ESSENTIALMETALS

for a sustainable future

**ASX Code: ESS**

**Corporate Profile**

Shares on issue: 240,839,974
Cash: $9m (30 Sep 2021)
Debt: Nil

**KEY PROJECTS**

**LITHIUM** Pioneer Dome
**GOLD** Golden Ridge
**GOLD** Juglah Dome

**Joint Ventures (ESS %)**

1 x lithium project (51%)
2 x nickel projects (20-25%)*
4 x gold projects (25-30%)*
* Free carried to a decision to mine



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**15 October 2021**

# Excellent lithium assays and widths returned from Cade Deposit

## Four holes into the Cade upper zone confirm high grade tenor and broad widths from surface

## KEY POINTS

- Four Reverse Circulation (RC) drill holes were completed into the upper zone of the Cade Deposit to better understand the weathering profile and evidence of lithium depletion. Pleasingly the assays are of a high lithium tenor, demonstrating that there has likely been minimal depletion of lithium near surface.

- **Cade Deposit** (4 RC holes) assay results include:
  - **21m @ 1.08% $Li_2O$ from surface** (PDRC589)
  - **24m @ 1.29% $Li_2O$ from surface** (PDRC590)
  - **15m @ 1.06% $Li_2O$ from 47m** (PDRC591)
  - **26m @ 1.46% $Li_2O$ from 51m** (PDRC592)

- These assays were prioritised by the laboratory, given their importance in planning the next work programmes. An ASX announcement incorporating all assays from the August drill programme is expected to be released towards the end of October.

- A diamond drill programme is currently being planned to commence in November to improve the confidence in the Dome North Resource and provide metallurgical test work samples for both the Davy and Cade Deposits.

- Steps are underway to ensure that the Dome North Resource area is 'development ready'. This includes applying for a mining lease and conducting various environmental and hydrology studies as well as obtaining up to date capital and operating cost parameters.

Essential Metals Managing Director, Tim Spencer, said: *"These assay results once again reinforce that the Dome North area hosts a high quality Resource with the potential to be mined with minimal overburden. We now need to undertake further drilling and metallurgical test work to advance the project towards development in parallel with more exploration. We will announce the program details as soon as we can finalise the various practicalities and contractors."*

# PIONEER DOME LITHIUM PROJECT

**The Pioneer Dome Lithium 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 lithium Mineral Resource of 11.2Mt @ 1.21% $Li_2O$ has been defined at Dome North in the northern part of the Project area[1].**

**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. The world-class Earl Grey deposit and the Mt Cattlin Mine are located further west and south of Pioneer Dome, respectively.**

