

MANJIMUP PROJECT - HISTORIC PEGMATITE OCCURRENCES AND LITHIUM POTENTIAL

Highlights

- Pegmatites logged in historic drilling by BHP at ELA70/5031 (5km south of Nannup)*
- Numerous prospects identified with elevated levels of coincident tin, tantalum and niobium often pathfinder minerals for LCT style pegmatites
- Exploration licence application areas lie on the highly prospective Donnybrook-Bridgetown shear zone which hosts the world-class Greenbushes lithium mine, plus several major fault zones

Taruga Minerals Limited (ASX: **TAR**, **Taruga** or the **Company**) is pleased to present an update on the Company's Manjimup Project in South-West of Western Australia. The Manjimup Project comprises 3 exploration licence applications totalling 460km², located ~ 35km to the south of one of the largest and high-grade lithium mines in the world, Greenbushes. Taruga has undertaken a detailed review of available historical data, with a focus on the lithium potential and occurrences of pegmatites and LCT pegmatite pathfinder minerals in the project area.



Figure 1: Project Location Map (inc. major faults and Donnybrook-Bridgetown shear zone)



+ Cautionary Statement: The Company notes that pegmatites contain varying abundances of typical LCT pegmatite non-Li-bearing minerals, predominantly feldspar, quartz, muscovite mica (as a group also referred to as Aplite) and accessory tourmaline. Investors should note that while LCT pegmatites are a known host for accessory lithium bearing minerals such as spodumene, it is also known that this is not a universal association. Visual observations of the presence of rock or mineral types and abundance should never be considered a proxy or substitute for petrography and laboratory analyses where mineral types, concentrations or grades are the factor of principal economic interest. Visual observations and estimates also potentially provide no information regarding impurities or deleterious physical properties relevant to valuations. At this stage it is too early for the Company to make a determinative view on the abundances of any of these minerals. These abundances will be determined more accurately through petrography, assay, and XRF analysis. The observed presence of pegmatite does not necessarily equate to lithium mineralisation. It is not possible to estimate the concentration of mineralisation by visual estimation and this will be determined by chemical analysis.

Background

Taruga's previous historic data review had focused on base metals and the potential for sulphide mineralisation, largely due to the close proximity of the Eastern licence to the "Thor" and "Odin" prospects currently being explored by Chalice Mining (JV with Venture Minerals).

However, recent exploration activities in the area have also been targeting pegmatite occurrences with a focus on the Greenbushes-style tin-tantalum lithium potential. Upon completion of its extended evaluation of historic data, Taruga has identified several areas of interest for hosting pegmatites and potential lithium mineralisation.



Figure 2: Projects with underlying magnetics image.





Figure 3: Taruga's Southwest project with underlying radiometric (potassium (K)) image.

Exploration History

Previous exploration in the project area has been affected by a thick laterite profile which hampers basic reconnaissance and masks geochemistry. However, the use of modern geophysical methods including high-resolution airborne magnetic and radiometric data to generate potential pegmatite targets is highly useful. The subsequent soil sampling of targets under laterites, using lower detection limit geochemistry analysis methods, in combination with select ground geophysical techniques, is then useful in supporting the advancement of valid drill targets for potential lithium-bearing pegmatites.

Western Permit (ELA70/5031)

BHP explored the Darling Fault for gold, expanding from the historical Donnybrook Goldfields down to the south of Nannup along the Darling Fault. As part of the work program, BHP carried out magnetic surveys, stream sediment, soils and drilling along target areas. Within Taruga's western tenement application area (ELA70/5031), BHP tested epithermal quartz veining and related structures.

Two drillholes DP40 and DP41 were collared within the project area, testing an outcropping siliceous zone within a structure. **BHP's reporting included drill logs which noted pegmatites intercepted in drilling (36-37m and EOH)** along with alteration assemblages of quartz, green mica and plagioclase that may include weathered pegmatites across a broad interval in section.





Figure 4: Cross section of BHP gold drilling (1987) intersecting pegmatites in DP41.

A mineral sands focussed BHP exploration report was also identified by Taruga that outlines drilling carried out predominantly on the western Phanerozoic sediments of the Perth Basin, but which also included drilling east of the Darling Fault into basement rocks of the Balingup Metamorphic Belt (which hosts the Greenbushes Mine). The BHP mineral sands exploration program included eleven (11) holes drilled within the western tenement area approximately five (5) kilometres south of the previously mentioned BHP gold target and drillholes. The mineral sands geochemistry report included lithium results for seven (7) of the holes, of which, two (2) holes appear to have low-level but elevated lithium results compared to expected background levels. The subtle lithium anomalism from within the deeply weathered profile identified quartz and mica, and provides encouragement that a lithium bearing pegmatite might be proximal to the area.

