

EXECUTIVE SUMMARY

For

“KURAI LIMESTONE BLOCK”

At

Villages- Village-Kurai, Kurli,
Sindola

Tehsil-Wani

District- Yavatmal

State- Maharashtra

ToR letter no:

IA-J-11015/35/2022-IA-II(NCM)

dated: 13.10.2022.

Lease Area- 480.80 ha.

Cost of Project - Rs 493.5 Crore

Item & Category - 1(a), A

Limestone Production capacity- 3 MTPA

**Total Excavation- 6.293 MTPA(including
limestone 3 MTPA, waste 3.172 MTPA,
and topsoil is 0.1216 MTPA) with one
Crusher of 1500 TPH.**

Baseline Season: October,
2022 to December 2022
Laboratory Assigned: M/s
Perfact Researchers Pvt.
Ltd.

Project Proponent

M/s ACC Limited

Registered Address- 121,
Maharshi Karve Road,
Maharashtra, 400020

Contact Person - Mr. Krishna
Mohan

Designation - Chief Plant
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Environmental Consultant

**Perfact Enviro Solutions Pvt.
Ltd. (PESPL)**

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Introduction

Kurai Limestone block (Auction block) has been awarded to M/S ACC Limited through auction process by Govt. of Maharashtra vide letter no MMN -0222/C.R.26/Ind-9 (A) on 07.03.2022 with no limit on sale quantity or specific end use. The proposal is for mining of limestone mineral with maximum production capacity of 3 MTPA. The total excavation will be 6.293 MTPA (including limestone 3 MTPA, waste 3.172 MTPA, and topsoil is 0.1216 MTPA) from Kurai (Auction block) limestone block over an area of 480.80 ha. by M/s ACC Limited located at Village- Kurai Kurli & Sindola , Tehsil Wani, District Yavatmal in the state of Maharashtra.

The present proposal is a greenfield mine project for an Auction Block (with no specific end use) for opencast mechanised mining of limestone mineral with production capacity of 3 MTPA.

Project Description

The lease area falls in the Survey of India toposheet No. 56I/13 and 56M/1 at Latitude: 19°50'36.44"N–19°52'35.26"N and, Longitude: 78°59'47.73"E – 79°01'27.35" E..

LOI has been granted by the state government through auction as per MMDR Act 1957, and its amendments (the "Act") and the mineral (Auction) Rules, 2015 including its amendments (the "Rules") by paying requisite upfront payment. ACC was declared as the "Preferred Bidder" for the grant of Mining Lease for the Kurai Limestone Block over an area of 480.80 Ha in Yavatmal district, Maharashtra. Out of this 480.80 Ha area, 0.2 Ha is Government land, 2.94 Ha is forest land and the remaining 477.66 Ha is private land.

The mining plan has been approved by IBM, Nagpur for maximum production capacity of 3 MTPA. The total excavation will be 6.293 MTPA (including limestone 3 MTPA, waste 3.172 MTPA, and topsoil is 0.1216 MTPA) vide letter no. YTL/LST/MPLN-01/2022-NGP dated 30.05.2022.

Mining Method

1. The mining will be carried out With "Fully Mechanised Opencast Mining Method". The mining operation will be extended in Pit No. 1 for the proposed period of five years.
2. Limestone / overburden will be excavated by dividing the entire thickness of deposit in benches 8 to 10m high.
3. Ramps at a gradient varying from 1:10 to 1:16 having width more than three times the width of a dumper will be provided for connecting different benches at locations favourable for optimising haul length and maximising mineral extraction.
4. Deep hole drilling & controlled blasting method will be adopted.
5. Blasted material will be loaded through the excavator.

6. Material will be transported by means of trucks/dumpers from mines to the destination point (Crusher/OB dump/stocks).
7. Crushed/uncrushed material will be used for captive purpose or sold in the open market for end users as per the market conditions in the cement industry.
8. Mining will be carried out in 3 shifts. Average working days in a year will be around 300.

Description of the Environment

The baseline data has been collected with due permission from MoEF&CC from October to December 2022. The details are given below:

Micro-meteorological data:

- i. **Temperature:** Temperature of the area varies from 9°C to 30°C.
- ii. **Relative Humidity:** The relative humidity varies from 40 to 98%.
- iii. **Wind Speed:** Wind speed normally is in the range of 0 m/s to 9 m/s.

Core zone

The mean value of PM₁₀ ranges from (65.76-77.60 µg/m³) & PM_{2.5} ranges from (36.49-43.05 µg/m³), SO₂ ranges from (6.20-7.32 µg/m³), NO₂ ranges from (17.77-20.97 µg/m³) & CO ranges from (0.54-0.64 mg/m³) which are within the limits of National Ambient Air Quality Standards (NAAQS).

