



ESSENTIAL METALS

for a sustainable future

7 October 2022

Positive results from additional metallurgical test work completed at Dome North

Test work demonstrates positive recovery characteristics for previously untested mineralisation domains at Dome North with the results to be incorporated into the ongoing Scoping Study.

HIGHLIGHTS

- Previous metallurgical test work undertaken in 2020¹ on fresh rock mineralisation of the Cade deposit ('Cade Fresh') which represents the main component of the Dome North Mineral Resource, demonstrated high lithium recoveries (74%-82%) with the production of marketable concentrates.
- Additional metallurgical test work has now been completed on composite samples representing three further mineralisation domains – Cade Weathered, Davy Weathered and Davy Fresh mineralisation – from the Cade and Davy lithium deposits at Dome North.
- The latest results complement the successful earlier test work programme completed on the Cade Fresh mineralisation.
- The **Cade Weathered** composite returned similar Heavy Liquid Separation (HLS) and batch Whole of Ore Flotation (WOF) results to the Cade Fresh test results, targeting a concentrate grade of 5.7% Li₂O, whilst the **Davy Fresh** sample returned a similar HLS result but a slightly lower WOF result.
- The results will be incorporated into the ongoing Scoping Study for the Pioneer Dome Lithium Project, with the Study outcomes to be used to help finalise a framework for potential partner/s to be involved in advancing the Pioneer Dome Lithium Project to production.

Essential Metals Managing Director, Tim Spencer, said: *"The metallurgical test work results provide further evidence of the high-quality nature of the Dome North lithium Resource, providing a key input for the ongoing Scoping Study, which is scheduled for delivery in December, and further enhancing the attractiveness of the Project to prospective off-take and project partners on terms favourable to Essential Metals."*

¹ Refer to ASX announcement dated 18 December 2020 "Dome North met test results".

ASX Code: ESS

Corporate Profile

Shares on issue: 248,033,787
Listed options: 19,174,367
(\$0.15 exercise: 30/11/22 expiry)

Cash: \$10.5m (30 June 2022)
Debt: Nil

KEY PROJECTS

LITHIUM Pioneer Dome
GOLD Golden Ridge
GOLD Juglah Dome

Joint Ventures (ESS %)

2x nickel projects (20-25%)*
4x gold projects (25-30%)*
* Free carried to a decision to mine

Corporate Directory

Non-Executive Chairman
Craig McGown

Non-Executive Directors
Paul Payne
Warren Hallam

Managing Director
Timothy Spencer

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PIONEER DOME LITHIUM PROJECT

The 450km² Pioneer Dome Project (ESS: 100%) is located in the core of Western Australia's lithium corridor in the Eastern Goldfields, approximately 130km south of Kalgoorlie and 275km north of the Port of Esperance. A Mineral Resource² of 11.2Mt @ 1.21% Li₂O has been defined at 'Dome North' in the northern area of the Project.

The southern Yilgarn area is recognised as being well-endowed with spodumene deposits, including the Bald Hill Mine, the Mt Marion Mine and the Buldania Project, all of which are located within 80km of the Pioneer Dome Project. The world-class Greenbushes Deposit, the Mt Holland Mine and the Mt Cattlin Mine are located further west, south-west and south-south-west, respectively.

