

EXECUTIVE SUMMARY

OF

“Establishment of a New Standalone Cement Grinding Unit
of Capacity 2.0 MTPA ”

AT

Burunga part II, Near Hilara Railway Station, PS- Kalain,
District Cachar, Assam

Total Area: 39.09 ha

Proposed Production: 2.0 MTPA Cement

Schedule – 3(b) Category ‘B1’

Total Cost of the project: Rs. 640.07 Crores

Reference: TOR issued vide identification no.

TO23B1103AS5983937N, File No. SEIAA3624/2023 dated 24.04.24

PROJECT PROPONENT

M/s Star Cement (I) Limited

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ENVIRONMENTAL CONSULTANT

M/s PERFECT ENVIRO SOLUTIONS PVT. LTD.

(NABET Registered vide list of accredited consultants organizations/

(NABET/EIA/2225/RA 0284 (Rev 01))

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1. Executive Summary

1.1. Introduction

M/s Star Cement (I) Limited is proposing Establishment of a New Standalone Cement Grinding Unit of Capacity 2.0 MTPA at Burunga part II, Near Hilara Railway Station, PS- Kalain, District Cachar, Assam over 39.09 ha land.

It has been made mandatory to obtain environmental clearance for all Cement Plants and the project lies under Item 3(b), Category B as per EIA Notification 2006 and its subsequent amendments. Since the unit is for Establishment of a New Standalone Cement Grinding Unit of Capacity 2.0 MTPA capacity the project falls under Category “B” (As per EIA Notification dated 14th Sept., 2006 and as amended from time to time).

Terms of Reference (TOR) for the proposed project has been granted by SEIAA, Assam vide identification no. TO23B1103AS5983937N, File No. SEIAA3624/2023 dated 24.04.24. Further Transfer of TOR has been applied from Star Cement (I) Limited to Star Cement North East Limited SIA/AS/IND1/471815/2024 dated 10.05.24 due to the company's decision of keeping all the cement grinding units in the same company for better financial and administrative control. However, this application is still under process & hence we have now applied for PH in the name of SCIL itself.

1.1.1. About the Project

The total area of the plant will be 39.09 ha. Due to increase in market demand, M/s Star Cement (I) Limited is planning for Establishment of a New Standalone Cement Grinding Unit of Capacity 2.0 MTPA at Burunga part II, Near Hilara Railway Station, PS- Kalain, District Cachar, Assam.

1.1.2. Location & Accessibility

The proposed project is located at Burunga part II, Near Hilara Railway Station, PS- Kalain, District Cachar, Assam. The minimum elevation of the project site is 37 m AMSL in almost the centre of the project site, whereas the maximum elevation is 46 m AMSL in the northern corner of the project site.

The site can be accessed from SH-38 (Kalain Road) is Adjacent to NE and NH-6 is 1.50 Km to SW. The nearest Railway station is Hilara Railway Station which is 0.38 Km in SW direction. The nearest Airport is Silchar Airport which is at 36.72 Km in ESE direction.

1.2. Project Description

S. No.	Particulars	Unit	Details
1	General Information		
1a.	S.No. in the Schedule & Project Sector	-	3(b), Cement Plant
1b.	Category of the Project	-	B1
1c.	CPA/SPA/ESA/ESZ, if any	-	Borail Wildlife Sanctuary ESZ is at 5.5 km in NNE direction and wildlife sanctuary is at 7.6 km in NNE direction from the project site
1d.	Specific/General Condition applicable	-	Not Applicable
1e.	Plot Area	ha	39.09
1f.	Green Belt area	ha	12.9 ha (33% of total plot area)
1g.	Project Cost	Cr.	Rs. 640.07
1h.	Manpower Details	No	During Construction-800 nos. (during peak construction period) During Operation- 300 nos. Resident in residential colony-350 nos.
1i.	Details if project falls under the purview of a)FCA, 1980, b) WPA,1972 c) CRZ,2011	-	NA
1j.	Interlinked Project, if any, with Status	-	NA
1k.	No. of shift	No.	3 shifts (24 hrs/day)
1l.	No. of working days in a year	No.	345
2	Production Details		
2a.	Production Capacity	MTPA	2.0 Cement (OPC, PPC, PSC, CC)
2b.	Type of Cement	-	Ordinary Portland Cement (OPC), Pozzolana Portland Cement (PPC), Portland Slag Cement (PSC) and Portland Composite Cement (PCC)
3	Power requirement & Source		
3a.	Power Required	MVA	12.5
3b.	Power Source	-	Panchgram Grid Sub-Station, Assam & 100 KW solar provision
4	Air Emission Management		
4a.	D.G. Sets Capacity and number of stacks	-	1 no. DG Set* of 500 KVA (for emergency lighting only)
4b.	Fuel type requirement for DG Set	-	Low Density Diesel- 500 lt/day
4c.	Number of stacks & APCS for process stacks	-	Pulse jet bag filter for each process stack (CEMENT MILL VRM, packing units, Fluidised Bed Combustion (FBC), Fly ash Dryer, coal crusher with appropriate stack height
5	Water Requirement & Waste Water Generation		
5a.	Total Water Requirement	KLD	455
5b.	Fresh Water Requirement & Source	KLD	394
5c.	Source of fresh water	-	Ground Water
5d.	Treated Water Requirement & Source	KLD	61 (From STP)
5e.	Waste water generation	KLD	64
5f.	STP capacity	KLD	80
5g.	Waste Water Discharge	KLD	Nil

