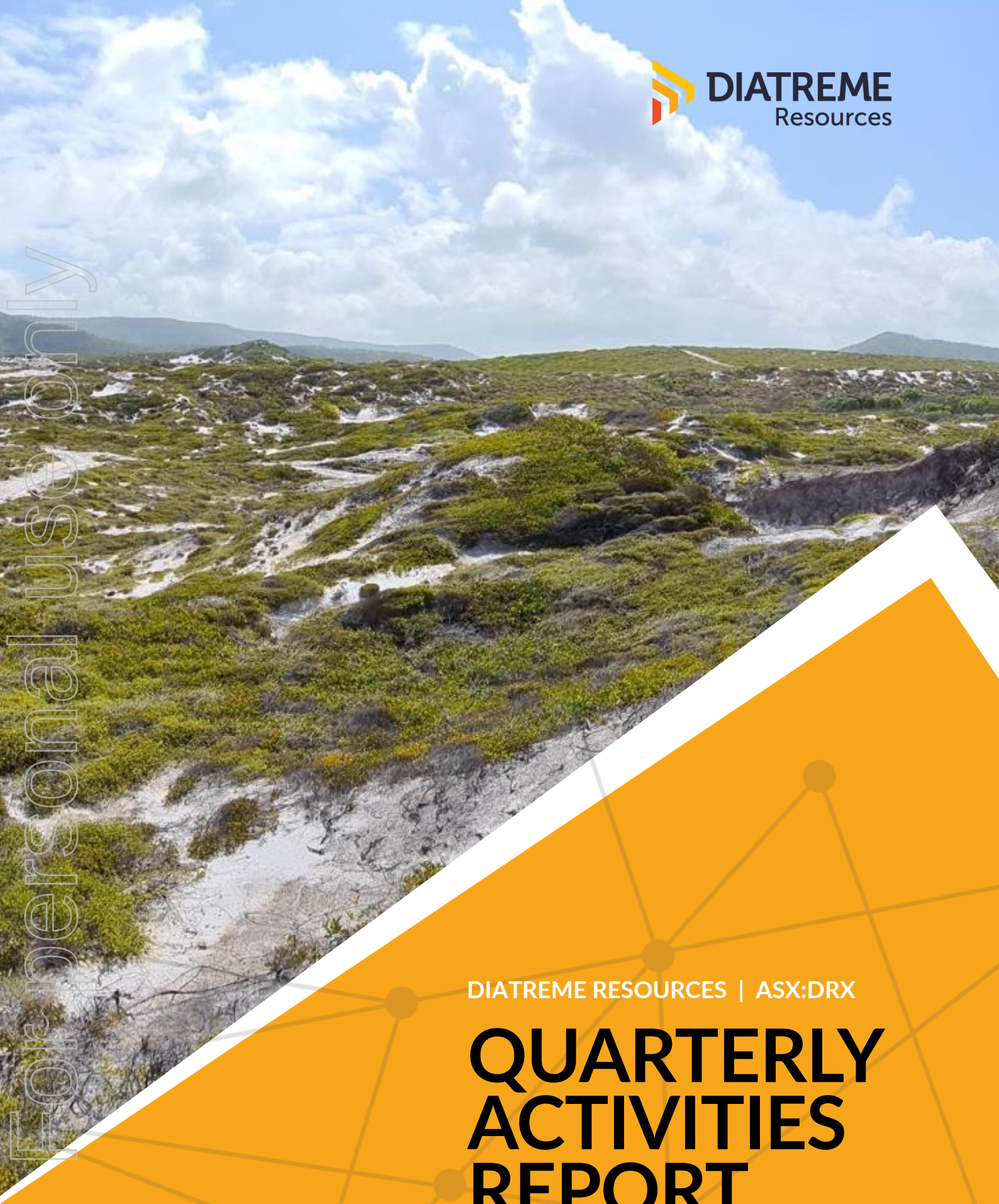

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DIATREME Resources

DIATREME RESOURCES | ASX:DRX

QUARTERLY ACTIVITIES REPORT

FOR THE PERIOD ENDED 30 June 2022

DIATREME Resources

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ASX RELEASE

29th July 2022

Quarterly Activities Report

For the period ended 30 June 2022

This announcement was authorised for release by the Board.

Neil McIntyre
Chief Executive Officer

Wayne Swan
Chairman

Contact – **Mr Neil McIntyre**
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CORPORATE

Diatreme held its Annual General Meeting on 26 May 2022 at its head office in Brisbane, Qld. All resolutions were passed on a poll (refer ASX release for the full results).

Post-quarter, on 26 June Diatreme announced an Extraordinary General Meeting of shareholders, to be held on 25 August 2022 in Brisbane.

