METALLICA MINERALS LIMITED
ABN: 45 076 696 092
ASX Code: MLM

23 February 2022

Infill drilling validates Cape Flattery Silica Project Resource Model

Highlights

- Assays from the December 2021 infill drilling have been received
- Intercepts include:
  - CFS126, 23m @ 99.27% SiO2 from 3m[1]
  - CFS132, 23m @ 99.42% SiO2 from 1m
  - CFS142, 33m @ 99.22% SiO_2 from 1m
  - CFS144, 17m @ 99.46% SiO_2 from surface
- The aims of the drilling program were to improve the mineral resource boundary definition, provide additional infill information with a view to improving confidence in the Mineral Resources
- This drilling information will be incorporated into an updated mineral resources estimate planned to be completed in March 2022
- The planned update of the Mineral Resources will not be included in the Pre-Feasibility Study which is near completion

Metallica Minerals Limited (**Metallica**, ASX: MLM) is pleased to announce that assay results have been received for the 410 silica sand samples (including duplicate samples) from the 24-hole infill drilling program completed at Metallica's Cape Flattery project in December 2021. The holes were drilled on the eastern part of EPM25734, which is located immediately north of Mitsubishi's silica sand mining operation at Cape Flattery (see Figure 1).

This infill drilling at the Cape Flattery project was undertaken between the 2nd and 5th of December 2021. A total of 24 holes were drilled for a total of 394 meters using a tractor mounted vacuum rig. The drilling was undertaken along existing drill lines and was designed to provide increased drilling density to support conversion of Inferred mineral resources to Indicated mineral resources and to improve definition of the mineral resource boundary.

All holes were drilled vertically using a track mounted vacuum rig, and the entire sample for a 1m interval (between 3 to 4Kg per sample) was collected and dispatched for assay. Duplicate samples were collected from the program to ensure sample integrity and a series of Specific Gravity determinations were taken to confirm the insitu density of the silica sand.

The drilling was confined to existing tracks which were cleared for the August 2021 program. All the samples were dispatched to ALS in Brisbane for assay.

[1] Intercepts calculated using a 98.5% Si2O3 COG, with a minimum width of 3m and maximum internal dilution of 3m

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Of the 24 holes drilled, 18 holes recorded significant intercepts of SiO_2 mineralization. The 6 holes which returned no significant results were drilled either on the margins of the dune field or on the western edge of the field. A table showing the significant drill hole intercepts for the drilling programme are presented in Table 1.

Photographs of the chip trays for each hole were taken to obtain a digital record of the hole and these are stored in a database with the relevant assay results so visual comparisons can be made between grade and sand quality (see Figure 1: Drill hole location map in the Project's resource area, with Metallica's December 2021 drill holes shown in dark green and the prior program drill holes shown in red, and Figure 2 and 3 on the following pages).

Metallica Executive Chairman, Theo Psaros said "*We are pleased with the infill drilling results as they were in line with our expectations and demonstrate the robustness of the resource model and the high quality of the silica sands within our EPM. These results will go into an upgraded resource model that is planned to be included in our Definitive Feasibility Study (DFS) following the release of the Pre-feasibility Study (PFS) that we are currently in the process of finalizing.*

We are looking forward to announcing the results of our PFS in the coming weeks."

Metallica has undertaken testing on high aluminium samples, which are below the silica cut-off grade and thus not currently included in the mineral resource. This preliminary test work suggests the aluminum is associated with clays and that it can be removed through a simple scrubbing process. The Company intends to undertake further metallurgical test work during the Definitive Feasibility Study stage to determine the economic potential of this material.