15 Waste Generation			
15 a.	Hazardous waste, Used oil	KLPA	4.50- Shall be given to authorised recycler
15b.	Solid Waste	kg/day	Biodegradable- 122 - will be composted & will be used as a manure for green belt development Non-Biodegradable- 81- will be handed over to authorised recyclers
15c.	Non- Hazardous Waste	-	STP Sludge- 13 Kg/day- Used as manure for plantation Dust from Bag filter- 200 TPD- 100% dust is collected from bag filters and will be recycled in cement manufacturing Bags & Containers- 1800 TPA- Sell/dispose to authorised vendor Fly ash- 6 TPD- used as raw material for the cement manufacturing process

Resource Requirements

- **Land:** Total plot area for the proposed project is 39.09 Ha., out of which the company has acquired 32.91 Ha. of land (i.e. approx 84.2% of the land). CLU (Change in Land Use) for the land has been applied & is under process.
- **Water Requirement:** Total water requirement for the proposed grinding unit will be 455 KLD out of which, fresh water of 394 KLD will be sourced from Groundwater and the rest 61 KLD will be treated water from STP.
- **Power Requirement:** Total Power load will be 12.5 MVA - Panchgram Grid Sub-Station, Assam. DG set of capacity 1 x 500 kVA will be used for the power backup during construction and operation phase. There will be a solar provision of 100 KW.
- **Fuel:** 500 lit/day of Low Density Diesel will be required for the operation of DG set (emergency use only).
- **Manpower:** During Construction, total 800 nos. (Permanent- 40 no. and temporary/contractual staff & labourers- 760 no.) manpower will be hired during the peak construction phase. During Operation, total 300 nos. (Permanent - 115 no. and contractual- 185 no.) manpower will be hired from nearby areas. Residents of 350 no are proposed in the residential colony.
- **Operational Activities:** Operational activities involved in the unit are Clinker handling, Fly ash handling, Dry fly ash will be brought through rake and will be pneumatically pumped to the dry fly ash, Slag, Gypsum storage & handling, Fluidised bed Combustion (FBC), Cement Production, Cement Packing and Dispatch
- **Pollution Sources:** Main Pollution sources from the project will be air & noise emission, wastewater generation and Solid & Hazardous waste.

