

## DRILLING UNDERWAY TO TEST EM CONDUCTORS AT THE EAST LAVERTON NICKEL PROJECT

### Highlights

- Reverse Circulation (RC) rig on site for the commencement of drilling at GSN's 100% owned East Laverton Nickel Project in Western Australia
- Two bedrock conductors to be tested within the Diorite Hill Intrusive Complex, prospective for nickel-copper-PGE sulphide mineralisation. This represents the first stage of exploration within the 405km<sup>2</sup> project area
- Stage two of East Laverton exploration will target the 17km of ultramafic stratigraphy of the Granite Well and Rotorua trends, prospective for Kambalda style komatiite hosted nickel sulphide mineralisation. First pass ground based electromagnetic (EM) surveys are planned for early 2023
- The current drill program at Diorite Hill is co-funded by the Western Australian Governments Exploration Incentive Scheme (EIS) for up to \$220,000

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### GSN's Managing Director, Matthew Keane, commented:

*"Following several months of refinement and target validation, GSN's team is excited to see the rig arrive at East Laverton to drill the EM conductors within the Diorite Hill Intrusive Complex. The largely untested intrusive geology of Diorite Hill, coupled with favourable stratigraphic positions of the conductors make for a compelling drill program."*

*GSN is grateful for the WA Government's EIS funding, which will cover approximately half of the drilling costs and significantly improved the risk-reward metrics for this expedition."*

Great Southern Mining Limited (ASX: GSN) ("**GSN**" or the "**Company**") is pleased to advise that drilling will commence this week at the Company's 100% owned East Laverton Nickel Project ("East Laverton"), located approximately 35km east of the town of Laverton (refer to Figure 1). This drilling campaign will test two bedrock electromagnetic ("EM") conductors within the Diorite Hill Intrusive Complex ("Diorite Hill"), which are considered prospective for magmatic intrusive style nickel-copper-PGE mineralisation (refer to Figure 2). The conductors were identified in a ground based moving loop EM ("MLEM") survey in 2021 and refined with a follow-up fixed loop EM (FLEM) survey in early 2022 (refer to GSN ASX announcements dated 8 December 2021 and 9 March 2022).

Geophysical surveys and drilling of Diorite Hill represent stage one of the Company's exploration strategy for East Laverton. The next stage will target approximately 17km of ultramafic stratigraphy along the Granite Well and Rotorua trends, which are considered prospective for Kambalda style komatiite host nickel mineralisation. EM surveys covering prospective geology are planned for early-2023.

Despite the presence of anomalous nickel in historic gold-focussed drilling, neither Diorite Hill nor the Granite Well trends have been previously targeted for nickel exploration. The Rotorua trend remains virtually undrilled to date.

