ASX ANNOUNCEMENT

15 October 2026

PFS confirms NSP's potential as profitable new FNQ silica sand mine

Long life, low cost, high purity operation supported by Maiden Ore Reserve

- **Pre-Feasibility Study (PFS) for Diatreme's Northern Silica Project (NSP) confirms potential as long life, low cost and high margin silica sand operation at Cape Flattery, Far North Qld (FNQ), supporting FNQ economic development and supplying the global solar energy sector as a recognised Qld based critical mineral.**

- **Phase 1 – Start-up operations of 3 Mtpa modelled over initial 25-year mine life delivers pre-tax NPV of $1.29b and pre-tax IRR of 36%; life of mine (LOM) gross revenue of $8.1b and net revenue of $6b, underpinned by C1 cash cost (FOB) of $25/t; construction capital of $443.5m with four-year payback, without expansion of production profile over LOM.**

- **Optional Phase 2 – Potential expansion up to 5 Mtpa of production from Year 3 delivers pre-tax NPV of $2.4b and pre-tax IRR of 46%, with just $38.5m of additional CAPEX; LOM gross revenue of $13.1b and net revenue of $9.8b, underpinned by C1 cash cost (FOB) of $18/t.**

- **Maiden Ore Reserve of 151m tonnes grading 99.25% SiO_2 for the Si2 deposit underpins initial 25 year mine life and supports the expanded production requirements for the NSP's Phase 2 expansion; derived from the world-class 301.5 Mt Si2 Mineral Resource (99.2% SiO_2), one of the largest and highest-purity silica sand projects globally.**

- **NSP to benefit local community with focus on local workforce and 50% Indigenous employment target; total employment of 214 during construction and 128 in operation and emphasis on maximising local procurement, training and business development to support the operation.**

- **Development to be advanced in joint venture with Sibelco Asia Pacific, a global leader in industrial minerals and silica processing and significant committed offtaker at 27% of production.**

Silica sand developer Diatreme Resources Limited (ASX: DRX) has completed a Pre-Feasibility Study (PFS) for its flagship Northern Silica Project (NSP) in Far North Queensland, with the PFS confirming the project's potential to be a profitable, long-life and low-cost producer of low-iron, high-purity silica sand for the fast-growing solar PV and specialty glass markets.

The PFS demonstrates compelling economics for a Phase 1 operation of **3 Mtpa** production output with no expansion over an initial **25-year mine life**. The PFS also evaluated a potential Phase 2 expansion of up to **5 Mtpa of production output from Year 3** over an initial 25-year mine life, which shows an upside case requiring limited additional CAPEX of just $38.5m but delivering significant additional returns with a **pre-tax NPV of $2.419b and pre-tax IRR of 46%.**

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Diatreme's CEO, Mr Neil McIntyre commented: *"This Pre-Feasibility Study confirms what we have long known, that the NSP is a genuine world-class asset. The 3 Mtpa Phase 1 start up case, with a pre-tax NPV of $1.29 billion and a 36% pre-tax IRR, delivered from a low-cost operation with a four-year payback, places NSP among the most compelling critical minerals developments in Australia. With our silica resource base and our joint venture with global material solutions leader Sibelco, we are exceptionally well positioned to move through the next steps including a Definitive Feasibility Study (DFS) and then into development.*

"Importantly, the NSP will contribute enormous economic benefits to the local community of Hope Vale and Cooktown. Diatreme has committed to a 50% Indigenous employment target, and we are focused on maximising local employment and local business opportunities. The operation will employ up to 214 during construction and 128 in operation, with a focus on local procurement and service providers, ensuring benefits stay where benefits belong in the Project area.

"The NSP has also been recognised by the Federal Government as a Major Project and by the Queensland Government as a Coordinated Project, with this Qld critical minerals project set to help power the booming solar energy sector, contributing to global decarbonisation and energy security as a key strategic asset for Queensland and Australia. We look forward to working even more closely with local stakeholders, business partners, government and community to deliver this project as efficiently as possible, while maximising both economic and environmental sustainability."

Diatreme Chairman, Mr Brian Flannery said: *"The PFS is a significant milestone for Diatreme and our shareholders. The scale and purity of our silica portfolio, combined with growing global demand for solar PV and specialty glass, gives us a rare opportunity to build an inter-generational, low-iron high purity silica business, with the Cape Flattery deposit one of the largest high purity silica sand deposits in the world.*

"Together with our partner Sibelco and the support of the Queensland Government's critical minerals agenda, we are focused on unlocking this value responsibly for the benefit of our shareholders and in close partnership with Traditional Owners and the local community.

"We have a genuine opportunity to build a project of national and international significance, and I am confident we have the right team in place to ensure success, building not only Diatreme's future but contributing economically to the future of Far North Queensland and beyond."

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Project Overview

The NSP is a proposed greenfield open-cut high purity "low iron" silica sand mine located adjacent to existing export and port infrastructure within the Cape Flattery to Cape Bedford silica mineral province. The Phase 1-only base case assumes a 25-year mine life at a 3 Mtpa production rate, producing 75 Mt of product over LOM. The Phase 2 expansion case contemplates an increase up to 5 Mtpa of production from Year 3, producing 121 Mt over LOM. The estimated additional CAPEX of $38.5 million for the Phase 2 expansion is expected to be funded from Phase 1 free cash flows, which will be further evaluated during the DFS.

The Phase 1-only case has been adopted as the base case as any expansion decision remains subject to market conditions and product demand. Approvals for the Phase 2 expansion are being progressed alongside Phase 1 to preserve optionality for a future scale-up to 5 Mtpa. The Phase 1-only economics detailed in Table 1 reflect a long-

life, low-cost operation with strong margins driven by premium product pricing into the solar PV and specialty glass markets.

Sibelco Strategic Joint Venture

The NSP is being advanced through Diatreme's joint venture (JV) with **Sibelco Asia Pacific (Sibelco)**, whose European based parent company Sibelco is one of the world's leading providers of industrial minerals, bringing world-class silica processing, technical, marketing and Asian market access. Sibelco has invested **c.$56 million** in DRX and the silica joint venture and plays an active role in supporting the FNQ silica sand joint venture.

Sibelco has a c.27% direct holding in the JV (Diatreme c.73%) and within the JV terms has the right, commensurate with its ownership share to product offtake (subject to agreement of terms and any required shareholder approvals). Product pricing is to be at a yet to be agreed arm's length commercial basis.

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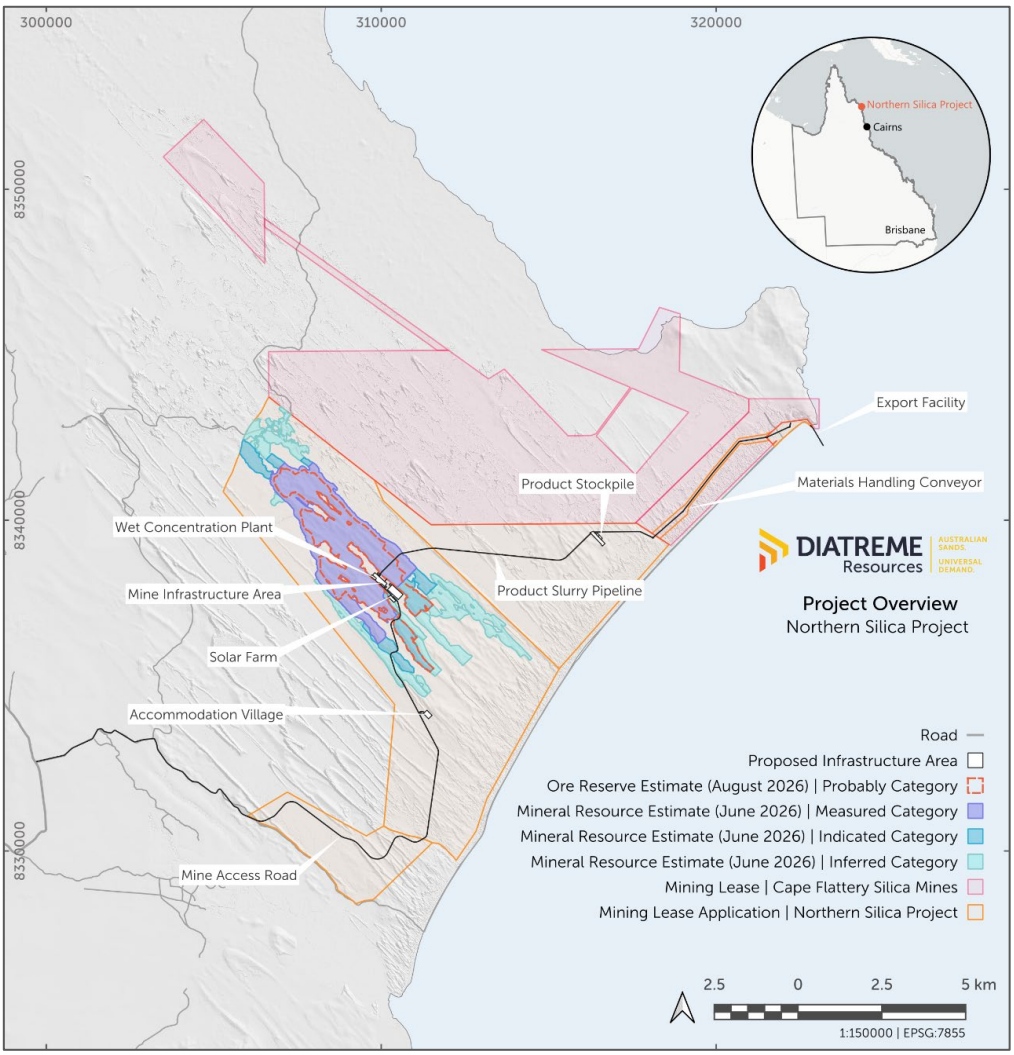
Note:

- **The PFS is presented on a 100% basis.**
- **A Detailed PFS Study Report** is further attached as Appendix 1 to this announcement.
- **JORC Table 1** is further attached as Appendix 2 to this announcement.

Figure 1: Project Overview



IMPORTANT CAUTIONARY STATEMENTS, NOTICES AND DISCLAIMERS

This announcement has been prepared by Diatreme Resources Limited (ASX: DRX) (Diatreme or the Company). It summarises the outcomes of the Pre-Feasibility Study (PFS) for the NSP and should be read in its entirety, together with the detailed PFS attached as Appendix 1, the JORC Code 2012 Table 1 in Appendix 2, and the Company's other announcements lodged with the ASX.

Not an offer or financial product advice: This announcement is for information purposes only. It does not constitute a prospectus, product disclosure statement or other offer document under the Corporations Act 2001 (Cth) or the law of any other jurisdiction, and it does not constitute an offer, invitation, solicitation or recommendation to acquire or dispose of securities in Diatreme. Nothing in this announcement constitutes financial product, investment, legal, taxation or other advice, and it has been prepared without taking into account the objectives, financial situation or needs of any person. Investors should seek independent professional advice and should not make any investment decision on the basis of this announcement alone.

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Pre-Feasibility Study Cautionary Statement: The PFS referred to in this announcement has been undertaken by Diatreme, in conjunction with independent consultants, to assess the technical and economic viability of the NSP's development. The PFS has been undertaken to a level of accuracy, and using methods, in accordance with the guidelines published by the Australasian Institute of Mining and Metallurgy (AusIMM) and the Association for the Advancement of Cost Engineering (AACE), with capital and operating cost estimates prepared to AACE Class 4 (Pre-Feasibility Study) level. The PFS is preliminary in nature and is based on technical and economic assessments that are not sufficiently detailed or definitive to provide certainty that the outcomes indicated will be realised. Further work, including completion of the DFS and the securing of outstanding approvals, agreements and financing, is required before a Final Investment Decision can be made.

Forecast Financial Information: The forecast financial information referred to in this announcement (including the pre-tax NPV of $1,290m and pre-tax IRR of 36% for the Phase 1-only case, and the pre-tax NPV of $2,419m and pre-tax IRR of 46% for the Phase 1 and 2 expansion case) is derived from the production target and is based on the material assumptions set out in this announcement, including an average silica sand price of US$55/t FOB (A$80.9/t), an average AUD:USD exchange rate of 0.68 and a real, unleveraged discount rate of 8%. The forecast financial information is preliminary in nature, is subject to the same uncertainties and contingencies as the production target, and there is no certainty that the forecast financial outcomes will be realised.

Mineral Resources and Ore Reserves: The Mineral Resource and Ore Reserve estimates referred to in this announcement have been estimated and reported in accordance with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012) and Chapter 5 of the ASX Listing Rules. Mineral Resources are reported inclusive of Ore Reserves. Mineral Resources that are not Ore Reserves do not have demonstrated economic viability. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original ASX releases referenced in this announcement, that all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed, and that the form and context in which the Competent Persons' findings are presented have not been materially modified from the original releases.

Production Target: The production target referred to in this announcement of 75 Mt of silica sand product over an initial 25-year mine life under the Phase 1-only case and 121 Mt under the Phase 1 and 2 expansion case is based entirely on the maiden Ore Reserve for the Si2 Deposit of 151.25 Mt (100% Probable), which was derived from approximately 87.3% Measured and approximately 12.7% Indicated Mineral Resources (with the first five years of production derived from approximately 73% Measured and 27% Indicated Mineral Resources). No Inferred Mineral Resources have been included in the production target or in the forecast financial information derived from it. The material assumptions on which the production target is based are set out in this announcement and in the JORC Code 2012 Table 1. The Company confirms, in accordance with Chapter 5 of the ASX Listing Rules, that it has a reasonable basis for the production target and considers all material assumptions to be based on reasonable grounds; however, there is no certainty that the production target will be achieved.

Funding: Project financing has not been secured. For the purposes of the PFS, Phase 1 development capital (estimated at $443.5m including contingency) is assumed to be funded through an equity placement, with final funding pathways potentially comprising a combination of debt, equity and government funding sources, including the Northern Australia Infrastructure Facility (NAIF) and Export Finance Australia (EFA). There is no certainty that the Company will be able to secure funding when required or on acceptable terms, and funding by way of an issue of new equity may result in dilution of existing shareholders. The funding assumption is a material assumption underpinning the production target and the forecast financial information.

Key Risks: Realisation of the outcomes indicated by the PFS is subject to a range of risks, including (without limitation) securing access to the Port of Cape Flattery; the grant of Mining Leases and other tenure; execution of native title and mining agreements with Traditional Owners; the grant of environmental approvals and water licences; silica sand prices and exchange rates; the securing of offtake agreements; and the availability of project financing. These and other risk factors are described in this announcement and in the attached PFS.

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Detailed Project Economics – PFS Results

A financial model has been developed for the Project which has evaluated the economics of the Phase 1 and 2 development, as well as a Phase 1-only development case over a consistent 25-year mine life.

The PFS has delivered robust economics for the NSP under both scenarios - delivering low production costs and modest CAPEX requirements over a long project life with the likely ability to extend.

Table 1: Economic Metrics

Key Economic Metric	Unit	Phase 1-only 3 Mtpa Production (no expansion)	Phase 1 & 2 5 Mtpa Production
NPV (pre-tax)	**A$m**	**$1,290**	**$2,419**
IRR (pre-tax)	**%**	**36%**	**46%**
NPV (post-tax)	A$m	$867	$1,661
IRR (post-tax)	%	29%	38%
Payback Years	years	4 Yr(s)	4 Yr(s)
Mine Life	years	25 Yr(s)	25 Yr(s)
Production over LOM	Mt	75Mt	121Mt
Construction CAPEX - Phase 1 (inc Contingency)	A$m	$443.5	$443.5
Construction CAPEX - Phase 2 (inc Contingency)	A$m	$0	$38.5
Gross Revenue	A$m	$8,134	$13,123
Shipping and Insurance	A$m	$2,007	$3,239
Marketing	A$m	$61	$97.9
Net Revenue	A$m	$6,066	$9,787
*C1 OPEX Cost (FOB)	A$m	$1,397	$1,700
EBITDA	A$m	$4,571	$7,975
Net Free Cash Flow (Post tax)	A$m	$2,764	$5,048
***C1 Cash Cost (FOB)**	**A$/t**	**$25**	**$18**

**Excludes Sustaining Capital and Royalties*

Table 2: LOM Assumptions

LOM Assumption Metric	Unit	Value
Average FX	AUD/USD	0.68
Discount rate (real, unleveraged)	% pa	8
Average product yield (recovery)	%	80
Average sales price (FOB)	USD/t	$55
Average sales price (FOB)	AUD/t	$80.9
Shipping and Insurance	AUD/t	$26.8
Marketing	AUD/t	$0.81

Capital Cost Breakdown

The economic assessment of the Project is supported by a CAPEX estimate which was prepared and based upon PFS level Class 4 pricing and suitable engineering detail for process and non-process infrastructure by external consultants, together with internally sourced data by Diatreme's technical team.

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The CAPEX estimate includes all direct (process and non-process infrastructure) costs, indirect (owners and other) costs, contingency and other allowances. The tables below provide a summary of the capital cost estimate for the Project. Note that all costs provided in this section are in $AUD millions (unless stated otherwise).

Table 3: Capital Cost Breakdown

WBS	Description	Phase 1: 3 Mtpa Prod A$m	Phase 2: 5 Mtpa Prod A$m	Phase 1 & 2 Cumulative Totals A$m
1000	Mining	17.5	2.70	20.2
2000	Processing	73.9	18.8	92.7
5000	Common Services	42.6	2.8	45.3
6000	On Site Infrastructure	121.4	3.5	124.9
7000	Off Site Infrastructure	36.7	0.0	36.7
8000	Pre-Production Cost	6.7	0.8	7.5
9000	Owners / Indirect Cost	77.0	4.9	81.8
10000	Offsets & Rehabilitation	10.00	0.00	10.0
	Total excluding contingency	**385.6**	**33.5**	**419.1**
	Contingency (15%)	57.8	5.02	62.9
	Total including contingency	**443.5**	**38.5**	**482.0**

Figure 2: NSP Project layout | Accommodation Village Area

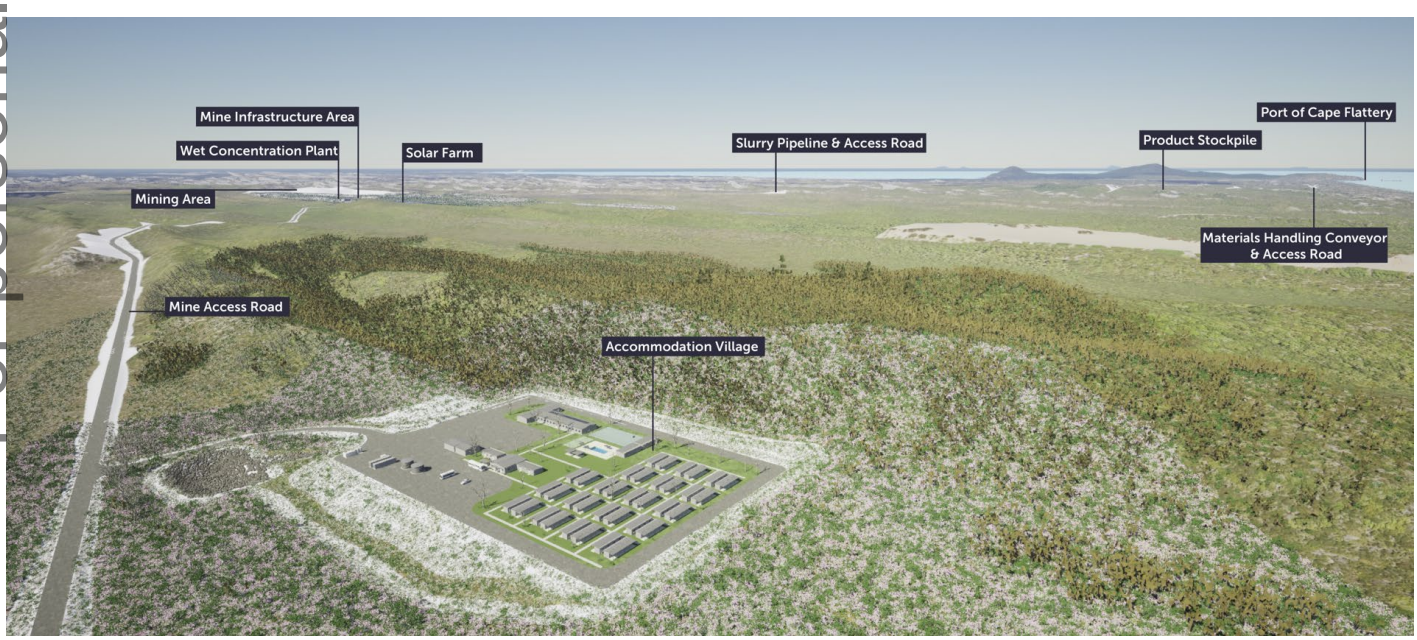

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Figure 3: NSP Project layout | Wet Concentration Plant and Mine Infrastructure Area

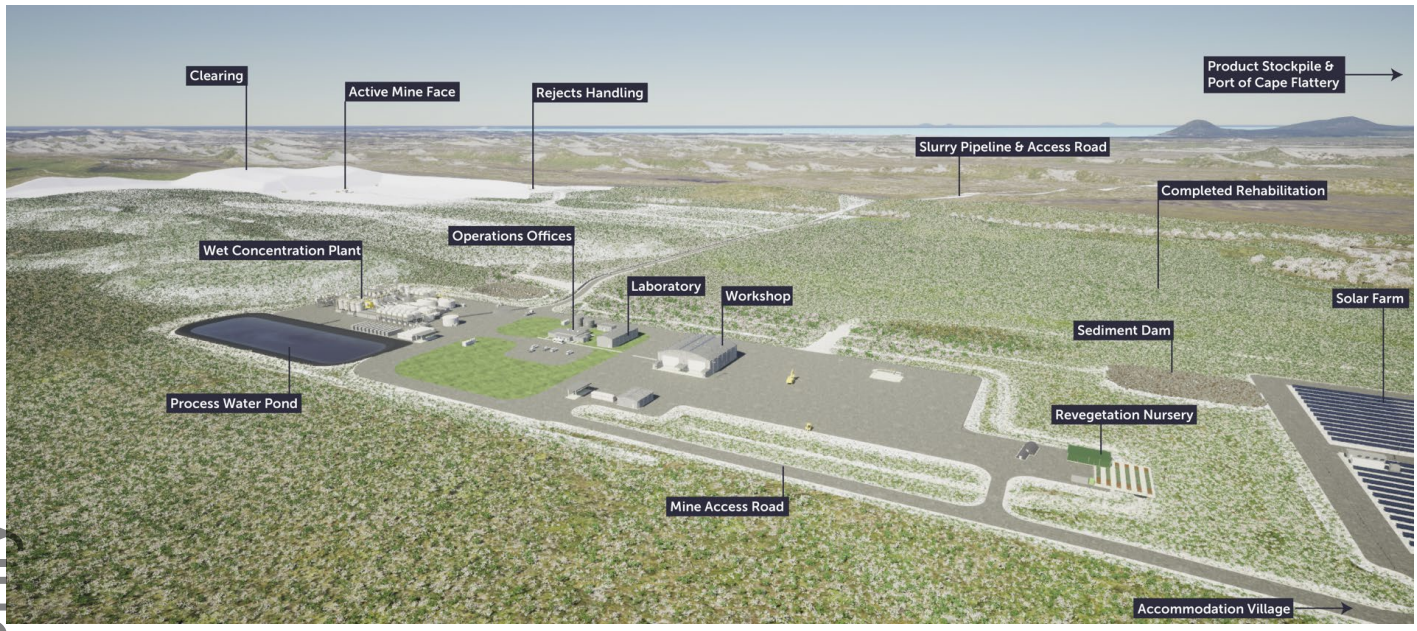
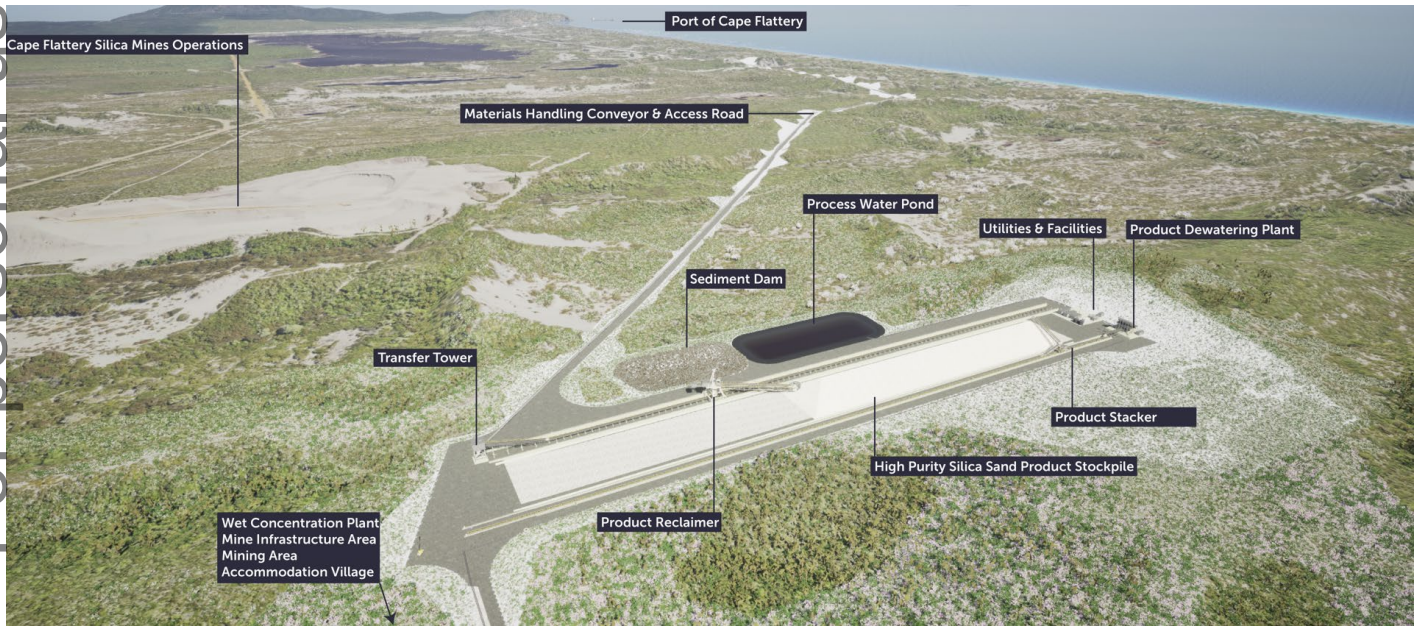


Figure 4: NSP Project layout | Product Stockpile and Export Conveyor



Silica Sand Pricing

The NSP can produce a premium grade "low iron" silica product (also known as PV grade) suitable for use as direct feed product by glass manufacturers for ultimate end use in the sheet or covering glass used on solar panels. The characteristics needed for PV grade silica sand are primarily focused on low iron, ideally sub or no more than 100 ppm, but manufacturers will also accept product in the 50-150 ppm range (with additional premiums or price penalties within the range), correct particle size range and low levels of other key contaminants.

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The Project consistently achieves these specifications through metallurgical testwork, and is looking to de-risk global supply chains, which have recently had supply issues from existing supply sources and are increasingly looking to offshore suppliers of this premium silica product.

The global silica sand market is fundamentally bifurcating, moving away from a single commodity price due to escalating technical demands across critical industrial sectors. Price premiums for high-purity, low-iron silica are no longer marginal, but instead reflect the material's indispensable role in high-value applications and the constraints of natural supply.

While standard construction sand sells for tens of dollars per tonne, the market shows a clear quality-based pricing hierarchy. Premium glass-grade sand (e.g., <0.035% Fe_2O_3) commands US$50–$100, driven by global demand for clear flint and architectural flat glass. This premium sharpens dramatically for the booming solar PV glass sector, which mandates ultra-low iron (often 50–150 ppm Fe_2O_3) to maximise energy efficiency.

This segment, led by manufacturers in the Asia-Pacific region, drives prices for top-tier solar-grade sand and is projected to be the fastest-growing grade segment, expanding at a CAGR of over 6.4% through 2030.

The long-term forecast suggests an overall stable growth trajectory, underpinned by the ongoing global energy transition and increasing demand for high-specification materials. The Base Case price is expected to rise moderately, settling at approximately US$60 by 2040 (real terms). This stability assumes a steady, sustainable premium for quality feedstock commensurate with supply-demand equilibrium.

Following extensive market investigations from research and consultancy firm Wood Mackenzie and engagement with various offtakers and customers, and through Diatreme's joint venture partner Sibelco, Diatreme has gained an understanding of current market prices of its "low iron" high-purity silica sand product. The high purity silica sand price used for the PFS is US$55 FOB (A$80.9 FOB) over the LOM, slightly below the mid-point Base Case forecast of US$60 FOB by 2040 (real terms).

Social and Economic Benefits

The NSP is expected to deliver significant long-term social and economic benefits for Far North Queensland through construction and operational employment, local procurement, skills development and sustained engagement and partnerships with Traditional Owners and regional communities. The Project will utilise a predominantly local workforce, targeting 50% Indigenous employment. The total construction workforce will consist of approximately 214 FTE, before transitioning to a steady-state operational workforce of approximately 128 FTE over LOM.

This workforce profile is expected to create direct employment opportunities, support training and capability development, and provide a platform for longer-term careers in mining, processing, logistics, environmental management and project services.

The Company-owned proposed accommodation village is expected to minimise pressure on local housing availability and community infrastructure, while local procurement and contracting opportunities should provide flow-on benefits for regional suppliers and service providers.

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Together with NSP's role in supplying high-purity silica sand for solar PV and specialty glass markets, these benefits reinforce the Project's potential to support local jobs, Indigenous participation, government revenue and regional economic resilience while contributing to Queensland's critical minerals supply chain.

Project Resources & Reserves

The NSP forms part of one of the world's purest silica sand portfolios of scale, with a **total global Mineral Resource of approximately 633 Mt at 99.19% SiO_2** across the NSP, Cape Flattery Silica Project (East and West), Casuarina, Galalar, and the Western Resource Area. The resource base has grown by more than **167% since 2023**, with **62% classified as Measured** at the Si2 deposit, supporting an intergenerational mine life potentially decades beyond 25 years. Silica sand is designated as a **Queensland Critical Mineral**.

Of the 633 Mt of total Mineral Resources, 151 Mt of the Si2 resource has been converted to Ore Reserves to underpin the initial 25-year mine life based on the 5 Mtpa expanded production case within the PFS. Mineral Resources are reported inclusive of Ore Reserves. The Ore Reserve is derived from 87.3% (132.04 Mt) of Measured Mineral Resources, and 12.7% (~19.21 Mt) of Indicated Mineral Resources.

All Mineral Resources lie within granted EPM's and Mining Lease Applications. Table 5 shows a summary of the total Company held Mineral Resource Estimate.

Ore Reserves and Mineral Resource Estimates have been completed on a 100% basis.

Table 4: Summary of Si2 Ore Reserve

JORC Category	Silica Sand (Mt)	Silica Sand (Mm^3)	Rejects (Mt)	SiO_2 %	Fe_2O_3 %	TiO_2 %	Al_2O_3 %	LOI %
Probable	151.25	91.66	30.25	99.25	0.10	0.14	0.11	0.14

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Table 5: Summary of Diatreme's Global Silica Sand Mineral Resources

Project	Mineral Resource Category	Mt	SiO_2 %	Fe_2O_3 %	TiO_2 %	Al_2O_3 %
Galalar	Measured	43.12	99.21	0.09	0.11	0.13
	Indicated	23.12	99.16	0.09	0.13	0.10
	Inferred	9.22	99.10	0.11	0.16	0.11
	Total	75.46	99.18	0.09	0.12	0.12
Si2	Measured	187.5	99.25	0.10	0.14	0.11
	Indicated	42	99.16	0.12	0.16	0.11
	Inferred	72	99.17	0.13	0.17	0.11
	Total	301.5	99.20	0.11	0.15	0.11
WRA	Indicated	10.3	99.20	0.15	0.24	0.16
	Inferred	81.4	99.38	0.09	0.15	0.06
	Total	91.7	99.36	0.10	0.16	0.07
CFSP West	Inferred	12	99.15	0.09	0.16	0.12
	Total	12	99.15	0.09	0.16	0.12
CFSP East	Measured	16.1	99.20	0.08	0.12	0.22
	Indicated	33.2	99.05	0.10	0.18	0.25
	Inferred	0.2	99.00	0.12	0.27	0.28
	Total	49.5	99.10	0.09	0.16	0.24
Casuarina	Indicated	61.3	99.03	0.12	0.15	0.11
	Inferred	41.4	99.06	0.10	0.12	0.10
	Total	102.7	99.04	0.11	0.14	0.11
Total Silica Sand	Measured	246.72	99.24	0.10	0.13	0.12
	Indicated	170.0	99.09	0.11	0.16	0.14
	Inferred	216.2	99.22	0.11	0.15	0.09
	Total	**632.9**	**99.19**	**0.11**	**0.15**	**0.12**

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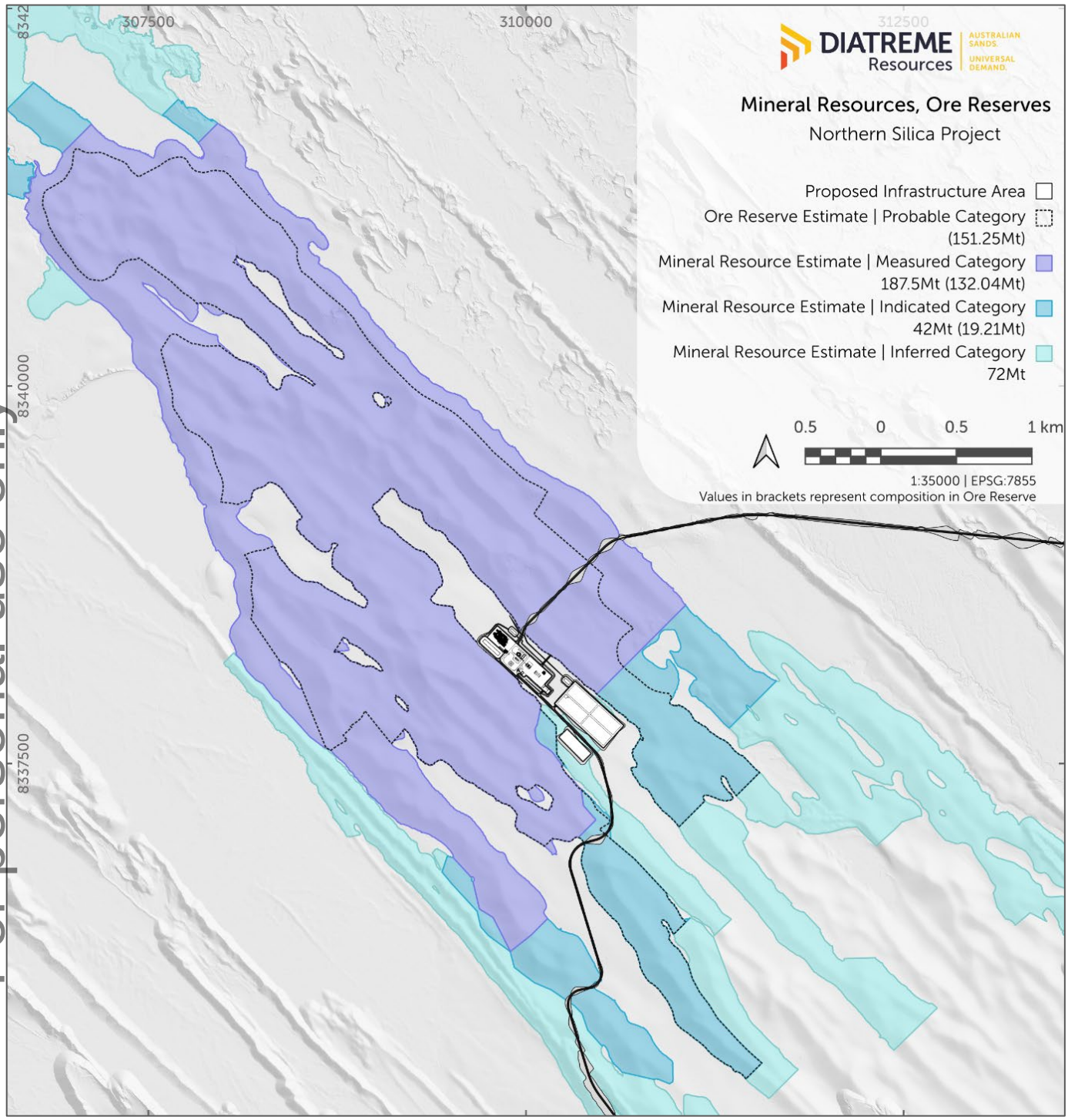
Figure 5: Si2 Ore Reserves



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Port and Development Pathway

The development case is based on **direct loading from an existing jetty to ocean-going vessels (OGVs)** at the Port of Cape Flattery, with the potential to **share loading facilities** with existing Cape Flattery Silica Mines (CFSM) operations. This approach reduces infrastructure duplication, lowers per-tonne operating costs through direct conveyor-to-ship loading, and importantly minimises environmental impact.

Existing port infrastructure offers excess capacity to service multiple operations from an estimated **~8.4 Mtpa capacity** with current estimated utilisation of around 32%. The Project's export solution is proposed to utilise excess export capacity within existing underutilised marine infrastructure at the Port via a Full User Agreement or similar commercial agreement.

Based on the historic and current Port leasing arrangements, it is considered that access as a Full User, and utilisation of existing spare capacity and marine infrastructure, can be achieved via various mechanisms including commercial negotiations with Cape Flattery Silica Mines (CFSM) and/or Ports North, direct State intervention and potential identified legal processes.

The current preference is to work within the existing leasing arrangements and undertake commercial negotiations with CFSM and Ports North, which is the basis of this PFS, and would result in fees being charged for the use and maintenance of the Port.

Diatreme recognises that it will be required to contribute an infrastructure charge to compensate CFSM for its original construction and capital renewal costs. While the charge should be based on the written down capital value of the assets utilised, the required asset valuation data has not been provided by either CFSM or Ports North. Consequently, an estimated contribution amount has been adopted based on industry knowledge and experience, which is considered to provide fair compensation for CFSM's capital contribution to the marine assets at the Port.

The life-of-mine fees and benefits have been calculated using published rates for harbour dues, tonnage dues and Port security. Estimated service, capital contribution, rehabilitation and maintenance charges have been calculated based on industry knowledge, specific third party contribution calculations cited in the original lease between Harbour Corporation of Queensland (now Ports North) and CFSM and comparison to similar operations and agreements.

Overall fees and charges payable to CFSM and Ports North are estimated at $3.815 per tonne of silica sand product. Although it should be noted that no commercial agreement is in place regarding fees and charges, the estimates are considered accurate for the purpose of the PFS and the distribution of payments may vary depending on final agreements.

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Figure 6: Port of Cape Flattery

Figure 7: NSP tie in transfer point to existing Port export infrastructure

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Next Steps and Key Milestones

As the Project continues to progress, key next steps comprise:

- **DFS -** targeting completion in **Q3 CY2028** to support financing and FID.
- **Environmental Impact Statement (EIS),** which is well advanced under the bilateral Queensland/Commonwealth assessment process.
- **Mining agreement** negotiations with Traditional Owners, with negotiations progressing.
- **Port export commercial arrangement** with Ports North and CFSM.
- **Financing and Offtake** discussions which are advancing, supported by the Sibelco partnership and strong PFS economics.
- **FID, currently** targeted for **Q4 CY2028.**

Figure 8: Project Development Progression – Key Stages

Si2 Resource Discovery Complete 2021 - 2026	• Greenfield discovery of Si2 dune system in 2021 • Multiple drilling programs to increase size and confidence category from 2021-2026 • Measured Resource area focused around project development area to reduce risk
Scoping Study Complete 2023	• Confirmed development concept and order of magnitude economics • Defined footprint, scale and infrastructure options. Benchtop metallurgical testwork. • Framed the EIS scope and baseline study requirements
Draft EIS & Baseline Complete 2024 - 2026	• Establishment of baselines and project constraints • Implementation of protection buffers from sensitive places • Constraints used to re-define Project footprint to avoid, mitigate and reduce impacts
Pre-Feasibility Study Complete 2025 - 2026	• Mine schedule, infrastructure footprint refinement. Bulk metallurgical testwork. • Integrated draft EIS constraints into Project layout • Confirmed staged development pathway – Phase 1 initial and potential Phase 2 expansion • Confirmed Port export pathway
Final EIS 2027 - 2028	• Responds to submissions from EIS from public comment and agency assessment • Locks the approved Project footprint and conditions • Approvals granted to develop the Project • Full User Port Access Agreement
Definitive Feasibility Study 2028	• To focus on Phase 1 initial development and optimisation • Engineering an costings to be bankable accuracy • Underpins financing and FID
Final Investment Decision 2028	• Project funding package executed • Construction activities commence

This announcement is authorised for release by the Board.

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ASX releases referenced in this release:

- 8 July 2026 – Sibelco injects $4.4M in boost for silica sand joint venture
- 23 June 2026 - Maiden Mineral Resource Estimate at Casuarina Deposit
- 9 June 2026 – Completion of sale of CFS to DRX/Sibelco silica JV
- 19 May 2026 - Significant Mineral Resource Estimate upgrade at Si2
- 13 April 2026 – Sale of CFS to DRX/Sibelco silica JV
- 26 March 2026 - Favourable Si2, Casuarina drilling boosts silica pipeline
- 9 September 2025 – Bulk metallurgical testwork confirms NSP product quality
- 6 December 2023 – New maiden 91.7Mt silica resource at Western Resource Area
- 17 July 2023 – Cape Flattery Silica DFS Confirms Excellent Economics – *announced by MLM*
- 3 March 2023 – Maiden Inferred Mineral Resource of 12Mt at 99.15% SiO2, 0.09% Fe2O3 estimated for Cape Flattery Silica West Project – *announced by MLM*
- 20 September 2021 – Galalar Silica Resource Expands by 22% to 75.5Mt

Diatreme confirms that it is not aware of any new information or data that materially affects the information included in the original releases and that all material assumptions and technical parameters underpinning the estimates in the original releases continue to apply and have not materially changed. Diatreme confirms that the form and context in which the competent person's findings are presented have not been materially modified from the original releases.

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About Diatreme Resources

Diatreme Resources (ASX: DRX) is an emerging Australian producer of mineral and silica sands based in Brisbane. Our key projects comprise the Northern Silica Project (NSP) and Galalar Silica Sand Project in Far North Queensland, located adjacent to the world's biggest silica sand mine at Cape Flattery, together with the Cape Flattery Silica Project, with the NSP strategically located near the dedicated silica sand export focused Cape Flattery Port facility.

The NSP has been designated a 'Coordinated Project' by the Queensland Government and a Major Project by the Australian federal government, reflecting the significance of the low iron, high purity silica sand project in the context of critical minerals, both for Queensland and Australia.

In Western Australia's Eucla Basin, Diatreme's Cyclone Zircon Project, with major approvals in place, is considered one of a handful of major zircon-rich discoveries of recent decades.

Global material solutions group Sibelco is Diatreme's development partner on its silica projects portfolio. Sibelco has invested circa $56 million into both the silica sands projects and Diatreme at the corporate level, and is an important partner in all aspects of the projects' development.

Diatreme's significant silica sand resources will support global decarbonisation by providing the necessary high-grade, premium quality silica for use in the solar PV industry. The Company has a strong focus on ESG, working closely with its local communities and other key stakeholders to ensure the long-term sustainability of our operations, including health, safety and environmental stewardship.

Diatreme has an experienced Board and management, with expertise across all stages of project exploration, mine development and construction and project financing, together with strong community and government engagement skills.

For more information, please visit www.diatreme.com.au

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COMPETENT PERSONS STATEMENT

The information in this report that relates to Exploration Targets, Exploration Results, and Mineral Resources for the Si2 Deposit is based on information compiled by Mr Frazer Watson, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. Mr Watson is a full-time employee of Diatreme Resources. The PFS referred to in this announcement was prepared and compiled by Mr Watson, in conjunction with various consultants engaged by Diatreme. Mr Watson has sufficient experience that 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 Watson 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 Exploration Results of Bulk Sample Preparation and Metallurgical Testwork is based on, and fairly represents, information and supporting documentation reviewed by Mr Phillip McMurtrie, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy. Mr McMurtrie takes responsibility for the metallurgical testwork reported within this announcement. Mr McMurtrie is a mining engineer and a consultant to Diatreme Resources Limited. 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.

The information in this report, that relates to Ore Reserve estimation is based on, and fairly represents, information and supporting documentation reviewed by Mr Phillip McMurtrie, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy. Mr McMurtrie takes responsibility for the Ore Reserve estimate reported within this announcement. Mr McMurtrie is a mining engineer and a consultant to Diatreme Resources Limited. 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.

The corresponding JORC 2012 Table 1 is attached to this report and can be found in Appendix 2.

Forward-Looking Statements

This announcement contains forward-looking statements, including statements regarding the outcomes of the Pre-Feasibility Study, project economics, production targets, forecast financial information, development and approvals timelines, port access, funding and development plans, and future silica sand prices and market conditions. Forward-looking statements can generally be identified by the use of words such as 'may', 'will', 'expect', 'target', 'intend', 'plan', 'forecast', 'estimate', 'anticipate', 'believe', 'continue' and 'potential', and other similar expressions.

Forward-looking statements are based on assumptions and estimates that are subject to significant business, economic and competitive uncertainties, contingencies and risks, many of which are beyond the Company's control and which may cause actual results to differ materially from those expressed or implied by such statements. These include, but are not limited to, silica sand prices, exchange rates, the grant of regulatory and environmental approvals and tenure, the securing of port access, native title and mining agreements, funding availability, offtake arrangements, operating performance and development costs.

Pre-Feasibility Study outcomes are preliminary in nature and there is no certainty they will be realised. Forward-looking statements, including the production target and forecast financial information, are not guarantees of future performance, and no representation or warranty is made that any forward-looking statement will be achieved. The forward-looking statements in this announcement reflect the Company's views only as at the date of this announcement. While the Company believes it has reasonable grounds, within the meaning of the Corporations Act 2001 (Cth), for each forward-looking statement as at the date of this announcement, the Company does not undertake to update or revise any forward-looking statements except as required by applicable law, including the ASX Listing Rules. All financial figures are in Australian dollars and pre-tax unless otherwise stated.

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DIATREME Resources

Northern Silica Project

Pre-Feasibility Study

Issued - 15-10-2026

ASX:DRX

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IMPORTANT CAUTIONARY STATEMENTS, NOTICES AND DISCLAIMERS

This announcement has been prepared by Diatreme Resources Limited (ASX: DRX) (Diatreme or the Company). It summarises the outcomes of the Pre-Feasibility Study (PFS) for the Northern Silica Project (NSP) and should be read in its entirety, together with the market announcement, the JORC Code 2012 Table 1 in Appendix 2, and the Company's other announcements lodged with the ASX.

Not an offer or financial product advice: This announcement is for information purposes only. It does not constitute a prospectus, product disclosure statement or other offer document under the Corporations Act 2001 (Cth) or the law of any other jurisdiction, and it does not constitute an offer, invitation, solicitation or recommendation to acquire or dispose of securities in Diatreme. Nothing in this announcement constitutes financial product, investment, legal, taxation or other advice, and it has been prepared without taking into account the objectives, financial situation or needs of any person. Investors should seek independent professional advice and should not make any investment decision on the basis of this announcement alone.

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Pre-Feasibility Study Cautionary Statement: The PFS referred to in this announcement has been undertaken by Diatreme, in conjunction with independent consultants, to assess the technical and economic viability of the development of the NSP. The PFS has been undertaken to a level of accuracy, and using methods, in accordance with the guidelines published by the Australasian Institute of Mining and Metallurgy (AusIMM) and the Association for the Advancement of Cost Engineering (AACE), with capital and operating cost estimates prepared to AACE Class 4 (Pre-Feasibility Study) level. The PFS is preliminary in nature and is based on technical and economic assessments that are not sufficiently detailed or definitive to provide certainty that the outcomes indicated will be realised. Further work, including completion of the Definitive Feasibility Study (DFS) and the securing of outstanding approvals, agreements and financing, is required before a Final Investment Decision can be made.

Forecast Financial Information: The forecast financial information referred to in this announcement (including the pre-tax NPV of $1,290m and pre-tax IRR of 36% for the Phase 1-only case, and the pre-tax NPV of $2,419m and pre-tax IRR of 46% for the Phase 1 and 2 expansion case) is derived from the production target and is based on the material assumptions set out in this announcement, including an average silica sand price of US$55/t FOB (A$80.9/t), an average AUD:USD exchange rate of 0.68 and a real, unleveraged discount rate of 8%. The forecast financial information is preliminary in nature, is subject to the same uncertainties and contingencies as the production target, and there is no certainty that the forecast financial outcomes will be realised.

Mineral Resources and Ore Reserves: The Mineral Resource and Ore Reserve estimates referred to in this announcement have been estimated and reported in accordance with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012) and Chapter 5 of the ASX Listing Rules. Mineral Resources are reported inclusive of Ore Reserves. Mineral Resources that are not Ore Reserves do not have demonstrated economic viability. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original ASX releases referenced in this announcement, that all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed, and that the form and context in which the Competent Persons' findings are presented have not been materially modified from the original releases.

Production Target: The production target referred to in this announcement of 75 Mt of silica sand product over an initial 25-year mine life under the Phase 1-only case (121 Mt under the Phase 1 and 2 expansion case) is based entirely on the maiden Ore Reserve for the Si2 Deposit of 151.25 Mt (100% Probable), which was derived from approximately 87.3% Measured and approximately 12.7% Indicated Mineral Resources (with the first five years of production derived from approximately 73% Measured and 27% Indicated Mineral Resources). No Inferred Mineral Resources have been included in the production target or in the forecast financial information derived from it. The material assumptions on which the production target is based are set out in this announcement and in the JORC Code 2012 Table 1. The Company confirms, in accordance with Chapter 5 of the ASX Listing Rules, that it has a reasonable basis for the production target and considers all material assumptions to be based on reasonable grounds; however, there is no certainty that the production target will be achieved.

Funding: Project financing has not been secured. For the purposes of the PFS, Phase 1 development capital (estimated at $443.5m including contingency) is assumed to be funded through an equity placement, with final funding pathways potentially comprising a combination of debt, equity and government funding sources, including the Northern Australia Infrastructure Facility (NAIF) and Export Finance Australia (EFA). There is no certainty that the Company will be able to secure funding when required or on acceptable terms, and funding by way of an issue of new equity will result in dilution of existing shareholders. The funding assumption is a material assumption underpinning the production target and the forecast financial information.

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Executive Summary

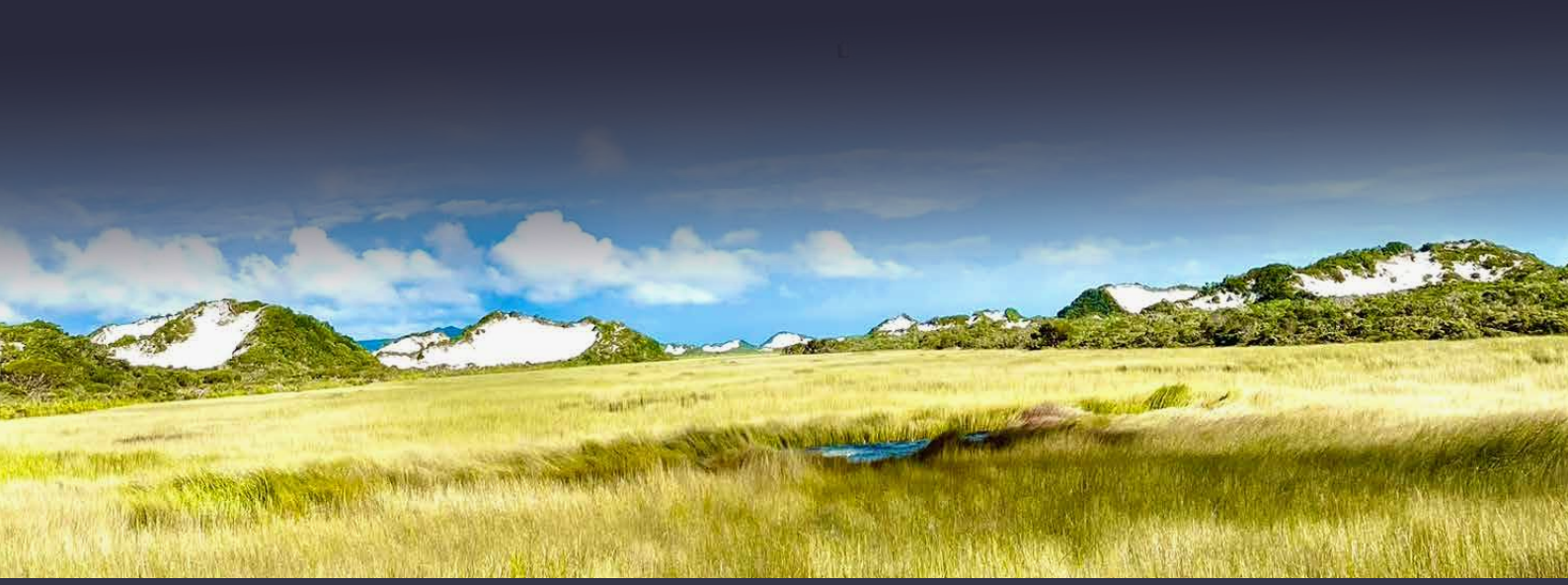
PROJECT BACKGROUND AND SCOPE

The Northern Silica Project ('Project') is a proposed greenfield open cut silica sand mine inclusive of a processing facility and associated existing infrastructure within the Cape Flattery to Cape Bedford silica mineral province in Far North Queensland, Australia. The Project has a proposed mine life of 25 years with a mining rate of 3.75 Mtpa (production rate of 3 Mtpa) for Years 1 and 2, potentially expanding to 6.25 Mtpa (production rate of 5 Mtpa) for Years 3 to 25, totalling 151.25 Mt of mined resource (121 Mt product).

The Phase 2 expansion will be dependent on the prevailing market conditions and product demand. Accordingly, given the dependency on market conditions, a standalone production case of 3 Mtpa has also been considered within this study, which entails the Phase 1 project phase of 3 Mtpa only running for the full 25 year mine life.

The key components making up the Project are:

- mobile mining units;
- wet concentration plant;
- product slurry pipeline and dewatering plant (processing plant to stockpile);
- product stockpile, including stacking and reclamation infrastructure;
- overland conveyor (stockpile to port);
- industrial area (workshops, offices, administration and fuel);
- diesel power generation, 8.8 MW solar farm and 5 MWh battery storage system;
- on-site accommodation village;
- site access road;
- offsite auxiliary infrastructure;
- export through the Port of Cape Flattery ('Port');
- export via ocean going vessels (OGVs), with approximately one OGV movement per week for Years 1 and 2, increasing to one to two movements per week for Years 3 to 25; and
- progressive rehabilitation over the life of the mine, with all constructed infrastructure to be removed at completion of the Project.



