EXECUTIVE SUMMARY

OF

"Expansion of Cement Plant capacity from 3.3 Lakhs TPA to 6.6 Lakhs TPA and clinker production from 3.135 Lakh TPA to 6.27 Lakh TPA"

AT

Village: Khrew, Tehsil- Pampore, District: Pulwama, State: Jammu & Kashmir

Total Area: 12.38 Ha
Capacity in Existing - Cement -3.3 Lakhs TPA, Clinker-3.135 Lakhs TPA
Capacity After expansion- Cement 6.6 Lakhs TPA, Clinker-6.27 Lakhs TPA
Schedule – 3(b) Category 'B'
Total Cost of the project: Rs. 250.52 Crores (Existing- 85.52 crores, Proposed- Rs 165 crores)

Reference: ToR issued vide letter no. F. No. J-11011/204/2016 - IA. II(I)] dated 15.01.2021.

PROJECT PROPONENT

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ENVIRONMENTAL CONSULTANT

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(NABET Registered vide list of accredited consultants organizations/Certificate no. NABET/EIA/1922/SA0143 & validity extension letter no. QCI/NABET/ENV/ACO/23/2766 till 28.08.2023)
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1. Executive Summary

1.1. Introduction

Trumboo Industries Private Limited (TIPL) is proposing to enhance the production capacity of Existing cement plant from cement and clinker capacity of 3.3 Lakhs TPA (0.33 million TPA) & 3.135 Lakhs TPA (0.31 million TPA) respectively over the existing land area of 12.38 ha located at Village Khrew, Tehsil Pampore, District Pulwama, State Jammu and Kashmir.

The project falls under category 'B1' of Schedule 3(b) as per EIA notification 2006 and its subsequent amendments as the capacity of the proposed cement plant is less than 1 MTPA. The project attracts general conditions as the Dachigam National Park is located at 3.12 km N from the plant site, hence will be appraised at Central Level. The ESZ of the aforementioned National Park is not notified hence the default ESZ of 10 km has been considered and accordingly, NBWL clearance application was applied vide Proposal No. FP/JK/IND/4774/2020. NBWL clearance has been granted by the Standing Committee vide letter no. F.No.6-132/2021-WL dated 02.05.2022. The distance from Dachigam National Park i.e. 3.12 km N has been authenticated by the Chief WildLife Warden, Jammu & Kashmir.

The plant has been in operation since 2010 for which CTE was obtained from Jammu and Kashmir State Pollution Control Board vide letter no 200 of 2004 dated 16.08.2004. The Consent to operate has been obtained for the existing capacity from time to time. Latest CTO has been granted by the Jammu & Kashmir State Pollution Control Board to M/s Trumboo Industries Pvt. Ltd. vide letter no. PCC/digital/22062773946 of 2022 dated 11.08.2022, which is valid up to June 2026.

Certified Compliance report on CTO has been issued by RO, MoEF, Srinagar, Kashmir vide letter no. PCC/RDK/PS/2023/97-98 dated 29.04.2023.

Terms of Reference (TOR) for the proposed project has been granted by MoEF&CC File No. J-11011/204/2016 - IA. II(I)] dated 15.01.2021.

1.1.1. About the Project

The total area of the plant will be 12.38 ha and the land is already in the possession of Trumboo Industries Private Limited. The proposed project is an "Expansion of Cement Plant capacity from 3.3 Lakhs TPA to 6.6 Lakhs TPA and clinker production from 3.135 Lakh TPA to 6.27 Lakh TPA".

1.1.2. Location & Accessibility

The proposed project is located at Village: Khrew, Tehsil- Pampore, District: Pulwama, State: Jammu & Kashmir.The minimum elevation of the site is about 1922m AMSL and maximum elevation is 1970 m AMSL.

The site can be accessed from Pampore- Zantrag Road which is approx 1.37 km ESE from the plant. The nearest Railway station is Pampore Railway Station which is approx. 12.60 km in SW direction from the plant site. The nearest Airport is Srinagar International Airport which is approximately 23.93 km in SW direction from the plant site.

