



**Ministry of Environment & Forests (MOEF)**

No.J-11015/225/2007-IA.II (M)

Paryavaran Bhawan,  
CGO Complex,  
New Delhi-110510.

Dated: 22<sup>nd</sup> October 2010

To  
Chief General Manager (E&F),  
**M/s Central Coalfields Ltd.,**  
District Bokaro,  
JHARKHAND

**Sub: Karma Opencast Coal Mine Project (1.0 MTPA (normative) with a peak production of 1.2 MTPA in an ML area of 244.04 ha ) of M/s Central Coalfields Ltd. to be located in East Bokaro Coalfields in , in village Karma, Block Mandu, District Ramgarh, Jharkhand – Environmental Clearance-regarding**

Sir,

This is with reference to letter No 43011/26/2007 dated 05.03.2007 of Ministry of Coal forwarding the application for Terms of Reference (TOR) and this Ministry's letter dated 23.05.2007 granting TOR to the above-mentioned project and subsequent letter No. CIL/DLI/EMP-TOR/2010/10 dated 07.05.2010 submitted for environmental clearance and your letter dated 05.08.2010 on the aforesaid subject. It is noted that the project is for starting a **Karma Opencast Coal Mine Project of a production capacity of 1 MTPA with a peak production of 1.2 MTPA in an ML area of 244.04 ha.** The project was sanctioned in December 1980 for a targeted capacity of 0.80 MTPA. Of the total lease area of which 50.76 ha is forestland, 124.41 ha is GMK land and 68.87 ha is tenancy land. Forestry clearance has been obtained for 32.61 ha of forestland and 124.41 ha of forestland recorded as Jungle Jhari and an area of 18.15 ha of forestland is not to be acquired. Forestry clearance has been obtained for 132.28 ha of forestland on 30.10.2008. There are no National Parks, Wildlife Sanctuary, Biosphere Reserves found in the 10 km buffer zone. The drainage of area is controlled by Meramgarh nala which joins Damodar River on the west side of the project. HFL of River Damodar is 316m and the RL of the mine is in the range of 338.30m-304.80m. An embankment is proposed. Of the total lease area, the break-up of the land for mining operations includes 72.49 ha for quarry, 63.21 ha for external OB dump, 7.49 ha for roads, 9.98 ha is for embankment, 30.65 ha is for infrastructure, 7.98 ha is for R&R colony and 52.24 ha is for safety zone. CHP is proposed. A colony of 2.30 ha with 289 dwelling units is proposed at a distance of 2-3 km from the mine. Mining will be opencast by mechanised method. Average grade of coal is 'F'. Ultimate working depth is 160m bgl. Transportation of 3030 TPD of coal from the CHP to Sirka Railway siding is by road involving an estimated 202 trips per day covering a distance of 18km and thereafter by rail. Water table in the study area is in the range of 6.41-12.38m bgl during pre-monsoon and 1.95-10.04m bgl during post monsoon. Peak water requirement is 415 m<sup>3</sup>/d of which will be met from mine pit water. Peak mine water discharge would be 10121m<sup>3</sup>/d during peak rainfall. The total estimated OB generation would be 28.90 Mm<sup>3</sup> of which 24 Mm<sup>3</sup> of OB would be stored in external OB dump of 90m height over the ground level and the balance 4.90 Mm<sup>3</sup> of OB would be used in construction of an embankment. There would be no backfilling of the decoaled void during mine life in view of the steep gradient. However, at the end of mine life, it is proposed to rehandle an estimated 4.6 Mm<sup>3</sup> of OB and reduce the overall height of the external OB dump to 60m. At the post mining stage, the max. depth of the decoaled void would be reduced to 65m from ground level and a water body of an area of 42.72 ha would be created. Project involves R&R from one village Sugia comprising 250 PAFs of which 79 are



to be shifted in first stage. Life of the mine is 19 years. Public Hearing was held on 26.05.2009. Project Approval was obtained on 15.06.2009. Capital cost of the project is **Rs. 162.46 Crores**.

