American Rare Earths Ltd

(ASX:ARR)

An Australian exploration company focused on the discovery & development of strategic technology mineral resources

Commodity Exposure

Rare Earth Elements, Heavy Mineral Sands, Cobalt, & Industrial Metals

Directors & Management

Creagh O'Connor
Non-Executive Chairman
Keith Middleton
Executive Director
Geoff Hill
Non-Executive Director
Denis Geldard
Non-Executive Director
Jim Guilinger
Chief Technical Advisor
Wayne Kernaghan
Company Secretary

Capital Structure

Ordinary Shares on Issue (31/10/20) 291M

Market Cap (undiluted at 9.8 cps) $28.5M

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11 November 2020

New work sets first JORC compliant resource and upside for US's leading Rare Earths project – owned by Australia's ARR

Highlights:

- JORC 2012 compliant total resource estimate of 128.2Mt @ 373.4ppm (0.037%) Total Rare Earth Elements (TREE) outlined in new review of American Rare Earth's (ASX: ARR) wholly-owned La Paz Rare Earth project in Arizona
- La Paz potentially the largest Rare Earths project in North America with ARR the only ASX company in the US Rare Earths market
- Project's highly shallow JORC resource sits within just 525 acres of ARR's total La Paz footprint of 5,143 acres
- Field exploration activities in the past year identified higher-grade zones of mineralisation extending to the southwest outside the existing resource, prompting a successful application by the Company over the acreage concerned
- Review's findings point to opportunity to substantially increase the La Paz resource, most within 30m of surface
- Also supports a near-term core drilling campaign to 61m depth which will commence in late November 2020
- Identifies potential to process more of the project's Scandium mineralisation
- Extensive metallurgical test work scheduled for 2021
- Report is first major La Paz study by recently appointed Chief Technical Consultant, Consulting Geologist and head of Colorado's World Industrial Minerals, Mr Jim Guilinger

American Rare Earths Limited November 2020 JORC Update

Sydney-based and ASX listed American Rare Earths Limited (ASX:ARR) (the Company) is pleased to announce the first formal JORC 2012 classified resource estimate of 128.2Mt @ 373.4ppm (0.037%) TREE for its wholly-owned La Paz Rare Earths project in Arizona in the United States.

La Paz is located ~170km northwest of Phoenix and is surrounded by world class infrastructure within a mining friendly jurisdiction. ARR's initial and successful field exploration activities in the past year identified higher-grade zones of mineralisation extending to the southwest outside the existing resource, prompting a successful application by the Company over the acreage concerned.

La Paz is a large tonnage, bulk deposit comprising high value, light rare earth (LREE) assemblage with the potential to be the largest rare earth project in North America. It contains very low penalty elements such as radioactive thorium and uranium.

The updated classification brings the project in line with ASX requirements for mineral resource inventories to meet JORC 2012 protocols. (See Table 1). Its previous 2011 known mineralisation of 128.2Mt @ 373.4ppm (0.037%) Total Rare Earth Elements (TREE) at 300ppm cut-off grade was classified under Canada's NI 43-101 code.

The new inventory description is a straight conversion and there is no change in actual classified mineralised volumes under either code.

La Paz Resource Estimate 2012 JORC				
	Mt	Grade (%)	Contained REE (kg)	Contained REE (Mlbs)
Inferred	112	0.037	37,586,080	83.3
Indicated	16.2	0.037	5,436,558	12.1
Total	128.2	0.037	43,022,638	95.4

The update follows an extensive review of the project by ARR's newly appointed Chief Technical Consultant, Consulting Geologist and head of Colorado's World Industrial Minerals, Mr Jim Guilinger.

Importantly, the review identifies substantial future upside for La Paz with a major forward works program also outlined.

The project is wholly owned by American Rare Earth's US subsidiary, Western Rare Earths (WRE). Its further development under ARR's new ownership comes at a time the world's largest Rare Earths producer, China, (132,000t in 2019, US 26,000t, Australia 21,000t) is tightening supply and access as trade tensions mount but against a backdrop of widening global demand for rare earths for new era technologies.