As per the Air Quality Index by CPCB, the air quality of the core zone is found Satisfactory in the Post-Monsoon season.

Buffer zone:

The mean value of PM₁₀ ranges from (69.71-79.57 µg/m³), PM_{2.5} ranges from (38.67-44.15 µg/m³), SO₂ ranges from (6.57-7.50 µg/m³), NO₂ ranges from (18.83-21.50 µg/m³) & CO ranges from (0.58-0.66 mg/m³) which are within the limits of National Ambient Air Quality Standards (NAAQS). As per the Air Quality Index by CPCB the air quality of the buffer zone is found to be Satisfactory during the sampling campaign.

Thus it can be concluded from the above results that all the parameters are within the range of the NAAQS and as per AQI by CPCB the buffer zone falls in the Satisfactory range.

Noise Quality results: Samples were collected from 12 locations.

Core Zone (Agriculture Area): N1, N2, N3 & N4: The ambient noise level during day time at the proposed project site varies from 56.8 dB (A) to 59.3 dB (A) which are within the standard limit of Industrial area ~ 75 dB (A). During night the noise level at the project site ranges from 46.2 dB (A) to 49.7 dB (A) which are within the standard limit of Industrial area 70 dB (A)

Buffer Zone:

Commercial Area (N5 & N6): The ambient noise level in commercial area i.e. Approach Road & SH-236 is 64.2 dB (A) to 71.4 dB (A) during day time which is higher than the standard limits of commercial

area ~ 65 dB (A) and 58.4 dB (A) to 67.2 dB (A) during night time which is higher than the standard limits of commercial area ~ 55 dB (A). The increased noise level in day & night time is due to vehicular movement.

Residential Area (N7, N8, N9, N10, N11 & N12): The ambient noise level in residential area ranges from 56.5 dB (A) - 58.9 dB (A) during day time and from 46.2 dB (A) to 48.2 dB (A) during night time. The slightly higher noise level compared to standard limit may be regarded to the residential and other local activities occurring within the village.

Water Quality Results

The samples were collected from 9 groundwater locations and 5 surface water sources:

Ground water quality- Core zone & Buffer Zone - The groundwater samples were collected from 9 locations namely Onsite, Kurai village, Gowari, Dorli, Shindola, Dhakori, Nimbala budurk, Chanakha, and Shivala Open Well. In some of the locations it was observed that except TDS, TH, alkalinity, fluoride, calcium, magnesium, and chloride, Iron all other parameters are within the permissible limit as per drinking water standard.

Surface water quality- The surface water quality of all the 5 locations namely Nala near Dorli, Nala near Dhakori, Penganga River, Vaidarbha River, Khadakhia Nala. shows that all the parameters are within the CPCB Surface Water Quality Criteria and falls under class B and D.

Soil Quality Results

The samples were collected from 12 locations:

Core Zone: The samples collected from the core zone sites show that the soil texture in the core zone is Clay, Color is 3/2 (Blackish Brown), pH is between 6.9 - 7.4 Amount of primary nutrients like Organic matter is 0.58-2.45 %, the available nitrogen 54.6 to 85.4 mg/kg is low and available Potassium 15.9 to 29.3 mg/kg is low while the available Phosphorus 8.8 to 14.6 mg/kg is in medium range. Thus it can be concluded that soil is average fertile in the **Core Zone**.

Buffer Zone: The samples collected from the buffer zone sites show that the soil texture in the buffer zone is Clay, Color is 3/2 (Blackish Brown), pH ranges from 6.9 to 7.5. Amount of primary nutrients like Organic matter 0.65 to 2.02 %, the Available Nitrogen 61.6 mg/kg to 84 mg/kg is lower in range, the Available Phosphorus 10.6 mg/kg – 14.4 mg/kg is low to medium in range, Available Potassium 19.8 mg/kg to 28.9 mg/kg is low in range, Primary nutrient profile shows that soil is average fertile due to the availability of low amount of nitrogen, available potassium.

Ecology and Biodiversity Results:

Mining can affect vegetation in the core zone. The mining activity will generate dust which may impact the nearby biological environment.

Flora: Core Zone. In the core zone few species of trees, shrubs have also been planted within the mining premises of trees, shrubs found at the site out of namely Teak(*Tectona grandis*), Ankura

(*Alangium lamarckii*), Bahera (*Terminalia bellirica*), Bael (*Aegle marmelos*), Kadam (*Anthocephalus cadamba*), Kendu (*Diospyros melanoxylon*), Neem (*Azadirachta indica*), Palash (*Butea frondosa*), Ash Tree (*Fraxinus*), Sheesham (*Dalbergia sissoo*), Pipal (*Ficus religiosa*), Imli (*Tamarindus indica*), Gular (*Ficus racemosa*), Rithaz (*Sapindus emarginatus*), Tulsi (*Ocimum tenuiflorum*), Doob (*Cynodon dactylon*), Sama (*Echinochloa colona*) etc.

