

EXECUTIVE SUMMARY

- PROJECT DESCRIPTION**

District Survey Report of District Ludhiana has been approved by State Environment Impact Assessment Authority (SEIAA) vide letter No. SEIAA/MS/2023/87 dated 19/01/2023. As per approved DSR, the proposed sand mining site involves mining of minor mineral i.e. sand from the bed of river Sutlej (PO_LD_LD2_ST_97_98_99_100_101), from Village Baghian, Kanian hussiani & Hayatewal, Tehsil–Sidhwan Bet District- Ludhiana, State Punjab from an area of 45.14 ha, Khasra No. Site-97 (Kanian Husaini) 29//22, 43//1,9, 10, 11, 12, 44//2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 45//4, 5, 6, 7, 14, 15, (Hiyatewal) 18// 1, 17// 5, Site-98 (Kanian Husaini) 28//19, 20, 21, 22, 23, 24,45//1, 2, 3 , 46//5, 6,(Hiyatewal), 10//11, 16, 17, 18, 20, 21, 24, 25, 17//2/1, 2/2, 8, 9, 10, 11//11, 12, 13, 14, 15, 16, 17, 18, 21, 22, 23, 24, 25, 12//13, 14, 15, 16, 16//2, 3, 4, 5/1, 7, 8, Site-99 (Hiyatewal) 12//11, 19, 20, 21, 22, 13//15, 16, 25, 15//2, (Baghian) 57//1, 2, 4, 6, 7, 8, 9, 12, 13, 14, 15, 17, 56//5, 42//21, 43//24, 25, Site-100 (Baghian) 42//1, 2, 43//2, 3, 4, 6, 38//1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 37//3, 4, 5, 6, 7, 8, 14, 15, 16, 28//1, 2, 9, 10, 11, 12, 13, 18, 19, 20, 21, 22, 23, 29//4, 5, 6, 7, 14, 15, 16, 17, 23, 24, 25, 22//17, 18, 23, 24, 25, Site-101 (Baghian) 21//13, 14,16, 17, 18, 25, 22//20, 21, 30//4, 5, 6. As per approved mining plan, the proposed production capacity is 307401 TPA of sand.

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

Table 1: Year wise development and production for first three years is tabulated below:

Year	RESERVES		
	Total Mineable Reserves (Tonnes)	Recoverable (Tonnes)	Mineable Reserves (40% of Mineable Reserve)



Name of the Project: Sand Mining Project (Mining Lease Area: 45.14 Ha)
Client: XEN/DMO, District: Ludhiana, Government of Punjab
Location: Village: Baghian, Kanian hussiani & Hayatewal, Tehsil–Sidhwan Bet
District: Ludhiana, State: Punjab

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First	768505	307401
Second	768505	307401
Third	768505	307401
Total	2305515	922203

It is proposed to produce about 922203 tonnes of Sand in three years and accordingly average annual proposed production will be 307401 TPA.

The proposed mining project has been categorized as Category B1 project as per EIA Notification,2006.

➤ **Proponent & Address:**

As per Chief Engineer/Drainage & Mines and Geology, Punjab office Memo No.5598-5602 dated 05.09.2022, Executive Engineer- cum- District Mining Officer, Ludhiana has been nominated as Project proponent and authorized to carry out mining operation in District Ludhiana.

Address: XEN/DMO, Drainage cum Mines and Geology WRD Punjab, Near Durga Mata Mandir, Urban Estate, Phase-1, Dugri, Ludhiana

➤ **Brief description of nature, size and location of the project:**

Brief details of the project are described in the Table No. 50 given below:

Table 2: Brief details

S. No.	Particulars	Description
A	Mining Lease & Location Details	
1.	Name of the Project	Sand Mining Project
2.	Location	
a.	Villages	Baghian, Kanian hussiani & Hayatewal
b.	Tehsil	Sidhwan Bet
c.	District	Ludhiana
d.	State	Punjab

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3.	Lease Area Coordinate	(PO_LD_LD2_ST_97)		
		Pillar No.	Latitude	Longitude
		1	30°58'24.32"N	75°24'45.82"E
		2	30°58'26.52"N	75°24'49.17"E
		3	30°58'27.45"N	75°24'54.37"E
		4	30°58'26.48"N	75°24'58.89"E
		5	30°58'24.61"N	75°25'6.57"E
		(PO_LD_LD2_ST_98)		
		1	30°58'32.85"N	75°24'20.37"E
		2	30°58'31.13"N	75°24'41.17"E
		3	30°58'29.44"N	75°24'50.06"E
		4	30°58'26.13"N	75°24'45.91"E
		5	30°58'25.04"N	75°24'44.08"E
		6	30°58'24.95"N	75°24'32.69"E
		7	30°58'26.30"N	75°24'30.24"E
		(PO_LD_LD2_ST_99)		
		1	30°58'39.32"N	75°23'56.14"E
		2	30°58'39.86"N	75°24'1.72"E

