PENSANA RARE EARTHS

13 July 2020

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Further high grade drill results at surface and very encouraging results from fresh rock below initial mine plan

Pensana Rare Earths Plc (LSE: PRE, ASX: PM8) is pleased to report results from a further 34 holes of the 8,000 metre drill programme completed at the Longonjo NdPr Project in Angola.

The programme is in support of the Bankable Feasibility Study work programmes for which the Company is targeting an initial 15 to 20 year mine life based on the weathered zone mineralisation at Longonjo. New results confirm particularly high-grade intersections from surface in the area of proposed first mining.

- ***Initial mine plan***: Infill drilling has confirmed +6% rare earth oxide (REO) in the surface weathered zone mineralisation. This area of mineralisation remains open to the north and east. The Company expects to upgrade the mineral resource to Measured in this area for inclusion in the initial 15 to 20 year mine plan.

- ***Fresh rock mineralisation:*** the first systematic drill testing of the potential immediately below the weathered zone mineralisation has returned wide intersections of 2.5% to 3% REO. These grades are very encouraging and add a second dimension to the Longonjo Project beyond the initial 15-20 year mine life. The mineralisation remains opens below the 80 metre drill depth.

- ***Southern margin:*** drilling has identified zones of high grade weathered zone mineralisation from surface that is expected to increase average grades in this area of the proposed open pit.

- ***Updated Mineral Resource estimate:*** An updated Mineral Resource estimate will be reported in the current quarter once all remaining assay results have been received.

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Intersection highlights from the new drill results include:

Drill hole	Intersection
LRC254:	**12 metres** at **5.74% REO** including **1.14% NdPr** from surface and **20 metres at 5.76% REO** including **1.09% NdPr** from 16 metres
LRC263:	**10 metres** at **5.60% REO** including **1.10% NdPr** from surface
LRC265:	**16 metres** at **6.03% REO** including **1.25% NdPr** from surface
LRC267:	**16 metres** at **6.08% REO** including **1.16% NdPr** from surface
LRC276:	**18 metres** at **6.25% REO** including **1.18% NdPr** from surface

**NdPr = neodymium – praseodymium oxide. REO = total rare earth oxides. Intersections reported at a +0.4% NdPr lower grade cut off. See Table 1 for details of all new results, including wider intersections at a +0.2% NdPr cut*

Executive Director & COO Dave Hammond commented:

"These latest intersections from surface prove the continuity of the high grade weathered mineralisation in the area that will be the focus of mining in the early years. We expect these infill drilling results will allow us to upgrade the current Indicated mineral resource to Measured.

The thick mineralised intersections returned from the fresh rock beneath the weathered zone, many of which remain open with depth, are very encouraging and support the potential to expand the project further on the successful completion of metallurgical testwork.

*We look forward to reporting the results from the remaining 86 holes and 3,457 metres of drilling and the revised Mineral Resource estimate which is on track for completion before the end of September.***"**

Authorised by the Board of Pensana Rare Earths Plc

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Technical Report

Additional assay results have been received from the ~8,000 metre infill and extension reverse circulation drilling programme completed in support of Bankable Feasibility Studies (BFS) for Longonjo. The Company completed the drilling with the aim to support an extended mine life of +15 years based on the near surface weathered zone mineralisation.

The programme was completed in March 2020 and transport of some samples was delayed due to Covid-19 restrictions but are now flowing freely and further results are expected shortly.

The new intersections are from 34 drill holes for 1,939 metres in the area of planned first mining (Figure 1) as identified by the Preliminary Feasibility Study (ASX Announcement 15 November 2019).

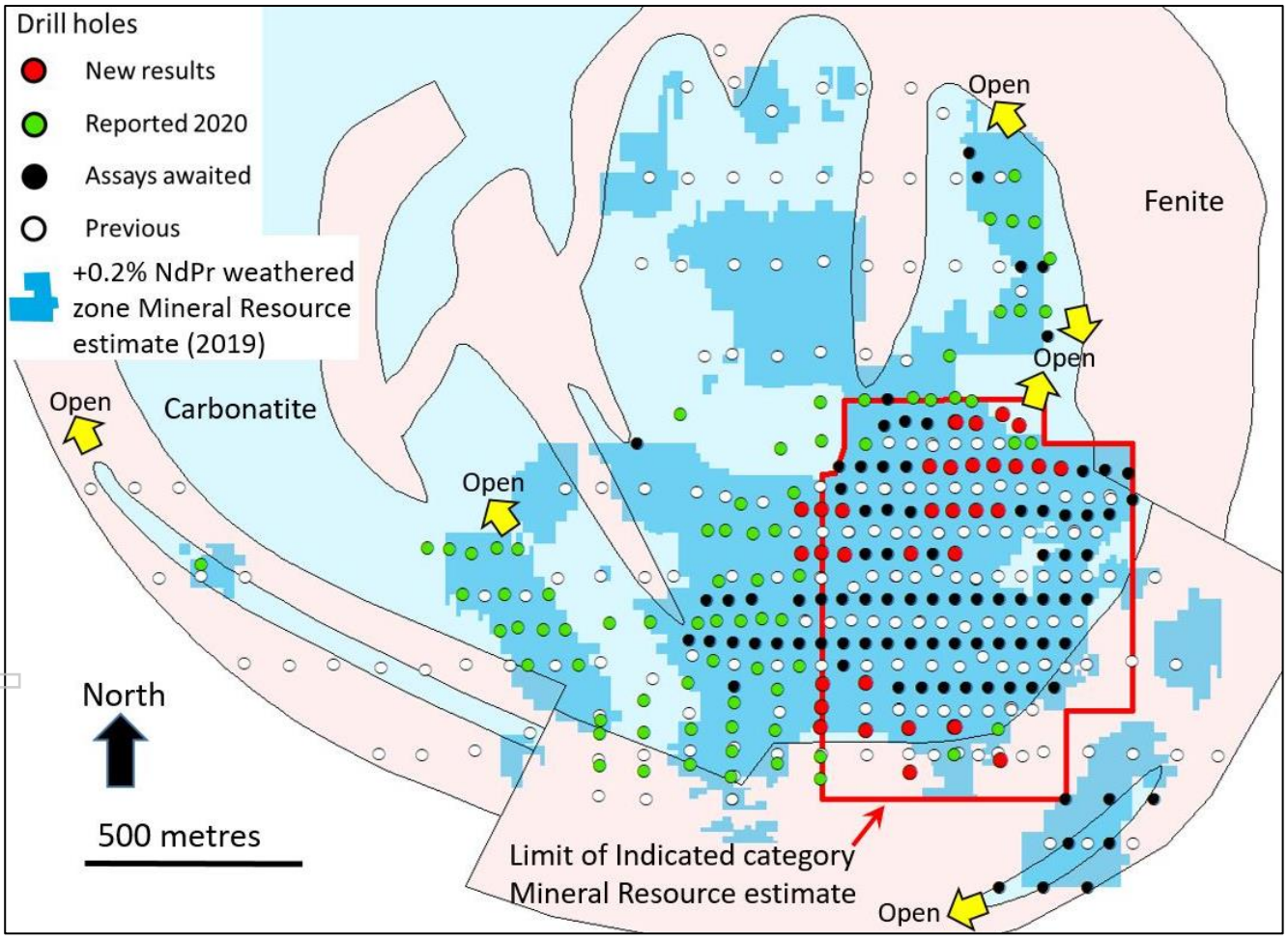

Figure 1: Plan view of the location of new assay results (red) and completed new drill holes (green) with results outstanding (black) over the +0.2% NdPr November 2019 Mineral Resource estimate block model for the weathered mineralisation. The current extent of the Indicated category Mineral Resource estimate is highlighted. Results from a further 86 drill holes (black) are awaited.

