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## POSITIVE METALLURGICAL RESULTS ADVANCE LONGONJO RARE EARTH PROJECT IN ANGOLA

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**Highlights**

- Beneficiation testwork produced a concentrate containing 19.44% Rare Earth Oxides (REO) representing a greater than three times upgrade of the head sample
- High value Neodymium and Praseodymium both achieved a four times upgrade of the calculated head sample
- Longonjo geology is typical of REE mines and prospects globally such as Lynas Corp's Mt Weld deposit in Western Australia and Peak Resources' Ngualla deposit in Tanzania
- Leach results confirmed by Sulphuric Acid Bake and Water Leach which achieved 89% extraction of Neodymium and Praseodymium

Rift Valley Resources Limited ("the Company") (ASX: RVY) is pleased to announce it has received further positive metallurgical results at the Company's 70% owned Longonjo Rare Earth Project in Angola, situated within the broader Ozango concession area.

As announced in August 2015, an initial beneficiation and leach sighter testwork program has been conducted on an oxidised surface composite from Longonjo at Independent Metallurgical Operations (IMO).

Significantly, the composite head sample contained 6.47% REO's, with mineralogical testwork confirming REO's to be primarily hosted within Monazite and various other complex minerals which may include secondary Cerianite.

**Rift Valley Resources Managing Director Geoff Gilmour commented,** "We are very pleased with the positive nature of the results from our Longonjo Rare Earths Project, as they continue to confirm the significant potential upside.

Our team will now be undertaking a detailed desktop evaluation of the economic profile of Longonjo in order to determine the Company's appraisal plans, which we anticipate to commence during the current quarter.

We also have a drill rig in work at our promising Cassenha Hill Copper-Gold Project also located within the Ozango concession area and we look forward to updating our shareholders on results in the near future."

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## **Details of Metallurgical Testwork Program**

XRD has indicated that Bastnasite may be present in trace amounts although discrete bastnasite grains were not detected. Based on the highly oxidised nature of this composite it has been assumed that any bastnasite present would have been leached during the weathering process.

Initial beneficiation bench scale rougher kinetic flotation tests have resulted in a stage 1 rougher concentrate containing 19.44% REO which represents a greater than three times upgrade of the assayed head value. High value Neodymium and Praseodymium achieved respective concentrate grades of 3.76% and 1.19% which represents a four times upgrade of the calculated head value.

Beneficiation open circuit rougher / cleaner flotation testwork achieved a cleaner concentrate at greater than 50% recovery containing 11.16% REO, equating to a greater than 1.8 times upgrade compared to the calculated head. High value REO's Neodymium and Praseodymium achieved a 2.1 times upgrade at greater than 57% recovery. A higher portion of Neodymium and Praseodymium are hosted within Monazite than the lower value REO Cerium resulting in an increased upgrade and recovery compared to the overall REO content.

A total of only ten open circuit rougher only and rougher / cleaner flotation tests were conducted during this testwork phase. Results are expected to improve with further flotation process optimisation and recycling of intermediate tailings stream in a locked cycle flotation test typical of a full scale processing plant flowsheet. Results are also expected to improve on a deeper less oxidised material more representative of the majority of expected ore from the Longonjo Rare Earth Elements Target. The calculated head value is within 10% of the assayed head value for all above presented results.

Hydrometallurgical characterisation testwork conducted on a beneficiated REO concentrate utilising a Sodium Hydroxide (caustic) conversion and hydrochloric acid leach achieved a high value REO's Neodymium and Praseodymium leach efficiency of 90%. Overall REO leach extraction was lower due to the selective nature of this leach rejecting low value REO Cerium. This leach result was confirmed by a sulphuric acid bake (300°C) and water leach which achieved a REO's Neodymium and Praseodymium leach efficiency of 89%. Total REO leach efficiency from the sulphuric acid bake (300°C) and water leach was 84%. Further optimisation is expected to improve leach efficiency and optimise reagent consumption.

## **Forward Work Program – Ozango Concession Area**

Rift Valley now intends to commence a detailed desktop study to investigate the economic profile of the Longonjo Rare Earth Project. This program is expected to commence in the first quarter of 2016, and the Company looks forward to updating the market in due course.

