# MinEx CRC COMMENCES GOVERNMENT FUNDED DRILLING ON MOONERA PROJECT

13 March 2024



## HIGHLIGHTS

- **Government funded drilling has commenced at the Moonera copper and rare earth elements project in the Eucla Basin**
- **Drilling to be undertaken using the innovative coiled-tube drilling method pioneered by MinEx CRC and its partner the Geological Survey of Western Australia**
- **Program consists of 3 to 4 holes down to a depth of approximately 700m**
- **Premier1 benefits from any discovery made**

Premier1 Lithium Limited (**ASX:PLC**) ("**Premier1**" or the **"Company**") is pleased to announce the commencement of drilling at the Company's Moonera project in the Madura Province of Western Australia.

Moonera is a copper and rare earth elements joint venture project that had previously been identified and drill tested with two drill holes by the Company in 2022 and 2023 (see technical annex). Through this previous drilling, Premier1 currently holds a 40% interest in the project and may elect to earn up to 80% by spending another $1.4m by 30 December 2024.

The Geological Survey of Western Australia (GSWA) previously advised SensOre (now Premier1) in 2023 that they wish to utilise the coiled-tube drilling method to test its applicability in the area. The program consists of 3 to 4 deep drill holes and is part of a precompetitive stratigraphic borehole program which will fill a gap in GSWA drilling in the region.

The majority of prior GSWA drilling was in the vicinity of the Trans-Australian railway line, approximately 100 km to the north. The holes being drilled currently would intersect the buried Madura Province Proterozoic basement beneath the younger Eucla Basin cover sediments.

This work is part of a long-running precompetitive geoscience program by GSWA which will improve understanding of the mineral, energy and groundwater potential of the region. MinEx CRC seeks to obtain drill core, chips and downhole data (such as semi-automated scanned geochemistry) from a series of stratigraphic boreholes up to an approximate depth of 700 m, penetrating through cover of the Eucla Basin.

The obtained multielement data will allow Premier1 to further test the copper and rare earth element potential of the project at no cost. The boreholes also further test the use of novel, smaller footprint coiled-tube drilling techniques for stratigraphic drilling in covered geological terranes.

**Richard Taylor, CEO of Premier1, commented**:

*"We are pleased to see the GSWA and MinEx CRC trialling its innovative drilling approach at Moonera. The engagement is testament to the potential identified by SensOre before our recent demerger and we are excited to see the results of this test."*

This release was approved by the Premier1 CEO.

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*Figure 1: RC Rig on-site at first drill location.*

## ENQUIRIES

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## ABOUT PREMIER1 LITHIUM

Premier1 Lithium (**ASX:PLC**), is focused on tapping into the potential of Western Australia's renowned lithium reserves. Our strategic exploration approach in this world-class mining jurisdiction is driven by a commitment to uncover valuable resources efficiently and effectively. Our projects are situated in the heart of Western Australia's renowned greenstone belts, home to the world's largest lithium-bearing LCT pegmatite deposits. Abbotts North is a premier exploration project with outcropping lithium bearing pegmatites. Beyond Abbotts North, we have a pipeline of promising projects.

## COMPETENT PERSON'S STATEMENT

The information in this announcement that relates to Exploration Results and Mineral Resources is based on information compiled by Robert Rowe, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy (AusIMM) and is a Registered Professional Geoscientist in the field of Mineral Exploration with the Australian Institute of Geoscientists. Mr Rowe is a full-time employee and the Chief Operating Officer of SensOre. Mr Rowe has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Rowe consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

## TECHNICAL ANNEX

The Moonera target is interpreted to be a pipe-like intrusive body with mantle source which is supported by the seismic interpretation and coincident magneto telluric conductive zones from publicly available data collected north of the target area. Major northeast to southwest crustal scale structures trend close to the geophysical target.

An EIS co-funded diamond drill hole 22MEDD001 was completed by SensOre (now Premier1) in 2022, passing through the Madura limestone sequence cover and into crystalline basement at 458m to a final depth of 733m. The drill hole was located following infill geophysics and subsequent 3D inversions on combined magnetics and gravity geophysics. Location of the hole in relation to both the regional and project scale geophysics are presented in figure 2. A second hole 23MEDD002 was completed in 2023 reaching a depth of 506m. The second hole failed to reach basement.

