

EXECUTIVE SUMMARY FOR PUBLIC HEARING

For

**PROPOSED AMBIVLI CEMENT GRINDING UNIT
WITH PRODUCTION CAPACITY OF 2 x 3 MMTPA (6.0 MMTPA)**

Located At

**VILLAGE – AMBIVLI, TALUKA - KALYAN,
DISTRICT- THANE, MAHARASHTRA- 421102**

(Study Period – October 2023 to December 2023)

SCHEDULE AS PER EIA NOTIFICATION, 2006 & ITS SUBSEQUENT AMENDMENTS TILL DATE -
ACTIVITY 3(b), CATEGORY “B1” - CEMENT PLANTS (STANDALONE GRINDING UNIT) AS PER
O.M. DATED 24TH DECEMBER, 2013

ToR Letter No. SIA/MH/IND1/449502/2023 dated 20.10.2023

Project Proponent:



**M/s. AMBUJA CEMENTS LIMITED
(ADANI CEMENT BUSINESS)**

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Environment Consultant:

M/s. P AND M SOLUTION

QCI Certificate No. NABET/EIA/2326/RA 0298
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EHS MATRIX PRIVATE LIMITED

(Accredited by NABL, Recognized by MoEF&CC, GoI)

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1.0 PROJECT DESCRIPTION

M/s. Ambuja Cements Limited has proposed a standalone Cement grinding unit namely “Ambivli Cement Grinding Unit” with production capacity of 2 x 3 MMTPA (6 MMTPA) which is based on Vertical Roller Mill Technology using Dry cement grinding process.

The project site is located at Survey No. (Mohane - 1, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17/1, 17/2, 17/3, 60 & 66), (Atali – 14, 15, 16 & 17), (Ambivli- 11, 31, 32, 36, 37, 38, 39, 40 & 41), Village- Ambivli, Taluka- Kalyan, District- Thane, Maharashtra.

The road abutting the project is Titwala – Ambivli Road (18 meter wide) towards NW direction. SH-61 is at approx. 2.35 km towards South direction from the project site. Ambivli Railway Station is approx. 0.15 km towards NW direction from project site. Chhatrapati Shivaji International Airport is approx. 37 km towards SW direction from project site. Kalu River is at a distance of 0.6 km from the project site and Ulhas River is at a distance of 1.00 km from the project site. Vadavli Koliwada Lake is at a distance of 0.87 m from the project site. No National Park/ Wildlife Sanctuary falls within 10 km of the plant area.

Application was submitted to MoEF&CC for obtaining Terms of References (ToR) for conducting the EIA studies. Accordingly, the project proponents have submitted prescribed application along with Pre-Feasibility Report to the SEIAA, Maharashtra on dated 20.10.2023 vide proposal No: SIA/MH/IND1/449502/2023 for seeking terms of references for conducting the EIA Study. Standard ToR has been granted by MoEF&CC for the project on 20.10.2023 vide File No. SIA/MH/IND1/449502/2023. The project activity is listed at Sr. no. 3(b), Cement Plants, under Category-“B”, as per the EIA Notification, 2006 and its subsequent amendments till date. It is categorized as B1 as per *OM dated 24th December, 2013 by MoEF&CC, New Delhi.*

Table 1: Salient Features of the Project

S. No.	Items	Details			
1.	Name of the Project	Proposed Ambivli Cement Grinding Unit with production capacity of 2 x 3 MMTPA (6.0 MMTPA) by M/s. Ambuja Cements Limited.			
2.	S. No. in the schedule	3 (b)			
3.	Category of Project	B1 as per OM dated 24 th December 2013			
4.	Proposed capacity and area	Total Area = 26.13 ha Capacity = 2 x 3 MMTPA (6 MMTPA)			
5.	Toposheet	SoI Toposheet No. E43B3, E43B4, E43B7 & E43B8			
6.	Raw Materials	Sr. No.	Raw Material (Dry basis)		
			Particulars	Max	Min
		1.	Clinker	2 x 2.85 MMTPA	2 x 0.90 MMTPA
		2.	Gypsum (Natural/ chemical)	2 x 0.24 MMTPA	2 x 0.15 MMTPA
		3.	Fly ash	2 x 1.05 MMTPA	2 x 0.90 MMTPA
		4.	Slag	2 x 1.95 MMTPA	2 x 0.75 MMTPA
5.	Coal (For HAG)	2 x 0.07 MMTPA	2 x 0.03 MMTPA		
7.	Water	Total water requirement for 2 mills: 600KLD (300 KLD each)			
8.	Electricity	2 x 18 MW (36 MW) [Source: State Grid]			
9.	Man Power	Description		Construction Phase	Operation Phase
		Proposed	Permanent	30 nos.	30 nos.
			Contract	1500 nos.	125 nos.
		Total (A)		1530 nos.	155 nos.
		Period of employment in days (B)		545 nos.	365 nos./year
		Total Man-days (A*B)		8,33,850 nos.	56,575 nos./year
11.	Total Project Cost	INR 1400 Crores.			
12.	Sanctuaries/ National Parks/ Biospheres, etc.	No WLS or National Parks within the study area.			
13.	Nearest Airport	Chhatrapati Shivaji International Airport is approx. 37 km towards SW direction from project site.			

14.	Nearest Railway Station	Ambivli Railway Station is approx. 0.15 km towards NW direction from project site.
15.	Highway Connectivity	The road abutting the project is Titwala - Ambivli Road which is at approx. 0.12 km towards NW direction. SH-61 is at approx. 2.35 km towards South direction from the project site.

