

Compliance Report:-

Subject:- Expansion of Alathiyur limestone opencast mine at Alathiyur, Adhanakurichi, Manakudayan and Tular villages in Sendurai Tehsil, Perambalur District, Tamil Nadu by M/s Madras Cement Ltd - reg

Reference :- MoEF.CI.Lt.No. J-11015/16/2001-IA.II (M) dt: 16.10.2002.

<u>A. Specific conditions</u>	
<p>(i) Top soil should be stacked properly with adequate measures at earmarked site. It should be used for reclamation of mined out area.</p>	<p>From the inception of mining about 3.25 Mil.T of top soil generated was temporarily dumped in the earmarked place on the Western side of the lease. The major part of this has been utilized for development of green belt, avenue plantation in the nearby cement plant, employee quarters, for creation of park & school premises etc. Part of the top soil is also used for spreading over the back filled and reclaimed mined out areas in Pit No.W1 and W4 of South Block and Western portion of North Block which is afforested.</p>
<p>(ii) OB dumps should be stacked in earmarked dumpsite(s) and properly designed keeping in view characteristics of over burden. Dumps should not be kept active for longer period. The over all slope of the dumps should not exceed 28 degree.</p>	<p>Over burden materials are being dumped in the earmarked area on the western side of the lease spread over an extent of 49.315 Ha in South Block and 31.015 Ha in the North Block. So far 11.30 ha and 15.04 Ha of area is utilised for dumping in the South and North blocks respectively and the balance of the above mentioned area is kept for future dumping. The dump height and slope are maintained properly with terracing of 10 mts & Slope angle not exceeding about 28°. The inactive slopes of the dumps are stabilized by afforestation and part of the dump material is also used for refilling the worked out W1 pit in the South block and North Block.</p>
<p>(iii) A green belt of adequate width (10 to 80 m) by planting the native plant species all around the ML area, roads, OB dump sites etc. should be raised in consultation with local DFO/ Agricultural Department. The density of trees should be around 1600 trees per hectare.</p>	<p>Green belt has been developed around the ML periphery, along the haul roads and also in the OB dumps by planting the native species in consultation with local DFO/Agricultural department. So far around 92,000 nos of saplings have been planted covering an area of 55.70 Ha. Project authorities have also made efforts to maintain the plantation width as per the condition and the density about 1600 per hectare. Proper care is being taken for survival of the saplings. Over all survival rate is 85%.</p>

(iv) Check dams and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected should be utilized for watering mine area, roads green belt development etc. The drains should be regularly desilted and maintained properly.

Garland drain (size, gradient and length) and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material

(v) A detailed mine decommissioning plan should be submitted to the Ministry of Environment and Forests five years in advance for approval.

(vi) While the mining operation is on, regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers. The interval of monitoring should be four times a year – pre-monsoon (April/May), monsoon (August), Post-monsoon (November) and winter (January). Data thus collected should be sent at regular interval to Ministry of Environment & Forests and the Central Ground Water Board.

(vii) Digital processing in the entire lease area using remote sensing technique should be done regularly once in 3 years for monitoring land use pattern and report submitted to Ministry of Environment & Forests and its Regional Office at Bangalore.

Two Siltation ponds/recharge pits of 120x60x2 meters each are constructed. Water collected in these pits is being used for sprinkling in mine haul roads & green belt development. Besides two check dams are constructed in the North and South Blocks.

a) **Garland drain for Dump** : Garland drains around the periphery of dumps has been formed to arrest the silt and sediments from the OB dumps. Garland drains around the dumps in the North and South block Size are 951 X 5 X 2 and 534 X 5 X 2 meters respectively. Desilting of drains is being carried out regularly.

b). **Garland drain for Mines** : Garland drains have been formed around the Working pit of North mines of size 1661 X 5 X 2 meter and South mines of size 732 x 5 X 2 meters to take care of rainfall and discharge of surrounding area. The mine floor has been maintained at the gradient of 1:20 to collect the water in the sump and allow the settling of silt material.

Compliance is agreed upon.

