

No. J-11015/59/2011-IA-II.(M)  
Government of India  
Ministry of Environment, Forests & Climate Change  
IA-II (Coal Mining Division)

Indira Paryavaran Bhawan,  
Jorbagh Road,  
New Delhi-110003

Dated: 16<sup>th</sup> January, 2015

To,

The General Manager (Colliery)  
M/s Steel authority of India Limited  
P.O.: Ramnagore (Barakar)  
P.S.: Barakar, Via : Asansol  
Dist: Barddhaman  
West Bengal.

**Sub.: Begunia Underground Coalmine Project (0.33 MTPA in a total project area of 236 Ha that includes approved ML area of 136 Ha. latitude 23°42'46" to 23°44'00" N and Longitude 86°48'48" to 86°50'20" E) of M/s SAIL, located at Dist. Bardwan, West Bengal - Environmental Clearance - reg.**

Sir:

This is with reference to letter no. GM/Begunia/RN/46 dated 17.02.2011 with the application for Terms of Reference (TOR) and this Ministry's letter dated 19.05.2011 granting TOR. Reference is also invited to the letter no GM(R/148/2013-14/45 dated 07.10.2013 and subsequent letter nos. dated 25.06.2014; 08.08.2014; 18.08.2014 and 17.09.2014 for environmental clearance on the above-mentioned subject.

2. The Ministry of Environment, Forests & Climate Change has considered the application. It is noted that the proposal is for grant of Environmental Clearance for **Begunia Underground Coalmine Project (0.33 MTPA in a total project area of 236 Ha that includes approved ML area of 136 Ha. latitude 23°42'46" to 23°44'00" N and Longitude 86°48'48" to 86°50'20" E) of M/s SAIL, located at Dist. Bardwan, West Bengal.** The proposal was considered in the 9<sup>th</sup> EAC meeting held on 20<sup>th</sup> -21<sup>st</sup> January, 2014; 19<sup>th</sup> EAC meeting held on 13<sup>th</sup> -14<sup>th</sup> August, 2014 and 21<sup>st</sup> EAC meeting held on 18<sup>th</sup> - 19<sup>th</sup> September, 2014. The proponent has informed that:

- i. The project was accorded TOR vide letter no. J-11015/59/2011-IA.II (M) dated 19.05.2011.
- ii. **The project area of 236 Ha includes the ML area of 136 Ha..**
- iii. The latitude and longitude of the project are 23°42'46" to 23°44'00" N and 86°48'48" to 86°50'20" E respectively.
- iv. There is no change in land use in Lease area.
- v. The total geological reserve is 4,9526 MT. The mineable reserve 4,2400 MT, extractable reserve is 2,5439 MT. The per cent of extraction would be 36.59 %.
- vi. The coal grade: Medium coking coal (Steel Grade, S-I & S-II to washery grade -II). The stripping ratio is not applicable. The average Gradient is 1 in 6 (smaller part) to 1 in 8/9 (major part). There will be seven coal seams. Out of seven coal seams, only one seam (Begunia seam) has been found