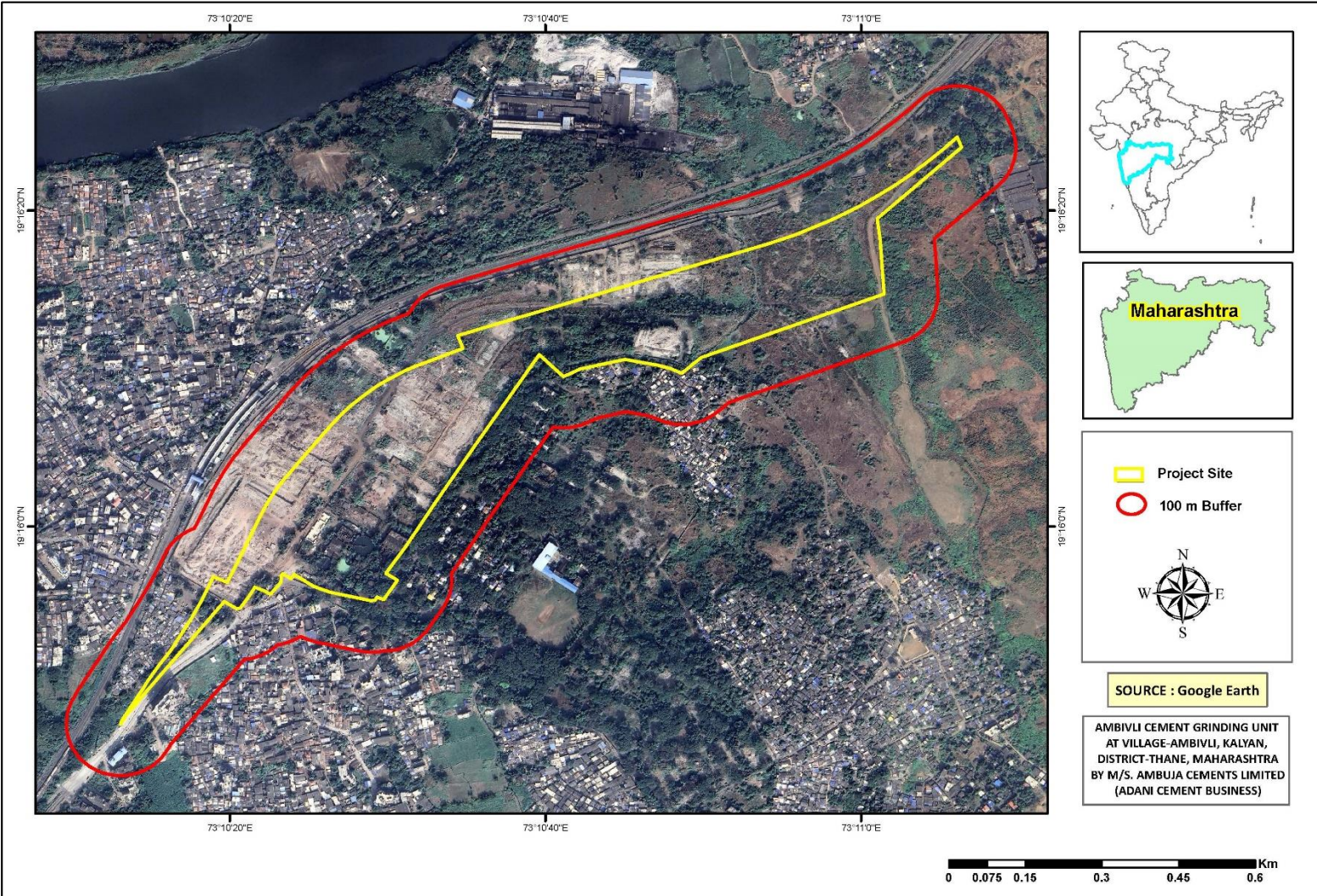


Figure 1: Vicinity Map (100 meter) Showing the Site and Surroundings

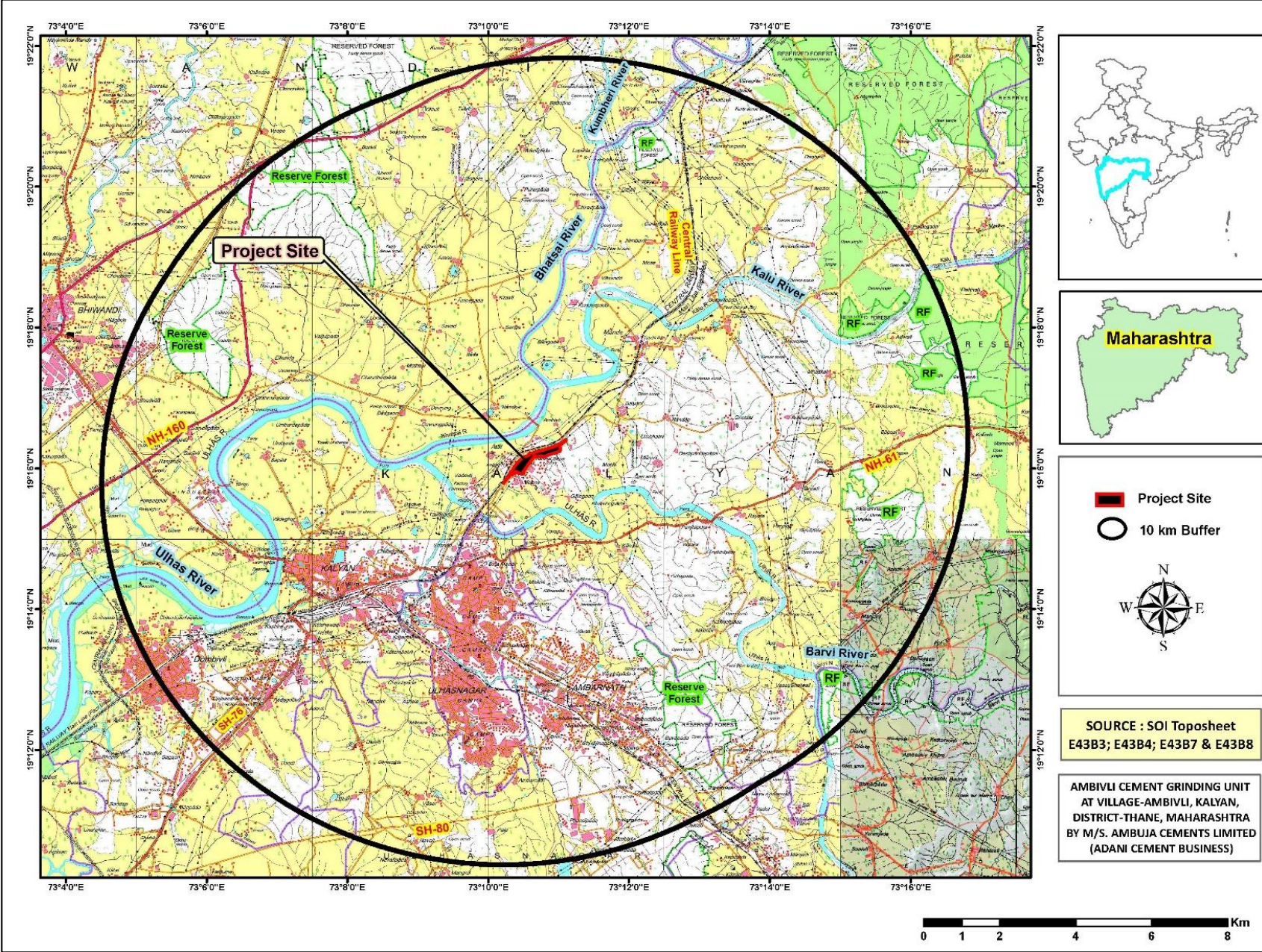


Figure 2: 10 km Topographical Map

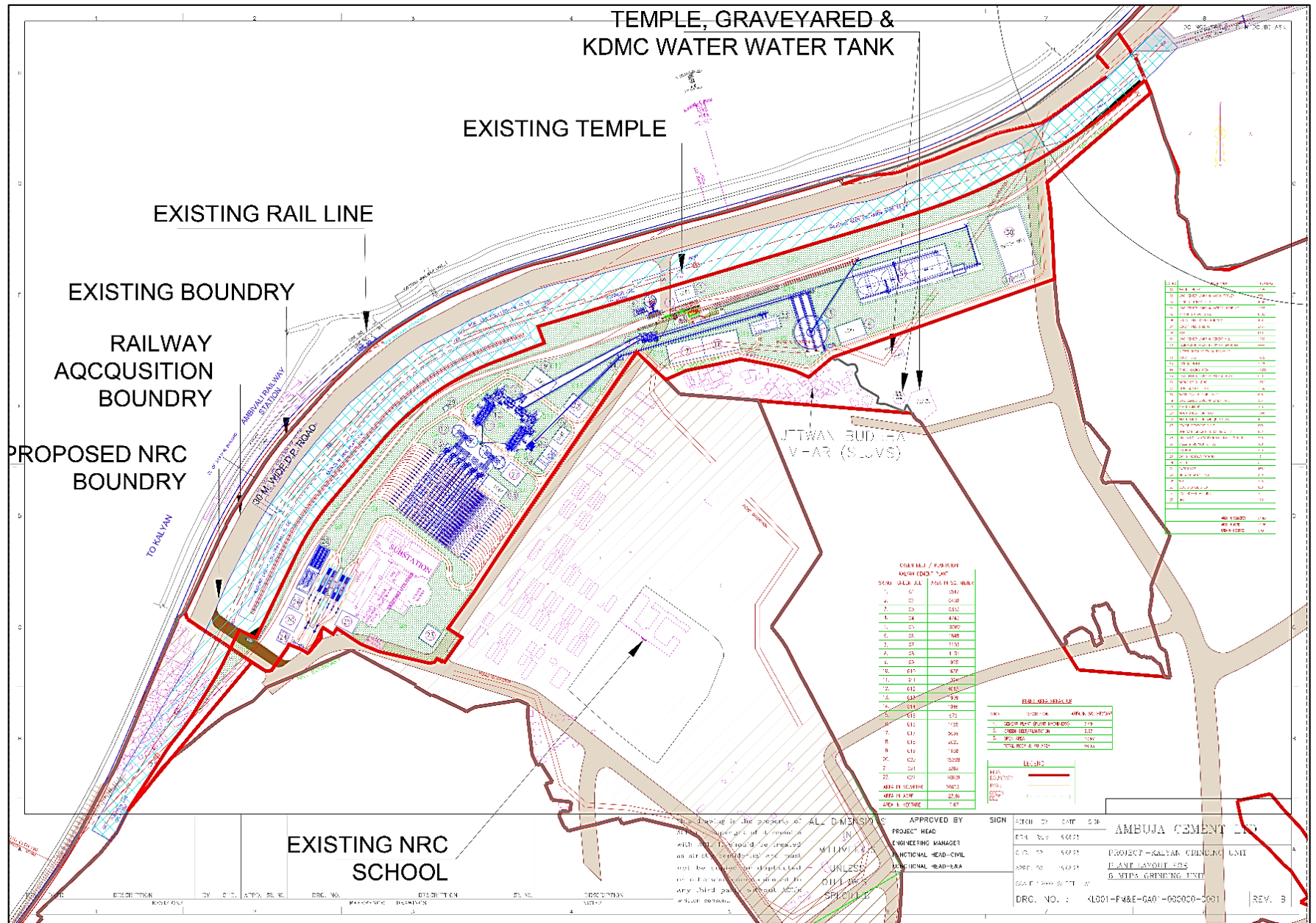


Figure 3: Proposed Site Layout

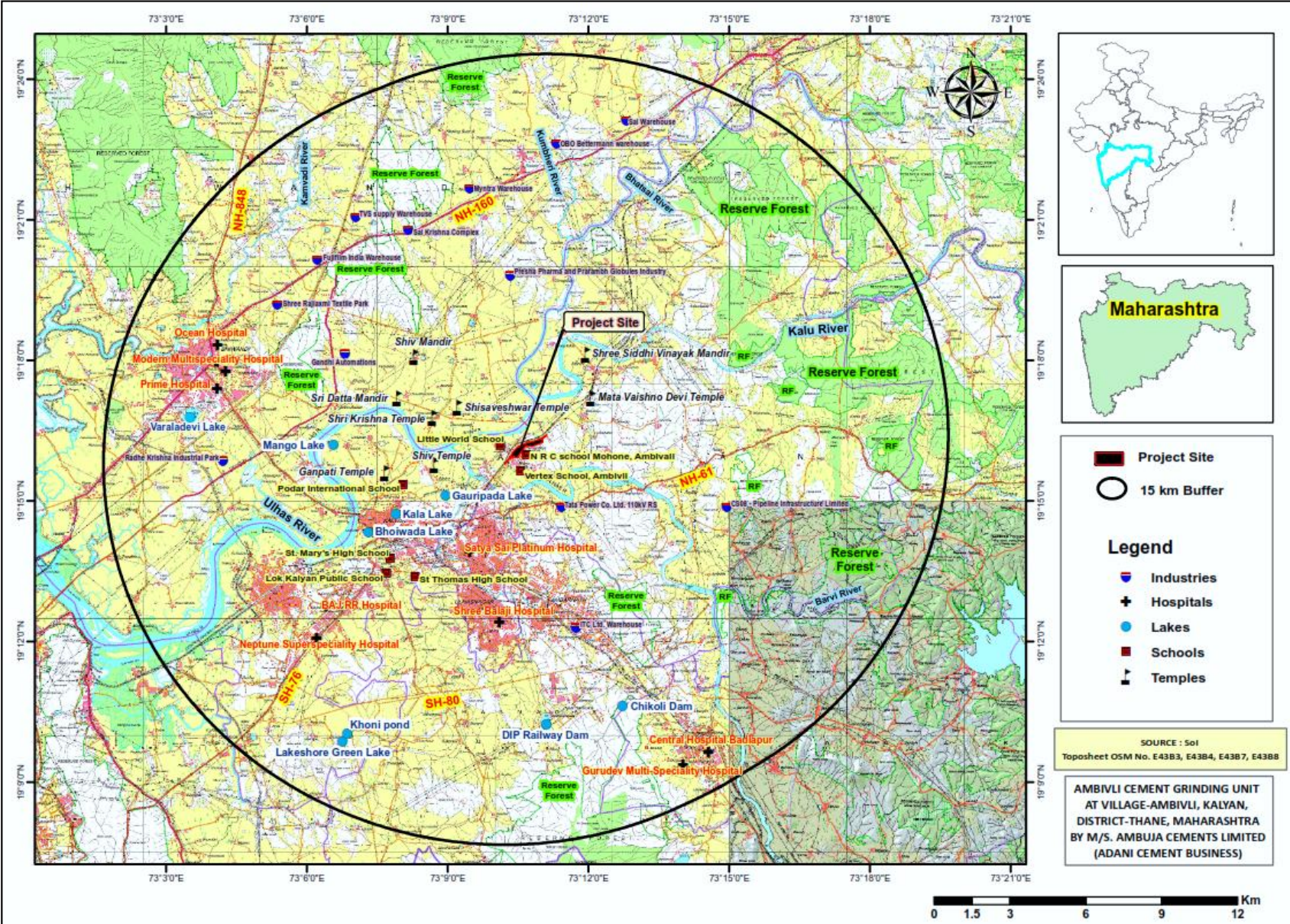


Figure 4: Map Showing Environmental Sensitive Places within 15 km Radius buffer

Table 2: Production Capacities of the Proposed Project

S. No.	Unit	Proposed Capacity (MMTPA)		
		Mill 1	Mill 2	Total
1.	Cement Grinding Unit (PPC, OPC, PSC & Other types)	3 MMTPA	3 MMTPA	6 MMTPA

Total land for the proposed project is 26.13 ha. Out of which 9.67 ha earmarked for Green belt development, 5.49 ha will be utilized under installation of Grinding Unit, Storage facilities and packing plant. The STP of 20 KLD capacity will be installed to treat the domestic sewage water whereas treated water from Sewage Treatment Plant (STP) will be reused for flushing in toilets and gardening purpose.