ARR is also acquiring the Wyoming Rare Earths project in the US.

REVIEW BACKGROUND:

Mr Guilinger, a Competent Person by JORC 2012 and NI 43-101 standards and with assistance from other Competent Persons, reviewed the project's data, completed a site visit and provided valuable new insights as part of bringing the previously released NI 43-101 compliant, July 2020 Technical Report update to be JORC 2012 compliant. The updated report includes new tables and new maps to help bring additional clarity to the flagship LPRE project and its progress to date. Along with confirming previous statements in the Technical Report update authored by Mr. Erik Ostensoe, a NI 43-101 Competent Person, Mr Guilinger provides the following insights:

- A detailed review of the previous drilling at different elevations **indicates opportunity for more than 60M thickness of higher-grade Rare Earths values** in the lower plate gneiss. Thus, the topography lends itself to the opportunity to substantially increase the resource by deeper drilling in the lower plate, where higher grade Rare Earths is prevalent. This analysis supports the plan for a core drilling campaign to 61M depths late in 2020.
- The **Scandium is not limited to the project's Allanite. It is ubiquitous to the lower plate gneiss** in relative higher grades than the overlying red bed sediments. This potentially means there could be economic value in processing more of the gneiss for Scandium. This would be additive to Rare Earths and Scandium in the Allanite material.
- With appropriate additional drilling to verify the data, the authors of the resource estimate consider **the REE and Scandium resources can be confidently reclassified and expanded**.
- After the planned Q4 2020 drilling program, **we expect to be able to upgrade the Rare Earths resource and separately establish a maiden resource for Scandium.**
- A review of the favorable geology and occurrence of Rare Earths and Scandium fortifies the planned extensive metallurgical test work scheduled for 2021. Testing is being explored, as recommended by WOOD PLC, with the Saskatchewan Research Council using its respective proven processes. Additionally, it supports the planned **collaborations with leading US universities and national laboratories to test the feedstock in cutting-edge new processes.**
- Following successful field work during 2019 and 2020, the current property position has been expanded to the Southwest due to favorable Rare Earths and Scandium sampling results. The current lode claims, and Arizona State Exploration Permit Area held by the Company is 5,143 Acres (2,081 Hectares). The current defined resource sits within an area of approximately 525 of those acres (212 Hectares). This expansion of tenements presents the opportunity to increase the resource through additional drilling in these areas in 2021.
- These activities undertaken by the Company will provide the backdrop for the planned Preliminary Economic Assessment (PEA) in H2 2021. The following key activities are recommended to be undertaken by the company to deliver a PEA in H2 2021: Further surface sampling, metallurgical testing, additional drilling in the maiden resource area together with the additional areas targeted, open cut mine planning and processing.

Grant funding invitation

- WRE has received an exclusive invitation from Lawrence Livermore National Laboratory to participate in application for up to US$1.5M in funding for processing research on WRE feedstocks. Additionally, this collaboration will include world-renown researchers from Penn State University and the University of Arizona. This development work would advance cutting edge new sustainable bio-tech processing that has been shown to capture as much as 99% of available REEs and 96% of Scandium, a 40% improvement over traditional solvent processing. Funding is available via the US Department of Energy's Office of Technology Transitions (OTT) Technology Commercialisation Fund (TCF) to prove commercial viability at industrial scale. Additionally, Purdue University and the University of Kentucky have agreed to test WRE feedstocks in their respective new processing technologies of REEs and Scandium.

Outlook

The results of the collective body of technical work over the past 10 years on the La Paz Rare Earth project supports continued investment in and development of the project with a near term goal of better defining the surface margins of the deposit while concurrently probing the 3rd dimension of depth with further core drilling. Completion of the recommendations of WOOD PLC report and advancement on their positive metallurgical results, will be vital to developing a pathway to success. Exploring multiple processing options,

both proven and emerging, will help maximise the likelihood for successful economics in the Preliminary Economic Assessment, planned to be completed in H2 2021.