Regular monitoring of ground water table and quality is being carried out. A net work of 8 existing bore wells in and around the working mine have been identified and periodical monitoring of ground water level is being done in 4 seasons/ Annum. Project authorities informed that actions have been initiated to install piezometers. The water quality is being monitored in 4 borewells and also surface water of vellar and Anavari odai upstream and down stream. The study report is being submitted to MOEF and Central Ground Water Board on half yearly basis.

Digital processing is being carried out regularly and copies of the imageries collected in the year 2006, 2009 and 2011 to study the land use pattern are submitted.

(viii) Vehicular emission should be kept under control and regularly monitored.

B. General conditions

(i) *No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.*

(ii) No change in the calendar plan including excavation, quantum of limestone and waste should be made.

(iii) Four ambient air quality – monitoring stations should be established in the core zone as well as the buffer zone for RPM,SPM,SO₂,NO_x and CO monitoring. Location of the stations should be decided based on the meteorological data topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board

(iv) Data on ambient quality should be controlled regularly submitted to the Ministry including its Regional office at Bangalore and the State Pollution Control Board/ Central Pollution Control Board once in six months.

(v) Fugitive dust emissions from all the sources should be controlled regularly monitored and data recorded properly. Water spraying arrangement on haul roads, wagon loading, dump, trucks (loading & unloading) should be provided and properly maintained.

(vi) Adequate measures should be taken for control of noise levels below 85 dB in the work environment.

(vii) Industrial waste water (workshop and waste from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December,1993 or as amended

Vehicular emission is kept under control by preventive and predictive maintenance system. Emission test certificate copies submitted by the project authorities shows that the emissions are within the limits.

No change was observed.

No change on the higher side was observed.

10 Ambient Air Quality monitoring stations have been set up in core and buffer zone. The location of the above stations are based on meteorological data topographical features and environmentally and ecologically sensitive considerations as per project authorities. Monthly monitoring is being carried out. Monitoring reports shows that the parameters monitored are well within the norms stipulated.

Ambient Air Quality data is being submitted regularly to the Regional Office, Bangalore once in six months and to State Pollution Control Boards once in a month.

Fugitive dust emission from all the sources is being controlled and regularly monitored. Haul roads, crushers, etc are water sprayed utilizing 20KLD water tankers. Both sides of haul road plantation is being maintained.

HEMM noise is reduced by means of preventive maintenance system. Acoustic enclosures are provided for the operators in all the equipment. Noise levels are being monitored periodically Monitoring reports shows that the noise levels are within the limits.

ETP with oil, grease traps and settling tank is provided in the mines workshop to treat the industrial effluent.

from time to time. Oil and grease trap should be installed before discharge of workshop effluents in to the pond.

(viii) Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution control Board.

(ix) Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.

Occupational health surveillance program of the workers should be under taken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.

(x) A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.

(xi) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry.

(xii) The Regional Office of this Ministry located at Bangalore shall monitor compliance of the stipulated conditions. The project authorities should provide a set of filled – in questionnaire and EIA/ EMP report to them and extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data /information/monitoring reports.

(xiii) State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry center and Collectors office/ Tahsildars Office for 30 days.

Environmental lab facilities are established with pollution monitoring equipments in the Plant site. These facilities are common to cement plant, mines and TPS. Apart from this services of Environmental consultant, M/s Environmental System Consultant & Ambiente lab Solutions Private Limited, Chennai. is hired to carrying out AAQ, Noise, Meteorology, Water, Soil etc periodically.

Personal Protective Equipments are provided. Training on safety and health aspect have been provided in the vocational training centre.

The occupational health surveillance program is being conducted for the workers periodically. An occupational health centre headed by occupational health physician is run by the company. Periodical medical examinations are conducted as per the Mines Act and records maintained.

Environmental cell is functioning under the unit head. One Environmental Engineer is posted at Corporate office to monitor and coordinate the Environmental activity. The organizational chart is submitted by the project authorities.

As per the EMP plan fund provision for capital and recurring expenditure towards environmental measures are provided. Details are provided. Please also see point No.9 of Part -I

Co operation extended and documents/information submitted.

Reportedly complied with.

(xiv) The project authorities should advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and may also be seen at web site of the Ministry of Environment & Forests at <http://envfor.nic.in>

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(Dr.A.B.Harapanahalli)
Adviser