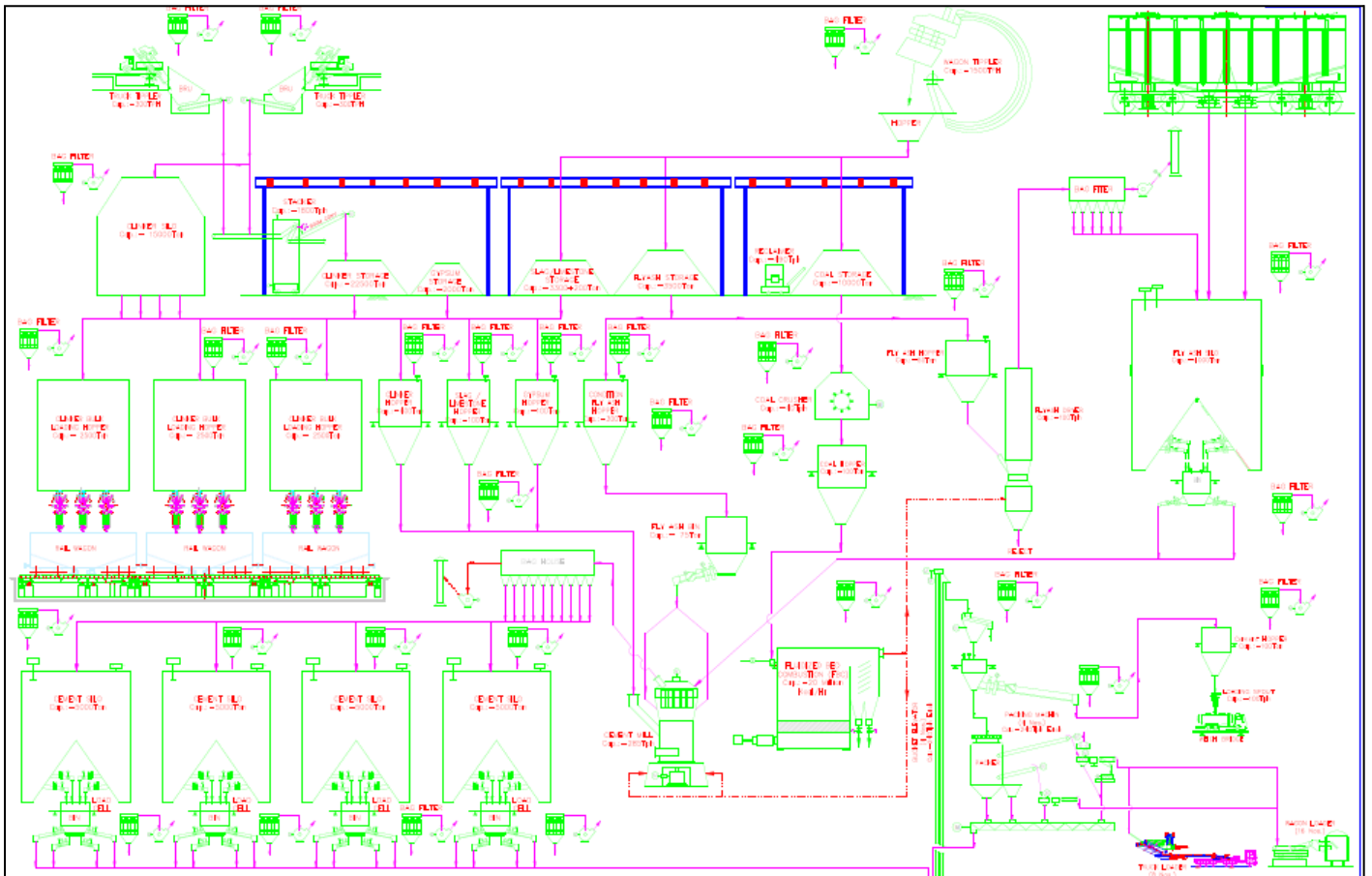
Total quantity of wastewater generation from the industry will be 64 KLD and will be treated in STP of capacity 80 KLD.

Air Emissions will be from the process machinery coal mill, VRM, Packing Unit, Fluidised Bed Combustion (FBC), Fly ash Dryer, Coal Crusher, adequate stack height with APCS will

be provided & maintained. Also, emission will be from Vehicles & DG sets (emergency use only) used in production processes. To prevent emissions, APCS like Jet pulse bag filters will be installed with all stacks in accordance with CPCB norms.

The main sources of **noise generation** from the unit will be operation of process machinery, transportation & DG sets (emergency use only) etc. Adequate engineering control will be taken to minimize the noise level during construction and operations.

Manufacturing Process:



1.3. Description of Environment

The baseline data is generated through field study within the impact zone (Core Zone and Buffer Zone i.e. 10 Km from Project Boundary) for various components of the environment viz. Air, Noise, Water, Soil, Land, Traffic, Ecology and Socioeconomic. The baseline environmental quality has been assessed for Winter Season (December 2022- February 2023) (by NABL accredited laboratory Perfect Researchers Pvt Ltd, New Delhi) in a study area of 10 Km radius from the project site. The baseline data obtained is summarized below:

- **Land Use:**

Core Zone: The proposed project is located Burunga part II, Near Hilara Railway Station, PS- Kalain, District Cachar, Assam. Total plot area for the proposed project is 39.09 Ha., out of which the company has acquired 32.91 Ha. of land (i.e. approx 84.2% of the land). CLU (Change in Land Use) for the land has been applied & is under process.