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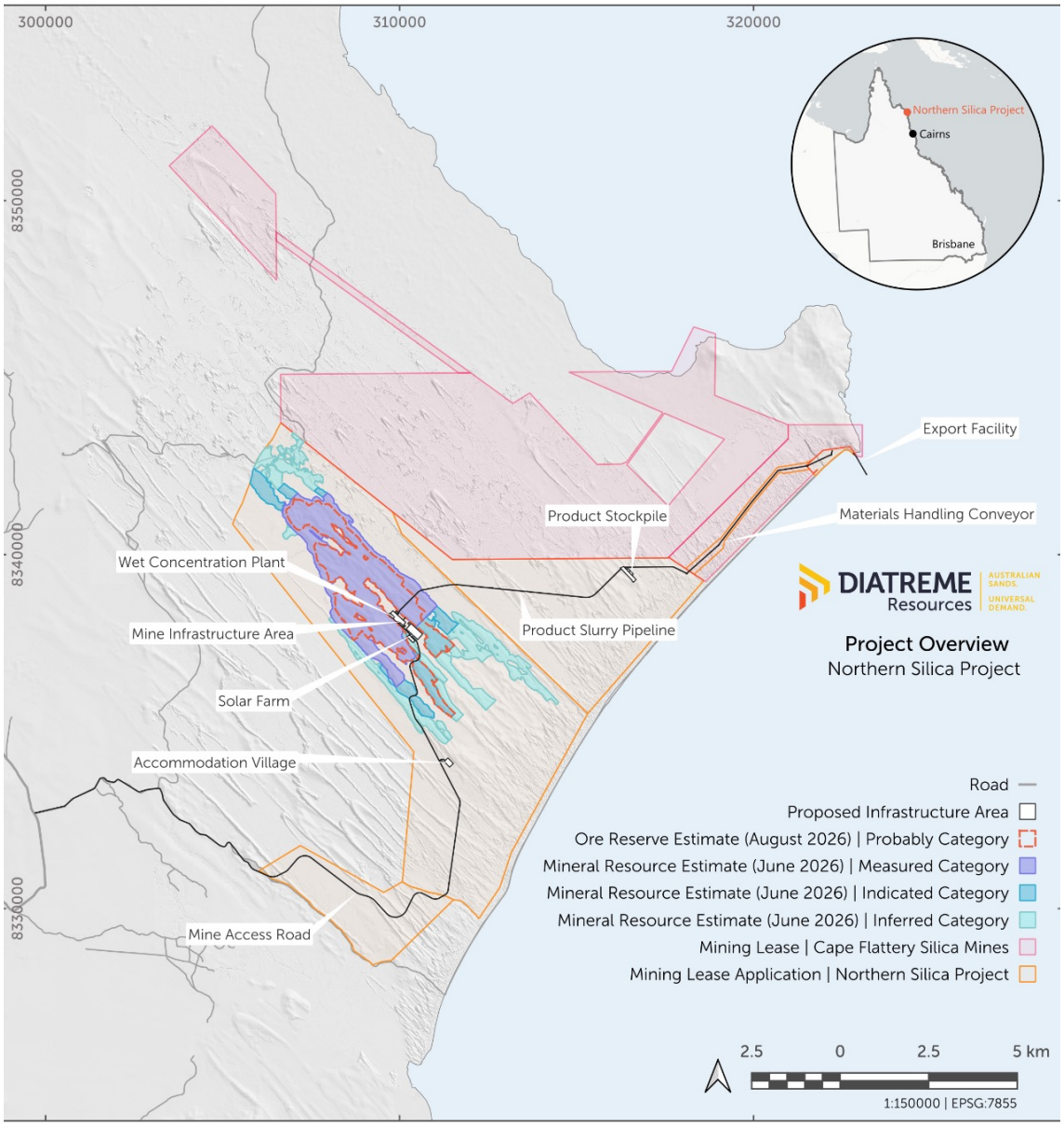
Project Overview



The scope of this Pre-Feasibility Study ('PFS') is to incorporate updated Project information to aid further evaluation of the feasibility of the Project and deliver an Ore Reserve at the Si2 Mineral Resource area.

This PFS is undertaken to a level of accuracy and using methods in accordance with the guidelines provided in publications by the Australasian Institute of Mining and Metallurgy ('AusIMM') and the Association for Advancement of Cost Engineering ('AACE').

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PROJECT DEVELOPMENT STRATEGY AND PROGRESSION

The Project has continued to progress through development stages since greenfield discovery of the Si2 dune system in 2021. The development strategy is focused on progressing technical studies in line with timely progression through permitting and approvals and using the approvals process to inform Project design, ensuring that advancement of design is appropriate to stage and incorporates design constraints.

This iterative process will ensure Project design is adaptive and optimised progressively as the Project advances to provide the required information and certainty to allow advancement of offtake agreements and funding discussions as the Project nears FID.

Whilst the PFS has evaluated Phase 1 and 2 developments, the next stage of Definitive Feasibility Study ('DFS') will focus on the Phase 1 initial development as a standalone optimised development with a focus on C1 cash cost and capital cost reduction.

The Phase 1 development is currently assumed to be funded through equity placement for the purposes of the PFS, although following further investigation, final funding pathways may be a combination of government funding sources, such as the Northern Australia Infrastructure Facility (NAIF) and Export Finance Australia (EFA), as well as debt and equity from existing and/or new cornerstone partners. Funding discussions have commenced and will continue as the Project continues to progress.

The Phase 2 expansion, if undertaken, is currently modelled in the PFS to be funded through equity placement, although further studies will consider the Phase 2 expansion to be self-funded using free cash flow from the Project.

Project Development Progression – Key Stages

Si2 Resource Discovery Complete 2021 - 2026	• Greenfield discovery of Si2 dune system in 2021 • Multiple drilling programs to increase size and confidence category from 2021-2026 • Measured Resource area focused around project development area to reduce risk
Scoping Study Complete 2023	• Confirmed development concept and order of magnitude economics • Defined footprint, scale and infrastructure options. Benchtop metallurgical testwork. • Framed the EIS scope and baseline study requirements
Draft EIS & Baseline Complete 2024 - 2026	• Establishment of baselines and project constraints • Implementation of protection buffers from sensitive places • Constraints used to re-define Project footprint to avoid, mitigate and reduce impacts
Pre-Feasibility Study Complete 2025 - 2026	• Mine schedule, infrastructure footprint refinement. Bulk metallurgical testwork. • Integrated draft EIS constraints into Project layout • Confirmed staged development pathway – Phase 1 initial and potential Phase 2 expansion • Confirmed Port export pathway
Final EIS 2027 - 2028	• Responds to submissions from EIS from public comment and agency assessment • Locks the approved Project footprint and conditions • Approvals granted to develop the Project • Full User Port Access Agreement
Definitive Feasibility Study 2028	• To focus on Phase 1 initial development and optimisation • Engineering an costings to be bankable accuracy • Underpins financing and FID
Final Investment Decision 2028	• Project funding package executed • Construction activities commence

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ECONOMIC EVALUATION

A financial model has been developed for the Project which has evaluated the economics of the Phase 1 and 2 development, as well as a Phase 1 only development case over a consistent 25 year mine life.

The outcome of this PFS has delivered robust economics for the project under both scenarios - delivering low production costs and modest capital cost estimate ('CAPEX') requirements over a long project life with the likely ability to extend.

Economic Metrics

Key Economic Metric	Unit	Phase 1 only 3 Mtpa Production (no expansion)	Phase 1 & 2 5 Mtpa Production
NPV (pre-tax)	**A$m**	**$1,290**	**$2,419**
IRR (pre-tax)	**%**	**36%**	**46%**
NPV (post-tax)	A$m	$867	$1,661
IRR (post-tax)	%	29%	38%
Payback Years	years	4 Yr(s)	4 Yr(s)
Mine Life	years	25 Yr(s)	25 Yr(s)
Production over LOM	Mt	75Mt	121Mt
Construction CAPEX - Phase 1 (inc Contingency)	A$m	$443.5	$443.5
Construction CAPEX - Phase 2 (inc Contingency)	A$m	-	$38.5
Gross Revenue	A$m	$8,134	$13,123
Shipping and Insurance	A$m	$2,007	$3,239
Marketing	A$m	$61	$98
Net Revenue	A$m	$6,066	$9,787
*C1 OPEX Cost (FOB)	A$m	$1,397	$1,700
EBITDA	A$m	$4,571	$7,975
Net Free Cash Flow (Post tax)	A$m	$2,764	$5,048
***C1 Cash Cost (FOB)**	**A$/t**	**$25**	**$18**

**Excludes Sustaining Capital and Royalties*

LOM Assumptions

LOM Assumption Metric	Unit	Value
Average FX	AUD/USD	0.68
Discount rate (real, unleveraged)	% pa	8
Average product yield (recovery)	%	80%
Average sales price (FOB)	USD/t	$55
Average sales price (FOB)	AUD/t	$80.9
Shipping and Insurance	AUD/t	$26.8
Marketing	AUD/t	$0.81

The economic assessment of the Project is supported by a CAPEX estimate which was prepared and based upon PFS level Class 4 pricing and suitable engineering detail for process and non-process infrastructure by external consultants together with internally sourced data by Diatreme's technical team.

The CAPEX estimate includes all direct (process and non-process infrastructure) costs, indirect (owners and other) costs, contingency and other allowances. The tables below provide a summary of the capital cost estimate for the Project. Note that all costs provided in this section are in $AUD millions (unless stated otherwise).

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Capital Cost Estimate Summary

WBS	Description	Phase 1: 3 Mtpa Prod A$m	Phase 2: 5 Mtpa Prod A$m	Cumulative Totals A$m
1000	Mining	17.5	2.70	20.2
2000	Processing	73.9	18.8	92.7
5000	Common Services	42.6	2.8	45.3
6000	On Site Infrastructure	121.4	3.5	124.9
7000	Off Site Infrastructure	36.7	0.0	36.7
8000	Pre-Production Cost	6.7	0.8	7.5
9000	Owners / Indirect Cost	77.0	4.9	81.8
10000	Offsets & Rehabilitation	10.00	0.00	10.0
	Total excluding contingency	**385.6**	**33.5**	**419.1**
	Contingency (15%)	57.8	5.02	62.9
	Total including contingency	**443.5**	**38.5**	**482.0**

An operating cost estimate ('OPEX') was prepared and based upon PFS level Class 4 pricing, underpinned by historical benchmark data, consultant input, and capital estimates for the Project.

The OPEX template is structured around the following cost centres:

- labour;
- flights and accommodation;
- fuel;
- maintenance;
- processing - reagents and consumables;
- equipment hire and lease;
- general expenses and contract;
- rehabilitation;
- port charges;
- environmental net benefit fund;
- community benefit fund; and
- estimated rehabilitation cost ('ERC') fee.

An operating cost estimate is shown for both the Phase 1 (3 Mtpa) development and the Phase 2 (5 Mtpa) expansion. If the Phase 2 expansion is completed it is expected that the operating cost will reduce and be representative of the life of mine operating cost.

Sustaining capital costs are factored as a percentage of CAPEX costs for items that will require end of life maintenance or upgrades through the Project lifecycle. These allocations cover items such:

- slurry pipeline replacement and extensions;
- marine infrastructure replacement;
- mining equipment replacement; and
- power generation equipment replacement.

Sustaining Capital

OPEX Item	3 Mtpa		5 Mtpa	
	A$/annum	A$/t Prod	A$/annum	A$/t Prod
Sustaining Capital	3,942,000	1.31	4,497,000	0.90

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Operating Cost Estimate Summary

OPEX Item	3 Mtpa		5 Mtpa	
	A$/annum	A$/t Prod	A$/annum	A$/t Prod
Labour	16,301,000	5.43	16,301,000	3.26
Flights & Accommodation	648,000	0.22	649,000	0.13
Fuel	15,695,000	5.23	21,512,000	4.30
Maintenance	4,016,000	1.34	4,503,000	0.90
Processing - Reagents & consumables	7,000	0.002	11,000	0.002
Equipment Hire & Lease	1,512,000	0.50	1,648,000	0.33
General Expenses & Contract	1,900,000	0.63	2,293,000	0.46
Rehabilitation	2,185,000	0.73	1,060,000	0.21
Port charges (PN & CFSM)	11,445,000	3.82	19,075,000	3.82
Environmental Net Benefit Fund	500,000	0.17	500,000	0.10
Community Benefit Fund	500,000	0.17	500,000	0.10
ERC Fee	1,140,000	0.38	1,050,000	0.21
Total	**55,849,000**	**18.62**	**69,102,000**	**13.82**

ORE RESERVE

This PFS has formed the basis of assessment on all underpinning modifying factors required to be considered for the estimation of an Ore Reserve. Due to these assessments, it is considered that an Ore Reserve Estimate can be declared for the Si2 Dune System.

The Si2 Probable Ore Reserve is:

Summary of Si2 Ore Reserve

JORC Category	Silica Sand (Mt)	Silica Sand (Mm^3)	Rejects (Mt)	SiO_2 %	Fe_2O_3 %	TiO_2 %	Al_2O_3 %	LOI %
Probable	151.25	91.66	30.25	99.25	0.10	0.14	0.11	0.14

PORT EXPORT

The Project export solution proposed is to use excess export capacity within existing marine infrastructure at the Port via a Full User Agreement or similar commercial agreement.

Based on the historic and current Port leasing arrangements, it is considered that access as a Full User, and utilisation of existing spare capacity and marine infrastructure, can be achieved via various mechanisms including, commercial negotiations with Cape Flattery Silica Mines (CFSM) and/or Ports North, direct State intervention and potential identified legal processes.

The current preference is to work within the current leasing arrangements and undertake commercial negotiations with CFSM and Ports North, which is the basis of this PFS, and would result in fees being charged for the use and maintenance of the Port.

Diatreme recognises that it will be required to contribute an infrastructure charge to compensate CFSM for its original construction and capital renewal costs. While the charge should be based on the written down capital value of the assets utilised, the required asset valuation data has not been provided by either CFSM or Ports North. Consequently, an estimated contribution has been adopted based on industry knowledge and experience, which is considered to provide reasonable compensation for CFSM's capital contribution to the marine assets at the Port.

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The life-of-mine fees and benefits have been estimated using published rates for harbour dues, tonnage dues and Port security. Estimated service, capital contribution, rehabilitation and maintenance charges have been calculated based on industry knowledge, experience and comparison to similar operations and agreements.

Overall fees and charges payable to CFSM and Ports North are estimated at $3.815 per tonne of silica sand product. Although it should be noted that no commercial agreement is in place regarding fees and charges, the estimates are considered sufficiently accurate for the purpose of the PFS and the distribution of fees and charges may vary depending on final agreements.

Full User Port Charges Overview Estimate

	LOM Fees and Benefits - $m	
	CFSM	Ports North
LOM Total	$194.7m	$266.9m
Average Pa	$7.78m	$10.68m

Note: These numbers are estimates based on available published Port charges and comparison to other existing Port charges/agreements.

Port of Cape Flattery and NSP Infrastructure Tie-In

PROJECT DELIVERY TIMELINE

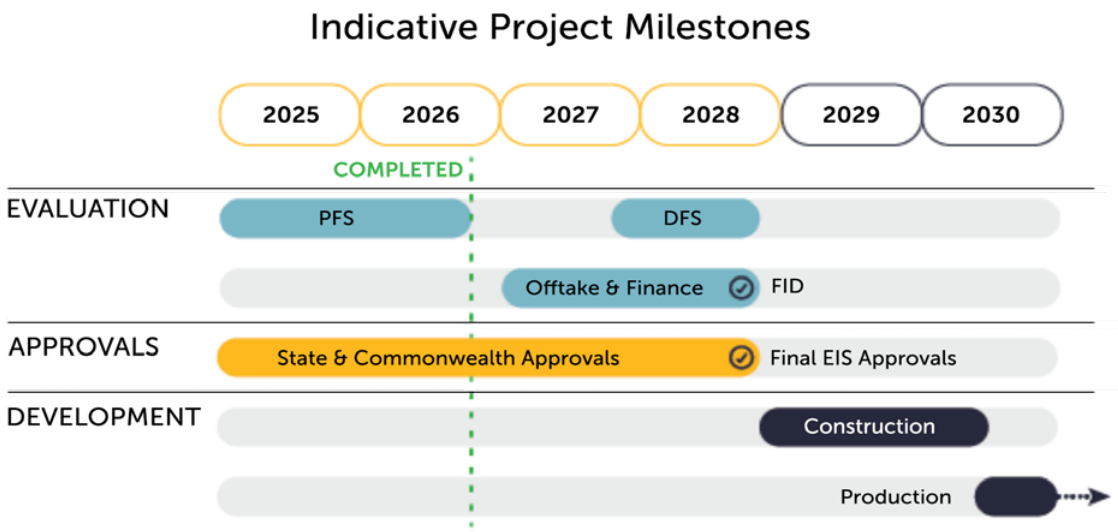
The Project is progressing project development across several key pathways:

- permitting and approvals – bilateral State and Commonwealth Environmental Impact Statement ('EIS');
- mining lease applications and grants;
- environmental authorities;
- negotiations with Traditional Owners and Landowners for consent to mine;
- engagement and negotiations with CFSM, Ports North and the State of Queensland in relation to access to the Port;
- feasibility studies and engineering (appropriate to stage);
- offsite development applications (bridges, crossings and road maintenance);
- product offtake agreements; and
- assembling of financing arrangements.

Project approvals through the EIS are critical to Diatreme achieving its execution schedule and cost targets. A detailed program has been developed and is being managed by Diatreme and its Joint Venture partner Sibelco. As at this PFS the timeline expects final Project approvals in Q4 2028, which will then trigger the commencement of construction activities.

Project Development Timeline

Note: Project timeline is subject to approvals processes and achievement of key milestones and may change.



**Project timeline is subject to approvals processes and achievement of key milestones and may change*

PRODUCT SPECIFICATION

A bulk testwork program was completed at Si2, which was completed by Mineral Technologies ('MT') at Carrara in QLD Australia, with additional magnetic separation optimisation testwork also completed.

The bulk testwork utilised typical sand processing techniques and equipment that have been adapted for the Project, which consisted of sizing, gravity separation using spirals, attritioning, classification and magnetic separation. This work confirmed processing performance at scale which was used to refine and confirm the flowsheet, achieving 85.6% recovery and 107 ppm Fe_2O_3. Importantly, it indicated that magnetic separation is required to further reduce Fe_2O_3 levels in the product and is an important step in the process.

Following the identification of the impacts of magnetic separation at Si2, further testwork was undertaken using advanced magnetic separation technology (vertical ring high-gradient magnetic separator) more suitable for fine removal of iron in comparison to WHIMS which are rougher and more suitable to larger processing splits (not ppm of Fe_2O_3 removal), with high yielding results of 83.8% and 81.6% recovery at 92 ppm and 89 ppm Fe_2O_3, respectively, achievable.

The bulk metallurgical testwork further confirmed that the Project can consistently produce a product of high-purity low-iron silica sand, with between 89 ppm to 107 ppm Fe_2O_3, at relatively high recovery rates of 81.6 to 85.6% respectively, depending on magnetic separation equipment selection.

Based on the results from historic testwork, and the bulk metallurgical testwork program, the target product speciation of the Project has now been updated and reflected in the process plant design, and an 80% recovery rate used for target plant performance.

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Project Product Technical Specification Target – Chemical Composition

SiO_2	Al_2O_3	Fe_2O_3	TiO_2	K_2O	Na_2O	CaO	Cr	MgO
=>99.9%	=<0.046%	=<0.01%	=<0.012%	=<0.0039%	=<0.0034%	=<0.0040%	=<0.00014%	=<0.0017%
	=<460 ppm	=<100 ppm	=<120 ppm	=<39 ppm	=<34 ppm	=<40 ppm	=1.41 ppm	=<17 ppm

SILICA SAND PRICING

The Project is capable of producing a premium grade "low iron" silica product (also known as PV grade) suitable for use as direct feed product by glass manufacturers for ultimate end use in the sheet or covering glass used on solar panels.

The characteristics needed for PV grade silica sand are primarily focused on low iron, ideally sub or no more than 100 ppm, but manufacturers will also accept product in the 50-150 ppm range (with additional premiums or price penalties within the range), correct particle size range and low levels of other key contaminants. The Project consistently achieves these specifications through metallurgical testwork, and is looking to de-risk global supply chains, which have recently had supply issues from existing supply sources and are increasingly looking to offshore suppliers of this premium silica product.

The global silica sand market is fundamentally bifurcating, moving away from a single commodity price due to escalating technical demands across critical industrial sectors. Price premiums for high-purity, low-iron silica are no longer marginal, but instead reflect the material's indispensable role in high-value applications and the constraints of natural supply.

While standard construction sand sells for tens of dollars per tonne, the market shows a clear quality-based pricing hierarchy. Premium glass-grade sand (e.g., <0.035% Fe_2O_3) commands US$50–$100, driven by global demand for clear flint and architectural flat glass. This premium sharpens dramatically for the booming Solar PV glass sector, which mandates ultra-low iron (often 50–150 ppm Fe_2O_3) to maximise energy efficiency. This segment, led by manufacturers in the Asia-Pacific ('APAC') region, pushes prices for top-tier solar-grade sand and is projected to be the fastest-growing grade segment, expanding at a CAGR of over 6.4% through 2030.

The long-term forecast suggests an overall stable growth trajectory, underpinned by the ongoing global energy transition and increasing demand for high-specification materials. The mid-point Base Case price is expected to rise moderately, settling at approximately US$60 FOB by 2040 (real terms). This stability assumes a steady, sustainable premium for quality feedstock commensurate with supply-demand equilibrium.

Following extensive market investigations from research and consultancy firm Wood Mackenzie and engagement with various offtakers and customers, and through Diatreme's joint venture partner Sibelco, Diatreme has gained an understanding of current market prices of its "low iron" high-purity silica sand product. The high purity silica sand price used for the PFS is US$55 FOB (A$80.9 FOB) over the LOM, slightly below the mid-point Base Case forecast of US$60 FOB by 2040 (real terms).

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1 Introduction

1.1 PROJECT DESCRIPTION & BACKGROUND

The Northern Silica Project ('Project') is a proposed greenfield open cut silica sand mine inclusive of a processing facility and associated existing infrastructure within the Cape Flattery to Cape Bedford silica mineral province in Far North Queensland, Australia. The Project has a proposed mine life of 25 years with a mining rate of 3.75 Mtpa (production rate of 3 Mtpa) for Years 1 and 2, potentially expanding to 6.25 Mtpa (production rate of 5 Mtpa) for Years 3 to 25, totalling 151.25 Mt of mined resource (121 Mt product).

The Phase 2 expansion may be dependent on the prevailing market conditions and product demand. Accordingly given the dependency on market conditions, a standalone production case of 3 Mtpa has also been considered within this study, which entails the Phase 1 project phase of 3 Mtpa only running for the full 25 year mine life.

The key components making up the Project are:

- mobile mining units;
- wet concentration plant;
- product slurry pipeline and dewatering plant (processing plant to stockpile);
- product stockpile, including stacking and reclamation infrastructure;
- overland conveyor (stockpile to port);
- industrial area (workshops, offices, administration and fuel);
- diesel power generation, 8.8 MW solar farm and 5MWh battery storage system;
- on-site accommodation village;
- site access road;
- offsite auxiliary infrastructure;
- export through the Port of Cape Flattery ('Port');
- export via ocean going vessels (OGVs), with approximately one OGV movement per week for Years 1 and 2, increasing to one to two movements per week for Years 3 to 25; and
- progressive rehabilitation over the life of the mine, with all constructed infrastructure to be removed at completion of the Project.

A Scoping Study was completed in 2023 which was used to establish the scope and framework for the permitting and approvals required for the Project, which resulted in a State and Commonwealth bilateral Environmental Impact Statement ('EIS') to be required, and is currently now completed up to draft EIS stage.

These inputs are now being used as the basis to produce a Pre-Feasibility Study ('PFS') to update project footprint changes, mitigations and commitments to produce an updated economic assessment of the Project.

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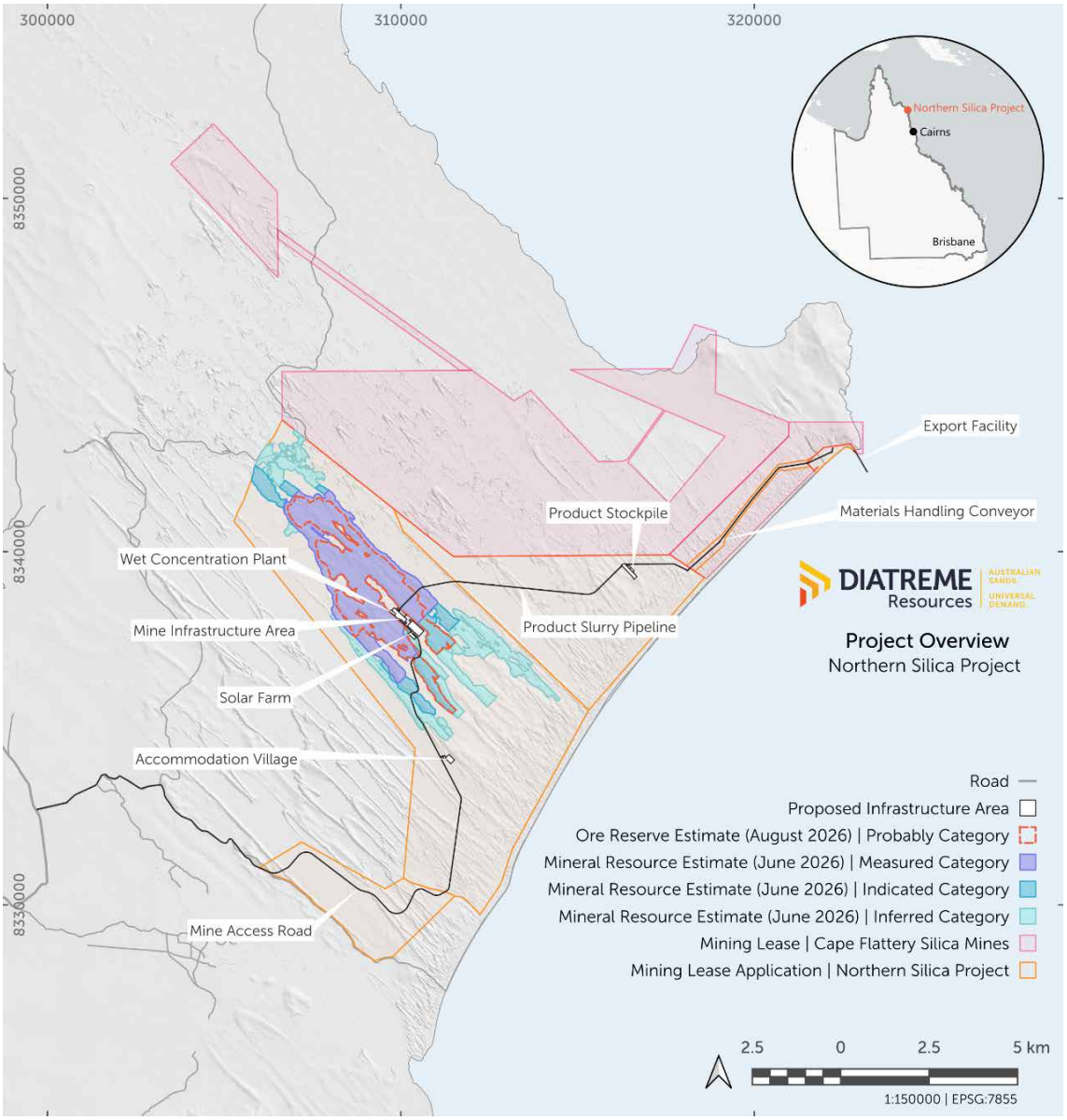
Figure 1: Project Overview



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1.2 PROJECT DEVELOPMENT STRATEGY AND PROGRESSION

The Project has continued to progress through development stages since greenfield discovery of the Si2 dune system in 2021. The development strategy is focused on progressing technical studies in line with timely progression through permitting and approvals and using the approvals process to inform Project design, ensuring that advancement of design is appropriate to stage and incorporates design constraints.

This iterative process will ensure Project design is adaptive and optimised progressively as the Project advances to provide the required information and certainty to allow advancement of offtake agreements and funding discussions as the Project nears FID.

Whilst the PFS has evaluated Phase 1 and 2 developments, the next stage of Definitive Feasibility Study ('DFS') will focus on the Phase 1 initial development as a standalone optimised development with a focus on C1 cash cost and capital cost reduction.

The Phase 1 development is currently assumed to be funded through equity placement for the purposes of the PFS, although following further investigation, final funding pathways may be a combination of government funding sources, such as the Northern Australia Infrastructure Facility (NAIF) and Export Finance Australia (EFA), as well as debt and equity from existing and/or new cornerstone partners. Funding discussions have commenced and will continue as the Project continues to progress.

The Phase 2 expansion, if undertaken, is currently modelled in the PFS to be funded through equity placement, although further studies will consider the Phase 2 expansion to be self-funded using free cash flow from the Project.

Figure 2: Project Development Progression – Key Stages

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1.3 PROJECT PROPONENT AND JOINT VENTURE

The proponent for the Project is Northern Silica Pty Ltd (ABN 44 659 896 563), a wholly owned subsidiary of Cape Silica Holdings Pty Ltd (ABN 45 659 896 189). Both entities are controlled by Australian Securities Exchange ('ASX') listed Diatreme Resources Limited ('Diatreme') (ABN 33 061 267 061). Cape Silica Holdings Pty Ltd operates as a Joint Venture ('JV') between Diatreme (73.2%) and Sibelco Asia Pacific Pty Ltd (ABN 70 092 916 811) (26.8%) ('Sibelco').

World class global material solutions group Sibelco (through Sibelco Asia Pacific Pty Ltd) is Diatreme's JV development partner on its silica projects, via the Cape Silica Holdings Pty Ltd JV. Sibelco has agreed to provide the JV access to Sibelco's technical and project development expertise, pursue joint product marketing and downstream onshore silica processing opportunities, as well as assistance in securing project finance.

The Project proponent is hereafter referred to as Diatreme.

Diatreme is an emerging Australian producer of mineral and silica sands based in Brisbane. The principal activities of Diatreme are critical mineral resource exploration and project development.

1.4 PROJECT LOCATION

The Project is located in the Hope Vale Aboriginal Shire in the vicinity of Cape Flattery, Far North Queensland. The Project area encompasses the area around the silica sand mining operation of CFSM which adjoins the Port.

Cape Flattery is a regional area serviced by the local communities of Hope Vale and Cooktown, and the major regional city of Cairns. The Project site is accessed via road and is 79 km from Hope Vale, 105 km from Cooktown and 431 km from Cairns. Air access is only by helicopter from Cooktown or Cairns, and maritime access is from Cooktown and Cairns ports.

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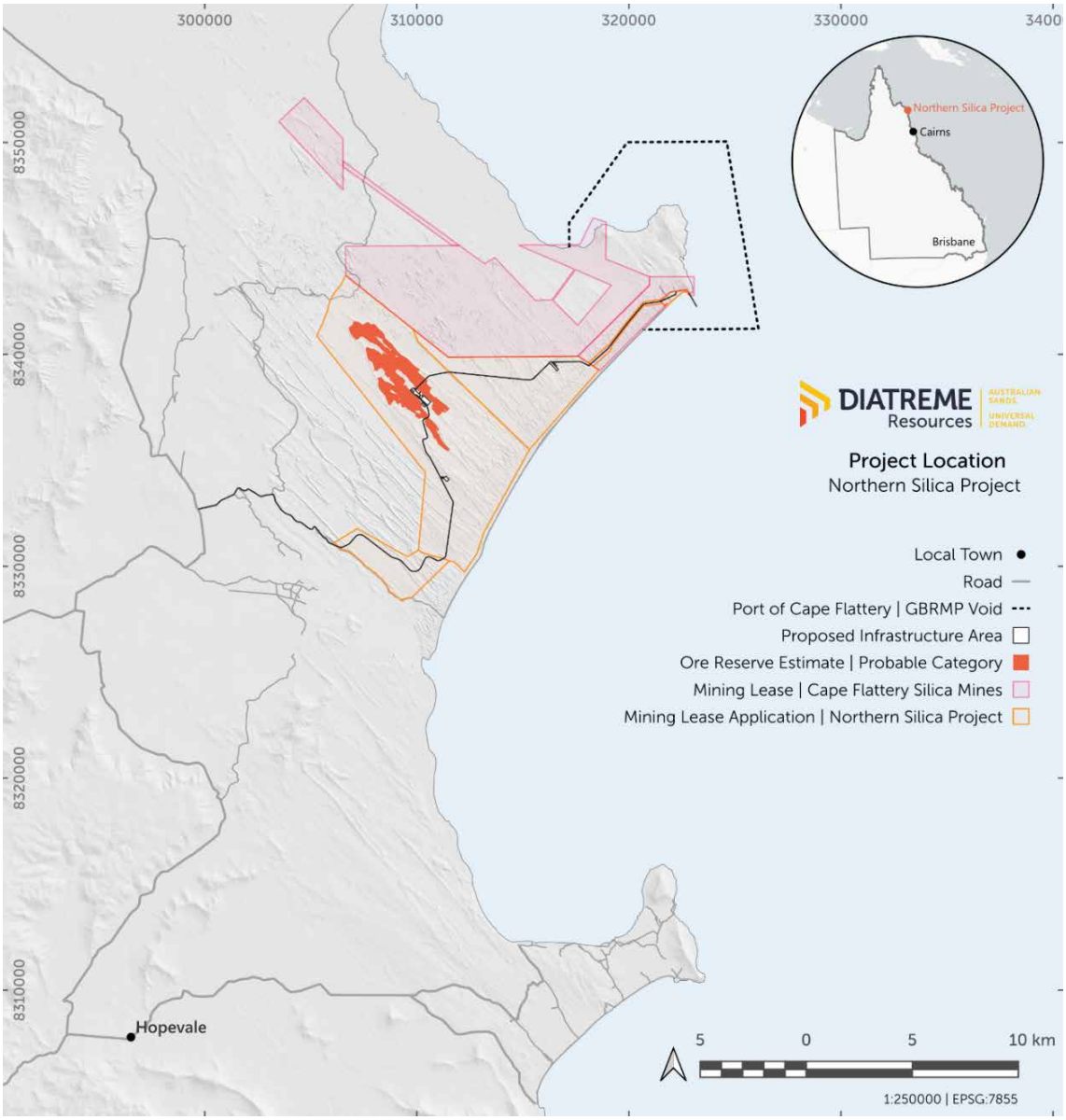
Figure 3: Northern Silica Project Location & Key Regional Features



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The following image is a photo captured of the Project area including the existing facilities at the Port.

Figure 4: Port of Cape Flattery

1.5 CLIMATE

Cape Flattery has a tropical savannah climate, with warm temperatures year-round across both the wet and dry seasons. Mean maximum daily temperatures range from 26.6°C in July to 32.6°C in December, and the wet season runs from December to March.

Average annual rainfall is 1,366 mm, of which 73% falls during the wet season, with March being the wettest month, accounting for 26% of annual rainfall. Wind gusts average 22.3 km/h, with maximum gusts reaching 167 km/h in March, with wind blowing dominantly from the south-east. The region is prone to tropical cyclones generally between the months of November and April.

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2 PFS Scope & Methodology

2.1 OBJECTIVES

The scope of this PFS is to incorporate updated project information to aid further evaluation of the feasibility of the Project and deliver an Ore Reserve at the Si2 Mineral Resource area. The study is a PFS as defined by the Australasian Institute of Mining and Metallurgy ('AusIMM') and is refining the optionality defined in the 2023 Scoping Study to select the Project design to take forward, comprising the following elements:

- resource summary (Measured, Indicated and Inferred);
- class 4 capital cost estimate;
- class 4 operating cost estimate;
- economic evaluation based on the above items; and
- the specific scope completed as part of this PFS is as follows:
  - to review, update and refine relevant work completed in the 2023 Scoping Study;
  - to incorporate additional data from metallurgical testwork programs;
  - to update the process flowsheet developed during the Scoping Study for the process plant;
  - to further develop the integration of renewable energy supply into the Project;
  - to develop conceptual layouts for the process and non-process infrastructure;
  - to develop a capital and operating cost estimates for the Project; and
  - to develop a financial model for the Project and evaluate project economics.

This PFS is undertaken to a level of accuracy and using methods in accordance with the guidelines provided in publications by the AusIMM and the Association for Advancement of Cost Engineering ('AACE').

2.2 SCOPE

This PFS outlines the development of the Project which is a proposed greenfield open cut silica sand mine, mining 151.25 Mt of the Si2 Measured and Indicated Mineral Resources, producing 121 Mt of high-purity silica sand, over an initial 25 year mine life, with potential for future extension.

The Project will be developed in phases, with the Phase 1 initial development of a 3.75 Mtpa operation for Years 1 and 2, with Phase 2 potentially expanding to 6.25 Mtpa at Year 3 to 25 and producing 3 Mtpa and 5 Mtpa of product in Phase 1 and 2, respectively.

The Phase 2 expansion will be dependent on the prevailing market conditions and product demand. Due to the dependency of Phase 2 on these factors, a standalone 3.75 Mtpa mining case will also be considered within this PFS which contemplates the Phase 1 project phase running for the full 25 year mine life and no expansion.

Table 1: Project Development Phase

Phase Stage	Stage Timing	Mining Rate	Production Rate
Phase 1	Years 1 to 2	3.75 Mtpa	3 Mtpa
Phase 2	Years 3 to 25	6.25 Mtpa	5 Mtpa

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3 Geology & Mineral Resources

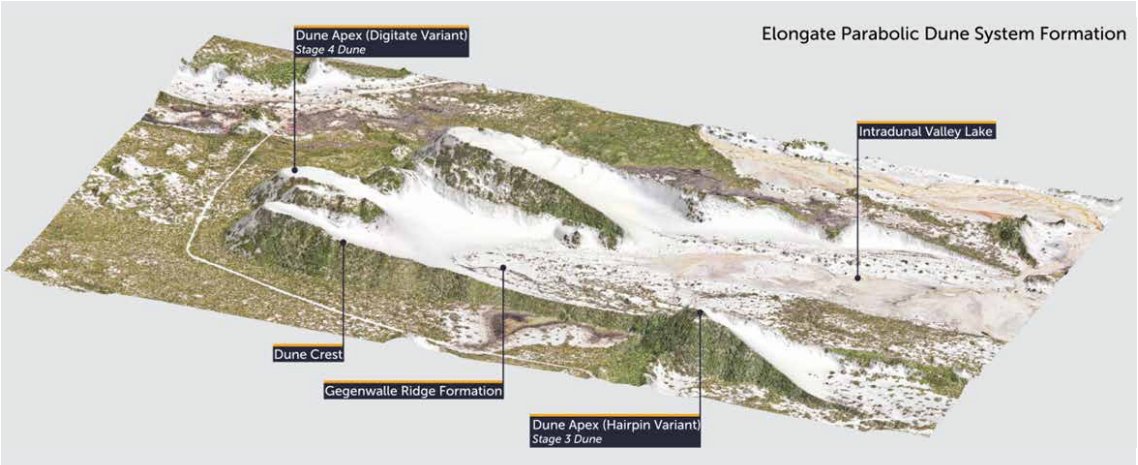
3.1 GEOLOGICAL INTERPRETATION

The Si2 Deposit sits within the Cape Bedford – Cape Flattery Dune Field, an extensive aeolian dune system spanning approximately 700 km^2 along the east coast of Cape York Peninsula. The dune field formed from quartz-rich sandstones of the Gilbert River Formation and Dalrymple Sandstone, with additional input from coastal granites and Hodgkinson Formation metasediments. Weathering and leaching within the Laura Basin aquifer system and through later surface erosion which liberated and concentrated the silica sand now hosted in dune forms.

Silica sand mineralisation is hosted primarily within the trailing arms and apices of elongate parabolic aeolian dunes. Interdunal areas typically lack thick aeolian sand and instead expose B1 horizons, clays, bedrock, or other sediments, with the sediments commonly reworked by successive deflationary events.

Deflation maintains a parabolic geometry and proceeds downward until it reaches a zone of lesser available sand, usually groundwater or saturated clays where moisture limits further wind transport of sand grains. A eluviated horizon is observable in the podsol profile and is topographically elevated nearer the coast. Dune flanks are steeper proximal to the coastline and become more subdued inland. The below figure illustrates these features in an active elongate parabolic dune.

Figure 5: Schematic of Parabolic Dune System Evolution



3.2 MINERAL RESOURCE

Since discovery in 2021, Diatreme has undertaken progressive and systematic exploration of the Si2 Deposit, continuing to define the resource in both its spatial extent and its classification confidence.

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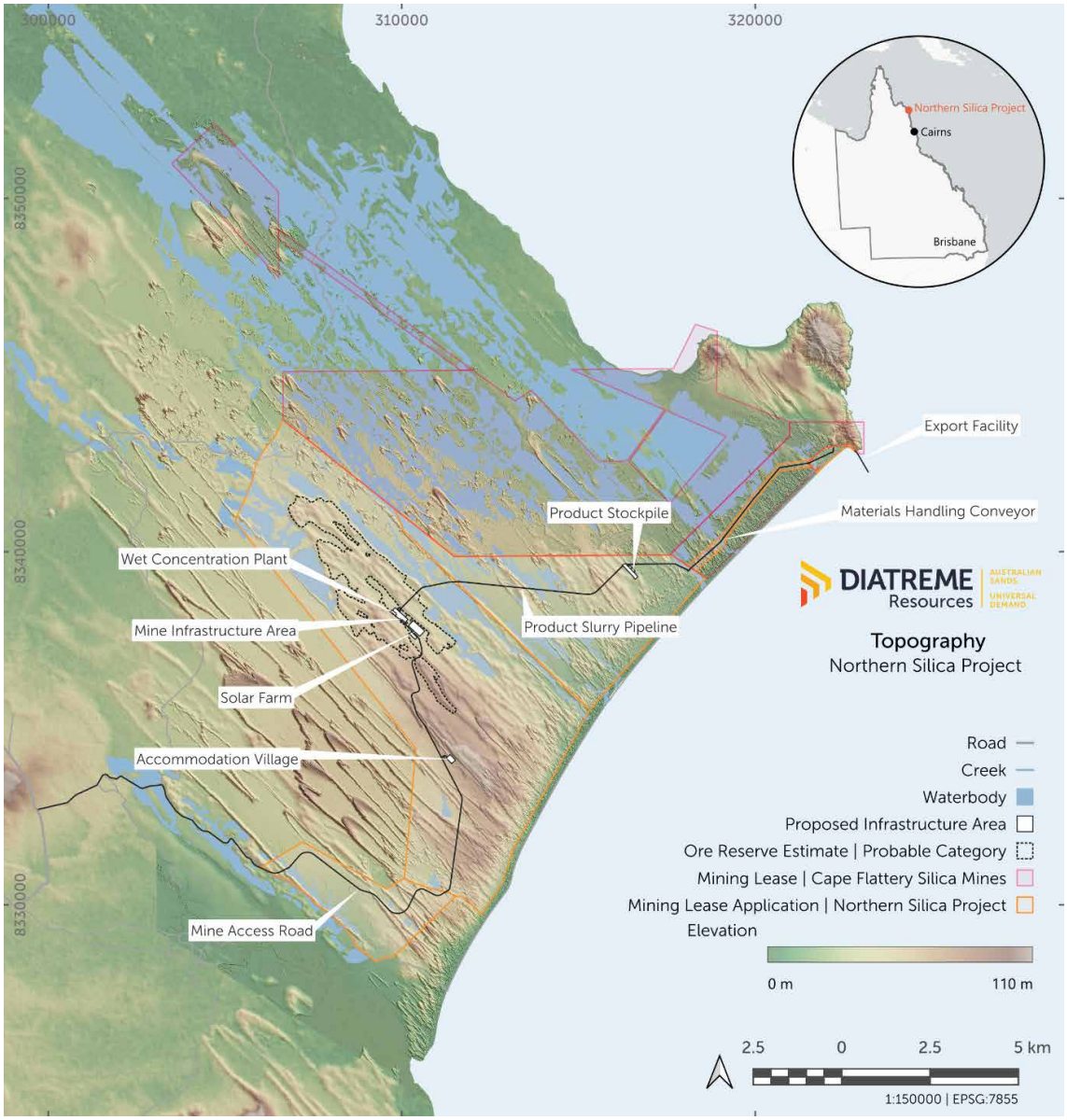
The Mineral Resource Estimate is defined by 529 drill holes, all drilled vertically, across drilling programs run from November 2021 through September 2025. Sampling was carried out using vacuum drilling, aircore drilling, and hand augering. Drilling was concentrated on the trailing arms and apices of the elongate parabolic dunes, with hand augering carried out in the deflationary troughs between dunes to support continuity.

Drilling terminated at refusal on damp clay basement or wet sand.

Figure 6: Topographic Features of the Cape Flattery Dune Field



The Mineral Resource Estimate was prepared by modelling the silica sand unit (locally termed the "A2"). Topography was captured by a LiDAR survey at a resolution of 10 points/m^2, from which a 1 m gridded digital elevation model with 10 cm relative vertical accuracy was produced. The top surface of the resource was set 0.3 m below the LiDAR topography, corresponding to the base of the topsoil;

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the base of the resource was constructed from the base depth of the A2 unit determined from drilling or augering, the depth of the groundwater table, and interpretation of the dune edge from LiDAR and aerial imagery.

Grades were estimated into a block model oriented to the dunes' average strike of 315°. Parent blocks were sized at 25 m across strike × 25 m along strike × 3 m vertical, with 1 × 1 × 1 m cubic sub-blocks used to honour the undulating geological model. Drill hole data were composited to a nominal 3 m interval prior to estimation. Grades were estimated using IDW^2 in a flattened space, with validation checks run via IDW^2 in regular space and ordinary kriging in both flattened and regular space; the flattened-space IDW^2 estimate populated the block model for SiO_2, Fe_2O_3, TiO_2, Al_2O_3, and accessory geochemistry. Estimation was carried out in four sequential passes, with search radii calibrated to inform classification into Measured, Indicated, and Inferred categories. Sensitivity crosschecks against alternative block sizes, estimation methods, and coordinate-space treatments showed no material differences, supporting the robustness of the final estimate.

No cut-off grade was applied at the compositing, block estimation, or reporting stages; the Mineral Resource is reported from every classified block carrying an interpolated SiO_2 grade. A minimum SiO_2 grade of approximately 98.5% was, however, one of several criteria used when defining the base of the geological model, with geological domains delineated on a combination of SiO_2 grade, sand colour, and contaminant levels. Minor internal intervals below 98.5% SiO_2 were retained within the high-purity silica domain where they did not materially affect overall resource quality.

Bulk density was determined through laboratory testwork on dried and compacted samples collected from drilling across the Si2 Deposit. A total of 132 samples were tested, and a dry bulk density of 1.65 t/m^3 was adopted for tonnage estimation.

The extent and variability of the Mineral Resource Estimate, expressed in terms of the full Resource Area:

- Mineral Resource Area: approximately 1,611 ha
- Max Length (along strike): 10.5 km
- Max Width: 3.5 km
- Resource Thickness: averages 10–11 m (ranging up to 55 m)
- Top of Resource: 20 mRL to 114 mRL (corresponds to topography)
- Bottom of Resource: 10 mRL to 96.5 mRL (corresponds to water table / resource basement)

The Mineral Resource Estimate totals 301.5 Mt at 99.20% SiO_2 (Measured 187.5 Mt at 99.25%; Indicated 42 Mt at 99.16%; Inferred 72 Mt at 99.17%), reported as in-situ tonnage. All Mineral Resources lie within granted EPM's, and Mining Lease Applications. Table 2 shows a summary of the Mineral Resource Estimate.

Table 2: Si2 Mineral Resource - Summary Table

Mineral Resource Category	Mt	SiO_2%	Fe_2O_3%	TiO_2%	Al_2O_3%
Measured	187.5	99.25	0.10	0.14	0.11
Indicated	42	99.16	0.12	0.16	0.11
Inferred	72	99.17	0.13	0.17	0.11
Total	**301.5**	**99.20**	**0.11**	**0.15**	**0.11**

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Figure 7: Si2 Mineral Resource Estimate (May 2026)

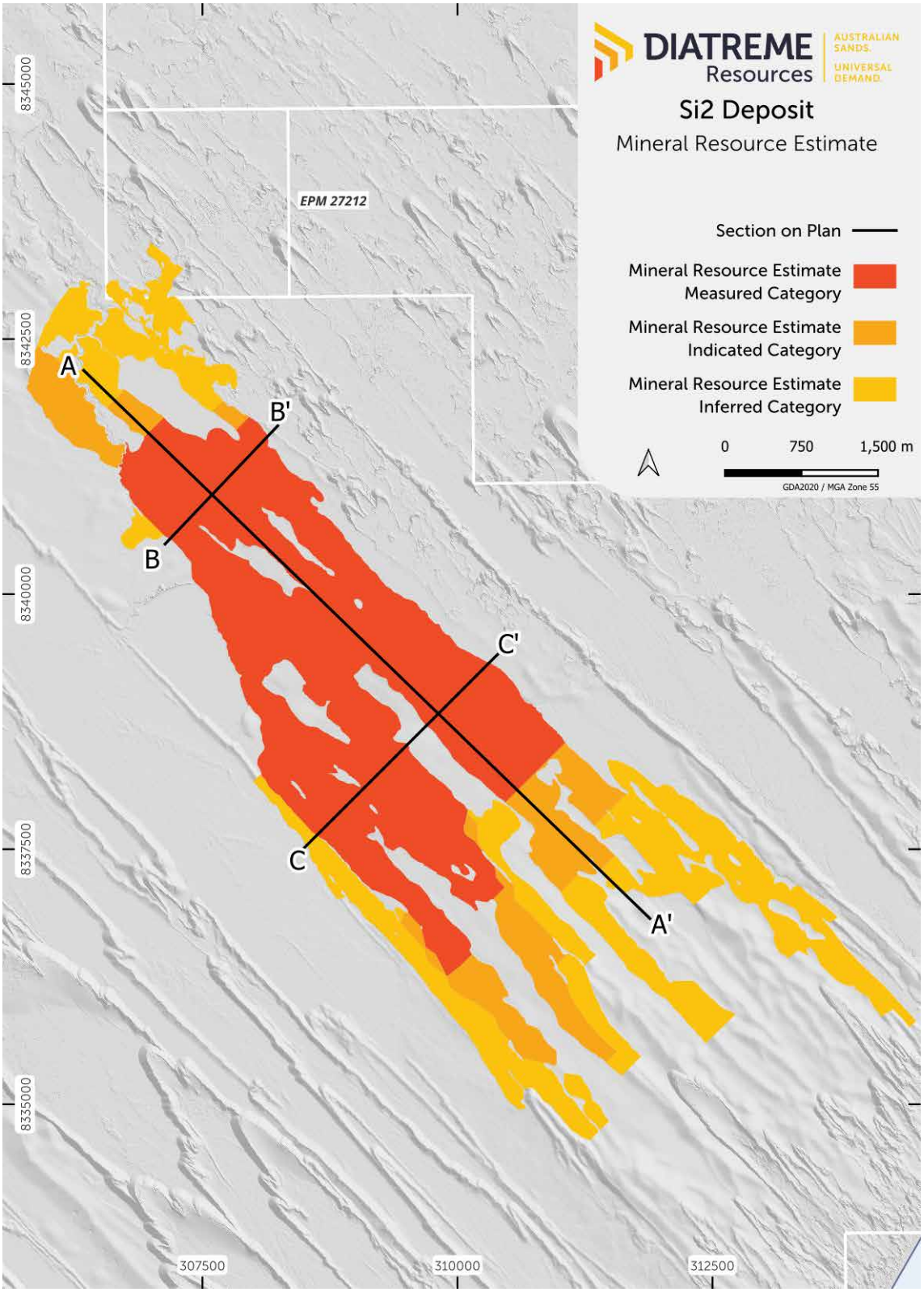

Figure 8: Si2 Mineral Resource Estimate Cross Sections

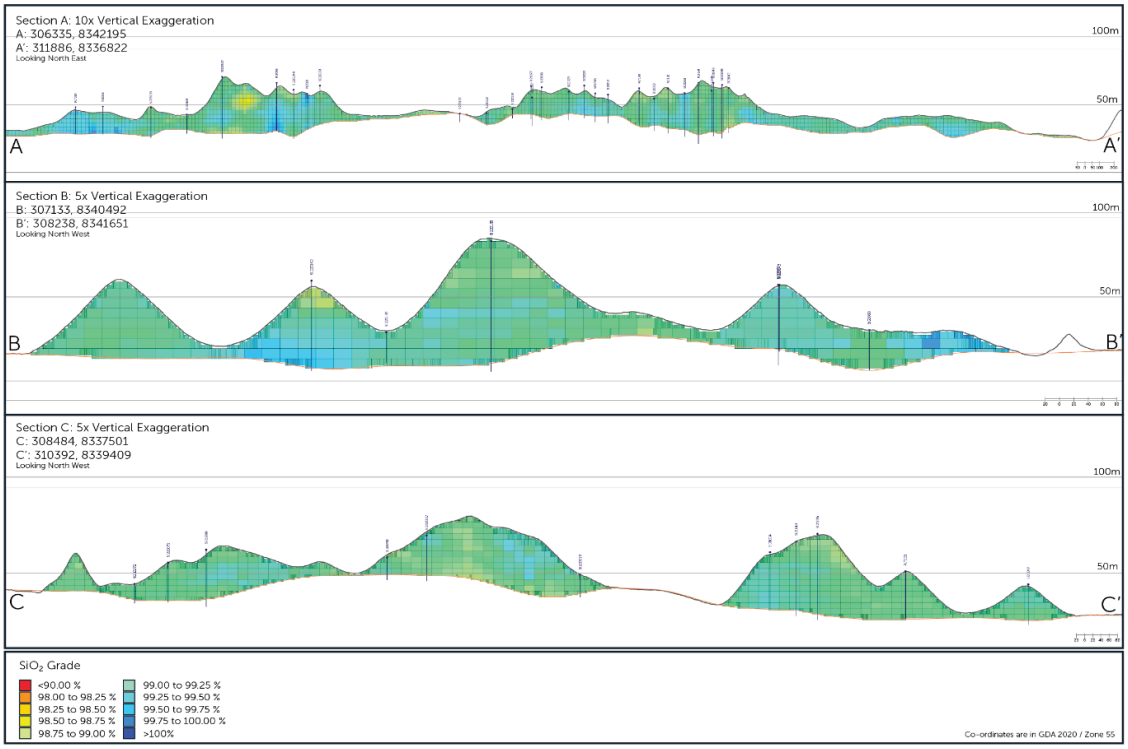

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Table 3: Si2 Exploration Drilling Summary

Sampling Program	ID Series	# Holes	Drilling Method	Commentary
November 2021 to January 2022	PLTxxx	99	Vacuum	Vacuum drill collected 2-3 kg cuttings which reported to a return thick perspex canister mounted on the drill rig (100% of drill material returned by the vacuum drill rig) after passing through a single tiered (50/50) riffle splitter. Samples were collected in numbered calico sample bags, and sealed ready for assaying as drilling progressed. Primary Analysis Lab: ALS QA: Duplicates 1 in 50
September 2022 to November 2022	Si20xxx	82	Aircore	1 m interval samples were collected from an aircore drill rig after passing through a single tiered (50/50) riffle splitter. The samples were collected in numbered calico sample bags, and sealed ready for assaying as drilling progressed. Primary Analysis Lab: Bureau Veritas QA: Introduction of ELIM22 CRM Duplicates 1 in 25
August 2023 to November 2023	Si21xxx	88		1 m interval samples were collected from an aircore drill rig after passing through a single tiered (50/50) riffle splitter. The samples were collected in numbered calico sample bags, and sealed ready for assaying as drilling progressed. Primary Analysis Lab: Bureau Veritas QA: Introduction of Coarse Blanks Samples were composited in 2024 to 3 m and assayed at ALS on a target market size fraction, using ICP.
August 2024 to December 2024	Si22xxxx	154		1 m interval samples were collected from an aircore drill rig, before being composited to a nominal 3 m composite. All samples were assayed at a nominal 3 m including XRF full sample, and target market production fraction. Primary Analysis Lab: ALS QA: Introduction of systematic recovery sampling. Introduction of NCS DC 60116a & NCS DC 60117a CRM
July 2025 To September 2025	Si24xxx	28		1 m interval samples were collected from an aircore drill rig, before being composited - or sampled as an interval - to a lithologically controlled sample (1-6 m variable). All samples were assayed with a full XRF suite. Primary Analysis Lab: ALS QA: Maintenance of existing established QA processes

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Sampling Program	ID Series	# Holes	Drilling Method	Commentary
December 2021	AHxxx	1	Hand Auger	1 m interval samples were collected before being split in a 50/50 riffle splitter. The samples were collected in numbered calico sample bags and sealed ready for assaying. Primary Analysis Lab: ALS
September 2022 to December 2022	Si2HAxxx	60		1 m interval samples were collected before being split in a 50/50 riffle splitter. The samples were collected in numbered calico sample bags and sealed ready for assaying. Primary Analysis Lab: BV for first part of season, ALS for second part of season.
January 2025 to February 2025	Si23xxxH	14		1 m interval samples were collected and retained in numbered calico sample bags and sealed. No assaying completed, strictly for geological observations

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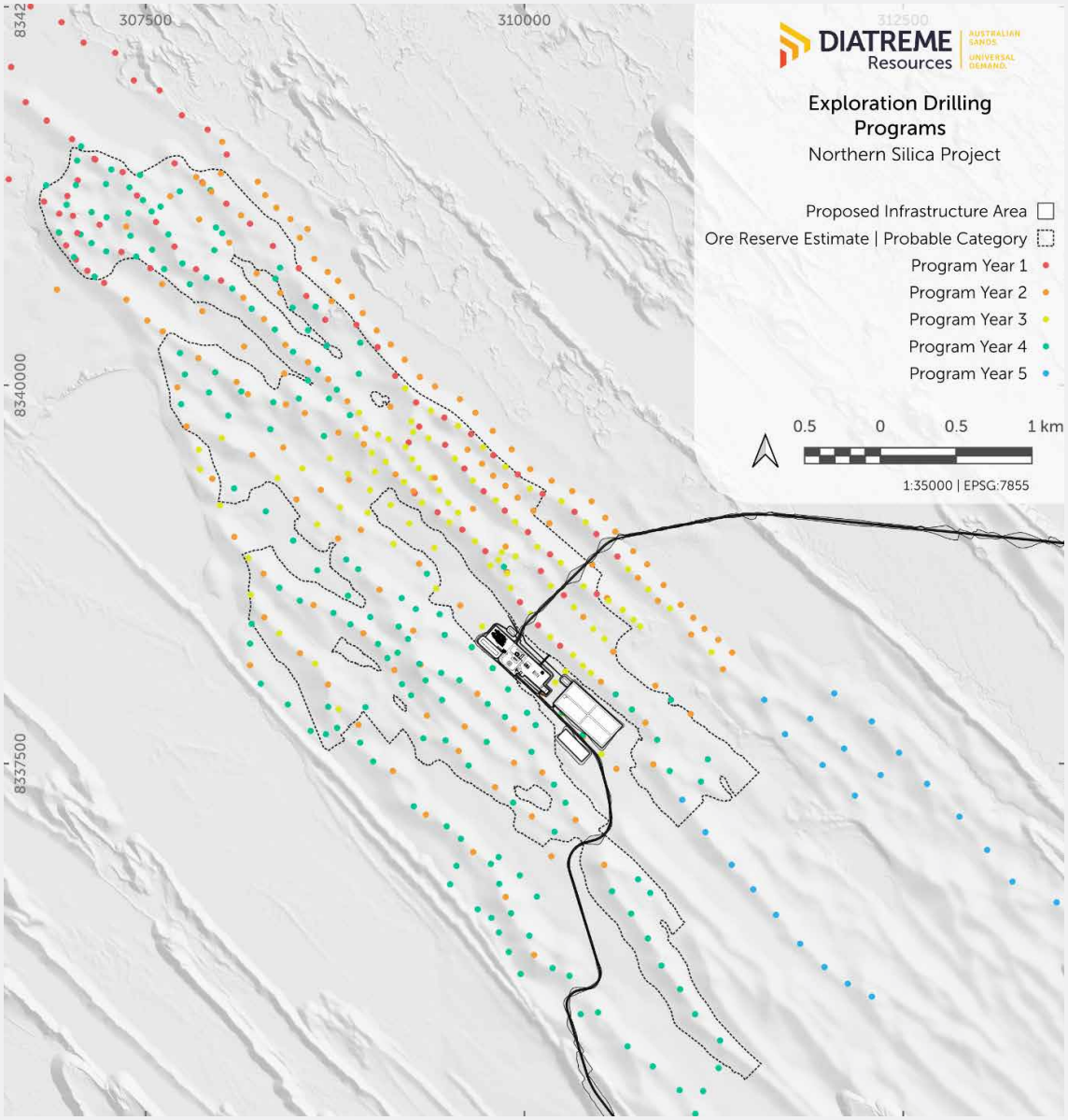
Figure 9: Exploration Drilling Program by Exploration Campaign Year



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4 Mining

4.1 MINING METHOD

Due to the proximity to the surface and lack of overburden the deposit is considered amenable to open cut mining methods. At the shallow depths proposed for excavation, and the loose nature of the sand resource, there is no prospect for underground development at the site.

