

## Geotechnical Drilling Program Delivers Positive Results for Mount Peake Open Pit Mine Design

*Holes drilled around the margins of the open pit indicate that competent pit walls are likely with full geotechnical analysis underway and assay results awaited*

### HIGHLIGHTS

- Geotechnical drilling comprising six PQ core holes completed within the proposed pit area at the Mount Peake Vanadium-Titanium-Iron Project in the NT.
- Excellent quality data generated to feed into the geotechnical model with overall competent ground conditions expected around the pit.
- Geotechnical testwork and laboratory analytical results will be forthcoming over the next two months.

Australian strategic metals company TNG Limited (ASX: TNG) is pleased to advise that a program of geotechnical drilling has recently been successfully completed at its flagship 100%-owned **Mount Peake Vanadium-Titanium-Iron Project** in the Northern Territory, delivering positive outcomes for the proposed design of the open pit mine.

TNG commenced a geotechnical diamond drilling program within the Mount Peake Resource area in late February (see ASX Announcement – 23 February 2015) to assess the rock strength properties in the vicinity of the pit walls to allow final pit design work to proceed. The results of this geotechnical drilling program represent a key input into the ongoing Mount Peake Feasibility Study, which is due for completion by mid-2015.

Six holes for a total of 612m of PQ sized core (Table 1) were drilled from within the resource area. Hole positions are shown on Figure 1, and details of the drilling are outlined in Appendix 1. Holes were oriented to intersect the likely pit wall positions on both the western and eastern sides, in the north, central and southern portions of the Mount Peake orebody.

Testwork on samples taken from this portion of the pit will be fed into the overall geotechnical model for the deposit, allowing the pit slope angles to be determined. This work will inform the pit design work that Snowden Mining Industry Consultants (SMIC) will complete over the coming months. Pit design will then allow the overall financial analysis for the project to be completed as one of the final components of the Feasibility Study.

Just under 200 geotechnical samples were taken which are now at the geotechnical laboratory for testwork over the next few weeks. A series of analyses will be conducted including Point Load Strength Index (PLSI) tests, Unconfined Strength Index (UCS) tests, Direct Shear (DS) tests and others.

Structural core logging has confirmed that the rocks surrounding the Mount Peake orebody are competent (see Figure 2) and pit walls (subject to the test results) are likely to be relatively steep. The deposit has a relatively thin (20-40m) weathered profile and a thin (2-15m) tertiary sand overburden zone, which will allow steeper pit walls to commence near the surface.

This has positive implications for the economics of the open pit design, as it allows for a more efficient mining operation with the potential for reduced mine development capital expenditure and operating costs.

All drill core was oriented and detailed geotechnical and structural logging was carried out on site on all intervals drilled. The core was also processed with full geological/mineralogical/regolith logs completed, magnetic susceptibility was determined and all core was analysed by on-site portable XRF, allowing accurate mine sequence lithological picks and ore zone determinations to be made.

Mineralised samples, together with a representative sample suite, were sampled (1/4 core PQ samples cut on site) and submitted to a commercial laboratory for a suite of elemental determinations, including vanadium (V), titanium (Ti), and iron (Fe) (Lab Code XRF21n). Samples are now with the laboratory, and results will be reported when available.

As expected, only narrow grade material was intersected in the geotechnical holes along the eastern side of the resource zone, where grade and widths are lower than the main zone. Along the western margin of the resource the magnetite gabbro ore zone terminates abruptly against an unmineralised gabbro which is then in fault contact with coarse K-spar granite further to the west.

As expected, geotechnical holes along the western pit edge mostly intersected granite and did not intersect V-Ti-Fe mineralisation. The north-western hole (15MPDDH026) drilled down the "granite contact" fault zone, in a position high on the pit wall and dipping into the wall, providing the only zone of structural instability for the pit design.

