ABx Group

ASX ANNOUNCEMENT
13 September 2021
ASX: ABX

Rare Earth Processing Studies Encouraging

- The first leach-test of a bulk sample of ABx's Rare Earth Elements (**REE**) mineralisation at its DL130 project area has confirmed that the REE are leached by cold water
- REE are enriched in the precipitate from the liquid phase, deleterious elements are depleted and radioactive elements are very low
- A commercially attractive concentrate may be achieved from ABx's REE mineralisation
- Results also suggest that a dilute solution of water and ammonium sulphate fertiliser may increase speed of reaction and increase recovery of the REE
- Results are consistent with the Ionic Adsorption Clay type of REE mineralisation (IAC)

ABx Group (ASX:ABX) is pleased to report results from leach testing of its rare earth element (**REE**) mineralisation at the DL130 bauxite-REE project in northern Tasmania - see Figure 1 & Table 1.

- A composite bulk sample was collected from across the mineralised zone shown in Figure 2
- The bulk sample was soaked in cold distilled water at approximately 12° C for 24 hours
- Cloudy liquids were filtered-off using a 125 micron sieve and dried at 105° C
- The bulk sample and the precipitate from the cloudy liquid were assayed by a commercial lab
- Results showed that **REE are significantly enriched** in the precipitate from the cloudy cold water
- **Deleterious elements are strongly depleted** in the precipitate from the cloudy cold water
- Radioactive elements (uranium and thorium) are very low grade in all fractions
- Some test results suggest that leaching with a sulphate solution (e.g. dilute ammonium sulphate fertiliser in water) could increase the leach recovery of REE into the water fraction

Table 1: Summary of cold water leaching of Rare Earth Elements from DL130 project area, Tasmania

Element	Original *ppm*	Precipitate *ppm*	Enrichment *%*	Water Soluble?	Comments
SUPER MAGNET RARE EARTH ELEMENTS					
Nd	132	177	34%	Yes	Super magnet REE are enriched by cold water leaching
Pr	33.3	43.9	32%	Yes	
Tb	4.27	5.41	27%	Yes	
Dy	25.2	32.3	28%	Yes	
Weighted average upgrade by cold water			**33%**		
OTHER RARE EARTH ELEMENTS			**Enrichment**		
Weighted average upgrade by cold water			**25%**	Yes	Other REE are enriched by cold water leaching
Radioactive elements					
U	1.34	1.41	5%	Minor	Very low uranium content
Th	4.88	5.26	8%	Minor	Very low thorium content
DELETERIOUS ELEMENTS			**Depletion**		
Weighted average depletion by cold water			**-46%**	Depleted	Unwanted elements are strongly depleted

