

EXECUTIVE SUMMARY

ToR Identification: NOTO24A0000RJ5633273N

FOR

DRAFT EIA/EMP REPORT FOR PROPOSED ROHIDA LIMESTONE MINE WITH PRODUCTION CAPACITY OF LIMESTONE 2.85MTPA, MINERAL REJECT 0.24 MTPA, SOIL 0.04 MTPA & OB 5.78MTPA, TOTAL EXCAVATION 8.91MTPA ALONG WITH 1000 TPH OF CRUSHER IN MINE LEASE AREA OF 800.9935 HA LOCATED AT VILLAGES ROHIDA, BHARJA, TAROONGI, DOLIPHALI, VATERA, PIPLA, KHARADOLI, TEHSIL PINDWARA, DISTRICT SIROHI, RAJASTHAN



PROJECT PROPONENT

M/s KAMLESH METACAST PRIVATE LIMITED

PREPARED BY:

ECOMEN MINING PVT. LTD



(formerly known as Ecomen Laboratories Pvt. Ltd)

**Accredited by QCI/NABET Certificate No. NABET/EIA/25-28/RA 0403, valid till March 23, 2028
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**1(a) - (3) Mining of Minerals, Category 'A' - Green Field Project
Baseline Data Generation carried out during March – May 2025
by NABL Approved Lab: Ecomen Mining Private Limited
(Certificate No.: TC 12751)**

**ECOMEN MINING PRIVATE LIMITED
(Formerly Known as Ecomen Laboratories Pvt. Ltd.)**

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1.1 INTRODUCTION

Kamlesh Metacast Private Limited has proposed Limestone Mining Project with proposed production capacity of 8.91 MTPA (Total Excavation) (Limestone – 2.85 MTPA, Mineral Reject-0.24 MTPA, OB- 5.78 MTPA & Soil – 0.04 MTPA) along with Installation of 1000 TPH Crusher with Wobbler and Screening 200 TPH over an area of 800.9935 Ha. Located in Village (s)- Rohida, Bharja, Taroongi, Doliphali, Vatera, Pipla and Kharadoli, Tehsil –Pindwara, District – Sirohi, Rajasthan.

This report has been prepared in reference to the ToR Letter issued by MoEF&CC, New Delhi Vide letter no. F. No. IA-J-11015/81/2024-IA-II (NCM), dated 05.05.2025 to carry out the EIA study. Terms of Reference was granted during 43rd meeting of Expert Appraisal Committee (Non-Coal Mining) held during April 22-23rd, 2025.

As per EIA Notification dated 14th September, 2006 as amended from time to time, the project falls under Category “A”, (>250 ha), Projects per the Schedule of EIA Notification, 2006 & its subsequent amendments thereof; Project or Activity 1 (a) – 3 for “Mining of Mineral”.

1.2 MINING LEASE STATUS

- The LOI for an area of 800.9935 ha has been granted by Mines and Petroleum Department, Government of Rajasthan. LoI has been issued vide order no. P 3 (6) Khan/Group-2/2022 dated 13.03.2023 which is valid till 12.03.2025. Now LOI is extended for one year vide P.3 (6) Khan/Group-2/2022, date-25.07.2023 and valid till 12.03.2026.
- Lease will be executed after obtaining Environment Clearance.
- According to the MMDR, Act 2015 mining lease will be valid for 50 years from the date of lease execution. Lease will likely to execute in 2026 and on the basis of lease execution it will be valid for 2076.

1.3 STATUS OF APPROVAL OF MINING PLAN

The Mining Plan along with Progressive Mine Closure Plan has been approved vide letter no. E12030-MCDR-MPC0LST/28/2024-AJM-IBM_RO_AJM, dated-27.11.2024.

1.4 NEED FOR THE PROJECT

- The main purpose of the report is to establish the baseline environmental attributes in terms of scoping and predict/ identify the impacts for preparing environment management plan.
- India is the second largest producer of cement in the world. India's cement industry is a vital part of its economy, providing employment to more than a million people, directly or

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indirectly. The importance of the project to the nation, in a developing nation like India, cement is essential for infrastructure development. Thus, keeping in mind this requirement, mining of limestone is essential for the nation's growth.

- The project will help the local economy directly as well as indirectly as the project will also contribute to the State as well as to National exchequer by way of various taxes and duties. With the proposed additional development in and around the area, there will be increase in supporting facilities/infrastructure eventually leading to the further development of the area. It will also bridge the gap between demand and supply of cement to the consumers. The project will boost the overall growth of the region and in the State; the local economy will flourish due to increased income expenditure in the local market. Therefore, project is having great importance to the state and national economy.