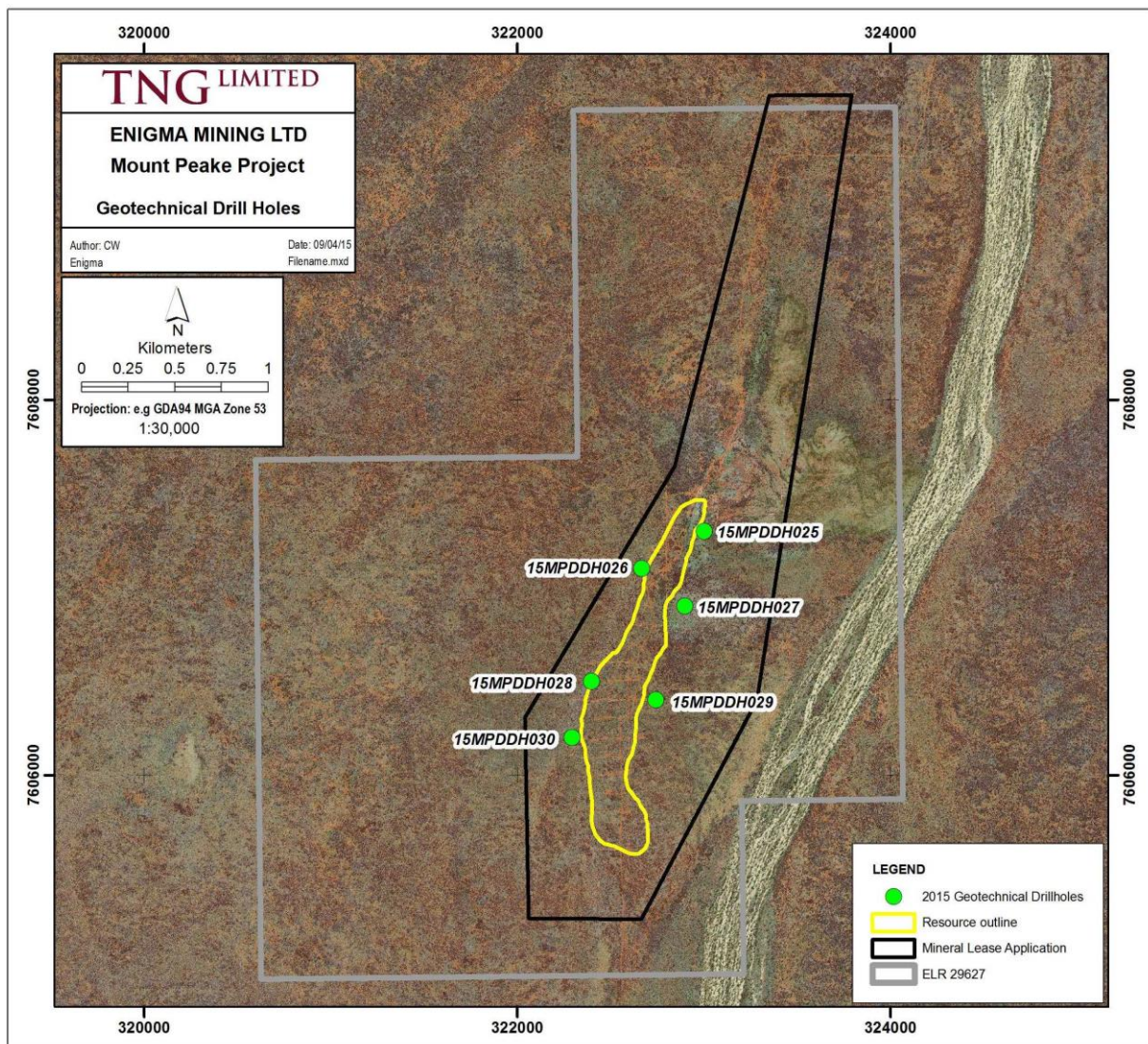


Figure 1. Geotechnical drill-hole collar locations shown relative to the Mineral Resource outline (in yellow) and tenure.



Table 1. Geotechnical drill-hole collar summary details.

HOLE_ID	HOLE_TYPE	EASTING_GDA94	NORTHING_GDA94	RL	DEPTH	DIP	AZIM_MAG
15MPDDH025	PQ3 DIAMOND	323001	7607304	481	90.8	-65	90
15MPDDH026	PQ3 DIAMOND	322670	7607100	481	100.1	-65	270
15MPDDH027	PQ3 DIAMOND	322902	7606900	480	96.3	-65	90
15MPDDH028	PQ3 DIAMOND	322354	7606500	480	92.1	-65	270
15MPDDH029	PQ3 DIAMOND	322734	7606397	480	32.1	-65	270
15MPDDH029A	PQ3 DIAMOND	322735	7606397	480	95	-65	90
15MPDDH030	PQ3 DIAMOND	322298	7606200	480	105.5	-65	270



Figure 2. Core tray photograph, showing oriented competent coarse-grained and unaltered hangingwall gabbro from the central eastern part of the resource.