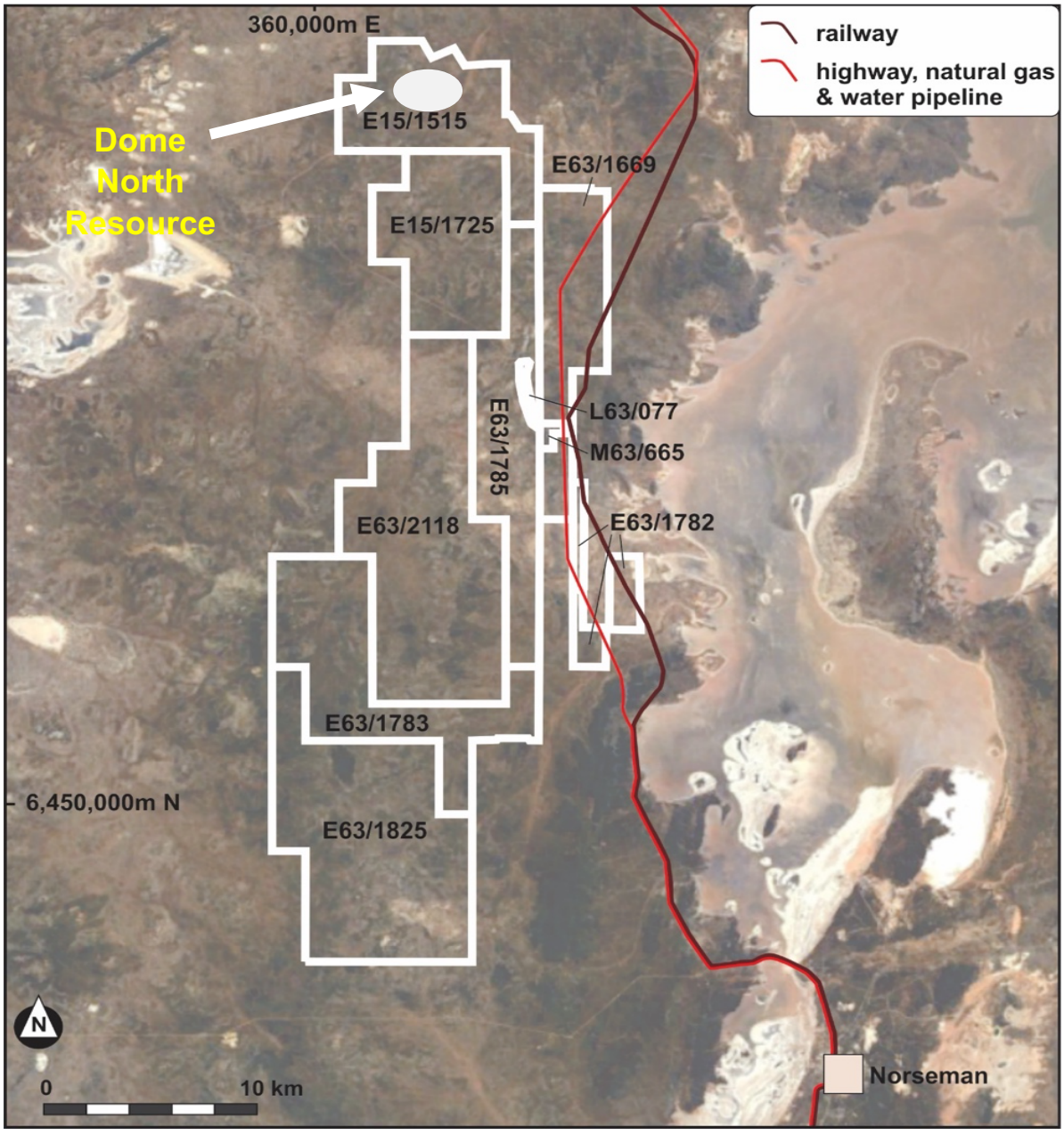


**Figure 1 – The location of the tenements of the Pioneer Dome Lithium Project relative to major infrastructure**

[1] Refer ASX announcement dated 29 September 2020 – Dome North Lithium Project - Resource upgrade

## CADE UPPER ZONE DRILL RESULTS

The 5,934m Reverse Circulation (RC) drill programme within the Dome North area at the Pioneer Dome Project was completed end-August.

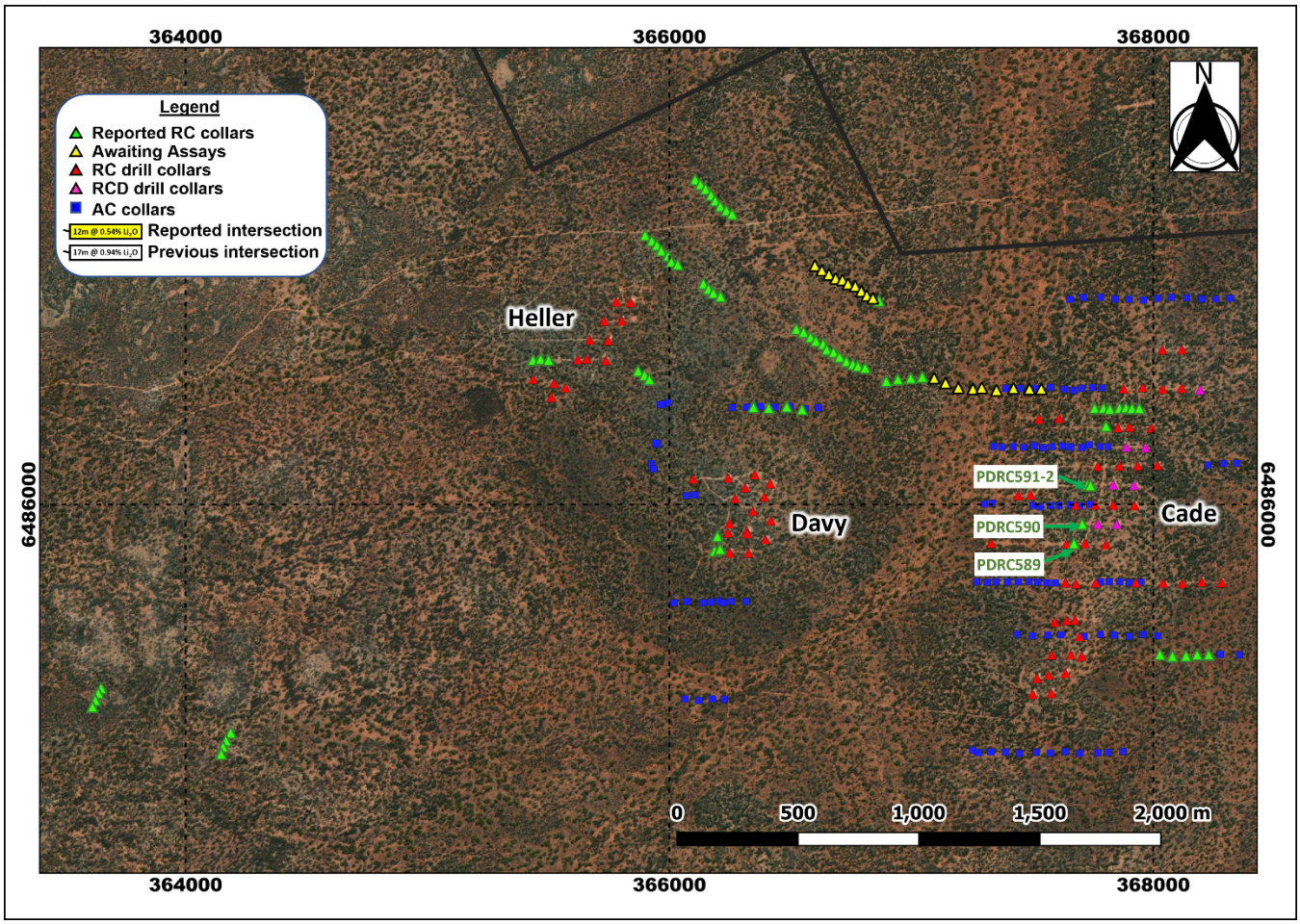


**Figure 2 – Location of the four drill holes being reported are labelled and the locations of the other drill holes completed in the August programme are indicated as per the Diagram legend.**

Four holes were drilled into the upper zone of the Cade Deposit to test the lithium grade and mineral assemblage and to ascertain the degree of weathering and near surface lithium depletion. An air-core hole drilled in June 2020 intersected 21m @ 1.79% $Li_2O$ from 4 metres (Hole PDAC386)[2], indicating no discernible lithium depletion in that area.

