11 September 2024

Exceptional High-Grade Titanium Rich Heavy Mineral Sands Discovered Over Large Area At Muckanippie

Highlights

- Mapping, surface sampling, and re-assaying of historic drilling has discovered high-grade Titanium rich heavy mineral sands (HMS) over several kilometres at the Muckanippie Project.
- Exceptional sample grades ranging from **10% to 50% TiO_2** from two large Prospect Areas. **79% of samples >10% TiO_2,** with **28% > 30% TiO_2**
- Titanium is on the critical minerals list for Australia, US and EU and has uses in electric vehicles and battery storage, wind technology, pigments, and as an alloy in steel and superalloys.
- At the Rosewood Prospect, outcropping mineralisation extends over 9 kilometres West to East. Wide spaced drilling confirms HMS extend at least 6 kilometres to the North.
- Re-Assaying of Historical Rosewood drill intercepts include:
    - CAR 39 – **20m @ 4.2% TiO_2** from 4m, including **4m @ 9.1% TiO_2** from 4m
    - CAR 38 – **36m @ 4.0% TiO_2** from 0m, including **6m @ 7.8% TiO_2** from 8m
- An accompanying Exploration Target for the initial planned drill area over the Rosewood Target highlights excellent upside potential.
- At Claypan Prospect, samples of the mineral sandstone horizons assaying **>5% TiO_2** and up to **31.5% TiO_2** have been traced over a 1.5 kilometre trend before passing under cover.
- A historical drill hole, 6 kilometres South of Claypan outcrop, intersected the heavy mineral sand layer assaying **12.1% TiO_2**, and underlying **source rocks were intersected** returned grades up to **21.0% TiO_2 and 0.44% V_2O_5**.
- A 4000-metre drilling program is scheduled to start early October to test grade and extent of HMS mineralisation and high-grade Titanium-Vanadium basement horizons.

Petratherm Limited (ASX: PTR) ("PTR" or "the Company") is pleased to announce a high-grade heavy mineral sand (HMS) discovery at its Muckanippie Project area southwest of Coober Pedy in South Australia (Figure 1). Reconnaissance mapping and surface sampling along with assaying of historic drill core stored at the South Australian Government's Core Library has identified previously unknown high-grade Titanium mineralisation spanning many square kilometres at two prospect sites, Rosewood and Claypan.

Recent outcrop samples recorded exceptional grades ranging between **10% and 50% titanium dioxide (TiO_2)** (Table 1 & 2). The mineralisation occurs from or near surface (<10 metres) and is present as heavy mineral bands forming sheet-like Heavy Mineral Sand (HMS) mineralisation. At Claypan significant Titanium-Vanadium mineralisation has also been identified in the underlying basement source rock, and additionally has potential for primary basement mineralisation.

The Australian Government along with the United States, the European Union, India, Japan, South Korea and the United Kingdom designated Titanium as a critical mineral for essential modern technologies, economies and national security. Titanium has uses in electric vehicles and battery storage, wind technology, pigments, and as an alloy in steel and superalloys. The global market size of titanium in 2022 amounted to 28.6 billion U.S. dollars and is forecast to grow over the coming years, to nearly 52 billion U.S. dollars in 2030[1].

An Exploration Target for the Rosewood Prospect is defined over the initial planned drill area and represents approximately 10% of the total interpreted prospective HMS area. The Rosewood target and grade range reports:

Rosewood Exploration Target (Phase 1 – proposed drill program area)

	Low	High
Tonnes (Mt)	237	377
Grade (TiO_2%)	5.3	7.9

Cautionary Statement: The potential quantity and grade of the Exploration Target is conceptual in nature and there has been insufficient exploration to estimate a Mineral Resource, and it is uncertain if further exploration will result in the estimation of a Mineral Resource

PTR Chief Executive Officer, Peter Reid Commented:

"The Muckanippie Suite is a rare and highly fertile layered intrusion, and this titanium discovery including high-grade, high value, titanium ores as heavy mineral sands has the potential to be transformational for the Company.

"The mineralisation has been traced over a large-scale area and has significant potential as large tonnage direct shipment ore. The Adelaide to Darwin railway, located just 30 kilometres east of Muckanippie, offers low-cost access to ports and global markets.

"The Company looks forward to drilling in October, which will expand on these significant and exciting findings to define initial grades and extent of the mineralisation".

[1] Source: Statista - Global market value of titanium 2021-2030, April 2024.

