भारत कोकिंग कोल लिमिटेड
(एक मिनिरत्न कम्पनी)
(कोल इन्डिया लिमिटेड का एक अंग)
महाप्रबन्धक का कार्यालय
कुसुन्डा क्षेत्र, पो: कुसुन्डा, धनबाद, झारखन्ड

Ref No. BCCL/KA-6/Env./2022/ 78 Date: 31-05-2022

To,
The Director(s)
Ministry of Environment, Forest and Climate Change (MoEFCC),
(Govt. of India)
Regional Office (ECZ),
Bungalow No. A-2,
Shyamali Colony,
Ranchi - 834002

Sub : Six monthly compliance report on Environmental Clearance Conditions for the period from October'2021 to March'2022 in respect of Cluster-VI Group of mines, EC order no.: EC order no.: J-11015/183/2011-1A.II (M), dated 26-08-2013

Dear Sir,

Enclosed please find herewith six monthly compliance report on environmental clearance conditions for the period from **October'2021 to March'2022** in respect of **Cluster-VI** Group of mines, **EC order no.: J-11015/183/2011-1A.II (M), dated 26-08-2013** for your kind perusal.

With regards,

31/05/22
General Manager
Kusunda Area, BCCL

COMPLIANCE OF EC CONDITIONS of CLUSTER-VI

EC order no.: J-11015/183/2011-1A.II (M), dated 26-08-2013

(October 2021 to March 2022)

Sl. No.	A. Specific Conditions by MOEF:	Compliance
i	The maximum production from the two opencast section in the cluster shall not exceed beyond that for which environmental clearance has been granted.	**It is being complied.** The production from the cluster is within the limit for which environmental clearance has been granted. The production of six months is enclosed as **Annexure - 1.**
ii	The two nallahs passing through the mines should be preserved and made functional to drain the water.	**It is being complied.** Every year, before monsoon the nallas are cleaned to ensure proper drainage and smooth flow of water.
iii	The coal transport to the siding will continue by road to the siding within 2 km with pay loader loading into Rly. Wagons for a period of 5 years by which time the proposed silo in Rly. Siding not being affected in the Jharia Action Plan will be constructed for RLS loading into railway wagons.	**It shall be complied.** Presently coal transportation has been done by trucks with tarpaulin cover. Covering of truck has been made mandatory in the transportation contract. **Picture -1** Avenue Plantation has been done along the roads and it shall be continuously carried out as per availability of space.
iv	As subsidence is on higher side in Godhur colliery, special attention should be given for control and monitoring of subsidence.	**It is being complied.** Regular periodic subsidence monitoring is being done at underground mines.
v	All old dumps will be filled back in mine voids. At the end of mining there should not be any OBD and should be only one void which shall not exceed 30 m deep.	**It is being complied.** • Backfilling process in abandoned pits and voids are continuously carried out along with the mining operation. Abandoned Pits may be utilized for Pisciculture in Post Mining Phase.
vi	An increase in the CSR	**It is being complied.** • BCCL is implementing CSR activities at various scale. A separate CSR committee has been formed at area level, which is looking after the works being executed under CSR. • Under CSR Initiatives, preventive health care of public living in command area has been undertaken extensively through Company as well as State Govt. Self-Protection Kit including Mask, Hand wash, Soap, Detergent etc were provided to needy villagers around the coal mines. • During pandemic situation, hunger eradication programme were undertaken under CSR/Welfare activities. Dry Food as well as prepared food was distributed among people living in command area. CSR activities are undertaken centrally at HQ level activities and expense of the same is attached as. **Annexure - 2**
vii	Dhanbad Action Plan, as CEPI, be implanted	**It is Being Complied.** Dhanbad Action Plan has

