

BY SPEED POST

J-11015/298/2010-IA.II (M)
Government of India
Ministry of Environment & Forests

Paryavaran Bhawan,
CGO Complex,
Lodhi Road
New Delhi-110003.
Dated: 15th February, 2013

To

The Chief General Manger (Env.),
M/s Bharat Coking Coal Ltd.,
Koyla Bhawan, Koyla Nagar,
DHANBAD - 826005.
JHARKHAND

Subject: Cluster VIII Group of 10 Mines (Combined capacity 4.31 MTPA with a peak production of 5.603 MTPA) in a combined ML area of 1183.92 ha (1200.41 ha – 16.49 ha = 1183.92 ha) of M/s Bharat Coking Coal Ltd., located in Jharia Coalfields, dist. Dhanbad, Jharkhand

Sir,

This has reference to the letter no. 43011/36/2010-CPAM dated 08th September, 2010 of Ministry of Coal along with your application for Terms of Reference (TOR) and this Ministry's grant of TOR on 03rd December, 2010. Reference is also invited to the letters no. BCCL/GM (Env.)/EMP/F-/2012/256 dated 30.03.2012, 04.07.2012, 30.01.2012 on the above-mentioned subject.

2. The Ministry of Environment & Forests has considered the application. It is noted that the proposal is for Cluster VIII Group of 10 Mines (Combined capacity 4.31 MTPA with a peak prodn. of 5.603 MTPA in a combined ML area of 1200.41 ha) of M/s Bharat Coking Coal Ltd., located in Jharia Coalfields, dist. Dhanbad, Jharkhand. The proponent has informed that:

- i. The proposal is for obtaining EC at the time of renewal of lease of 10 mines which are being grouped in a cluster with a combined lease area of 1200.41 ha with a normative production of 4.31 MTPA and a peak production of 5.603 MTPA. Of the 10 mines, 9 are in operation and one mine – Goluckdih OCP is a proposed mine. Cluster-VIII is located in the eastern part of Jharia coalfields in Dhanbad, Jharkhand. The details of the proposal is as under:

Details of the land use of the mines in Cluster VIII are given below:

| LAND USE DETAILS OF CLUSTER VIII | | | | | | |
|----------------------------------|----------------|--------------------------|-------|---------------------|----------------------|-----------|
| S.N | Name of Mine | Production capacity(MTY) | | Leasehold Area (ha) | Life of mine (years) | Status |
| | | NORMATIVE | PEAK | | | |
| 1 | Bastacolla OCP | 0.10 | 0.130 | 239.45 | 3 | Operating |
| | Bastacolla UG | 0.33 | 0.429 | | 18 | Operating |
| 2. | Bera OCP | 0.15 | 0.195 | 209.56 | 3 | Operating |
| | Bera UG | 0.19 | 0.247 | | 13 | |

| | | | | | | |
|----|---|-------------|--------------|----------------|----|-----------|
| 3. | Dobari Coliery(UG) | 0.24 | 0.312 | 146.90 | 20 | Operating |
| 4. | Kuyu OCP | 0.60 | 0.780 | 340.50 | 5 | Operating |
| | Kuyu UG | 0.10 | 0.130 | | 20 | Operating |
| 5. | Goluckdih (NC) OCP (Proposed) Proposed OCP will commence after the closure of existing Kuya OCP) | 1.2 | 1.560 | | 25 | Proposed |
| | Ghanoodih Colliery(OCP) | 1.40 | 1.820 | 73.00 | 5 | Operating |
| 6. | Kujama Colliery(OCP) | 0.60 | 0.780 | 191.00 | 5 | Operating |
| | Total | 4.31 | 5.603 | 1200.41 | | |