1.5 PROJECT DETAILS

Table - 1.1
Project Details

S. No.	Particular	Details
A.	Nature of the Project	Opencast Mechanized Limestone Mine
B.	Size of the Project	
1.	Mine Block Area	800.9935 ha (Govt. Waste Land- 227.9500 ha (29%) & Grazing /Charagah Land- 21.0900 ha (3%) & Private Agriculture Land- 551.9535 ha (68.0%).)
2.	Proposal	➤ Limestone Production Capacity: 2.85 Million TPA ➤ OB/waste – 5.78 Million TPA ➤ Top Soil - 0.04 Million TPA ➤ Mineral Reject-0.24 Million TPA ➤ Total Excavation – 8.91 Million TPA ➤ Crusher - (1000 TPH) with Wobbler (200 TPH)
C.	Project Location	
1.	Villages	Rohida Bharja, Taroongi, Doliphali, Vatera, Pipla, Kharadoli
2.	Tehsil	Pindwara
3.	District	Sirohi
4.	State	Rajasthan
5.	Latitude & Longitude	Latitude: 24° 32' 47.3874"N to 24° 38' 33.7254"N Longitude: 72° 51' 57.958"E to 72° 57' 57.515"E
6.	Toposheet No.	45D/14, 15 & 45 H/2
D.	Environmental Setting Details (with approx. aerial distance & direction from the mine boundary)	

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1.	Nearest Village	Particulars		Distance (Km)	Direction	
		(From Lease Boundary)				
		Nearest Habitation				
		Wasa	0.53		SE	
		Rohida	0.48		E	
		Wara	0.41		W	
		Bhujela	1.23		NNW	
		Bharja	Some part of village within the lease area		--	
		Taroongi	Some part of village within the lease area		--	
		Bhimana	0.24		NW	
		Vatera	50 m		E	
		Pipela	0.31		WNW	
		Hirawala	0.37		NNE	
		Densely populated				
		Rohida	0.48		E	
		Wasa	0.53		SE	
		Vatera	50 m		E	
		Bhimana	0.24		NW	
		Bharja	Some part of Bharja village within the lease area		--	
		Swarupganj	2.98		WNW	
2.	Nearest Town/City	Particulars		Name	Distance, Direction (From Lease Boundary)	
		Nearest Town		Abu Road	9.82 km, SW	
		Nearest City		Sirohi	27.53 km, NNW	
		Nearest District Headquarter		Sirohi	27.80 km, NNW	
		Source: - Distances measured are taken from SOI, Toposheet are indicative pertinent to the project.				
3.	Nearest Highway	S. No.	Particulars	Distance (km)	Direction	
		(From Lease Boundary)				
		Routes Facility				
		1.	NH-27	1.70	NW	
		2.	NH-927A	Passing through the lease area	--	
		3.	MDR-49	2.64	W	
		4.	MDR-60	6.98	W	
		5.	SH-11	9.55	SW	
4.	Nearest Railway Station	Particular	Name		Distance & Direction (From the lease boundary)	
		Railway Station	Kivrali Railway Station		2.56 km in WSW	
			Bhimana Railway Station		2.70 km, NW	
			NewSwarup Ganj Railway Station		2.97 km, NW	
			Morthala Railway Station		7.97 km, SW	
5.	Nearest Airport	Maharana Pratap Airport Udaipur ~ 90.76 km, E				
6.	National Park, Wild Life Sanctuary, Biosphere Reserves, Wildlife corridors, Tiger/Elephant	Mount Abu Wild Life Sanctuary situated at a distance of 5.47 km in NW direction (Notified on 11.11.2020). ESZ is declared for Mount Abu Wild Life Sanctuary.				

