20 September 2022

Auger Drilling at the Western Areas of Cape Flattery Project Intersects High Purity Silica Sand

Highlights

- Assay results for sixteen of the 25-hole hand auger program intersected zones of very high purity silica sand grading over 99.0% SiO_2 and with low iron (< 500 ppm Fe_2O_3)
- Intercepts include:
  - WA150, 5m @ 99.49% SiO_2 and 0.02% Fe_2O_3 from 0m[1]
  - WA156, 5m @ 99.32% SiO_2 and 0.03% Fe_2O_3 from 0m
  - WA160, 5m @ 99.59% SiO_2 and 0.03% Fe_2O_3 from 0m
  - WA164, 5m @ 99.80% SiO_2 and 0.04% Fe_2O_3 from 0m
  - WA168, 5m @ 99.73% SiO_2 and 0.03% Fe_2O_3 from 0m
  - WA169, 5m @ 99.76% SiO_2 and 0.05% Fe_2O_3 from 0m
- Resource estimation work will commence in September 2022 and is expected to be completed in October 2022

Metallica Minerals Limited (**Metallica**, ASX: MLM) is pleased to announce that assay results have been received for the 25 Hand Auger holes that were drilled in the western part of the Cape Flattery Silica (CFS) tenement (EPM 25734) in August 2022[2].

A total of 25 hand auger holes were drilled (WA145 to WA169) comprising 123m of drilling in the western part of the EPM. The auger holes were designed to determine the possible ariel extent of silica sand in the western part of the tenement and to determine the quality of the silica sand.

Metallica Executive Chairman, Theo Psaros said "*We are pleased with these initial auger results as they indicate that additional high purity silica sand is located on the western part of our EPM. The sand samples appear at this stage, to be of a very high quality. Our focus remains on developing the MLA area to the east. However, it is important we start to identify the silica sand potential located in the Western Area.*"

The holes were augured vertically into individual sand dunes to a maximum depth of 5m, which was the physical limit that the auger was capable of drilling. High quality silica sand was intersected at the base of twenty-three of the twenty-five holes, indicating that there is likely to be depth extensions to the high quality silica sand mineralisation. Future drill testing of the Western Area will determine the maximum depth extent of the mineralisation in each of the sand dunes tested by the auguring.

[1] Intercepts calculated using a 98.5% Si2O3 COG, with a minimum width of 3m and maximum internal dilution of 3m
[2] First Reported, ASX released dated the 23rd August 2022, "Extensional exploration program commences west of the Cape Flattery Silica Project"

Samples were collected at 1m intervals down each hole. Each hole was logged at 1m intervals and the colour, grain size and the presence of any contaminants recorded.

A representative sample of each one-meter interval was placed in a chip tray, which was then photographed to provide a digital record of each hole. These photographs are stored in a database with the relevant assay results so visual comparisons can be made between grade and sand quality. All the samples were submitted to ALS in Brisbane where they were assayed for silica, iron oxide, aluminum, and titanium content.

The two western areas of EPM25734 which were tested by the auger program are presented in Figure 1 and the auger hole locations in Figure 2. Photographs of chip trays for holes WA160 and WA168 and their respective assays are included as Figures 3 and 4 and a completed list of the drill hole assay results can be found in Table 1.

