



Outstanding Heavy Mineral concentrations at Muckanippie

Marmota Limited (ASX:MEU) ('Marmota')

First assay results from metallurgical testwork at Marmota's new Titanium discovery at Muckanippie EL 6166 has returned **bonanza Heavy Mineral (HM) concentrations and intercept thicknesses.**

Key Points

- Assay results from the initial testwork program has yielded **outstanding Heavy Mineral (HM) concentrate percentages, with every discovery hole featuring bonanza HM grades over thick wide intervals from surface:**

Hole WI-081	28m @ 19.2 % HM ¹	from 0m (from surface)	including 4m @ 22.2 % HM
Hole WI-080	36m @ 13.5 % HM	from 0m (from surface)	including 4m @ 27.8 % HM
Hole WI-079	39m @ 13.2 % HM	from 0m (from surface)	including 4m @ 26.0 % HM
Hole WI-078	24m @ 13.5 % HM	from 0m (from surface)	including 4m @ 21.3 % HM

See Table 1 and Figure 1 for full detail.

Australia is one of the leading producers of titanium dioxide and mineral sands in the world.

Table 2 below provides a brief listing of major Australian Mineral Sands projects and their corresponding HM %.

¹ In Hole WI-081, there was insufficient sample left to test one of the 4m intervals in the 28m range from surface (namely, from 12m to 16m). That interval, from 12m to 16m, in ASX:MEU [13 Nov 2024](#), reported the highest titanium grade of all samples [see [Fig. 1](#)]. To enable the calculation of comparative continuous HM% intervals from surface, the missing 4m was inferred as the simple average of the HM % from the 2 samples above and 2 samples below [see [Fig. 1](#)] (*i.e.* average of the surrounding 16m of samples), noting that the hole features exceptional geological continuity from surface [see [Fig. 1](#)]. Given the strong positive correlation between TiO₂% and HM%, the averaging of surrounding samples is conservative and likely to underestimate HM%.

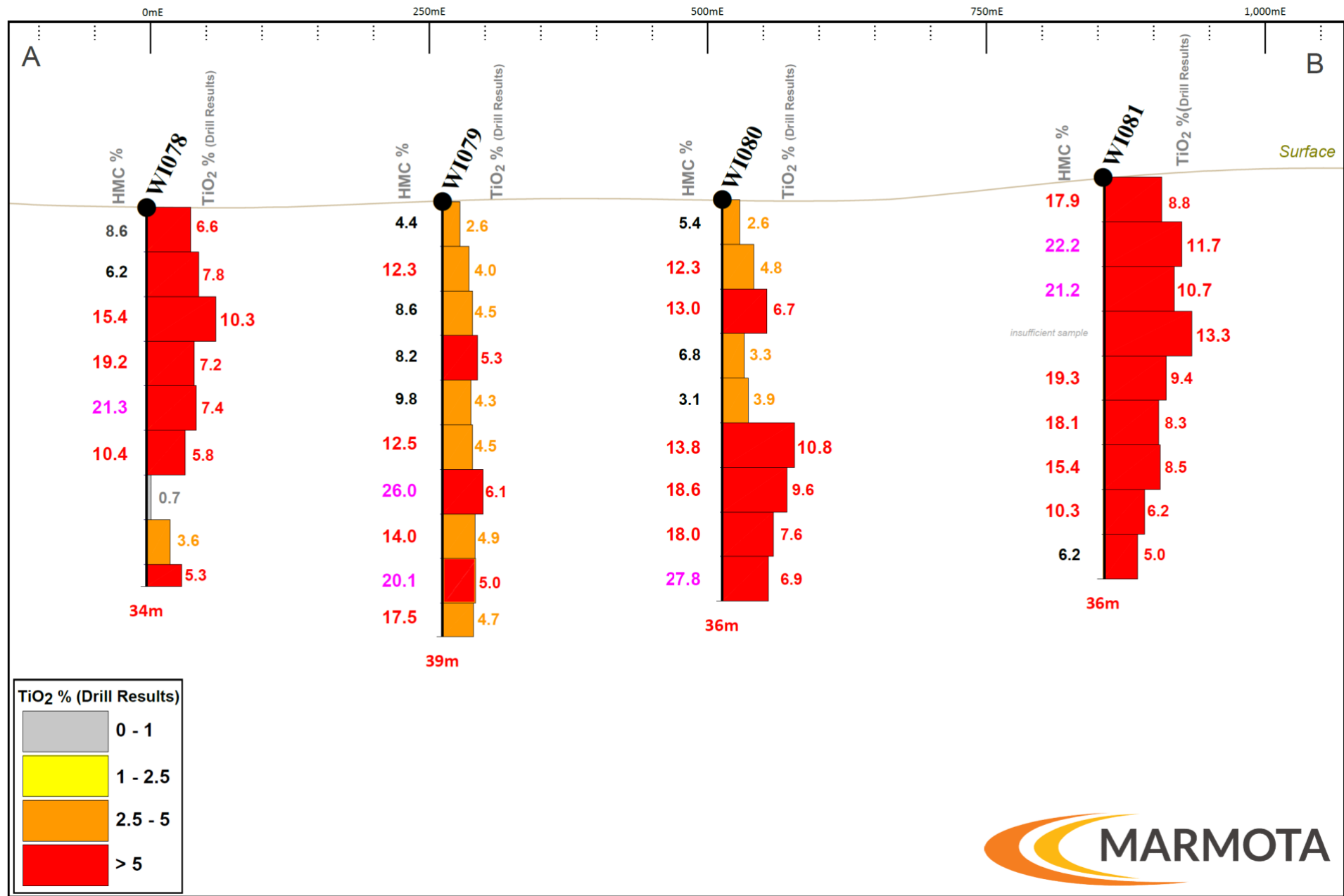


Figure 1: Cross-section from surface through all 4 Outstanding Titanium Discovery Holes (Hole 78 (NE) to Hole 81 (SW))