Drilling within the Proterozoic basement in the first drill hole 22MEDD001 encountered a multiphase, strongly altered felsic intrusive rock sequence including monzodiorite, syenogranite, granite and granodiorite. A cross section and selected photos are presented in figure 3. Compositionally variable xenoliths within the monzodiorite, ranging from mafic to granite indicates the intermediate intrusive complex passed though older basement. The contact between the monzodiorite and an underlying granite unit is a wide low angle, strongly oxidised or weathered fault zone between 595-610m (figure 2). Under the fault zone, a strongly altered granite and syenogranite was intercepted from 610-667m passing back into an altered granodiorite to the end of hole. Alteration within the syenogranite and granite consists of magnetite, hematite, albite, sericite and chlorite with some minor pyrite. Towards the base of the hole several narrower similarly altered magnetite, hematite, albite and sericite, chlorite alteration zones with minor pyrite and narrow quartz-epidote veining were observed.

Multielement geochemical assays of selected intervals of drill core were obtained to assess fertility of the basement lithologies. Three classes of granitic rocks were identified using SensOre's machine learning technology. Two classes have geochemical compositions consistent with oxidised A-type granitic rocks, exhibiting high HFSEs (Y, Nb, and Zr), Zn, and Ga/Al ratios. The mean REE values and patterns of the Moonera granitic rocks are distinctive and elevated relative to the mean GEOROC values of similar rock types (figure 4). Overall, the whole-rock geochemistry and mineralogy of the intercepted granitic rocks are consistent with granitic rocks hosting intrusion related Cu-Au systems. These characteristics include hydrous, strongly oxidised, and compositionally unevolved magmas, with A-type granite affinities and elevated HFSEs, LILEs, and S contents. The third class has geochemical signatures consistent with pervasive hydrothermal alteration of a granitic rock. The geochemical values from the oxidised fault zone and immediately below has returned elevated Cu (up to 206 ppm), Te (up to 2,400 ppb), and Cl (up to 1,190 ppm).

Combining the alteration assemblage with the geochemical analysis into a granite fertility mineralisation factor (including W-Cu-LOI-Cl-Ag-Cs-Mn-Be-Te-U-Fe-Co-Ga) confirms the presence of a hydrothermal mineral system. Assessment of the geochemical data using SensOre's iFertile tool indicates strong mineral fertility associated with MH-IOCG, alkaline Cu-Au porphyry and gold related breccia mineral systems. Further assay sampling of the remaining portion of the core has been processed and results are expected within the next 6 weeks.