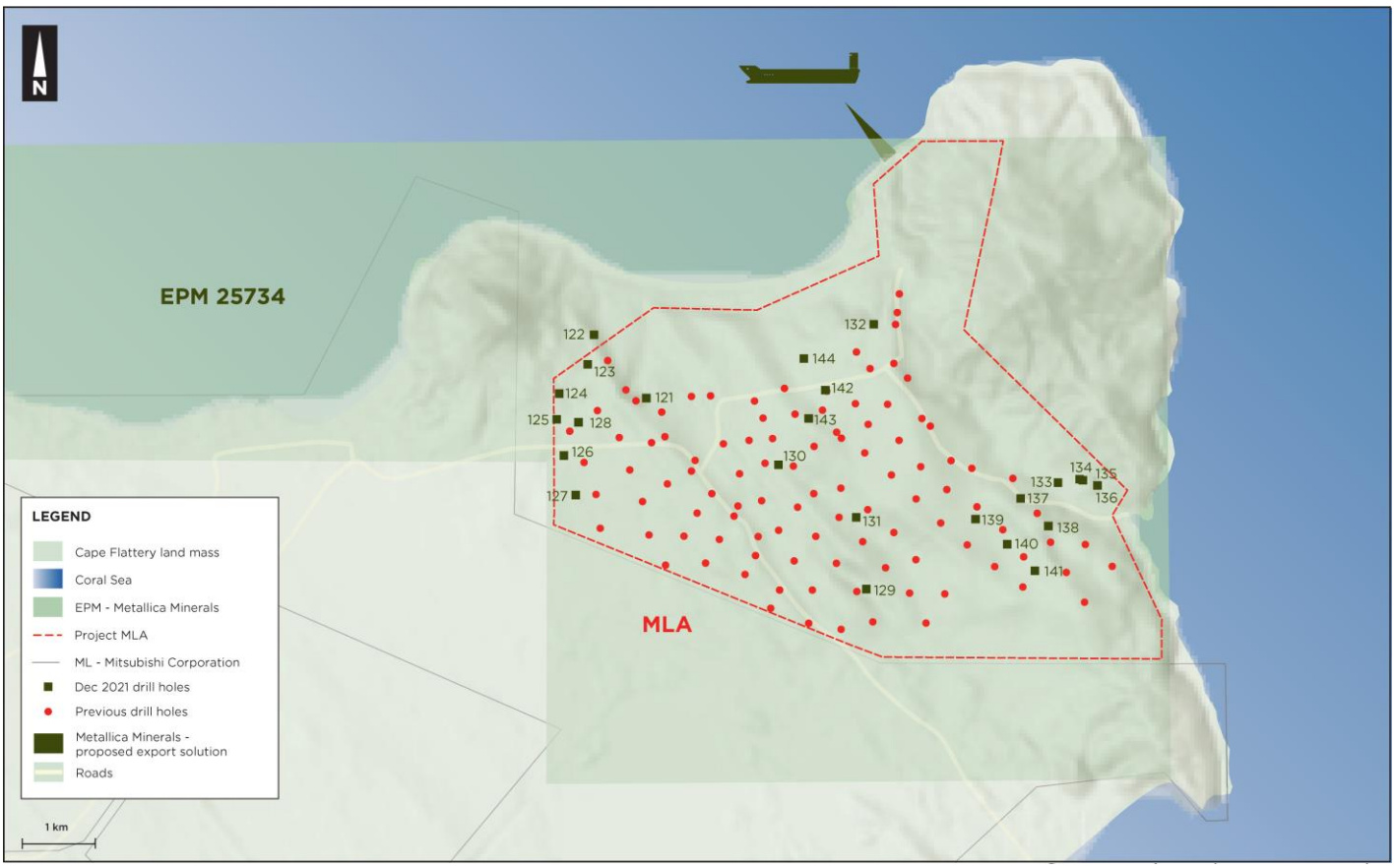


Figure 1: *Drill hole location map in the Project's resource area, with Metallica's December 2021 drill holes shown in dark green and the prior program drill holes shown in red*