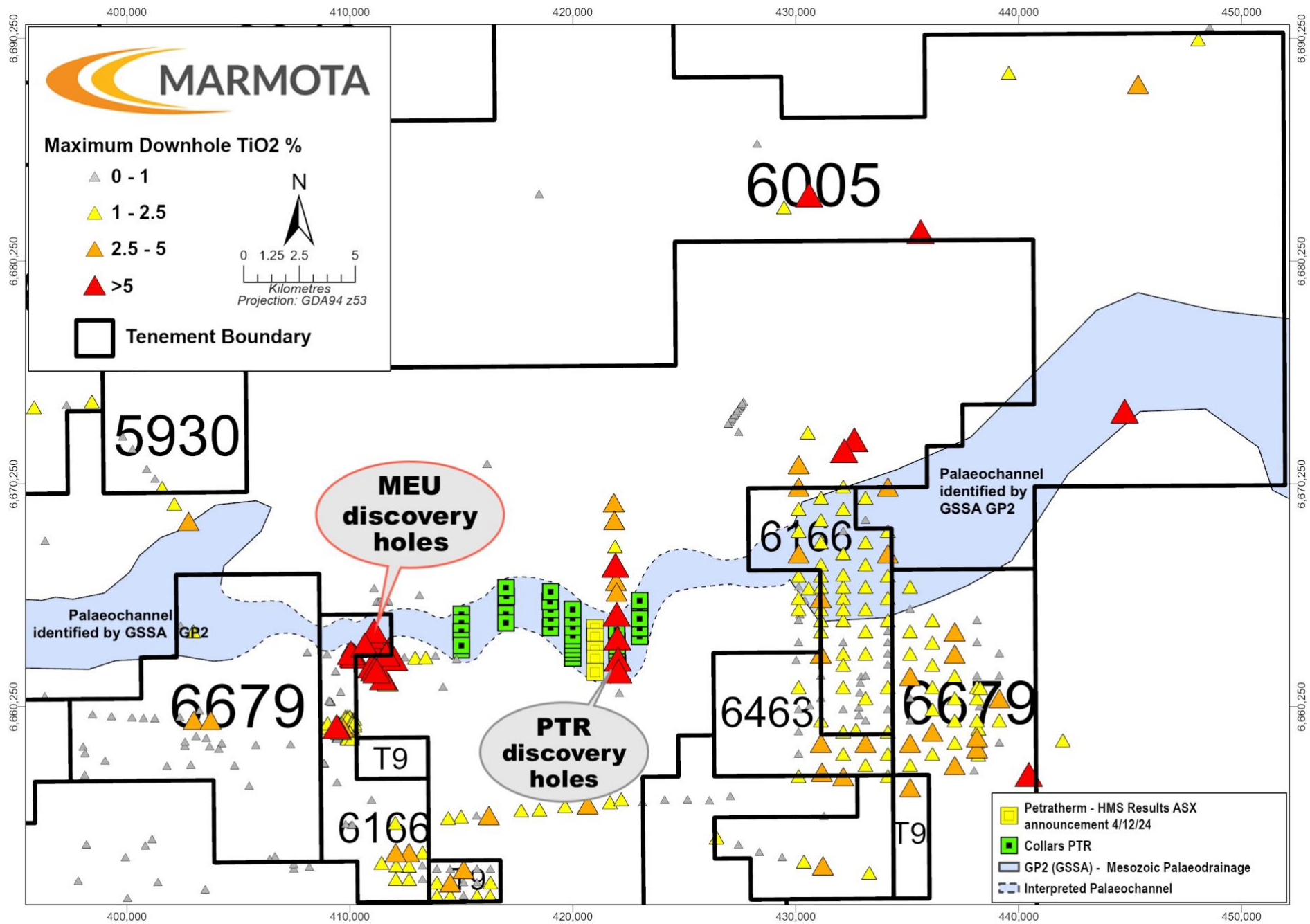


Figure 2: Palaeochannel interpretation over the regional area of Marmota's Titanium Discovery on EL 6166 (Muckanippie) and Petratherm's Titanium discovery, and adjacent MEU tenements [ASX:MEU 7 Jan 2025]