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	Reserves, Protected Forests etc. within 10 km radius of the project site					
6.	Reserved / Protected Forest within 10km radius study area	S. No.	Particulars	Distance (km)	Direction	
				(From Lease Boundary)		
		Forests				
		1.	Reserved Forest N/V Wara	0.055	S	
		2.	Protected Forest N/V Hirawala	0.56	NE	
		3.	Reserved Forest N/V Wara	0.96	SW	
		4.	Kivrali Ka Zor Reserved Forest	1.10	W	
		5.	Reserved Forest N/V Pipela	1.10	NW	
		6.	Reserved Forest N/V Pipela	2.08	NW	
		7.	Reserved Forest N/V Swarupganj	2.10	NW	
		7.	Water body within 10 km radius of study area	S. No.	Particulars	Distance (Km)
(From Lease Boundary)						
Water Bodies						
1.	Hukli Nadi			8.89	NNE	
2.	Silva Nala			5.54	E	
3.	Kosiya Bhagra Nala			7.72	E	
4.	Akhleti Nala			5.85	E	
5.	Mandwara Distributary			3.36	E	
6.	Khara Distributary			1.27	ESE	
7.	Chitriya Nala			4.99	SE	
8.	Sukli Nadi			Passing through the lease area	--	
8.	Seismic Zone	S. No.	Particulars	Distance (Km)	Direction	
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		6.	Khara Distributary	1.27	ESE	
		7.	Chitriya Nala	4.99	SE	
		8.	Sukli Nadi	Passing through the lease area	--	
8.	Seismic Zone	S. No.	Particulars	Distance (Km)	Direction	
				(From Lease Boundary)		
		Water Bodies				
		1.	Hukli Nadi	8.89	NNE	
		2.	Silva Nala	5.54	E	
		3.	Kosiya Bhagra Nala	7.72	E	
		4.	Akhleti Nala	5.85	E	
		5.	Mandwara Distributary	3.36	E	
		6.	Khara Distributary	1.27	ESE	
		7.	Chitriya Nala	4.99	SE	
		8.	Sukli Nadi	Passing through the lease area	--	
D.	Cost Details	S. No.	Particulars	Distance (Km)	Direction	
				(From Lease Boundary)		
		Water Bodies				
		1.	Hukli Nadi	8.89	NNE	
		2.	Silva Nala	5.54	E	
		3.	Kosiya Bhagra Nala	7.72	E	
		4.	Akhleti Nala	5.85	E	
		5.	Mandwara Distributary	3.36	E	
		6.	Khara Distributary	1.27	ESE	
		7.	Chitriya Nala	4.99	SE	
		8.	Sukli Nadi	Passing through the lease area	--	
8.	Seismic Zone	S. No.	Particulars	Distance (Km)	Direction	
				(From Lease Boundary)		
		Water Bodies				
		1.	Hukli Nadi	8.89	NNE	
		2.	Silva Nala	5.54	E	
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		4.	Akhleti Nala	5.85	E	
		5.	Mandwara Distributary	3.36	E	
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		3.	Kosiya Bhagra Nala	7.72	E	
		4.	Akhleti Nala	5.85	E	
		5.	Mandwara Distributary	3.36	E	
		6.	Khara Distributary	1.27	ESE	
		7.	Chitriya Nala	4.99	SE	
		8.	Sukli Nadi	Passing through the lease area	--	
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		1.	Hukli Nadi	8.89	NNE	
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		4.	Akhleti Nala	5.85	E	
		5.	Mandwara Distributary	3.36	E	
		6.	Khara Distributary	1.27	ESE	
		7.	Chitriya Nala	4.99	SE	
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		3.	Kosiya Bhagra Nala	7.72	E	
		4.	Akhleti Nala	5.85	E	
		5.	Mandwara Distributary	3.36	E	
		6.	Khara Distributary	1.27	ESE	
		7.	Chitriya Nala	4.99	SE	
		8.	Sukli Nadi	Passing through the lease area	--	
8.	Seismic Zone	S. No.	Particulars	Distance (Km)	Direction	
				(From Lease Boundary)		
		Water Bodies				
		1.	Hukli Nadi	8.89	NNE	
		2.	Silva Nala	5.54	E	
		3.	Kosiya Bhagra Nala	7.72	E	
		4.	Akhleti Nala	5.85	E	
		5.	Mandwara Distributary	3.36	E	
		6.	Khara Distributary	1.27	ESE	
		7.	Chitriya Nala	4.99	SE	
		8.	Sukli Nadi	Passing through the lease area	--	
D.	Cost Details	S. No.	Particulars	Distance (Km)	Direction	
				(From Lease Boundary)		
		Water Bodies				
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		2.	Silva Nala	5.54	E	
		3.	Kosiya Bhagra Nala	7.72	E	
		4.	Akhleti Nala	5.85	E	
		5.	Mandwara Distributary	3.36	E	
		6.	Khara Distributary	1.27	ESE	
		7.	Chitriya Nala	4.99	SE	
		8.	Sukli Nadi	Passing through the lease area	--	
8.	Seismic Zone	S. No.	Particulars	Distance (Km)	Direction	
				(From Lease Boundary)		
		Water Bodies				
		1.	Hukli Nadi	8.89	NNE	
		2.	Silva Nala	5.54	E	
		3.	Kosiya Bhagra Nala	7.72	E	
		4.	Akhleti Nala	5.85	E	
		5.	Mandwara Distributary	3.36	E	
		6.	Khara Distributary	1.27	ESE	
		7.	Chitriya Nala	4.99	SE	
		8.	Sukli Nadi	Passing through the lease area	--	
D.	Cost Details	S. No.	Particulars	Distance (Km)	Direction	
				(From Lease Boundary)		
		Water Bodies				
		1.	Hukli Nadi	8.89	NNE	
		2.	Silva Nala	5.54	E	
		3.	Kosiya Bhagra Nala	7.72	E	
		4.	Akhleti Nala	5.85	E	
		5.	Mandwara Distributary	3.3		