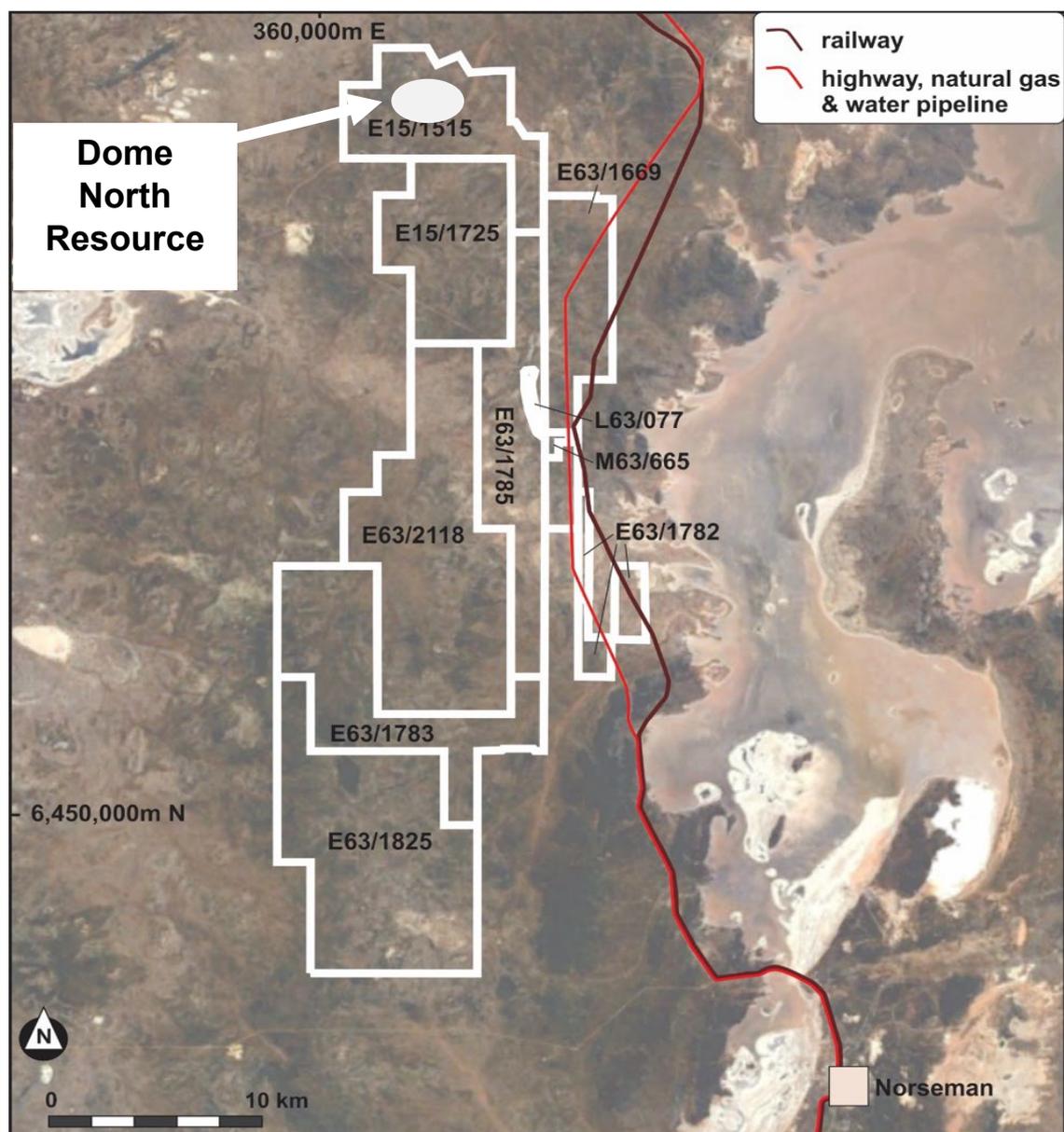


Figure 1 - The location of the tenements of the Pioneer Dome Lithium Project relative to major infrastructure.

² Refer to ASX announcement dated 29 September 2020 "Dome North Lithium Project - Resource Upgrade"



LITHIUM RECOVERY METALLURGICAL TEST WORK

Previous Test Work

In December 2020, Essential Metals Limited (ASX: ESS) (the "Company") reported highly encouraging results from the first metallurgical test work programme completed on fresh rock mineralisation from the Cade deposit ('Cade Fresh'). This domain represents 63% of the Dome North Mineral Resource tonnes.

The results demonstrated that the lithium mineralisation (spodumene) from the deposit can be processed into a concentrate that should meet market specifications while achieving a high overall lithium recovery rate. In summary, the following results were achieved:

Table 1 - Concentrate Summary

Concentrate	Grade (% Li ₂ O)	Grade (% Fe ₂ O ₃)	Overall Recovery (%Li ₂ O)
T12 Flot Con & DMS Con	5.66	1.3	82%
T15 Flot Con & DMS Con	5.65	0.7	74%

Current Test Work

In March this year, a diamond drilling (DD) programme was completed, consisting of six holes drilled into the weathered profile (up to the first ~50m from surface) of the Cade deposit (**Cade Weathered**), four holes drilled into the weathered profile of the Davy deposit (**Davy Weathered**) and three into the fresh rock of the Davy deposit (**Davy Fresh**).

The results from the drill programme were reported in June³ and included the following excellent results which demonstrated broad widths and high lithium grades from near-surface:

- **Cade deposit:**
 - **19.2m @ 1.44% Li₂O** from 15m (PDD596)
 - **9.6m @ 1.42% Li₂O** from 14.4m (PDD598)
 - **23.7m @ 1.26% Li₂O** from 3.6m (PDD599)
 - **18.9m @ 1.24% Li₂O** from 21.1m (PDD600)
 - **14.7m @ 0.90% Li₂O** from 11.6m (PDD595)
- **Davy deposit:**
 - **31.95m @ 1.24% Li₂O** from 45.4m (PDD601)
 - **17m @ 1.32% Li₂O** from 97.1m (PDD605)
 - **18.7m @ 1.05% Li₂O** from 17m (PDD603)
 - **11.1m @ 1.70% Li₂O** from 99.2m (PDD604)

Three composite samples were selected from drill core for metallurgical test work, representing the three mineral domains outlined above, complementing the successful test work already completed on the Cade Fresh mineralisation as reported in December 2020¹.

³ Refer to ASX announcement dated 7 June 2022 "Assays confirm high-grade near-surface lithium at Dome North"



The grade and recovery data from Heavy Liquid Separation (HLS) and batch Whole of Ore Flotation (WOF) test work was then compared to the previous Cade Fresh test work to assess if the three composites are expected to be amenable to the previously tested hybrid pilot Dense Media Separation (DMS) and flotation flowsheet and reagent regime.