Greenbelt will be developed in 9.67 ha land which is 37% of total area. Density of trees will be 2000 trees/ha as per the MoEF&CC norms and proposing to plant 19,340 nos. of trees.

2.0 DESCRIPTION OF BASELINE ENVIRONMENT

Baseline environmental study has been carried for the period 1st October, 2023 to 31st December, 2023 (Post-Monsoon Season).

2.1 Summary of Ambient Air Quality

- Results were compared with the standard for ambient air quality monitoring as per the Ministry of Environment, Forest and Climate Change (MoEF&CC).
- Ambient Air Quality Monitoring reveals that the minimum and maximum concentrations of PM_{2.5} for all the 8 AAQM stations were found to be 25.3 µg/m³ to 39.9 µg/m³ at project site and Kalyan respectively.
- While for PM₁₀, the maximum value of 76.2 µg/m³ at Ambernath and minimum 58.4 µg/m³ was recorded at Vaholi within the study area.
- As far as the gaseous pollutants SO₂ and NO₂ are concerned, the prescribed CPCB limit of 80 µg/m³ for residential, rural and industrial areas has never surpassed at any station.
- The minimum and maximum concentrations of SO₂ were found to be 17.3 µg/m³ to 39.7 µg/m³ at Vaholi and Ulhasnagar-2 respectively.
- The minimum and maximum concentrations of NO₂ were found to be 17.0 µg/m³ to 42.3 µg/m³ at Ambernath and Ulhasnagar-2 respectively.
- Monitoring and analysis was also carried out for CO. Also, CO values within study area was below permissible level of 2 mg/m³.

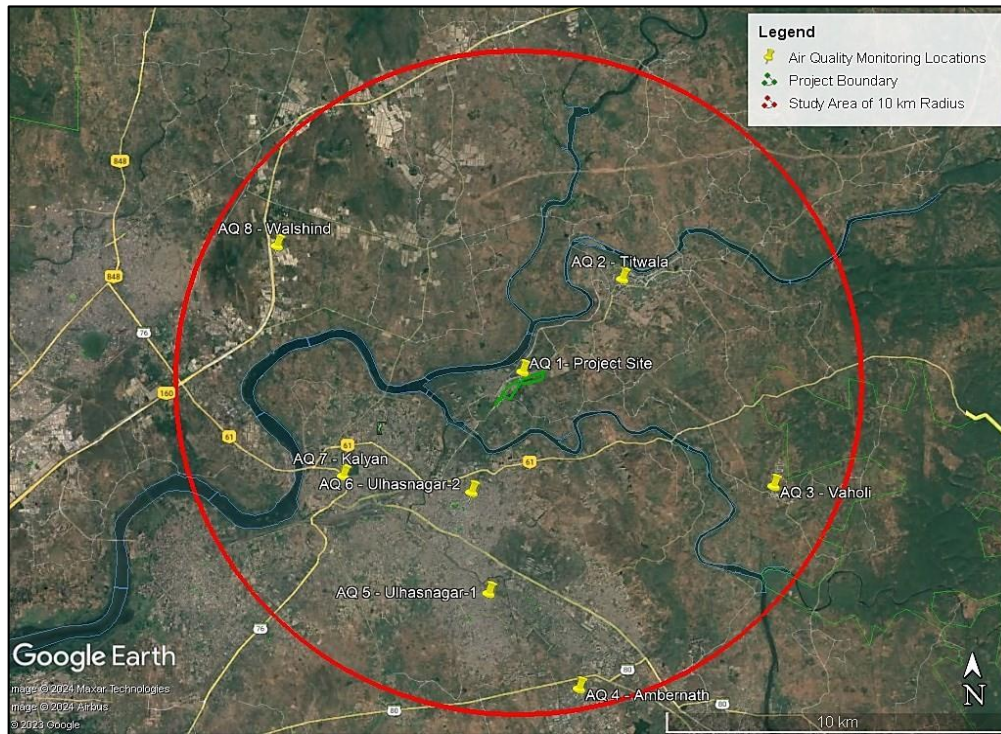


Figure 5: Ambient Air Quality Monitoring Location Map

2.2 Summary of Noise Levels

Assessment of day noise levels around the study area are ranging from 43.6 to 48.0 dB (A) during study period. Whereas, the range of the night equivalents were 33.0 to 36.3 dB (A).