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The 50 metre x 50 metre hole spacing will provide detailed data to support an upgrade of the current Indicated to a Measured mineral resource.

The BFS drilling programme is also designed to extend the November 2019 PFS mine life through the conversion of the large areas of Inferred category Mineral Resource to Indicated through infill drilling. The majority of the Inferred mineralisation was excluded from the PFS mine plan.

A third objective of the drilling programme is to test the potential for substantial fresh rock hosted mineralisation immediately beneath the weathered zone by systematically extending drill holes to 80 metres depth in an initial 450 metre by 350 metre target area.

Infill and fresh rock drilling

Assay results from 50m x 50m spaced vertical drill holes in the northern part of the current Indicated mineral resource (Figure 1) returned some particularly high grades from surface within the **weathered zone** that is the basis of the current BFS.

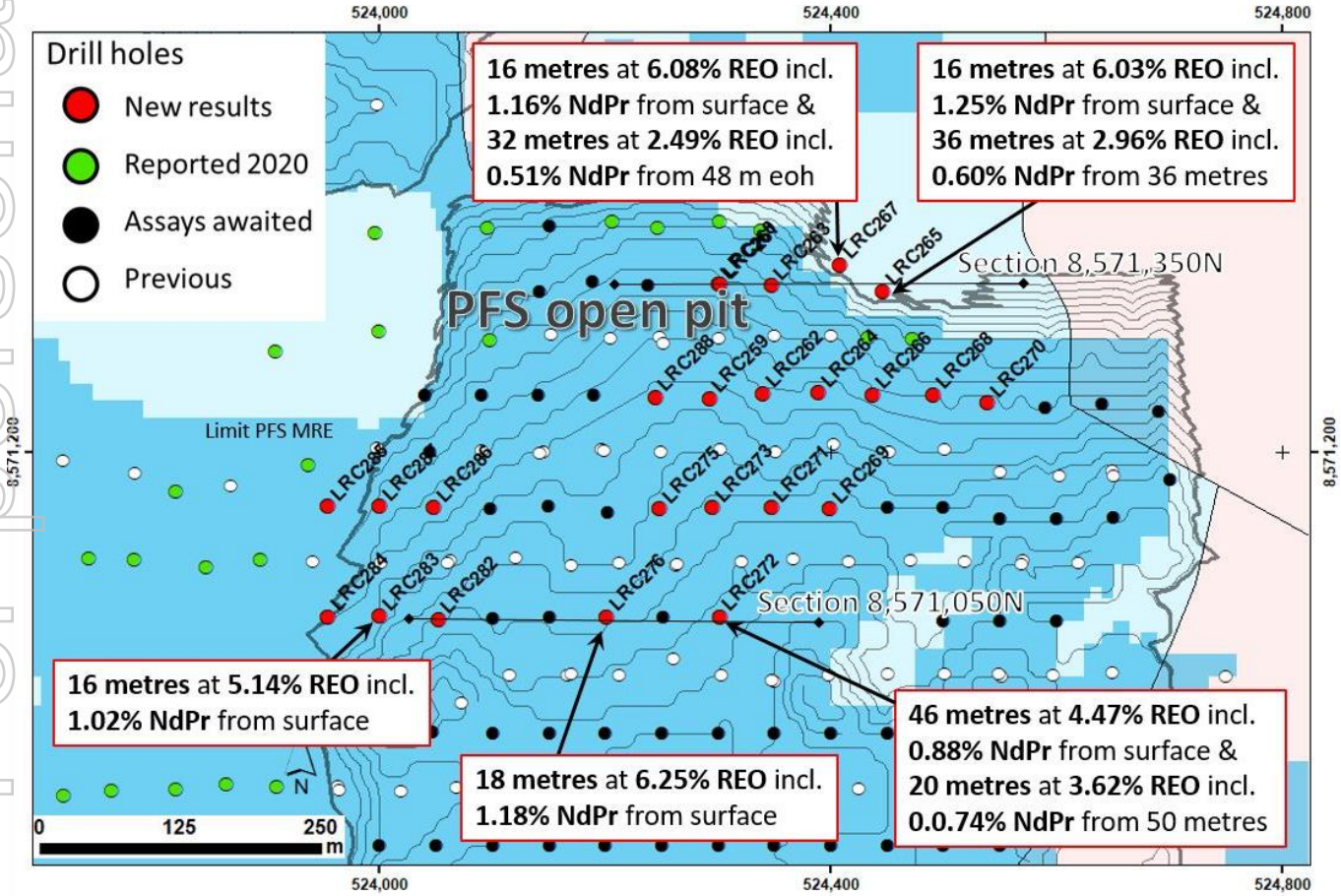

Figure 2: Location of new drilling results (red) in the northern area of initial proposed mining within the PFS open pit. Intersection highlights are shown over the +0.2% NdPr November 2019 Mineral Resource estimate block model (blue) for the weathered mineralisation (see Figure 1 for location).

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Intersection highlights from the weathered zone included:

Drill hole	Intersection*
LRC263:	**10 metres** at **5.60% REO** including **1.10% NdPr** from surface
LRC265:	**16 metres** at **6.03% REO** including **1.25% NdPr** from surface
LRC267:	**16 metres** at **6.08% REO** including **1.16% NdPr** from surface
LRC272:	**18 metres** at **5.57% REO** including **1.09% NdPr** from surface
LRC276:	**18 metres** at **6.25% REO** including **1.18% NdPr** from surface
LRC283:	**16 metres** at **5.14% REO** including **1.02% NdPr** from surface

*NdPr = neodymium – praseodymium oxide. REO = total rare earth oxides. Intersections reported at a +0.4% NdPr lower grade cut off. Refer appendix- Table 1 for details of all new results, including wider intersections at a +0.2% NdPr cut

The new results demonstrate the continuity of high grade weathered zone rare earth mineralisation from surface in this important area proposed for initial mining. Note that mineralisation still remains open to the northeast from high grade intersections in LRC267 and LRC265 (Figure 3).

