INITIAL METALLURGICAL WORK CONFIRMS COLOSSUS AS A TRUE IONIC ADSORPTION CLAY PROJECT

ASX Release: 29 August 2023

Highlights

- **All Saprolite surface grab samples have returned Ionic Mineralisation with single-step Ammonium Sulfate [$(NH_4)_2SO_4$)] wash of pH4 at room temperature** from Colossus Ionic Adsorption Clay (**"IAC"**) Rare Earth Project.

- **Exceptional MREO recovery rates through Ammonium Sulfate leaching, averaging:**
  - 46% for Neodymium (Nd) (n = 3, SD = 0.05)
  - 40% for Praseodymium (Pr) (n = 3, SD = 0.05)
  - 38% for Dysprosium (Dy) (n = 3, SD = 0.21)
  - 35% for Terbium (Tb) (n = 3, SD = 0.17)

- **Sample PC-10 at Colossus Project returned 2,753ppm Total Rare Earths Oxide ("TREO") (27% MREO) with 48% recovery for Neodymium and 45% for Praseodymium using Ammonium Sulfate. Recovered Neodymium grades on this sample exceeded the 200ppm detection limit for the assay method, meaning actual recoveries are higher than the results presented. This is the highest grade recorded to date on the Colossus Project.**

- **These results exemplify a proper single-step recovery process**, with whole-rock saprolite clays sampled from outcrop and recovered with an Ammonium Sulfate wash.

- **The SGS GEOSOL lab REE leach test used a diluted solution with 0.5Mol/L Ammonium Sulfate [$(NH_4)_2SO_4$)] at room temperature and pH 4 for 30 minutes**; this unequivocally confirmed the ionic nature of our Rare Earth Elements ("REEs") clay deposit. This breakthrough firmly places Colossus at the forefront of Tier-1 Ionic Adsorption Clay initiatives.

- The initial sampling results indicates that **Rare Earth mineralisation is not limited to historic Auger holes but ionic, homogenous, and widespread across the concessions**.

- Recent results highlight the **ionic nature of the saprolite in the Colossus Project, beginning at the surface with high REE content.** Typically, oxidised saprolite surfaces have lower Rare Earth grades, where REE ions tend to leach downward to be more heavily absorbed onto the intermediate weathered layers[1]. Given these promising findings, the company is **launching a comprehensive drilling and metallurgical program** to target even higher grade zones and optimise recovery ratios.