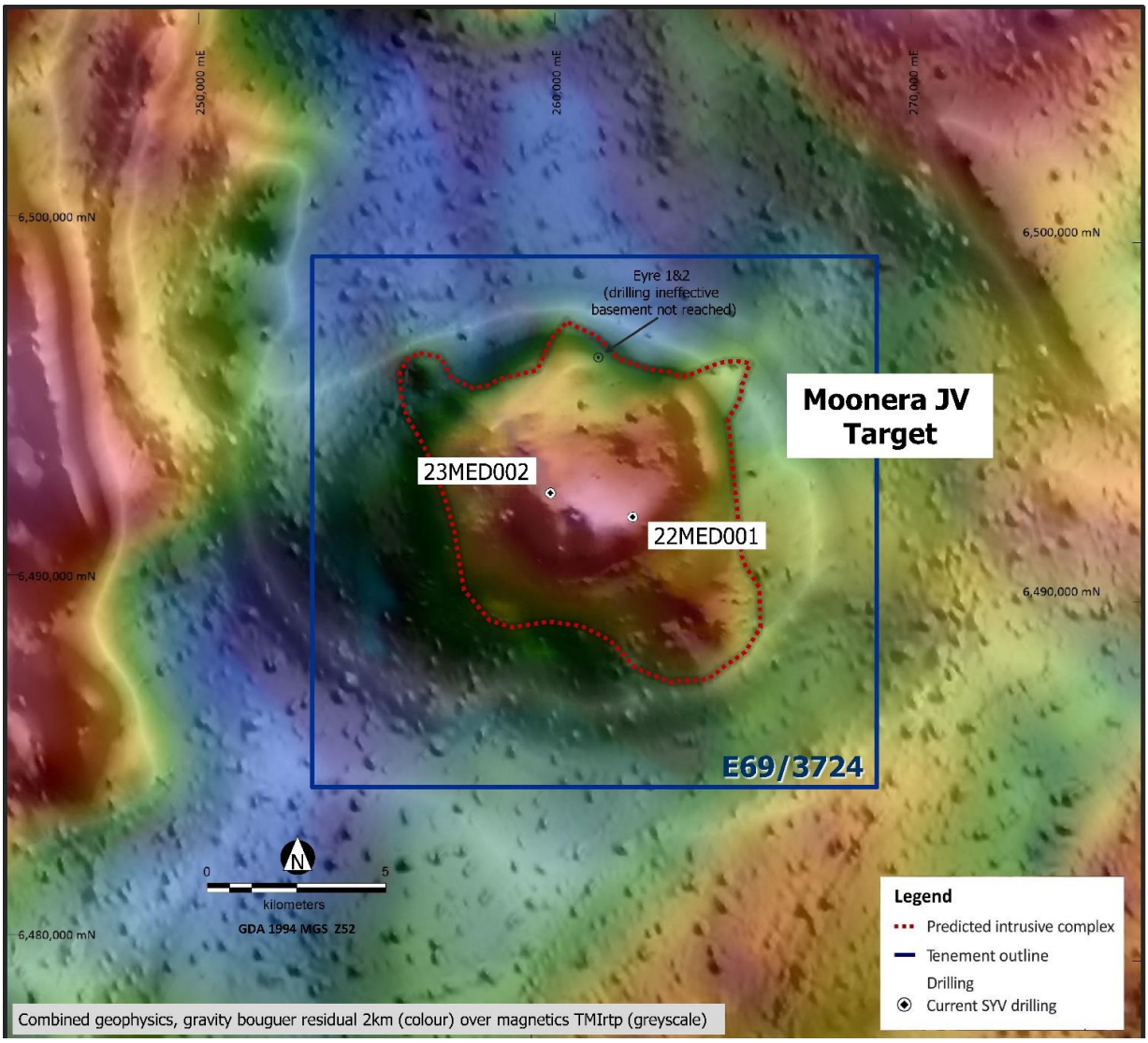


*Figure 2: Combined Gravity bouguer residual 2km (colour) over magnetics TMIrtp (black and white) with previous SensOre holes 22MEDD001 and 23MED002 and historic drilling.*

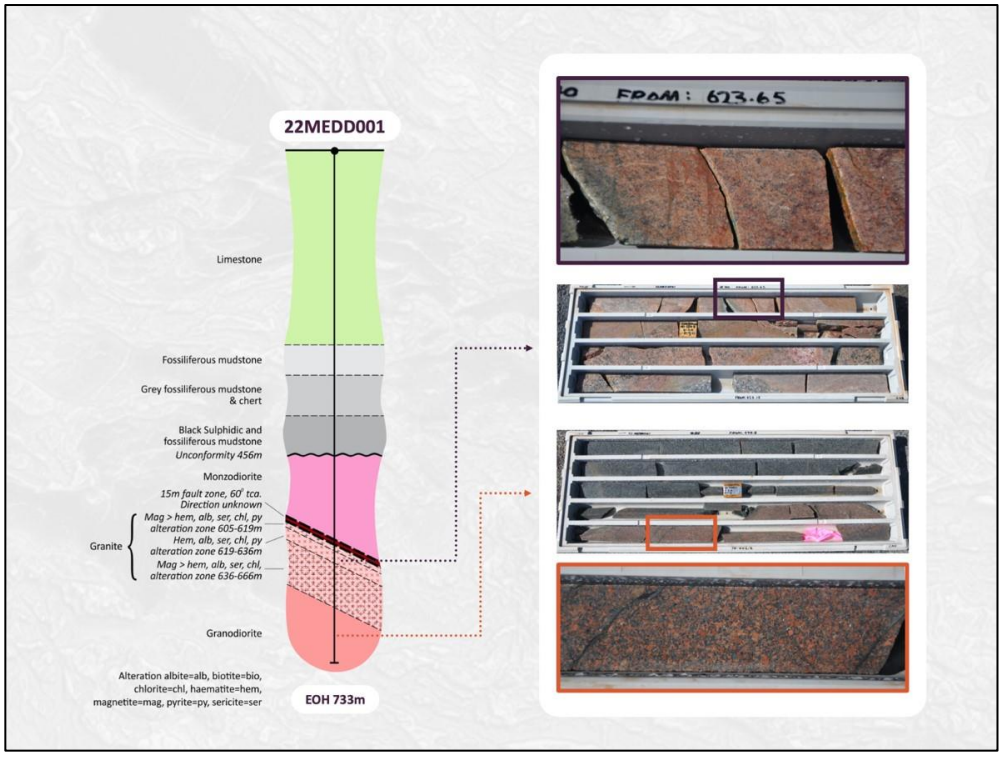


*Figure 3: Cross section and selected core photos of previous SensOre hole 22MEDD001 showing alteration assemblage.*

