EXECUTIVE SUMMARY

1. PROJECT DESCRIPTION

District Survey Report of District Pathankot has been approved by State Environment Impact Assessment Authority (SEIAA) vide letter No. SEIAA/MS/2023/1654 dated 03/10/2023 **(copy of DSR attached as Annexure 3).** As per approved DSR, the proposed mining site involves mining of minor mineral from Ravi River bed mine site. located at as per approved mining plan.

1.1 CONSTITUTION OF CLUSTERS

There are three sand mining sites present in this area and the work of obtaining EC for each mine, individually, would take a lot of time. Since the environmental problems being faced are of regional nature and not confined to individual mines alone, it was proposed that cluster/groups of such mines may be identified for preparing cluster-wise integrated EIA & EMPs, addressing environmental concerns comprehensively and ensuring effective co-ordination of environmental control measures within each cluster. EC has been proposed for 3 mines named in table no.-1.1, the EIA/EMP report has been prepared on the basis of 'Standard Terms of Reference'

Table No. I: Cluster Project Description

Village Name	**Tehsil & District**	**Area in Hectare**	**Production in TPA**
Kharkhara	Pathankot	45.34	762948
Maira Kalan	Pathankot	13.81	246343
Chak Hari Rai	Pathankot	27.21	477498
		Total Cluster Area (86.36)	**Total Cluster Production (14,86,789)**

The river bed material is in high demand in the local market; it is used for basically construction purposes.

Table No. II: Year wise production for first three years of Kharkhara is tabulated below:

Year	**RESERVES**	
Year	**Total Mineable Reserves(Tonnes)**	**Recoverable Mineable Reserves (Tonnes) (40%of Mineable Reserve)**
First	1907373	762948
Second	1907373	762948
Third	1907373	762948
Total	**5722119**	**2288844**

Table No. III: Year wise production for first three years of Maira Kalan is tabulated below:

Year	**RESERVES**	
	Total Mineable Reserves (Tonnes)	**Recoverable Mineable Reserves (Tonnes) (40% of Mineable Reserve)**
First	615858	246343
Second	615858	246343
Third	615858	246343
Total	**1846755**	**739029**

Table No. IV: Year wise production for first three years of Chak Hari Rai is tabulated below:

Year	**RESERVES**	
	Total Mineable Reserves (Tonnes)	**Recoverable Mineable Reserves (Tonnes) (40% of Mineable Reserve)**
First	1193747	477498
Second	1193747	477498
Third	1193747	477498
Total	**3581241**	**1432494**

2. Proponent & Address:

As per Chief Engineer/Drainage & Mines and Geology, Punjab office Memo No.5598-5602 dated 05.09.2022 (copy required), Executive Engineer- cum- District Mining Officer, Pathankot has been

nominated as Project proponent and authorized to carry out mining operation in District Pathankot.

Address: XEN/DMO, Drainage cum Mines and Geology WRD Punjab, Madhopur, Pathankot

3. Brief description of nature, size and location of the project:

Table No.V: Brief details of the project

<table>
<tr><th>S. No.</th><th>Particulars</th><th>Description</th></tr>
<tr><td>A</td><td colspan="2">Mining Lease & Location Details</td></tr>
<tr><td>1.</td><td>Name of the Project</td><td>RBM Mining Project</td></tr>
<tr><td>2.</td><td colspan="2">Location</td></tr>
<tr><td>a.</td><td>Villages</td><td>Kharkhara, Maira Kalan and Chak Hari Rai</td></tr>
<tr><td>b.</td><td>Tehsil</td><td>Pathankot</td></tr>
<tr><td>c.</td><td>District</td><td>Pathankot</td></tr>
<tr><td>d.</td><td>State</td><td>Punjab</td></tr>
<tr><td>3.</td><td>Lease Area Coordinate</td><td>Kharkhara Coordinates of project site
<table>
<tr><td>Pillar No.</td><td>Latitude</td><td>Longitude</td></tr>
<tr><td>1</td><td>production</td><td>75°29'46.13"E</td></tr>
<tr><td>2</td><td>32°18'42.63"N</td><td>75°29'46.09"E</td></tr>
<tr><td>3</td><td>32°18'42.60"N</td><td>75°29'51.72"E</td></tr>
<tr><td>4</td><td>32°18'41.19"N</td><td>75°29'52.13"E</td></tr>
<tr><td>5</td><td>32°18'34.81"N</td><td>75°29'46.06"E</td></tr>
</table>
Maira Kalan Coordinates of project site
<table>
<tr><td>Pillar No.</td><td>Latitude</td><td>Longitude</td></tr>
<tr><td>1</td><td>32°18'46.91"N</td><td>75°29'53.67"E</td></tr>
<tr><td>2</td><td>32°18'46.90"N</td><td>75°29'56.37"E</td></tr>
<tr><td>3</td><td>32°18'43.04"N</td><td>75°30'6.88"E</td></tr>
</table></td></tr>
</table>