In addition, Rift Valley is undertaking a diamond drilling program at its Cassenha Hill Copper-Gold Project, which is also located within the broader Ozango Project area in Angola and will be providing an update on results from the program as soon as possible.



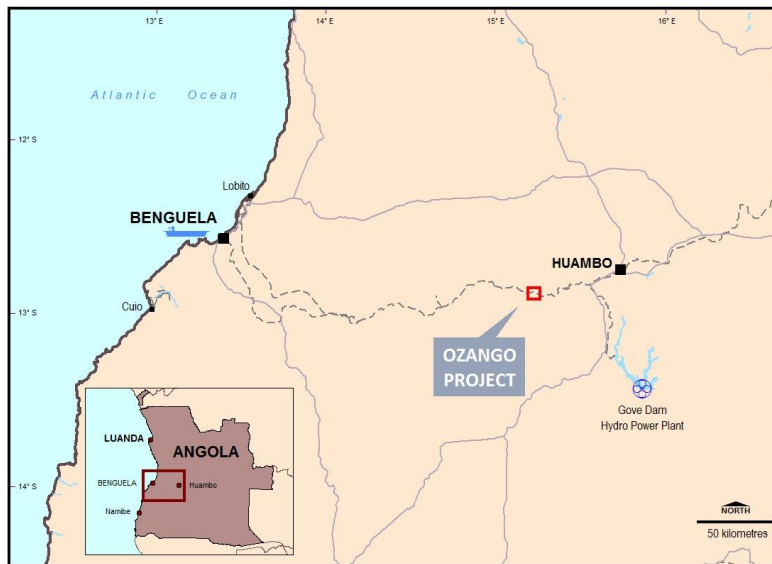
***Figure 1: Longonjo Carbonatite vent, looking west from National highway***



***Fig 2: Trench sampling at Longonjo Rare Earth Project***

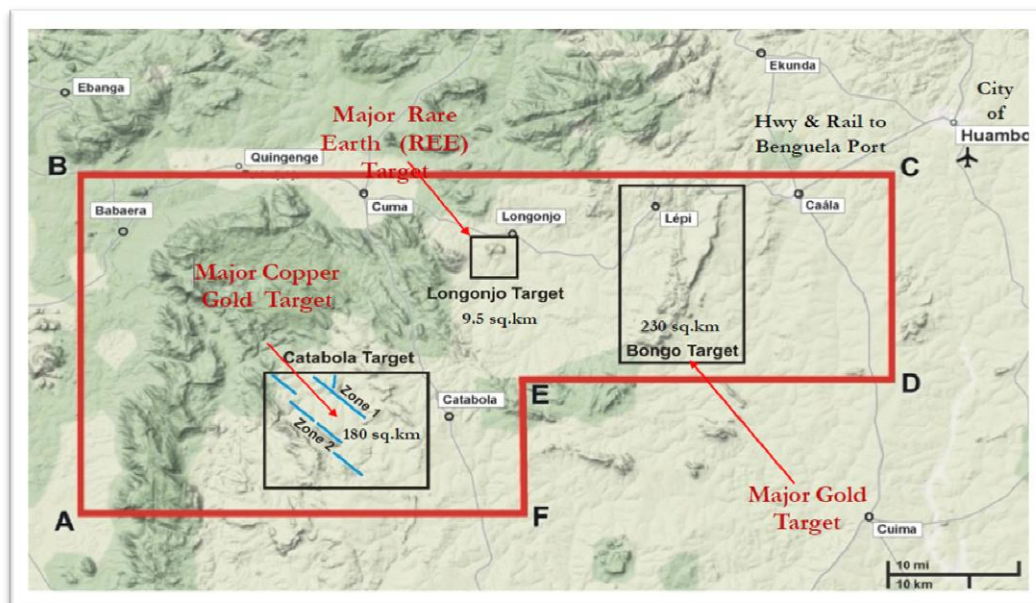
## **Longonjo Rare Earth Project Overview**

The Longonjo REE project is located within the Ozango consession, approximately 600km southeast of the Angolan capital Luanda and 50km west of the regional city of Huambo. It is located proximal to good infrastructure including roads, towns and the recently recommissioned railway which links the area to the deep water Atlantic port of Lobito.