Some holes were extended through the weathered zone to 80 metres depth, providing the first systematic test of the **fresh rock** potential. Fresh rock mineralisation is excluded from the current BFS studies. The drilling identified thick zones of mineralisation hosted within unweathered carbonatite breccia including:

Drill hole	Intersection*
LRC265:	**8 metres** at **2.16% REO** including **0.48% NdPr** from 22 metres and **36 metres** at **2.96% REO** including **0.60% NdPr** from 36 metres
LRC266:	**26 metres** at **2.83% REO** including **0.61% NdPr** from surface and **24 metres** at **3.28% REO** including **0.70% NdPr** from 54 metres
LRC267:	**32 metres** at **2.49% REO** including **0.51% NdPr** from 48 metres to end of hole
LRC268:	**30 metres** at **4.23% REO** including **0.86% NdPr** from surface and **18 metres** at **2.80% REO** including **0.63% NdPr** from 62 metres to end of hole
LRC270:	**30 metres** at **3.48% REO** including **0.70% NdPr** from surface and

24 metres at **2.88% REO** including **0.58% NdPr** from 32 metres

LRC272: **20 metres** at **3.62% REO** including **0.74% NdPr** from 50 metres

* Intersections reported at a +0.4% NdPr lower grade cut off. Refer Appendix- Table 1 for details of all new results, including wider intersections at a +0.2% NdPr cut.

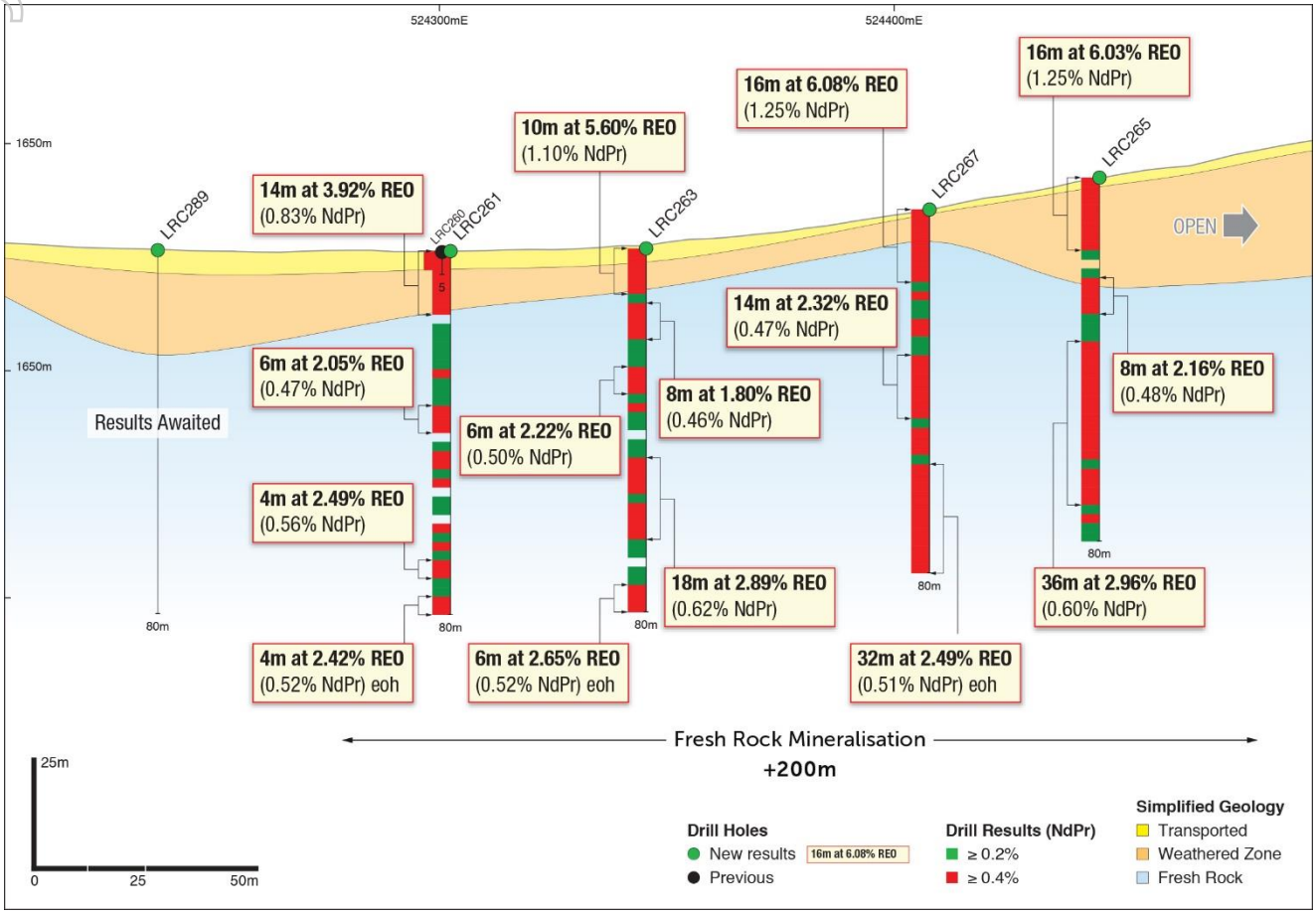

Figure 3: Vertical east – west section 8,571,350mN looking north. New results prove the continuity of high grade weathered mineralisation from surface that remains open to the north and east. Consistent fresh rock mineralisation immediately beneath the weathered zone also remains open with depth over a 200 metre width with further results pending.

The thick zones of mineralisation intersected remain open with depth and to the north and east, suggesting the potential for significant amounts of this fresh rock mineralisation. Note that the fresh rock mineralisation starts from surface in adjacent holes LRC266, LRC268 and LRC270 (Figure 2). Metallurgical testwork is in progress to determine the economic potential of processing this second style of mineralisation at Longonjo.

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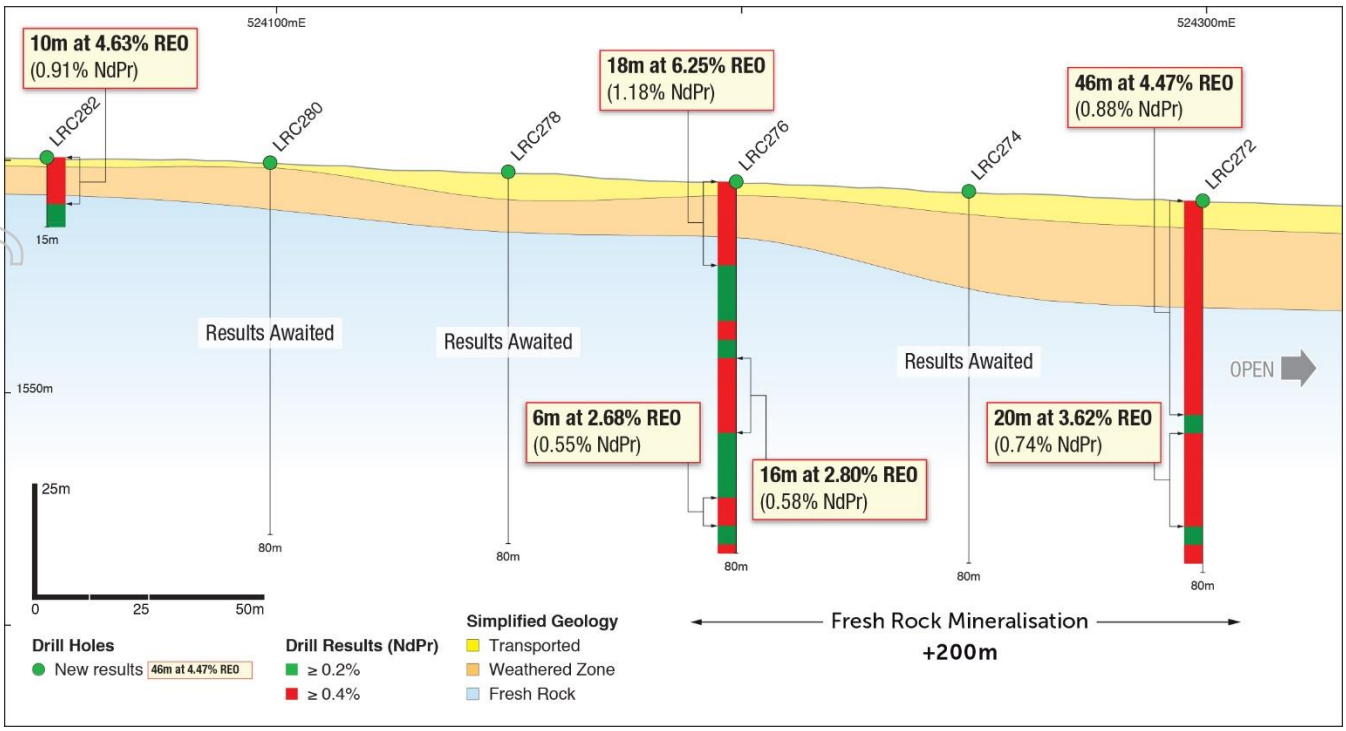