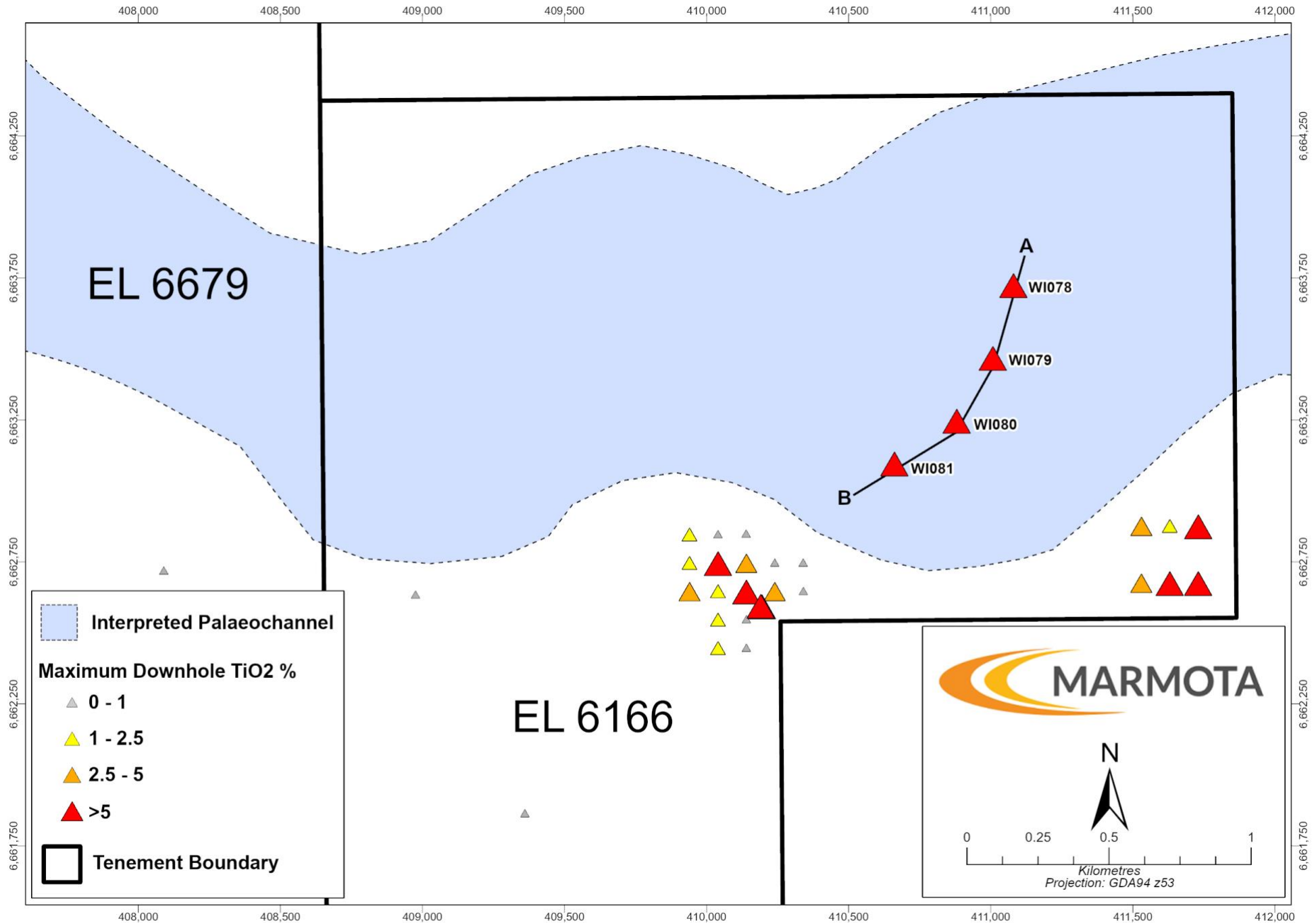


Figure 3: DETAIL VIEW: Marmota's Titanium Discovery on EL 6166 (Muckanippie) with interpreted hosting palaeochannel

