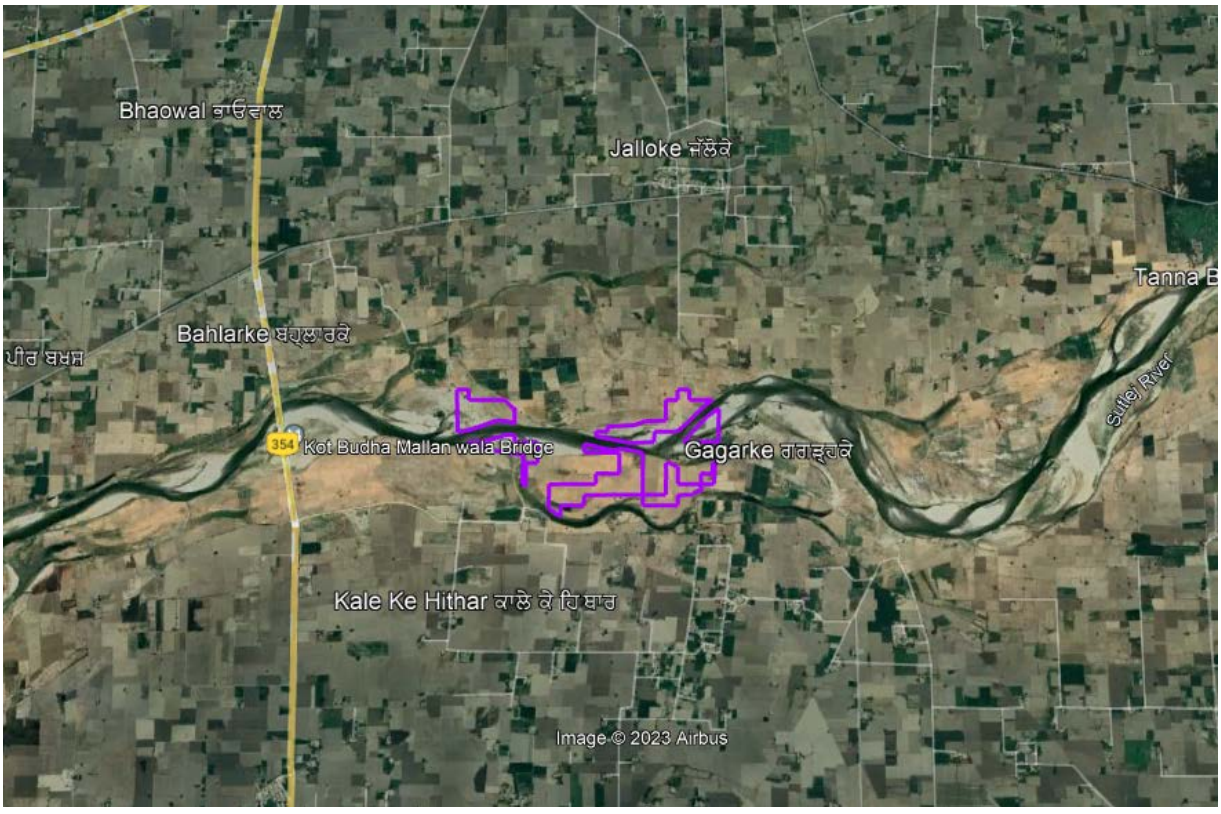
# EXECUTIVE SUMMARY
# OF
# ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR
# PUBLIC CONSULTATION
# OF
## Jaloke & Kot Budha Sand Mining Project
## Lease Area: 29.32ha.
## Production Capacity: 396980 Tonnes per Annum
## At
## Village-Jaloke & Kot Budha, Tehsil-Patti, District-Tarn Taran, Punjab




**By**
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## 1.0 Brief Description of the Project

Jaloke & Kot Budha Sand Mining Project is located at Village-Jaloke & Kot Budha, Tehsil-Patti , District- Tarn Taran in State- Punjab. This is riverbed site. The Total lease area is 29.32Ha. The District Survey Report (DSR) for the district Tarn Taran is approved by the State Environment Impact Assessment Authority (SEIAA), Punjab vide letter no. SEIAA/MS/2023/206 dated: 18/04/2023. The mining plan for an area of 29.32 Ha. and production of 396980 TPA for Jaloke & Kot Budha Sand Mining Project is approved by Assistant Geologist Punjab and Letter no Glg/Pb/M.P/Jaloke & Kot Budha/1345 ; dated:04-05-23. The No Objection Certificate (NOC) was attained from DFO, Tarn Taran regarding sand mining of the above area. Similarly NOC from DFO(Wildlife), Tarn Taran obtained stating that the mining sites do not include area falling in the Eco sensitive zone of wildlife sanctuary & conservation Reserves cover under wildlife protection act 1972 and Punjab wildlife preservation act 1959. ToR was issued by SEIAA, Punjab vide letter no-SEIAA/MS/2023/1645 dated 03/10/2023 under the EIA Notification, 2006 and amendments.