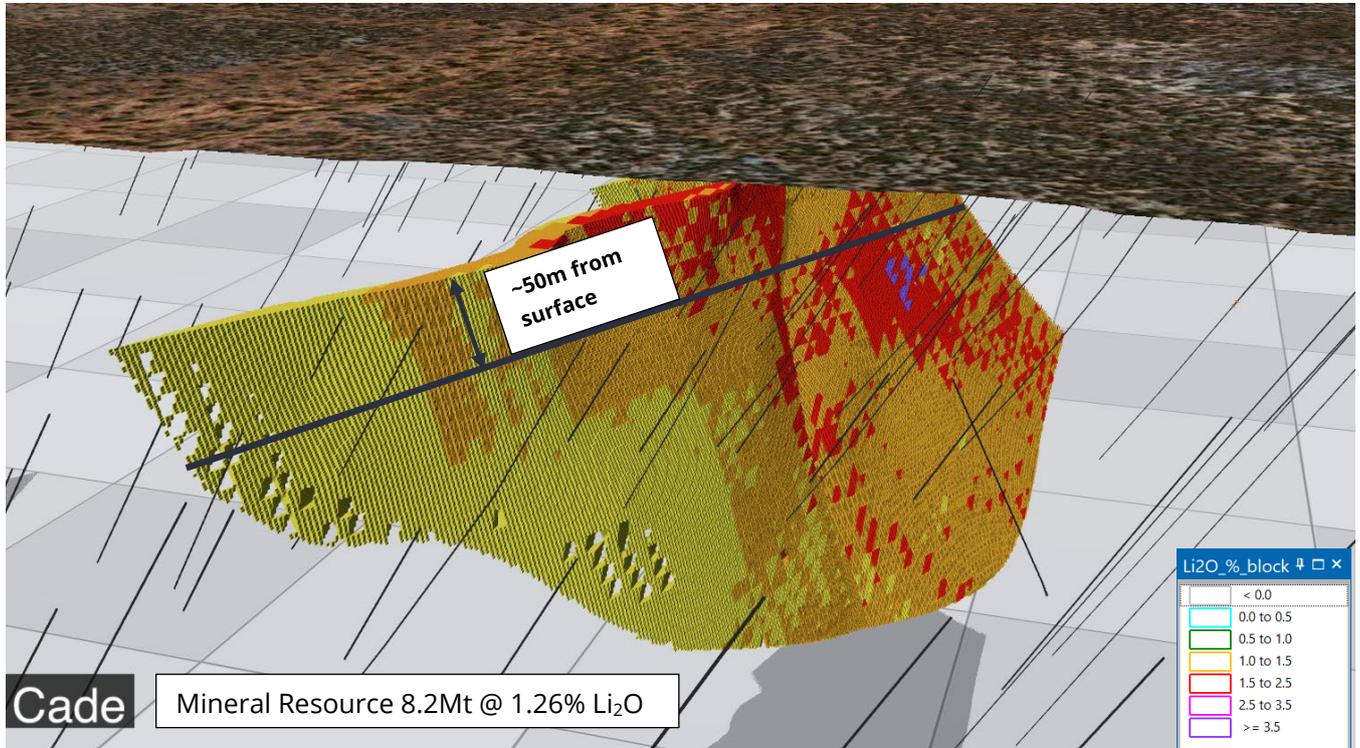


Figure 2 - Oblique view (looking NW) of the Cade deposit showing a dark blue line representing approx. 50m below the surface. Drilling (thin black traces) and the Mineral Resource block model (coloured by grade as per the legend) are also shown.

