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ASX Limited Market Announcements Platform

8 November 2021

Reconnaissance Rock Chip Sampling Program Completed

Highlights:

- Helicopter-supported first pass reconnaissance rock chip sampling program completed
- Potential discovery of Rare Earth Elements (REE) mineralised ironstone exhibiting botryoidal goethite, which could represent a weathered gossan of a primary Yangibana style ferrocarbonatite (Figures 1 & 3)
- Samples have been sent to ALS Laboratory in Perth, with assay turnaround expected in 2-3 weeks, approximately end of November
- A detailed airborne magnetic-radiometric survey of 5,189 line kilometres will be flown over the entire tenement area, due to commence early November 2021
- Gascoyne Projects staked prior to regional land rush and recent discoveries by Dreadnought Resources of 12 high-grade REE prospects 15km southwest of Yangibana¹
- Large land position with very limited historical exploration covering 230km² of prospective Proterozoic Durlacher Supersuite lithology, host to the adjacent world-class Yangibana Deposit 27.42Mt @ 0.97% TREO², exploring for light rare-earth oxides of Neodymium (Nd₂O₃) and Praseodymium (Pr₆O₁₁) critical to the production of permanent magnets with demand set to increase 5x by 2030³
- Favourable structures identified to intersect project area, include the major Bald Hill Lineament which has a key influence on REE mineralisation at Yangibana
- Ongoing desktop review and compilation of historical datasets to identify targets and assist in future exploration programs

Frontier Resources Ltd (ASX: FNT) (**Frontier** or the **Company**) is pleased to announce a reconnaissance rock chip sampling program and geological mapping has been completed over two exploration licence applications in the Gascoyne Region of Western Australia that are considered to be prospective for REE's (**Gascoyne Project**).

Mr Brian Thomas, Non-Executive Director commented "The early visual identification of a potential Yangibana style ironstone outcropping at the Gascoyne Project is a very exciting development. We are continuing our desktop review and compilation of historical datasets which are also providing further encouragement that our tenure is prospective for the discovery of REE mineralisation,

adjacent to the world class Yangibana mine. The Board looks forward to progressing the Company's existing projects and the growing REE portfolio, exploring for critical metals that can help the world reach targets of being net zero carbon by 2050."



Figure 1. Potential REE bearing ironstone outcrop identified during Heli-supported rock-chip sampling, analogous to the Yangibana style ferro-carbonatites.



Figure 2. Typical outcrops of Yangibana style ironstones from Pirajno and Gonzalez-Alverez, 2013.



Figure 3. Rock chip sample GPR010 exhibiting botryoidal banding of potential Mn oxides and hydrous Fe oxides, such as goethite (>80% total rock mass, based on initial visual inspection) which are common features of Yangibana style ironstones. Note for scale, Calico sample bag is 27cm wide.

Gascoyne Rare Earth Element Project – Background

The Gascoyne REE Project adjoins the world-class Yangibana Deposit (ASX.HAS ~A\$460 million market capitalisation) in the Gascoyne Region of Western Australia, set to be the next REE producer outside of China by 2023. The project area is also proximal to recent discoveries made by Dreadnought Resources at their Mangaroon Project located ~15kms southwest of the Yangibana REE Resource¹ (ASX.DRE ~A\$104 million market capitalisation).

The REE-bearing Yangibana ironstones within the Durlacher Supersuite lithology were first targeted by prospectors in 1972 as base metal bearing gossans however, the REE potential of the ironstones wasn't assessed until 1985 and remained underexplored until Hastings Technology Metals (ASX.HAS) acquired the project in 2011. Hastings has since delineated a world-class JORC 2012 Mineral Resource² of 27.42Mt @ 0.97% TREO with 0.33% Nd₂O₃+Pr₆O₁₁ and a ratio of 52% Nd Pr:TREO making it one of the highest value REE projects for ore value per kg.



Figure 4. Location Map of the Gascoyne and Koolya Projects in Western Australia.



Figure 5. Location Map of the Edmund and Lyons tenements which make up the Gascoyne Project in Western Australia.

Despite the region's prospectivity for REE's, very limited exploration has been undertaken at the Gascoyne Project, in part potentially due to shallow alluvial cover which has led to the area being overlooked historically however, the southeastern Lyons tenement E09/2515 has areas of outcrop, where the historic copper prospect Tabletop Well⁴ occurs.

With the use of modern exploration techniques and a renewed focus on REE's, there is an exciting opportunity for the discovery of economic REE mineralisation. A detailed airborne magnetic-radiometric survey consisting of 5,189 line kilometres will be flown over the entire tenement area, due to commence early November 2021. The data gathered from this survey will assist with target definition within the prospective Durlacher Supersuite across the entire project area.