On 27 June, Diatreme announced a transformational strategic partnership with global material solutions provider Sibelco. Under the agreement, Diatreme will raise up to $52 million, corporately and through the formation of a Silica Projects J/V, subject to certain conditions (refer details below).

The Company's cash and liquids position as at 30 June 2022 totaled $16.2 million.

During the quarter the Company made payments totaling $61k to related parties and their associates representing Directors' remuneration.

Noosa Mining Investor Conference presentation, July 2022

Diatreme's CEO Neil McIntyre presented at the 2022 Noosa Mining Investor Conference, held from 20-22 July in Noosa, Qld. The investor presentation and a recording of the event are available on the Company's website.

Diatreme also presented at the AusIMM Resourceful FNQ 2022 conference, held in Cairns on 19 May. A copy of the presentation is also available on the Company's website.

DIATREME Resources

QUARTERLY HIGHLIGHTS

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Galalar Silica Project & Northern Resource Project

- Transformational strategic partnership agreed with global material solutions provider Sibelco, to progress development of FNQ silica sand projects
- Diatreme raising up to $17 million via a strategic corporate placement to Sibelco, supported by major shareholder, Ilwella
- Progressive tranche Sibelco J/V to raise further $35m for NQ silica project development
- **Post-quarter**: Mining and Infrastructure Lease Applications lodged for Northern Silica Development near Port of Cape Flattery; delivering access to port and road connections to Hope Vale

Clermont Copper/Gold Project

- Farm-out partner Metallica Minerals (ASX:MLM) meets expenditure commitment, moves towards 51% ownership of Clermont JV; assay results (post-quarter) show potential for mineralised porphyry system at depth

Cyclone Zircon Project

- Talks continuing with potential development partners, with rising prices for zircon and rutile and constrained supply underpinning project demand.

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COMING SEPTEMBER QUARTER 2022 ACTIVITIES

Diatreme's operational focus for the September quarter 2022 comprises the following:

Galalar Silica Project and Northern Resource Project (NRP)

Galalar Silica Project

- Submissions received and assessed for Indigenous Labor Enterprise Solution programs to achieve Indigenous employment targets; to be reviewed by Native Title clan groups and Hopevale Congress
- Mining Project Agreement drafting progressing to final draft to allow communication on benefits to broader native title clan family members
- Tendering and Definitive Feasibility Study advancement, linked to submission of EIS
- Strategic review of personnel to support expanding work programs at Hope Vale, Qld
- Further silica product delivery from Mineral Technologies to allow distribution to offtake partners and specialist technology providers for testing
- Engineering review of preferred process plant manufacturing facilities
- Advance interactions on downstream research and development options with selected groups, advancing "value add" onshore potential
- Progress various community programs including junior rugby league, barefoot ballerinas and assessment of collaboration with regional universities and TAFE programs

Northern Resource Project (NRP)

Northern Silica

- Advance Mining and Infrastructure Lease Applications (MLA's lodged) with the Department of Resources and progress to RTN process with affected Native Title clan groups
- Commence scoping studies
- Finalise scope and program development for environmental studies
- Development Plan and budget approval to advance detailed assessment of Northern Silica Development
- Advance port option studies with Ports North
- Commission new drilling rig and support trucks for resource drilling programs at Casuarina and Si2 North
- Continue environmental monitoring and cultural heritage clearances
- Engage and train new personnel to execute planned development programs
- Rollout upgraded safety systems
- Review establishment of site laboratory facilities to reduce expenditures on external laboratory analysis

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Cyclone Zircon Project

- Continue work towards assembling an optimum mix of commercial parties to facilitate the project's development or divestment, amid continued rising demand and constrained supply of zircon and titanium products.

GALALAR SILICA PROJECT, QLD

Diatreme's high purity silica production plans gained a substantial boost during the quarter, with the Company announcing a strategic partnership with global material solutions provider, Sibelco.

Post-quarter, Diatreme lodged new Mining Lease Applications and Infrastructure MLA's for its Northern Silica Development, highlighting the potential for the development of a second, high-grade silica project.

Transformational strategic partnership with Sibelco

Diatreme announced on 27 June a strategic partnership with global material solutions provider, SCR-Sibelco N.V., with the potential to rapidly progress the development of the Company's emerging silica sand projects in Far North Queensland.

Under the agreement with a subsidiary of the European based company, Sibelco has become a significant shareholder in Diatreme via a $13.97 million strategic placement, representing a 15% shareholding in Diatreme post-raising.

Diatreme's largest shareholder, Ilwella, has strongly endorsed the new partnership and the Company's strategic development plans with a $3.3 million placement commitment alongside of Sibelco. The placement to Ilwella is subject to approval by Diatreme shareholders and if approved would see Ilwella hold around 19.99% of Diatreme shares.