US-based CEO of Western Rare Earths, Mr Marty Weems: "We are energized and optimistic about the prospects of developing the La Paz Project further and bringing along its new highly complementary sister in the Wyoming Rare Earths project. We continue to make good progress with an upcoming La Paz drill campaign and several high efficiency processing paths to explore under the guidance of world-class technical experts. There is plenty of work to do and we have high priority opportunities to which we are laser focused to execute upon."

US-based Chairman of the La Paz Rare Earth project and WRE Board member, Mr Clarence McAllister: "The acceleration of progress is palpable. Engaging the deep experience of Mr Guilinger has helped us better understand and begin to communicate the true potential of the La Paz Rare Earth project. The leadership and engagement of the Board of Directors as a team supporting and empowering the technical team is starting to bear fruit. This feels like it is just the beginning, yet it has been 10 years in the making."

ARR Chairman, Mr Creagh O'Connor: "It is most advantageous that Joe Biden is emerging as the winner of the US Presidential election. Mr Biden has put forth a $2T USD Clean Energy Spending Plan and has signalled support for domestic REE and Critical Mineral mining as recently as 2 weeks prior to the election which echoes his party's position on addressing the Climate Crisis and boosting critical minerals production.

This market announcement has been authorised for release to the market by the Non-Executive Chairman of American Rare Earths Limited.

F Creagh O'Connor AM

Chairman

This ASX announcement refers to information extracted from the market announcements, which are available for viewing on ARR's website **https://americanrareearths.com.au**

ARR confirms it is not aware of any new information or data that materially affects the information included in the original market announcements, and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. ARR confirms that the form and context in which the Competent Person's findings presented have not been materially modified from the original market announcements.

Competent Persons Statement: The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Mr. Jim Guilinger. Mr. Guilinger is a Member of a Recognised Overseas Professional Organisation included in a list promulgated by the ASX (SME Registered Member of the Society of Mining, Metallurgy and Exploration Inc). Mr. Guilinger is Principal of independent consultants World Industrial Minerals LLC. Mr. Guilinger has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking 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. Guilinger consents to the inclusion in the report of the matters based on their information in the form and context in which it appears.

JORC Code, 2012 Edition – Table 1 report template

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.*	• Historical drilling: In 2011, the prospect was drill tested by 195 percussion drill holes ranging from 40' (13m) to 100' (30m depth) for a total of 18,805' (5,731)m. Drilling was completed on 3 parallel section lines across strike and 1 section line along strike, with holes spaced 100' along section lines • Representative 1kg samples were collected from each 5' (1.52m) interval of drilling. • A 250g sub-sample was pulverized to -75 microns and a 0.5g charge was assayed for REEO by ICP-MS using standard industry procedures at ALS Chemex, Reno, Nevada.
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).*	• Historical drilling: A track mounted percussion rig supplied by Dynamic Rock Solutions LLC, Salome, Arizona was used to drill 195 3.5" diameter percussion holes. Drilling began on April 20th, 2011 and was completed on May 31st 2011. Hole depths varied from 40-100', with 142 out of 195 holes drilled to 100' depth. A total of 18,805' (5,731m) was drilled.
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.*	• Sampling of ~200g per foot drilled to produce a composite~1kg sample for every 5' drill interval which is considered representative of each interval. • All drilling was carried out above the water table to minimize possible contamination
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.*	• A representative sample of each 5' interval was retained in chip trays for logging. • Geological logging is considered to have been logged to a level of

