EXECUTIVE SUMMARY

OF

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

FOR

Guma Limestone Mine

(ML Area: 157.122 ha)

Limestone Production Capacity: 3.2 MTPA

At

Village - Guma, Tehsil - Palari,

District - Balodabazar-Bhatapara (Chhattisgarh)

APPLICANT

M/s. UltraTech Cement Ltd.

P.O. Grasim Vihar, Village - Rawan,

District - Balodabazar-Bhatapara - 493 196 (Chhattisgarh)

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1.0 PROJECT DESCRIPTION

1.1 INTRODUCTION

UltraTech Cement Limited is a flagship company of Aditya Birla Group and it is the largest cement manufacturing company in India and the 10th largest in the world ranking with present annual capacity of 62 Million Ton Per Annum (MTPA) including 3 MTPA capacity outside India. The production units are spread across 12 integrated plants, 16 grinding units besides 6 bulk terminals in India. In the year 2011, the Group was ranked 4th globally and 1st in the Asia-Pacific region as top company for leaders in a study conducted by Aon Hewitt Associates, RBL Group and Fortune magazine. In India, the Group has been adjudged the best employer in India and among the top 20 in Asia by the Hewitt-Economic Times and Wall Street Journal Study 2007.

1.2 TYPE OF THE PROJECT

M/s. UltraTech Cement Ltd. identified a Limestone deposit forming part of Village Guma, Tehsil Palari, District Balodabazar - Bhatapara (Chhattisgarh). LoI issued for an area of 157.122 ha, forming part of this deposit to M/s. UltraTech Cement Ltd for its proposed Limestone Mine with Production Capacity 3.2 MTPA.

As per EIA Notification dated 14th September 2006, as amended time to time, this project falls under Category "A", Project or Activity 1(a) – (3) and therefore requires Environmental Clearance from MoEF, New Delhi.

1.3 NEED FOR THE PROJECT

UltraTech Cement Ltd. is presently having one of its cement manufacturing unit along with Captive Power Plant & Rawan Jhipan Limestone Mine at Village Rawan, Tehsil Simga, District Balodabazar - Bhatapara, Chhattisgarh. The company is now proposing a new mine i.e. Guma limestone mine with production capacity of 3.2 MTPA near Village Guma, Tehsil Palari, District Balodabazar - Bhatapara (Chhattisgarh) to fulfill the limestone requirement of the abovementioned Cement Plant.

1.4 DETAILS OF THE PROJECT

Table -1

S. No.	Particulars	Details	
A.	**Nature & Size of the Project**	Guma Limestone Mine Proposed Limestone Production capacity - 3.2 MTPA	
B.	**Lease Area Details**		
1.	Total Lease Area	157.122 ha	18.566 ha (Govt. Waste Land)