Diatreme has also agreed a long-term joint venture with Sibelco to develop the Company's Galalar Silica Project and Northern Resource Project, with a progressive, two-tranche investment of up to $35 million, earning a 26.8% project interest post tranche two of the investment (subject to satisfaction of certain conditions, including Foreign Investment Review Board approval).

The investment quantum and resultant 26.8% fully diluted interest are based upon progressive group silica project valuations of $110m and $160m, respectively. It is anticipated that the first tranche investment will complete within the next six months (following satisfaction of the conditions precedent), with the second tranche to complete 12 months post the first tranche completion.

Co-operation principles for the asset joint venture include product marketing, the pursuit of onshore silica processing downstream opportunities and assistance in securing project finance. The newly formed joint venture company, Cape Silica Holdings Pty Ltd (CSHPL), will be responsible for developing and managing the Galalar and Northern Resource projects.

A new Non-Executive Director nominated by Sibelco will also be appointed to Diatreme's Board, assisting in progressing Diatreme's projects towards successful production. The appointment is expected to be formalised within weeks.

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New Mining, Infrastructure Lease Applications lodged

Post-quarter, on 5 July Diatreme announced the lodgement of Mining Lease Applications (MLA's) and Infrastructure MLA's for its Northern Silica Development, located near the Port of Cape Flattery. The proposed MLA's cover the entire Si2 and Casuarina dune systems.

These Mining and Mining Infrastructure Lease applications comprise:

Lease Name	Number	Purpose
Northern Silica	MLA 100308	Mining, processing, with infrastructure supporting both Northern Silica and Casuarina Silica leases.
Casuarina Silica	MLA 100309	Separated lease with infrastructure areas noted.
Northern Silica Port Access	MLA (Infrastructure) 100310	Access to port across Mitsubishi granted ML.
FNQPCL Cape Flattery Access	MLA (Infrastructure) 100313	Lease over the Ports North Freehold Leases.
Starke-Northern Silica Access 1	MLA (Infrastructure) 100311	Shortest possible access form Starke Rd to Northern Silica and camp.
Starke-Northern Silica Access 2	MLA (Infrastructure) 100312	Backup access to Northern Silica and Casuarina Silica.

Table 1 – Mining and Infrastructure MLA's, Northern Silica Development

Diatreme will undertake further drilling in Q3 2022 to assess opportunities to expand the Si2 North resource and upgrade information on the Casuarina dune system.

Concurrently, Diatreme is applying for an Infrastructure Lease (Section 316 of the Mineral Resources Act 1989) for product transport purposes to link the Northern Silica MLA areas to the State-owned Cape Flattery Port, located within 15km of the project area. Expansion or addition to the current port facilities is being assessed, facilitating the port's long-term operation and expansion.

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Diatreme is also seeking seek to negotiate a Mining Project Agreement with the Native Title Clan members, utilising the extensive negotiations and documentation produced from the Galalar agreements. This is designed to introduce commonality to agreements with the Native Title clan groups and will define a joint commitment to apply the principles of Free, Prior and Informed Consent to all aspects of decision making by Hope Vale Congress and the Native Title Holders.

A liaison committee will be established to interact with Diatreme site personnel and the Native Title clan representatives and Hope Vale Congress.

Diatreme is also working with other stakeholders, including the Hope Vale Shire Aboriginal Council and relevant State and Commonwealth government agencies. Ongoing community consultation and information meetings are planned for 2022-2023.