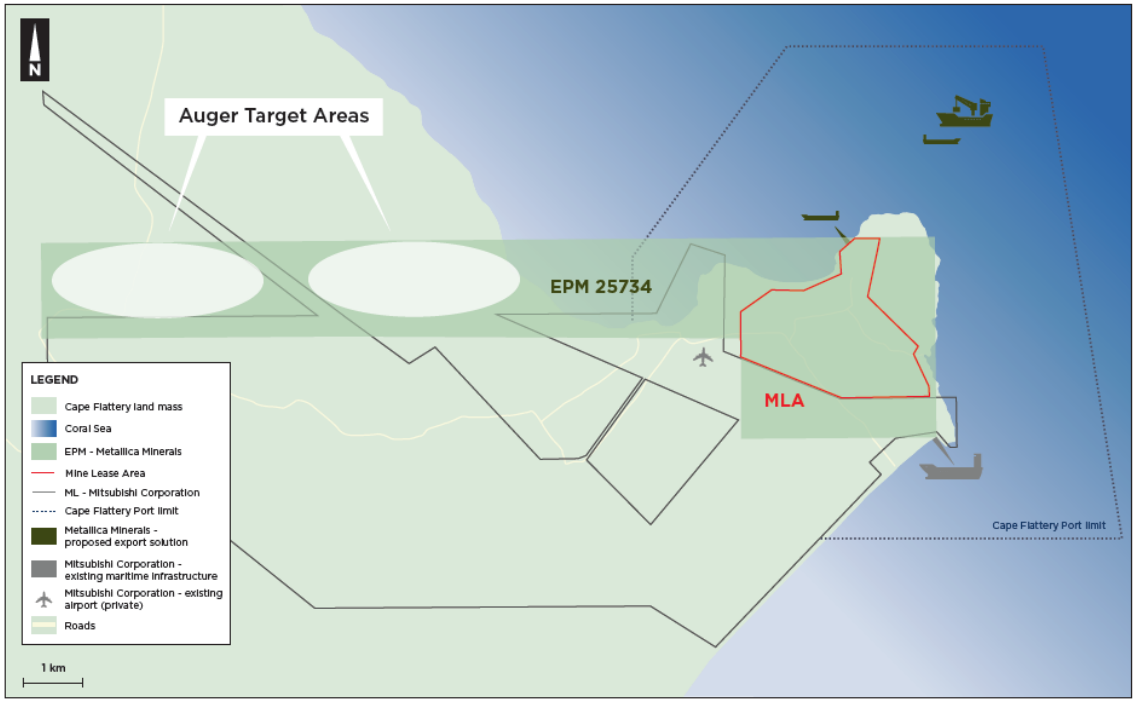

Figure 1. EPM25734, Areas targeted by hand auger drilling

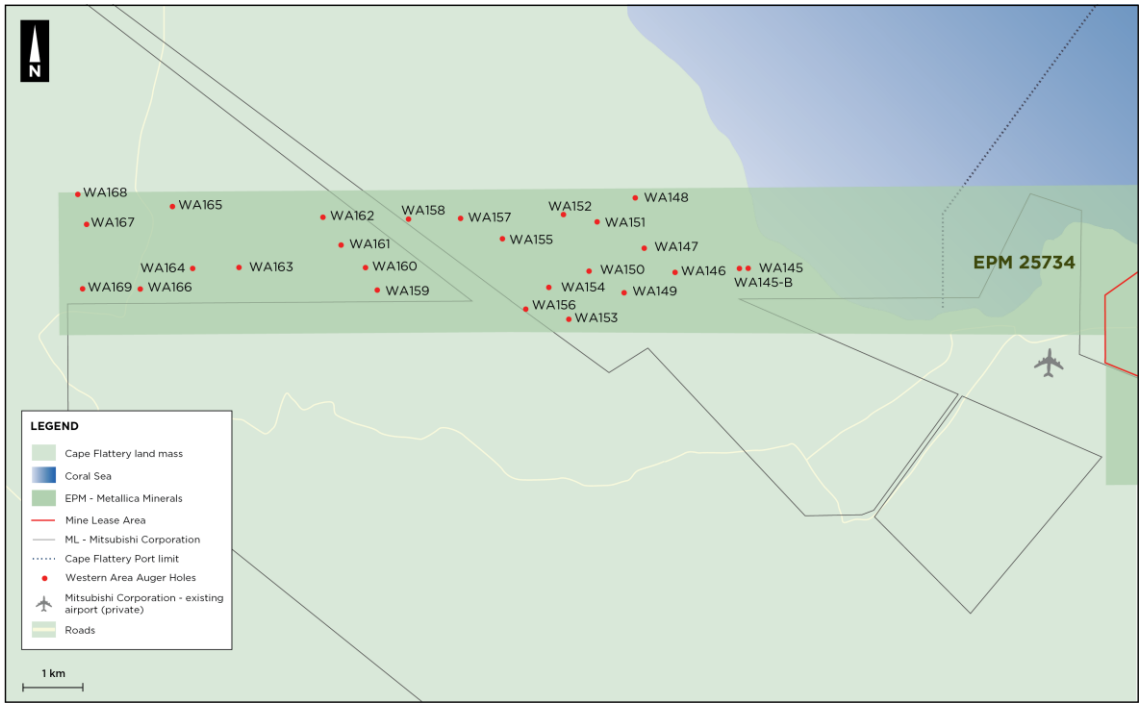

Figure 2. EPM25734, Auger Hole Locations

Table 1: EPM27534 – Western Areas Auger Drilling Results

Hole No.	Easting	Northing	RL (m)	Total Depth (m)	From (m)	To (m)	Interval (m)	Al_2O_3 (%)	Fe_2O_3 (%)	SiO_2 (%)	TiO_2 (%)	Total	LOI
WA145	315,083	8,345,671	23	4	1	3	2	0.32	0.10	98.94	0.09	99.53	0.16
WA145B	315,083	8,345,673	23	5	1	5	4	0.16	0.11	99.13	0.15	99.78	0.78
WA146	314,270	8,345,604	23	3	1	3	2	0.18	0.05	99.32	0.13	100.22	0.47
WA147	313,894	8,345,903	23	2	0	2	2	NSR					
WA148	313,797	8,346,559	31	5	0	5	3	0.51	0.16	98.54	0.09	99.78	0.42
WA149	313,670	8,345,372	32	5	0	5	5	0.05	0.04	99.27	0.09	99.74	0.22
WA150	313,244	8,345,649	35	5	0	5	5	0.04	0.02	99.49	0.05	99.86	0.19
WA151	313,278	8,346,267	29	5	0	4	4	0.29	0.12	99.06	0.12	99.93	0.27
WA152	312,849	8,346,331	24	4	0	4	4	0.04	0.02	99.18	0.03	99.85	0.26
WA153	312,916	8,345,036	40	5	0	5	5	0.05	0.05	99.33	0.10	99.75	0.14
WA154	312,699	8,345,440	49	5	0	5	5	0.05	0.12	99.24	0.26	99.92	0.13
WA155	312,078	8,346,040	33	5	5	5	5	0.05	0.05	99.45	0.10	99.86	0.14
WA156	312,040	8,345,167	32	5	0	5	5	0.06	0.03	99.32	0.07	99.88	0.33
WA157	311,559	8,346,288	33	5	0	5	5	0.06	0.07	98.99	0.15	99.60	0.22
WA158	310,775	8,346,275	19	5	0	5	5	0.05	0.03	98.76	0.09	99.77	0.84