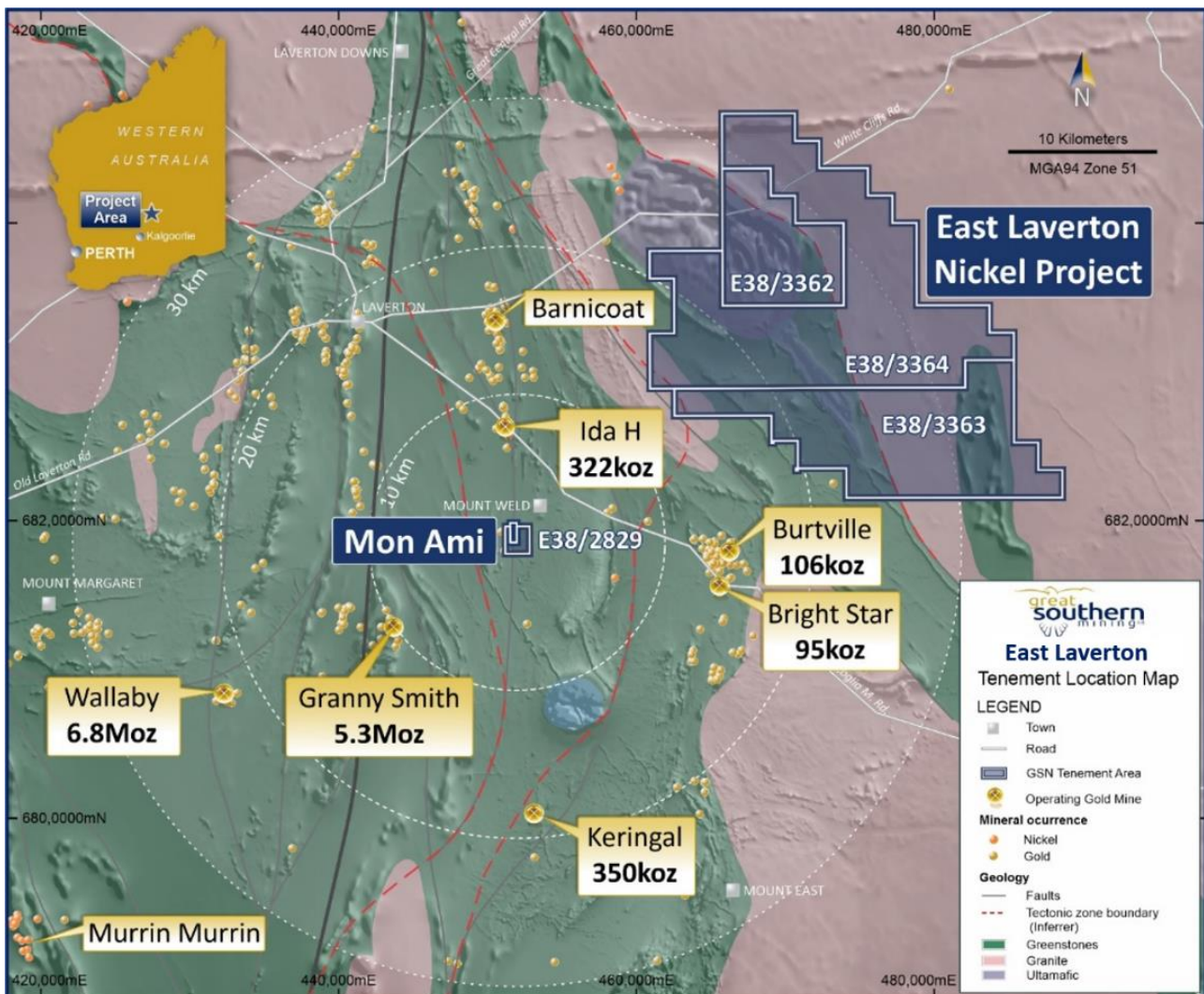


Figure 1. Location map of the East Laverton Nickel Project

## Diorite Hill Conductors

The Diorite Hill Intrusive Complex covers an area of approximately 110km<sup>2</sup> and consists of a cumulate rock sequence of interlayered peridotites, pyroxenites, gabbros and anorthosite up to 7km thick. The intrusion is considered prospective for several styles of nickel-copper-PGE mineralisation, including contact style (i.e. Chalice Mines' Julimar deposit), conduit style (i.e. IGO Group's Nova-Bollinger deposit) and reef style (i.e. Merensky Reef in South Africa).

There is very little outcrop exposure at Diorite Hill, so geological interpretation is largely derived from either geophysics or drilling. The vast majority of historic drilling is either shallow rotary air blast



(“RAB”) or aircore (“AC”) targeting gold and/or PGEs, with only five diamond drill holes drilled to date.

Ground based EM surveys conducted by GSN in 2021-2022 identified two conductive targets within the Granite Hill complex. The first conductor, L076, is located on or near the southern boundary the intrusion in a position considered favourable for contact or conduit style sulphide mineralisation. This conductor will be drilled with a diamond tailed RC hole to a downhole depth of approximately 600m.

The second conductor, L124, is more discrete and interpreted to be on the basal contact of an ultramafic unit, which looks to be the lowermost unit within a sequence of layered intrusive stratigraphy (refer to Figure 2). L124 is considered prospect for reef style sulphide mineralisation. Shallow drill holes within the vicinity of this ultramafic contact have intercepted anomalous nickel as well as anomalous platinum and palladium (including 4m at 0.45% Ni in RAB hole DRA0004 and 0.5m at 153ppm Pd & 10ppb Pt in diamond hole DIORCDD121). Diamond hole DIORCDD123 intercepted 6.2m at 1.8% Ni from 46.8m within the oxide zone proximal to conductor L124 (see Figure 2).

