

EXECUTIVE SUMMARY OF DRAFT EIA EMP REPORT

INTRODUCTION

M/s. Rudradev Cement Pvt. Ltd., has proposed to set up 360 TPD Cement manufacturing unit at Village Kisam, 48 No. Block, Mouza-Jamunamukh District Nagaon, Assam.

Category of the project is B, 3(b) Cement Plants (<1 Million tonnes/annum production capacity) as per EIA Notification dated 14 September, 2006.

LOCATION OF THE PROPOSED PROJECT

The proposed unit to be located on a private land measuring 15.17 acres (61405.2 sq.m.) at Dag No. 87, 142, 86, 135, 87 of K.P. Patta No. 40, 48, 95, 95, 40 of Village Kisam, 48 No. Block, Mouza-Jamunamukh District Nagaon, Assam.

DETAILS OF THE SITE

The selection of the site has been highly influenced by location factor. The site enjoys maximum location advantage with respect to availability to raw materials, market proximity and infrastructure facility.

Details of the project site are as given in following table:

| | |
|-------------------------|--|
| Village | Kisam |
| Taluka | - |
| District | Nagaon |
| State | Assam |
| Latitude | 26 ⁰ 06' N |
| Longitude | 92 ⁰ 44' E |
| National Highway | NH-36 (1.0 Km in North Direction) |
| Nearest Railway Station | Jamunamukh Railway Station (4 km North West) |
| Nearest Airport | Tezpur Airport (62 km North) |
| Nearest City | Guwahati (123.00 Km) |
| Nearest River | Jamuna River (2 km) |
| Reserved Forest | Dabaka (2.5 km North) |

PROJECT COST

The total Project Cost is Rs. 4855.0 Lacs. It includes site development, building, all the plant Machinery and its installation and Environment Protection measures cost. Total capital cost and recurring cost per annum for environmental pollution control measures are 348.0 lacs & 120.0 lacs respectively.

BRIEF PROCESS DESCRIPTION

Manufacturing Cement is based on Rotary Kiln technology which involves Crushing of raw materials and Storage or proportioning for milling to produce fine powder. This fine powder of raw materials is blended and homogenize for pelletizing and then burning in rotary kiln to form Clinker which further cooled and grounded in cement mill with Gypsum & fly ash to produce Cement.

DETAILS OF RAW MATERIAL CONSUMPTION ITS SOURCE, AVAILABILITY & TRANSPORTATION

The main raw material for the clinker and/or cement manufacturing unit is Limestone. Limestone is available in both Assam and Meghalaya.

The location of the unit is such that it is very close to Meghalaya. The Prominent Limestone deposits in Meghalaya are Cherrapunjee, Mawlong-Ishamati, Komorrah, Shella, Borsora in Khasi Hills, Siju and Nagwalbibra in Garo Hills, Lumshnong, Sutnga, Nongkhlieh, Sybdai and Lakadong Jaintia Hills. Hence the unit will be able to procure limestone both from the state of Assam and Meghalaya.

Other raw materials like Clay, Iron Dust, coal and Gypsum are also readily available. Details of which given in following table.

| SR. NO. | NAME OF THE RAW MATERIAL | CONSUMPTION MT/DAY | SOURCE & THEIR DISTANCE (KM) | MODE OF TRANSPORTATION |
|---------|--------------------------|--------------------|---|------------------------|
| 1. | Limestone | 526 | Cherraounji – 250 km Isamati - 200, Meghalaya NC Hilles – 100 Km Assam | By Road |
| 2. | Clay/Shale | 90 | Nagon Assam | By Road |
| 3. | Iron Dust | 9 | Byrnihat – 120 km Assam | By Road |
| 4. | Fly Ash | 148 | Durgapur – 1200 km Bihar | By Road |
| 5. | Gypsum | 8 | Samdrup – 350 km Jongkhar Bhutan | By Road |
| 6. | Coal | 60 | Meghalaya – 250 km | By Road |

REQUIREMENTS FOR THE PROJECT

Land: Around 15.17 acres (61405.2 sq.m.) land is acquired for the proposed cement plant.