The mineralisation at Cade consists of two main pegmatites that are sigmoidal in shape, trending north-north-east and dipping steeply to the east. These pegmatite bodies are hosted in metamorphosed felsic volcaniclastics and metasediments. Lithium mineralisation in the fresh rock is associated with spodumene with rare petalite and lepidolite observed. At the centre of the pegmatite bodies the spodumene zone almost makes up the entire width of the pegmatite with wall zones 0.5 to 2m either side of it. At the margins of these pegmatites they are composed completely of unmineralised granitic pegmatite.

Majority of previous drilling tested the pegmatite in fresh rock, however, in this drilling both PDRC589 and PDRC590 collared in mineralised pegmatite. For the first two to three metres (down hole depths) the pegmatites are weathered but still mineralised and this transitions to fresh rock at approximately 50 metres

[2] Refer ASX announcement dated 23 July 2020 'Dome North Lithium Project Update'

(down hole depth). Spodumene is discernible throughout most of the mineralised pegmatite except for the first two to three metres.

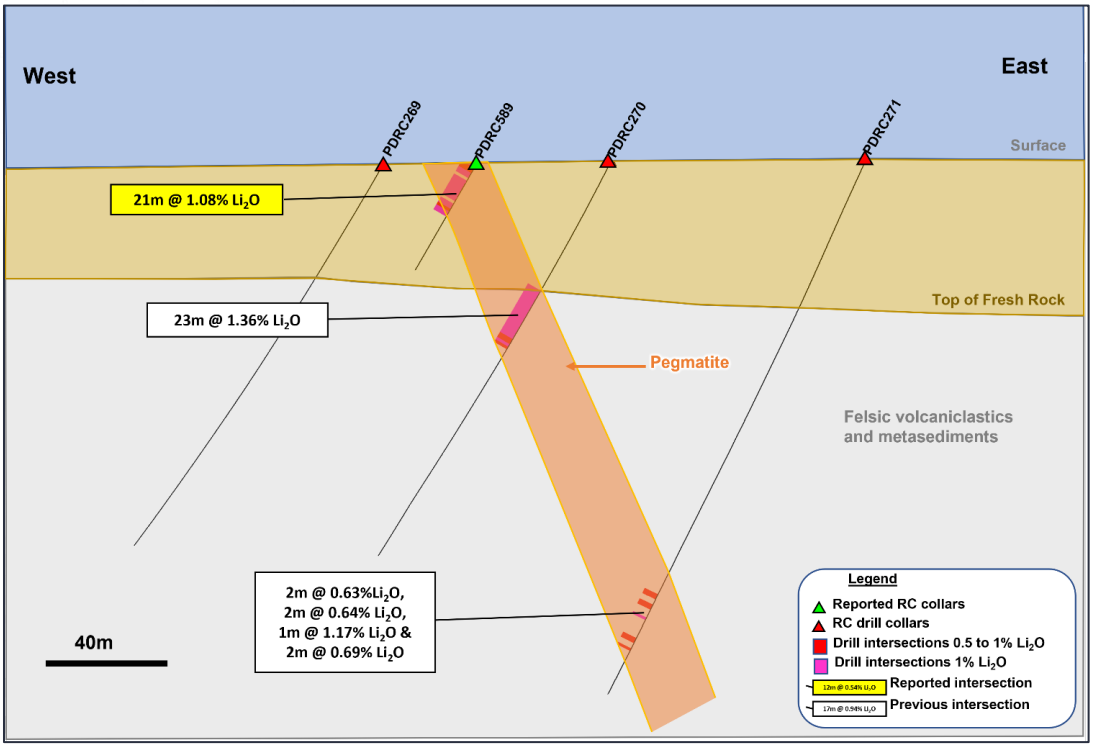


**Figure 3 – Cross section showing drill hole PDRC589 and previously drilled holes on the same section.**

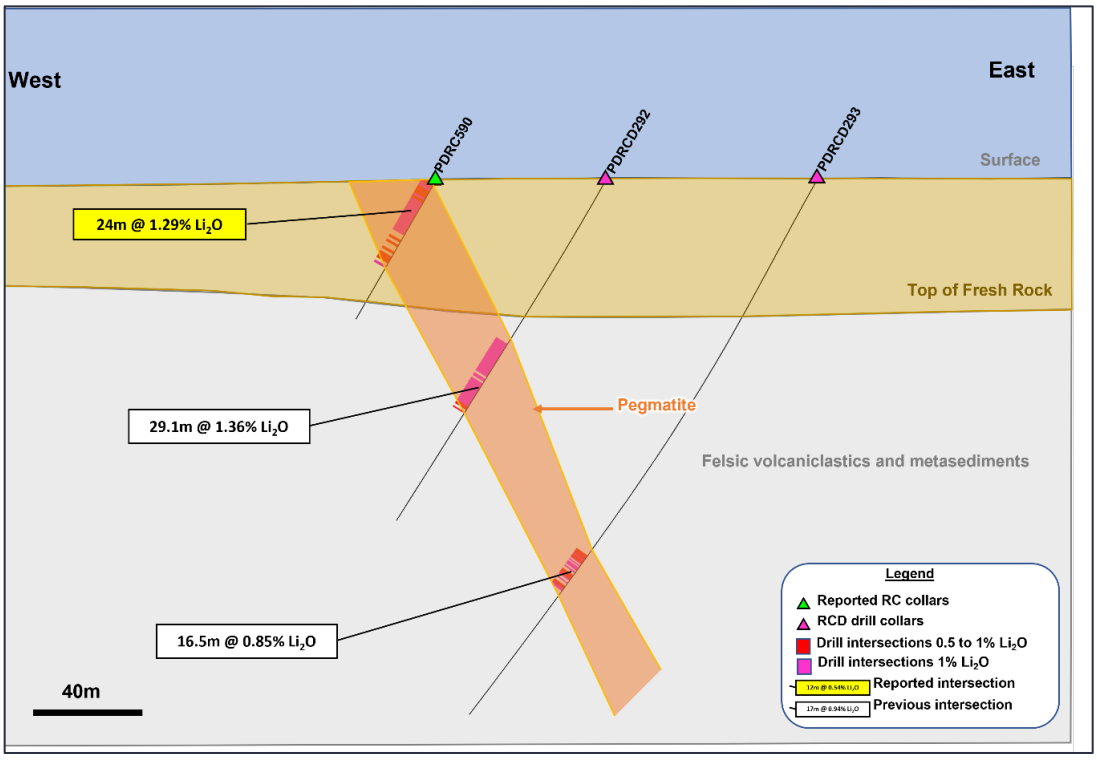


**Figure 4 – Cross section showing drill hole PDRC590 and previously drilled holes on the same section.**

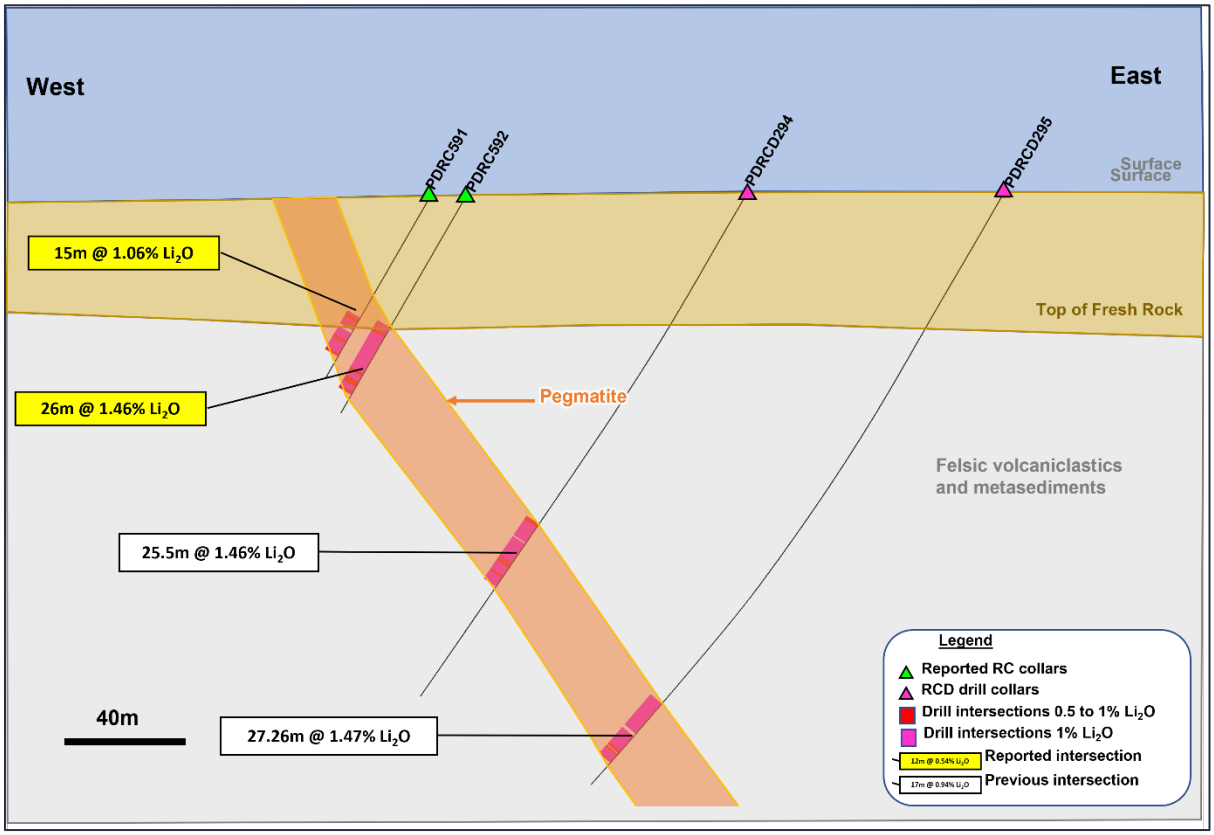


**Figure 5 – Cross section showing drill holes PDRC590 and PDRC591 and previously drilled holes on the same section.**

Mineralogy tests will be conducted to confirm that the host mineral is spodumene, which is expected given that visual spodumene was observed when the holes were drilled.

Assays received to date are shown in Table 1 with the remaining assays now expected to be received in the next two weeks.

Preparations are being made to undertake a diamond drilling programme to obtain samples suitable for conducting metallurgical test work and bulk density analysis on both the Cade and Davy Deposits.

*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 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 ($Li_2O$).
- **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:

- **LITHIUM*:*** The Company holds a 51% Project interest in the **Mavis Lake** Project, Ontario, Canada where drilling has intersected spodumene.
- **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) and Sumitomo Corporation (TYO:8053), who will jointly 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 Crest Investment Group, 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).

**Reference to previous market announcements**

Previous ASX releases referred to in this release:

- 29 September 2020 – Dome North Lithium Project - Resource upgrade
- 19 July 2021 – Dome North lithium drilling commences
- 23 July 2020 – Dome North Lithium Project update

The Company confirms that it is not aware of any new information or data that materially affects the information included in the previous market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.