Buffer Zone: Out of total 10 km radius study area i.e. **34864.80** Ha, agriculture land is about 14319.70 hectares (41.07%), built up area is about 963.38 hectares (2.76%), waste/barren land is about 330.57 hectares (0.95%), Water bodies area is about 3024.7 hectares (8.68%), Forest land is about 13783.57 hectares (39.54%), of the total 10 km radius study area.

Natural Hazard: The area under study falls in Zone-V , according to the Indian Standard Seismic Zoning Map which is classified as High Risk Zone intensity.

- **Geology:**The study area is situated in the Barak Valley of Assam. It is occupied by the folded sedimentary formations of Surma, Tipam, Dupitila, and Alluvium groups ranging in age from Lower Miocene (Tertiary) to Holocene (Quaternary). The regional strike of the folded geosynclines facies sequences is NNE-SSW,

- **Hydrology: Core zone:** Burunga Khal flows outside the project area at the southern boundary of the site. The rainwater flows towards the south and joins with Burunga Khal.

Buffer zone: The area is drained by the Barak River, Larang River, Arang Gang, Kalang Nadi, Naga Chhara, Bar Chara, Kinna, Kakra, Bihara, Burunga Khal, etc, The buffer zone comprises various water bodies such as Rivers, Nadi, Ponds, Bils, Khal Nalas, etc. The Larang River is the major river in the area, it originates as Kakra Khal. The river flows from north to west and is located about 4.88 Km north of the project site. The Barak River flows from south to southwest and is located about 7 km south of the project site. The Arang Gang is located 5 km east of the site flows from northeast to south and finally joins the Barak River. The slope of the area is towards the south, south-southwest, southwest, and east of the site.

- **Ambient Air Quality:**

Core Zone:The value of PM_{10} at core zone locations ranges from (28.20 - 41.14 $\mu g/m^3$) & $PM_{2.5}$ ranges from (16.56 - 26.72 $\mu g/m^3$), SO_2 ranges from (5.02- 8.27 $\mu g/m^3$), NO_2 ranges from (8.30 - 15.82 $\mu g/m^3$) & CO (0.09 - 0.17 mg/m^3), 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 Good during the sampling period - December 2022- February 2023.

Buffer zone: The value of PM10 ranges from (30.17 - 57.95 $\mu\text{g}/\text{m}^3$), PM2.5 ranges from (18.80 - 35.16 $\mu\text{g}/\text{m}^3$), SO2 ranges from (5.37 - 9.99 $\mu\text{g}/\text{m}^3$), NO2 ranges from (9.50 - 19.02 $\mu\text{g}/\text{m}^3$) & CO ranges from (0.10 - 0.21 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 Good during the period - December 2022- February 2023.

- **Ambient Noise levels:** The ambient noise level during day time at the proposed project site varies from 59.9 dB (A) to 62.1 dB (A) which are within the day time standard limit of industrial area ~ 75 dB (A). During night the noise level at the project site ranges from 49.7 dB (A) to 51.3 dB (A) which are also within the night time standard limit of industrial area ~ 70 dB (A).

In the residential area of Buffer Zone, noise levels at the day time range from 51.9 dB(A)- 56.4 dB(A) and at night time it ranges from 40.2 dB (A) to 44.6 dB (A) which is within the prescribed standards. The daytime noise level in commercial area range from 64.7 dB(A) to 73.4 dB(A) during the day while 57.9 to 66.3 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 onsite - S1 shows that the soil moisture content in the core zone is 3.3%, pH is 8.30. Amount of primary nutrients like Organic matter is 1.21%, the available nitrogen is 72.8 mg/kg is very low, available Potassium is 9.80 mg/kg is very low while the available Phosphorus is 8.6 is medium in range. Therefore, the Primary nutrient profile shows that soil is low fertile in the core zone due to low concentration of available nitrogen & phosphorus.

Buffer Zone: The samples collected from the site S2- S8 shows that the soil moisture content in the buffer zone is between 2.2-5.4 %, pH is 6.33-7.42. Amount of primary nutrients like Organic matter is 0.60-2.31%, the available nitrogen 78.4-128.8 mg/kg is low, available Potassium 13.7-31.3 mg/kg is low while the available Phosphorus 10.2-14.4 mg/kg is in medium to higher range. Therefore, the Primary nutrient profile shows that soil is low fertile in the buffer zone due to the availability of extremely low amounts of nitrogen & phosphorus.