The project will strictly adhere to "Sustainable Sand Mining Management Guideline-2016" (SSMG-2016), and "Enforcement & Monitoring Guidelines for Sand Mining" (EMGSM-2020) The project falls under Schedule 1(a) of mining and is a Category- "B1" as per the amended EIA notification dated 20.04.2022.

## 1.1 Location of the Project

The mining lease area is in Village-Jaloke & Kot Budha, Tehsil-Patti, District- Tarn Taran State- Punjab.

Jaloke & Kot Budha Sand Mining Project is bounded between latitudes 31° 8'0.89"N and 31° 7'57.87"N and longitudes 74°47'51.52"E and 74°47'50.35"E and is covered under the survey of India toposheet no 44 I and 44 M

## 1.2 Size and Magnitude of Operation

Total 29.32 ha is under operation. Total envisaged production of useable material shall be 396980 TPA.

### 1.2.1 Anticipated Life of Mine and Cost of the Project

The anticipated life of the mine is 3 Years 11,90,940 TPA. The cost of the project is about Rs. 7.31 Crore

### 1.2.2 Method of Mining as per present status

Jaloke & Kot Budha Sand Mining Project is proposed to be an opencast semi-mechanized method.

**The project details are as follows:**

| | | |
|---|---|---|
| 1. | Project Name | Jaloke & Kot Budha Sand Mining Project |
| 2. | Location | **The geographical coordinates is as below:**<br><br>**Latitude:** 31° 8'0.89"N and 31° 7'57.87"N<br>**Longitude:** 74°47'51.52"E and 74°47'50.35"E<br><br>**Village: Jaloke & Kot Budha**<br>**Tehsil: Patti**<br>**District: Tarn Taran**<br>**State: Punjab.** |
| 3. | Minerals of mine | Sand |
| 4. | Type of Mine | Riverbed |
| 5. | Depth | 1 m |
| 6. | Proposed production of mine | 396980 TPA |
| 7. | Area(Cluster) of land(ha.) | 29.32ha. |
| 8. | Topo Sheet No | 44 I and 44 M |
| 9. | Project Cost (INR) | Rs. 7.31 Crore |
| 10. | EMP Cost | Capital Cost: Rs. 35,51,000<br>Recurring Cost: Rs. 8,34,000 |
| 11. | Method of Mining | Opencast semi – mechanized mine |
| 12. | No. of working days(per year) | 300 Days |
| 13. | Total Manpower | 32 People |
| 14. | Total Water Requirement | 15.28 KLD |
| 15. | Source of Water | Supply water through private water tankers from nearby villages |
| 16. | Nearest railway station | The nearest railway station is Gharyala at 11 km in the NW direction. |
| 17. | Nearest state highway/national highway | NH-354; approx. 5 km in the NW direction |
| 18. | Nearest airport | Nearest domestic as well as International airport is in Chandigarh & it is about 250 km aerial distance from proposed mining area. |

| | | |
|---|---|---|
| 19. | Seismic zone | Zone III |
| 20. | Status of District Survey Report (DSR) | District Survey report of Tarn Taran is prepared and Approved by SEIAA, Punjab vide letter no. SEIAA/MS/2023/206 dated: 02/02/2023 |
| 21. | Copy of LOI | Letter of Intent: Vide letter no. 196 dated 05.04.2023 |
| 22. | Status of Mining Plan | The mining plan for area of 29.32 Ha. and production of 396980 TPA for Jaloke & Kot Budha is approved by Assistant Geologist, Punjab and Letter no Glg/Pb/M.P/Jaloke & Kot Budha/1345; dated:04-05-23 |
| 23. | Mineable Reserve | 11,90,940 Tonnes |
| 24. | Geological Reserve | 36,91,398 Tonnes |
| 25. | Life of mine | 3 Years |

## 1.3 BASELINE ENVIRONMENTAL STATUS

The EIA/EMP report has been prepared on the basis of one season (Pre Monsoon Season) baseline environmental data monitored during March-2023 to May 2023 by M/s GRC India Training & Analytical Laboratory, Noida, UP.