Criteria	JORC Code explanation	Commentary
	• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	detail appropriate to support Mineral Resource Estimates. • Chip sample logging is qualitative in nature. • Drill holes were logged in full based on representative samples from every 5' interval.
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.*	• No core samples have been collected. • Percussion chips were collected in a bucket for every 5' interval. A representative 1kg sample from each 5' interval was prepared by the site geologist. • All samples were dry. • The 1kg samples were delivered to an accredited laboratory for sample preparation and analysis. • Sample preparation: 1kg samples split to 250g for pulverizing to -75 microns • Sample analysis: 0.5g charge assayed by ICP-MS technique • Sample preparation techniques are considered industry practice and are conducted at accredited external laboratory, all considered appropriate to the style of mineralization and suitable for determining Mineral Resource Estimates
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 laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• Sample analysis: A 250g splIt from each sample was pulverized to -75 mciron and a 0.5g subsample fused with lithium borate, then subjected to a 4-acid digest and then assayed by ICP-MS for 38 elements. • No geophysical tools, spectrometers, handheld XRF instruments, etc used. • The laboratory used standard quality control procedures incorporating duplicate samples, standards and blanks.
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.*	• Significant intercepts were verified by an independent consultant geologist as part of the resource estimation. • No twinned holes were used. • Originally all chip trays for each hole interval were stored in a secure facility in Bouse, Arizona. All drill hole logs, associated interval assay results were stored electronically within the company. All geologic data was entered onto log sheets manually then subsequently entered into the computer. Data at all times was secure.

Criteria	JORC Code explanation	Commentary
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.*	• Holes were not surveyed due to their short length (max 30m depth) • Hole collars were surveyed using a handheld GPS • UTM grid system NAD 1927 Zone 12 • Drill hole elevations were estimated using existing USGS topographic base maps as control.
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.*	• The data spacing and distribution are considered sufficient for the current level of early exploration of the areas of interest. • Samples have not been composited as all sample intervals were equal (5').
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.*	• Close-spaced vertical drill holes were used to overcome any structural bias of the fine-grained disseminated REEO mineralisation.
Sample security	• *The measures taken to ensure sample security.*	• Drill samples were kept in a secure storage locker before dispatch by bonded courier to the laboratory.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No audits or reviews have been conducted. Extensive review of the data has been undertaken for the purpose of updating the historic and current planned exploration activity.

Section 2 Reporting of Exploration Results

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

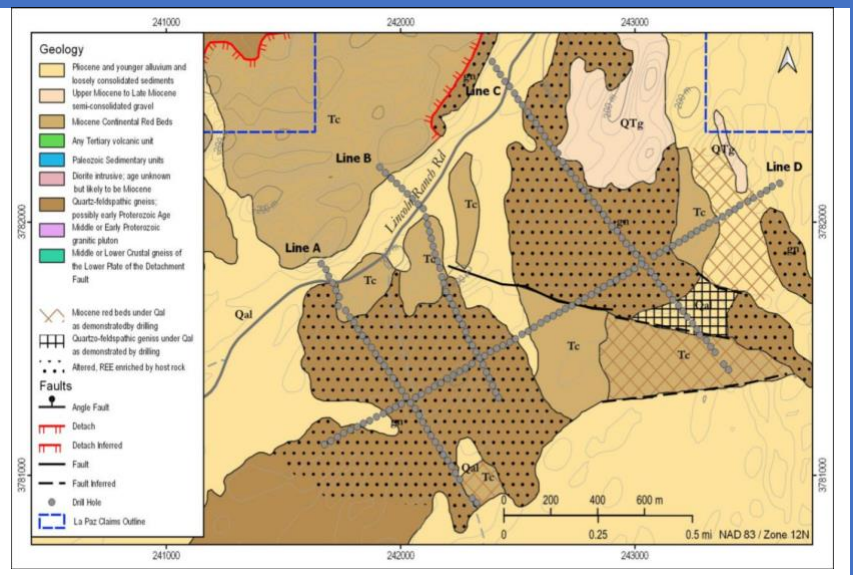
Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.*	• The tenement schedule is included in the appendix to this report. The tenements are in the form of 20-acre United States Bureau of Land Management lode mining claims. The total land package controlled by the Company in the La Paz Project Area consists of 261 unpatented lode mining claims totalling 5392.26 acres (2178.47 has). The State Exploration Permit totals 640 acres (259 has). The