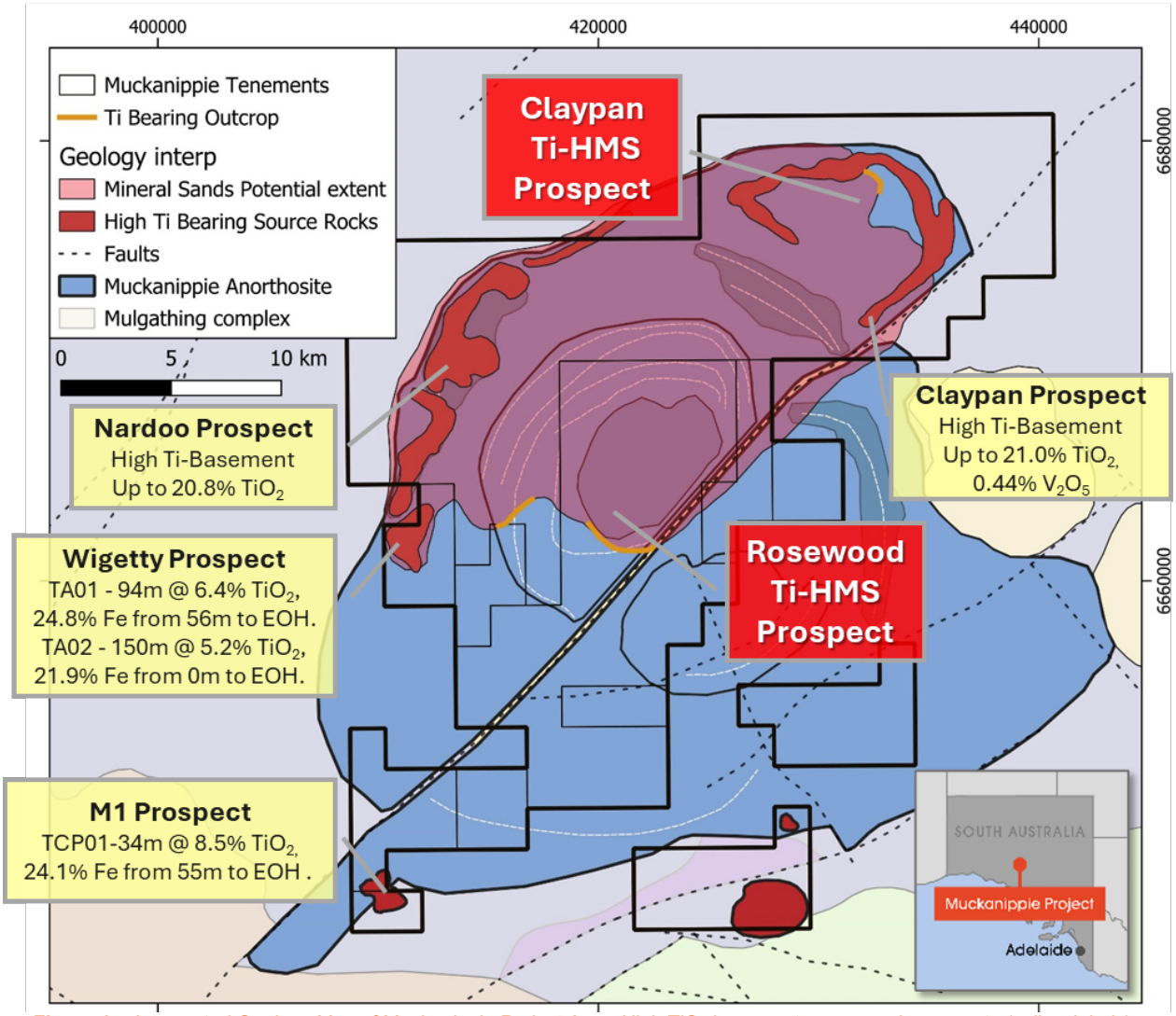


Figure 1 – *Interpreted Geology Map of Muckanippie Project Area, High TiO_2 basement source rock prospects (yellow labels)[2], HMS Titanium Prospects (red labels) and interpreted extent of Titanium Rich Mineral Sands.*

Rosewood Titanium Heavy Mineral Sands Prospect

At the Rosewood Prospect reconnaissance mapping identified outcrops of high-grade heavy mineral banded, partly indurated sandstone on the side of a low escarpment (Photo 1). This unit has subsequently been traced over a length of 9 kilometres. PTR geologists took 31 surface rock chip samples to test for the presence of Titanium-bearing minerals with multiple samples returning **bonanza TiO_2-grades of >25%, and up to 49.4%** (Figure 2, Table 1).

Notable rock chip samples results include:

- G01989 Rosewood East - **49.4% TiO_2** and 0.16% V_2O_5
- S10471c Rosewood West - **38.5% TiO_2** and 0.22% V_2O_5
- S10465 Rosewood East - **33.6% TiO_2** and 0.23% V_2O_5
- PTR011045 Rosewood East - **33.2% TiO_2** and 0.19% V_2O_5

[2] PTR ASX release 14/11/2022- Muckanippie Project Tenement Granted

The Rosewood Prospect straddles EL 6855, 100% owned by PTR, and EL 6715 where PTR completed a Mining Farm-in and Joint Venture Agreement with Narryer Metals (ASX:NYM). PTR can earn up to a 70% interest in EL6715, via a 2 Stage Farm-in with further provisions, dependent on NYM's elections, to earn up to an 80% equity in the project[3].

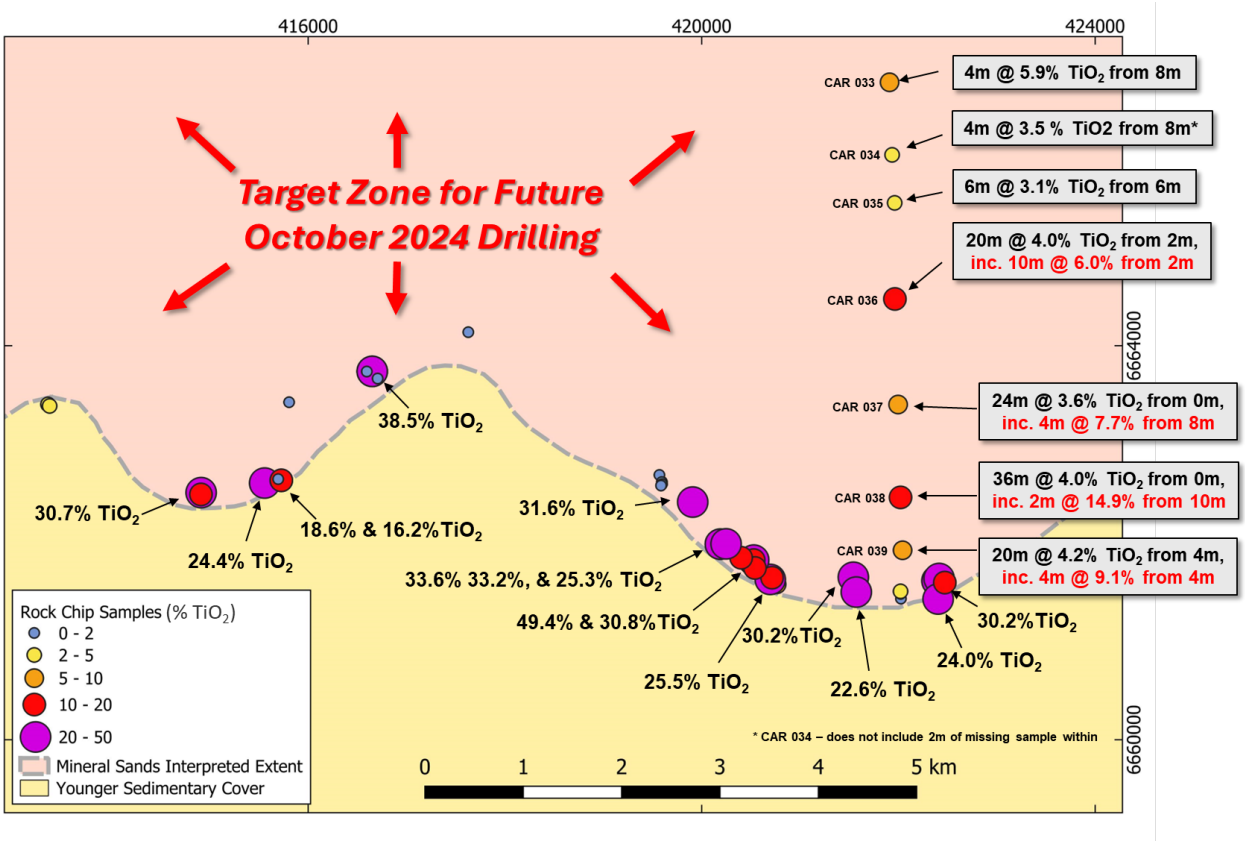


Figure 2 – *Location of rock chip and historic drilling samples at Rosewood Prospect.*

Photo 1 *– Low escarpment at Rosewood Prospect showing tertiary silcrete cap and exposures of underlying HMS horizon*

[3] PTR ASX release 18/04/2024 – Farm-in Agreement Expands Muckanippie Project

Photo 2 – Left – Typical outcrop of HMS titanium ore (dark minerals) in white silts. Right – high-grade ores (>30% TiO_2) from the Rosewood Prospect. The brown-black minerals are the Titanium-bearing mineral ores comprising ilmenite, leucoxene and rutile.

North of the high-grade escarpment outcrop, PTR has obtained samples from wide-spaced air core drilling undertaken by the Mines Department in 1991 and stored at the South Australian Core Reference Library. These samples had not previously been subject to analysis for TiO_2 and the new assaying shows that the mineralisation continues at least 6 kilometres North (Figure 2). The drill holes were drilled along an existing North-South track at approximately 1 kilometre spacing.