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			3	30°58'31.83"N	75°24'9.25"E
			4	30°58'36.03"N	75°24'8.46"E
			5	30°58'34.22"N	75°24'11.76"E
			6	30°58'32.40"N	75°24'13.15"E
			(PO_LD_LD2_ST_100)		
			1	30°59'9.95"N	75°23'42.33"E
			2	30°59'7.02"N	75°23'47.67"E
			3	30°59'6.60"N	75°23'47.75"E
			4	30°59'6.57"N	75°23'49.36"E
			5	30°59'5.96"N	75°23'51.17"E
			6	30°58'57.57"N	75°23'53.61"E
			7	30°58'51.40"N	75°23'59.83"E
			(PO_LD_LD2_ST_101)		
			1	30°59'11.19"N	75°23'27.39"E
			2	30°59'11.29"N	75°23'29.25"E
			3	30°59'9.00"N	75°23'35.69"E
			4	30°59'6.68"N	75°23'37.20"E
			5	30°59'6.64"N	75°23'35.06"E
			6	30°59'2.42"N	75°23'35.16"E

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4.	Lease Period of Mine	03 Years
5.	Cost of the project	Rs. 12.91 Crores (Approximate)
6.	Man Power Requirement	45 Nos.
7.	Water Requirement & Source	Domestic demand: 2 KLD approx. Dust Suppression: 5 KLD Source: Water tankers
B	Environmental Settings	
8.	Elevation(RL)	Highest & lowest levels found in the area are of 226.70 m RL and 222.85 m RL
9.	Nearest National Highway /State Highway	National Highway 703 approximately 10 Km W.
10.	Nearest Railway Station	Jagraon Railway station approximately 20 Km SE
11.	Nearest Airport	Ludhiana airport is approx. 54 km towards East direction
12.	Ecological Sensitive Areas (Wildlife Sanctuaries)	None
13.	Reserved/Projected Forests	Mattewara Forest is about 51 km in East direction
14.	Nearest Village/Town/City	Sherewala 1.0 Km South-East
15.	Nearest River	Satluj River
16.	Seismic Zone	Zone IV

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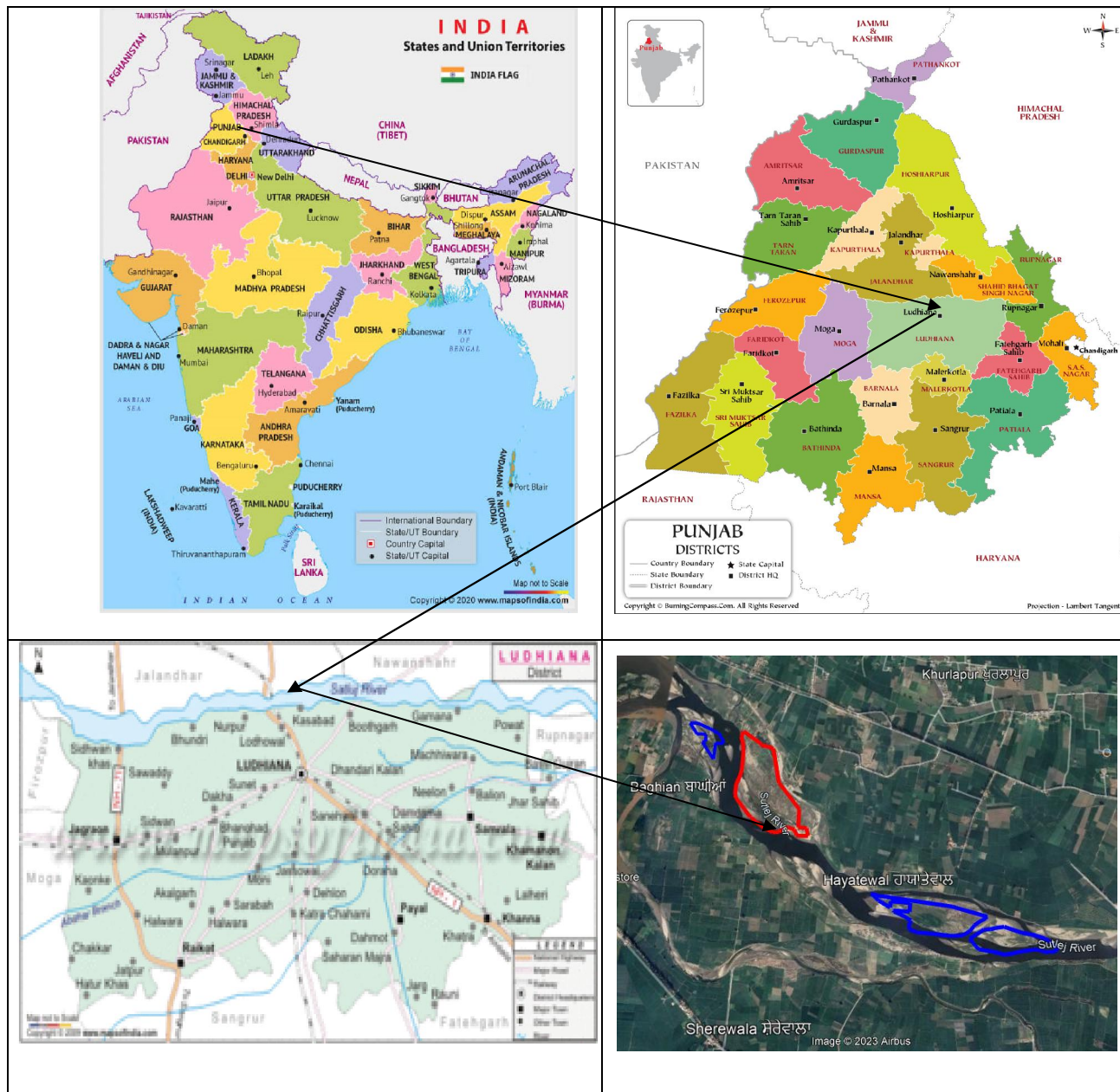


