



Project delivery strategies  
during COVID-19 : Kenmare  
Resources as an African case  
study

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# Who we are - the world's largest supplier of ilmenite



Primarily used for the production of titanium pigment; a bright white opacifier

## Located in Mozambique, East Africa

- +30 years experience in country
- +12 years of operations
- Meaningful contribution to the local and national economy
- Moma represented ~5% of Mozambique's exports in 2018

## Moma Titanium Minerals Mine

- Mining ~35-40 million tonnes per annum, mainly by dredge
- 90% renewable, hydro-electric power source
- Progressive rehabilitation of mined areas
- 100+ years life of mine

## Key products

- Titanium feedstocks (ilmenite and rutile)
  - Growing to 10% of global supply
- Zircon – mainly used in ceramics
- Monazite – mineral containing REE's

## Mozambique



## Wet Concentrator Plant B



## Used in everyday “quality-of-life” items



Paints



Paper



Foods



Plastics and rubber



Glazes and enamels

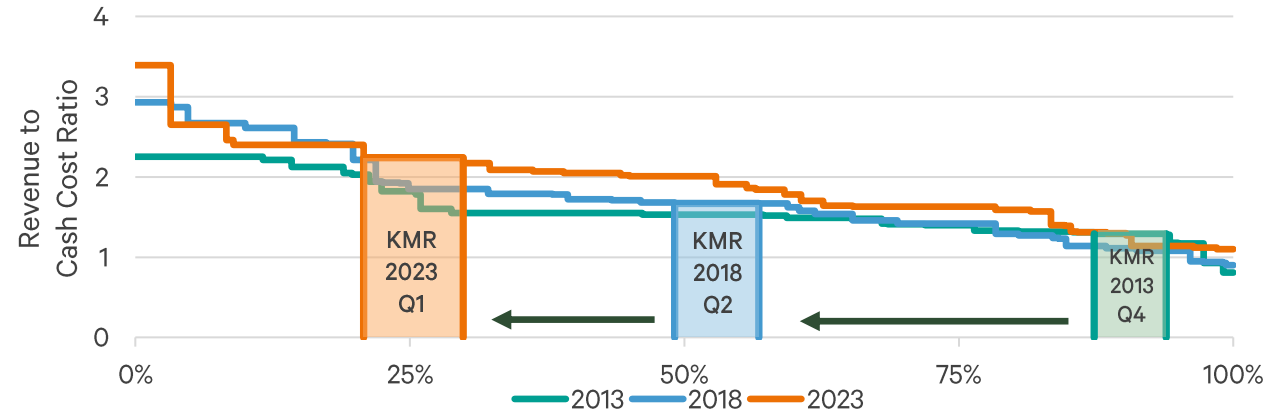


Fabrics and textiles

# Targeting a 1<sup>st</sup> quartile industry position



Development projects now largely complete, positioning us for strong free cash flow generation



- Kenmare is on track to become a first quartile margin producer
- This is expected to deliver increased cash flows
- Provides resilience to the business - positive free cash flow through the commodity cycle

## Three key core programmes

2018: WCP B Upgrade
20% capacity upgrade
Capex <US\$10 million

2019/20: Build WCP C
Additional mining pond
Capex <US\$45 million

2020: WCP B relocation
Movement to high grade Pilivilil
Capex ~US\$124 million

# Project scope: the world's largest & heaviest move



Moving a plant in 80m long, as wide as a football pitch and as tall as a seven story building – in one piece

## Moma's highest grade ore zone...

- Relocating mining operations from the depleted Namalope ore zone to the new high grade Pilivili,
- Required significant mining infrastructure

## But 23km away, without a road

- WCP B consists of a dredge and a 7,100 tonne floating concentrator
- ~50% of Moma's production is attributable to WCP B – downtime critical
- Transported by Self-Propelled Modular Transporters (SPMTs), along a 60m wide engineered road
- Targeted a move in Q3 2020, with production ramp up in Q4 2020

## Approach & considerations

- Project by phases approach (PFS 2018, DFS H1 2019, detailed design and engineering H2 2019, execution 2020)
- Compressed time schedule with downtime duration criticality
- Project scale and scope had not been attempted previously
- Technical risk integrating SPMT method with floating plant structural design with affordable road & river crossing designs

## 23 km of engineered road



# New risk: COVID-19



Kenmare's highest priorities are the safety and wellbeing of our employees and host communities

## Abundant sanitation stations



## COVID-19 testing on site



## Rapid development in Q1 2020

- Critical path project civils were in full swing at site
- Long lead contracts were in place internationally with fabrication contracting at a critical stage

## Prompt response to escalating COVID-19 risk

- Improved sanitation & social distancing on site
- Initiation of travel mandatory isolation and testing
- Agreement with main contractors and EPCM to have site teams present for contract duration

## Rapid adaptation to legislated change

- Mozambican state of emergency declared
- Progressive international lockdowns especially South Africa
- Restrictions on the movement of people and goods

## Main challenges

- H1 2020: delayed fabrications, relocation of contracts to countries not in lockdown
- H2 2020: Access to Mozambique for installation contractors and services to site