1.2. Project Description

Details	Existing	Proposed	After Expansion
Production Capacity	Cement (OPC) - 0.33 MTPA and Clinker - 0.3135 MTPA	Cement (OPC) - 0.33 MTPA and Clinker - 0.3135 MTPA	Cement (OPC) - 0.66 MTPA and Clinker - 0.627 MTPA
Type of Cement	Ordinary Portland Cement, (OPC)		
Total plot area	12.38 ha		
Total greenbelt area	1.76 ha (14.2 % of total plot area)	2.32 ha (18.8 % of total plot area)	4.08 ha (33 % of total plot area)

Total Water Requirement	75	114	189
Fresh Water Requirement	75	96	154
Fresh Water Source	Ground water from the borewell		
Power Required & source	9 MW (Power grid of the state government)	9 MW (Power grid of the state government)	18 MW (Power grid of the state government)
D.G. Sets	3 * 1500 kVA	1* 1500 kVA	4*1500 KVA
Waste water	19 KLD	18 KLD	37 KLD
STP capacity	Discharge of wastewater in soak pit via septic tank	50 KLD of MBBR technology	50 KLD of MBBR technology
APCS proposed for process emissions	Jet pulse bag filters, Bag Filter, Bag house & ESP		
Waste generated	Dust from Bag filter - 96 TPD Used Oil- 2500 KLPA	Dust from Bag filter - 96 TPD Used Oil- 800 KLPA	STP Sludge- 9 kg/day Dust from Bag filter - 192 TPD Used Oil- 3300 KLPA
Total Cost of the Project	Rs. 85.52 crores	Rs. 165 crores	Rs. 250.52 crores
Manpower	350	200	550

Resource Requirements

- **Land:** The total area of the plant will be 12.38 ha and the land is already in the possession of Trumboo Industries Private Limited.
- **Water Requirement:** The total water requirement for the existing phase is 75 KLD which is totally met from the fresh water. After expansion, water requirement will be 189 KLD out of which fresh water requirement will be 154 KLD which will be sourced from Groundwater.
- **Power Requirement:** After expansion, total Power load will be 18 MW which will be sourced from the Power grid of the state government and

DG sets (for emergency use only) of capacity 4*1500 KVA will be used for the power backup.

- **Fuel:** After expansion, 200 liter/hr of Diesel will be required for the operation of DG set (emergency use only).
- **Manpower:** The existing manpower for the existing phase is 350 nos. and manpower for proposed expansion will be 200 nos., and total manpower after expansion will be 550.
- **Operational Activities:** Operational activities involved in the unit are transportation, unloading of raw material, Raw material Crushing, Raw Meal Homogenization, Pre-Calcination, Calcination & Clinkerization/ Cement Clinker Cooling, Fuel (Coal) handling, Gypsum storage and handling and Clinker storage, Cement grinding and storage, Cement packing and dispatch.
- **Pollution Sources:** Main Pollution sources from the project will be air & noise emission, wastewater generation and Solid & Hazardous waste.

Total quantity of wastewater generation

Waste water generated during existing phase is 19 KLD which is disposed off to two soak pit via septic tank, after expansion the waste water generated will be 37 KLD which will be treated in STP of 50 KLD and treated water of 35 KLD will be reused for gardening (20 KLD), dust suppression (6 KLD) & cement plant make-up water (9 KLD). No wastewater will be discharged outside.

Manufacturing Process:

The Manufacturing Process details comprises:

- ❖ Transportation of limestone from captive mine to Cement Plant
- ❖ Crushing of limestone, Gypsum & coal
- ❖ Grinding of crushed limestone, coal and other raw material
- ❖ Raw material preparation and blending operations
- ❖ Preheating
- ❖ Calcination in the Kiln
- ❖ Clinker cooling and stocking
- ❖ Cement grinding and packing
- ❖ Quality and process control

- Cement packing and dispatch.