Figure 1 – Cultural Heritage Survey with representatives of the Dingaal Clan

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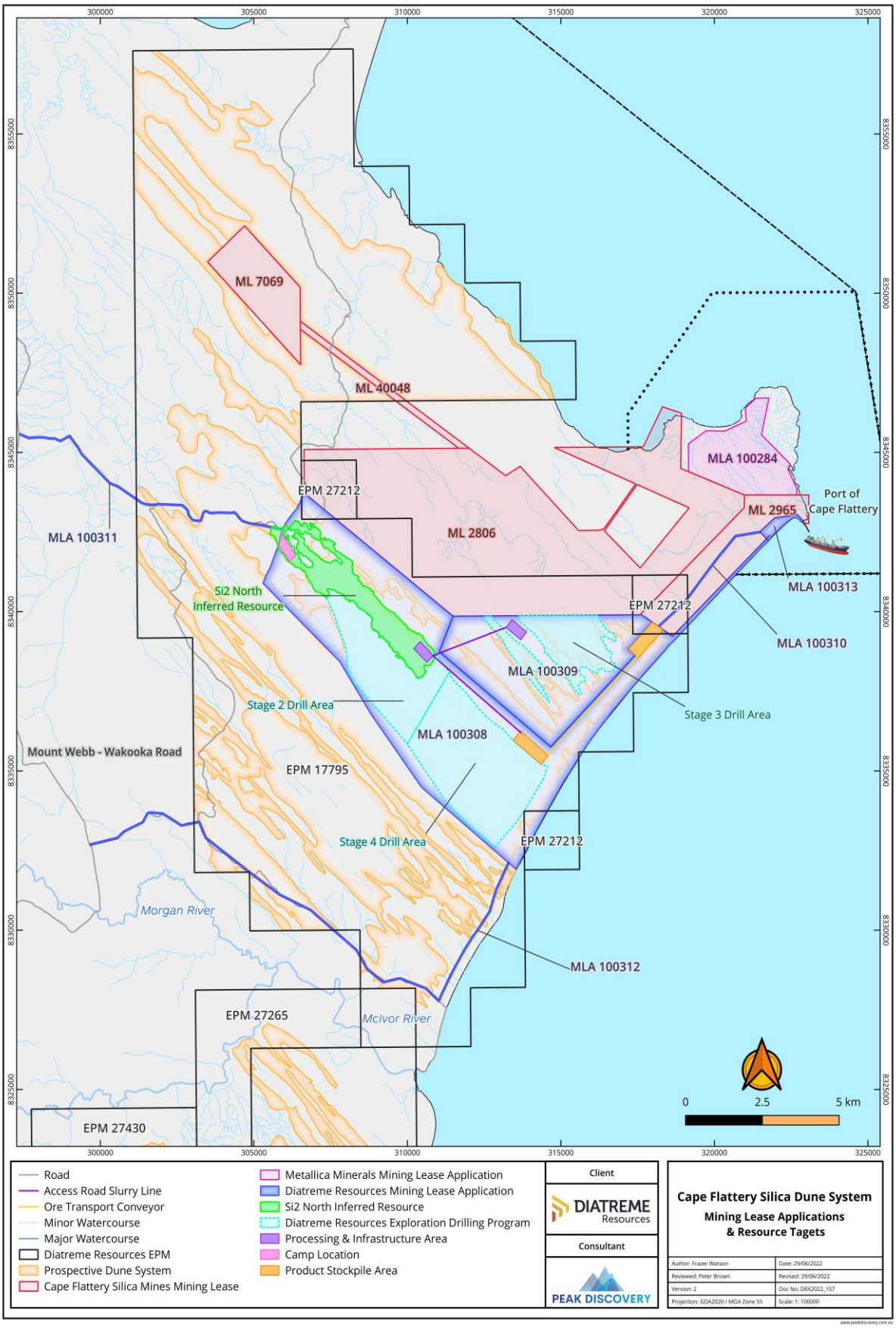

Figure 2 – Mining Lease Applications and Resource Targets

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Table 2 – Total Resource Estimate Galalar Silica Project & Si2 North

	JORC Resource Category	Silica sand (Mt)	Silica sand (Mm^3)	Cut-off SiO_2 (%)	SiO_2 %	Fe_2O_3 %	TiO_2 %	LOI %	Al_2O_3 %	Density (t/m^3)
Galalar	Measured	43.12	26.95	98.5	99.21	0.09	0.11	0.16	0.13	1.60
Galalar	Indicated	23.12	14.45	98.5	99.16	0.09	0.13	0.24	0.10	1.60
Galalar	Inferred	9.22	5.76	98.5	99.10	0.11	0.16	0.27	0.11	1.60
Galalar	**Sub Total****	**75.46**	47.16	98.5	99.18	0.09	0.12	0.20	0.12	1.60
Si2 North	**Inferred**	**124.1**	77.56	98.5	99.33	0.11	0.15	0.12	0.08	1.60
Combined	Total	**199.56**		98.5						1.60

** Resource estimate current as of 13 September 2021*

*** Galalar Sub-total inferred, indicated and measured*

Figure 3 – Purpose-Built Drilling Fleet and Support

Galalar Project – next steps

Permitting on the Company's 1.35 million tonne per annum (Mtpa) flagship Galalar project is well advanced and remains a priority. Mining Project Agreements are in the final stages of drafting, while environmental permitting approvals are expected during 2023, together with the completion of a definitive feasibility study. Subject to these approvals, construction could commence in late 2023, with first production as early as 2024.

Diatreme continues to engage with a range of potential project development partners, including potential offtake and other agreements, amid increasing demand for high-grade silica from the fast-growing solar PV industry.

The parallel advancement of the Galalar and Northern Silica Development projects over the coming five years will allow for increased targeted production capacity and scale. These projects will deliver significant benefits to all stakeholders, including First Nations and other local communities and Queensland.