# COVID-19: Project Mitigations



## Dynamic and integrated project management

### Early and frequent communication with contractors

- Understanding schedule compliance was critical with multiple critical workstreams assessed
- Buy-in from owners team, EPCM and contractors that solutions must be found to challenges encountered
- Defining alternative suppliers and/or subcontractors early
- Identifying Mozambican in-country contractors
- Contractor to contractor support for schedule compliance, re-allocating scope to available site resources
- Supporting contractors with Kenmare's country management experience to facilitate work visas

### Led to the development of the “HMC on time” plan

- Focussed on production of HMC before the end of Q3 2020
- Mitigated the areas where scope could not be completed on time
  - Plan B's on electricity supply and HMC haulage
- COVID-19 related changes & extensions of time added cost
  - Outweighed by getting WCP B back in to production

### WCP-B Overall Schedule Progress



#### Key Milestones

Description	Baseline	Forecast 11 Sep	Variance between Baseline and 11 Sep	Forecast 18 Sep	Variance between Baseline and 18 Sep
Board Approval to Proceed with Implementation	31-May-19	31-May-19	0	31-May-19	0
EPCM Appointment	25-Jun-19	25-Jun-19	0	25-Jun-19	0
Commence with Haul Road Construction	17-Aug-19	17-Aug-19	0	17-Aug-19	0
Road EA and RP Approved	29-Sep-19	31-Jan-20	-133	31-Jan-20	-133
End of Mine Path	31-Jul-20	28-Aug-20	-29	28-Aug-20	-29
Mama B Substation Operational	7-Aug-20	31-Oct-20	-85	3-Nov-20	-99
First HMC		15-Oct-20		17-Oct-20	
EDM Power Installed & Commissioned		2-Dec-20		2-Dec-20	
Plant Commissioned	30-Sep-20	30-Jan-21	-122	30-Jan-21	-122

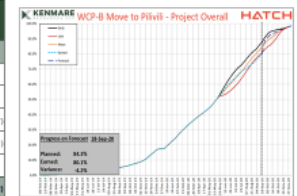
Baseline % Complete  
**84.3%**  
(82.7%)

Actual % Complete  
**80.1%**  
(78.2%)

Variance  
**(4.2)**  
(4.5)

#### Schedule Progress

Phase	Period			Cumulative		
	Planned	Earned	Variance	Planned	Earned	Variance
Engineering	2.00%	2.28%	0.3	100.00%	100.00%	-
Procurement	0.00%	0.00%	-	100.00%	100.00%	-
Fabrication	1.90%	2.15%	0.2	95.95%	95.95%	(7.7)
Construction	2.70%	2.88%	0.1	79.66%	79.59%	(8.1)
Commissioning	0.00%	0.00%	-	0.00%	0.00%	-
Overall	1.8%	1.9%	0.3	84.3%	80.1%	(4.2)



Development Projects – Steering Committee Meeting – 25 September 2020

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# Success factors



## Project success built around strong relationships

### Project foundation built in relationships between parties

- Integration of Project team and Operations
- Key relationships with Hatch EPCM personnel through previous projects
- Dedicated contractors working as partners
- Every contractor went the extra mile

### Project management systems and controls

- Prompt understanding of schedule, costs and risks
- Effective governance structure creating efficient project management
- Rigorous performance management of contracts to ensure open and fair contractor relationship
  - Claims process regarding COVID-19 costs and extensions of time
- Decoupling the project's non-mission critical components

## Dredge on the move



## WCP B on the road to Pilivili



## Kenmare's owners team



# Final thoughts

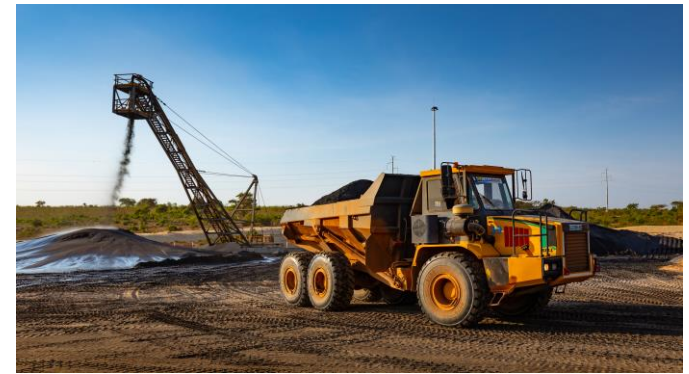


Kenmare is well on it's way to achieving targeted production of 1.2 Mtpa ilmenite on a sustainable basis

## Operations in production at Pilivili

- HMC production commenced 25 October 2020, as per plan
- Ramp up of WCP B successful in Q4 2020. Significant stocks of +50kt HMC in place by year end
- Successful transition to grid power in December 2020
- HMC haulage continues pending completion of HMC pipeline

## HMC loading truck leaving WCP B



## Video of the WCP B Move



**A massive congratulations and thank you to our Owners team, Hatch, and all key contractors, who delivered this move in such dynamic circumstances**

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- Kenmare has profiles on Facebook, Twitter and LinkedIn, which feature regular updates on our corporate social responsibility initiatives, operational and development milestones, news flow and more
- Click the name of the social network to visit our profiles and connect with Kenmare: [Facebook](#), [Twitter](#) and [LinkedIn](#)

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