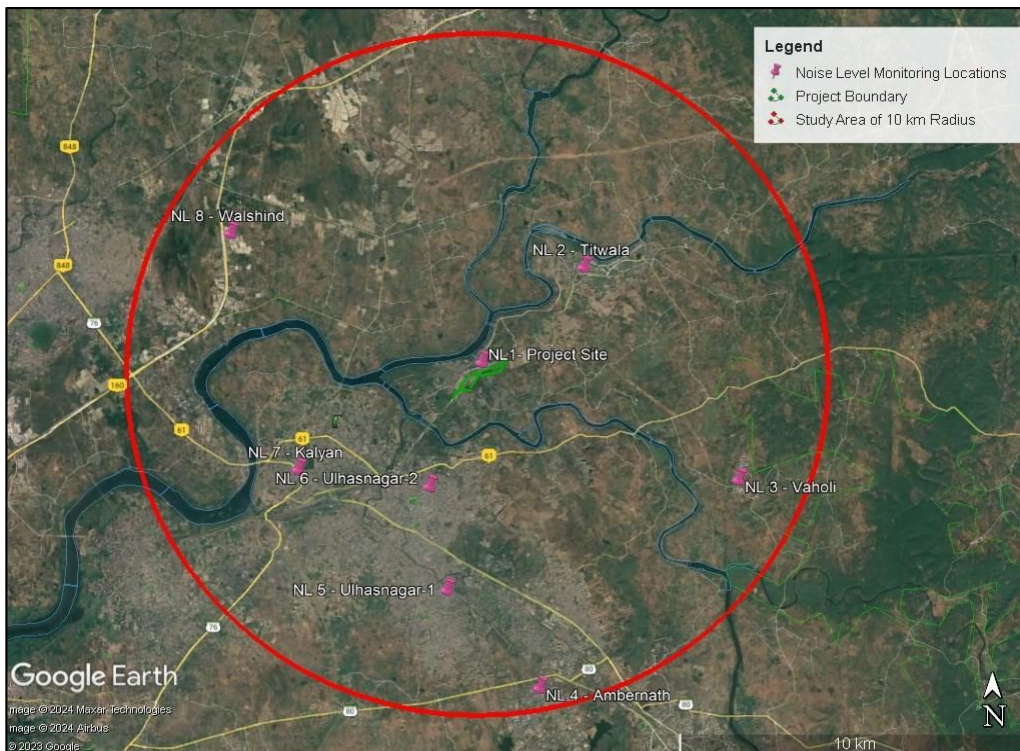


Figure 6: Ambient Noise Monitoring Location Map

2.3 Summary of Ground Water Quality

- pH of the ground water samples was in the range from 7.27-7.71 and is within the acceptable limit.
- Total dissolved solids found in the range of 91-393 mg/l and was found within the limits of 500 mg/l.
- Turbidity from all the water samples was found below detectable limit.
- Nitrate was found to be within the acceptable limits in all the locations.
- Calcium from all the water samples were found in the range of 11.2-62.5 mg/l and are within the acceptable limit.
- Magnesium from all the water samples were found in the range of 5.8 – 23.3 mg/l and are within the acceptable limit.
- Total Hardness of water sample varied between 60-174.00 mg/l. Total Hardness of Ground water sample at Titwala was recorded as 174.00 mg/l is within the acceptable limit.
- Chloride from all the water samples were found in the range of 15.8-76.9 mg/l and are within the acceptable range.
- Sulphate in the all locations were found to be within the acceptable limit.
- Fluoride from all the water samples was found in the range of 0.15-0.9 mg/l.
- Total Iron, Aluminum, barium, Boron, Copper, Selenium, Zinc from all the water samples were analyzed and found below detectable limit.
- Cadmium from all the water samples were found in the range of 0.0011-0.0016 mg/l.
- Lead, mercury, nickel total arsenic and Chromium were found to be within the acceptable limits in all the locations.
- The analysis of microbiological parameters in all water samples reveals that the total Coliform were absent in the all water samples and the Fecal Coliform were absent in the all water samples.

2.4 Summary of Surface Water Quality

The following description is based on the analysis of the samples:

- pH of the surface water samples was in the range from 6.86 to 7.09 and is within the acceptable limit.
- Total dissolved solids found in the range of 109.0 - 489 mg/l and was found within the limits of 500 mg/l.
- Nitrate was found to be within the acceptable limits in all the locations.
- Calcium in the Gauri Pada Talav was found in the range of 14.4-65.0 mg/L and was found to be within the acceptable limit.
- Magnesium from all the water samples were found in the range of 5.8 - 29.2 mg/l and are within the acceptable limit.
- Total Hardness of water sample varied between 60-190 mg/l. Total Hardness of Gauri Pada Talav was recorded as 190 mg/l is within the acceptable limit.

- Chloride from all the water samples were found in the range of 13.8 -80.8 mg/l and are within the acceptable range.
- Sulphate in the Gauri Pada Talav was found in the range of 7.2-168.0 mg/l and was found to be within the acceptable limit.
- Fluoride from all the water samples was found in the range of 0.78– 0.87 mg/l.
- Total Iron, Aluminum, barium, Boron, Copper, Selenium, Zinc from all the water samples were analyzed and found below detectable limit.
- Cadmium from all the water samples were found in the range of 0.002 -0.003 mg/l.
- Lead, mercury, nickel and total arsenic were found to be within the acceptable limits in all the locations.
- Total Chromium from all the water samples were analyzed and found to be in the range of 0.04 – 0.049 mg/l.
- The analysis of microbiological parameters in all water samples reveals that the total Coliform were found to be in the range of 120-219 MPN/100 ml and the Fecal Coliform were found to be in the range of 49-56 MPN/100 ml. It may be possible that the water bodies are subject to discharge of uncontrolled and untreated domestic waste water.

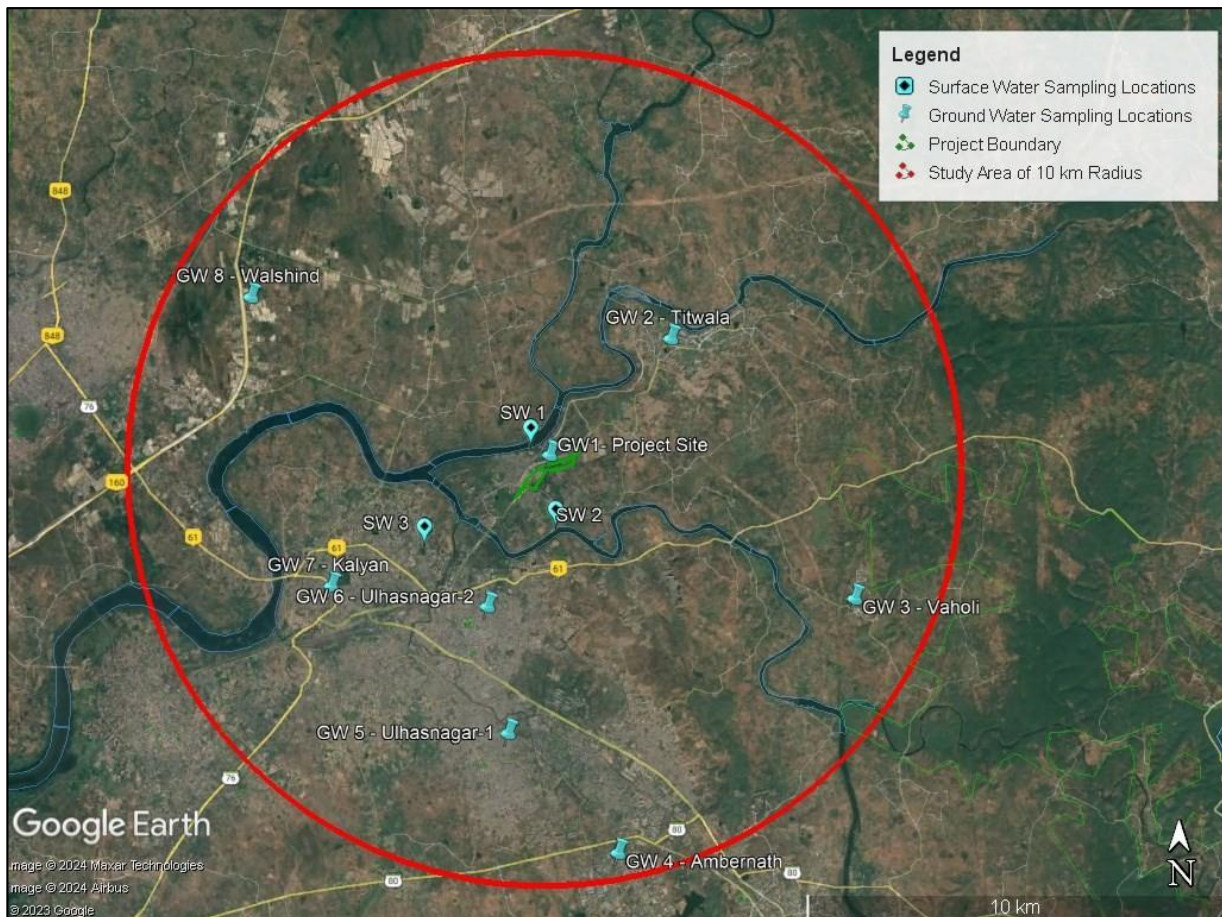


Figure 7: Ground and Surface Water Monitoring Location Map

2.5 Summary of Soil Quality

Soil is the media for supplying the nutrients for plant growth. Nutrients are available to plants at certain pH and pH of soils can reflect by addition of pollutants in it either by air, or by water or by solid waste or by all of these. In order to establish the baseline status of soil characteristics, soil samples were collected from 08 sampling locations. The color of the soil is brown. The soil texture for all the locations was observed to be Clay. The permeability of the soil is in the range of 0.60 - 0.75 cm/hr. The porosity of soil is in the range of 11.0 - 13.0 %. Water holding capacity is in the range of 48.0-53.0 %. The bulk density of soil in the study area is found to be 0.64-0.68 g/cm³.