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In the southern portion of the western tenement application area (ELA70/5031) is the **Crooked Brook prospect**. Saprolite layers appear to cover much of the prospect area. Historical surface sampling and mineral sands focussed drilling in the area by Pancontinental Mining contained what appear to be elevated tin, tantalum and niobium (Sn, Ta, Nb). The 1992 and 1995 annual reporting discussion stated that the infill laterite sampling was completed with the conclusion that the zone of tin, niobium and tantalum anomalism could represent the presence of a pegmatite in the immediate area.

Recent exploration and drilling by Kula Gold to the north of the Western permit and along strike of the Darling Fault has identified a 3.2km by 500m wide pegmatite called the Cobra prospect.

Central Permit (ELA70/5030)

Support for pegmatite exploration in Taruga's central tenement application area is encouraged by the fact that to the north (~ 5 kilometres) are the Smithfield and Willow Springs prospects. These prospects are known to have had tin and tantalum mineralisation within recorded pegmatites up to 35m wide, with small-scale mining occurring at various periods from 1907. The confirmation of outcropping pegmatites nearby along with conducive structures and shear zones (Donnybrook-Bridgetown shear zone) extending through central application areas provides encouragement for future exploration and lithium potential.



Figure 5: Outcropping pegmatites exist to the north of the central permit.



Eastern Permit (ELA70/5029)

The **Yerraminup prospect** within the eastern tenement application area (ELA70/5029) is a known tin-tantalum occurrence, with a peak recording of 700ppm tin in drilling records. The area is predominantly Archean meta-gabbroic rocks covered in the most part by laterite and bounded by granites in the south-east and north-west. The Western Australia Rock database of field observation sites (WAROX) has a site noted as pegmatite at the Yerraminup prospect location, this is yet to be field verified. Tin, tantalum and lithium are potential future target commodities within this prospect.

Regional Geology

The Manjimup project area is in the Southwest Terrane of the Yilgarn Craton, making up the southwestern corner of the craton. The Yilgarn craton is bounded on its western margin by the Darling Fault, the southern margin of the craton is the Manjimup Fault, running east-west. The basement rocks are predominantly Balingup Metamorphic Belt along with a series of granitoid intrusives. The Balingup Metamorphic Belt has limited exposure, being largely obscured by tertiary sediments and laterite. The Taruga project areas western and central tenements are predominantly quartz-feldspar-biotite gneiss and to a lesser degree quartz-mica schist whilst the eastern tenement is predominantly migmatite and granitic rocks. Mafic and ultramafic intrusions are present throughout the project area.

The main pegmatite body at the world class Greenbushes lithium mine strikes NNW with a strike length of approximately 3km and width of 300m. The pegmatites that constitute the Greenbushes Mine appear to have intruded during shearing whilst also being affected by subsequent deformation and/or hydrothermal recrystallisation. The principal country rock enclosing the pegmatites include gneisses, ultramafic schist, and coarse-grained amphibolite.

Base Metals potential

Taruga's previous historic data review had focused on base metals and the potential for sulphide mineralisation (magmatic Ni-Cu-PGE and VHMS style), largely due to the close proximity of the Eastern license to the "Thor" and "Odin" prospects currently being explored by Chalice Minerals (JV with Venture Minerals). The Ni-Cu-PGE style mineralisation in the area is hosted within mafic/ultramafic intrusions, which also feature in Taruga's eastern permit application (ELA70/5029).

Recent exploration by Chalice Mining (ASX release 24/03/2023) near the Odin prospect has identified a new magmatic Ni, Cu-PGE target called "Target 4" which exists in the very NE corner of permit E70/4837 which adjoins the Eastern permit currently held by Taruga.

The prospective VHMS style mineralisation is found at the Kingsley and Jack prospects 2.5km's east of the central tenement (ELA70/5030) with predominantly pyrrhotite with pyrite, arsenopyrite, galena and sphalerite. VHMS mineralisation can be massive or disseminated and is hosted within meta sedimentary sequences associated with felsic volcanics.