Criteria	JORC Code explanation	Commentary
	• *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.*	mining claims are 100% owned by the Company with no royalties. All claims are outside of any wilderness or national park and environmental settings. An historic railroad line crosses a portion of the claims but is outside of any historic or planned exploration programs. The State leased land is subject to a State royalty (as yet undetermined) once the exploration activity has advanced to the exploitation level. At this point the State engineers and geologists will evaluation any defined mineral deposit and determine an appropriate royalty. • The QP is not aware of any environmental liabilities attached to the La Paz claims and is not a Qualified Person with respect to environmental issues. An archaeological survey of the La Paz claims conducted by Professional Archaeological Services of Tucson, Arizona, dated March 20, 2011, was submitted to the Arizona State Land Department. The survey found no substantial areas of archaeological significance (P.A.S.T., 2011). The author is not a Qualified Person with respect to archaeological issues. • As long as annual Arizona State lease holding fees and annual claim holding fees are paid to both the BLM and the County (La Paz) in which the claims reside, tenure is secure.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Rare earths were first recognized in June 2010 by John Petersen, a geologist, who submitted for analysis a reconnaissance sample from the Swansea and Bill Williams River areas that analyzed 459.98 ppm total rare earth elements (TREE). A further 119 samples returned TREE values of 20.6 to 674.21 ppm. Scandium varied from 1.1 to 30.2 ppm. AusAmerican then conducted a confirmation sampling exercise of 22 samples that returned values of 6 to 588 ppm TREE, followed in February 2011, by a sample grid of 199 samples that returned 49 to 714 ppm TREE. 195 percussion drill holes were drilled in early 2011. Additional sampling was conducted in 2019 and 2020. • All drilling was carried out by AusAmerican Mining Corporation and at the time the company was listed on the ASX.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The project lies within the Harcuvar metamorphic core complex within the Basin and Range Province of Arizona. Mineralisation is hosted in alkali granitic gneiss and to a lesser extent, a structurally-

Criteria	JORC Code explanation	Commentary
		superimposed suite of continental red beds. REEOs occur in Allanite (epidote) that occurs as fine-grained disseminations and micro-fracture fillings.

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.*
		• AusAmerican in 2011 contracted Dynamic Rock Solutions LLC of Salome, Arizona, to conduct exploratory drilling using a track-mounted percussion drill. Drilling began on April 20, 2011 and was completed on May 31, 2011. One hundred and ninety-five 3.5" diameter holes were completed for the purpose of obtaining samples of the rock types present. Holes varied in depth from 40 to 100 feet: most holes (142 of 195) were completed to 100 feet and total footage drilled was 18,805 feet. Distances between holes was 100 feet and holes were situated along 4 lines: Lines A, B, and C were oriented NW-SE, and one, Line D, was oriented in the NE direction and crossed the other lines. The map below illustrates the La Paz percussion drill hole locations and the sample lines.

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.*	• Drill holes cuttings were collected at five-foot intervals. An approximate 2 lb. (1.36 kg) sample was submitted to ALS Chemex laboratory in Reno, Nevada, for geochemical analysis. A total of 3269 samples were submitted: all were analyzed for 60 elements, including REE, Y and Sc. REE assay results from the percussion drilling program are summarized in an Appendix at the back of the report
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').*	• The vertical drill hole orientations, 5' sample lengths are considered appropriate to the style of flat-lying bulk tonnage mineralisation

Criteria	JORC Code explanation	Commentary
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.*	 • Additional figures are found 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.*	• Exploration results are included in the body of this report under both the “Exploration” and “Drilling” Sections
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.*	• Metallurgical test work was completed following the 2011 drilling program. Drillhole LP-B7 was twinned and sixteen samples submitted to Saskatchewan Research Council, Saskatoon, Saskatchewan, Canada for pre-concentration and preliminary leaching tests…… • Representative rock specimens were submitted to SGS Canadian Laboratories, Vancouver, Canada from within the resource areas to determine overall mineral assemblages and liberations/association of rare earth element carriers.
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,*	• Six 200-foot-deep vertical core holes are planned to be drilled across the project area. These holes will be twins of the following previously drilled percussion drill holes: B13, C54, D47, A7,C38, C62. Refer to

Criteria	JORC Code explanation	Commentary
	including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	the "Drilling Section" drill hole map for locations of these proposed holes. The purpose of these core holes is to confirm previous results, test for extensions of mineralization to depth, and to collect a high grade combined TREE core for metallurgical testing.