TNG's Managing Director, Mr Paul Burton, said the completion of the geotechnical drilling program marked an important milestone towards completion of the Mount Peake Feasibility Study.

"This work provides our consultant Mining Engineers, Snowden Mining Consultants, with all the data they now require to complete the open pit mine design," he said. "With steep pit walls envisaged, the results indicate the potential for significant cost savings both in mine capital development and in ongoing operating costs – very encouraging indications for the final outcomes of the Feasibility Study."

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20 April 2015

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**Competent Person Statement**

The information in this report that relates to Exploration Results and Exploration Targets is based on, and fairly represents, information and supporting documentation compiled by Exploration Manager Mr Kim Grey B.Sc. and M. Econ. Geol. Mr Grey is a member of the Australian Institute of Geoscientists, and a full time employee of TNG Limited. Mr Grey has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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 Grey consents to the inclusion in the report of the matters based on his information in the form and context in which it appear.

**About TNG**

TNG is building a world-scale strategic metals business based on its flagship 100%-owned Mount Peake Vanadium-Titanium-Iron Project in the Northern Territory. Located 235km north of Alice Springs, Mount Peake will be a 20-year plus project producing a suite of high-quality, high-purity strategic metals products for global markets including vanadium pentoxide, iron oxide and titanium dioxide. The project, which will be a top-10 global producer, has received Major Project Facilitation status from the NT Government.

The Mount Peake Feasibility Study is well advanced and due for completion by mid-2015, paving the way for project financing and development to proceed. An integral part of TNG's emerging strategic metals business is its 100% ownership of the unique and patented TIVAN® hydrometallurgical process, which offers significantly lower capital and operating costs, lowers risk and successfully extracts two other valuable metals from the resource in addition to vanadium – titanium dioxide and high-purity iron oxide.

Vanadium is a highly strategic metal which is used as an alloy in steel. It is also in strong demand for use in energy storage, with vanadium redox batteries used to store electricity generated by solar and wind power, and lithium-vanadium ion batteries used to power hybrid cars.

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## APPENDIX ONE – MOUNT PEAKE GEOTECHNICAL DRILLING

## Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	Nature and quality of sampling (eg cut channels, 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. Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. Aspects of the determination of mineralisation that are Material to the Public Report.	Geotechnical samples are whole core (PQ) segments 20-30cm long. Various tests are to be applied. Geochemical sampling is of cut quarter PQ core submitted to ALS laboratory for industry standard preparation (all crushed and pulverized to >85% <75 um) and analysis by XRF techniques for V, Ti, Fe and several other elements. Core was also analysed on site by portable XRF on 1 metre intervals.
Drilling techniques	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).	Diamond drilling, PQ core
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the samples. 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.	Average of >90% recovery in all intervals. Diamond core was reconstructed into continuous runs on an angle iron cradle for orientation marking. Core metreages were checked against core blocks and drillers records. Diamond core with high recovery provides the best possible and most representative sample medium. No issues of fines loss were observed. No issues relating to preferential loss/gain of grade material have been noted.
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. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged.	Geotechnical logging included recovery, RQD, fractures per metre, and rock strength, while significant structures were logged with alpha and beta angles measured on oriented core or alpha angles on un-oriented core. Core was geologically logged for lithology, mineralogy, colour, weathering, alteration, structure and mineralisation. All core has been photographed both dry and wet. All holes were logged in full.
Sub-sampling techniques and sample preparation	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. Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. 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. Whether sample sizes are appropriate to the grain size of the material being sampled.	All core was sampled by a core saw with quarter core sampling. The sample preparation for core samples follows industry best practice, with oven drying of samples prior to coarse crushing and pulverization (to >85% passing 75 microns) of the entire sample. No field duplicates have been taken. Further sampling (second quarter half, lab umpire assay) will be conducted if it is considered necessary. The sample size (2-5 kg) is considered to be adequate for the material and grain size being sampled and the style of mineralisation being drilled.

