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# **EXECUTIVE SUMMARY**

## 1.0 PROJECT DESCRIPTION

## 1.1 INTRODUCTION

M/s. UltraTech Cement Limited (UTCL) incorporated in Company Act 1956 (CIN No. L-17120MH1897PLC000163) has proposed a Limestone Mining Project in mining lease named Kesla block in District- Raipur (Chhattisgarh).

### 1.2 TYPE OF PROJECT

M/s. UltraTech Cement Limited (Unit: Baikunth Cement Works) has proposed a Limestone Mining Project (Auction Block) (M.L. Area – 108.335 ha) with Limestone Production Capacity of 3.0 Million TPA (ROM), at Villages Kharora & Kesla, Tehsil: Tilda, District: Raipur (Chhattisgarh).

As per EIA Notification dated 14th September, 2006, as amended from time to time; the project falls under S. No.'1' (Mining of Minerals), Project or Activity '1(a) - (3)', Category "A".

## 1.3 NEED FOR THE PROJECT

- M/s. UltraTech Cement Limited (Unit: Baikunth Cement Works) has an existing Cement Plant with cement production capacity 2.4 Million Tonnes at Village Baikunth, District Raipur (CG) for which EC has already been obtained from MoEFCC vide letter No J-11011/404/2007-IA.II (I) dated 28.09.2007
- Company has proposed this mining project in order to meet the requirement of Limestone for manufacturing of Cement in its existing Cement Plant at Village Baikunth, district Raipur (CG).
- M/s. UltraTech Cement Limited (Unit: Baikunth Cement Works) already has 2 mining leases in the area having lease areas of 237.003 Ha and 74.843 Ha. The production of the combined leases is 1.8 Million Tonnes per annum.
- The leases at present have about 12 Million tonnes of reserve, which is likely to exhaust in 7 years. Thus, to maintain the continuous supply of limestone and to sustain the cement plant life company is proposing a Limestone Mining Project (Auction Block) with Limestone Production Capacity of 3.0 Million TPA (ROM) (M.L. Area 108.335 ha) in District- Raipur (Chhattisgarh)

## 1.4 BRIEF DESCRIPTION OF THE PROJECT

S. No.	Particulars	Details
А.	Nature of project	Proposed Limestone Mining Project
В.	Size of project	
1.	ML Area	108.335 ha
2.	Production capacity	3.0 Million TPA Limestone
C	Project Location	
1.	Villages	Kharora & Kesla

# Table – 1 Brief Description of the Project

Executive Summary of Draft EIA / EMP Report

S. No.	Particulars	Details
2.	Tehsil	Tilda
3.	District	Raipur
4.	State	Chhattisgarh
5.	Coordinates	Latitude - 21°24'39.74970"N to 21°25'13.74423"N
		Longitude - 81°55'40.29892"E to 81°56'29.49717" E
6.	SOI Toposheet No.	Core zone - 64 G/15
		Buffer zone – 64 K/3, 64 G/14
D	Environmental Setting Details (with	approx. aerial distance and direction from the mining lease boundary)
1.	Nearest State / National Highway	SH-9 (~1.8 km in South direction)
2.	Nearest Railway Station	Tilda (~20 Km in NW direction)
3.	Nearest Airport	Raipur Airport (~ 32 km in SW direction)
4.	National Park, Wild Life Sanctuary,	There is no National Park, Wild Life Sanctuaries, Biosphere Reserves, Wildlife
	Biosphere Reserves, Wildlife	corridors, Tiger/Elephant Reserves etc. within 10 km radius study area
	corridors, Tiger/Elephant Reserves,	
	etc. within 10 km radius of the	
	project site	
5.	Reserve / Protected Forest within	No Reserve forest exist within the 10 km radius of Project Site
	10 km radius of Project Site	Khaulidabri PF (~ 1.0 Km in the NNW direction)
		Moharenga PF (~ 6.2 Km in the NW direction)
6.	Water body within 10 km radius	There is no perennial water body flowing through ML Area. Following water
	study area	bodies exist in study Area:
		Two small seasonal nallas are flowing easterly within the lease area and
		merging together near eastern end of lease area
		<ul><li>Canal (~ 0.5 km in West direction)</li></ul>
		Mahanadi Canal (~2.2 km in ENE direction)
		<ul> <li>Pindraon Tank (~5.0 Km in West direction)</li> </ul>
		<ul> <li>Pikridih Tank (~6.0 Km in SW direction)</li> </ul>
		<ul> <li>Kosrangi Tank (~7.0 Km in SE direction)</li> </ul>
		<ul><li>Kumhari Tank (~7.0 Km in NNW direction)</li></ul>
		<ul> <li>Seasonal Ponds (~220 m in NW direction) from lease boundary</li> </ul>
7.	Critically Polluted area	None
8.	Aravali Range	None
9.	CRZ	None
10.	Seismic Zone	Zone – II as per IS: 1893 (Part-I) : 2002
E	Cost Details	
1.	Project Cost	5500 Lakh/-
2.	Cost of EMP	Capital Cost- Rs. 235 Lakh/-
		Recurring Cost- Rs. 121 Lakh/annum