The present levels of production from cluster-VIII are given below:

| Name | Coal Production in MT for 2011-2012 | | |
|--------------------------|---|---|--------------------------|
| | Production (in MT) | Coal recovered (MT) during execution of Master Plan | Total Production (in MT) |
| Bastacolla UG & OCP | 0.191 | - | 0.191 |
| Bera UG & OCP | 0.201 | - | 0.201 |
| Dobari Colliery UG | 0.21 | - | 0.21 |
| Kuya UG & OCP | 0.636 | - | 0.636 |
| Ghanoodih Colliery (OCP) | - | 0.599 | 0.599 |
| kujama Colliery (OCP) | - | 0.478 | 0.478 |
| Goluckdih (NC) OCP | Proposed mine (will be operational after closure of Kuya OCP) | | |
| Total | 1.238 | 1.077 | 2.315 |

| Conceptual Post Mining Land Use Pattern for Cluster - VIII | | | | | |
|--|---------------|--------------|------------|---------------|----------------|
| Existing land use | Land use (ha) | | | | |
| | Plantation | Water body | Public use | Undisturbed | Total |
| Agriculture land | - | - | - | 24.71 | 24.71 |
| Excavation Including dump areas | 154.26 | 42.65 | - | - | 196.91 |
| Rail & Road | - | - | - | 38.92 | 38.92 |
| Homestead land & service land | - | - | - | 132.80 | 132.80 |
| Green Belt | 76.6 | - | - | - | 76.6 |
| Barren land | 420.22 | 34.70 | - | - | 454.92 |
| Forest land | 130 | 120.57 | - | - | 250.57 |
| Water Body | - | 15.04 | - | - | 15.04 |
| Others | - | - | - | 9.94 | 9.94 |
| Total | 781.08 | 92.39 | - | 326.94 | 1200.41 |

The details of present, proposed and post-mining land use of the cluster-VIII are as follows:

| LAND USE DETAILS OF CLUSTER VIII | | | | |
|----------------------------------|--------------------------------------|-----------------------------|-------------------------------|----------------------------|
| S.N | Type Land Use | Present Mining Landuse (ha) | Proposed Mining Land use (ha) | Post- Mining Land Use (ha) |
| 1. | Running quarry | | | |
| | Backfilled | 5.1 | 273.67 | 0 |
| | Not Backfilled | 69.35 | 105 | 0 |
| 2. | Abandoned quarry | | | |
| | Backfilled | 25.14 | 25.14 | 0 |
| | Not Backfilled | 42.65 | 42.65 | 0 |
| 3. | External OB dump | 48.55 | 48.55 | 0 |
| 4. | Service building/mine infrastructure | 7.9 | 7.9 | 0 |
| 5. | Coal dump | 7.75 | 9.8 | 0 |
| 6. | Homestead land | 118.9 | 118.9 | 118.9 |
| 7. | Agricultural land | 24.71 | 24.71 | 24.71 |
| 8. | Forestland | 250.57 | 67.11 | 250.57 |
| 9. | Plantation/reclamation | 76.6 | 149.5 | 665.05 |
| 10. | Water body | 15.04 | 15.04 | 92.39 |
| 11. | Barren land | 460.96 | 265.25 | 0 |
| 12. | Road & railways, | 38.92 | 38.92 | 38.92 |
| 13. | Mine pit/fan house/haulage | 6.3 | 6.3 | 0 |
| 14. | others | 1.97 | 1.97 | 1.97 |
| | Total | 1200.41 | 1200.41 | 1200.41 |