The Project will use Wheel Loaders to mine the dune face and feed directly into a Mobile Mining Unit ('MMU') which will then slurry the sand to be pumped to the Wet Concentration Plant ('WCP'). As mining occurs the face will progressively advance, and the MMU will relocate as required to reduce travel distances of the loaders.

4.2 MINING EQUIPMENT

The Project utilises an owner operator model for the purchase and maintenance of mobile mining equipment. The primary mining equipment has been selected as a fleet of 988K Wheel Loaders or equivalent. While these machines are effective, hybrid models such as the 988XE are now available in the market which may provide further efficiency to the Project and will continue to be investigated.

The equipment selected is considered standard for sand mining operations and is likely to be similar to plant operated by local earthworks contractors and quarry operators. Industry standard training will be sufficient for operators to be proficient in operating the selected mobile plant.

An overview of the equipment necessary for the Project operations is presented in the table below.

Table 4: Mobile Mining Equipment Summary

Qty	Plant	Purpose/Description
3-5	988K Wheel Loaders	Primary mining (up to x3 for Phase 1, up to x5 for Phase 2)
1	D7T Dozer	Dozer Primary clearing, bulk push rehabilitation works
1	14H Grader	Road management
1	966M Wheel Loader	Plant area general use, rehabilitation management
1	226D3 (2T) Skid Steer Loader	Minor plant use including conveyor clean-up
1	CB34B (5T) Double Drum Roller	Maintenance of accessways
1	428 (8T) Backhoe	Drain cleaning, minor maintenance & general purpose
1	15 kL Mobile Fuel & Service Truck	Refuelling & minor servicing of machinery
2	25 kL ADT Water Truck	Haul road and rehabilitation watering, geotechnical control
1	Cat 735	Transporting of cleared vegetation / rejects
1	Cat 330	General use / cleanup and movement of vegetation
1	Cat 340	Mounting cyclone for stacking of rejects
1	15t Flat Bed Truck	Site deliveries
1	MHT-X 790 Manitou	General purpose
1	340 AJ Elevated Work Platform	34 ft Boom for maintenance and repairs
15	Mobile LED Lighting Towers	Night operations
10	Light Vehicles	Site access
6	Mobile Comms Towers	Site communications
2	22-Seater Bus	Personnel transport
1	44-Seater Coach	Personnel transport

Other contractor equipment such as - but not limited to - excavators, articulated dump trucks, wheel loaders and cranes will be hired on an as-required basis to fulfill short term needs of the Project, particularly during the construction phase.

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4.3 MINING METHODOLOGY

4.3.1 Vegetation Clearing

Surveyors will mark out an area for clearing based on the mine schedule; the area will undergo cultural heritage inspection and flora and fauna management undertaken in line with established management plans.

Clearing will be prioritised in the late dry season to minimise damage to the soils including any unnecessary germination of the seed bank, and to ensure the local flora has been able to drop seed. Any suitable trees and shrubs that are suitable for log pile habitat will be managed separately for use in rehabilitation. The dozer is predominantly used to clear vegetation and push to a stockpile at the perimeter of the pit. In some instances, low heath vegetation may be mixed with the topsoil if it is deemed beneficial.

4.3.2 Topsoil Stockpiling

Following vegetation clearing, a tracked dozer will push the 300 mm layer of topsoil into stockpiles. For approximately the first two years of operation the topsoil will be stockpiled at the perimeter of the pit. However, once previously mined areas are available for rehabilitation the topsoil will be loaded directly from the stockpiles to articulated dump trucks by loaders for transport to an active rehabilitation area or pushed directly by dozer where possible.

Whilst the whole topsoil layer is defined as ~300 mm thick, it is predominantly unconsolidated sand and organic material which will not require ripping.

4.3.3 Mining Process & Mobile Mining Unit

Mining operations will be matched to processing capacity and will run at a steady state, 24 hrs per day and 7 days per week at a utilisation rate of 85% equating to 20.4 hrs per day, 365 days per year, for 7,446 operational hours. Mining operations will be matched to processing operations and run at a continuous steady state, 24 hrs per day and 7 days per week at a utilisation rate of 85% equating to 20.4 hrs per day, 365 days per year, for 7,446 operational hours. Feed rates will vary depending on project stage as shown in the table below:

Table 5: Production & Mining Rate Summary

Project Phase	Mining Rate (tonnes/annum)	Mining Rate (t/hr)	Production (tonnes/annum)	Production (t/hr)
1	3,750,000	504	3,000,000	403
2	6,250,000	839	5,000,000	672

Mining feed is recovered to final product at a rate of 80%.

A fleet of 988 Wheel Loaders will serve as the primary production unit for loading directly from the mine face to the feed unit. The loading process will be carried out from floor level. The face will typically stand up to approximately 28 degrees and will gradually and naturally settle to below the angle of repose at around 26 degrees. The extraction procedure will involve varying the loading zone across a face width of up to 250 m, ensuring that the extraction area does not form a convex shape. Loading from a wide zone facilitates material blending, with a consistent feed rate achieved by alternating short and long tramming hauls to the feed unit. If material becomes hung up on the face, manual slumping using either a water truck with a cannon spray or a dozer / excavator in extreme circumstances
may occur.

Each MMU includes the following components:

- coarse screening with a dry grizzly featuring a 100 mm aperture;
- hopper and feed conveyor;
- water supply pipeline;
- a 4 mm vibrating screen above the sump;
- constant density sump;
- slurry pump and pipeline for transporting the processed sand; and
- power supply generator for operating the MMU.
- The -4 mm material from the MMU will flow to a sump where it will be mixed with water (slurried) and pumped to the WCP. The location of the feeder unit will be moved to stay within close proximity to the mining face and reduce tramming distance for the Wheel Loader. The system can be extended using lengths of pipe and slurry booster pumps where required. It is anticipated that the MMU will be moved every 2-4 weeks on average, based on the surface area of the extraction stage and thickness of the sand.

In the current mine plan, there is no inter-burden or low-grade zones that are excluded or require removal.

4.3.4 Wet Concentration Plant

The WCP is designed to process feed from the MMU to remove heavy minerals and iron contamination (the WCP process is detailed further in the Mineral Processing chapter). The WCP is centrally located on the B1 basement so as not to sterilise any Mineral Resources or require relocation.

4.3.5 Processing Plant Rejects

Low-grade and reject streams (including oversize, fines, heavy mineral and other low grade silica sands) are consolidated into a dedicated reject sand circuit. Cyclones in the WCP concentrate solids prior to pumping to a field mobile stacking unit. The field stacking unit uses cyclones to remove water to enable the reject sand to be stacked in engineered piles used to support ongoing rehabilitation activities. Overflow and drain water from these circuits is collected and returned as process water. A dozer will be used to push out stacked tailings or shape final landforms where required.

During the first three years of operations reject sand will be stacked adjacent to the processing plant on an area located on the B1 basement so as not to sterilise any Mineral Resources. Once completed, mining panels are available from year 3 onwards, while processing plant reject sands will be directly stacked in mined out areas for final land forming and rehabilitation.

Landfarming design is focused on long term post mining land use criteria and to mitigate impacts from wind and erosion, and enable native vegetation and habitat to be returned.

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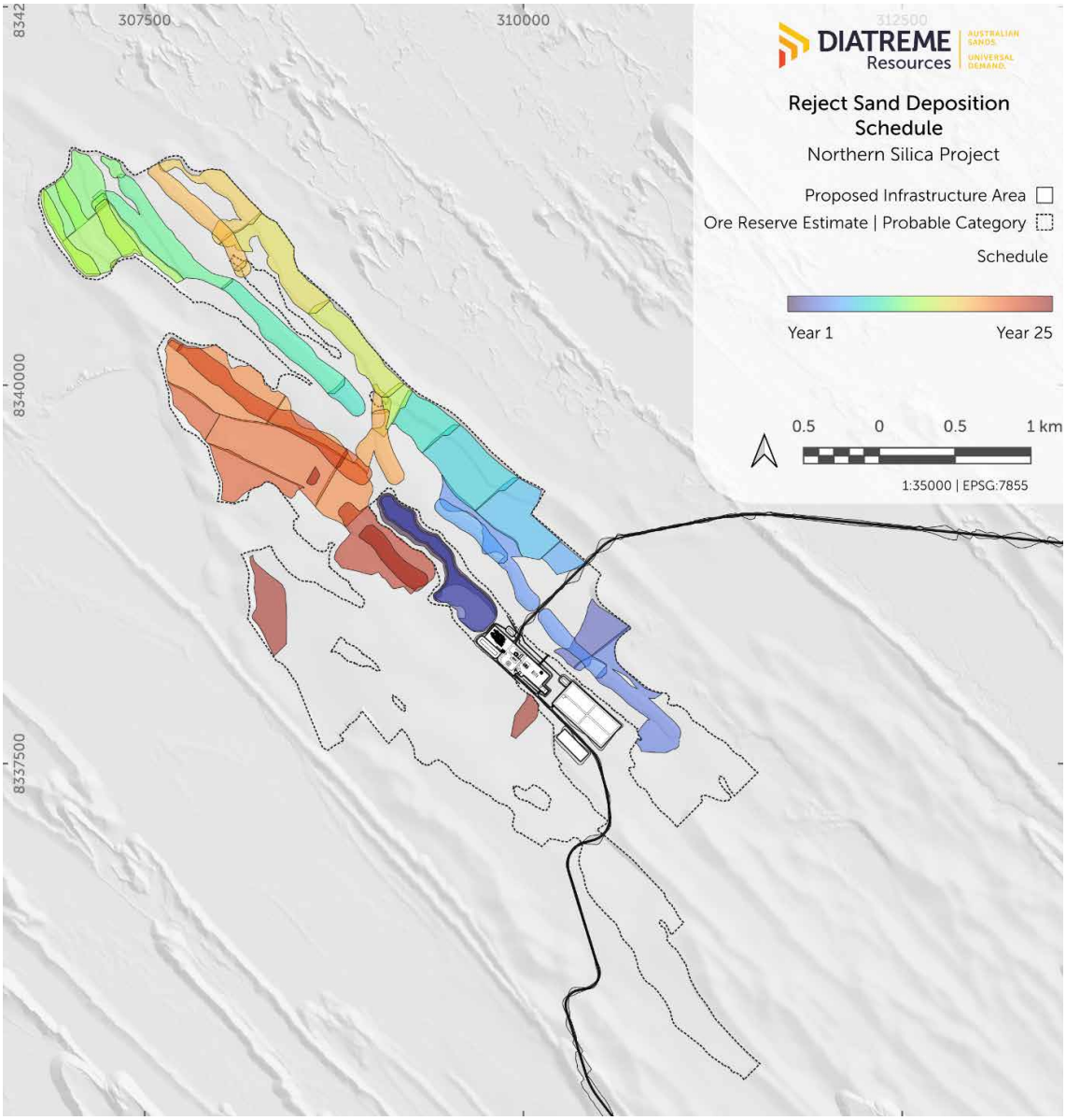
Figure 10: Reject sand deposition schedule



4.3.6 Topsoil Spreading

Following the placement and contouring of reject sand, topsoil placement will occur. Topsoil will be transported or pushed directly with a dozer from stockpiles and placed on the contoured surface. The topsoil will be placed in similar layers and thickness to where it was removed (~300 mm topsoil). Where and when required, ameliorants will be applied with a tractor mounted seeder together with seed. Rehabilitation timing will be planned to allow seeding coincidental with or just prior to the commencement of the wet season (October – December).

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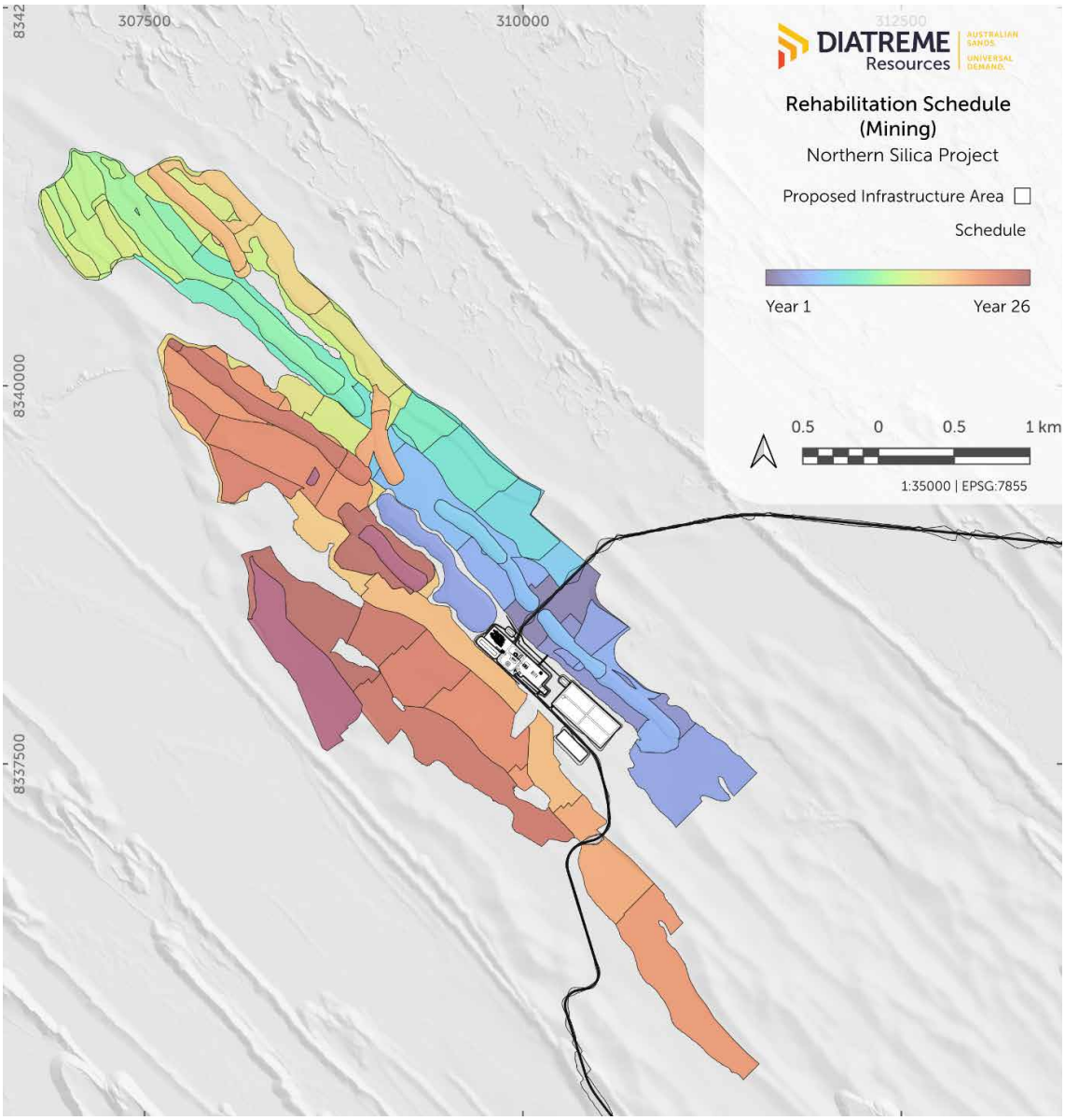
4.3.7 Revegetation

Revegetation will be undertaken as per an approved Progressive Rehabilitation and Closure Plan ('PRCP'). An assessment has been undertaken on the final landform to select the most suitable ecosystem type against the landform and final land use criteria. Revegetation will be undertaken progressively as mined out areas are made available.

Figure 11: Si2 Mine Rehabilitation Design & Schedule



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4.4 MINE CONTROL SYSTEM

4.4.1 Survey Control of Pit Operations

The initial control of the mine system involves surveyors utilising the engineered pit design to mark out the perimeter of the pit stage and create a projected dig plan that details the excavation depths throughout the pit. This file will be uploaded to the site machinery to assist with GPS guidance.

Regular survey pickups of the pit will be conducted by unmanned aerial vehicles ('UAV') to assess the excavation progress against the design.

4.4.2 Grade Control Drilling

If grade control drilling is required, it will be undertaken in advance of the mine face. After vegetation clearing a drill rig will be deployed to the area to drill on an approximately 50x50 m grid with samples assayed at 3 m intervals. The assay results will be compared with the Grade Control Model, and major anomalies will be taken into consideration for mining activities and ongoing refinement of the Grade Control Model.

Visual assessment of grades will be conducted as required by the site geologist, and if necessary, grab samples will be assayed to refine grade control.

4.4.3 Grade & Tonnage Reconciliation

Reconciliations provide the assurance that the Resource Model, the mined material and the product delivered to the WCP remain in agreement, and that any divergence is identified and corrected. Reconciliation will be conducted by site geologists on a regular basis, with survey data used to define mined volumes and tonnages, and with updates to future Resources and Reserves undertaken as required.

4.5 MINE DETAIL & PIT SHELL

4.5.1 Mine Design Parameters & Assumptions

A series of consistent mining, geological, and operational assumptions underpin the development of pit limits, mining geometry, production scheduling, and material movement estimates. These assumptions were applied to:

- generate pit shells and panel geometries for stage definition;
- convert block model volumes to Run-of-Mine ('ROM') and product tonnes;
- develop the Life-of-Mine ('LOM') production schedule for Years 1–25; and
- size pumping requirements and reject dump capacities on a volumetric basis.
- Environmental and Cultural Constraints

~100 m offset zones are applied from wetlands and waterbodies to define mining boundaries. In places, there are cultural limitations around Hoop Pine vegetation, and the larger lakes also containing cultural significance to Traditional Owners. These areas form the primary outer limits of the mining envelope, ensuring compliance with cultural, ecological and regulatory requirements. Mining and rehabilitation are designed to align with prevailing wind direction (where practicable) which will be a major factor in erosion management. Vertical mining extents were defined using geological surfaces and maximum seasonal groundwater constraint.

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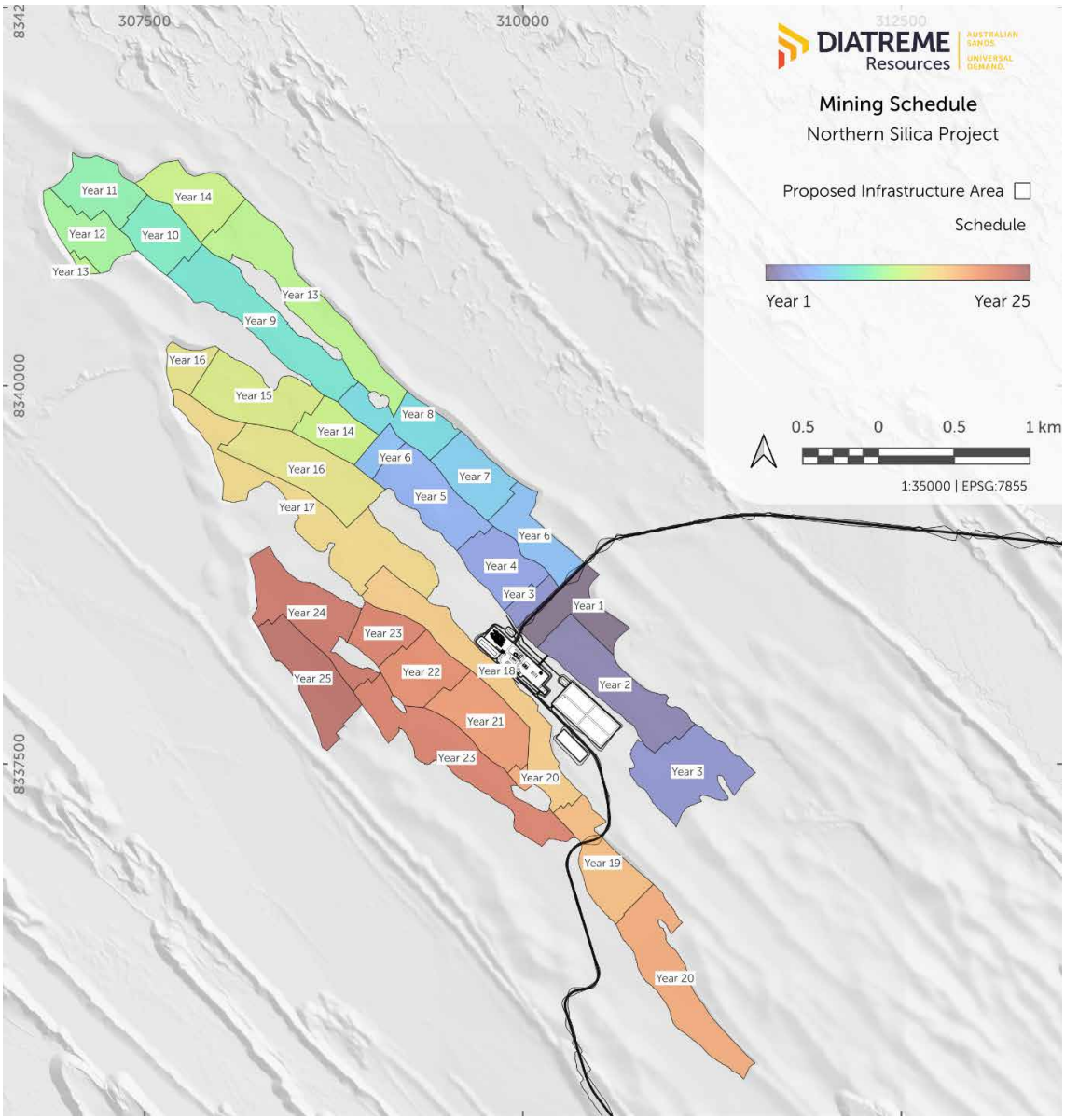
Mining Panel Boundaries

The pit is subdivided into mining panels to control mining direction, facilitate progressive rehabilitation, and optimise operational access. Panel boundaries provide the internal geometry used for mine staging and scheduling.

Figure 12: Si2 Mine Design & Schedule



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Geometric Constraints and Pit Definition

Minimum and maximum pit widths were applied to ensure sufficient clearance for geometrical controls to prevent narrow, operationally inefficient zones and maintain safe operations across the deposit to ensure the safe and optimised operation of:

- mining equipment operation;
- safe slope configurations; and
- trafficable access routes.

Where the water table intersects the deposit, the pit floor is set at the water table with a 1 m vertical offset buffer for operational clearance. The water table has been measured during 3 consecutive years of above average rainfall and is considered to represent a higher, more conservative water table elevation estimate.

Where the B1 horizon lies above the water table, the B1 surface forms the pit floor.

This framework maintains geotechnical stability, prevents interaction with groundwater, and provides consistency when determining ore volumes.

The A2 horizon defines the roof of the economic orebody. Material above A2 to the surface is classified as topsoil and is removed ahead of mining to meet rehabilitation requirements.

Geotechnical and Geometric Parameters

Simplifying geotechnical parameters adopted for mine design include:

- active mining face angle: 28° (represents stable working conditions for loose sand materials);
- final dump slope angle: <20° (ensures long-term stability and supports rehabilitation);
- strip width: 50 m (balances equipment productivity and scheduling flexibility); and
- panel widths: 200–400 m.

Ore Characteristics and Conversions

- Processing recovery: 80% of ROM to saleable product.
- In situ bulk density: 1.65 t/m^3.
- Swell factor: 5% applied for loose material volumes in reject dumps.

4.5.2 Geotechnical Considerations

In-situ dunes exhibit variable slope angles. Where stabilised and not exposed to active elongation or deflationary processes, slopes are typically around 10 degrees, whereas active dune faces stand at their angle of repose, with slip faces up to approximately 35 degrees.

The advancing mine face is modelled at a 28-degree slope, representing a settled face. A 26-degree wall angle is targeted for the working pit area.

Figure 13: Si2 Mine Pit Cross Sections

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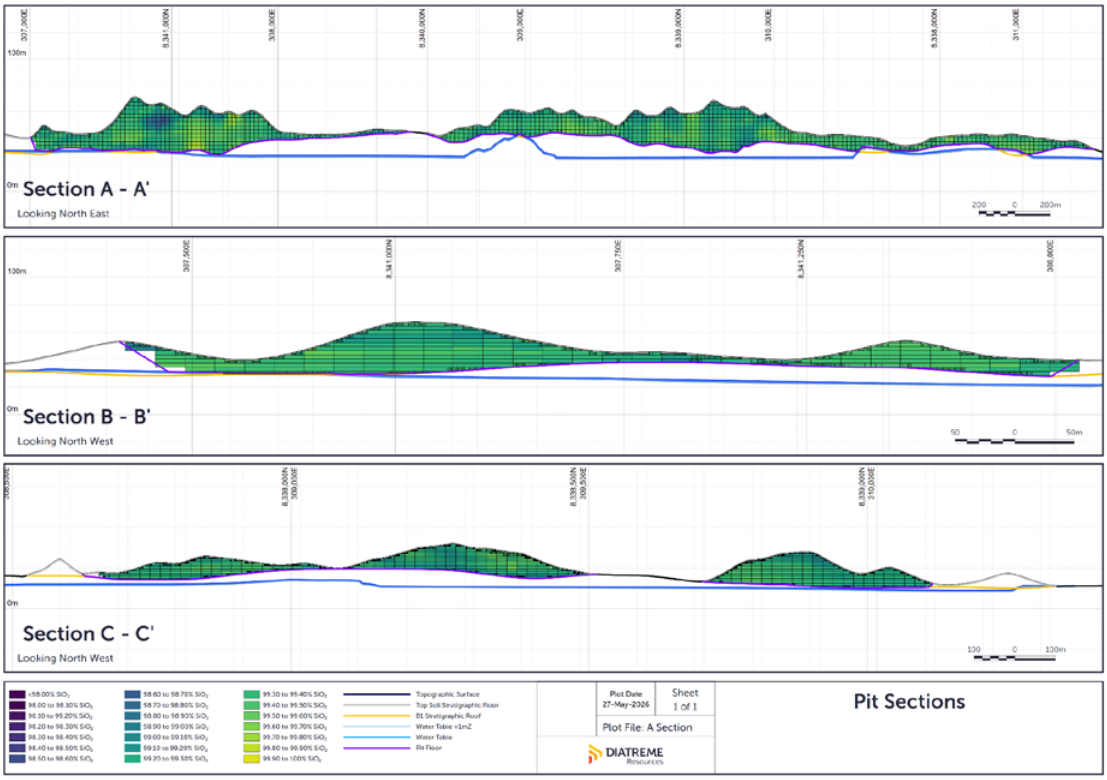
Figure 14: Si2 Mine Pit Cross Sections – A-A, B-B, C-C



4.6 MINING SCHEDULE

Within the geochemical and operational parameters of the pit optimisation process the Mineral Resource at the Project has a homogeneous and consistent feed grade required for its target product specification. The mining schedule is therefore optimised by operational constraints such as prevailing wind direction, reject placement and operational sequencing.

The Project will be developed in two phases, the annual mining rates required for Phase 1 are 3.75 Mtpa in years 1 and 2, with Phase 2 potentially increasing to 6.25 Mtpa in years 3 to 25. These mining rates equate to the annual production of final product of 3 Mtpa and 5 Mtpa for Phase 1 and 2 respectively.

Over the 25 year LOM, 151.25 Mt will to be mined from the 301.5 Mt Mineral Resource estimate at Si2.

The mined resources are made up of 132.04 Mt of Measured Resources and 19.21 Mt of Indicated Resources.

Backfilling requirements will be in line with production, with ~20% of material mined returned to the pit as reject sand. This material is benign sand and will be dewatered in the pit and used for recontouring works and final rehabilitation.

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Figure 15: Mine Schedule by Mineral Resource Category

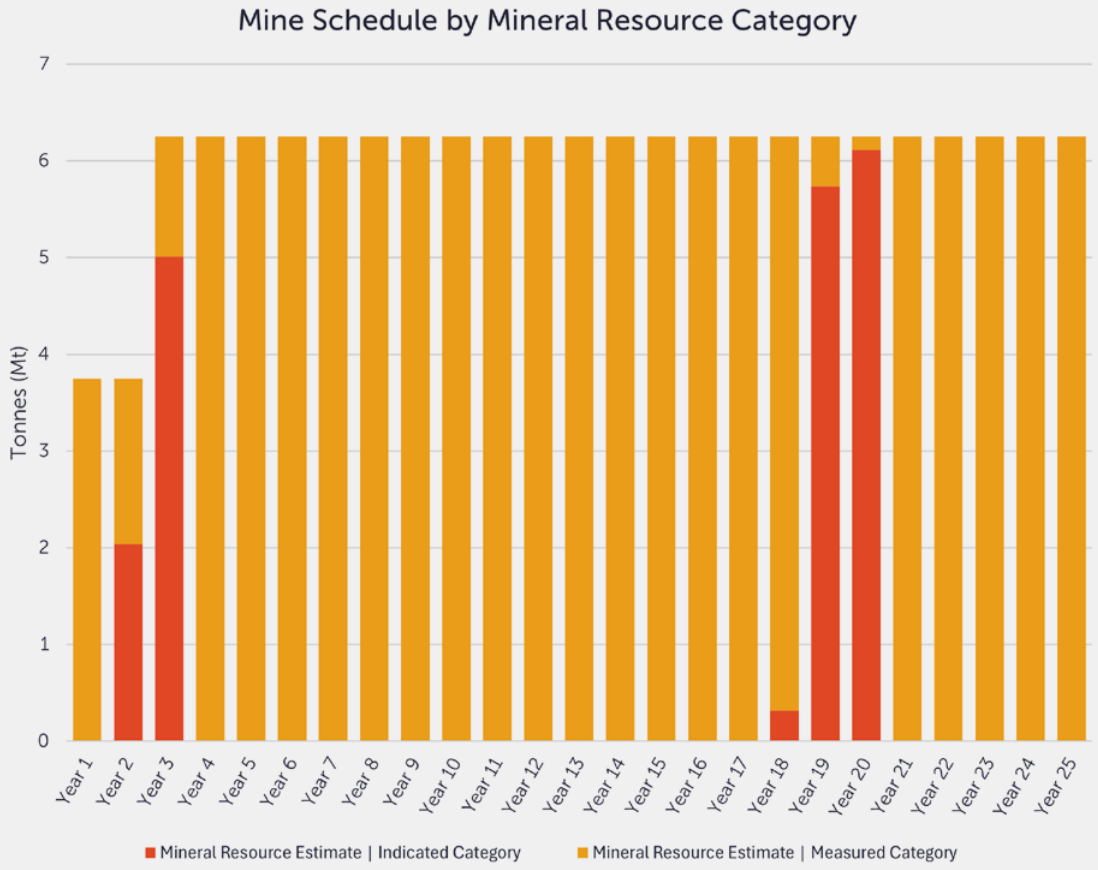

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Table 6: LOM Schedule Summary

Production Year	Mined Tonnes	Tonnes Produced	JORC Mineral Resource Category
1	3,750,000	3,000,000	Measured
2	3,750,000	3,000,000	Measured 45.6% | Indicated 54.4%
3	6,250,000	5,000,000	Measured 19.8% | Indicated 80.2%
4	6,250,000	5,000,000	Measured
5	6,250,000	5,000,000	Measured
6	6,250,000	5,000,000	Measured
7	6,250,000	5,000,000	Measured
8	6,250,000	5,000,000	Measured
9	6,250,000	5,000,000	Measured
10	6,250,000	5,000,000	Measured
11	6,250,000	5,000,000	Measured
12	6,250,000	5,000,000	Measured
13	6,250,000	5,000,000	Measured
14	6,250,000	5,000,000	Measured
15	6,250,000	5,000,000	Measured
16	6,250,000	5,000,000	Measured
17	6,250,000	5,000,000	Measured
18	6,250,000	5,000,000	Measured 94.9% | Indicated 5.1%
19	6,250,000	5,000,000	Measured 8.2% | Indicated 91.8%
20	6,250,000	5,000,000	Measured 2.2% | Indicated 97.8%
21	6,250,000	5,000,000	Measured
22	6,250,000	5,000,000	Measured
23	6,250,000	5,000,000	Measured
24	6,250,000	5,000,000	Measured
25	6,250,000	5,000,000	Measured
Total	**151,250,000**	**121,000,000**	**Measured 87.3% | Indicated 12.7%**

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Figure 16: Life of Mine Ore Grade Profile by Year

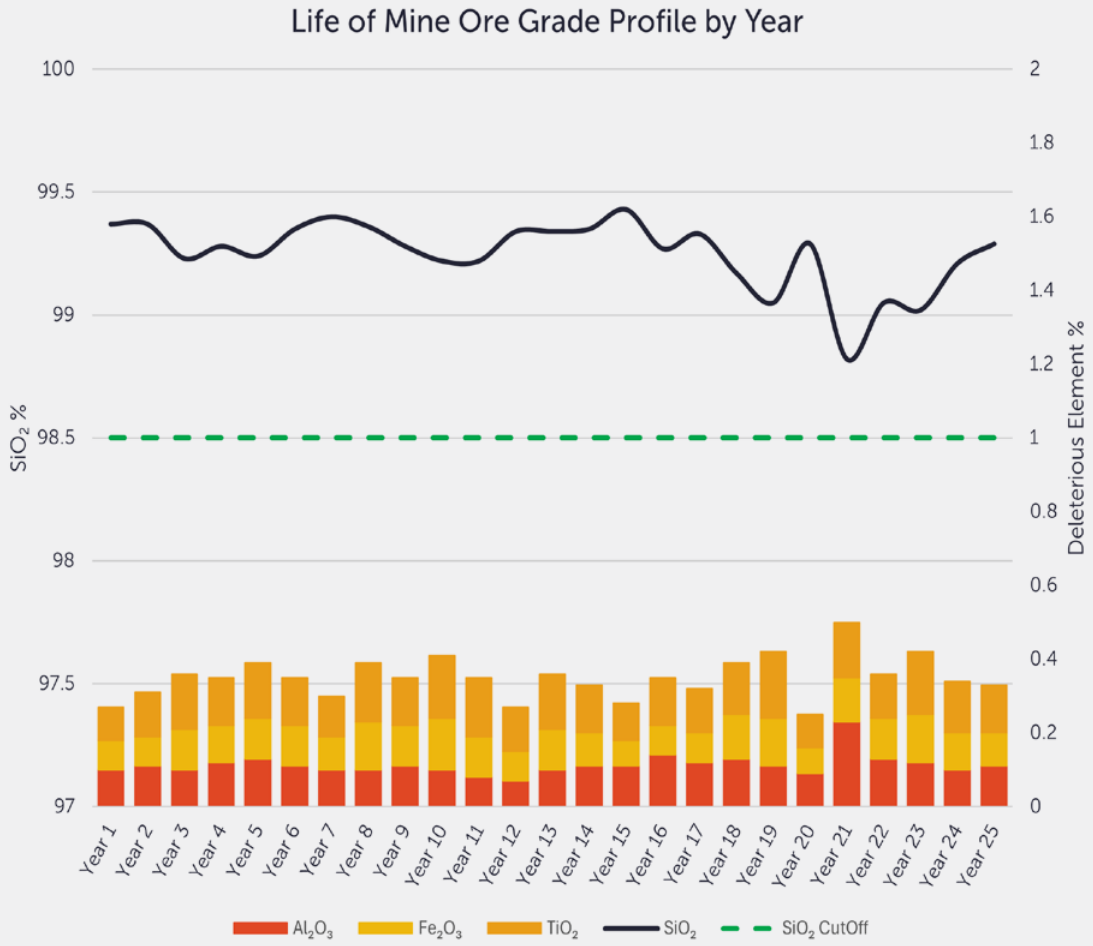

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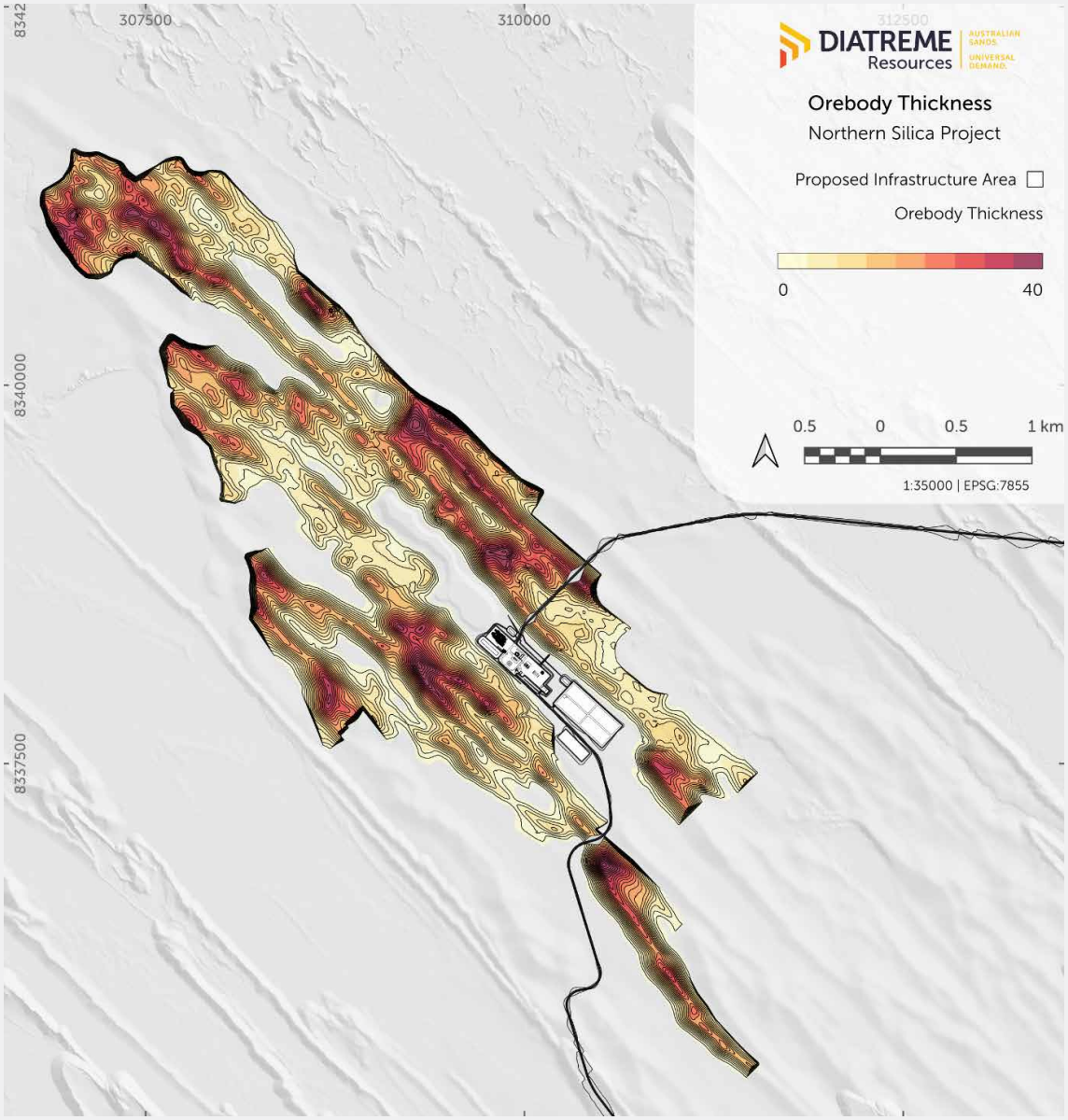
Figure 17: Mine Layout Showing Contours for Sand Thickness



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5 Metallurgical Testwork

5.1 SCOPING STUDY TESTWORK SUMMARY

An initial metallurgical testwork program was completed as part of the Scoping Study, using composite samples from across the Si2 resource area at the time. This was suitable for the Scoping Study, for which the testwork completed multiple benchtop-scale tests.

The steps in the Scoping Study metallurgical characterisation procedure were:

- screening to remove coarse (+710 µm) and fine particles (-106 µm);
- gravity separation using bromoform heavy liquid;
- high energy attritioning using high slurry density;
- screening to remove fine particles (-106 µm); and
- dry magnetic separation to remove high iron particles and produce product samples.

These samples served to:

- demonstrate broad lateral continuity of silica sand across the Project area; and
- confirm general amenability of the ore to conventional processing, including washing, screening, and basic beneficiation.

Following the Scoping Study testwork it was determined that the Project could produce a product in the 103 ppm to 110 ppm Fe_2O_3 range with and without magnetic separation, respectively. Subsequently the flow sheet excluded a magnetic separation circuit and a Scoping Study product of 120 ppm Fe_2O_3 was selected.

The Scoping Study testwork demonstrated that the Project was able to produce high-purity silica sand within target specifications for supply into the photovoltaic glass market, at a high economic yield suitable for commercialisation. Further testwork was completed to focus on scaling up and further refinement of the attritioning and magnetic separation requirements to enable assessment of product quality options to inform further plant design.

Table 7: Scoping Study Characterisation Testwork - Average Product Quality

Characterisation Process	SiO_2	Fe_2O_3	Al_2O_3	TiO_2
Excluding magnetic separation	99.9 %	110 ppm	297 ppm	147 ppm
Including magnetic separation	99.9 %	103 ppm	290 ppm	147 ppm

5.2 BULK SAMPLE TESTWORK

A bulk testwork program was completed at Si2 by Mineral Technologies ('MT') based in Carrara in QLD Australia. The selected bulk sample location was chosen in an area that is considered representative of the first several years of mining to mitigate risk during startup and to ensure strong economics, particularly during the payback period.

The bulk testwork utilised typical sand processing techniques and equipment that have been adapted for the Project, which consisted of sizing, gravity separation using spirals, attritioning, classification and

magnetic separation. This work confirmed processing performance at scale which was used to refine and confirm the flowsheet, achieving 85.6% recovery and 107 ppm Fe_2O_3. Importantly, it indicated that magnetic separation is required to further reduce Fe_2O_3 levels in the product and is an important step in the process.

Following the identification of the impacts of magnetic separation at Si2, further testwork was undertaken using advanced magnetic separation technology (vertical ring high-gradient magnetic separator) more suitable for fine removal of iron in comparison to WHIMS which are rougher and more suitable to larger processing splits (not ppm of Fe_2O_3 removal), with high yielding results of 83.8% and 81.6% recovery at 92 ppm and 89ppm Fe_2O_3, respectively, achievable.

The bulk metallurgical testwork further confirmed that the Project can consistently produce a product of high-purity low-iron silica sand, with between 89 ppm to 107 ppm Fe_2O_3, at relatively high recovery rates of 81.6 to 85.6% respectively, depending on magnetic separation equipment selection.

Based on the results from historic testwork, and the bulk metallurgical testwork program, the target product speciation of the Project has now been updated and reflected in the process plant design, and an 80% recovery rate used for target plant performance.

Figure 18: Project Product technical specification – Particle size distribution

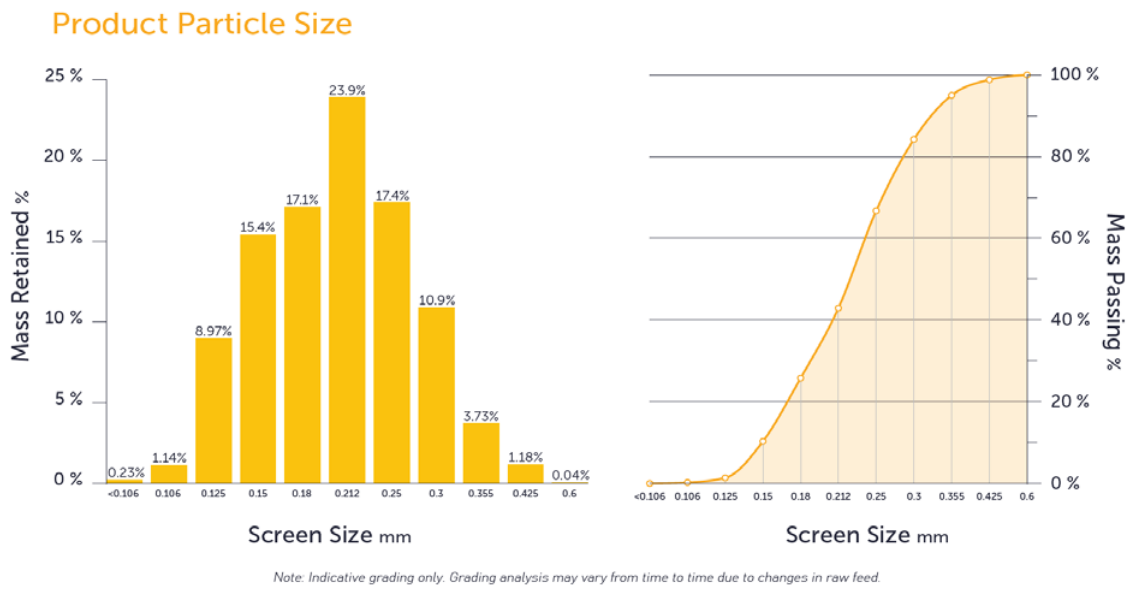

Table 8: Project Product Technical Specification Target – Chemical Composition

SiO_2	Al_2O_3	Fe_2O_3	TiO_2	K_2O	Na_2O	CaO	Cr	MgO
=>99.9	=<0.046%	=<0.01%	=<0.012%	=<0.0039%	=<0.0034%	=<0.0040%	=<0.00014%	=<0.0017%
	=<460 ppm	=<100 ppm	=<120 ppm	=<39 ppm	=<34 ppm	=<40 ppm	=1.41 ppm	=<17 ppm

TECHNICAL SPECIFICATION DISCLAIMER AND NOTES:

- The information set forth in this Product Data Sheet represents properties of the Bulk Sample from Mineral Technologies as well as additional testwork undertaken for magnetic separation optimisation to further remove impurities.
- The properties listed are to be used as guidelines only, minor variation is to be expected due to slight variations in raw feed.

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Table 9: Bulk sample testwork results

Stage	Fe_2O_3 ppm	Recovery % (as % of bulk testwork feed)
Feed	1,120	100
Spiral Product	159	91.9
Attritioned Product	180	88.1
UCC Product	150	85.9
WHIMS Non-Mag Product	110	85.6
Final Product	107	85.6

Table 10: Metallurgical Testwork - Vertical Ring High Gradient Magnetic Separatory Testwork Summary

Stage	Fe_2O_3 ppm	Recovery % (as % of bulk testwork feed)
1st Pass LHGC WHIMS Product	92	83.8
2nd Pass LHGC WHIMS Product	89	81.6
HTDZ Slurry Magnetic Separator Product	86	66.5

Figure 19: Bulk sample on spiral separator

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Figure 20: Bulk sample – Process flow

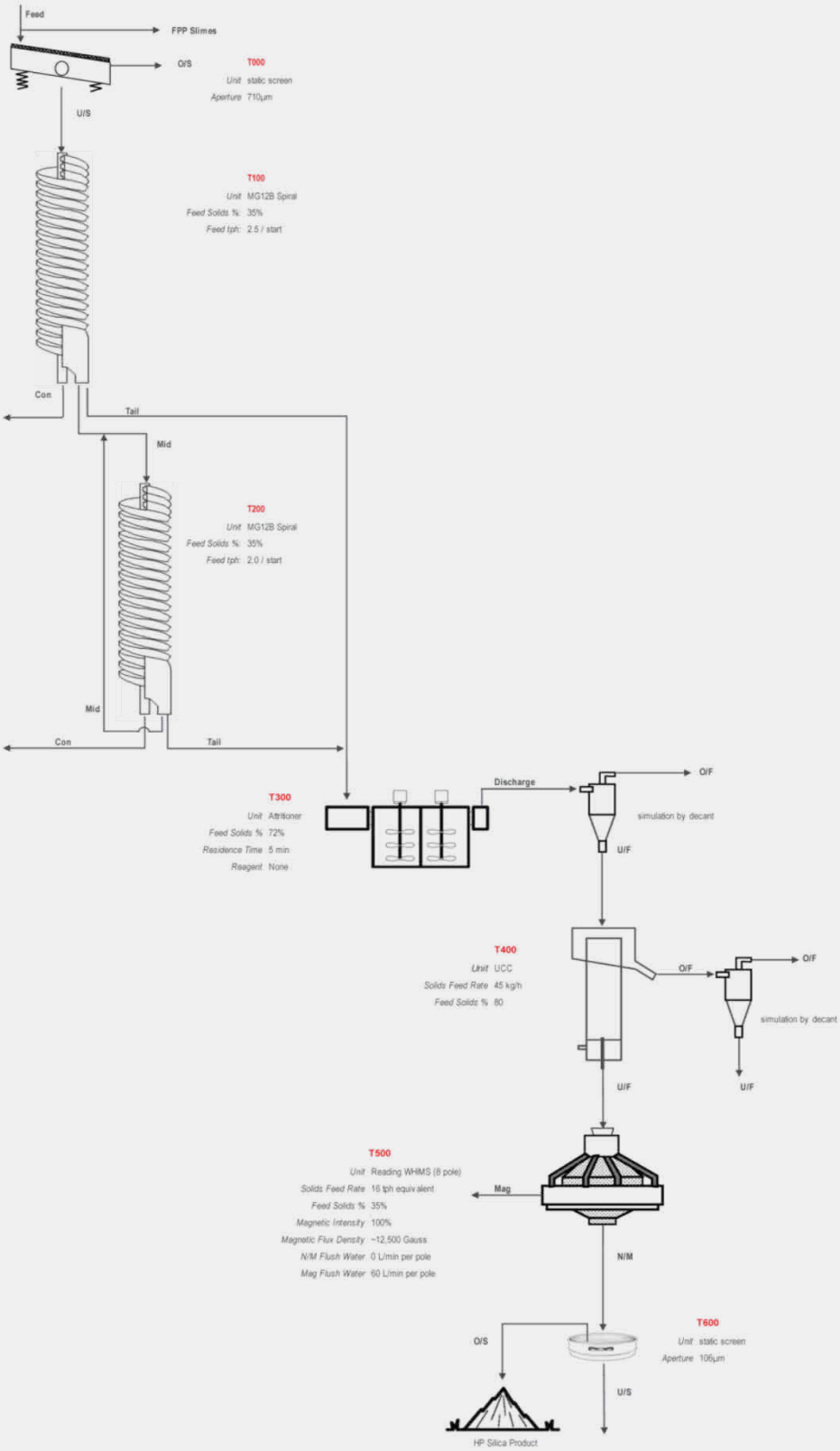
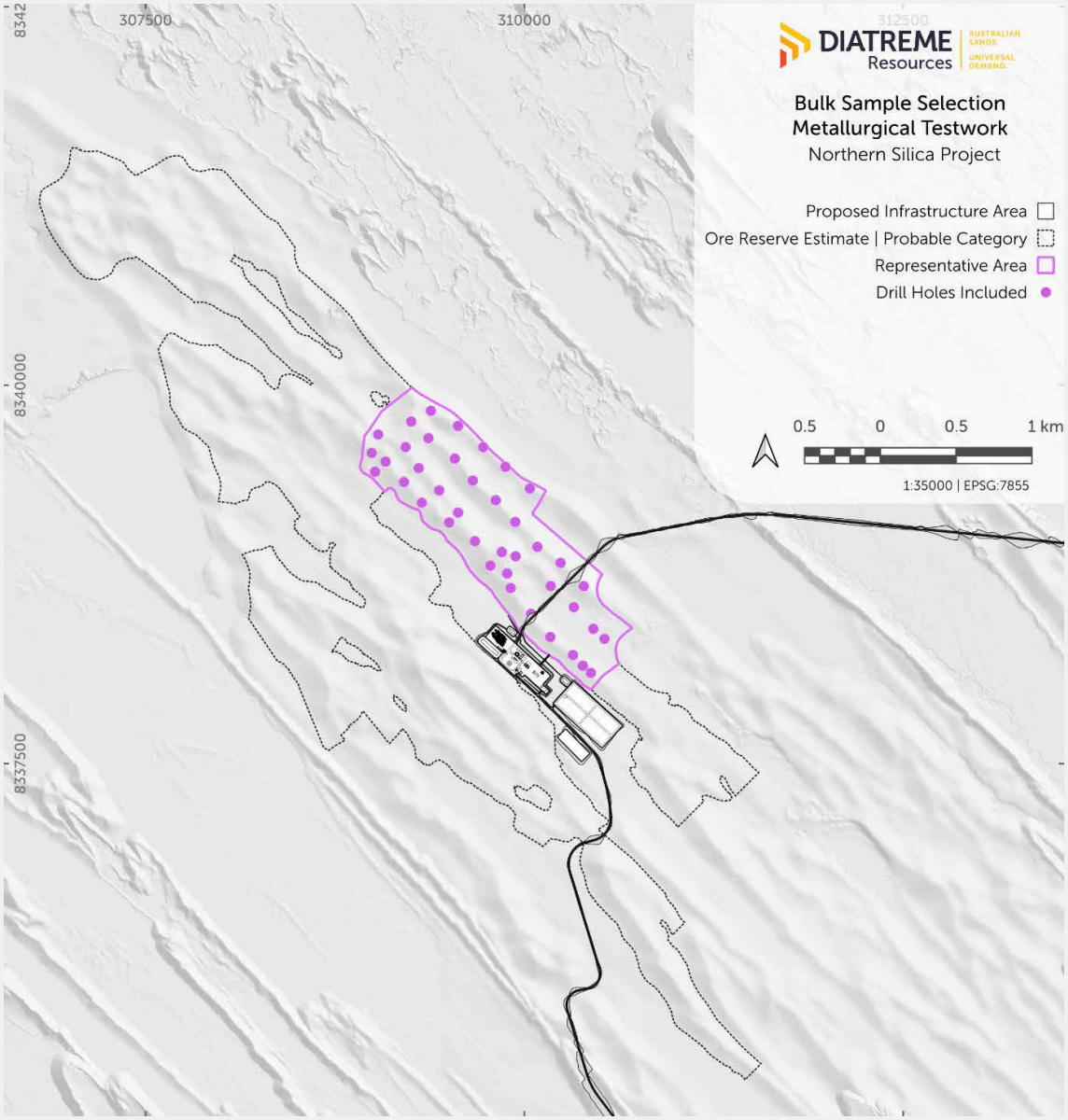


Figure 21: Bulk sample location



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6 Mineral Processing

To date, through various metallurgical testwork programs, the Project has demonstrated the ability to achieve consistent production of high-purity silica sand with 89 ppm to 107 ppm Fe_2O_3, at relatively high recovery rates of 81.6 to 85.6%. These results have now been used to inform an updated processing plant flow sheet and target product quality specification.