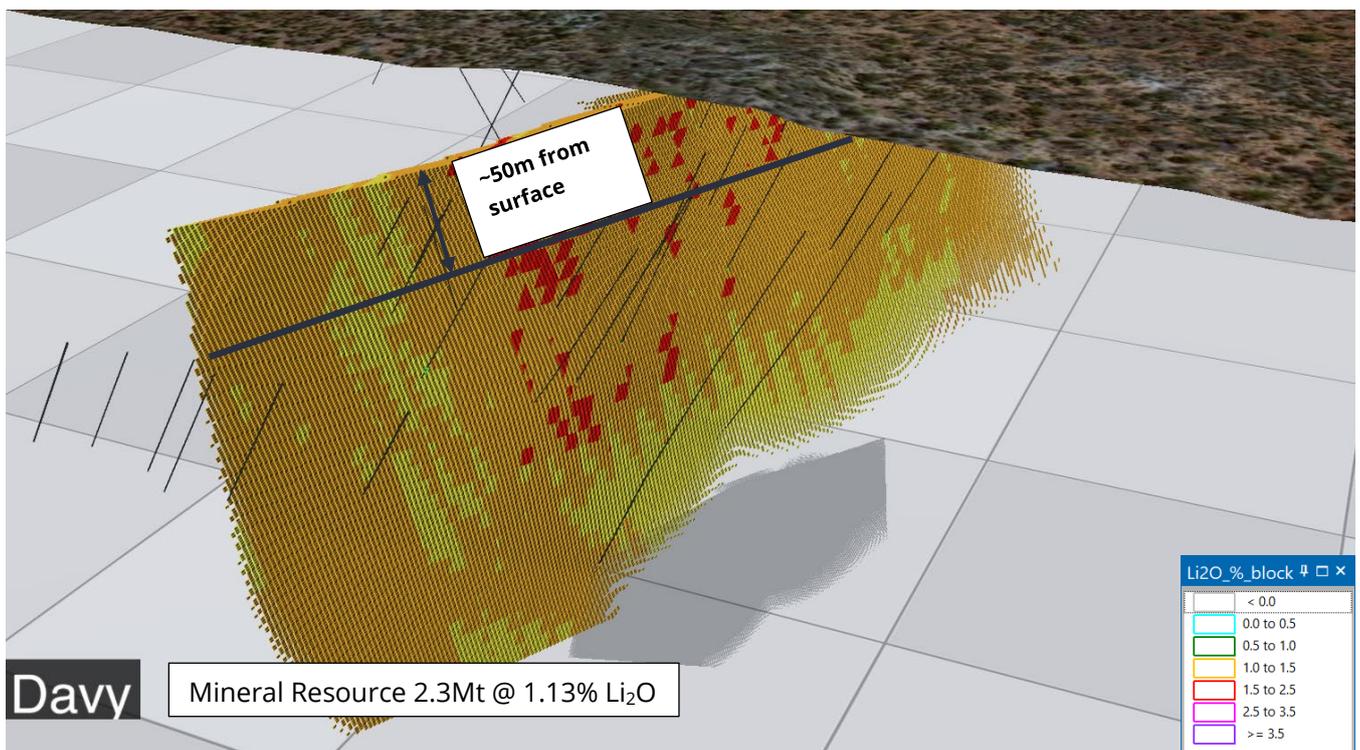


Figure 3 - Oblique view (looking NW) of the Davy deposit showing a dark blue line representing approx. 50m below the surface. Drilling (thin black traces) and the Mineral Resource block model (coloured by grade as per the legend) are also shown.



Metallurgical Sample Details

The three composites for the test work programme were selected from core drill holes from the three domains. Geological logging, elemental assays and an open pit optimisation were used to check that the composites were as representative of the domains as is practical, given the samples available.

Table 1 in Appendix A provides details of the drill holes that provided the metallurgical samples for the test work.

KEY FINDINGS

- The test work was designed to determine the lithia recoveries based on a hybrid pilot DMS and flotation flowsheet.
- The results show that the Cade Weathered mineralisation is expected to return an overall recovery similar to the 74-82% Li_2O overall recovery rates returned for the previously tested Cade Fresh composite sample. The whole Cade deposit represents 73% of the Mineral Resource.
- The results show that the Davy Fresh mineralisation is expected to return a marginally lower overall recovery at around 64% Li_2O .
- Due to the higher degree of weathering in the Davy Weathered composite, it is difficult to confidently estimate from these results the expected overall lithia recovery for this domain via a hybrid pilot DMS and flotation flowsheet. However, the results suggest it could be in the range of 30-50% Li_2O recovery at a target concentrate grade of 5.7% Li_2O .
- All test work to date indicates that the vast bulk of the Dome North resource (Cade Fresh, Cade Weathered and Davy Fresh) will result in high recoveries with the production of marketable concentrate grades.
- Although the Davy Weathered and Davy Fresh composites have returned lower recoveries, they represent smaller components of the Mineral Resource. The Davy weathered and transitional zones represent 4% of the Mineral Resource whilst the Davy fresh zone represents 16% of the Mineral Resource.
- The Scoping Study will determine how much each domain represents in terms of mining inventory.

Heavy liquid separation (HLS) testing was conducted to understand how the material processed will behave in a dense medium separation (DMS) process flowsheet. The tests were conducted at a crush size of P100 3.1mm+0.85mm, the same as was used for the 2020 test work programme.

The batch Whole of Ore Flotation (WOF) testing was conducted to understand how the finer grain sized material behaves in the flotation stage of the process flowsheet. The tests also included Wet High Intensity Magnetic Separation (WHIMS) to reject iron and mica pre-flotation for the rejection of mica which can contaminate the final concentrate. The spodumene flotation stage was conducted at a comparatively coarse grind size of 80% (P80) passing 0.15mm, as was used in the 2020 test work programme.



Cade Weathered

The Cade Weathered composite returned very similar results for HLS and flotation when compared to the Cade Fresh test results at a target grade of 5.7% Li₂O.