Major Technical Parameter of Cluster VIII mines

| Major Technical Parameter of Cluster VIII mines | | | | | | | |
|---|---|--|--|---|--|---|-------|
| Particular | Name of Mines | | | | | | Total |
| | Bastacolla OCP (mixed) | Bera OCP (mixed) | Dobari Coliery(UG) | Kuya Colliery (mixed) | Ghanoodih Colliery(OCP) | Kujama Colliery(OCP) | |
| Method of mining | Shovel-dumper combination& Bord & pillar | Shovel-dumper combination& Bord & pillar | Bord & pillar | Shovel-dumper combination & Bord & pillar | Shovel-dumper combination& Bord & pillar | Shovel-dumper combination | |
| Grade of coal | OCP-D UG-C, D,W-I | OCP-C UG-D,W-I | C,D,W-I, W-II | OCP-C,E UG-C, W- INC (OCP)-E,F, | W-III | W-III, W-IV, W-I, C, D, E | |
| Seam to be worked out | OCP-III Bottom UG-III Top, iii Bottom, II Bottom, I-Top | OCP- III Bottom, II UG-II Bottom-I | IIITop, III Bottom,, IIBottom, I | OCP -IV Top, IV BOTTOM, III TOP, III BOTTOM, I TOP | V,VI,VII,VIII,S pecial,IX,X | XI, XII, X, IXVIII, VII, VI, V, IV, III, II, I | |
| Linkage | Power Plant | Steel/power | Steel/pow | NA | Power | Bhojudih coal | |

| | | | | | | | |
|--------------------------------------|----------------------|-----------------------|-----------|--|-----------------|---------|-------|
| | | plant | er plant | | plant/Road sale | washery | |
| Mineable Reserve MT | OCP-1.4 UG-5.48 | OCP-0.515 UG-5.46 | UG-13.002 | OCP-3.0 UG-2.45 NC (OCP)-26.92 | 10.70 | 3.389 | |
| Production in (1993-94) in MT | 0.24 | 0.1246 | 0.1298 | 0.8772 | 0.8995 | 0.0341 | 23052 |
| Proposed peak Production | OCP-0.13 UG-0.429 | OCP-0.195 UG-0.247 | UG-0.312 | OCP-0.780 UG-0.130 NC (OCP)-1560 | 1.820 | 0.780 | 5.803 |

Details of Rehabilitation and Mitigation Measures and integration with the Jharia Action Plan will be as follows:

| Rehabilitation and Mitigation Measures | |
|---|--|
| Parameter | Details |
| Unstable Sites | 22 - Fire affected: 02 - Subsidence :16 - Fire & Subsidence: 04 |
| - Area affected due to fire | 0.18 Km ² |
| - Area affected due to subsidence. | 0.41 km ² |
| - Area affected due to fire and subsidence | 0.28 km ² |
| No. of Houses to be rehabilitated. | 4959 as per JAP |
| Cost of Rehabilitation | Rs 15064.58 Lakhs |
| Cost of fire fighting | Rs 260.51 cores |

| Conceptual Post Mining Land use Pattern for Cluster-VIII | | | | | |
|---|-------------------|-------------------|-------------------|--------------------|----------------|
| Existing land use | Land use | | | | |
| | Plantation | Water body | Public use | undisturbed | Total |
| Agriculture land | - | - | - | 24.71 | 24.71 |
| Excavation including dump areas | 154.26 | 42.65 | - | - | 196.91 |
| Rail & Road | - | - | - | 38.92 | 38.92 |
| Homestead land & service land | - | - | - | 132.80 | 132.80 |
| Green Belt | 76.6 | - | - | - | 76.6 |
| Barren land | 420.22 | 34.70 | - | - | 454.92 |
| Forest land | 130 | 120.57 | - | - | 250.57 |
| Water Body | - | 15.04 | - | - | 15.04 |
| Others | - | - | - | 9.94 | 9.94 |
| Total | 781.08 | 92.39 | - | 326.94 | 1200.41 |