	where ever is applicable.	been prepared in consultation with Jharkhand State Pollution Control Board for entire BCCL and it is being implemented comprehensively for all the mines of BCCL including mines of Kusunda Area.
viii	Since the cluster is situated close to Dhanbad, thick green belt and residential areas should be done along the periphery of ML area. Avenue-plantation should be done along the roads which are used for coal transport and measures to arrest coal dust while transporting by covering the trucks and water sprinkling measures etc.	**It is being complied.** • Plantation at de-coaled OB dump area is already being executed for development of green belts as per EC. • Adequate water sprinkling is being done at coal transportation road regularly by mobile water sprinklers, and coal transportation is being done by covering trucks by tarpaulin as measures to control dust pollution**. Picture – 1 & 2** • At degraded OB dumps at Gondudih Eco-restoration Park has been developed. Enclosed as **Annexure – 3**.
ix	Whereas laudable efforts have been made in drawing skill development programmes along with Planning Commission of GoI , all out efforts should be made to ensure that they are suitably employed either with the PP or elsewhere.	**It is being complied.** Company is organizing training on regular basis through Vocational Training Centre and Human Resource Department. **Annexure – 4.**
x	The measure to identify in the Environmental Plan for Cluster- VI 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. The master plan deals with fire control and rehabilitation activities of fire affected areas in the leasehold of BCCL. By implementing complete digging out of fiery seams with water spraying in force as fire control measures fire affected areas are being prevented. Further rehabilitation of the families from the fire endangered area to the safe places is being taken-up with the help of JRDA. The Master plan is being implemented for BCCL as per the prioritization of fire and rehabilitation activities in approved Master Plan. The brief status of Rehabilitation and Fire control measures are enclosed **Annexure-5.**
xi	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	**It is being complied.** Land Use Map of Cluster VI has been prepared by CMPDIL using remote sensing data for monitoring of land use pattern and for post mining land use. The latest report as submitted by NRSC in this regard is attached below. **Annexure - 6** Action is being taken as per Jharia Master Plan approved by GOI and State Govt. of Jharkhand. Excavation/ Open Cast mining is being done in the

	other areas including in mines of cluster VI shall be undertaken. Expertise available internationally could also be utilized for control of fire in Jharia Coalfields and for their reclamation and to further minimize time for fire and subsidence control. Isothermal mapping using thermal imaging has been got done by NRSA. Measures would be taken to prevent ingress of air (ventilation) in such areas, which may re-start fresh fires	fire/subsidence affected mines to dig out combustible materials to save the coal from burning and to prevent further spread of the fire. Old UG Workings have been sealed off to prevent ingress of Air in other areas. Global Expression of Interest had been opened for the international experts/ firms/ consultants/ agencies to deal with coal mine fire in Jharia Coalfield with vision of reclamation, further minimization of spread of fire & subsidence control for which no bidder has qualified to take up the work. Enclosed as **Annexure-7**. Recommendations of NRSC is being implemented to control fire in JCF.
xii	Underground mining should be taken up after completion of reclamation of Opencast mine area.	**It shall be complied.**
xiii	The OB material should be crushed like sand and be used for stowing in underground mines.	**It shall be complied**. Scope for OB to sand conversion is being explored.
xiv	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-VI shall be drawn up and implemented. The schedule of backfilling should be clearly brought out and submit the same to MoEF.	**It is being complied.** ● Mining operation is being done as per approved Calendar Plan. ● Mine closure plan as per the guidelines of Ministry of Coal has been prepared by Central Mine Planning and Design Institute (CMPDI). • Progressive mine closure activities is being implemented regularly as per approved Mine Closure Plan considering present geo-mining conditions.
xv	The embankment constructed along the river boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the river front side and stabilized with plantation so as to withstand the peak water flow and prevent mine inundation	**It is being complied.** Mining is being done as per the guidelines and permissions of Directorate General of Mines Safety (DGMS) in accordance with Coal Mines Regulation, 2017. ● Embankment has been constructed in some areas and further embankments shall be constructed. **Picture – 3.**

xvi	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.	**It is being complied**. Action is being taken to control, mine fires as specified in Jharia Master Plan and the mining is being done as per the guidelines and permissions of Directorate General of Mines Safety (DGMS).
xvii	There shall be no internal OB dumps. There will be 8 external OB Dumps covering an area of 32.84 Ha. The height of the dumps shall be 16 m and the total quantity shall be of 5.247 Mm3. The final mine voids will have an area of 66.76 ha (Filled up with water). With depth of 25 m bgl. The entire mined out area shall be re-vegetated. Areas where opencast mining was carried out and completed shall be reclaimed immediately thereafter. It was observed that most of the OB are reclaimed total area 441.24 ha at the end of mining where reclaimed external OB dump 32.84 ha and internal OB Dump 120.34 ha. Green Belt over an area of 66.12 ha. Density of tree plantation 2500 trees/ ha of plants which of and abandoned. The proponent should dump all the OB material in abandoned mines.	**It is being complied**. Action is being taken as specified in EMP. Backfilling of OB is going on concurrent with mining and at the end of mining activity the area will be re-vegetated and reclaimed as per EMP. Plantation work have already been done with the help of DFO, Dhanbad. Also finalized Dump has been reclained and Eco-Restoration Site has been created. **Picture – 4.**
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.	**It is being complied.** Mining is being done as per the guidelines and permissions of Directorate General of Mines Safety (DGMS) in accordance with Coal Mines Regulation, 2017. • Embankment has been constructed in some areas and further embankments shall be constructed. **Picture – 3.**