Chemical properties represent the complex chemical reactions and processes occurring in the soils. They represent nutrient availability, deficiency, toxicity and salinity just to name a few. Almost all of the properties require field equipment or lab analysis for measurement. They include:

Electrical conductivity value ranges from 68.4-275 $\mu\text{S}/\text{cm}$. The pH of the soil samples varies from 6.38-7.49 which is an indicative of the Neutral to Moderately alkaline nature of soil. It is very important property of soil as it determines the availability of nutrients, microbial activity and physical conditions of soil. The cation exchange capacity of soil in the study area is found to be 0.60-0.74 meq/100g. Sodium absorption ration is in the range of 11.0 - 12.5. Nitrogen is found to be in the range of 176-212 mg/kg. Phosphorus is found to be 25.4-31.4 mg/kg and Potassium are in the range of 39.6-48.2 mg/kg.

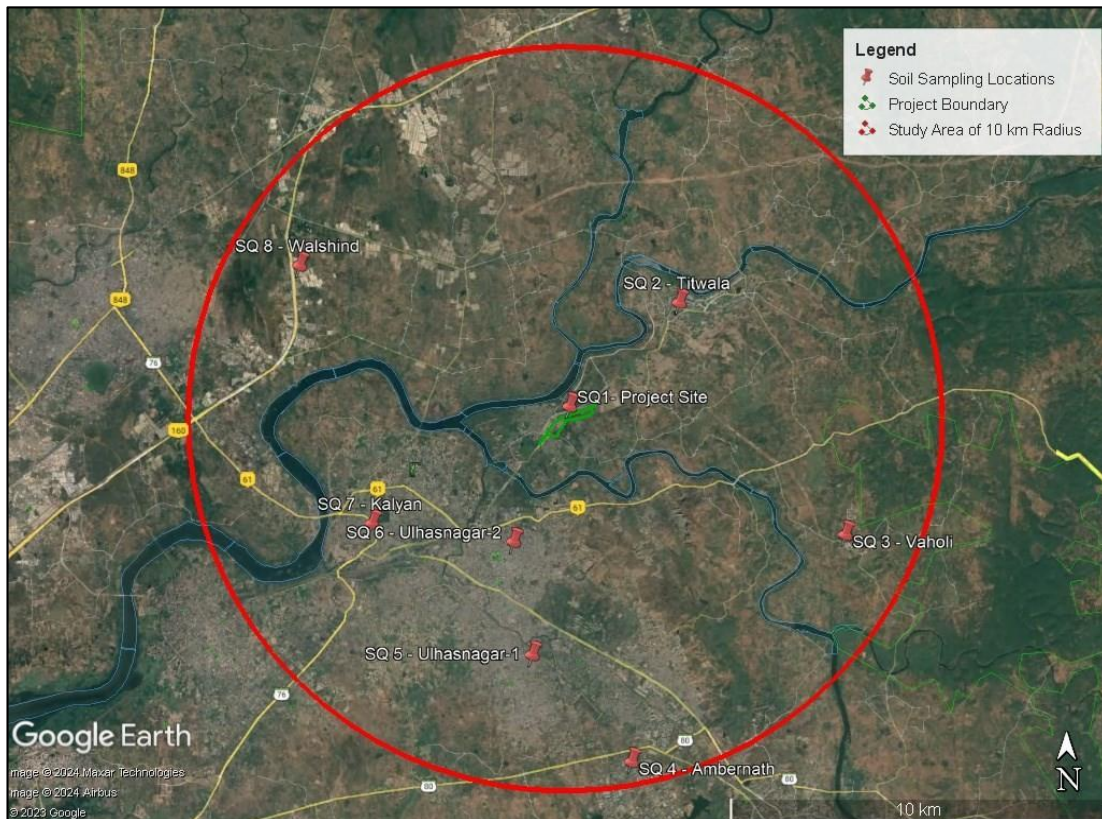


Figure 8: Soil Quality Monitoring Location Map

2.6 Socio-economic Study:

The socio-economic study area is restricted up to 10 km periphery from the project site. The area within 10 km limit of the proposed site includes most of Kalyan Taluka (38 Villages), KDMC Wards A, B, C, D, part of Biwandi Taluka (29 Villages), part of Ambernath Taluka (3 Villages), Ulhasnagar, and Maharal BK Town.

According to survey conducted population within the study area has a total population of 14,82,478. Again, out of the total population 52.56 percent are Males and 47.44 percent are females. Total households are 343001 in Nos.

In the study area, average 12.78 % of the population belongs to the schedule caste and 3.0 % to schedule tribes. Total literate population is 11,80,587 in Nos.

Out of which, 6,43,151 Nos. are males and 5,37,436 Nos. are females.

No schedule-I species is reported in study area. There is No national park and wildlife sanctuary or any animal corridor is present in the study area.

Total number of plant species observed in the core zone is 94 species & in buffer zone is 106.

Table 3: List of Schools, Colleges and Hospitals

Sr. No.	Areas	Name/ Identity	Aerial distance (within 10 km.)
1.	Schools	N R C School Mohone, Ambivli	0.10 km
		Yashodeep School	0.25 km
		New Model English School	1.15 km
		Devaki High School	0.80 km
2.	Colleges	Ravindra High School & Jr. College Science & Commerce	3.40 km
		B. K. Birla College, Kalyan	3.30 km
		Lourdes Junior College Of Science And Commerce	4.75 km
3.	Hospitals	JSSP College Goveli -	6.3 km
		Shwaas NX Hospital	0.10 km
		Aayush Multispeciality Hospital - Emergency & Critical Hospital in Kalyan	3.75 km
		City Criticare Hospital	4.00 km
		Satya Sai Platinum Hospital	4.00 km
4.	Government Buildings	Kalyan Dombivli Mahanagar Prasutigra Rukmini Hospital	3.90 km
		Central Railway divisional Hospital, Kalyan	4.80 km
		Kalyan Dombivli Municipal Corporation	3.85 km
		Construction Division Government Office	4.75 km
		MMRDA, Sub Regional Office, Kalyan	5.10 km
5.	Religious Places	PWD Rest House, Kalyan	4.60 km
		Deputy Registrar of Co-op Societies office, Kalyan	5.40 km
		Mohona Jain Tirth	550 m

		Pradnya Buddha Vihar	1.80 km
		Our Lady Of Lourdes Church	5.80 km
		Jama Masjid Mohone	7.70 km
		Shiv Mandir	6.70 km

2.7 Ecology & Biodiversity:

No schedule-I species is reported in study area. There is No national park and wildlife sanctuary or any animal corridor is present in the study area.

