

Environment Management Plan

1.0 Background

India is the second largest producer of clay fired bricks, accounting for more than 10 percent of global production. India is estimated to have more than 100,000 brick kilns, producing about 150-200 billion bricks annually, employing about 10 million workers and consuming about 25 million tons of coal annually. India's brick sector is characterized by traditional firing technologies; environmental pollution; reliance on manual labour and low mechanization rate; dominance of small-scale brick kilns with limited financial, technical and managerial capacity; dominance of single raw material (clay) and product (solid clay brick); The growth in India's economy and population, coupled with urbanization, has resulted in an increasing demand for residential, commercial, industrial, and public buildings as well as other physical infrastructure. Building construction in India is estimated to grow at a rate of 6.6% per year between 2005 and 2030. Brick manufacturing is a traditional, labour-intensive, land-based and small-scale industry in India, with its products sold in the home market. Brick is basic building materials required for construction activities.

This proposal has been submitted over an area of about 2.446 **ha. in village Salarpur (mangalaur) & Kamaura mangalaur, tehsil-Roorkee, District Haridwar, Uttarakhand.** Applicant M/s Ram brick field intend to mine out brick earth form the given plots to manufacture raw bricks for firing.

1.1 Justification of Project

Brick earth mining is one of the important aspects to ensure availability of bricks in the country. Bricks are the basic building material required for construction activities. Manufacturing of bricks depends on availability of brick earth/clay in that region. It is confined to the areas having clay soil. For manufacturing of bricks brick earth excavation is done. Brick earth excavation activity comes under purview of environmental clearance. Environmental clearance application also consists of environment management plan to submitted to ensure environmental sustainability in the region.

2.0 Project Description

2.1 Location and Connectivity:

The area is located in village Salarpur (mangalaur) & Kamaura mangalaur near tehsil Roorkee & District Haridwar. Approach road is available from mine. The applied area is connected to NH-58 via a link road. Google map 5 km radius is attached as plate no.2.

3.0 Environment Management Plan

3.1 General

Considering the impacts along with mitigation measures and monitoring programme, an Environment Management Plan covers all phases of the project. The plan outlines the measures that will be undertaken to ensure compliance with environmental legislations and to minimize adverse impact.

EMP essentially includes monitoring programs and management control strategies for minimizing the adverse impacts. This is a small scale mining activity; fortunately, a few of the serious impacts associated by mining activity are not part of the mine in question. Important amongst them are —

- ❖ Subsidence
- ❖ Acid Mine Drainage
- ❖ Loss of Forest Land
- ❖ Loss of Agricultural Land
- ❖ Rehabilitation and Resettlement of Residents

The mitigation and management of other impacts arising out of proposed activity is discussed in the subsequent paragraphs as ahead -

4.2 Water quality

As aforementioned there will be no impact on ground water. Ground water contamination possibility is nil, since the mining has been proposed 1.8m below ground level. Haridwar district showing that, water levels range from 0.78 to 50.20 m bgl in pre-monsoon period and from 0.64 to 48.56 m bgl during post- monsoon period, respectively The surface water contamination is

likely anticipated due to generation of dust & transportation of bricks from project site to brick kiln.

Dust will be generated during wind blow and cause the setting of dust particles in the nearby surface water bodies. Only small quantity of domestic waste (in terms of food packaging waste etc.) may be generated that may create some nuisance and disturb the aesthetic conditions of the area.

MITAIGATION MEASURES

- ❖ Regular sprinkling will be carried out to avoid dispersion of dust particles in air and to avoid its subsequent settling in surface water bodies.
- ❖ Labours will not be allowed to through thrashes are domestic waste here and there. They will be asked to dump the waste in waste collection bins placed on the project site that will be subsequently disposed to earmarked composting site outside lease area.
- ❖ Regular servicing of vehicles will be get done on service repair shops, no repair works will be done on mining site.
- ❖ Washing of vehicles will not be done onsite.
- ❖ The conveyance vehicles of staff will be regularly checked to avoid spillage/leakage of oil.
- ❖ There is no impact on water quality is anticipated however, seasonal water quality monitoring will be carried out to ensure the impact on water quality is minimal.

4.3 Air Pollution Control

Brick earth mining being small scale activity does not require drilling and blasting. Therefore minimum impact on air quality. There are various sources of fugitive dust emission during mining eg excavation of soil/clay, drying, and transportation of bricks to brick kiln site. The environmental management for air pollution control includes —

- ❖ Mining of clay leads to generation of dust particles that create negative impact on air quality in the environment.
- ❖ Loading and unloading is the another source of dust generation in this activity

Brick Clay Mining Project of M/s Ram Brick Field Vill: Salarpur (mangalaur) & kamaura mangalaur, Tehsil- Roorkee & Distt- Haridwar, Uttarakhand

- ❖ Transportation will also contribute little to dispersal of dust particles.
- ❖ Haul roads are always a major source of fugitive dust emission in mining activity.

