

COMPLIANCE OF EC CONDITIONS OF CLUSTER-XVI
EC order no- J-11015/185/2010-IA.II(M) dated 6.2.2013
Upto Sept. 2013

Sl. no.	A. Specific Conditions by MOEF:	compliance
i	The maximum production shall not exceed beyond that for which environmental clearance has been granted for the 14 mine of cluster XVI as below:	The approved normative production and peak production are 1.51MTPA & 1.963 MTPA respectively. The total production of the cluster is 1.43 MT in the year 12-13 which is well within the limit.
ii	All the void /water bodies should be backfilled upto ground level and no OB dump at the end of mining.	This is being done.
iii	Extensive plantation should be provided on either side of River;	It shall be complied. Yearly plantation is being done for development of green belts as per EMP.
iv	Impact of mining on ground water of the area (Impact Zone) should be provided;	The work of monitoring of ambient environment including ground water monitoring has already been awarded to Central Institute of Mining & Fuel Research (CIMFR), Dhanbad having CSIR laboratory recognized under the EP Rules. Fixing up the monitoring stations for this purpose is in process with Jharkhand State Pollution Control Board.
v	A Garland drain should be provided	It is being done.
vi	Excess water from mine after treatment should be supplied to the villagers;	At present excess water from mine is supplied to the villages through settling pond.
vii	Rejects of washery along with dry carbon slurry should be utilized in power plant and other recognized vendors.	There is no washery at present.
viii	A time schedule for filling of existing and abandoned quarries be done.	4 no.s abandoned quallies have already been filled up.
ix	The measure identified in the environmental plan for cluster XVI groups of mine and the conditions given in this environmental clearance letter shall be dovetailed to the implementation of the Jharia Action Plan.	Master Plan activities are dovetailed with compliance of environmental clearance conditions.
x	As there is no fire in Cluster XVI but the measure should be adopted by proponent to control spread of neighbouring fire to this	Work has been awarded to NRSC (earlier NRSA). A MoU is to be entered with the NRSC for start of the work .For this purpose, duly

	Cluster XVI. 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. Measures to prevent ingress of air (Ventilation) in such areas, to prevent restart fresh/spread fires in other areas including in mines of cluster XIV shall be undertaken.	signed MOU from our end has been sent to NRSC for necessary processing at their end and to start the work immediately .(Copy enclosed as Annexure-A) Action is being taken as specified in EC and as per Jharia Master Plan.
xi	Underground mining should be taken up after completion of reclamation of Opencast mine area after 2 years.	It shall be complied. Mining is being done as per the guidelines and approval/ permission of DGMS.
xii	No mining shall be undertaken where underground fires continue. Measure shall be taken to prevent/ check such fire including in old OB dump	It is being complied.
xiii	A part of cluster XVI is under Barakar River and Damodar River. It was clarified that although the mine is underground, there is no coal underneath River Damodar, which would be mined. The Committee desired that the data of bore wells near River Damodar require to be monitored for permeability and seepage of waster of River Damodar.	At present there is no underground minig operation below River Damodar.
xiv	The rejects of washeries in Cluster –XVI should be send to FBC based plant.	Coal Washery has not yet started.
xv	There shall be no external OB dumps. OB produce from the whole cluster will be 29.01 Mm³. OB from One Patch OCP mine shall be backfilled. 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.	Action is being taken as specified in EMP. For Backfilling of OB concurrent with mining. Also old OCP of Pre-nationalization is being filled up.
xvi	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- XVI shall be drawn up and implemented.	Calendar plan has been prepared.Mine closure plan as per the guidelines of Ministry of Coal and on the basis of clustuter concept is under preparation by CMPDI.
xvii	The void in 5 ha area shall be converted into a water reservoir of a maximum depth of 15-20 m in post mining stage and shall be gently sloped and the upper benches of the reservoir	It shall be complied. Continuous process of the backfilling has been adopted. A part of the void will be converted into the water body as specified in EC.

	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	
xviii	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.	Mining is being carried out as per Statute from the streams/nalas following within the lease and maintaining a safe distance from the nalas following along the lease boundary.
xix	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.	No OB is being dumped near water bodies. The OB dumps created earlier already stabilized & further action has been taken for their eco-restoration work as per Road Map prepared by FRI, Dehradun and as per the action plan of Prof. CR Babu ,Professor Emirates CEMDE, Delhi University.
xx	Thick green belt shall be developed along undisturbed areas, mine boundary and in mine reclamation. During post mining stage, a total of 242.09ha area would be reclaimed by planting native species in consultation with the local DFO/Agriculture Department/institution with the relevant discipline. The density of the trees shall be around 2500 plants per ha.	It shall be complied.
xxi	The road should be provided with avenue plantation on both side as trees act as sink of carbon and other pollutant.	It shall be complied.
xxii	Specific mitigative measures identified for the Jharia Coalfields in the Environmental Action Plan prepared for Dhanbad as a critically polluted area and relevant for Cluster -XVI shall be implemented.	Dhanbad Action Plan has been prepared in consultation with Jharkhand Pollution Control Board for entire BCCL and not clusterwise. It is being implemented comprehensively for all the mines of BCCL. Some of the salient actions of this cluster are as under: <ol style="list-style-type: none"> 1. Construction of pucca road <ol style="list-style-type: none"> a. Construction of Pucca Road from PWD Road to Rly. Siding, NLOCP. b. Construction of PCC Road at R.K. colony. 2. Construction of water