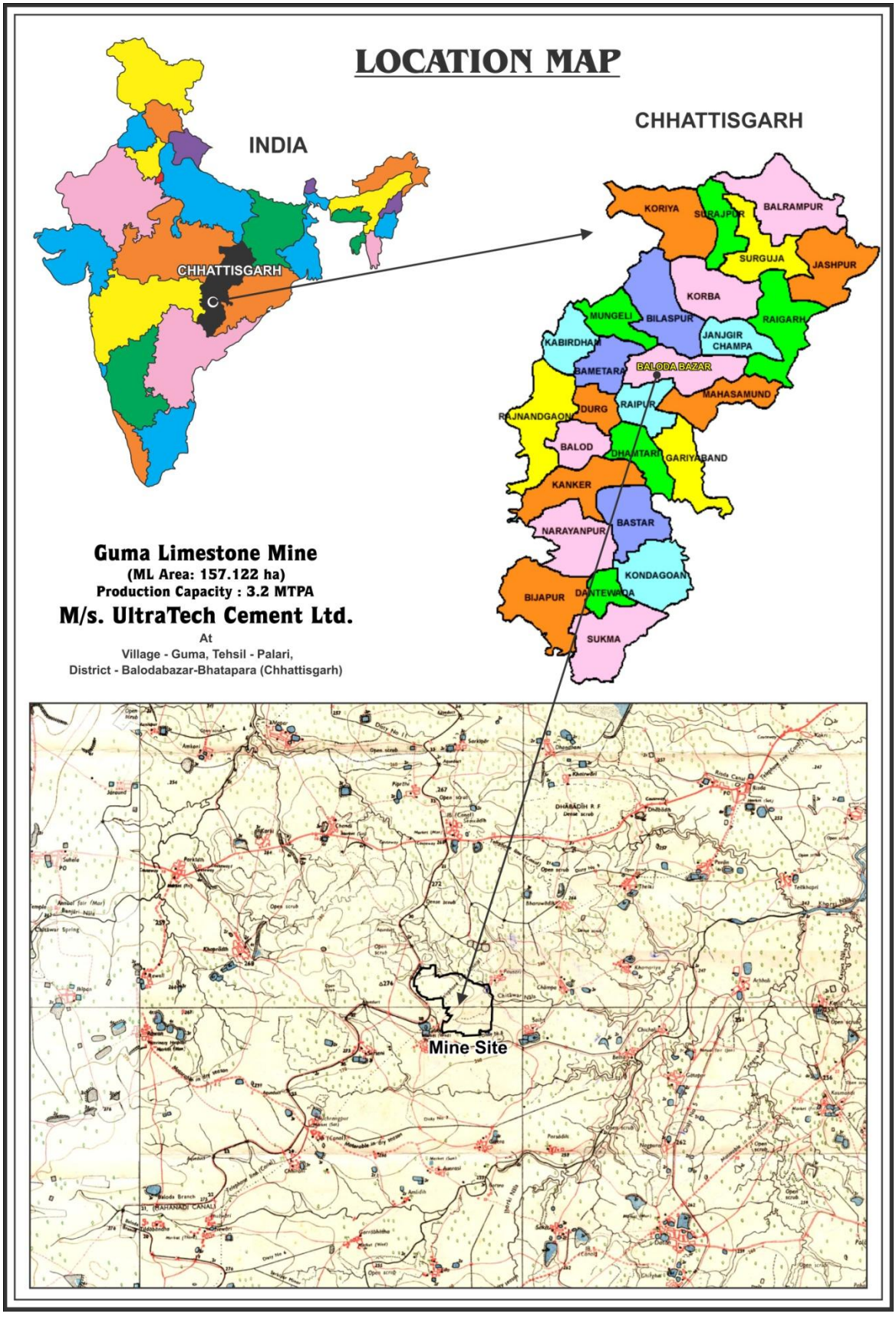
			138.556 ha (Private Agricultural Land)
2.	Total area for development of green belt / plantation	51.22 ha (8.18 ha un worked area + 43.04 ha backfilled area)	
C.	**Project Location**		
3.	Village	Guma	
4.	Tehsil	Palari	
5.	District	Balodabazar - Bhatapara	
6.	State	Chhattisgarh	
7.	Coordinates of Guma Block as per Approved Mining Plan*	Latitude - $21^0$34'30"N to $21^0$37'30"N Longitude - $82^0$03'00"E to $82^0$06'30"E	
8.	Coordinates of applied ML area as per DGPS Survey*	Latitude - $21^0$34'44.6304"N to $21^0$35'32.3196"N Longitude - $82^0$03'25.3584"E to $82^0$04'22.6452"E.	
9.	Toposheet No.	64 K/2	
C.	**Cost Details**		
10.	Total cost of the Project	Rs. 50.0 Crores/-	
11.	Capital Cost of EMP	Rs. 1.5 Crores /-	
12.	Recurring Cost/Annum	Rs. 15.0 Lacs/annum	
D.	**Environmental Settings of the Area (With Approx. distance and direction from the proposed mine site)**		
13.	Nearest Village	Guma at a distance of ~500 m in SW direction	
14.	Nearest Town	Balodabazar at a distance of ~15 km from mine site	
15.	Nearest Railway Station	Bhatapara at a distance of ~25 km in SE direction	
16.	Nearest National Highway	NH – 6 at a distance of ~73 km. connecting Sambhalpur & Nagpur	
17.	Nearest Airport	Raipur at a distance of ~95 km	
18.	Ecologically sensitive areas: National Park, Wildlife Sanctuary, Biosphere Reserve, Tiger /Elephant Reserve, Reserved / Protected Forest within 10km radius (Boundary to boundary distance)	No National Park, Wildlife Sanctuary, Biosphere Reserve, Tiger /Elephant Reserved Forest, Protected Forest exists within 10 km radius of proposed mine site. Dhabadih Reserve Forest is at a distance of ~4.0 km in NE direction	
19.	Water Bodies within 10 km radius	➢ Mahanadi Canal (seasonal, ~50 m in West direction) ➢ Chitawar nallah (~50 m in NE direction) ➢ Khorsi Nallah (~ 3.5 km in E direction) ➢ Bhanjara Nallah(~6.0 km in WNW direction) ➢ Kukurdih Dam (~6.5 km in NE direction)	
20.	Seismic Zone	Zone – II as per IS: 1893 (Part-I) : 2002	
E.	**Requirements for the project**		
21.	Water requirement	150 KLD (Source: Bore well and mine sump)	
22.	Power Requirement	02 MW (Source: Captive Thermal Power Plant)	
23.	Manpower requirement	95 persons	