Map of Sampling Locations on Colossus Project

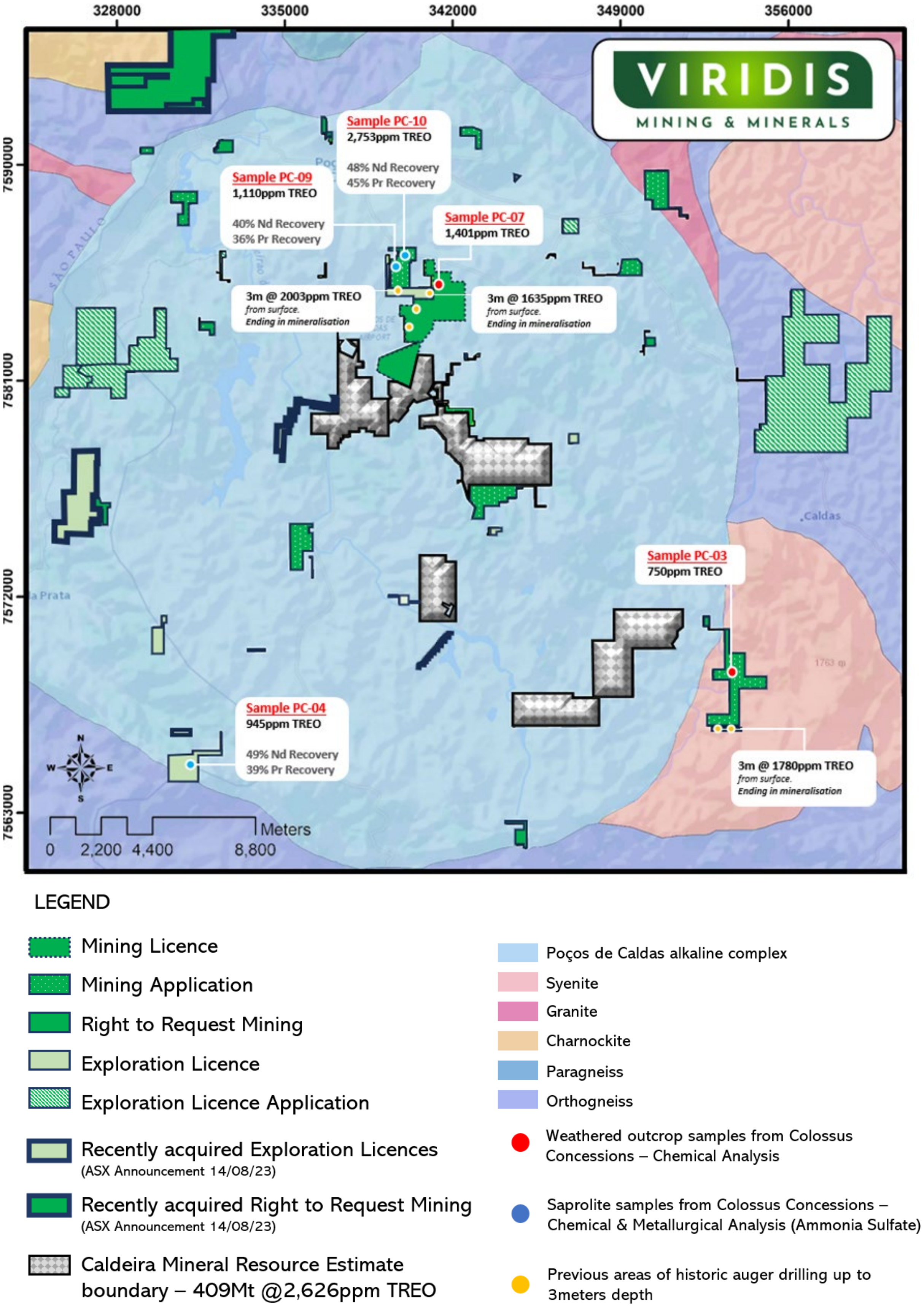

Figure 1: *Map of all sample locations on Colossus concessions with highlights of areas previously drilled by 3-metre Auger holes that have all ended in mineralisation*[2]*.*

Executive Chairman Agha Shahzad Pervez commented:

"These results truly exemplify the Tier-1 potential of the Colossus Ionic Rare Earth Project. It confirms to Viridis that the Rare Earth mineralisation hosted within clay saprolites is wide-scale across concessions, ionic and homogenous.

It was the true definition of single-step processing, with whole-rock saprolite surface samples sent straight to recover Rare Earths at room temperature over 30 minutes with a weak salt solution (0.5mol/l) at pH 4.

These sample results put us amongst very few projects globally which are genuinely Ionic, where the Rare Earths are not colloidally bonded to the clay but rather ionically adsorbed, requiring a weak salt solution at room temperature to precipitate them into a high-value concentrate. This completely relinquishes the need for a high OPEX and CAPEX operation with complex and expensive hydrometallurgical plants, confirming the Colossus project as a low environmental impact project. This results in less time for necessary licencing and enhances the community support for the mine operation.

Ionic Clay deposits use simple ion-exchange metallurgy to recover Rare Earths, due to the chemical weathering of the source rock over the millions of years which have liberated the Rare Earths Elements into their ion form to be weakly attached to clays.

The Viridis team is very excited to commence drilling soon, allowing us to test the more profound and less weathered 'REE accumulation zone' where the Rare Earth ions tend to leach downwards; where we expect to be able to see the real potential of the ionic mineralisation and get samples for the fully optimised metallurgical tests.

The Company intends to commence a large-scale drill program combined with widespread metallurgical testing to boost further confidence of Colossus being a world-class project".

Viridis Mining and Minerals Limited ("Viridis" or "Company") is pleased to report the results it has received from preliminary grab samples from its Colossus Ionic Clay Project. These results have been accepted as part of a broad sampling analysis within the Poços De Caldas Alkaline Complex.

As part of the Company's due diligence, Viridis collected samples from the total of 5 locations within Colossus Concessions, for Chemical Analysis, of which three saprolite samples were taken for Ammonium Sulfate leaching and assaying.

The samples were taken from outcrops at locations which had no previous drilling[2] or exploration during a site visit to the Colossus Project. Results from the Colossus concessions have confirmed to Viridis that the project hosts Ionically Adsorbed Clay and shares the same geological features as neighbouring deposits.

Sample Results

Sample Preparation

Samples were collected by hand from outcrops of saprolitic/soily clays. Samples were placed directly into plastic bags and sent to SGS GEOSOL. The preparation for the chemical analysis and metallurgical testing is described in Appendix A.

Colossus Project – Chemical Analysis Results (ppm)

REO	PC-03	PC-04	PC-07	PC-09	PC-10	
La_2O_3	129	205	411	276	1,025	
CeO_2	307	307	712	461	767	
Nd_2O_3	154	186	102	152	483	
Pr_6O_{11}	39	51	43	50	169	
Sm_2O_3	27	31	12	22	55	
Eu_2O_3	7	8	4	6	14	
Gd_2O_3	20	24	10	17	38	
Tb_4O_7	2	3	2	17	5	
Dy_2O_3	10	18	12	13	24	
Ho_2O_3	2	3	2	2	4	
Er_2O_3	4	9	7	7	11	
Tm_2O_3	0	1	1	1	1	
Yb_2O_3	3	8	7	6	9	
Lu_2O_3	0	1	1	1	1	
Y_2O_3	47	90	74	79	145	
Th	3	12	59	32	32	
U	0	2	13	13	7	**AVERAGE**
TREO	**750**	**945**	**1,401**	**1,110**	**2,753**	**1,392**
MREO %	**31%**	**31%**	**12%**	**23%**	**27%**	**25%**

Table 1: Assay results (ppm) from sampled saprolitic clays and bauxite outcrops within the Colossus Concessions.

The average grade of randomised grab samples from outcrops showed exceptional results, averaging 1,392ppm TREO (n = 5, SD = 0.076). All these samples were taken from areas within the Colossus project, which had not been historically tested by shallow 3-meter Auger drills. This confirms to the Company that the project is not just limited to historic shallow drilling; rather mineralisation is widespread across the complex.