The composite performed as follows:

- The HLS recovery was 40% Li₂O at a grade of 5.7% Li₂O. It is expected that DMS performance for this samples may be similar to the Cade Fresh composite sample.
- The WOF recovery was 68% at a grade of 5.7% Li₂O. It is expected that flotation circuit performance for this sample may be similar to the Cade Fresh composite sample.
- On this basis, it is expected that the Cade Weathered composite can achieve an overall recovery of 74-82% Li₂O via a hybrid pilot DMS and flotation flowsheet.

Davy Fresh

The Davy Fresh composite returned very similar results for HLS when compared to the Cade Fresh test results at a target grade of 5.7% Li₂O. However, this composite returned marginally lower WOF recovery at a target grade of 5.7% Li₂O.

The composite performed as follows:

- The HLS recovery was 41% Li₂O at a grade of 5.7% Li₂O. It is expected that DMS performance for this samples may be similar to the Cade Fresh composite sample.
- The WOF recovery was 57% at a grade of 5.7% Li₂O. It is expected that flotation circuit performance for this sample will be marginally lower compared to the Cade Fresh composite sample.
- On this basis it is expected that the Davy Fresh composite can achieve an overall recovery of 64% Li₂O via a hybrid pilot DMS and flotation flowsheet.

It should be noted that the flotation tests conducted were based on the baseline reagent regime and test methodology applied to the other composites, which are significantly less weathered. Further testing specifically designed to optimise recovery for the Davy Fresh mineralisation will be conducted as part of future studies. These tests will also analyse whether the recovery rate could improve if Davy Fresh mineralisation is blended with mineralisation from other zones during commercial production.

Davy Weathered

The Davy Weathered composite WOF and HLS results returned lower recoveries, lower grades and higher gangue grades when compared to the other composites. The composite performed as follows:

- The HLS Li₂O recovery was 26% at 5.7% Li₂O concentrate grade and higher iron levels of 1.8% Fe₂O₃.
- The WOF recovery was 38% Li₂O at a grade of 5.7% Li₂O.

The impact of the lower recovery rates for the Davy Weathered composite sample will be mitigated by the fact that the Davy Weathered mineralised zone represents <5% of the overall Dome North Mineral Resource tonnes.



As with the Davy Fresh tests, flotation tests conducted were based on the baseline reagent regime and test methodology applied other composites which are significantly less weathered. Further testing specifically designed to optimise recoveries for the Davy Weathered mineralisation will be conducted as part of future studies. These tests will also analyse whether the recovery rate could improve if Davy Weathered mineralisation is blended with mineralisation from other zones during commercial production.



Figure 4 - Flotation test work underway on Dome North samples at Nagrom Laboratory.

UPCOMING KEY EVENTS

October

- Completion of an interpretation of the Pioneer Dome structural setting and controls of lithium-caesium-tantalum (LCT) pegmatite emplacement
- Receipt of assays from the Resource extension drill programme

November

- Completion of the Dome North Mineral Resource update

December

- Completion of the Pioneer Dome Lithium Project Scoping Study
- Receipt of non-binding expressions of interest from parties seeking a financing and off-take partnership to assist with advancing the Pioneer Dome Lithium Project into production.

Exploration activities will continue in parallel with the above key milestone activities, focused on discovering new spodumene-bearing pegmatites at the Pioneer Dome Lithium Project.



This ASX release has been approved by the Board of Directors.

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ABOUT ESSENTIAL METALS LIMITED

Essential Metals is a well-funded and active explorer focussed on the discovery of lithium and other key global demand-driven commodities, for the creation of shareholder wealth through exploration and project development. The Company operates **three strategically located lithium and gold projects** in Western Australia.

100% OWNED AND MANAGED PROJECTS:

- **LITHIUM:** The **Pioneer Dome Lithium Project** is highly prospective for lithium-caesium-tantalum (LCT) mineral systems and includes the **Dome North Lithium Mineral Resource** of 11.2 million tonnes @ 1.21% lithium (Li₂O).⁴
- **GOLD:** The **Juglah Dome Project** is located 60km east-south-east of Kalgoorlie and is considered to be highly prospective for gold and has potential for VHMS style polymetallic deposits.
- **GOLD:** The **Golden Ridge Project** is located ~20km south-east of Kalgoorlie, WA. Our activities are focussed on reappraising known prospects as well as identifying new areas within the large land tenure.

JOINT VENTURE INTERESTS:

- **GOLD:** The **Acra** Project is near Kalgoorlie. Northern Star Resources Limited (ASX:NST) has earned a 75% Project Interest and continues to fully fund exploration programmes until approval of a Mining Proposal by DMIRS is received with Essential Metals holding a 25% interest.
- **GOLD:** The **Kangan** Project is in the West Pilbara and part of a joint venture with Novo Resources Corp (TSXV:NVO), who will fund 100% of gold exploration programmes until a decision to mine is made, with Essential Metals holding a 30% interest.
- **GOLD:** The **Balagundi** Project is subject to a farmin & JV agreement where Black Cat Syndicate Limited (ASX:BC8) is earning a 75% interest in the Project located at Bulong, near Kalgoorlie. Black Cat will then fully fund gold exploration programmes until a decision to mine is made, with Essential Metals retaining a 25% interest.
- **GOLD:** The Company holds a 25% free-carried interest (20% for nickel rights) in the **Larkinville** Project near Kambalda, WA, with Maximus Resources Ltd (ASX:MXR).
- **NICKEL:** The nickel mineral rights on the **Blair-Golden Ridge** Project, which includes the suspended Blair Nickel Sulphide Mine, are subject to a Farmin/Joint Venture with Australian Nickel Company Ltd, a nickel exploration specialist which is earning up to a 75% interest. The Company will retain a 25% free-carried interest up to a decision to mine.
- **NICKEL:** The Company holds a 20% free-carried interest (nickel only) in the **Wattle Dam** project near Kambalda, WA, with Maximus Resources Ltd (ASX:MXR).