The monitored baseline data includes micro meteorological parameters, ambient air quality, noise levels, and surface & ground water quality and soil characteristics. Site survey has been conducted for studying the flora & fauna, socio-economic conditions including public consultation, land use, hydrology and hydrogeology, ecology, traffic density etc. Secondary information has been collected from several agencies and departments, both under State and Central Government.

The collected data have been analyzed in detail for identifying, predicting and evaluating the environmental impacts and suitable environmental management plan has been formulated.

### 1.3.1 Summary of Ambient Air Quality

Ambient Air Quality Monitoring reveals that the minimum & maximum concentrations of $PM_{10}$ for all the 8 AAQ monitoring stations were found to be 31.8µg/m$^3$ at Jhugrian Pir Abrakash (AAQ3) and 85.1µg/m$^3$ at Fatta Bora(AAQ7), respectively. The minimum & maximum concentrations of $PM_{2.5}$ for all the 8 AAQ monitoring stations were found to be 15.8µg/m$^3$ at Jhugian Pir Abrakash (AAQ3) and 45µg/m$^3$ at Bandala (AAQ6) respectively.
As far as the gaseous pollutants $SO_2$ and NOx are concerned, the prescribed CPCB limit of 80µg/m$^3$ for residential and rural areas has never surpassed at any station. The maximum

& minimum & maximum concentrations of $SO_2$ were found to be 4.1µg/$m^3$ at Near Project Site(AAQ1) , 4.1µg/$m^3$ at Jaloke & kot Budha(AAQ4) , 4.1µg/$m^3$ at Fatta Bora (AAQ7) & 9.1 µg/$m^3$ at Jaloke & kot Budha(AAQ4), respectively. The minimum & maximum concentrations of $NO_2$ were found to be 5.9µg/$m^3$ at Qutabdinwala (AAQ2) & 18.9µg/$m^3$ at Bandala (AAQ6) respectively. All the results are within the Standard permissible values for $PM_{2.5}$ (60µg/m3), $PM_{10}$ (100µg/m3) , $NO_2$(80µg/m3 )and $SO_2$ (80µg/m3).

### 1.3.2 Summary of Water Quality

**Water samples were collected at 5 stations from Groundwater source and 2 stations from Surface water source.**

**Summary of Ground Water Quality**

- pH varies from 7.69 -7.83 during study period.
- Total hardness varies from 236mg/l to 247mg/l.
- Total dissolved solids vary from 526mg/l at 551mg/l.
- Total coliform was not found in any samples

The ground water from all sources remains suitable for drinking purposes as all the constituents arewithin the limits prescribed by drinking water standards promulgated by Indian Standards IS: 10500. Fluorides and nitrates are within the permissible limits.

**Summary of Surface Water Quality**

- The pH ranges between 7.51 to 7.59.
- Dissolved Oxygen (DO) was observed in the range of 4.2 to 4.6 mg/l.
- BOD values were observed to be in the range of 4.5 to 5.1 mg/l.
- The chlorides were observed to be in the range of 75 to 78 mg/l.
- Sulphates were found to be in the range of 15 to 17 mg/l.
- Bacteriological examination of surface water samples revealed the presence of total coliform inrange of 850 MPN/100 ml to 900 MPN/100 ml

Based on the results it is evident that most of the parameters of the samples comply with 'Category 'C' standards of CPCB indicating their suitability for Drinking water source after conventional treatment and disinfection.

### 1.3.3 Soil Quality

Physical characteristics of soil were characterized through specific parameters viz bulk density, porosity, water holding capacity, pH, electrical conductivity and texture. Soil pH plays an important role in the availability of nutrients. Soil microbial activity as well as solubility of metal ions is also dependent on pH. In the study area, Samples collected from identified locations indicate the soil is sandy clay loam type and the pH value ranging from 7.12 to 7.36, which shows that the soil is alkaline in nature. Potassium is found to be from 61 mg/kg to 65 mg/kg. The water holding capacity is found in between 32.1% to 32.7%.