Sample PC-03 was taken about 2.4km North of the historic F2 hole – which intersected 3m @1,780ppm TREO (from the surface ending in mineralisation)[2]. In contrast, sample PC-10, which returned 2,753ppm, was taken from a previously untested saprolite hill with approximate dimensions of 880m in length and 400m wide. Sample PC-10 is approximately 1.3km North of the historic TN-AG-22 hole – which intersected 3m @2,003ppm TREO (from the surface ending in mineralisation)[2].

The upper layer in this region consists of soils, clayey saprolite and bauxite, where the random grab samples were taken from.

In IAC deposits, three distinct layers are identified. The topmost layer, being the most weathered, is clay-rich and typically has high aluminium content due to bauxitization. The intermediate layer, less weathered than the top, acts as an "accumulation zone" where REEs leached from the upper layer ionically bond to clay minerals, predominantly kaolinite. The least weathered bottom layer generally lacks significant ionic REE concentrations and pronounced clay minerals[3].

The results are pleasing as they were taken from the outcrops. If the saprolite profile on those areas is completely preserved, they may show an increase in the grade values upon drilling into the “REE accumulation zone” across the Colossus Project.

Colossus Project – Metallurgical Results

Saprolite samples were tested with Ammonium Sulfate as the ion exchange medium. Upon arrival at the lab, SGS GEOSOL put aside a 40g aliquot for leaching tests. These were diluted with a weak 0.5mol/L Ammonium Sulfate [$(NH_4)_2SO_4$)] at pH4 in room temperature conditions for 30 minutes.

REO	PC-04	PC-09	PC-10	AVERAGE
La_2O_3	27%	44%	61%	44%
CeO_2	3%	5%	1%	3%
Nd_2O_3	49%	40%	48%	46%
Pr_6O_{11}	39%	36%	45%	40%
Sm_2O_3	52%	31%	43%	42%
Eu_2O_3	43%	25%	38%	35%
Gd_2O_3	57%	28%	47%	44%
Tb_4O_7	53%	19%	34%	35%
Dy_2O_3	59%	19%	35%	38%
Ho_2O_3	59%	17%	32%	36%
Er_2O_3	59%	15%	28%	34%
Tm_2O_3	60%	15%	23%	33%
Yb_2O_3	54%	12%	18%	28%
Lu_2O_3	52%	13%	16%	27%
Y_2O_3	70%	22%	43%	45%

Table 2: Metallurgical recoveries from a weak Ammonium Sulfate salt solution leach with pH4 at room temperature. With higher value (> US $30/kg per oxide price), Rare Earth Oxides are highlighted.

These non-optimised results are outstanding, given that samples can be picked immediately off the ground and washed with a weak Ammonium Sulfate salt solution to liberate Rare Earths from the saprolite.

Sample PC-04 has already shown substantial recoveries of heavy rare earth elements such as Gd, Tb, Dy, Ho, and Er through a one-step leach process. Furthermore, the selective minimal ionic recoveries of low-value Cerium Oxide will allow the final residue to obtain a higher basket value through heavy and magnet rare earth concentration.

Although these results on their own accord are impressive, they still leave the Company significant scope to optimise the recoveries during our maiden exploration program.

Figure 2: *Image of Sample PC-07, which returned 1,401ppm TREO, consisting of oxidised bauxitic clays.*

Figure 3: *Image of Sample PC-10, which returned 2,753ppm TREO, consisting of saprolitic ionic clay. This sample returned 48% recovery for Nd (maxing out the 200ppm detection limit), 45% for Pr, 34% for Tb and 35% for Dy using pH4 Ammonium Sulfate at room temperature over a 30-minute leach.*

Geology of Ionic Clays

In the Poços de Caldas Complex, we find the optimal conditions for an IAC-type REE deposits. Its alkaline rocks, rich in feldspars, weather mainly into kaolinite. Simultaneously, these rocks contain bastnaesite, a rare earth fluocarbonate. Upon weathering, bastnaesite releases REEs, which ionically bond with the existing clay minerals, further upgrading the region's mineral profile[3].

The upper layer in this region consists of clayey soil and bauxite. Through lateralisation, some of the upper layer's rare earths are mobilised to the intermediate horizon, where kaolinite is the main clay mineral, retaining the REEs in ionic form adsorbed onto its structure[3,5].

Within IAC deposits, the top layer presents the lowest levels of REE mineralisation, as illustrated in the deposition model of both Malaysian and South China Ionic Clay Projects (see Figure 4 and Figure 5).