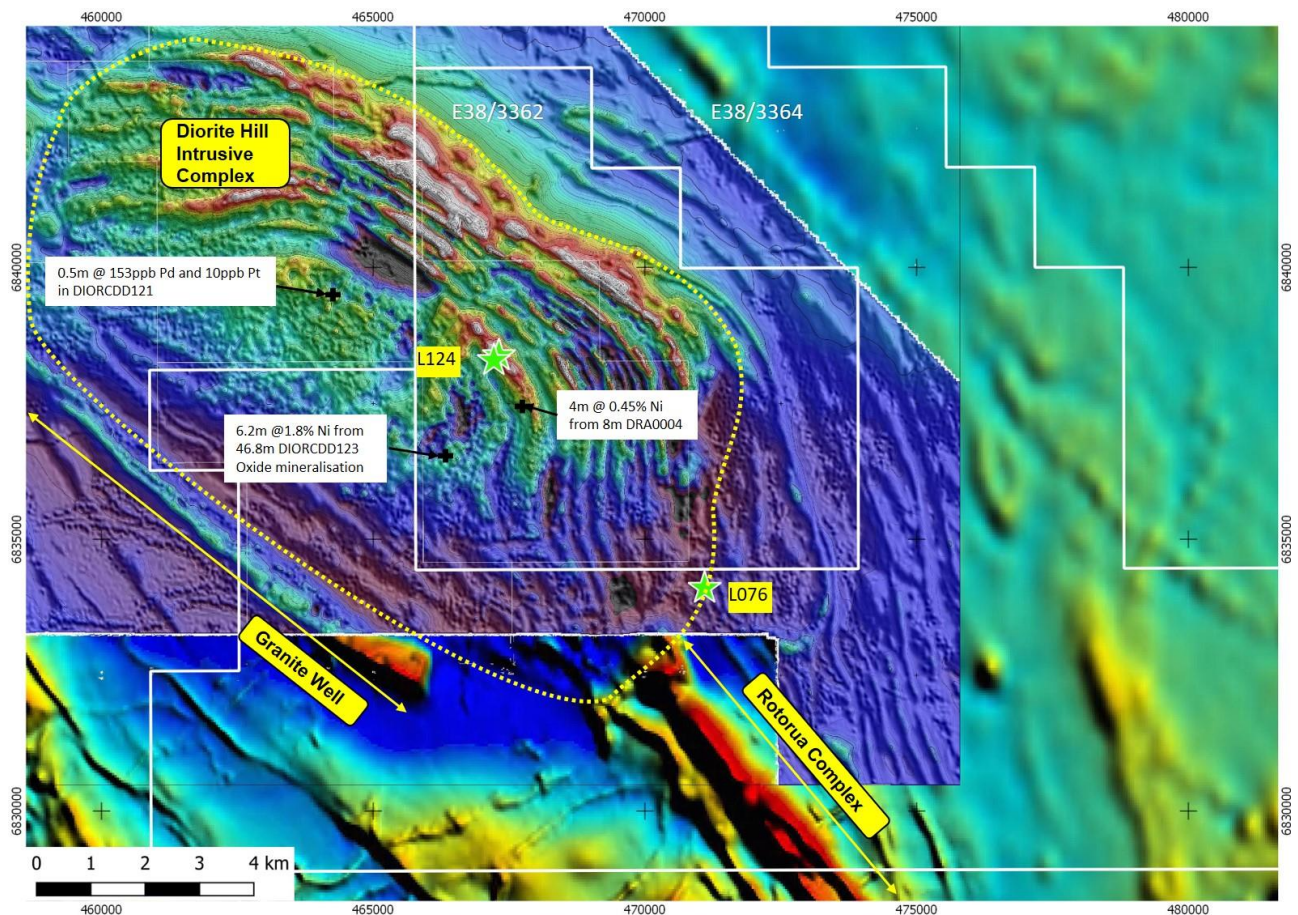


Figure 2. Diorite Hill Intrusive Complex showing the location of EM plate drillhole positions (green stars) underlain by Geological Survey of Western Australia aeromagnetic imagery. Conductor L076 sits on the interpreted margin of the intrusion (yellow dashed line), while conductor L124 lies along on the lower contact of stratigraphy with a high magnetic response, interpreted to be a mafic / ultramafic contact.