2. The Ministry of Environment & Forests hereby accords environmental clearance for the above-mentioned **Karma Opencast Coal Mine Project of M/s Central Coalfields Ltd for a production capacity from 1 MTPA with a peak production of 1.20 MTPA peak in an ML area of 244.04 ha** under the provisions of the Environmental Impact Assessment Notification, 2006 and subsequent amendments thereto and under MOEF Circulars there under subject to the compliance of the terms and conditions mentioned below:

**A. Specific Conditions**

- (i) No mining operations shall be undertaken in forestland until prior clearance has been obtained under the provisions of FC Act, 1980.
- (ii) Mining shall be carried out as per statuette from the streams/nallahs flowing within the lease and maintaining a safe distance from the diverted nallah along the lease boundary.
- (iii) Dimension and depth of the diverted nala and design of embankment shall be finalised based on the peak flow of the water. The side of embankment along the river shall be strengthened with stone pitching. The slope of the embankment shall at least 2:1 towards the ML and shall be stabilised by plantation. The height of the embankment shall be at least 3m higher than the HFL of the river.
- (iv) No washery shall be established within the ML without prior environmental clearances from this Ministry.
- (v) Topsoil shall be stacked properly with proper slope at earmarked site(s) and shall not be kept active and shall be used for reclamation and development of green belt.
- (vi) The total estimated OB generation shall be 28.90 Mm<sup>3</sup> of which 24 Mm<sup>3</sup> of OB is to be stored in external OB dump of a max. height of 90m height over the ground level. Slope stability study shall be undertaken for increasing the height of the external OB dump beyond 60m from ground level. At the end of mine life, an estimated 4.6 Mm<sup>3</sup> of OB shall be rehandled and the overall height of the external OB dump be reduced to 60m. The ultimate slope of the dumps shall not exceed 28°. Monitoring and management of reclaimed dumpsites shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests and its Regional office located at Bhubaneswar on yearly basis.
- (vii) Catch drains and siltation ponds of appropriate size shall be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected shall be utilised for watering the mine area, roads, green belt development, etc. The drains shall be regularly desilted and maintained properly.
- (viii) Garland drains (size, gradient and length) and sump capacity shall 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 shall also be provided with adequate retention period to allow proper settling of silt material.
- (ix) Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data.
- (x) All internal roads and approach shall be black topped. A 3-tier avenue plantation shall be developed along the mineral transportation road from mine to Railway Siding using trucks of a minimum 20-T capacity. Green belt shall be developed at the Railway siding.



- (xi) High efficiency water sprinkling system provided to check fugitive emissions at the transfer points, haulage roads, etc shall be provided for crushing/loading operations for dust control at the CHP.
- (xii) Drills shall be wet operated only.
- (xiii) Controlled blasting shall be practiced with use of delay detonators. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders shall be implemented.
- (xiv) The total area that shall be brought under afforestation at the time of mine closure shall include reclaimed backfilled area (29.77 ha), external OB dump (63.21 ha), topsoil dump (6.32 ha), plantation (40.53 ha), along ML boundary, embankment, safety zone and undisturbed area (39.94 ha), along roads and in township outside the lease by planting native species found in the original ecosystem during pre-mining phase in consultation with the local DFO/ Agriculture Department. The density of the trees shall be around 2500 plants per ha.
- (xv) A Mine Closure Plan shall be implemented by reclamation of the quarry area of an extent of 29.77 ha which shall be backfilled and the balance 42.72 ha of decoled void being converted into a water body, the upper benches of which shall be gently sloped and afforested by planting native plant species in consultation with the local DFO/ Agriculture Department. The density of the trees shall be around 2500 plants per ha.
- (xvi) No groundwater (bore well) shall be used for mining operations. Rainwater harvesting structures shall be erected within and around the ML including check dams for recharge of ground water and for additional use if any during mining operations along with mine sump water.
- (xvii) Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new piezometers. The monitoring for quantity shall 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 shall be submitted to the Ministry of Environment & Forests and to the Central Pollution Control Board quarterly within one month of monitoring.
- (xviii) The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.
- (xix) Sewage treatment plant of adequate capacity shall be installed in the colony. ETP shall also be provided for workshop and CHP wastewater. Treated wastewater meeting prescribed norms only shall be permitted to be discharged in to the natural water courses.
- (xx) 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, Ahmadabad within a period of one year and the results reported to this Ministry and to DGMS.
- (xx) A detailed project specific R&R Plan shall be prepared for village Sugia comprising about 250 PAFs and land losers and implemented in consultation with the stakeholders. R&R shall not be inferior to that in the National R&R Policy and shall be completed within the agreed time-frame of 3 years (2012-13). R&R shall include specific income generation schemes. A Corpus Fund shall be created for maintenance of the R&R colony. Annuities shall be provided for the vulnerable sections of the displaced population. Alternate livelihood schemes shall be implemented for the persons not being absorbed for employment.
- (xxi) A detailed CSR Plan shall also be prepared for and in consultation with the local communities. CSR should be for a minimal Rs.3.0 Crore/year or 2.5% of the retain profit shall be