<table>
<tr><td></td><td></td><td>
<table>
<tr><td>4</td><td>32°18'43.01"N</td><td>75°30'3.90"E</td></tr>
<tr><td>5</td><td>32°18'39.08"N</td><td>75°30'3.89"E</td></tr>
</table>
Chak Hari Rai Coordinates of project site
<table>
<tr><td>Pillar No.</td><td>Latitude</td><td>Longitude</td></tr>
<tr><td>1</td><td>32°18'52.54"N</td><td>75°29'15.40"E</td></tr>
<tr><td>2</td><td>32°18'54.52"N</td><td>75°29'17.99"E</td></tr>
<tr><td>3</td><td>32°18'54.48"N</td><td>75°29'23.08"E</td></tr>
<tr><td>4</td><td>32°18'52.51"N</td><td>75°29'28.21"E</td></tr>
<tr><td>5</td><td>32°18'56.43"N</td><td>75°29'28.23"E</td></tr>
<tr><td>6</td><td>32°18'56.43"N</td><td>75°29'23.11"E</td></tr>
</table>
</td></tr>
<tr><td>4.</td><td>Lease Period of Mine</td><td>03Years</td></tr>
<tr><td>5.</td><td>Cost of the project</td><td>
<table>
<tr><td>Project Site</td><td>Project Cost</td></tr>
<tr><td>Kharkhara</td><td>Rs. 11,60,45,778</td></tr>
<tr><td>Maira Kalan</td><td>Rs. 3,77,51,935</td></tr>
<tr><td>Chak Hari Rai</td><td>Rs. 7,27,50,453</td></tr>
<tr><td colspan="2">Total Cluster Project Cost = Rs. 22,65,48,166/-</td></tr>
</table>
</td></tr>
<tr><td>6.</td><td>Man Power Requirement</td><td>
<table>
<tr><td>Project Site</td><td>Man Power</td></tr>
<tr><td>Kharkhara</td><td>90</td></tr>
<tr><td>Maira Kalan</td><td>45</td></tr>
<tr><td>Chak Hari Rai</td><td>75</td></tr>
<tr><td colspan="2">Total Man Power for cluster project = 210</td></tr>
</table>
</td></tr>
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<table>
<tr><td>7.</td><td>Water Requirement & Source</td><td>
<table>
<tr><th>Project Site</th><th>Domestic</th><th>Dust suppression</th><th>Total</th></tr>
<tr><td>Kharkhara</td><td>1.50 KLD</td><td>1.70 KLD</td><td>3.20KLd</td></tr>
<tr><td>Maira Kalan</td><td>1.20 KLD</td><td>1.00 KLD</td><td>2.00 KLD</td></tr>
<tr><td>Chak Hari Rai</td><td>1.50 KLD</td><td>1.70 KLD</td><td>3.20 KLD</td></tr>
<tr><td colspan="3">Total Cluster water Requirement</td><td>8.40 KLD</td></tr>
</table>
</td></tr>
<tr><td>B</td><td colspan="2">Environmental Settings</td></tr>
<tr><td>8.</td><td>Elevation(RL)</td><td>
<table>
<tr><td>Project Site</td><td>Heighest Level(MRL)</td><td>Lowest Level(MRL)</td></tr>
<tr><td>Kharkhara</td><td>288.85m</td><td>281.70m</td></tr>
<tr><td>Maira Kalan</td><td>287.80m</td><td>284.20m</td></tr>
<tr><td>Chak Hari Rai</td><td>291.98m</td><td>286.65m</td></tr>
</table>
</td></tr>
<tr><td>9.</td><td>Nearest National Highway /State Highway</td><td>Pathankot Airport approx. 16.00 Km towards SE Direction.</td></tr>
<tr><td>10.</td><td>Nearest Railway Station</td><td>Nearest Railway Station Bharoli Junction approx. 12.08 km towards SE Direction</td></tr>
<tr><td>11.</td><td>Nearest Airport</td><td>Pathankot Airport approx. 16.00 Km towards SE Direction.</td></tr>
<tr><td>12.</td><td>Ecological Sensitive Areas (Wildlife Sanctuaries)</td><td>None</td></tr>
<tr><td>13.</td><td>Reserved/Projected Forests</td><td>Kathlour Kushlian Wildlife Sanctuary 6.50 Km South</td></tr>
<tr><td>14.</td><td>Nearest Village/Town/City</td><td>Narot Jaimal Singh 1.45 Km South-West</td></tr>
</table>