## Rotorua and Granite Well Exploration

The East Laverton Nickel Project also contains approximately 17km of virtually unexplored ultramafic stratigraphy along the Granite Well and Rotorua trends (Figure 3). These are considered prospective for Kambalda style komatiite hosted nickel mineralisation.

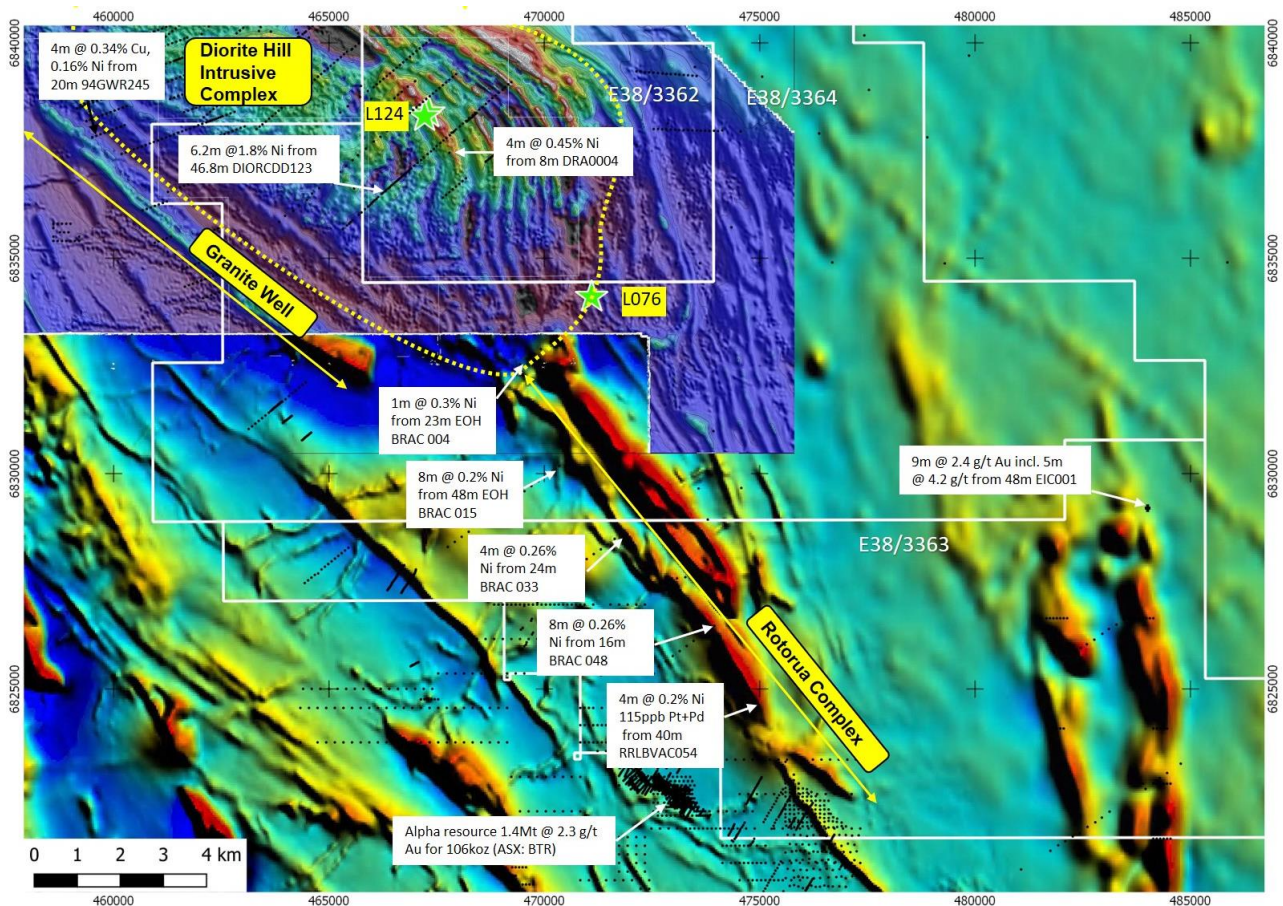


Figure 3 Magnetic image highlighting the Rotorua and Granite Well targets with drillhole database displaying Newmont significant intersections along the edge Rotorua complex. Refer to Brightstar Resources (BTR) 2021 Annual Report for Alpha Gold Resource.

The Granite Well trend comprises of 10km of interpreted komatiitic ultramafic stratigraphy immediately west of the Diorite Hill intrusion, of which ~3km of strike is within GSN's tenure. Limited exploration has targeted Granite Well, however hole 94GWR245 on a neighbouring tenement to the north intercepted anomalous and coincident copper-nickel sulphides (20m @ 0.28% Cu, 0.11% Ni from 12m, including 4m @ 0.34% Cu, 0.16% Ni) (Figure 3). In addition, multiple holes along this trend have nickel values above 0.2% with no drilling on the 3km portion of GSN's tenure.

The Rotorua ultramafic trend consists of a 14km long ultramafic sequence extending south from the Diorite Hill intrusion. No historical nickel focussed exploration has been conducted over Rotorua, however limited shallow gold focussed AC drilling on the western margin of the ultramafic stratigraphy showed anomalous nickel (0.2-0.3% Ni) in base of holes samples. Drillhole RRLBVAC054 was also assayed for Platinum and Palladium with a peak value of 115ppb Pd+Pt (Figure 3). The presence of komatiitic spinifex textures were also noted in base of hole logging.

#### *Stage Two Exploration at East Laverton*

The Company is also looking to undertake MLEM surveys on both the Rotorua and Granite Well komatiite trends. Both surveys have now been designed and costed with surveys likely to take place in early 2023 following the completion of the Diorite Hill drilling program.