WA159	310,504	8,345,419	53	5	0	5	5	0.09	0.25	98.66	0.65	100.06	0.16
WA160	310,362	8,345,687	28	5	0	5	5	0.05	0.03	99.59	0.07	99.93	0.11
WA161	310,052	8,345,967	26	5	0	5	5	0.05	0.04	99.15	0.12	99.68	0.23
WA162	309,864	8,346,312	23	5	0	5	5	0.04	0.03	99.22	0.09	99.79	0.32
WA163	308,792	8,345,688	30	5	0	5	5	0.06	0.10	99.37	0.24	100.00	0.14
WA164	308,228	8,345,694	29	5	0	5	5	0.05	0.04	99.80	0.10	100.00	0.07
WA165	307,997	8,346,443	27	5	0	5	5	0.05	0.04	99.38	0.07	99.85	0.24
WA166	307,547	8,345,384	29	5	0	5	5	0.06	0.05	99.56	0.10	99.89	0.04
WA167	306,901	8,346,169	27	5	0	5	5	0.05	0.04	99.40	0.10	99.85	0.18
WA168	306,735	8,346,580	33	5	0	5	5	0.03	0.03	99.73	0.05	99.93	0.03
WA169	306,824	8,345,389	28	5	0	5	5	0.06	0.05	99.76	0.10	100.00	0.30

1. Topsoil contamination can result in top 1 meter being below 98.5% SiO_2 cut-off (COG), if there was too much organic material in the top 1m of the hole no samples were collected

2. The significant intervals were calculated using a 98.50% SiO2 COG,

3. Only intervals with a minimum width of 2m were reported as this is considered to be the minimum mining width for silica sands

4. A maximum of 3m of internal dilution was included for each intercept, (i.e. only a maximum of three consecutive samples would be recorded as part of an intercept if they assayed below the COG).