6.1 PLANT CONFIGURATION & THROUGHPUT BASIS

The process plant is proposed to be configured as modular parallel systems:

- Phase 1 - 3.75 Mtpa (Year 1 - 2)
- Phase 2 - 6.25 Mtpa (Year 3 -25 – End of Mine Life)

Phase 1 Initial configuration: 3.75 Mtpa Feed for 3 Mtpa of product:

- A processing train capable of 504 t/hr of raw feed to produce 403 t/hr of product

Phase 2 Potential expansion configuration: 6.25 Mtpa Feed for 5 Mtpa of product:

- Installation of an additional parallel processing train to increase overall capacity to 839 t/hr of raw feed to produce 672 t/hr of product

The plant design is based on:

- Operating hours: 365 days per year @ 85% Utilisation = 7,446 hrs PA (24 h/day, 7 days/week with planned downtime)
- Overall process recovery: nominal 80% from ROM feed to saleable product.

6.2 ORE PROPERTIES

Key ROM feed properties adopted for design include:

- Ore type: unconsolidated silica sand (open-pit mined).
- In situ density: ~1.65 t/m^3.
- Specific gravity of solids: ~2.65.
- Moisture: nominal 3 wt% (expected range ~1–10 wt%).
- Particle size: F98 approximately 0.71 mm (very fine to fine sand).

6.3 PROCESS FLOWSHEET OVERVIEW

The overall processing configuration comprises four main functional areas:

- Mobile Mining Units: ROM receival, wet screening, slurrying and pumping.
- Fixed Wet Concentration Plant: Screening, gravity separation, classification, attritioning, hydraulic classification and magnetic separation.
- Product Dewatering Plant and Stockpile / Reclaimer: Final dewatering, rinsing and stacking of product sand and reclaiming for export.
- Field Mobile Reject Sand Stacking Unit and Water Recovery: Dewatering and stacking of reject sand and recovery of process water.
- Water recovery and recycling: A high-rate thickener and associated process water storage provide a centralised water treatment and recycle system integrated with the above areas.

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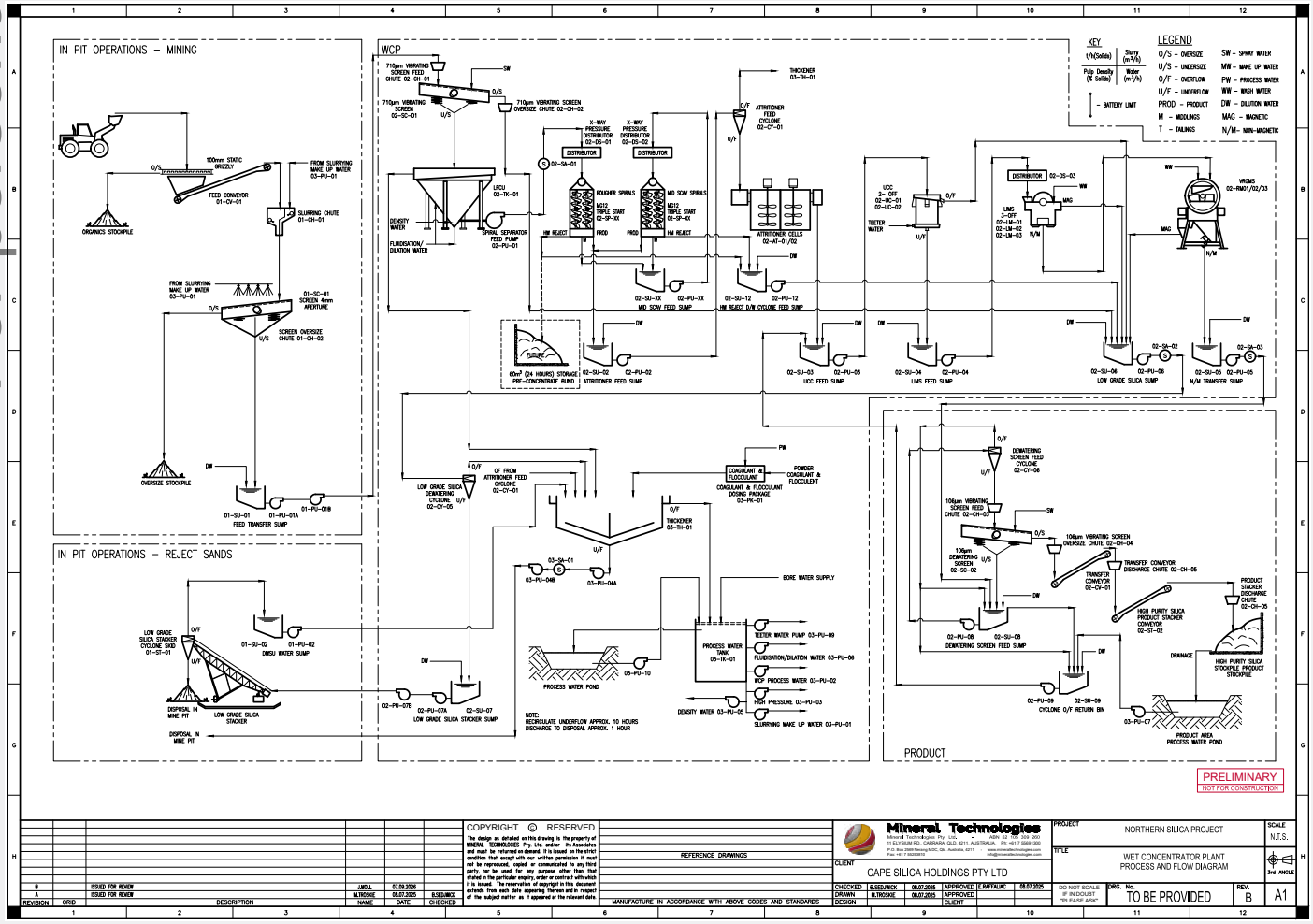
Figure 22: Project Process Flow Diagram



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Wet Concentration Plant

The WCP receives slurried sand feed from the MMUs and performs the main beneficiation stages:

Screening, Washing and Classification

- Fine screens control top size at the start of the processing plant
- Screen undersize is then received in a surge tank to smooth feed fluctuations
- Cyclones perform desliming and density control ahead of gravity separation

Gravity Separation - Spirals

- Primary spiral concentrators separate higher-density contaminant minerals from lower-density silica
- Middling spirals treat middlings streams to maximise silica recovery
- Combined spiral circuits achieve high overall gravity recovery, consistent with testwork design criteria

Attritioning

- Spiral product is thickened via cyclones to a high solids concentration
- Attrition cells provide intense particle-on-particle scrubbing to remove fine surface impurities and liberate adhered contaminants
- Design residence time is typically greater than 5 minutes to ensure effective surface cleaning

Up Current Classification ('UCC')

- Post-attrition, the slurry is diluted and pumped to upward current classification units to separate remaining fine contaminants and low-grade material from cleaned sand, particularly below ~0.106 mm
- The underflow forms the upgraded silica product stream; overflow reports to low-grade or tailings circuits

Magnetic Separation

- The UCC product is passed through wet high-intensity magnetic separators to remove iron-bearing and other magnetically susceptible minerals
- Magnetic rejects join the low-grade silica stream
- Non-magnetic product forms the final high-purity silica slurry sent to the product dewatering plant

The WCP will be expanded by adding a secondary parallel processing stream to increase throughput during phase 2.

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Operational & Plant Control

The processing facilities are designed for largely continuous, steady-state operation with centralised control and remote monitoring:

- Control system:
  - Pre-wired modular MCCs with PLC-based control.
  - Local isolation and interlocks for all equipment.
  - Fire detection and suppression (e.g. Very Early Smoke Detection Apparatus) within electrical enclosures.
- Communications:
  - Integration with a site-wide wireless communications system.
  - Voice and data connectivity between field units, fixed plant and dewatering facility.
- Operating philosophy:
  - Two or more parallel trains, each capable of independent start/stop and turndown.
  - Operation at or near design throughput for 7,446 h per year, with maintenance windows scheduled to minimise lost production.

Water Recovery and Reject Streams

Fines streams from desliming, attritioning and classification steps are directed to a thickener which:

- Produces a thickened underflow for transfer to final deposition (co-disposed with coarse reject streams)
- Recovers and recycles clarified overflow water to a process water storage tank for reuse

Coagulant and flocculant dosing systems are sized to achieve target settling performance at low feed solids concentrations. Due to the very low concentrations of solids a thickener underflow recirculation loop can be used to stabilise thickener feed density.

Site based testwork has been completed to understand the dosing rates required. The testwork was conducted at site using freshly drilled samples during the program, as coagulants and flocculants can have variable performance based on aged ore and difference source water quality.

A dedicated raw water tank supplies:

- Flocculant make-up (to eliminate contamination by suspended solids)
- Final product rinsing

Excess raw water overflows to the process water tank, ensuring an integrated water balance with high levels of recycling.

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7 Non-Process Infrastructure

7.1 SITE COMPONENT LAYOUT

7.1.1 Strategic Location & Siting

The WCP and Mine Infrastructure Area ('MIA') have been deliberately located on sterilised land, ensuring no Mineral Resource lies beneath the footprint. The WCP and MIA are located centrally to the broader deposit, reducing sustaining capital as mining progresses outward from the centre. This minimises ore slurry pumping distances, lowers operational fuel use, and provides flexibility for future sequencing of pit areas.

The WCP and MIA are located above the clay-rich B1 horizon, providing a natural buffer between surface facilities, dune sand, and deeper aquifers.

The layout has been refined to minimise interaction between Light Vehicles ('LV') and Heavy Vehicles ('HV'), improving safety and reducing congestion within the industrial precinct. Segregated access routes, dedicated HV manoeuvre areas, and clear separation of administration and workshop facilities assist in maintaining orderly traffic flows.

The selected location is optimised relative to pipeline routing to the stockpile, avoiding realignment during mining operations, and reducing the length of water reticulation infrastructure.

The surrounding landform provides sufficient developable area to accommodate multiple project components, including:

- WCP;
- power generation and fuel storage facilities;
- 8.8 Mw Solar farm and 5Mwh battery storage system;
- nursery;
- process water borefield;
- initial reject material dump;
- MIA facilities; and
- borrow pits and hardstand areas.

The consolidation of these elements within one precinct reduces both capital and operational complexity. Shorter distances for water, power, communications, and services translate directly to lower reticulation costs and improved maintainability.

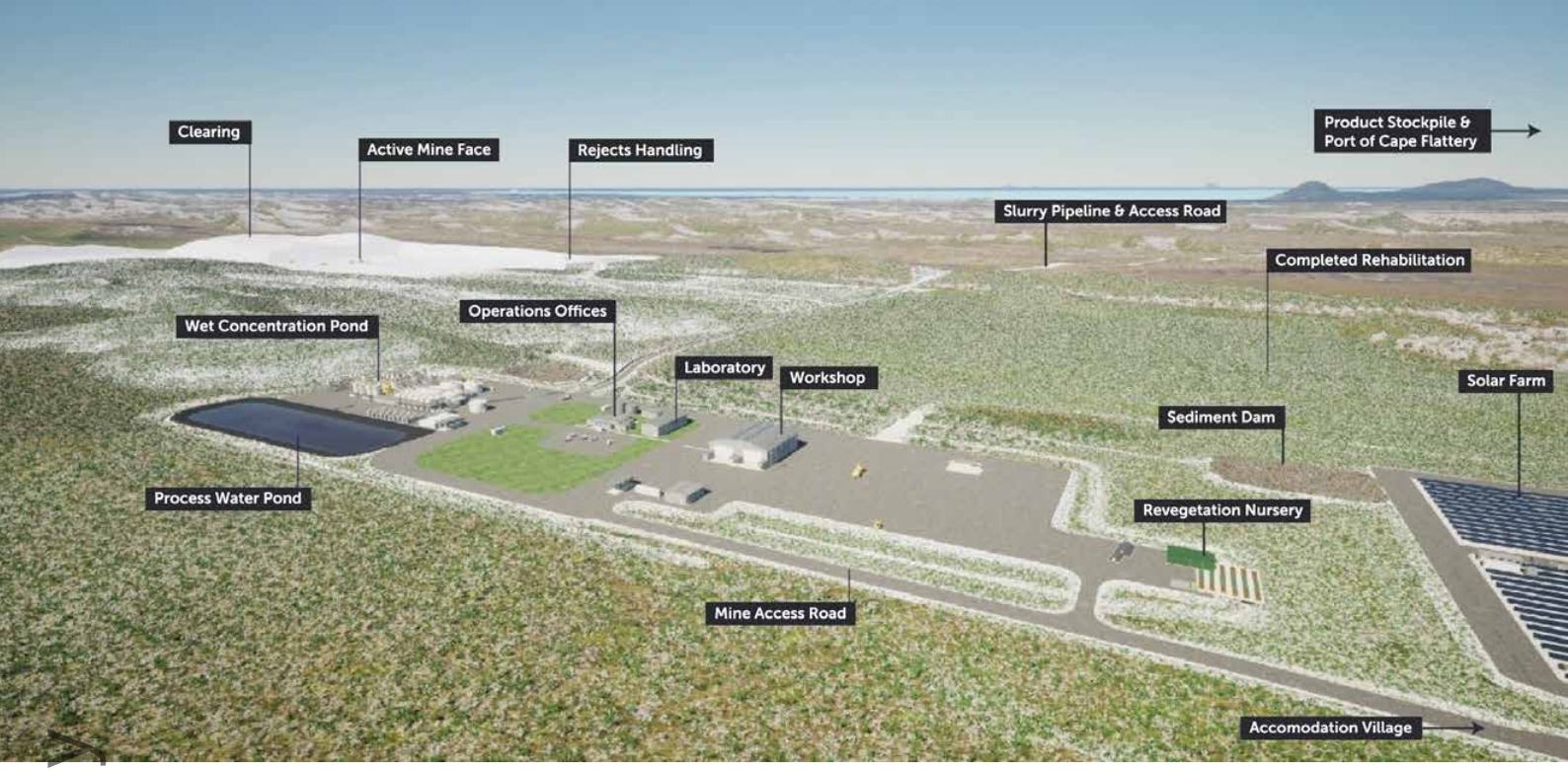
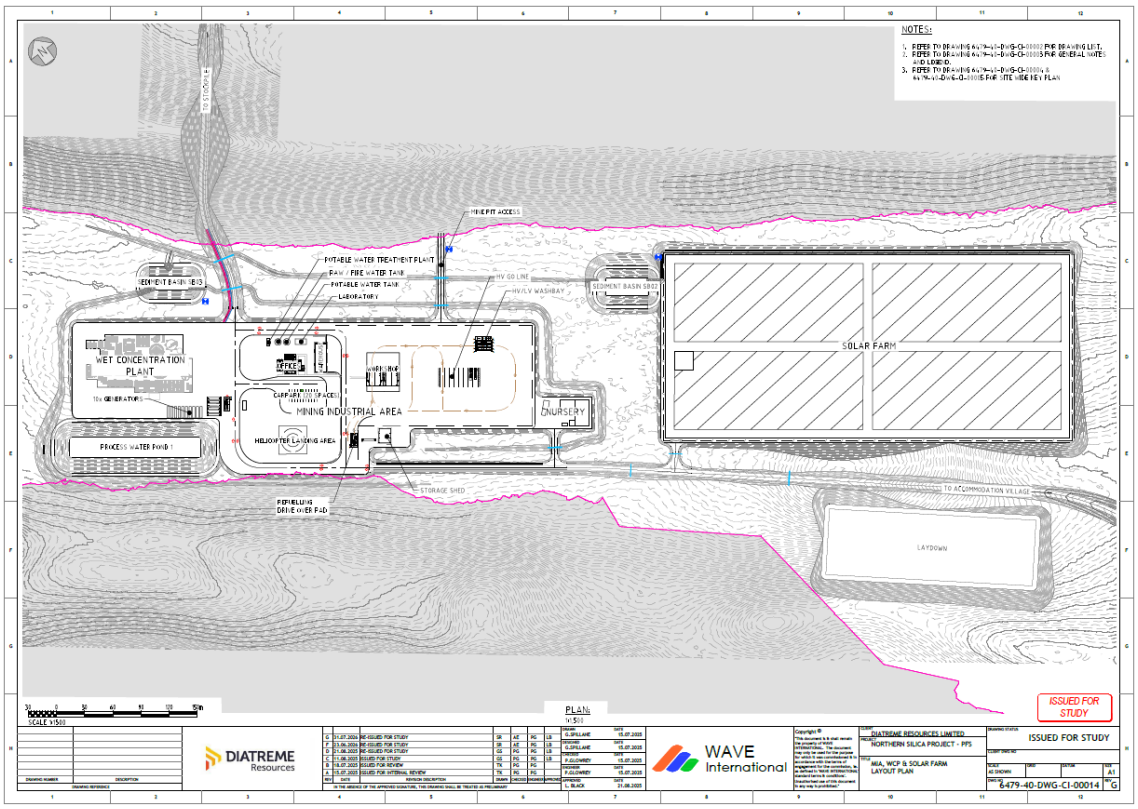


Figure 23: Wet Concentration Plant, Mine Infrastructure Area, & Mining Area Overview

Figure 24: WCP, MIA and Solar area Site Layout



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7.1.2 Project Footprint

The Project footprint makes allowances for fixed and linear infrastructure and associated designated roads, laydown areas, sediment ponds, drains and maintenance areas.

An additional construction footprint buffer of 10 m has been adopted around all construction areas to provide additional footprint that may be required to achieve the designed cut and fill requirements. This construction buffer is reduced to 2 m through areas of higher environmental sensitivity.

Constructed areas and buffers are included in the total disturbance calculation, of which construction areas disturbed will form part of early rehabilitation as per an approved PRCP.

Note: Infrastructure Elements below are estimates, as various project elements overlap, and all disturbance contains a variable buffer (not calculated below, but included in the total)

Table 11: Footprint of Project Infrastructure Elements

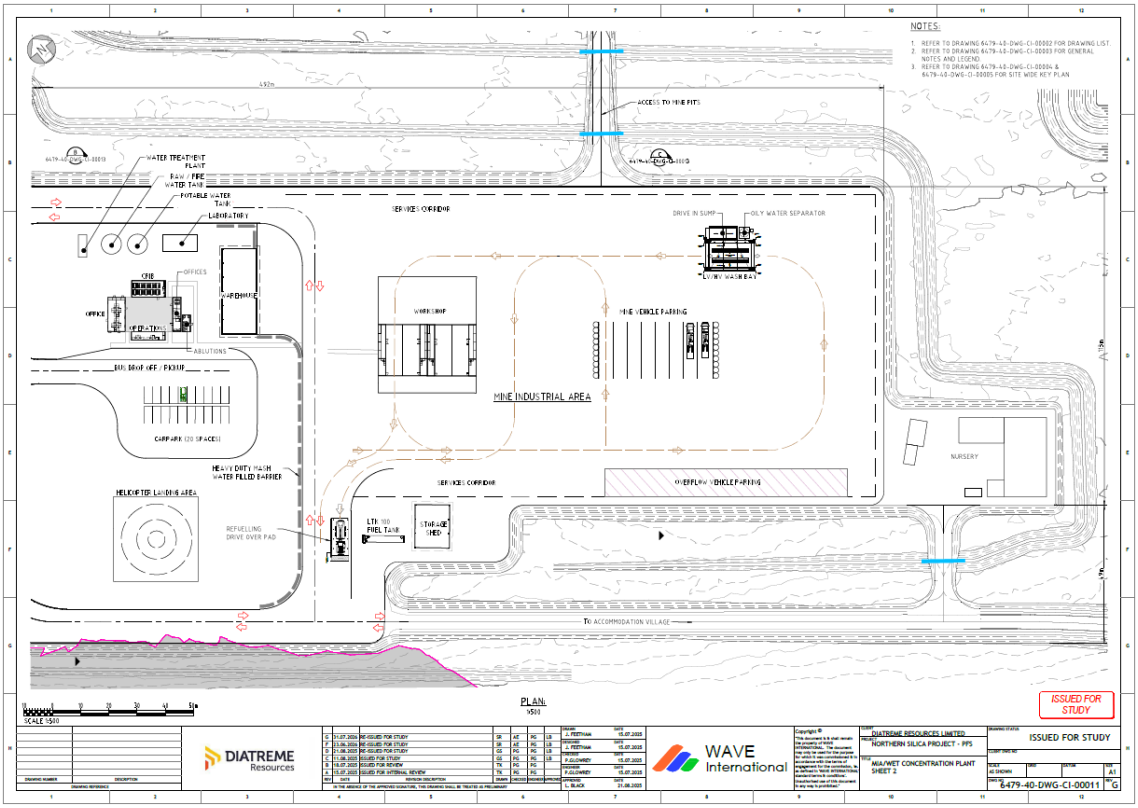
Infrastructure element	Total Area (ha)
Mine access road	102.31
Accommodation camp	6.97
Wet Concentration Plant & Mine infrastructure area	43.54
Slurry and return pipelines and access road	35.28
Stockpile	13.84
Materials handling conveyor and access road	35.27
Mining Activities	729.22
Total	**977.12**

7.1.3 Mine Infrastructure Area

The 3.8-hectare MIA is positioned immediately adjacent to the WCP so that maintenance, services, and administration facilities can be shared efficiently. The MIA accommodates essential operational infrastructure, including:

- HV workshop;
- storage shed;
- vehicle washdown facilities;
- fuel and lubrication facility;
- warehouse;
- vehicle manoeuvre areas and laydowns;
- LV and HV parking;
- office building;
- ablutions;
- crib room;
- laboratory;
- water tanks (raw, fire, potable);
- water treatment plant;
- wastewater treatment plant;
- First Aid facilities and emergency vehicle parking;
- helicopter landing area;
- nursery; and
- laydown yard, earthworks pad and drainage.

Figure 25: MIA



7.1.4 Wet Concentration Plant Area

The WCP area is approximately 1.6 hectares and includes:

- a 3.75 Mtpa Process Plant, with design allowances for future expansion to 6.25 Mtpa;
- diesel power generation;
- fuel storage capacity of 900 kL;
- truck unloading area; and
- earthworks pad and drainage systems sized for operational demands.

The compact footprint ensures efficient material flow from in-pit operations through the plant and into the product pipeline, whilst allowing sufficient areas for maintenance and cleaning requirements.

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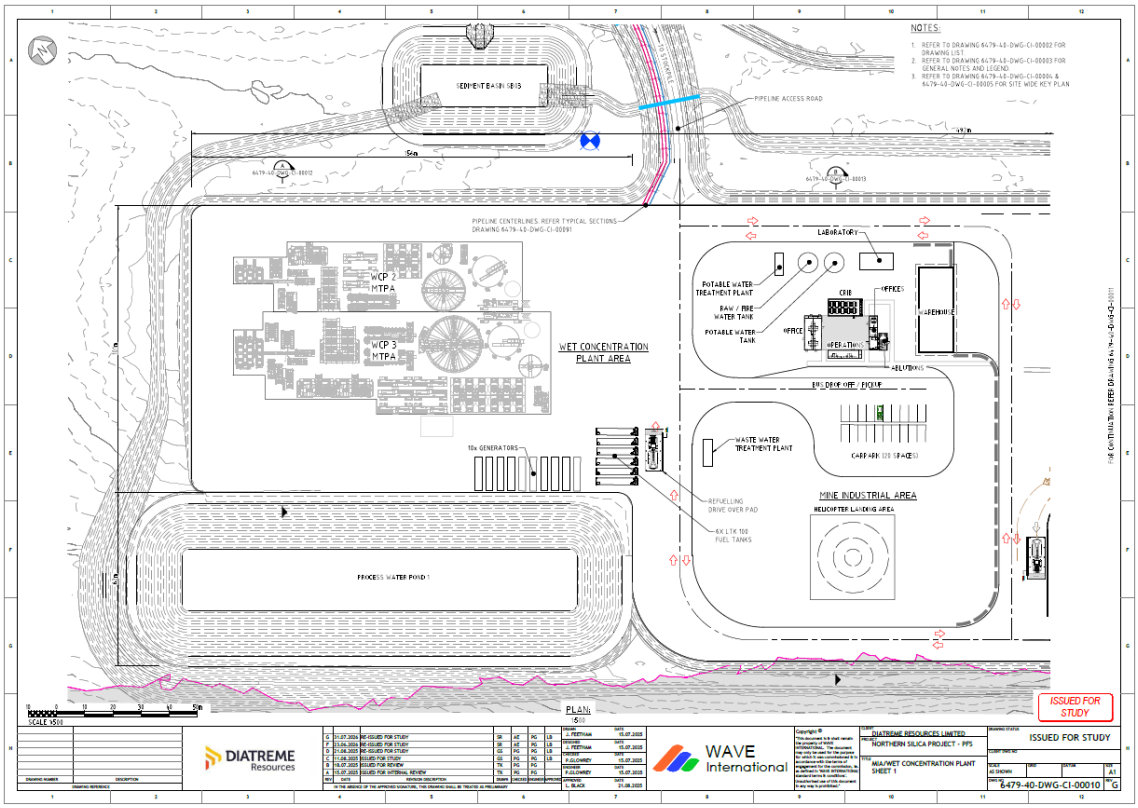
Figure 26: WCP Area



7.1.5 Solar Farm and Battery Storage System

An 8.8 Mw solar farm and 5 Mwh battery storage facility are located adjacent to the MIA to allow for short power articulation into the main power generation system for optimised efficiency and reduced cost.

The solar farm area also includes a sediment basin to capture any runoff.

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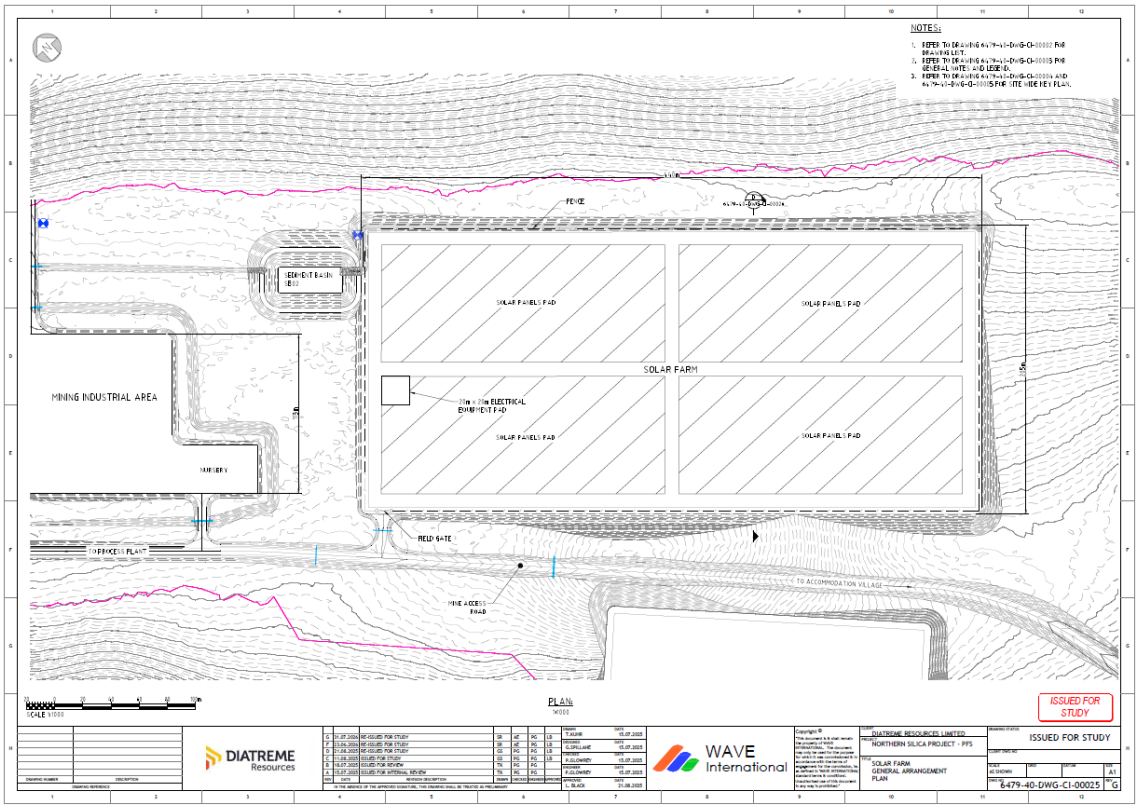
Figure 27: Solar Farm and Battery Area



7.2 SITE SERVICES – WATER MANAGEMENT

7.2.1 Site Water Management Plan

A water balance model has been developed for the Project and will seek a water licence to extract up to 3.5 GL per annum of water from the deep groundwater aquifer. The water licence is to be obtained from the Cape York Water Plan Strategic Reserve.

The EIS groundwater and surface water baseline and impact assessments quantified existing conditions and modelled the Project's water demands and discharges against the capacity and behaviour of local aquifers and surface catchments.

The assessments concluded that:

- the volumes of water to be used by the Project are small relative to the overall aquifer system; and
- groundwater and surface water receptors are not expected to be materially impacted by the Project, given the limited extraction volumes and the emphasis on water recycling.

These findings confirmed that the recirculation focused design and moderate borefield extraction were broadly compatible with the regional hydrogeological and surface water environment.

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The PFS basis of design considers the following key water management principles:

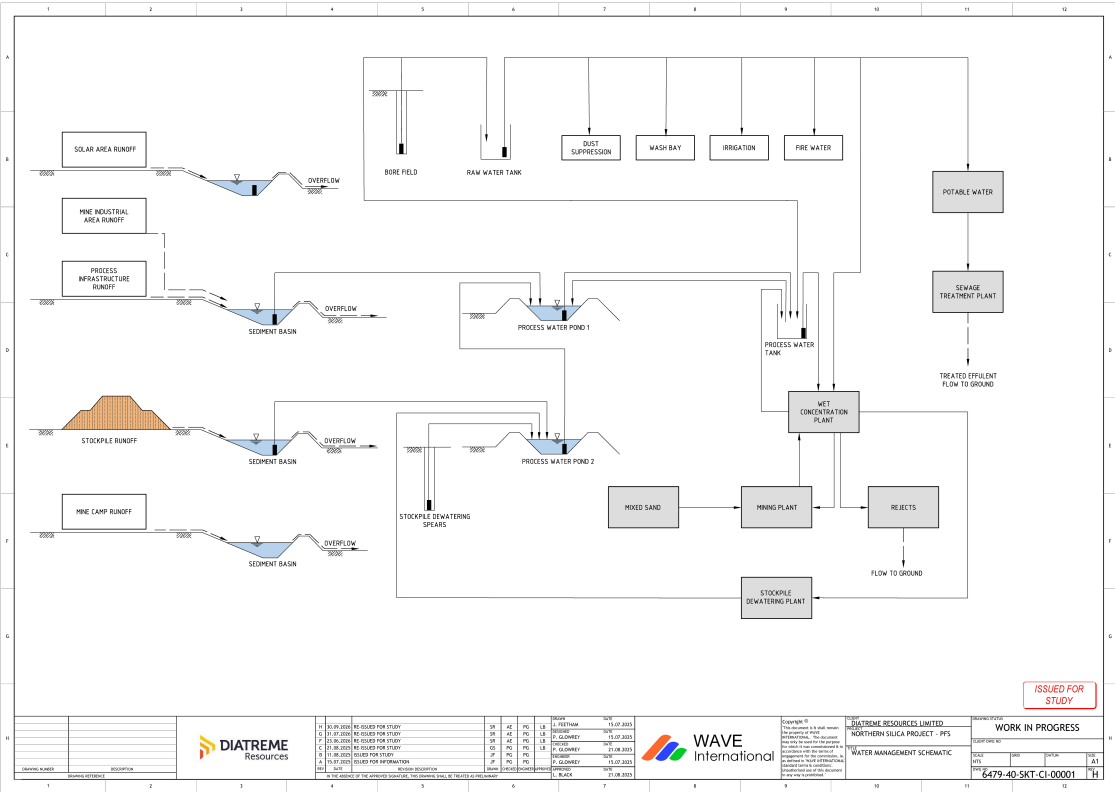
- Raw water is to be sourced from bores located adjacent to the WCP and MIA
- Raw water is to be used for:
  - process water make-up;
  - mining;
  - feed water to potable water treatment;
  - dust suppression;
  - vehicle washing;
  - irrigation;
  - fire water; and
  - construction.
- Process water is to be used to transport sand slurry and be recycled through dewatering steps.
- Process water ponds are to hold recovered process water for reuse.
- Water captured in sediment basins may be harvested for use as process water.

The raw water is reticulated at the key infrastructure areas:

- WCP and MIA;
- accommodation Village; and
- product stockpile.

Each area is to be serviced by a 500 kL water storage tank providing raw water to the local network.

Figure 28: Site water reticulation



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7.2.2 Process Water Ponds

To support water storage, reticulation and stable operations, two HDPE-lined process water ponds will be constructed adjacent to the process plant and product stockpile. The ponds include sumps for sediment control. The process plant pond will also receive raw water directly from the borefield.

These ponds provide a reliable buffer between fluctuating plant demands and bore supply and strengthen the ability to recirculate water while maintaining sediment control and water quality.

7.2.3 Sediment Basins

Sediment will be managed at key infrastructure areas with four specific sediment basins:

- SB01 - Capturing runoff from the accommodation village area
- SB02 - Capturing runoff from the solar farm
- SB03 - Capturing runoff from the WCP and MIA areas
- SB04 - Capturing runoff from the stockpile

7.2.4 Potable Water

A containerised water treatment plant will be located at the MIA to produce all potable water requirements for the Project. A potable water treatment plant is to be installed with a 35,000 L/day capacity and a 20,000 L potable water tank.

Individual potable water storage tanks will also be installed at key infrastructure areas:

- Accommodation village - 60,000 L
- Stockpile - 30,000 L

Potable water will be pumped from the MIA to the accommodation village and trucked from the MIA to the stockpile area tank.

7.2.5 Wastewater Treatment

There will be a dedicated wastewater management facility at key locations with sufficient treatment capacity for estimated usage:

- Accommodation village - 35,000 L/day
- MIA - 10,000 L/day

Remote ablutions will be located at the stockpile area equipped with waste storage tanks. Wastewater from remote tanks is trucked to the accommodation village treatment plant for processing.

Treated effluent will be dispersed over designated irrigation areas, while sludge will be trucked off-site to a regulated waste disposal facility.

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7.3 SITE SERVICES – POWER GENERATION

The Project's power supply concept has evolved through successive study phases as the understanding of processing throughput, operating philosophy and sustainability objectives to reduce Greenhouse Gas ('GHG') emissions has matured.

The main power supply to operate the site is designed as a hybrid mixture of diesel generators, solar and a battery energy storage system ('BESS').

The system is intended to operate with a diesel generation base load capable of 100% supply, supplemented by a photovoltaic ('PV') array. The diesel component is sized to be able to produce the full AC load requirement to ensure power generation reliability is maintained.

This hybrid system is designed to:

- provide 5 MWh of BESS storage, with power capacity sized to support diesel ramping, manage transient events and provide spinning reserve equivalent, and store excess power generation;
- improve fuel efficiency by displacing a portion of diesel generation with 8.8 MW PV array;
- provide sufficient flexibility and resilience to support the wet concentration plant and ancillary loads under variable operating conditions;
- enhance energy stability, efficiency and quality through the combined operation of diesel, PV and BESS; and
- reduce GHG emissions to as low as possible within the available project footprint on site.

Whilst the majority of the power generation is undertaken at the main power station at the WCP, there are several smaller power generation areas across the site.

The Project power system is made up of the following key components.

Table 12: Phase 1 - Project Power Summary

Project Area	Generation Type	Connected Load (kW)	Percent
Mine Plant & MMU	Hybrid Diesel, Solar, BESS	537	5.12%
Wet Concentration Plant	Hybrid Diesel, Solar, BESS	5,102	48.66%
Product Stockpile	Diesel Genset	905	8.63%
Plant Services	Hybrid Diesel, Solar, BESS	400	3.81%
Water Services	Hybrid Diesel, Solar, BESS	235	2.24%
Camp Buildings	Diesel Genset	204	1.95%
Materials Handling Conveyors	Diesel Genset	2,805	26.75%
Pipelines & Borefields	Hybrid Diesel, Solar, BESS	298	2.84%
	Total Power Required	**10,486**	**100.00%**
	PV Power Generation Capacity	8,800	35.93%
	Diesel Power Generation Capacity	15,690	64.07%
	Total Power Generation Capacity	**24,490**	**100.00%**
	Installed Capacity Margin	14,004	134%

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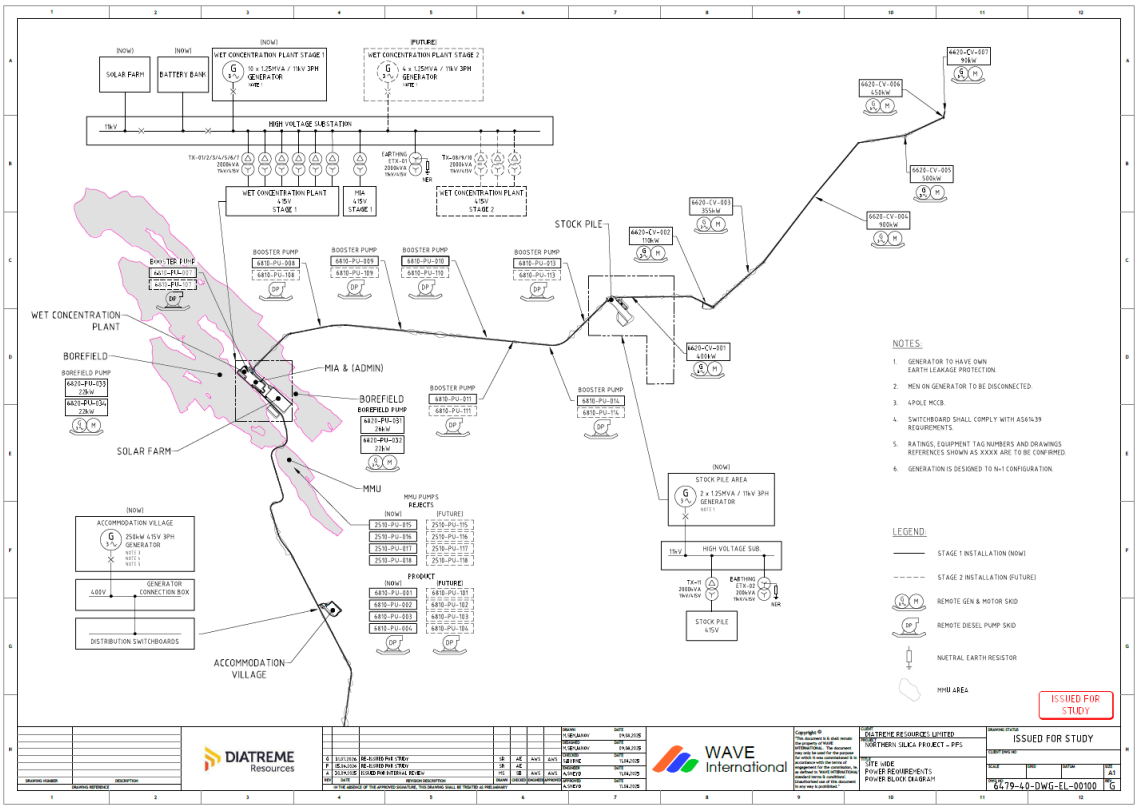
Table 13: Phase 2 - Project Power Summary

Project Area	Generation Type	Connected Load (kW)	Percent
Mine Plant & MMU	Hybrid Diesel, Solar, BESS	806	6.00%
Wet Concentration Plant	Hybrid Diesel, Solar, BESS	7,724	57.50%
Product Stockpile	Diesel Genset	905	6.74%
Plant Services	Hybrid Diesel, Solar, BESS	455	3.39%
Water Services	Hybrid Diesel, Solar, BESS	235	1.75%
Camp Buildings	Diesel Genset	204	1.52%
Materials Handling Conveyors	Diesel Genset	2,805	20.88%
Pipelines & Borefields	Hybrid Diesel, Solar, BESS	298	2.22%
	Total Power Required	**13,432**	**100.00%**
	PV Power Generation Capacity	8,800	30.74%
	Diesel Power Generation Capacity	19,826	69.26%
	Total Power Generation Capacity	**28,626**	**100.00%**
	Installed Capacity Margin	15,194	113%

Figure 29: Site Wide Power Requirements Block Diagram



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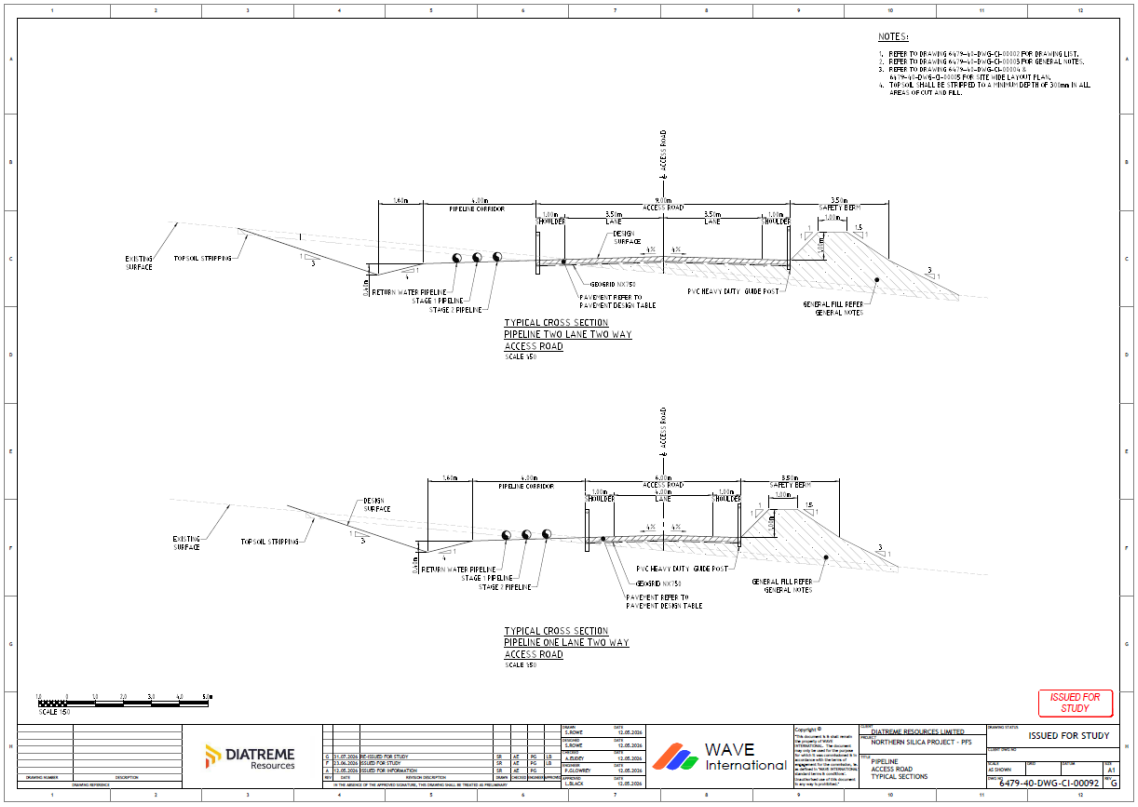
7.4 SLURRY PIPELINE

7.4.1 Pipeline System Design Parameters

The product slurry pipeline system has been designed for both Phase 1 (3 Mtpa) and Phase 2 (5 Mtpa) production rates.

Figure 30: Slurry Pipeline & Access Road Cross Section



Phase 1 Configuration

- One DN280 PE100 slurry pipeline
- Two pumps installed in series at the WCP
- Six diesel-powered field booster pumps at strategic terrain-optimised locations

Phase 2 Configuration

- Addition of a second DN225 PE100 slurry pipeline
- Both pipelines utilise the same access corridor and pumping philosophy

The slurry is transferred at 50–55% solids by weight over a distance of 7 km, from the WCP to the stockpile area.

The slurry pipeline alignment has been designed to take advantage of the region's generally flat topography, minimising pumping energy requirements. Booster pump stations are positioned at natural elevation transitions or long horizontal reaches to maintain the required slurry velocity.

Each booster station is equipped with:

- Warman 8/6 slurry pump with 310 kW diesel drive unit;
- on board fuel storage; and
- remote stop/start, instrumentation and remote telemetry monitoring.

The consolidated road-and-pipeline arrangement ensures ease of access for:

- pump maintenance;
- pipeline inspection; and
- emergency shutdown or isolation events.

The alignment therefore balances cultural heritage protection, environmental conservation, constructability, and hydraulic efficiency in a single optimised corridor.

7.4.2 Process Water Return System

Where the slurry is dewatered via the dewatering plant at the stockpile, the recovered process water is returned to the Wet Concentration Plant via a DN400 PE100 process water return pipeline.

This pipeline is sized for both Phase 1 and Phase 2 flow requirements, supporting long-term operational efficiency and water reuse.

7.5 PRODUCT STOCKPILE & MATERIALS HANDLING CONVEYOR

7.5.1 Location Overview & Strategic Positioning

The product stockpile is located approximately 7 km east of the WCP, positioned at the discharge point of the product pipeline. This location enables direct transfer of dewatered silica sand to the stockpile with minimal intermediate handling. The stockpile has a capacity of 200,000 tonnes, equivalent to around one month of production at a nominal throughput of 3 Mtpa.

The stockpile area is aligned to dominant prevailing wind direction, which was a key engineering requirement. This alignment reduces exposure of the long stockpile face to wind loading and minimises wind driven product loss. The location is also selected to optimise the reduction of disturbance to high ecological value vegetation, reducing ecological impacts. The dune also screens the stockpile from the nearby public beach, maintaining coastal visual amenity and reducing public visibility of operations.

Infrastructure within the stockpile precinct includes the dewatering plant, stacker feed conveyor, reclaim conveyor, rail-mounted stacker and reclaimer, and a small administration facility. The stockpile is configured linearly, enabling simultaneous and independent operation of both stacker and reclaimer and an efficient flow of material through the system.

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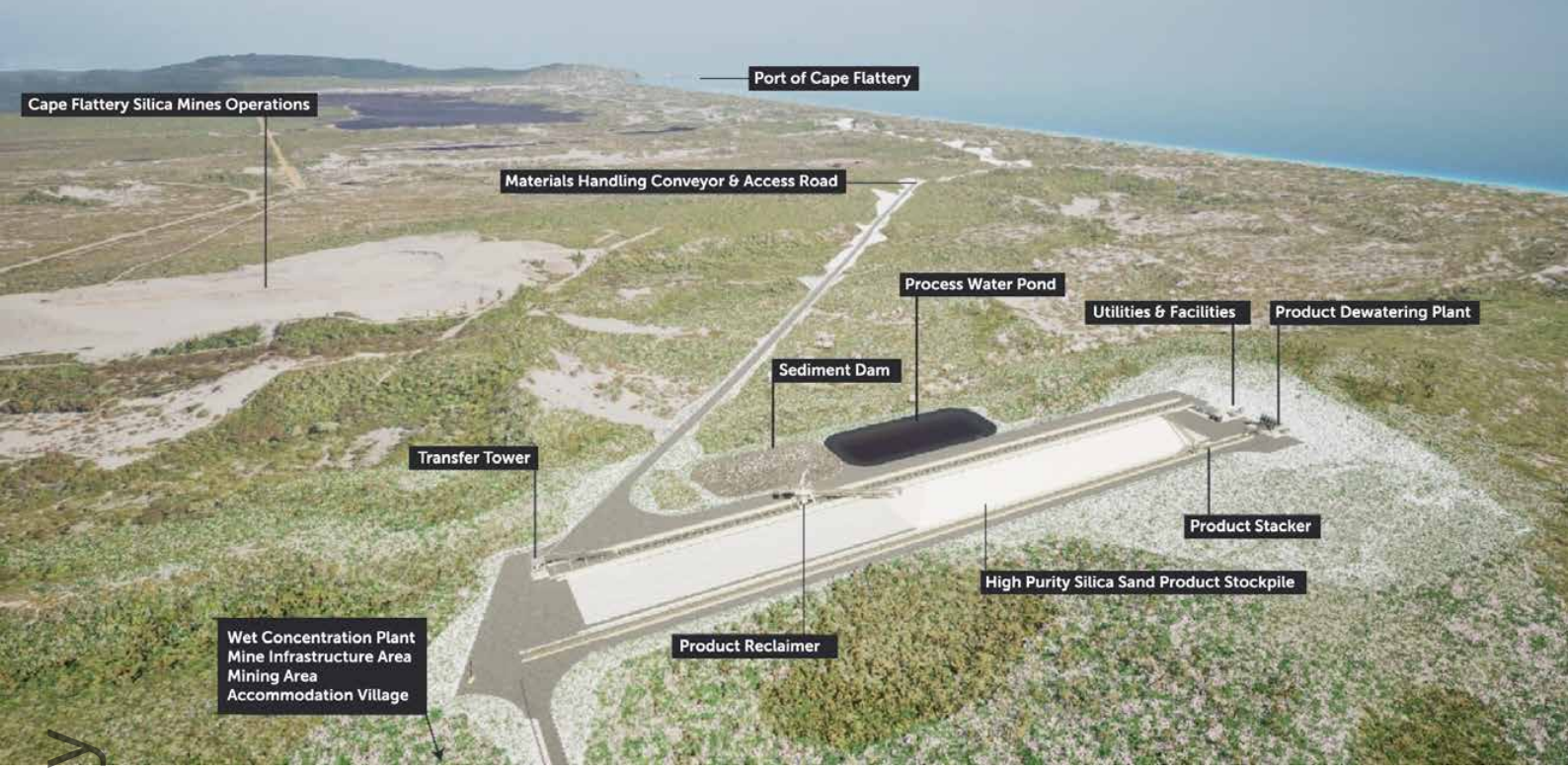
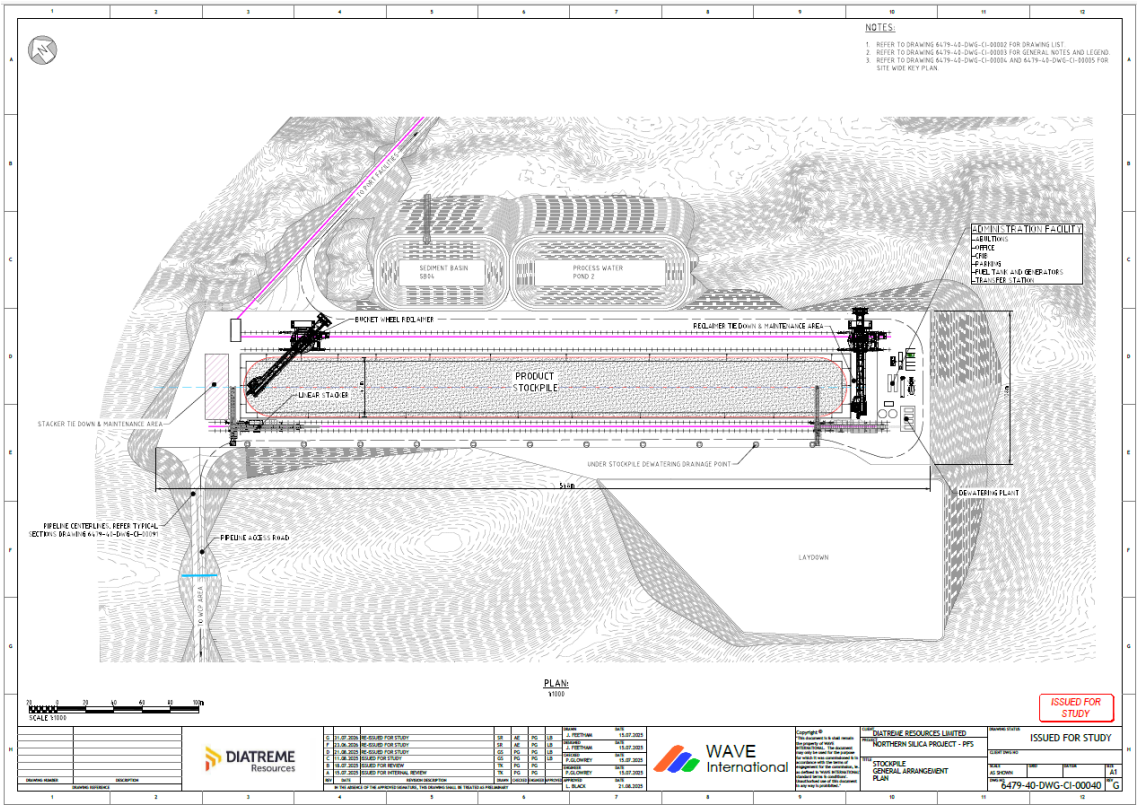


Figure 31: Stockpile Layout Overview

Figure 32: Stockpile layout



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7.5.2 Product Dewatering

High purity silica sand from the WCP is received directly to the sump of the final product. Slurry will be pumped from the sump to the 500 mm diameter thickening cyclones which discharge directly to the dewatering screens.