### **Gold potential of the East Laverton Project**

While gold exploration at East Laverton is not the immediate focus, it is noteworthy that Brightstar Resources' (ASX:BTR) Alpha deposit (1.4 million tonnes at 2.3g/t gold for 106,000 ounces) resides on the southern edge of the East Laverton tenure. The strike extent of this mineralised trend extends into GSN's ground and has not been effectively explored.

Further, a review of historical datasets has also demonstrated the potential for orogenic gold, with intercepts such as 9m at 2.4g/t gold, including 5m at 4.2g/t gold from 48m (EIC001, WAMEX A48007) reported from historic drilling in the east of the project area (Figure 3).

**The release of this ASX announcement was authorised by the Managing Director on behalf of the Board of Directors of the Company.**

#### **For Further Information Contact:**

Matthew Keane

Managing Director

[admin@gsml.com.au](mailto:admin@gsml.com.au)

+61 8 9240 4111

## About Great Southern Mining

Great Southern Mining Limited is a leading Australian listed exploration company. With significant land holdings in the world-renowned districts of Laverton in Western Australia and Mt Carlton in North Queensland, all projects are located within 25km of operating mills and major operations.

The East Laverton Nickel Project is located 15km east from the town of Laverton in Western Australia where GSN maintains an exploration base to service its significant exploration portfolio in the region, including the Southern Star Gold Deposit.

## Competent Person's Statement

The information in this report that relates to exploration results at the East Laverton Nickel Project is based on, and fairly represents, information and supporting documentation compiled by Simon Buswell-Smith. Mr. Buswell-Smith is a full-time employee of Great Southern Mining Limited. He has sufficient experience relevant to the style of mineralization and type of deposit under consideration. Mr. Buswell-Smith is a Member of the Australian Institute of Geoscientists and as such, is a Competent Person for the Reporting of Exploration Results, Mineral Resources and Ore Reserves under the JORC Code (2012). Mr. Buswell-Smith consents to the inclusion in the report of the matters based on his information in the form and context in which they occur.