5. NSR – No significant results, ie intercept did not meet the criteria to be included in the table

The majority of the auger holes intersected clean high purity white silica sand with low contaminants. The quality of the sand also appears to increase away from the coast with the highest grade silica holes with the lower iron contents located in the western part of EPM257634.

The results from the auger program are expected to be included in a maiden resource estimate for the Western Area to determine if a mineral resource estimate can be obtained in Q4 2022.

Future work on the Western Areas is expected to involve a tractor mounted vacuum rig drilling program to test the western sands dunes to a depth of greater than 5m and benchtop metallurgical testwork to determine the final product grade than can be achieved after running the sand through a processing circuit.

Chip Tray Photograph	Hole_ID	From	To	Sample No.	Colour	Lith	Al2O3	Fe2O3	SiO2	TiO2	Total	LOI
	WA160	0	1	WA160_0_1	White	Sand	0.06	0.04	100	0.11	100.5	0.13
	WA160	1	2	WA160_1_2	White	Sand	0.04	0.03	99.62	0.08	99.94	0.1
	WA160	2	3	WA160_2_3	White	Sand	0.04	0.03	99.22	0.07	99.54	0.12
	WA160	3	4	WA160_3_4	White	Sand	0.04	0.02	99.64	0.05	99.89	0.1
	WA160	4	5	WA160_4_5	White	Sand	0.05	0.02	99.47	0.06	99.77	0.1

Figure 3, Auger Hole WA160, 5m @ 99.59% SiO_2 and 0.03% Fe_2O_3 from 0m

Chip Tray Photograph	Hole_ID	From	To	Sample No.	Colour	Lith	Al2O3	Fe2O3	SiO2	TiO2	Total	LOI
	WA168	0	1	WA168_0_1	White	Sand	0.03	0.02	99.89	0.04	100.05	0.01
	WA168	1	2	WA168_1_2	White	Sand	0.03	0.02	99.83	0.06	100.05	0.03
	WA168	2	3	WA168_2_3	White	Sand	0.04	0.03	99.77	0.06	100	0.05
	WA168	3	4	WA168_3_4	White	Sand	0.03	0.02	99.26	0.04	99.43	0.03
	WA168	4	5	WA168_4_5	White	Sand	0.03	0.04	99.9	0.05	100.1	0.01

Figure 4, Auger Hole WA168, 5m @ 99.73% SiO_2 and 0.03% Fe_2O_3 from 0m

About the Cape Flattery Silica (CFS) Project

Metallica's 100% owned Cape Flattery Silica Sand (CFS) Project is located in the Cape Flattery area, on the eastern coastline of Cape York Peninsula, 220 km north of Cairns, and 55km from Cooktown. MLM is developing the CFS Project adjacent to the Cape Flattery Silica Sand mining and shipping operation owned by the Mitsubishi Corporation. Initial exploration drilling in late 2019 confirmed the presence of high purity silica sand within EPM 25734.

This announcement has been approved in accordance with the Company's published continuous disclosure policy and has been approved by the Board.

For further information, please contact:

Mr Theo Psaros
Executive Chairman
+61 (7) 3249 3000

Mr Scott Waddell
CFO & Company Secretary
+61 (7) 3249 3000

Cape Flattery Silica Western Area Exploration Results

The information in this report that relates to the Exploration Sampling and Exploration Results is based on information compiled by Mr Patrick Smith, a Competent Person who is a Member of the Australian Institute of Mining and Metallurgy.

Mr Smith is the owner and sole Director of PSGS Pty Ltd and is contracted to Metallica Minerals as their Exploration Manager. Mr Smith confirms there is no potential for a conflict of interest in acting as the Competent Person. Mr Smith has sufficient experience that is relevant to the style of mineralisation and type of deposits under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Smith consents to the inclusion of this information in the form and context in which it appears in this release/report.

Forward-looking statements

Forward-looking statements are based on assumptions regarding Metallica, business strategies, plans and objectives of the Company for future operations and development and the environment in which Metallica may operate.