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• Drill hole logs are captured in an Access database with built-in validation for imports. The Access database was linked to Gemcom Surpac for geological wireframing and resource estimation.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• Competent Person visited the La Paz project site in 2011 to review drill chips, verify drill hole collar locations and critical geological observations. An additional CP (author of this current updated report visited the field in 2020 to review geology and drill sites for the upcoming core drilling program.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• The La Paz project area lies within the Reid Valley Basin, adjacent to the Buckskin Mountains, in the west central part of the Basin and Range Physiographic and Structural province of southwestern United States. The Buckskin Mountains are part of the Harcuvar metamorphic core complex that features exposures of a detachment fault and its mylonitic footwall. Hanging wall rocks, collectively referred to as the Upper Plate, consist of a variety of complexly normal-faulted and tilted rocks that include syntectonic, mid-Tertiary sedimentary and volcanic rocks. The footwall block, commonly referred to as the Lower Plate, is composed of variably mylonitic crystalline and meta-sedimentary rocks • The geology at the La Paz project is not well understood at the project level and has not been mapped in detail, however principal rock units identified in chips included Tertiary red beds, gneiss and felsic intrusives. • Modelling of geological units was completed by delineating two domains conforming to the unconformable character of regional geology: Upper Plate, comprising Quaternary alluvium (Qal) and Tertiary-aged red bed conglomerate (Tc), and Lower Plate,

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td></td><td></td><td>comprising Proterozoic gneiss and Tertiary-Cretaceous felsic intrusive sills.
• Geological continuity between drill holes has been assumed and no detailed structural complexity has been incorporated.</td></tr>
<tr><td>Dimensions</td><td>• The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</td><td>• The REE mineralized zones extend 900m N-S and 1200m E-W along strike and to a depth of 40m</td></tr>
<tr><td>Estimation and modelling techniques</td><td>• The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.
• The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.
• The assumptions made regarding recovery of by-products.
• Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).
• In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.
• Any assumptions behind modelling of selective mining units.
• Any assumptions about correlation between variables.
• Description of how the geological interpretation was used to control the resource estimates.
• Discussion of basis for using or not using grade cutting or capping.
• The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</td><td>• Block model size: 10m x 10m x 10m; no rotation; total 265,440 blocks
• Block Model Parameters:
<table>
<tr><td></td><td>X (m)</td><td>Y (m)</td><td>Z (m)</td></tr>
<tr><td>Min Coordinate</td><td>3780892.105</td><td>241660.893</td><td>381.627</td></tr>
<tr><td>Max Coordinate</td><td>3782642.105</td><td>243620.893</td><td>461.627</td></tr>
<tr><td>Block Size</td><td>10</td><td>10</td><td>10</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>Bearing</td><td>Dip</td><td>Plunge</td></tr>
<tr><td>Rotation</td><td>0</td><td>0</td><td>0</td></tr>
</table>
• Resource estimation was constrained by modelled geological domains and each domain was reported independently.
• A total of 3,364 assays from 195 drill holes and 94 surface samples were used for the resource estimate.
• Resource estimate was based on an isotropic Inverse Distance Weighting (IDW) interpolation. The minimum number of sample sued to populate each block was three. A maximum search radius of 20m and 400m was used to populate blocks for indicated and inferred resources respectively.
• Variographic analysis concluded that there was no strong directionality.
• Search parameters:
<table>
<tr><td></td><td>Bearing</td><td>Plunge</td><td>Dip</td></tr>
<tr><td>Ellipsoid Orientation</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>Major/Semi-Major</td><td>Major/Minor</td><td></td></tr>
<tr><td>Anisotropy Ratios</td><td>1</td><td>1</td><td></td></tr>
</table></td></tr>
</table>