Significantly, Diatreme's ESG principles govern its delivery of low impact projects, aligned to Australia's 2022 Critical Minerals Strategy, which recognises the importance of silica in the rapid transition to lower global carbon emissions.

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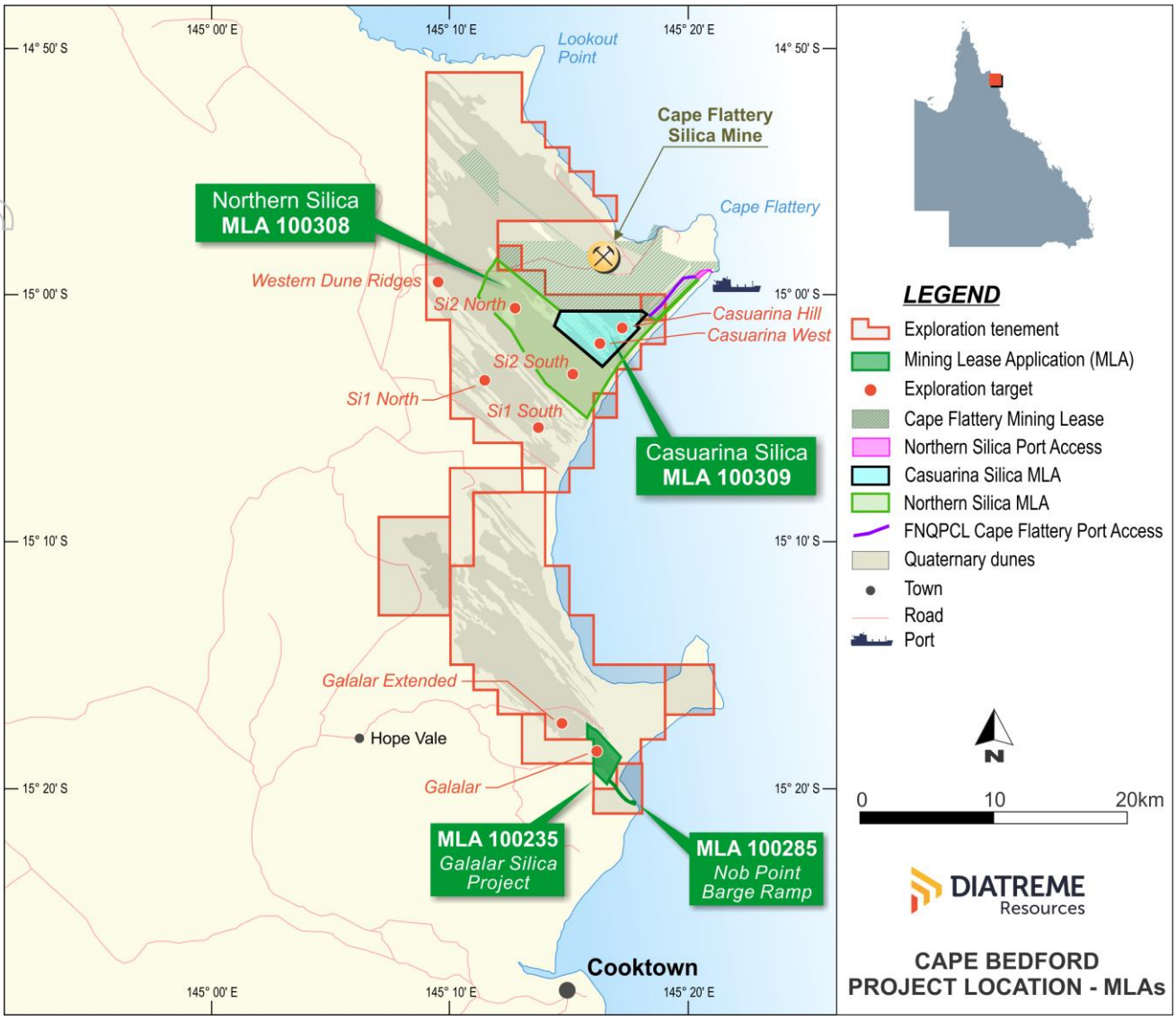

Figure 4 – Cape Bedford Project Location, showing key Diatreme MLA's

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CLERMONT COPPER/GOLD PROJECT, QLD

The Clermont Copper/Gold Project continues to progress under a binding Memorandum of Understanding (MOU) with Metallica Minerals Limited (ASX:MLM).

On 29 April, Metallica announced it had met the MOU's expenditure commitments to earn 25% of the project and had made the decision to move to the second stage, increasing its interest to 51% through spending an additional $700,000 on exploration prior to 27 April 2023.