Forward-looking statements are based on current views, expectations and beliefs as at the date they are expressed and which are subject to various risks and uncertainties. Actual results, performance or achievements of Metallica could be materially different from those expressed in, or implied by, these forward-looking statements. The forward-looking statements contained in this presentation are not guarantees or assurances of future performance and involve known and unknown risks, uncertainties and other factors, many of which are beyond the control of Metallica, which may cause the actual results, performance or achievements of Metallica to differ materially from those expressed or implied by the forward-looking statements. For example, the factors that are likely to affect the results of Metallica include general economic conditions in Australia and globally; ability for Metallica to funds its activities; exchange rates; production levels or rates; demand for Metallica's products, competition in the markets in which Metallica does and will operate; and the inherent regulatory risks in the businesses of Metallica. Given these uncertainties, readers are cautioned to not place undue reliance on such forward-looking statements

JORC Code, 2012 Edition – Table 1

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.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*	• Drilling samples were collected from a hand auger, (shell auger) with samples collected at 1m intervals down hole. The entire 1m sample was collected from the auger and placed in a calico bag. The samples were collected in a pre-numbered sample bag, with each sample having a mass of between 2.5 to 4kg. • The entire 1m sample was collected on site and dispatched to the laboratory for splitting and analysis • Samples were submitted to ALS Laboratories in Brisbane for drying, splitting and pulverization in a tungsten carbide bowl, and XRF analysis. • Sampling techniques are mineral sands "industry standard" for dry aeolian sands with low levels of induration and slime. • As the targeted mineralization is silica sand, geological logging of the drill material is a primary method for identifying mineralisation. • Samples from this drilling programme will be selected for Metallurgical testwork. These samples will be composited to form a bulk sample.
Drilling techniques	• *Drill type and details.*	• The "drilling technique" was hand auguring using a hand auger, which was 50mm in diameter. The hand auguring was undertaken by Metallica Minerals Geologists and Field Assistants. • Holes were terminated at a depth of 5m, as this was a deep as the augers could be physically drilled to by hand.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.*	• Visual assessment and logging of sample recovery and sample quality. • Auger drilling is low disturbance and low impact, minimising drill hole wall impact and contamination. • Samples are collected from the shell auger at 1m intervals as the hole was being drilled.

		• Cleaning of the auger "shell" was done after every 1m, to avoid contamination • No sample bias occurred between sample recovery and grade. • The consistent weight of the samples indicates that recovery of between 90 to 100% was achieved, lower recoveries (less than 80%) were recorded in the top 1m of each hole due to the presence of organic matter and topsoil
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.* • *The total length and percentage of the relevant intersections logged*	• Geological logging of the total hole by field geologist, with retention of sample in chip trays to allow subsequent re-interpretation of data if required. • The total hole is logged in 1m intervals; logging includes qualitative descriptions of colour, grain size, sorting, • Photographs of each chip tray were taken so a digital visual record of each of the drill holes was obtained • Logging has been captured through field drill log sheets and transferred through to an excel spreadsheet which will then be uploaded into a central database and storage prior to being provided to a third party consultant for resource estimation.
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.*	• The sample for the entire 1m interval was collected from the auger at 1m intervals. • The sample was placed in a numbered calico bag, prior to being placed in a poly-weave sack for dispatch to the laboratory • Each sample weighed between 2.5 to 4.0Kg. • The samples were split to 100gram samples for analysis in the laboratory under laboratory-controlled methods • The sample size is considered appropriate for the grain size of material, average grain size (87% material by weight between 0.125mm and 0.5mm • The Competent Person considers the sample preparation to be appropriate for the drilling program.