See JORC Statement Appendix 1

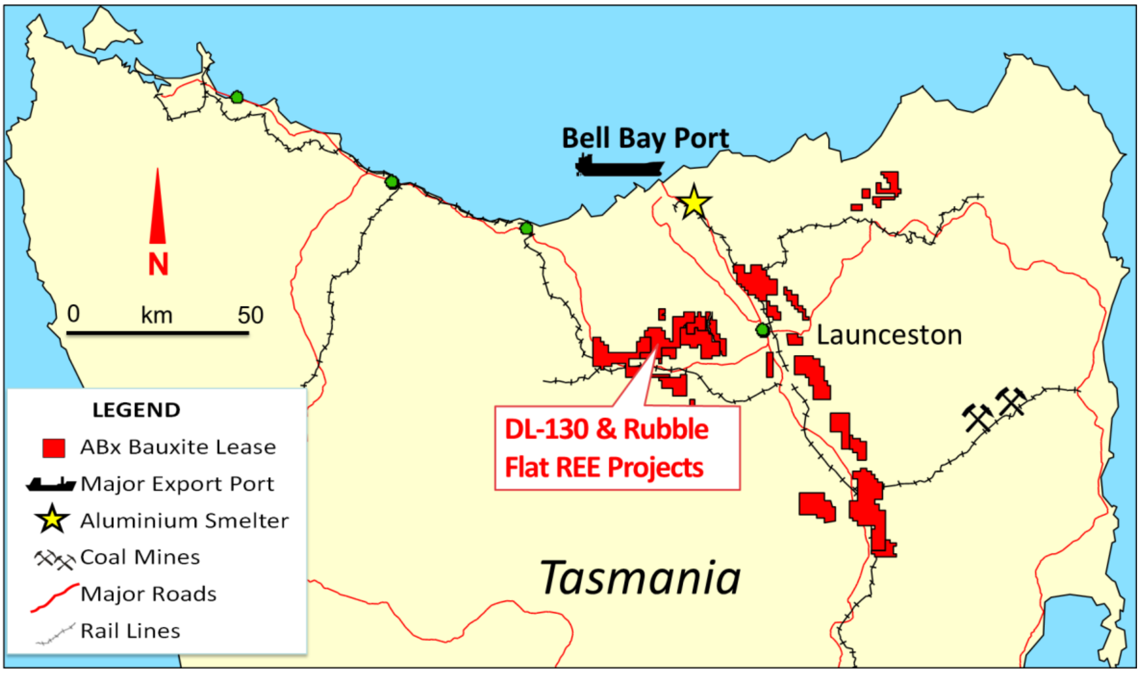

Figure 1: Location of ABx's REE Discoveries in Northern Tasmania

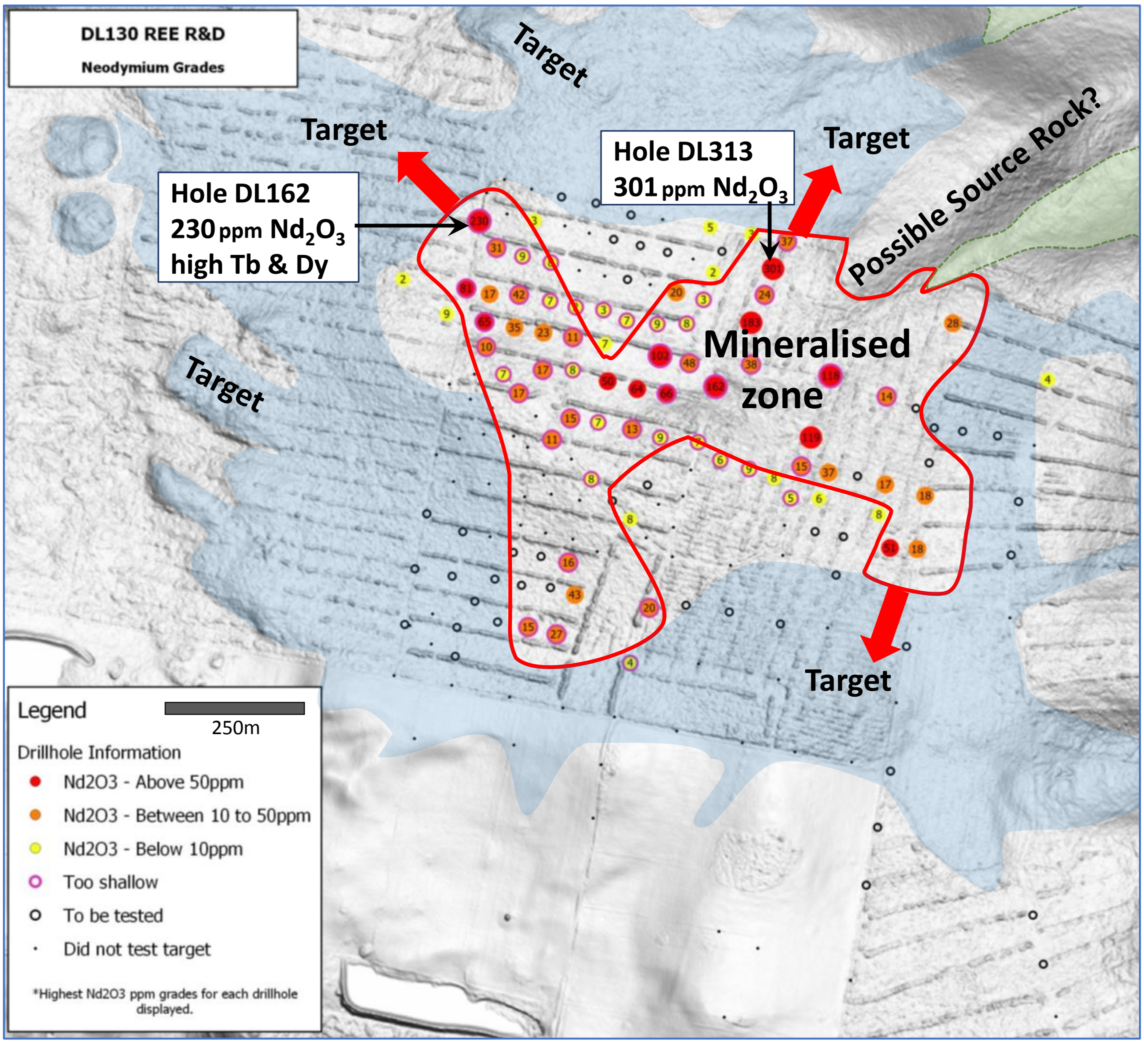

Figure 2: REE discovery at the DL130 project area. The mineralised zone has been bulk-sampled for process testwork at ABx's Tasmanian research laboratory and assaying at commercial laboratories

SIGNIFICANCE OF THESE RESULTS

ABx discovered mineralisation enriched in the super-magnetic rare earth elements Neodymium ("Nd"), Praseodymium ("Pr"), Terbium ("Tb") and Dysprosium ("Dy") which are strategically important, high priced metals needed for electric vehicles, wind turbines, smart phones and military electronics - see Figure 3.

ABx believes it has discovered "water-soluble" REE resources that can be concentrated into a saleable precipitate by low-cost leaching with dilute water-based solutions. These results support that concept.

Element	Original *ppm*	Precipitate *ppm*	Enrichment *%*	Water Soluble?
SUPER MAGNET RARE EARTH ELEMENTS				
Nd	132	177	34%	**Yes**
Pr	33.3	43.9	32%	**Yes**
Tb	4.27	5.41	27%	**Yes**
Dy	25.2	32.3	28%	**Yes**
Weighted average upgrade by cold water			**33%**	
OTHER RARE EARTH ELEMENTS			**Enrichment**	
Sm	32.4	41.0	26%	**Yes**
Eu	9.58	12.1	27%	**Yes**
Gd	26.9	34.3	28%	**Yes**
Ho	4.74	5.92	25%	**Yes**
Er	13.4	17.3	29%	**Yes**
Tm	1.96	2.45	25%	**Yes**
Yb	11.8	13.4	14%	**Yes**
Lu	1.81	2.12	17%	**Yes**
Weighted average upgrade by cold water			**25%**	**Yes**
Cerium			**Depletion**	
Ce	328	253	**-23%**	Depleted

Table 2

Results for all Rare Earth Elements from cold water leaching of a composite bulk sample the DL130 project area, Tasmania

Observations