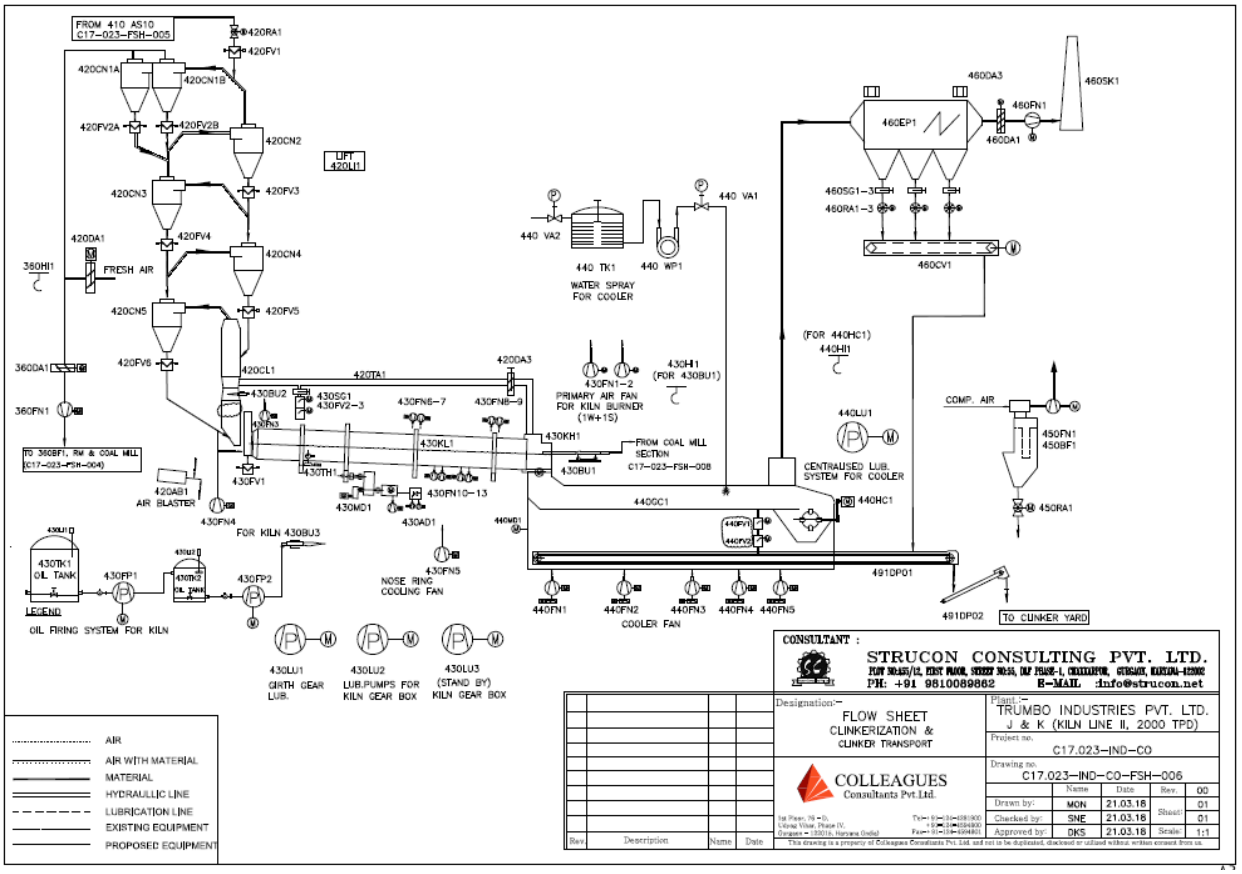

Fig: Schematic Process Flow Diagram of Clinker Unit

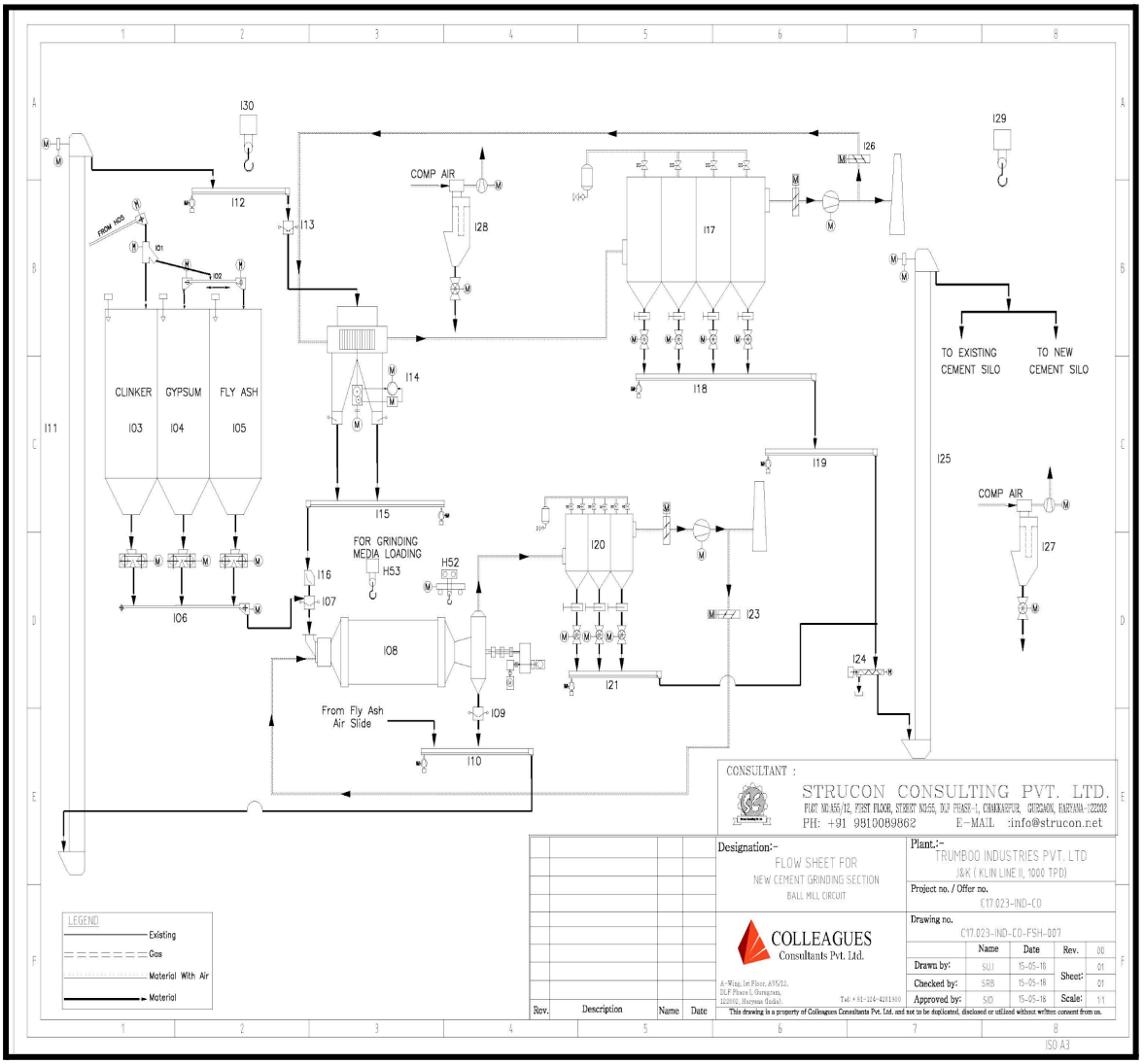

Fig: Schematic Process Flow Diagram of Cement Grinding Unit

1.3. Description of Environment

The baseline data is generated through field study within the impact zone (Core Zone and Buffer Zone) for various components of the environment viz. Air, Noise, Soil, Water, Land, Ecology and Socioeconomic. The baseline environmental studies have been done for **Post Monsoon Season (October 2022- December 2022)** by Perfact Researchers Pvt. Ltd. in a study area of 10 km radius from the project site. While generating the baseline status of the physical and biological environment of the study area, the concept of impact zone has been considered.

The impact zone selection is based on preliminary screening and modelling studies. The data collection had been done as given below:

- **Land Use:**

  Core Zone: The proposed Clinker and Cement manufacturing unit will be located in an area of 12.38 ha owned by Trumboo Industries Private Limited. It is an operational unit, land use has already been changed. No additional land is required for the proposed project.

  Buffer Zone: Out of total 10 km radius study area i.e. 33909.94 Ha, built up area is about 2083.72 hectares (6.14 %), agriculture land is about 9140.42 hectares (26.95%), Forest land area is about 19681.61 hectares (58.04%), waste/barren land is about 2555.39 hectares (7.54%), water bodies area is about 461.86 hectares (1.36%) and Grass/ Grazing land is about 135.17 hectares (0.40%) of the total 10 km radius study area.