### 1.34 Noise Levels

The values of noise observed in some of the areas are primarily owing to vehicular traffic and other anthropogenic activities. Noise monitoring reveals that the maximum & minimum noise levels at day time were recorded as

58.7 Leq. dB (A) at NQ3 & 45.8 dB (A) at NQ4, respectively. The maximum & minimum noise levels at night time were found to be 46.2 dB (A) at NQ3 & 37.4 dB (A) at NQ5. There are several other sources in the 10 km radius of study area, which contributes to the local noise level of the area. Traffic activities as well as activities in nearby villages and agricultural fields add to the ambient noise level of the area.

### 1.3.5 Ecological Environment

The study area is agriculture dominant area and no wildlife sanctuary falls within 10 km radius. The existing biodiversity should be protected by planting more trees such as avenue planation, groove plantation, green belt within premises, participation in social forestry etc. Ficus auriculata Lour (Tose), Ficus palmate Forsk (Fagwara), Phyllanthus emblica L. (Ambla), Syzygium cumini(L.) Seels (Jamun), are the most common plants. Some amphibians found are Common Indian Toad, Indian Bullfrog and Indian Cricket frog, while some common avifauna are Shikra, Bank Myna, Common Myna, Indian Great Reed Warbler and Skylark while some common mammals are Gangetic Dolphin, Hog Deer, Nilgai, and Jackal. Total eight faunal species recorded from study area which is protected under Schedule-I of Wildlife Protection Act 1972.

### 1.3.6 Social Environment

There will be some positive impacts of the mine on social environment:

- Employment opportunities, both direct and indirect are likely to be generated
- Communication and transport facilities are expected to be improved.
- Education facilities are improved
- Enhanced Community health care programs will provide better health and medical facilities
- Cultural & sports activities and improvement of social welfare is expected

## 1.4 ANTICIPATED ENVIRONMENTAL IMPACT & MITIGATION MEASURES

### Impact on Air Quality & Mitigation Measures

Sand mining is carried out by opencast semi-mechanized method. The air borne particulate matter generated by sand and handling operations, and transportation of sand is the main air pollutant. The emissions of Sulphur dioxide (SO2), Oxides of Nitrogen ($NO_2$) contributed by diesel operated excavation/loading equipment and vehicles plying on haul roads are marginal. Prediction of impacts on air environment has been carried out taking

into consideration proposed production and net increase in emissions, as discussed in the EIA report.

Water tankers with spraying arrangement will be used for regular water sprinkling on the haul roads to ensure effective dust suppression.

**Impact on Water Resources & Mitigation Measures**

No surface or ground water bodies exist within lease area. The sand material shall be extracted up to 1 m depth from ground profile. Therefore there will be no impact on water regime.

Proposal of mining is for non-rainy days; therefore water quality will not deteriorate. No surface water/ground water body will be disturbed due to proposed mining.

**Mitigation Measures**

Mining in the area will be done above the water table therefore; much impact on water regime is not anticipated. The operation will be semi-mechanized with use of hand tools like shovel, pan, sieves, etc. The minerals will be collected in its existing form. The working level in next one year is likely to reach 1 m, so it is not likely to touch the ground water table. No drainage or water course will be disturbed due to mining. The area consists of agriculture land & during monsoon period, mining operation shall be temporarily suspended. Therefore no question arises to control erosion/sedimentation of water courses.

**Impact on Noise Levels and Ground Vibrations & Mitigation Measures**

No drilling & blasting shall be required for sand mining. The impact on this aspect is negligible. Proposed mining is of open cast semi-mechanized with deployment of light excavator in day time; therefore noise level too will not show any significant increase.

**Impact on Flora and Fauna & Mitigation Measures**

The ecology and biodiversity plays an important role for clean environment. The mitigation measures and management of same for the project shall be done as follows:

1. **Green Belt & other plantation**: Proponent shall undertake Green area development through State Forest Department. Accordingly, the Project Proponent will deposit the Capital and Recurring costs for the same in the state Treasury in the account of Greening Punjab Mission.
2. **Plantation program of mine**: A plantation program over life of mine has been planned in a phase wise manner. The plantation shall be started from first year of mining and till conceptual period and about 1466 nos. trees shall be planted.

The incremental dust generations due to the mining operations, at the boundary of the mine lease are insignificant and it is also expected that with the adoption of mitigatory

measures as suggested in EMP, the impact due to operation of the mine will be minimal on the terrestrial ecosystem and also on the adjacent forest area.

