Executive Summary

MARKAGONDI LATERITE MINE
AT VILLAGE MARKAGONDI, TEHSIL JIWATI, DISTRICT CHANDRAPUR, STATE MAHARASHTRA
LEASE AREA OF 54.25 HA
PRODUCTION QUANTITY: 7,00,000 TPA

to

Maharashtra Pollution Control Board
Chandrapur, Maharashtra

PROJECT PROPONENT

M/s. Ultratech Cement Limited
Unit – Manikgarh Cement Works, Post – Gadchandur, Tehsil – Korpana, District – Chandrapur, Maharashtra-442908

EIA Consultant

POLLUTION & ECOLOGY CONTROL SERVICES
NABET Accredited EIA Consultant Organization
Certificate No. NABET/EIA/2023/ SA 0165

May 2023

EXECUTIVE SUMMARY

EX-1.1 INTRODUCTION

M/s Ultratech Cement Limited has been successfully declared as the "Successful Bidder" under Rule 9(4)(b)(iii) of the Mineral (Auction) Rules, 2015 for grant of a quarry lease for Laterite (Minor Mineral), over an area of 54.25 Ha, in Village – Markagondi, Tahsil – Jiwati, Dist. Chandrapur, State–Maharashtra vide their letter no. sasha/Karya-11/Te-3/Khanij/21/927, dated 14.12.2021.

The Markagondi Laterite Projects covers land of Compartment No. 43 to 59 (excluding 48) , 210 and falls under Forest Demarcated Compartment nos.89 & 102, Village – Markagondi, Tahsil – Jiwati, Dist. Chandrapur, State – Maharashtra. The area of the leasehold is 54.25 Ha. It is bounded by Latitude 19° 34' 29.765" N to 19° 35' 08.468" N and Longitude 79° 09' 32.314" E to 79° 10' 02.492" E and is included in Survey of India Toposheet No. 56M/2. It may be noted that as per the writ petition no.3669/2009, The chief Secretary, Government of Maharashtra vide letter dated 09/06/2015 has clarified that the disputed land of 33486 Hectare in this area shall be considered as Forest Lands which includes the land of Jiwati Tahsil and since the proposed area is part of this land as such the entire Project Site area is also Forest Land. The entire mining area falls under Forest area and the necessary application for diversion of this forest land has been made to the competent authority on 01/06/2022 and is under active consideration.

Mining Plan over an area of 54.25 Ha was approved by Directorate of Geology and Mining (DGM), Maharashtra State Govt. vide Letter No. vide letter no. STC/446/2019-20/1550 dated 12th April 2022 for maximum Laterite production of 7,00,000 Tonnes/Annum.

It's a green field project. DGM Maharashtra carried out 28 nos. of trial pits of 1x1x2 m during year 2006 and 2008. In continuation, during the plan period, lease area will be fully explored by drilling 14 vertical boreholes upto a depth of 10 to 20 m each with a grid interval of 200x200 m. The Markagondi Block is located in and around village Markagondi, Tahsil – Jiwati, District – Chandrapur and falls in Toposheet No. 56 M/2. The Markagondi village is approachable from Shengaon and Ambejhari by a tar road. The proposed project is an opencast Laterite (major mineral) project and is classified as "CATEGORYB1" by Ministry of Environment, Forests & Climate Change, New Delhi. The capital cost of the project has been estimated to be Rs 1992.90 Lakhs.

EX-1.2 ENVIRONMENTAL SENSITIVITY

No National Park, Wildlife Sanctuary, Biosphere Reserve or Migratory Corridors of Fauna is present inside the Project Site or within 10 Kms area of the Project Site. There is no important river or stream passing through of the lease area. However during rainy season, the area is drained by a first order stream.

EX-1.3 TOR APPRAISAL

In accordance with the provisions of EIA Notification 2006 published by MoEF&CC vide Notification No. S.O. 1533 dated 14/09/2006, the Markagondi Laterite Ore (add) Mining Project is required to obtain Prior Environment Clearance.