**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.

**Exploration Work - Competent Person Statement**

Mr Andrew Dunn (MAIG), Exploration Manager who is employed full-time by Essential Metals Limited, compiled the technical aspects of this Report. 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 mineralization 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.

## Table 1 – Significant intersections returned to date from the Dome North RC drilling

| Area | Hole ID | MGA94_z51 East | MGA94_z51 North | RL | Dip | Azimuth | Hole Depth (m) | From (m) | To (m) | Width | Li2O% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cade East | PDRC501 | 368027 | 6485382 | 342 | -60 | 270 | 62 | | | | NSA |
| Cade East | PDRC502 | 368079 | 6485375 | 340 | -60 | 270 | 98 | | | | NSA |
| Cade East | PDRC503 | 368135 | 6485376 | 339 | -60 | 270 | 90 | | | | NSA |
| Cade East | PDRC504 | 368181 | 6485381 | 337 | -60 | 270 | 90 | | | | NSA |
| Cade East | PDRC505 | 368229 | 6485381 | 339 | -60 | 270 | 90 | | | | NSA |
| Cade North | PDRC506 | 367757 | 6486399 | 335 | -60 | 270 | 60 | | | | NSA |
| Cade North | PDRC507 | 367794 | 6486400 | 337 | -60 | 270 | 60 | | | | NSA |
| Cade North | PDRC508 | 367820 | 6486396 | 339 | -60 | 270 | 60 | | | | NSA |
| Cade North | PDRC509 | 367860 | 6486400 | 340 | -60 | 270 | 66 | | | | NSA |
| Cade North | PDRC510 | 367887 | 6486401 | 340 | -60 | 270 | 60 | | | | NSA |
| Cade North | PDRC511 | 367912 | 6486398 | 340 | -60 | 270 | 60 | | | | NSA |
| Cade North | PDRC512 | 367942 | 6486398 | 338 | -60 | 270 | 60 | | | | NSA |
| Davy | PDRC513 | 366524 | 6486726 | 342 | -60 | 300 | 60 | | | | NSA |
| Davy | PDRC514 | 366554 | 6486713 | 341 | -60 | 300 | 60 | | | | NSA |
| Davy | PDRC515 | 366583 | 6486692 | 342 | -60 | 300 | 60 | | | | NSA |
| Davy | PDRC516 | 366605 | 6486676 | 342 | -60 | 300 | 60 | | | | NSA |
| Davy | PDRC517 | 366635 | 6486664 | 343 | -60 | 300 | 60 | | | | NSA |
| Davy | PDRC518 | 366187 | 6485810 | 347 | -60 | 250 | 78 | | | | NSA |
| Davy | PDRC519 | 366209 | 6485817 | 338 | -60 | 270 | 78<br>Including | 21<br>24<br>42 | 28<br>27<br>51 | 7<br>3<br>9 | 1.02<br>1.44<br>0.62 |
| DN_21 & 6 | PDRC520 | 363651 | 6485243 | 377 | -60 | 20 | 60 | | | | NSA |
| DN_21 & 6 | PDRC521 | 363639 | 6485222 | 374 | -60 | 15 | 54 | | | | NSA |
| DN_21 & 6 | PDRC522 | 363627 | 6485193 | 372 | -60 | 15 | 48 | | | | NSA |
| DN_21 & 6 | PDRC523 | 363615 | 6485166 | 372 | -60 | 15 | 48 | | | | NSA |
| DN_21 & 6 | PDRC524 | 364186 | 6485059 | 364 | -60 | 20 | 60 | | | | NSA |
| DN_21 & 6 | PDRC525 | 364167 | 6485026 | 364 | -60 | 20 | 60 | | | | NSA |
| DN_21 & 6 | PDRC526 | 364155 | 6485001 | 365 | -60 | 20 | 60 | | | | NSA |
| DN_21 & 6 | PDRC527 | 364147 | 6484971 | 365 | -60 | 20 | 60 | | | | NSA |
| Heller | PDRC528 | 365436 | 6486598 | 360 | -60 | 270 | 60 | | | | NSA |
| Heller | PDRC529 | 365467 | 6486602 | 360 | -60 | 270 | 60 | | | | NSA |
| Heller | PDRC530 | 365500 | 6486598 | 360 | -60 | 270 | 60 | | | | NSA |
| Heller | PDRC531 | 365870 | 6486553 | 359 | -60 | 310 | 60 | | | | NSA |
| Heller | PDRC532 | 365897 | 6486535 | 360 | -60 | 310 | 60 | | | | NSA |
| Heller | PDRC533 | 365917 | 6486518 | 359 | -60 | 310 | 60 | | | | NSA |
| Heller | PDRC534 | 365899 | 6487113 | 348 | -60 | 310 | 78 | | | | NSA |
| Heller | PDRC535 | 365927 | 6487090 | 348 | -60 | 310 | 60 | | | | NSA |
| Heller | PDRC536 | 365948 | 6487072 | 348 | -60 | 310 | 60 | | | | NSA |
| Heller | PDRC537 | 365966 | 6487050 | 349 | -60 | 310 | 60 | | | | NSA |
| Heller | PDRC538 | 365994 | 6487028 | 349 | -60 | 310 | 60 | | | | NSA |