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.	**It is being complied.** No OB is being dumped near any water bodies.
xx	Thick green belt shall be developed along undisturbed areas, mine boundary and in mine reclamation.	**It is being complied.** Plantation & Eco-restoration is being done. **Annexure – 3. Picture - 4**
xxi	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 VI shall be implemented.	**It is being complied.** Action Plan has been prepared in consultation with Jharkhand Pollution Control Board for entire BCCL. It is being implemented comprehensively. Some of the salient actions of this cluster are as under: 1. Covered Truck Transport 2. Construction of Pucca Road wherever feasible. 3. Construction/Maintenance of water reservoir for mine water utilization 4. Plantation. Etc.
xxii	The locations of monitoring stations in the Jharia Coalfields should be finalized in consultation with the Jharkhand State Pollution Control Board.	**It has been complied.** The optimum location of monitoring stations in Jharia Coal Field has been finalized with the approval of Jharkhand State Pollution Control Board. Enclosed as **Annexure – 8.**
xxiii	The Committee stated that smoke/dust emission vary from source to source (fuel wood, coal ,fly ash 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.	**Compliance is under progress.** NEERI, Nagpur has already initiated Source Apportionment Study. NEERI Nagpur has completed the data collection for Summer Season and winter season. Source Apportionment Study: Workshop organized with NEERI, Nagpur on 04.10.2021. Comments/Clarification submitted to NEERI, Nagpur for its incorporation. Further, comments of JSPCB and BCCL also submitted to NEERI and final report submitted on 27.04.2022 .**Annexure – 9.**
xxiv	The Plan for conveyor-cum—rail for Cluster-VI should be dovetailed with Jharia Action Plan. The Committee desired that road transportation of coal during Phase—I should be by mechanically covered trucks,	**It shall be complied.** ● Action has been taken for the transportation plan for conveyor cum rail system of dispatch. CMPDIL, RI-II has been requested to conduct

	which should be introduced at the earliest. Coal dispatch shall be diverted from the present rail sidings to Rapid Loading System (RLS) soon after the construction and commissioning of the RLS at Maheshpur is completed. The railway siding order issued and same would come in 3 years. The details of same should be provided to ministry. The mode of transportation of coal by truck till Railway Siding should be by mechanically covered trucks.	study and prepare the plan in this regard. • At present, Transportation is being done by covering vehicle with tarpaulin cover and it is made mandatory in Transportation Contracts. **Picture – 1.**
xxv	1387 no. of PAF's should be rehabilitated at cost of Rs 10,768.17 Lakhs as per the approved Jharia Action Plan.	**It is being complied – Annexure – 5.**
xvi	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.	**It is being complied.** • Regular subsidence monitoring is being done at underground mines.
xxvii	Sufficient coal pillars shall be left un extracted around the air shaft (within the subsidence influence area) to protect from any damage from subsidence, if any.	**It is being Complied.** • Sufficient coal pillars have been left around air shafts as per Coal Mines Regulations 2017 and DGMS Orders.
xxviii	High root density tree species shall be selected and planted over areas likely to be affected by subsidence.	**It is being Complied.** • Planation is regularly done in leasehold area of Cluster VI. High root density plants are regularly planted as per the roadmap prepared by Forest Research Institute, Dehradun.
xxix	Depression due to subsidence resulting in water accumulating within the low lying areas shall be filled up or drained out by cutting drains.	**It shall be complied.** • Time to time depression created by the mining operations have been filled by the locally available material and over burden.
xxx	Solid barriers shall be left below the roads falling within the blocks to avoid any damage to the roads.	**It is being Complied.** • Sufficient barriers are left for saving the surface installation and infra structures as per Coal Mines regulation 2017 and DGMS Orders.
xxxi	No depillaring operation shall be carried out below the township/colony.	**It is being Complied.** • Prior permission is always obtained from DGMS