M/s. Ultratech Cement Limited entrusted the services of assessment of the environmental impacts arising due to the proposed Project to NABET Accredited EIA Consultant viz. M/s Pollution & Ecology Control (PECS), Nagpur to facilitate grant of Prior Environment Clearance for the Project.

MoEF&CC vide its Notification No. S.O. 1886(E) dated 20th April 2022 amended the categorization. As per the recent amendment, now the Non-Coal Mining Project with lease area of less than 250 Ha has been classified as Category "B" Projects. Considering all the above, the Markagondi Laterite Mine project of M/s Ultratech Cement Limited considered as Category "B" Project from Environment Angle. The Project shall be appraised by SEAC/SEIAA, Maharashtra of Ministry of Environment, Forest & Climate Change at State level for grant of Environment Clearance.

Accordingly, an application for the grant of Terms of Reference (TOR) was submitted on PARIVESH portal dated 06.06.2022. The State Expert Appraisal Committee-I (SEAC-I) of Maharashtra State considered the Project for grant of Terms of Reference in its 226th Meeting held on 25th to 27th July 2022 and State Level Impact Assessment Authority (SEIAA), Maharashtra considered in 252nd meeting date 21.10.2022 and accordingly issued the TOR vide its Letter No SIA/MH/MIN/77812/2022 dated 17th Nov 2022.

In order to ensure compliance for obtaining the Environmental Clearance for this mining activity, the proponent has initiated steps to carryout required Environmental Impact Assessment (EIA) studies in and around the mine lease area.

The study was conducted within 10 Km radius from the mine boundary. The baseline data collection involves the data of air quality, water status, land use, socioeconomic structure of the study area, existing flora, fauna, prevailing noise levels, along with the physiographical status and meteorological conditions of the area. The baseline monitoring was carried out in and around the mine area during the period of Dec 2022 to Feb 2023.

EX-1.4 MINING METHODOLOGY

The proposed method of mining will be open-cast mechanized method using excavator, tipper combination and if oversized boulders are encountered, they will be reduced by hydraulic rock breaker, and thereafter the entire ROM will be transported by excavator/tipper combination to the captive cement plant of project proponent.

The production will be carried out in both northern and southern sides. The bench height will be maintained as 6 m. Out of this, top 0.35 m will be expected as inferior in grade and encountered at some places. This inferior material will be transported to the 7.5 m barrier zone and utilized for plantation. The oversized boulder if encountered will be reduced in size by hydraulic rock breaker. All efforts will be made considering eco-friendly mining in the area. For this, plantation will be done all around the lease area in the non-mining zone. The proposed maximum production rate of laterite will be 700,000 Tonnes per annum.

There is no any generation of top soil is expected. There is no drilling and blasting are required. It is proposed to develop this mine by Opencast Mining. Excavator for loading and 35 tonner tippers for transportation of mineral from the mine to the cement plant will be used.

EX-1.5 BASE LINE ENVIRONMENT

Air Environment: On the basis of observations, the parameter wise result for monitored parameters are discussed below compared with National Ambient Air Quality Standards.

Particulate Matter (PM_{10}): The maximum PM_{10} concentration covering all the air quality monitoring stations i.e. A-1 to A-8 were observed in the range of 38.0 to 74.0 µg/m^3. Almost all the stations have PM_{10} concentrations less than half of 24 hours average permissible limit i.e. 100 µg/m^3 as prescribed by MoEF&CC for industrial, residential, rural and other area.

Particulate Matter ($PM_{2.5}$): The maximum $PM_{2.5}$ concentration covering all the air quality monitoring stations A-1 to A-8 were observed in the range of 16.0 to 39.2 µg/m^3 as against the NAAQ Standards of MoEF&CC prescribed limit of 60 µg/m^3 for industrial, residential, rural and other areas.