15.	Nearest River	Ravi River
16.	Seismic Zone	Zone IV

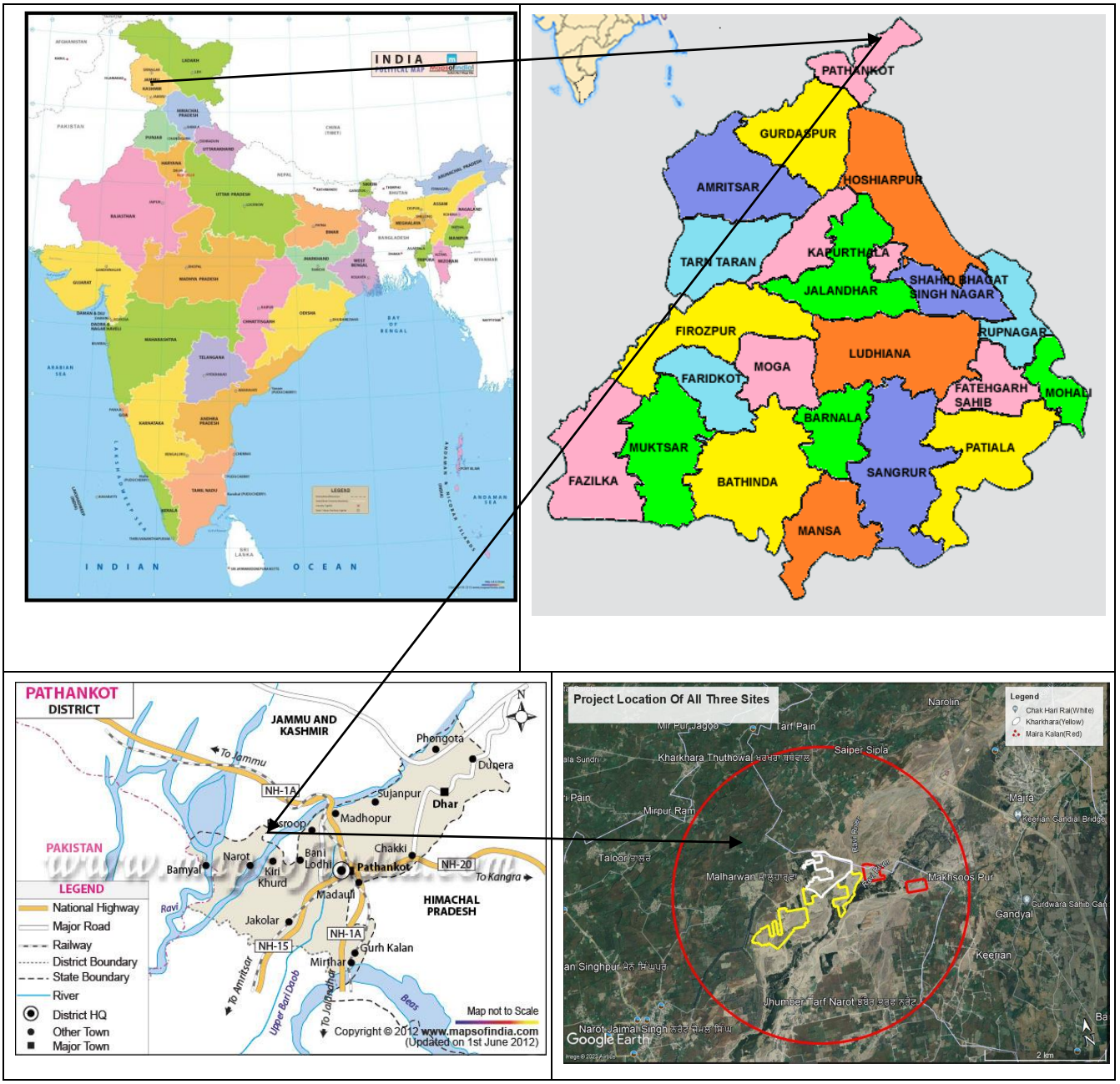

Figure No. I: Project Location

4. STATUS OF REGULATORY CLEARANCES OF THE PROJECT

The Mining plan has been approved by Assistant Geologist, Mines & Geology, Water Resources Department, Punjab, Chandigarh vide Memo No. Glg/Pb/M.P./Kharkhara/2743 dated 03.11.2023, Glg/Pb/M.P./Maira Kalan/2740 dated 03.11.2023 and Glg/Pb/M.P./Chak Hari Rai/940 dated 22.03.2023. There is no National Park, Wildlife Sanctuary & National Monument, within core zone ML area. There is no legal issue against the project in the court of law.