Source: Site Visit & Pre-feasibilty Report

Executive Summary of Draft EIA / EMP Report

1.5 LOCATION MAP



Figure 1- Location Map

### 1.6 MINE DESCRIPTION

#### 1.6.1 MINING LEASE STATUS

- Government of Chhattisgarh, Department of Mineral Resources, issued the notice inviting the tender dated 08.12.2015 to commence the auction process for grant of mining lease for Kesla Limestone Block located at Villages Kharora & kesla, Tehsil Tilda, District Raipur.
- M/s. Century Textiles & Industries Ltd. (Unit: Century Cement) participated in the Auction Process and declared as a preferred bidder vide letter no. F3-4/2016/12, dated 26.02.2016 & letter of Directorate dated 27.02.2016.
- Thereafter, a Letter of Intent (LOI) for grant of mining lease over an area of 108.335 ha at Kharora and Kesla, Tehsil-Tilda, Dist-Raipur (Chhattisgarh) was granted to M/s. Century Textiles & Industries Ltd. by Mineral Resources Department, Government of Chhattisgarh vide letter No. F 3-04/16/12 dated 08.04.2016, which was valid upto 07.04.2019.
- Extension of Validity period of LOI for additional year i.e up to 07.04.2020 was granted by Mineral Resources Department, Government of Chhattisgarh vide letter No. F 3-04/16/12 dated 25.07.2019.
- In the meantime, M/s. Century Textiles and Industries Limited (Unit: Century cement) and their business was transferred to UltraTech Cement Ltd (UTCL) by National company Law Tribunal (NCLT) order 03.07.2019 by approving Scheme of Arrangement which came into effect on 01.10.2019.
- Henceforth, cement units and mining leases of M/s. Century Textiles and Industries Limited along with all the contracts, deeds, bond, schemes and agreements etc have been transferred to and vested in UltraTech Cement Ltd.
- LOI was transferred to M/s. UltraTech Cement Limited vide State Govt letter dated 13.12.2019. Extension of Validity period of LOI for additional year i.e up to 07.04.2021 was granted by State Govt vide letter No. F 3-04/16/12 dated 02.05.2020

# 1.6.2 MINING DETAILS

S. No.	Particulars	Details
1.	Method of mining	Opencast Fully Mechanized Mining Method
2.	Proposed Production Capacity	3.0 Million TPA
3.	Total Geological Reserves	67 Million Tonnes
4.	Total Mineable reserves	27.15 Million Tonnes
5.	Life of the Mine	15 years (based on reserves) and 28 years (based on
		total resource estimate of State Govt)
6.	Bench Height	8 m- for top 3 benches
		4 m - for bottom bench
		In soil average 2 m
7.	Bench Width	8 m (Ultimate)
8.	Elevation Range	286 m AMSL to 291 m AMSL