Cyclone overflow is directed to a collection tank and recovered water is pumped back to the WCP. Dewatered product sand is discharged to a conveyor system which feeds the final product stacker.

Key design elements of the dewatering plant include:

- cyclone and dewatering screen combinations to thicken product to a high solids concentration (targeted ~85 wt.% solids);
- final rinse with raw water to minimise residual impurities on grain surfaces;
- discharge to a common conveyor feeding a linear stockpile/reclaimer system;
- belt weigher and cross-belt sampler on the product conveyor for production accounting and quality control; and
- process water recovered from the dewatering cyclones is returned to the WCP for reuse.

The base of the stockpile is sand which will allow water to drain from the product into the underlying sand, water will then be recovered for reuse. The moisture content of the product is expected to reduce to 3% to 5% prior to export.

7.5.3 Stacker Design

After dewatering, the silica sand product exits the plant at approximately 15% moisture and is conveyed directly to the stacker for placement on the stockpile.

The design incorporates a rail-mounted linear stacker with a capacity of up to 1,000 t/hr, suitable for both Phase 1 and Phase 2 throughput. It operates on a 10 m gauge twin-rail system, supported by a cable reel and tripper conveyor system that allows full-length stacking in both directions.

7.5.4 Reclaimer Design

Reclaimed material is transferred to the outloading system via a series of overland conveyors and transfer towers.

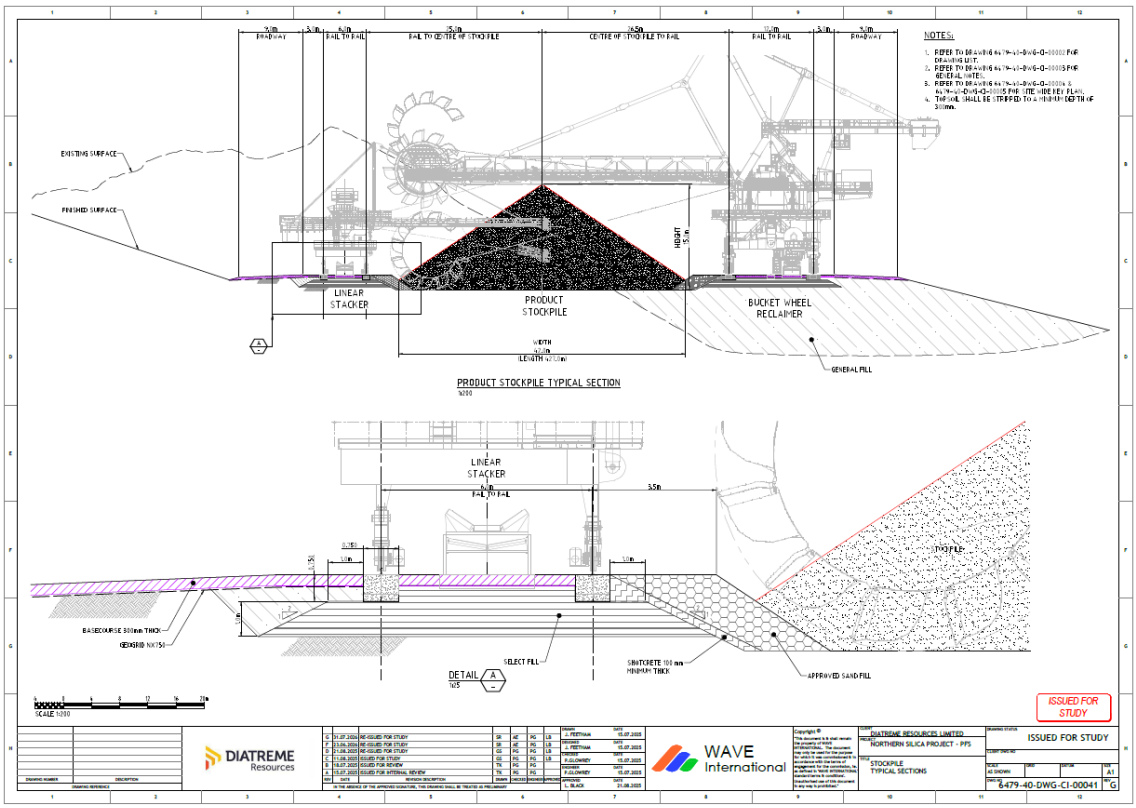
A boom bucket-wheel reclaimer operating on a 12 m gauge twin-rail system has been selected. It provides a nominal reclaim rate of 1,500 t/hr, with the ability to reach up to 2,000 t/hr depending on ship-loading demands and weather conditions.

7.5.5 Stockpile Operations

The stacker and reclaimer are both rail-mounted, bi-directional machines, allowing them to operate independently and concurrently. The stacker boom geometry permits it to pass over the reclaimer's bucket-wheel structure, enabling unrestricted movement for both units.

In routine operation, the reclaimer trails the stacker, recovering product that has undergone the longest natural drying period. It traverses the stockpile length and reverses at each end, maintaining consistent reclaim sequencing and moisture management.

Figure 33: Combined Stacker and Reclaimer



7.5.6 Materials Handling Conveyor

Connecting the product stockpile to the Port is a proposed 5.7 km overland materials handling conveyor and access road.

The conveyor is made up of a series of overland conveyors, consisting of pre-assembled ground modules installed on precast concrete footings. The main conveyor route has limited horizontal curves and uses six transfer towers to allow for changes in horizontal alignments.

The material handling conveyor is fed directly from the stockpile reclaimer and has a maximum rating of 2,000 t/hr and an estimated average operating rate of 1,200 t/hr.

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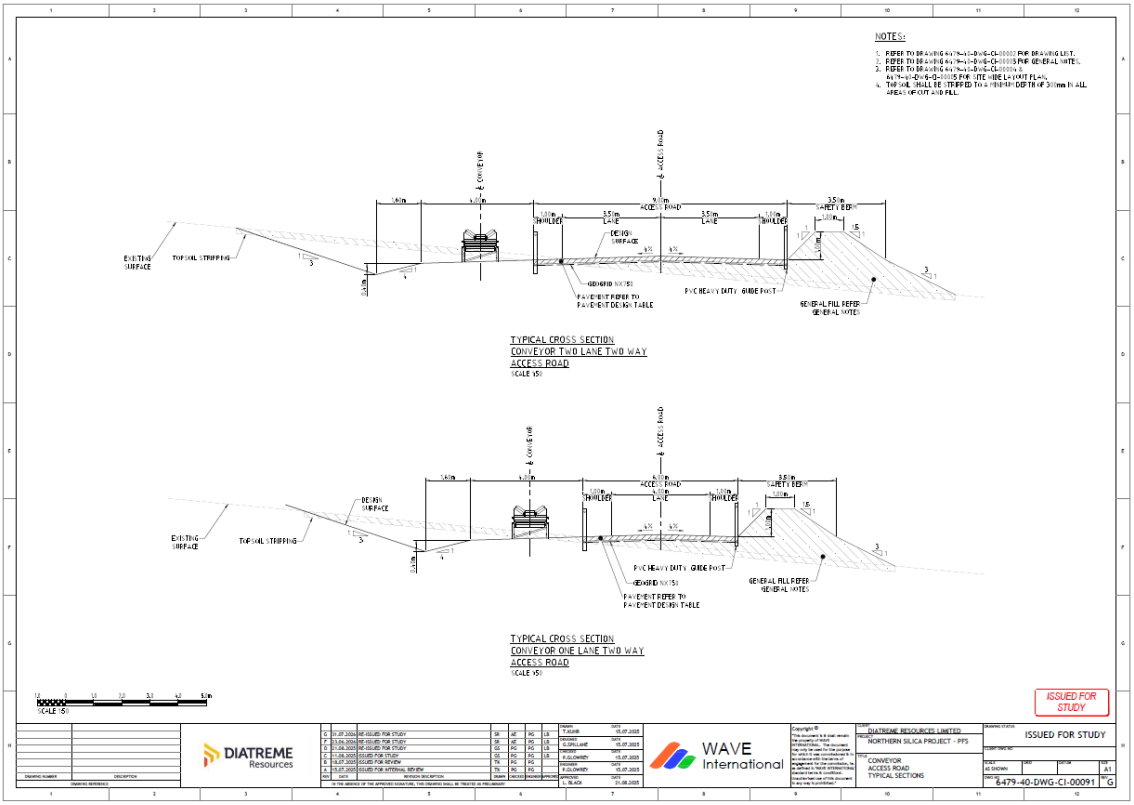
Figure 34: Typical cross section for Materials Handling Conveyor and access road



7.6 SITE ACCESS ROAD

7.6.1 Site Access Road Alignment and Parameters

A site access road will be constructed to connect the Project to the established public road network. The site access road will serve the Project for all aspects of equipment supply and logistics (including fuel and staff).

The alignment of the site access road has been selected using a multi analysis criteria (MCA) process that considered all aspects of safety, social, construction, environmental and cultural impacts, as well as benefits from road upgrades to improve flood immunity in the region.

The selected alignment will construct and upgrade a total of 23 km from the existing Starke-Wakooka Road to the MIA. Of this 23 km, 11 km will be shared public road located on an existing track, with the remaining 12 km being a dedicated site access road.

Site access roads will be constructed as all-weather unsealed two-lane, two-way roads, designed to safely accommodate heavy highway vehicles, service vehicles, and light vehicles.

Mine Access Road Characteristics

- Approximately 23 km in length
- Formation width of 9 m
- First 11 km shared with the public: remaining 12 km section restricted to mine site access only
- Constructed as an unsealed all-weather facility

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Pavement Design

Pavement structures were developed in accordance with the Austroads Guide to Pavement Technology Part 2: Pavement Structural Design.

Typical site ground conditions consist of fine sand subgrade, generally tested at CBR 5. Due to the cohesionless nature of the soils and the need to minimise imported pavement material, the design incorporates:

- Geotextile separation layer beneath the pavement
- Geogrid reinforcement (e.g., NX750 or equivalent) underlying the 200 mm thick base course

Pavement layer summary:

- Basecourse: CBR 45, 200 mm thick
- Geogrid Reinforcement: NX750 or equivalent, underlain by geofabric

Slope Stabilisation

Where cut depths exceed 5 m, slope stabilisation is required. The proposed treatment includes:

- grading cut faces to 1V:3H slope;
- placement of topsoil;
- installation of open-weave geotextile (e.g., TEC Mat® Coir Mesh or equivalent); and
- application of hydroseeding to promote vegetation establishment and erosion control.

Waterway Crossings and Erosion Protection

The proposed access roads intersect multiple waterways, to manage erosion risk and protect embankments:

- Rockfill will be used to construct the road embankment at water crossings
- Culvert systems will include 1200 mm HPL PE-coated corrugated pipes for standard flows
- Box culverts will be installed where existing fish passage requirements are identified
- Minimum 600 mm pipe cover will be maintained to ensure structural integrity
- Riprap armouring will be installed upstream and downstream of all culverts to stabilise the embankment and prevent scour

7.7 ON-SITE ACCOMMODATION VILLAGE

An on-site accommodation village will be constructed to service Project requirements with a capacity of 140 personnel, ensuring adequate capacity for operational, maintenance, and services staff.

The accommodation village footprint is approximately 6.9 hectares and is located along the Site Access Road, 5 km east of the MIA.

The accommodation village includes the following key facilities:

- accommodation units with ensuites;
- village kitchen and mess;
- office;
- ablutions;
- gym;
- pool;
- barbeque area;
- covered walkways;
- laundry facilities;
- storage;
- potable water tank and reticulation;
- sewage reticulation, treatment, and effluent disposal;
- back-up gensets, fuel storage, and load bank; and
- car parking and bus stop.

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Figure 35: Accommodation Village Overview

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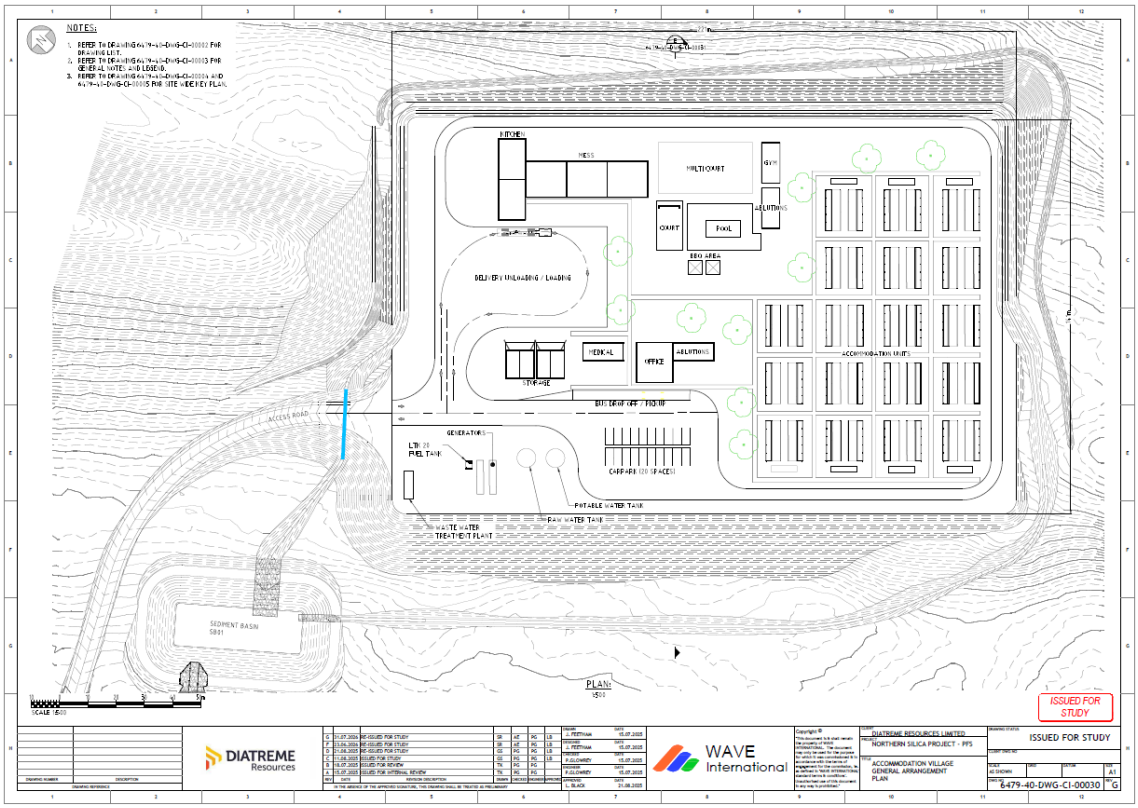
Figure 36: Accommodation Village



7.8 QUARRY MATERIALS

Quarry and concrete products where required for site roads and infrastructure pads will be sourced from a variety of suitable locations within the greater Cook Shire and Hope Vale Aboriginal Shire Council areas.

Table 14: Quarry requirements

Site Area	Quarry product volume
Accommodation Village	4,570 m^3
Solar Farm	3,640 m^3
Wet Concentration Plant & Mine Infrastructure Area	15,560 m^3
Product Stockpile	26,450 m^3
Sitewide Drains, Sediment Basins & Process Water Ponds	41,850 m^3
Slurry Pipeline & Access Road	13,200 m^3
Materials Handling Conveyor & Access Road	10,730 m^3
Mine Access Road	41,720 m^3
Sitewide concrete	687 m^3

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7.9 OFFSITE AUXILIARY INFRASTRUCTURE

7.9.1 Offsite Multipurpose Facility & Accommodation

As part of project preparedness and implementation, there is a requirement to provide workforce readiness, training programs, inductions and administration. It is proposed to construct an offsite multipurpose facility that will contain a combination of offices, training facilities, meeting rooms and associated amenities to enable these functions to be completed. The location of the facility is not yet confirmed although it will be located in the Hope Vale / Cooktown region.

As part of, or separate to the multipurpose facility (pending final location selection), a temporary offsite 75-person accommodation village will also be constructed with the purpose of enabling:

- construction of the mine access road;
- construction of the on-site camp accommodation village; and
- providing accommodation during the Phase 2 production expansion.

The offsite camp accommodation village will ensure that the Project's housing requirements are self-sustained, so the local housing market is not impacted.

Additional optimisation of the construction schedule may remove the requirement of the 75-person temporary offsite accommodation village whilst maintaining housing impacts to an acceptable level, which will be investigated in future studies.

7.9.2 Offsite Roads and Traffic

There is an existing well-formed road network outside of the Project area. From Cooktown there are significant portions that are sealed although much of the road is well-formed and maintained gravel.

As part of the Project development it is proposed to undertake offsite road upgrades which support the logistics requirements of the Project and forms the primary land-based access between existing regional infrastructure and the mine site. These offsite road upgrades will also provide local communities with improved seasonal access to areas that may otherwise be cutoff during wet season flooding. The upgrades are purposed to facilitate:

- regular provision of consumables to site;
- routine transport of construction and operations personnel;
- improved access as a project and community benefit; and
- increase seasonal flood immunity of the project.

Offsite road upgrades will be progressed separately to the main project EIS approvals process through typical Development Application and agreement processes with local councils.

Engineering and design firms have undertaken scopes of work to assess the following elements of the offsite road upgrades:

- traffic baseline and impact assessments;
- optionality assessment to determine the most suitable routes to balance impacts and benefits;
- early engagement with local council on intended upgrades and guidance on acceptable design criteria;
- initial engineering and design of bridges, crossings, culverts and roadways; and
- initial cost estimation to undertake all proposed upgrade works.

The offsite road upgrades are summarised as:

- minor repair works to Isabella Creek Crossing;
- construction of new bridge over the McIvor River Crossing;
- construction of new bridge over the Morgan River Crossing;
- construction of new box culvert over the Deep Creek Crossing;
- construction of new concrete culverts at various low-lying crossings; and
- general maintenance and widening improvements of unsealed road sections.

Figure 37: Morgan River Bridge Upgrade

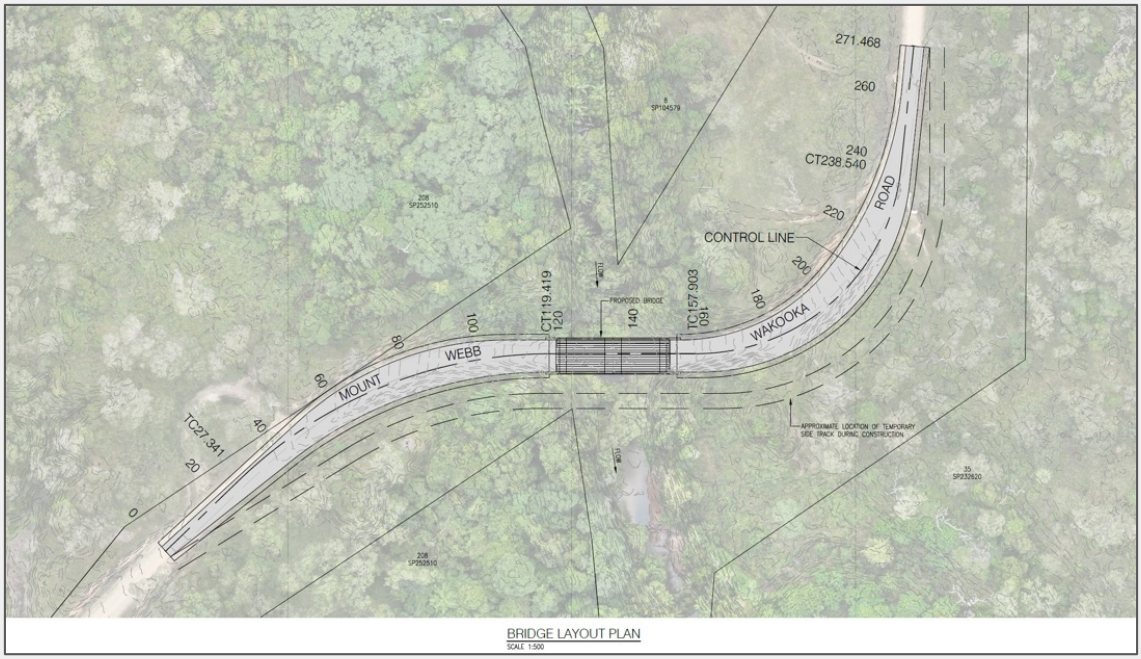

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Figure 38: McIvor River Bridge Upgrade

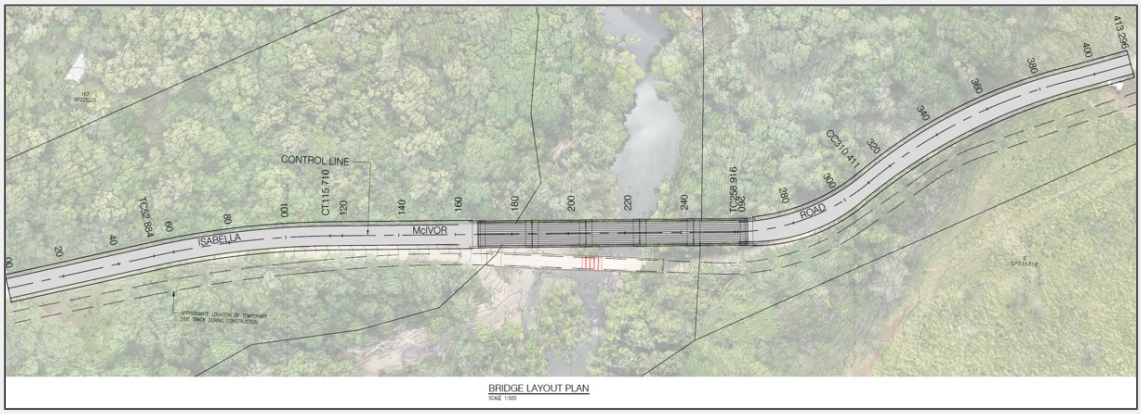

Figure 39: Deep Creek Culvert Upgrade

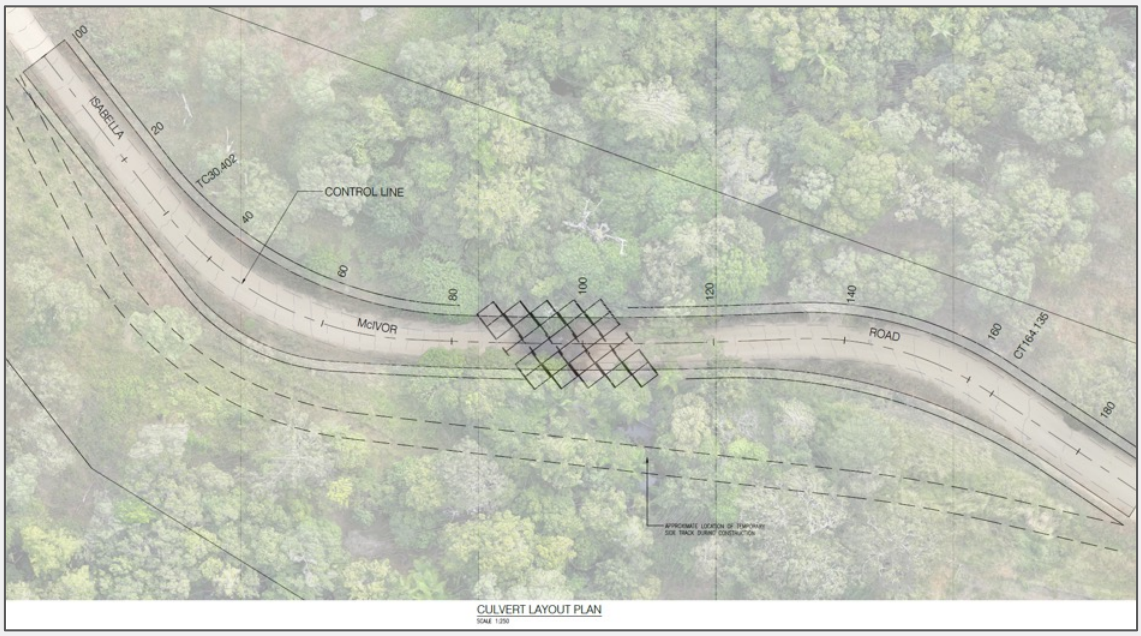

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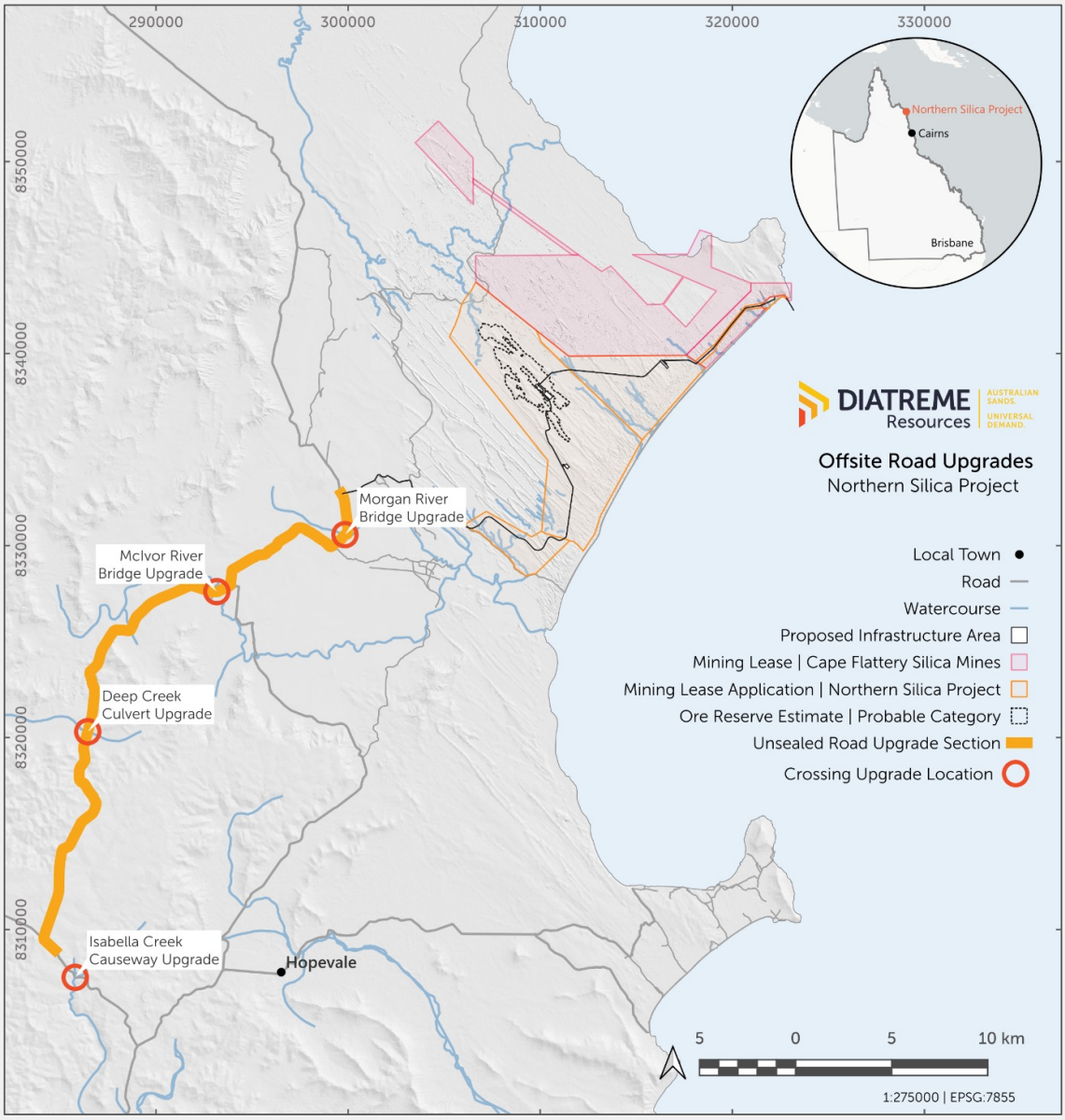
Figure 40: Offsite Road Upgrades Locations



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8 Port and Product Export

8.1 PORT OF CAPE FLATTERY LOCATION & BACKGROUND

It is intended that the Project will export product through a shared full-user facility at the Port. The Port is an established Port area owned by the Queensland Government and controlled by Ports North as the Port Authority, with defined Port Limits which are excluded from the Great Barrier Reef World Heritage Area.

As a result of a 1985 Queensland Government cabinet decision to approve construction of marine facilities, a new jetty and shiploader was constructed at Cape Flattery (1987) which is an open roadstead wharf close to a rocky shore. The 1985 cabinet minute acknowledged that the transhipping arrangements utilised by the incumbent operator was "most inefficient and time consuming" and provided the basis for approving the construction of contemporary marine infrastructure that was to be owned by the Harbours Corporation of QLD as a public or multi-user facility. Upon completion of construction, a 1988 Lease was executed by the Harbours Corporation of Queensland and CFSM which supported the conditions approved in the 1985 cabinet decision.

There is currently an existing mining operation, CFSM, a subsidiary of Mitsubishi Corporation, which has been operating and exporting silica sand in the Cape Flattery region for approximately 60 years. CFSM has utilised the jetty and shiploader since it was constructed in 1987. CFSM agreed to fund the construction of marine infrastructure on terms that included the creation of a total capacity of 6 Mtpa with a shiploader that operated at 2,000 tonnes per hour in exchange for a long term lease with a peppercorn rent of $1 per year. The original lease provided a 3 Mtpa reserved capacity for CFSM and clear third party access rights to ensure competitors equal and fair access to this public infrastructure.

There is an established Port Procedure for the Port which is controlled by the Regional Harbour Master ('RHM') which assess and approve all marine operations in the area.

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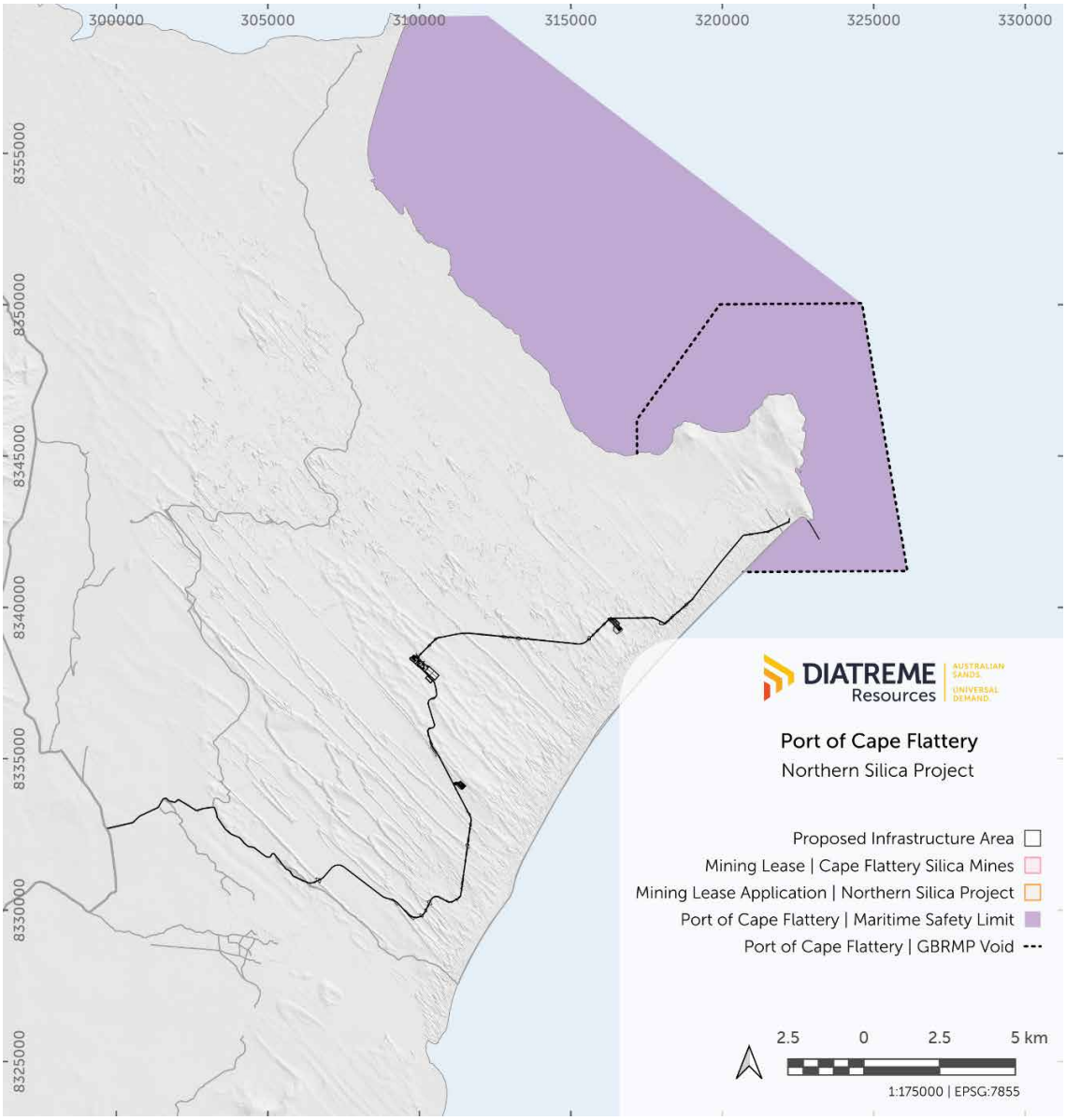
Figure 41: Port Limits



8.2 EXISTING INFRASTRUCTURE & CURRENT OPERATIONS SUMMARY

8.2.1 Main Wharf

This main wharf is situated at the southern tip of Cape Flattery off a rocky headland. The wharf area runs in a 140° direction for 200 m and the wharf itself continues off this access in a 150° direction for a further 210 m. There are two separate dolphins, the seaward dolphin is situated 65 m seaward from the end of the wharf and is connected by a 'flying fox' cable car arrangement, and the shore dolphin is connected by a short access ramp. There are six breasting dolphins along the wharf face.

A ship loader is situated on the wharf and traverses the length of the wharf face. Minimum required air draft is 14.5 m. An integrated conveyor system, and the tramming ship loader with a maximum loading rate of 2,000 tonnes per hour (average gross rate 1,300 t/hr) links the shiploader with CFSM's silica sand product stockpile ashore.

All vessels are berthed 'starboard side to,' the wharf. Ship engines must be kept on standby, and all crew are required to remain on board at all times. The berth is fitted with 17 quick release hooks for the mooring lines. Vessels should use a minimum of 14 good ropes when securing.

The berth pocket has a nominal depth of 15.6 m at the Lowest Astronomical tide ('LAT'). The under-keel clearance requirements of 1 m are assumed to not to restrict either loading or OGV movements through the deep-water passages to/from the berth. The berth is limited to OGVs with an overall maximum length permitted of 195 m with a beam of 32.2 m. Ships cannot exceed 80,000 Deadweight tonnes ('DWT') due to wharf structural limitations.

8.2.2 Ocean Going Vessels Movements

Cape Flattery is a compulsory pilotage area, transfer is by line launch and helicopter transfers of pilots are not used. It is assumed pilots fly into site or Cooktown from Cairns and are not a constraint when assessing productivity of the port/outloading system.

The berth is marked by lights fixed to the two extreme dolphins although the harbour is not currently lit for night navigation. The Port Procedures currently limit ship movements to daylight operations only, although the Port Authority suggests that the introduction of navigation lights is the only precursor for allowing 24-hour ship movements, subject to RHM approval, which may also aid in increased export capacity and efficiency. Diatreme has engaged with Ports North on navigational upgrades, which has provided written advice that it is in a position to upgrade navigational aids. Loading is not limited to daytime and is able to occur 24-hours/day.

Figure 42: Port of Cape Flattery

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8.2.3 History of Shipments and Berth Utilisation

Table 15 presents annual export data for the Port of Cape Flattery based on trade statistics published by the Department of Transport and Main Roads (2025).

Table 15: Port Annual Exports

Metric	CY 2021	CY 2022	CY 2023	CY 2024	CY 2025
Tonnes (M)	3.03	3.27	2.815	3.021	2.121
Vessels	56	61	49	53	36
Average Cargo tonnes	54,107	53,607	57,449	57,000	58,917

Based on actual recent and up to date export data the berth currently operates at about 32% of capacity, with berth vacancies (in between vessel visits) having a range of 1.6 hours to around 24 days over a 12-month period. Based upon current operating schedules this would indicate the Port is underutilised by some 68%.

Based upon 365-day x 24-hour loading operations, the current outloading system is estimated to be available to load 88% or 322 days of the year on a 24-hour basis after allowing for maintenance and non-weather working time ('NWWT'). The NWWT is assumed to be based upon shore side restrictions. Further, this NWWT allowance should be sufficient to conservatively cover the impact of any berth closures due to cyclonic activity.

8.2.4 Estimated Performance and Capacity

The Port Procedures and information for Shipping for the Port dated February 2026 states the outloading system has a maximum loading rate of 2,000 tph and an average gross rate 1,300 tph. Based upon the average OGV cargo of 52,011 t and allowing for pre and post loading delays it is estimated that the actual Qships OGV alongside times of around 42.3 hrs.

Table 16: Port Performance Summary

Average Cape Flattery Port Cargo and Loading Summary	Unit	Value
Average OGV Cargo FY20 to FY22	tonnes cargo	52,011
Average load rate	tph	1,300
Average Time to load	hrs	40
Average total time at berth	hrs	42.3

Table 17: Utilisation Estimates for Port

OGV Alongside and Movement Duration Estimates	Unit	Value
Initial Draft Survey to Authority to Load	hrs	1
Load Time	hrs	40
Completion of Loading to Final Draft Survey	hrs	0.5
Final Draft Survey to Completion of Docs	hrs	0.5
Pilot on Board to Last Line	hrs	0.25
Estimated OGV Alongside time	**hrs**	**42.3**
Anchorage to Wharf (Berthing - All secure)	hrs	1.27
Wharf to Sea (post load)	hrs	0.5
OGV Port Cycle Time (Anchorage/alongside/Pilot off at departure)	**hrs**	**44.0**

Based upon the assumption that Cape Flattery operations are capable of outloading 322 days per year it could load 161 OGVs per annum or circa ~8.4 Mt (161 x 52,011 tonnes). This 8.4 Mtpa of port/ outloading capability is 274% more than the actual throughput being achieved, and ~40% more than the current rated Port capacity within the existing lease.

Outloading and port operations could have accommodated more than an additional 5 Mt of exports beyond the actual exports without the need for any additional wharf, outloading or port capacity, solely by just scheduling more vessels to be loaded during berthing pocked vacancies.

Based on Diatreme's analysis it is considered that the Port has significant underutilised capacity available to multiple third party operators, that could coexist without interruptions to or interference with CFSM's current operations.

8.2.5 Current Port Leasing Arrangements

On 27 March 2018, CFSM and Ports North entered into two additional leases in respect of the area that was previously the subject of the 1988 Lease (Prior Lease). The term of the new Sublease / Lease is from 1 January 2018 to 31 December 2037, and the annual rent payable by CFSM continues to be a "peppercorn" of $1 to Ports North.

CFSM is required to keep and maintain the Facility in a state of good repair at its own cost and expense. It must also attend to structural maintenance and repair, including any required repair and/or replacement of any capital or component part of the Facility.

While the Prior Lease provided certainty for third party access with final decision making resting with the Ports Corporation, mechanisms included in the 2018 Sublease ('Sublease') have been complicated by the purported change of ownership in the "above deck" infrastructure. This purported change of ownership was not considered under the Prior Lease or the recitals of the Sublease. The Sublease attempts to separate ownership of marine infrastructure into Sublessee's property and Sublessor's property and contains a mechanism for a third party to request to make use of all or part of the Facility, described as a "Prospective User". A Prospective User may seek to become:

- a "Full Facility User", meaning they are granted a right to access and make use of the whole Facility (including the Sublessee's Property); or
- a "Part Facility User", meaning they are granted a right to make use of the sublessor's Property only, pursuant to a Part Facility User Agreement.

In each case, there is a contractual process laid out concerning the negotiation and finalisation of any agreement between CFSM, Ports North, and the Prospective User.

If the Prospective User intends to be a Part Facility User, the Sublease stipulates the following process:

- Ports North may negotiate with the Prospective User concerning its use of the Lessor's Property as a Part Facility User;
- if Ports North chooses [to negotiate] and those negotiations lead to a Part Facility User Agreement Ports North will inform CFSM of the terms of the Part Facility User Agreement; and
- within 30 days, CFSM must give Ports North written notice that it either consents or does not consent to the Part Facility User Agreement. If CFSM consents, Ports North may sign the Part Facility User Agreement on CFSM behalf. If CFSM does not consent, it must also provide written notice specifying all grounds on which it relies for declining consent. CFSM must consent to the Prospective User becoming a Part Facility User, unless CFSM (acting reasonably) considers that the probable consequence of doing so would be to materially prejudice, disrupt or interfere with its use of the Facility or the business it conducts from the land, or to prohibit it from achieving its Reserve Throughput Capacity.

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With the knowledge that the existing infrastructure has the capacity to service both CFSM and Diatreme's export goals, Diatreme's studies, investigations and data collection indicate a Part Facility User Agreement is unlikely to allow efficient operations for either CFSM or a new user. Supporting infrastructure (barge ramp, wharf extensions) has the potential for greater environmental harm, traditional owners do not support new infrastructure, financing and capital costs are prohibitive and environmental approval pathways are more expensive and significantly impacted in this scenario.

If the Prospective User intends to be a Full Facility User, the Sublease stipulates the following process:

- CFSM, within a reasonable time of receipt of a referral from Ports North may, (at CFSM's sole election) meet with the Prospective User to discuss the Prospective Users proposal to use the Facility including:
- the nature and extent the Prospective User proposes to make use of the Facility;
- the period during the Prospective User desires to make use of the facility.
- the basis on which the Prospective User proposes that it be permitted to make use of the facility, including consideration payable, the terms and conditions and risk sharing arrangements; and
- such other matters or issues, including the likely impact of the use of the Facility by the Prospective User on:
  - the uses made of the Facility by CFSM;
  - CFSM's projected throughput capacity; and
  - the business that CFSM conducts from the land.
- CFSM must, if it decides to meet the Prospective User, endeavour to cause the meeting to occur as soon as reasonably practicable and bring about the conclusions of discussions and/or negotiations for use of the Facility as soon as may be practicable following an initial meeting. CFSM is required by the Lease to conduct all dealings and negotiations with a Prospective User in a professionally, courteously and diligent manner and must act in good faith.

The current lease allows for CFSM to utilise the entirety of the port capacity subject to third party entrants. At the signing of the lease in March 2018, CFSM had a specific Reserved Capacity of 3 Mtpa. Both the previous and current lease/sublease requires CFSM to maintain the facility in a manner that allows for a minimum capacity of 6 Mtpa. The operating mode employed by CFSM may result in reduced capacity, with a focus on targeting delivery of their export shipments rather than managing to the actual facility capacity. Elements impacting include feed infrastructure not located on ports land such as reclaiming capability and conveyor capacity.

8.3 PROPOSED PROJECT PORT OPERATIONS

Based on the historic and current Port leasing arrangements, it is considered that access as a Full User, and utilisation of existing spare capacity and marine infrastructure, can be achieved via various mechanisms including, commercial negotiations with Cape Flattery Silica Mines (CFSM) and/or Ports North, direct State intervention and potential identified legal processes.

The current preference is to work within the current leasing arrangements and undertake commercial negotiations with CFSM and Ports North, which is the basis of this PFS, and would result in fees being charged for the use and maintenance of the Port.

Diatreme recognises that it will be required to contribute an infrastructure charge to compensate CFSM for its original construction and capital renewal costs. While the charge should be based on the written down capital value of the assets utilised, the required asset valuation data has not been provided be either CFSM or Ports North. Consequently, an estimated contribution has been adopted based on

industry knowledge and experience, which is considered to provide reasonable compensation for CFSM's capital contribution to the marine assets at the Port.

The life-of-mine fees and benefits have been calculated using published rates for harbour dues, tonnage dues and Port security. Estimated service, capital contribution, rehabilitation and maintenance charges have been calculated based on industry knowledge, specific third party contribution calculations cited in the original lease between Harbour Corporation of Queensland (now Ports North) and CFSM and comparison to similar operations and agreements.

Overall fees and charges payable to CFSM and Ports North are estimated at $3.815 per tonne of silica sand product. Although it should be noted that no commercial agreement is in place regarding fees and charges, the estimates are considered accurate for the purpose of the PFS and the distribution of payments may vary depending on final agreements.

Table 18: Full User Port Charges Overview Estimate

	LOM Fees and Benefits - $m	
	CFSM	Ports North
LOM Total	$194.7m	$266.9m
Average Pa	$7.78m	$10.68m

The 2023 Scoping Study originally contemplated development of the Project under the Partial User scenario, which involved an initial transhipping operation in years 1 and 2, followed by construction of a new Port facility.

The Scoping Study development scenario was reviewed which identified:

- development cost estimates for the construction of complete new marine infrastructure have significantly increased, resulting in increased longer term operational costs which will prevent the Project from being as competitive as possible on the market;
- construction of a new Port will create stranded assets risks for the State Government;
- replication of existing facilities will increase impacts to environmental and cultural places; and
- Traditional Owners and other stakeholders have expressed their preference for the utilisation of the existing marine infrastructure.

Progressing the Project as a Full User will avoid replication of existing and underutilised marine infrastructure and provide superior financial, environmental and community benefits to all stakeholders, including new revenue streams for CFSM and Ports North.

The Project remains in an active process to gain Full User Access, which has not yet been rejected or refused and is considered the appropriate pathway that remains viable and achievable.

The integration of the Project alongside and into the CFSM operations and existing marine infrastructure will involve:

- Project overland conveyor system tie into existing conveyor system;
- no new marine infrastructure;
- increased utilisation of existing infrastructure within excess capacity;
- scheduling of vessels to service all export requirements for both users;
- installation of nighttime navigation aids (if the RHM determines additional navigational aids are required);
- pilots will fly into Cooktown and transit to the OGV via pilot vessel;
- tug costs for the PFS are estimated using industry rates (this may be an additional negotiated service provided by CFSM);
- OGV's will be moored and tied up using Project staff; and
- service, maintenance and rehabilitation fees paid to CFSM and Ports North.

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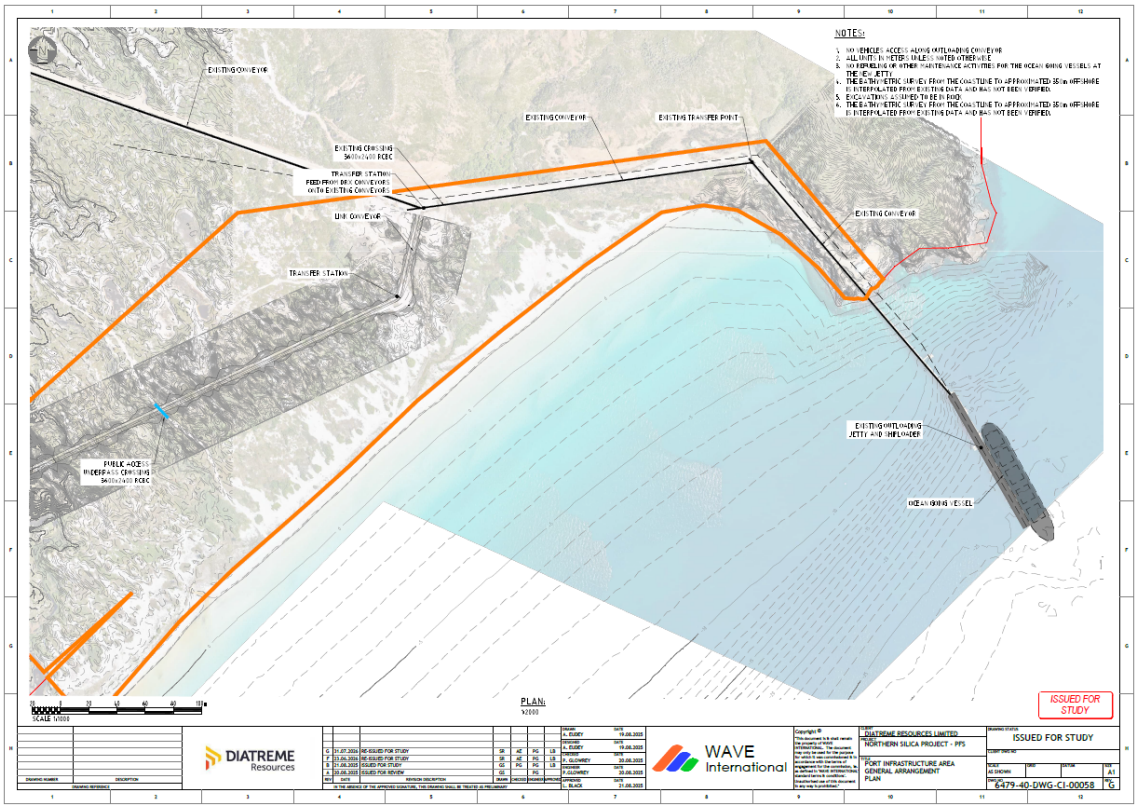
Figure 43: Port of Cape Flattery and NSP infrastructure Tie-In

Figure 44: Port of Cape Flattery infrastructure layout



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9 Human Resources

9.1 SUMMARY

The Project's human resources strategy will support the wider business in creating the right environment for people to be engaged and productive. This includes:

- A culture that is safe, caring and open:
  - being safe – Diatreme's safety leadership demonstrated in every part of the business;
  - caring – Diatreme will ensure its employees know the business cares for them and their wellbeing (including through engagement and development opportunities), ensuring that employees are taking care of each other; and
  - open and inclusive – Diatreme will be an open, transparent and diverse organisation, with high ethical standards and a working environment that allows people to perform at their best all of the time.
- Environmental, Social and Governance ('ESG') – An environment where there is a focus on sustainability, environmental stewardship, making improvements and reducing waste.
- Engagement – Ensuring Diatreme leads by example and measures engagement across the communities in which it operates.
- Policy frameworks and compliance – Diatreme fully understand its legal obligations and risks, and will ensure these are managed in accordance with the required standards and governance frameworks.
- Governance – Clear and transparent decision making, clear responsibilities accompanied by simple processes.
- By delivering in these areas, Diatreme will:
  - improve productivity – having people with the right skills to fill roles when needed, less productivity loss through vacant roles, have skilled resources available to meet customer demands, supporting people to be their best through the culture (safe, open, inclusive) and meeting flexibility needs;
  - improve performance through an engaged workforce;
  - improve its reputation as an employer;
  - reduce legal risks/ be legally compliant;
  - improve retention – avoid the cost of training and recruitment, retain key knowledge and skills through fewer people leaving voluntarily or reducing the need for redundancies through more agility and flexibility;
  - reduce the time for people managers in dealing with issues such as disciplinaries and grievances through better quality people management/leadership and preventing/pre-empting issues and resolving them before they escalate; and
  - reduce overall employment costs through lower reliance on contractors and third-party labour, reduce recruitment advertising costs through better effective planning for roles/skills, return on investment on training/investment in people/skills.

Diatreme will be positioned to react to changing business needs, with mobility of skills across the business, control of costs, policies and processes development. The current industrial relations climate is an area of focus as the Project teams develop. Industrial relations systems will be developed in alignment to the Fair Work Act during the operational preparedness activities.

As the Project progresses, Diatreme will further and continually review and develop its own human resource / industrial relations policies including local and indigenous employment policies based on the above fundamentals.

9.2 WORKFORCE REQUIREMENTS

The Project will have a combination of internal and external workforce requirements that will change as it moves through construction, commissioning and operations.

Key aspects of these workforce requirements are:

- A combination of in-house construction workforce and Engineering, Procurement and Construction Management ('EPCM') contract workforce.
- Based on combined construction and operational workforce projections, the maximum workforce numbers will peak at 214 during the construction phase (contractors and internal workforce), reducing to a 128 direct internal workforce during operational phase.
- Operational works will be undertaken through internal workforce, including a small offsite workforce and larger onsite workforce. This workforce starts at 37 from the beginning of the Project, ramping up to a peak of 128 moving into operations. Note there is no dedicated workforce for port operations as this will utilise staff within the overall operational workforce as required (i.e. when OGVs are being loaded).
- There will be a progressive ramp up of internal workforce and ramp down of external contractors, with an intentional overlap to facilitate on-the-job training for increased development of local employment.
- The operational workforce is currently based on complete internal workforce. The Project will consider providing business opportunities/discrete contracts to local businesses which will equate to an equivalent reduction in internal workforce.

As part of this workforce, the Project is committing to a 50% indigenous employment target during operations. Additionally, Diatreme will work with local indigenous groups to provide business opportunities to service the mine. No commitment on local business procurement can be made at present as this will be dependent on the capacity of local businesses at the time of works, however Diatreme will support capacity development of these businesses.

Based on the workforce numbers, two accommodation facilities may be constructed:

- 75-person temporary off-site accommodation facility – This facility will provide initial accommodation ahead of onsite works commencing and will also supplement the capacity of the onsite accommodation facility for both initial construction phase and the construction of the additional processing train for Years 3 onwards. This will be decommissioned from Year 3 after all infrastructure has been constructed.
- 140-person onsite accommodation facility – this will provide accommodation both during construction and longer-term during operations. This will be decommissioned at the end of mine life.

The combination of these facilities will match the peak onsite workforce requirements for the Project and therefore avoids the need for purchase, rent or the construction of additional houses in Hope Vale or Cooktown. The location of the off-site accommodation facility has not been finalised but will be identified as part of ongoing discussions with landholders and local council bodies.

Wherever possible, onsite operational roles will be hired from the Hope Vale and Cooktown

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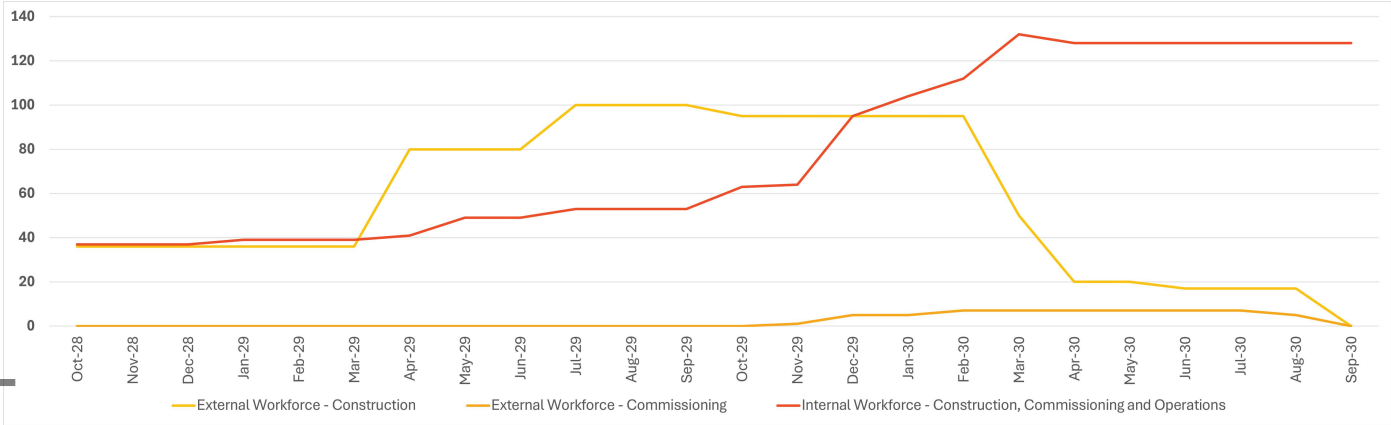
communities to avoid the need for fly-in fly-out ('FIFO') arrangements. Buses will be provided from Hope Vale and Cooktown to allow for staff to commute to and from the Project. To maximise workforce capability within the community ahead of operations, Diatreme will provide training opportunities. The balance of the workforce may require employment from outside the local region and therefore may involve some FIFO workers for key roles unable to be filled locally.