Major issues of Cluster-VIII are as follows:

| Major Issues of Cluster-VIII | | |
|-------------------------------------|---|---|
| S.N. | Major Issues | Mitigation measures and Benefit |
| 1. | Total Voids (128.57 ha) | 51.22ha Backfilling and 77.35 ha water body. |
| 2. | Dumps (48.55 ha) | Use for backfilling |
| 3. | Fire /Unstable area with 87.27 ha in 22 sites | Dig out fire and stabilise at the cost of Rs 26051 lakhs. |
| 4. | Loss of coal (10% locked in barriers) | Recover 7.23 MT from barriers |
| 5. | Reclamation /Mine closure | Plantation in 704.48 ha for Rs 7202.46 lakhs |
| 6. | Rehabilitation (4959 families) | Shifting to safe areas at the cost of Rs 29948 Lakhs |
| 7. | CSR for a total costs of Rs. 215.5 Lakh per year @ Rs 5/T of coal | Rs. 215.5 Lakh per year @ Rs 5/T of coal |
| 8. | Forest land (250.57 ha) | Forest clearance would be obtained. |
| 9. | Mine Closure cost | Rs 5139,59 lakhs |

- ii. The cluster is mainly drained by some 1st and 2nd order seasonal nalas, which finally drain into Kashi Jore (3rd order stream) and Tisra Jore. Both these nalas flow from north to south and meet the Chatkari Jore which outfalls into River Damodar at the distance of about 8 km in the southern side. No nala diversion is required for cluster. The water table level is in the range of 1.35 to 11.03m bgl (pre-monsoon) and in the range of 0.65 to 8.93 m bgl during post-monsoon. The estimated water requirement is 5556 m³/day, of which 1992 m³/day is for mining operations and 3564 m³/day is for drinking and domestic use in the township.
- iii. The maximum subsidence over the mining area is due to extraction of upper most 3 top seams and is about 2.297m.
- iv. The mode of transportation is by road upto C. K. Railway siding. It was informed that an estimated 2.431 MTPA of coal would be transported from Cluster-VIII in Phase-II, by conveyor to railway siding.
- v. The fire control and rehabilitation of affected families from fire and subsidence area in the cluster would be carried out in a phased manner. The fire would be dealt with by cooling, quenching and removal, excavation of fire material and filling with cohesive, soil and surface sealing and blanketing.
- vi. The Public Hearing was held on 31.01.2012.
- vii. The Stage-II Forestry Clearance has been granted vide letter no. 8-44/2009 FC dated 12.04.2012 for 234.08 ha of forestland in Ghanoodih Bera and Dohari Colliery. It is proposed to further enhance capacity of the Cluster-VIII mines by amalgamating all the individual mines thereby reflecting the highest achievable production capacity from this cluster. It was informed that a fresh application for environmental clearance would be submitted after obtaining EC, based on peak capacity with sufficient cushion for enhancing production of offsetting shortfall from other mines opening.
- viii. Cluster- VIII falls in Dhanbad critically polluted area.

3. The entire Jharia Action Plan, which consists of all fire dousing projects /plans had been surveyed by DGMS, which has been designated as the monitoring and scrutinizing agency by Hon'ble Supreme Court of India under the WP (PIL) 387/1997 i.e. Haradhan Roy Vs UOI.

4. This is a violation case. As per the Office Memorandum dated 12.12.2012, issued by the Ministry of Environment and Forests, with regard to the consideration of proposals for ToR/Environment clearance/CRZ clearance involving violation of the Environment (Protection) Act, 1986/EIA notification, 2006/CRZ notification, 2011, the Environmental Clearance will be granted after the written commitment in the form of a formal resolution by the Board of Directors submitted to the MoEF to ensure that violations will not be repeated and the State Government concerned initiates credible action on the violation by invoking powers under Section 19 of the Environment (Protection) Act, 1986 for taking legal action under section 15 of the Act for the period for which the violation has taken place and evidence provided to the MoEF of the action taken. In this case, the Board's resolution has been received. As regards credible action, Jharkhand State Pollution Control Board, has issued directions of closure of collieries of M/S Bharat Coking Coal Limited under section 31A & 33A of Air (Prevention and Control of Pollution) Act, 1981 & Water (Prevention and Control of Pollution) Act, 1974 respectively for operating without obtaining Environmental Clearance. M/s BCCL has filed a Writ Petition (No. 4944/11) challenging the Board's directions of closure. The Jharkhand High Court has passed interim order on 25.08.2011 that "Till then, status quo, as on today, shall be maintained by the parties" and passed order on 18.01.2012 that "Until further orders, the interim order dated 25.08.2011 shall continue". In the light of interim orders of the Jharkhand High Court, the State Pollution Control Board is seeking legal opinion for initiating legal action against the collieries of BCCL in the Court of Law in terms of the OM of the MoEF. The State Government has been asked to expedite taking legal opinion and taking action under intimation to the MoEF.