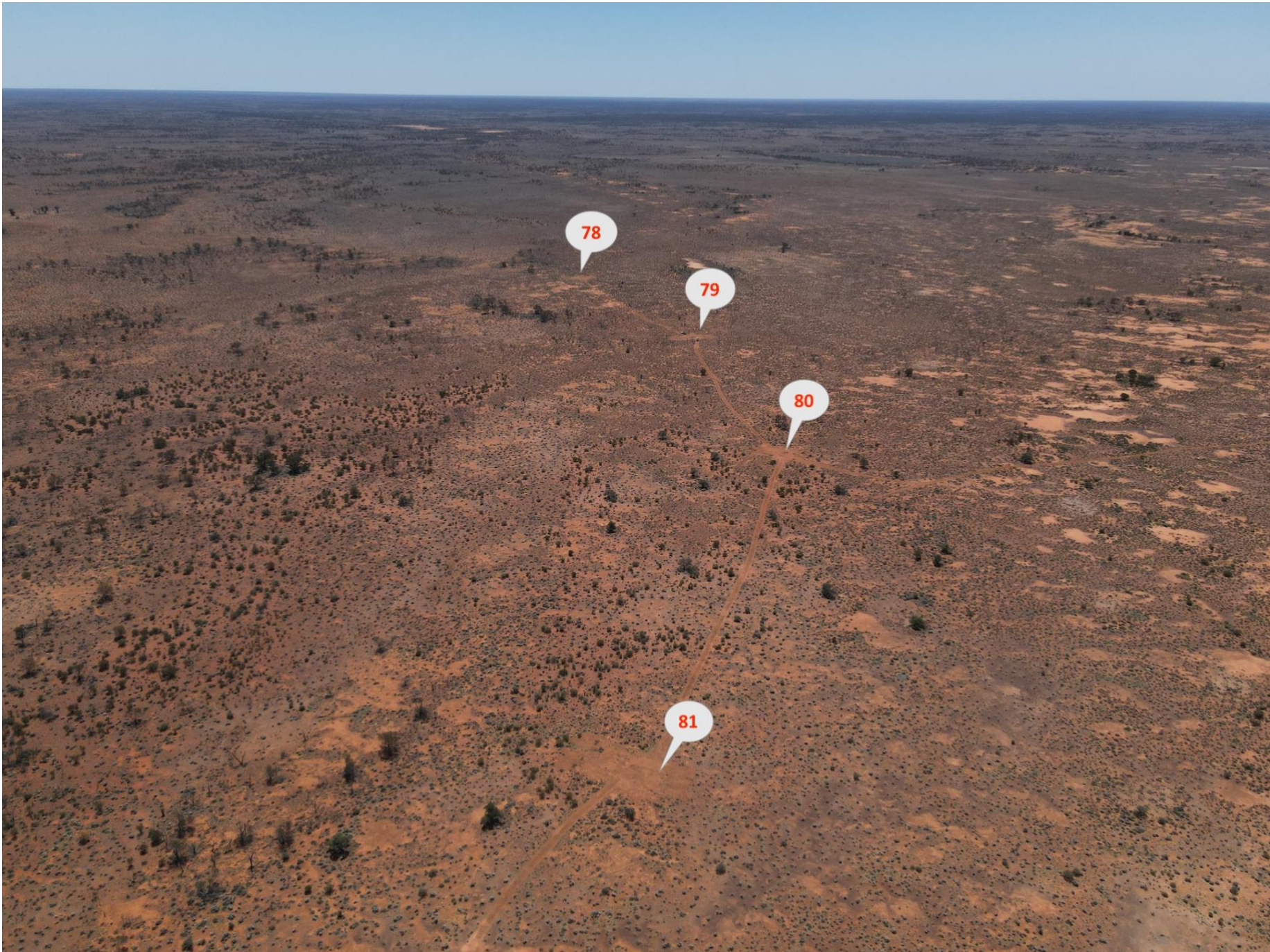


Figure 4: Titanium discovery holes WI-078 to WI-081 (aerial drone view)

Background

- In November 2024, Marmota discovered **exceptional thick rich titanium** mineralisation at Muckanippie [ASX:MEU 13 Nov 2024] from surface, *in every discovery hole* [see Fig. 1].
- In December 2024, Marmota submitted the first metallurgical testwork to specialist laboratories to determine the heavy mineral properties in the discovery holes.
- Last week, in January 2025, Marmota announced that a geological review at Muckanippie identified a **regional scale palaeochannel** [see Fig. 2] interpreted to transect both Marmota's recent discovery of exceptional thick rich titanium mineralisation at Muckanippie (EL 6166) [ASX:MEU 13 Nov 2024] and Petrathern's discovery of thick rich titanium mineralisation also at Muckanippie [ASX:PTR 11 Sept 2024]. The new interpretation of the Mesozoic palaeochannel has been aided by work published as recently as November 2024 by the Geological Survey of South Australia ('GSSA') GP2 project [ASX:MEU 7 Jan 2025].
- **Marmota holds approximately 28km (in length) of the highly prospective titanium-bearing palaeochannel** on its tenements. Of the 28km, approximately 10km (in length) lies within Marmota's tenements to the west, and approximately 18km (in length) lies within Marmota's tenements to the east.
- The palaeochannel is interpreted to be up to ~ 5km in width over MEU tenements, as defined by the Geological Survey of South Australia GP2 project.
- Titanium is one of the critical minerals identified by governments worldwide with a range of uses in energy storage, defence, space, semiconductors, surgical implants, pigments and the production of metal alloys.
- The discovery features exceptional **TiO₂ grades over 10%** [ASX:MEU 13 Nov 2024], with every hole featuring remarkable intersections from surface.
- The titanium discovery is **located close to transport infrastructure**, adjacent to both the Adelaide to Darwin rail line, and the Adelaide to Perth rail line [see Fig. 5].

**Table 1 Muckanippie Heavy mineral (HM) %
Significant HM Intersections over 12%**

Hole ID	Easting	Northing	DIP	AZI	EOH	From (m)	To (m)	Interval (m)	Heavy Mineral %
WI078	411,080	6,663,729	-90	0	34	0	24	24 m	13.5
<i>incl</i>						8	12	4 m	15.4
<i>incl</i>						12	16	4 m	19.2
<i>incl</i>						16	20	4 m	21.3
WI079	411,007	6,663,473	-90	0	39	0	39	39 m	13.2
<i>incl</i>						4	8	4 m	12.3
<i>incl</i>						24	28	4 m	26.0
<i>incl</i>						32	36	4 m	20.1
<i>incl</i>						36	39	3 m	17.4
WI080	410,880	6,663,252	-90	0	36	0	36	36 m	13.5
<i>incl</i>						4	8	4 m	12.3
<i>incl</i>						8	12	4 m	13.0
<i>incl</i>						20	24	4 m	13.8
<i>incl</i>						24	28	4 m	18.6
<i>incl</i>						28	32	4 m	18.0
<i>incl</i>						32	36	4 m	27.8
WI081	410,661	6,663,101	-90	0	36	0	28	28 m	19.2
<i>incl</i>						0	4	4 m	17.9
<i>incl</i>						4	8	4 m	22.2
<i>incl</i>						8	12	4 m	21.2
<i>incl</i>						12	16	<i>Insufficient sample left for HMC</i>	
<i>incl</i>						16	20	4 m	19.3
<i>incl</i>						20	24	4 m	18.1
<i>incl</i>						24	28	4 m	15.4