Figure 1: Project location

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➤ **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./Baghian, Kanian hussiani & Hayatewal/603 dated 01.06.2023. There is no National Park, Wildlife Sanctuary & National Monument, within core zone or 10 km radius of the ML area. There is no legal issue against the project in the court of law.

➤ **METHOD OF MINING**

The mining is proposed by opencast semi- mechanized method without drilling and blasting. Sand will be excavated in slices of 1metre thickness upto a depth of (site 97) – 1.72 m, (site 98) – 1.59 m, site 99-1.15m, site 100- 0.90m, site 101- 3m (as per DSR report). Sand deposit falls in replenishable area of the river bed. The height of slices of layer will be kept 1m each with face slope of 45 degree. 7.5 m barrier zone will be provided along with the lease boundary as stated under MMR 1961. No mining will be done during the rainy season (monsoon season). A distance of 3m or 10% of width of river whichever is more to be left intact as no mining zone. The maximum level of annual production planned is 307401 TPA. 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.

1. 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 Sand Mining Project located at Village- Baghian, Kanian hussiani & Hayatewal, Tehsil–Sidhwan Bet District: Ludhiana, State: Punjab.

The climate of Ludhiana district can be classified as tropical steppe, hot and semi-arid which is mainly dry with very hot summer and cold winter except during monsoon season when moist air of oceanic origin penetrates into the district. There are four seasons in a year. The hot weather season starts from mid-March to last week of the June followed by the south west monsoon which lasts upto September. The transition period from September to November forms the post-monsoon season. The winter season starts late in November and remains up to first week of March.

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. The monitored results were found to be well below the prescribed standards.

2. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

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

3.1 Impact on Land Use Pattern and Mitigation Measures

Sand 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.
- Sand mining will create temporary activity in the dry river bed, which will be replenished during monsoon.
- The mining will not be carried out below the river water level.

3.2 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 sand 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.

3.3 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.

3.4 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

- There is a possibility of mixing of freshly disturbed material with the rain water. To take care of such happenings, retaining walls will be provided along the backfilled pits which will be used as a water reservoir for rain water.
- 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.

3.5 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.

3.6 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.

3. ENVIRONMENTAL MONITORING PROGRAMME

Table No. 51: -Following table depicts the monitoring schedule for environmental parameters

Table 3: Monitoring schedule

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 Water
4	Soil Sampling	Physico - chemical parameters and metals	Grab	Twice in a year	One location inside and One outside

4. 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 SEIAA, Punjab vide File No. SEIAA/PB/MIN/2023/TOR/38 dated 05.10.2023, under EIA Notification of the MoEF dated 14-9-2006, as amended from time to time, public hearing will be conducted.

5. 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.

6. ENVIRONMENT MANAGEMENT PLAN

The summary of environmental management plan is given below in **Table No.4:**

S.No.	Parameter	EMP
1	Land Environment	Bank protection and restoration will be ensured.
2	Air Environment	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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.