Source: Site Visit & Pre- Feasibility Report

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1.6 MINING DETAILS

Table - 1.2
Mining Details

S. No.	Particular	Details
1.	Mining Method	Fully Mechanized Opencast Mining Method
2.	Production Capacity	Limestone: 2.85 Million TPA
3.	Total Geological Reserves	27,67,13,725.85 MT (276.71 Million TPA)
4.	Total Mineable reserves	5,67,92,655.3 MT (56.79 Million TPA)
5.	Life of Mine	20 years
6.	Bench Height	10 m
7.	Bench Width	15-20 m
8.	Elevation Range	Highest –360 MSL; Lowest – 295 MSL,
9.	Water Table	Water level Pre monsoon-235 MSL (60 m bgl) Water Level:- Post monsoon 240 MSL (55 m bgl).
10.	Ultimate pit limit	UPL- 300-200 MSL
11.	Number of Working days	300
12.	Number of Working Shifts	2 Shifts
Source: Derived from Approved Mining Plan along with Progressive Mine Closure Plan		

1.7 METHOD OF MINING

The mining operations will be carried out by fully mechanized opencast method, deploying Heavy Earth Moving Machinery (HEMM i.e. hydraulic excavators, rear dump trucks, hydraulic drills, bull dozers etc.) in conjunction with controlled blasting techniques NONEL (Non- Electrical Initiation system) for blasting. Loading will be done by Hydraulic Excavators. Limestone to be transported by dumpers to proposed crusher (1000TPH) located in the lease area. The crushed Limestone will be transported to the Proposed Cement Plant via covered conveyor belt.

1.8 YEAR WISE PRODUCTION & EXCAVATION

Table – 1.3 (A)
Excavation Details During the Plan Period (In Million Tonnes)

Year	Soil in million Tonne	OB in million Tonne	Mineral Reject in million Tonne	Mineral in million Tonne	Total Excavation in million Tonne
1 st Year	Nil	Nil	Nil	Nil	Nil
2 nd Year	0.0001	0.0036	0.0015	0.0183	0.0239
3 rd Year	0.04	5.7840	0.2478	2.8497	8.923
4 th Year	0.0051	3.7171	0.2477	2.8496	6.8283
5 th Year	0.0010	2.3403	0.2478	2.8499	5.4409

Source: Pre-feasibility Report of Approved Mining Plan along with Progressive Mine Closure Plan

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1.9 DESCRIPTION OF THE ENVIRONMENT

Baseline data for the environmental studies has been collected during Summer Season (March to May 2023) and revalidate the baseline has been done in Summer Season (March to May 2025) to carry out the Environment Impact Assessment study for the proposed Project.

Ambient Air Quality

PM₁₀: The maximum value for PM₁₀ observed in 8 locations at Village: Delder 68.9 µg/m³ and minimum value for PM₁₀ observed at Village: Taroongi (within the Lease Area), Near-Village (Rohida) 44.5µg/m³. Whereas, in the revalidaite the baseline data has been done in 11 locations in which PM₁₀ maximum value (66.8µg/m³) in Bhimana Village and minimum value near village 29.0 µg/m³. The 24 hours applicable limit for industrial, Residential Rural and Other Areas is -100 µg/m³.

PM_{2.5}: The maximum value for PM_{2.5} observed at Village: Delder, Bhimana 40.4 µg /m³ and minimum value for PM_{2.5} observed at Village: Urwariya, Hirawala (within the Lease Area) 26.8 µg/m³. Whereas, in the revalidaite the baseline data has been done in 11 locations in which PM_{2.5} maximum value (43.5 µg/m³) in Bhimana Village and minimum value near village Wada 18.5 µg/m³.The 24 hours applicable limit for industrial, Residential Rural and Other Areas is- 60µg/m³.

SO₂: The maximum value for SO₂ observed at Village: Delder 8.3 µg/m³ and minimum value for SO₂ observed at Village: Rohida (Vasa), Near-Village (Rohida), Wada, Bhimana, Urwariya, Hirawala (within the Lease Area) 6.0 µg/m³. Whereas, in the revalidaite the baseline data has been done in 11 locations in which SO₂ maximum value (16.4 µg/m³) in Deldar Village and minimum value near village Bharja 7.0 µg/m³.The 24 hours applicable limit for industrial, Residential Rural and Other Areas is 80µg/m³.

NO₂: The maximum value for NO₂ observed at Village: Delder 15.2µg/m³ and minimum value for NO₂ observed at Village: Taroongi (within the Lease Area), Rohida (Vasa) 6.2 µg/m³. Whereas, in the revalidaite the baseline data has been done in 11 locations in which NO₂ maximum value (25.0 µg/m³) in Deldar Village and minimum value near village Bharja 10.7 µg/m³.The 24 hours applicable limit for industrial, Residential Rural and Other Areas is- 80µg/m³.

CO: The maximum value for CO observed at villages: Taroongi (within the Lease Area), Rohida (Vasa), Near-Village (Rohida), Delder, Bhimana, and Hirawala (within the Lease Area) 802 µg/m³ and minimum value for CO observed at Village: Near-Village (Rohida), Wada, Urwariya, Hirawala (within the Lease Area) 458 µg/m³. Whereas, in the revalidate the baseline data has been done in 11 locations in which CO maximum value (940 µg/m³) in Taroongi Village and minimum value near village Wada 240 µg/m³.The 8 hours applicable limit for Industrial, Residential Rural and other areas is- 2000 µg/m³.