Table 2: Australian Mineral Sand Projects and Heavy Mineral HM %

Company	Project	HM %
Tronox¹	Western Australia: COOLJARLOO - Dredge Mine	1.6
	Western Australia: DONGARA - Planned Dry Mine	3.9
	New South Wales: ATLAS-CAMPASPE - Dry Mine	3.0
	New South Wales: KARA/CYLINDER	4.1
Iluka Resources Ltd²	Eucla Basin: ATACAMA + JACINTH AMBROSIA	4.9
	Murray Basin: EUSTON, WIMMERA & BALRANALD	6.5
	Perth Basin: TUTUNUP, CATABY	5.5
Strandline Resources Ltd³	Coburn WA	1.2
Image Resources Ltd⁴	Various Dry Mining Deposits	1.5
	Various Dredge Mining Deposits	2.1
Diatreme Resources Ltd⁵	Cyclone, WA	2.3

Source:

- 1 Tronox (2023). *2023 Annual Report*.
Available at: <https://investor.tronox.com/financials/annual-reports>
- 2 Iluka Resources Limited (2024), *21 Feb 2024 - Annual Report Including Appendix 4E*.
Available at: <https://www.iluka.com/investors-media/financial-results>
- 3 Strandline Resources Limited (2024), *1 October 2024 - Annual Report to Shareholders*.
Available at: <https://strandline.com.au/announcement-category/annual-report>
- 4 Image Resources (2024), *19 April 2024 – Annual Report to Shareholders*.
Available at: <https://imageres.com.au/investors-centre/reports>
- 5 Diatreme Resources Ltd (2024), *22 April 2024 – Annual Report to Shareholders*.
Available at: <https://diatreme.com.au/company-reports>

HM% is one component of the commercial viability of a mineral sands deposit. Other factors include the mineral assemblage, distribution and sizing fractions of the heavy minerals, metallurgical properties, proximity to infrastructure, size of the resource, depth of resource and method of mining.

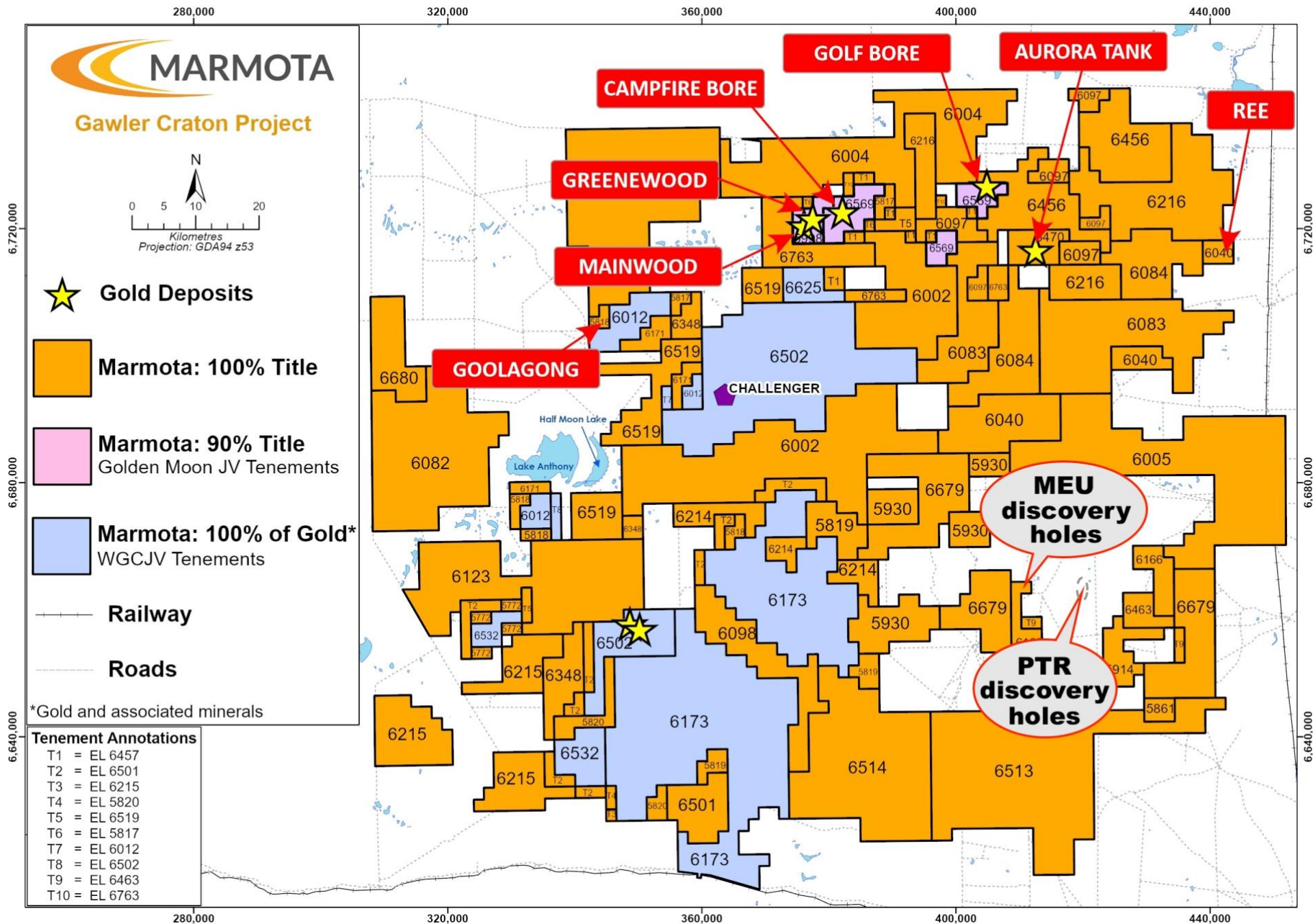


Figure 5: Titanium discovery holes on Marmota’s Muckanippie tenement EL 6166 and Petratherm’s Muckanippie tenement

