

PTK-ML-1

No.J.11015/244/2005-IA.II(M)
Government of India
Ministry of Environment & Forests

Paryavaran Bhawan,
C.G.O.Complex, Lodi Road,
New Delhi-110003.

Dated: 28th October 2005

To
Shri Y.P.Sharma,
Manager- Business Development,
M/s Dalmia Cement (Bharat) Ltd.,
Hansalaya (11th and 12th Floors),
15, Barakhamba Road,
Post Box- 364,
New Delhi-110001.

Sub: Expansion of Periyathirukonam Limestone Mine (61.36 ha) of M/s Dalmia Cement (Bharat) Ltd. (from 0.03 MTPA to 1.2 MTPA), located in village Periyathirukonam, Tehsil Arviyur, District Perambalur, Tamil Nadu - Environmental Clearance - reg. Sr.

This has reference to your letter No.ND/SR/2102 dated 12.07.2005 submitting your application, and subsequent letters dated 16.08.2005, 22.09.2005 and received on 06.10.2005 on the above-mentioned subject. The Ministry of Environment and Forests has examined the application. It has been noted that the proposal is for expansion of the existing Periyathirukonam Limestone Mines with a total lease area of 61.365 ha, consisting of wasteland (Govt. land and private land). Of the total lease area, area to be excavated is 52.0 ha, 0.665 ha is for storage of topsoil, 3 ha is for OB dumps, 0.50 ha is for infrastructure, 2.20 ha is for roads, 3 ha is for green belt. No forestland is involved. No ecologically sensitive area falls within 10 km radius of the mine site. The project does not involve displacement of people. Expansion of production capacity of the mine is from 0.03 million tonnes per annum (MTPA) to 1.2 MTPA of limestone. Mineral transportation of 4000 TPD is by road to the linked cement plant. Working is opencast by mechanised method involving drilling and blasting. Ultimate working depth is 39m below ground level (bgl). Present working depth is 5 m bgl. Mining will intersect water table, which is at a depth of 13-14m bgl (pre-monsoon) and 6-7m bgl (post-monsoon) in the core zone. The area has been declared as 'semi-critical' by the State Ground Water Dept. Average water requirement of the mine is 203 m³/day will be met from mine sump water (200 m³/d) and from groundwater (3 m³/d). About 0.24 mill. m³ of OB has been accumulated and an estimated 64.63 mill. m³ of OB will be generated over the balance life of mine. Partial backfilling (16%) is proposed when the rated capacity is achieved. IBM approval of Modifications to Mining Plan was obtained on 31.12.003. The Tamil Nadu State Pollution Control Board has granted NOC on 28.06.2005. Public Hearing was held on 26.03.2005. Life of the mine at the rated capacity is about 6 years. Capital cost of the Project is Rs. 85 lakhs. 26.3.2004

2.0 The Ministry of Environment and Forests hereby accords environmental clearance to the above-mentioned Periyathirukonam Limestone Mine of M/s Dalmia Cement (Bharat) Ltd. to expand production from 0.03 MTPA to 1.2 MTPA of limestone involving lease area of 61.365 ha, under the provisions of the Environment Impact Assessment Notification, 1994 and its subsequent amendments subject to terms and conditions mentioned below:

A. Specific Conditions

- (i) Prior approval of the CGWA shall be taken for mining below water table.
- (ii) Top soil should be stacked properly with proper slope at ear marked site(s) with adequate measures and should be used for greenbelt development.
- (iii) OB should be stacked at earmarked dumpsite only on temporary basis. Garland drains will be provided around the excavations to prevent storm water from catchment area to come in contact with freshly excavated areas. Toe drains will be provided all along the toe of the dump to arrest any soil erosion. Loose material slopes will be planted by making contour trenches at 2m intervals to check soil erosion.
- (iv) Check dams and siltation ponds of appropriate size should be constructed wherever required to arrest silt and sediment flows within the lease area. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted and maintained.
Garland drain (size, gradient & length) and sump capacity should be designed keeping 50% safety margin over and above the 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. Sedimentation pits should be constructed at the corners of the garland drains.
- (v) Drills should be wet operated or with dust extractors.
- (vi) Controlled blasting should be practiced and only during daytime. The mitigative measures for control of ground vibrations to arrest the fly rocks and boulders should be implemented.
- (vii) Crusher should be operated with high efficiency bag filters, water sprinkling system should be provided to check fugitive emissions from crushing operations, haulage roads, transfer points, etc.
- (viii) Water sprinkling arrangements to control the fugitive dust generation from the haulage roads and to the crusher.
- (ix) Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral ore. The vehicles should be covered with tarpaulin and should not be overloaded.
- (x) Progressive Mine Closure Plan shall be implemented to backfill and reclaim an area of 22.50 ha. The higher benches of the balance excavated void/mine pit of an area of 29.50 ha, which is not being backfilled and is being converted into a water reservoir, shall be terraced and plantation done to stabilise the slopes. Peripheral fencing shall be done along the excavated area.
- (xi) Plantation should be developed in the lease by planting the native species around the ML boundary, topsoil dump (0.665 ha), waste dumps (3 ha), along the roads (2.1 ha) and undisturbed area of 3ha, in consultation with the local DFCI/Agriculture Department. The density of trees should be around 2000 plants per hectare.
- (xii) A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests 5 years prior to closure of mine for approval of the Ministry.



