

**SCOTTS HILL AND MT VULCAN PROJECT
TASMANIA
EL2/2017**

FINAL REPORT
15TH AUGUST 2023 TO 14TH AUGUST 2024

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Tasmania Energy Metals Pty Ltd

Note: All figures and grids are according to the GDA94 datum and MGA94 grid system.

ABSTRACT/EXECUTIVE SUMMARY

The main focus of Tasmania Energy Metals Pty Ltd (“TEM” or “the Company”) at the Scotts Hill and Mt Vulcan Project is lateritic nickel-cobalt mineralisation. TEM had aimed to develop an open pit mining operation at Scotts Hill and Mt Vulcan with production of intermediate nickel (Ni) and cobalt (Co) products undertaken off-site in Tasmania.

The development focus at Scotts Hill and Mt Vulcan remained metallurgical testing as part of the feasibility assessment of the project. Financial modelling has suggested that values from subsidiary minerals will be important in being able to progress towards development. Work-to-date has confirmed that development of the Scotts Hill and Mt Vulcan deposits with the nearby Barnes Hill deposits is required to give the project improved scale and greater commercial viability.

Exploration completed during the reporting period has included a second stage gravity separation polishing of a Wet High Intensity Magnetic Separation (WHIMS) magnetite concentrate using a wet shaking table. This saw a gravity middling retreated to assess further upgrading potential.

Given the weak results from testwork completed in this period, the decision was taken to allow the license to expire on its terms. Consequently, a program of geochemical analysis to allow the estimation of a JORC-compliant iron (magnetite) Mineral Resource Estimate was not completed.

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Digital files submitted with this report:

Filename	File format
EL022017_202408_01_Report.doc	<i>doc</i>

1 INTRODUCTION

The Scotts Hill and Mt Vulcan Project (EL2/2017) is located in northern Tasmania. The exploration licence contains a JORC 2012 inferred resource of 7.7Mt at 0.67% Ni and 0.047% Co (on a 0.5% Ni cut-off grade). The resource is made up of two interconnected resources known as the Scotts Hill and Mt Vulcan deposits (see Figure 1).

The Scotts Hill and Mt Vulcan Hill Project is located 5km west of the township of Beaconsfield near the Tamar River in northern Tasmania. The Scotts Hill and Mt Vulcan resource can be directly accessed using Tattersall's Road, just west of Beaconsfield.

The exploration licence covers an area of 13km² and was granted on 15th August 2017 for an initial period of five years. It is owned 100% by Tasmania Energy Metals Pty Ltd (TEM). It is not subject to any current agreements with other companies. The exploration target is lateritic nickel-cobalt mineralisation.

The land tenure plan shows EL2/2017 is covered by both Crown and Private Land. The Crown Land is variously classified. The private land only minorly impacts the Scotts Hill Ni-Co mineralisation to the east of the Tattersalls Road. No exploration has been undertaken or is proposed for private land. The relevant areas of Crown Land are classified either as Future Potential Production Forest (FPPF), Regional Reserve, and Conservation Area. The Scotts Hill mineralisation sits on FPPF, while Mt Vulcan sits on FPPF west of the Tattersalls Road and the Dans Hill Conservation Area east of the Tattersalls Road.

The development focus has been metallurgical testing. Given the grade of resources hosted at Scotts Hill and Mt Vulcan, development will turn on achieving co-production of viable by-products. Several stages of metallurgical testing have been undertaken with a view to other valuable contained elements including Al, Cr, Fe, Mn and Sc.

Exploration completed during the reporting period was physical beneficiation to improve the quality and mass available as an iron (Fe) concentrate extracted from lateritic nickel ore. This approach combined a stage of magnetic separation and application of two stages of gravity upgrading. #