1. All rare earth elements (REE) other than Cerium are enriched in the precipitate produced from 24 hours of soaking in cold distilled water.
2. Super magnet REE have higher enrichment rates than other REE species
3. Higher grade REE species tend to have higher rates of enrichment in the precipitate, which suggests that higher grade zones will leach better.
4. The depletion of Cerium is not considered to be an issue, and could be beneficial because some buyers of REE concentrates prefer low Cerium.

DEPLETION OF DELETERIOUS ELEMENTS

Element	Original ppm	Precipitate ppm	Enrichment %	Water Soluble?
DELETERIOUS ELEMENTS			**Depletion**	
Ca	4,770	2,763	-42%	Depleted
Mg	3,770	2,440	-35%	Depleted
Mn	3,650	1,405	-62%	Depleted
Na	1,540	1,028	-33%	Depleted
Ti	5,250	2,737	-48%	Depleted
Co	433	172	-60%	Depleted
Ba	520	369	-29%	Depleted
P	378	111	-71%	Depleted
V	318	260	-18%	Depleted
Ni	161	119	-26%	Depleted
Zn	167	137	-18%	Depleted
Cu	153	122	-20%	Depleted
Weighted average depletion by cold water			**-46%**	Depleted

Table 3
Results for elements other than Rare Earth Elements from cold water leaching of a composite bulk sample the DL130 project area, Tasmania

Observations

1. Calcium (Ca) can be a significant deleterious element in the leaching of "water soluble" REE mineralisation. Calcium is generally of low abundance in the host rocks and is strongly depleted in the precipitate.
2. Base metals (Co, Ni, Zn, Cu) are also generally low in abundance and are also depleted in the precipitate.
3. Phosphorus (P) can reduce electrical efficiency in the refining of REE concentrates but in this mineralisation, phosphorus is generally low in abundance and is also very strongly depleted in the precipitate.
4. Manganese (M") is similarly strongly depleted in the precipitate.