The workforce strategy is intended to:

- make a Project commitment of a 50% indigenous employment target;
- prioritise local employment for local / regional communities and townships – specifically Hope Vale and Cooktown;
- shift based day/night rosters working 12 hr shifts on an even time roster;
- minimise the level of FIFO workforce;
- provide training and work readiness programs leading into all phases of the Project;
- ramp up an internal workforce in parallel to the contractor workforce to enable on the job training and site familiarisation; and
- implement a Social Impact Management Plan ('SIMP') and Community Wellbeing Plan to increase local participation and retention of staff.

Figure 45: Project Workforce ramp up schedule



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10 Project Implementation Timeline & Stages

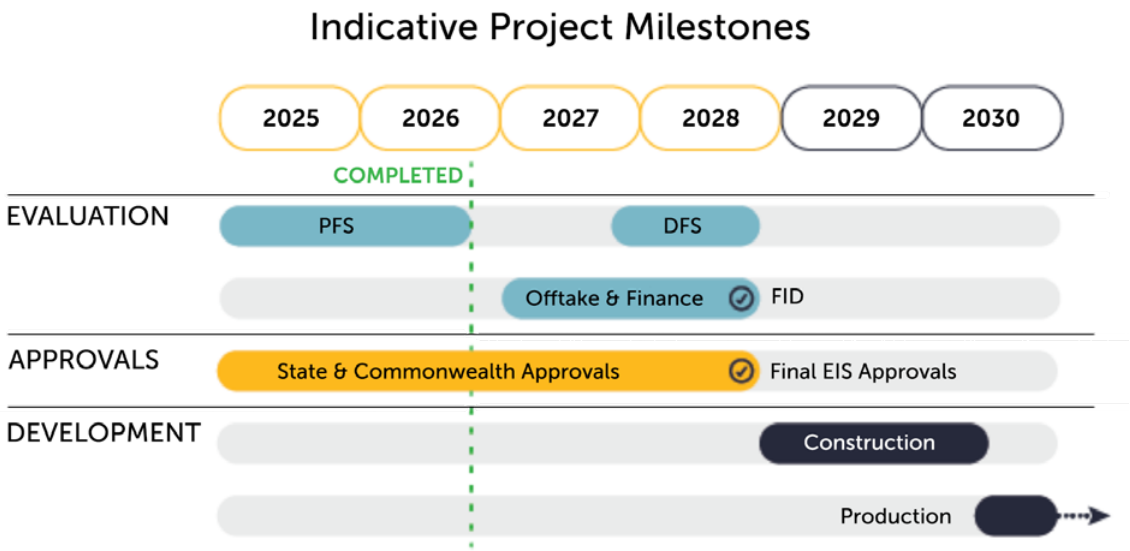
10.1 PROJECT DEVELOPMENT TIMELINE

The Project is progressing project development across several key pathways:

- permitting and approvals – bilateral State and Commonwealth Environmental Impact Statement ('EIS');
- mining lease applications and grants;
- environmental authorities;
- negotiations with Traditional Owners and landowners for consent to mine;
- engagement and negotiations with CFSM, Ports North and the State of Queensland in relation to access to the Port;
- feasibility studies and engineering (appropriate to stage);
- offsite development applications (bridges, crossings and road maintenance);
- product offtake agreements; and
- assembling of financing arrangements.

Project approvals through the EIS are critical to Diatreme achieving its execution schedule and cost targets. A detailed program has been developed and is being managed by Diatreme and its Joint Venture partner Sibelco. As at this PFS the timeline expects final project approvals in Q4 2028, which will then trigger the commencement of construction activities in Q4 2028.

Figure 46: Project – Development Timeline



Note: Project timeline is subject to approvals processes and achievement of key milestones and may change.

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10.2 PROJECT STAGING

10.2.1 Overview

The Project will occur over four overlapping stages as it progresses through initial construction, operations, expansion and rehabilitation / closure stages:

Table 19: Project Stages

Project Stage	Indicative Timing
Phase 1 Construction and commissioning	Q4 2028 to Q2 2030
Phase 1 Operations and Phase 2 expansion	Q3 2030 to Q2 2032
Phase 2 Operations	Q3 2032 to Q2 2055
Mine closure and decommissioning	Q3 2055 to Q1 2065

Progressive rehabilitation and closure activities will occur over the life of the mine in accordance with an approved PRCP for the Project.

The potential expansion from a 3.75 Mtpa facility to a 6.25 Mtpa facility will involve the construction of an additional MMU, processing train at the WCP and pipeline to the stockpile and expansion of power generation capacity. No other infrastructure or workforce changes are required as the existing material delivery, stockpiling and loading infrastructure will be sufficient to handle the additional throughput.

10.2.2 Construction Sequence

A construction sequence for the Project has been developed and is based on a start date of Q4 2028.

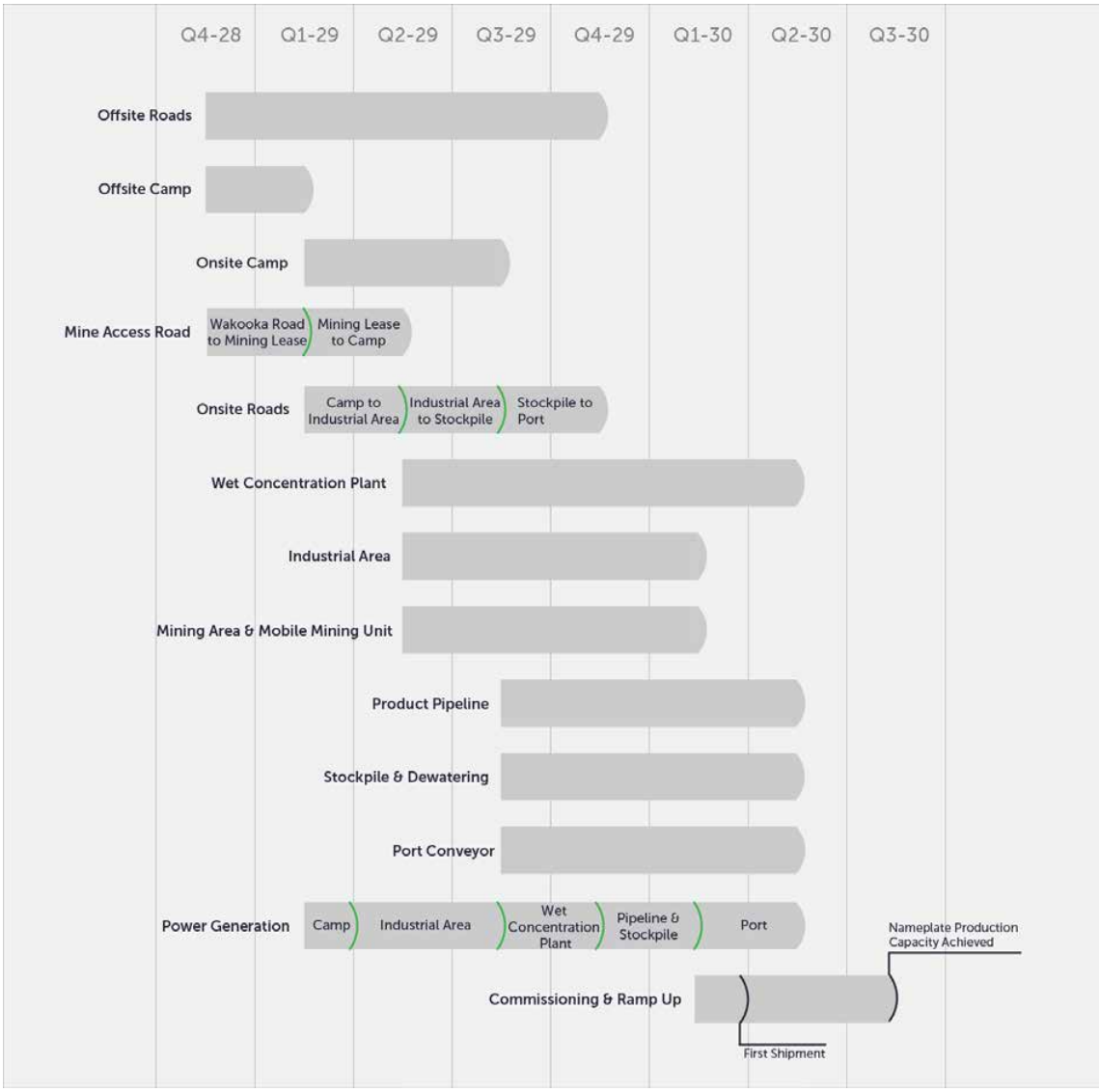
Generally, works will progress through the development of offsite works first (external road network upgrades and off-site accommodation camp), followed by clearing and development of the mine access road to provide for access into the site. Beyond this, all linear infrastructure (i.e. access roads, slurry pipeline, materials handling conveyor) will be cleared together with the footprints of civil infrastructure (i.e. accommodation village, mine infrastructure area, wet concentration plant, stockpile) to allow for construction of these elements.

Once cleared, the access roads and civil infrastructure areas will be developed first, followed by installation of pipelines, the stockpile infrastructure and the materials handling conveyor. This includes both ground preparation (i.e. earthworks) and construction/installation of infrastructure. Construction is expected to take 1.5 years, followed by commissioning.

If the Phase 2 expansion is triggered by market requirements, the construction of the additional processing plant train is expected to take one year. As these will occur concurrently with Years 1 and 2 of operations, they will be ready for operation by the start of Year 3.

Construction will occur 24-hours a day, seven days a week, to allow for progression through the full construction schedule in a timely manner.

Figure 47: Phase 1 Construction and Commissioning Schedule



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11 Environmental, Sustainability & Stakeholders

11.1 ESG & SUSTAINABILITY

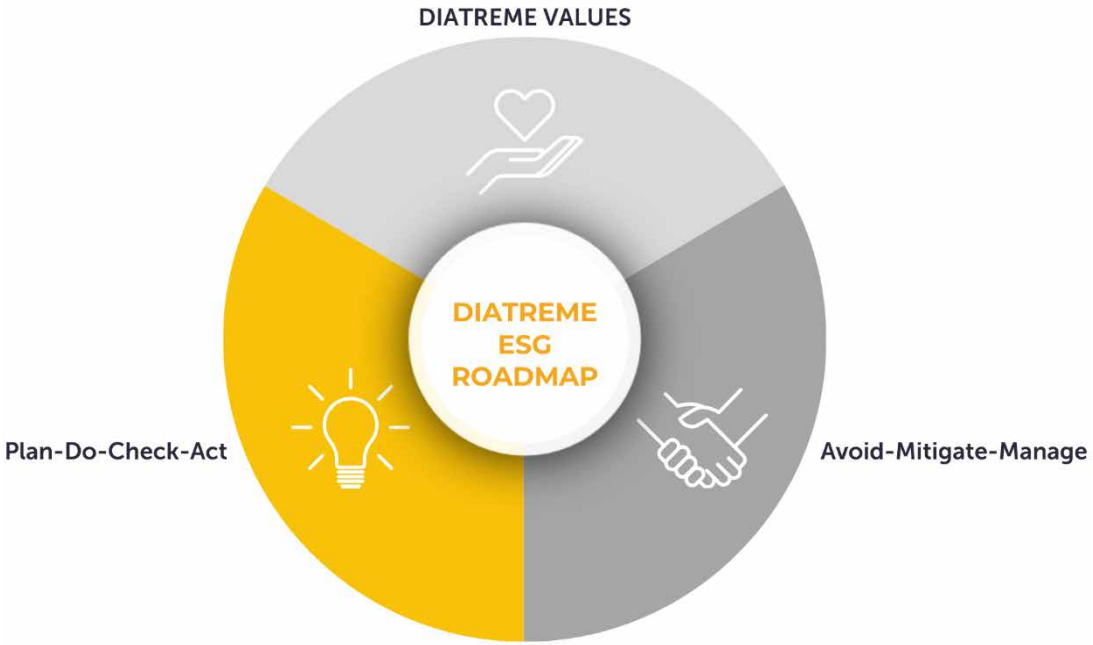
As Diatreme transitions from an explorer to an operator, it is focused on maturing its approach to managing ESG, ensuring that the sustainability of its operations, and the voices of the communities in which it operates, are at the centre of its ESG approach.

Diatreme is committed to sustainable practices that support a cleaner energy future, foster diversity and inclusion, uphold environmental stewardship, and keep community engagement at the forefront.

Its approach to ESG is aligned with, and informed by, the United Nations Global Compact corporate sustainability initiative and the Global Reporting Initiative standards, with People, Planet, Profit and Governance as its key pillars for assessing and reporting against ESG metrics.

As Diatreme progresses from the development phases through to the exploration, approvals, construction, operational and closure stages, each year it will review its ESG commitments, consistent with the Plan-Do-Check-Act ('PDCA') framework. This will also be influenced by the Company's values and its decision-making ethos of avoid, mitigate and manage. With time, it will be able to demonstrate its progress and learnings as it navigates each development phase.

Figure 48: ESG Roadmap Process



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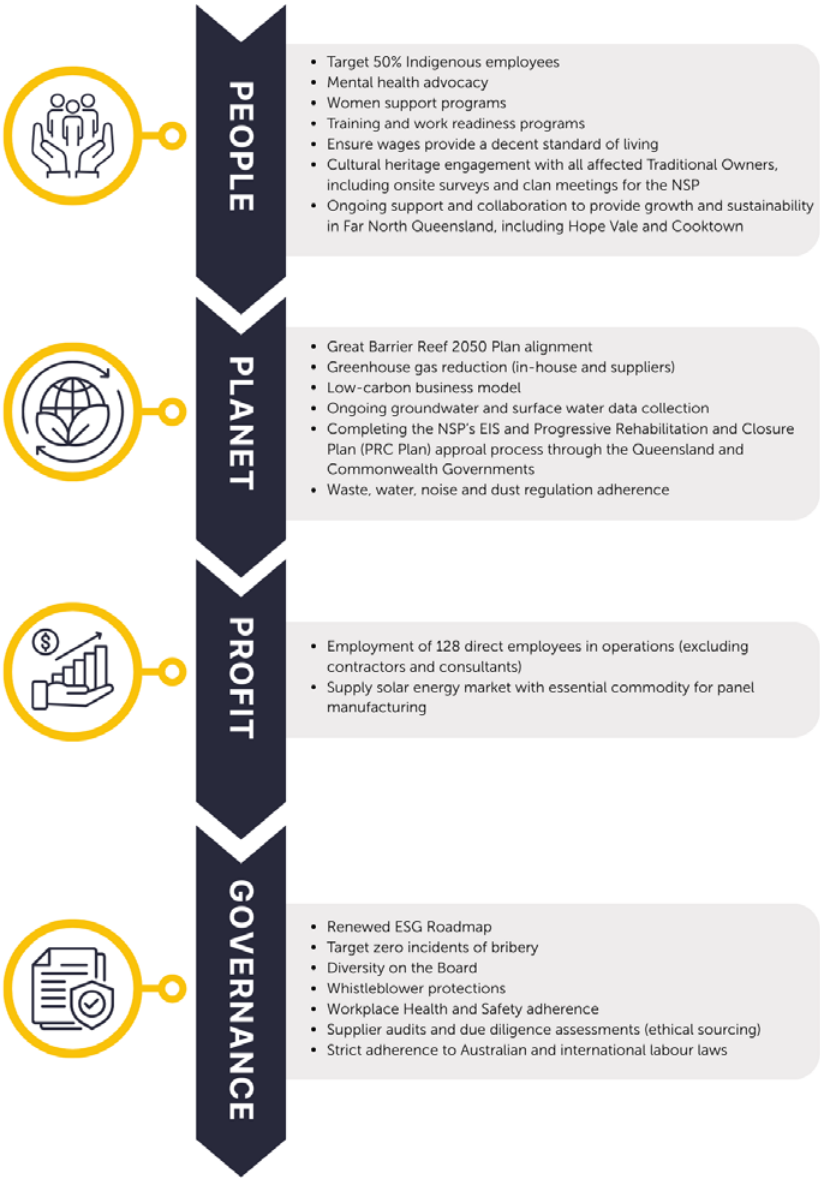
11.1.1 ESG Mission

To further develop its existing responsible and sustainable business practices and emerge as a market leading producer of high purity silica products, contributing to an increasing domestic and global demand for high quality, ethically sourced, renewable technology materials.

11.1.2 ESG Strategy

Diatreme is dedicated to unlocking the strategic value of its world-class silica assets by integrating sustainable development practices across its value chain. Its strategy is built on a foundation of deep collaboration with Traditional Owners and First Nations Peoples, and a proactive approach to managing environmental and social impacts. Figure 55 provides an overview of the actions Diatreme has been progressing to support its ESG pillars of People, Planet, Profit and Governance. As Diatreme continues to transition from explorer to developer, these actions may be updated to reflect the evolving status of Diatreme's business activities.

Figure 49: Diatreme's ESG Strategy



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11.1.3 Diatreme's Values

Diatreme's values are at the heart of the organisation. Promoting safety, improving sustainability, heritage protection, robust governance and improving diversity are the foundation of its operations. Its highly experienced Board and passionate team are committed to undertaking their duties with these values in mind.

Figure 50: Diatreme's organisational values

11.1.4 ESG Roadmap

As Diatreme continues to grow as a company, it is committed to ensuring that its ESG framework and commitments grow with it, and that it is focusing on the right things at the right time of development. To guide this growth, which is driven by the Project's success, it has renewed its ESG roadmap to guide maturation of its ESG practices, and to reflect alignment between Company values and the ESG roadmap.

Figure 51: ESG Roadmap

11.1.5 ESG Approach

Diatreme's ESG commitments are underpinned by the PDCA continuous improvement framework. This approach ensures that ESG risks and opportunities are systematically identified, managed, monitored and reviewed consistent to the needs of each development phase. This approach aligns closely with Company values and is further underpinned by its commitment to avoid, mitigate and manage impacts.

As a company, Diatreme is committed to reviewing its ESG performance annually, ensuring alignment with evolving regulatory changes, Company values and stakeholder expectations. This approach ensures a cycle of continuous improvement and organisational transparency.

Figure 52: PDCA continuous improvement

11.1.6 Environmental Commitment

Diatreme is committed to an impact avoidance, mitigation and minimisation approach, utilising an environmental management framework that upholds its licence to operate. This approach reflects Company values and a commitment to responsible, conscientious development. This commitment is not confined to just the Project development stage, but guides its actions from early exploration through to post closure stewardship.

11.1.7 Social Commitment

Diatreme is committed to fostering strong relationships with its stakeholders and local communities, maintaining transparent, consistent and inclusive engagement throughout all stages of its operations.

Diatreme is establishing a culture that recognises and embraces all people as individuals, empowering them to celebrate what makes them different, while also utilising the knowledge of these individuals in determining those environmental values which hold cultural significance in the area. It will foster an environment of mutual learning, respect, dignity, and openness to other cultures and an appreciation of diverse perspectives while promoting equal opportunity to contribute to business success and lead by example without unconscious bias.

Since Diatreme began working in Hope Vale in 2020, it has learnt a lot about the community, their values and through ongoing engagement opportunities will continue to develop and nurture these relationships, for the benefit of all stakeholders.

11.1.8 Governance Commitment

Diatreme is governed by a Board of Directors (the Board) who are responsible for the review and endorsement of Diatreme's corporate strategy, statements, policies, management systems and corporate governance.

Diatreme's Board and Executive Management Team are highly experienced across all stages of project exploration, mine development and project financing together with having strong government, regulatory and community engagement credentials. This foundation underpins the Company's strong commitment to ensuring the long-term sustainability of its operations, including health, safety and environmental stewardship in the communities in which it operates.

The Board's governance is supported by the Board Charter, Corporate Governance Statement and suite of policies as listed on the Company website.

Diatreme's Executive Management Team is the owner of ESG performance, with oversight from the Board.

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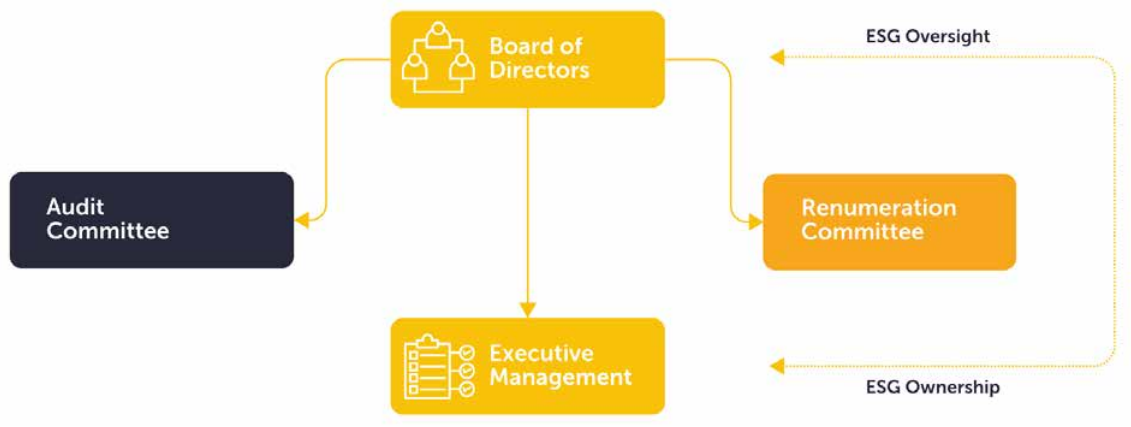
Figure 53: Diatreme's Governance Structure



11.2 ENVIRONMENTAL ASSESSMENT AND MANAGEMENT

The Project is currently in an active EIS process for State and Commonwealth matters with a Terms of Reference ('ToR') issued for the Project on 20 September 2024. To date a significant amount of baseline and impact assessment work has been undertaken and a draft EIS submitted to State and Commonwealth governments as part of the adequacy review stage.

Whilst the Project is not yet approved by State or Commonwealth governments there is sufficient knowledge and confidence to inform this PFS to understand key risks, commitments and mitigations that are required during the Project's implementation and closure stages.

The EIS will require a best practice approach to environmental management that employs a hierarchical process to identify, avoid, minimise, mitigate and potentially offset environmental impacts from the Project. In this context, a series of environmental management and monitoring actions will be identified for the Project during the EIS process.

Overarching environmental management plans (EMPs) will be developed initially, noting that more detailed plans will be developed and implemented for the Project. The management plans set out the commitment by Diatreme towards impact management, including outcomes and performance criteria, and the actions to be undertaken to achieving these outcomes.

The management plans form an initial framework for EIS assessment purposes and will be supported by more detailed management plans to be developed once all detailed regulatory approvals, authorities and permits are secured.

These plans are likely to encompass:

- a Construction Environmental Management Plan ('CEMP') for site establishment, clearing and similar activities;
- a Mining Operations Plan ('MOP') tied to the Environmental Management System ('EMS') applied to the site including management of water resources;
- a mining workplace health and safety plan;
- a PRCP (see further below);
- a SIMP;
- Cultural Heritage Management Plans ('CHMP') under the Aboriginal Cultural Heritage Act 2003 (Qld) ('ACH Act') or equivalent provisions within the native title agreement prepared in accordance with the Native Title Act 1993 (Cth) ('NT Act');
- a port operations and shipping management plan; and
- specific plans required by regulatory approvals related to the conservation and management of protected wildlife.

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Diatreme is developing an EMS and intend to seek certification of this in accordance with ISO 14001:2026. The EMS will cover all of Diatreme's activities including the Project and will provide the overarching framework under which EMPs and associated documents will operate. Diatreme already has elements of an EMS in place, including overarching environmental policy and related commitments.

While elements of the EMS will be important in guiding the EIS studies, Diatreme does not intend on achieving certification until the Environmental Authority for the Project is in place so as to ensure the EMS aligns with appropriate approval conditions.

Developing the EMS, therefore, will consist of the following steps:

- reviewing the existing environmental management processes and systems already in place for Diatreme and development of a Project Plan to identify and communicate action items;
- understanding and articulating Diatreme's environmental and sustainability objectives;
- adapting the EIS assessments to identify the Project's environmental aspects and other Diatreme activities and to inform a risk assessment;
- reviewing of resourcing requirements, identifying and assigning responsibilities, and establishing mechanisms to facilitate management review;
- developing supporting documents for the EMS that meet the requirements of ISO 14001: 2026, including improving existing practices and identifying opportunities for continuous improvement;
- adapting the Project-specific EMPs and monitoring requirements into the EMS; and
- seeking certification.

Figure 54: Environmental Impact Statement (EIS) Framework

11.3 PROGRESSIVE REHABILITATION AND CLOSURE PLAN

A draft PRCP has been developed for the Project and will be approved and implemented for mining operations. The intention of a PRCP is to understand how rehabilitation and closure activities will occur during mining operations, with the intention of reducing the 'gap' between impact and rehabilitation as well as the risk of sudden closure without adequate ability to restore impacted areas.

This supports the long-term environmental management of key impacts within the terrestrial environment, including the clearing of vegetation communities and associated impacts to fauna species.

The principal commitment of the PRCP will be to progressively rehabilitate and reinstate native habitat across the Project area, as areas become available that are no longer required for production. Wherever possible, rehabilitation will occur immediately upon cessation of mining in that area. The rehabilitation will also include active infill planting as required and specific trialling of rehabilitation of specific communities.

At the completion of operations and decommissioning of the mining and processing equipment all remaining unrehabilitated areas will be rehabilitated. The rehabilitation process will include:

- shaping the surface of the disturbed areas with earthmoving equipment to remove any abrupt features and create a land surface suitable for spreading soil and seed;
- removing land surface features that may be prone to wind erosion;
- covering the shaped surface with soil that was removed when the area was originally cleared for mining activities;
- returning remnants of vegetation that were removed from the surface when the area was cleared;
- spreading seed on the topsoil and providing wind protection where necessary to minimise wind damage to the surface of the soil and seedlings; and
- where necessary planting seedlings of specific species that do not establish well from seed.

The final elevation of the rehabilitated surface will be lower than the original surface in areas that have been mined.

The proposed mining activities have been assessed for financial assurance under the Mineral and Energy Resources (Financial Provisioning) Act 2018. Although the surety has not been approved, the estimate has been included in the costings of the PFS.

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11.4 KEY PROJECT COMMITMENTS AND MITIGATIONS

Through the EIS process the following key project commitments and mitigations have been developed to ensure the Project is developed with an acceptable impact, sustainably and focused to ensure that benefits stay where benefits belong in the local region.

All of these commitments and mitigations are currently factored into the PFS design and costings.

Table 20: Key Project Commitments and Mitigations

Commitment / Mitigation	Description
Environmental Net Benefit Fund	Commitment of funds for net benefit environment initiatives.
Community Benefit Fund	Commitment of funds for community benefit programs in Hope Vale and Cooktown via implementation of the SIMP.
Health Infrastructure Commitments	Commitment of funds to local health infrastructure improvements
Threatened Ecological Communities of Littoral Rainforest (TEC LRF) Management Plan	Establishment of a Management plan that priorities net gain as part of progressive rehabilitation and collaboration with Recovery Planning groups
Ctenotus Research Program and Management Plan	Develop Cape Heath Ctenotus Management Plan with regional monitoring, species tracking, and PhD funding and research.
Environmental Buffers	Create protective zones between mining panels and key features (LRF, hoop pine, waterways, wetlands).
Wildlife Corridors	Progressive vegetation clearing while retaining movement corridors for ctenotus and other species.
Progressive Rehabilitation	Ongoing activities aligned with PRCP requirements.
Local Employment and Procurement	Focus on local employment and procurement during construction and operations
Indigenous Employment Target	50% target for indigenous employment.
Training and Work readiness program	Development and implementation of a training and work readiness program aimed at achieving the 50% indigenous employment target and broader local workforce prioritisation
Business Opportunities	Development of local business opportunities to provide supportive services to the mine.
Regional Infrastructure	Upgrade external road network for improved flood immunity and broader regional benefits.
Workforce Accommodation	Development of offsite accommodation camp to enable site construction and to mitigate local housing requirements and impacts.

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11.5 STAKEHOLDERS

11.5.1 Stakeholder Engagement Design Considerations

Through the EIS process a detailed stakeholder identification and assessment process has been completed. This work has resulted in the identification of 70 key stakeholders across 15 discrete groupings. To date, over 200 formal engagements and significantly more informal engagements have been completed to ensure stakeholders have an opportunity to have their say, and that the Project design and implementation consider the views and aspirations of impacted and interested stakeholders.

The community and stakeholder engagement process has had a specific and direct tangible influence on the Project's design and layout. This has resulted in revising and selecting infrastructure alignments that are considerate of the identification and/or protection of critical social, environmental and heritage values, views and aspirations.

Some of the key alterations to the Project from community and stakeholder engagement are as follows:

- Selecting the inland conveyor route over the coastal/beach conveyor route for this infrastructure noting that the beach and foredune area has important cultural and natural values including beach springs that were identified as part of cultural heritage surveys and engagement directly with the affected parties. This also reduces/avoids environmental and visual impacts associated with the beach conveyor option.
- Selecting the Southern Road Alignment as the Project's preferred road alignment based on the presence of a range of cultural and environmental values identified by stakeholders along the Northern Road Alignment and associated views expressed by the relevant Aboriginal Parties.
- Selecting the Northern (Casuarina) slurry pipeline alignment as the Project's preferred pipeline alignment to avoid creek crossings and associated cultural and environmental values along the coastal area as identified as part of engagement with the relevant Aboriginal Party.
- Ensuring buffers to all lakes and wetlands on and adjacent to the mine panels to ensure areas that are most likely to contain cultural heritage items, objects and significant places are not disturbed by mining as identified in engagement with the relevant Aboriginal Party.
- Ensuring a detailed PRCP that will be implemented in parallel with mining to reduce the overall footprint of vegetation disturbance and return the land to a predominantly natural state as efficiently and effectively as practicable.
- Ensuring the Project design avoids vegetation communities of hoop pine.
- Ensuring the Project design avoids, to the greatest extent practicable, vegetation communities of Threatened Ecological Communities of Littoral Rainforest.
- Ensuring clear proponent commitments to both on-mine and off-mine workers accommodation facilities to ensure that the construction and operation of the mine does not have a negative social or economic impact on the Hope Vale and Cooktown townships. This has included the commitment to develop a temporary offsite accommodation camp for use during construction, with the remainder of staff housed onsite at the mining camp, thereby minimising the potential of housing supply constraints in the local township.
- Ensuring clear proponent commitments to employment and training to directly benefit the local communities of Hope Vale and Cooktown as opposed to seeking to attract a FIFO-dominated workforce.
- The Project will be subject to strict controls regarding groundwater management, including requirements that groundwater extracted as part of mine processing is closely monitored and reused to ensure impacts on groundwater dependant ecosystems on the mining lease area are avoided or minimised and that there is no impacts to regional groundwater resources or water supply off the site.

11.6 LOCAL COMMUNITIES

The Project is located in Far North Queensland with the local communities being Hope Vale and Cooktown.

While the Project site is remote, it is not intended to be a Fly-In, Fly-Out (FIFO) mining operation. The majority of locally sourced workers will be accommodated in on-site accommodation. As such, the most affected communities will be the townships of Hope Vale and Cooktown, where it is expected most of the mine workforce will be sourced.

Diatreme has been engaging with these community stakeholders through a local presence, ongoing exploration operations employing a local workforce and engagement and consultation as part of the EIS process.

Diatreme has an office presence and personnel based in Hope Vale and is actively implementing a community engagement and development program in advance of the Project.

As outlined previously, the scale of the Project will require a Social Impact Assessment (SIA) and management plan to identify positive and negative impacts on the social and economic environment of the locality and region. This includes consideration of a broad range of community issues including health, recreation, education and emergency services. The SIA and management plan will be developed in accordance with the State of Queensland guidelines for social impacts from mining projects.

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12 Tenure, Native Title and Landholders

12.1 NATIVE TITLE

Project impacts

The Project will affect the native title rights and interests of the following clan groups:

- the Dingaal People, to the extent of the mining, processing, accommodation and infrastructure activities proposed within MLA 100552 (Northern Silica Production);
- the Nguurruumungu People in their own right, and the Dingaal and Nguurruumungu shared country area, to the extent affected by the pipeline, stockpile and conveyor proposed within MLA 100550 (Northern Silica Casuarina);
- the Dingaal and Nguurruumungu shared country area, to the extent of access to the Port and the overland conveyor proposed within MLA 100553 (Northern Silica Port Access); and
- the Gulaal People, to the extent of the mine access road proposed within MLA 100551 (Northern Silica Access 1).

Registered Native Title Bodies Corporate

Each impacted clan group is represented by a Registered Native Title Body Corporate ('RNTBC'), as nominated by the native title holders following the determination of their native title rights and interests.

Walmbaar Aboriginal Corporation ('WAC') is the agent RNTBC for the Dingaal People, whose native title determination covers approximately 158 km^2.

Hopevale Congress Aboriginal Corporation ('HCAC') acts as the agent RNTBC for 11 clan groups, including the Gulaal People and the Nguurruumungu People, whose native title determination covers approximately 1,100 km^2.

WAC and HCAC jointly represent the native title interests of the Nguurrumungu People and the Dingaal People in Dingaal and Nguurruumungu shared country area.

Diatreme has engaged with both WAC and HCAC, as well as directly with the direct clan groups in relation to the Project and its impacts.

Aboriginal freehold land

In December 2011, the former Deed of Grant in Trust in the Hope Vale area was converted to Aboriginal freehold land under the Aboriginal Land Act 1991 (Qld). That Aboriginal freehold land is now described as Lot 35 on SP232620 and was transferred to HCAC to hold in trust for the people particularly concerned with the land. HCAC is the trustee of the Aboriginal freehold land on which the Project is proposed.

Native title process

Where required under the NT Act, Diatreme will undertake a Right to Negotiate ('RTN') process with the clan groups impacted by the Project and will enter into agreements with both WAC and HCAC, acting as the agent RNTBC on behalf of the relevant clan groups. These negotiations will include the execution of an agreement under section 31(1)(b) of the NT Act.

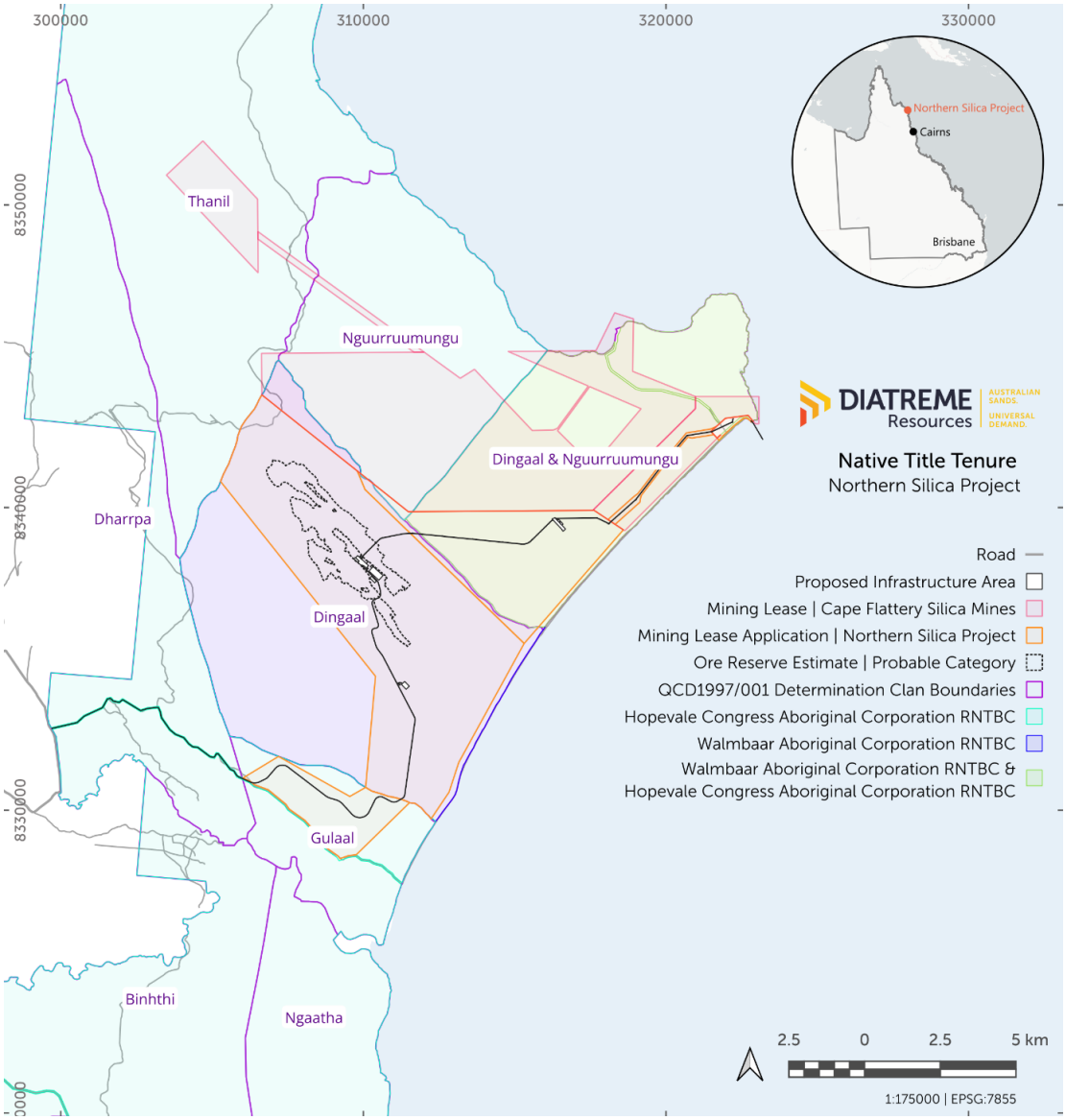
The negotiated agreements are expected to address a range of matters, including environmental impacts, cultural heritage, community benefits, compensation and governance arrangements. Negotiations will be progressed in parallel with the EIS and associated approvals.

While compensation arrangements remain subject to negotiation and agreement, an estimate of potential compensation has been incorporated into the PFS cost estimate, with compensation apportioned based on the relative impact of the Project.

Negotiation protocols

Diatreme has separately entered into negotiation protocols with WAC and the Gulaal People, and is negotiating the terms of a negotiation protocol with HCAC. The protocols establish a framework and guiding principles for ongoing engagement and future negotiations between the parties in relation to opportunities arising from the Project. Their purpose is to support the development of mutually beneficial agreements that maximise economic and social benefits for the relevant clan groups, while providing a pathway for Diatreme to achieve the development outcomes necessary to progress the Project.

Figure 55: Native Title Tenure of the Northern Silica Project



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12.2 TENURE AND LAND INTERESTS

There are currently a suite of mining lease applications associated with the Project. The table below outlines these and intended purposes.

The mining leases will be granted as part of the current permitting and approvals process being undertaken.

Table 21: Project Mining Lease Applications and Land Interests

Lease	Purpose	Area	Landholder	RNTBC	Traditional Owners
MLA 100552 Northern Silica Production	Mining, processing, accommodation and infrastructure sought through the section 234(1) process in the MR Act.	5426.75 ha	Hopevale Congress Aboriginal Corporation	Walmbaar Aboriginal Corporation	Dingaal
MLA 100550 Northern Silica Casuarina	Pipeline, stockpile and conveyor sought through the section 234(1) process in the MR Act.	1836.82 ha	Hopevale Congress Aboriginal Corporation	Walmbaar Aboriginal Corporation & Hopevale Congress Aboriginal Corporation	Dingaal & Nguurruumungu
MLA 100553 Northern Silica Port Access	Access to the Port and overland conveyor. MLA crosses an existing mining lease held by CFSM. CFSM's consent to the MLA and a co-existence plan will be sought, initially, by negotiation or, failing that, through the section 271AB process in the MR Act.	82.41 ha	Hopevale Congress Aboriginal Corporation	Walmbaar Aboriginal Corporation & Hopevale Congress Aboriginal Corporation	Dingaal & Nguurruumungu
MLA 100551 Northern Silica Access 1	Mine site access road sought through the section 234(1) process in the MR Act.	745.68 ha	Hopevale Congress Aboriginal Corporation	Hopevale Congress Aboriginal Corporation	Gulaal
MLA 100313 FNQPCL Cape Flattery Access	Lease over the Ports North Freehold Leases.	37.2 ha	State owned Crown Lands with perpetual lands lease to Ports North	N/A	N/A

The proposed offsite road upgrades are within the council controlled road reserves of Hope Vale Aboriginal Shire Council and Cook Shire Council.

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13 Permits & Approvals

The Project is currently progressing through permitting and approvals and is in an active bilateral EIS process for State and Commonwealth approval requirements. The Project is being coordinated at a State level through the Office of the Coordinator-General and was designated as a Coordinated Project on 12 January 2024 under the State Development and Public Works Organisation Act 1971 ('SDPWO Act'). It was declared a Major Project at the Federal level on 11 June 2025.

The Project has a Controlled Action (EPBC 2023/09485) decision and is required to address Matters of National Environmental Significance ('MNES') pursuant to the Environment Protection and Biodiversity Conservation Act 1999 (Cth) ('EPBC Act') administered by the Commonwealth Department of Climate Change, Energy, the Environment and Water. The EPBC MNES are:

- the world heritage values of a declared World Heritage property (section 12 & section 15A);
- the national heritage values of a National Heritage place (section 15B & section 15C);
- listed threatened species and communities (section 18 & section 18A);
- listed migratory species (section 20 & section 20A); and
- the environment in the Great Barrier Reef Marine Park ('GBRMP') (for a proposed action taken outside that impacts the environment inside the GBRMP) (section 24B & section 24C)

The final ToR was issued for the EIS on 20 September 2024, formally outlining all of the Project's study requirements.

As part of the EIS, a series of long-term data collection and/or modelling exercises are required, with particular focus on ground and surface waters, terrestrial and aquatic ecology, marine and coastal environment, soils, and cultural heritage and values. The EIS process also triggers the need for specific management plans or applications, including:

- a SIA and SIMP in accordance with the Strong and Sustainable Resource Communities Act 2017 (Qld) ('SSRC Act');
- a CHMP under the ACH Act or equivalent provisions within the native title agreement prepared in accordance with the NT Act;
- a strategic allocation of water under the Water Act 2000 (Qld) ('Water Act'); and
- a PRCP developed at the time of approval in accordance with the EP Act.

Key progress approvals milestones to date:

Table 22: Key Project Milestones to Date

Key progress approvals milestones	Date
Scoping Study	14 June 2023
EPBC Referral Controlled Action decision	14 June 2023
Coordinated Project Designation	12 January 2024
Major Project Status	11 June 2025
Final ToR issued	20 September 2024
Draft EIS submitted to State and Commonwealth agencies for adequacy review	15 December 2025

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Based on the current EIS pathway, the following approvals are expected for the Project:

Project-wide authorisations

- Coordinated Project Approval under the SDPWO Act
- Controlled Action Approval under the EPBC Act
- Mining Project Agreement ('MPA') and related section 31 native title agreement(s) under the NT Act
- SIA and SIMP under the SSRC Act
- CHMP under the ACH Act or equivalent provisions within the MPA/native title agreement prepared in accordance with the NT Act (outlined above)

Mine site approvals

- Environmental Authority (Resource Activity) under the EP Act
- Mining Lease and Mine Infrastructure Lease, including a section 271AB co-existence plan to traverse a mining lease held by a third party
- Water allocation licence (groundwater extraction and use) under the Water Act
- Protected species permits (various) under the Nature Conservation Act 1992 (Qld)

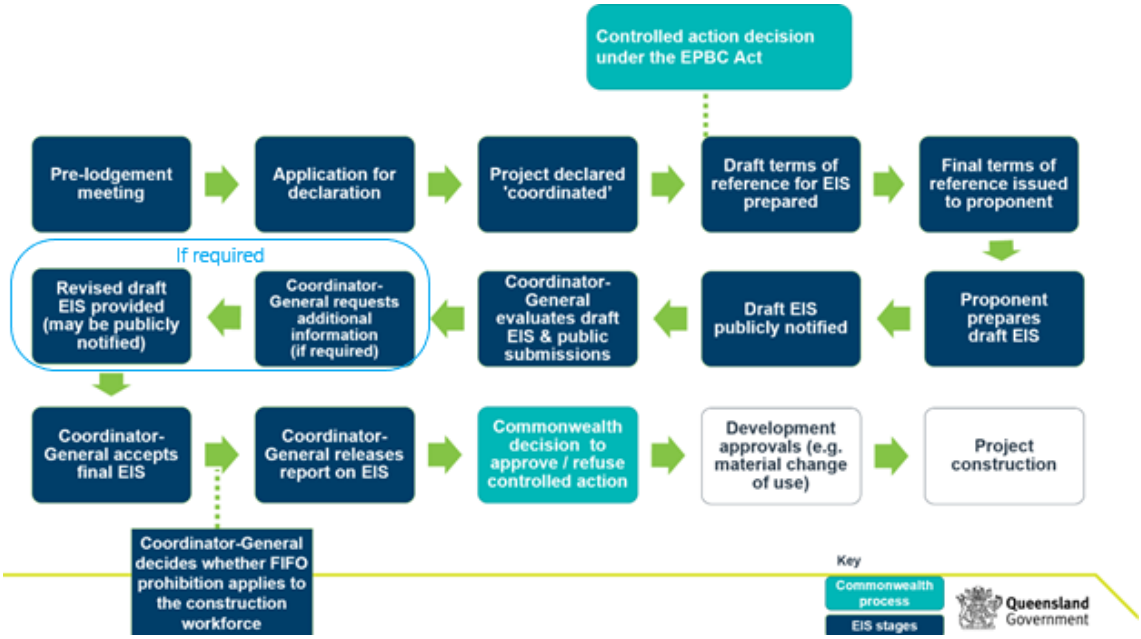
Export operation approvals

- Modification of existing Environmental Authority to enable multiple user exports of same product under the EP Act

The Project is currently finalising the draft EIS ahead of the public notification and comment period.

Further details on the Project's approvals status can be found on the Office of the Coordinator-General's website: https://www.coordinatorgeneral.qld.gov.au/projects/find-a-project/current-coordinated-projects/northern-silica-project

Figure 56: Coordinated Project Approvals Process



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14 Industry & Market Overview

14.1 SUMMARY

The Project is capable of producing a premium grade "low iron" silica product (also known as PV grade) suitable for use as direct feed product by glass manufacturers for ultimate end use in the sheet or covering glass used on solar panels.

The characteristics needed for PV grade silica sand are primarily focused on low iron, ideally sub or no more than 100 ppm, but manufacturers will also accept product in the 50-150 ppm range (with additional premiums or price penalties within the range), correct particle size range and low levels of other key contaminants. The Project consistently achieves these specifications through metallurgical testwork, and is looking to de-risk global supply chains, which have recently had supply issues from existing supply sources and are increasingly looking to offshore suppliers of this premium silica product.

The global silica sand market is fundamentally bifurcating, moving away from a single commodity price due to escalating technical demands across critical industrial sectors. Price premiums for high-purity, low-iron silica are no longer marginal, but instead reflect the material's indispensable role in high-value applications and the constraints of natural supply.

While standard construction sand sells for tens of dollars per tonne, the market shows a clear quality-based pricing hierarchy. Premium glass-grade sand (e.g., <0.035% Fe_2O_3) commands US$50–$100, driven by global demand for clear flint and architectural flat glass. This premium sharpens dramatically for the booming Solar PV glass sector, which mandates ultra-low iron (often 50–150 ppm Fe_2O_3) to maximise energy efficiency. This segment, led by manufacturers in the Asia- Pacific (APAC) region, pushes prices for top-tier solar-grade sand and is projected to be the fastest-growing grade segment, expanding at a CAGR of over 6.4% through 2030.

The long-term forecast suggests an overall stable growth trajectory, underpinned by the ongoing global energy transition and increasing demand for high-specification materials. The Base Case price is expected to rise moderately, settling at approximately US$60 FOB by 2040 (in real terms). This stability assumes a steady, sustainable premium for quality feedstock commensurate with supply-demand equilibrium.

Following extensive market investigations from research and consultancy firm Wood Mackenzie and engagement with various offtakers and customers, and through Diatreme's joint venture partner Sibelco, Diatreme has gained an understanding of current market prices of its "low iron" high-purity silica sand product. The high purity silica sand price used for the PFS is US$55 FOB (A$80.9 FOB) over the LOM, slightly below the mid-point Base Case forecast of US$60 FOB by 2040 (real terms).

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14.2 WOOD MACKENZIE SILICA SAND MARKET STUDY – DECEMBER 2025

14.2.1 Market Report Summary

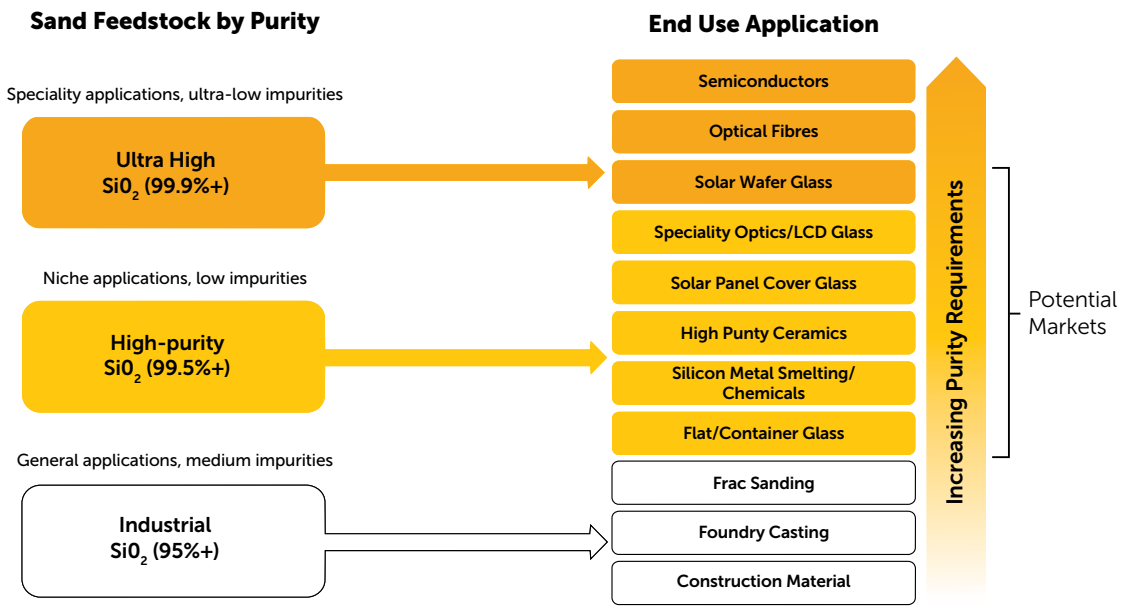
Silica sand is primarily used to create glass, for foundry castings, as a construction material, and in high-tech glass applications.

In recent years global demand for silica sand has risen between 3% and 5% on an annual basis and Wood Mackenzie expects this trend to continue primarily driven by glass production (for construction, automotive, and solar panels) and sustained needs in foundry and hydraulic fracturing sectors. The Asia-Pacific region dominates consumption (~44% of global volume) as China and emerging economies expand infrastructure and high-tech manufacturing.

While most countries have domestic resources, higher quality supply is rarer and to protect their domestic requirements some countries (particularly in Asia) have, or are considering export bans meaning Australia, the United States, and select European nations are important seaborne suppliers.

Domestically, Australia's own use of industrial silica is modest but could grow if new glass or silicon processing facilities are established as part of the "Made in Australia" program being pursued by the federal government. Key target industries include flat and container glass (which demand >99.5% SiO_2 and low Fe for clarity), specialty ultra-clear glass for solar panels (requiring Fe_2O_3 <100 ppm or 0.01%) and foundry casting sand which requires low impurities and consistent sizing.

Figure 57: Silica Sand Feedstock by Purity – Wood Mackenzie December 2025

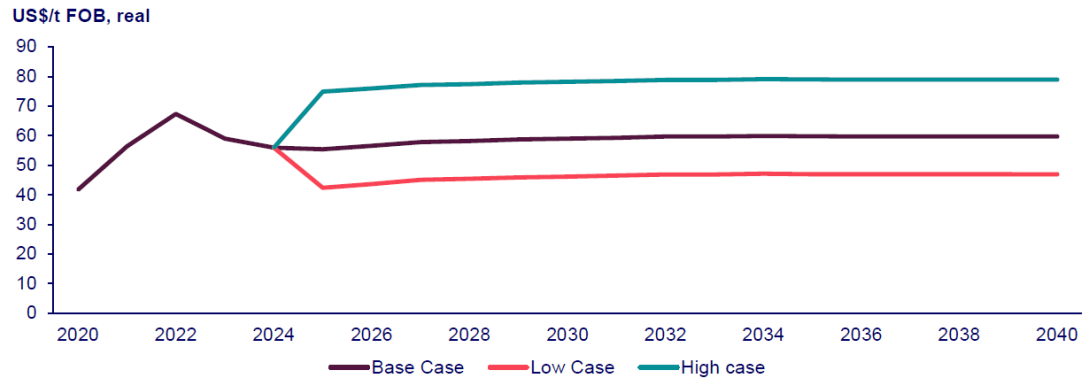


Source: Wood Mackenzie

Diatreme's sand is characterised by high SiO_2 purity and low levels of key contaminants, positioning it at the premium end of the market. For context, most industrial applications require >97% SiO_2, glass typically exceeds 99.5% SiO_2 with very low iron, and foundry/frac sands are usually >95–99% SiO_2. The product specification of the Project exceeds the purity level for ultra clear glass and is acceptable for solar panel glass production.

Factors such as purity (iron content), grain size, distance to port, and shipping costs all influence realised prices. Pricing for silica sand is robust and forecast to rise due to tightening supply, standard glass-grade sand from Australia typically achieves ~US$35–60 per tonne FOB, while ultra-high-purity low-iron sand is expected to trade at around US$79 per tonne in the longer term.

Figure 58: Silica Sand Price Forecast – Wood Mackenzie December 2025



Source: Wood Mackenzie

Demand for silica sand is significant and expected to grow. Global glassmakers consumed roughly 120 Mt of silica sand in 2023, and solar PV glass alone used over 21 Mt of ultra-low iron sand. Based on the product specification of the Project, Diatreme could participate in this higher value market.

Major importers like China, Japan, and South Korea collectively import millions of tonnes of silica sand annually, often from Australia, highlighting ready markets. Securing even a modest percentage of these import markets would translate to substantial volumes for the Project.