5. Reference is invited to the letter no. BCCL/HoD(Env.)/F-EMP/13 dated 31.1.2013, stating that the proponent has confirmed that out of 250.57 ha of forest land in cluster 8, BCCL requires only 234.08 ha for diversion of forest land to mining purpose. The balance 16.49 ha of forest land falls in Kuya mines is not required for diversion for mining purpose. In this regard, you are required to follow the guidelines issued by the FC Division of the Ministry of Environment & Forests vide no. 11-362/2012-FC dated 01-02-2013 "Guidelines for diversion of forest land for non-forest purposes under the Forest (Conservation) Act 1980. Submission of proposals to obtain forest land located within the mining lease and grant of environment clearance to mining projects" addressed to the Principal Secretary (Forests), Principal Secretary (Environment) of all the States/UT Govts. and copy to concerned Government Departments/Organisations which prescribes, inter-alia, the following:

" (iii) As regards Environment Clearance (EC) cases of existing mining operations, where approval under the FC Act for the full forest area in the mining lease area is not available, granting of EC may be considered and the following process will be adopted for processing such cases:

- a) Grant of EC may be considered only for the non-forest area plus the forest area within the mining lease for which FC is available. No mining activities will be allowed in forest area for which the FC is not available; and
- b) The project proponent will seek and obtain approval under the FC Act for diversion of the entire forest land located within the mining lease within a period of two years from the date of issue of these guidelines, failing which the mining lease area will be reduced to the non-forest area plus the forest area for which the project proponent has been able to obtain the FC at the end of this time period. In the case of reduction in mine lease area, the project proponent will need to get a revised mining plan approved from the competent authority for reduced area and enter into a new mining lease as per reduced lease area. The EC will be construed to be available for the mining lease area as per the revised mining lease deed."

6. The proposal was considered in the Expert Appraisal Committee (EAC) (Thermal & Coal Mining) and recommended in its 53rd meeting held on 16-17 July, 2012 for granting Environmental Clearance. The Ministry of Environment & Forests has examined the application in accordance with the EIA Notification 2006 and under the provisions thereof, hereby accords environmental clearance for the above-mentioned Cluster VIII Group of 10 Mines (Combined capacity 4.31 MTPA with a peak production of 5.603 MTPA in a combined ML area of 1183.92 ha (1200.41 ha – 16.49 ha = 1183.92 ha) of M/s Bharat Coking Coal Ltd., located in Jharia Coalfields, dist. Dhanbad, Jharkhand under the provisions of the Environmental Impact Assessment Notification, 2006 and amendments thereto and Circulars issued thereon and subject to the compliance of the terms and conditions mentioned below. You will need to seek and obtain approval under the FC Act for diversion of the entire forest land located within the mining lease within a period of two years from the date of issue of these guidelines (i.e. 01 February, 2013), failing which the mining lease area will be reduced to the non-forest area plus the forest area for which you have been able to obtain the FC at the end of this time period. In the case of reduction in mine lease area, you will need to get a revised mining plan approved from the competent authority for reduced area and enter into a new mining lease as per reduced lease area. The EC will be construed to be available for the mining lease area as per the revised mining lease deed.