Access into the project area is very good with a combination of well-maintained gazetted and station roads located on Edmund, Gifford Creek and Wanna Pastoral Leases which will greatly assist exploration work programs.



Figure 6. Geology and Tenement Map of the Gascoyne and Koolya Projects in Western Australia.

Gascoyne Rare Earth Element Geology – Background

The Yangibana rare earth element (REE) district consists of multiple mineral deposits/prospects hosted within the Mesoproterozoic Gifford Creek Carbonatite Complex (GCCC), Western Australia, which comprises a range of rock types including calcite carbonatite, dolomite carbonatite, ankerite-siderite carbonatite, magnetite-biotite dykes, silica-rich alkaline veins, fenite, glimmerites and what have historically been called "ironstones". The dykes/sills were emplaced during a period of extension and/or transtension, likely utilising existing structures.

The GCCC sits adjacent to the Lyons River Fault, which has been determined via seismic reflection surveys to extend down to, and offset, the Mohorovičić Discontinuity (Johnson et al. 2013). The Lyons

River Fault is a major shear zone that sutured the Neoarchean Glenburgh Terrane with the Archean Pilbara Craton during the 2215 to 2145 Ma Ophthalmia Orogeny (Sheppard et al. 2005; Johnson et al. 2011, 2013)⁵, Figure 7. The Lyons River fault system was activated during tectonic events in the Gascoyne Province (Cutten et al., in press; Johnson et al., 2012) and is suggested by F. Pirajno et al. (2014), that in one of these events, at about 1050 Ma, a small pull-apart structure, possibly defined by the Lyons River Fault and the Bald Hill Lineament, was formed on the sites, where the ferrocarbonatites had been previously intruded at ~1075 Ma. This stimulated the re-activation of the carbonatite system, widening the fenitic halo in the country rocks and producing a sinuous carbonatite veins system which eventually was locally altered to the ironstone veins, Figure 8.

The ironstone dykes or "ironstones", as they have historically been called, specifically refer to large (up to several metres wide) dyke-like structures that protrude from the landscape (Figure 2). They are mainly located subparallel to the Bald Hill Lineament and along the eastern and western flanks of the GCCC⁵.

The primary ore mineral at Yangibana is monazite, which is contained within ankerite-siderite carbonatite, magnetite-biotite dykes and ironstone units. The ironstones comprise boxwork-textured Fe oxides/hydroxides, quartz, chalcedony and minor monazite and subordinate rhabdophane. The ironstones do not exhibit any primary igneous textures. Most features relate to low-temperature mineral precipitation and include botryoidal banding of Mn oxides and hydrous Fe oxides, such as goethite⁵.

Based on petrology, geochemistry and isotopic systematics, the GCCC is considered to have formed via emplacement of evolving, mantle-derived, alkaline magma at mid to upper crustal levels (Slezak and Spandler 2020). The variation in rock types across the complex is interpreted to reflect magma evolution via fractionation (with or without liquid immiscibility), melt wall-rock reaction and hydrothermal alteration (Slezak and Spandler 2020). The REE-rich ironstones of the Yangibana District have spatial associations and similar Nd isotopic compositions to these alkaline igneous rocks⁵.



Figure 7. Mantle metasomatism under the Glenburgh Terrance resulting from plate subduction during the Glenburgh Orogeny (2018– 1950 Ma). b Localised extension caused minor decompression melting at the Lyons River Fault Moho ofset, creating the alkaline melts that travel along the fault and are emplaced as the GCCC. CF Cardilya Fault, ESI Errabiddy Shear Ione, LRF Lyons River Fault. Modifed from Johnson et al. (2011, 2013).



Figure 8. Two-stage model for the emplacement of ferrocarbonatite sills and dykes at ~1075 Ma along Lyons River Fault (A), followed by strike-slip movements, formation of a pull-apart structure and emplacement of carbonatite-ironstone veins swarm at ~1050 Ma (B); bottom panel shows a schematic spatial distribution of the 1075 Ma ferrocarbonatites dykes and sill and the adjacent 1050 Ma Fe oxide veins swarm emplaced in a pull-apart structure formed during re-activation of the Lyons River Fault; lines A and B in this panel schematically represent the two cross-sections above.