Sulphur Dioxide (SO_2): The maximum SO_2 concentrations covering all sampling stations A-1 to A-8 were in the range of 8.8 to 27.7 µg/m^3. All monitored stations have SO_2 concentrations well within the stipulated (annual 24 hours) limit of 80 µg/m^3 as prescribed for industrial, residential, rural and other areas under revised NAAQ Standards of MoEF&CC.

Oxides of Nitrogen (NO_X): The maximum NO_x concentrations covering all sampling stations A-1 to A-8 were observed in the range of 11.9 to 32.8 µg/m^3. All monitored stations have NO_X concentrations well within the stipulated (annual 24 hours) limit of 80 µg/m^3 as prescribed for industrial, residential, rural and other areas under NAAQ Standards of MoEF&CC.

In summary, the ambient air quality of Markagondi Laterite Mine area and its buffer zone showed that the concentrations of all monitored parameters were within the stipulated standards of MoEF&CC.

Surface & Ground Water Environment

In summary, overall quality of water samples indicated that the water quality of all the sources is satisfactory of the area are not polluted except the surface water samples which showed bacteriological contamination possibly from surface run-off.

Markagondi Laterite mine falls under safe zone of Central Ground Water Authority (CGWA). The hydrogeological study concludes that there is no intersection of ground water during mining.

The water table is below 12 meters ground level and average mining activities will be carried out up to 4-6 meters below ground level (maximum 6.0 m). Therefore, there will be no adverse effect in ground water regime. To eliminate the chances of pollution of nearby water regime through silt and rain wash of mine exposed area during rainy season, construction of a garland drain is proposed. Up to the life of the mine, there is negligible

chance of working going beyond 6 m depth, hence there will not be an intersection with ground water.

Noise Environment

Day Time Noise Levels

The day time noise levels at all locations of buffer zone were observed to be in the range of 36.9-55.7 dB (A) and observed to be well within the prescribed limit of 55 dB(A) for residential area. Whereas the Noise levels in the core Zone i.e. mine site was 38.8-46.5 dB(A) which was also within the prescribed limit of 75 dB(A) as per CPCB Standard for Industrial Areas.

Night Time Noise Levels

The night time noise levels at all locations of buffer zone were observed to be in the range of 36.6-50.9 dB (A) and observed to be slightly higher than the prescribed limit of 45 dB(A) for residential area. Whereas the Noise levels in the core Zone i.e. mine site was 58 dB(A) which was also within the prescribed limit of 70 dB(A) as per CPCB Standard for Industrial Areas. The noise levels in the Markagondi Mine lease buffer zone were observed in the range of 37.7 to 44.0 dB (A).

Flora & Fauna

The Markagondi Laterite Projects covers land of Compartment No. 43 to 59 (excluding 48) , 210 and falls under Forest Demarcated Compartment nos. 89 & 102, The entire mining area falls under forest area and the necessary application for diversion of this Forest Land has been made to the competent authority on 01/06/2-22 and is under active consideration.

There is no any National Park, Wildlife Sanctuary, Biosphere Reserve and Migratory Corridor of Wild Animals up to 50 km from the Mining Lease Area.

No endangered or threatened species was found in the study area.

Soil Environment

A total of 8 Samples were collected from different locations representing waste land, agriculture land and forest land at 3 different depths viz. 0-30, 30-60 and 60-90 cm below the surface. The forest land soil is found to have sufficient nutrients. The agricultural land soils are also found suitable for cultivation of climatic crops and have good fertility.

Socio-Economic Environment

As per Census 2011, demographic characteristics of the study area are represented by several criteria, namely population composition, sex ratio, family structure, and age distribution pattern.

Attempt has been made to compare the demographic features between the census data whenever corresponding data are available. The area selected for the study constitutes 32 inhabited Village.

Rehabilitation & Resettlement : The entire area is a forest land and there is no displacement envisaged. However, recently some encroachment has been noticed within the lease area. Details of this encroachment is provided in this report. Necessary legal action as per procedure shall be taken by competent authority.