Flora of Buffer Zone: On the basis of primary survey and secondary data collected from the forest office a large variety of trees, herbs, shrubs, ornamental plants, weed and grasses found suited to climatic conditions.

Fauna in Study area: No threatened, rare, endangered or endemic species were observed during the survey in the core zone. However, thirteen (13) Schedule II species i.e. Indian Fox, Jackal, Langur, Rhesus Macaque, Small Indian Mongoose, Indian Cobra, King Cobra, Common Krait, Rat Snake, Russel Viper, Chameleon, Jungle Cat, Common Mongoose are reported in the Buffer zone which lies within a 10 km radius.

Socio Economic Study Results:

Study area comprises two districts i.e Yavatmal and Chandrapur. Out of total 85 villages 59 villages fall in Yavatmal and 25 villages come in Chandrapur district. One urban area viz Nakoda (CT) is in Chandrapur district. All the villages falling in Chandrapur district are within 5km to 10km in the study area.

Administrative structure of the study area:

About 84 village settlements and 1 urban area were selected for the Socio Economic study. The total population of the study area is 82019 constituting 19894 households. Average sex ratio is 937 females to 1000 males.

Social Structure

The proportion of Scheduled Caste (SC) population within the study area is 8.09% and Scheduled Tribes (ST) population is 17.69%.

Literacy

Total literates in the study area are 84.16% and total illiterates are 15.84 %. Out of total literates' males are 90.27% and females are 77.66%.

Occupation and Livelihoods

Out of the total population, total workers are 55.25% of which the main working population is 90.29% whereas the marginal population is 9.71% and non-workers are 44.75%.

Primary Study

Out of 84 villages in the study area total 4 villages are selected for the primary data collection. The areas within 2 km were taken as sample villages for primary survey. Surveyed villages are Kurai, Dorli, Gowari & Shinola Village. During the fieldwork, available demographic data was collected from Gram Pradhan/Sachiv. All the sample villages are situated very close to the project area. The area houses

many industries, consequently, the demographic data keeps on modifying due to the floating labor population.

The village Gowari shows that only about 27.83% of main workers are engaged in agriculture, whereas, village Dorli shows that about 66.59% of main workers are engaged in agriculture. It indicates that in all the villages, the main livelihood is provided by labour work other than agriculture. As on date, the other wages in this area are the 3rd main livelihood provider for communities residing within 2 km of the project. It is also worth noticing that agriculture is the 2nd main livelihood provider in the villages located within 2 km.

Traffic Study Results:

Transportation

As per the traffic survey done for SH-236, the existing traffic (PCU/hr) is 238 and the carrying capacity of the road is 2550 PCU/hr.

Proposed Transportation System

The proposed transportation from mine to cement plant of mineral will be carried out through tippers/dumpers to nearby ACC Sindola mines (5 km) by village road. From there it will be transported in an enclosed conveyor belt to the cement plant as and when required.

The mineral will also be sold to various buyers for which transportation will be done through SH-236. As per traffic study the increment in traffic will be 2 PCU/hr which is within the carrying capacity of SH-236.

The carrying capacity of the SH-236 Road is much higher than the proposed traffic volume. The traffic (to & fro) from Kurai Limestone Mine will not create any traffic congestion.

Anticipated environmental impact and mitigation measures

Air Environment: The airborne particulate matter is the main air pollutant contributed by opencast mining, drilling and blasting, Mineral crushing and screening and transportation. Various emission sources are identified from the proposed mining operations. Therefore, water sprinkling will be done and workers will be given protective gears such as goggles, dust masks, gloves, and helmets. Fixed sprinklers will be installed at permanent mine haulage road. All measures stipulated in the EC will be implemented. Water sprinkling will be done at regular intervals on haul roads, loading and unloading and at transfer points to suppress dust emissions in the mine area. Regular maintenance of vehicles and machinery. The development of green belt will be done in an area of 4 ha in a safety zone of 7.50m in the first five years of mining. At the end of the conceptual period, a total 60 Ha will be covered under the green belt including 7.5 m boundary. In addition, a backfilled area of 200 Ha & 35 Ha of waste dump will also be afforested.

Noise Environment: The mining operation will be done by open cast mechanised mining method with drilling and blasting. Excavators will be used in excavation. To mitigate noise pollution at the mine

mining site machinery will be maintained in good condition, mine workers will be given protective gears such as goggles, dust masks, gloves, helmets and earmuffs for protection. Blasting parameters will be optimised to obtain good fragmentation with least noise and vibration.