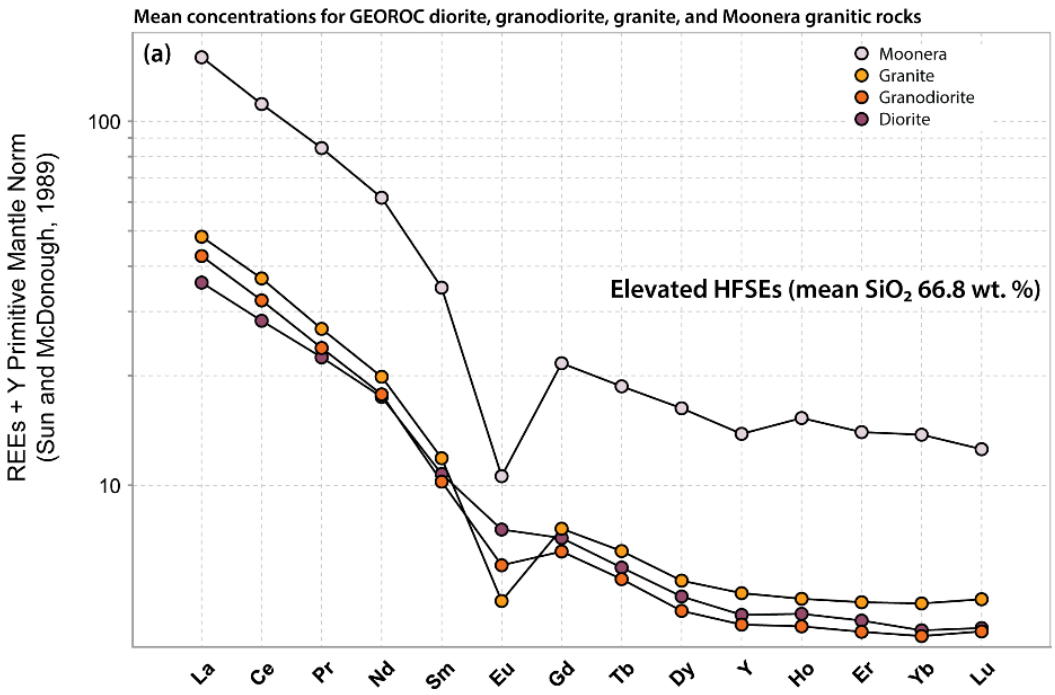


*Figure 4: Mean REE concentrations for GEOROC diorite, granodiorite and granite compared to Moonera granitic samples demonstrating elevated REE and distinctive Eu depletion.*

# JORC CODE[1] 2012 EDITION – TABLE 1

## SECTION 1: SAMPLING TECHNIQUES AND DATA

*(Criteria in this section apply to all succeeding sections)*

The following Table 1 relates to exploration geophysical surveys conducted by Premier1 subsidiary SensOre Yilgarn Ventures Pty Ltd (SYV) over the Moonera Project Joint Venture tenement E69/3724.