		for depillaring.
xxxii	A detailed CSR Action Plan shall be prepared for Cluster VI croup of mines. As stated by the Proponent, it is formulating a detailed Corporate Social Responsibility (CSR) Action Plan through Tata Institute of Social Sciences (TISS), Mumbai which will consist of need-based base-lit e survey, CSR Action Plan, CSR Auditing and monitoring mechanism etc. Director (Per.), BCCL. along with a team visited TISS/ National CSR Hub, Mumbai on 18th Jun, 2012 for finalizing the MoU with TISS and National CSR Hub for conducting base-line survey, empanelment of NGOs and formulating the project specific CSR action plan for BCCL. The Action Plan for Corporate Social Responsibility will include 5% of the retained earnings of the previous year subject o minimum of Rs. 5 per tonne of coal production of the previous year will be provided for Corporate Social Responsibility (CSR), an amount of Rs. 381.55 lakhs/year has been year marked for the CSR activities.	**It is being complied.** • BCCL is implementing CSR activities at various scale. A separate CSR committee has been formed at area level, which is looking after the works being executed under CSR. • Under CSR Initiatives, preventive health care of public living in command area has been undertaken extensively through Company as well as State Govt. Self-Protection Kit including Mask, Hand wash, Soap, Detergent etc were provided to needy villagers around the coal mines. During pandemic situation, hunger eradication programme were undertaken under CSR/Welfare activities. Dry Food as well as prepared food was distributed among people living in command area. The total nos of beneficiary under this programme was around 10000. Activity wise expense attached as **Annexure – 2.**
xxxiii	The area within Cluster VI ML existing as waste land and not being acquired shall be put for productive use under CSR and developed with fruit bearing and other useful species for the local communities. A third party evaluation shall be 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 expenditures there on 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. The gap/space available between the entire mine area should he suitably planted with native species. Plantation should also be made in vacant area and along the road side so as to reduce dust pollution.	CSR and other welfare activities have been taken up on priority basis. The details of activities are enclosed. As **Annexure – 2.** Plantation at degraded area and office/colonies premises has been done for development of green belts as per EC. Eco-restoration work are in successful progress at degraded at OB dump areas. Details of plantation to be done and programme of eco-restoration are enclosed in **Annexure- 3, Picture -4.**
xxxiv	The mine water should be treated properly	**It is being Complied.** Mine water is treated by water

	before supply to the villager.	filter plant before domestic supply to villagers.
Xxxv	Details of transportation, CSR, R&R. and implementation of environmental action plan for each of the clusters-VI should be brought out in a booklet form within a year and regularly updated.	**It is being complied**.
xxxvi	Central recreation park with herbal garden should be developed for use of all inhabitants.	**It is being Complied**. The Eco-restoration park at GKKC has been developed and dedicated to residents of the city. It is further being developed into an Eco-Park.
xxxvii	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.	**It is Being complied.** The work of monitoring of water is being carried out by CMPDI. Report Enclosed as **Annexure – 10.**
xxxviii	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.	**It is being complied.** Mine water is being used for the industrial as well as domestic purpose. Mine water is also supplied to colonies and community after filtration through pressure filters, slow sand filters and rapid sand filters. A MoU has been signed between Coal India Ltd. & Govt. of Jharkhand for providing mine water to nearby villages. A copy of MoU has been enclosed as **Annexure 11**.
xxxix.	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 stabilized with plantation and the periphery of the reservoir fenced. The abandoned pits and voids should be backfilled with OB and reclaimed with plantation and or may be used for pisciculture.	**It shall be complied.**
xl	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 piezometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post monsoon (November) and winter (January) seasons and for quality including Arsenic and Fluoride during the month of May. Data thus	**Compliance under progress.** For Drilling for establishment of 23 nos Piezometer wells for cluster of mines of BCCL command area for Ground water monitoring, LOA has been issued by Civil Department on 03.12.2021 and work is in progress. **Annexure – 13**. CMPDI is regularly conducting study of groundwater level and quality of areas within Cluster VI.

	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.	Groundwater monitoring data has been enclosed as **Annexure 12.**
xli	ETP shall also be provided for workshop, and CHP, if any. Effluents shall be treated to confirm to prescribe standards in case discharge into the natural water course.	**It is Being Complied**. **Picture – 5.**
xlii	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.	**It is being complied.** Land Use Map of Cluster VI has been prepared by CMPDIL using remote sensing data for monitoring of land use pattern and for post mining land use. The latest report as submitted by NRSC in this regard is attached as **Annexure – 14.**
xliii	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 eco system 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, the mining plan and post-mining plan, closure plan should be prepared and submitted to the Ministry;	**It shall be complied.** CMPDI has prepared “Mine Closure Plan” for all the mines of Cluster VI. In order to restore the original ecological system, Kusunda Area has initiated ecological restoration at various sites as per roadmap prepared by Forest Research Institute. Native species of flora and fauna can be seen on these sites. **Picture – 4.**
xliv	A separate management structure for implementing environment policy and socio-economic issues and the capacity building required in this regard.	**It has been complied**. ● A full-fledged Environment Department, headed by a Dy.GM (Environment) along with a suitable qualified multi-disciplinary team of executives have been established at Company Headquarters for implementation of Environment Policy of the company. ● One Executive in each area has also been nominated as Nodal Officer (Environment) for looking after routine environment related jobs along with an Environment Management Cell at Area Level.