- **Surface Water Quality:** The results of water quality of surface water for all locations i.e SW1 (Nala adjacent to site), SW2 (Pond near Site), SW3 (Kurkuri Pt. I pond), SW4 (Manipur pt. II Pond), SW5 (Barak River Upstream), SW6 (Barak River downstream) shows that these are 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

- **Ground Water Quality:** For the Buffer zone all the values are found within the drinking water standards (IS:10500). The **Total Dissolved Solids (TDS)** of the sampling locations ranges from 79 mg/l to 222 mg/l, **total Hardness** of the sampling locations ranges from 40 mg/l to 128 mg/l, **Magnesium content** in the sampling locations ranges from 3.89 mg/l to 15.55 mg/l., **Alkalinity** of the sampling locations ranges from 25.46 mg/l to 102.77 mg/l, **Calcium** Concentration of the sampling locations ranges from 7.2 mg/l to 25.60 mg/l, **Chloride** Concentration of all the sampling locations ranges from 18.0 mg/l to 54.0 mg/l.
- **Biological Environment:** In the core zone of the proposed greenfield project, the initial survey revealed minimal presence of flora and fauna. A limited variety of tree species were observed, like *Areca catechu*, *Saraca indica* etc. The fauna primarily consisted of birds like Crows, Sparrows, and Red-vented Bulbuls, alongside common animals such as Squirrels, Mongooses, and Garden Lizards, with occasional sightings of butterflies.

In the buffer zone, a primary and secondary floral study was conducted to record the floral species and their diversity. Schedule I species found in the buffer zone were- *Herpestes edwardsii* (Indian Grey Mongoose), *Canis aureus* (Golden Jackal), *Bos gaurus* (Mithun (Gaur)), *Hystrix indica* (Indian Crested Porcupine), *Python molurus* (Indian Python), *Naja naja* (Indian Cobra) , *Ophiophagus hannah* (King cobra), *Varanus bengalensis* (Bengal Monitor Lizard), *Pavo cristatus* (Indian Peafowl), *Anthracoceros albirostris* (Oriental Pied Hornbill), *Gyps bengalensis* (White-rumped Vulture) for which Conservation Plan is under process.

- **Socioeconomic Environment:** 7 villages are taken as a sample village for Primary study. The total household in the surveyed villages is 2358. The overall literacy rate in the surveyed village is 78-87%. Total BPL households are 905. Maximum houses are Semi pucca (Concrete & Tin). Category wise maximum are agricultural farmers and laborers. Drinking water is primarily sourced from Covered/Uncovered Well, Hand Pump & River/canal. All the houses have their own individual toilet followed by a Septic Tank. Medical facilities include Asha workers in all the villages. Drinking water source is via PWS government supply in all the villages

1.4. Additional Studies

The project is situated in the Seismic zone-V area and is a high risk zone. Proper measures will be taken during the construction to avoid damage and loss. To avoid flooding or water

logging in the area due to the existing nearby river, the site will be raised above the existing road level. All measures will be taken as per law.

A detailed fire safety and management plan as well as on-site and off-site management plan have been developed for the site.

Some General safety measures

- Occupational health surveillance programmes will 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 will be submitted.
- An Environment, Health and Safety (EHS) Manager will be available, who 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.

Occupational Health & Safety management plan

- Occupational health surveillance programmes will be done six monthly & and their records will be maintained.
- Health check-up camps will be organized on a regular basis at company dispensary/nearby locations for nearby people.
- Label Precautions and First Aid facilities will be provided.
- Emergency plan will be prepared and mock drills of the on-site emergency will be conducted.
- Inspection of the industrial activity will be done at least once in a year and an annual status report on the compliance with the Rules will be submitted.

- An Environment, Health and Safety (EHS) Manager will be available, who 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.
- Specific written instructions will be obtained before any welding, burning, grinding or other flame heat producing work commences in coal processing areas.

1.5. Project Benefits

The unit will generate direct & indirect employment and benefits with respect to availability of social, physical infrastructure and other benefits, such as,

- The project will cater to the increasing demand of cement in the country as well as increase export capacity of the country
- The industry will spend Rs. 675.0 Lakhs as Social welfare activities in the area including activities for rural development and livelihood development.
- Employment opportunities will lead to a rise in income and improved standard of living. The 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.
- M/s Star Cement (I) Limited will improve their efficiencies and use technological advances to reduce their impact on the environment. The industry also aims to use dust collected in bag filters and fly ash generated to be 100% reused in the plant process.
- Biomass/ bamboo/ RDF will also be used as alternative fuel as per availability.