| Criteria | Commentary |
|---|---|
| **Sampling techniques** | • A rotary mud (RM) and diamond drilling program was designed to test a large (7 x 5km), circular, dense, and magnetic body occurring in the Madura Province near the south-eastern boundary of WA. One vertical mud rotary diamond drill hole was drilled in May 2022.A second drill hole was completed in June 2023.<br>• Two gravity and magnetic geophysical surveys, designed by Terra Resources, were completed to detail and map both the underlying interpreted intrusive complex and determine thickness, depth, and nature of the overlying cover carbonate sequences.<br>• An unmanned aerial vehicle (UAV) aeromagnetic survey was carried out by Pegasus Airborne, an independent contractor in May 2021. Drone magnetic survey details: 470 total line kilometres, acquisition north-south, 200m line spacing, 2,000m tie-line spacing, 20m sensor height.<br>• An infill ground gravity survey was performed by Atlas Geophysics, an independent contractor in June 2021. Ground gravity acquisition details: 540 stations at 250m and 500m station spacing.<br>• Drill hole location was pegged using handheld GPS units. After drilling, the drill hole location was picked up using a Garmin GPSMAP 64SX handheld GPS.<br>• Diamond core was selectively sampled based on geological observation predominantly on 1m intervals, however occasional varied length intervals were taken. Minimum of 0.3m and a maximum of 1.2m. All core was cut in half 1cm left of the orientation line. The half core was then cut again producing quarter core with one quarter submitted for analysis and the remaining retained.<br>• All core samples submitted were analysed for gold and multielements.<br>• Gold platinum palladium by Fire Assay FA003. Lead Collection Fire Assay – ICP-MS Nominal 40g charge analysed. Silver used as a secondary collector, Au, Pt, Pd determined with ICP quantification. Nature of the sample and/or lower sample weights may compromise detection limits. Detection limits in ppb. By ICP-MS Au (1) Pt (1) Pd (1).<br>• Silicates and major elements by XRF and Laser Ablation ICMS.<br>• XF100. XRF Analysis. Samples are fused with 12:22 Lithium Borate flux. LOI determined by RTGA. Detection limits in ppm. Fe (100), SiO2 (100), Al2O3 (100), MnO (10), TiO2 (10), CaO (100), MgO (100), K2O (10), P (10), S (10), Na2O (100), Cu (10), Ni (10), Co (10), Cr (10), Pb (10), Zn (10), As (10), Sn (10), Sr (10), Zr (10), Ba (10), V (10), Cl (10).<br>LA101- Elements determined by LA-ICP-MS. Fused Bead Laser Ablation ICP-MS utilises high productivity robotic fusion technology with state-of-the-art laser ablation and ICP-MS instruments to provide a fully extracted quantitative analysis for all elements. Detection limits are comparable with traditional multi acid digestion methods. The technique offers safety and environmental advantages as there are no acids used in digestion, and it is fast and repeatable. Detection limits in ppm. Ag (0.1), As (0.2), Ba (0.5), Be (0.2), Bi (0.02), Cd (0.1), Ce (0.02), Co (0.1), Cr (1), Cs (0.01), Cu (2), Dy (0.01), Er (0.01), Eu (0.01), Ga (0.1), Gd (0.01), Ge (0.05), Hf (0.01), Ho (0.01), In (0.05), La (0.01), Lu (0.01), Mn (1), Mo (0.2), Nb (0.01), Nd |

1 *Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2012 Edition*, sets out minimum standards, recommendations and guidelines for public reporting in Australasia of Exploration Results, Mineral Resources and Ore Reserves, authored by the Joint Ore Reserves Committee of The Australian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and the Minerals Council of Australia.