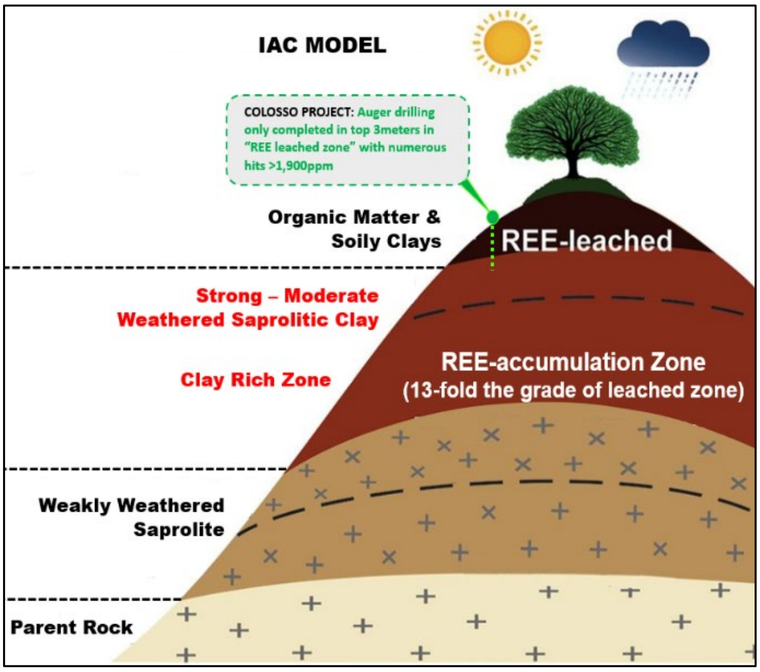

Figure 4: Deposition Model of Malaysian Ionic Clay Project with superposition of Colossus Project Auger Drill depths[4].

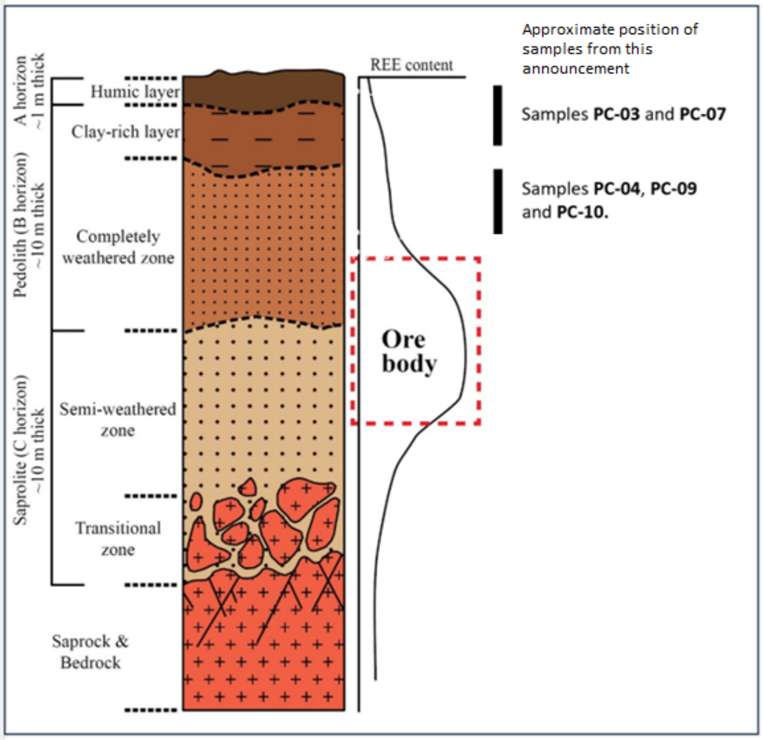

Figure 5: General IAC Deposition Model (Li and Zhou, 2020) with an estimated placement of the Colossus Project samples based on their visual and chemical characteristics.

Future Work

Viridis is compiling all available geological information and has commenced drill planning for the Colossus Project *(see ASX announcement 01 August 2023).* The Company intends to initiate a comprehensive exploration program at Colossus, including mapping, sampling, metallurgical studies, and exploration drilling to establish a significant maiden JORC-compliant resource.

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About Viridis Mining and Minerals

Viridis Mining and Minerals Limited is a resource exploration and development company with assets in Brazil, Canada and Australia. The Company's Projects comprise:

- The Colossus Project, which the Company considers to be prospective for Rare Earth Elements;
- The South Kitikmeot Project, which the Company considers to be prospective for gold;
- The Boddington West Project, which the Company considers to be prospective for gold;
- The Bindoon Project, which the Company considers to be prospective for nickel, copper and platinum group elements; and
- The Poochera and Smoky Projects, which the Company considers to be prospective for kaolin-halloysite; and
- The Ytterby and Star Lake Projects, which the Company considers prospective for Rare Earth Elements.

Competent Person Statement

Dr. José Marques Braga Júnior PhD., a consulting geologist, compiled and evaluated the technical information in this release and is a member of the Australian Institute of Geoscientists (AIG) (MAusIMM: 336416), accepted to report in accordance with ASX Listing Rules. Dr Braga has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity that he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the 'Australian Code for Reporting of Regulation, Exploration Results, Mineral Resources, and Ore Reserves. Dr Braga consents to the inclusion in the report of the matters based on information in the form and context in which it appears.

All announcements referred to throughout can be found on the Company's website – viridismining.com.au.

Forward-Looking Statements

This announcement contains 'forward-looking information' based on the Company's expectations, estimates and projections as of the date the statements were made. This forward-looking information includes, among other things, statements concerning the Company's business strategy, plans, development, objectives, performance, outlook, growth, cash flow, projections, targets and expectations, mineral reserves and resources, results of exploration and related expenses. Generally, this forward-looking information can be identified by the use of forward-looking terminology such as 'outlook', 'anticipate', 'project', 'target', 'potential', 'likely', 'believe', 'estimate', 'expect', 'intend', 'may', 'would', 'could', 'should', 'scheduled', 'will', 'plan', 'forecast', 'evolve' and similar expressions. Persons reading this announcement are cautioned that such statements are only predictions and that the Company's results or performance may differ materially. Forward-looking information is subject to known and unknown risks, uncertainties, and other factors that may cause the Company's actual results, level of activity, performance or achievements to materially differ from those expressed or implied by such forward-looking information.