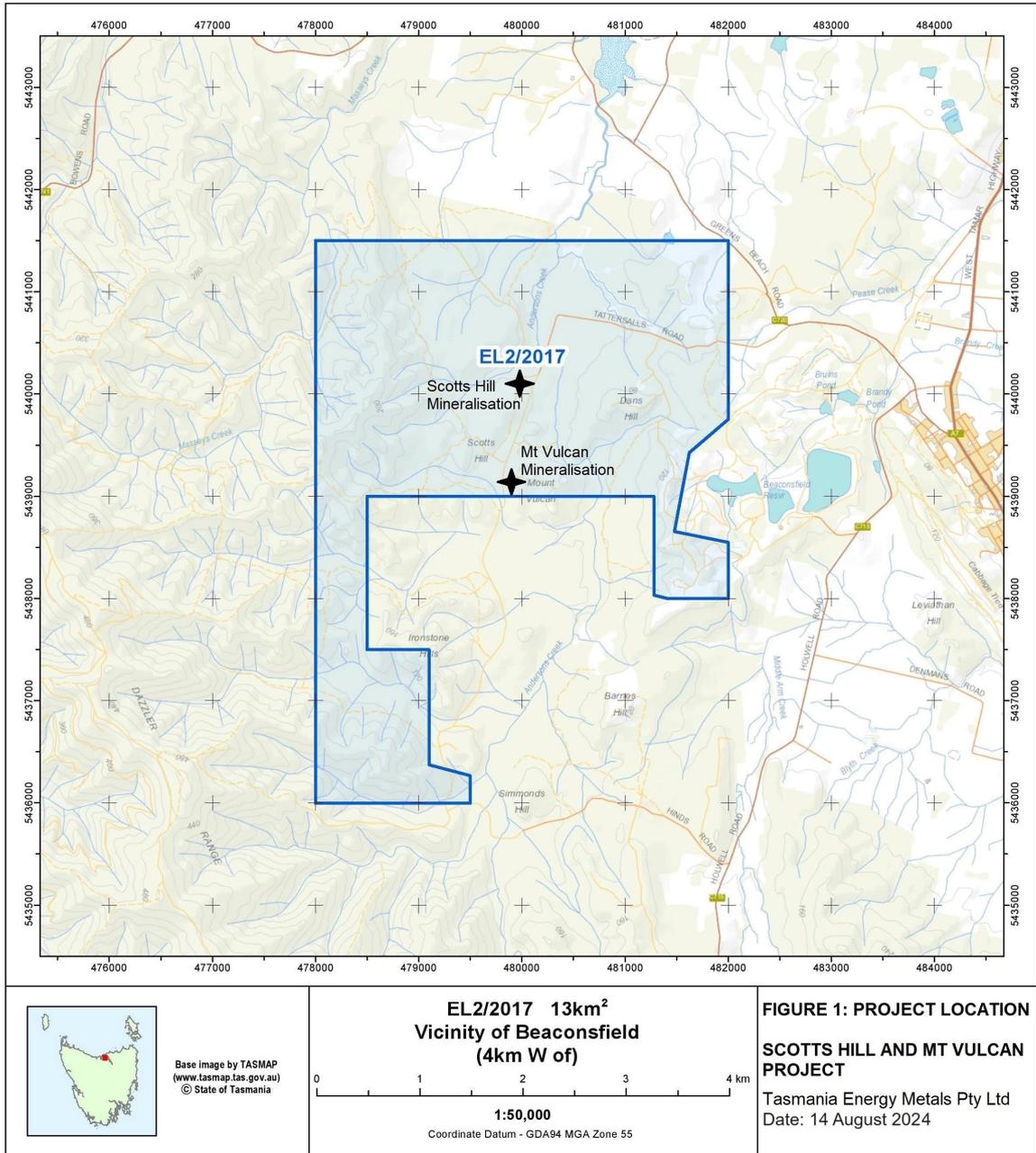


FIGURE 1 SUMMARY ACTIVITY MAP FOR SCOTTS HILL AND MT VULCAN

2 REVIEW OF PREVIOUS WORK AND GEOLOGICAL SETTING

Substantial exploration has been carried out at Scotts Hill and Mt Vulcan over the last 50 years. A summary table is included in the 2021 Annual Report (Richard, 2021). A review of the geological setting, being weather regolith associated with the Andersons Creek Ultramafic Complex (ACUC), as well as historical minerals resource and metallurgical testwork was presented in the 2017-2018 Annual report for EL 2/2017 (Richard, 2018) and may be used for reference.

3 EXPLORATION COMPLETED DURING THE REPORTING PERIOD

The production and sale of an Iron Ore concentrate has been identified as essential for the developmental viability of a mine on EL2/2017. Based on testwork to date (see Richard, 2022, 2023), a combination of magnetic separation and gravity methods was considered necessary to

maintain grade while achieving commercial throughput in terms of saleable production volumes. The combination magnetic/gravity approach was applied to balance these requirements.

The magnetic separation and gravity testwork was to be undertaken by specialist physical beneficiation consultants IHC Royal (formerly Robbins Metallurgical) based in Brisbane. The work undertaken included implementation of a two-stage shaking table flowsheet, that was applied after magnetic separation, to retreat WHIMS shaking table middlings for recovery of contained Fe to an iron ore concentrate.