**Figure 3: Location of Ozango Concession containing Longonjo REE project**

The Ozango Concession consists of a single Exploration Licence (013/03/09/T.P/ANG-MGM/2015) that covers a large area of 3,670 square kilometres. The property extends for 100 kilometres in an east-west direction and varies between 28 to 46 kilometres in width. The northeast corner of the property comes to within 17 kilometres of Huambo.



**Figure 4: Ozango concession showing Longonjo REE Project and other major targets**

The Project area covers some 3,670km<sup>2</sup> of Archaean/Palaeoproterozoic greenstone rocks that have been intruded by Cretaceous felsic volcanics, carbonatites and kimberlites. These rocks are considered highly prospective for REE, phosphate, copper, iron ore and gold. To date, however, this area has seen very little modern exploration.

The Longonjo REE project is the first target within the Ozango concession to be drill tested by Rift Valley. Located near the town of Longonjo in the north-central portion of the concession area the project centres on a Cretaceous age, carbonatite intrusive. The geology is typical of REE mines and prospects globally including Lynas Corp's Mt Weld deposit in Western Australia and Peak Resources' Ngualla deposit in Tanzania.

A soil geochemical sampling program undertaken at Longonjo over an area of 8km<sup>2</sup> defined a large and robust 3.5km long and 1.7km wide +0.5% REO anomaly which remains open to the west. A follow up trenching and pitting program carried out to test the bedrock within the soil anomaly returned highly encouraging results of up to 18.9% TREO from the pit bedrock samples.

First pass exploratory drilling conducted at the Company's Longonjo prospect in 2014 tested the centre of the geochemical anomaly and returned high grade rare earth assays, as total rare earth oxides (TREO), from every hole. From a total of 168 composite samples generated during the campaign, the highest grade returned was 11.32%, the lowest 0.45%, with an average of 2.96% TREO over all the samples. The distribution of the major rare earths for the average of the assay results is tabulated below:

	La <sub>2</sub> O <sub>3</sub> %	CeO <sub>2</sub> %	Pr <sub>6</sub> O <sub>11</sub> %	Nd <sub>2</sub> O <sub>3</sub> %	Sm <sub>2</sub> O <sub>3</sub> %	Gd <sub>2</sub> O <sub>3</sub> %	Y <sub>2</sub> O <sub>3</sub> %	Other %	TREO %
RVY drill campaign	0.78	1.38	0.14	0.45	0.05	0.02	0.05	0.03	2.96

The work to this point suggested that the Longonjo material was most likely suited to physical upgrading via flotation. As such, the current testwork program was devised to collect sufficient material for quantitative mineralogy (QEMSCAN) as well as leaching and flotation test work.

*The information in this release that relates to Metallurgical Testwork is based on information compiled and / or reviewed by Mr Peter Adamini who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Adamini is a full time employee of Independent Metallurgical Operations. Mr Adamini consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*

**-ENDS-**

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## Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>Nature and quality of sampling (e.g. 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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>Composite samples from trenching.</li> <li>None taken.</li> <li>Samples assayed for a suite of REE elements as well as U, Th, P, Fe and Ca.</li> <li>Samples were taken from which 3kg was pulverised to produce a 30g charge for fusion and ICP-MS analysis.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. 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).</li> </ul>	<ul style="list-style-type: none"> <li>No drilling.</li> </ul>

Drill sample recovery	<ul style="list-style-type: none"> <li>• Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>• Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• Not a drilling sample</li> <li>• Not a drilling sample</li> <li>• Not a drilling sample</li> </ul>
Logging	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>• The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>• The trench samples were determined as the host carbonatite in situ before sampling by the field geologist.</li> <li>• Was not logged.</li> <li>• 0%.</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>• If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>• If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>• For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>• Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>• 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.</li> <li>• Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>• Was not core.</li> <li>• Trench spoil sampled dry.</li> <li>• No sample preparation carried out. Composites sample collected which is required for a representative metallurgical sample.</li> <li>• At this stage of the exploration, field QC involves the review of laboratory supplied certified reference material, in house controls, blanks, splits and duplicates. These QC results are reported by the laboratory with final assay results.</li> <li>• Trenching was carried out over 80m across known mineralisation, defined by surface geochem and subsequent drilling, is considered representative of the Longonjo carbonatite hosted REE mineralisation.</li> <li>• The sample sizes are considered more than adequate to ensure that there are no particle size effects.</li> </ul>

Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul style="list-style-type: none"> <li>The fusion digest is a complete digest and is the best available for the ICP-MS finish. Checks against a 4 acid (hydrofluoric, nitric, perchloric and hydrochloric acids) will be carried out on the pulps as a check.</li> <li>Laboratory No geophysical or portable analysis tools were used to determine assay values stored in the database. Handheld XRF machine was only used as a guide while drilling and readings have not been included in review of the data. Assay data only is used.</li> <li>At this stage of the exploration, field QC involves the review of laboratory supplied certified reference material, blanks, splits and duplicates. These QC results are reported by the laboratory with final assay results.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>There were no significant intersections</li> <li>No twin holes undertaken</li> <li>Data storage as Ocris files on company PC in Perth office</li> <li>No adjustments to the assay data have been made.</li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>All sample locations were surveyed using a hand held GPS, accurate to within 3-5m.</li> <li>The grid system used is WGS84 Zone 338. All reported coordinates are referenced to this grid. The topography was flat.</li> <li>Topography was fairly flat, small differences in elevation between samples will have no effect on the metallurgy reported.</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Continuous composite sampling along the entire length (80m) of the purpose dug trench.</li> <li>No resource has yet been calculated.</li> </ul>



- *Whether sample compositing has been applied.*
- Yes.

<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> <li>• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• Not drilling.</li> <li>• Not drilling.</li> </ul>
<i>Sample security</i>	<ul style="list-style-type: none"> <li>• The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>• Sample security is managed by the Company. After collection in the field the samples were transported by the Company directly to the assay laboratory. The assay laboratory audits the samples on arrival and reports any discrepancies back to the Company. No such discrepancies occurred.</li> </ul>
<i>Audits or reviews</i>	<ul style="list-style-type: none"> <li>• The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>• No review of the sampling techniques has been carried out. The database is compiled by an independent contractor and is considered by the Company to be of sufficient quality to support the results reported. In addition, from time to time, the Company carries out its own internal data audits.</li> </ul>

## Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• Prospecting License 013/03/09/T.P/ANG-MGM/2015</li> <li>• The tenements are in good standing and no known impediments exist.</li> </ul>
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> <li>• Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>• Previous workers in the area include Black Fire Minerals and Cityview Corporation LTD to NI43-101 standards.</li> </ul>
<i>Geology</i>	<ul style="list-style-type: none"> <li>• Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>• Cretaceous, carbonatite hosted, disseminated rare earth and niobium.</li> </ul>

Drill hole Information	<ul style="list-style-type: none"> <li>• 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 hole collar</li> <li>○ elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>○ dip and azimuth of the hole</li> <li>○ down hole length and interception depth</li> <li>○ hole length.</li> </ul> </li> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• See previous press release (31.03.14)</li> <li>• No information is excluded</li> </ul>
Data aggregation methods	<ul style="list-style-type: none"> <li>• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>• 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.</li> <li>• The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>• No weighting or averaging calculations were made, assays reported and compiled on the “first assay received” basis. No cuts applied.</li> <li>• No intercepts reported.</li> <li>• TREO's were calculated from raw element assay data. The molecular weight of the element and the accompanying oxygen in the elements oxide form were calculated.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>• These relationships are particularly important in the reporting of Exploration Results.</li> <li>• If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>• If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. ‘down hole length, true width not known’).</li> </ul>	<ul style="list-style-type: none"> <li>• Mineralisation widths were not reported.</li> <li>• Geometry of mineralisation is not known.</li> <li>• No widths or lengths reported.</li> </ul>

<i>Diagrams</i>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No drilling reported.</li> </ul>
<i>Balanced reporting</i>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Not drilling</li> </ul>
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• See details from previous ASX releases dealing with Longonjo work activities and programmes; these can be accessed via the internet.</li> </ul>
<i>Further work</i>	<ul style="list-style-type: none"> <li>• <i>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li>• <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<ul style="list-style-type: none"> <li>• A programme of leaching and flotation test work.</li> <li>• Not applicable, commercially sensitive.</li> </ul>