Water Environment: The water requirement for mine will be approx. 85 KLD which will be mainly consumed for drinking & domestic purpose, sprinkling, plantation & workshop. The requirement of water in the initial stages would be met from adjacent rain-harvested mine sump of the ACC or nearby water sources/groundwater subject to necessary permission from competent authorities.

Land Environment: Mine lease encompasses a total area of 480.80 Ha. Mining will be opencast mechanised with drilling and blasting. The maximum production of limestone will be 3.0 MTPA and the total excavation will be 6.293 MTPA (including limestone 3 MTPA, waste 3.172 MTPA, and topsoil is 0.1216 MTPA) from this mine. As per existing land use pattern, 0.2 Ha is Govt Land, 2.94 Ha is Forest Land and remaining 477.66 Ha is private land. At the end of mining, out of the total mined out area 328 Ha, 200 Ha of area will be backfilled & afforested and the rest of the area 128 Ha will be left as a water reservoir..

Biological Environment: 2.94 Ha forest land is involved in the lease area. The fauna in the vicinity of the mine is restricted to a few common species. There will be no impact on flora and fauna due to the proposed project.

The mining lease comprised a total 480.80 Ha of land. Out of which, 328 Ha land will be used for mining, 1.0 Ha will be utilised for roads, 2.0 Ha area for infrastructure, Building and Workshop, 35.0 Ha for waste dump, and 60 Ha area utilised for green belt(including 7.5 metre boundary area) at the end of life of mine. Rest of the area 54 Ha will not be disturbed. At the end of mining, out of the total mined out area 328 ha, 200 ha of area will be backfilled & afforested and the rest of the area 128 ha will be developed as a water reservoir. The excavated soil will be stacked separately and later it will be used for afforestation. Regular water sprinkling will be done to reduce the dust generation.

- **Socio- Economic environment:** The project will enhance indirect employment in the area. Therefore overall economic development is much likely after the commencement of the project.
- **Mine Waste:** Mine waste will be backfilled in the quarry. Other waste generated on account of mining will be disposed as per stipulated rules and EC conditions.
- **Impacts due to transportation:** Impact of transportation will be minimal as ROM will be transported by 50-55 Tonne truck to proposed crusher (1500 TPH) located in the lease area.

Environmental Monitoring Programme

Environmental monitoring at various locations, within the mining lease area and in the study area of 10 km radius will be carried out on a periodic basis. A comprehensive network for monitoring has been prepared. Sampling locations have been identified by considering the source of pollution due to mining operations, drainage pattern, topography of the area and biological environment.

Additional Studies

Risk Assessment & Disaster Management Plan. Mining will be carried out by mechanised opencast mining, with drilling and blasting as and when required. Mining equipment such as excavators, dumpers etc will be used. Mining will be done under strict supervision hence the rate of operational risks is minimal.

Rehabilitation and Resettlement- It may be noted that ACC won the kurai Limestone Block through an e-auction process conducted by the State Govt of Maharashtra on 06.01.2022 under the MMDR Act 1957, and its amendments (the “Act”) and the mineral (Auction) Rules, 2015 including its amendments (the “Rules”). ACC was granted Letter of Intent and declared Successful Bidder for grant of Mining Lease in the concerned auctioned block.

Having won the Mining Lease rights under the stated State Govt Auction, ACC is now pursuing the acquisition of surface rights in compliance with the State Govt Laws.

The lands within the mining block are predominantly private lands under non-irrigated cultivation. There are some structures or habitations present towards western side in the area falling within this Block. Normally, land acquisition(Long term or Short term) is undertaken as required depending upon the expansion of the mining pit and associated activities. As and when land acquisition is required, it will be done on a mutually agreeable basis with land owners.

Project Benefits

The proposed mining project has a significant positive impact on the socio-economic environment and it will help sustain the overall development of the area. The proposed project significantly contributes to economic development by providing total direct employment to 66 and indirect employment to many more people in the area. By organizing health checkup camps, awareness programs about rural development of the locals in the field of education, personal health care and skill development campaigns to improve standards of living in the area.

Environment Management Plan

Environmental Management plans giving the environmental protection measures for mine to meet the stipulated norms of IBM/MoEF&CC.

The effective management system involves proper and regular monitoring of the environment components for continual improvement. Based on the project descriptions and the activities associated, the Environment Management plan has been prepared for all the valued Components for which the Budget proposes Rs. 360 lakhs as capital cost & Rs. 70 Lakhs as recurring cost has been proposed by the ACC Ltd. Environment Monitoring shall be carried out as per EC/CTE/CTO conditions.

Conclusion

Thus, it can be concluded on a positive note that after the implementation of the mitigation measures and Environmental Management Plan, the normal operation of the project will have minimal impact on the environment.