4 DISCUSSION OF RESULTS

Results up to August 2022 (Richard, 2022) showed that although Low Intensity Magnetic Separation (LIMS) could produce a potentially saleable Fe product, implementation of WHIMS beneficiation on the LIMS non-magnetics did not produce a sufficiently clean Fe-concentrate. The WHIMS Mag grades were below seaborne market standard Iron Ore Fe-levels (i.e., >56% Fe min). In most cases the Fe was too low for even blending consideration (being well below 40% Fe). The WHIMS also pulled significant Ni/Co. These results suggests that paramagnetic species carrying Ni and Co (such as paramagnetic goethite) were being pulled by the WHIMS along with their included Ni/Co. Further tests were then undertaken that took these WHIMS concentrates and sought to pull a cleaner Fe product (to potentially allow blending into saleable Fe concentrates) (see Richard, 2023). This test was implemented on the samples already held at the laboratory and saw a gravity upgrade of the WHIMS Mags using a wet shaking table. Some improvement in the Fe grade was achieved and the gravity concentrates were considered potentially suitable for blending into an Fe product with high magnetite LIMS concentrates. The gravity concentrates also carried materially less Ni content. However, a substantial volume reported to a middlings rather than the gravity concentrate (65% of mass for limonite, 66% for transitional ore, 71% for saprolite and 72% for saprock). In all cases these first-stage gravity middlings carried lower Fe concentrations and apart from the limonite middlings (36.04% Fe) were considered unsuitable for even blending into an Fe product. Consequently, it was considered that a further application of gravity concentration might be suitable to attempt to pull a second concentrate suitable for addition to the first.

During this reporting period, middlings produced from the WHIMS ~8,000 Gauss Mags were subjected to further gravity separation by wet shaking table by IHC Royal's Brisbane laboratories. For the Limonite and Transition Ore the material tested was P80 250µm and was deslimed at 38µm. For the Saprolite and Saprock Ore the material tested was finer, being P80 125µm, and again deslimed at 38µm. As noted above, during the last reporting period (see Richard, 2023), this produced both concentrates and sub-specification middlings (results in table 1 below).

Ore Type	Product	Dry Mass (kg)	Dry Mass (%)	Assay (XRF)					Distribution				
				Ni %	Co %	Fe %	Cr %	Si %	Ni %	Co %	Fe %	Cr %	Si %
Limonite Ore	Conc	0.20	29	0.45	0.31	44.80	10.50	2.93	17	37	34	76	9
	Mids	0.44	65	0.93	0.22	36.04	1.42	12.95	78	58	61	23	86
Transitional Ore	Conc	0.31	20	0.69	0.50	31.80	15.70	4.22	12	39	22	76	6
	Mids	1.00	66	1.43	0.21	27.96	1.34	17.68	77	53	64	21	80
Saprolite Ore	Conc	0.35	15	0.47	0.16	27.30	17.00	7.45	6	22	22	67	5
	Mids	1.71	71	1.16	0.09	15.79	1.39	25.19	77	64	63	27	80
Saprock Ore	Conc	0.10	8	0.28	0.08	23.30	22.20	4.81	4	15	22	63	2
	Mids	0.92	72	0.55	0.04	6.77	1.13	19.39	71	69	60	30	77

TABLE 1 FIRST STAGE WET SHAKING TABLE CONCENTRATES AND MIDLINGS

These gravity middlings were then fed into a further round of gravity separation over a wet shaking table. The new tests aimed to determine if a further round of gravity separation could improve the Fe grade to allow the direct sale of the Fe concentrate, or to reduce the dilutionary effect that such a concentrate would have in being blended with the high-Fe magnetite fines that could be produced from LIMS. Results are presented in table 2 below.