Source: *Site Visit & Pre- Feasibility Report*

* As per Approved Mining Plan & Progressive Mine Closure Plan the Guma Limestone Deposit is part of the Bharuwadih, Semradih, Pausari and Guma area of Balodabazar, Palari Tehsil, of Balodabazar – Bhatapara District. This deposit is speared over an area of 16.47 Sq. Km. the entire area is bounded by the Latitude - $21^0$34’30”N to $21^0$37’30”N and Longitude - $82^0$03’00”E to $82^0$06’30”E.

As per DGPS survey of applied ML area 157.122 ha is bounded by the Latitude - $21^0$34’44.6304”N to $21^0$35’32.3196”N and Longitude - $82^0$03’25.3584”E to $82^0$04’22.6452”E.

1.5 LOCATION MAP



1.6 MINE DESCRIPTION

1.6.1 MINING LEASE STATUS

The total mining lease area of Guma Limestone Mine is 157.122 hectare. Letter of Intent (LOI) for 157.122 ha area was granted initially in the name of Grasim Industries Ltd. by Mineral Resources Department of Chhattisgarh vide letter no. F. 2-32/2003/12(2) dated 17.11.2009. Revised LOI in the name of M/s UltraTech Cement Ltd. has been granted vide letter F. 2-32/2003/12(2) dated 29.12.2010.

1.6.2 MINING DETAILS

Table- 2

S. No.	Particulars	Details
1.	Method of mining	Opencast Mechanized
2.	Proposed Limestone Production per year	3.2 MTPA
3.	Mineable Reserves	62.16 Million Tonnes
4.	Life of the Mine	19 years @ 3.2 MTPA Limestone Production Capacity
5.	Bench Height and Width	➢ Bench Height – 8 m (Max.),
6.	Bench Width	➢ Bench Width (Working) – 40 m (Min.) ➢ Bench Width (Ultimate) – 14 m (Max.)
7.	Elevation Range	256 m RL to 268 m RL
8.	General Ground Level	264 mRL
9.	Water table	Pre Monsoon: 258 m RL to 256 mRL (6 m to 8 m bgl) Post monsoon: 260 m RL to 258 m RL (4 m to 6 m bgl)
10.	Ultimate Working Depth	232 m RL
11.	Ultimate Pit Slope angle	45^0 (Max.)
12.	Stripping ratio	1:0.4
13.	Number of Working Days	330 days per year
14.	Number of shifts per day	2 shifts per day (8 hr)
15.	Total waste generation at the end of first five years	Top soil: 1.317 Mm^3 ,Waste : 2.0 MT, Screen rejects : 1.04 MT
16.	Total waste generation at the end of life of mine	Top soil: 2.59 Mm^3 ,Waste : 6.2 MT, Screen rejects : 4.96 MT

Source: Approved Mining Plan & Progressive Mine Closure Plan

1.6.3 METHOD OF MINING

Proposed method of mining is mechanized opencast along with deep hole drilling and blasting to produce limestone @ 3.2 Million Tonnes per annum. The mineral will be crushed at site and crushed limestone will be transported to the cement plant of UTCL at a distance of 3 km in village Rawan. The transport will be by covered conveyor belt.

1.6.4 EXTENT OF MECHANIZATION

Machinery & Equipments

S. No	Machine	Quantity	Capacity
1	Excavator	05	3.9 Cu. Mtr.
2	Rock Breaker	01	HB 4200
3	Loader	01	5.74 Cu. Mtr.
4	Dumper	11	35 T
5	Drill Rig	01	152 MM dia
6	Drill Rig	01	115 MM dia
7	Dozer	01	350 HP
8	Water Tanker	01	12 KL
9	Diesel Tanker	01	9 KL
10	Explosive Van	01	9.45 Tons
11	Tyre handler	01	3 Ton
12	Vibromax	01	110 HP
13	Dewatering Pump	05	--

***Source**: Approved Mining Plan & Progressive 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 Winter Season, 2014-2015.