Figure 4: Vertical east – west section 8,571,050mN looking north. New high grade drill intersections in the weathered zone from surface. Fresh rock beneath is also mineralised and open with depth. Additional results are expected shortly.

<u>Southern margin</u>

Angled holes were completed along the southern margin of the Longonjo Carbonatite to test mineralisation in sub-vertical carbonatite dykes as well as the horizontal weathered zone. High grade intersections in both the weathered and fresh rock zones included:

Drill hole	**Intersection***
LRC250:	**18 metres** at **3.32% REO** including **0.77% NdPr** from surface
LRC251:	**12 metres** at **3.51% REO** including **0.85% NdPr** from surface
LRC253:	**14 metres** at **3.70% REO** including **0.80% NdPr** from surface
LRC254:	**12 metres** at **5.74% REO** including **1.14% NdPr** from surface and **20 metres** at **5.76% REO** including **1.09% NdPr** from 16 metres
LRC258:	**26 metres** at **4.40% REO** including **0.96% NdPr** from surface

* Intersections reported at a +0.4% NdPr lower grade cut off. Refer Appendix- Table 1 for details of all new results, including wider intersections at a +0.2% NdPr cut

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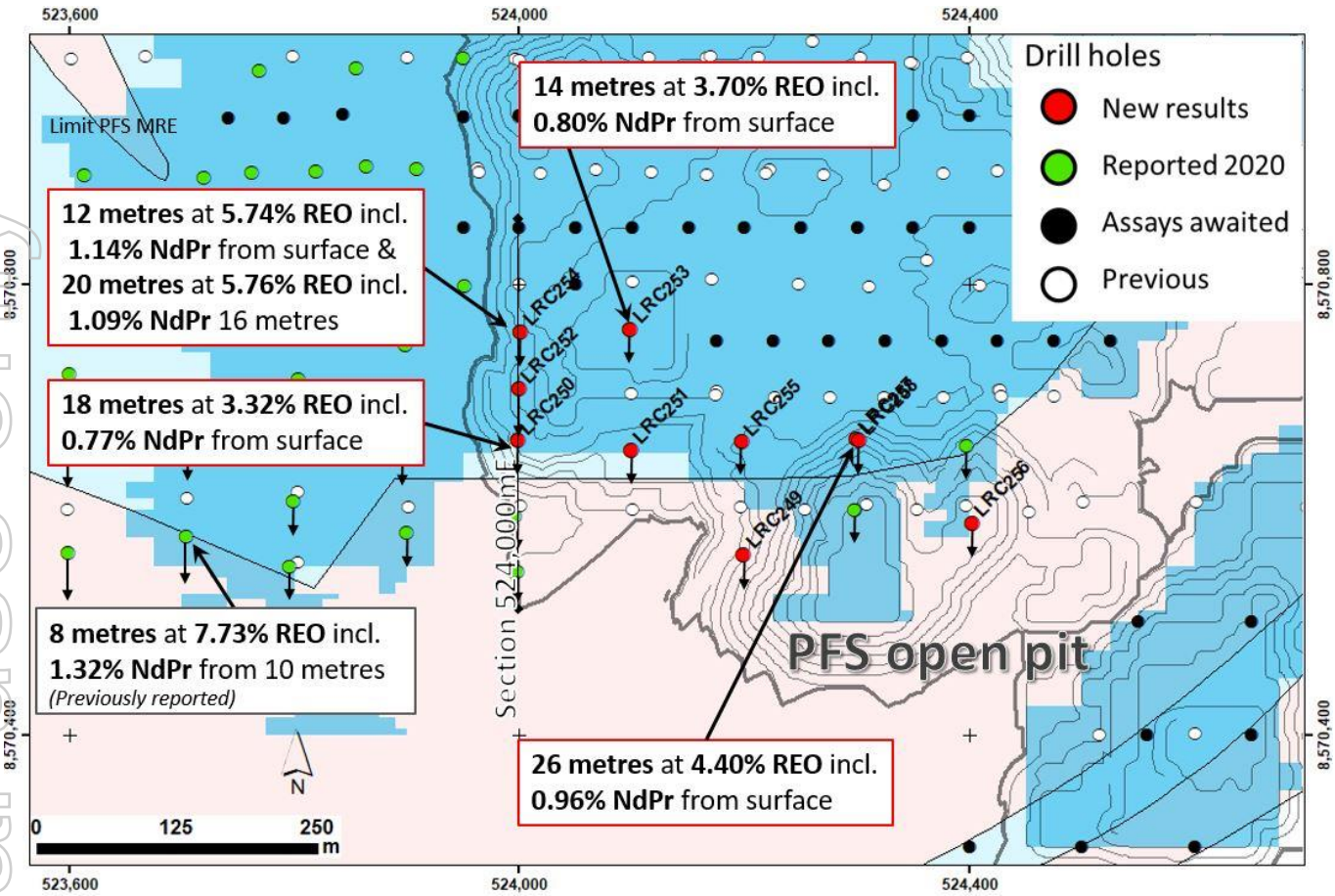

Figure 5: Location of new drilling results (red) along the southern margin of the Longonjo Carbonatite and outside the 9 year PFS open pit. Intersection highlights are shown over the +0.2% NdPr November 2019 Mineral Resource estimate block model (blue) for the weathered mineralisation (see Figure 1 for location). High grade intersections returned from the green drill holes reported in January and March 2020 also suggest the potential to extend the open pit into these areas.

The Company expects these new higher grade results over a 400 metre strike length to increase the overall grade of the mineral resource in this southern margin area.