2.7.1 Floral Diversity

- Total number of plant species observed in the core site including trees, herbs, and shrubs: 94
- Total number of species observed in the buffer region: 106
- Number of quadrates used in studying buffer region: 16
- Number of locations studied in Buffer: 4
- No Rare, Endangered, vulnerable or protected species encountered in the project site area.
- Potential of rare and endangered plant species in buffer area. The area is largely a deciduous to semi-evergreen forested region and may have species of ecological and conservation importance.

2.7.2 Faunal Diversity

- Total number of species in core: 63 species
- Total number of species in buffer: 91 species
- Rare, Endangered, vulnerable or protected species encountered in the project site area: As per IUCN red list, Alexandrine Parakeet (*Psittacula eupatria*) & Woolly-necked Stork (*Ciconia episcopus*) is categorized as Near Threatened species
- Fishes: Rohu, Katla, Mrigal, Tilapia, Kala Masa/ Tend Masa, Urne, Karwali, Shimple, Kolambi, etc.

3.0 ANTICIPATED IMPACTS AND MITIGATION MEASURES

Table 4: Anticipated Impacts and Mitigation Measures

Sr. No.	Environmental Facets	During construction	During operational	Mitigation measures
1.	Air Environment	<ul style="list-style-type: none"> Deterioration of air quality due to fugitive dust emissions from construction activities (especially during dry season) like excavation, back filling and concreting, hauling and dumping of earth materials and from construction spoils. Emission of gaseous pollutants due to operation of heavy vehicles and movement of machineries and equipment for material handling, earth moving, laying of sands, metal, stones, asphalt etc. 	<ul style="list-style-type: none"> Raw Material and product handling areas. Production process. Movement of Vehicles. The operational phase of the project comprises of various activities each of which will have an impact Air Quality. Both Dust & Gaseous emissions are likely to be emitted. The key emissions from the proposed Project are emissions due to Particulate Matter, Sulphur dioxide (SO₂), Nitrogen dioxide (NO₂) & CO. 	<ul style="list-style-type: none"> Suitably designed Bag filters will be installed cement mill stacks which separate out the incoming dust in the dust laden gas and limit the dust concentration at its designed outlet concentration of 30 mg/Nm³. The dust generated from coal handling plant will be insignificant because of handling of fine coal in closed circuit. For further suppression of dust adequate water spray shall be provided.
2.	Noise Environment	The major activities which are likely to increase ambient noise levels during construction phase are foundation work, fabrication of structures, operations of construction equipment and movement of vehicles. The study area may likely to experience	During the normal operation of various plants the ambient noise levels are expected to increase significantly with the attributes of the respective equipment, but this noise will be restricted close to the concerned equipment.	<ul style="list-style-type: none"> Proper maintenance, oiling and greasing of machines at regular intervals will be done to reduce generation of noise. Improved silencers within

		increment in ambient noise level due to the above- mentioned activities. The areas closer to the site will have slight increase in noise level.		the equipment generating high noise.
3.	Water Environment	Stagnant pools of water would promote breeding of mosquitoes and generally create unsanitary conditions. However, adequate arrangements would be made to ensure proper drainage of wastewater from the construction sites, so that such waters do not form stagnant pools nor aggravate soil erosion.	Total water requirement during operation phase will be 600 KLD which will be met from the ground water resources.	<ul style="list-style-type: none"> • Wastewater will not be generated in the dry grinding process. • About 9.67 ha of the total project area will be covered under greenbelt & plantation. Treated waste water from the STP will be reused in greenbelt development.
4.	Land Environment	The project site is more or less leveled land. Thus there will be not much cutting or filling required. For the leveling of land, soils from within the site would be enough and no soil will be transported from outside, thus reducing impact of fugitive emission outside the site due to transportation.	No water bodies or drains are passing through the project site. The land use of the project site will not be altered as it is already an Industrial land. About 9.67 ha of the total project area will be covered under greenbelt & plantation.	--
5.	Biological Environment	There is no forest land involves within the project. No tree felling is involved, as the site is devoid of vegetation. Birds and other domesticated biodiversity observed near the project site are	The green area will be developed with local species that will attract local bird and insect species. Greenbelt will reduce carbon dioxide emissions caused by significant amount of energy	It is proposed to develop green area in the project site to improve the aesthetics of the area which will also help in reduction of air pollution, noise pollution and provide suitable habitat for local

		<p>common and already adapted to thrive in human - colonized habitats.</p> <p>The project will not have any major negative ecological impact. Greenery shall be developed along most of the periphery of the project area as well as along roads.</p>	<p>consumption due to lighting, heating, cooling and air condition as well as fixed and mobile material handling equipment. Therefore, there will be no effect on the ecology of the core and buffer zone.</p>	<p>birds and animal species.</p>
6.	Traffic Environment	<p>There would be congestion due to transport of construction materials to the site during construction phase of the project.</p>	<p>There would be congestion due to transport of raw materials and finished products.</p>	<ul style="list-style-type: none"> • Construction raw materials will be transported only during non-peak hours. • Internal roads within the Cement grinding unit premises will be maintained sufficiently wide to allow free flow of incoming and outgoing transport vehicles.

4.0 ENVIRONMENTAL MONITORING PROGRAM

Environmental Management Cell (EMC) has been made to undertake routine environmental monitoring. Monitoring will be done to ensure compliance with the prescribed laws and standards. The Head of EMC reports to the Plant Head. Qualified staff will be recruited in EMC. Environmental monitoring of ambient air, stack emission, fugitive dust emission, noise levels, groundwater quality, surface water quality and soils are carried out as per norms. EMC is responsible for the following functions:-

Regular monitoring of:-

- Measuring fugitive emissions, measuring PM_{2.5} and PM₁₀ in work environment and report any abnormalities for initiating corrective and preventive actions.
- Measuring the ambient air quality at upwind and downwind direction of crusher, at plant boundary.
- Checking the wastewater quality (inlet and outlet).
- Checking the ground water quality near the project area, and surrounding villages.
- Water quality of water body present in study area at upstream and downstream of site.
- Noise monitoring at plant boundary, nearest habitation, near highway, and work areas.
- Development and maintenance of greenbelt and greenery within the plant boundary.