| Criteria | Commentary |
|---|---|
| | (0.01), Ni (2), Pb (1), Pr (0.01), Rb (0.05), Re (0.01), Sb (0.1), Sc (0.1), Se* (5), Sm (0.01), Sn (0.2), Sr (0.1), Ta (0.01), Tb (0.01), Te (0.2), Tl (0.2), Th (0.01), Ti (1), Tm (0.01), U (0.01), V (0.1), W (0.5), Y (0.02), Yb (0.01), Zn (5), Zr (0.5). |
| **Drilling techniques** | • For 22MEDDD0001 Rotary mud and diamond drilling was undertaken by Wallis Drilling utilising a Mantis 1000 mounted on a MAN 8 x 8 truck recovering PQ, HQ and NQ2 core. PQ used a 123mm diameter drill bit producing 86mm drill core. HQ used a 96mm diameter drill bit producing 63.5mm drill core. NQ2 used a 76mm diameter drill bit producing 47.5mm drill core.<br>• For 23MEDD002 PQ and HQ diamond drilling was undertaken by DDH1 Drilling using a Sandvik 1200 truck mounted drill rig. PQ used a 123mm diameter drill bit producing 86mm drill core. HQ used a 96mm diameter drill bit producing 63.5mm drill core. |
| **Drill sample recovery** | • Diamond drilling core is logged for sample recovery and core loss. Drill core recovery in the basement rock is >99%. |
| **Logging** | • All diamond core is geologically and geotechnically logged to record weathering, regolith, rock type, alteration, mineralisation, shearing/foliation and any other features that are present. Wet/dry photographs of diamond core are taken before cutting.<br>• Where required, the logging records the abundance of specific minerals or the amount of alteration (including weathering) using defined ranges.<br>• Diamond drilling is logged with a minimum interval of 10cm. |
| **Sub-sampling techniques and sample preparation** | • Diamond drilling recovered PQ3, HQ2 and NQ2 size core. Drill core was transported to Petricore Solutions in Kalgoorlie. Selected intervals of drill core were cut with a diamond blade saw and sent to Bureau Veritas laboratory in Perth. Quarter core samples were then crushed to <2mm, riffle split to less than 3kg, and pulverised to >85% passing 75µm and analysed.<br>• The sample preparation technique for all samples follows industry best practice, by an accredited laboratory. The techniques and practices are appropriate for the type and style of mineralisation. The bulk pulverised sample is then bagged and approximately 200g extracted by spatula to a numbered paper bag that is used for the analysis.<br>• Standards are inserted into the sample stream at a frequency of one standard in every 25 samples with blanks at the same frequency. The laboratory uses its own internal standards of two duplicates, two replicates, two standards and one blank per 50 assays. The laboratory also uses barren flushes on the pulveriser.<br>• Field duplicate samples were not collected during these drilling campaigns.<br>• The sample sizes are standard industry practice sample size collected under standard industry conditions and by standard methods and are appropriate for the type, style and thickness of mineralisation which might be encountered at this project. |
| **Quality of assay data and laboratory tests** | • The assay method is designed to measure total gold and multielement concentrations in the sample. The laboratory procedures are best industry practice and are appropriate for the testing of the style of gold and base metal mineralisation being explored. The technique involves using a 40g sample charge for gold, platinum and palladium by fire assay. Silver is used as a secondary collector, Au, Pt, Pd determined with ICP-MS quantification. Nature of the sample and/or lower sample weights may compromise detection limits. Detection limits in ppb. Multielement analysis is for 60 elements and was completed by XRF for major elements and by laser ablation ICP-MS on a fused bead for minor elements.<br>• The laboratory is accredited and uses its own certified reference material. The laboratory has two duplicates, two replicates, one standard and one blank per 50 |

| Criteria | Commentary |
|---|---|
| | assays. YEV submitted standard samples every 25th sample but did not submit additional blanks and duplicates for programs to date. |
| **Verification of sampling and assaying** | • The holes were logged by independent geological contractors and YEV staff and the sampling, logging, drilling conditions and RC chips are reviewed. YEV Exploration Manager verifies the field sampling and logging regime and the correlation of mineralised zones with assay results and lithology.<br>• No twinned drill holes were drilled in campaigns to date.<br>• Primary data is sent from the field to YEV Principal Geoscientist – Data & Information Management who imports the data into the industry accepted DataShed database software. Assay results are merged when received electronically from the laboratory.<br>• No adjustments or calibrations were made to any assay data used in this report. |
| **Location of data points** | • Grid system is MGA94, Zone 52. |
| **Data spacing and distribution** | • The drill spacing was variable to test target rationale (i.e. predicted mineralised cells from DPT combined with geochemical surface sampling and interpretations).<br>• This report is for the reporting of exploration results derived from early-stage drilling programs. The drill spacing, spatial distribution and quality of assay results are sufficient to support quotation of exploration results and detect any indication of mineralisation. The data is not intended to be used to define mineral resources. |
| **Orientation of data in relation to geological structure** | • The drill hole was vertical |
| **Sample security** | • Diamond drill core samples were packed, securely strapped, and transported from the field by SYV personnel to Petricore Solutions in Kalgoorlie where they were cut and sampled. Petricore Solutions personnel transported the samples to Bureau Veritas in Kalgoorlie for transport to Bureau Veritas Perth. |
| **Audits or reviews** | • No external or third-party audits or reviews have been completed. |