5. METHOD OF MINING

The mining is proposed by opencast semi- mechanized method without drilling and blasting. RBM will be excavated in slices of 1metre thickness upto a depth of 3 m (as per DSR report). RBM deposit fall in river bed mining site so mining will be done upto 3 m depth. The height of slices of layer will be kept 1m each with face slope of 45 degrees. 7.5 m barrier zone will be provided along with the lease boundary as stated under MMR 1961. A distance of 3m or 10% of width of river whichever is more to be left intact as no mining zone. Mining will be carried out only in summer i.e. 1st April to 30th June from 6.00 am to 7.00 pm and in winter i.e. 1st October to 31st March from 7.00 am to 5.00 pm. Mineral extraction will be done for a period of about 270 days in a year.

6. DESCRIPTION OF THE ENVIRONMENT

The entire proposed mine lease area is considered as core zone. The surrounding area covering 10 km radius from the periphery of the core zone is considered as buffer zone. The study area covers 10 km radius of the proposed RBM Mining Project located at Village- Kharkhara, Maira Kalan and Chak Hari Rai Tehsil & District-Pathankot, State- Punjab.

The climate of the district is characterized by dryness except a brief spell of monsoon season in a very hot summer and a bracing winter. The cold season extends from mid-November to the early part of March. The succeeding period up-to the end of June is the hot season. July, August and half of September constitute the southwest monsoon. The period from mid-September to mid-November is considered as post monsoon. June is generally the hottest month. Hot and scorching dust laden winds

blow during summer season. The project zone lies in the sub-tropical region with four distinct seasons;

Winter – November to February

Summer – March to June

Monsoon – July to Mid-September

Post Monsoon – Mid September to mid-November

The base-line data has been collected during the summer season i.e. from April to June 2023 at the project site and 10 km buffer zone for prominent environmental attributes like Ambient Air Quality, Ambient Noise Level, Water quality and Soil profile. In order to get an idea about the existing state of the environment, various environmental attributes such as meteorology, air quality, water quality, soil quality, noise level, ecology and socio-economic environment have been studied/monitored.

7. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Based on the Baseline Environment, environmental impacts of the mining activity on the surrounding environment are described in following sub-sections.

7.1 Impact on Land Use Pattern and Mitigation Measures

RBM mining activities result in surface degradation due to road network and river bank erosion. But by adopting the following mitigation measures, the impact will be minimized:

- Road will be maintained in good condition by using local earth material.
- Regular levelling of transportation route.
- Removal of RBM shall not exceed 60% of the mine lease area, which will minimize effect of erosion.
- The mining will not be carried out below the river water level.

7.2 Impact on Air Quality and Mitigation Measures

In mining operations, loading, and transportation operations may cause deterioration in air quality. Semi mechanized mining method shall be adopted for the mining of RBM and following mitigation measures will be implemented:

- Loaded vehicles will be covered with tarpaulin.
- PUC certified vehicles will be used.
- Overloading will be avoided.
- Plantation will be carried out along the approach road and vicinity area.
- Periodic air quality monitoring will be done and adequate measures will be done.

7.3 Impact of Noise Levels and Mitigation Measures

Noise level will increase due to transportation. To minimize the impact of noise, following mitigation measures will be adopted:

- Proper maintenance of vehicles will be done on regular basis.
- Necessary Personnel protective equipment will be provided to the workers.
- Adequate silencers will be provided in all the diesel engines of vehicles.
- Minimum use of horns and speed limit of 10km/hr in the village area.
- Plantation will be carried out along the approach road and vicinity area.

7.4 Impact on Water Resources and Mitigation Measures

No waste water is generated from the mining activity of minor mineral**.** However, following mitigation measures will be adopted:

Surface Water Resources

- Monitoring of water will be carried out periodically. Water analysis will be carried out seasonally.