Beguina\_UGP\_EC

- workable with thickness ranging between 2.60 to 3.20m
- vii. The total estimated **water requirement** is 3700 m<sup>3</sup>/day. The Ground water level ranges from 4.28 to 8.55 m.
  - viii. The **Method of mining** would be by Bord & Pillar Method with SDL/LHD.
  - ix. There are no OB Dumps as (Coal extraction will be done by Underground Mining Method).
  - x. The seasonal data for ambient air quality has been documented and all results at all stations are within prescribed limits.
  - xi. The **life of mine** is 14 Years.
  - xii. **Transportation:** Coal transportation in pit from underground to surface through conveyors, Surface to Siding Through covered trucks and loading at siding through covered trucks to the ISP by trucks by road.
  - xiii. There is no R & R involved. There are no PAFs.
  - xiv. **Cost:** Total capital cost of the project is Rs. 99.46 Crores. Cost of production Rs. 1255/Tone. CSR Cost will be as per the company guideline (~2% of the profit). No R&R Cost. Environmental Management Cost Rs. 54.74 Lakh/Year (Rs. 2.53/Tonne).
  - xv. **Approvals:** Ground water approval not applicable. Board's approval obtained on 12.12.2013. Mining plan/Mining closure plan approved by the Ministry of Coal vide letter No. 13016/23/2011-CA-I/CA-II, Dated 25.03.2014.
  - xvi. **Wildlife issues:** There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.
  - xvii. **Forestry issues:** No forest land is involved for mining.
  - xviii. **Total afforestation** plan shall be implemented covering an area at the end of mining over an area of 3.5 ha. Density of tree plantation shall be 7500 trees/ ha of plants.
  - xix. There is no court case/violation pending with the project proponent.
  - xx. **Public Hearing** was held on 26.02.2013 at Welfare Center, L.C. Road, Kulti, Burdwan, West Bengal. The issues raised in the PH include the Effects of pollution from the proposed project on the local residents and over all benefit of the project, compensation package, employment, arrangement of water supply construction of flyover and treatment of mine water etc. The proponent has made commitments to the issues raised during the PH.
  - xxi. The mining of quantity of coal has been reduced due to safety reason.
  - xxii. The main incline mouth complex will be situated within the surface boundary of SAIL Growth Works, Kulti.
  - xxiii. No land is to be acquired for development of the main incline complex and related surface infrastructures
  - xxiv. Sand stowing plant will be located on the company acquired land.
  - xxv. Land will have to be acquired only for development of connecting roads of sand stowing plant and other related infrastructures.
  - xxvi. Block is mostly covered with alluvium except at few places where Barren Measures are exposed.
  - xxvii. Strike of the formation in block is NNW-SSE in the N & NW part of the block. In rest of the block the strike is more or less E - W.
  - xxviii. General dip of the strata is towards south and is about 10° in the N & NW part and 5° in the rest of the block.
  - xxix. Barakar and Damodar Rivers forms main drainage of the area.
  - xxx. A total of 7 coal horizons have been established in Mahatadih-Raidih Block, Out of this, only Begunia seam has been found workable. Begunia seam is a good quality medium coking coal



- xxxi. Considering the geo-mining conditions & seam gradient, the block is feasible for exploitation by underground (UG) method.
- xxxii. Semi-mechanized Bord & Pillar method with SDL/LHD in conjunction with hydraulic sand stowing has been found to be the most suitable method.
- xxxiii. Incline No. 2 will be fitted with conveyors for coal transport.
- xxxiv. Blasted coal from the face will be carried and loaded onto the pony belts by LHDs/SDLs in each of the three districts. Pony belts will deliver coal to a gate belt conveyor installed out-by of the district, which, in turn, will load coal to trunk conveyors for transportation to the surface.
- xxxv. Coal from hopper shall be loaded into mechanically covered trucks and sent to the steel plants by road. Trucks of a minimum 25-T capacity will be used to minimize number of trips per day for coal transport.
- xxxvi. Limiting the speed of vehicles to reduce dust generation and noise level. Regular sprinkling of water at all strategic dust generating points. Enclosing belt conveyors to prevent coal dust generation and emission. Regular wash of the wheels of the dumper and other transporting vehicles.
- xxxvii. Development of green belt and plantation of trees along the road side and open spaces to arrest airborne dust movement.
- xxxviii. Avoidance of overloading and regular maintenance of roads.
- xxxix. Details of the land use are as follows:

Description	Area (Ha)
Forest Land	Nil
Govt. waste land	6.31
Residential Area	35.43
Pond/Tank	10.55
Company Land	24.65
Private Land (including Agr.)	159.05
<b>Total</b>	<b>235.99 (say 236.00)</b>

- xi. The Begunia block comprising core and buffer zone, no endangered flora and fauna species available. The area does not fall under any ecologically sensitive area and hence no conservation plan prepared. However, mixed flora consists of the following species: - Amaltas, Mahua, Gamhar, Bid, Semal, Bel, Dhatura, Salai, Kusum, Sisam, Palash, Pipal, Bar, Ber and Sirish etc are found in the area. The area is not very rich in floral and higher fauna.
- xli. The fragmented and poor vegetative cover, industrial activities and human settlement and agricultural activities restricts forest and natural vegetation, hence, faunal habitat are in patches around the periphery of Maithon reservoir.
- xlii. Varieties of birds are observed, including aquatic species, especially in the winter season. Amongst birds the bulbul, the white-breasted kingfisher, magpie robin, spotted dove, mayna, pigeon, parakeet etc. are prominent.
- xliii. Prominent mammalian wild species include Bengal fox, civet cat, black napped hare; squirrel, jackals and porcupines.
- xliv. Amongst reptiles, several poisonous like cobra, viper, krait and non-poisonous snakes (like boa, rat snakes, green whip, Bronze backed tree snake etc.). The garden lizard and monitor lizard are also seen.
- xlv. Variety of butterflies (like common grass yellow/common jezebel) and insects (such as beetles, spiders, red ants, and flies) are spotted in abundance in the study zone.