References

1. *Review on the Development and Utilization of Ionic Rare Earth Ore, X. Luo, Y. Zhang, H. Zhou et al., 2022*
2. *ASX: VMM Announcement Dated 01st August 2023*
3. *Polygenetic processes in the genesis of clay deposit of Poços de Caldas alkaline massif in southeastern Brazil, C. Montes, A. Melfi, A. Carvalho, A. Viera-Coelho, Journal of Applied Clay Science, 2016*
4. *Comparison of characteristics and geochemical behaviors of REE's in two weathered granitic profiles generated from metamictized bedrocks in Western Peninsular Malaysia, A. Yaraghi, K. Ariffin, N. Baharun, Journal of Asian Earth Sciences, 2020.*
5. *Adsorption of rare earth elements in regolith-hosted clay deposits, A. Borst, M. Smith et al., 2020*

Appendix A: JORC Code, 2012 Table 1

Section 1 Sampling Techniques and Data

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.* • *Include reference to measures taken to ensure sample retrospectivity 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 (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.*	• *Nature of Sampling: Soil samples were collected from outcrops, road cuttings, and the ground floor.* • *Method of Collection: A mattock was used to collect the samples. The sampling tools was cleaned between each sample to prevent contamination.* • *Sample Preparation: The surface layer was carefully removed to exclude roots, leaves, and organic material that could compromise the sample's integrity. This ensures that the samples represent the underlying soil and are not influenced by recent surface contamination or organic matter.* • *Sample Weight: The samples' weight varied from 600g to 1950g.* • *Packaging & Labeling: Once collected, the samples were placed into plastic bags, sealed to prevent contamination, and labelled with the prefix 'pc' followed by a unique identification number for traceability.*
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, whether core is oriented and if so, by what method, etc).*	• *No drilling was conducted for the collection of the samples. Samples were collected from outcrops, road cuttings, and the ground floor using a mattock. Refer to the "Sampling Techniques" section for detailed information on the sample collection methodology.*
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures are 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 was conducted in the sample collection process. As such, traditional drill sample recovery is not applicable. Samples were collected using a mattock from outcrops, road cuttings, and the ground floor. The methodology ensured the collection of intact and representative samples from each location. For detailed information on the sample collection method, refer to the "Sampling Techniques" section.*
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.*	• *Nature of Logging: Geological logging was performed by the service provider for all collected samples.* • *Logging Details: The samples were described based on visual characteristics, which included:* • *Material Type: Distinguishing between soil, colluvium, saprolite, and rock fragments.* • *Color: Recording the observed colour of the sample.* • *Predominant Particle Size: Estimating and noting the dominant particle size present.*

		• *Moisture Presence: Indicating whether the sample was dry or contained noticeable moisture.* • *Indicator Minerals: Identifying any minerals that could indicate mineralization or other geological features of interest.* • *Additional Observations: Any other relevant observations were recorded during the logging process.* • *Extent of Logging: Every sample was logged in total, ensuring comprehensive documentation of each sample's characteristics.* • *Comments on Logging: The geological logging provided a systematic and detailed visual assessment of the samples, which is expected to aid in interpreting the sampled area's geological context.*
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.*	• *Sample Preparation Facility: Allsamples were prepared at the SGS-GEOSOL laboratory.* • *General Sample Preparation: The samples underwent standard industry practices for physical preparation at the SGS-GEOSOL laboratory. The specific preparation services contracted included:* • *Homogenization: The samples were thoroughly mixed to ensure a uniform distribution of particles.* • *Separation: An aliquot of 150g was separated for ammonium sulfate leaching tests.* • *Chemical Analysis Preparation:* • *Drying: The samples were dried at a temperature of 105°C.* • *Sub-sampling: A Jones splitter was used to take a sub-sample of approximately 250g.* • *Pulverization: The sub-sample of 250g was pulverized in a steel mill to achieve a granularity where 95% of the particles were finer than 150 mesh.* • *Leaching Test Preparation:* • *Initial State: The samples for the leaching test were neither dried, crushed, nor pulverised.* • *Disaggregation and Sieving: The sample underwent disaggregation and sieving processes if clumps were present. Post these processes, the aliquot with particle sizes <4mm was selected for analysis.* • *Comments on Sub-sampling and Preparation: The sub-sampling techniques and preparation methodologies adhere to industry best practices, aiming to ensure the samples are representative and results from subsequent analyses are reliable.*
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 (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	*Laboratory: All assay tests were conducted by the SGS-GEOSOL laboratory in Brazil.* *Assay Techniques:* *a. XRF76R_Full: X-ray Fluorescence (XRF) with lithium tetraborate fusion was utilised to analyze a broad spectrum of Rare Earths and Major Oxides. Some elements and their detection limits include:* Al_2O_3 0.1 - 100 (%) BaO 0.01 - 65 (%) Cr_2O_3 0.01 - 50 (%) Dy_2O_3 0.01 (%) Gd_2O_3 0.01 (%) K_2O 0.01 - 18 (%) MnO 0.01 - 75 (%) Na_2O 0.1 - 12 (%) NiO 0.01 - 8 (%) P_2O_5 0.01 - 45 (%) SiO_2 0.1 - 99 (%) Sm_2O_3 0.01 (%)