		• For implementing and look after Socio-Economic Issues, an executive of Community Development Cadre has also been incorporated at HQ level .
Xlv	Corporate Environment Responsibility.	
(a.)	The Company shall have a well laid down Environment Policy approved by the Board of Directors.	A well-defined Corporate Environment Policy has already been laid down and approved by the Board of Directors. This is also uploaded on company's website. **Annexure - 15**
(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.	**Complied.**
(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.	**It has been complied**. A hierarchical system of the company to deal with environmental issues from corporate level to mine level already exists. Complied. ● A full-fledged Environment Department, headed by a Dy.GM (Environment) along with a suitable qualified multi-disciplinary team of executives have been established at Company Headquarters for implementation of Environment Policy of the company. ● One Executive in each area has also been nominated as Nodal Officer (Environment) for looking after routine environment related jobs along with an Environment Management Cell at Area Level.
(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.	Being complied.
B.	**<u>General Conditions</u>**	

i	No change in mining technology and scope of working shall be made without 'prior approval of the Ministry of Environment and Forests.	**It shall be Complied.**
ii	No change in the calendar plan of production for quantum of mineral coal shall be made.	**It is being Complied**. Production of clusters are well within the 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, PM2.5, SO2 and NOx 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.	**It has been Complied.** ● The optimum location of monitoring stations in Jharia Coal Field has been finalized with the approval of Jharkhand State Pollution Control Board. Enclosed as **Annexure – 8.** ● Air quality Monitoring report has been enclosed as **Annexure-16.**
iv	Data on ambient air quality (PM10, PM 2.5, SO2 and NOX) 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 recognized under the EPA rules, 1986 shall be furnished as part of compliance report.	**It is being complied.** Data is regularly submitted to ministry along with compliance report. **Annexure- 16.**
v	Adequate measures shall be taken for control of noise levels below 85 dB(A) 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.** Personnel operating HEMMs, drilling machine and other machines comply with safety regulation and are equipped with Personal Protective Equipment. Noise monitoring data has been enclosed as **Annexure 17.**
vi	Industrial wastewater (workshop and waste water 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 December1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.	**It is being complied.** Effluents discharge standards are regularly monitored by CMPDIL for cluster VI group of mines. Mine water is being treated using filter plants (Pressure, Sand filters etc.) for its further use in industrial purpose and supply to the community. Mine water monitoring report has been enclosed as **Annexure 10**.

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.** Vehicles used for transportation of coal are always covered by tarpaulin and being monitored for the vehicular emission by the transporter and BCCL. Copy of some Emission under Control/Fitness Certificate has been enclosed as **Annexure 18.**
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 analyzed through a laboratory recognized under EPA Rules, 1986.	**It is being complied.** Ambient environmental monitoring is being done by CMPDIL. Monitoring data have been enclosed as **Annexure - 10, 16, 17.**
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.	**It is being Complied.** A separate full-fledged Human Resource Development Deptt. is conducting regular training programme on these issues. Apart from this Vocational Training Centers (VTC) are existing in the Area which provides periodical training on the safety and occupational health issue to each of the workers working in the mines. The VTC training data is enclosed in **Annexure-4.**
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 an records maintained thereof. The quality of environment due to outsourcing and health and safety issues of the outsourced manpower should be addressed by the company while outsourcing.	**It is being Complied.** Periodical medical Examination (PME) of all the mining and other personnel is being carried out as per the Coal Mines Regulation 2017 and Director General of Mines Safety (DGMS) guidelines. Enclosed as **Annexure 19**.
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 Dy.GM (Environment) along with a suitable qualified multi-disciplinary team of executives have been established at Company Headquarters for implementation of Environment Policy of the company. ● One Executive in each area has also been nominated as Nodal Officer (Environment) for looking after routine environment related jobs along with an Environment Management Cell at Area Level.