- (xiii) Consent to operate should be obtained from State Pollution Control Board before expanding mining activities:

B. General Conditions

- (i) No change in 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, waste/OB dumps should be made.
- (iii) Ambient air quality monitoring stations should be established in the core zone as well as buffer zone for SPM, RPM. Location of the ambient air quality stations should be decided based on meteorological data, topographical features and environmentally and ecologically sensitive targets and the frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.
- (iv) Data on air quality should be 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) Adequate measures for control of fugitive emissions should be undertaken such as water spraying arrangements on haul roads, loading and unloading points, and transportation of minerals, etc. Fugitive dust emissions from all sources should be regularly monitored and data recorded properly.
- (vi) Adequate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operations of HEMM, etc., should be provided with ear plugs/muffs.
- (vii) Industrial waste water (workshop and wastewater 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 from time to time. Oil and grease trap should be installed before discharge of effluents from the Workshop.
- (viii) 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 programme of the workers should be undertaken periodically and corrective measures taken, if required.
- (ix) The funds earmarked for environmental protection measures should be kept in separate account and not diverted for any other purpose. Year-wise expenditure should be reported to the Ministry of Environment & Forests.
- (x) The project authorities should inform to the Regional Office located at Bangalore regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- (xi) The Regional Office of this Ministry located at Bangalore shall monitor compliance of the stipulated environmental conditions. The project authorities should extend full cooperation to the officer(s) of the Regional Office by furnishing the requisite data/information/monitoring reports.

- (xii) A copy of the clearance letter should be marked to concerned Panchayat/local NGO, if any, from whom any suggestion/representation has been received while processing the proposal.
- (xiii) The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and the collector's/Tehsildar's Office for 30 days.
- (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 within 7 days of issuance of the clearance letter 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 and forests at <http://envfor.nic.in>.

C. Conditions stipulated by Tamil Nadu Pollution Control Board

- (i) Wherever practicable, the mine water shall be utilised for irrigation of the plantation raised to stabilise the mine waste dumps.
- (ii) Acid mine water if any has to be treated by the unit to satisfy the standards prescribed by the Tamil Nadu Pollution Control Board.
- (iii) The overburden and mine waste shall be used for reclamation, restoration and rehabilitation of the terrain without affecting the natural drainage and water regimes.
- (iv) Possibility of dumping the overburden and waste, in available low lying areas accompanied by levelling and providing soil cover to utilise the land profitably may be explored.
- (v) If considered suitable, the overburden may be used as road metal or construction aggregates after crushing into proper size.
- (vi) Peripheral plantations shall be raised as wind belts to minimise the dry tailings being air-borne.
- (vii) Tailing dams for land disposal shall be constructed to their final heights before mining commences. All down stream slopes of tailing dams shall be vegetated as quickly as possible.
- (viii) Air pollution control measures have to be provided for controlling gaseous pollutants (SO₂, NO_x, CO) to satisfy the standards prescribed by the Tamil Nadu Pollution Control Board.
- (ix) To prevent dust from air-borne, transport equipment shall be leak proof and properly covered with tarpaulin.
- (x) The unit shall adopt water mist system, dust extraction system in the wagon driller so as to reduce the dust generation during drilling.
- (xi) To minimise dust pollution, measures such as adoption of hoods, at transfer point, proper dust suppression or dust extraction system for conveyors shall be introduced. The dust generation shall satisfy the standards prescribed by the Tamil Nadu State pollution Control Board.
- (xii) The unit shall make necessary arrangement for wetting of haulage roads to rest the dust generated due to movement of vehicles.

- (xiii) The waste dumps, active mining area, sub-grade dumps shall be sprinkled with water so that air borne dust generation shall be minimal.
- (xiv) Landuse plan shall be prepared to encompass pre-operational, operational, and post-operational phases of the mine, based on general survey and collection of relevant information.
- (xv) Vegetation barriers shall be raised along the contours in the higher elevation areas for the prevention of soil erosion and for arresting mine wash.
- (xvi) It has to be ensured that the waste shall be dumped within the lease area and it will not create any damage to adjacent property, agricultural fields, public utility, human settlement and shall not cause any barrier or obstruction to any water course.
- (xvii) The unit shall dump the excavated earth after studying the engineering properties such as stability of slope, lateral earth pressure, etc., so as to avoid landslide.
- (xviii) Garland drains shall be provided around the opencast excavation area, stacking, loading area and periphery of waste dumps so as to collect and discharge the incush of water during unprecedented heavy rain. The water collected in the garland drain will flow towards the settling tank.
- (xix) The unit shall provide collection sump at suitable location to collect the rainwater and seepage water and the same shall be used for irrigation.
- (xx) The unit shall not dump the solid waste in the groundwater recharge/catchment area under any circumstances.
- (xxi) The unit shall provide check dams across the final drain from the mine and peripheral bunds on the outer edge of abandoned benches that the solid shall not be carried away by storm water.
- (xxii) The banks of streams in the mining area shall be intensively vegetated to prevent the discharge of sediments into the streams.
- (xxiii) The unit shall not collect the topsoil from the mining area and preserve it biologically and to utilise the same for plantation of trees during the reclamation programme.
- (xxiv) The unit shall use leak proof containers for the storage and transportation of oil/grease/workshop waste so as to prevent the spillage in the mining area.
- (xxv) The unit shall ensure that the mining activity shall not affect the habitation and villages situated nearby and that no blasting shall be carried out.
- (xxvi) The unit shall follow the safety and precautionary measures while carrying out blasting operation and it should be done under the direct supervision of well-qualified blaster.
- (xxvii) All the loose debris, stones, fine dust shall be cleared from blasting area before blasting. Sentries shall be posted on all sides of the mining area with necessary communication facilities.
- (xxviii) As the unit proposes controlled blasting technology for mining, it has to be ensured that use of millisecond delay detonation, proper stemming, to ensure complete detonation use of adequate