Notable intercepts from historic drill core include:

- CAR 36 – **20m @ 4.0 % TiO2** from 2m, including **10m @ 6.0% TiO2** from 2m
- CAR 37 – **24m @ 3.6 % TiO2** from 0m, including **4m @ 7.7% TiO2** from 8m
- CAR 38 – **36m @ 4.0 % TiO2** from 0m, including **6m @ 7.8% TiO2** from 8m, including **2m @ 14.9 % TiO2** from 10m
- CAR 39 – **20m @ 4.2 % TiO2** from 4m, including **4m @ 9.1% TiO2** from 4m

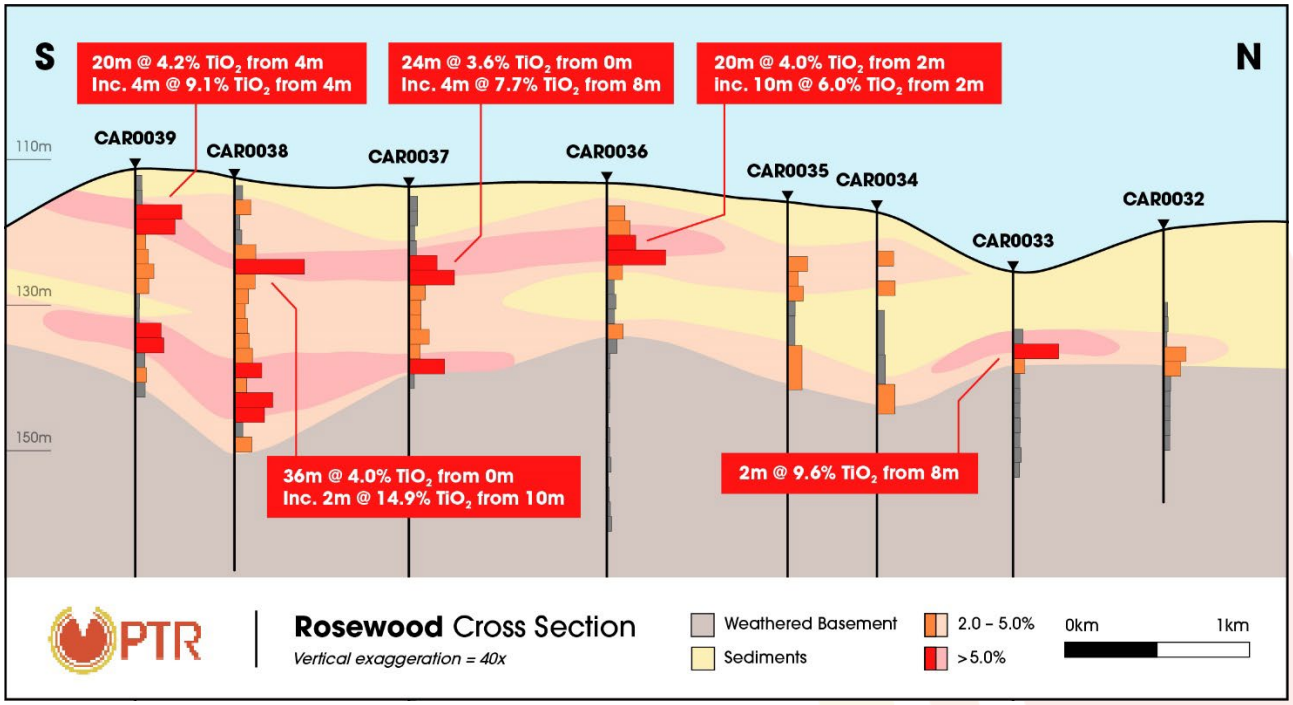


Figure 3 – *Section showing Titanium assays from CAR drillholes at the Rosewood Prospect*

Table 1 – *Rosewood Prospect – High Titanium Surface Samples*

Rosewood Prospect Surface Sampling >5% TiO_2					
Sample ID	**Prospect**	**Easting** *(GDA94)*	**Northing** *(GDA94)*	**TiO_2** *%*	**V_2O_5** *%*
S10452	Rosewood East	422460	6661585	10.1	0.06
S10453	Rosewood East	422382	6661579	6.9	0.04
S10454	Rosewood East	422392	6661614	24.0	0.12
S10455	Rosewood East	422414	6661638	21.3	0.11
S10456	Rosewood East	421542	6661650	30.2	0.22
S10457	Rosewood East	420763	6661578	6.8	0.04
S10458	Rosewood East	420697	6661628	9.6	0.06
S10459	Rosewood East	420697	6661628	25.5	0.15
S10460	Rosewood East	420716	6661646	18.0	NS
S10461	Rosewood East	420530	6661824	30.8	0.22
G01989	Rosewood East	420530	6661824	49.4	0.16
S10462	Rosewood East	420530	6661824	12.8	0.08
S10463	Rosewood East	420542	6661744	19.5	NA
S10464	Rosewood East	420402	6661848	14.9	0.08
S10465	Rosewood East	420190	6661986	33.6	0.23
S10466	Rosewood East	420190	6661986	25.3	0.12
S10467	Rosewood East	419909	6662413	31.6	0.25
S10469	Rosewood West	415557	6662606	24.4	0.18
S10470	Rosewood West	415734	6662648	8.5	0.05
S10471a	Rosewood West	416651	6663740	34.8	0.20
S10471b	Rosewood West	416651	6663740	35.0	0.20
S10471c	Rosewood West	416651	6663740	38.5	0.22
PTR01123	Rosewood West	414912	6662509	30.7	0.21
PTR01125	Rosewood West	414910	6662491	12.7	0.10
PTR01126	Rosewood West	415727	6662634	18.6	0.10
PTR01127	Rosewood West	415727	6662634	16.2	0.08
S10085	Rosewood East	422404	6661429	24.0	0.15
S10086	Rosewood East	422472	6661596	10.2	0.06
PTR01140	Rosewood East	421572	6661500	22.6	0.11
PTR01145	Rosewood East	420248	6661989	33.2	0.19

Claypan Prospect

Outcrop of HMS sandstone at the Claypan Prospect located on EL 6715[4], comprises a series of low escarpments outcropping over 2 kilometres of trend. Rock chip sampling returned TiO_2 assays ranging between **5.7% and 31.5% TiO_2** (Table 2, Figure 4). Higher-grade mineralised horizons were found on the southern side of an interpreted high Titanium-Vanadium basement source rock horizon (**see below - Claypan Basement Titanium Target**). The source rock horizon has a distinctive magnetic signature, and its outline is shown overlain in Figure 4 below.