The impact on the fauna of the buffer zone due to the mining activity will be insignificant. The dust suppression methods and proposed progressive plantation over a period of time will reduce the impact, if any, on the fauna.

**Impact on Land Use Pattern & Mitigation Measures**

The proposed opencast mine will result in change the land use pattern of the ML area. The land degradation is expected during mining activities and being an agricultural site, the topsoil shall be spread over mined out pit after mining activities are completed to restore fertility of soil.

**Impact on Socio - Economic Aspects & Mitigation Measures**

The mine area does not cover any habitation. Hence the mining activity does not involve any displacement of human settlement. No public buildings, places, monuments etc. exist within the lease area or in the vicinity. The mining operation will not disturb/ relocate any village or need resettlement. Thus no adverse impact is anticipated.

## 1.5 ANALYSIS OF ALTERNATIVES

Sand bed mining is a site specific project depending upon the geological set up and mineable portion of the land.

## 1.6 ENVIRONMENTAL MONITORING PROGRAM

In order to maintain the environmental quality within the stipulated standards, regular monitoring of various environmental components is necessary which will comply as per conditions. For this the proponent has taken the decision to formulate an Environment Policy of the mine and constitute an Environmental Management Cell and committed to operate the proposed mine with the objectives mentioned. Regular Monitoring of all the environmental parameters viz., air, water, noise, SE, EB and soil, as per the formulated program based on CPCB and MoEF&CC guidelines will be carried out every year.

## 1.7 ADDITIONAL STUDIES

Adequate mitigation measures will be ensured during Mining operation. Disaster Management Plan has been prepared to take care of public health and safety during any accident. The concerns and input expressed during the public hearing will be duly considered, and corresponding actions or measures will be formulated in response.

## 1.8 PROJECT BENEFITS

The benefits due to mining activities in the region are as follows-

1. The proposed project will provide direct employment to skilled/unskilled and semi-skilled laborers.
2. The proposed project will also provide indirect employment to local people in different activities such as transportation, food points, plantation activities, water tanker supply, hand equipments etc.
3. Awareness program and community activities like health camps, medical aids will be undertaken
4. Generation of revenue for the State of Punjab.

## 1.9 ENVIRONMENTAL MANAGEMENT PLAN

Environmental Management Plan for effective management of environmental impacts and ensuring overall protection of the environment through appropriate management procedures has been developed.

As per above discussion pollutant in the form of dust shall be generated during mining for which water sprinkling measures will be carried out on haul road. Proponent shall undertake Green area development through State Forest Department.

**Budget for Environmental protection**

| Sr. No | Environment mitigation measure | Total cost to be incurred (In Rs) | Recurring Cost (Rs) |
|---|---|---|---|
| 1 | Water Sprinkling Measures to be done on haul road tosuppress dust & Haul Road and other Roads Repair and maintenance | 1,50,000 | 50,000 |
| 2 | Plantation and maintenance of saplings through State Forest Department under Green Punjab Mission | 14,66,000 | 7,50,000 |
| 3 | Drinking water facility, Septic Tank & Mobile toilets and solid waste management | 65,000 | 10,000 |
| 4 | Safety equipment's such as gloves, mask, helmet, First aid kit etc. | 30,000 | 7,000 |
| 5 | Additional Environmental activities (Rs. 1.5 per MT of Total quantity) (The amount may be deposited to Forest Department for utilization of the same for development of green area(s)/belt(s)) | 18,00,000 | - |

| | | | |
|---|---|---|---|
| 6 | Regular health check-up camps for the workers engaged in mines shall be organized. | 10,000 | 10,000 |
| 7 | Environmental Monitoring (Air, Water Soil etc.). | 30,000 | 7,000 |
| **Total** | | **35,51,000** | **8,34,000** |

## 1.10 CONCLUSION

The lease spanning 29.32 hectares has been approved in favor of DMO Tarn Taran, situated northeast of Patti at Jaloke & Kot Budha. This project falls under Category "B1" according to the Environmental Impact Assessment Notification from September 14, 2006, and its subsequent amendments. It's a proposed sand mining project covering an area of 29.32 hectares, with an output of 396980 TPA. The project is expected to have positive socio-economic impacts, including local employment opportunities and increased government revenue through royalties, excise, and taxes. Moreover, it anticipates raising the average income levels, thereby improving the overall living standards of the local population.