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Noise Levels

A) Day time Noise Levels Leq(day)

The daytime (Leqday) noise level is observed in project area to be 51.7 dB(A) which are within the prescribed limit of 75 dB(A) and in residential areas to be in the range of 49.5- 53.9 dB(A) which are within the prescribed limit of 55 dB(A). Whereas, in the revalidate the baseline data has been done in 11 locations in which noise level maximum value observed 54.1 dB(A) in Urwariya Village and minimum value near Bharja village 36.5 dB(A) .

B) Night time Noise Levels Leq(night)

The nighttime (Leqnight) noise levels are observed in project area to be in the range of 42.8 dB(A) which are within the prescribed limit of 70 dB(A) and in residential areas to be in the range of 41.3 – 43.7 dB(A) which are not within the prescribed limit of 45 dB(A). Whereas, in the revalidaite the baseline data has been done in 11 locations in which noise level maximum value observed 44.9 dB(A) in Hirawala Village and minimum value near Rohida (Vasa) village 33.9 dB(A) .

From the above study and discussions, it can be concluded that noise levels in the study area are well within the prescribed limits as prescribed by the CPCB.

Surface Water Quality

The results obtained for the collected samples during March to May 2023 indicate that the surface water quality was found to be well within the prescribed standard limit (Class C). The analysis results indicate that the pH of the surface water is in the range of 7.16 – 8.05. The TDS was found to be in the range of 432 - 524 Mg/l. Revliadte the sample was collected March to May 2025. The analysis results indicate that the pH of the surface water is in the range of 7.36 –7.68. The TDS was found to be in the range of 283.88- 427.34 Mg/l.

Other parameters like Total Hardness as CaCO₃ is in range of 152-160mg/L, Total Alkalinity is 192-240mg/L, Dissolve Oxygen is 2.4-2.6mg/L, E-Coli is absent. Other parameters Calcium as Ca, Magnesium as Mg, Chloride as Cl, Sulphate as SO₄ and Fluoride were found in the permissible range. Revalidate the data for Total Hardness as CaCO₃ is in range of 108-1604mg/L, Total Alkalinity is 96-140mg/L, Dissolve Oxygen is 5.40-6.20 mg/L. Other parameters Calcium as Ca, Magnesium as Mg, Chloride as Cl, Sulphate as SO₄ and Fluoride were found in the permissible range. E coli is absent in the surface water samples.

Surface water quality was also analyzed for Iron, Aluminum, Boron, Phenolic Compounds, Anionic detergents, Zinc, Copper, Manganese, Lead, Selenium, Arsenic, Nickel, Mercury, Hexa Chromium etc. and were found below the detection limit.

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Ground Water Quality

The analysis results indicate that pH of groundwater were found to be in range of 6.9 to 7.6. The TDS were found to be in the range of 798 - 3489 mg /l. Other parameters like Total Hardness as CaCO₃ (264 to 1300 mg/l), Total Alkalinity (256 to 496 mg / l), Calcium as Ca (81.60 – 457.60 mg/l), Magnesium as Mg (14.58 – 114.70 mg/l), Chloride as Cl 167.95 – 1533.52 mg/l), Sulphate as SO₄ (23.89 – 345.98 mg /l) and Fluoride as F- (0.77 – 1.27 mg /l).

The samples was collected during Monsoon Season (March to May 2025). The analysis results indicate that pH of the groundwater were found to be in range of 7.05 to 7.57. The TDS were found to be in the range of 733 - 2860 mg /l. Other parameters like Total Hardness as CaCO₃ (256 to 804 mg/l), Total Alkalinity (236 to 732 mg / l), Calcium as Ca (64.0–227.20 mg/l), Magnesium as Mg (21.38 –63.18 mg/l), Chloride as Cl (60-588 mg/l) and Fluoride as F- (0.34 – 1.23 mg /l).

Soil Quality

The pH of the soil samples varied from 7.29 to 8.07. The texture of the soil samples majorly consists of Silty and Silty loam. The soil samples majorly exhibit dark brownish and reddish-brown color at all the soil sampling locations.

The indicator such as organic matter varies from 0.89% to 1.45% and Organic carbon varies from 0.51% to 0.83%. The Water holding capacity varied from 43.77% to 49.20%. Nitrogen ranges from 350.39 to 420.19 kg/ha, Phosphorous ranges from 25.83 to 83.84 kg/ha, Potassium 220.37 to 915.87 kg/ha, Magnesium 242.82 to 539.26 mg/kg, Calcium 2514.88 to 4591.07 mg/kg and Sodium 89.64 to 239.50 mg/kg. The SAR value was observed under the limits at all the sampling locations with 0.45 to 0.89.

1.10 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Air Environment

The key air emissions from the mining activities (drilling, blasting, loading, unloading and transportation) are Particulate Matter, Oxides of Nitrogen (NO₂) and Sulphur dioxide (SO₂).