- **Hydrology & Geology:**

  Geology: This zone has undulating topography. The maximum elevation 1970m AMSL is found at the northeast corner of the core zone and minimum elevation 1922m AMSL towards SSE of the project site. The altitude of the buffer zone of the project area varies from 3759m AMSL on the North-eastern periphery to 1586 m AMSL on the South-Western periphery. The general slope of the buffer zone of the project area is towards south-west. Soil in hilly areas is poor and fertile in plain areas. Productivity in higher ranges is poor while in central regions is fertile. The rock types belonging to various age groups starting from Panjal Traps and other Permo-carboniferous formations to recent ones(Scree, talus and clays) are encountered in this area.

  Hydrology: There is no perennial source of water in the project area. Study area has a dendritic pattern of drainage. 1st and 3rd order ephemeral streams passing from the lease area and ultimately joins the jhelum river at about 9.8 km in west of the project site.

- **Ambient Air Quality:**
  Core Zone: The mean value of PM_{10} ranges from (71.06 -75.39 µg/m^3) & $PM_{2.5}$ ranges from (39.40-41.80 µg/m^3), SO_2 ranges from (7.24-7.68

μg/m^3), NO_2 ranges from (19.97-21.19 μg/m^3) & CO ranges from (0.59-0.63mg/m^3) 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 to be Satisfactory in the Post Monsoon season.

Buffer zone: The mean value of PM_{10} ranges from (60.15-95.62 μg/m^3), $PM_{2.5}$ ranges from (33.55 - 53.02 μg/m^3), SO_2 ranges from (6.13- 9.75 μg/m^3), NO_2 ranges from (16.90 - 26.87 μg/m^3) & CO ranges from (0.50 - 0.80 mg/m^3) 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.

Ambient Noise levels: The ambient noise level during day time at the proposed project site varies from 57.2 dB (A) to 57.4 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 50.1 dB (A) to 50.4 dB (A) which are within the standard limit of Industrial area 70.0 dB (A).

In the residential area of Buffer Zone, noise levels at the day time range from 53.3 dB(A)- 55.8 dB(A) and at night time it ranges from 45.6 dB (A) to 47.3 dB (A). The daytime noise level in commercial area (buffer zone) range from 58.5 dB(A) to 61.5 dB(A) during the day while it goes down to 51.4 to 57.6 dB(A) during the night. The noise levels in the region seem to be slightly higher than the ambient noise standards which could be attributable to vehicular and residential activities.

- **Soil Quality:**

Core Zone : The samples collected from the core zone sites show that the soil texture in the core zone is Clayey, Colour is Dull Reddish Brown, pH is 6.83. Amount of primary nutrients like Organic matter is 0.98 %, the available nitrogen 65.8 mg/kg is low and available Potassium 7.0 mg/kg is low while the available Phosphorus 9.6 mg/kg is in the medium range. Thus it can be concluded that soil is low 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 and Silt Clay, Color is blackish to Dull Reddish Brown, pH ranges from 6.73 - 7.98. Amount of primary nutrients like Organic matter 0.59 -3.01 %, the Available Nitrogen 57.4-105.0mg/kg is lower in range, the Available Phosphorus 8.2-21.2 mg/kg is medium to high in range, Available Potassium 8.8-17.8mg/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.

- **Surface Water Quality**: The results of water quality of surface water SW1 (i.e. Satural (Upstream) Tributary of Jhelum), SW4 (Narastan (Upstream) Tributary of Jhelum) shows that it is meeting the criteria class "D" i.e. Propagation of Wildlife and Fisheries as per CPCB surface water quality- Designated Best Use Water Quality Criteria defined by CPCB and SW2 (Khanagund (Downstream) Tributary of Jhelum), SW3 (Aripal (Downstream) Tributary of Jhelum), SW5 (Sarbal Lake) shows that it is meeting Class "E" i.e. Irrigation, Industrial Cooling, Controlled Waste disposal as per CPCB surface water quality- Designated Best Use Water Quality Criteria. The majority of the water quality parameters in the selected sites were within their respective drinking water quality standards except for SW5 in which Total hardness, Calcium & Alkalinity is higher than the drinking water standards.
- **Ground Water Quality**: **Core zone:** The water quality of the core zone of borewell shows that Total dissolved solids, total hardness, fluoride, calcium, Magnesium, Chloride, however alkalinity is slightly higher than drinking water standards (IS:10500).