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 compiled.** Funds for environmental protection measures area kept in separate head which is only used in environmental management activities
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 www.envfor.nic.in.	**It has been complied.** Advertisement in local newspaper has also been done.
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.	**It has been complied.**
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.	**It has been 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, PM2.5, SO2 and NO„ (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.	**It is being Complied.**

xvii	The project proponent shall submit six monthly compliance reports on status of compliance the stipulated environmental clearance conditions (both in hard copy and in e-mail) to view 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.	**It is being Complied.**
xix	The Environmental statement for each financial year ending 31 March in Form —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.	**It is being Complied.**
6.	The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report so also during their presentation to the EAC.	**It is being Complied.**
7.	The proponent is required to obtain all necessary clearances/approvals that may be required before the start of the project.	**It is being Complied.**
8.	The Ministry or any other competent authority may stipulate any further condition for environmental protection.	**Agreed**
9.	Failure to comply with any of the conditions mentioned above may result in the withdrawal of this clearance and attract the provisions of the Environment (Protection) Act, 1986.	**Agreed**

	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, 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 minting operations.	**It is being Complied.**
11.	The Environmental Clearance is subject to the outcome of the Writ Petition filed b. 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.	**Agreed**

31/5/22

Project Officer

East Bassuriya Colliery

31/5/22

Project Officer

Gondudih Khas Kusunda Colliery/ Bassuriya Colliery

Project Officer

Godhur Colliery

Annexure – I

Name of the Mine	**Annual Production (Te)**
Godhur	73845
Gondudih Khas Kusunda Colliery	2324400
East Bassuriya Colliery	164495
Total	2562740 **(2.56 MTPA)**

Annexure – 2

CSR initiatives and expenditure FY 2021-22 _BCCL		
FY 2021-22		
Sl No	**Particulars**	**Expenditure incurred(in Rs. Lakh)**
1	Depository mode Financial assistance to D.C., Dhanbad for combating COVID-19 situation in Dhanbad	100.00
2	Depository mode Financial assistance to Jharkhand State Disaster Mitigation Fund for distributing home isolation kits to COVID-19 patients	25.00
3	Procurement of masks & hand wash/ sanitizers for distribution amongst public for combating COVID-19	0.72
4	Fooding through Administration department for Doctors and Frontline workers at Covid Ward, CHD, Dhanbad and other miscellaneous COVID-19 expenditure like temporary contract of doctor etc.	36.45
5	Additional financial liability on submission of fresh bills for the work "Boarding and lodging of doctors and paramedical staff engaged in COVID-19 Hospital, CHD"	22.62
6	Cleaning and sanitization of temporary quarantine centres for doctors and paramedic staff engaged in treatment of COVID 19	2.15
7	Training of Youths in Various Plastic Engineering Courses through Central Institute of Plastics Engineering and Technology (CIPET)	14.00
8	Development of 500 Nos. of Aanganwadi Centres in Dhanbad	75.00
9	SVA Survey Expenditure (All Areas)	6.96
10	Distribution of blankets during winter season	3.58
11	Submission of fresh bills for project "Training of mining sirdar for SC/ST PAPs" by PB Area	3.26
12	Submission of fresh bills for "Operation of COVID quarantine centre" by Bastacolla Area	3.80
13	Upgradation of public toilets and approach road in Central Hospital, Dhanbad	3.15
14	Submission of final bills for "Gymnasium at Ambedkar Academy, Dhanbad"	2.35
15	Reversal of Financial Liablity (medical camps)	(8.52)
16	Amount for Aanganwadi deposited in Unspent CSR Account	188.50
17	Amount for CIPET deposited in Unspent CSR Account	14.00
	Total	**493.02**

- Work Order for 530 nos of bamboo gabion plantation has been issued to DFO, Dhanbad and is being carried out
- Plantation- At Gondudih- Khas Kusunda Colliery about 500 no. bamboo-gabion plantation have already been done.
- In 2014-15 At 1st Ecological restoration site a total of about 6402 no. plants and plenty of grass-seeds in an area of 2.0 Ha have been planted successfully with encouraging results, and natural eco-system is being established there with increasing flora & fauna (Fig.2).
- In 2015-16 At 2nd. eco-restoration site (about 1.79 Ha OB dump- area) about 2400 plants along with seeds of grass and shrubs have spread over since 2015-'16 successfully.
- In 2016—17 And at 3rd. site, (about 3.0 Ha OB dump area) about 5322 plants and plenty of grass seeds have been planted
- In 2018-19 A 4th site of area about 4.99 Ha has been taken up in the year 2018-19. Till March, 2019 a total of 12,482 saplings have been planted.
- In 2019-20, at all four sites more 4465 plant has been planted and 5000 seed ball broadcasted and 983 plants have been planted in lease hold of mines under Kusunda Area.
- In 2020-21 A new site adjacent to site 1 is proposed for plantation.