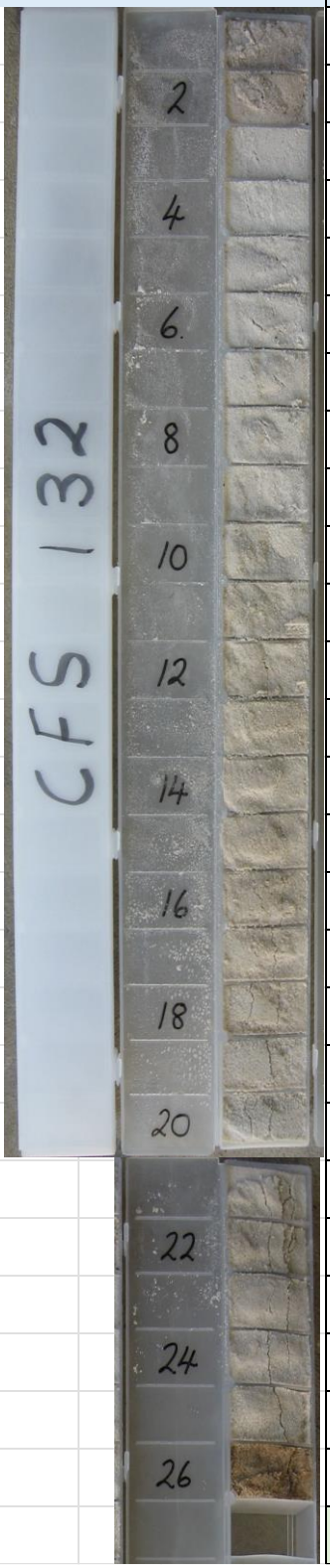
Chip Tray Photograph	Hole_ID	From	To	Sample No.	Colour	Lith	Al2O3	Fe2O3	SiO2	TiO2	Total	ZrO2
	CFS132	0	1	40593	wh	sa	0.07	0.02	97.63	0.04	99.63	0.01
	CFS132	1	2	40594	wh	sa	0.07	0.02	99.44	0.04	99.75	0.01
	CFS132	2	3	40595	wh	sa	0.05	0.02	99.53	0.05	99.8	0.02
	CFS132	3	4	40596	wh	sa	0.03	0.02	99.64	0.06	99.84	0.02
	CFS132	4	5	40597	wh	sa	0.05	0.03	99.43	0.08	99.72	0.02
	CFS132	5	6	40598	wh	sa	0.04	0.03	>100.0	0.08	100.35	0.02
	CFS132	6	7	40599	wh	sa	0.04	0.03	99.47	0.07	99.71	0.01
	CFS132	7	8	40600	wh	sa	0.04	0.04	99.9	0.1	100.15	0.02
	CFS132	8	9	40601	wh	sa	0.05	0.05	99.23	0.12	99.53	0.02
	CFS132	9	10	40602	wh	sa	0.05	0.05	99.72	0.13	100.05	0.02
	CFS132	10	11	40603	wh	sa	0.06	0.07	99.34	0.19	99.78	0.02
	CFS132	11	12	40604	wh	sa	0.05	0.06	99.89	0.17	100.3	0.02
	CFS132	12	13	40605	wh	sa	0.06	0.08	99.3	0.2	99.73	0.02
	CFS132	13	14	40606	wh	sa	0.05	0.07	99.48	0.19	99.89	0.02
	CFS132	14	15	40607	wh	sa	0.07	0.04	99.26	0.12	99.6	0.01
	CFS132	15	16	40608	wh	sa	0.03	0.04	99.37	0.08	99.63	<0.01
	CFS132	16	17	40609	wh	sa	0.05	0.03	99.14	0.08	99.39	<0.01
	CFS132	17	18	40610	wh	sa	0.05	0.03	99.23	0.05	99.45	<0.01
	CFS132	18	19	40611	wh	sa	0.04	0.03	>100.0	0.05	100.45	<0.01
	CFS132	19	20	40612	wh	sa	0.03	0.07	99.31	0.04	99.54	<0.01
	CFS132	20	21	40613	wh	sa	0.04	0.03	99.71	0.05	99.94	<0.01
	CFS132	21	22	40614	wh	sa	0.03	0.03	99.54	0.04	99.76	<0.01
	CFS132	22	23	40615	wh	sa	0.04	0.06	99.5	0.12	99.87	0.01
	CFS132	23	24	40616	wh	sa	0.06	0.13	99.09	0.25	99.68	0.03
	CFS132	24	25	40617	wh	sa	0.13	0.17	98.64	0.27	99.45	0.03
	CFS132	25	26	40618	wh-yll	sa	0.83	0.28	98	0.36	100.15	0.05
	Totals (>98.50% SiO2)						**0.05**	**0.05**	**99.42**	**0.10**	**99.82**	