  Buffer zone: The water quality of the core zone of borewell shows that Total dissolved solids (TDS) of the sampling locations ranges from 194 mg/l to 352 mg/l, fluoride of the sampling locations ranges from <0.1 mg/l to 0.65 mg/l, calcium of the sampling locations ranges from 62.4 mg/l to 104.0 mg/l, magnesium concentration of sampling locations ranges from 5.83 mg/l to 18.47 mg/l, Chloride Concentration of all the sampling locations ranges from 1.42 mg/l to 12.76 mg/l are within the drinking water standard (IS:10500) while total hardness ranges from 228 mg/l to 320 mg/l & alkalinity ranges from 188 mg/l to 358 mg/l which is higher than the drinking water standards.

Biological Environment: Flora of core zone already present at the site are Cupressus torulosa (Himalayan Cypress), Populus nigra (Black poplar), *Vachellia nilotica* (Gum arabic tree), *Juglans regia* (Persian walnut) and *Picea smithiana* (Indian Spruce).

As per the Indian WildLife (Protection) Act, 1972, 08 Schedule I species mentioned in the study area within a 10 km radius namely *Cervus elaphus hanglu (*Kashmir stag (hangul)*), Panthera pardus (*Leopard*), Moschus chrysogaster (*Alpine musk deer*), Ursus arctos isabellinus (*Himalayan brown bear*), Falco tinnunculus (*Common kestrel*), Capricornis thar (*Himalayan serow*), Ithaginis cruentus* (Blood Pheasant*), Lophophorus impejanus* (Himalayan monal)

- **Socioeconomic Environment:**

  The total population of the study area is 109474 constituting 16911 households.The sex ratio of the study area as per census 2011 records is 898, whereas the sex ratio of the district Pulwama involved is 912 and district Srinagar is 900. During the primary survey it was found that Agriculture, Service, Labour, Private Job, Private Business etc. were principal work in the villages. Main water sources in the surveyed area were bore well and community supply.

  Agriculture plays an important role in the economy of the District. The agriculture products like paddy, oil seeds, fodder, saffron & milk are the main contributors to the Gross Domestic Product (GDP) of the District. Among the fruits, apple, almonds, walnut & cherry are the important one produced in this District. All surveyed areas had 80-100% toilet facility; sanitation facility was satisfactory. During the survey, it was observed that drainage lines were mixed type (open, semi pakka, covered etc).

- Main commodities have been taken from DCHB 2011. Main commodities of the district are paddy, oil seeds, fodder, saffron & milk.

- The project will generate employment opportunities for the local people which will reduce unemployment and enhance the lifestyle of the community.

1.7. Additional Studies

Risk Assessment

Risk Assessment was carried out in order to ensure effective management of any emergency situations that may arise from the failure of storage silos, spillages, etc. with respect to the proposed project. The Risk Assessment provides the appropriate preventive and risk mitigation measures

Some General safety measures

- Occupational health surveillance programmes shall be done six monthly & and their records will be maintained.
- At the project site, an emergency First Aid facility will be provided. A room will be provided separately with provision of bed and an experienced doctor.
- Health check-up camps will be organized on a regular basis at company dispensary / nearby locations for nearby people to evaluate exposure of the workers to chemicals during pre-placement and periodic medical monitoring.
- Proper medical facility arrangements will be provided in case of any accidental release.
- Label Precautions and First Aid facility will be provided.
- Emergency plans will be prepared and mock drills of the on-site emergency will be conducted.
- Employers and employees will be made aware of the hazardous properties of materials in their workplaces, and the degree of hazard each poses.
- Inspection of the industrial activity will be done at least once a year and an annual status report on compliance with the Rules shall be submitted.
- An Environment, Health and Safety (EHS) Manager will be available, which handles all the safety issues related to man, machine & materials.
- Exterior refuge or safe areas include parking lots, open fields or streets which will be located away from the site of the emergency and which provide sufficient space to accommodate the employees.