Mitigation measures

- ❖ Following measures will be taken to reduce dust from haul roads.
 - a. The sprinkling will be done to reduce dust dispersion.
 - b. Brick kiln site is located near to mining site hence haul road length is very less. However periodically, water will be sprinkled on these roads to wet the surface.
 - c. The haul road is un-metalled so will be adequately compacted before being put into use.
 - d. Over loading of material will be strictly avoided.
 - e. The road will be properly maintained and compacted.
- Regular checking and maintenance of conveyance vehicles will be conducted and pollution under control certificate will be obtained.

4.4 Noise Control

The proposed mining method is manual hence no heavy mining equipments will be deployed. Drilling and blasting is not required hence noise emission will be minimum. Only source of noise is DG set. So there will be less noise pollution and accordingly noise assessment measures will be implemented.

- ❖ DG sets with suitable acoustic enclosure will be deployed.
- ❖ Noise level will be maintained below 90 dB(A) in workplace (for 8 hour exposure).
- ❖ Hearing protection devices (Ear plugs and ear muffs) should be provided if required.
- ❖ Proper maintenance of DG set & vehicles will be done to reduce the noise and keep the same within reasonable limit.

4.5 Biological Management

As mentioned earlier that certain losses are inevitable during the mining operations, the important among them are loss of vegetation, degradation of land and air pollution. Besides other

mitigation measures it would be in fitness of things to plan an appropriate plantation/afforestation programme. The plants selected for plantation/afforestation will be locally thriving species.

It is proposed that 500 plants will be planted in five years proposal period. Plantation is taken up on both side the road. Before onset of monsoon in the month of march to may plantation will be undertaken. For this purpose pits of 0.5x0.5 m² will be dug at the distance of 2.5 m. and plantation will be undertaken. The average spacing of tree species will be kept about 5 m depending upon the size of canopy of the species.

There is shrub or grass plantation proposed on the soil dump as the work of mining will be conducted. The shrubs will include the locally thriving species.

Plantation in village areas jointly managed by lessee and community:

Besides the above plantation/afforestation programme a plantation drive in various parts of vacant areas of village will be undertaken in consultation with the community members. At the outset it is proposed to take-up every year sufficient land. The spacing will be kept at about 5 m. However, it will vary depending on species. The species with larger canopies will have higher than 5 m spacing.

Post Plantation Care

Post plantation care is very important and will be an integral part of mine management. A regular post plantation care, which include, regular watering, manuring, protective measures etc. will be done. Diseased and dead plants will be uprooted and replaced by fresh saplings. Regular monitoring on survival rate and remedial action will be done in an organized and planned manner.

4.6 Land-use Planning and Mine Closure

As per proposal the ultimate land use will be restored after end of agreement period. The mined out land will be restored after reaching the ultimate depth.

- The soil dump will be dispersed, labeled and restored for reuse purpose.
- Proper fencing all around the excavated site so that it can prevent any mishap or accident in future.

- Land will be left for certain period and to be used for agricultural activity.

4.7 Occupational Safety and Health

Occupational safety and health is very closely related to productivity. The mining is directly associated with health and safety of the work force. It is established that the mining activities have several health risk. Some of the occupational hazards associated with mining are:

- ❖ Hearing impairment
- ❖ Skin diseases
- ❖ Eye diseases
- ❖ Respirable diseases

Fortunately all above diseases are not anticipated in this project.

Safety of employees during operation of mines will be as per the mines rules and as per guideline of Director General of Mines Safety (DGMS) provided through periodical circulars. The following measures relating to safety and health will be adhered —

- ❖ Provisions of safe drinking water facility for mine workers.
- ❖ Awareness on safety and ensure using of personal protective equipments (PPE) by workers.
- ❖ Periodical medical examination of all workers.
- ❖ First Aid facility and training to workers.

4.8 Compliance Of Environmental Laws

The project has been applied for getting environmental clearance. Project proponent would comply with Environmental clearance conditions and the following environmental laws as applicable to them:

1. The Water (Prevention & Control of Pollution) Act,1974
2. The Water (Prevention & Control of Pollution) Cess Act,1977
3. The Air (Prevention & Control of Pollution) Act,1981
4. Environment (Protection) Act, 1986

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