A. Specific Conditions:

- i. The maximum production shall not exceed beyond that for which environmental clearance has been granted for the mine of cluster VIII as below:

| LAND USE DETAILS OF CLUSTER VIII | | | | | | |
|----------------------------------|---|--------------------------|--------------|---------------------|----------------------|-----------|
| S.N | Name of Mine | Production capacity(MTY) | | Leasehold Area (ha) | Life of mine (years) | Status |
| | | NORMATIVE | PEAK | | | |
| 1 | Bastacolla OCP | 0.10 | 0.130 | 239.45 | 3 | Operating |
| | Bastacolla UG | 0.33 | 0.429 | | 18 | Operating |
| 2. | Bera OCP | 0.15 | 0.195 | 209.56 | 3 | Operating |
| | Bera UG | 0.19 | 0.247 | | 13 | |
| 3. | Dobari Coliery(UG) | 0.24 | 0.312 | 146.90 | 20 | Operating |
| 4. | Kuyu OCP | 0.60 | 0.780 | 340.50 | 5 | Operating |
| | Kuyu UG | 0.10 | 0.130 | | 20 | Operating |
| 5. | Goluckdih (NC) OCP (Proposed) Propped OCP will commence after the closure of existing Kuya OCP) | 1.2 | 1.560 | | 25 | Proposed |
| | Ghanoodih Colliery(OCP) | 1.40 | 1.820 | | 73.00 | 5 |
| 6. | Kujama Colliery(OCP) | 0.60 | 0.780 | 191.00 | 5 | Operating |
| | Total | 4.31 | 5.603 | 1200.41 | | |

- ii. The road transportation of coal during phase-I should be by mechanically covered trucks. The road used for coal transportation should be developed with avenue plantation on both sides.
- iii. The company must give priority to capacity building both within the company and to the local youth, who are motivated to carry out the work in future.
- iv. The details of transportation, CSR, R&R and implementation of environmental action plan for each of the 17 clusters should be brought out in a booklet form.
- v. A study should be initiated to analyse extent of reduction in pollution load every year by reducing road transport.
- vi. The expertise available internationally should be utilised for control of fire in Jharia Coalfields and for their reclamation and to further minimise time for fire and subsidence control.
- vii. The abandoned pits and voids should be backfilled with OB and reclaimed with plantation and or may be used for pisciculture.
- viii. BCCL may consider setting up a separate management structure for implementing environment policy and socio-economic issues and the capacity building required in this regard.
- ix. The locations of monitoring stations in the Jharia Coalfields should be finalised in consultation with the Jharkhand State Pollution Control Board.
- x. The smoke/dust emission vary from source to source (fuelwood, coal, flyash from TPPs, silica from natural dust, etc) and a Source Apportionment Study should be got carried out for the entire Jharia Coalfields.
- xi. Mineralogical composition study should be undertaken on the composition of the suspended particulate matter (PM₁₀ and PM_{2.5}) in Jharia Coalfields and also quantified. These studies would help ascertain source and extent of the air pollution, based on which appropriate mitigative measures could be taken.
- xii. The proponent shall prepare time -series maps of the Jharia Coalfields through NRSA to monitor and prevent fire problems in the Jharia Coalfields by Isothermal mapping /imaging and monitoring temperatures of the coal seams (whether they are close to spontaneous ignition temperatures) and based on which, areas with potential fire problems shall be identified.
- xiii. Measures to prevent ingress of air (Ventilation) in such areas, to prevent restart fresh/spread fires in other areas including in mines of cluster VIII shall be undertaken.
- xiv. Underground mining should be taken up after completion of reclamation of Opencast mine area after 15 years.
- xv. No mining shall be undertaken where underground fires continue. Measure shall be taken to prevent/ check such fire including in old OB dump areas where the fire could start due to presence of coal /shale with sufficient carbon content.
- xvi. The rejects of washeries in Cluster –VII should be send to FBC based plant.
- xvii. There shall be no external OB dumps. At the end of the mining there shall be no void and the entire mined out area shall be re-vegetated. Areas where opencast mining was carried out and completed shall be reclaimed immediately thereafter.
- xviii. A detailed calendar plan of production with plan for OB dumping and backfilling (for OC mines) and reclamation and final mine closure plan for each mine of cluster-VII shall be drawn up and implemented.
- xix. The void shall be converted into a water reservoir of a maximum depth of 15-20 m and shall be gently sloped and the upper benches of the reservoir shall be stabilised with plantation and the periphery of the reservoir fenced. The abandoned pits and voids should be backfilled with OB and biologically reclaimed with plantation and or may be used for pisciculture