Water: Daily water requirement for the proposed project shall be 23 KL/day and would be met through Ground water using bore well. Water requirement is primarily for industrial use, domestic use and for gardening & other

Electrical Energy: The estimated power requirement for the proposed project will be 3000 KW. Power supply to the proposed project will be sourced from Assam State Electricity Board, during power failure or emergency a stand by D. G. Sets of 1500 KVA shall be utilized.

Manpower: The proposed cement plant will have great employment potential providing employment to approximately 95 full time persons.

SOURCES OF POLLUTION AND CONTROL MEASURES

AIR POLLUTION

The particulate emissions are among the most significant impacts of cement manufacturing.

Particulate Matters (Dust):

There will be emission of particulate matter due to operation of crusher, hammer mill, raw mill, coal mill kiln and cement mill. The cement dusts are alkaline with size varying from 5 µm to 250 µm (Chemical Technology and Pollution Control by Martin B. Hocking).

The fugitive dust emissions from the cement plant would be significant and the sources are as under:

1. Lime stone quarry
2. Crusher
3. Pre blending and storage

4. Raw Mill
5. Blending and Homogenization
6. Kiln
7. Coal mill
8. Clinker Cooler
9. Cement Mill
10. Packing Plant
11. Handling of waste
12. Unpaved Roads

Sulphur Dioxide, Oxide of Nitrogen and Carbon Oxides

Sulfur dioxide may generate due to the sulfur content in the coal. However, the alkaline nature of the materials provide for direct absorption of SO₂, thereby mitigating the quantity of SO₂ emissions in the exhaust stream.

Oxides of nitrogen are generated during fuel combustion by oxidation of chemically bound nitrogen in the fuel and by thermal fixation of nitrogen in the combustion air.

There will be generation of CO₂ due to calcining of lime stone. In the calcining process, CaCO₃ thermally decomposes to CaO and CO₂.

Air Pollution control measures:

The major pollutant is particulate matter from the proposed cement plant. The unit will install bag filters to control air pollutants. Adequate height shall be provided to stacks attached to the air pollution control equipments to disperse the air pollutants to the satisfactory levels.

WATER POLLUTION:

No industrial waste water shall be generated from the proposed project, but only domestic waste water 4.5 KL/Day will be generated. Entire quantity of domestic waste water generated shall be treated through septic tank and disposed off through Soak Pit/well.

NOISE POLLUTION:

The noise levels near the sources such as , Kiln operation, Clinker crusher, Generator Area, Compressor Area, Raw material handling area and vehicular movement in the plant etc will be higher during the operational phase but general noise levels within plant are expected to remain below 75 dB(A). In order to mitigate the noise levels during the operational phase, a green belt will be developed around the periphery of the plant. However, at places where noise levels may exceed the permissible limit, acoustic enclosure shall be provided.

SOLID WASTE:

Dust collected from air pollution control equipment will be 100% recycled in the process. Other solid wastes will be used/spent oil and discarded drums and bags. The sources of solid wastes, generation and its management are as given in the following table.

| SR.NO. | SOLID WASTE | SOURCE | WASTE MANAGEMENT DETAILS |
|--------|-------------------------|--------------|---|
| 1. | used/spent oil | Prime Movers | Reused in plant for lubrication or sell to authorized recyclers |
| 2. | discarded drums or bags | Storage | Return to raw material supplier or sell to authorized recyclers |

BASELINE ENVIRONMENTAL STATUS

The baseline environmental quality of Air, water, soil, noise, socioeconomic status and ecology has been assessed in the winter season (October, 2008 to December, 2008) in a study area of 10 km radial distance from the project site

Air Environment:

The ambient air samples were collected from eight locations and analyzed for SPM, RSPM, SO₂ and NO_x, for identification, prediction, evaluation and assessment of potential impact on ambient air environment. Design of network for ambient air quality monitoring location was based on guidelines provided by CPCB. The arithmetic mean values of SPM, RSPM, SO₂ and NO_x are found within permissible limit at all the locations.

Water Environment:

To assess water quality, surface water and ground water samples were collected from different locations. Results of all the water parameters were found within permissible limit.

Noise Environment:

Ambient noise level monitoring of background & transportation was done at same locations where ambient air monitoring was carried out. The noise levels of the study are found low and within the stipulated standards of CPCB for the respective designated areas.