Ta_2O_5	0.05 - 5 (%)	ThO_2	0.01 (%)
V_2O_5	0.01 - 5 (%)	WO_3	0.01 - 5 (%)
ZnO	0.01 - 87 (%)	ZrO_2	0.01 - 70 (%)
CaO	0.01 - 70 (%)	CeO_2	0.01 (%)
Er_2O_3	0.01 (%)	Fe_2O_3	0.01 - 103 (%)
La_2O_3	0.01 (%)	MgO	0.1 - 100 (%)
Nb_2O_5	0.05 - 70 (%)	Nd_2O_3	0.01 (%)
PbO	0.01 - 11 (%)	Pr_6O_{11}	0.01 (%)
SnO_2	0.01 - 5 (%)	SrO	0.01 - 1.2 (%)
TiO_2	0.01 - 100 (%)	U_3O_8	0.01 (%)
Y_2O_3	0.01 (%)	Yb_2O_3	0.01 (%)

b. PHY01E: Loss on Ignition (LOI) was determined by calcining the sample at 1000°C.

c. IMS95R: Lithium Metaborate Fusion followed by Inductively Coupled Plasma Mass Spectrometry (ICP MS) was employed to determine concentrations of Rare Earth elements. Detection limits for some elements include:

Ce	0.1 - 10000 (ppm)	Dy	0.05 - 1000 (ppm)
Gd	0.05 - 1000 (ppm)	Ho	0.05 - 1000 (ppm)
Nd	0.1 - 10000 (ppm)	Pr	0.05 - 1000 (ppm)
Th	0.1 - 10000 (ppm)	Tm	0.05 - 1000 (ppm)
Yb	0.1 - 1000 (ppm)	Eu	0.05 - 1000 (ppm)
Er	0.05 - 1000 (ppm)	Lu	0.05 - 1000 (ppm)
La	0.1 - 10000 (ppm)	Tb	0.05 - 1000 (ppm)
Sm	0.1 - 1000 (ppm)	Y	0.05 - 10000 (ppm)
U	0.05 - 10000 (ppm)		

d. ICM694: Ammonium Sulfate Leaching followed by ICPOES/ICPMS analysis.

The sample was subjected to leaching at room temperature with 160 ml of a 0.5 mol/L ammonium sulfate solution for 30 minutes.

Post-leaching, the pulp was filtered using a vacuum pump, and the residue was rinsed with 80 ml of a 0.1% ammonium sulfate solution.

An aliquot of the solution was then taken and diluted 25 times with 2% HNO3.

Analytical Method:

The diluted solution from the above process was analysed using Inductively Coupled Plasma Mass Spectrometry (ICP-MS). Elements and their respective detection limits include:

Element	Inferior (ppm)	Superior (ppm	Element	Inferior (ppm)	Superior (ppm
Ag	0.12	800	Na	20	8000
Al	2	8000	Nb	0.2	200
As	0.4	800	Nd	2.4	200
B	40	800	Ni	0.2	800
Ba	20	800	P	4	8000
Be	0.4	800	Pb	0.32	800
Bi	0.8	800	Pr	0.06	200
Ca	10	8000	Rb	0.8	200
Cd	0.12	800	Re	0.4	200
Ce	0.2	200	Sb	0.4	200

Co	0.2	800	Sc	0.24	800
Cr	1	800	Se	4	200
Cs	0.2	200	Si	150	8000
Cu	0.04	800	Sm	0.04	200
Dy	0.028	200	Sn	1.2	200
Er	0.02	200	Sr	0.16	800
Eu	0.02	200	Ta	0.2	200
Fe	2	8000	Tb	0.08	200
Ga	0.4	200	Te	0.2	200
Ge	0.4	200	Th	0.2	200
Hf	0.2	200	Ti	5	8000
Hg	0.4	25	Tl	0.08	200
Ho	0.016	200	Tm	0.012	200
In	0.08	200	U	0.04	200
K	20	8000	V	2	800
La	1	800	W	1	800
Li	0.4	800	Y	0.2	800
Lu	0.04	200	Yb	0.4	200
Mg	2	8000	Zn	0.5	800
Mn	0.4	8000	Zr	0.2	800
Mo	0.2	200			

Quality Control: The laboratory follows strict quality control procedures, ensuring the accuracy and precision of the assay data. Internally, the laboratory uses duplicate assays, standards, and blanks to maintain quality.

Comments on Assay Data and Tests: The assay techniques employed are well-suited for the elements and minerals of interest. The methods utilised, combined with the reputable quality control practices of the SGS-GEOSOL laboratory, ensure the reliability of the assay data.

