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No.J-11015/55/2006-IA.II(M)
Government of India
Ministry of Environment & Forests

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

Dated: 14th July 2006

To
General Manger (CP & P),
M/s Mahanadi Coalfields Ltd.,
At PO: Jagruti Vihar,
Burla, Dist. Sambalpur - 768020,
ORISSA.

Sub: Samleshwari Opencast (Epxn.) Project (3 MTPA to 5 MTPA) of M/s Mahanadi Coalfields Ltd. (MCL), located in villages Kudolai, Orampara, Ganganagar, Chingriguda, and Lajkura, Tehsil & District Jharsuguda, Orissa- environmental clearance - reg.

Sir,

This has reference to Coal India Ltd.'s letter No. CIL/DLI/ENV/2006/145 dated 21.02.2006 forwarding your application and subsequent letters dated 25.04.2006 and 22.06.2006 and your letter dated 29.03.2006 on the above-mentioned subject. The Ministry of Environment & Forests has considered your application. It has been noted that the project is for expansion of the existing Samleshwari Opencast Coal Project in terms of production capacity from 3 MTPA to 5 MTPA. The total land requirement of the project is 878.619 ha of which 828.764 ha is the mine lease area and 49.855 ha is for residential colony. Of the total mining lease area of 828.764 ha, 313.052 is forestland, 86.448 ha is agricultural land, 415.744 ha is wasteland and 13.52 is surface water bodies. A number of Reserve Forests (RF) are found within and adjoining the lease and within 10km of the core zone. The study area supports highly endangered species such as Bear, leopard and the Indian Elephant. Forestry clearance has not been obtained. There are no National Parks, Wildlife Sanctuary, Biosphere Reserves found in the 10 km buffer zone. The Ib River flows at a distance of 1.6 km from the ML boundary. Lilari Nallah flows at a distance of 1 km and the Pandren Nallah adjoining the mine lease. It is not proposed to modify the existing drainage nor construct any embankment alongside the Nallah. The project does not involve R&R. Of the total lease area, area for excavation is 448.272 ha, 24.86 ha is for OB dumps, 3.266 ha is for mineral storage, 12.864 ha is for roads, 4.8 ha is for CHP, 9.12 ha is for workshop, 9.296 ha is for ETP, 14.656 ha is for Railway Siding, 0.003 ha is for buildings and 301.627 ha is for others (safety zone for blasting). Mining will be opencast by mechanised method and involves drilling and blasting. Expansion of the rated capacity of the mine is from 3 million tonnes per annum (MTPA) to 5 MTPA of coal production. Mineral transportation of 15,152 TPD of coal is by rail. Ultimate working depth of the mine is 102m below ground level (bgl). Water table is in the range of 1.30 m - 7.62 m bgl in the core zone and 1.80 m - 8.03 m bgl in the buffer zone. Peak water requirement is 1500 m³/d of which 497m³/d is for dust suppression, 254m³/d is for mine operation, 73m³/d is for drinking and 427 m³/d is for domestic consumption and is to be met from Integrated Water Supply Scheme from River Brahmani (500 m³/d) and from mine sump water (1000 m³/d). The entire amount of OB of 110.51 Mm³, estimated to be generated over the balance life of mine will be backfilled. No new OB dumps will be created for the expansion project. OB accumulated have been stored in six external OB dumps of 24.86 ha area accommodating 4.06 Mm³ of OB has been stabilised and reclaimed. Public Hearing was held on 11.07.2005. Life of mine at the rated capacity of 12 MTPA is 12 years. The project has been approved by M/s MCL on 19.07.2005 for expansion to 5 MTPA. Capital cost of the project is Rs. 16892 lakhs.

2. The Ministry of Environment & forests hereby accords environmental clearance for the above-mentioned Samleshwari Opencast (Expansion) Coal Project of M/s MCL for

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expansion in production of coal to 5 MTPA rated capacity under the provisions of the Environmental Impact Assessment Notification, 1994 and subsequent amendments thereto subject to the compliance of the terms and conditions mentioned below:

A. Specific Conditions

- (i) Mining shall not be carried out in forestland for which forestry clearance has not been obtained under the provisions of FC Act, 1980.
- (ii) All the conditions stipulated in the NOC shall be strictly implemented.
- (iii) Topsoil, if any, should be stacked properly with proper slope at earmarked site(s) and should not be kept active and shall be used for reclamation and development of green belt.
- (iv) OB shall be simultaneously backfilled in the decoaled area. No new OB dumps shall be created for the OB to be generated in the balance life of mine.
- (v) Monitoring and management of existing reclaimed dumpsites should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forests and its Regional office located at Bhubaneswar on yearly basis.
- (vi) Catch drains 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 utilised for watering the mine area, roads, green belt development, etc. The drains should be regularly desilted and maintained properly.
Garland drains (size, gradient and 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 provided adequate retention period to allow proper settling of silt material.
- (vii) Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation should be based on the rainfall data.
- (vi) Crushers at the CHP should be operated with high efficiency bag filters, water sprinkling system should be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, transfer points, etc.
- (vii) Drills should be wet operated. ✓
- (viii) Controlled blasting should be practiced with use of delay detonators and only during daytime. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders should be implemented.
- (ix) The total area brought under afforestation shall not be less than 594.57 ha, shall include backfilled area covering 354.610 ha, OB dumps (24.86 ha), along ML boundary, infrastructure and along roads (10.60 ha), safety zone and vacant area (200.04 ha) and area in township outside the lease (5ha) by planting native species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per ha.
- (x) A Progressive Mine Closure Plan shall be implemented and OB generated shall be simultaneously backfilled so as to backfill and reclaim 354.61 ha of decoaled area and the balance 19.552 ha being converted into a water reservoir shall be protected by peripheral fencing and the upper benches of the reservoir shall be gently sloped and stabilised with plantation.

- (xi) Regular monitoring of groundwater level and quality should be carried out by establishing a network of existing wells and construction of new piezometers. The monitoring for quantity should be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected should be submitted to the Ministry of Environment & Forests and to the Central Pollution Control Board quarterly within one month of monitoring.
- (xii) The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource. The project authorities should meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.
- (xiii) Sewage treatment plant should be installed in the existing colony. ETP should also be provided for workshop and CHP wastewater.
- (xiv) Besides carrying out regular periodic health check up of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health check up for occupational diseases and hearing impairment, if any, through an agency such as NIOH, Ahmedabad within a period of one year and the results reported to this Ministry and to DGMS.
- (xv) Digital processing of 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 MOEF and its Regional office at Bhubaneswar.
- (xvi) A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.
- (xvii) Consent to Operate shall be obtained before expanding mining operations.

B. General Conditions

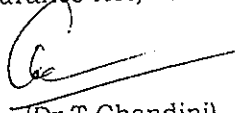
- (i) No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment and Forests.
- (ii) No change in the calendar plan including excavation, quantum of mineral coal and waste should be made.
- (iii) Four ambient air quality monitoring stations should be established in the core zone as well as in the buffer zone for SPM, RPM, SO₂ and NO_x 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 air quality (SPM, RPM, SO₂ and NO_x) should be regularly submitted to the Ministry including its Regional Office at Bhubaneswar and to the State Pollution Control Board and the 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 and unloading) points should be provided and properly maintained.
- (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, operation of HEMM, etc should be provided with ear plugs/muffs.

- (vii) Industrial wastewater (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 before discharge. Oil and grease trap should be installed before discharge of workshop effluents.
- (viii) Vehicular emissions should be kept under control and regularly monitored. Vehicles used for transporting the mineral should be covered with tarpaulins and optimally loaded.
- (ix) Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.
- (x) 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 to observe any contractions due to exposure to dust and to take corrective measures, if needed.
- (xi) 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 company.
- (xii) 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 this Ministry and its Regional Office at Bhubaneswar.
- (xiii) A copy of the environmental clearance letter shall be marked to concerned Panchayat/ local NGO, if any, from whom any suggestion/representation has been received while processing the proposal.
- (xiv) State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's Office/Tehsildar's Office for 30 days.
- (xv) 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 seven days 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 the website of the ministry of Environment & Forests at <http://envfor.nic.in>.

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

4. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract the provisions of the Environment (Protection) Act, 1986.

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 along with their amendments and Rules.


(Dr. T. Chandini)
Additional Director

Copy to:

1. Secretary, Ministry of Coal, New Delhi.

2. Secretary, Department of Environment & Forests, Government of Orissa, Secretariat, Bhubaneswar.
3. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, A-31, Chandrashekarapur, Bhubaneswar - 751023.
4. Chairman, Orissa State Pollution Control Board, Parivesh Bhawan, A/118, Nilkanthanagar, Unit VIII, Bhubaneswar - 751012.
5. Chairman, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi - 110032.
6. Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
7. Shri M.K. Shukla, CGM, Coal India Limited, SCOPE Minar, Core-I, 4th Floor, Vikas Marg, Laxminagar, New Delhi.
8. District Collector, Jharsuguda, Government of Orissa, New Delhi.
9. Monitoring File 10. Guard File 11. Record File