Metallurgical work

- **Initial Metallurgical Testwork completed** includes:
 1. Heavy **Liquid Separation (HLS)** to determine the **percentage of heavy mineral concentrates** of each sample. The Heavy Liquid Separation facilitates the separation of denser TiO₂-bearing heavy minerals from the less dense sands, slimes and clays within each sample, after passing the sands through a sieve.
- **Further Metallurgical Testwork to be completed:**
 2. **X-Ray Fluorescence (XRF)** Laboratory analysis to determine the **TiO₂ content of the heavy mineral concentrates** of each sample;
 3. **X-Ray Diffraction (XRD)** analysis to determine **mineralogy of heavy mineral concentrates** for each sample, including the **percentage of high-value heavy minerals** such as rutile, anatase and ilmenite.

Marmota Chairman, Dr Colin Rose, said:

“ The first metallurgical Heavy Mineral (HM) assays are outstanding. They confirm Marmota’s discovery at Muckanippie as a highly significant new Heavy Mineral sands discovery. The HM assays feature bonanza grades *in every discovery hole* and speak for themselves. Marmota is moving rapidly to build on this momentum. It is a wonderful start to 2025, and just the beginning of what we expect will be a very rewarding year for the Company and our shareholders. ”

Follow Marmota on X at: [X.com/MarmotaLimited](https://x.com/MarmotaLimited)

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About Marmota Limited

Marmota Limited (ASX:MEU) is a South Australian mining exploration company focused on gold and uranium. Gold exploration is centred on the Company's gold discovery at Aurora Tank that is yielding outstanding intersections in the highly prospective and significantly underexplored Gawler Craton in the Woomera Prohibited Defence Area.

The Company's flagship uranium resource is at Junction Dam adjacent to the Honeymoon mine.

For more information, please visit: www.marmota.com.au

Competent Persons Statement

Information in this Release relating to Exploration Results is based on information compiled by Aaron Brown, who is a Member of The Australian Institute of Geoscientists and Executive Director of Exploration at Marmota. He has sufficient experience relevant to the styles of mineralisation and types of deposits under consideration and to the activities being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code of Reporting of Exploration Results, Mineral Resources and Ore Reserves." Mr Brown consents to the inclusion in this report of the matters based on this information in the form and context in which they appear.

Where results from previous announcements are quoted, Marmota confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcement and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.

For the purpose of ASX Listing Rule 15.5, the Board has authorised for this announcement to be released.

APPENDIX 1 JORC Code, 2012 Edition – Table 1 report

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> • <i>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.</i> • <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i> • <i>Aspects of the determination of mineralisation that are Material to the Public Report.</i> • <i>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 pulverized 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.</i> 	<ul style="list-style-type: none"> • Muckanippie (RAB): <ul style="list-style-type: none"> ○ A total of 106 RAB holes were drilled for 3,995 metres. ○ Samples were collected at 1m intervals from the drilling cyclone and stored in separate bags at the drill site. ○ Composite 4m samples were collected using a 50mm PVC tube ‘spear’ to collect representative samples from bags. Composite samples were an average weight of 3.3 kg which were pulverized to produce sub samples for lab assay. ○ Titanium was tested by Lithium Borate Fusion: an aliquot of sample is fused with lithium metaborate at high temperature in a Pt crucible. The fused glass is then digested in nitric acid and analysed by ICP-MS. ○ Only laboratory assay results were used to compile the table of intersections that appears in the report. • Muckanippie Metallurgy HMC test work samples: <ul style="list-style-type: none"> ○ Reserve (residue) samples were collected from the original Lab. The average weight of the residue samples was 2.2kg. The residue was then split using riffle splitting to obtain a subsample to submit for Metallurgical Heavy Mineral test work. The average weight of the sample sent to ALS for metallurgical test work was 0.9 kg; the remaining sample has been retained by Marmota. ○ When the samples arrived at ALS, samples were split to an average size of 0.470kg for HMC % test work. These samples were then processed using the following steps: <ul style="list-style-type: none"> ○ Wet screening at -1mm /+0.02mm to produce sample for Heavy Mineral Separation. ○ Standard Heavy Minerals Separation on -1mm /+0.02mm sand using