Table – 2 Mining Details

S. No.	Particulars	Details
9.	General Ground Level	288 m AMSL
10.	Water table	Pre-Monsoon Season (8-11m bgl)
		Post-Monsoon Season (6-8m bgl)
11.	Ultimate Working Depth	258 m RL (30 m bgl)
12.	Overall Pit Slope	49°
13.	Stripping Ratio (Ore: OB/IB) (tonnes : tonnes)	1:0.24
14.	Number of working days	300 days
15.	Number of shifts per day	2

Source: Mining Plan & Progressive Mine Closure Plan

#### **METHOD OF MINING** 1.6.3

- $\geq$ Mining operations will be carried out by fully mechanized opencast mining method with deep hole drilling and blasting adopting a system of benches. Mining will be done within 6 pits/zones because of statutory boundary restrictions.
- > The bench parameters are 8m high for first 3 benches and the last bench considered to be of height of 4mtrs. The floor RL of the pits however will change because of topographical considerations and will be 259 mRL in zones A, B and C and 258 m RL in zones D, E and F.
- Bench width in operational phase to be maintained at 20 m & at the ultimate stage it will be  $\geq$ left at 8 m. Drilling will be carried out by crawler mounted DTH hammer Drill machine.
- No secondary blasting will be undertaken and the boulders will be broken using hydraulic rock  $\triangleright$ breaker. Loading of limestone and overburden will be done by Hydraulic shovels. The excavated material will be transported to the crusher/dump yard by dumpers. Loading will be done by Hydraulic Excavators.
- Limestone will be transported from mine face to the crushing plant (Crusher is located at the  $\triangleright$ existing integrated cement plant located at Baikunth at about 25 Km from Lease Area) by tippers (25 tonner). If Feasible, a Limestone Crusher will be installed at pit Top in future and the crushed Limestone will be transported from Crushing Plant to Cement Plant (25 Km from Lease Area) by tippers.

#### **EXTENT OF MECHANIZATION** 1.6.4

Machinery & Equipments			
S. No.	Equipment Name	Capacity	Numbe
1.	Crawler Mounted DTH Drill Machine of diameter100 mm	150 Psi	2
2.	Hydraulic Excavators	3.5 CuM	3
3.	Tippers	25 Tonne	60
4.	Bulldozer D.155	10.44 Cum	1
5.	Rock Breaker	-	1
6.	Water Tanker	9 KL	1
7.	Explosive van	10 Tonne	1
8.	Diesel / Water Tanker	-	1

Table – 3

Source: Mining Plan & Progressive Mine Closure Plan

### 2.0 DESCRIPTION OF THE ENVIRONMENT

## 2.1 PRESENTATION OF RESULTS (AIR, NOISE, WATER & SOIL)

Baseline study of the study area was conducted during Summer Season, March - May, 2018.

The concentrations of  $PM_{10}$  and  $PM_{2.5}$  for all the 8 AAQM stations were found between 50.4 to 73.4 µg/m<sup>3</sup> and 20.1 to 46.5 µg/m<sup>3</sup> respectively. The concentrations of SO<sub>2</sub> and NO<sub>2</sub> were found to be in range of 5.3 to 12.8 µg/m<sup>3</sup> and 8.5 to 18.8 µg/m<sup>3</sup>, respectively.

Ambient noise levels were measured at 8 locations in and around the mine site. Noise levels varied from 48.6 to 54.1 Leq dB(A) during day time and from 38.7 to 43.8 Leq dB(A) during night time.

The Surface water analysis for all the 5 sampling stations shows that pH varied from 7.09 to 7.36, total hardness varied from 59.4 mg/l to 82.6 mg/l & total dissolved solids varied from 182.0 mg/l to 227.0 mg/l.

The ground water analysis for all the 8 sampling stations shows that pH varied from 7.07 to 7.50, total hardness varied from 176.00 mg/l to 243.20 mg/l & total dissolved solids varied from 464 mg/l to 625 mg/l.