SULPHUR ENRICHMENT

Element	Original ppm	Precipitate ppm	Enrichment %	Water Soluble?
Sulphur enrichment			**Enrichment**	
S	95	474	**399%**	**Yes**

Table 4
Results for sulphur from cold water leaching

Observation

A 400% enrichment of sulphur (S) in the precipitate was unexpected and may indicate that soluble REE may be leached strongly by dilute sulphate solutions.

A test using dilute solution of ammonium sulphate and water is in progress to test this concept.

Summary comments

ABx Operations Manager, Nathan Towns said; "This research work will continue to provide a better understanding of the potential of our rare earth element mineralisation.

"The current results support our interpretations that the REE occurs as ionic substances that are loosely bound to clays and are therefore relatively easy to leach and precipitate a concentrate that is saleable. The mineralisation appears to be Ionic Adsorption Clay deposits ("IAC") which have been a major source of low-cost REE production in southern China until recently.

"We are conducting further metallurgical tests on bulk samples to confirm the deposit type and continue assembling results to design a low-cost concentration method for our REE type of mineralisation."

ABx CEO, Ian Levy said; "Prices for the four super-magnet REE are still rising strongly – see Figure 3. ABx is targeting the IAC type of REE mineralisation that can be developed fastest so as to give ABx shareholders an opportunity to capture some of the value from this bull market situation".

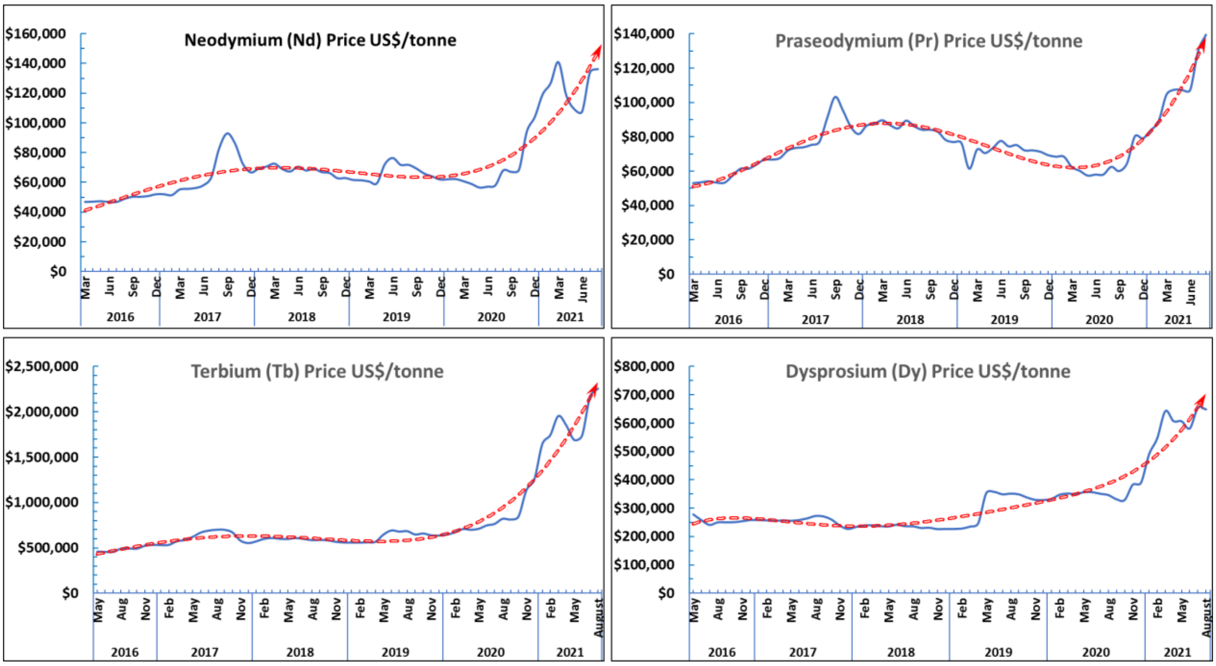

Figure 3: Prices per tonne for the 4 super-magnet REE Sources: Chinese exports, cross-referenced with Kitco data.

This announcement is authorised by the Board of Australian Bauxite Limited.