Criteria	JORC Code explanation	Commentary
		<p>Tetrabromoethane (TBE) with floats discarded.</p> <ul style="list-style-type: none"> ○ Results of historic drilling (including on adjacent tenements) has been sourced from SARIG (open source data) which has been compiled and maintained by Department of Energy and Mining. For such data, generally limited information or no information is available for sampling collection methods.
	<ul style="list-style-type: none"> • <i>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).</i> 	<ul style="list-style-type: none"> • Drilling method was RAB, with a hole diameter of 146.5 mm. • Historic drilling by other companies has been sourced from SARIG where the drill technique has been sourced.
Drill sample recovery	<ul style="list-style-type: none"> • <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i> • <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i> • <i>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.</i> 	<ul style="list-style-type: none"> • Drill holes and sample depths were recorded in hard copy format during drilling including sample intervals. • Qualitative assessment of sample recovery of drill samples was recorded. • Sample recoveries were generally high, and moisture in samples minimal. • No relationship is known to exist between sample recovery and grade, in part due to in-ground variation in grade. A potential bias due to loss/gain of fine/coarse material is not suspected. • Historic drilling has been sourced from SARIG: no additional information of recovery is known.
Logging	<ul style="list-style-type: none"> • <i>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 studies.</i> • <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i> • <i>The total length and percentage of the relevant intersections logged.</i> 	<ul style="list-style-type: none"> • Representative drill holes were geologically examined by Marmota geologists. • The holes have not been geotechnically logged. • Geological logging is qualitative. • Historic drilling has been sourced from SARIG including logs where available.
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> • <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i> • <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i> • <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i> • <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i> • <i>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.</i> 	<ul style="list-style-type: none"> • Muckanippie Drilling (RAB): <ul style="list-style-type: none"> ○ Composite samples averaging 3.3 kg were collected for laboratory assay. Samples were collected with a 50mm tube by diagonally spearing individual samples within bags. ○ It is considered representative samples were collected after homogenising of sample through drilling cyclone and unbiased spearing of samples in bags. ○ Laboratory sample preparation includes drying and pulverizing of submitted sample to target of p80 at 75 µm. ○ No samples checked for size after pulverising failed to meet sizing target in the sample batches relevant to the report.

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> Whether sample sizes are appropriate to the grain size of the material being sampled. 	<ul style="list-style-type: none"> Duplicate samples were introduced into the sample stream by the Company. Muckanippie Metallurgy HMC testwork samples: <ul style="list-style-type: none"> Reserve (residue) samples were collected from the Lab. The average weight of the residue samples was 2.2kg. The residue was then split using riffle splitting to obtain a subsample to submit for Metallurgical Heavy Mineral test work. The average weight of the sample sent to ALS for metallurgical test work was 0.9 kg; the remaining sample has been retained by Marmota. When the samples arrived at ALS, samples were split to an average size of 0.47 kg for HMC % test work. These samples were then processed using the following steps: <ul style="list-style-type: none"> Wet screening at -1mm /+0.02mm to produce sample for Heavy Mineral Separation. Standard Heavy Minerals Separation on -1mm /+0.02mm sand using Tetrabromoethane (TBE) with floats discarded. Historic drilling has been sourced from SARIG (open source data), which has been compiled and maintained by Department of Energy and Mining and generally limited information or no information is available for sampling collection methods.
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> 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 (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established. 	<ul style="list-style-type: none"> Muckanippie Drilling (RAB): <ul style="list-style-type: none"> Samples from exploratory holes on Muckanippie tenement were analysed for Titanium using Lithium Borate Fusion using Inductively Coupled Plasma Mass Spectrometry. QAQC Drilling assay methods: <ul style="list-style-type: none"> For all samples, the Company introduced QA/QC samples at a ratio of one QA/QC sample for every 30 drill samples. The laboratory introduced additional QA/QC samples (blanks, standards, checks) at a ratio of greater than 1 QA/QC sample for every 10 samples. Both the Company and laboratory QA/QC samples indicate acceptable levels of accuracy and precision have been established. Duplicates were introduced into the sample stream by the Company. The laboratory completed repeat assays on

Criteria	JORC Code explanation	Commentary						
		<p>various samples.</p> <ul style="list-style-type: none"> ○ Standard samples were introduced into the sample stream by the Company, while the laboratory completed standard assays also. • Duplicate samples for HMC % was submitted at a ratio of one QA/QC for every 30 samples by company. The duplicates indicate acceptable levels of accuracy and precision have been established. • Historic drilling has been sourced from SARIG (open source data), which has been compiled and maintained by Department of Energy and Mining and generally limited information or no information is available for sampling collection methods or QAQC protocols. 						
Verification of sampling and assaying	<ul style="list-style-type: none"> • <i>The verification of significant intersections by either independent or alternative company personnel.</i> • <i>The use of twinned holes.</i> • <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i> • <i>Discuss any adjustment to assay data.</i> 	<ul style="list-style-type: none"> • An alternative company representative has checked the calculation of the quoted intersections. No twinned holes were drilled in the program. • Assays were reported in Elemental form and converted to relevant oxide using James Cook University's Element-to-stoichiometric oxide conversion factors: <table border="1" data-bbox="1384 710 1899 790"> <thead> <tr> <th>Element</th> <th>Oxide</th> <th>Factor</th> </tr> </thead> <tbody> <tr> <td>Titanium</td> <td>TiO₂</td> <td>1.6681</td> </tr> </tbody> </table>	Element	Oxide	Factor	Titanium	TiO ₂	1.6681
Element	Oxide	Factor						
Titanium	TiO ₂	1.6681						
Location of data points	<ul style="list-style-type: none"> • <i>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.</i> • <i>Specification of the grid system used.</i> • <i>Quality and adequacy of topographic control.</i> 	<ul style="list-style-type: none"> • Drillhole coordinate information was collected using a handheld GPS system with an autonomous accuracy of ± 3m utilising GDA 94 Zone 53. • The area is generally of low topographic relief. Topographic control uses SRTM 90 DEM. • Where SARIG (open source data) has been shown this information has been plotted in GDA 94 Zone 53 and there is no known accuracy of this historic data. 						
Data spacing and distribution	<ul style="list-style-type: none"> • <i>Data spacing for reporting of Exploration Results.</i> • <i>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.</i> • <i>Whether sample compositing has been applied.</i> 	<ul style="list-style-type: none"> • Drill hole spacing is irregular as indicated in Appendix 2. 						
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> • <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i> • <i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have</i> 	<ul style="list-style-type: none"> • Drill lines were new reconnaissance holes. Therefore, a sampling bias should not have occurred. 						