## Forward Looking Statements

Forward- looking statements are only predictions and are not guaranteed. They are subject to known and unknown risks, uncertainties and assumptions, some of which are outside the control of the Company. Past performance is not necessarily a guide to future performance and no representation or warranty is made as to the likelihood of achievement or reasonableness of any forward-looking statements or other forecast. The occurrence of events in the future are subject to risks, uncertainties and other factors that may cause the Company's actual results, performance or achievements to differ from those referred to in this announcement. Given these uncertainties, recipients are cautioned not to place reliance on forward looking statements. Any forward- looking statements in this announcement speak only at the date of issue of this announcement. Subject to any continuing obligations under applicable law and the ASX Listing Rules, the Company, its directors, officers, employees and agents do not give any assurance or guarantee that the occurrence of the events referred to in this announcement will occur as contemplated.

## JORC Code 2012 Edition – Table 1

### Section 1 Sampling Techniques and Data

| Criteria   | Commentary  |
|--|---|
| <b>Sampling techniques</b>                                     | N/A   |
| <b>Drilling techniques</b>                                     | N/A   |
| <b>Drill sample recovery</b>                                   | N/A   |
| <b>Logging</b>   | Logging of geology, weathering, colour, veining was reported in various forms from various companies. Spinifex texture was logged by Regis Resources (WAMEX A report A801062) |
| <b>Sub-sampling techniques and sample preparation</b>          | N/A   |
| <b>Quality of assay data and laboratory tests</b>              | Quality of drillhole assay data unknown, industry standard assumed.   |
| <b>Verification of sampling and assaying</b>                   |   |
| <b>Location of data points</b>                                 | All sites are in MGA94 – Zone 51 grid coordinates Handheld GPS was used for location. Topographic control in nominal.   |
| <b>Data spacing and distribution</b>                           | N/A   |
| <b>Orientation of data in relation to geological structure</b> | N/A   |
| <b>Sample security</b>   | N/A   |
| <b>Audits or reviews</b>                                       |   |

### Section 2 Reporting of Exploration Results

| Criteria                                       | Commentary   |
|--|--|
| <b>Mineral tenement and land tenure status</b> | <p>Tenement E38/3663 was granted 27/7/2020 in the name of East Laverton Exploration Pty Ltd, a 100% owned subsidiary of Great Southern Mining Limited. The tenement is in good standing.</p> <p>Tenements E38/3664 and E38/3662 was granted 29/04/2021 in the name of Great Southern Mining Limited. The tenements are in good standing.</p>   |
| <b>Exploration done by other parties</b>       | <p>In 1990 Aberfoyle conducted three RAB drilling programmes totalling 4,629m in 119 holes (DHRB001 – 119) across the Diorite Hill Complex aimed at assessing the PGE potential. Bottom of hole and near surface lateritic samples were collected from drill holes DHRB001 to 83 and bottom of hole samples only from DHBR084 to 119. (WAMEX A report A33246).</p> <p>Aberfoyle followed up on their PGE prospective ultramafic – mafic contact zone at diorite hill with a four (4) hole RC pre-collar diamond program in 1992 (DIORCDD 120, 121, 122, 123)</p> |