- xlvi. No rivers/nullas are shown on the surface contour map above the mining area and Barakar River flows at quite distance. There is no existence of any worked out seam above or below Begunia seam as the block is a virgin one. However, all the statutory precautions against inundation need to be followed.
- xlvii. Measures proposed to prevent possible inundation of the underground mine workings include
- xlviii. All entries to the mine shall not be less than 1.5m above the HFL; adequate pumping arrangement will be provided; self-drainage of water from the panels to the main sump; all other precautions against danger of inundation due to surface and underground water, as required under the provisions of CMR, 1957, will be taken.
- xliv. As depillaring with stowing is proposed for extraction of panels, the possibility of formation of surface cracks is minimal. Even then, if such cracks occur, they should be sealed to prevent air/water intrusion into depillared zone. All other statutory provisions under the CMR, 1957 with regard to precautions against subsidence must be complied with. Care will be taken to divert the surface run off water by making garland drains which will be progressively provided over individual or set of panels commensurate with the panel extraction operations. Subsidence will be periodically monitored and record maintained as per the DGMS stipulation.
- 1. Sufficient fund allocation has been made towards environmental management and monitoring by way of direct capital. A recurring cost of Rs. 54.74 lakhs per annum will also be spent on environmental management.

3. The proponent has further submitted that:

- i. The coal is proposed to be transported from mine site to steel plants by rail. A railway siding and coal loading wharf are under process of development inside the SAIL Growth Works at Kulti, near the mouth of the incline. The job has been entrusted to M/s RITES Ltd. and likely to be completed by March 2015.
- ii. The Hydro –geological study for the project area has been carried out by M/s CIMFR, Dhanbad. Based on the sub-surface geological information and exploratory boreholes data of existing mining area the disposition of aquifers has been worked out as follows:.

Formation	Thickness Range (m)		Hydro-geological Unit
	Minimum	Maximum	
Soil/sub soil/alluvium	2.75	35.5	Unconfined aquifer
Thick bed of shale with layers of intercalation of sandstone, shale and thin layers of local coal seams (above Begunia)	0.10	1.14	Aquiclude
Medium to coarse grained sandstone with intercalation of shale & sandstone	66.55	74.60	Semi-confined aquifer
Begunia coal seam (B-VII)	2.60	3.20	Aquiclude
Medium to coarse grained sandstone with intercalation of shale & sandstone	62.80	72.75	Semi-confined aquifer
Begunia Special Coal Seam (B-VI Bottom)	0.30	2.05	Aquiclude
Coarse to medium grained sandstone with intercalation of shale	133.75	175.30	Semi-confined aquifer



& sandstone			
Ramnagar coal seam (B-VI Top)	3.10	5.35	Aquiclude
Medium grained sandstone with intercalation of shale & sandstone	23.82	40.50	Semi-confined aquifer
Laikdih Seam (Bottom & B-VI Bottom)	20.95	23.45	Aquiclude
Medium grained sandstone with intercalation of shale & sandstone	44.53		Semi-confined aquifer
Gopinathpur Group Seam (Intersected only in one BH and occurs in several splits)	18.56		Aquiclude
Medium grained sandstone with intercalation of shale & sandstone	58.87		Semi-confined aquifer