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Ore Type	Product	Dry Mass (kg)	Dry Mass (%)	Assay (XRF)					Distribution				
				Ni %	Co %	Fe %	Cr %	Si %	Ni %	Co %	Fe %	Cr %	Si %
Limonite Ore	Conc 2	0.12	27.1	0.94	0.27	36.4	1.66	12.8	27.5	33.2	27.4	31.7	26.8
	Tails 2	0.32	72.9	0.93	0.20	35.9	1.33	13.0	72.5	66.8	72.6	68.3	73.2
	Feed (Mids)	0.44	100	0.93	0.22	36.0	1.42	12.9	100	100	100	100	100
Transitional Ore	Conc 2	0.37	38.0	1.58	0.30	25.6	1.53	18.3	42.0	54.4	34.8	43.5	39.3
	Tails 2	0.60	62.0	1.34	0.16	29.4	1.22	17.3	58.0	45.6	65.2	56.5	60.7
	Feed (Mids)	0.97	100	1.43	0.21	28.0	1.34	17.7	100	100	100	100	100
Saprolite Ore	Conc 2	0.67	45.9	0.96	0.11	14.6	1.62	26.6	38.2	54.1	42.4	53.5	48.4
	Tails 2	0.79	54.1	1.32	0.08	16.8	1.19	24.0	61.8	45.9	57.6	46.5	51.6
	Feed (Mids)	1.46	100	1.16	0.09	15.8	1.39	25.2	100	100	100	100	100
Saprock Ore	Conc 2	0.38	45.9	0.48	0.04	6.06	1.44	18.9	40.2	49.1	41.1	58.5	44.7
	Tails 2	0.45	54.1	0.61	0.04	7.37	0.87	19.8	59.8	50.9	58.9	41.5	55.3
	Feed (Mids)	0.82	100.0	0.55	0.04	6.77	1.13	19.4	100	100	100	100	100

TABLE 2 SECOND STAGE WET SHAKING TABLE RESULTS

The follow-up test was not able to make any further improvement to the Fe grade, but did reduce the losses of Ni for the saprolite and saprock ores. These tests saw more of the Ni reporting to the gravity tails, which would be the leach stream (61.8% Ni in 54.1% mass for Saprolite and 59.8% Ni in 54.1% mass for saprock). However, in all cases the Co reporting to the gravity concentrate was higher or equal to that in the feed. Importantly, there was no significant Fe upgrading for all four ore types and the second stage concentrate Fe grades (36.4% Fe for limonite, 25.6% Fe for transitional, 14.6% Fe for saprolite and 6.06% Fe for saprock) faced the same challenges as the first stage shaking table middlings. Only the Limonite concentrates met the general hurdle for blending consideration. The testwork also showed some response for Cr recovery, but not sufficient to suggest any pathway for a chromite product using this processing method.

5 CONCLUSIONS

Earlier testwork had suggested that multiple stages of wet tables may be able to perform an effective separation and add additional volumes to previously identified . However, these results were not successful and confirmed significant Ni and Co losses, only partial removal of Fe and the inability to contribute to saleable Fe products. In all these areas magnetic separation results dominated gravity, and led to the abandonment of this program of work.

Overall, gravity selectivity for Fe was weak, indicating poor liberation and/or very similar mineral density profiles. The results have left open whether alternative fine mineral gravity separation technologies may be more suitable for this application (e.g. multi-gravity separator, centrifugal concentrator). That may warrant further attention but was not undertaken due to the expected nickel price outlook, which would require significantly better beneficiation outcomes than suggested by any of the gravity testwork undertaken to date on the Scotts Hill and Mt Vulcan ore.

6 PROPOSED EXPLORATION

The license was allowed to expire on its terms. No additional work was planned.

7 ENVIRONMENTAL MANAGEMENT

The site was visited several times during the period to assess the status of previously implemented rehabilitation. No extractive groundwork was undertaken in this reporting period. No new environmental or rehabilitation concerns were reported and no significant risk is considered to be ongoing given the substantial period since last site works in 2019.

8 EXPENDITURE

Expenditure from 15th August 2023 to 14th August 2024 is summarised below for the Scotts Hill and Mt Vulcan EL2/2017 licence.

1. Geoscience	\$0
2. Drilling and Gridding	\$0
3. Land Access	\$0
4. Rehabilitation	\$0
5. Feasibility Studies	\$18,014.82
6. Other	\$1,103.85
7. Administration	\$1,500.00
TOTAL - ELIGIBLE	\$19,118.67

TABLE 3 EXPENDITURE 15 AUGUST 2023 TO 14 AUGUST 2024

9 KEY REFERENCES

Richard, P (2018) EL2/2017 Annual Report 15th August 2017 to 14th August 2018. Scotts Hill and Mt Vulcan Project. Available from Mineral Resources Tasmania.

Richard, P (2021) EL2/2017 Annual Report 15th August 2020 to 14th August 2021. Scotts Hill and Mt Vulcan Project. Available from Mineral Resources Tasmania.

Richard, P (2022) EL2/2017 Annual Report 15th August 2021 to 14th August 2022. Scotts Hill and Mt Vulcan Project. Available from Mineral Resources Tasmania.

Richard, P (2023) EL2/2017 Annual Report 15th August 2022 to 14th August 2023. Scotts Hill and Mt Vulcan Project. Available from Mineral Resources Tasmania.