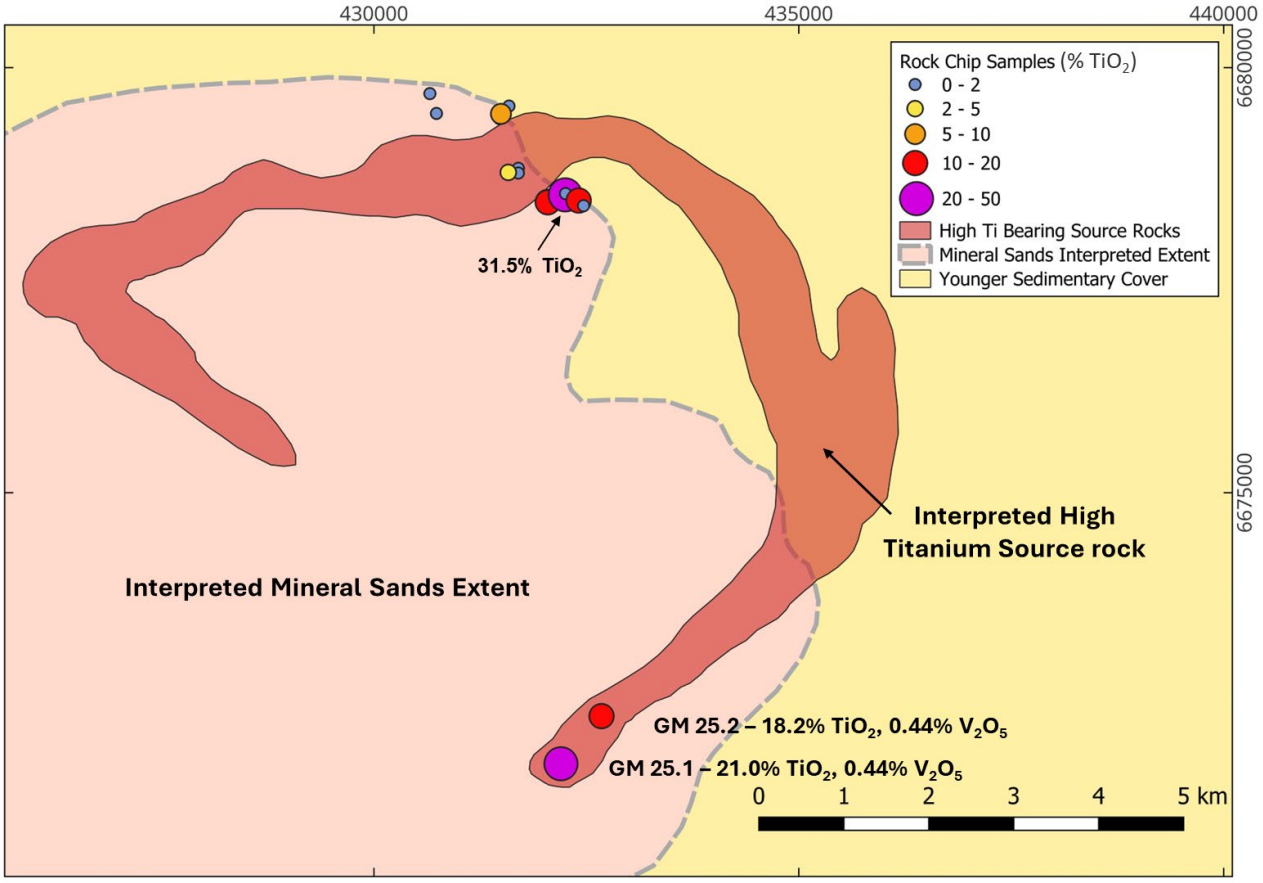


Figure 4 – *Location of rock chip and drilling samples at Claypan Prospect, outline of prospective HMS extent and outline of underlying interpreted high titanium-Vanadium basement source rocks horizon.*

Table 2 – *Claypan Prospect – High Titanium Surface Samples*

Claypan Prospect Surface Sampling >5% TiO_2					
Sample ID	**Prospect**	**Easting** *(GDA94)*	**Northing** *(GDA94)*	**TiO_2** *%*	**V_2O_5** *%*
G01997	Claypan	432042	6678437	8.3	NA
PTR01108	Claypan	432046	6678420	13.4	0.067
PTR01112	Claypan	432046	6678417	13	0.034
PTR01113	Claypan	432252	6678504	31.5	0.075
PTR01115	Claypan	432410	6678438	12.1	0.044
S10450	Claypan	431495	6679457	5.66	0.022

[4] EL 6715 – Petratherm Mining Farm-in and Joint Venture Agreement with Narryer Metals (ASX: NYM) refer to JORC Table 1

Claypan Basement Titanium Target

Claypan Prospect has additional high potential for basement-hosted Ti-V targets immediately below and adjacent to the HMS mineralisation. Approximately 6 kilometres south of the outcropping Titanium-bearing sandstone, Flinders Mines drilled two shallow holes in 2008 at two magnetic anomalies, as part of a regional exploration program for diamonds (Figure 4).

Drill holes GM 25.1 and GM 25.2 were selectively assayed for a wide range of elements over short down hole intervals. Both drill holes record exceptional concentrations of vanadium (**up to 0.44%**), titanium (**up to 21% TiO_2**) and iron (**up to 47.5% Fe**) along with highly anomalous phosphate and chrome (Table 3)[5]. Although only limited sampling was undertaken by Flinders Mines, almost all samples returned significant TiO_2 assays throughout the hole (Figure 5).

In drill hole GM25.2, a single cover sediment sample was taken of the overlying HMS unit returning **10.1% TiO_2**. Further down the hole it passes into weathered high titanium and vanadium basement rock recording up to **18.2% TiO_2 and 0.44% V_2O_5** (Figure 5).

The style of mineralisation intersected in the basement rock is indicative of Vanadiferous Titanomagnetite (VTM) deposits, which supply approximately 88% of the world's vanadium[6]. These deposits are associated with layered intrusions like that identified at Muckanippie and the ores typically form stratiform horizons due to their association with the layered intrusions. At Claypan, the prospective magnetic horizon extends for approximately 18 kilometres (Figure 4) under shallow cover and will be a priority for follow up drilling.

Table 3 - *Historical drill assays from Claypan Prospect. Drill holes were not continuously sampled. Element assays reported show all sampled intervals.*

Claypan Prospect - Historic Vanadium -Titanium Drillhole Assays								
Drill Hole	**From** (m)	**To** (m)	**Interval** (m)	**V_2O_5** %	**TiO_2** %	**Fe** %	**P_2O_5** %	**Cr_2O_3** %
GM25.1	20	21	1	0.07	0.9	**47.5**	0.3	0.1
GM25.1	24.5	25	0.5	**0.44**	**21.0**	**43.5**	0.2	**1.5**
GM25.1	45	46	1	0.06	**5.3**	15.4	1.5	0.1
GM25.1	50	51	1	0.06	**8.6**	14.3	**4.4**	0.0
GM25.1	54	55	1	0.01	0.6	2.4	0.4	0.0
GM25.1	55	56	1	0.04	**8.3**	14.3	**4.2**	0.0
GM25.2	10.5	11	0.5	0.05	**10.1**	**27.6**	0.8	0.0
GM25.2	24	24.5	0.5	0.05	**12.1**	16.6	**3.1**	0.0
GM25.2	34.8	35	0.2	**0.40**	**16.7**	**43.5**	0.1	**1.3**
GM25.2	41	41.5	0.5	**0.39**	**16.7**	**44.5**	0.1	**1.2**
GM25.2	48.5	49	0.5	**0.13**	**14.3**	17.3	0.0	0.2
GM25.2	52	52.5	0.5	**0.44**	**18.2**	**45.4**	0.0	**1.4**
GM25.2	53	53.2	0.2	0.07	3.5	17.9	0.2	0.2
GM25.2	53.7	54	0.3	0.04	1.9	**21.8**	0.1	0.1

[5] PTR ASX Release 18/04/2024 – Farm-in Agreement Expands Muckanippie Project.
[6] Simandl GJ & Paradis S 2022. Vanadium as a critical material: economic geology with emphasis on market and the main deposit types. *Applied Earth Science* 131 (4): 218-236.

