

UNIT–III: ENVIRONMENTAL MANAGEMENT PLAN

3.1 -Plan for mitigation of adverse impact on water, air and land, water, energy, flora and fauna



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Air Pollution Mitigation Measures- Transportation

The mitigation measures are being adopted by the management, during the transportation of raw materials: To control the dust emission from dropping/transfer points of the belt and bucket conveyors, bag house are provided at various locations of the transfer points.

More over there is an adequate arrangement of atomized dust suppression arrangement at conveyor belts. Operators and attendants are provided with dust mask.

The roads in the cement plant are paved to prevent dust emissions.

Proper mitigation measures are taken to control fugitive dust emission and noise from transport (like water sprinkling during transport activities) along with green belt development along the road sides to control pollution.

The proposed network of road is adequate to handle the increased load due to the proposed production capacity.

Proper maintenance of vehicles will be done regularly.

Periodic air quality survey will be carried out to monitor the changes as per the norms of State Pollution Control Board. Hence, there is not any major impact on the on the environment due to the transportation of raw materials.

Raw Material Handling

The fugitive emissions during the handling and transferring of the raw materials to the process area will be controlled by adopting the latest technology of closed conveyer

system, loading and unloading equipments.

Raw material feeding area

Raw materials will be fed into the process equipment in closed systems to avoid the dust emission. In this process the feed mix passes through the feed tube, which will be sealed for leakage, so there is no chance to generate fugitive emissions.

Monitoring Plan for the fugitive emissions

In the plant there is designated work force for environmental section that will look after the environmental issues and its monitoring works. The environmental monitoring will be carried on regular basis with fixed monitoring facilities as per the guidelines of SPCB & CPCB.

A dust suppression system will be provided to spray water. The amount of water sprayed should preferably be optimized by employing proper design of spray system. Suitable systems may be adopted to reduce the problems like choking, jamming of the moving parts.

Material Handling Section

All transfer point locations should be fully enclosed

The enclosures from all sides with the provision for access doors, which will be kept, closed during operation, spillages should be periodically removed.

Airborne dust and vapours at all transfer operations/points will be controlled by spraying water/extracting to bag filter.

Water will be periodically sprayed on the stockpiles so as to retain some moisture in the top layer.

Coal Yard Section

Maximum possible airborne dust could be extracted from various locations like unloading, crusher discharge, and transfer points. The extracted fines should be separated to prevent its re-entrainment. Open stocking of coal in unpaved area will be avoided.

The pathways for vehicle movement will also be paved.

Any deposits of dust on the ground (other than stock piles) will be cleaned regularly either manually or by sweeping machines. Additionally sufficient water will be sprayed on ground frequently to suppress the dust getting airborne.

Coal will be sufficiently moistened to suppress fines by spraying minimum quantity of water.

Water spray will also be applied at crusher discharge and transfer points.

Roads

The paved roads should be maintained as paved at all times and necessary repairs to be done immediately after damages to the road if any.

Limit the speed of vehicle to 10 km/hr for heavy vehicles within the plant premises to prevent the road dust emissions.

Preventive measures include covering of trucks and paving of access areas to unpaved areas. Mitigative controls include vacuum sweeping, water flushing, and broom sweeping.

Requirement of Trained Manpower

The industry will employ or contract a dust control officer who will be available on site during working hours.

Necessary training should be provided on aware of operational & maintenance aspects, moreover responsible for proper control of fugitive emissions.

Noise Environment

During operation, the major noise generating sources are coal mill, Kiln/ Raw mill, packers of cement plant. These sources will be located far from each other. Under any circumstances the noise level from each of these sources will not exceed 90 dB (A). The noise levels are dependent upon the deployment of machinery and heavy-duty vehicles in the area. Noise is produced due to movement of machinery, etc., but the pronounced effect of noise is felt only near the active working area.

During installation of cement plant, no significant impact is envisaged as most of the construction equipment produces noise level below 90 dB (A). The noise generated is expected to be intermittent and of short duration.

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Noise at a point generates spherical waves, which are propagated outward from the source through the air at a speed of 1,100 ft/sec, with the first wave making an ever-increasing sphere with time. As the wave spreads the intensity of noise diminishes as the fixed amount of energy is spread over an increasing surface area of the sphere.

Mitigation measures

Noise pollution from blowers, fans, compressors, centrifugal pumps, electric motors, etc. is anticipated. Noise from safety valves, startup vents, steam jet ejectors of condenser, etc. are reduced by providing silencers at the outlet of down steam piping.