Soil Environment:

The general Topography of the study area varies from low-lying plains to highland having small-hillocks. Soil samples were collected from eight different locations and physico-chemicals properties were analyzed. All the parameters are found within limit.

Socioeconomic Environment:

Baseline information of socio-economic data has been collected from EIC and Census handbook for the four major indicators viz. demography, civic amenities, economy and social culture, literacy, occupational structure.

ENVIRONMENTAL IMPACT ASSESSMENT

Air Environment: As discussed earlier air monitoring was done in winter season and collected data was used for air dispersion modeling as per the guidelines provided by CPCB. And it is concluded that proposed project activity will not adversely affect air quality.

Water environment: As the proposed project is clinker production and cement grinding unit, no industrial waste water shall be generated but only domestic waste water 4.5 KL/day shall be generated which will be treated through septic tank and disposed off through Soak Pit/well. Rain water harvesting shall be carried out to recharge ground water which can improve water environment of the area. So no adverse impact of proposed activities, on water quality is envisaged.

Land environment: No hazardous waste shall be generated from the proposed project. Other solid waste generated from the proposed project activities shall be properly disposed as environmental friendly so there will be no significant impact on land environment.

Noise environment: The main sources of noise pollution in the plant would be crusher, cement mill, diesel generator and vehicular movement. Adequate noise control measures such as mufflers, silencers at the air inlet/outlet, anti vibration pad for equipment with high vibration, earmuff and earplugs to the operators etc. will be provided. However, the proposed green belt will help to reduce noise level. The adverse impact on occupationally exposed workers will not be envisaged, as noise protection devices will be provided.

Socioeconomic environment: Over all 95 persons will get direct or indirect employment due to proposed expansion project. In addition to these company will contribute in socio economic development of the area.

ENVIRONMENTAL MANAGEMENT PLAN

An Environmental Management Plan (EMP) has been prepared for the proposed cement grinding & clinker manufacturing unit to minimize negative impacts and is formed on the basis of prevailing environmental conditions and likely impacts of this project on various environmental parameters. This plan will also facilitate monitoring of environmental parameters.

EMP includes scheme for proper and scientific treatment and disposal mechanism for air, liquid and solid hazardous pollutants. Apart from this, green belt development, safety aspect of the workers, noise control, fire protection etc. are also included in it.

Following measures are proposed to mitigate negative impact of operation phase of the project on the surrounding air environment:

- All transfer points will have bag filter attached to them to control and capture dust emission.
- Height of all the stacks will be as per statutory requirement. All the stacks will have stack monitoring facility (SMF) consisting of sampling port-hole, platform and access ladder.
- Adequate spares of critical components of dust collection systems will be kept to ensure trouble – free operations and continuous compliance to emission norms.
- A comprehensive plan for fugitive emission control based on CPCB guidelines is prepared.
- All stacks will be provided with on-line CPM (continuous particulate measurement) analysers and interlocking system with production plant will be provided which will automatically shut–off production activities when the emission concentration exceeds the set limit.

Precautionary measures will also be adopted to control the noise level within the stipulated limits.

The plantation at the proposed project site will be carried-out after interaction with local experts and various species will be selected as per CPCB guidelines.

About 33% land area of total land will be allocated for greenbelt / green cover development at the proposed project site. Proper budgetary provision considering expenses incurred on saplings, soil handling, manuring, after care and maintenance will be made.

ENVIRONMENT MONITORING PROGRAM

A regular monitoring of environmental parameters like air, water, noise and soil as well as performance of pollution control facilities and safety measures in the plant are important for proper environmental management of any project. Therefore, the environment and safety cell will handle monitoring of air and water pollutants as well as the solid wastes generation as per the requirements of SPCB and CPCB.

CLEANER PRODUCTION

The unit will take following steps to implement the cleaner production in the proposed plant.

1. The proposed unit will install air pollution control equipments to control dust emissions. The collected dust will be 100 % recycled.
2. The proposed unit will implement good housekeeping.
3. Maintenance of air pollution control equipments will be done regularly.
4. Efficiency of air pollution control equipments will be checked regularly.
5. Where ever possible Green Belt will be developed in the industrial premise.