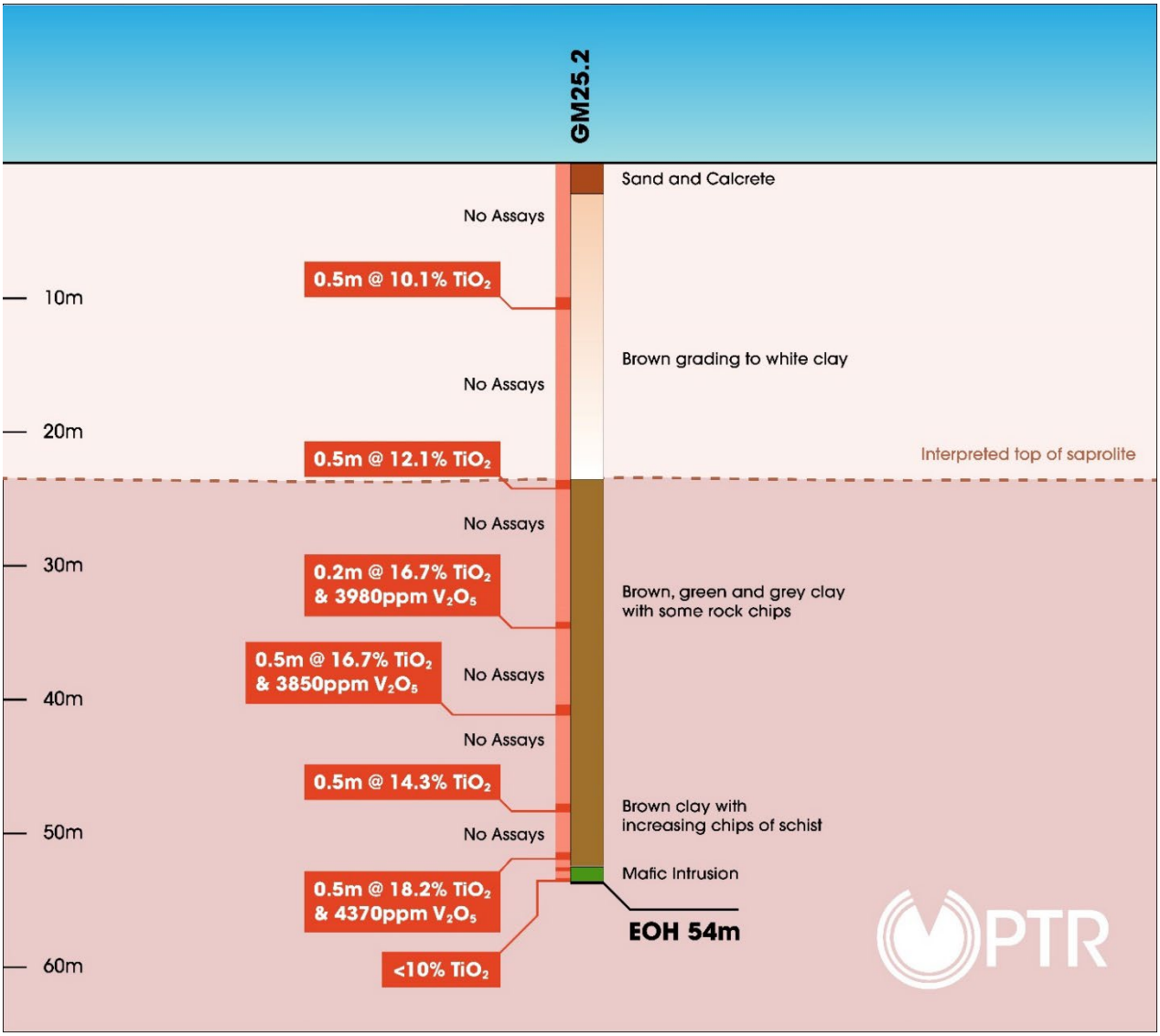


Figure 5 – *Section through historic drill hole GM25.2 at the Claypan Prospect showing limited Ti assays and interpreted geology.*

High Value Titanium Heavy Mineral Sands

The Titanium HMS form horizons in a recent white silt and sand sequence. It is postulated the underlying high Titanium-Vanadium bearing Muckanippie Suite basement rocks are softer than surrounding strata forming an ancient lowland lake depositional centre. The distinctive white silts are the result of breakdown of aluminous feldspar (anorthite) which make up a large portion of the Muckanippie Suite layered Complex.

Typically, HMS occurrences contain high percentages of deleterious iron rich minerals that need to be removed, however at Muckanippie the HMS comprise >90% titanium minerals. The associated iron rich minerals (originally mostly magnetite and some haematite) have broken down and have been removed leaving only titanium minerals which are more resistant to weathering.

Preliminary petrological assessment of titanium bearing minerals, describes original ilmenites which have undergone varying degrees of leaching and removal of iron to produce higher value titanium enriched leucoxene. Iron leaching is pronounced in some specimens with replacement to high value rutile around mineral grains and other free rutile grains being observed. At this stage average mineral compositions cannot be determined until detailed metallurgical testing is completed.

Rosewood Exploration Target

An initial Exploration Target over the proposed Rosewood drilling program area is defined and represents approximately 10% of the total interpreted prospective HMS area (Figure 6). The target area is limited to the extent of historical higher-grade CAR drill hole intercepts and mapped extent of outcropping mineralisation.

Mapping observations and sampling of outcropping mineralised HMS showed mineralisation was continuous, flat lying and had little grade and thickness variation. The outcropping sequence extends over a 7.5 kilometre west-east trend. The exploration target area was limited north-south to the Southern 4 CAR drill holes (CAR036 to CAR039) closest to the outcropping mineralisation. These 4 holes demonstrate good continuity between drill holes in terms of average TiO_2 grade, intercept thickness and mineralisation depth (Figure 3). Drill hole spacing ranges from 537 metres to 1070 metres. Mineralisation does continue further North but at an overall lower grade and thickness.

In total, 81 two metre composite drill samples were analysed from the CAR drill holes. Samples analysed were the sedimentary cover sequence through to the upper saprolite (weathered basement) boundary. Samples were analysed by ALS, prepared via lithium borate fusion and analysed with ICP-AES.

Due to potential biases being introduced from the surface sampling, grade and thickness data was based solely on CAR drilling intercepts (Tables 4 & 5). The surface mapping served only to map the extent of mineralisation. Grade ranges and interval thicknesses are based on calculation of the weighted average CAR drillhole intercepts within the defined Exploration Target Area. A nominal 6% TiO_2 average intercept cut-off grade was applied. This was deemed as having prospects of eventual economic extraction. Only the higher-grade top zone of mineralisation was selected for the calculation ranging from 4 to 10 metres of intercept thickness and starting from 2 to 8 metres from surface.

A dry density range of 1.6 to 1.7 t/m^3 was applied based on range of typical Eocene cover sediment indicative of the host rock. The Exploration target and grade range is determined by applying a +20% and -20% threshold to determine the upper and lower limits of the Exploration Target grade range.