## SECTION 2: REPORTING OF EXPLORATION RESULTS

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

| Criteria | Commentary |
|---|---|
| **Mineral tenement and land tenure status** | • The results reported in company announcements are on exploration licence E69/3724 held by Nullabor Resources Pty Ltd. SYV is earning 80% of the tenement through a farm-in agreement.<br>• The tenement is believed to be in good standing. There are no known impediments to obtaining a license to operate, other than those set out by statutory requirements, which has not yet been applied for. |
| **Exploration done by other parties** | • Exploration by other parties has been reviewed and is used as a guide to SYV's exploration activities. Previous parties have completed geophysical data collection and interpretation. A reverse circulation and diamond drilling program was undertaken by General Mining Corp and failed to reach depth.<br>• The Moonera Prospect geophysical feature was reviewed by CRAE in 1990, containing a large circular magnetic anomaly of approximately 8km in diameter with 700nT amplitude interpreted to be a carbonatite. With difficult drilling conditions predicted and an expected 400-500m depth of cover, CRAE decided to surrender the tenement without testing the carbonatite conceptual target (Hamdorf, 1990, Wamex Report No A032379).<br>• From 2008 to 2013, General Mining Corporation Ltd (GMC) held title of E69/2369 and carried out four 20km long north-south ground magnetic survey lines 2.5km apart in 2009 covering the entire airborne magnetic feature (Agron, 2008, Wamex Report No A082052). GMC unsuccessfully drill tested the basement geophysical feature. Two diamond holes were drilled to test the shallowest magnetic feature. The holes were planned to be drilled to 700m. The first hole was terminated at 530m (angled), approximately 30m short of the modelled depth to the basement. A second hole, Eyre 2, was pre-collared to 321m with RC and diamond tailed to 558m.Details of the drilling are reported (Agron, 2011, Wamex Report No A090967). |
| **Geology** | • The Moonera target is inferred to be a large circular magnetic anomaly interpreted to be a carbonatite ultrabasic or mafic intrusive complex. |
| **Drill hole information** | • The drill holes reported in Company announcements have the following parameters applied. All drill holes completed, including holes with no significant gold intersections, are reported in Company announcements.<br>  ○ Easting and northing are in MGA94 Zone 52.<br>  ○ RL is AHD.<br>  ○ Dip is the inclination of the hole from the horizontal (i.e. a vertically down drilled hole from the surface is -90°). Azimuth is reported in magnetic degrees as the direction toward which the hole is drilled. MGA94 and magnetic degrees vary by approximately 1° in this project area.<br>  ○ Down hole length of the hole is the distance from the surface to the end of the hole as measured along the drill trace. Interception depth is the distance down the hole as measured along the drill trace. Intersection width is the downhole distance of an intersection as measured along the drill trace.<br>  ○ Hole length is the distance from the surface to the end of the hole as measured along the drill trace.<br>• No results have been excluded from this report. |
| **Data aggregation methods** | • No high-grade cuts have been applied to assay results. Diamond drill results are reported to the closest 10cm sampling interval. |

| Criteria | Commentary |
|---|---|
| | • Intersections are reported as anomalous if the interval is at least 4m wide at a grade greater than the Mean plus twice the Standard Deviation for a selection of elements.<br>• No metal equivalent reporting is used or applied. |
| **Relationship between mineralisation widths and intercept lengths** | • No drilling by SYV has been undertaken. Not applicable to the geophysical surveys being reported. |
| **Diagrams** | • Figures pertinent to the exploration stage of the project are included in company reports and announcements. |
| **Balanced reporting** | • All drill holes completed are included in the results tables in each Company announcement per drilling programs. |
| **Other substantive exploration data** | • Reference to other relevant exploration data is contained in Company announcements including geophysical images and geological plans. |
| **Further work** | • Future exploration is dependent on further review of the current drilling results. |

**End of Table 1**

**Table1a:** Significant intercepts for drilling completed at Moonera

| Hole ID | Year | From (m) | To (m) | Width (m) | Grade (Au ppm) | Intercept | Cut Off (ppm) |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

**Table1b:** Summary of Moonera drill collars

| Hole ID | Hole Type | Max Depth (m) | Grid | East | North | Dip | Azi | RL (m) | Assays |
|---|---|---|---|---|---|---|---|---|---|
| 22MEDD001 | DD | 773.1 | MGA94_52 | 262503 | 6492059 | -90 | 0 | 120 | NSR >0.1ppm Au or 500ppm Cu |
| 23MEDDD002 | DD | 506 | MGA94_52 | 260177 | 6492675 | -90 | 0 | 120 | NSR |