- xx. Mining shall be carried out as per statuette from the streams/nalas flowing within the lease and maintaining a safe distance from the Nalas flowing along the lease boundary. A safety barrier of a minimum 60m width shall be maintained along the nalas/water bodies. The small water bodies in OC shall be protected to the extent feasible and the embankment proposed along water body shall be strengthened with stone pitching.
- xxi. Active OB dumps near water bodies and rivers should be rehandled for backfilling abandoned mine voids. However, those which have been biologically reclaimed need not be disturbed.
- xxii. Thick green belt shall be developed along undisturbed areas, mine boundary and in mine reclamation. During post mining stage, a total of 704.48ha area would be reclaimed. The total additional area under plantation would be 345.06 ha (67.79 ha abandoned quarry area, 277.27 ha active quarry area, 48.55 OB dump outside quarry area, 6.30 ha service building /mine infrastructure area /coal dump etc, 108.26 ha green belt around OCP, 196.31 ha barren area), by planting 1761200 plants in 704.48 ha at a total cost Rs 7202.46 lakhs.
- xxiii. The road should be provided with avenue plantation on both side as trees act as sink of carbon and other pollutant.
- xxiv. Specific mitigative measures identified for the Jharia Coalfields in the Environmental Action Plan prepared for Dhanbad as a critically polluted are and relevant for Cluster VII shall be implemented.
- xxv. The locations of monitoring stations in the Jharia Coalfields should be finalized in consultation with the Jharkhand State Pollution Control Board. The Committee stated that smoke/dust emission vary from source to source (fuel wood, coal, flyash from TPPs, silica from natural dust, etc) and a Source Apportionment Study should be got carried out for the entire Jharia Coalfields. Mineralogical composition study should be undertaken on the composition of the suspended particulate matter (PM10 and PM2.5) in Jharia Coalfields and also quantified. These studies would help ascertain source and extent of the air pollution, based on which appropriate mitigative measures could be taken.
- xxvi. No groundwater shall be used for the mining activities. Additional water required, if any, shall be met from mine water or by recycling/reuse of the water from the existing activities and from rainwater harvesting measures. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry to dewatering of mine.
- xxvii. Regular monitoring of groundwater level and quality of the study area 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 including Arsenic and Fluoride during the month of May. Data thus collected shall be submitted to the Ministry of Environment & Forest and to the Central Pollution Control Board/SPCB quarterly within one month of monitoring. Rainwater harvesting measures shall be undertaken in case monitoring of water table indicates a declining trend.
- xxviii. Mine discharge water shall be treated to meet standards prescribed standards before discharge into natural water courses/agriculture. The quality of the water discharged shall be monitored at the outlet points and proper records maintained thereof and uploaded regularly on the company website.