| Area | Hole ID | MGA94_z51 East | MGA94_z51 North | RL | Dip | Azimuth | Hole Depth (m) | From (m) | To (m) | Width | Li2O% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Heller | PDRC539 | 366007 | 6487003 | 348 | -60 | 310 | 60 | | | | NSA |
| Heller | PDRC540 | 366034 | 6486992 | 347 | -60 | 310 | 60 | | | | NSA |
| Heller | PDRC541 | 366140 | 6486913 | 347 | -60 | 310 | 60 | | | | NSA |
| Heller | PDRC542 | 366161 | 6486891 | 347 | -60 | 310 | 60 | | | | NSA |
| Heller | PDRC543 | 366181 | 6486875 | 347 | -60 | 310 | 60 | | | | NSA |
| Heller | PDRC544 | 366211 | 6486860 | 347 | -60 | 310 | 60 | | | | NSA |
| Heller | PDRC545 | 366106 | 6487343 | 341 | -60 | 310 | 60 | | | | NSA |
| Heller | PDRC546 | 366128 | 6487323 | 341 | -60 | 310 | 60 | | | | NSA |
| Heller | PDRC547 | 366149 | 6487304 | 339 | -60 | 310 | 66 | | | | NSA |
| Heller | PDRC548 | 366172 | 6487279 | 341 | -60 | 310 | 60 | | | | NSA |
| Heller | PDRC549 | 366189 | 6487256 | 341 | -60 | 310 | 60 | | | | NSA |
| Heller | PDRC550 | 366210 | 6487233 | 345 | -60 | 310 | 60 | | | | NSA |
| Heller | PDRC551 | 366235 | 6487215 | 344 | -60 | 310 | 60 | | | | NSA |
| Heller | PDRC552 | 366259 | 6487200 | 342 | -60 | 310 | 60 | | | | NSA |
| Davy | PDRC553 | 366347 | 6486403 | 346 | -60 | 270 | 60 | | | | NSA |
| Davy | PDRC554 | 366410 | 6486399 | 348 | -60 | 270 | 60 | | | | NSA |
| Davy | PDRC555 | 366485 | 6486405 | 346 | -60 | 270 | 60 | | | | NSA |
| Davy | PDRC556 | 366548 | 6486394 | 345 | -60 | 270 | 60 | | | | NSA |
| Davy | PDRC557 | 366650 | 6486641 | 341 | -60 | 300 | 60 | | | | NSA |
| Davy | PDRC558 | 366678 | 6486630 | 339 | -60 | 300 | 60 | | | | NSA |
| Davy | PDRC559 | 366703 | 6486610 | 339 | -60 | 300 | 60 | | | | NSA |
| Davy | PDRC560 | 366731 | 6486592 | 341 | -60 | 300 | 60 | | | | NSA |
| Davy | PDRC561 | 366758 | 6486580 | 340 | -60 | 300 | 60 | | | | NSA |
| Davy | PDRC562 | 366779 | 6486573 | 339 | -60 | 300 | 60 | | | | NSA |
| Davy | PDRC563 | 366809 | 6486565 | 339 | -60 | 300 | 60 | | | | NSA |
| Cade North | PDRC564 | 366896 | 6486510 | 338 | -60 | 270 | 78 | | | | NSA |
| Cade North | PDRC565 | 366944 | 6486518 | 338 | -60 | 270 | 78 | | | | NSA |
| Cade North | PDRC566 | 366997 | 6486523 | 338 | -60 | 270 | 78 | | | | NSA |
| Cade North | PDRC567 | 367045 | 6486528 | 338 | -60 | 270 | 78 | | | | NSA |
| Cade North | PDRC568 | 367094 | 6486523 | 336 | -60 | 270 | 72 | | | | AA |
| Cade North | PDRC569 | 367141 | 6486503 | 335 | -60 | 270 | 72 | | | | AA |
| Cade North | PDRC570 | 367194 | 6486483 | 334 | -60 | 270 | 80 | | | | AA |
| Cade North | PDRC571 | 367254 | 6486478 | 334 | -60 | 270 | 80 | | | | AA |
| Cade North | PDRC572 | 367291 | 6486483 | 334 | -60 | 270 | 78 | | | | AA |
| Cade North | PDRC573 | 367352 | 6486473 | 332 | -60 | 270 | 78 | | | | AA |
| Cade North | PDRC574 | 367422 | 6486481 | 332 | -60 | 270 | 78 | | | | AA |
| Cade North | PDRC575 | 367488 | 6486478 | 333 | -60 | 270 | 78 | | | | AA |
| Cade North | PDRC576 | 367537 | 6486478 | 333 | -60 | 270 | 60 | | | | AA |
| Davy | PDRC577 | 366601 | 6486988 | 338 | -60 | 300 | 60 | | | | AA |
| Davy | PDRC578 | 366630 | 6486968 | 337 | -60 | 300 | 60 | | | | AA |
| Davy | PDRC579 | 366659 | 6486951 | 337 | -60 | 300 | 60 | | | | AA |
| Davy | PDRC580 | 366687 | 6486935 | 337 | -60 | 300 | 60 | | | | AA |