Criteria	JORC Code explanation	Commentary
	<i>introduced a sampling bias, this should be assessed and reported if material.</i>	
Sample security	<ul style="list-style-type: none"> <i>The measures taken to ensure sample security.</i> 	<ul style="list-style-type: none"> Company staff collected all laboratory samples. Samples submitted to the laboratory were transported and delivered by Company staff. Historic Drilling (open source data): the sample security method is unknown
Audits or reviews	<ul style="list-style-type: none"> <i>The results of any audits or reviews of sampling techniques and data.</i> 	<ul style="list-style-type: none"> No audit of data has been completed to date.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> 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, 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. 	<ul style="list-style-type: none"> Muckanippie (EL 6166) is 100% owned by Marmota Limited. The EL is located approximately 120 km southwest of Coober Pedy in South Australia. There are no third-party agreements, non-government royalties, historical sites or environmental issues. Exploration is conducted within lands of the Antakirinja Matu-Yankuntjatjara Native Title Determination Area. The tenements are in good standing.
Exploration done by other parties	<ul style="list-style-type: none"> Acknowledgment and appraisal of exploration by other parties. 	<ul style="list-style-type: none"> Previous exploration drill holes on the tenement included: <ul style="list-style-type: none"> Regional AC by CRA Exploration Pty Ltd (1983) for Kimberlites. Regional RC by South Australia Department of Mines and Energy (1991) focused on basement lithology. Regional RAB by Normandy Exploration Ltd (1997) focused on Gold, Base Metals. Regional RC drilling by Aztec Mining (1998) focused on Gold, Base Metals. Reconnaissance AC, TMI and EM surveys by Uranium SA Ltd (2007) focused on Uranium. Previous RC drilling at the Widgetty prospect by MEU (2015). Drilling AC by Marmota (2023) for Project X. No previous Titanium exploration has occurred within the tenement.
Geology	<ul style="list-style-type: none"> Deposit type, geological setting and style of mineralisation. 	<ul style="list-style-type: none"> All drilling occurred within geology of the Christie Domain of the western Gawler Craton. The Christie Domain is largely underlain by late Archaean Mulgathing Complex which comprises meta-sedimentary successions interlayered with Banded Iron Formations (BIF), chert, carbonates and calc-silicates. Marmota targeted near surface mineralisation. See Geology section in ASX releases.
Drill hole Information	<ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> The required information on drill holes is incorporated into Appendix 2 to the ASX Release. Historic drilling has been sourced from SARIG (open source data), which has been compiled and maintained by Department of Energy and Mining.

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> 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. 	
Data aggregation methods	<ul style="list-style-type: none"> In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg 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. The assumptions used for any reporting of metal equivalent values should be clearly stated. 	<ul style="list-style-type: none"> Muckanippie RAB drilling: <ul style="list-style-type: none"> Any intersections are calculated by simple averaging of 4m Composite Samples. Where aggregated intercepts are presented in the report, they may include shorter lengths of high-grade mineralisation; these shorter lengths are also tabulated. No metal equivalents are reported. Muckanippie HMC Test work: <ul style="list-style-type: none"> Any intersections are calculated by simple averaging of 4m Composite Samples. Where aggregated intercepts are presented in the report, they may include shorter lengths of high-grade mineralisation; these shorter lengths are also tabulated. WI081 at 12-16m: there was not sufficient sample to complete HMC Testwork over this 4m interval. To enable the calculation of the comparative continuous HM% intervals from surface, the 4m interval was inferred as the simple average of the HM % from the 2 samples above and 2 samples below [see Fig. 1] (i.e. average of the surrounding 16m of samples), noting that the hole features exceptional geological continuity from surface [see Fig. 1]. Given the strong positive correlation between TiO₂ and HMC%, and that this simple recorded the highest TiO₂ % of all samples, the averaging of surrounding samples is conservative and likely to underestimate HM%. No metal equivalents are reported.
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> 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'). 	<ul style="list-style-type: none"> Drill coverage is considered sufficient to establish approximate true widths, given the current geological understanding of mineralisation dip and strike. Mineralisation intersections are downhole lengths; exact true widths are unknown but are similar to the intersection lengths as the mineralised zones are approximately normal to hole inclinations.
Diagrams	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> See Figures within ASX release

Criteria	JORC Code explanation	Commentary
Balanced reporting	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> A cut-off grade of 12% Heavy Mineral Concentrate (HMC) was applied in reviewing assay results and deemed to be appropriate at this stage in reporting of exploration results. Reporting is considered balanced.
Other substantive exploration data	<ul style="list-style-type: none"> 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. 	
Further work	<ul style="list-style-type: none"> The nature and scale of planned further work (e.g. tests for lateral 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. 	<ul style="list-style-type: none"> Marmota is reviewing results received to date and preparing additional work programs including additional infill and extensional drilling.

APPENDIX 2 Summary of all Drillhole collars submitted for metallurgical testwork EL6166

Tenement	Hole ID	Drill Type	Easting (MGA94 z53)	Northing (MGA94 z53)	RL	Dip	Azimuth (Mag)	EOH Depth
Muckanippie	WI078	RAB	411,080	6,663,729	186	-90	0	34
Muckanippie	WI079	RAB	411,007	6,663,473	185	-90	0	39
Muckanippie	WI080	RAB	410,880	6,663,252	186	-90	0	36
Muckanippie	WI081	RAB	410,661	6,663,101	188	-90	0	36