implemented which is to be adjusted for depreciation in the value of the rupee over the life of the project. The activities undertaken for the specific villages adopted under CSR shall be displayed on the company website and updated at least once a year.

- (xxii) For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on a scale of 1: 5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MOEF and its Regional office at Bhubaneswar.
- (xxiii) A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.

**B. General Conditions**

- (i) No change in technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.
- (ii) No change in the calendar plan including quantum of mineral coal and waste being produced shall be made.
- (iii) Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring PM10, PM2.5, SO2 and NOx. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, in particulates shall be carried out at least once in six months.
- (iv) Data on ambient air quality (PM10, PM 2.5, SO2 and NOx and heavy metals such as Hg, As, Ni, Cr, etc) and other monitoring data shall be regularly submitted to the Ministry including its Regional Office at Bhubaneshwar and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of samples through analysis from independent laboratories recognised under the EP Rules, 1986 shall be furnished as part of the compliance report.
- (v) Adequate measures shall 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 shall be provided with ear plugs/muffs.
- (vi) Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, and treated so as to conform to the standards including for heavy metals before discharge prescribed under GSR 422 (E) dated 19<sup>th</sup> May 1993 and 31<sup>st</sup> December 1993 or as amended from time to time. Oil and grease trap shall be installed before discharge of workshop effluents.
- (vii) Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transportation of the mineral shall be covered with tarpaulins and optimally loaded.
- (viii) Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got analysed through a laboratory recognised under EP Rules, 1986.
- (ix) Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.



Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed.


- (x) A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.
- (xi) The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its Regional Office at Bhubaneshwar.
- (xii) The Project authorities shall 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>
- (xiii) A copy of the environmental clearance letter shall be marked to concerned Panchayat/Zila Parishad, Municipal Corporation or Urban Local Body and local NGO, if any, from whom any suggestion/representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on the company's website.
- (xiv) A copy of the clearance letter shall be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Centre and Collector's Office/Tehsildar's Office for 30 days.
- (xv) The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated EC conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in the public domain. The monitoring data of environmental quality parameters (air, water, noise and soil) and critical pollutants such as PM10, PM2.5, SO<sub>2</sub> and NO<sub>x</sub> (ambient) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mines office and in corporate office and on the company's website.
- (xvi) The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the MOEF, the respective Zonal offices of CPCB and the SPCB.
- (xvii) The Regional Office of this Ministry located at Bhubaneshwar shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.
- (xviii) The environmental statement for each financial year ending 31<sup>st</sup> March in Form-V is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MOEF by E-mail.

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. The proponent shall ensure to undertake and provide for the costs incurred for taking up remedial measures in case of soil contamination, contamination of groundwater and surface water, and occupational and other diseases due to the mining operations.



(Dr.T.Chandini)  
Director

**Copy to:**

1. DG (F), MOEF, New Delhi w.r.t Specific Condition No. (i).
2. Secretary, Ministry of Coal, Shastri Bhawan, New Delhi.
3. Secretary, Department of Environment & Forests, Government of Jharkand, Secretariat, Ranchi.
4. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, A-31, Chandrashekarpur, Bhubaneswar – 751023.
5. Chairman, Jharkand State Pollution Control Board, T.A. Division Building (Ground Floor), H.E.C., Dhurwa, Ranchi – 834004.
6. Chairman, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi -110032.
7. Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
9. District Collector, Ramgarh, Government of Jharkhand.
10. Dr.R.K. Garg, Advisor, M/s Coal India Ltd., New Delhi.
11. Monitoring File                      12. Guard File                      13. Record File.