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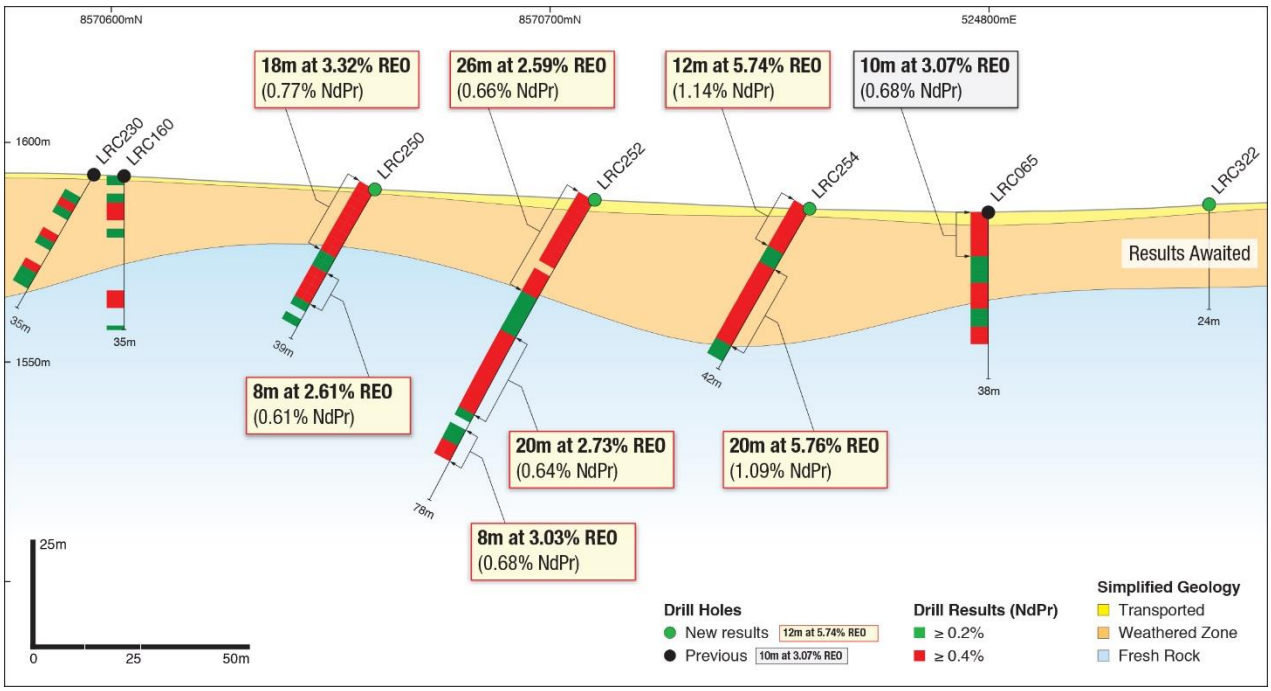

Figure 6: Vertical north - south section 534,000mE looking west. New high grade drill intersections define a deep zone of weathered NdPr rich rare earth mineralisation along the fenite contact. Mineralisation continues into the fresh rock immediately beneath the weathered zone within steeply dipping carbonatite dykes.

Assay results for samples from the remaining 86 drill holes for 3,457 metres of the programme are expected shortly and the Company looks forward to providing further updates as results are received.

A revised Mineral Resource estimate for Longonjo to incorporate the new drilling data will be completed once final assays are received.

Competent Persons Statement

The information in this report that relates to Geology, Data Quality and Exploration results is based on information compiled and/or reviewed by David Hammond, who is a Member of The Australasian Institute of Mining and Metallurgy. David Hammond is the Chief Operating Officer and a Director of the Company. He has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and the activity which he is undertaking to qualify as a Competent Person in terms of the 2012 Edition of the Australian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves. David Hammond consents to the inclusion in the report of the matters based on his information in the form and contest in which it appears.

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The information in this statement that relates to the 2019 Mineral Resource estimates is based on work done by Rodney Brown of SRK Consulting (Australasia) Pty Ltd. Rodney Brown is a member of The Australasian Institute of Mining and Metallurgy and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration, and to the activity he is undertaking, to qualify as a Competent Person in terms of The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012 edition).

The Company confirms that it is not aware of any new information or data that materially affects the information included in the above original market announcements. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

This announcement contains inside information for the purposes of Article 7 of Regulation (EU) 596/2014

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Appendix

Table 1: Longonjo NdPr Project, RC drill intersections at least 4m thick and ≥0.20% NdPr lower grade cut. Intersections ***> 0.40% NdPr*** lower grade cut shown in ***bold italics***

Hole ID	East	North	RL	Hole Depth (m)	From (m)	To (m)	Interval (m)	REO %	NdPr %
LRC249	524,199	8,570,561	1,573	50	NSI				
LRC250	523,999	8,570,660	1,589	39	0	36	36	2.60	0.60
				(incl.	***0***	***18***	***18***	***3.32***	***0.77***
				and	***22***	***30***	***8***	***2.61***	***0.61)***
LRC251	524,100	8,570,654	1,586	67	0	14	14	3.13	0.76
				(incl.	***0***	***12***	***12***	***3.51***	***0.85)***
					22	38	16	1.58	0.42
				(incl.	***28***	***38***	***10***	***1.80***	***0.50)***
					42	62	20	1.37	0.33
				(incl.	***56***	***60***	***4***	***1.99***	***0.52)***
LRC252	523,998	8,570,710	1,587	78	0	58	58	2.37	0.58
				(incl.	***0***	***26***	***26***	***2.59***	***0.66***
				and	***36***	***56***	***20***	***2.73***	***0.64)***
					60	72	12	2.45	0.56
				(incl.	***64***	***72***	***8***	***3.03***	***0.68)***
LRC253	524,098	8,570,761	1,584	43	0	30	30	2.42	0.56
				(incl.	***0***	***14***	***14***	***3.70***	***0.80)***
				and	***16***	***20***	***4***	***1.91***	***0.52)***
LRC254	524,001	8,570,759	1,585	42	0	40	40	4.87	0.95
				(incl.	***0***	***12***	***12***	***5.74***	***1.14***
				and	***16***	***36***	***20***	***5.76***	***1.09)***
LRC255	524,197	8,570,660	1,577	42	***0***	***8***	***8***	***4.58***	***0.92***
					18	32	14	1.20	0.32
LRC256	524,401	8,570,588	1,558	19	NSI				
LRC257	524,300	8,570,663	1,569	9	***0***	***9***	***9eoh***	***4.01***	***0.87***
LRC258	524,300	8,570,660	1,569	46	0	30	30	3.93	0.86