The analysis results of soil shows that soil is slightly alkaline in nature, the pH value ranging from 7.43 to 7.84, the soil texture is silty clay at the sampling locations. The organic matter% ranges from 1.39% to 1.69%. The concentration of Nitrogen varies considerably from 172.90 kg/ha to 225.84 kg/ha and Phosphorous found in less to medium amount i.e. from 36.80 to 42.60 kg/ha, whereas the Potassium is found to be ranging from 216.80 to 312.80 kg/ha, which is from less to average in quantity.

## 2.2 BIOLOGICAL ENVIRONMENT

Flora: Species which are most commonly found in the study area are Acacia catechu (Khair) Acacia nilotica (Babul), Ziziphus jujuba (Ber), Azadirachta indica (Neem), Cassia fistula (Amaltas), Shorea robusta (Sal), Butea monosperma (Palash), Mangifera indica (Mango), Nerium indicum (Kaner), Citrus limon (Nimbu), Ocimum sanctum (Tulsi), Saraca asoka (Ashok), Ricinus communis (Arand), Acacia senegal (Kumtha/ Gum Arabic Tree) Syzygium cumini (Jamun), Prosopis cineraria (Khejri), Tectona grandis (Teak/Sagwan) etc.

**Fauna:** Commonly found fauna in the study area are *Axix axis* (Chital), *Funambulus pennanti* (Palm squirrel), *Presbytis entellus* (Common Langur), *Felis chaus* (Jungle cat), *Canis aureus* (Jackal), *Rattus rattus* (House Rat), *Herpestes edwardsii* (Mongoose), *Hemidactylus flaviviridis* (House Lizard), *Naja naja*, (Indian cobra), *Hoplobatrachus tigerinus* (Common Indian Bull Frog), *Duttaphrynus melanostictus* (Common Indian toad), *Canis aureus* (Jackal) etc.

## 2.3 SOCIO-ECONOMIC ENVIRONMENT

The population as per 2011 Census records is 89280 (in 10 km radius Study Area). Scheduled Caste population of the study area (10 km) is 21501 and Scheduled Tribe is 3902. Total no. of household in the area is 18683 and percentage of literacy is 71.90 %.

# 3.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

### Impact on Air Environment

### Due to Mining:

The key air emissions from the proposed mining activities (drilling, blasting, loading, haulage and transportation) are Particulate Matter, Oxides of Nitrogen (NO<sub>2</sub>) and Sulphur dioxide (SO<sub>2</sub>). Gaseous emissions will be generated from HEMM, crusher & transportation of vehicles. Use of proper mitigation measures will be taken like water sprinkling during transport activities & development of green area to control fugitive emissions. Better maintenance of equipments also helps to reduce such emissions.

# > Impact on Water Environment –

# Surface Water:

No perennial water bodies are there within the study area except some seasonal water bodies i.e. Seasonal Ponds (~220 m in NW direction), Canal (~0.5 km in West direction), Mahanadi main Canal (~2.2 km in ENE direction), Pindraon Tank (~5.0 Km in West direction), Pikridih Tank (~6.0 Km in SW direction), Kosrangi Tank (~7.0 Km in SE direction), Kumhari Tank (~7.0 Km in NNW direction).

No waste water will be discharged outside ML Area which may contaminate any surface water body.

The following mitigation measures will be adopted to control the surface run-off:

- Garland drain having siltation pits will be provided at the toe of the temporary dumps, to channelize the runoff water from dumps into the settling tank water around the active pits to restrict rainy water from entering in to the working pit.
- Retaining walls having water holes will be provided along the toe of the temporary dumps to avoid the soil wash out & around the active pit to prevent fall of human/animal in to the working pit.
- > The domestic effluent generated will be disposed off in soak pits and septic tanks.
- Waste water from workshop will be treated by oil separator and then will used for dust suppression & plantation.

Except this two small seasonal nallas are flowing easterly within the lease area and merging together near eastern end of lease area . A safety barrier of 50 mtr. will be left on either side of nallas to protect them.

