recognised Erongo uranium province in Namibia, a country with an established and longstanding uranium mining industry. In Namibia, Marenica has three uranium exploration project areas, being the Namib Uranium Project, Marenica Uranium Project and Mile 72 Uranium Project. The Marenica Uranium Project has a large inferred uranium resource of 61 million pounds. These project areas are located in the North West, North and South East of the Erongo province, which provides diversity and opportunity to explore in a large tenement position.

In Australia, Marenica has uranium tenements and joint venture interests containing substantial uranium resources. The Angela, Thatcher Soak, Minerva and Oobagooma project areas and joint venture holdings in the Bigrlyi, Malawiri, Walbiri and Areva joint ventures contain 48 Mlbs of high-grade uranium mineral resources. The mineral resources are significant in their own right but could be dramatically enhanced when coupled with Marenica's ***U-pgrade™*** beneficiation process.

U-pgrade™ Beneficiation Process

Marenica's portfolio of uranium projects in Namibia and Australia contain uranium mineralisation suitable for processing via its proprietary ***U-pgrade™*** beneficiation process.

A study on the Marenica Uranium Project, indicated that ***U-pgrade™*** can materially lower development and operating costs on calcrete hosted uranium projects.

About U-pgrade™

U-pgrade™ is a potential industry leading and economically transformational beneficiation process for upgrading surficial uranium ores.

This breakthrough process was developed on ore from Marenica's namesake Marenica Uranium Project in Namibia and subsequently, testwork has been undertaken on ore samples from a number of other sources.

In summary, Marenica has demonstrated, in bench scale testwork, that the ***U-pgrade™*** beneficiation process;

- Concentrates the uranium by a factor of 50
- Increases Marenica Project ore grade from 93 ppm to ~5,000 ppm U_3O_8
- Rejects ~98% of the mass prior to leaching
- Produces a high-grade concentrate in a low mass of ~2% (leach feed)
- Rejects acid consumers
- Potentially reduces operating costs by ~50% and capital costs by ~50% as compared to conventional processing.

Beyond application at the Marenica Uranium Project, Marenica has determined, through bench scale testing, that calcrete hosted uranium deposits in Namibia and Australia are amongst those that are amenable to the ***U-pgrade™*** process.