Figure 2. *Visual Representation of CFS132*

Chip Tray Photograph	Hole_ID	From	To	Sample No.	Colour	Lith	Al2O3	CaO	Fe2O3	K2O	SiO2	TiO2	Total	ZrO2
	CFS144	0	1	40776	Gry	sa	0.06	<0.01	0.05	0.01	99.13	0.08	99.87	0.01
	CFS144	1	2	40777	Gry-Wh	sa	0.05	<0.01	0.06	0.01	99.41	0.11	99.85	0.02
	CFS144	2	3	40778	wh	sa	0.03	<0.01	0.04	<0.01	99.39	0.07	99.71	0.01
	CFS144	3	4	40779	wh	sa	0.04	<0.01	0.06	<0.01	99.27	0.1	99.63	0.02
	CFS144	4	5	40780	wh	sa	0.05	<0.01	0.09	<0.01	99.27	0.17	99.72	0.03
	CFS144	5	6	40781	wh	sa	0.04	<0.01	0.07	0.01	99.74	0.13	100.15	0.02
	CFS144	6	7	40782	wh	sa	0.07	<0.01	0.05	<0.01	99.81	0.08	100.15	0.01
	CFS144	7	8	40783	wh	sa	0.04	<0.01	0.05	0.01	99.36	0.08	99.68	0.01
	CFS144	8	9	40784	wh	sa	0.04	<0.01	0.04	<0.01	99.45	0.05	99.68	<0.01
	CFS144	9	10	40785	wh	sa	0.05	<0.01	0.05	0.01	99.71	0.05	99.96	<0.01
	CFS144	10	11	40786	wh	sa	0.06	<0.01	0.05	0.01	99.58	0.04	99.82	<0.01
	CFS144	11	12	40787	wh	sa	0.04	<0.01	0.04	<0.01	99.51	0.03	99.67	<0.01
	CFS144	12	13	40788	wh	sa	0.06	<0.01	0.06	<0.01	99.48	0.03	99.71	<0.01
	CFS144	13	14	40789	wh	sa	0.03	<0.01	0.04	<0.01	99.52	0.03	99.73	<0.01
	CFS144	14	15	40790	wh	sa	0.04	<0.01	0.05	<0.01	99.17	0.03	99.43	<0.01
	CFS144	15	16	40791	wh	sa	0.03	<0.01	0.05	<0.01	99.31	0.07	99.57	0.01
	CFS144	16	17	40792	wh	sa	0.03	<0.01	0.05	<0.01	99.68	0.07	99.96	0.01
	CFS144	17	18	40793	Brn-Rd	sa	0.74	<0.01	0.83	0.02	97.64	0.15	100.05	0.01
	CFS144	18	19	40794	Brn-Rd	sa	1.86	<0.01	1.52	0.02	94.76	0.25	99.74	0.02
	Totals (>98.50% SiO2)						**0.04**		**0.05**		**99.46**	**0.07**	**99.78**	

Figure 3. *Visual Representation of CFS144, showing Chip tray and associated assay results*

Hole Number	Easting	Northing	RL (m)	Total Depth (m)	From (m)	To (m)	Interval (m)	SiO2 (%)	Fe2O3 (%)	Al2O3 (%)	TiO2 (%)	Total	LOI
CFS121	319,804	8,344,988	85	25	1	23	22	99.16	0.11	0.06	0.18	99.72	0.15
CFS122	319,541	8,345,306	83	24	1	21	20	99.07	0.11	0.12	0.16	99.70	0.19
CFS123	319,509	8,345,158	71	8	NSR	-	-	-	-	-	-	-	-
CFS124	319,366	8,345,011	51	19	2	5	3	99.11	0.16	0.16	0.19	99.85	0.19
CFS125	319,352	8,344,882	43	10	NSR	-	-	-	-	-	-	-	-
CFS126	319,390	8,344,700	34	27	0	26.5	26.5	99.22	0.12	0.14	0.09	99.84	0.22
CFS127	319,449	8,344,502	28	20	5	20	15	99.08	0.09	0.25	0.07	99.72	0.17
CFS128	319,461	8,344,868	49	12	NSR	-	-	-	-	-	-	-	-
CFS129	320,910	8,344,030	43	15	1	13	12	98.62	0.38	0.24	0.14	99.72	0.27
CFS130	320,468	8,344,654	50	15	1	11	10	99.29	0.09	0.09	0.14	99.82	0.16
CFS131	320,859	8,344,390	65	17	1	10	9	99.45	0.07	0.06	0.12	99.92	0.17
CFS132	320,950	8,345,359	89	26	1	25	24	99.47	0.05	0.05	0.11	99.81	0.08
CFS133	321,876	8,344,564	58	13	2	9	7	98.94	0.30	0.10	0.32	99.87	0.10
CFS134	321,982	8,344,580	45	5	0	5	5	99.07	0.24	0.12	0.15	99.81	0.19
CFS135	321,997	8,344,576	43	4	NSR	-	-	-	-	-	-	-	-
CFS136	322,072	8,344,550	36	10	NSR	-	-	-	-	-	-	-	-
CFS137	321,684	8,344,485	34	14	1	11	10	98.96	0.07	0.06	0.12	99.34	0.08
CFS138	321,825	8,344,346	34	14	1	11	10	99.20	0.03	0.04	0.07	99.44	0.06
CFS139	321,459	8,344,381	61	19	2	18	16	99.05	0.08	0.09	0.15	99.54	0.13
CFS140	321,618	8,344,255	57	17	1	16	15	99.07	0.08	0.11	0.15	99.63	0.16
CFS141	321,762	8,344,122	57	15	1	12	11	98.97	0.08	0.05	0.16	99.43	0.10
CFS142	320,704	8,345,026	106	36	1	34	33	99.22	0.14	0.06	0.25	99.82	0.08
CFS143	320,620	8,344,887	70	10	NSR	-	-	-	-	-	-	-	-
CFS144	320,596	8,345,187	69	19	0	17	17	99.46	0.05	0.04	0.07	99.78	0.12