Proper mitigation measures like controlled blasting, water sprinkling before drilling, blasting & during transport activities, use of rock breaker to avoid secondary blasting, development of greenbelt/plantation etc. will be carried out to control the fugitive emission. Better maintenance of equipment & HEMMs, PUC checking of mining equipment's & vehicles will help to reduce emissions. Proper protection measures i.e. use of Bag filters, Regular water spraying on Crusher hopper to arrest dust from becoming air-borne, construction of wind breaking walls especially at charging hopper & crushing place, development of green belt/plantation all around in the vicinity of the crusher to tarp fugitive dust will be carried out.

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Water Environment

Seasonal water bodies viz. Sukli Nadi falls in mining lease area and Hukli Nadi , Silva Nala , Kosiya Bhagra Nala , Akhleti Nala , Mandwara Distributary, Khara Distributary, Chitriya Nala, Batriya Nadi, Left Canal, Banas River, Gabir Nala, Right Canal, Grangri Bala, Sangwara Minor, Sangbariya Balo, exist in the study area which receive water in the Monsoon Period and will not be adversely impacted as majority of these are distantly located.

Ground Water

The general elevation is ranges from 296 m AMSL to 361m AMSL. During Pre Monsoon period average water level of the Pindwara block is 13-meter bgl and Post Monsoon water levels is 10-meter bgl. Ground water will be intersected from the 3rd year onwards and permission for water intersection will be obtained from Central Ground Water Authority before such intersection. The mine seepage from working faces will be collected in sumps over lower benches and water will be pumped for its usage in mine and surplus water will be supplied to nearby Villagers. The mineral limestone and associated rocks do not contain any toxic substances so that there will not be any adverse impact on ground water quality.

Domestic wastewater generated (8.0 KLD) from mines office will be modular STP (10 KLD) and treated water will be used in greenbelt/plantation. Wastewater from workshop (8 KLD) will be treated in ETP (10 KLD) and treated water will be used in dust suppression after oil & grease trap. KMPL will make efforts to eliminate usage of Ground water after development of Mine Pit. Company will also use nontoxic chemical to reduce the water evaporation on haul roads. Dry fog system is proposed at the crusher unloading hopper to conserve the water. During monsoon or post monsoon time, excess water needs to be discharged, it will pass through sedimentation pond/check dams/filters for proper sedimentation prior to join natural streams or nallahs. Regular monitoring of ground water quality will be carried out.

Noise & Vibration

Major noise generating sources of the mining activity are drilling, blasting and HEMM deployed for loading & transportation of limestone.

Various measures will be undertaken to control noise & vibration. Drilling will be carried out with the help of sharp drill bits. Controlled blasting techniques through proper blast design and explosive selection will be used to reduce the noise & vibrations to a greater extent. Hydraulic rock breaker will be used in place of secondary blasting. DGMS guideline will be followed strictly to reduce the impact of blasting on nearby habitation. HEMMs equipped with acoustic cabins are/will be provided for the operators. Proper maintenance, oiling and greasing of HEMMs will be carried out. PPEs like earplugs/earmuffs will be provided to mine workers. Development of green belt/plantation along the mining boundary help in reducing noise level.

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Crushing is also generating the noise pollution. Proper mitigation measures i.e. insulators & closed acoustic systems will be provided to control the noise pollution. Plantation will be developed around the crusher which also help to control the noise pollution.

Solid Waste Management

During the plan period 11.8452 Million Tonnes OB & 0.7450 Million Tonnes mineral reject will be generated. At conceptual stage, about 65.97 Million Tonnes of OB and 4.94 Million Tonnes mineral reject will be generated which will be used for backfilling purpose.

Land Environment

As per approved mining plan, the total excavated area will be 121.96 ha out of which 72.66 ha area will be back filled & 49.30 ha will be used for rain water storage. Area under utility & services will be 30.40 ha. About 592.99 ha area will be undisturbed. Greenbelt and plantation will be developed over an area of 55.64 ha.

1.11 POST PROJECT ENVIRONMENTAL MONITORING PROGRAMME

Table - 1.4
Post Project Monitoring Programme

S. No.	Description	Frequency of Monitoring
1.	Micro-Meteorological Data	Hourly
2.	Ambient Air Quality	Online CAAQMS & Manual as per CPCB Guideline
3.	Water Quality & Level	Quarterly
4.	Noise Level Monitoring	Quarterly
5.	Vibration Monitoring	On every blast
6.	Medical Checkup of employees	3 to 5 year interval
7.	Digital Mapping/ Drone survey of block area	Once in 3 years/ as per IBM guidelines

1.12 ADDITIONAL STUDIES

Additional Studies i.e. Hydro-Geological Study, Biological Study, Resettlement & Rehabilitation Plan and Risk Assessment & Disaster Management Plan are covered in EIA/EMP Report as per the Terms of References issued vide F. No. IA-J-11015/81/2024-IA-II(NCM), dated 05.05.2025.