14.2.2 Pricing

Wood Mackenzie's long-term price forecast for high-purity silica sand, Free-on-Board (FOB) East Coast Australia, is derived through a methodology that links the underlying industrial sand market to the downstream silicon value chain, while applying a premium reflective of product quality. Historical export prices for bulk industrial sand, sourced from Global Trade Tracker (GTT), established the market's historical floor.

To project forward, a regression model was constructed, testing the moderate positive correlation identified between historical silica sand prices and Wood Mackenzie's long-term forecasts for Ferrosilicon (FeSi) and Silicon Metal (Si Metal). This linkage acknowledges shared market dynamics and input costs across the entire silicon value chain.

The derived prices are then adjusted with a premium to account for the uplift in value associated with the high-purity product, reflecting the significant processing costs (e.g., acid leaching) required to achieve high silica content.

- **Base Case Premium:** US$15 uplift is applied to reflect the typical value of high-purity feedstock (99.5% SiO_2 and <0.035% Fe_2O_3)
- **Low Case Premium:** US$5 uplift is applied, recognising that a price floor is maintained due to the processing capital and operating costs already incurred.
- **High Case Premium:** US$30 uplift is applied, capturing the potential pricing for scarce, ultra-high-purity (UHP) material (99.9% SiO_2 and <0.01% Fe_2O_3) critical for premium applications like solar PV and advanced electronics – this scenario matches Diatreme's proposed product quality.

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The period between 2020 and 2025 was marked by significant volatility driven by global macroeconomic factors. The Base Case price trajectory saw a sharp increase from approximately US$42/t in 2020 to a peak of nearly US$67/t in 2022. This price surge was a direct result of concurrent factors, including a post-pandemic demand rebound across construction and glass manufacturing, coupled with extreme cost inflation in global freight and energy. Following the peak, prices corrected back towards the US$55-$60/t range through 2024 and 2025, reflecting the normalisation of global logistics.

The long-term forecast suggests an overall stable growth trajectory, underpinned by the ongoing global energy transition and increasing demand for high-specification materials. The Base Case price is expected to rise moderately, settling at approximately US$60 by 2040 (real terms). This stability assumes a steady, sustainable premium for quality feedstock commensurate with supply-demand equilibrium.

The High Case scenario, which reaches approximately US$79/t by 2040, is predicated on a significant supply-side constraint or, more likely, the successful capture of the Ultra-High-Purity (UHP) market. Key upside drivers include:

- **Accelerated Solar PV Demand:** Exponential growth in solar PV and related glass manufacturing, leading to a scramble for the highest-purity input materials.
- **Geopolitical Supply De-risking:** Buyers prioritising non-China-sourced material, granting a premium for supply chain security from stable regions like Australia.
- **Successful UHP Penetration:** The ability to consistently produce and sell ultra-high-purity silica required for advanced semiconductors and specialty glass.

Conversely, the Low Case forecast, which plateaus near US$47/t by 2040, would be driven by strong competition and lower-value market oversupply. The core downside risks involve:

- **Excess New Supply:** A significant influx of new, low-cost high-purity production globally, suppressing the pricing premium.
- **Material Efficiency/Substitution:** Technological advancements leading to greater material efficiency in end-use applications or faster substitution (e.g. increased cullet uses in glass).

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14.2.3 Factors Affecting Pricing

Quality (chemical and physical): The purer and more uniform the sand, the higher the price. Low iron content is especially price-sensitive: going from 0.1% Fe_2O_3 to 0.01% Fe_2O_3 can double the price in extreme cases because it opens high-end markets. Grain size consistency and lack of fines also commands a premium, since glass plants will pay more for sand that is already properly graded to avoid processing it themselves. The Project's ability to consistently meet tight specs will allow it to achieve the higher end of the price range. Off-spec batches might be penalised or only saleable at discount, so quality control is key to maintaining price levels.

Distance to port and freight: Australian producers have an edge to Asia due to proximity, with lower freight than from distant competitors like the United States or EU.

Volume and contract length: Large, long-term contracts (e.g. supplying 200 ktpa to a glass plant for 5 years) often are priced lower per tonne than spot or small orders, reflecting bulk discount and relationship.

Value-in-use: Some buyers might pay more if using the Project's sand saves them money elsewhere. For instance, a very low impurity sand might allow a glass plant to reduce costly refining agents or fuel (as less contamination means lower melting losses). This could justify a premium. Similarly, foundries might reduce binders or improve casting yields with better sand.

Market conditions: Current indicators are that the market for high-grade sand is tight. If multiple new Australian projects start around the same time there could be a wave of supply hitting the market, potentially tempering prices. However:

- as Diatreme is the developer of several projects it can stage development; and
- given demand projections (especially solar) and the fact some projects may face delays, the near-term outlook is firm to bullish on price.

Tariffs/taxes: While import tariffs are mostly zero, export taxes or royalties on sand in Australia (royalties) could affect netback. Queensland's mineral royalty for sand is relatively low. There may be upside for Australian supply should Indonesia ban exports.

Market acceptance: New players often have to offer a price discount to gain market share and assure off-takers of supply and product reliability. It is likely that Diatreme would need to discount to market rates to gain acceptance.

14.2.4 Silica Sand Premiums

The global silica sand market is fundamentally bifurcating, moving away from a single commodity price due to escalating technical demands across critical industrial sectors. Price premiums for high-purity, low-iron silica are no longer marginal, but instead reflect the material's indispensable role in high-value applications and the constraints of natural supply.

While standard construction sand sells for tens of dollars per tonne, the market shows a clear quality-based pricing hierarchy. Premium glass-grade sand (e.g. <0.035% Fe_2O_3) commands $50–$100, driven by global demand for clear flint and architectural flat glass. This premium sharpens dramatically for the booming Solar PV glass sector, which mandates ultra-low iron (often 50–150 ppm Fe_2O_3) to maximise energy efficiency. This segment, led by manufacturers in the Asia- Pacific (APAC) region, pushes prices for top-tier solar-grade sand and is projected to be the fastest-growing grade segment, expanding at a CAGR of over 6.4% through 2030.

The ultimate price ceiling is set by Ultra-High-Purity Quartz (HPQ) for semiconductors and optical fibres. Here, metal impurities must be in the single-digit parts-per-million range or less, requiring expensive chemical beneficiation and reliance on a handful of specialised global deposits.

This electronics-grade silica commands astronomical prices, ranging from $5,000 to over $10,000 per tonne, underscoring its scarcity and strategic importance to the high-tech supply chain. Consequently, low-iron silica is now a strategic, supply-constrained commodity. Major industrial users are actively securing long-term offtake agreements and investing in regional supply sources, such as those in Australia and North America, to de-risk supply chains and guarantee access to quality feedstock, a trend that is expected to keep prices for premium grades elevated well above the general market average.

14.2.5 Silica Sand Demand and Market Growth

Global demand for silica sand is large and steadily growing, underpinned by industrialisation, urbanisation, and the renewable energy boom. In 2023, worldwide silica sand production was estimated at 320 Mt.

Glassmaking is the largest sector, accounting for roughly 38% (or 122 Mt in 2023) of industrial silica sand usage.

Flat glass and container glass together dominate global glassmaking, each with large but distinct markets. Container glass (bottles and jars) makes up around half of all glass produced and remains the largest segment, driven by the continuous need for food, beverage, and pharma packaging and bolstered by a push for sustainable, recyclable packaging solutions. Flat glass (windows, automotive and solar panel glass) constitutes roughly a quarter to a third of world glass production by volume and is growing faster thanks to construction booms and renewable energy projects.

Figure 59: Silica Sand Market Distribution – Wood Mackenzie December 2025

Type	Proportion	Mt
Container Glass	~45–50%	57
Flat Glass	~25–35%	36
Glass Fibre	~6–10%	9
Tableware/Domestic	~4–7%	6
Speciality/Technical	~6–12%	10
Miscellaneous	~1–3%	2

Source: Aggregated data from IFC, World bank, European container glass federation et al

Both flat glass and container glass output have been rising in Asia and the Middle East, driving strong demand for quality silica. Specialty glass for high-tech uses (e.g. LCD displays, fibre optics) also contributed to growth, particularly in East Asia (Japan and South Korea together used ~3.2 Mt of electronics-grade silica in 2023).

The foundry industry is the second-largest sector, using around 24% of global silica sand. In 2023, foundries consumed an estimated 78 Mt of silica sand for metal casting moulds and cores. Growth in foundry sand demand is tied to metal casting output (automotive parts, machinery, etc.), which remains robust in countries like China, India and the United States.

Hydraulic fracturing has emerged as a high-volume use with roughly 18% of silica sand used as frac sand. North America is the centre of frac sand demand. In 2023, over 63 Mt of sand was used in the United States and Canada for shale oil/gas operations. While global oil and gas activity fluctuates with energy prices, the trend towards more intensive well fracturing (higher sand per well) has kept proppant demand significant. Other application segments make up the remainder of silica sand usage.

The construction sector directly consumed over 42 Mt in 2023 (~12%) for uses like building sands, cement additives and traction sand. Ceramics and refractories accounted for roughly 25 Mt (~7%), used in glass fibre, whitewares, kiln linings and advanced ceramics. "Other" emerging uses including silica

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for chemical production (silicones, silicates), fillers in paint and plastics, filtration media, etc. comprised an estimated 7–8 Mt in 2023 (~2%). Geographically, demand is concentrated in industrialised and industrialising regions.

The Asia-Pacific region is by far the largest market for silica sand, accounting for ~44% of global consumption (over 140 Mt in 2023). China alone is the single biggest consumer as it not only has a huge construction and glass industry, but also a growing need for high-purity sand in electronics, solar panel manufacturing, and foundries for its manufacturing base. Rapid growth in South East Asian economies (Vietnam, Thailand, Indonesia, Malaysia) and India is also contributing to rising regional demand, particularly for construction sand and glass.

The North American market (United States and Canada) is also significant, driven by the fracking industry and steady glass/foundry sectors. The United States consumed 91 Mt in 2022 after a dip in 2020–21, mostly due to renewed fracking activity. Europe (EU countries, UK, Turkey, etc.) represents a substantial traditional market as well as glassmaking, foundries, and construction in Europe use tens of millions of tonnes of silica annually (for example, Italy, Germany, and France have large glass industries).

The Middle East is a smaller market in terms of volume but growing countries like the UAE, Saudi Arabia and Qatar have invested in glass manufacturing (for building and container glass).

Globally, Wood Mackenzie forecasts overall demand to grow between 3 and 5% per year to 2035. Key drivers include the global shift to solar energy (which massively boosts demand for low-iron sand (such as Diatreme's) for high quality glass required for PV panels), increasing urban construction (requiring float glass and concrete), and the recovery of automotive production (driving both glass and foundry castings demand).

It is worth noting that while overall demand is abundant, the availability of high-grade silica sand is tightening. Many easily accessible sand deposits (especially those near markets) are being depleted or diverted to construction use. Sand mining often occurs in environmentally sensitive locations, meaning ESG requirements have increased. This is creating supply-side pressures.

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14.3 PRICE ASSUMPTIONS FOR USE IN PROJECT ECONOMIC MODEL

The high purity silica sand price used for the PFS is US$55 FOB (A$80.9 FOB) over the LOM, slightly below the mid-point Base Case forecast of US$60 FOB by 2040 (real terms).

The financial analysis model is based on net proceeds at the domestic loading point (Port of Cape Flattery) for net sales revenue.

Diatreme also notes:

- For the purposes of this financial analysis, Diatreme has netted shipping, insurance and marketing related costs to arrive at an FOB equivalent revenue.
- There is no established reference point for silica product pricing generally, so all price discovery is around engagement with end users and by nature is subject to final negotiations between the parties.
- Final product pricing may vary depending on final product quality.
- All market engagement is at non-binding level only (apart from Sibelco's offtake share as per their Joint Venture holding percentage) – Diatreme will progress these to more binding arrangements appropriately relative to the Project's advancement.
- Assumes 100% of product into China for purposes of the modelling – some variations in shipping costs to Japan and other Asian markets.
- Australian based markets are also being explored.
- Markets for PV grade product are smaller into Japan/Korea/Taiwan markets but there is appetite for the product.
- Market risk diversification program into other than China based markets is underway and it is anticipated that up to 40% of total exported product may go to these alternate markets.
- Long term pricing assumptions are consistent with available peer analysis and public disclosures.

14.4 BROADER MARKET USE OF PRODUCT

While the PFS is based on PV Grade sales into the solar glass supply chain, silica sand serves a much broader set of markets. These provide diversification optionality for the Project as secondary product streams for off-specification material which may act as alternate markets should PV-grade qualification timelines extend, or if pricing reference points across the grade vary.

Flat & Container Glass

Silica sand is the principal raw material in soda-lime glassmaking, typically comprising around 70% of the batch by mass. Clear float glass (architectural and automotive) and colourless container glass require >99.5% SiO_2 with low iron and less stringent on impurities than solar cover glass. Product that narrowly misses PV specification, or size fractions outside the PV envelope, remains saleable into these segments at standard glass-grade pricing.

Speciality & Technical Glass

Low-iron architectural glass, borosilicate glass, and other technical glasses and glass fibre draw on high-purity sand, generally at premiums comparable to standard glass grades.

Foundry

Silica sand is the dominant moulding and core making medium for ferrous and non-ferrous casting. Requirements centre on consistent grain sizing and grain shape, thermal stability and low impurity levels, rather than ultra-low iron. APAC foundry demand is substantial and is partly already supplied by Australian sands.

Construction, filtration & leisure

Dried and graded sands supply speciality mortars, renders, tile adhesives and abrasives as well as water filtration media, and turf and golf course applications. These are lower value, and would generally serve only a domestic market, but importantly are tolerant of material outside PV grade glass specification.

Chemical & Metallurgical feedstocks

Silica sand is the feedstock for sodium silicate production and downstream silica chemistry. Silicon metal and ferrosilicon smelting typically require lump quartz rather than sand, however any development of Australian silicon processing capacity would broaden the domestic high-purity silica ecosystem.

Hydraulic fracturing proppant

Frac Sand requires high sphericity, roundness and crush strength to meet target specification. Some products from the Project may be suitable for these markets.

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15 Capital Cost Estimate

15.1 CAPEX SUMMARY

A CAPEX estimate was prepared and based upon PFS level Class 4 pricing and suitable engineering detail for process and non-process infrastructure by external consultants and internally sourced data by Diatreme's technical team.

The capital cost estimate includes all direct (process and non-process infrastructure) costs, indirect (owners and other) costs, contingency and other allowances. The tables below provide a summary of the capital cost estimate for the Project. Note that all costs provided in this section are in $AUD millions (unless stated otherwise).

The following principal data sources deliver up to date costings for the development and have been provided by a number of the consultants listed for involvement in the Project evaluation and development:

- Processing (CDE, CNBM, Wave International, various suppliers quotes and owners' data)
- Common Services (Wave International, various suppliers quotes and owners' data)
- On Site Infrastructure (Wave International, various suppliers quotes and owners' data)
- Off Site Infrastructure (Wave International, various suppliers quotes and owners' data)
- Pre-Production Cost (Wave International and owners' data)
- Owners/Indirects (Wave International and owners' data)

CAPEX requirements are split into the initial development costs for 3 Mtpa of product in Phase 1 and separated CAPEX for the Phase 2 expansion up to 5 Mtpa of total production.

Table 23: Capital Cost Estimate Summary

WBS	Description	Phase 1: 3 Mtpa Prod A$m	Phase 2: 5 Mtpa Prod A$m	Cumulative Totals A$m
1000	Mining	17.5	2.70	20.2
2000	Processing	73.9	18.8	92.7
5000	Common Services	42.6	2.8	45.3
6000	On Site Infrastructure	121.4	3.5	124.9
7000	Off Site Infrastructure	36.7	0.0	36.7
8000	Pre-Production Cost	6.7	0.8	7.5
9000	Owners / Indirect Cost	77.0	4.9	81.8
10000	Offsets & Rehabilitation	10.00	0.00	10.0
	Total excluding contingency	**385.6**	**33.5**	**419.1**
	Contingency (15%)	57.8	5.02	62.9
	Total including contingency	**443.5**	**38.5**	**482.0**

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15.2 BASIS OF ESTIMATE

15.2.1 General

The estimating methodologies used to determine the direct cost and the indirect cost were derived from a combination of quotations from equipment suppliers, Stochastic (factoring) and Analogy (like for like) and Deterministic (measurement) estimating techniques. These methods are considered accurate and suitable for the Class 4 estimate requirements of this PFS.

A PFS estimate such as this, where factors are used to determine capital cost based on the mechanical equipment value, is very dependent on the accuracy of the priced mechanical equipment list (both in terms of price and content). All attempts have been made to include sufficient equipment in the list as expected by the layout and similar, operating plants, noting the early stage of the study and engineering progress to date.

The following is a summary of basis of estimate utilised in the PFS:

- Mining:
  - Equipment quoted from suppliers
- Process Infrastructure:
  - Equipment quoted from supplier
  - Factored EPCM and indirect cost estimate
- Non process infrastructure:
  - Equipment quoted from supplier for onshore infrastructure
  - Equipment estimated from industry knowledge and comparative projects for offshore infrastructure
  - Factored EPCM and indirect cost estimate
  - Earthworks volumes estimated through civil engineering and drawings completed. Earthworks costs applied using known or comparative rates and industry standards.
- Project level indirect costs:
  - Factored estimate for project indirect costs, insurances and EPCM are based on schedule and direct cost estimates from supplier quotes.
  - Built up estimate for owner's costs and labour.
- Contingency:
  - Direct cost estimate of each line item.

15.2.2 Estimate Structure

A Work Breakdown Structure ('WBS') has been developed for the Project and will be used both in this PFS and future studies to provide a coding structure to define the Project scope, cost and schedule. The capital cost estimate is structured using the WBS, with individual cost line items in the estimate entered at level 3 of the WBS.

Within the WBS, each cost line item is further structured into categories of direct / indirect, discipline and supply / installation such that the resulting estimate can be analysed.

15.2.3 Foreign Exchange

The estimate has been prepared in Australian Dollars. The following exchange rates have been used where foreign currency inputs have been received.

Table 24: Foreign Exchange Rates

Currency	AUD$ exchange rate
US Dollars	$0.68

**Exchange rate is based on publicly published long term currency outlook (Westpac) as at July 2026.*

15.2.4 Estimate Constraints, Assumptions and Exclusions

The list below reflects the currently identified constraints and exclusions that are pertinent to this CAPEX estimate:

- force majeure issues;
- future scope changes;
- flooding delay costs or resulting construction labour stand down costs;
- foreign exchange cover;
- standing costs;
- access to the plant is from Hope Vale via the upgraded road;
- there is no allowance for a new airstrip;
- the facility is to be specified and constructed to suit a 25 year life-of-mine; and
- no allowance is made for escalation.

The estimate includes costs which have been rolled up into other WBS area. It should be noted where some areas have zero cost, the costs have been included as part of a package.

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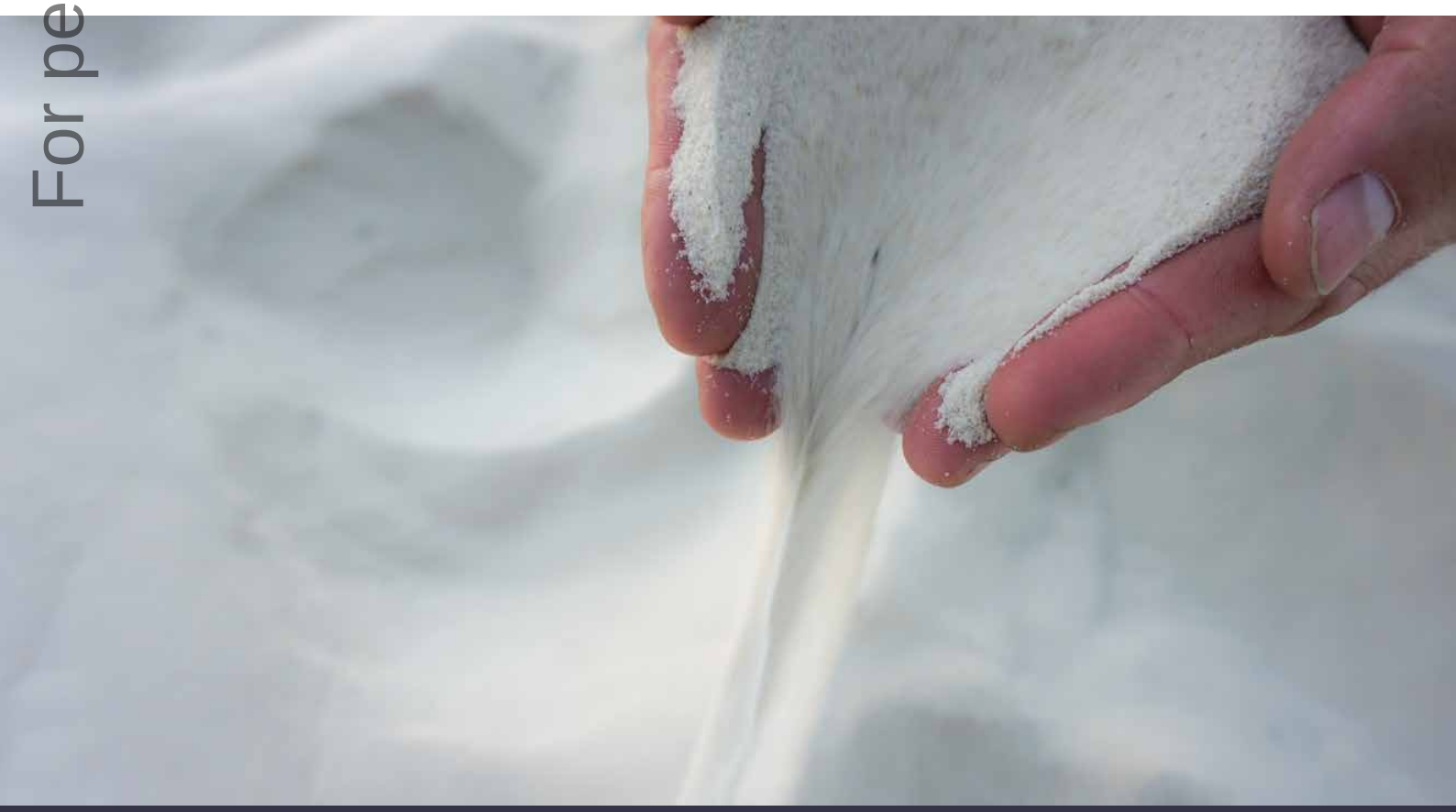

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16 Operating Cost Estimate

16.1 OPEX SUMMARY

An operating cost estimate ('OPEX') was prepared and based upon PFS level Class 4 pricing, underpinned by historical benchmark data, consultant input, and capital estimates for the Project.

The operating cost template is structured around the following cost centres:

- labour;
- flights and accommodation;
- fuel;
- maintenance;
- processing - reagents and consumables;
- equipment hire and lease;
- general expenses and contract;
- rehabilitation;
- port charges;
- environmental net benefit fund;
- community benefit fund; and
- estimated rehabilitation cost ('ERC') fee.

An operating cost estimate is shown for both the Phase 1 (3 Mtpa) development and the Phase 2 (5 Mtpa) expansion. If the Phase 2 expansion is completed it is expected that the operating cost will reduce and be representative of the life of mine operating cost.

Sustaining capital costs are factored as a percentage of CAPEX costs for items that will require end of life maintenance or upgrades through the Project lifecycle. These allocations cover items such as:

- slurry pipeline replacement and extensions;
- marine infrastructure replacement;
- mining equipment replacement; and
- power generation equipment replacement.

Table 25: Sustaining Capital Estimate

OPEX Item	3 Mtpa		5 Mtpa	
	A$/annum	A$/t Prod	A$/annum	A$/t Prod
Sustaining Capital	3,942,000	1.31	4,497,000	0.90

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Table 26: Operating Cost Estimate Summary

OPEX Item	3 Mtpa		5 Mtpa	
	A$/annum	A$/t Prod	A$/annum	A$/t Prod
Labour	16,301,000	5.43	16,301,000	3.26
Flights & Accommodation	648,000	0.22	649,000	0.13
Fuel	15,695,000	5.23	21,512,000	4.30
Maintenance	4,016,000	1.34	4,503,000	0.90
Processing - Reagents & consumables	7,000	0.002	11,000	0.002
Equipment Hire & Lease	1,512,000	0.50	1,648,000	0.33
General Expenses & Contract	1,900,000	0.63	2,293,000	0.46
Rehabilitation	2,185,000	0.73	1,060,000	0.21
Port charges (PN & CFSM)	11,445,000	3.82	19,075,000	3.82
Environmental Net Benefit Fund	500,000	0.17	500,000	0.10
Community Benefit Fund	500,000	0.17	500,000	0.10
ERC Fee	1,140,000	0.38	1,050,000	0.21
Total	**55,849,000**	**18.62**	**69,102,000**	**13.82**

Table 27: Operating Cost Distribution %

OPEX Item	3 Mtpa	5 Mtpa
Labour	29.19%	23.59%
Flights & Accommodation	1.16%	0.94%
Fuel	28.10%	31.13%
Maintenance	7.19%	6.52%
Processing - Reagents & consumables	0.01%	0.02%
Equipment Hire & Lease	2.71%	2.38%
General Expenses & Contract	3.40%	3.32%
Rehabilitation	3.91%	1.53%
Port charges (PN & CFSM)	20.49%	27.60%
Environmental Net Benefit Fund	0.90%	0.72%
Community Benefit Fund	0.90%	0.72%
ERC Fee	2.04%	1.52%

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17 Economic Analysis

17.1 SUMMARY

This section analyses the financial outcomes of the expanded development case incorporating the Phase 1 (years 1-2) and Phase 2 (years 3-25) Project development for a 25 year mine life, delivering 121 Mt of saleable product.

In addition to the expanded case, a conservative case has also been considered where the Phase 1, 3 Mtpa project, is developed and not expanded over the same 25 year mine life, delivering 75 Mt of saleable product.

The Phase 2 project expansion may be dependent on market conditions and product demand.

The financial model takes into account both phases of the Project and the financial evaluation in this chapter considers 100% of the Project's output and associated revenue and costs.

The financial model uses a discounted cashflow methodology to assess the financial viability of the Project. The financial model indicates that the Project delivers strong financial returns, even for the Phase 1 conservative 3 Mtpa development with no expansion.

Table 28: Economic Metrics

Key Economic Metric	Unit	Phase 1 only 3 Mtpa Production (no expansion)	Phase 1 & 2 5 Mtpa Production
NPV (pre-tax)	**A$m**	**$1,290**	**$2,419**
IRR (pre-tax)	**%**	**36%**	**46%**
NPV (post-tax)	A$m	$867	$1,661
IRR (post-tax)	%	29%	38%
Payback Years	years	4 Yrs(s)	4 Yrs(s)
Mine Life	years	25 Yr(s)	25 Yr(s)
Production over LOM	Mt	75 Mt	121 Mt
Construction CAPEX - Phase 1 (inc Contingency)	A$m	$443.5	$443.5
Construction CAPEX - Phase 2 (inc Contingency)	A$m	-	$38.5
Gross Revenue	A$m	$8,134	$13,123
Shipping and Insurance	A$m	$2,007	$3,239
Marketing	A$m	$61	$98
Net Revenue	A$m	$6,066	$9,787
*C1 OPEX Cost (FOB)	A$m	$1,397	$1,700
EBITDA	A$m	$4,571	$7,975
Net Free Cash Flow (Post tax)	A$m	$2,764	$5,048
***C1 Cash Cost (FOB)**	**A$/t**	**$25**	**$18**

**Excludes Sustaining Capital and Royalties*

Table 29: LOM Assumptions

LOM Assumption Metric	Unit	Value
Average FX	USD	0.68
Discount rate (real, unleveraged)	% pa	8
Average product yield (recovery)	%	80
Average sales price (FOB)	USD/t	$55
Average sales price (FOB)	AUD/t	$80.9
Shipping and Insurance	AUD/t	$26.8
Marketing	AUD/t	$0.81

17.2 BASIS OF ESTIMATE

The financial evaluation of the Project has made several assumptions, including:

- all physical tonnages are assumed to be dry;
- inflation or escalation is not considered, and future cash flows have been discounted using a real discount rate to generate the Net Present Value ('NPV') calculations; and
- working capital is considered in the financial model and standard accounting practices applied.

Given the factors above, once in operation the Project's working capital requirements are expected to be relatively stable. The financial model was constructed on a yearly basis. The financial model commences on the construction commencement date.

17.2.1 Silica Sand Pricing Assumptions

The product market and price forecasts used in the financial evaluation are detailed in the marketing chapter, and are based on a photovoltaic grade silica sand with an iron oxide (Fe_2O_3) content of 100ppm. The high purity silica sand price used for the PFS is US$55 FOB (A$80.9 FOB) over the LOM, slightly below the mid-point Base Case forecast of US$60 FOB by 2040 (real terms).

17.2.2 Taxations & Royalties

The fiscal regime applied to the Project in the financial evaluation is detailed in the following table.

Table 30: Summary of Tax and Royalty Assumptions

Fiscal	Assumption
Australian Corporate Tax	30%
GST	The financial model assumes the Project is GST neutral on a period by period basis.No GST has been assumed for initial working capital build up
Queensland State Royalty	A$0.90/wmt Silica Sand sold (Mineral Resource Regulation 2013)
Traditional Owner Royalty	2.0% of Project FOB Revenue (estimate)

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17.3 ANNUALISED CASH FLOW FORECAST

The annualised cashflow forecast including the cumulative cashflow over the LOM of the Project.

Forecast annual cashflows are consistent in real terms due to consistent Mineral Resource grade, consistent resource recovery rates, mining methods and product export profiles.

Figure 60: LOM Annualised and cumulative net cash flow – Expanded Project Case - Phase 1 and Phase 2 Development

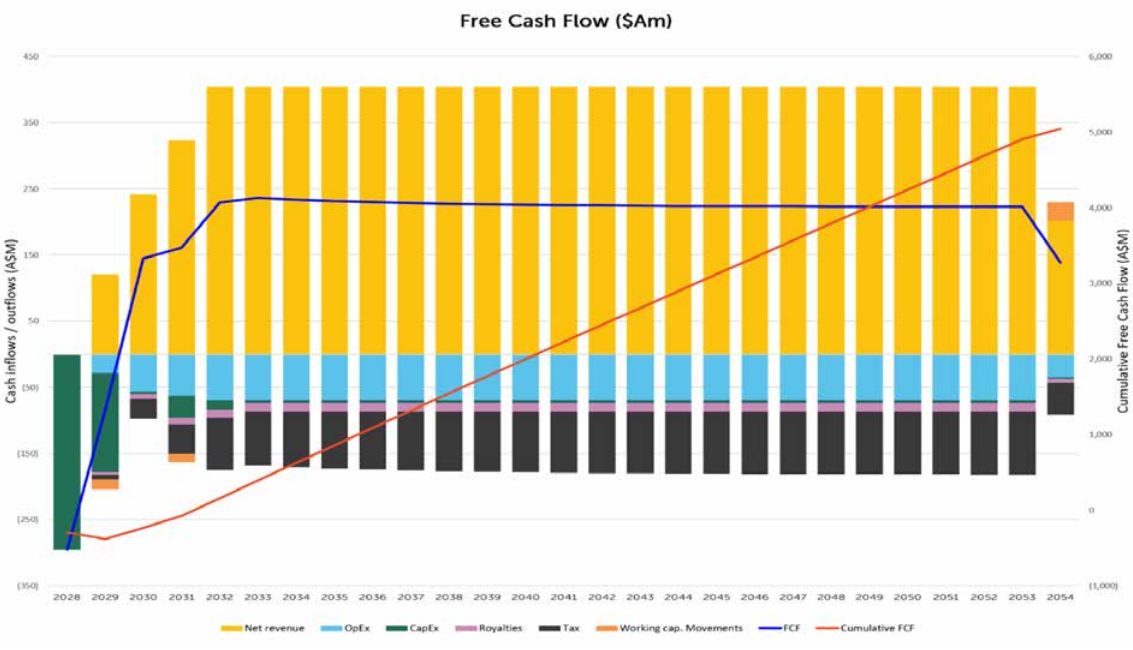
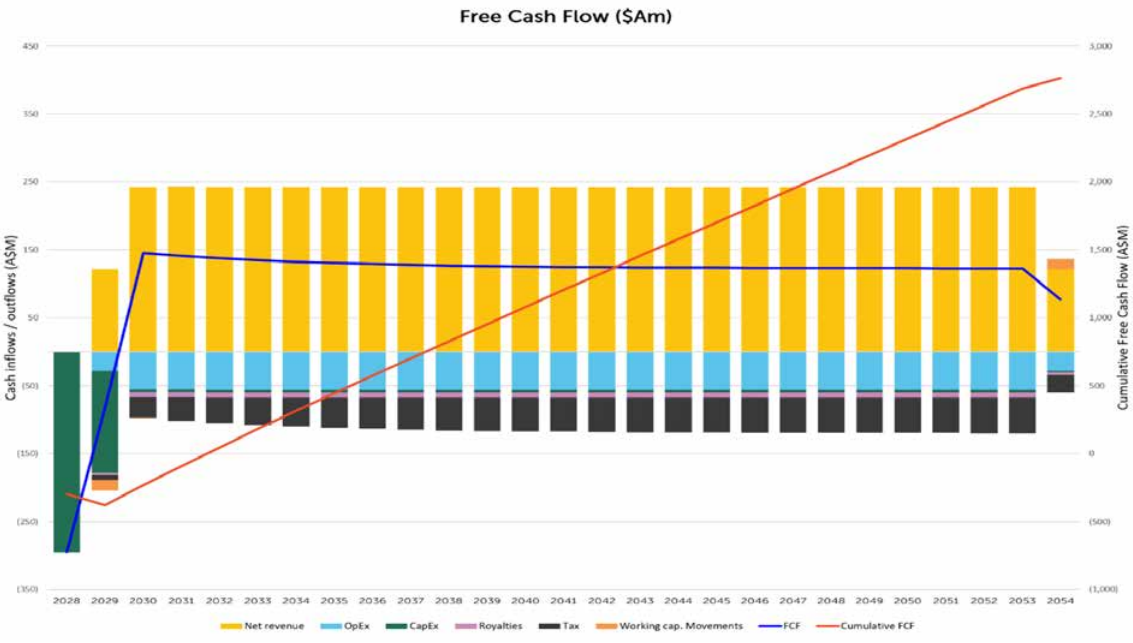


Figure 61: LOM Annualised and cumulative net cash flow – No Expansion Case - Phase 1 development to 3 Mtpa production and no expansion over the LOM



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17.4 SENSITIVITY ANALYSIS

Sensitivity analysis has been undertaken which presents how different key volatile variables may impact Project economics in certain circumstances.

This sensitivity analysis shows how the Project's key financial metrics (NPV, IRR, payback period) behave when certain key inputs move up or down. In the case of the PFS it has looked at the following key assumptions, and the following Tornado chart/s illustrates the Project's financial sensitivity to four key independent variables. This highlights that the Project is most sensitive to:

1. exchange rate;
2. silica sand price;
3. production tonnes; and
4. OPEX.

The following tables and graphs provide the sensitivity data for the Project's 3 Mtpa standalone case, and the expanded case to 5 Mtpa in Year 3.

Sensitivity analysis has been presented against post-tax NPV.

Table 31: Sensitivity Analysis Summary

Sensitivity Variable	3 Mtpa Standalone		5 Mtpa Expansion Case	
	NPV Min (A$m)	NPV Max (A$m)	NPV Min (A$m)	NPV Max (A$m)
Exchange Rate (+10%/-10%)	$668	$1,110	$1,349	$2,036
Silica Price (+10%/-10%)	$648	$1,085	$1,319	$1,999
Production Tonnes (+10%/-10%)	$747	$986	$1,457	$1,860
Operating Cost (+10%/-10%)	$812	$921	$1,593	$1,724

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Figure 62: Sensitivity Tornado Chart – Expansion Case

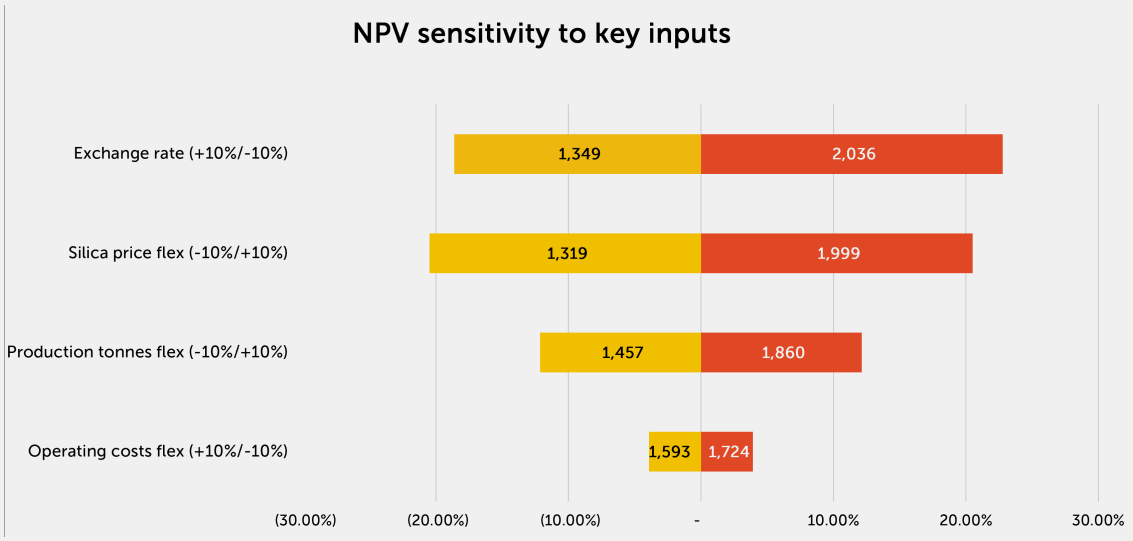
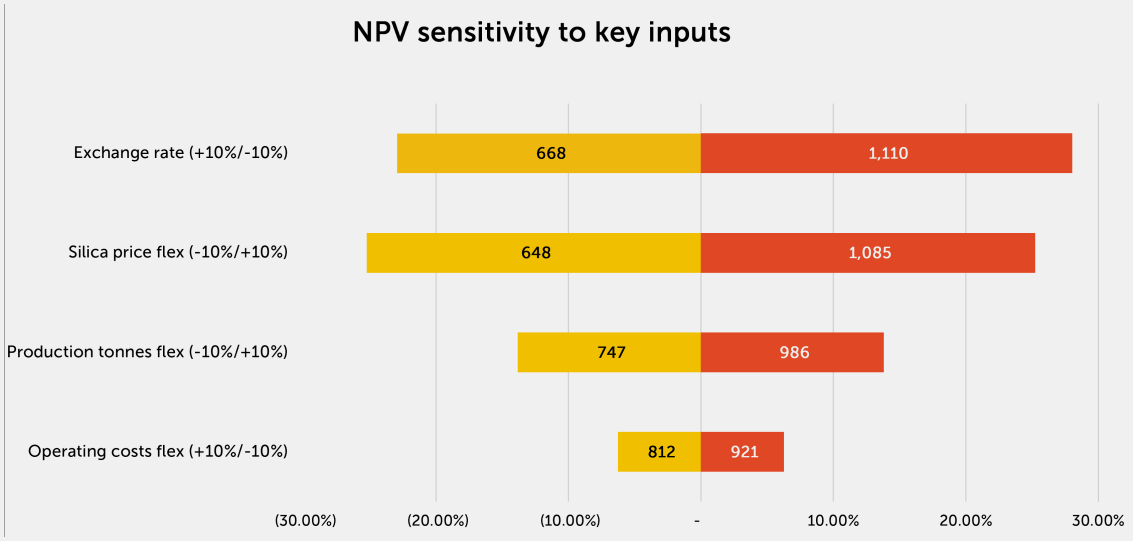


Figure 63: Sensitivity Tornado Chart - 3 Mtpa Standalone



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18 Ore Reserve Statement

18.1 SUMMARY

As outlined throughout this PFS document there have been significant works undertaken on all underpinning modifying factors required to be considered for the establishment of an Ore Reserve. Due to these assessments, it is considered that an Ore Reserve Estimate can be declared for the Si2 Dune System.

The Si2 Ore Reserve is:

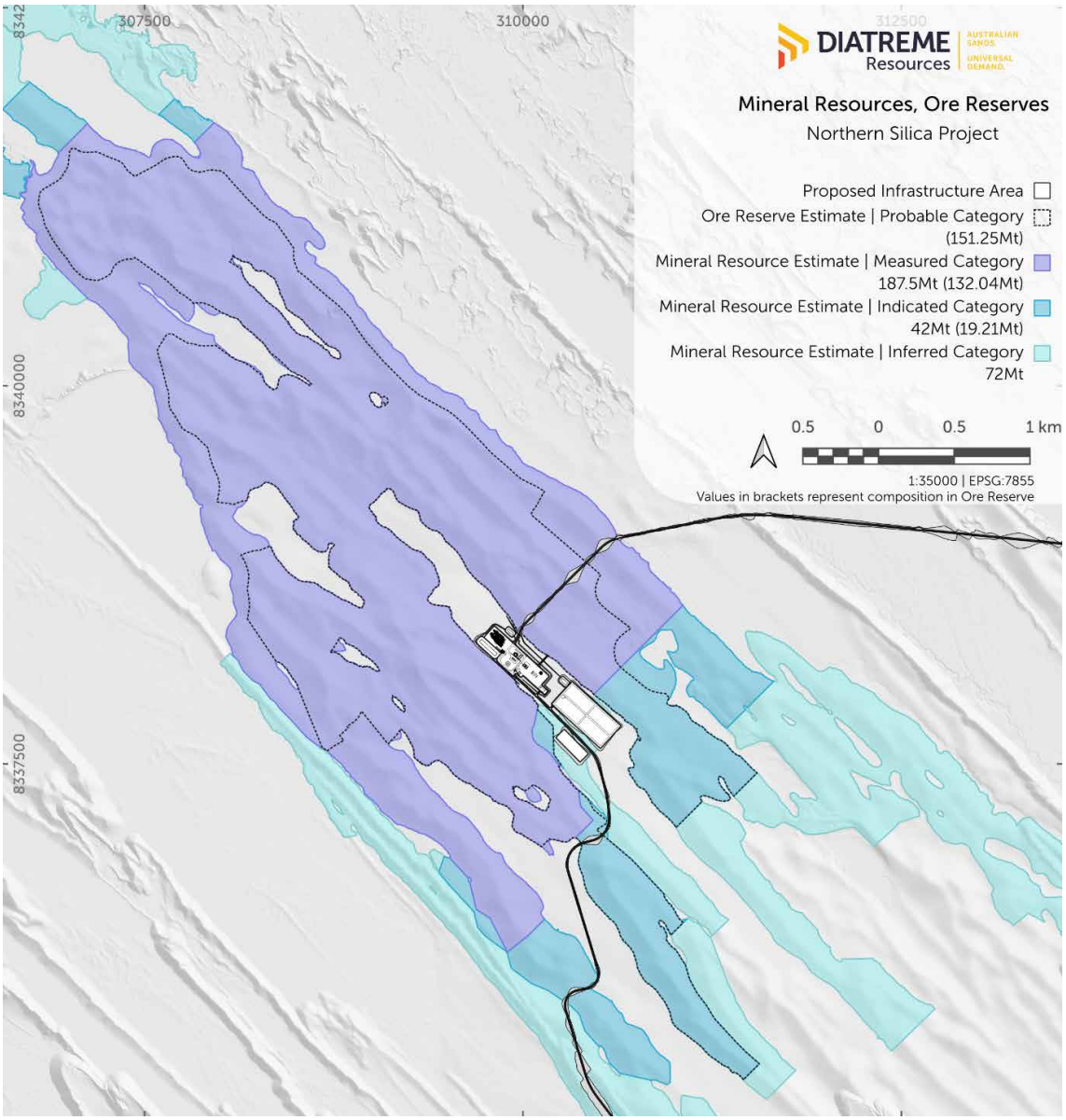
Table 32: Summary of Si2 Ore Reserve

JORC Category	Silica Sand (Mt)	Silica Sand (Mm^3)	Rejects (Mt)	SiO_2 %	Fe_2O_3 %	TiO_2 %	Al_2O_3 %	LOI %
Probable	151.25	91.66	30.25	99.25	0.10	0.14	0.11	0.14

Table 33: Average Silica Sand Grade by Mine Schedule Year

Year	SiO_2 %	Fe_2O_3 %	TiO_2 %	Al_2O_3 %	LOI %
1	99.37	0.08	0.09	0.10	0.16
2	99.37	0.08	0.12	0.11	0.16
3	99.23	0.11	0.15	0.10	0.10
4	99.28	0.10	0.13	0.12	0.10
5	99.24	0.11	0.15	0.13	0.13
6	99.35	0.11	0.13	0.11	0.16
7	99.40	0.09	0.11	0.10	0.16
8	99.36	0.13	0.16	0.10	0.12
9	99.28	0.11	0.13	0.11	0.14
10	99.22	0.14	0.17	0.10	0.13
11	99.22	0.11	0.16	0.08	0.12
12	99.34	0.08	0.12	0.07	0.12
13	99.34	0.11	0.15	0.10	0.13
14	99.35	0.09	0.13	0.11	0.14
15	99.43	0.07	0.10	0.11	0.13
16	99.27	0.08	0.13	0.14	0.17
17	99.33	0.08	0.12	0.12	0.14
18	99.17	0.12	0.14	0.13	0.13
19	99.05	0.13	0.18	0.11	0.12
20	99.29	0.07	0.09	0.09	0.09
21	98.82	0.12	0.15	0.23	0.19
22	99.05	0.11	0.12	0.13	0.14
23	99.02	0.13	0.17	0.12	0.22
24	99.21	0.10	0.14	0.10	0.15
25	99.29	0.09	0.13	0.11	0.16

Figure 64: Project Ore Reserves



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19 Project Risks

Throughout the Project development process key risks have been identified and recognised. These key risks can potentially affect the Project's development, and as such, form an integral part of forward looking business risk and focus. A summary of the key risks and mitigation actions / strategies is listed below:

Table 34: Key Risks & Mitigation Strategies

Key Risk Area	Risk Issue	Mitigation Actions / Strategy
People	• Availability of construction and operational staff to service the Project	• Early recruitment & training programs • Competitive remuneration benchmarked to the regional resources market • Early engagement with construction contractors • Staged operational ramp-up
Tenure	• Granting of Mining Leases for the Project, including a Mining Lease over an existing granted Mining Lease held by a third party	• Early proactive engagement with DNRMMRRD • Development of a co-existence plan • Conclusion of native title & land access agreements ahead of grant • Maintain tenure held in good standing, schedule contingency built around grant milestone
Port Use	• Full-User Access agreement is reached to enable Port use	• Commercial negotiation and execution of Full-User access agreement
Infrastructure and Equipment	• Procurement of key infrastructure and long lead times	• Advance ordering of long-lead items • Supplier pre-qualification and framework agreements with OEMs • Preference for modular/standardised equipment • Local fabrication where practical
Project Financing and exchange rate	• A suitable funding package is able to be obtained for the Project • AUD:USD exchange rate variation may impact project economics	• Advancement of appropriate technical studies to underpin financing discussions • Offtake agreements to support financing discussions • Staged capital deployment aligned to project phases • Investigate multiple funding sources and combinations • Continue to monitor exchange rates and re-evaluate project economics against updated long term exchange rate forecast during DFS stage.

Key Risk Area	Risk Issue	Mitigation Actions / Strategy
Approvals, regulation and Environment	• Granting of Project approvals occur in a timely manner • Approved development conditions are able to be met • Rehabilitation compatibility and success criteria • Air, noise and vibration emissions to sensitive receptors & habitat • Water licence is granted for the Project	• Bilateral EIS to ensure all Commonwealth and State approvals proceed simultaneously • PRCP included in EIS • Rehabilitation trials to commence during early development • Water licence is sought as part of EIS process
Mining and Technical	• Water table seasonal differences (inability to access mining areas) • Pockets of high iron contamination during mining • Variations in final product quality affecting product pricing	• 1 m vertical buffer from wet season water table, to ensure pit access is not subject to water table levels • Grade control drilling to ensure deleterious conditions are avoided. • Metallurgical process control

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20 Forward Work

The future work plan highlights key activities required prior to or during the next phase of studies. These items have been considered based on the Project implementation timeline and identified risks and opportunities.

The following key forward work items have been identified during the PFS as:

- ongoing permitting and approvals;
- ongoing engagement with Port stakeholders, including finalising a section 271AB co-existence plan to traverse a mining lease held by a third party;
- commencement of definitive feasibility study;
- ongoing engagement and consultation with local communities and local stakeholders;
- continuation of metallurgical testwork programs;
- negotiate and finalised Mining Project agreements and related section 31 native title agreement(s) under the NT Act with affected native title holders;
- negotiate a CHMP under the ACH Act (or include equivalent provisions within the MPA/native title agreement under the NT Act) with native title holders;
- Advancement of offtake agreements; and
- Advancement of financing discussions

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1 Appendix 1 - Glossary of terms

The following abbreviations are used throughout this report.