Metallica has drilled two diamond holes at Clermont, RDD019 and RDD020, totalling 1,030.4m. The two holes were drilled to test a possible copper gold exploration target withing the Rosevale Porphyry Corridor.

Porphyry style alteration was intersected in both drill holes, with potassic and phyllic alteration observed in both and with the intensity of alteration increasing with depth. Sulphide mineralisation in the form of iron pyrite, chalcopyrite and molybdenum was also observed in the core removed from both holes.

Post-quarter, on 13 July Metallica reported assay results for the two diamond drill holes. Anomalous copper was recorded in both drill holes, with grades ranging from 5ppm Cu to 1,840ppm Cu in hole RDD019 and 2ppm to 3,460ppm Cu in RDD020.

Molybdenum grades ranged from <1ppm Mo to 312 ppm Mo in RDD019 and from <1ppm Mo to 87ppm Mo in RDD020. Gold grades ranged from <0.01 to 0.11 Au in RDD019 and from <0.01 ppm Au to 1.75 g/t Au in RDD020.

The assay data showed a distinct increase in copper mineralisation with hole depth, with the highest copper assays recorded at the base of each hole. The same trend was also evident with silver assays in RDD020. The highest recorded gold assays occurred in the bottom 30m of RDD020, with the highest gold intercept of 2m @ 1.69 g/t Au recorded in hole RDD020 from 475m.

Geochemical modelling, especially of the tin and tungsten assays, indicated that both drill holes possibly intersected the porphyry immediately above or adjacent to the expected location of the more mineralised core.

Metallica's future work at the project will include reviewing geochemical and petrological data from RDD019 and RDD020 in conjunction with data available from historical holes drilled on the periphery of the magnetic low.

This is expected to further assist in identifying which part of the mineralised porphyry system has been intersected and to aid in recommending further exploration activity.

A ground magnetic survey is also expected to be undertaken over the magnetic low feature to improve understanding of the geometry of the anomaly.

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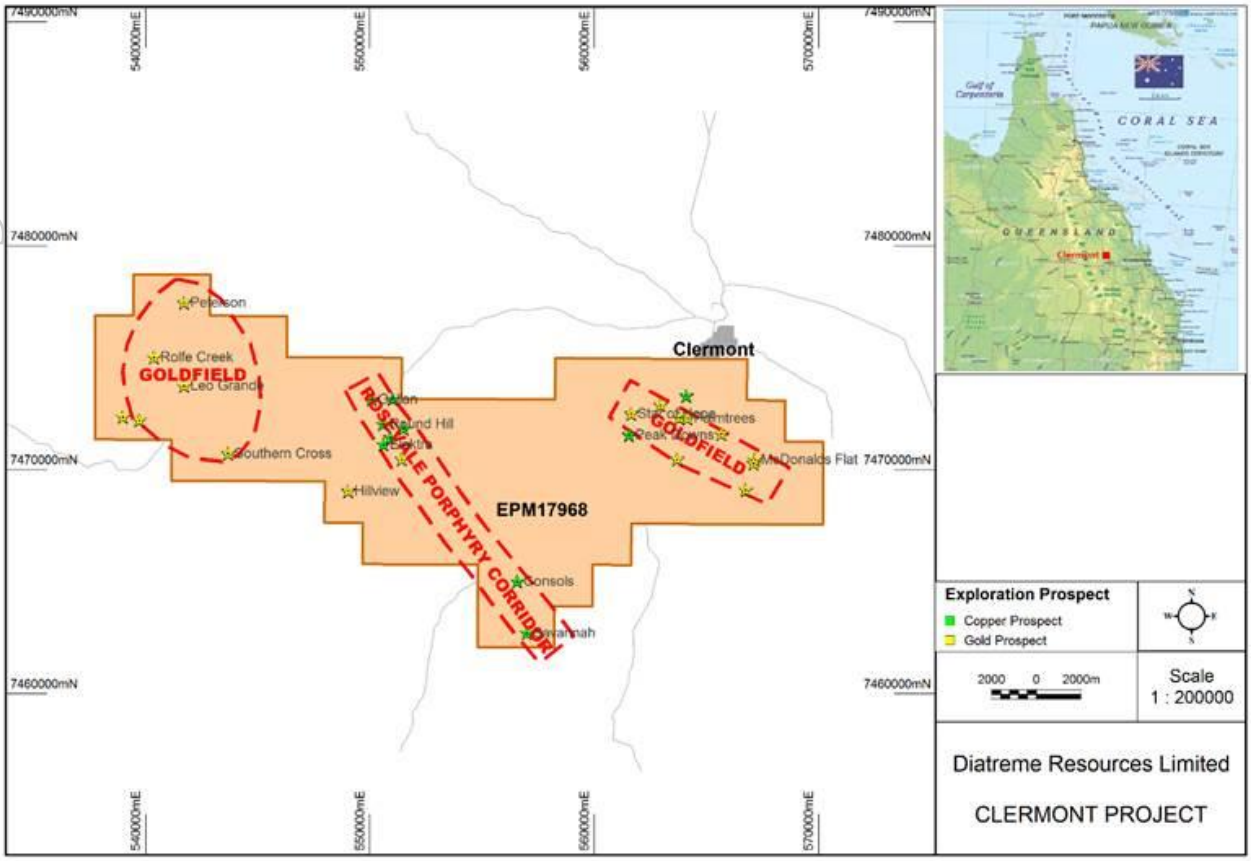