# Ground Water:

- > General Ground level of the mining lease area is 288 m AMSL.
- According to groundwater monitoring, Water table level varies from 6 to 8 m during the Pre-Monsoon Season & 8 to 11 m during Post Monsoon Season. Ultimate working depth of the mining operation will be 258 mRL (30m bgl).
- Mining will be done below water-table level; hence there will be groundwater intersection by mine workings, or groundwater ingress in the mine pits.

## Impact of Noise & Vibration –

#### Due to Mining Activities:

Major noise generating sources of the mining activity are drilling, blasting and HEMM movement used for transportation of limestone. The plantation and the green belt around the mining lease boundary help in reducing noise level and proper mitigation measures will be carried out.

Total Mining Lease area is 108.335 ha. The Nearest village from the mine site is Village Kesla which is located at an approx distance of 1.0 km in South direction. However, All DGMS guidelines will be followed to reduce the impact of blasting on the nearest habitation. Controlled blasting techniques through proper blast design and explosive selection will be used to reduce the vibrations to a greater extent.

Impact on Land Environment – The land use of the lease area will be altered from waste land as well as agricultural land to mining area including pits, temporary dumps, greenbelt etc but will not have any significant effect on the surface features of the surrounding areas.

At the conceptual stage of mining, out of the total mining lease area (i.e. 108.335 ha), total mined-out area will be around 55.76 ha, out of which, 12.31 ha area will be backfilled & reclaimed with plantation and remaining 43.45 ha area will be converted into water reservoir, 1.20 ha area will continue to be covered under roads and 3.95 ha area will be under nallah. Plantation will be done on 12.31 ha on backfilled area. Green belt will be done on 3.50 ha area on 7.5 m safety zone of lease boundary. 43.89 ha area will be unditurbed at the end of life of mine which coveres mainly Area under safety barrier of nallah, road, grazing land and HT line etc.

# 4.0 POST PROJECT ENVIRONMENTAL MONITORING PROGRAMME

S. No.	DESCRIPTION	FREQUENCY OF MONITORING	
1.	Ambient Air Quality	Twice a Week	
2.	Water Quality & Level	Quarterly	
3.	Noise Level Monitoring	Quarterly	
4.	Vibration Monitoring	Of every blast	
5.	Stack Monitoring	Regular	

Table - 4				
Post Pro	iect	Mon	itoring	ŗ

#### 5.0 ADDITIONAL STUDIES

Additional Studies i.e. Hydro –Geological Study and Risk Assessment & Disaster Management Plan are covered in Draft EIA/EMP Report as per the Terms of References issued vide letter no. J-11015/247/2016-IA.II (M) dated February 27<sup>th</sup>, 2017.

# 6.0 PROJECT BENEFITS

The proposed project will help in meeting the growing demand of cement & hence help in the economic growth of the country. It will be helpful in the development of basic needs of the local area like education, Health & family welfare, women empowerment, Natural resource

management, roads etc. It will result in growth of the surrounding areas by increasing direct and indirect employment opportunities in the region including ancillary development and supporting infrastructure.

## 7.0 ENVIRONMENT MANAGEMENT PLAN

## 7.1 AIR QUALITY MANAGEMENT

- Drilling operation will be provided with water injection system for complete suppression of fugitive dust.
- Controlled blasting by latest blasting technique using shock tube detonator (Downline detonator in combination with noise less trunk line detonators.)
- Rock breaker will be used in place of secondary blasting to reduce generation of fly rocks and ground vibration.
- > Regular water spraying will be done on haul roads
- > No overloading of material will be done during transportation.
- Proper maintenance (preventive as well as scheduled maintenance) of vehicles will be carried out regularly for minimization of generation of gaseous pollutants.
- > Regular maintenance of HEMMs & transportation vehicles.
- > The emission levels will be monitored regularly.
- Development of green belt/plantation around mine boundary to tap fugitive dust will be carried out.
- > Personal Protective Equipment like dust masks will be provided to all employees.