PLANTATION/ECOLOGICAL-RESTORATION PROGRESS

Year	Biological reclamation Area (in Ha)	No. of Plants in Eco-Restoration Site (approx.)
2014-15	2.0	6402
2015-16	1.79	2400
2016-17	3.00	5322
2018-19	4.99	12482
2019-20	0.00	4465
2021-22	1.00	1000
Total	**12.78**	**32071**

Annexure – 4

Status of Training

Sl. No.	Month	Refresher Training	Initial Training	Contractual Worker	Change of Job	Special Training
1	October	25	2	0	0	27
2	November	21	1	0	8	0
3	December	32	1	8	3	22
4	January	31	0	5	2	10
5	February	28	1	0	3	14
6	March	2	1	6	5	14
Total		**139**	**6**	**19**	**21**	**87**

STATUS OF JHARIA MASTER PLAN DOVETAILED WITH ENVIRONMENT CLEARANCE CONDITIONS

Rehabilitation and Fire control measures

Socio-economic Survey :

Survey of fire affected families (non-BCCL) at Kusunda Area has been nearly completed by JRDA and distribution of ID Card has been partially done by JRDA.

Accommodation provided in Satellite Township:

- Till about 1464 quarters out of 1700 total newly quarters constructed in colonies at East Bassuriya and at Jagjivan Nagar and Karmik Nagar have been allotted to the employees residing at coal bearing/fire affected areas in different collieries under Kusunda Area and out of which 793 employees have been shifted. More quarters are under construction for phase wise shifting of employees.

Status of fire dealing :

Under Master Plan, many Fire schemes have been formulated / prepared /implemented for dealing fires sites spread in collieries of BCCL. Further for expediting the fire dealing process, excavation methods has been resorted to by deploying Hired HEMM at various mines of BCCL. Total digging out of fiery coal has been adopted for dealing of fire.
In fire patch of V/VI/VII/VIII seam of Gareria Secn. at East Bassuriya, about 1,70,000 cu.m. mitti and non-combustible material has been filled, rest will be filled by quarry OB .

At Kusunda Colliery total firey coal are being dug out as a measure of fire dealing with the deployment of hired HEMM, and at Ena OC, after restart, total firey coal will be dug out . The underground workings of Alkusa Colliery has been sealed due to fire threats after taking measures to control UG fire as per CMR'57 DGMS guidelines. The coal reserve of Alkusa Colliery will be extracted from Kusunda OC side. For control and monitoring of threat of subsidence at fire affected area within Godhur lease hold special attention has been made by mine management.

Details of priority sites of JRDA under Jharia Master Plan of Kusunda Area-VI

Priority	Sr No.	JRDA Site Code	JRDA Site Name	Total no of encroachers surveyed (Non LTH)	Total no of LTH	To be Extracted Upto Seam	Left Seam	Coal Locked To be Extracted Upto Seam	Urban /Rural	Name of Colliery of Kusunda Area	Total Quarters Allotted to non-LTH of Kusunda Area by J.R.D.A	number of non LTH allottees who have received their allotment order as on 29/2/2020	Total no. of non LTH allottees shifted to allotted quarter at Belgaria as on 29/2/2020	Total no. of JRDA qtrs reported by unit P.Os as urgently required for poject expansion again sent to G.M-JMP on 7/11/2019
Phase-I	1	2/176	Keska Basti Qtrs	0	3	Comb.	IV Seam	59 LMT	Urban	Kusunda	0	0	0	0
	2	2/215	4 pit Ghansadih Colliery Qtrs/20 & Ghansadih Kumartola Bhuiyan Bastee	425	0	Seam	& Below			Godhur (Kenduadih)	29	20	0	65
	3	1/153	West Ena 1 & 2 Pit/01	879	0	Extracted	Nil	70 LMT		Industry	0	0	0	
	4	1/133	No 2 Colony/04	289	0	Upto Zero				Ena	47	5	0	82
	5	1/134	Officer Colony & B.UP Area/05		0	Seam				Ena	0	0	0	
	6	2/163	Lahabera Bastee/03	65	0	Comb.	IV Seam	10 LMT		Industry	0	0	0	0
	7	2/165	KOCP Office and Colony qtrs.	64	0					Industry	0	0	0	
	8	2/166	Rise Bhagatdih Colony/06	276	0	Seam	& Below			Industry	18	1	0	96
Total				1998	3			139 LMT			94	26	0	243
Phase-II	1	1/150	No 1 Bastee/01	120	1	Extracted	Nil	59 LMT	Urban	Basseriya	0	0	0	0
	2	1/154	Office Complex & companies Qtrs/10	84	0					Khas Kusunda	0	0	0	0
	3	2/167	B Panel Area/07	125	0					KKC	0	0	0	0
	4	2/168	Colony near KG Section School/11	4	0					KKC	0	0	0	0
	5	2/169	Company Qtr west of Bhuli Road/12	6	1					KKC	0	0	0	0
	6	2/172	Harijan Bastee/05	49	51	Upto Zero				KKC	0	0	0	0
	7	2/173	Hospital Bastee/08	101	25					KKC	0	0	0	0
	8	2/174	Kharikabad Bastee/09	63	87					KKC	0	0	0	0
	9	2/175	Kusunda Station Village/06	66	4					KKC	0	0	0	0
	10	2/170	Dharia Joba Village/04	54	13			80 LMT		KKC	0	0	0	0
	11	2/171	Gondudih Bastee/03	35	26					Basseriya	0	0	0	0
	12	1/149	Gwala Patti/01	287	50	Seam					0	0	0	0
Total				994	258			139 LMT						
Phase-III	1	1/132	Colliery Qtrs/03	228	639	Upto Zero	Nil	15 LMT	Urban	Ena	0	0	0	0
	2	1/135	Parsatand Bastee/02	199	71	Seam				Ena	0	0	0	0