The concentration for all the 8 AAQM stations for PM_{10} ranges between 50.8 to 77.2 µg/ m^3, SO_2 ranges between 5.4 to 10.9 µg/m^3 and NO_2 ranges between 12.8 to 20.8 µg/m^3.

Ambient noise levels were measured at 8 locations around the mining project. Noise level varies from 50.21 to 54.32 Leq dB(A) during day time and during night time noise levels ranges from 40.17 to 44.0 Leq dB(A).

The ground water analysis for all the 8 sampling stations shows that pH varies from 7.19 to 7.89, total hardness varies from 132.92 mg/l to 482.0 mg/l and total dissolved solids varies from 392.0 mg/l to 774.0 mg/l.

The analysis results for soil shows that pH value ranges from 7.29 to 7.93. It means soil is slightly alkaline in nature and texture of soil is Loam Clay. The concentration of

Nitrogen & Phosphorus has been found to be in good amount whereas Potassium has been found average in the soil samples.

2.2 BIOLOGICAL ENVIRONMENT

FLORA: Most commonly found tree species in the area are *Acacia catechu* (Kher), *Terminalia arjuna* (Arjun), *Albizzia odoratissima* (Chichwa), *Ficus religiosa* (Pipal), *Aegle marmelos* (Bel), *Tamarindus indica* (Imli), *Terminalia belerica* (Bahera), *Madhuca indica* (mahua), *Spondias pinnate* (Amera), *Terminalia tomentosa* (Saja), *Capparis sepiaria* (Kanker), *Acacia Arabica* (Babul), *Dalbergia sisso* (sisam), *Ziziphus mauritiana* (Bar)etc.

FAUNA: The presence of fauna depends on topography and vegetation in the area. The fauna found in the study area include Indian Hare (*Lepus nigricollis*), Indian Rat (*R. rattus*), Five striped squirrel (*Funambulus pennanti*), Common Garden Lizard (*Calotes versicolor*), Blue rock Pigeon (*Columba livia*), House crow (*Corvus splendens*), Weaver bird (*Ploceus philippinus*), Common Babblers (*Turdoides caudatus*) etc.

2.3 SOCIO-ECONOMIC ENVIRONMENT

The population as per 2011 Census records is 90722 (for 10 km radius buffer zone). Scheduled Caste fraction of the population of the study area (area within 10 km radius of mining lease) is 23.85% and Scheduled Tribe is 11.43 %.

Percentage of literacy is 80.39 % and that of workers those actually engaged in occupation is 45.77 % (including, 71.28 % as Main workers & 28.72 % as Marginal workers). Rest 54.23 % of the total population, are considered as non-workers. Total no. of household in the area is 18033.

3.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

- **Impact on Air -** The key air emissions from the mining activities (drilling, blasting, loading, haulage and transportation) are Particulate Matter, Oxides of Nitrogen (NO_2) and Sulphur dioxide (SO_2). 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 along the road sides and lease boundary to control fugitive emissions.

A. Impact on Water Environment - There are few surface water bodies which are passing within the study area (10 km radius buffer zone). Mahanadi Canal (Seasonal) flows at a distance of ~50 m in W direction, Chitawar nala ~50 m in NE direction) and Khorsi Nalla is situated at distance of ~3.5 km in E direction to the mine site. There will be no outside discharge of liquid effluent from the mine site;

therefore no significant impact on surface water bodies is anticipated due to mining operations. The general ground level in the area is 264 mRL. The ground water table is 256 mRL (8 m bgl) while the workings in the area is proposed upto the ultimate depth of 232 mRL (32 m bgl). Mineral as well as overburden is non – toxic in nature.

Water table will get intersected and due permission from CGWA will be taken. A detailed hydrogeological study will be done to study the effect of mining on water table in surrounding area.

- **Impact of Noise -** Major noise generating sources of the mining activity will be drilling, blasting, crushing and trucks movement used for transportation of limestone. The instant noise level from blasting will be high but for a very short duration. The proposed plantation will also check propagation of noise to the surrounding areas.