| Criteria       | Commentary  |
|----------------|---|
|                | <p>for a combined 525m of drilling. (WAMEX A report A35358 and A35364).</p> <p>A conclusion from the work was that the hole intersected too high in the layered complex to be prospective for PGE mineralisation, however no further work was undertaken. The potential for primary Ni sulphide mineralisation was not discussed.</p> <p>CRA explored the Granite Well area between 1993-95 a 76 RAB program was completed in 1994 for 2158m (94GWRseries) for gold exploration along the granite ultramafic contact. Holes were assayed for Au, Co, Cr, Cu, Fe, Ni, Pt and Pd. (WAMEX A report A45588).</p> <p>Follow-up drilling by Ni-West in 2002 on Aberfoyles best intersections consisted of 15 vertical aircore programs for 534m (DRA0001 – 0005, KNA001 – 002, DCAC0001 – 13). Holes were drilled to recognisable bedrock, were generally low anomalous and included a best 'standout' intercept of 8m at 0.98% Ni and 0.18% Co from 32m (DRAC0008) and 4m at 0.45% Ni from 8m (DRAC0004) (WAMEX A64129).</p> <p>Placer Dome Asia Pacific ("Placer") farmed into the Diorite Hill Project in late 2002 and initially completed a high-resolution airborne EM and magnetic survey. Work completed by Placer during the following year included follow up soil sampling (452 samples), RAB and minor aircore drilling totalling 7,224 metres in 171 drill holes, and two diamond drill holes for 599.5 metres (including 78.7 metres in pre-collars). (WAMEX A68301).</p> <p>The drilling programme was designed to map basement geology beneath the transported cover, test soil and geophysical anomalies and locate PGM-bearing sulfide and chromite layers. Holes were sited to give broad coverage across the entire width of the intrusive body, both augmenting and infilling the earlier Aberfoyle RAB drilling, and targeting the zones/layers interpreted to be the most prospective from both the magnetics and the earlier drilling.</p> <p>In 2006, Southern Geoscience consultants ("SGC") were contracted by A1 Minerals to re-process and interpret aeromagnetic data collected as part of the Diorite Hill Hoistern helicopter EM survey flown by Placer Dome.</p> <p>Gold exploration aircore drilling (BRAC series) by Newmont in 2005 WAMEX open file report WAMEX A69883.</p> <p>A small 2 hole RC program was completed by Placer in 1996 over the Curra area (East Ida) best intersection of 9m @ 2.4 g/t Au including 5m @ 4.2 g/t from 48m (EIC001, WAMEX A48007)</p> <p>Regional Aircore drilling was completed at Rotorua for total of 59 AC holes for 3598m were drilled on by Regis Resources RRLBVAC series (WAMEX A report A801062).</p> |
| <b>Geology</b> | <p>The East Laverton project incorporates the southern portion of the Diorite Hill Layered Ultramafic Complex, a NW-SE trending body, about 7000m wide and delineated by an aeromagnetic anomaly. The interpreted feeder conduit to the layered complex has been classified as the Rotorua Ultramafic unit.</p> <p>The Diorite Hill Layered Intrusive Complex was originally interpreted as an east facing, steeply dipping sequence, but was subsequently interpreted as a shallow dipping, west facing sequence complicated by thrusting with remnants of hornfels grade country rock. There is a complex inter-fingering of cross-cutting coarse pyroxenite in fine magnetic recrystallised dolerite/peridotite, as well as xenoliths of the finer grained lithology in foliated pyroxenite.</p> <p>The geology is poorly understood, with previous workers interpreting a layered sill complex comprising alternating layers of olivine-rich cumulates, pyroxenites, gabbros and even anorthosites. A mafic-ultramafic hornfels has been interpreted along the granite contact to the east, and it appears as if abundant hornfels xenoliths may have been caught up in the</p>   |



| Criteria  | Commentary  |
|---|---|
|   | <p>layered pyroxenite and gabbro units. A basaltic rock sequence defines the western margin. Recrystallised dolerite has also been interpreted from certain outcrops.</p> <p>The topography is generally flat to slightly undulating with occasional low hills of outcrop and lateritic residuum. Outcrop in the area is poor (5–10%), restricted to the north eastern sector of the body, with the remainder covered by transported alluvium, laterite and minor calcrete.</p> <p>Sediments have been mapped in the eastern portion of the tenement.</p> |
| <b>Drill hole Information</b>   | <p>No new drillhole information reported historic drillholes by Newmont</p> <p>No material information has been excluded drillholes with low nickel values are also displayed</p>   |
| <b>Data aggregation methods</b>   | N/A   |
| <b>Relationship between mineralisation widths and intercept lengths</b> | relationship is unknown due to limited data   |
| <b>Diagrams</b>   | Relevant Diagrams are included in the body of this report.  |
| <b>Balanced reporting</b>   |   |
| <b>Other substantive exploration data</b>                               | N/A   |
| <b>Further work</b>   | Future exploration is included in next steps of the body of the report  |