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Hole ID	East	North	RL	Hole Depth (m)	From (m)	To (m)	Interval (m)	REO %	NdPr %
				(incl.	***0***	***26***	***26***	***4.40***	***0.96)***
					34	46	12eoh	1.60	0.36
				(incl.	***36***	***40***	***4***	***1.77***	***0.41)***
LRC259	524,289	8,571,250	1,611	80	0	74	74	2.38	0.51
				(incl.	***0***	***24***	***24***	***3.08***	***0.61***
				and	***28***	***46***	***18***	***2.25***	***0.48***
				and	***48***	***54***	***6***	***1.85***	***0.44***
				and	***58***	***70***	***12***	***2.61***	***0.59)***
LRC260	524,301	8,571,349	1,625	5	***0***	***5***	***5eoh***	***3.82***	***0.88***
LRC261	524,303	8,571,350	1,625	80	***0***	***14***	***14***	***3.92***	***0.83***
					16	52	36	1.52	0.35
				(incl.	***34***	***40***	***6***	***2.05***	***0.47***
				and	***44***	***48***	***4***	***1.97***	***0.47)***
					54	58	4	1.08	0.28
					60	80	20eoh	2.10	0.46
				(incl.	***68***	***72***	***4***	***2.49***	***0.56***
				and	***76***	***80***	***4eoh***	***2.42***	***0.52)***
LRC262	524,339	8,571,252	1,609	80	0	28	28	2.74	0.60
				(incl.	***0***	***24***	***24***	***2.98***	***0.65)***
					34	80	46eoh	1.74	0.39
				(incl.	***38***	***44***	***6***	***2.71***	***0.56***
				and	***68***	***72***	***4***	***2.13***	***0.48)***
LRC263	524,346	8,571,347	1,626	80	0	68	68	2.47	0.54
				(incl.	***0***	***10***	***10***	***5.60***	***1.10***
				and	***12***	***20***	***8***	***1.80***	***0.46***
				and	***26***	***32***	***6***	***2.22***	***0.50***
				and	***46***	***64***	***18***	***2.89***	***0.62)***
					70	80	10eoh	2.03	0.41
				(incl.	***74***	***80***	***6eoh***	***2.65***	***0.52)***
LRC264	524,389	8,571,252	1,610	80	0	32	32	2.45	0.55
				(incl.	***0***	***14***	***14***	***2.91***	***0.70***
				and	***16***	***20***	***4***	***2.87***	***0.58***

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Hole ID	East	North	RL	Hole Depth (m)	From (m)	To (m)	Interval (m)	REO %	NdPr %
				and	***28***	***32***	***4***	***2.15***	***0.48)***
					38	70	32	2.06	0.42
				(incl.	***38***	***46***	***8***	***3.09***	***0.66***
				and	***64***	***70***	***6***	***2.53***	***0.51)***
					72	80	8eoh	1.31	0.29
LRC265	524,445	8,571,343	1,638	80	0	80	80eoh	3.14	0.65
				(incl.	***0***	***16***	***16***	***6.03***	***1.25***
				and	***22***	***30***	***8***	***2.16***	***0.48***
				and	***36***	***72***	***36***	***2.96***	***0.60)***
LRC266	524,437	8,571,250	1,610	80	0	80	80eoh	2.54	0.53
				(incl.	***0***	***26***	***26***	***2.83***	***0.61***
				and	***28***	***32***	***4***	***2.46***	***0.47***
				and	***54***	***78***	***24***	***3.28***	***0.70)***
LRC267	524,408	8,571,363	1,638	80	0	80	80eoh	2.98	0.60
				(incl.	***0***	***16***	***16***	***6.08***	***1.16***
				and	***24***	***28***	***4***	***2.46***	***0.50***
				and	***32***	***46***	***14***	***2.32***	***0.47***
				and	***48***	***80***	***32eoh***	***2.49***	***0.51)***
LRC268	524,489	8,571,251	1,612	80	0	36	36	3.86	0.78
				(incl.	***0***	***30***	***30***	***4.23***	***0.86)***
					44	80	36eoh	2.53	0.57
				(incl.	***46***	***54***	***8***	***3.62***	***0.75***
				and	***62***	***80***	***18eoh***	***2.80***	***0.63)***
LRC269	5243,978	8,571,150	1,596	80	0	18	18	1.84	0.41
				(incl.	***0***	***4***	***4***	***2.71***	***0.61)***
					32	54	22	1.32	0.32
LRC270	5245,378	8,571,244	1,611	80	0	60	60	3.05	0.62
				(incl.	***0***	***30***	***30***	***3.48***	***0.70***
				and	***32***	***56***	***24***	***2.88***	***0.58)***
					64	80	16eoh	1.88	0.37
				(incl.	***68***	***76***	***8***	***2.46***	***0.51)***
LRC271	524,348	8,571,149	1,598	80	0	14	14	4.09	0.85

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Hole ID	East	North	RL	Hole Depth (m)	From (m)	To (m)	Interval (m)	REO %	NdPr %
				(incl.	***0***	***12***	***12***	***4.53***	***0.94)***
					18	28	10	2.25	0.50
				(incl.	***20***	***24***	***4***	***3.39***	***0.74)***
					34	62	28	1.31	0.30
				(incl.	***44***	***48***	***4***	***2.04***	***0.46)***
					64	74	10	1.59	0.34
LRC272	524,299	8,571,053	1,590	80	0	78	78	3.84	0.77
				(incl.	***0***	***46***	***46***	***4.47***	***0.88***
				and	***50***	***70***	***20***	***3.62***	***0.74***
				and	***74***	***78***	***4***	***1.97***	***0.45)***
LRC273	524,297	8,571,150	1,599	80	0	58	58	2.29	0.52
				(incl.	***0***	***14***	***14***	***3.42***	***0.75***
				and	***18***	***30***	***12***	***1.96***	***0.53***
				and	***36***	***50***	***14***	***2.44***	***0.52)***
					72	76	4	0.99	0.25
LRC275	524,249	8,571,149	1,600	80	0	80	80eoh	2.39	0.53
				(incl.	***0***	***34***	***34***	***3.62***	***0.77)***
LRC276	524,199	8,571,054	1,595	80	0	80	80eoh	3.09	0.61
				(incl.	***0***	***18***	***18***	***6.25***	***1.18***
				and	***30***	***34***	***4***	***2.77***	***0.52***
				and	***38***	***54***	***16***	***2.80***	***0.58***
				and	***68***	***74***	***6***	***2.68***	***0.55)***
LRC282	524,051	8,571,053	1,600	15	0	15	15eoh	3.72	0.73
				(incl.	***0***	***10***	***10***	***4.63***	***0.91)***
LRC283	523,999	8,571,052	1,600	18	0	18	18eoh	4.79	0.95
				(incl.	***0***	***16***	***16***	***5.14***	***1.02)***
LRC284	523,954	8,571,053	1,597	28	0	14	14	3.36	0.72
				(incl.	***0***	***12***	***12***	***3.77***	***0.81)***
LRC285	523,954	8,571,151	1,609	26	0	26	26eoh	2.14	0.53
				(incl.	***0***	***10***	***10***	***3.07***	***0.80)***
LRC286	524,048	8,571,151	1,610	20	***0***	***14***	***14***	***3.38***	***0.82***