Quality of assay data and laboratory tests	<p>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</p> <p>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.</p> <p>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.</p>	<p>Not available as yet</p> <p>Core samples are being analysed for a multi-element suite at ALS in Perth by XRF technique (lab code XRF21n).</p> <p>Standards have been inserted into the laboratory batch.</p>
Verification of sampling and assaying	<p>The verification of significant intersections by either independent or alternative company personnel.</p> <p>The use of twinned holes.</p> <p>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</p> <p>Discuss any adjustment to assay data.</p>	<p>Not available as yet</p> <p>Sampling was conducted by contract geologist and verified by the Exploration Manager on site prior to cutting</p> <p>All geotechnical logging was direct to spreadsheet on Toughbook PC using a standard form with pick lists and record validation.</p> <p>Primary geological logging was onto A3 diamond log sheets using standard coding lists, while numeric data was entered into standardized spreadsheets on field laptops and uploaded into the company database.</p> <p>No adjustments have been made to the primary assay data</p>
Locations of data points	<p>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.</p> <p>Specification of the grid system used.</p> <p>Quality and adequacy of topographic control.</p>	<p>Drill holes were picked up using a standard GPS device using multiple point averaging, with accuracy of better than 3 metres for Northing and Easting, and around 5 metres for RL.</p> <p>All coordinates data for the project are in MGA_GDA94 Zone 53.</p>
Data spacing and distribution	<p>Data spacing for reporting of Exploration Results.</p> <p>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.</p> <p>Whether sample compositing has been applied.</p>	<p>Geotechnical drilling has been done on a broad grid to provide the most information about the pit wall areas and has not specifically targeted mineralisation.</p> <p>No compositing has been applied to the exploration results.</p> <p>Sampling was of an exploratory and reconnaissance nature and spacings are insufficient to establish continuity or define Resources.</p>
Orientation of data in relation to geological structure	<p>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</p> <p>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.</p>	<p>Holes were drilled angled at 65 degrees to the west on the western side of the resource and to the east on the eastern side (to drill through the pit wall areas and identify structures parallel to the wall surfaces).</p>
Sample security	<p>The measures taken to ensure sample security.</p>	<p>All core and samples were under company supervision at all times prior to freighting to the geotechnical laboratory or, for the geochemical samples, to ALS laboratories in Alice Springs</p>
Audits or reviews	<p>The results of any audits or reviews of sampling techniques and data.</p>	<p>No sampling audits have been completed to date on the geotechnical materials collected at the Mount Peake</p>



## Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
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, wilderness or national park and environmental settings. 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.	The Mount Peake Project comprises eleven tenements, including ELs and MLs. Drilling was conducted on EL in Retention ELR 29627, which also falls on the Mining lease Application MLA 28341, both held by Enigma Mining Limited, a wholly owned subsidiary of TNG Limited. The tenements are in good standing with no known impediments
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	TNG has been exploring the Mount Peake resource area for over 6 years
Geology	Deposit type, geological setting and style of mineralisation.	The Mount Peake resource is a vanadiferous titanomagnetite rich gabbro sill that intrudes the lowermost Georgina Basin sediments (Central Mount Stuart Formation). It is intrusive in nature and becomes ore with over 5% magnetite content.
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: <ul style="list-style-type: none"> <li>○ Easting and northing of the drill collar</li> <li>○ Elevation of RL (Reduced Level – elevation above sea level in metres) of the drill collar</li> <li>○ Dip and azimuth of the hole</li> <li>○ Down hole length and interception depth</li> <li>○ Hole length</li> </ul>	See Table 1
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. 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.	No data aggregation has been applied.
Relationship between mineralisation widths and intercept lengths	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').	Magnetite mineralisation is near horizontal and so the drill intercepts are near true width.
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 Figure 1 in the body of the 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.	Not available as yet
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results;	Numerous ASX releases outline information about the Mount Peake deposit. Previous geotechnical work was



	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.	done as part of the Preliminary Feasibility Study in 2011 (see ASX Announcement 23 February 2015, 18 March 2013, and 23 November 2011)
Further work	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	This drilling should be sufficient to develop a geotechnical model for the deposit to include in the Definitive Feasibility Study