| Area | Hole ID | MGA94_z51 East | MGA94_z51 North | RL | Dip | Azimuth | Hole Depth (m) | From (m) | To (m) | Width | Li2O% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Davy | PDRC581 | 366715 | 6486929 | 337 | -60 | 300 | 60 | | | | AA |
| Davy | PDRC582 | 366738 | 6486912 | 335 | -60 | 300 | 60 | | | | AA |
| Davy | PDRC583 | 366768 | 6486903 | 336 | -60 | 300 | 60 | | | | AA |
| Davy | PDRC584 | 366793 | 6486882 | 335 | -60 | 300 | 60 | | | | AA |
| Davy | PDRC585 | 366816 | 6486864 | 336 | -60 | 300 | 60 | | | | AA |
| Davy | PDRC586 | 366841 | 6486853 | 333 | -60 | 300 | 60 | | | | AA |
| Davy | PDRC587 | 366866 | 6486842 | 334 | -60 | 300 | 60 | | | | NSA |
| Davy | PDRC588 | 366198 | 6485870 | 352 | -60 | 270 | 42 | | | | NSA |
| Cade | PDRC589 | 367672 | 6485840 | 340 | -60 | 270 | 42 | 0 | 21 | 21 | 1.08 |
| | | | | | | | Including | 1 | 2 | 1 | 1.02 |
| | | | | | | | Including | 4 | 6 | 2 | 1.11 |
| | | | | | | | Including | 7 | 21 | 14 | 1.24 |
| Cade | PDRC590 | 367706 | 6485921 | 344 | -60 | 270 | 60 | 0 | 24 | 24 | 1.29 |
| | | | | | | | | 26 | 27 | 1 | 0.63 |
| | | | | | | | | 28 | 29 | 1 | 0.56 |
| | | | | | | | | 31 | 38 | 7 | 0.68 |
| | | | | | | | Including | 37 | 38 | 1 | 1.02 |
| Cade | PDRC591 | 367728 | 6486082 | 338 | -60 | 270 | 70 | 47 | 62 | 15 | 1.06 |
| | | | | | | | Including | 47 | 48 | 1 | 1.21 |
| | | | | | | | Including | 49 | 52 | 3 | 1.10 |
| | | | | | | | Including | 53 | 56 | 3 | 1.13 |
| | | | | | | | Including | 57 | 61 | 4 | 1.52 |
| Cade | PDRC592 | 367760 | 6486080 | 337 | -60 | 270 | 84 | 51 | 77 | 26 | 1.46 |
| | | | | | | | Including | 51 | 76 | 25 | 1.50 |
| Cade North | PDRC593 | 367804 | 6486325 | 340 | -60 | 270 | 42 | | | | NSA |

*Key: AA= Awaiting Assays and NSA= No Significant Assays. Intersections calculated using 0.5% $Li_2O$ lower cut-off and including assays calculated using 1.0% $Li_2O$ lower cut-off*

## 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 (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.* | • Industry-standard reverse circulation drilling with a face-sampling hammer was used to collect the sample. |
| | • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* | • The rig had sufficient air pressure and volume to keep the majority of samples dry, however, any wet samples were recorded. All of the reported significant intersection were dry samples.<br>• Where pegmatites were expected to be intersected near existing mineralised ones then individual one metre samples were collected using a cyclone and a cone splitter into sub samples of nominal 3.0kg weight. The cyclone was cleaned regularly to minimise contamination.<br>• Duplicate samples and Certified Reference Standards were inserted at regular intervals to provide quality checks for assays. The standards and duplicates associated with the reported intersections are within acceptable limits. |
| | • *Aspects of the determination of mineralisation that are Material to the Public Report.*<br>• *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.* | • Reverse circulation drilling was used to obtain 1 m samples for pegmatites intersected near existing mineralised ones and they were sub-sampled by a rig mounted cone splitter to produce a nominal 3.0 kg samples. Else, three-metre composite samples for intervals using an aluminium scoop from the sample piles to produce a nominal 3.0 kg samples.<br>• These samples were crushed and pulverised by pulp mill to nominal P80/75um to produce a pulverised sample for analysis.<br>• Lithium exploration package of elements were digested by a four-acid digestion and determined with a Mass Spectrometer (Intertek analysis code 4A Li48-MS). Any over range Li values were re-analysed by a sodium peroxide zirconium crucible fusion with Mass Spectrometry (MS) finish. |
| ***Drilling techniques*** | • *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diametre, 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).* | • Reverse Circulation Drilling.<br>○ 4.5-inch (114mm) drill rods.<br>○ 5-inch (127mm) diameter face-sampling hammer. |
| ***Drill sample recovery*** | • *Method of recording and assessing core and chip sample recoveries and results assessed.* | • During RC drilling the geologist recorded occasions when sample quality was poor, sample return was low, when the sample was wet or compromised in another way. |
| | • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* | • Sample recovery was good during the drilling. |
| | • *Whether a relationship exists between sample recovery and grade and whether* | • There has been no correlation recognised between sample recoveries and grade. |

| | | |
|---|---|---|
| | *sample bias may have occurred due to preferential loss/gain of fine/coarse material.* | |
| ***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.* | • Geological information was captured during drilling. This included lithology, mineralogy, alteration, texture, recovery, weathering and colour.<br>• The details captured were considered appropriate. |
| | • *Whether logging is qualitative or quantitative in nature. Core (or costean, Face, etc) photography.* | • Logging has primarily been qualitative, but it includes quantitative estimates of mineral abundance.<br>• A representative sample of each RC drill metre was sieved and retained in chip trays for future reference. |
| | • *The total length and percentage of the relevant intersections logged.* | • The entire length of the drill holes was geologically logged. |
| ***Sub-sampling techniques and sample preparation*** | • *If core, whether cut or sawn and whether quarter, half or all core taken.*<br>• *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.*<br>• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* | • RC drilling - For pegmatites intersected near existing mineralised ones, individual one metre samples were collected via a rig mounted cone splitter. All samples were dry. Individual samples were approximately 3kg.<br>• Three metre composites were collected for the remainder of the drill holes. This involved representative scoop composites from the sample piles. The sample collection, sampling and sub- sampling is considered standard industry practise for the exploration stage of project. |
| | • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* | • Cyclones are routinely cleaned.<br>• Geologist recorded any evidence of sample contamination, when present.<br>• Geologist observed and recorded sample recoveries to track representivity. |
| | • *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.* | • Duplicate field samples were routinely taken at a rate of 1 per 30 samples for RC drilling.<br>• Laboratory quality control samples were inserted by the laboratory with the performance of these control samples monitored by the laboratory and the company.<br>• Analysis of the aforementioned measures indicated that the sampling was representative and reliable. |
| | • *Whether sample sizes are appropriate to the grain size of the material being sampled.* | • The sample size is considered appropriate for the style of deposit being sampled. |
| ***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.* | • The sample preparation and assay method used is considered standard industry practice and is appropriate for the deposit. |
| | • *For geophysical tools, spectrometres, handheld XRF instruments, etc, the parametres used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* | • NA |
| | • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.* | • Standard Reference Materials were inserted at a rate of 1 per 30 samples.<br>• Duplicate field samples were routinely taken at a rate of 1 per 30 samples for RC drilling.<br>• Laboratory quality control samples were inserted by the laboratory with the performance of these control samples monitored by the laboratory and the company.<br>• Analysis of the aforementioned measures indicated that the sampling was representative and reliable. |