- iii. Bord and Pillar method with hydraulic sand stowing is proposed to extract coal from Mahatadih-Raidih Block. Maximum of three depillaring panels will be in operation at any point of time. Requirement of sand and water for hydraulic sand stowing is estimated to be around 880 m<sup>3</sup>/day and 2640 m<sup>3</sup>/day respectively for a production level of 1100 tpd from stowing panels. One stowing plant with two mixing troughs is proposed to be constructed at the surface. Sand from the nearby collecting points will be transported to the sand bunkers by tipping trucks. Sand-water slurry, from the mixing chambers of the stowing plant, will be transported to the places of stowing by pipelines through stowing boreholes and mine galleries. Stowing water will be collected in the sumps of the seam, from where it will be pumped out of the mine for reuse.
- iv. The subsidence study has been carried out by M/s CMPDIL Ranchi and the report are as follows:
- Due to extraction of panels of Begunia seam, the anticipated maximum possible subsidence likely to occur is 0.01m over the panels R1, R2 & R3. The estimated maximum possible slope and strain likely to occur are 0.047mm / m and 0.024mm/m over the panel R1. Over rest of the panels subsidence is not likely to occur over surface due to greater depths.
  - The anticipated maximum subsidence of 0.01m and strain of 0.024mm/m is not likely to affect any of the surface features provided stowing is done to full compaction.
  - While carrying out extraction in some initial panels, close subsidence monitoring is required to be done. On the basis of observed data, necessary correction in subsidence estimation may done if required.
- v. A detailed information on heat, humidity, degree of gaseousness has been carried out by M/s CMPDIL Ranchi and the report is as follows:
- The seam is virgin. During exploration stage no gas emission assessment has been noticed in Begunia seam. The Begunia seam in neighboring Victoria UG mine of BCCL, has been categorized as degree-III gassiness. Hence there is probability that this Begunia seam will be categorized as degree III gassiness. However, it is proposed to determine the desorbable gas content and degree of gassiness of Begunia seam once the seam is accessible. Hence, based on the status of neighboring mine, the Begunia seam has been considered as degree III gassy seam (highest) for the purpose of ventilation planning. All the safety measures need to taken as per degree III gassy mine.
  - All safety measures need to be taken as per CMR 1957 & related Technical Circulars
  - The ventilation system design has been made to remove heat produced from various sources & to create safe & comfortable working environment. Cooling power of air can

be generated by providing adequate air quantity with adequate velocity & by installing air-conditioning plant or spot coolers at district. In the nearby locality, in CIL underground mines which are at around more or less same depth & having SDL/LHD machines for loading coal, the temperature is not crossing the statutory limit. Cooling power is generated by circulating air only & nowhere air-conditioning plant or spot coolers are being used. Hence, provision of air conditioning plant is not considered for Begunia Project.

- vi. The management committed to spend at least Rs. 50 Lakhs per year towards CSR activities.
- vii. The Mining Plan and Mine Closure Plan for Begunia U/G Project has been approved by the Ministry of Coal vide letter No. 13016/23/2011-CA-I/CA-II, Dated 25.03.2014.
- viii. The proponent has submitted the action plan alongwith the budgetary provisions for the commitment during the public hearing.

4. The proposal was reconsidered in the Expert Appraisal Committee (EAC) (Thermal & Coal Mining) and recommended in its 19<sup>th</sup> EAC meeting held on 13<sup>th</sup> -14<sup>th</sup> August, 2014 for granting Environmental Clearance. The Ministry of Environment, Forests & Climate Change hereby accords environmental clearance for the above-mentioned **Begunia Underground Coalmine Project (0.33 MTPA in a total project area of 236 Ha that includes approved ML area of 136 Ha. latitude 23°42'46" to 23°44'00" N and Longitude 86°48'48" to 86°50'20" E) of M/s SAIL, located at Dist. Bardwan, West Bengal** under the provisions of the Environmental Impact Assessment Notification, 2006 and amendments thereto and Circulars issued thereon and subject to the compliance of the following specific conditions, in addition to the general conditions:

**A. Specific Conditions:**

- i. The maximum production from the mine at any given time shall not exceed the limit as prescribed in the EC.
- ii. No mining operations shall be undertaken in the forestland until clearance has been obtained under the provisions of FC Act, 1980.
- iii. The validity of the EC is for the life of the Mine or as specified in the EIA Notification, 2006, whichever is earlier.
- iv. Environmental Clearance to the proposal is subject to obtaining clearance under the Wildlife (Protection) Act, 1972 from the Standing Committee of National Board for Wildlife, as applicable.
- v. All safety measures need to be taken as per CMR 1957 & related Technical Circulars.
- vi. The approved mine plan shall be followed in synchronization with the EC conditions.
- vii. There shall be no diversion/disturbance to the aquifer and any nalla/rivers in the vicinity of the mines.
- viii. Adequate numbers of piezometers shall be installed around the mines and the ground water tables shall be monitored regularly.
- ix. Close monitoring of subsidence and gasses emission shall be done. Safety and monitoring actions as recommended by CMPDIL shall be implemented.
- x. Proponent should provide adequate air conditioning so as to prevent heat and humidity to the underground mining.
- xi. Local people be recruited /trained and be given preference for appropriate jobs
- xii. All electrical equipment should be flame proof.
- xiii. Measures proposed to prevent possible inundation of the underground mine workings include