1.8. Project Benefits

The benefits due to the proposed project are given below:

- After expansion additional employment opportunities will lead to a rise in income and improve standard of living. The expansion of existing industry would also generate jobs for the labourers during the construction phase as well as during the operation phase. It will provide direct and indirect employment to local youth.
- Since many of the products are import substitutes – Make in India theme will get a boost. The country will be able to save valuable foreign exchange.

1.10. Environment Management Plan

Air Quality Management Plan

For Construction Phase

- Water sprinkling shall be done at the location where dust generation is anticipated.
- No excavation of soil shall be carried out without adequate dust mitigation measures in place.
- No loose soil or sand or Construction & Demolition Waste or any other construction material that causes dust shall be left uncovered.
- Sprinkling shall be done frequently by a fixed sprinkling system.
- Construction and Demolition Waste processing and disposal sites shall be identified and required dust mitigation measures be notified at the site.
- To minimize the occupational health hazard, proper masks shall be provided to the workers who are engaged in dust generation activity.

For Operation Phase

- There are 3 x 1500 KVA DG sets in the existing unit. For proposed expansion DG sets of 1x1500 KVA (emergency use only), stack height of 35 m above ground level has been/shall be provided to control air emissions for each. To control fugitive emissions, water sprinkling at coal & limestone storage yards. Raw material and product kept under sheds, Road Sweeping machines have been deployed for cleaning dust. Same shall be followed for proposed expansion.
- Process emissions will be from the stack attached to the Limestone Crusher, Gypsum Crusher, Coal crusher, Coal Mill Area, Raw Mill / Kiln

Area, Clinker Cooler Area, Cement Mill Area & Packing Unit Area, from which pollutants/gases PM, SO2, NO2 will be released in the form of gases.

- Emissions to the atmosphere through process stacks shall be controlled within acceptable limits by installation of pollution control equipment like Pulse Jet Bag Filter, Bag House, Electrostatic Precipitator. Provision of ID Fan Vent is there for Limestone Crusher, Gypsum Crusher & Coal Crusher and same shall follow for proposed expansion.
- Green belt area in the plot will be 4.08 Ha (33% of plot area). Also, outside green belt development will be done in the land owned by the company.

Noise Level Management Plan

For Construction Phase

- During the installation stage, expected noise levels shall be in the range of 80-100 dB(A), which will decrease with increase in distance. Hence most of the activities shall be carried out during the day.
- Regulating the movement of vehicular traffic so that the ambient noise quality with respect to noise is not adversely affected.
- To prevent any occupational hazard, earmuffs/earplugs shall be given to the workers working around or operating plant/ machinery emitting high noise levels.

For Operation Phase

To reduce Ambient Noise level the following measures will be adopted-:

- Noise attenuating devices like earplugs and earmuffs are being provided to the workers exposed to high noise levels.
- About 33% of land has been earmarked for the green belt and plantations.
- Noise generating machinery is kept in the covered sheds.
- Improved mufflers & silencers have been provided in the machinery generating high noise.
- There are 3 x 1500 KVA DG sets in the existing unit. However, for the proposed installation of new line-II, DG set of capacity 1x1500 KVA (for

emergency use only) shall be bought acoustically enclosed and kept on surface.

- A 20m height boundary wall has been constructed all around the plant boundary which acts as a noise barrier; the same will be maintained for the proposed expansion.

Solid & Hazardous Waste Management plan

For Construction Phase

- Total 53 kg/day of solid waste will be generated, out of this 21 kg/day will be organic waste and the rest 32 kg/day will be inorganic waste which will be given to authorized vendors.
- C&D waste generated will be managed as per construction and demolition waste management rules 2016.

For Operational Phase

- After Expansion, total 83 kg/day solid waste will be generated out of which 33 kg/day of biodegradable waste will be composted in the proposed OWC and further will be used as manure for plantation, and recyclable waste of 50 kg/day will be given to authorized recyclers.
- After Expansion, used oil/Used grease of 3300 KLPA, will be given to an authorized recycler/ burnt at kiln as per the permission obtained under Hazardous waste rules 2016.
- After Expansion, E-waste will be 0.024 TPA, Battery waste of 0.048 TPA, shall be sold/disposed of to authorized vendors.
- After Expansion, non hazardous Waste of 9 kg/day of STP sludge will be used as manure for plantation and 192 TPD of Dust from APCS/Bag filter/ ESP residue will be recycled in cement manufacturing.