1.6. Environment Management Plan

Air Quality Management Plan

For Construction Phase

- Water sprinkling will be done to reduce the dust generation.
- Flexible dust suppression systems (water spray) will be done as per the requirement at the construction site.
- No excavation of soil will be carried out without adequate dust mitigation measures in place.
- No loose soil or sand or Construction Waste or any other construction material that causes dust will be left uncovered.

- Construction Waste processing and disposal sites will be identified and required dust mitigation measures be notified at the site.
- To minimize the occupational health hazard, proper masks will be provided to the workers who are engaged in dust generation activity.

For Operation Phase

- Workers will be trained properly regarding handling of raw materials/chemicals, appropriate PPEs like nose masks and goggles will be provided to the workers.
- If required, water will be sprayed at the dust generation point.
- The air emissions will be controlled by proper mitigating measures such as regular dust suppression by sprinkling of water which helps in reducing the effect. In addition, periodical monitoring will be done and results will be analysed. In case any change shows adverse effects, it will be attended to for improvements.
- APCS Pulse Jet Bag Filter (30 no.) will be provided to the cement grinding unit to reduce PM emissions to less than 30 mg/Nm³ as per the revised standards of MoEFCC/CPCB norms.
- Appropriate stacks of height of 62 m for cement mill VRM, 35 m for Packing Units, 30 m for Fluidised Bed Combustion (FBC), 40 m for Fly ash Dryer, 12.5 m for Coal Crusher will be provided and maintained.
- All the personnel working in dust/noise prone areas are provided with appropriate personal protective equipment (PPE) such as helmets, safety shoes, safety goggles, industrial grade gloves, safety harnesses, nose masks.
- DG set (1x500 kVA) stack of 30 m will be provided and will be used in case of emergency only.
- Appropriate PPEs will be provided to the workers.
- Frequent work area monitoring will be done to ensure fugitive emission is under control.
- Green belt/ greenery will be developed along most of the periphery of the project area as well as along roads. Green area in the plot will be 12.90 ha (33% of plot area).

Noise Level Management Plan

For Construction Phase

- The noise will be limited only for specified periods of construction.
- Ready Mix concrete will be used instead of a concrete mixer so no noise generation will be there due to it.
- Proper training will be given to the workers regarding handling of construction materials. Workers will not be allowed to throw the construction materials like bricks, debris, etc. from height.

- Loading and unloading of Construction waste will be done from loaders/excavators directly to tippers/trucks to ensure minimal noise generation.
- Machines and equipment will be properly greased, lubricated and regularly maintained and shall be provided with vibration isolators and noise damping, construction will be done during the day time only, proper barricading of the project site will be done and maintained during the construction.
- Appropriate PPE like ear plugs and muffs will be provided to the workers at the project site. Also, acoustic flooring using tiles will be done in the admin building so that it acts as a noise absorber.
- Proper barricading will be done around the project site which helps in controlling noise emission to & from the site to some extent.

For Operation Phase

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

- Proper training will be given to the workers for handling raw materials. PPE will be provided to the workers.
- Process machinery (coal crusher, cement mill) will be provided with Improved mufflers & silencers will be provided in the machinery generating high noise
- Machineries of the reputed make and less noise producing will be purchased.
- Stationary machineries and equipment will be properly enclosed by enclosures and will be provided with dampeners for minimising noise generated due to vibration of machineries.
- It is re-checked and assured that mufflers systems, vibration damping systems etc. will be installed in engines of machineries which will help in reduction of noise.
- Sufficient oiling and lubrication will be done to all the parts of the machineries to ensure that minimal noise is generated.

Solid & Hazardous Waste Management plan

- Proper care of waste will be taken while handling & transportation, appropriate PPE will be used.
- There will be no generation of hazardous waste from the process in the project.
- During the operational phase, Total 203 kg/day solid waste will be generated out of which 122 kg/day of biodegradable waste will be composted and will be used as manure for green belt development and recyclable waste of 81 kg/day will be handed over to authorized recyclers.
- Used oil (4.50 KLPA) will be generated, and will be stored at separate storage areas designated and maintained as per Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016. It Shall be given to authorized recycler
- STP sludge of 13 kg/day will be used as manure for plantation.