A. Impact on Land Environment – Opencast mining activities may alter the landscape of the lease area but will not have any effect on the surface features of the surrounding areas.

At the conceptual stage total excavated area will be 148.942 ha, out of which 43.04 ha area will be backfilled and reclaimed by plantation while rest 105.902 ha will be converted into water reservoir.

4.0 POST PROJECT ENVIRONMENTAL MONITORING PROGRAMME

Table – 3

S. No.	DESCRIPTION	FREQUENCY OF MONITORING
1.	Meteorological Data	Daily
2.	Ambient Air Quality at project site	Quarterly/ Half Yearly
3.	Water Quality	Quarterly/ Half Yearly
4.	Noise Level Monitoring	Quarterly/ Half Yearly
5.	Soil Quality	Half Yearly/Yearly
6.	Health Check-up	As per the guideline

5.0 ADDITIONAL STUDIES

The Additional Studies conducted as per the Terms of Reference (ToR) issued vide MoEF letter No J-11015/68/2010-IA-II (M) on 16th September, 2013, are covered in Draft EIA/EMP Report.

6.0 PROJECT BENEFITS

The proposed project activity will help in meeting the growing demand of cement in the market & hence will help in the economic growth of the country. UTCL has already been actively involved in the CSR activities in the nearby villages of the project site. Infrastructure development in the nearby villages, creation of educational facilities, empowering women through self help groups, gainful employment for nearby villagers, health awareness programmes & surgical camps, assistance in social forestry programmes in the area are some of the highlights of the CSR activities which will be taken up by the company. Besides government will get revenue by collection of royalty and other taxes.

7.0 ENVIRONMENT MANAGEMENT PLAN

7.1 AIR QUALITY MANAGEMENT

- Water spraying will be done regularly on the haul roads.
- Wet Drilling arrangements will be done.
- Controlled blasting will be carried out. Rock breaker will be used to avoid secondary blasting.
- Dust masks will be provided to the workers.
- Development of green belt/plantation will be done around the lease boundary, along approach roads and other places to arrest dust.
- Periodic air quality monitoring will be carried out.
- Proper maintenance of vehicles will be done to reduce gaseous emission

7.2 WATER QUALITY MANAGEMENT

- Garland drain all along the quarry surface edge keeping a barrier from the mine surface will be constructed to arrest incoming water to the mine. The collected water shall be used in plantation and spraying on haul roads.
- Domestic water generated from mine office & canteen/rest shelter shall be disposed off in septic tanks via soak pits.
- Waste water generated from workshop shall be properly collected, treated so as to comply with the prescribed standards.
- Rainwater falling in the catchments area of mining pit will be collected in sump of mines

7.3 NOISE MANAGEMENT

- Control Blasting will be carried out to minimize vibration.
- Rock breaker will be used to avoid secondary blasting
- PPEs like earmuffs/earplugs will be provided to all operators and employees working near the machinery.
- Proper maintenance, oiling and greasing of machines at regular intervals will be done to reduce generation of noise.
- Green belt development / Plantation will be done to minimize the propagation of noise.
- Periodical monitoring will be done.

7.4 SOLID WASTE MANAGEMENT

- Waste will be generated in the form of overburden consisting of top soil/ lateritic soil and sub-grade. The top soil, screen reject & waste likely to be generated upto end of life of mine are 2.59 Mm^3 and 4.96 Million tonnes & 6.2 Million tonnes respectively.
- Soil will be stacked separately and used for reclamation and plantation. Waste will be backfilled in worked out area.
- No external dumps will remain at the end of life of mine.

7.5 MANAGEMENT OF LAND USE PATTERN

The mining activity will affect the present landscape of the ML area. The original topography of the ML area will be affected mainly due to the actual mining operation. The total lease area is 157.122 ha. At the end of life of mine total excavated area will be 148.942 ha, out of which 43.04 ha area will be backfilled and reclaimed by plantation while rest 105.902 ha will be converted into water reservoir.

7.6 GREENBELT DEVELOPMENT AND PLANTATION PROGRAMME

Out of total ML area of 157.122 ha, 51.22 hectare area will be covered under plantation & green belt development.

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. UTCL will initiate the above amenities either by providing or by improving the facilities in the area, which will help in uplifting the living standards of local communities.