1.12.1 HYDRO-GEOLOGICAL STUDY

Total water requirement will be 150 KLD. The NOC is obtained to withdrawal 9.5 KLD water required for drinking and domestics initially for two years, where no mining activity is proposed.

Total water requirement is 150 KLD for which CGWA NOC will be obtained prior starting

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working of 3 three years. The ground water consumption will gradually reduce as the mine progress and mine pits are developed to harvest the rainwater.

Detailed hydrogeological study has been carried out as per the guidelines issued by the CGWA from time to time has been prepared and given in this EIA/EMP Report.

As per the study due to presence of a multi-layered aquifer system and low permeability, the drawdown cones in the individual hydro-geological units will be small and stacked, hence impact on ground water resources is negligible.

Further, the extracted limestone is clean and no toxic chemicals will be used, water quality risks are expected to be low. A 50 m no-mining buffer zone from the river and nalas will be maintained, and protective structures such as embankments, rubble retaining wall (3×2×2 m), garland drains, and siltation tanks will be implemented to prevent silt and waste ingress.

The water quality of the mine lease area is good for all purposes. There will be no leachates or any other source of contamination resulting in deterioration of ground water quality from the mining activities. Hence, there is no expected quality impact due to withdrawal of ground water

1.12.2 BIOLOGICAL ENVIRONMENT

A primary field survey was carried out within 10 km radius impact zone in and around the project area to study the floral and faunal diversity of the study area.

As per study conducted in the study area and as per information collected from Forest Range Office, Pindwara, and Divisional Forest Officer, Sirohi, it is found that Mount Abu Wildlife Sanctuary is situated 5.47 km from Mine lease area, Whereas there are no National Parks, Biosphere Reserves, Wildlife Corridors, Ramsar site, Tiger/Elephant Reserves/(existing as well as proposed) within 10 km radius of the Mine Lease.

Authenticated List of Flora and Fauna has been approved DCF, Sirohi vide letter dated 4.06.2025. As per the approved list of flora and fauna there are total 15 schedule-I species found in the study area i.e. i.e. *Panthera pardus* (Leopard), *Rusa unicolor* (Sambar deer), *Felis chaus* (Jungle Cat), *Paradoxurus hermaphroditus* (Common Palm Civet), *Canis lupus* (Indian Wolf), *Hyaena hyaena* (Striped Hyaena), *Canis aureus* (Jackal), *Vulpes bengalensis* (Indian Fox), *Hystrix indica* (Indian Porcupine), *Melursus ursinus* (Sloth Bear), *Naja naja* (Indian Cobra), *Ptyas mucosus* (Common Rat Snake), *Varanus bengalensis* (Bengal Monitor Lizard) *Pavo cristatus* (Indian Peafowl), *Tachypiza badia* (Shikra) were recorded in the study area; which are categorized as Schedule- I fauna according to Indian Wildlife Protection Act (IWPA), 2022 conservation status.

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For the conservation of these species Wildlife Conservation Plan has been prepared. Budget earmarked for the conservation of the same is Rs. 475 Lakh. Wildlife Conservation Plan for further approval has been submitted to DCF, Sirohi on 16.7.2025 which has been forwarded to Chief conservator of forest, Jodhpur vide letter dated 28.7.2025.

1.12.3 REHABILITATION & RESETTLEMENT ACTION PLAN

The Resettlement & Rehabilitation Plan has been aimed to address the rights and privileges of local people, ensures good share of jobs in the projects and facilitate comprehensive socio-economic development of the area.

The area of proposed mine is 800.9935 ha which falls in 7 Villages in 1 Tehsils namely, Villages: Rohida, Bharja, Taroongi, Doliphali, Vatera, Pipla, Kharadoli in Tehsil Pindwara, District Sirohi, Rajasthan. As per the revenue record total mine area is 800.9935 Ha, out of which 227.9500 ha is Govt. Waste Land (29%) & 21.0900 ha (3%) Grazing /Charagah Land- & 551.9535 ha (68.0%) is Private Agriculture Land.

Two village habitation namely Bharja and Taroongi falls in the lease area. There are some individual habitants (Kaccha & Pakka) built on the private agriculture land falling within proposed Mining Pit. These habitants will be removed once the surface rights of the land will be acquired/ possessed with mutual understanding/ negotiation. Mining Operations will be carried out only after getting the land.

Further “Blasting will be conducted in accordance with the guidelines stated by the DGMS and by complying the regulations in this regard. However, when the Mines working will reach near the habitant’s those couldn’t be removed, permission will be obtained from DGMS for conducting controlled blasting, within the distance below 300 mtrs as permitted by DGMS else other Mining Method like rock breaking by hydraulic hammer etc, that is not involved the blasting operation will be adopted for extraction of the Mineral within the danger zone of blasting”.