Rosewood Exploration Target (Phase 1 proposed drill program area)

	Low	High
Tonnes (Mt)	237	377
Grade (TiO_2%)	5.3	7.9

The potential quantity and grade of the Exploration Target is conceptual in nature and there has been insufficient exploration to estimate a Mineral Resource, and it is uncertain if further exploration will result in the estimation of a Mineral Resource.

Future work could comprise:

- Obtaining measured density data.
- Metallurgical test work to determine titanium mineral assemblage and mineral recoveries.
- Complete drilling to determine a Mineral Resource.

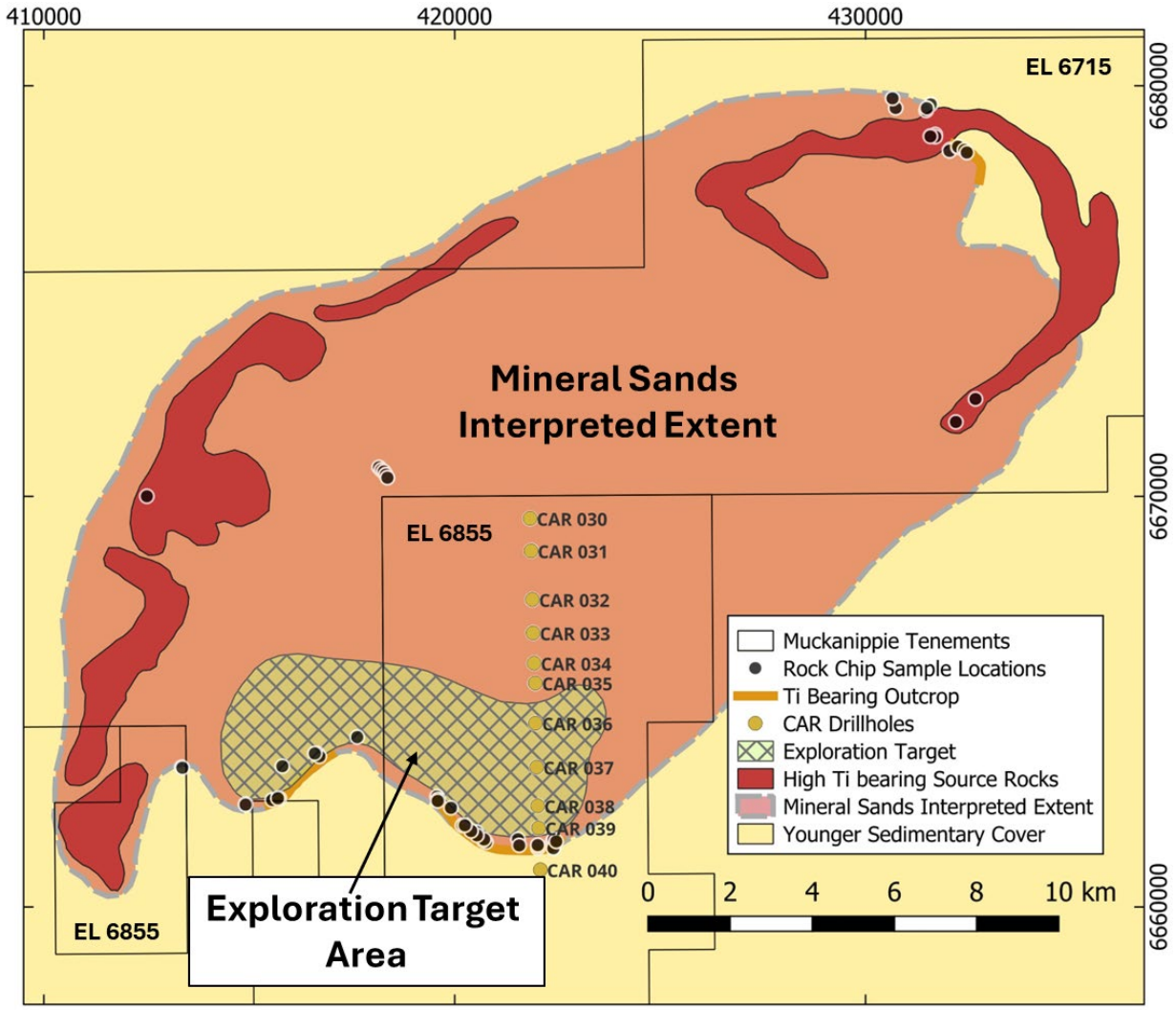


Figure 6 - *Outline of the initial Exploration Target Area for Rosewood Prospect*

Next Steps

Initial metallurgical evaluation of titanium ores is underway and further results will be reported once they come to hand. The Company will conduct heritage surveying starting in two weeks, to allow for more extensive ground exploration and drilling operations over the wider Muckanippie Project area.

An initial 4,000 metre drill program is scheduled to start in early October. The drilling will assess at a regional scale the Rosewood Area defined in the Exploration Target to test its validity (Figure 6) as well as the initial extent of the Claypan Prospect mineralisation. Drill traverses are also planned over high Titanium-Vanadium bearing source rock horizons for primary VTM style deposits.

About Titanium - Key Market Metrics

- The Australian Government along with the United States, the European Union, India, Japan, South Korea and the United Kingdom have designated Titanium as a critical mineral for essential modern technologies, economies and national security.
- Rutile (TiO2) and Ilmenite (FeTiO3) are the principal ores of titanium dioxide (TiO_2) and titanium metal.

- Approximately 90% of titanium product is sold as titanium dioxide, which is a white pigment with high brightness, and used in the manufacture of paint, plastic, paper and fibre where, in addition to being a non-toxic whitener, it also provides UV and chemical resistance.
- Titanium metal has superior material properties that are prized across advanced industries. It has a high strength to weight ratio that is 45% lighter than steel and has superior corrosion resistance. Titanium alloys are 3 to 5 times stronger than stainless steel. Titanium's light weight combined with great strength, rust resistance and very high melting point make it ideal for use across a diverse range of applications including aeronautics, medical implants, defence, sporting goods and high-tech componentry.
- The global market size of titanium in 2022 amounted to 28.6 billion U.S. dollars. The titanium market size is forecast to grow over the coming years, to nearly 52 billion U.S. dollars in 2030.[7]
- Ti Prices (10 Sept 2024) – rutile = US$2,265 metric tonne, ilmenite (~47% TiO2) = US$362 metric tonne[8], Leucoxene prices dependent on TiO_2 content. High grade leucoxene (HiTi = 86-90%), will typically command 80-85% of the rutile price.[9]

About the Muckanippie Complex – Regional Prospectivity

The Muckanippie Suite is series of large layered igneous intrusions, ranging in composition from ultramafic to felsic (anorthosite), located in the northern Gawler Craton of South Australia (Figure 1). This style of layered intrusion forms in specific geological environments and are uncommon. Globally, layered mafic and anorthosite igneous intrusions are a major source of critical minerals. The most notable example being the Bushveld Complex of South Africa which is host to world's foremost Platinum Group Metals mining operations and includes major quantities of base metal, chromium and vanadium .

Other layered mafic to anorthosite intrusions host major titanium, iron, vanadium and phosphate mines, for example Lac Tio in Canada (Ti-Fe), Tellnes in Norway (Ti), and Damiao in China (Fe-Ti-V-P).