⁴ Refer to ASX announcement dated 29 September 2020 "Dome North Lithium Project – Resource Upgrade"



Forward Looking Statement

This announcement may contain forward-looking statements which involve a number of risks and uncertainties. These forward-looking statements are expressed in good faith and believed to have a reasonable basis. These statements reflect current expectations, intentions or strategies regarding the future and assumptions based on currently available information. Should one or more of the risks or uncertainties materialise, or should underlying assumptions prove incorrect, actual results may vary from the expectations, intentions and strategies described in this announcement. No obligation is assumed to update forward looking statements if these beliefs, opinions, and estimates should change or to reflect other future developments.

Reference to previous market announcements

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The company confirms that the form and context in which Exploration Results or Competent Person's findings are presented have not been materially modified from the original market announcements.

Exploration Results – Competent Person Statement

Mr Andrew Dunn (MAIG) holds the position of Exploration Manager and is employed full-time by Essential Metals Limited. Mr Dunn compiled the technical aspects of this Announcement pertaining to Exploration Results, which is based on and fairly represents information compiled by Mr Dunn.

Mr Dunn is eligible to receive equity-based securities in Essential Metals Limited under the Company's employee incentive schemes. Mr Dunn is a member of the Australian Institute of Geoscientists and has sufficient experience that is relevant to this style of mineralisation and type of deposit under consideration and to the activity that is being reported on 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 Dunn consents to the inclusion in the report of the matters in the form and context in which it appears.

Dome North Mineral Metallurgical Test Work - Competent Person Statement

The information in this report that relates to metallurgical test work for the Dome North Lithium Project has been reviewed by Mr Joshua Paterson who is a member of the Australasian Institute of Mining and Metallurgy. Mr Paterson is an employee of Primero Ltd and has sufficient experience relevant to the style of processing response and type of deposit under consideration, and to the activities 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 Paterson consents to the inclusion in the report of a summary based upon his information in the form and context in which it appears.



Dome North Lithium Mineral Resource – Competent Person Statement

The information in this Report that relates to Mineral Resource Estimates for the Dome North Lithium Project is based on and fairly represents information compiled by Competent Persons Mr Stuart Kerr and Mr Lauritz Barnes as extracted from the report entitled “Dome North Lithium Project – Resource upgrade” created on 29 September 2020 and is available to view on www.essmetals.com.au. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case 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. The Company confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcement.

Dome North Lithium Mineral Resource (20 September 2020)

Project area	Category	Tonnes (Mt)	Grade (Li ₂ O %)	Tonnes Li ₂ O
Cade Deposit	Indicated	5.4	1.30	70,000
	Inferred	2.8	1.18	33,000
Davy Deposit	Inferred	2.3	1.13	25,000
Heller Deposit	Inferred	0.7	1.02	8,000
Total		11.2	1.21	136,000



Appendix A - Lithium intersections & drill hole data

Table 1

Area	Hole_ID	MGA East	MGA North	RL	Dip	Azimuth	From (m)	To (m)	Width (m)	Li ₂ O%
CadeW	PDD595	367689	6485840	335	-60	270	11.6	26.3	14.7	0.90
CadeW	PDD595	367689	6485840	335	-60	270	29.1	31	1.9	1.38
CadeW	PDD596	367743	6485840	335	-60	270	15	34.2	19.2	1.44
CadeW	PDD596	367743	6485840	335	-60	270	51	53.7	2.7	2.28
CadeW	PDD597	367705	6485840	335	-60	270	18.5	28.5	10	1.13
CadeW	PDD598	367774	6485840	335	-60	270	14.4	24	9.6	1.42
CadeW	PDD599	367744	6485840	335	-60	270	3.6	27.3	23.7	1.26
CadeW	PDD600	367719	6485840	335	-60	270	21.1	40	18.9	1.24
CadeW	PDD600	367719	6485840	335	-60	270	46.8	52.3	5.5	1.19
DavyW	PDD601	366212	6485840	335	-60	295	45.4	77.35	31.95	1.24
DavyW	PDD603	366228	6485840	335	-60	270	17	35.7	18.7	1.05
DavyF	PDD604	366284	6485840	335	-60	270	99.2	110.3	11.1	1.70
DavyF	PDD605	366304	6485840	335	-60	295	97.1	114.1	17	1.32
DavyF	PDD606	366307	6485840	335	-60	295	72.6	84.2	11.6	0.82

- CadeW = Cade deposit weathered domain; DavyW = Davy deposit weathered domain; DavyF = Davy deposit fresh domain
- Intersections calculated using 0.5% Li₂O lower cut-off. All depths and widths are down hole measurements. True width may be less than down hole length.