Table 1. *Cape Flattery Silica Project – table of Significant Results*

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 3m 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

About the Cape Flattery Silica (CFS) Project

Metallica's 100% owned Cape Flattery Silica Sands (CFS) project is adjacent to the world class Cape Flattery Silica Sand mining and shipping operation owned by Mitsubishi. Exploration drilling to date has now confirmed that the sand dunes within EPM 25734 contain high purity silica sands with an in-situ quality which is understood to be comparable to Mitsubishi's Cape Flattery Silica Mine.

Figure 4. *Yearlong Contractors vacuum-based drill rig working at CFS project with Mitsubishi silica sand operations in the background*

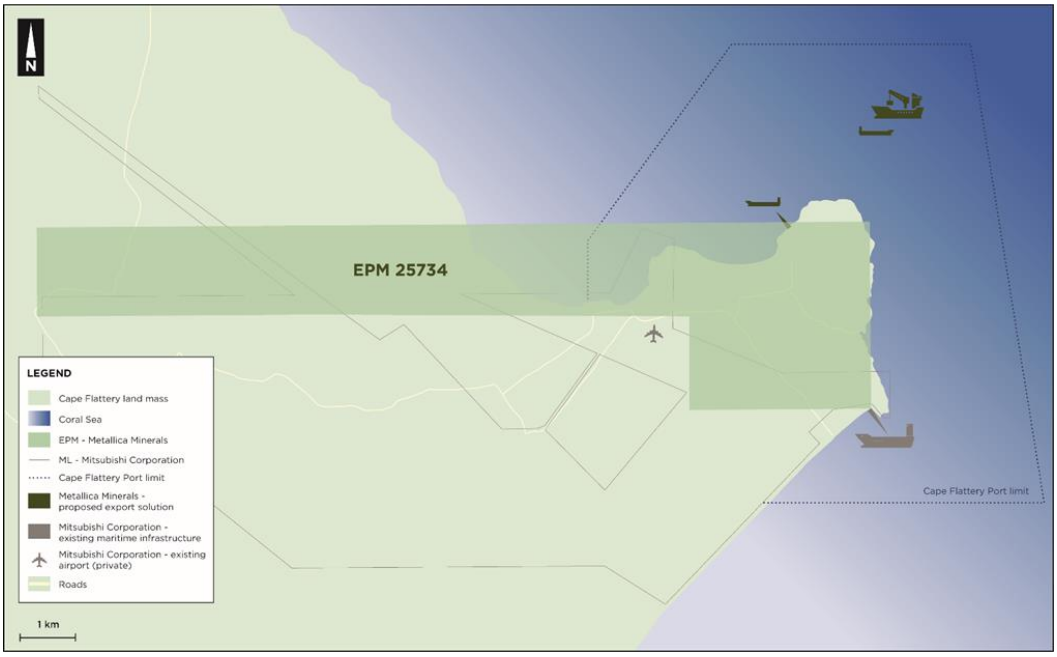


Figure 5 *EPM 25734 location and orientation at Cape Flattery and within the Cape Flattery Port limit*

On 21st of October 2021, the Company released an upgraded resource in the CFS Eastern Resource Area, the resource estimate is summarised in Table 2 below[2].