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| ***Verification of sampling and assaying*** | • *The verification of significant intersections by either independent or alternative company personnel.*<br>• *The use of twinned holes.* | • Significant intersections were calculated by geological staff with these intersections checked by the Exploration Manager.<br>• The significant assay results were compared to the logging to confirmed they matched the spodumene zones.<br>• No holes have been twinned. |
| | • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* | • The geological and sampling information were collected in MDS software, validated in Micromine and then uploaded to the Company's SQL drilling database. |
| | • *Discuss any adjustment to assay data.* | • The Company has adjusted the lithium (Li) assay results to determine $Li_2O$ grades. This adjustment is a multiplication of the elemental Li assay results by 2.1527. |
| ***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.* | • The collar locations of the holes have been surveyed by handheld GPS. |
| | • *Specification of the grid system used.* | • MGA94 (Zone 51) |
| | • *Quality and adequacy of topographic control.* | • 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*** | • *Data spacing for reporting of Exploration Results.* | • Drill spacing was variable due to the different objectives, it ranged from 80 to 300m spaced panels with drill holes 40 to 80m apart. |
| | • *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.* | • Current data is sufficient to establish geological at the Cade, Davy and Heller deposits. All other drilling is exploratory in nature and hence drilling is insufficient to establish geological continuity. |
| | • *Whether sample compositing has been applied.* | • The reported intersections were from 1m samples, no composites were included. |
| ***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.*<br>• *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.* | • The geometry of the spodumene mineralisation at Cade, Davy and Heller 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.<br>• Down hole intercept widths are estimated to closely approximate true widths based on the interpretation of the pegmatite bodies and the orientation of the drilling. |
| ***Sample security*** | • *The measures taken to ensure sample security.* | • The Company uses standard industry practices when collecting, transporting and storing samples for analysis.<br>• Drilling pulps are retained by the Company off site. |
| ***Audits or reviews*** | • *The results of any audits or reviews of sampling techniques and data.* | • Sampling techniques for assays have not been specifically audited but follow common practice in the Western Australian exploration industry.<br>• The assay data and quality control samples are periodically audited by an independent consultant. |

Section 2 - Reporting of Exploration Results

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

| Criteria | JORC Code explanation | Commentary |
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| ***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* | • The Dome North drilling reported herein is entirely within E15/1515 which is a granted Exploration Licence.<br>• The tenement is located approximately 60km north of Norseman, WA.<br>• The Company is the registered holder of the tenement and holds a 100% unencumbered interest in all minerals within the tenement.<br>• The tenement is on vacant crown land.<br>• The Ngadju Native Title Claimant Group has a determined Native Title Claim which covers the Pioneer Dome project. |
| | • *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.* | • 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*** | • *Acknowledgment and appraisal of exploration by other parties.* | • 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*** | • *Deposit type, geological setting and style of mineralisation.* | • The Project pegmatites are consistent with records of highly differentiated 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 is highly enriched in Lithium. |
| ***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, 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.*<br>• *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.* | • Refer to Appendix 1 of this announcement. |
| ***Data aggregation methods*** | • *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.*<br>• *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should* | • Weighted average $Li_2O$ assays within the release are calculated using 0.5% $Li_2O$ lower cut-off grade, minimum thickness 1m, with a maximum of 4m of internal waste and no external dilution. Including assays are calculated using 1.0% $Li_2O$ lower cut-off grade.<br>• All reported intersections are from 1 metre samples.<br>• There are no metal equivalent values reported. |

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| | *be stated and some typical examples of such aggregations should be shown in detail.*<br>• *The assumptions used for any reporting of metal equivalent values should be clearly stated.* | |
| ***Relationship between mineralisation widths and intercept lengths*** | • *These relationships are particularly important in the reporting of Exploration Results.*<br>• *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*<br>• *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').* | • Downhole lengths are reported. The current geological interpretation, based on drilling and mapping, suggests that the true widths approximate the down hole widths. |
| ***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.* | • Refer to figures in this report. |
| ***Balanced reporting*** | • *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.* | • All of the drill details for the latest drill programme have been provided in this announcement. |
| ***Other substantive exploration data*** | • *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.* | • All meaningful and material exploration data has been reported. |
| ***Further work*** | • *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).*<br>• *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.* | • Interpret remaining assay results when they have been received.<br>• Drill planning to convert Inferred material in the MRE to the Indicated category. Also, to further drill planning to extend the current MRE. |