- xxix. ETP shall also be provided for workshop, and CHP, if any. Effluents shall be treated to confirm to prescribed standards in case discharge into the natural water course
- xxx. 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 clayey soil/suitable material.
- xxxii. 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.
- xxxiii. High root density tree species shall be selected and planted over areas likely to be affected by subsidence.
- xxxiiii. Depression due to subsidence resulting in water accumulating within the low lying areas shall be filled up or drained out by cutting drains.
- xxxv. Solid barriers shall be left below the roads falling within the blocks to avoid any damage to the roads.
- xxxvi. No depillaring operation shall be carried out below the township/colony.
- xxxvii. The Transportation Plan for conveyor-cum-rail for Cluster-VIII should be dovetailed with Jharia Action Plan. Road transportation of coal during Phase-I should be by mechanically covered trucks, which should be introduced at the earliest. The Plan for conveyor-cum-rail for Cluster-VII should be dovetailed with Jharia Action Plan. The road transportation of coal during phase-I should be by mechanically covered trucks.
- xxxviii. A study should be initiated to analyze extent of reduction in pollution load every year by reducing road transport.
- xxxix. R&R of 4959 nos of PAF's involved. They should be rehabilitated at cost of shifting to safe areas at the cost of Rs 29948 Lakhs as per the approved Jharia Action Plan.
- xl. A detailed CSR Action Plan shall be prepared for Cluster VIII group of mines. Specific activities shall be identified for CSR the budget of Rs. 215.5 Lakhs per year @ Rs 5/T of coal as recurring expenditure. The 265.25 ha of area within Cluster VIII ML existing as waste land and not being acquired shall be put to productive use under CSR and developed with fruit bearing and other useful species for the local communities. In addition to afforesting 250.57 ha of area at the post-mining stage, the waste land /barren land within Cluster VIII ML shall be rehabilitated/reclaimed as forest/agricultural land under CSR Plan in consultation with local communities. Third party evaluation shall be got carried out regularly for the proper implementation of activities undertaken in the project area under CSR. Issue raised in the Public Hearing shall also be integrated with activities being taken up under CSR. The details of CSR undertaken along with budgetary provisions for the village-wise various activities and expenditure thereon shall be uploaded on the company website every year. The company must give priority to capacity building both within the company and to the local youth, who are motivated to carry out the work in future.

- xl. For monitoring land use pattern and for post mining land use, a time series of landuse 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.
- xli. A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests five year before mine closure for approval. Habitat Restoration Plan of the mine area shall be carried out using a mix of native species found in the original ecosystem, which were conserved in-situ and ex-situ in an identified area within the lease for reintroduction in the mine during mine reclamation and at the post mining stage for habitat restoration.
- xlii. 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 for implementing environment policy and socio-economic issues and the capacity building required in this regard. .
- xliii. Implementation of final mine closure plan for Cluster VIII, subject to obtaining prior approval of the DGMS in regard to mine safety issues
- xliv. 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 and Forests.
- (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 PM₁₀, PM_{2.5}, SO₂ and NO_x 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 (PM₁₀, PM_{2.5}, SO₂ and NO_x) and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall 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. 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 19th May 1993 and 31st 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 Regional Office at Bhubaneswar.
- (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 at <http://envfor.nic.in>.
- (xiv) A copy of the environmental clearance letter shall be marked to concern Panchayat/ZilaParishad, 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 be 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 PM₁₀, PM_{2.5}, SO₂ and NO_x (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 at Bhubaneswar 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 MoEF by E-mail

6. The Ministry or any other Competent Authority may stipulate any further condition(s) for environmental protection.

7. 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.

8. 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.

9. The Environmental Clearance is subject to the outcome of the Writ Petition filed by M/S Bharat Coking Coal Limited (BCCL) in response to the closure orders issued by the Jharkhand State Pollution Control Board which is pending in the Jharkhand High Court.

(Dr. Manoranjan Hota)
Director

Copy to:

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi.
2. Secretary, Department of Environment & Forests, Government of Jharkhand, Secretariat, Ranchi.
3. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, A-31, Chandrashekarapur, Bhubaneswar – 751023.
4. Chairman, Jharkhand State Pollution Control Board, T.A. Division Building (Ground Floor), H.E.C., Dhurwa, Ranchi – 834004.
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. District Collector, dist. Dhanbad Government of Jharkhand.
8. Monitoring File 9. Guard File 10. Record File
- 9.

(Dr. Manoranjan Hota)
Director