Criteria	JORC Code explanation	Commentary
		Composite Parameters: Count 3364 Mean 320.15 Standard Error 1.965 Median 336.2 Mode 288.91 Standard Deviation 113.99 Sample Variance 12995.4755 Kurtosis 0.685665479 Skewness 0.176084552 Range 748.86 Minimum 32.63 Maximum 781.49 Sum 1076991.26
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnage was estimated on a dry basis
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• A cut-off grade of 300ppm TREE was used for reporting mineral resources.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• No mine plan or design has been prepared at this stage however the shallow nature of the deposit assumes extraction by open pit mining methods.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• Preliminary metallurgical test work on RC chips from drill holes has indicated the mineralisation is amenable to concentration by a series of gravity separation, magnetic separation and flotation processes. • Overall total rare earth oxides (TREO) recoveries are 68.1% at an average grade of 1,248ppm TREO and a total mass yield of 26.9% • Total recovery is a combination of 5.2% recovery by gravity separation and 62.9% by flotation.
Environmen-tal factors or	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of*	• No baseline environmental studies have been completed at this stage, however no environmental liabilities are known.

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td>assumptions</td><td>determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</td><td></td></tr>
<tr><td>Bulk density</td><td>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.
The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.
Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</td><td>No density or specific gravity tests have been performed at the project. On the basis of standard tables of specific gravities of common rocks, a specific gravity of 2.65 was used.
Porosity and Bulk Density of Sedimentary Rocks by G.Edward Manger, Geological Survey Bulletin 1144-E, 1963 suggest that an assigned bulk density of 2.65 is reasonable.</td></tr>
<tr><td>Classification</td><td>The basis for the classification of the Mineral Resources into varying confidence categories.
Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).
Whether the result appropriately reflects the Competent Person’s view of the deposit.</td><td>Drilling data from 2011 was separated into two domain – Lower Plate and Upper Plate based on geology. Within each domain, indicated and inferred resources were estimated.
Blocks within the domains located less than 20m from any drillhole were classified as indicated, all other blocks within the domains are classified as inferred.
This arbitrarily assigned classification is considered to be fair and reasonable. Proportionally, the indicated resource amounts to 12.7% of the total resource.
Indicated Resource<table><tr><th></th><th>Tonnes (millions)</th><th>Grade above Cut-off (ppm)</th><th>Grade above Cut-off (%)</th><th>Lbs REE millions</th></tr><tr><td>Upper Plate</td><td>0.4</td><td>337.7</td><td>0.033</td><td>0.3</td></tr><tr><td>Lower Plate</td><td>15.8</td><td>373.4</td><td>0.037</td><td>11.8</td></tr><tr><td>Total Indicated</td><td>16.2</td><td>373.4</td><td>0.037</td><td>12.1</td></tr></table>
Inferred Resource</td></tr>
</table>

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td></td><td>Tonnes (millions)</td><td>Grade above Cut-off (ppm)</td><td>Grade above Cut-off (%)</td><td>Lbs REE (millions)</td></tr>
<tr><td>Upper Plate</td><td>7.2</td><td>369.8</td><td>0.036</td><td>5.4</td></tr>
<tr><td>Lower Plate</td><td>104.8</td><td>371.6</td><td>0.037</td><td>77.9</td></tr>
<tr><td>Total Inferred</td><td>112</td><td>371.5</td><td>0.037</td><td>83.3</td></tr>
</table>
</td></tr>
<tr><td>Audits or reviews</td><td>• The results of any audits or reviews of Mineral Resource estimates.</td><td>• The resource estimate methodology has been externally reviewed by Odessa Resources Pty Ltd in September 2020.
• This review concluded that the estimate is a fair and reasonable global representation of the mineralization present at the La Paz Project.</td></tr>
<tr><td>Discussion of relative accuracy/ confidence</td><td>• Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.
• The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.
• These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</td><td>• Current data for the La Paz project does not support economic studies at the stage however with appropriate additional drilling to verify the data, the authors of the resource estimate consider the resource can be confidently reclassified and upgraded.
• The resource has also been estimated by different methodologies to verify the validity of the global resource estimate.</td></tr>
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