- Dust from Bag filter of 200 TPD will be collected from bag filters and will be recycled in cement manufacturing
- Bags & Containers of 1800 TPA will be sold/disposed to authorised vendor
- Fly ash of 6 TPD will be used as raw material for the cement manufacturing process
- E-waste of 0.50 TPA will be given to authorised recyclers as per E-waste (Management) Rules, 2016 and amendment as to date.
- Battery waste of 25 no./annum will be given to the manufacturer/authorised recycler as per Battery waste & Management Rules 2023 and amended as to date.
- Biomedical waste of 0.1 TPA will handled as per Bio medical waste management rules, 2016

Wastewater & Effluent Management Plan

For Construction Phase

- 9 KLD STP treated water will be used for construction purposes, as much as possible as compared to fresh water.
- During the construction period, runoff from the construction site will not be allowed to stand (water logging) or enter the roadside or nearby drain.
- The runoff due to rain water from the site will be collected and reused.

For Operational Phase

- Total water requirement for the proposed grinding unit will be 455 KLD out of which, fresh water of 394 KLD will be sourced from Groundwater and rest 61 KLD will be treated water from STP. 455 KLD consists of water required for cement grinding machinery cooling water (65 KLD), dust suppression (71 KLD), Water sprinkling for clinker bed (118 KLD), domestic water including both for plant employees/labour & residents of residential colony (61 KLD), gardening (130 KLD), and wheel washing (10 KLD).
- Total waste water generation is 64 KLD which will be treated in STP capacity of 80 KLD. Treated water of 61 KLD will be used in gardening and wheel washing.

Biological Environment Management Plan

- Green belt/ greenery will be developed along most of the periphery of the project area as well as along roads. Green area in the plot will be 12.90 ha (33.00% of plot area).
- Total 40,300 nos. of trees will be planted in the proposed site.

Socio Economic Environment management plan

- The Industry will require raw materials, skilled and unskilled laborers. It will be available from the local area. Due to increasing industrial activities, it will boost the commercial and economical status of the locality, to a positive extent.
- About 800 (Permanent- 40 no. and temporary/contractual staff & laborers- 760 no.) people will be employed during peak construction of the project.
- In the operation phase, the proposed plant will require a significant workforce of nontechnical and technical persons. About 300 people (Permanent- 115 no. and contractual- 185 no.) will be employed during the operational stage of the project. There will be indirect employment opportunities such as in transportation, workshop, packing, repair & maintenance etc. Lots of ancillary units will also come up. Unit will employ a minimum of 80% people of Assam in the Managerial cadre and minimum 90% people of Assam in Non Managerial Cadre.
- Total plot area for the proposed project is 39.09 Ha., out of which the company has acquired 32.91 Ha. of land (i.e. approx 84.2% of the land) & rest land is under acquisition process. CLU (Change in Land Use) for the land has been applied & is under process. Thus, no R&R will be applicable.

1.7. Cost & EMP Implementation Budget

The total cost of the project is Rs. 640.17 Crores. The total capital cost for the EMP Budget will be Rs. 3090 Lakhs and recurring cost will be Rs 194.57 Lakhs/Year.

Sr. No.	Particulars	Capital Cost (lakhs)	Recurring Cost/ Annum (Rupees in lakhs)
1	Air Pollution Control Devices & stacks, water sprinkling	2000	150
2	Noise management (enclosures etc)	100	5
3	Wastewater Treatment	100	4
4	Landscaping / plantation	65	22
5	Rainwater collection	100	4
6	Social Activities	675	-
7	Solid waste management	50	5
8	Environment monitoring	-	4.57
	Total	3,090	194.57

Cost Summary

S.No.	COST Summary	Cost for Total (Rs. in Crores)	% of the project Cost
1	Project Cost	640.07	100
2	Capital cost for Environment Management Plan	30.9	4.83

Establishment of a New Standalone Cement Grinding Unit of Capacity 2.0 MTPA at Burunga part II, Near Hilara Railway Station, PS- Kalain, District Cachar, Assam by Star Cement (I) Limited

3	Recurring cost for Environment Management Plan	1.95	0.30
4	Social activities (included in EMP capital)	6.75	1.05
5	Occupational Health and Safety and Public Health & Safety (included in EMP capital)	0.25	0.04