- xiv. All entries to the mine shall not be less than 1.5m above the HFL; adequate pumping arrangement will be provided; self drainage of water from the panels to the main sump; all other precautions against danger of inundation due to surface and underground water, as required under the provisions of CMR, 1957, will be taken
- xv. Coal transportation in pit from underground to surface through conveyors, Surface to Siding Through covered trucks and loading at siding through covered trucks to the ISP by trucks by road.
- xvi. The production shall be within the same Mining Lease area.
- xvii. A separate team for subsidence monitoring and surface mitigation measures be constituted and continuous monitoring and mitigation measures be carried out.
- xviii. Regular monitoring of subsidence movement on the surface over and around the working area and impact on natural drainage pattern, water bodies, vegetation, structure, roads, and surroundings shall be continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate effective corrective measures shall be taken to avoid loss of life and material. Cracks shall be effectively plugged with ballast and clay soil/suitable material.
- xix. If subsidence is found exceeding the permitted limits, then the landowners shall be adequately compensated with mutual agreement of the landowners.
- xx. Mining shall be carried out as per statuette at a safe distance from river/nalla following within adjacent to the lease boundary at the time of depillaring, protective bunds and garland drains shall be provided so that no water from the surface enters the subsidence area and the shaft.
- xxi. Sufficient coal pillars shall be left unextracted around the air shaft (within the subsidence influence area) to protect from any damage from subsidence, if any.
- xxii. Solid barriers shall be left below the roads falling within the blocks to avoid any damage to the roads.
- xxiii. Diversion of Land shall be done with approval of the Competent Authorities.
- xxiv. Coal Extraction shall be optimised in areas where agricultural production is continuing. Some pillars shall be left below the agricultural land. No depillaring & coal extraction should be carried out below habitation, H.T. Lines & beneath road, water bodies, railway track.
- xxv. The mined out land should be used for agriculture purpose.
- xxvi. Safety measures and health issues need to be addressed for workers and surrounding villagers.
- xxvii. Proponent shall implement all the related safety measures with safety equipments.
- xxviii. The CSR cost should be Rs 5 per Tonnes of Coal produced which should be adjusted as per the annual inflation.
- xxix. At the time of establishing the CHP, it is proposed to establish mist spray arrangements and also enclosing the ground level bunkers up to the level of gantry.
- xxx. An afforestation plan to be prepared for implementation after stabilization of subsidence.
- xxxi. Water spraying arrangements at loading points and mist spray arrangements are to be provided.
- xxxii. Mine closures activities include sealing of incline mouth dismantling of haulage system, clearing and afforestation of coal stock area, plantation on barren land and old abandoned mine.
- xxxiii. 3-tier plantation should be developed 2 km stretch of road from the mine using native species
- xxxiv. Garland drains (size, gradient and length) around the safety areas such as mine shaft and low lying areas 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 sites. Sump capacity shall also provide adequate retention period to allow proper settling of silt material.
- xxxv. Water sprinkling system shall be provided to check fugitive emissions from loading operations, conveyor system, haulage roads, transfer points, etc. Major approach roads shall be black topped and properly maintained.
- xxxvi. A progressive afforestation plan shall be prepared and implemented over the mine lease area acquired and shall include areas under green belt development, areas along roads, infrastructure, along ML boundary and township etc., by planting native species in consultation with the local DFO/Agriculture Department.