Proposed exploration and study activities on the Gascoyne, Koolya and Kalgoorlie Projects

The Company proposes to undertake the following exploration and study activities within 12 months following the completion of the acquisition:

- Further rock-chip, geochemical sampling, and geological mapping across the entire Gascoyne Project;
- A detailed airborne magnetic-radiometric survey of 5,189 line kilometres will be flown over the entire tenement area, due to commence early November 2021;
- Systematic drill programs of targets identified from the combination of the geophysical survey, geochemical and rock-chip sampling programs, to test the continuation at depth and along strike of any geochemical anomalism and/or geophysical targets;
- Reconnaissance wide-spaced Air Core drilling at the Koolya Project to investigate the depth, thickness, ISO brightness, mineralogy, and alumina content over the project area prior to further infill drilling programs with the aim of delineating a JORC compliant resource;
- SEM imaging and metallurgy studies will be completed on drill samples from the Koolya Project to confirm the qualitive nature of alumina content and Halloysite, if present; and
- Reconnaissance at the Kalgoorlie Project site of historic prospecting activity and an extensive geochemical sampling program is planned across the entire tenement, with Air Core drilling to follow pending positive results.

This announcement has been authorised for release by the Directors of the Company.

Alec Pismiris Non-Executive Chairman

For additional information please visit our website at <u>www.frontierresources.net.au</u>

FRONTIER RESOURCES LTD

The information referred to in this announcement relates to the following sources:

¹ ASX.DRE: 11 June 2021 "High-grade Rare Earth Element Ironstones outcropping at Mangaroon" <u>b564fa17-d73.pdf (investi.com.au)</u>

² ASX.HAS: 5 May 2021 "Yangibana Project updated Measured and Indicated Resource tonnes up by 54%" <u>b07ebf9d-03c.pdf (investi.com.au)</u>

³ Adamas Intelligence September 2020

⁴ Minedex Site; Tabletop Well (S0023828), 16km ENE of Gifford Creek Hmsd

⁵ Geology and ore genesis of the carbonatite-associated Yangibana REE district, Gascoyne Province, Western Australia, P. Slezak et al. (2020)

⁶ The Gifford Creek Ferrocarbonatite Complex, Gascoyne Province, Western Australia: Associated fenitic alteration and a putative link with the ~ 1075 Ma Warakurna LIP, F. Pirajno et al. (2014)

Competent Person's Statement

The information in this announcement that relates to Exploration Results and other geological information has been compiled under the supervision of Mr Bill Oliver. Mr Oliver is a member of the Australian Institute of Geoscientists and the Australasian Institute of Mining and Metallurgy and is a consultant to the Company as well as a shareholder. Mr Oliver has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and the activity he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves ('the JORC Code')". Mr Oliver consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The Company confirms that it is not aware of any new information or data that materially affects the information in the original reports, and that the forma and context in which the Competent Person's findings are presented have not been materially modified from the original reports.

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. 	 Rock Chips Rock Chips were collected by Gascoyne Geological Services Geologist and submitted for analysis. Rock chips are random, subject to bias and often unrepresentative for the typical widths required for economic consideration. They are by nature difficult to duplicate with any acceptable form of precision or accuracy. Rock chips have been collected by Gascoyne Geological Services to assist in characterising different lithologies, alterations and expressions of mineralisation. In many instances, several rock chips were collected from a single location to assist with characterising and understanding the different lithologies, alterations and expressions of mineralisation present at the locality. Rock chips were submitted to ALS Laboratories in Perth for determination of Rare Earth Oxides by Lithium Borate Fusion XRF (ALS Method ME-XRF30).
Drilling techniques	 Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Banaka, sonic, etc) and details 	No drilling undertaken.

Criteria	JORC Code explanation	Commentary
	(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).	
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. 	No drilling undertaken.
Logging	 Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged. 	No drilling undertaken.
Sub-	If core, whether cut or sawn and	Rock Chips
sampling techniques and sample preparation	 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. 	Entire rock chips were submitted to the lab for sample prep and analysis.
Quality of	The nature, quality and	Rock Chips
assay data and laboratory tests	 appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. For geophysical tools, spectrometers, here the laboration of the sector o	 All samples were submitted to ALS Laboratories in Wangara, Perth where 1-3kg rock chips samples were crushed so that >70% of material passes through -6mm, the sample is then
	nanahela XRF instruments, etc., the parameters used in determining the	pulverised to >85% passing 75 micron.