Classification	Silica Sand (Mt)	Silica Sand (Mm^3)	Density (t/m^3)	SiO_2 %	Al_2O_3 %	Fe_2O_3 %	TiO_2 %	LOI %
Measured Resource	**9.6**	**5.97**	**1.6**	**99.29**	**0.8**	**0.10**	**0.13**	**0.18**
Indicated Resource	**38.2**	**23.91**	**1.6**	**99.15**	**0.12**	**0.13**	**0.14**	**0.19**
Inferred Resource	**5.7**	**3.54**	**1.6**	**99.26**	**0.16**	**0.11**	**0.18**	**0.18**
Total	**53.5**	**33.41**	**1.6**	**99.19**	**0.12**	**0.12**	**0.14**	**0.19**

Table 2. Cape Flattery Resource as of 21st October 2021

The Resource has been prepared in accordance with the JORC Code 2012 – A cut-off grade 98.5% has been defined based on the surrounding data. These results show there is good potential to produce a premium grade silica product using standard processing techniques.

On 15 June 2021 the Company announced that it had lodged a Mine Lease Application (MLA) for the project[3], Figure 6 below.

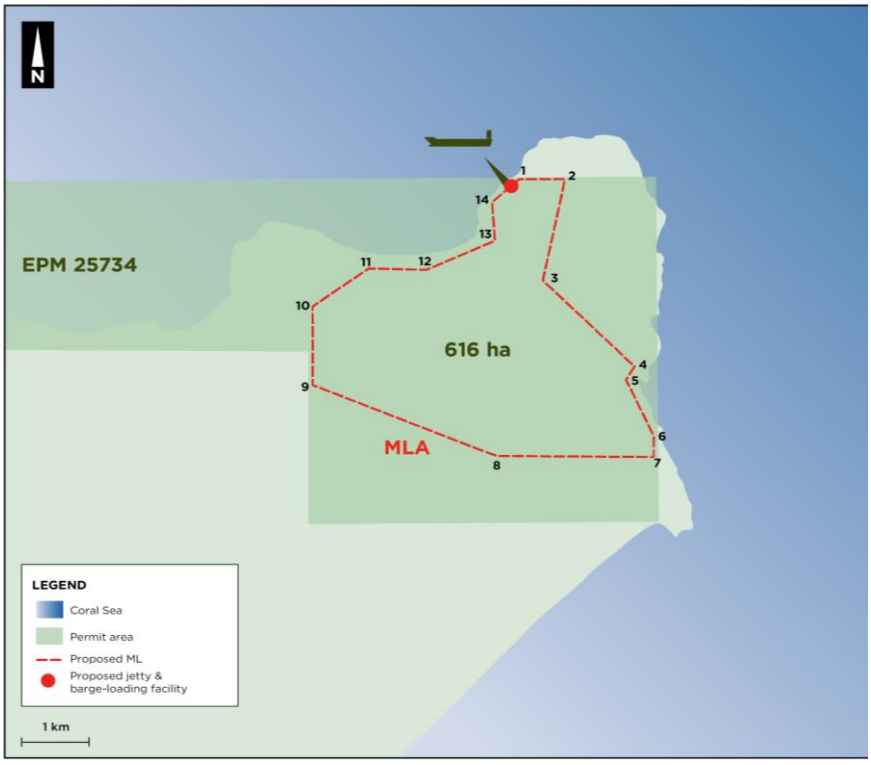


Figure 6. *Cape Flattery Silica Sand project MLA area boundary and EPM*

[2] First Report to the ASX on the 21st of October 2021 " 40% Increase of the Cape Flattery Silica Sand Resource to 53.5M38 Mt of High", Competent persons are Mr Patrick Smith and Mr Chris Ainslie

[3] First Report to the ASX on the 15th June 2021"MLA Lodged for Cape Flattery Silica"

On 22 June 2021 the Company released the first metallurgy test results on samples taken from the December 2020 drilling program. The bulk sample metallurgical testing confirmed high quality silica sand product and demonstrated a low contaminant product with an attractive narrow particle size distribution can be produced at a high yield. The test work produced a product with 99.8% SiO_2, 170ppm Fe_2O_3 and 450ppm Al_2O_3 and further work included successful test of process to reduce Fe_2O_3 from 170ppm to 70ppm Fe_2O_3[4] .