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Qualifying statements

General regarding exploration data and reporting

Information in this report that relates to Exploration Information is based on information compiled by Ian Levy who is a Fellow of The Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists and a qualified geologist. Mr Levy is a director of Australian Bauxite Limited trading as ABx Group.

Nathan Towns, the Operations Manager who conducted the testwork at the ABx Research Laboratory in Western Junction, near Launceston Airport has been conducting research projects to ISO standards at both the ABx Research Laboratory in Tasmania and the advanced Alcore Research Centre at Berkeley Vale, Central Coast NSW for more than 7 years.

Ian Levy has sufficient experience relevant to the mineralisation style and deposit type 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'. Ian Levy consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Tasmania

The information relating to Exploration Information and Mineral Resources in Tasmania has been prepared or updated under the JORC Code 2012. Mr Levy has sufficient experience, which is relevant to the mineralisation style and deposit type under consideration and to the activity 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 Levy has consented in writing to the inclusion in this report of the Exploration Information in the form and context in which it appears.

Disclaimer Regarding Forward Looking Statements

This ASX announcement (Announcement) contains various forward-looking statements. All statements other than statements of historical fact are forward-looking statements. Forward-looking statements are inherently subject to uncertainties in that they may be affected by a variety of known and unknown risks, variables and factors which could cause actual values or results, performance or achievements to differ materially from the expectations described in such forward-looking statements.

ABx does not give any assurance that the anticipated results, performance or achievements expressed or implied in those forward-looking statements will be achieved.

JORC Code, 2012 Edition – Table 1 report

See ASX release dated 04 May 2021 and update in Appendix 1 following.

APPENDIX 1

JORC Code, 2012 Edition – Table 1 report

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 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.* • *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.*	• Drill holes samples to 25 metres maximum depth but typically to 12 metres depth
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).*	• Reverse circulation rotary percussion
Drill sample recovery	• *Method of recording & assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery & 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.*	• Weight tests indicated reliable sample recovery
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. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• Geologically logged in detail by senior professional geologists. Every sample photographed, with photos and logs and assays entered into ABx's proprietary ABacus database.
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.*	• Chips are subsampled using bauxite shovel method in accordance with ISO standards

Criteria	JORC Code explanation	Commentary
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.* • *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.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external lab checks) & whether acceptable levels of accuracy (ie lack of bias) & precision have been established.*	• All assaying done at NATA-registered commercial laboratories of ALS Brisbane Australia and Labwest Minerals Analysis Pty Ltd in Western Australia. Duplicate interlab assays done. • Round robin assays with 4 other major laboratories confirmed accuracy and precision meets industry standards.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• All assaying done at NATA-registered commercial laboratories of ALS Brisbane Australia and Labwest Minerals Analysis Pty Ltd in Western Australia. Duplicate interlab assays showed excellent correspondence.
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.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• GPS hole locations have been tested for accuracy on many prospects, all satisfactorily – within 1m.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *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.* • *Whether sample compositing has been applied.*	• Drilling typically at 50 to 75 metre spacing on mineralised prospects
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.* • *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.*	• Vertical holes through flat-dipping bauxite is as good as it gets
Sample security	• *The measures taken to ensure sample security.*	• Samples collected and assembled onto pallets every day
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Several audits confirmed reliability

Section 2 Reporting of Exploration Results

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

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.*	• Satisfactory to excellent. All tenements are unencumbered….
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• 3 industry majors and two customers have approved exploration methods and data collection, interpretation and reporting
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Bauxite deposit formed on Lower Tertiary basalts
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:* ○ *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* ○ *hole length.* • *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.*	• GPS location. • Airborne Radar RL topography • All holes are short straight vertical holes
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.*	• All data is presented. To enable comparisons between different mixtures of valuable elements, an aggregation into a price-weighted equivalence of Neodymium oxide was used as follows: **Nd_2O_3 equivalent** = Nd_2O_3 + 1.01 x Pr_2O_3 + 11.89 x Tb_2O_3 + 4.64 x Dy_2O_3.

Criteria	JORC Code explanation	Commentary
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').*	• Mineralisation typically 3 to 6 metres thick and Drillholes are sampled at 1 metre intervals
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.*	• N.A.
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 new results are reported in this report
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.*	• N.A.
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.*	• To be planned