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Hole ID	East	North	RL	Hole Depth (m)	From (m)	To (m)	Interval (m)	REO %	NdPr %
LRC287	524,001	8,571,152	1,610	32	0	32	32eoh	2.80	0.65
				(incl.	***0***	***10***	***10***	***4.81***	***1.12***
				and	***14***	***20***	***6***	***2.50***	***0.57***
				and	***24***	***30***	***6***	***2.13***	***0.47)***
LRC288	524,244	8,571,251	1,612	80	0	80	80eoh	2.43	0.51
				(incl.	***0***	***26***	***26***	***3.14***	***0.65***
				and	***40***	***44***	***4***	***2.59***	***0.51***
				and	***48***	***52***	***4***	***3.13***	***0.61***
				and	***54***	***58***	***4***	***2.63***	***0.55***
				and	***68***	***80***	***12eoh***	***2.77***	***0.59)***

*All holes are vertical reverse circulation except for LRC249 to LRC258 along the southern margin of the project, which are angled -60 degrees to the south – see Table 2 for details. REO = Total rare earth oxide includes NdPr and is the sum of La_2O_3, CeO_2, Pr_6O_{11}, Nd_2O_3, Sm_2O_3, Eu_2O_3, Gd_2O_3, Tb_4O_7, Dy_2O_3, Ho_2O_3, Er_2O_3, Tm_2O_3, Yb_2O_3, Lu_2O_3, Y_2O_3. NdPr = neodymium + praseodymium oxide. eoh = intersection to end of hole. Co-ordinate system is WGS84 UTM Zone 33 south, rounded to nearest metre. Assays of 2m composite samples by peroxide fusion and ICP analysis, Nagrom laboratories Perth, Western Australia. Maximum of 2m internal subgrade included.

Table 2: Longonjo NdPr Project, angled RC drill holes collar inclinations and azimuths

Hole ID	Zone	Angle	Azimuth	Hole Depth (m)
LRC249	Southern margin	-60	179	50
LRC250	Southern margin	-60	179	39
LRC251	Southern margin	-60	179	67
LRC252	Southern margin	-60	181	78
LRC253	Southern margin	-60	179	43
LRC254	Southern margin	-60	182	42
LRC255	Southern margin	-60	183	42
LRC256	Southern margin	-60	183	19
LRC257	Southern margin	-60	180	9
LRC258	Southern margin	-59	182	46

Collar angles (from horizontal) and azimuths rounded to nearest degree. Accurate hole angle and azimuths recorded at 5m intervals down hole after completion using a Reflex Ez-Gyro tool.

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APPENDIX

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 (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.*	• All samples are from reverse circulation (RC) drilling sampled to 2m composites using a 3 tier riffle splitter to obtain approximately 4kg of sample from the whole one metre rig sample for sample preparation. Entire down hole lengths were sampled from surface to end of hole.
	• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*	• During RC drilling the drill string is cleaned by flushing with air and the cyclone cleaned regularly. • Sampling is carried out under Pensana QAQC protocols and as per industry best practise. • RC sample returns are closely monitored, managed and recorded. A reference weight is used to calibrate the weighing scale. • Samples are riffle split using a 3 tier splitter which is cleaned between every sample
	• *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 (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	• Reverse circulation drilling and a riffle splitter were used to obtain 2m samples of approximately 3 to 4kgs. Samples are prepared (dry, split, pulverise, split) to a 100g pulp for analysis at Analabs laboratories Windhoek, Namibia • Samples are assayed at for Ca, Fe, K, Mg, Mn, P Pb, S, Si, Sr, Ti, Zn, Ce, Dy, Er, Eu, Gd, Hf, Ho, La, Lu, Nb, Nd, Pr, Sm, Ta, Tb, Th, Tm, U, Y, Yb, Al, Ba by peroxide fusion followed by ICP analysis at Nagrom laboratories, Perth, Western Australia. • All commercial laboratories used use industry best practise procedures and QAQC checks. • Entire hole lengths were submitted for assay.
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type,*	• Reverse circulation (RC) drilling was completed using a Super rock 100 drill rig with a face sampling hammer button bit of 131mm diameter and 5 metre rods. A 131mm diameter blade RC bit was used in most holes in the weathered zone, generally for around 10 metres.

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Criteria	JORC Code explanation	Commentary
	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.*	• RC recoveries were monitored closely, recorded and assessed regularly over the drilling programme. • Every 1m sample from the rig was weighed and recorded for moisture content. The weigh scale was calibrated frequently. • RC sample weights are compared against expected weights for the drill diameter and geology. • Drill pipes and cyclone were flushed and cleaned regularly • Some short intervals 1 to 3 metres of reduced sample recovery occur in the soft weathered zone in some holes. Data analysis to date including diamond hole twins to RC holes, has not identified any relationship between recovery and grade.
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.*	• RC 1m samples were geological logged by specifically trained geologists for the entire length of all holes. All relevant features such as lithology, mineralogy, weathering, structure, texture, grain-size, alteration, veining style and mineralisation were recorded in the geological log. • All logging was quantitative. All RC chip trays were photographed. • All holes were logged in full 100%
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.*	• RC drilling only, no core drilling results reported • 1m rig samples were riffle split using a 3 tier splitter. All samples were dry or wet samples were sun-dried in a protected environment before sampling. • The preparation of samples follows industry practice. This involves oven drying of the full 4kg 2m composite sample, splitting to a representative 1kg sample, pulverising to 85% passing 75 micron and splitting to a 100g sample pulp. • Field duplicates, certified reference standards and blanks were inserted at random but on average every 27 samples for each as part of Pensana QAQC protocols as per industry best practise. Laboratories also have and report internal QAQC checks including assay and preparation duplicates • Field, preparation and assay lab duplicate results indicate no significant sampling variance

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Criteria	JORC Code explanation	Commentary
	• *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• The sample sizes are considered more than adequate for this disseminated style and grainsize of material sampled. Repeatability of assays is good.
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.*	• The analysis was carried out by an accredited independent assay laboratory. • Samples are assayed at for Ca, Fe, K, Mg, Mn, P Pb, S, Si, Sr, Ti, Zn, Ce, Dy, Er, Eu, Gd, Hf, Ho, La, Lu, Nb, Nd, Pr, Sm, Ta, Tb, Th, Tm, U, Y, Yb, Al, Ba by peroxide fusion, hydrochloric leach and followed by ICP analysis at Nagrom laboratories, Perth, Western Australia. • The assay technique is 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.*	• Laboratory data only. No geophysical or portable analysis tools were used to determine assay values stored in the database.
	• *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• Certified reference materials (CRM's) –standards and blanks - were submitted at random with the field samples on an average of 1 of each type every in 27 field samples basis, as well as the laboratory's standard QAQC procedures. • Samples were selected periodically and screened tested to ensure pulps are pulverised to the required specifications. • Analysis of QAQC data results indicates acceptable levels of accuracy and precision
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.*	• Significant intersections have been verified by company management.
	• *The use of twinned holes.*	• No twins completed for the current programme. Twin diamond holes have been completed for previous RC drill programmes with no bias observed.
	• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*	• Field data was logged into an Ocris logging package and uploaded to the main, secure, database in Perth once complete. The data collection package has built in validation settings and look-up codes. All field data and assay data was verified and validated upon receipt. The database is managed by an independent and professional database manager offsite • Data collection and entry procedures are documented and training given to all staff • Scans of original field data sheets are stored digitally and never altered • Digital data entry is checked and validated against original field sheets if not entered directly