EX-1.6 ANTICIPATED IMPACTS & MITIGATION MEASURES

Impact on Climate: The proposed Project is not expected to have any major irreversible impact on the climatological features like temperature, rainfall, wind speed, humidity etc.

Impact on Topography: The mining operations will change the topography and the landscape of mineral bearing area and its immediate vicinity in the core zone only. The entire area is covered by Laterite with highest RL 535 m and lowest RL 494 m (average 510 mRL). The lease area consists of 54.25 Ha wherein actual mining shall be done in about 23.30 Ha in the current mining p;an period.

Impact on Drainage: There is no perennial nala within or nearby the project area. A seasonal nala exist near the northern boundary and flowing towards eastern direction. Also, a seasonal nala flows from the eastern boundary and towards southern direction.

Impact on Land Use: The proposed opencast Laterite ore will result in change of the land use pattern of the Mining Lease Area. The land degradation is expected during mining activities of excavation, overburden dumps, mineral Storage etc.

Impact on Soil: Soil erosion may also get accelerated on areas where the overburden will be dumped. As there is neither a toxic effluent nor solid waste from the mines, quality of soil is not expected to be adversely affected. Impact on soil will be localized i.e. around the mine site. Likelihood of any adverse impact from soil erosion and disturbance in quality is remote.

Impact on Air Quality due to Mining: In order to estimate the ground level concentrations, due to the emission from the proposed increase in production, EPA approved Industrial Source Complex AERMOD View Model has been employed.

Maximum predicted incremental rise in concentration due to proposed project of PM_{10} is estimated to be 0.726 $\mu g/m^3$, respectively. This prediction is based on various mining operations and site-specific meteorological data in worst scenario.

Impact on Air Quality due to Transportation: The maximum ground level concentration due to proposed transport is estimated to be increased by 0.0152 ug/m^3.

Impact on Noise Quality: From the modeling results, it is observed that the maximum resultant noise levels near the mine lease boundary will be about 60.1 dB(A). The noise levels will be further reduced and the predicted resultant noise levels at the nearest village habitation will be below 60.00 dB(A).

Impact on Water Regime: The proposed mining activity is not expected to alter the natural drainage pattern of the area. A garland drain will be provided along the periphery of the top bench for handling the rain water. There will be no contamination of water as no processing and no toxic elements are present in the Laterite production.

As such there is no possibility of seepage during the rainy season because the proposal are given at the top but due to tectonic reason some seepage of rainwater may get accumulated in the working pit then it will be discharged with the help of a 10 H.P. pump having capacity to lift 22,000 lit/hour with maximum head of 12-15 m.

The mine pumped out water shall be collected in a sedimentation pond and after treatment part of this water shall be utilized for use in the Project activities for Dust Supression, plantation, etc and excess water shall be drained into the natural water courses.

Impact on Flora & Fauna: Due to mining and associated activities, fugitive dust in the atmosphere may deposit on different parts of the plants in the surrounding area leading to the destruction of flora. During operation phase, various vehicle/ machinery movement and mining activities would create noise that may force the movement of animals from nearby forest patches. There is no Wildlife Sanctuary or National Park in 15 Km radius of the Markagondi Laterite Mine. There is no reported migratory path of wildlife or bird species of threatened or protected species. The transport route of the mineral also lies away from these areas.

Impact on Socio-Economic Aspects: The project is likely to create positive impacts due to creation of employment opportunities both direct and indirect. Generation of employment opportunities is important as the project region is devoid of any industrial activities and agriculture is the only main source of income.

Mitigation Measures at the source level and an overall Management Plan at the Study Area Level are elicited so as to improve the supportive capacity of the Study Area and also to preserve the assimilative capacity of the receiving bodies. The Report provides detailed Action Plan for each pollutant viz. Air, Water, Noise, Socio-Economic, Land Use and Plantation Activities.