Criteria	JORC Code explanation	Commentary
	 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. 	 A 66-gram aliquot of pulverised sample is fused with 12:22 lithium borate flux containing an oxidizing agent, and poured to form a fused disk. The resultant disk is in then analysed by XRF spectrometry specifically for Rare Earths (ALS Method ME-XRF30) Lithium borate fusion is considered a total digest and Method ME-XRF30 is appropriate for REE determination. No standards, duplicates or blanks submitted with rock chips.
Verification	The verification of significant interrections by either independent or	Rock Chips
of sampling and assaying	 Intersections by eitner 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. 	 Rock chip and geological information is written in field books and coordinates and track data saved from handheld GPSs used in the field. Gascoyne Geological Services geologist inspected and logged all rock chips. Field data is entered into excel spreadsheets to be loaded into a database.
Location of	Accuracy and quality of surveys used	All sample locations were recorded with a
data points	 to locate drill holes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. Specification of the grid system used. Quality and adequacy of topographic control. 	Garmin handheld GPS which has an accuracy of +/- 5m. • GDA94 MGAz50.
Data	Data spacing for reporting of	Sample spacing and distribution is not sufficient to
spacing and distribution	 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. 	establish the degree of geological and grade continuity appropriate for a Mineral Resource.
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. 	At this early stage of exploration, mineralisation thickness's, orientation and dips are not known.

Criteria	JORC Code explanation	Commentary
Sample security	 The measures taken to ensure sample security. 	 All geochemical samples were collected, bagged, and sealed by Gascoyne Geological Services staff and delivered to Bennalong Transport in Carnarvon. Samples were delivered directly to ALS Laboratories in Wangara, Perth by Bennalong Transport ex Carnarvon.
Audits or reviews	 The results of any audits or reviews of sampling techniques and data. 	No audits have been completed.

Section 2 Reporting of Exploration Results

(Criteria in this section apply to all succeeding sections.)

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. 	 Frontier Resources Ltd entered into a conditional agreement to acquire all of the shares in Dalkeith Capital Pty Ltd (Dalkeith) which holds two exploration licence applications in the Gascoyne Region of Western Australia. The acquisition of Dalkeith remains subject to receipt of shareholder approval in general meeting. The Gascoyne Project consists of 2 pending Exploration Licenses (E09/2515 and E09/2516). All tenements are 100% owned by Dalkeith Capital. The Gascoyne Project covers 2 Native Title Determinations including the Thudgari (WAD6212/1998) and the Combined Thiin-Mah, Warriyangka, Tharrkari and Jiwarli (WAD464/2016). The Gascoyne Project is located over the following pastoral leases; Edmund, Gifford Creek, and Wanna.
Exploration done by other parties	 Acknowledgment and appraisal of exploration by other parties. 	 Historical exploration of a sufficiently high standard was carried out in the region by a few parties including: Hurlston Pty Ltd 1986-1987: WAMEX Report A23584 Newmont 1990: WAMEX Report A32886 Newcrest 1990: WAMEX Report A36887 Desert Energy 2006-2007: WAMEX Reports A78056, A80879
Geology	 Deposit type, geological setting and style of mineralisation. 	• The Gascoyne Project is located within the Gascoyne Province, within the Gascoyne Province of the greater Capricorn Orogen – the region that records the collision of the Pilbara-Glenburgh Terrane at 2215–2145 Ma (Ophthalmian Orogeny) and eventual collision of Pilbara/Glenburgh and Yilgarn at 2005–1950 Ma (Glenburgh Orogeny), the Gifford

Criteria	JORC Code explanation	Commentary
		Creek Carbonatite Complex (GCCC) intrudes the Dulurcher Supersuite (including Yangibana and Pimbyana Granites) and the Pooranoo Metamorphics.
		 The c.1360 Ma GCCC is composed of; ~NW striking Lyons River Sills (calcio-, magnesio- and ferrocarbonatites) ~NE striking fenite (alteration) veins Yangibana Ironstones (REE ore bodies) Magnetite-biotite dykes
		 Carbonatites in region are thought to have been generated from melting of the Glenburgh Orogenfertilized mantle during reactivation of structures (e.g. Lyons River Fault) at c. 1370 Ma followed by magma ascent along the same structures. The Gascoyne Project is prospective for Fault and REF.
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. 	No drilling undertaken.
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 	No drilling undertaken.

Criteria	JORC Code explanation	Commentary
	of metal equivalent values should be clearly stated.	
Relationship between mineralisatio n 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'). 	No drilling undertaken.
Diagrams	 Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views. 	• Refer to figures within this 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. 	• The accompanying document is a balanced report with a suitable cautionary note.
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. 	• Suitable commentary of the geology encountered are given within the text of this document.
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. 	• Detailed airborne magnetic – radiometric surveys, surface geochemistry and mapping prior to drilling