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, and data storage (physical and electronic) protocols.* - *Discuss any adjustment to assay data.*	- *Duplicate Sampling: During the fieldwork, 7 duplicate samples were collected to ensure consistency in the sampling process. This provides an initial quality assurance and quality control level by identifying significant variability between sample pairs.* - *Recording and Data Transfer: All sampling data were diligently recorded in field books during sampling.* - *Upon returning from the field, the data from these field books were digitised and cross-checked to ensure the integrity and accuracy of the data recorded. The verified data was then systematically transferred to the primary database, ensuring no discrepancies or data loss occurred during this transition.* - *Laboratory Quality Control: Of the 21 samples sent to the SGS-GEOSOL laboratory for analysis:* - *Two samples were analysed in duplicate.* - *One sample was analysed in triplicate.* - *One blank sample was introduced into the batch for quality control.* - *Additionally, two standard reference samples were included in the batch.* - *Quality Control Results: The results from the control samples (duplicates, triplicates, blanks, and standards) all returned values within expected ranges. This confirms the precision of the assay results and further validates the sampling and assaying processes.* - *Adjustments to the data were made- transforming the elemental values into the oxide values. The conversion factors used are included in the table below.*

Element	Oxide	Factor

		Ce CeO_2 1.2284 La La_2O_3 1.1728 Sm Sm_2O_3 1.1596 Nd Nd_2O_3 1.1664 Pr Pr_6O_{11} 1.2082 Dy Dy_2O_3 1.1477 Eu Eu_2O_3 1.1579 Y Y_2O_3 1.2699 Tb Tb_4O_7 1.1762 Gd Gd_2O_3 1.1526 Ho Ho_2O_3 1.1455 Er Er_2O_3 1.1435 Tm Tm_2O_3 1.1421 Yb Yb_2O_3 1.1387 Lu Lu_2O_3 1.1371 • *Comments: The verification steps taken both in the field and laboratory provide robust confidence in the quality and reliability of this project's sampling and assaying processes. The introduction and subsequent positive results from the quality control samples, combined with the meticulous data recording and transfer procedures, ensure the integrity of the assay data.*
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• *GPS Instrumentation: The coordinates for sampling points were accurately acquired using a handheld GPS device.* • *The GPS device used was the GPS WayPoints.* • *Coordinate System and Datum: The UTM coordinate system provided all recorded coordinates (Latitude and Longitude).* • *The datum used for georeferencing was the SIRGAS 2000.* • *The coordinates correspond to the spindle (or zone) 23S of the UTM system.* • *Accuracy: The handheld GPS device has a reported maximum positional error of 3.7 meters.* • *Data Integrity: No adjustments were made to the coordinates after collection.* • *The raw data from the GPS was directly transferred and maintained in its original form to ensure data integrity and to avoid potential inaccuracies from post-processing adjustments.* • *Comments: The methods for collecting the spatial data align with industry best practices. Using a reliable GPS device and keeping the data in its raw form post-collection ensures that the location of each sample point is as accurate as possible, given the tools used.*
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution are 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.*	• *Sampling Approach: The sampling was conducted opportunistically, targeting locations with prominent outcrops of saprolite with ionic clay or bauxite.* • *Due to the nature of these geological features and the purpose of the sampling, a systematic grid-based approach was not adopted.* • *Data Spacing: Given the opportunistic approach, the data spacing varied based on the presence and distribution of suitable outcrops.* • *No fixed intervals were established as sampling was driven by geological features rather than a predetermined grid.* • *Distribution: Samples were collected from areas where the geological formations, namely saprolite with ionic clay or bauxite, were observed at the surface.* • *The distribution of samples, therefore, closely follows the distribution of these specific geological features on the field.* • *This methodology is particularly apt for preliminary exploration*

		stages where understanding the geology is more critical than establishing resource quantities. • *Comments: While the sampling was non-systematic, the opportunistic approach was deemed appropriate given the geological context and the exploration phase.*
Orientation of data about 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 crucial mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• *The samples collected are point samples and do not have a specific orientation concerning the geological structure. As such, they do not impart any bias in the data concerning the direction of geological features or structures. The nature of the sampling is primarily designed to provide a representative geochemical snapshot of the area rather than determine structural orientations.*
Sample security	• *The measures taken to ensure sample security.*	• *All samples were collected by field personnel and carefully packed in labelled plastic bags. Once packaged, the samples were transported directly to the SGS-GEOSOL laboratory in Brazil. The samples were secured during transportation to ensure no tampering, contamination, or loss. Chain of custody was maintained from the field to the laboratory, with proper documentation accompanying each batch of samples to ensure transparency and traceability of the entire sampling process. Using a reputable laboratory further reinforces the sample security and integrity of the assay results.*
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• *As of the current reporting date, no external audits or reviews have been conducted on the sampling techniques, assay data, or results obtained from this work. However, internal processes and checks were carried out consistently to ensure the quality and reliability of the data.*

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.*	• *All samples were acquired from tenements owned by Viridis Mining and Minerals LTD, following an agreement with the Varginha Parties. Specifically:* • *Samples pc-09 and pc-10 were sourced from tenement 830113/2006, which is currently in the "Mining request" phase.* • *Sample pc-04 was obtained from tenement 830519/2022, presently in the "Exploration Licence" phase.* • *Sample pc-03 was taken from tenement 834738/1995, now in the " Mining request " stage.* • *Sample pc-07 was derived from tenement 9031/1966 in the "Mining Concession" phase.* • *All related activities complied with the terms and conditions stipulated in the agreement and relevant legal frameworks.*
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• *Historical exploration in the area comprises notable endeavours by various entities:* • *The Colossus project is geologically intertwined with the Caldeira Project, sharing the same geological context.* • *Varginha Mineração previously undertook regional drilling exercises, utilising a powered auger drill rig to produce open holes.*