KMPL has following options for acquisition of land for its proposed mining project:

Option 1: Acquire land falling in the mine block through provisions of LARR Act, 2013

Option 2: Land acquisition through mutual agreement with the land holders falling in the mine block area at negotiated rates and terms and conditions.

KMPL proposes to procure land on mutual agreement with the land holders at mutually agreeable rates.

It is proposed that required land shall not be acquired in one go. Land purchase shall be done in phases as per the requirement for mining purpose. This is proposed in order to ensure minimal disturbance of the land & associated people. No forceful land acquisition will be undertaken.

1.12.4 RISK ASSESSMENT & DISASTER MANAGEMENT PLAN

A Hazard Identification and Risk analysis is a systematic way to identify and analyze hazards to determine their scope, impact and the vulnerability of the built environment to such hazards and its

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purpose is to ensure that there is a formal process for hazard identification, risk assessment and control to effectively manage hazards that may occur within the workplaces. Excessive dust, noise and vibration are the chief health hazards for the miners besides physical hazards.

The objective of disaster management plan for the proposed limestone captive mine is to be in a state of perpetual readiness through training and development to immediately control and arrest any emergency situation so as to avert a full-fledged disaster and the consequence of human and property damage and in the event of a disaster still occurring, to manage the same so that the risk of the damage to life and property is minimized.

1.13 ENVIRONMENT MANAGEMENT PLAN

KMPL have a full-fledged Environmental Management Cell (EMC) for environmental monitoring, implementation of mitigative measures and control. A group of qualified and efficient engineers with technicians will be deputed for maintenance, up keeping and monitoring the pollution control equipment, to keep them in working mode at the best of their efficiencies. The EMC shall oversee and implement the various functions to ensure that environmental status of the area remains will within the statutory standard of MoEF&CC and SPCB. The Capital Cost for EMP is Rs. 19 Crore and Recurring Cost for EMP is Rs. 1.43 Crore per annum.

1.14 POST MINING LAND USE DETAILS/RECLAMATION PLAN

Table – 1.5
Post-Mining Land Use of Core Zone

S. No.	Land Use Category	Present Land Use (Ha.)	At the End of 5th Year (Ha.)	Conceptual Stage(Ha.)
1	Soil Stack	0.0000	0.00	0.0000
2	Waste Dump	0.0000	22.61	0.0000
	Mineral Storage	0.0000	0.21	0.0000
	Total Excavated	6.5300	32.04	121.96
3	(A) Excavation (Water Reservoir)	0.0000	00.0000	49.30 (Water Reservoir)
	(B) Excavation (Backfilled)	0.0000	00.0000	72.66 (Re-grassing)
4	Area under utility services	4.85	11.11	30.40
5	Afforestation/Plantation (Unworked Area)	0.0000	4.80 (Plantation)	55.64 (Plantation)
Total Disturbed Area		11.83	70.77	208
6	Undisturbed Area	789.16	730.2235	592.99
Total		800.9935	800.9935	800.9935

Source: Approved Mining Plan along with Progressive Mine Closure Plan

1.15 PROJECT BENEFITS

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The project activity will help in meeting the growing demand of cement & hence help in the economic growth of the country. The mine will be contributing around Rs. 25.53 crore/year to the State & Central Govt. exchequers by way of mining revenue (Royalty, Premium, DMF, NMET, GST, SGST) with the execution of the project.

With the proposed development in and around the area, there will be supporting facilities/infrastructure eventually leading to the development of the area. The core benefit of the proposed project is the availability of limestone for cement manufacturing. The beneficial aspects of the project on the socio-economic environment of the area are in the fields of employment, service, trade, commerce, public utility, literacy, social awareness, health care facilities, recreation etc. The locals of the area will be benefited for the employment directly and indirectly. Direct employment, envisaged from the mine, is about 80 persons. PAFs & locals will be preferred in employment as per their eligibility. Further, there would be a lot of indirect employment opportunities arising due to the execution of this project like transportation, workshops establishment, petty contracts; commercial establishments (shops), truck owners, drivers etc. This will upgrade the economic status of the region and people living therein.

Based on the Public Hearing issues various community developmental activities in the form of medical facilities, education and creation of self-help groups will be proposed for the betterment of the locals. The project will help in the overall growth of the region.

1.16 CONCLUSION

The EIA/EMP study was prepared with compliance of ToR issued by MoEF&CC. Baseline data of land, air, water, noise, biological and socio-economic environment was duly assessed by conducting field investigation as well as by having an access to the available secondary information. The prediction of impacts was identified & evaluated and EMP is suggested to mitigate the environmental concerns arising from the proposed project.

With the proposed development in & around the area, there will be supporting facilities/infrastructure eventually leading to the development of the area. Employment (direct & indirect) will be generated with the execution of the proposed mine & its interlinked Cement Plant. Economy of the area will get boost and overall development of the region in terms of education, health, training, transport, automobile, industry is anticipated. Thus, the project will contribute to the Social, Environmental and Economic benefit of the local people and region.