Table 35: Glossary of Terms

Abbreviation	Definition
ABN	Australian Business Number
AACE	Association for Advancement of Cost Engineering
ACH Act	Aboriginal Cultural Heritage Act 2003 (Qld)
APAC	Asia-Pacific
ALS	ALS Limited (analytical laboratory)
Al_2O_3	Aluminium Oxide (Alumina)
ASX	Australian Securities Exchange
AUD	Australian Dollars
AusIMM	Australasian Institute of Mining and Metallurgy
BESS	Battery Energy Storage System
BV	Bureau Veritas (analytical laboratory)
CAPEX	Capital cost estimate
CEMP	Construction Environmental Management Plan
CFSM	Cape Flattery Silica Mines
CHMP	Cultural Heritage Management Plan
CRM	Certified Reference Material
CY	Calendar Year
Diatreme	Diatreme Resources Ltd
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortisation
EIS	Environmental Impact Statement
EMS	Environmental Management System
EMP	Environmental Management Plan
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Cth)
EPCM	Engineering, Procurement, Construction, Management
EPM	Exploration Permits for Minerals
ERC	Estimated Rehabilitation Cost
ESG	Environmental, Social, Governance
Fe_2O_3	Iron Oxide
FIFO	Fly-In Fly-Out
FOB	Free on Board or Freight on Board
FX	Foreign Exchange
GBRMP	Great Barrier Reef Marine Park
GHG	Greenhouse Gas

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Abbreviation	Definition
GST	Goods and Services Tax
HCAC	Hopevale Congress Aboriginal Corporation
HDPE	High Density Polyethylene
HV	Heavy Vehicle
ICP	Induced Coupled Plasma Mass Spectrometry
IDW	Inverse Distance Weighting
IRR	Internal Rate of Return
JORC	Joint Ore Reserves Committee
ISO	International Organization for Standardization
JV	Joint Venture
ktpa	Thousand tonnes per annum
kW	Kilowatt
kWh	Kilowatt hour
LAT	Lowest Astronomical Tide
LiDAR	Light Detection and Ranging
LOI	Loss on Ignition
LOM	Life of Mine
LRF	Littoral Rainforest & Coastal Vine Thickets of Eastern Australia Threatened Ecological Community
LV	Light Vehicle
MCA	Multi Analysis Criteria
MCC	Motor Control Centres
MIA	Mine Infrastructure Area
ML	Megalitre
MLA	Mining Lease Application
MMU	Mobile Mining Unit
MNES	Matter of National Environmental Significance
MPA	Mining Project Agreement
MOP	Mining Operations Plan
MOU	Memorandum of Understanding
MR Act	Mineral Resources Act 1989 (Qld)
mRL	Metres Reduced Level
Mt	Million tonnes
MT	Mineral Technologies
Mtpa	Million tonnes per annum
MW	Megawatt
MWh	Megawatt Hour
NPV	Net Present Value
NWWT	Non-Weather Working Time
OGV	Ocean Going Vessel
OPEX	Operating cost estimate
PDCA	Plan-Do-Check-Act

Abbreviation	Definition
PFS	Pre-Feasibility Study
PLC	Programmable Logic Controller
PN	Ports North
ppm	Parts per million
PRCP	Progressive Rehabilitation and Closure Plan
Project	Northern Silica Project
PSD	Particle Size Distribution
PV	Photovoltaic
QA	Quality Assurance
QLD	Queensland, Australia
RHM	Regional Harbour Master
RNTBC	Registered Native Title Body Corporate
ROM	Run of Mine
RTN	Right to Negotiate
SDPWO Act	State Development and Public Works Organisation Act 1971 (Qld)
Si2	Name of the predominant deposit within the Project
SIA	Social Impact Assessment
SIMP	Social Impact Management Plan
SSRC	Strong and Sustainable Resource Communities Act 2017 (Qld)
TEC	Threatened Ecological Community
tpd	Tonnes per Day
tph	Tonnes per hour
ToR	Terms of Reference
UAV	Unmanned Aerial Vehicle
UCC	Up Current Classification
USD	US Dollars
WAC	Walmbaar Aboriginal Corporation
Wave	Wave International
WBS	Work Breakdown Structure
WCP	Wet Concentrator Plant
WHIMS	Wet High Intensity Magnetic Separator
VSD	Variable Speed Drive
XRF	X-Ray Fluorescence

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APPENDIX 2: JORC TABLE 1

SECTION 1: SAMPLING TECHNIQUES AND DATA

CRITERIA	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 representivity 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.	• For drill holes reported PLT001 to PLT247, Vacuum drilling samples were collected in 1m intervals, before being passed through a single-tiered 50/50 riffle splitter. The sample was sent to ALS Brisbane from which 250g was pulverised to produce a fused bead before being assayed by method code ME-XRF26. • For drill holes reported Si20001 through to Si20076, Aircore drilling samples were collected in 1m intervals (~2kg) after passing through a single-tiered (50/50) riffle splitter. The sample was sent to Bureau Veritas in South Australia from which 150g was pulverised to produce a fused bead before being assayed by method code XF100. • For drill holes reported Si20077 through to Si20082, Aircore drilling samples were collected in 1m intervals (~2kg) after passing through a single-tiered (50/50) riffle splitter. The sample was sent to ALS Brisbane from which 250g was pulverised to produce a fused bead before being assayed by method code ME-XRF26. • For hand auger hole reported AH001, hollow stem auger samples were collected in 1m intervals (~2kg) after passing through a single-tiered (50/50) riffle splitter. The sample was sent to Bureau Veritas in South Australia from which 150g was pulverised to produce a fused bead before being assayed by method code XF100. • For hand auger holes reported Si2HA0002 to SI2HA0013, hollow stem auger samples were collected in 1m intervals (~2kg) after passing through a single-tiered (50/50) riffle splitter. The sample was sent to Bureau Veritas in South Australia from which 150g was pulverised to produce a fused bead before being assayed by method code XF100. • For hand auger holes reported Si2HA0014 to SI2HA0061, hollow stem auger samples were collected in 1m intervals (~2kg) after passing through a single-tiered (50/50) riffle splitter. The sample was sent to ALS Brisbane from which 250g was pulverised to produce a fused bead before being assayed by method code ME-XRF26. • For hand auger holes reported Si23001H to Si23130H, hollow stem auger samples were collected in 1m intervals (~2kg). These samples were not sent for assay, instead were used primarily as geological observations. The full sample has been retained for any future analysis. • For drill holes reported Si21001 through to Si210088, Aircore drilling samples were collected in 1m intervals (~2kg) after passing through a single-tiered (50/50) riffle splitter. The sample was sent to Bureau Veritas in South Australia from which 150g was pulverised to produce a fused bead before being assayed by method code XF100. A second analysis program (focussing on grade of a particular size fraction) was conducted on the Si21 series drill holes. The original sample material was composited into nominal 3m composites and submitted to ALS Brisbane for sieving into three fractions +710µm, -710µm+106µm and -106µm. The respective fractions were then weighed, followed with the 710µm+106µm fraction pulverised and assayed by method code ME-ICP64. • For drill holes reported Si220001 to Si220153, Aircore drilling samples were collected in 1m intervals, before being composited by scoop into nominal 3m samples (~1kg). This material was submitted to ALS Brisbane for sieving into three fractions +710µm, -710µm+106µm and -106µm. The respective fractions were then weighed, followed with the 710µm+106µm fraction pulverised and assayed by method code ME-ICP64. In addition a sample representing the full

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CRITERIA	EXPLANATION	COMMENTARY
		particle size distribution was split, pulverised and then assayed by ME-XRF26. • For drill holes reported Si24001 to Si24028, Aircore drilling samples were collected in 1m intervals before being composited by scoop into nominal 2-6m composites controlled by lithological variables (~1kg). This material was then submitted to ALS Brisbane from which 250g was pulverised to produce a fused bead before being assayed by method ME-XRF26. • Mr Watson considers the quality of the sampling method to be fit for the deposit style, and the stage of exploration, given the homogenous nature of this silica sand deposit.
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.).	• Three (3) types of drilling have been utilised for exploration, Aircore (AC), Vacuum (VX) and Hand Auger (HA). • AC drilling was by a track mounted drill rig with a 3" blade bit, and a rod length of 3m. • VX drilling was by a tractor mounted drill rig with a 60mm diameter blade bit, and a rod length of 1.8m. • Hand Auguring (HA) was conducted using a Dormer Sand Auger with an internal diameter of 2". • Aircore and Vacuum drilling was to refusal, which occurs at geologically determined contact such as clayey sands at the base of mineralisation, or a water table. This is due to the limitations of AC drilling at the water table, and limitations of the AC drill rig when penetrating the clay layers. • Mr Watson considers the quality of the sampling method to be fit for the deposit style, as mineral sands are easily contaminated, or recoveries can be poor and not representative using other drilling methods.
DRILL SAMPLE RECOVERY	• Method of recording and assessing core and chip sample recoveries and results assessed. • Measures taken to maximise sample recovery and ensure representative nature of the samples. • Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	• Since 2024, sample recovery is monitored at the rig by recording sample mass of each 1m interval to observe for the presence or deviation from a consistent sample size. Weighing of samples at the drill site was not undertaken in a systematic manner in prior years. In the absence of systematic weighing, sample recovery was visually monitored on the rig for a consistent sample size. • Sample recovery is maximised within a closed system from the drill bit to the riffle splitter. • After encountering wet clays, sacrificial rods are drilled into clean dry sand, to flush out any contamination through the drilling hoses, prior to drilling the subsequent drill hole. • No relationship between recovery and grade has been observed, as the orebody is relatively homogenous. • Correct interval delineation on AC drilling is achieved with metre intervals marked on the drill mast, and samples are collected when the base of the top drive reaches a metre interval.
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.	• All drill holes have been logged in their entirety, with qualitative descriptions of grain size, sphericity, roundness, moisture content, lithology, and colour recorded. • Photography is captured on a chip tray basis firstly at the drill rig, and then later on a chip tray compartment by compartment basis when samples have dried. • Sample photography in a controlled setting using Imago software with a Canon EOS R5 and a Canon 24-50mm lens , a hexadecimal colour value is extracted from the imagery, and the RGB values are derived through python scripts. Colour photography is verified against a Calibrite ColorChecker. • The quality of logging is sufficient for this stage of exploration.
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.	• Prior to 2023, VX and AC samples were riffle split after the cyclone, and placed in sample bags representing 1m intervals. • Since 2024, AC samples were scooped from the sample bags representing 1m intervals, and composited to a nominal 3m composite. The single scoop is approximately 330g in mass. • Where sample preparation was completed at ALS in Brisbane. Full samples are dried at 105°C, then weighed

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CRITERIA	EXPLANATION	COMMENTARY
	• 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.	(WEI-22g), then a split is screened (SCR-61) into three size fractions +710µm, -710µm+106µm and -106µm, with a split of the raw sample retained. A nominal 150g split of the raw sample, and a nominal 150g split of the -710µm+106µm fraction are then pulverised using a tungsten carbide ring mill (PUL-33), prior to being assayed. During 2024, the full sample was assayed, and a subsample was sieved into target fractions. • Where sample preparation was completed by BV in South Australia. Samples progressed through the PR001 method where samples are sorted, weighed wet, and then dried at 105°C, samples are then split using a rotary sample divider, and volumetrically weighed to a nominal 150g before undergoing the PR305 method where samples are pulverised in a tungsten carbide bowl. • The Competent Person considers that the -710µm+106µm size fraction does not represent a final "product" grade, as heavy minerals are not removed through the sieving process, nor is the material washed, whereas in a final target specification, both of these processes would be undertaken. • The PUL-33 method has a QC check on a 20g split to ensure >85% passes -75µm • Coarse flushes of an unpulverized sample matching ELIM22 CRM have been introduced to both clean the lab pulveriser between drill holes, and test for any contamination. ELIM22 was prepared by OREAS, specifically for silica sand material in the Cape Bedford / Cape Flattery dune systems. • Field duplicate results are validated upon receipt of lab results, particular attention is paid to Fe_2O_3, and TiO_2. • A coarse flush of the raw ELIM22 sample is included after intersecting a deleterious horizon – and this is used to clean the Tungsten Carbide ring mill / pulveriser at ALS Brisbane. All samples are pulverised sequentially through the same pulveriser. • Crushing is not required as the grain size of the sample material is suitable for pulverizing. • Mr Watson considers the drill sample sizes as appropriate for the grain size of the material, the style of mineralisation and the nature of the drilling program. • These methods are determined to be appropriate by the Competent Person to avoid sample carry-over contamination, in addition Cr_2O_3 is monitored to ensure that pulverisation is performed in a non-ferrous pulverising bowl.
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 (i.e. lack of bias) and precision have been established.	• As ME-XRF26, and XF100 methods are considered a total digest, it is considered appropriate for silica sand when assessing full sample geochemistry. • Loss On Ignition (LOI) determined by thermogravimetric analysis (TGA) using method code OA-GRA05x or ME-GRA05 at ALS or TG002 at Bureau Veritas) and, where a sample is placed in a furnace at ambient temperature and then heated to 1000°C, and then weighed. • Field duplicates were submitted at a nominal rate of 1 in 25 in line with the quality assurance procedure. Prior to 2023, this was nominally 1 in 50. • CRM (ELIM22) is utilised every 33rd sample. This CRM was introduced to the program in 2022. It has been noted that the variability in this sample has broadened in recent years, and that the number of samples submitted to the laboratory during drilling programs far exceeds the sample rates submitted during initial certification. • Either CRM NCS 60116a or NCS 60117a are used 2 in 100 – for samples drilled after 2024 • The quality control procedures adopted by Diatreme establish an acceptable level of accuracy and precision. Bureau Veritas, and ALS conduct their own internal checks, and these results have been provided to Diatreme and are monitored by both parties as part of the quality control process.

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		• The variability observed between the primary sample and the field duplicate assay results are considered appropriate for the style of mineralisation by the Competent Person.
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	• Mr Watson and various Diatreme Resources' Exploration Geologists have personally inspected all sample intervals. • Several twinned holes have been completed, with minimal sampling bias observed, the only difference being the depth of refusal changed which is considered to be related to seasonal changes groundwater levels. • Collar and geological logging is captured by and stored within the geological logging/database software MX Deposit, in accordance with company procedures. • Photographic data is captured, and stored within Imago, a software package that acts as a repository and analysis tool for geoscientific imagery. • Assay data is recorded, and stored in MX Deposit, a drill hole Database software. • No adjustment has been 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 drill hole locations have been surveyed using Spectra Precision SP60, with a Trimble RTX CenterPoint DGPS correction ± 0.05m on the horizontal plane. • The collar data is recorded in the UTM coordinate system: Map Grid of Australia 1994 (MGA94) Zone 55, this is then reprojected to GDA2020 Zone 55 for compatibility with other spatial files. • All drill holes are shallow and vertical, no down-hole surveying is conducted. • Digital elevation models derived from LiDAR (December 2022) were used as the topographic surface to generate RL's for each collar. The DEM was generated via a cloth simulation function, using an approximate 10 ground classified points per square metre. Relative accuracy is considered to be ± 0.1m.
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.	• Auger drilling occasionally is performed at the edge of a given dune to provide geological observations of the contact between the eluviated sand and the illuviated horizon. • First pass drilling spaced nominally at 380m along dune crests, and infill drilling at a nominal 180 - 200m along the trailing arm of an elongate parabolic dune, and in the interdunal valleys, although the Competent Person considers data spacing at these intervals are not a material constraint on the development of geological grade or geological continuity, and as such, the Competent Person considers the data spacing to be more than appropriate for this style of deposit, at this stage of exploration. • Select samples have been composited to nominal 3m intervals, following recommendations from a variability assessment completed by Measured Group in 2024, and also on an assessment that the 3m compositing also aligns with likely SMU's for the deposit. This is defined in further detail in the Sampling Techniques section of this Table.
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 deposit style is an unlithified aeolian sand deposit, comprised of a series of complex parabolic and elongate parabolic dune systems which are repeatedly deflated and are superimposed upon older dune systems. • The mineralisation process (podsolisation) is gravitationally controlled. The Competent Person has determined that vertical drilling intersects the bedforms at an angle which represents the true width of mineralisation. • The orientation of heavy mineral bedding (if present) is considered immaterial due to the processing methods of silica sand. The main grade control on economic extraction is the podsolisation profile. • No sampling bias is introduced by the orientation of drilling.
SAMPLE SECURITY	• The measures taken to ensure sample security.	• Sample bags were sealed by cable-tie, and transported in polywoven bags, then securely stored in a locked yard on-site until transported by courier to the respective labs.

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		• Transport chain of custody forms have been reviewed for each sample dispatch. • Submission reconciliation reports are provided by the laboratory and checked against the sample submission forms.
AUDITS OR REVIEWS	• The results of any audits or reviews of sampling techniques and data.	• An audit in 2025 of the drill hole database was conducted by Measured Group. • A review of the sampling techniques was conducted by the Competent Person in 2025, indicating compliance to internal standards.

SECTION 2: REPORTING OF EXPLORATION RESULTS

CRITERIA	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.	• These Exploration Results comprise exploration on the Si2 Deposit, which is the mineral resource within the Northern Silica Project, which is located adjacent to the coastline in Far North Queensland, approximately 53km north of Cooktown. The project is adjacent to the south of the Cape Flattery Silica Mines (CFSM) Mining Lease. CFSM has been in operation since 1967 and is Queensland's largest producer of high purity silica and is reported to have the highest production of high purity silica sand of any mine historically. • The project is located at the northern end of the Cape Flattery/ Cape Bedford dune field complex within the Exploration Permits for Minerals (EPM) 17795 & 27212. • Most of the EPM, and the entirety of the Si2 Deposit is located on one land title, Lot 35/SP232620, a freehold lot of 110,000 hectares. • The Project and EPM is in the Mareeba Mining District and falls within the Hope Vale Aboriginal Shire Council area. This lies approximately 35km north of the township of Hope Vale, with a population of approximately 1,500 in the Hope Vale Aboriginal Shire Council. • EPM 17795, EPM 27265, EPM 25734, EPM 27212, and EPM 27430 comprise an "exploration project PROJ310". • PROJ310 is an extensive EPM package comprising approximately 485km2 covering the majority of the Cape Flattery-Cape Bedford Quaternary dune field complex. • PROJ310 is owned by Cape Silica Holdings Pty Ltd and its subsidiaries, which is a Joint Venture between Diatreme Resources 73.2% and Sibelco Silica Pty Ltd 26.8%. • Diatreme was granted a renewal on EPM 17795 "Cape Bedford" until 21 June 2026 based on continued targeting of heavy mineral sands and silica sand. The EPM was granted under protected Native Title Protection Conditions. As of October 2026, the tenure is in good standing. A renewal has been submitted for EPM 17795, EPM 27212, and EPM 27430. • The NSP / SI2 deposit area is covered by Mining Lease Applications (ML 100550, ML 100551, ML 100552, ML 100553, and ML 100313, currently undergoing approvals processes.
EXPLORATION DONE BY OTHER PARTIES	• Acknowledgment and appraisal of exploration by other parties.	• Exploration for silica sand has been undertaken in the Cape Flattery – Cape Bedford area in 11 Authorities to Prospect (ATP's) or Exploration Permits for Minerals (EPMs) since the 1960's. In general, past exploration of the dune field has primarily focused on the prominent active parabolic dunes of clean white silica sand. • Historical exploration activities missed the Si2 Deposit in its entirety, until discovery by Diatreme Resources in late 2021. • As there are no assay certificates for this historic data, and the locations of which are dubious, the data is considered qualitative and is not used for Mineral Resource Estimation, or Exploration Targeting.

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CRITERIA	EXPLANATION	COMMENTARY
GEOLOGY	• Deposit type, geological setting and style of mineralisation.	• The Northern Silica Project is comprised of unlithified aeolian dune complexes. • The Cape Flattery & Cape Bedford dune fields are aeolian dunes established in the Pleistocene epoch and regularly remobilised during the Pleistocene and Holocene epochs. The dune fields are situated on a coastal plain overlying the Hodgkinson Formation basement with Dalrymple Sandstone forming mesa on basement highs. • Mineralisation is thought to be due to repeated eluviation and illuviation events on immobilised dune systems comprised of an existing quartzose sand source, with reactivated dune systems also exhibiting mineralisation. Intradunal valleys tend to be a surface expression of the B1 horizon, and typically are not considered mineralised. • Deleterious metals are thought to have been eluviated by organic acids, which are transported by gravity through the stratigraphic column and illuviated either by binding to clay rich horizons, or transported away from the deposit through the water table.
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 not detract from the understanding of the report, the Competent Person should clearly explain why this is the case	• All material collar information for drill holes has been aggregated in the Table of Material drill holes and Results attached in this appendix to this report.
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 aggregation used in this report is a calculation of the mean average for each reported variable across the respective mineralised profile for that drill hole. • All intercepts have been aggregated in the Table of Material drill holes and Results attached in this appendix to this report.
RELATIONSHIP BETWEEN MINERALISATION WIDTHS AND INTERCEPT LENGTH	• 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').	• All drilling was vertical (-90°) intersecting undulating flat-lying aeolian dune sands. • Downhole length correlates with true width of mineralisation. • The deposit is a large homogenous mass of eluviated aeolian sands. Intercept length is an order of magnitude smaller than the mineralisation width. The eluviated zone is gradual, with in most cases a distinct delineable contact for the illuviated zone.
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	• Plan view of drill hole collar locations and appropriate sectional views are contained in this report.

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	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 mineralised silica sand results used in the estimation of this Mineral Resource are reported. • Where the results in the table are not published, there is either organics present in the first metre, or unmineralized sands / sandy clays below the mineralised horizon. The acknowledgement of these intervals/zones are considered material in the context that they exist and are used to constrain the resource geometry, but the results are considered immaterial in the context of populating the grade model.

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.	• Fe_2O_3 percentage is the most significant limiting factor on conversion of naturally occurring silica sand (in this region) to high purity silica sand product and determines value after SiO_2 percentage.
		• Fe_2O_3 when found in association with TiO_2, does not act as a contaminant or barrier to refining high- purity silica sand, with metallurgical testing showing gravity separation to accurately remove this impurity.
		• Colour (oranges, yellows, reds) tend to be a significant - but not limiting – indicator on the identification of deleterious or low yielding sands.
		• For the 1t bulk sample, a nominal 850g was composited from each of 1147 intervals drilled in 2023 representative of the first few years of proposed mining.
		• Geochemical results were performed at ALS Brisbane using ME-XRF26 for head grade & lower purity samples, and ME-PKG85 for higher purity product samples. ME-PKG85 and ME-XRF26 are considered a full digest.
		• Metallurgical testwork was performed at various locations globally and consisted of various benchtop and bulk scale tests. All tests followed the same target process being:
		  • Sample homogenisation, and sub sampling
		  • Sieving and retaining the -1mm+0.045mm product stream
		  • Sieving and retaining the -0.710mm+0.106mm product stream sample
		  • Gravity separation, either using spirals or heavy liquid separation
		  • Attritioning, with various residence times, and solids %, followed by up current classification.
		  • Various magnetic tests, depending on the scale of the sample
		  • The Non Magnetic fraction is then considered representative of final product for this stage of study.

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.
		• Mr Watson recommends the following programs to increase geological confidence on the deposit.
		  • Undertake sizing analysis and ICP (or other suitable low Fe_2O_3 detection limit assay) on samples from 2021 & 2022 programs, and maintaining this on future drill programs.
		  • In particular, the B1 horizon needs to be checked and tested in the interdune locations by drilling, or geological observations with hand augering to assist better defining geological continuity and support potential upgrade areas.

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		• Further study stages may require an improved understanding of environmental and cultural constraints (currently being identified through an EIS) relevant to the development of the deposit. • Maintain regular bulk density measurements in future drill programs. • Complete mineralogical analysis on Fe bearing minerals (such as surface coats, and inclusions) within the silica sands, and with respect to the relevant size fractions. • Establishment of a geometallurgical model to underpin the relationship between head grade and amenability to processing. • Submission of samples for umpire checks and bulk density assessment, is underway. • Testing of lateral extensions of the deposit toward the Southeast • Maintain the routine use of Certified Reference Materials (CRMs) to monitor and validate assay accuracy for primary and deleterious elements. • Geochemical analysis of the +710µm and -106µm fractions • Maintain regular collection of bulk density measurements to support accurate tonnage estimation. • Verify and refine the interpretation of topsoil thickness across the resource area, considering the observed variability in vegetation density.

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SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES

CRITERIA	EXPLANATION	COMMENTARY

DATABASE INTEGRITY	• Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.
	• Data validation procedures used.
		• The Mineral Resource Estimate for the Si2 Deposit is based on information provided by CSHPL. Mr Watson considers it appropriate and reasonable for the purpose of estimating Mineral Resources in accordance with the guidelines of the JORC Code (2012).
		• The data used for resource estimation, includes but was not limited to:
		  • drill hole collar information, including total hole depths;
		  • drill hole lithological logging data;
		  • Sample data, including sample intervals and assay results
		  • Metallurgical testwork results;
		  • Density measurements;
		  • Quality Assurance/Quality Control (QAQC) data.
		• Data validation procedures included checks on collar locations, assay results against laboratory certificates, lithological coding consistency, and QAQC performance. No material data errors were identified.

SITE VISITS	• Comment on any site visits undertaken by the Competent Person and the outcome of those visits. • If no site visits have been undertaken indicate why this is the case.	• The Competent Person (Mr Watson) has undertaken quarterly site visits since 2021. During the visits, active drilling and sampling procedures were observed, and field observations were made of the dune field characteristics. The site visit confirmed that drilling practices, sampling methods, and geological interpretations were consistent with the data provided.
GEOLOGICAL INTERPRETATION	• Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. • Nature of the data used and of any assumptions made. • The effect, if any, of alternative interpretations on Mineral Resource estimation. • The use of geology in guiding and controlling Mineral Resource estimation. • The factors affecting continuity both of grade and geology.	• The Si2 Deposit is located within the Cape Bedford–Cape Flattery Dune Field. Silica sand mineralisation is predominantly hosted within the trailing arms and apices of elongate parabolic aeolian dunes. • The Mineral Resource is generally constrained to these dune features, which are clearly defined by surface LiDAR imagery. Drilling often intersects overlapped dunal features, which are not represented by LiDAR or aerial photography. • Interdunal areas are often devoid of thick aeolian sand and predominantly exhibit exposed B1 horizons, clays, bedrock, or other sediments. Where drilling has intersected obscured silica sand mineralisation, the sampled sand has been included in the geological model. • There is an observable basement high coincident with the topographic high towards the coastline on the western dunes. • The interpreted geology of the Si2 Deposit is considered robust, and alternative interpretations are unlikely to materially impact the Mineral Resource Estimate.
DIMENSIONS	• The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	• The Mineral Resource Estimate spans a total area of 1611 hectares with varying dimensions: a maximum length along strike of 10.5 km and a width up to 3.5 km. The average thickness of the resource is 10-11 metres, though it can reach up to 55 metres. The top of the resource at the dune crest varies in elevation from 20 mRL to 114 mRL, corresponding to the topography, while the bottom ranges from 10 mRL to 96.5 mRL, aligning with the water table or resource basement level. • The depth of the resource below the surface is 0.3m, the deposit is effectively mineralised from surface.
ESTIMATION AND MODELLING TECHNIQUES	• The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation	• The Mineral Resource Estimate was prepared by modelling the high-purity silica sand unit (A2). The geological model incorporated several key parameters. The topography surface was surveyed using LIDAR techniques to a resolution of 1 m horizontally and 10 cm relative vertical accuracy. The top surface of the resource volume was set at 0.3 m below the

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	method was chosen include a description of computer software and parameters used. • The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. • The assumptions made regarding recovery of by-products. • Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation). • In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. • Any assumptions behind modelling of selective mining units. • Any assumptions about correlation between variables. • Description of how the geological interpretation was used to control the resource estimates. • Discussion of basis for using or not using grade cutting or capping. • The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	LIDAR topography, representing the base of the topsoil. The base of the resource was constructed from: • The base depth of the A2 unit determined from drilling • The depth of the groundwater table determined from drilling • Interpretation of the dune edge from LiDAR survey and aerial imagery • The resource boundary was established by geological interpretation and analysis of surface dune extents visible in LIDAR and aerial imagery. Both assayed drill samples and geological observations from hand auger holes were used to interpret the top and base of the mineralised profile • Coordinates of drill hole data and the block model were transformed so each dune base aligned to a single flattened RL, accounting for significant RL variations and dune thickness variability across the deposit. This allowed grade estimation to reflect podsolisation influences and reduce vertical smearing. Grades were interpolated within three semi-soft vertical domains (upper, middle, and lower sands) to capture observed vertical grade variations. After estimation, coordinates were transformed back to their original positions. A comparison with estimates run using untransformed coordinates showed comparable global tonnes and grades, confirming no material bias from the transformation. • Hand auger holes were excluded from grade estimation due to concerns about sample contamination associated with the drilling method. These holes were predominantly located at the edges of the deposit, and their mineralised intervals were geologically interpreted to guide and constrain the resource boundaries. These intervals closely matched the interdunal level, further validating the geological interpretation. • A block model was used to estimate the deposit grade. The orientation of the block model was set to the average strike of the dunes (315 degrees). The dimensions for the parent blocks were determined as 25 m across strike by 25 m along strike by 3 m vertical, which were then subdivided into sub-blocks of 1 x 1 x 1 m to best fit the undulating geological model. • All drill hole data were composited to nominal 3 m intervals prior to grade estimation. • Grade estimation was completed using IDW at a power of 2 and a validation check estimate was completed using Ordinary Kriging. • In the 2025 estimate, Ordinary Kriging was used to populate the block model for SiO_2, Fe_2O_3, TiO_2, Al_2O_3, and LOI. For the current estimate the method was changed to IDW^2: the A2 silica sand is consistently high-purity and low-variability, producing high-nugget variograms in which kriging's weighting offers little practical benefit over a more transparent and reproducible distance-based estimator. • The grade estimation process was conducted over 4 (four) sequential passes, each defined by specific search radii that help to guide to the categories of 'Measured', 'Indicated' and 'Inferred' in resource classification. • This methodology involved setting the major sample search parameters for each block horizontally in the average strike direction of the dune (315 degrees), the semi-major search direction is also set horizontal (perpendicular to the major search direction) across the dune, and the minor search direction is set to vertical. • Search distances were informed by variographic analysis from prior estimates to align the interpolation with the spatial characteristics of the data, even though IDW does not strictly require it. All passes used a quadrant-based search with the maximum number of samples set at 16 and required a

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CRITERIA	EXPLANATION	COMMENTARY
		minimum of two drill holes for reliable grade estimation. Block discretisation of 4 x 4 x 4 (X,Y, Z) was employed.
MOISTURE	• Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	• Tonnages are estimated on a dry basis. Bulk density testwork was completed on dried and compacted samples, supporting a dry bulk density of 1.65 tonnes per cubic metre, which is typical for silica sand deposits.
CUT-OFF PARAMETERS	• The basis of the adopted cut-off grade(s) or quality parameters applied.	• No cut-off grade was applied during compositing, block estimation, or reporting. The Mineral Resource is reported from all classified blocks with interpolated SiO_2 grades. • While no cut-off was applied, a minimum SiO_2 grade of approximately 98.5% was one of several factors considered when defining the base of the geological model in drill holes. Geological domains were based on a combination of SiO_2 grade, sand colour, and contaminant levels. • Minor internal intervals with SiO_2 grades below 98.5% were included within the high-purity silica domain where they did not materially affect the overall quality of the Mineral Resource.
MINING FACTORS OR ASSUMPTIONS	• Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	• The PFS identified that mining operations will involve extracting material directly from the face using a Wheel Loader. Once extracted, the material will be transported to the processing plant either through a conveyor system or via a slurry pipeline. • The PFS excluded selective mining. The entire face will be mined. • Some intervals of less than 98.5% SiO_2 are included within the high purity silica unit however, these do not materially dilute the resource. • The upper 300mm is considered topsoil and reserved for rehabilitation purposes. This overburden surface forms the upper boundary of the estimated geological domain and is not included in the Mineral Resource Estimate.
METALLURGICAL FACTORS OR ASSUMPTIONS	• The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	• Metallurgical testwork completed to-date confirms the silica sand resource is readily amenable to upgrading by screening, density separation, attritioning, and magnetic separation to produce a low iron, high purity silica sand for photovoltaic applications (solar panels). Testwork completed to date includes benchtop work, as well as a bulk testwork program.
ENVIRONMENTAL FACTORS OR ASSUMPTIONS	• Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfield project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	• CSHPL is currently undertaking an EIS on the Northern Silica Project. The study has not yet been completed, this Mineral Resource Estimate does not include a detailed environmental assessment at the Si2 Deposit, although early findings are considered material to acknowledge. • Based on the nature of the deposit and proposed mining method, environmental factors are not expected to present significant barriers to eventual economic extraction. • Project studies identified in a processing flowsheet where high Fe, oversize, low grade, heavy minerals or slimes are rejected from product streams. The material will be stacked to form a replacement dune as a post mining surface, suitable for rehabilitation. The coagulants and flocculants used in processing are considered to be environmentally neutral. Early-stage considerations indicate that the proposed mining and processing activities are likely to have manageable environmental impacts, subject to future detailed assessments. • The Si2 dune system lies adjacent a perched aquifer, and above a deeper dune aquifer which are hydrogeologically connected to window lakes within the dune fields. At present

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		there is no relationship established between mining and the water levels of these lakes. • The Si2 deposit area is proximal to several wetlands, vegetation types in the dune area are considered habitat for the Ctenotus rawlinsonii skink, and there are several protected plant species in the area such as Xanthostemon arenius, Acacia solenota, Dendrobium johannis, Myrmecodia beccarii. The impact of the presence of these species in the area, on potential extractive operations is unknown, and is currently in assessment.
BULK DENSITY	• Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. • The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit. • Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	• Bulk density was determined through laboratory testwork on dried and compacted samples collected from drilling across the Si2 Deposit. A total of 132 samples were tested. The dry bulk density was calculated as the average of the measured samples, and a value of 1.65 tonnes per cubic metre was adopted for tonnage estimation. Void spaces and porosity are not considered material given the aeolian dune nature of the deposit.
CLASSIFICATION	• The basis for the classification of the Mineral Resources into varying confidence categories. • Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). • Whether the result appropriately reflects the Competent Person's view of the deposit.	• The Mineral Resource has been classified according to the principles of the JORC Code (2012 edition). The resource has been divided into Measured, Indicated, and Inferred categories, corresponding to a high, moderate and low level of confidence in the geological and grade continuity of the resource. The classification integrates several key factors, including: depth of geological knowledge of the deposit, geological and mineralisation continuity, drill hole spacing, and the results of quality control measures. • The classification also considers drill hole logging, analytical results from drill samples, geostatistical analysis, and confidence in geological and grade continuity, along with recent metallurgical/process test outcomes. Additionally, search and interpolation parameters, recently completed density data, and considerations from JORC Code Clause 49 are factored into the classification process. • All relevant factors have been considered and the result reflects Mr Watson's view of the deposit.
AUDITS OR REVIEWS.	• The results of any audits or reviews of Mineral Resource estimates.	• Internal reviews of the Mineral Resource Estimate were conducted and confirmed that the results were robust and aligned with industry standards.
DISCUSSION OF RELATIVE ACCURACY/ CONFIDENCE	• Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. • The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	• The Mineral Resource classification reflects the Competent Person's assessment of the confidence in the distribution of mineralisation and grade variability across the Si2 Deposit on a global basis. • A high degree of confidence is placed in the geological interpretation, supported by the known formation processes of the aeolian dune sands. High SiO_2 grades and strong geological continuity have been observed across the majority of drill holes. A detailed LiDAR survey provides high confidence in the topographic surface, with the base of the resource interpreted from drilling observations (geological & geochemical picks). • The interpreted geology of the Si2 Deposit is considered robust, and alternative interpretations are unlikely to materially impact the Mineral Resource Estimate. • No production data is available for comparison. Estimation was based on interpolation of composited drill hole data within geological domains guided by dune morphology and lithological logging.

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	• These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	

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SECTION 4: ESTIMATION AND REPORTING OF ORE RESERVES

CRITERIA	JORC CODE EXPLANATION	COMMENTARY
MINERAL RESOURCE ESTIMATE FOR CONVERSION TO ORE RESERVES	• Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve. • Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	• The Mineral Resource Estimate used as a basis for the conversion to an Ore Reserve is the Si2 Deposit Mineral Resource Estimate, May 2026. It totals 301.5 Mt at 99.20% SiO_2, comprising Measured 187.5 Mt at 99.25% SiO_2, Indicated 42 Mt at 99.16% SiO_2 and Inferred 72 Mt at 99.17% SiO_2, reported as in situ tonnage on a dry basis. • 151.25 Mt, or approximately 65.9%, of the 229.5 Mt of Measured and Indicated Mineral Resources were converted to Ore Reserves, representing approximately 50.2% of the total Mineral Resource. The Ore Reserve satisfies the planned 25 year mine life; mining of the remainder is subject to future operating conditions. • The Mineral Resources reported above are inclusive of the Ore Reserves.
SITE VISITS	• Comment on any site visits undertaken by the Competent Person and the outcome of those visits. • If no site visits have been undertaken indicate why this is the case.	• The Competent Person for Ore Reserves, Phil McMurtrie, completed various site visits to the area between 2016 to 2026, to inspect the drilling chip trays, the mine dune forms, and project footprint. The site visits provided an understanding of the project assumptions and constraints used in estimating the Ore Reserves.
STUDY STATUS	• The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves. • The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	• Diatreme Resources has completed a Pre-Feasibility Study (PFS) for the Northern Silica Project. This Ore Reserve was completed in conjunction with the PFS and is therefore reported concurrently. • The PFS was undertaken in accordance with guidelines published by the AusIMM and the Association for the Advancement of Cost Engineering (AACE), refines the 2023 Scoping Study, and includes AACE Class 4 capital and operating cost estimates and a financial model. All material Modifying Factors have been considered. • The PFS has determined a mine plan that is technically achievable and economically viable.
CUT-OFF PARAMETERS	• The basis of the cut-off grade(s) or quality parameters applied.	• No grade cut-off was applied in estimating the Ore Reserve. The Si2 deposit is a homogeneous, high purity aeolian dune sand in which the full mineralised profile is above the specification required for the target product, and mineralisation is therefore not selectively mined on grade. • A minimum SiO_2 grade of approximately 98.5% was one of several unbinding criteria, together with sand colour and contaminant levels, used to define the base of the geological model during Mineral Resource estimation. Minor internal intervals below 98.5% SiO_2 were retained within the high purity silica domain where they did not materially affect overall resource quality. • The mining envelope is defined by lithological and hydrological boundaries rather than by grade. The top of the A2 horizon forms the roof of the orebody, with the nominal upper 0.3 m removed as topsoil ahead of mining and retained for rehabilitation. The floor is the B1 horizon where it lies above the water table, or otherwise the maximum seasonal water table elevation plus a 1 m vertical clearance buffer.
MINING FACTORS OR ASSUMPTIONS	• The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design). • The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. • The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling. • The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	• An open cut mining method was selected due to the proximity of the deposit to surface, the lack of overburden and the loose, unconsolidated nature of the sand. The method includes wheel loader excavation of the dune face feeding a Mobile Mining Unit (MMU), which screens and slurries the material for pumping to the Wet Concentration Plant. • The proposed fleet is owner operated, comprising three 988K wheel loaders in Phase 1 increasing to five in Phase 2 with dozer, grader, water trucks and ancillary equipment, all standard for sand mining operations. Loading is from floor level across a face width of up to 250 m to facilitate blending, and the MMU would advance with the mine face every 2 to 4 weeks to reduce tramming distances. • Geotechnical parameters are based on observed natural dune behaviour, where stabilised slopes stand at approximately 10 degrees and active faces at their angle of repose of approximately 35 degrees. An active mining face angle of 28 degrees, a working pit

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	• The mining dilution factors used. • The mining recovery factors used. • Any minimum mining widths used. • The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion. • The infrastructure requirements of the selected mining methods.	wall angle of 26 degrees and a final dump slope of <20 degrees have been adopted, with a 50 m strip width, 200 to 400 m panel widths and a 5% swell factor for reject dumps. No benches are required given the low batter angles and shallow excavation depths. No formal geotechnical investigation has been completed; this is a forward work item for the DFS. • Pre-production and Grade control drilling are forward work items to be undertaken as required prior to production. • Mining remains entirely above the water table. Where the water table intersects the deposit the pit floor is set at the post wet season (high) water table with a 1 m vertical buffer, avoiding interaction with groundwater, and no dewatering is planned or costed. The water table was measured over three consecutive years of above average rainfall and is considered conservative. • Due to the lack of overburden, pit optimisation was limited to the practical mining area through mining, environmental and cultural parameters rather than strip ratio. Constraints include nominal 100 m offsets from wetlands and waterbodies, cultural exclusions around Hoop Pine vegetation and lakes of significance to Traditional Owners, and alignment with prevailing wind direction for erosion management. The pit is subdivided into panels to control mining direction and facilitate progressive rehabilitation. • A mining dilution factor of 0% has been used. The deposit is a single homogeneous domain bounded by the A2 and B1 horizons with no inter-burden or low grade zones requiring removal, and the bounding contacts are lithological and hydrological surfaces rather than assay boundaries. Dilution is therefore anticipated to be negligible for the operation. • 100% mining recovery is assumed due to the free dig mining method, where recovery is well managed through survey control and GPS guided machinery. • No minimum mining width is used, given the flexibility of the method and the extent of the deposit. Minimum and maximum pit widths were applied in design to prevent narrow, operationally inefficient zones, with the 50 m strip width and 200 to 400 m panel widths the controlling geometry. • A dry in situ bulk density of 1.65 t/m^3, determined from 132 laboratory samples, has been applied. The Ore Reserve of 151.25 Mt corresponds to 91.66 Mm^3. • There is effectively no mine waste. The only pre-strip is the nominal 0.3 m topsoil layer, stockpiled at the pit perimeter for the first two years and thereafter placed directly to active rehabilitation areas. Process rejects of approximately 20% of ROM feed are dewatered and stacked adjacent to the plant on the B1 basement for the first three years so as not to sterilise Mineral Resource, and thereafter directly into mined out panels. • No fixed infrastructure is required to facilitate the mining method; the MMU and fleet are mobile. Supporting infrastructure comprises the slurry and return water pipelines, mine access roads, the Mine Infrastructure Area and power supply. • No Inferred Mineral Resources have been converted to Ore Reserves, and the outcome is not sensitive to its inclusion or exclusion. • Mining is matched to processing capacity and operates 24 hours per day, 7 days per week at 85% utilisation, equating to 7,446 operating hours per annum.
METALLURGICAL FACTORS OR ASSUMPTIONS	• The metallurgical process proposed and the appropriateness of that process to the style of mineralisation. • Whether the metallurgical process is well-tested technology or novel in nature. • The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied. • Any assumptions or allowances made for deleterious elements.	• The proposed metallurgical process is well developed in the silica sand industry and uses conventional, off the shelf plant and components tried and tested at sites with similar operating parameters. • The flowsheet includes Mobile Mining Units (dry grizzly at 100 mm, wet screening at 4 mm and slurrying) and a fixed Wet Concentration Plant comprising cyclone desliming and density control, primary and middling spiral separation, attritioning at greater than 5 minutes residence time, up current classification below approximately 0.106 mm, and wet high intensity magnetic separation, followed by product dewatering, stacking and reclaim, a reject sand stacking unit and a high rate thickener with process water recovery.

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	• The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole. • For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?	• The proposed plant is capable of 504 t/h of raw feed for 403 t/h of product, with provision to expand to 839 t/h feed for 672 t/h of product in Phase 2 through a parallel processing train. • Mineral Technologies (MT) at Carrara, Queensland completed a bulk sample testwork programme using sizing, spiral gravity separation, attritioning, classification and magnetic separation. This confirmed processing performance at scale and established that magnetic separation is required to further reduce Fe_2O_3 in the product. Staged results were spiral product 159 ppm Fe_2O_3 at 91.9% recovery, attritioned product 180 ppm at 88.1%, up current classifier product 150 ppm at 85.9%, WHIMS non magnetic product 110 ppm at 85.6% and final product 107 ppm Fe_2O_3 at 85.6% recovery. • Further magnetic separation testwork demonstrated that using advanced magnetic separation technology (vertical ring high-gradient magnetic separator) more suitable for fine removal of iron in comparison to WHIMS which are rougher and more suitable to larger processing splits (not ppm of Fe_2O_3 removal), with high yielding results of 83.8% and 81.6% recovery at 92ppm and 89ppm Fe_2O_3, respectively, achievable. • A plant recovery of 80% has been assumed for the PFS as a conservative target, applied uniformly across the life of mine. Applying 80% to the 151.25 Mt Ore Reserve yields 121 Mt of saleable product, with the balance reporting to the benign reject sand stream. • No metallurgical domaining has been applied. The deposit exhibits a homogeneous and consistent feed grade, with scheduled head grade varying only between 98.82% and 99.43% SiO_2 and between 0.07% and 0.14% Fe_2O_3 across the schedule. • A 1 tonne bulk sample was taken from an area considered reflective of the first several years of mining to mitigate start up risk, and are therefore representative of the early years of the schedule rather than of the orebody as a whole. Testing to date is sufficient to support the PFS; continuation of testwork, including material from later schedule years, is a forward work item. • The main contaminant Fe_2O_3, with other heavy minerals, is removed through gravity, classification and magnetic separation stages and the respective waste of each stage reports to the reject stream. No allowance for penalties or price adjustments for deleterious elements has been made. The risk of localised zones of elevated iron is managed by grade control drilling and metallurgical process control. • Silica sand is a specification defined product. The target specification is ≥99.9% SiO_2, ≤100 ppm Fe_2O_3, ≤120 ppm TiO_2 and ≤460 ppm Al_2O_3 at approximately F98 0.71 mm. The Mineral Resource is estimated on SiO_2, Fe_2O_3, TiO_2 and Al_2O_3, being the elemental oxides that govern the specification.
ENVIRONMENTAL	• The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	• The Project is in an active bilateral Environmental Impact Statement (EIS) process for State and Commonwealth matters. It was designated a Coordinated Project on 12 January 2024 and declared a Major Project on 11 June 2025. Final Terms of Reference were issued on 20 September 2024 and a draft EIS was submitted for adequacy review on 15 December 2025. It is a Controlled Action under the EPBC Act (EPBC 2023/09485). Final Project approvals are expected in Q4 2028. • The operation generates no conventional tailings and requires no tailings storage facility. Process rejects are benign silica sand of the similar composition as the ore, dewatered and stacked adjacent to the plant on the B1 basement for the first three years and thereafter directly into mined out panels for landforming and rehabilitation. There is no mine waste rock; the only stripped material is the nominal 0.3 m topsoil layer, retained for rehabilitation. Formal geochemical characterisation of the reject material has not been reported. • A draft Progressive Rehabilitation and Closure Plan has been developed and will be assessed for approval for mining operations, committing to progressive rehabilitation as areas become available. All constructed infrastructure will be removed at completion. • Mining activities have been assessed for financial assurance under the Mineral and Energy Resources (Financial Provisioning) Act 2018;

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		the surety has not been approved, although the estimate has been included in the PFS costings. The Environmental Authority, water allocation license and protected species permits have not yet been granted.
INFRASTRUCTURE	• The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	• The Project is a greenfield development with a total footprint of 977 ha. Other than the Port of Cape Flattery and the regional road network, all infrastructure is to be constructed. The Wet Concentration Plant and Mine Infrastructure Area are located on sterilised land so that no Mineral Resource lies beneath their footprint, and are sited centrally to minimise slurry pumping distances and sustaining capital. • Power is a hybrid of diesel generation sized to carry the full load, an 8.8 MW solar array and a 5 MWh battery energy storage system. Raw water would be drawn from a borefield with a licence sought for up to 3.5 GL per annum, and process water is recycled through thickening and dewatering. • Product is transported by a 7.0 km slurry pipeline to the stockpile and a 5.7 km overland conveyor to the port, with no road haulage of product. 23 km of site access road is to be constructed and upgraded, with offsite upgrades including new bridges over the McIvor and Morgan Rivers progressed separately through council development applications. • Labour, accommodation and other services have been assessed and appropriate provisions allowed in the PFS. An on site village for 140 personnel is provided; the workforce peaks at 214 during construction and settles at 128 in operations, sourced principally from Hope Vale and Cooktown rather than on a fly in fly out basis. • Based on the historic and current Port leasing arrangements, it is considered that access as a Full User, and utilisation of existing spare capacity and marine infrastructure, can be achieved via various mechanisms including, commercial negotiations with Cape Flattery Silica Mines (CFSM) and/or Ports North, direct State intervention and potential identified legal processes. • The current preference is to work within the current leasing arrangements and undertake commercial negotiations with CFSM and Ports North, which is the basis of this PFS, and would result in fees being charged for the use and maintenance of the Port.
COSTS	• The derivation of, or assumptions made, regarding projected capital costs in the study. • The methodology used to estimate operating costs. • Allowances made for the content of deleterious elements. • The source of exchange rates used in the study. • Derivation of transportation charges. • The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc. • The allowances made for royalties payable, both Government and private.	• Capital and operating cost items have been estimated using a mixture of quotations from equipment suppliers, stochastic (factoring), analogy (like for like) and deterministic (measurement) estimating techniques, benchmarking of similar operations and industry knowledge, with inputs from Wave International, CDE and CNBM together with Diatreme's technical team. • Capital and operating cost estimates have been prepared to AACE Class 4 (Pre-Feasibility Study) level. • A 15% capital cost contingency has been applied to the direct cost estimate of each line item. No provision has been made for escalation of future capital costs. • Construction capital cost including contingency is A$443.5M for Phase 1 and A$38.5M for Phase 2. • Operating cost is A$18.62/t of product at 3 Mtpa and A$13.82/t at 5 Mtpa. C1 cash cost FOB, excluding sustaining capital and royalties, is A$25/t and A$18/t respectively. Sustaining capital is not carried within operating cost, Sustaining capital is factored as a percentage of capital cost for items requiring end of life replacement, including the slurry pipeline, marine infrastructure, mining equipment and power generation. • An exchange rate of A$1.00 = US$0.68 has been applied where foreign currency inputs were received, based on a long term forecast published by Westpac. The same rate is applied to revenue. • Shipping and insurance of A$26.80/t and marketing of A$0.81/t are netted from gross revenue to derive an FOB equivalent price. Port fees and charges payable to CFSM and Ports North are estimated at A$3.815/t of product, derived from published harbour, tonnage and port security dues together with estimated service, capital contribution, rehabilitation and maintenance charges based on industry knowledge and comparable agreements. No commercial agreement is in place regarding these fees.

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		• Silica sand is sold as a finished product and no treatment or refining charges apply. No allowance has been made for penalties or price adjustments for deleterious element content or failure to meet specification. • Royalties allowed for are the Queensland State royalty of A$0.90 per wet metric tonne under the Mineral Resources Regulation 2013 and a Traditional Owner royalty of 2.0% of Project FOB revenue. The Traditional Owner rate is an estimate and remains subject to negotiation and agreement. • Port charges of A$3.815/t are estimated from published rates and comparable agreements. They remain subject to final commercial terms, including the asset valuation used to set the infrastructure capital contribution.
REVENUE FACTORS	• The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc. • The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	• Revenue is based on a single product, photovoltaic grade silica sand with an iron content of 100 ppm, sold FOB at the Port of Cape Flattery. • The high purity silica sand price used for the PFS is US$55 FOB over the LOM, slightly below the mid-point Base Case forecast of US $60 FOB by 2040 (real terms). • An exchange rate of A$1.00 = US$0.68 has been applied. Gross revenue of A$108.5/t is reduced by shipping and insurance of A$26.80/t and marketing of A$0.81/t to a net revenue of A$80.9/t. • The scheduled head grade averages 99.25% SiO_2 and 0.10% Fe_2O_3. Applying the 80% process recovery, 151.25 Mt of run of mine feed would yield 121 Mt of saleable product targeting the specification on which the price is based. • No treatment, refining or net smelter return deductions apply to a finished mineral product, and no penalties for failure to meet specification have been assumed. • A single price is applied to all product, with no differentiation by size fraction or iron content and no revenue attributed to secondary or off specification streams. Prices and costs are held flat in real terms; inflation and escalation have not been applied.
MARKET ASSESSMENT	• The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future. • A customer and competitor analysis along with the identification of likely market windows for the product. • Price and volume forecasts and the basis for these forecasts. • For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	• Extensive market assessment was completed by Wood Mackenzie, a research and consultancy firm, in December 2025. • Worldwide silica sand production was estimated at 320 Mt in 2023. Demand has risen between 3% and 5% per annum and is forecast to continue at that rate to 2035, driven by glass production for construction, automotive and solar panels and by foundry and hydraulic fracturing demand. Asia Pacific accounts for approximately 44% of global consumption. • While overall demand is well supplied, the availability of high grade, low iron silica sand is tightening as accessible deposits are depleted or diverted to construction use and as environmental requirements increase. Several Asian countries have introduced or are considering export bans, increasing the importance of Australia as a seaborne supplier. • A detailed operation-by-operation competitor analysis has not been undertaken. Silica sand is not a homogeneous commodity: each customer qualifies product against specific chemical and physical requirements, and the Project's marketing and offtake engagement is directed at those target specifications. Comparison with other operations or development projects is therefore only meaningful where their product satisfies equivalent specifications, qualification requirements and delivered-cost parameters. Competing supply is instead considered at the market level through the Wood Mackenzie assessment, which addresses the availability of high-grade, low-iron silica sand from existing and emerging seaborne suppliers • The target market is ultra clear solar photovoltaic cover glass requiring Fe_2O_3 below 100 ppm, together with flat and container glass requiring greater than 99.5% SiO_2. Manufacturers will also accept product in the 50 to 150 ppm Fe_2O_3 range provided particle size and other contaminant levels are met. Product qualification with individual customers, including testing and acceptance of representative samples, is required prior to a supply contract. Material outside photovoltaic specification remains saleable into

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		container and flat glass, foundry, construction and filtration markets, although no revenue has been attributed to these. • For modelling purposes 100% of product is assumed to be sold into China. A market diversification programme is underway and up to 40% of exported product may be directed to Japan, Korea, Taiwan and other markets, with Australian domestic markets also being explored. • There is no established reference point for silica product pricing generally, so all price discovery is through engagement with end users and is subject to final negotiation between the parties. All market engagement is at a non binding level, apart from Sibelco's offtake share as per its joint venture holding percentage. Advancement of offtake agreements is a forward work item.

ECONOMIC	• The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.
	• NPV ranges and sensitivity to variations in the significant assumptions and inputs.
		• The discount rate of 8% per annum (real, unleveraged) was determined from peer benchmarking of comparable development projects and industry forecasts, and is considered appropriate for a study at this level. Cash flows are expressed in unescalated dollars with no inflation applied to costs. Forward-looking estimates on this basis are considered suitable for a Pre-Feasibility level study.
		• Key outcomes of the 3-5 Mtpa production case are:
		  • Post tax NPV A$1,661m, IRR 38%
		  • Pre tax NPV A$2,419m, IRR 46%
		  • Payback period 4 years
		  • CAPEX A$443.5m (Phase 1) and A$38.5m (Phase 2), including contingency
		  • LOM C1 cash cost FOB A$18/t
		  • LOM net revenue A$9,787m
		  • LOM EBITDA A$7,975m
		  • LOM post tax net free cash flow A$5,048m
		• Key outcomes of the standalone 3 Mtpa production case are:
		  • Post tax NPV A$867m, IRR 29%
		  • Pre tax NPV A$1,290m, IRR 36%
		  • Payback period 4 years
		  • CAPEX A$443.5m
		  • LOM C1 cash cost FOB A$25/t
		  • LOM net revenue A$6,066m
		  • LOM EBITDA A$4,571m
		  • LOM post tax net free cash flow A$2,764m
		• Sensitivity has been assessed against post tax NPV at plus and minus 10% for four variables. For the 5 Mtpa case the NPV ranges are exchange rate A$1,349m to A$2,036m, silica price A$1,319m to A$1,999m, production tonnes A$1,457m to A$1,860m and operating cost A$1,593m to A$1,724m. The Project is most sensitive to exchange rate and silica sand price, followed by production tonnes and operating cost. Post tax NPV remains positive and substantial across all cases tested.

SOCIAL	• The status of agreements with key stakeholders and matters leading to social licence to operate.	• Negotiation protocols have been entered into with Walmbaar Aboriginal Corporation (WAC) and the Gulaal People, and a protocol is being negotiated with Hopevale Congress Aboriginal Corporation (HCAC). Diatreme will undertake a Right to Negotiate process including execution of an agreement under section 31(1)(b) of the Native Title Act 1993, addressing environmental impacts, cultural heritage, community benefits, compensation and governance. • No Mining Project Agreement, section 31 native title agreement or Cultural Heritage Management Plan has been executed. An estimate of compensation has been incorporated into the PFS as a 2.0% FOB revenue royalty. It is anticipated that Diatreme will be able to progress these agreements to completion in a reasonable timeframe. • A stakeholder assessment through the EIS identified 70 key stakeholders across 15 groupings, with over 200 formal engagements completed. Engagement has directly influenced Project design.

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OTHER	• To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves: • Any identified material naturally occurring risks. • The status of material legal agreements and marketing arrangements. • The status of governmental agreements and approvals critical to the viability of the project, including the mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	• The Mineral Resource lies within granted Exploration Permits for Minerals and Mining Lease Applications. Five Mining Lease Applications support the Project: MLA 100552 Northern Silica Production (5,426.75 ha), MLA 100550 Northern Silica Casuarina (1,836.82 ha), MLA 100553 Northern Silica Port Access (82.41 ha), MLA 100551 Northern Silica Access 1 (745.68 ha) and MLA 100313 FNQPCL Cape Flattery Access (37.2 ha). No Mining Lease has yet been granted. Diatreme has reasonable grounds that approval for these Mining Leases will be granted within the timeframes nominated in the PFS, having regard to the Project's Coordinated Project and Major Project designations. • Access to the Port and overland conveyor. MLA crosses an existing mining lease held by CFSM. CFSM's consent to the MLA and a co-existence plan will be sought, initially, by negotiation or, failing that, through the section 271AB process in the MR Act. • Approvals still to be obtained include Coordinated Project approval, EPBC Act approval, the Mining Project Agreement and section 31 native title agreements, a Social Impact Management Plan, a Cultural Heritage Management Plan, the Environmental Authority, the Mining Leases and mine infrastructure lease, a water allocation licence, protected species permits, and modification of the existing Environmental Authority to enable multiple user exports. Final Project approvals are anticipated in Q4 2028. • The Project is held by Northern Silica Pty Ltd, a wholly owned subsidiary of Cape Silica Holdings Pty Ltd, a joint venture between Diatreme Resources Limited (73.2%) and Sibelco Asia Pacific Pty Ltd (26.8%). Sibelco provides technical and project development expertise and joint product marketing and holds an offtake entitlement corresponding to its joint venture interest. No binding offtake agreements are in place with third parties. • Project financing has not been secured. Phase 1 is assumed to be funded through equity placement for the purposes of the PFS, with government funding sources including the Northern Australia Infrastructure Facility and Export Finance Australia under consideration. • Identified material naturally occurring risks are the tropical wet season and cyclones between November and April. These are managed through the 1 m vertical buffer above the seasonal water table to maintain year round pit access, all weather road construction and offsite road upgrades to improve flood immunity, and a non working weather time allowance in port scheduling considered sufficient to cover berth closures from cyclonic activity.
CLASSIFICATION	• The basis for the classification of the Ore Reserves into varying confidence categories. • Whether the result appropriately reflects the Competent Person's view of the deposit. • The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	• The Ore Reserve has been classified 100% as Probable Ore Reserves. • The classification of the Reserves appropriately reflects the Competent Person's view in that, whilst a high level of geological understanding of the deposit has been maintained, confidence in the Modifying Factors remains lower than confidence in the Mineral Resource estimate. Mining tenure, port access, native title agreements and environmental approvals are not yet secured, and capital and operating cost estimates are at Pre-Feasibility Study level. Accordingly the Project may not progress to Proved Ore Reserves until these matters are resolved. • Ore Reserves were derived from approximately 87.3% Measured Resources and approximately 12.7% Indicated Mineral Resources. The first 5 years of mine life are derived from approximately 73% Measured Resources and approximately 27% Indicated Mineral Resources.
AUDITS OR REVIEWS	• The results of any audits or reviews of Ore Reserve estimates.	• Ore Reserve Estimates have been reviewed internally by Diatreme, which identified no material issues with the estimate. • Sibelco conducted a review of the PFS, and associated Ore Reserve Estimate, which identified no material issues.
DISCUSSION OF RELATIVE ACCURACY / CONFIDENCE	• Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the	• The Ore Reserve is based on a PFS which has been completed to a level of detail expected for the Project at its current stage. The statement relates to a global estimate of in situ mined tonnes and grade over the 25 year mine life. Whilst a global accuracy for the Ore

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	application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate. • The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. • Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage. • It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Reserve cannot be stated, capital and operating cost estimates were completed to AACE Class 4 level. • Confidence in the geological and grade estimate is high, supported by 529 drill holes completed between November 2021 and September 2025, LiDAR survey at 10 points per square metre, and 132 bulk density determinations. The deposit is a laterally continuous, homogeneous aeolian dune system with consistent grade, and approximately 87.3% of scheduled material derives from Measured Mineral Resource. • The Ore Reserve is reported on a run of mine (mined tonnes) basis of 151.25 Mt. Application of the 80% process recovery yields 121 Mt of saleable product. Reported life of mine grades reconcile to the tonnage weighted average of the annual scheduled grades. • Further work is required to allow geostatistical analysis to be used for estimation of relevant confidence intervals for the Ore Reserve. Geotechnical parameters are simplifying assumptions that slope angles are shallower than the angle of repose with no formal geotechnical investigation completed, and metallurgical recovery is supported by bulk scale testwork on a sample representative of the early years of the schedule, applied as a single factor across the mine life. • Key risks to the Ore Reserve are access to the Port of Cape Flattery, the grant of Mining Leases, execution of native title agreements, the grant of environmental approvals and the water licence, product price and exchange rate, and the securing of offtake agreements and project financing. The Competent Person believes that an appropriate level of detail has been provided for these factors. • No production data are available for comparison as the Project is undeveloped.

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