The Muckanippie Suite has been largely unexplored as it is partially masked by a thin layer of cover material above the layered geological sequence. Where sparse outcrop occurs or shallow drilling has been undertaken, highly anomalous Gold, Platinum Group Metals, Titanium, Vanadium, Iron and Phosphate are reported. PTR has previously announced high Ti-Fe-P and elevated V drill intersections at its M1 and Wigetty Prospects (Figure1) .

-ENDS-

This announcement has been authorised for release on the ASX by the Company's Board of Directors.

[7] Source: Statista - Global market value of titanium 2021-2030, April 2024.
[8] Shanghai Metals Market - https://www.metal.com/
[9] Shanghai Metals Market - https://www.metal.com/

For further information:

Peter Reid
Chief Executive Officer
preid@petratherm.com.au
0435 181 705

Media and Broker Contact

Jason Mack
White Noise Communications
jason@whitenoisecomms.com
0410 611 709

Competent Persons Statement:

The information in this report that relates to Exploration Targets and Exploration Results is based on information compiled by Mr Peter Reid, who is a Competent Person, and a Member of the Australian Institute of Geoscientists. Mr Reid is not aware of any new information or data that materially affects the historical exploration results included in this report. Mr Reid is an employee of Petratherm Limited. Mr Reid 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 Resources and Ore Reserves'. Mr Reid consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Rosewood Prospect - Significant Drill Hole Intercepts					
Drill Hole	From	To	Interval	TiO2	V2O5
	metres	*metres*	*metres*	*%*	*%*
CAR 030	4	10	6	2.04	NA
inc	4	6	2	3.0	NA
CAR 031	10	12	2	2.89	NA
and	22	26	4	2.14	NA
CAR 032	14	26	12	2.15	NA
inc	14	18	4	**4.01**	0.053
CAR 033	2	26	24	2.26	NA
inc	8	12	4	**5.94**	0.042
inc	8	10	2	**9.62**	0.057
CAR 034	4	6	2	3.36	0.026
sample missing	6	8	2	NA	NA
and	8	10	2	**3.67**	0.032
and	22	26	4	**3.62**	NA
CAR 035	2	24	22	2.45	NA
inc	6	12	6	3.11	0.028
CAR 036	2	22	20	**3.97**	0.028
inc	2	12	10	**6.01**	0.035
inc	8	10	2	**12.50**	0.067
CAR 037	0	24	24	**3.57**	0.029
inc	8	12	4	**7.73**	0.044
inc	22	24	2	**7.47**	0.068
CAR 038	0	36	36	**4.01**	NA
inc	8	14	6	**7.84**	0.043
inc	10	12	2	**14.90**	0.079
inc	28	32	4	**7.16**	NA
CAR 039	4	24	20	**4.20**	0.035
inc	4	8	4	**9.14**	0.045
inc	20	24	4	**5.67**	0.039
STRB04	32	33	1	**20.8**	0.20

Table 4 - *Table of Significant Drill Intercepts*

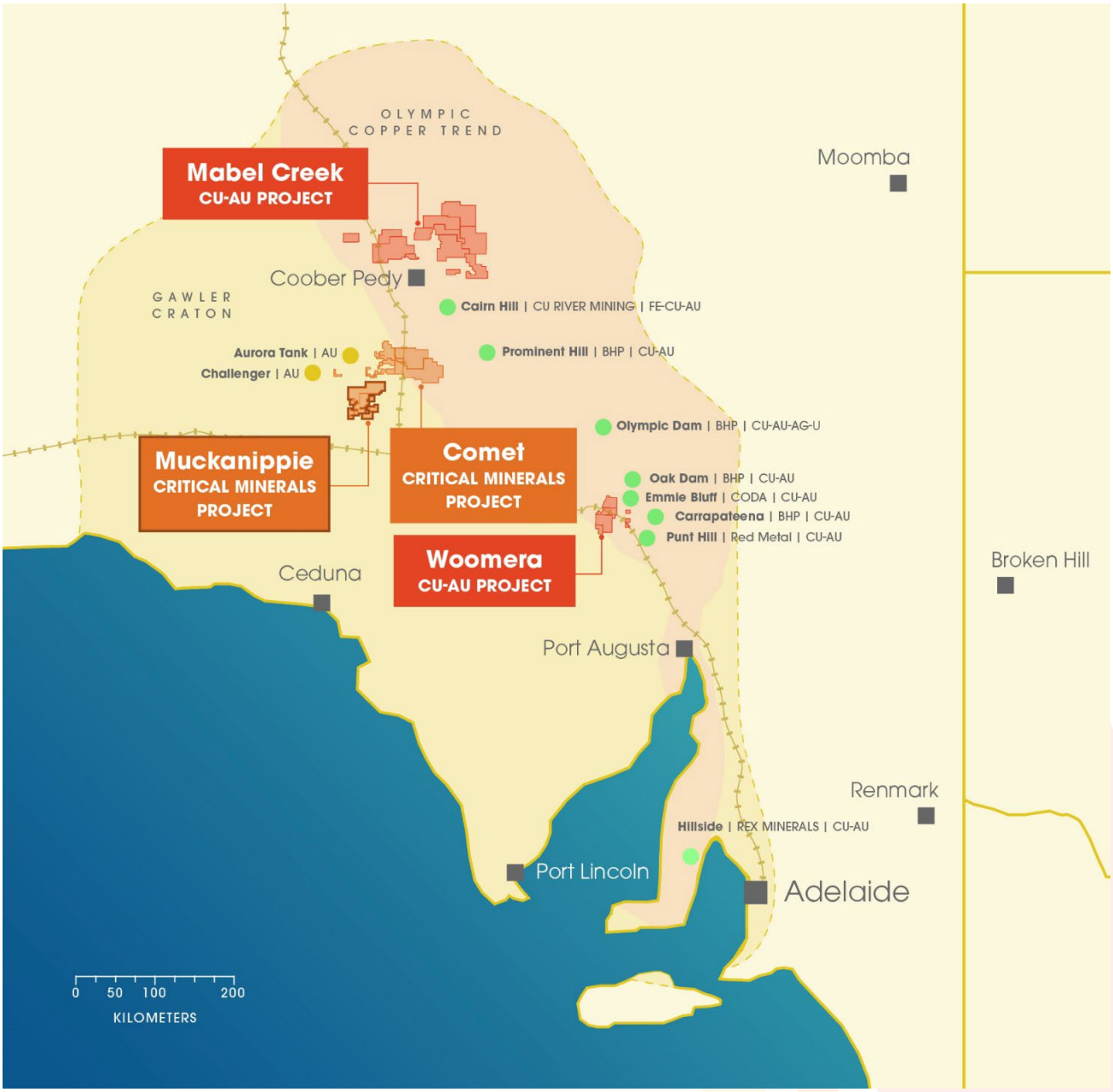
Hole ID	Easting MGA94 Z53	Northing MGA94 Z53	RL metres	Dip Deg.	Azimuth Deg.	EOH Depth metres
CAR 030	421837	6669463	180	-90	0	62
CAR 031	421860	6668673	179	-90	0	54
CAR 032	421892	6667487	178	-90	0	35
CAR 033	421909	6666673	172	-90	0	67
CAR 034	421934	6665936	181	-90	0	55
CAR 035	421964	6665453	182	-90	0	53
CAR 036	421965	6664475	185	-90	0	55
CAR 037	421997	6663404	184	-90	0	80
CAR 038	422020	6662460	186	-90	0	52
CAR 039	422043	6661923	187	-90	0	79
STRB04	412507	6670004	NA	-60	270	33

Table 5 - *Table of Drill Collars*

About Petratherm Limited

Petratherm Limited (ASX: PTR) is a copper and critical minerals explorer focused on the discovery of world-class deposits in both frontier and mature mineral provinces. The Company has two major exploration projects in the world-class Olympic Copper-Gold Province of South Australia. Work in the region has uncovered Iron-Oxide Copper-Gold style alteration/mineralisation at both its Mabel Creek and Woomera Project Areas. Geophysical targeting work has defined several compelling Tier-1 Copper-Gold targets which the Company is aiming to drill test during the 2024 calendar period.