Figure 5: Clermont Copper/Gold Project

CYCLONE ZIRCON PROJECT, WA

Diatreme continues to advance discussions with potential development partners for the Cyclone Zircon Project in Western Australia's Eucla Basin, with the project well positioned given declining global supply and growing demand.

Major producer Iluka Resources reported a weighted average zircon price for premium and standard sand of US$1,910 per tonne in the second quarter 2022, up 25% from the second half 2021. The rutile price also rose by 17% to US$1,506 per tonne.

Despite a challenging global macro environment, demand for such products remains strong and global supply tight, according to Iluka's quarterly review to 30 June 2022.

These positive market dynamics support Diatreme's aim to maximise value from Cyclone by attracting a suitable investment partner to develop this shovel-ready project.

The Company will keep the market fully informed when talks potentially transition to a more formally documented process.

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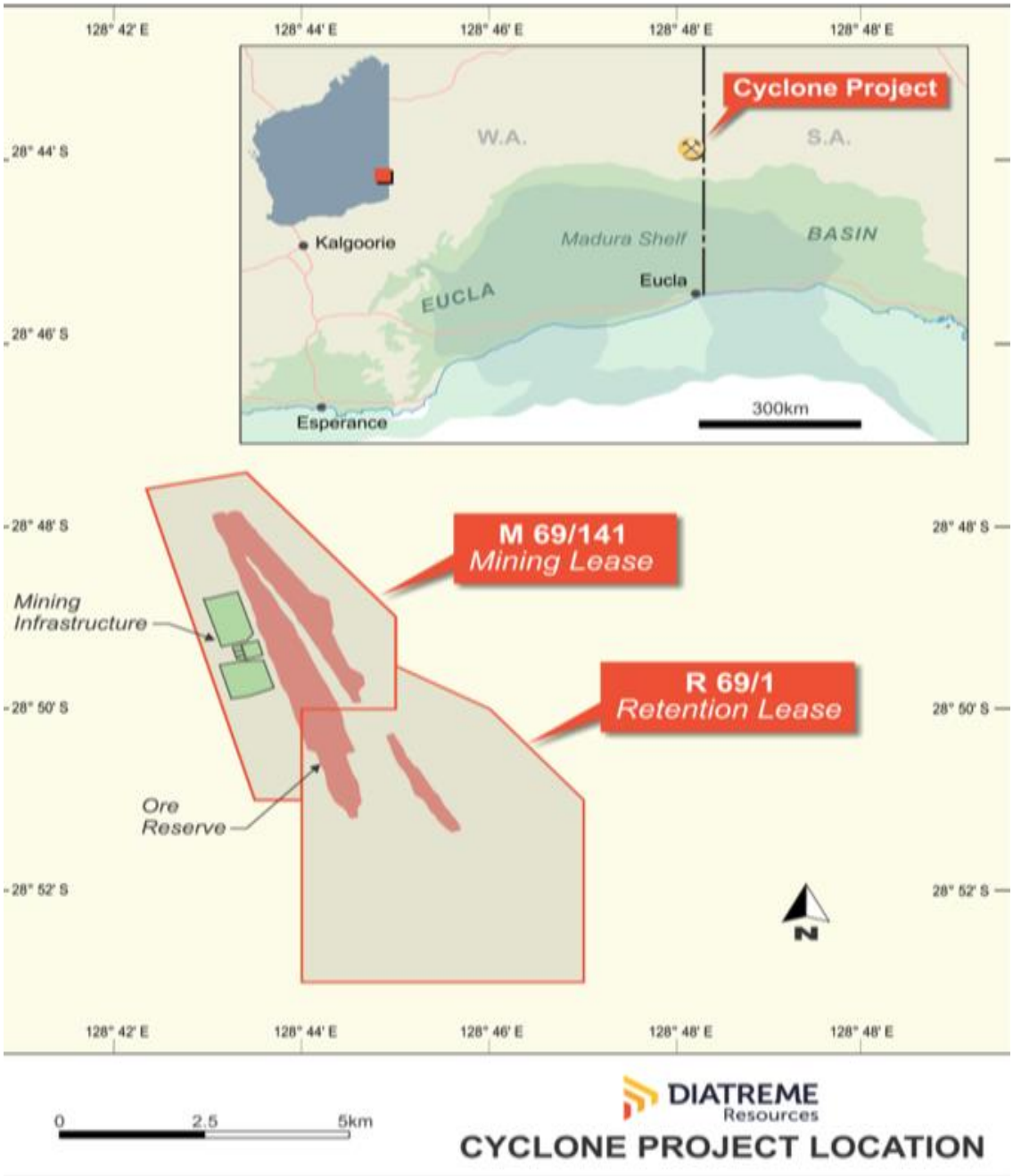