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:

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Mr Scott Waddell
CFO & Company Secretary
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[4] First reported to the ASX on the 22nd June 2021 "Excellent Metallurgical Test Results on Cape Flattery Silica" competent persons, Mr Neil Mackenzie-Forbes, Mr Chris Ainslie, Carl Morandy, Mr Brice Mutton and Mr Kruger

Competent Person Statement

Cape Flattery Silica Sands Resource

The information in this report that relates to Mineral Resources at the Cape Flattery Silica Sands Project is based on information and modelling carried out by Dale Brown, Senior Mining Engineer, Ausrocks Pty Ltd who is a competent person and a Member of the Australasian Institute of Mining & Metallurgy. Dale Brown is employed by Ausrocks Pty Ltd who have been engaged by Metallica Minerals Ltd to prepare this independent report, there is no conflict of interest between the parties.

Dale Brown has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity for which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code). Dale Brown consents to the inclusion in the report on the matters based on their information in the form and context in which it appears.

Cape Flattery Silica Sands 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.

Reference to Previous Releases

Drilling, resource estimates and metallurgical results referred to in this announcement have been previously announced to the market in reports dated; 2nd March, 15th June, 22nd June, 12th August and the 21st October 2021 and are available to view and download from the Company's website: ASX Announcements — Metallica Minerals Limited***https://metallicaminerals*****.**

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

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 ranging from 0.5 to 1.0m down hole intervals of vacuum drill rig cuttings were collected from a cyclone. 100% of the sample was 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 additional Metallurgical testwork. These samples will be composited to form a bulk sample.
Drilling techniques	• *Drill type and details.*	• The drilling technique used was vacuum drilling, which was undertaken by Yearlong Contractors using a tractor mounted drill rig. The drill bit diameter was 48mm equivalent to NQ sample size. • Holes were terminated in a clayey sand layer or when the water table was intersected, and wet sand affected sample recovery
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. • Vacuum drilling is low disturbance and low impact, minimising drill hole wall impact and contamination. • Samples are collected in a cyclone which has a clear Perspex casing allowing visual inspection of sample as they are being collected. • Regular cleaning of cyclone and drill rods was utilised to prevent sample

		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 a 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, induration and estimates of HM, slimes and oversize utilising panning. • 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 is then transferred to 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*	• The sample for the entire 1m interval was collected from the cyclone as it came out of the cyclone. • 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.

	field duplicate/second-half sampling. • *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.*	• Drilling 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 - Duplicate samples were collected in the field to check on the sampling procedure and reproductivity, the duplicate samples came back well within margin of error. Inter-laboratory checks were also undertaken on samples from the previous drilling campaign, with over 110 samples re-assayed by Intertek in Perth, The correlation of the results between the two laboratories was very good and there is no evidence of laboratory 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 holes have been twinned, as the grade continuity in the holes is consistent. • 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*	• All holes initially located using handheld GPS with an accuracy of 5m for X, Y.

	locations used in Mineral Resource estimation. • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• UTM coordinates, Zone 55L, GDA94 datum. • Topographic surface generated from Lidar imagery which was produced by Aerometrex
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.*	• Drilling was completed on existing tracks • The holes were infill holes and closed off existing drilling on the western side of the resource area to 100m spacings and infilled minor gaps in the August 2021 drilling program. • Drill spacing, and distribution is sufficient to allow valid interpretation of geological and grade continuity for an Inferred, Indicated and Measured 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°. • The drill access tracks typically run along or sub-parallel to dune ridges which suggest unbiased sampling, some cross-dune tracks linking the ridges were also drilled • 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 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.*	• A review was conducted internally by Metallica Minerals Ltd and a third-party consultants, Ausrocks Pty Ltd, will also review the data prior to undertaking a resource estimate.

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*	• A tabulation of the material drill holes is included in the body of this report as Table 1.

	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 (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*	• A map of the drill collar locations is incorporated with the main body of the report.

	reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	
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. • Groundwater was intersected during drilling at the base of holes, as expected given the dune complex is an aquifer and drilling was undertaken to a maximum depth of 35m. • The mineralisation is unconsolidated sand. • A bulk sample will be composited from the individual samples for metallurgical testwork, this work will commence in Q4 • 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 infill drilling may be required to increase the confidence levels in the resource prior to a PFS and FS • The next stage of exploration on the EPM will be to assess the western targets on the EPM utilising Auger sampling, but this work has yet to be planned