In addition, PTR has a major project holding in the northern Gawler Craton of South Australia. Recent exploration has uncovered significant concentrations of rare earths over large areas at several prospect sites. The rare earths are associated with a major intrusive complex, which has been found to be highly prospective for other critical minerals including Platinum Group Elements, Vanadium, and Titanium. This is an early-stage Greenfields project with exceptional upside potential.



PTR's Project Locations in South Australia

EL6815, EL6855, EL6715, EL6873 & EL7007 (Muckanippie Project) JORC Table 1

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 Au that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	• 73 surface rock chip samples were collected from outcrop, across the tenement package. • 123 drill chip samples were taken from 11 Drillholes. Samples were collected from the South Australian Drill Core Reference Library. Holes sampled were, CAR030-CAR039 and STRB04. 2 metre composites were sampled, with approximately one third to one half of the available sample utilized to ensure samples were representative. Average sample weight was 100 grams. • Titanium bearing samples were digested using a lithium borate fusion method and analysed using ICP-AES and ICP-MS, by ALS laboratories. • Historic drill hole information has been sourced from open file public records managed by the South Australian Department of Primary Industries and Resources. • Additional details from historic drilling are unknown.
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.).*	• Historic CAR exploration drilling reported was RC. • Additional details from historic drilling are unknown.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *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.*	• No drilling has been undertaken by Petratherm although limited historical drilling exists. • Additional details from historic drilling are unknown.

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 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.*	• No drilling has been undertaken by Petratherm although limited historical drilling exists. • Additional details from historic drilling are unknown.
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.*	• Samples taken from South Australian drill core library were taken from representative 2 metre composites. • Approximately one third to one half of each composite were taken per sample for analysis. Average sample weight was 100 grams. • Sample sizes are appropriate to the grain size of the material.
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.*	• Internal quality control was carried out by ALS laboratories, including blanks and standards. • Higher-grade surface rock chip samples in excess of 20% TiO_2 have in some instances reported lower total oxide recoveries than typically expected. Further studies are underway to confirm the quality of digestion of samples in the methods used. It is possible some of the higher-grade samples are under reporting TiO_2 grades due to incomplete digestion of titaniferous minerals. • The CAR drill hole assays used in the Exploration Target are deemed accurate as these samples are lower grade (<20 % TiO_2) and oxide recoveries indicate they have undergone complete or very near complete digestion.
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*	• No drilling has been undertaken by Petratherm although limited historical drilling exists.

Criteria	JORC Code explanation	Commentary
	and electronic) protocols. • *Discuss any adjustment to assay data.*	Additional details from historic drilling are unknown.
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 maps and locations are in UTM grid (GDA94 Z53). Drill hole positions have been reproduced from SA Government open file databases and the accuracy of this data is unknown.
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.*	• No drilling has been undertaken by Petratherm although historical drilling exists. • Data spacing is insufficient to establish the degree of geological and grade continuity required for a Mineral Resource estimation.
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.*	• No drilling has been undertaken by Petratherm although limited historical drilling exists. • The mineralisation in drillholes and mapped in outcrop is interpreted to be recent flat lying sediments. • Historic drilling is vertical and gives a true reflection of grade, thickness and continuity.
Sample security	• *The measures taken to ensure sample security.*	• Samples were taken directly from the South Australian Core Library by PTR staff to the ALS preparation facilities. ALS sample results closely match prior internal XRF measurements.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• There is currently a review into the methods used by ALS for analysis of titanium ores.

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	• *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*	• EL6815 was granted 100% to Petratherm Limited on 12/08/2022 for a period of 6 years. • EL 6855 was granted 100% to Petratherm Limited on 18/10/22 for a period of 6 years.

Criteria	JORC Code explanation	Commentary
	licence to operate in the area.	• EL 7007 was granted 100% to Petratherm Limited on 15/08/24 for a period of 6 years. • EL6873 was granted to G4 Metals Pty. Ltd. on 18/11/2022 for a period of 6 years. Petratherm Ltd may earn up to a 70% interest via a 2 Stage Farm-in with further provisions, dependent on elections, to earn up to a 100% equity in the project. Refer to PTR ASX release 29/02/2024. • EL6715 was granted on 06/04/2022 to Leasingham Metals Pty. Ltd. a, wholly owned subsidiary of ASX listed Narryer Metals Ltd. for a period of 6 years. Petratherm Ltd may earn up to an 70% interest, via a 2 Stage Farm-in with further provisions, dependent on elections, to earn up to an 80% equity in the project. Refer to PTR ASX release 18/04/2024 • The tenements are located approximately 120 km south south-west of Coober Pedy overlapping Bulgunnia, Mulgathing and Commonwealth Hill Pastoral Stations. • The tenements are located within the Woomera Prohibited Area (Green Zone). • **Native Title Claims:** SCD2011/001 Antakirinja Matu-Yankunytjatjara. • The tenements are in good standing and no known impediments exist.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Previous exploration work includes; • **Surface Geochemical Sampling:** Calcrete **Airborne Geophysics:** Magnetics & Radiometrics. **Ground Geophysics:** Prospect scale Magnetics, Gravity and EM. **Exploration Drilling:** Open file records indicate 296 RAB / Air core, 2 sonic

Criteria	JORC Code explanation	Commentary
		& 51 RC reconnaissance and prospect scale holes drilled over Project Group.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Petratherm is exploring for Ti-Fe-V-P, rare earths, and Au-PGM associated with the Muckanippie Suite. Targets include primary basement mineralisation and secondary enrichments in paleochannels and in the weathering zone.
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.*	• No drilling has been undertaken by Petratherm although regional historical prospect drilling exists. • Details from historic drilling are presented in main body of the report and Tables 4 & 5. • Data sourced from SA Government open file databases and the accuracy of this data is unknown.
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.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• No drilling has been undertaken by Petratherm. • No assumptions of metal equivalent values were made or used.
Relationship between mineralisation 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 mineralisation viewed in drillholes and outcrop is interpreted to be recent, flat lying sediments. Historic drilling is vertical and should give a true reflection of thickness and continuity.
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.*	• See Figures in main body of release attached.
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.*	• No drilling has been undertaken by Petratherm.

Criteria	JORC Code explanation	Commentary
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.*	• No other substantive exploration data has been collected by Petratherm.
Further work	• *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.*	• A range of exploration techniques are being considered to progress exploration including rock chip and soil sampling, geophysical surveying, and drilling.