Groundwater Resources

- Regular monitoring of water levels and quality in the existing open wells and bore wells in the vicinity will be carried out. If found necessary, additional observation wells will be sunk for monitoring the water levels and quality around the mine representing both upstream and downstream conditions. In addition to this, following mitigation measures will also be adopted:

- River streams will not be diverted to form inactive channels.
- Groundwater will not be intersected during mining activities.

- Mobile toilets will be made available near mine's office away from the river.
- Washing of vehicles in the river will be prohibited.

7.5 Impact on Biological Environment and Mitigation Measures

Ecological impact on aquatic life, flora and fauna and surrounding habitat due to fugitive emission. Following mitigation measures will be adopted:

Flora

- Pollutant like dust, gaseous emanations will be minimized at the generation point itself and adequate measures will be taken to prevent their impact on environment.
- There is no forest in the core zone of mining lease area. So, there will be no deforestation due to mining.
- The mining lease area is devoid of vegetation. So, the greenery to be developed under green belt development programme in the village panchayat land and along the approach road will improve the floral environment of the area.

Fauna

- No mining will be carried out during the monsoon season to minimize impact on aquatic life which is mainly breeding season.
- The lease area is not inhabited by any wild life, as there is no forest cover, hence there will not be any effect on migration or extinction of wildlife.

7.6 Socio-Economic Profile

The social demographic profile of the area is not likely to be much affected, as there is no displacement of people due to the project. The mining in the area has created rural employment. The mining activity in the region has positive impact on the social economic condition of the area by providing employment to the local inhabitants; wages paid increase the per capita income.

8. ENVIRONMENTAL MONITORING PROGRAMME

Following table depicts the monitoring schedule for environmental parameters

Table No.VI: Environment Monitoring Parameter

S.No.	Particulars	Parameters for Monitoring	Duration of Station	Monitoring Frequencies	Location
1	Air Emission	PM_{10}, $PM_{2.5}$, SO_2, NO_X and CO	24 hr	Twice in a week	One location inside and One outside
2	Noise	Spot Noise level recording Leq (day), Leq (night), Leq (dn)	8 hr	Once in a month (Day/ Night)	One location inside and One outside
3	Surface & Ground Water	Physical, Chemical	Grab	Quarterly	One location Surface water and One Location Ground Wate
4	Soil Sampling	Physico - chemical parameters and metals	Grab	Twice in a year	One location inside and One outside

9. ADDITIONAL STUDIES

- **Risk Assessment**

The complete mining operation will be carried out under the management control and direction of a qualified mine manager holding Mines Manager's Certificate of Competency. Moreover, mining staff will be sent to refresher courses from time to time to keep them updated.

- **Disaster Management Plan**

Emergency preparedness is an important aspect in the planning of Disaster Management. Personnel would be trained suitably and prepared mentally and physically in emergency response through carefully planned, simulated procedures. Similarly, the key personnel and essential personnel shall be trained in the operations.

- **Public Hearing**

As per Terms of Reference (TOR) received from State Level Environment Impact Assessment Authority, Punjab, under EIA Notification of the MoEF dated 14-9-2006, as amended from time to time, public hearing will be conducted.

10. PROJECT BENEFITS

The impact on the civic amenities will be substantial after the commencement of mining activities. Medical facilities will be provided in the form of first-aid facility at the mine. These medical facilities will also be available to local people in the surrounding in case of emergencies.

- Generation of employment and improved standard of living;
- Increased revenue to the State by way of royalty, taxes and duties; and
- Superior communication and transport facilities etc.

The employment of local people in primary and secondary sectors of project will upgrade the prosperity of the region.

11. ENVIRONMENT MANAGEMENT PLAN

Table No.VII: The summary of environmental management plan

S.No.	Parameter	EMP
1	Land Environment	Bank protection and restoration will be ensured.
2	Air Environment	Water spraying will be done for dust suppression. Trucks will be covered with tarpaulin to stop dust emission. PUC Certified Trucks will be deployed for transportation.
3	Water Environment	Mining will not interfere with the ground water table.
4	Noise Environment	Minimum use of Horns near the village area. Use of loud sound systems in transport vehicles will be prohibited.
5	Biological Environment	Awareness program will be conducted for labours to sensitize them about importance of biological environment
6	Health & Safety	Labours will be made aware of the ways of working

		and safety measures. Medical facilities & first aid boxes along with anti-venom will be provided in the mine premises. Health Awareness Programmes and camps shall be arranged for local villagers.

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