Criteria	JORC Code explanation	Commentary
		- *This historical data provides essential context and complements current exploration efforts in understanding the region's geological potential.*
Geology	- *Deposit type, geological setting and style of mineralisation.*	- *The geology of the region where the deposit is located can be summarised as follows:* - *Deposit Nature: The deposit under study is recognised as an Ionic Adsorption Clay Rare Earth Element (REE) deposit. Its spatial positioning is within and adjacent to the renowned Poços De Caldas Alkaline massif complex.* - *Poços de Caldas Complex: This geological entity stands as one of the most extensive alkaline massif intrusions globally, enveloping an area of roughly 800 km². It stretches across the Brazilian states of São Paulo and Minas Gerais. From a macro perspective, it portrays a near-circular structure with an approximate diameter of 30 km. This formation has a semblance of a collapsed caldera. Delving deeper, the dominant rocks within the alkaline complex encompass phonolite, nepheline syenites, sodalite syenites, and many volcanic rocks. This diverse geological setting has played a crucial role in dictating mineral occurrences and potential mining prospects.* - *REE Mineralisation: The specific REE mineralisation highlighted in this disclosure leans towards the Ionic Clay type. Evidence pointing to this is mainly derived from its occurrence within the saprolite/clay zone of the weathering profile of the Alkaline granite basement. The enriched MREO (Medium Rare Earth Oxides) composition also attests to this classification.* - *Relevant Additional Information: The Ionic Adsorption Clay Rare Earth Element deposits, particularly in regions like Poços de Caldas, have recently gained significant attention due to the global demand surge for rare earth elements. These elements, especially the heavy rare earths, have vital applications in modern technologies such as renewable energy systems, electronics, and defence apparatus. The ability of these deposits to offer relatively environmentally friendly mining prospects compared to traditional hard rock REE mines further enhances their appeal.* - *Given the strategic importance of REEs in modern industries, a thorough understanding and exploration of such geologies becomes paramount. The unique geological setting of the Poços de Caldas complex presents both opportunities and challenges, making further detailed study and research essential for sustainable exploitation.*

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*
		- *Viridis Mining and Minerals LTD have conducted no new drilling. However, prior auger drilling in the acquired areas is detailed in the JORC table from Viridis's announcement dated 01/08/2023. Current exploration data is based on surface analyses and geologic mapping.*

Criteria	JORC Code explanation	Commentary
	not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	
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.*	• *Data collected for this project includes surface geochemical analyses, geological mapping, and prior auger drilling results. Data points were compiled without selective exclusion. All analytical methods and aggregation were done according to industry best practices, as detailed in previous discussions.*
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 (e.g. 'down hole length, true width not known').*	• *Given the nature of the data, the samples collected are point samples and don't provide a direct measurement of mineralisation widths or intercept lengths. The samples pc-09, pc-04, and pc-10, sourced from saprolite with ionic clay, and pc-03 and pc-07, sourced from aluminium ore (bauxite), offer insights into the mineralogical composition but not directly into widths or continuity of mineralisation.*
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.*	• *Included in the announcement are detailed diagrams elucidating the data:* • *A Geological Map highlights the Colossus Project's licenses and their proximity to the Caldeira Deposit (refer to Viridis announcement, 14th August 2023).* • *Table 1: Assay results from Colossus Concessions' saprolitic clays and bauxite.* • *Table 2: Metallurgical recoveries using a weak Ammonium Sulfate leach at pH4, highlighting Rare Earth Oxides over US $30/kg.* • *Figure 2: Image of Sample PC-07 with 1,401ppm TREO from oxidised bauxitic clays.* • *Figure 3: Sample PC-10 image showing 2,753ppm TREO; recoveries include 48% Nd, 45% Pr, 34% Tb, and 35% Dy in pH4 Ammonium Sulfate conditions.* • *Figure 4: Malaysian Ionic Clay Project's deposition model with Colossus Project drill depths.* • *Figure 5: AIC Deposition Model (Li and Zhou, 2020) indicating estimated Colossus sample placements.*
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 data presented in this report strives to provide a transparent and holistic view of the exploration activities and findings. All the information, ranging from sampling techniques, geological context, prior exploration work, and assay results, has been reported comprehensively. Cross-references to previous announcements have been provided where relevant to ensure continuity and clarity. Including diagrams, such as geological maps and tables, supports a more in-depth understanding of the data. It's noteworthy to mention that while positive results have been highlighted, the nature of the samples, particularly their origin from either saprolitic clays or bauxite, has been distinctly reported to ensure a balanced view. In essence, this report is a faithful representation of the exploration activities and findings without any undue bias or omission.*

Criteria	JORC Code explanation	Commentary
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.*	- *There is no additional substantive exploration data to report currently.*
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).* - *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	- *Future works include conducting an auger campaign in 2023, geological mapping, geochemical and metallurgical tests, and mineralogical characterisation.*