		<p>reservoir for mine water utilization</p> <p>3. Plantation.</p>
xxiii	<p>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 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.</p>	<p>Establishment of ambient environment quality monitoring stations is already in process and Jharkhand State Pollution Control Board is being pursued in this regard.</p> <p>The work of monitoring of ambient environment has already been awarded to Central Institute of Mining & Fuel Research (CIMFR), Dhanbad who is having CSIR laboratory recognized under the EP Rules.</p> <p>Presently ambient air is being monitored through BCCL own Laboratory at HQ level. It is being complied.</p> <p>For the source apportionment study the action has been taken to conduct with help of CMPDIL,RI-II.</p>
xxiv	<p>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.</p>	<p>No ground water is being utilized for the purpose of industrial use of the water. Mine water has been channelized through pipelines and through delivery in to the ponds for its is for the community and irrigation purposes. Drinking water is being purchased from the Mineral Area Development Authority (MADA). Further for the utilization of mine water following actions has been taken by the company</p> <ol style="list-style-type: none"> 1. Installation of Pressure filters: BCCL has installed 25 pressure filter plants of total capacity of 16 MGD at the cost of Rs. 2.75 crores to meet the drinking water requirements in the area. More pressure filters shall be put in to operation. 2. Rain water Harvesting: to catch run-off water in colonies Rain water Harvesting is being done. BCCL has already awarded work for 138 houses at Koylanagar Township covering surface area of 14450 sq mts of roof top with total cost of Rs77.36 lakhs. It has been estimated that the system will recharge 13150 cum of

		<p>water per annum to the ground water.</p> <p>3. Further approximately 2000 quarters of BCCL under different Areas of BCCL will be taken up in the 2013-14 for Rain Water Harvesting.</p>
xxv	<p>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.</p>	<p>The work of monitoring of ambient environment including ground water monitoring has already been awarded to Central Institute of Mining & Fuel Research (CIMFR), Dhanbad having CSIR laboratory recognized under the EP Rules.</p> <p>Fixing up the monitoring stations for this purpose is in process with Jharkhand State Pollution Control Board.</p>
xxvi	<p>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.</p>	<p>It shall be complied.</p>
xxvii	<p>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.</p>	<p>Construction of ETP/ Oil grease Trap is being taken-up.</p>
xxviii	<p>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.</p>	<p>At present only development districts are operational at UG mines in Cluster XVI and no depillaring district is taken up. However regular monitoring of subsidence will be undertaken on operating depillaring districts.</p>
xxix	<p>Sufficient coal pillars shall be left unextracted around the air shaft (within the subsidence</p>	<p>Sufficient coal pillars have been left around air shafts as per the statutes and DGMS</p>

	influence area) to protect from any damage from subsidence, if any.	guidelines.
xxx	High root density tree species shall be selected and planted over areas likely to be affected by subsidence.	Identification of high root density Plant and its plantation in subsidence prone area is in the process. The plantation programme will include such plants.
xxxii	Depression due to subsidence resulting in water accumulating within the low lying areas shall be filled up or drained out by cutting drains.	It is complied.
xxxiii	Solid barriers shall be left below the roads falling within the blocks to avoid any damage to the roads.	It is being followed. Sufficient barriers are left for saving the surface installation and infra structures as per the statute and DGMS guidelines.
xxxiv	No depillaring operation shall be carried out below the township/colony.	It is followed.
xxxv	The Transportation Plan for conveyor-cum-rail for Cluster- XVI 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-XIV should be dovetailed with Jharia Action Plan. The road transpiration of coal during phase-I should be by mechanically covered trucks.	Action has been taken for formulating adequate transportation plan for conveyor cum rail system of dispatch. CMPDIL, RI-II has been requested to conduct study and prepare the plan in this regarding. Conversion of existing truck in to mechanically covered trucks in a phased manner has been taken up. By that time transportation is being done by covering vehicle with tarpaulin cover.
xxxvi	A study should be initiated to analyze extent of reduction in pollution load every year by reducing road transport.	CMPDI RI-2 has been requested for Source Apportionment Study.
xxxvii	R&R of 1193 nos of PAF's involved. They should be rehabilitated at cost of Rs 10171.88 lakhs as per the approved Jharia Action Plan.	Action of Master plan is being completed as per action plan of Master Plan
xxxviii	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 for and submitted to Ministry.	It is being monitored at BCCL HQ level.
xxxix	A detailed CSR Action Plan shall be prepared for Cluster XVI croup of mines. Specific activities shall be identified for CSR of Rs 20.25/annum @ of Rs 5/ton of coal production. as recurring expenditure. The 242.09ha of area within Cluster XVI ML existing as waste land and not being acquired shall be put to productive use under CSR and developed with	It shall be complied. BCCL is implementing CSR activities.