Table 5: Observations of Environmental Monitoring

Sr. No.	Environmental Attributes	Parameters	Monitoring Location	Monitoring Duration	Monitoring Frequency
1.	Meteorology	Wind Speed, Wind Direction, Temperature, Humidity & Rainfall	Project site	24 Hours	Daily
2.	Ambient Air Quality	PM ₁₀ , PM _{2.5} , SO ₂ , NO _x & CO.	2 Location (Upwind & downwind)	24 Hours	Twice a Week
3.	Noise level	Day and Night Equivalent Noise Level dB(A)	1 Location	24 Hours	Weekly Once
4.	Surface Water Analysis	Physico-chemical, biological characteristics	2 Locations (Upstream & downstream)	---	Once in Six Months
5.	Ground Water Analysis	Physico-chemical, biological characteristics	1 Location	---	Once in Six Months
6.	Soil Quality	Physico-chemical, micro-biological characteristics	1 Location	---	Once in Six Months

M/s AMBUJA CEMENTS LIMITED

7.	Stack Attached to APCE & DG sets	Particulate Matter, SO ₂ , NO _x	---	Isokinetic	Once in a Week
8.	Ecology	Loss of Flora and Fauna	Construction Site	---	During site Preparation
9.	Occupational Health & Safety	General Health aspects of Workers and Staff	Project Site	---	Once in Six Months

Adequate fire mitigation measures will be ensured for handling fire in project area in case of emergency. Disaster Management Plan has been prepared to take care of public health and safety during any accident.

CER will be done as per CER norms. Generally, the CER amount is used to spend as per the issues raised during the public consultation as per Office Memorandum vide F.No.22-65/2017-IA.III dated. 30th September 2020 by MoEF&CC, New Delhi. A budget of INR 14.00 Crores is allocated for CER.

5.0 PROJECT BENEFITS

The proposed project is expected to yield a positive impact on the socio-economic environment within the study area. It helps to sustain the development of this area including further development of physical infrastructural facilities.

About 1530 Nos. of people on daily wages basis will get employment during the construction stage. During operation of the proposed Cement Grinding Unit, total 155 Nos. of people will get employment. The preference will be given to local population for employment in the semi-skilled and unskilled category; this will increase the employment opportunity in the surrounding area. More revenue will be generated by the way of GST to the State & Central exchequers.

6.0 ENVIRONMENTAL MANAGEMENT PLAN

The cost of project is proposed to be INR 1400 Crores. The capital cost for environmental management of the proposed project is estimated to be INR 2010 lakhs. INR 480 lakhs per year will be required as annual recurring expenses to meet the recurring expenditure for implementing the measures. The break-up of the investment is shown in **Table 7**.

Table 7: EMP Budget

DURING CONSTRUCTION PHASE		
Component	Capital cost (INR lakhs)	Recurring cost (INR Lakhs/Year)
Labor Sanitation & Waste water Management	50	10
Dust Mitigation Measures Including site barricading, water sprinkling, anti-smog gun and monitoring)	80	15
Storm Water Management (temporary drains and sedimentation basin)	50	10
Solid Waste Management	55	10
TOTAL	235	45
DURING OPERATION PHASE		
Component	Capital Cost (INR Lakhs)	Recurring Cost (INR Lakhs/Year)
Air Pollution Controlling Devices (Stack with Bag Filter) & Industrial Vacuum Cleaners, CEMS	825	235.0
Water Pollution Controlling measures	100	25
Rain Water Harvesting System	80	20
Solid Waste Management	120	25
Green Area/ Landscape Area	125	30
Others (Energy saving devices, miscellaneous)	350	50
DMP and Occupational Health & Safety	175	50
TOTAL	1775	435
Total EMP Budget		
Component	Capital Cost (INR Lakhs)	Recurring Cost (INR Lakhs/Year)
During Construction Phase	235	45
During Operation Phase	1775	435
TOTAL	2010	480

6.1 Environmental Management Cell

An Environmental Management Cell (EMC) will be established in the plant under the guidance of Project Head. The Environmental Management Cell (EMC) will be headed by an Environmental Experts having adequate qualification and experience in the field of environmental management. Hierarchical Structure of environmental management cell is shown in following figure.

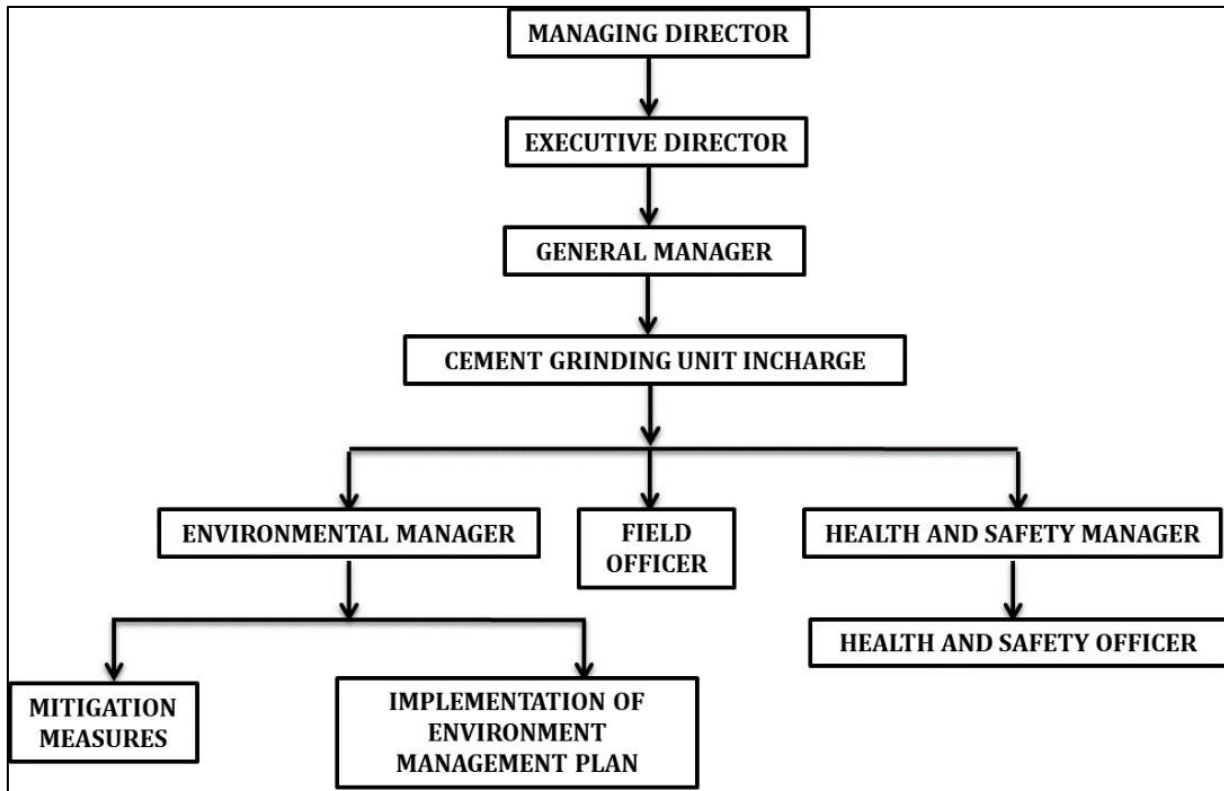


Figure 9: Hierarchical Structure of environmental management cell