Appendix B

JORC Code 2012 Table 1 Section 1 – Diamond Drill Hole 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"> Nature and quality of sampling (eg cut Faces, 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. 	<ul style="list-style-type: none"> Diamond drilling was carried out using HQ sized triple tube system.
	<ul style="list-style-type: none"> Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. 	<ul style="list-style-type: none"> Duplicate samples and Certified Reference Standards were inserted at regular intervals to provide quality checks for assays.
	<ul style="list-style-type: none"> 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 (eg '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 (eg submarine nodules) may warrant disclosure of detailed information. 	<ul style="list-style-type: none"> These samples were staged crushed to 6.3mm. Riffle splitting occurred to obtain 200g sample. Then pulverised by pulp mill to nominal P80/75um to produce a pulverised sample for analysis. Lithium exploration package of samples underwent sodium peroxide fusion in Alumina crucibles and digested in dilute hydrochloric. Elemental concentrations were determined by Induced Coupled Plasma (ICP) with a Mass Spectrometer (MS) or Optical Emission Spectra (OES) read (Nagrom analysis code ICP005_MS or ICP005_OES, respectively). Any over range Li values will be re-analysed by a sodium peroxide zirconium crucible fusion with Mass Spectrometry (MS) finish.
Drilling techniques	<ul style="list-style-type: none"> Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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). 	<ul style="list-style-type: none"> Diamond Drilling. <ul style="list-style-type: none"> HQ size triple tube system (nominal core diameter of 61.1mm).
Drill sample recovery	<ul style="list-style-type: none"> Method of recording and assessing core and chip sample recoveries and results assessed. 	<ul style="list-style-type: none"> Core recoveries were logged for the diamond holes.
	<ul style="list-style-type: none"> Measures taken to maximise sample recovery and ensure representative nature of the samples. 	<ul style="list-style-type: none"> Triple tube drilling was used to maximise the core recovery.
	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> There has been no correlation recognised between sample recoveries and grade.
Logging	<ul style="list-style-type: none"> Whether core and chip samples have been geologically and geotechnically logged to a 	<ul style="list-style-type: none"> Geological information was captured during drilling. This included lithology, mineralogy, alteration, texture,



	<p>level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</p>	<p>recovery, weathering and colour. For diamond core structural measurements were taken.</p> <ul style="list-style-type: none"> The details captured were considered appropriate.
	<ul style="list-style-type: none"> Whether logging is qualitative or quantitative in nature. Core (or costean, Face, etc) photography. 	<ul style="list-style-type: none"> Logging has primarily been qualitative, but it includes quantitative estimates of mineral abundance. All drill core is photographed in full.
	<ul style="list-style-type: none"> The total length and percentage of the relevant intersections logged. 	<ul style="list-style-type: none"> The entire length of the drill holes was geologically logged.
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Diamond – competent core has been quarter core cut for analysis. Friable core was whole core sampled and split at the laboratory. These samples were staged crushed to 6.3mm. Riffle splitting occurred to obtain 200g sample. Then pulverised by pulp mill to nominal P80/75um to produce a pulverised sample for analysis.
	<ul style="list-style-type: none"> Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. 	<ul style="list-style-type: none"> Geologist observed and recorded sample recoveries to track representivity. In laboratory duplicates were taken to assess variability of riffle splitting sub-sampling procedure. Results were acceptable.
	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Duplicates were generated at the laboratory by riffle splitting for the diamond drill core. Laboratory quality control samples were inserted in accordance with the laboratory procedure with the performance of these control samples monitored by the laboratory and the company.
	<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"> The sample size is considered appropriate for the style of deposit being sampled.
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. 	<ul style="list-style-type: none"> The sample preparation and assay method used is considered standard industry practice and is appropriate for the deposit. The assay technical is considered a total determination of elements that were analysed.
	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> NA
	<ul style="list-style-type: none"> Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established. 	<ul style="list-style-type: none"> Standards and laboratory checks have been assessed. The standards show results within acceptable limits of accuracy, with good precision. Internal laboratory checks indicate very high levels of precision.
Verification of sampling and assaying	<ul style="list-style-type: none"> The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. 	<ul style="list-style-type: none"> NA