Figure 6: Cyclone project location

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Figure 7: Diatreme CEO Neil McIntyre (right), with Robyn Bartlett (centre), Group Leader, Community and Social Performance and Peter Brown, Chief Operating Officer at the Noosa Mining Investor Conference

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MINERAL SANDS AND SILICA - COMPETENT PERSON STATEMENTS

The information in this report that relates to Mineral Resources at the Cape Bedford Project (including the Galalar Silica Project) is based on information compiled by Bryce Mutton from Ausrocks Pty Ltd who has significant experience in Industrial Minerals and Quarry Resource assessments.

Bryce Mutton 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). Bryce Mutton consents to the inclusion in the report on the matters based on their information in the form and context in which it appears.

The information in this report that relates to Exploration Results and Exploration targets from the Cape Bedford Project is based on information reviewed and compiled by Mr. Neil Mackenzie-Forbes, a Competent Person who is a Member of the Australian Institute of Geoscientists. Mr. Mackenzie-Forbes is a director of Sebrof Projects Pty Ltd (a consultant geologist to Diatreme Resources Limited). Mr. Mackenzie-Forbes has sufficient experience which is relevant to the style of mineralisation and type of deposit 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. Mackenzie-Forbes consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report, insofar as it relates to Mineral Resources at the Cyclone Project is based on information compiled by Mr Ian Reudavey, who was a full time employee of Diatreme Resources Limited and a Member of the Australian Institute of Geoscientists. Mr Reudavey has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he has 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 Reudavey consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

The information in this report, insofar as it relates to Ore Reserves at the Cyclone Project is based on information compiled by Mr Phil McMurtrie, who is a director of Tisana Pty Ltd (a consultant to Diatreme Resources Limited), and a Member of the Australasian Institute of Mining and Metallurgy. Mr McMurtrie has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he has 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 McMurtrie consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

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APPENDIX 1

Appendix 1 provides information required under ASX listing rule 5.3.3 for mineral exploration entities.

Interest in mining tenements at end of quarter

State	Tenement Name	Tenement ID	Status	Location	Interest	Holder
WA	Cyclone	M 69/141	Granted	Eucla Basin	100%	LSPL
WA	Cyclone Extended	R 69/1	Granted	Eucla Basin	100%	DRX
QLD	Clermont	EPM 17968	Granted	Clermont	100%	CHAL
QLD	Cape Bedford	EPM 17795	Granted	Hopevale	100%	DRX
QLD	Cape Bedford	EPM 27265	Granted	Hopevale	100%	DRX
QLD	Cape Bedford	EPM 27212	Granted	Hopevale	100%	DRX
QLD	Cape Bedford	EPM 27430	Granted	Hopevale	100%	DRX
QLD	Cape Bedford	MLA 100235	Application	Hopevale	(Pending)	DRX
QLD	Cape Bedford	MLA 100285	Application	Hopevale	(Pending)	DRX
QLD	Cape Flattery	MLA 100308	Application	Cape Flattery	(Pending)	DRX
QLD	Cape Flattery	MLA 100309	Application	Cape Flattery	(Pending)	DRX

Beneficial percentage interests held in farm-in or farm-out agreements at end of quarter

State	Project name	Agreement type	Parties	Interest held at end of quarter by exploration entity or child entity	Comments
WA	Cyclone Zircon Project	Farm-out Heads of Agreement	LSPL and Perpetual Mining Holding Limited	94%	HoA announced Jan 2014, initial 6% farm-out completed 18 Sept 2014 – Subject to dilutionary non-contribution clauses.

Abbreviations:

M	Western Australia	Mining Lease	DRX - Diatreme Resources Limited
R	Western Australia	Retention Licence	CHAL – Chalcophile Resources Pty Ltd
EPM	Queensland	Exploration Permit for Minerals	LSPL – Lost Sands Pty Ltd
EPMA	Queensland	Exploration Permit for Minerals Application	
MLA	Queensland	Mining Lease Application	