booster, using sharp drill bits for drilling holes, drills with flushing system, etc., will reduce ground vibration thereby avoiding adverse effect on the environment around mining area.

- (xxix) The unit shall not carry out secondary blasting, thereby huge boulders shall be broken by deploying terminator and breakers.
- (xxx) Stack of adequate height shall be provided for diesel generator if any and the emission let out shall satisfy Ambient Air Quality standards prescribed by the Board.
- (xxxi) The unit shall carry out the technological and biological reclamation works in the mined area so as to develop a self-sustaining eco-system.
- (xxxii) To avoid landslides, slope shall be planted with adequate trees or other soil binding vegetation.
- (xxxiii) The unit shall treat the sewage and wastewater from canteen in a full fledged treatment system to satisfy the standards prescribed by the Board and to utilise the same for greenbelt development.
- (xxxiv) The wastewater generated from the workshop shall be collected separately and it shall be treated through upflow filter to separate the oil and grease.
- (xxxv) The unit shall ensure that the noise generated for the mining operation and other allied activity shall satisfy the ambient noise level standards prescribed by the Board.
- (xxxvi) The unit shall provide suitable storm water network with necessary gradient in the mining area and in the dumpsite to drain stormwater to collection pit during monsoon period.
- (xxxvii) Diversion of water course would also have an effect on flora and fauna resulting in ecological imbalance to some extent. The measures proposed for changing the water course shall ensure the rehabilitation of flora/fauna.
- (xxxviii) The unit shall establish continuous ambient air quality monitoring stations preferably in the predominant wind direction in consultation with the Board to collect baseline data as well as to assess the adequacy and operational condition of air pollution control measures installed.
- (xxxix) Periodical monitoring shall be done by the unit to ensure compliance with effluent standards, ambient air quality standards and groundwater table in monitoring wells.
- (xxxx) The unit has to approach the Board for issue of consent by enclosing the Environmental Clearance issued by the Ministry of Environment and Forests, Government of India.
- (xxxxi) The unit shall provide infrastructure facilities like land building, equipment, and maintenance to the 'Health sub-centres' in the vicinity of the unit.
- (xxxxii) The reclaimed mined area of the unit shall be developed as a green belt with trees having a thick canopy cover. The number of trees planted should be at the rate of 2000 trees/hectare. The species which are found locally and those which are capable of colonising the degraded areas should be referred.
- (xxxxiii) The NOC issued without prejudice to the right of the Tamil Nadu Control Board to collect consent fees for the NOC order at the rates to be revised by the Government of Tamil Nadu.


(xxxiv) The unit must provide rainwater harvesting facilities within the premises so as to increase the recharging of groundwater in that area.

(xxxv) The unit shall maintain good housekeeping.

3. The Ministry or any other competent authority may stipulate any further additional condition for environmental protection.

4. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance.

5. The above conditions will be enforced, *inter-alia*, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control) of Pollution Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 alongwith their amendments and rules.


(Dr. T. Chandini)
Additional Director

Copy to:

1. Secretary, Department of Environment & Forests, Government of Tamil Nadu, Fort St. George, Secretariat, Chennai-600009.
2. Secretary, Industry, Government of Tamil Nadu, Industries Department, Fort St. George, Secretariat, CHENNAI-600009.
3. Chief Conservator of Forests, Ministry of Environment & Forests, Regional Office (SZ), E-3/240, Kendriya Sadan, IV Floor, E&F Wings, 17th Main Road, II Block, Koramangala, Bangalore-560034.
4. Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi-110032.
5. Chairperson, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, CHENNAI-600032.
6. Member-Secretary, Central Ground Water Authority, A-3, W-3 Central Ground Water Authority, Curzon Road Barracks, Kasturba Gandhi Marg, New Delhi.
7. Controller General of Mines, Indian Bureau of Mines, 'Indira Bhawan', Civil Lines, NAGPUR- 440 001.
8. District Collector, Tiruchirappalli, Government of Tamil Nadu.
9. E.I. Division, Ministry of Environment & Forests, New Delhi.
10. Guard File. 11. Monitoring File. 12. Record File.