	<ul style="list-style-type: none"> Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. 	<ul style="list-style-type: none"> The geological and sampling information was collected in MDS software, validated in Micromine and then uploaded to the Company's SQL drilling database.
	<ul style="list-style-type: none"> Discuss any adjustment to assay data. 	<ul style="list-style-type: none"> Li₂O wt% was calculated by multiplying Li wt% result by 2.1527.
Location of data points	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> The collar locations of the holes were initially surveyed by handheld GPS. Subsequently the diamond holes were picked up using RTK DPGS by a qualified surveyor.
	<ul style="list-style-type: none"> Specification of the grid system used. 	<ul style="list-style-type: none"> MGA94 (Zone 51)
	<ul style="list-style-type: none"> Quality and adequacy of topographic control. 	<ul style="list-style-type: none"> SRTM was used to validate the RL. This is sufficient for the exploration holes. Any holes to be used in MRE will be surveyed by differential GPS.
Data spacing and distribution	<ul style="list-style-type: none"> Data spacing for reporting of Exploration Results. 	<ul style="list-style-type: none"> Drill spacing was spaced 80m from existing drill panels with holes spaced 80m apart.
	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Current drilling is sufficient to establish geological and grade continuity at the Cade and Davy deposits, which are included in the Dome North lithium Mineral Resource Estimate.
	<ul style="list-style-type: none"> Whether sample compositing has been applied. 	<ul style="list-style-type: none"> Diamond drilling assays are geology dependent and sample intervals range from 10cm minimum - 160cm maximum
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> The geometry of the spodumene mineralisation at Cade and Davy is broadly has a north-north-east striking and dips steeply to the east. The majority of the drill holes tested the mineralisation at a near optimal orientation. No relationship has been observed between assay grades and drill hole orientation so no sampling bias is evident.
Sample security	<ul style="list-style-type: none"> The measures taken to ensure sample security. 	<ul style="list-style-type: none"> The Company uses standard industry practices when collecting, transporting and storing samples for analysis.
Audits or reviews	<ul style="list-style-type: none"> The results of any audits or reviews of sampling techniques and data. 	<ul style="list-style-type: none"> Sampling techniques for assays have not been specifically audited but follow common practice in the Western Australian exploration industry.



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 	<ul style="list-style-type: none"> The drilling reported herein is within E15/1515 which is a granted Exploration Licence. The tenement is located approximately 55km north-north-west of Norseman, WA. The Company is the registered holder of the tenement and holds a 100% unencumbered interest in all minerals within the tenement. The tenement is on vacant crown land. The Ngadju Native Title Claimant Group has a determined Native Title Claim which covers the Pioneer Dome project, which includes E15/1515.
	<ul style="list-style-type: none"> 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"> At the time of this report E15/1515 was in Good Standing. To the best of the Company's knowledge, other than industry standard permits to operate there are no impediments to Company's operations within the tenement.
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"> There has been no previous LCT exploration drilling or sampling on the Pioneer Dome project other than that carried out by the Company. Previous mapping by the Western Australian Geological Survey and Western Mining Corporation (WMC) in the 1970's identified several pegmatite intrusions, however, these were not systematically explored for lithium.
Geology	<ul style="list-style-type: none"> Deposit type, geological setting and style of mineralisation. 	<ul style="list-style-type: none"> The Project pegmatites are consistent with highly fractionated Lithium Caesium Tantalum (LCT) pegmatite intrusion. This type of pegmatite intrusions are the target intrusions of hard rock lithium deposits. The Dome North deposits are classified as a Spodumene sub type and are highly enriched in Lithium.
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, including 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 plus 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. 	<ul style="list-style-type: none"> Refer to Appendix A of this announcement.
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 	<ul style="list-style-type: none"> Li₂O intercepts calculated using 0.5% cut off with a maximum of 2m of consecutive and total of 4m internal dilution. No external dilution typically applied



	<p>high grades) and cut-off grades are usually Material and should be stated.</p> <ul style="list-style-type: none"> 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. 	<p>except where drill hole logging (e.g. continuous pegmatite) and assays indicate wider internal dilution is warranted.</p> <ul style="list-style-type: none"> There are no metal equivalent values 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 (eg 'down hole length, true width not known'). 	<ul style="list-style-type: none"> Downhole lengths are reported in the Appendices attached to ASX announcements, which list drill hole statistics. The current geological interpretation, based on drilling and geological surface mapping, suggests that the true widths approximate the down hole widths. However, for the PDD601 the pegmatite appears to be sub-vertical, hence, it is greater than true width.
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"> Refer to figures in this report.
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"> Reports on exploration results can be found in ASX announcements on the Company's website at www.essmetals.com.au. The exploration results reported are representative of the mineralisation style and grades and/or widths reported in a consistent manner. Metallurgical results are provided by Primero and summarised in this ASX announcement and another announcement dated 18 December 2020 "Dome North met test results" with all metallurgical drill holes identified in the respective announcements.
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. 	<ul style="list-style-type: none"> All meaningful and material exploration data has been reported.
Further work	<ul style="list-style-type: none"> The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). 	<ul style="list-style-type: none"> Undertake a Scoping Study based on the Dome North Mineral Resource. Undertake an update to the Dome North Mineral Resource.



	<ul style="list-style-type: none">• 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">• Further drilling to define and extend the current Mineral Resource.
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