Next Steps

Taruga is progressing its applications towards grant, noting that the Southwest area contains a high level of land use (e.g. farming, state forest) and requires careful consideration. Taruga will continue its assessment and review process with a near term focus on the lithium potential in the known pegmatites and the potential for additional pegmatites in the area.

This announcement was approved by the Board of Taruga Minerals Limited.

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Competent person's statement

The information in this report that relates to exploration results is based on, and fairly represents information and supporting documentation prepared by Mr Brent Laws, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Laws is the Exploration Manager of Taruga Minerals Limited. Mr Laws has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resource and Ore Reserves". Mr Laws consents to the inclusion in this report of the matters based on their information in the form and context in which it appears.

Cautionary Statement

The Company notes that pegmatites contain varying abundances of typical LCT pegmatite non-Libearing minerals, predominantly feldspar, quartz, muscovite mica (as a group also referred to as Aplite) and accessory tourmaline. Investors should note that while LCT pegmatites are a known host for accessory lithium bearing minerals such as spodumene, it is also known that this is not a universal association. Visual observations of the presence of rock or mineral types and abundance should never be considered a proxy or substitute for petrography and laboratory analyses where mineral types, concentrations or grades are the factor of principal economic interest.

Visual observations and estimates also potentially provide no information regarding impurities or deleterious physical properties relevant to valuations. At this stage it is too early for the Company to make a determinative view on the abundances of any of these minerals. These abundances will be determined more accurately through petrography, assay, and XRF analysis. The observed presence of pegmatite does not necessarily equate to lithium mineralisation. It is not possible to estimate the concentration of mineralisation by visual estimation and this will be determined by chemical analysis.

HoleID	Drill Type	Easting*	Northing*	Elevation	Azimuth	Dip	Depth
				(m)			(m)
DP40	Percussion	388638	6226646	205	270	-60	81
DP41	Percussion	388613	6226646	207	270	-60	51
NP300	NQ Aircore	387575	6221624	239	0	-90	18
NP301	NQ Aircore	389328	6221161	166	0	-90	6
NP302	NQ Aircore	389295	6222570	224	0	-90	27
NP303	NQ Aircore	388383	6221998	176	0	-90	3
NP304	NQ Aircore	387207	6220569	202	0	-90	33
NP305	NQ Aircore	387927	6219738	165	0	-90	10
NP306	NQ Aircore	386100	6220733	149	0	-90	21
NP308	NQ Aircore	386008	6222340	139	0	-90	45

Table: Historical BHP drilling information (*Survey data converted to GDA94 zone 50)



JORC Code, 2012 Edition – Table 1 report template

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	 Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information. 	No new data is being reported on in this document. Historical sampling mentioned includes drilling which is often 3m downhole composite samples or laterite sampling which is effectively soil sampling with material collected at or just below the ground surface. In considering the historical soil samples the surficial cover, transported and residual laterite needs to be considered.
Drilling techniques	 Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc). 	Historical drilling - percussion drilling.
Drill sample recovery	 Method of recording and assessing core and chip sample recoveries and results asses Measures taken to maximise sample recovery and ensure representative nature of the samples. Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material. 	Variable. Historical gold vs mineral sands drilling objectives.



Criteria	JORC Code explanation	Commentary
Logging	 Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical 	Historical drill logging. Drill logs are often hand written and scanned records. Geological descriptions were sufficient to outline the lithology intersected in the context of the drill program objectives.
	 studies. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged. 	Any interpretation of minerals identified and possible rock type is based on historical logging and has not been verified in the field or from stored sample.
Sub- sampling techniques and sample preparation	 If core, whether cut or sawn and whether quarter, half or all core taken. If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique. Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. Whether sample sizes are appropriate to the grain size of the material being sampled. 	Unknown.
Quality of assay data and laboratory tests	 The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established. 	Unverified.
Verification of sampling and assaying	 The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. 	Not verified.



Criteria	JORC Code explanation	Commentary
	Discuss any adjustment to assay data.	
Location of data points	 Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. Specification of the grid system used. Quality and adequacy of topographic control. 	All data is in or converted to coordinate datum GDA94 Zone 50. Accuracy is sufficient to have a reasonable chance of locating sites in the field.
Data spacing and distribution	 Data spacing for reporting of Exploration Results. Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. Whether sample compositing has been applied. 	Historical drillhole and laterite/soil sampling spacing can be variable and is dependant of field access, traverses, and limited outcrop.
Orientation of data in relation to geological structure	 Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material. 	Grids of variable dimensions have been utilised for laterite sampling and later infill sampling if carried out. Reconnaissance mineral sands drilling included short vertical holes variably spaced along tracks broadly across the main geology trend. The targeted quartz vein drilling for potential gold was angled to best intercept the vein and geology.
Sample security	• The measures taken to ensure sample security.	Unknown.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	None known.



Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary		
<i>Mineral tenement and land tenure status</i>	 Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, 	Taruga Minerals Ltd has applied for three tenements in the Manjimup area. All tenements are 100% controlled by Taruga and were acquired as vacant ground.		
	 historical sites, wilderness or national park and environmental settings. The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area. 	All tenements are in application stage, with correspondence and progress towards grant proceeding through the steps required.		
		Tenements are E70/5029, 5030, 5031.		
Exploration done by	• Acknowledgment and appraisal of exploration by other parties.	There are 3 separate application tenements presented in this release. Each have undergone different levels of historical exploration.		
other parties		Historical geophysical surveys (aeromagnetic) and gravity surveys completed by government cover the tenements.		
		A historical VTEM survey was conducted by BHP over E70/5030 however the resultant anomalies within the tenement were not followed up. A historical TEMPEST EM survey was conducted in the southern portion of the E70/5031 tenement application, presumably for exploration for heavy mineral sands.		
		Exploration in the areas has targeted Tin/Tantalum/Lithium pegmatite mineralisation for which there is a historical working with E70/5029.		
		Exploration in the area has also targeted VHMS, base metal and PGE mineralisation.		
		Historical gold mining and prospecting has occurred adjacent to E70/5031 along strike to the north along the Darling Fault/Shear.		
		Relevant WAMEX Exploration Reports include:		
		WAMEX Identifier A49464 – BHP Gold Drilling, Donnybrook Project final report,		
		A42704 – BHP Mineral Sands relinquishment report,		
		A46405 & A50108 Yerraminup annual reporting,		



Criteria	JORC Code explanation	Commentary
		A36447 & A38552 – Crooked Brook annual reporting,
		A18378 – Bauxite
		A14322 – Smithfield and Willow Springs
Geology	Deposit type, geological setting and style of mineralisation.	The Manjimup project is considered prospective for tin/tantalum/lithium and base metal mineralisation including Cu-Ni-Co and PGE mineralisation. In addition, exploration on adjacent tenements has identified potential VHMS style mineralisation.
		There is potential for Tin/Tantalum/Lithium mineralisation associated with pegmatite veins. The Project is within the Balingup Metamorphic Belt with the western and central licenses including part of the highly prospective Donnybrook-Bridgetown shear zone that hosts the Greenbushes Li-Ta-Sn mine (Greenbushes), some 35km NE of the project tenements.
Drill hole Information	 A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: easting and northing of the drill hole collar elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar dip and azimuth of the hole down hole length and interception depth hole length. If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case. 	Historical drillhole information. Appropriate figures with available information are included in the announcement.
Data aggregation methods	 In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated. Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. 	Historical data with various sampling intervals. Mineral sands drill sample assay intervals appear to be predominantly 3m composite data with 1m or interval based lithology records.



Criteria	JORC Code explanation	Commentary
	 The assumptions used for any reporting of metal equivalent values should be clearly stated. 	
Relationship between mineralisatio n widths and intercept lengths	 These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known'). 	The announcement refers to historical records. Any reference made to thickness or dimension is limited to the accuracy of historical records and reporting.
Diagrams	 Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views. 	Appropriate diagrams of location and historical records of surface features, interpretations and results are provided in the report.
Balanced reporting	 Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results. 	Taruga intends to continue a systematic exploration program to evaluate the project.
Other substantive exploration data	• Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	All relevant and meaningful recent exploration or known historical exploration data is included in this report, has been previously released or is otherwise publicly available.
Further work	• The nature and scale of planned further work (e.g. tests for lateral	Potential future exploration programs consists of:
	 extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive. 	Reconnaissance style exploration including detailed geological mapping, interpretation, and laterite sampling, focussed on known or interpreted pegmatite locations.
	provided this morthation is not commercially sensitive.	Additional infill geochemical sampling and analysis over target areas.
		Geophysical interpretation and incorporation with new geochemical sampling results.
		Potential higher resolution geophysical surveys including magnetics and radiometrics over priority target areas.