Wastewater & Effluent Management Plan

For Construction Phase:

- **Source of water:** The water required during construction of the project will be 26 KLD out of which 10 KLD will be used for domestic activities of the labour and 16 construction purposes. 10 KLD will be sourced from the inhouse borewell supply and 16 KLD for construction purposes will

be sourced from mobile STP treated water. Domestic wastewater will be generated from labours which will be treated in mobile STP.

For Operational Phase:

- **Source of fresh water:** Groundwater from borewells

  The total water requirement for the existing phase is 75 KLD which consists of water required for Domestic water (16 KLD), Cement plant make up water (50 KLD), Gardening (8 KLD) and Dust suppression (1 KLD) & is totally met from the fresh water. After expansion, water requirement will be 189 KLD out of which fresh water requirement will be 154 KLD. After expansion water will be required for Domestic water (25 KLD), Cement plant make up water (138 KLD), Gardening (20 KLD) and Dust suppression (6 KLD). Waste water generated during existing phase is 19 KLD which is disposed off to two soak pit via septic tank after expansion the waste water generated will be 37 KLD which will be treated in STP of 50 KLD and treated water of 35 KLD will be reused for gardening (20 KLD), dust suppression (6 KLD) & cement plant make-up water (9 KLD).

Biological Environment Management Plan

- After Expansion, greenbelt area in the plot will be 4.08 Ha (33% of plot area) along with vertical green.
- Total 10,200 nos. of trees will be planted after expansion out of which 4500 no. of trees have already been planted, remaining trees 5,700 no. will be planted during expansion. After considering 80% survival rate, **7,125 no.** of saplings will be planted.

Socio Economic Environment management plan

- The Industry will require raw materials, skilled and unskilled laborers. Maximum will be available from the local area. Due to increasing industrial activities, it will boost the commercial and economical status of the locality, to some positive extent.
- In the operation phase, the proposed plant would require a significant workforce of nontechnical and technical persons. About 350 people will be employed during construction of the project and 550 people will be employed during the operational stage of the project after expansion.

1.11. Cost & EMP Implementation Budget

The total cost of the project is Rs 250.52 Crores. The total capital cost after expansion for the EMP Budget will be Rs. 1470.05 lakhs and recurring cost will be Rs 427.14 lakhs/Year.

Capital Environment Management Plan Cost

Sr. No.	Particulars	Existing Unit (Lacs)	Proposed Unit (Lacs)	Total After Expansion (Lacs)
1	Air management including water sprinkling system for dust suppression, vacuum sweeper for cleaning dust, APCS	370	425	795
2	Solid Waste management	5	7	12
3	Wastewater management	25	100	125
4	Noise pollution control	10	15	25
5	Landscaping / plantation	13	21	34
6	Rain water harvesting	0	100	100
7	Social Activities *	300	79.05	379.05
	Total	**723**	**747.05**	**1470.05**

Recurring Environment Management Plan Cost

Sr. No.	Particulars	Existing Unit (Lacs)	Proposed Unit (Lacs)	After Expansion (Lacs)
1	Air management including water sprinkling system for dust suppression, vacuum sweeper for cleaning dust, APCS	185	190	375
2	Solid Waste management	2	3	5
3	Wastewater management	5	8	13

4	Landscaping / plantation	4.5	7	11.5
5	Noise pollution control	2	3	5
6	Rain water harvesting	-	5	5
7	Environment monitoring	6	6.64	12.64
	Total	**204.5**	**222.64**	**427.14**

Cost Summary

S.No	Cost Summary	Cost for Total after Expansion (Rs. in Crores)	% of the project Cost
1	Project Cost	250.52	100
2	Capital cost for Environment Management Plan (including social activities cost)	14.70	5.87
3	Recurring cost for Environment Management Plan	4.27	1.70
4	Social Activities (included in EMP capital)	3.79	1.51
5	Wildlife Conservation Plan	0.9	0.36
6	Occupational Health and Safety	0.59	0.24
7	Public Health and Safety	0.12	0.047