EX-1.7 ENVIRONMENT MANAGEMENT PLAN

A Comprehensive Environment Management Plan including development of Green Belt over 2.90 Ha area has been suggested.

Plantation of about 7250 Trees is envisaged in the Mine Lease area and additional 2500 Trees along the 1.25 km mineral transport route.

The Capital Budget for Environmental Protection Measure is estimated to be Rs. 258.67 Lakhs and the Recurring Budget is estimated to be Rs53.00 Lakhs.

EX-1.8 CORPORATE SOCIAL RESPONSIBILITY

M/s. Ultratech Cement Ltd. proposes to undertake several activities under the Corporate Social Responsibility Initiative during the operation of Markagondi Laterite Mining Project. The capital CSR Budget has been worked out as per the expressed felt needs of villagers during Rapid Rural Appraisal. The proposed total capital budget is to the extent **Rs.20.00 Lakhs** (Rupees twenty Lakhs Only) and recurring Budget of **Rs.15.00 Lakhs** (Rupees Fifteen Lakhs Only) will be spent in core and buffer Village of study area during the first five years.

EX-1.9 CORPORATE ENVIRONMENT RESPONSIBILITY

In addition to the CSR, M/s. Ultratech Cement Ltd. proposes to undertake several activities as one time measure under the Corporate Environment Responsibility Initiative during the operation of Markagondi Laterite Mining Project. A budgetary provision of **Rs.40.00 Lakhs** is proposed to be made for implementing the CER Activities.

EX-1.10 MITIGATIVE MEASURES

The EIA/EMP Report has established the Base Line Environment of the Project Area and has assessed anticipated impacts of the Project on the overall ecology & environment. Accordingly, general as well as specific mitigation measures for management of the Key Environmental Parameters have been suggested. Further, specific measures towards monitoring and implementation of the Environment Management Plan along with details of the funds required towards implementation of the Pollution Control Measures are also included in the Report. By implementing the suggested Environment Management Plan adverse effects of the Project can be mitigated.

EX-1.11REQUEST

The proposed Laterite ore Mining Project is bound to have certain negative impacts on the local environment. However, with proper mitigation measures and an effective implementation of the Environment Management Plan as suggested in this EIA/EMP Report and recommended by MoEF&CC, CPCB and State Pollution Control Board, the negative impacts may be minimized to a great extent.

The Project on the other hand shall bring in positive and beneficial impacts in terms of growth in regional economy by transforming the economy from predominantly agricultural to significantly industrial, increase in government earnings and revenues and accelerate the pace of overall development of the region. The proposed project will provide direct employment to a large number of people in the project area and nearby Village. This project will also generate indirect employment to a considerable number of families, who will render their services for the employees of the project.

The project will also encourage ancillary industries in the region, which will not only increase the employment potential but also strengthen the economic base of the region. The Project would be in the interest of the Region and State of Maharashtra as a whole and therefore may be implemented.

AN EPILOGUE

In compliance with the environmental procedure the environmental clearance application is made. Necessary scientific studies have been undertaken as per the guidelines set by the Ministry of Environment Forests & Climate Change (MoEF&CC). The suggestions/ recommendations of all the experts, competent authorities, and government officials are being sought for the impacts of the proposed project. Views and guidance of the residents, community-based organizations, social organizations are extremely important in order to devise a full proof Environment Management Plan for the proposed mining project and also mitigate the damages caused due to the project. Allocation of necessary funds, manpower and machinery will be made to for the protection and conservation of all the components of environment. It is ensured that all mandatory clearances will be sought from respective competent authorities before operating the proposed Markagondi Laterite Mine. M/s. Ultratech Cement Ltd. is committed to implement the suggestions for the improvement of the environment and assure that every attempt will be made for the conservation and protection of the natural resources to the maximum extent. It is requested to recommend this proposal for the grant of Environmental Clearance.

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