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Criteria	JORC Code explanation	Commentary
	• *Discuss any adjustment to assay data.*	• Laboratory assay data for rare earths is received in element form and converted to oxides for the reporting of rare earth results using molecular weight conversion and the oxide states factors: La to La_2O_3 – 1.1728 Ce to CeO_2 – 1.2284 Pr to Pr_6O_{11} – 1.2082 Nd to Nd_2O_3 – 1.1664 Sm to Sm_2O_3 – 1.1596 Eu to Eu_2O_3 – 1.1579 Gd to Gd_2O_3 – 1.1526 Tb to Tb_4O_7 – 1.1762 Dy to Dy_2O_3 – 1.1477 Ho to Ho_2O_3 – 1.1455 Er to Er_2O_3 - 1.1435 Tm to Tm_2O_3 – 1.1421 Yb to Yb_2O_3 – 1.1387 Lu to Lu_2O_3 - 1.1371 Y to Y_2O_3 – 1.2699 • Intersection grades are reported as REO (the sum of the above oxides) and as NdPr (the sum of Nd_2O_3 and Pr_6O_{11}, which is included in the REO grade
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.*	• All drill hole collar locations have been accurately surveyed by a professional surveyor using an RTK DGPS at the end of the programme. • The majority of holes for the programme are vertical, with no down hole survey completed. Ten holes are angled at -60 degrees to the south (LRC249 to LRC2158) and were surveyed at 5m intervals using a down hole gyro tool. The collar set up was checked on every hole by measuring the angle of the mast is vertical using a spirit level clinometer. • The grid system used is WGS84 UTM Zone 33S. All reported coordinates are referenced to this grid. • Topography is modelled using a high precision satellite based topographic survey and surveyed drill collars fitted to the surface. An RTK DGPS survey has been completed on ground control points to ensure accuracy and precision of the satellite DTM survey.
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.*	• Drill hole spacing is 50m x 50m in the northern area and 100m x 50m on the southern margin. Samples are 2m down hole. • Data spacing is considered sufficient to establish geological and grade continuity of this disseminated style of NdPr and REO mineralisation and support Mineral Resource estimation. • 1m RC drill samples were combined in the field after riffle splitting for a final 2m composite sample for submission to laboratory. • Two metre composites are considered adequate for the resource estimation, variography studies

Criteria	JORC Code explanation	Commentary
	• *Whether sample compositing has been applied.*	and potential mining techniques for this style of mineralisation
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.*	• High grade NdPr mineralisation within the central parts of the Longonjo carbonatite occurs as a thick horizontal blanket of disseminated mineralisation within weathered carbonatite averaging 20m or more in thickness and with good lateral continuity. The vertical drilling and 2m sampling is optimum for this style of mineralisation. • Subvertical carbonatite dykes and carbonatite:country rock contacts occur on the margins of the carbonatite body, overprinted by a zone of subhorizontal weathering of variable thickness. This peripheral zone is tested by angled -60^0 drill holes perpendicular to strike, which are considered optimum to intersect both vertical and horizontal orientations to the mineralisation. • No sampling bias is considered to have been introduced by the drilling orientation.
Sample security	• *The measures taken to ensure sample security.*	• Sample security is managed by the Company. After collection in the field the samples are stored at camp in locked sea containers. • A customs officer checks and seals the samples into containers on site before transportation by the Company directly to the preparation laboratory. The preparation laboratory submits the samples to the assay laboratory by international air freight – the samples again being inspected by customs and sealed prior to despatch. • The laboratories audit the samples on arrival and reports any discrepancies back to the Company. No such discrepancies occurred.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• SRK has completed a site visit and conducted a review of the primary and QAQC data as part of the November 2019 Mineral Resource estimation work. The database is compiled by an independent consultant and is considered by the Company to be of sufficient quality to support the results reported. In addition, from time to time, the Company carries out its own internal data audits.

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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.*	• Prospecting License 013/03/09T.P/ANG-M.G.M/2015. Pensana owns an 84% holding in the Project with Ferrangol (10%), an agency of the Angolan government, and other Angolan partners (6%). • The concession is in good standing and no known impediments exist.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Previous workers in the area include Black Fire Minerals and Cityview Corporation Ltd.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Longonjo NdPr deposit occurs within the rare earth enriched Longonjo Carbonatite, a sub circular and subvertical explosive volcanic vent (diatreme) approximately 2.6km x 2.4km in diameter. Primary rocktypes include carbonatite lava and magma, extensive mixed carbonatite - fenite breccia and tuffaceous deposits. Mineralisation is disseminated in style. Particularly high grades occur within the iron rich weathered zone that extends from surface over much of the carbonatite. The higher grades in the regolith are a result of residual enrichment through dissolution of primary carbonate minerals. NdPr rare earth mineralisation also occurs within fresh rock carbonatite and carbonatite:fenite breccia beneath the weathered zone and associated with subvertical carbonatite ring dykes on the carbonatite margins.
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*	• Refer to the Tables 1 and 2 in the body of the text. The majority of holes reported in the current announcement are vertical. Ten holes (LRC249 to LRC258) are angled -60^0 to the south.

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Criteria	JORC Code explanation	Commentary
	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 material information was excluded.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.* • *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.*	• Cut-off grade of 0.20% NdPr oxide applied in reporting of intersections and 0.40% NdPr oxide for high grade 'Highlights'. No upper grade cuts have been applied. • Intersections are reported as length weighted averages above the specified cut-off grade. Length weighted grade averages for REO and NdPr are presented • Intercepts may include a maximum of 2m internal dilution. • No metal equivalent values have been used for the reporting of these exploration results.
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*	• Geometry of the mineralisation is a sub horizontal blanket, the drill holes are vertical. As such mineralisation is at a high angle to the drill holes. • Drill hole intercepts reported can be considered true thicknesses in the centre of the carbonatite • Subvertical mineralised carbonatite dykes on the

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Criteria	JORC Code explanation	Commentary
	lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	margins of the carbonatite are overprinted with a horizontal weathering profile of variable depth and true widths are variable in relation to down hole length.
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.*	• Appropriate plans and sections are included in this release.
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 exploration results above the specified cut off grade are reported.
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.*	• Previously reported evaluations of the NdPr mineralisation at Longonjo, including the November 2019 Mineral Resource estimate and drilling programme results are contained within ASX releases
Further work	• *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).*	• The reported results are the fourth batch from 34 of a total 195 hole infill and extension RC drilling programme testing the shallow weathered zone and an area of underlying fresh rock mineralisation at Longonjo. Remaining results from a further 86 drill holes are awaited. Drilling is designed to provide data for a revised Mineral Resource estimate and to upgrade a significant portion of the large amount of Inferred weathered zone Mineral Resource at Longonjo

Criteria	JORC Code explanation	Commentary
		to Indicated or Measured category, thereby enabling the current 9 year mine life as defined in the November 2019 Preliminary Feasibility Study to be extended. The revised Mineral Resource estimate will form part of the Bankable Feasibility Study for Longonjo.
	• *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Appropriate diagrams accompany this release.

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