	<p>fruit bearing and other useful species for the 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.</p>	
xxxix	<p>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.</p>	<p>Presently a time series map of vegetation cover in the Jharia Coal Field is being carried out through CMPDI Ranchi using satellite imagery for every 3 years. The last map of the year 2010-11 has been uploaded on the official website of company.</p> <p>Further CMPDI has been requested to prepare "Time series of land use maps based on satellite imagery of the core zone and buffer zone in the scale 1:5000.</p>
xl	<p>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.</p>	<p>CMPDI, Ranchi has been requested to prepare "Final Mine Closure Plan along with a Plan for Habitat Restoration and with details of Corpus Fund".</p>
xli	<p>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.</p>	<p>A full-fledged Environment Department, headed by a HoD (Environment) along with a suitable qualified multidisciplinary team of executives (12 nos.) which includes Environment, Mining, Excavation, Civil, Survey, Electrical & mechanical, Forestry disciplines executives and technicians (4 nos.) has been established in Headquarters. They are also</p>

		<p>trained in ecological restoration, sustainable development, rainwater harvesting methods etc. At the project level, one Executive in each area has also been nominated as Project Nodal Officer (Environment) and is also entrusted with the responsibility of compliance and observance of the environmental Acts/ Laws including environment protection measures .The activities are monitored on regular basis at Area and at Head quarters levels. GM (Environment) at head quarter level, co-ordinates with all the Areas and reports to the Director (Technical) and in turn he reports to the CMD of the company.</p> <p>The team is multidisciplinary and very much motivated under the guidance of company's Director (Technical) and CMD. Further capacity building at both corporate and operating level is being done.</p>
xlii	Implementation of final mine closure plan for Cluster XVI, subject to obtaining prior approval of the DGMS in regard to mine safety issues	Final Mine Closure Plan, as per the guideline will be submitted 5 years before the closure of the Mine. For the purpose of safety issues related to the closure prior approval of DGMS will be taken in this regard.
xliii	<p>Corporate Environment Responsibility:</p> <p>a) The Company shall have a well laid down Environment Policy approved by the Board of Directors.</p> <p>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.</p> <p>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.</p> <p>d) To have proper checks and balances, the</p>	<p>A well defined Corporate Environment Policy has already been laid down and approved by the Board of Directors. This is also posted on BCCL website.</p> <p>Complied.</p>

	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.	A hierarchical system of the company to deal with environmental issues from corporate level to mine level already exists. Being complied.
B	General Conditions by MOEF:	
i	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.	It is being followed.
ii	No change in the calendar plan of production for quantum of mineral coal shall be made	Being followed. Production is being done well within the peak production capacity as per EC.
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.	Establishment of Four ambient air quality monitoring stations is already in process and Jharkhand State Pollution Control Board is being pursued in this regard. The work of monitoring of ambient environment has already been awarded to Central Institute of Mining & Fuel Research (CIMFR), Dhanbad having CSIR laboratory recognized under the EP Rules.
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.	It shall be complied.
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.	It is being complied.
vi	Industrial wastewater (workshop and	Establishment of monitoring stations is

	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.	already in process and Jharkhand State Pollution Control Board is being pursued in this regard. The work of monitoring of ambient environment has already been accepted by Central Institute of Mining & Fuel Research (CIMFR), Dhanbad having CSIR laboratory recognized under the EP Rules. Presently mine effluent is being monitored through BCCL own Laboratory at HQ level.
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.	It is being complied.
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.	It is being done.
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.	Dust mask is being provided to personel works in dusti areas.
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.	Initial Medical Examination (IME) and Periodical Medical Examination (PME) of all the personnel is carried out as per the Statutes and Director General of Mines Safety (DGMS) guideline. Records of IME & PME are also being maintained.
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.	A full-fledged Environment Department, headed by a HoD (Environment) along with a suitable qualified multidisciplinary team of executives (12 nos.) which includes Environment, Mining, Excavation, Civil, Survey ,Electrical & mechanical, Forestry disciplines executives and technicians (4 nos.) has been established in Headquarters. They are also trained in ecological restoration, sustainable

		<p>development, rainwater harvesting methods .etc. At the project level, one Executive in each area has also been nominated as Project Nodal Officer (Environment) and is also entrusted with the responsibility of compliance and observance of the environmental Acts/ Laws including environment protection measures .The activities are monitored on regular basis at Area and at Head quarters levels. GM (Environment) at head quarter level, co-ordinates with all the Areas and reports to the Director (Technical) and in turn he reports to the CMD of the company.</p> <p>The team is multidisciplinary and very much motivated under the guidance of company's Director (Technical) and CMD. Further capacity building at both corporate and operating level is being done.</p>
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.	It is being followed.
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.	<p>It has been complied.</p> <p>Advertisement in local newspaper is enclosed as Annexure-c.</p>
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	Complied.

	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.	Complied.
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.	Complied.
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.	It is being complied.
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.	Shall be complied.
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	Being complied.