## 7.2 WATER QUALITY MANAGEMENT

- > No waste water will be generated from the mining activities.
- Septic tanks and soak pit will be provided for the disposal of domestic waste water generated from mine office.
- Garland drain having siltation pits will be provided at the toe of the dumps, to channelize the runoff water from dumps into the water reservoir (i.e. mined out pits) & around the active pits to restrict rainy water from entering in to the working pit.
- Retaining walls having water holes will be provided along the toe of the dumps to avoid the soil wash out & around the active pit to prevent fall of human/animal in to the working pit.
- The rainwater falling directly into the mine pits will be stored and used for plantation & dust suppression.
- > Periodical monitoring of ground water quality will be carried out.

## 7.3 NOISE QUALITY MANAGEMENT

- > Sharp drill bits will be used with wet drilling arrangements.
- Controlled blasting will be done by latest blasting technique using shock tube detonator to prevent generation of fly rock, air blast etc.
- Rock breaker will be used in place of secondary blasting. Adequate silencers in HEMM will be provided to reduce generation of noise. HEMMs equipped with acoustic cabins will be provided for the operators. Proper maintenance (preventive as well as scheduled maintenance), oiling and greasing of HEMMs to minimize generation of noise.

- Dense green belt and plantation will be developed around mine boundary, along the haul roads and on un-worked area etc. to minimize the propagation of noise.
- > Periodical monitoring of noise will be carried out regularly.

## 7.4 TOP SOIL AND SOLID WASTE GENERATION & MANAGEMENT

#### **Top Soil Generation & Management**

The lease area has Top soil with thickness of 0 m – 3.5m. The soil is silty clay in nature. About 281929 CuM of top soil will be generated during plan period. At conceptual stage, 1115388 m<sup>3</sup> top soil will be generated with an average thickness of 2m. It will not require any drilling or blasting for its handling. The soil will be utilized time to time for reclamation of mined out benches.

## Solid Waste Generation & Management

At the end of plan period, total 375379 CuM waste will be generated, out of which, 250928 CuM will be top soil/ overburden/ SB/ IB and 124451 CuM will be mineral reject. At conceptual stage of mining, 1248488 CuM of waste will be generated, about 1% of the waste generated will be used for toe wall making, safety berm construction on mine road etc. during the 1<sup>st</sup> five years.

The waste that will be generated will be stacked at separate dump of waste material. The height of waste dump will be 7 m & the slope of the dump will be maintained at 45°. The dumps both soil and waste dumps will be temporary dumps. The dumps will be removed as and when the mine area is matured for reclamation and rehabilitation and at the ultimate stage there will not be any dump in the lease area.

# 7.5 CONCEPTUAL MINING PLAN

At the conceptual stage of mining, out of the total mining lease area (i.e. 108.335 ha), total minedout area will be around 55.76 ha, out of which, 12.31 ha area will be backfilled & reclaimed with plantation and remaining 43.45 ha area will be converted into water reservoir, 1.20 ha area will continue to be covered under roads and 3.95 ha area will be under nallah. Plantation will be done on 12.31 ha on backfilled area. Green belt will be done on 3.50 ha area on 7.5 m safety zone of lease boundary. 43.89 ha area will be unditurbed at the end of life of mine which coveres mainly Area under safety barrier of nallah, road, grazing land and HT line etc.

# 7.6 GREENBELT DEVELOPMENT AND PLANTATION PROGRAM

Greenbelt will be done on 3.5 ha area on 7.5 m lease periphery. At conceptual stage, plantation will be done on 12.31 on backfilled area. Thus, total greenbelt/plantation will be done on 15.81 ha area. The trees will be planted @ 2000 saplings per ha of land.

# 7.7 SOCIO-ECONOMIC ENVIRONMENT

Better education facilities, proper health care, road infrastructure and drinking water facilities are basic social amenities for better living standard of any human being. M/s. Century Textiles & Industries Ltd. will provide such facilities to the nearby villagers and will further improve the facilities in the area, which will help in uplifting the living standards of local communities.