	• *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• The Competent Person considers the sample sizes to be appropriate for the type of material being sampled. Appropriate sample sizes and pulverisation of the entire sample support good representivity
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• Hand Auger samples were submitted to ALS Brisbane, where they were dried, weighed and split. • Analysis was undertaken by ALS Brisbane utilising a Tungsten Carbide pulverization, ME-XRF26 (whole rock by Fusion/XRF) and OA-GRA05(H_2O/LOI by TGA furnace). • Samples were assayed primarily for SiO_2, Fe_2O_3, Al_2O_3 and TiO_2 and a range of other elements. • Analysis undertaken determined by a sample code which correlates to drill logs to ensure no sample bias. • QC procedures – No duplicates were collected due to this being the early reconnaissance stage of exploration for the western areas. bias.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Significant intersections validated against geological logging and local geology/ geological model. • No auger holes have been twinned, one hole WA145 was redrilled as the initial hole was subject to collapse • All data captured and stored in both hard copy and electronic format. • No assay data had to be adjusted. • All digital data is verified by the Competent Person. • No adjustments were made to 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.*	• All holes initially located using handheld GPS with an accuracy of 5m for X, Y. • UTM coordinates, Zone 55L, GDA94 datum. • Topographic surface generated from imagery which was open file data

Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• Auger drilling was completed on existing tracks or exposed areas of the dunes, no tracks were cleared and no areas were disturbed • Auger spacing, and distribution is sufficient to allow valid interpretation of geological and grade continuity for an **Inferred Mineral Resource**. • There has been no sample compositing.
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.*	• The dune field has ridges dominantly trending 320º - 330°. • Silica deposition occurs as windblown with angle of rest approximately 35º. Drilling orientation is appropriate for the nature of deposition.
Sample security	• *The measures taken to ensure sample security.*	• Sample collection and transport from the field was undertaken by company Personnel following company procedures. • Samples were aggregated into larger polyweave bags and sealed with plastic zip ties, Bags were labelled and transported in a helicopter to Cooktown where they were put into palette-crates and sealed prior to being shipped to ALS Townsville. • Samples were delivered directly to ALS Brisbane for sample preparation and analysis
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• An internal review was conducted internally by Metallica Minerals Ltd personnel

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.*	• The Cape Flattery Silica Sands Project is located within EPM 25734 in Queensland and is held by Metallica Minerals Ltd through subsidiary company Cape Flattery Silica Pty Ltd. • A compensation and conduct agreement is in place with the landholder (Hopevale Congress) and native title party. • The tenement is in good standing and there are no impediments to conduct exploration programs on the tenements.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Previous exploration has been carried out in the area during the 1970's and 80s by Cape Flattery Silica Mines (CFSM). CFSM reported seven (7) holes drilled for 84 meters. These holes intersected sand dunes between 10 and 20 meters in thickness. • The historical exploration data is of limited use since but never assayed for SiO2 and there is poor survey control to determine exact locations of historical holes. • All current exploration programs are managed by Metallica Minerals
Geology	• *Deposit type, geological setting, and style of mineralisation.*	• The geology comprises variably re-worked aeolian sand dune deposits associated with Quaternary age sand-dune complex. • Mineralisation occurs within aeolian dune sands

Drill hole Information	• *A summary of all information material to the understanding of the exploration results* • *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.*	• A tabulation of the material auger holes is included in the body of this report as Table 1.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• The significant intercepts for each drill hole are calculated using a cut off grade of 98.5% SiO2, only intercepts of greater than 3m are considered as significant as that is considered to be the minimal mining width • Internal dilution of up to 3m is included in the reported intercepts • The grade is highly consistent, and the aggregate intercepts use a simple arithmetic average • No top cuts were applied to the data. • No metal equivalents reported.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• As the mineralisation is associated with aeolian dune sands the majority of which are sub-horizontal, some variability will be apparent on dune edges and faces.

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.*	• A map of the drill collar locations is incorporated with the main body of the report.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• All exploration results are reported in a balanced manner. All results are supported by clear and extensive diagrams and descriptions. No assays or other relevant information for interpreting the results have been omitted.
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.*	• Geological observations are consistent with aeolian dune mineralisation. • No groundwater was intersected during the auger drilling due to the shallow nature of the drilling, i.e. maximum hole depth was only 5m. • The mineralisation is unconsolidated sand. • A sample may be composited from the individual samples to provide material for metallurgical testwork, • There are no known deleterious substances. • All exploration results detailed in attached report.
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*	• A limited amount of vacuum drilling may be undertaken in Q4 2022 or in Q1 2023 if warranted • The next stage of exploration on the EPM will be to further assess the western areas by drilling deeper holes into the sand dunes.