Water Environment

The total water requirement for the cement plant is estimated to be 5.5 KLD. Cement is manufactured by dry process technology. In the entire process water is used only at very few stages in the process at cooler, Cement mill, coal mill and raw mill for cooling. Cooling include the circulating cooling water for bearings and gearboxes. The other areas of water consumption other than process are for domestic purposes, plant canteen and also for greenbelt development.

In the cement plant, a Bag House system is installed for the cleaning of the kiln

flue gas and hence the no gas –conditioning tower is required. Due to this, the water consumption in the cement plant is considerably reduced.

100% of the treated waste water will be used for dust suppression and on land for gardening and greenbelt development as prescribed in the consent order and thus the Zero Discharge status will be maintained.

The total waste water generation with in the plant premises is around 3.3 KLD; i.e. of waste water from domestic sections such as toilets, mess, canteen etc. whereas the domestic waste water will be treated in 4 KLD STP. In addition, approx. 2.64 of treated water will be used on land for gardening/ greenbelt development.

Land Environment

The site preparation for construction of the cement plant may slightly alter the environmental conditions resulting in air and noise pollution. However, this is a scenario of pre-project and is of short duration. There are no settlements or grazing lands present at the site. The Project shall be set up in 8.09 ha. The present land use pattern has no forest land and mostly Single Crop, Low yield Agriculture land. The greenbelt will be developed by plant authorities within the plant premises improve vegetal cover in the study area. An area of about 2.67 ha (boundary plantation, avenue plantation etc) would be developed under greenbelt within plant premises.

There may be some pollution, which may affect the soil adjacent to the plant area, if proper care is not taken. The anticipated pollution to soil environment due to plant activities is as follows:

Changes in soil texture due to settling of air borne dust or due to wash off of solid particulates by surface or ground water. This will lead to change in porosity, permeability & other such physical characteristics of soil of the area.

Changes in soil chemistry due to addition of foreign material from polluted air and water due to plant activities in the area.

But proper mitigative measures like use of efficient pollution control systems, proper stack height, use of top soil in plantation results in no significant impact on soil of the core zone. There will be no impact on soil of the study area located beyond the working area of the proposed project. Soil samples will be collected and tested at regular intervals for the nearby areas. This will help in mitigation of any harmful impact on soil due to the project activity, if any.

Impact on Terrestrial Ecology

The flora and fauna of an area shows a certain affinity to the existing environmental setting. Due to the proposed facility, there could probably be a change in the environmental surroundings for a short duration due to the construction phase and for a long term due to the operation of the project activities. Thus, in order to predict the ecological impacts from the project site, it is necessary to detail the baseline data. The potential impacts on the ecology of the study area are discussed below:

As no wastewater from the plant site is discharged outside the premises, there is no impact as the ecology of the study area due to wastewater. The flora and fauna of the area could be disturbed if the various air pollutants discharged from

the facility would not be maintained within specified permissible limits. However, various air pollution control equipment such as the Bag filters / Bag houses, ESP etc. will be provided.

Other emissions such as Particulate Matter, Sulphur Dioxide and Nitrogen Oxides are kept below the prescribed permissible limits. Thus, the potential impact of air emission can be rated as marginal impact.

The Company will adopt adequate pollution reduction measures for water, air and solid waste for effective protection of the environment. Thus, it could be concluded that the potential impact of solid wastes is insignificant. Moreover, the proposed green belt helps in reducing the adverse impacts further if any.

Solid Waste Generation

The wastes generated from the plant are segregated into Non Hazardous and Hazardous wastes as detailed below:

Nonhazardous waste Cement Dust & HDPE Bags

The main solid waste generated from the cement plant is cement dust collected from various pollution control devices.

This generated cement dust is recycled to the process. Hence no solid waste for disposal is available in the cement plant. The HDPE bags will be used for Cement Packaging, unused or spoiled bags will be recycled.

Domestic Waste

The generated solid wastes are segregated in biodegradable parts.

The biodegradable waste will be composted and used as manure.

Incinerable non-biodegradable waste will be burnt in incinerator.

Other non-biodegradable waste will be sent to landfill.

Sludge generated from the STP shall be used as manure for plantation

Hazardous waste

Used lubricating oil is used for scraper/screw conveyors internally and the balance quantity will be sold to PCB / MoEF authorized recyclers.

Waste grease is sold to the PCB's approved recyclers

Lead acid batteries are exchanged with OEMs

Mitigation measures

No solid waste is generated in cement manufacturing process.

Dust collected from air pollution control equipment is recycled in process.

Solid waste in the form of sludge is generated from water treatment plant & it is used as manure for green belt development.