- xxxvii. Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new peizometers. 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 & Climate Change and to the Central Pollution Control Board quarterly within one month of monitoring.
- xxxviii. Acid Water Treatment Plant, volume of water to be treated and disposal of brine should be provided.
- xxxix. High root density tree species shall be selected and planted over areas likely to be affected by subsidence.
- xl. Monitoring of drinking water should be carried out regularly.
- xli. Sewage treatment plant shall be installed in the township. ETP shall also be provided for treating workshop and CHP effluents.
- xl.ii. 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 Bangalore.
- xl.iii. If the water quality parameters such as F, pH, heavy metals, etc. exceed the prescribed limits, suitable measures by the proponent be taken to ensure that the local communities are provided alternate source of water for their livelihood
- xl.ii. Medical camps should be organized in the area for regular check-up of workers/ villagers/population. Detailed prevalent disease pattern in the area should be documented and details of medical facilities provided for the same be made available to the MoEF
- xl.ii. Mine discharge water outside the ML shall be monitored, particularly for TDS and treated to conform to prescribed levels before discharge into the natural environment.
- xl.ii. The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource, in case water table shows a declining trend. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.
- xl.ii. 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.
- xl.ii. The mining in the existing mines should be phased out after expiry of the current mining lease and after reclamation of mined over area. The operating mines may be analysed and monitored for compliance of conditions, bearing with movement of wildlife and until such time they are closed/phased out.
- xl.ii. Project specific CSR for an amount of Rs5/Tonne of coal production, as adjusted as per the annual inflation, should be provided for the CSR activities undertaken and the progress made thereon shall be uploaded annually on the company website. Monitoring of the impacts of activities under CSR shall be carried out periodically.
- l. A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment, Forests & Climate Change 5 years in advance of final mine closure for approval.
- li. Corporate Environment Responsibility:
- a) The Company shall have a well laid down Environment Policy approved by the Board of Directors.
- b) The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
- c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished.





- d) To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.

## **B. General Conditions**

- i. No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment, Forests & Climate Change.
- ii. No change in the calendar plan of production for quantum of mineral coal 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 PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> monitoring. 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, etc carried out at least once in six months.
- iv. Data on ambient air quality (PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub>) and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly submitted to the Ministry including its concerned Regional Office 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 EPA rules, 1986 shall be furnished as part of 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, treated so as to conform to the standards 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 before discharge. 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 transporting 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 EPA 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.
- x. 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 and records maintained thereof. The quality of environment due to outsourcing and the health and safety issues of the outsourced manpower should be addressed by the company while outsourcing.
- xi. 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.
- xii. 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 concerned Regional Office.
- xiii. 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 & Climate Change at <http://envfor.nic.in>.



- xiv. A copy of the environmental clearance letter shall be marked to concern 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 company's website.
- xv. A copy of the environmental clearance letter shall also 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 Sector and Collector's Office/Tehsildar's Office for 30 days.
- xvi. The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated environmental clearance 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 public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM<sub>10</sub>, PM<sub>2.5</sub>, 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 mine office and in corporate office and on company's website.
- xvii. The project proponent shall submit six monthly compliance reports on status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the Ministry, respective Zonal Office s of CPCB and the SPCB.
- xviii. The Regional Office of this Ministry located in the Region 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.
- xix. The Environmental statement for each financial year ending 31 March in For -V is mandated to be submitted by the project proponent for 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 MoEFCC by e-mail.

5. The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report so also during their presentation to the EAC.

6. The commitment made by the Proponent to the issue raised during Public Hearing shall be implemented by the Proponent

7. The proponent is required to obtain all necessary clearances/approvals that may be required before the start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection.

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

9. The Proponent shall setup an Environment Audit cell with responsibility and accountability to ensure implementation of all the EC Conditions.

10. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

11. 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 and any other orders passed by the Hon'ble Supreme Court of India/ High Courts and any other Court of Law relating to the subject matter. 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.

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12. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

  
(Dr. Manoranjan Hota)  
Director

**Copy to:**

1. Secretary, Ministry of Coal, New Delhi.
2. Secretary, Department of Environment & Forests, Government of West Bengal, Secretariat, Kolkatta.
3. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, A-31, Chandrashekarapur, Bhubaneswar – 751023, Orissa.
4. Member Secretary, West Bengal State Pollution Control Board, Paribesh Bhawan, 10A, Block LA, Sector-III, Salt Lake City, Kolkatta – 700098.
5. Member Secretary, 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. Dr. R.K. Garg, Advisor, Coal India Limited, SCOPE Minar, Core-I, 4t Floor, Vikas Marg, Laxmi Nagar, New Delhi.
8. District Collector, Bardwan, Government of West Bengal.
9. IG (Wild life), Ministry of Environment, Forests and Climate Change, New Delhi.
10. Monitoring File    11.    Guard File    12.    Record File.    13. Notice Board

  
(Dr. Manoranjan Hota)  
Director