	3	2/159	Gareria Bastee/01	185	78	Comb.	IV Seam	22 LMT		East	0	0	0	0
	4	1/151	Rawani Bastee	134	7			30 LMT		Godhur	2	0	0	0
	5	2/160	3 Pit Area/03	116	0					Godhur	0	0	0	0
	6	2/161	Beldar Bastee	136	354					Godhur	0	0	0	0
	7	1/155	Kusunda Village/01	80	3			20 LMT		Kusunda	0	0	0	0
	8	1/156	workshop Office and Qtrs (PK1 & 2 Pit Area)/04	187	0					Kusunda Colliery	0	0	0	0
	9	1/123	Officers qtrs near Thana/01	37	0			30 LMT		Alkusa	0	0	0	0
	10	1/121	DAV school & G camp/02	65	0					Alkusa	0	0	0	0
	11	1/122	Hutment Near Durga mandir/05	44	0			25 LMT		Alkusa	0	0	0	0
	12	2/124	GM bunglows & qtrs/04	122	0					Alkusa	0	0	0	0
	13	2/125	Qtrs near 6/7 Pit /03	272	0			10 LMT		Alkusa	0	0	0	0
	14	2/156	Bright Kusunda Colony/02	233	0	Seam	& Below	NIL		Dhansar	0	0	0	0
	15	2/158	New Delhi Colony/03	591	0	III seam &	NIL	8 LMT		Dhansar	0	0	0	0
	16	2/157	East Godhur Colony/01	221	0	Zero Seam	NIL	NIL		Kusunda Area	0	0	0	0
Total				2850	1152			160 LMT			96	26	0	243
Vacated/	1	2/164	Huchuktand Bastee/02	0	0	Comb.	IV Seam		Urban	excavation through dept. patch (Industry)				
sites where						Seam	& Below							
mining	2	1/152	Surender Colony(East Loyabad)	0	0	Excavated upto Zero Seam	NIL			Gondudih				
operation	3	2/162	10 no Dhowra/08	0	0	Zero Seam	Nil			Excavation will be done through patch in (Gondudih)				
is done														
Total				5842	1413						96	26	0	243

Annexure – 6

SURFACE PLAN OF CLUSTER VI

Global Expression of Interest (EoI)

For

Dealing with coal mine fires in lease hold of BCCL in Jharia Coalfield, Dhanbad, Jharkhand, India. Detailed scope of work as given in the document.

LAST DATE OF SUBMISSION : 28.04.2014

1. BHARAT COKING COAL LIMITED: A PROFILE

Bharat Coking Coal Limited incorporated in January, 1972 is a fully owned subsidiary of Coal India Limited a 'Maharatna' Public Sector Undertaking under the Ministry of Coal, Government of India. Being the sole repository of prime coking coal in the country, BCCL, at present operates 66 coal mines spread over in Jharia Coalfield and part of Raniganj Coalfield apart from 6 coking coal washeries & 2 non-coking coal washeries. The mines are grouped under 12 areas for administrative convenience. BCCL has some unique inherent and perennial characteristics which are adversely affect the normal operation of the Company. Difficult geo-mining conditions involving large number of overlaying coal seams, preponderance of old workings, high degree of gassiness, coal fires affecting working seams, water logged upper seams above current places of working, etc, restricts coal production and productivity. Besides, high density of population in the coal bearing areas limits the equipment size of opencast operations apart from being an impediment to acquisition of land for uninterrupted operations. In the year 2012-13, the company achieved a coal production of 31.21 million tone and offtake of 32.99 million tone thereby registering the highest ever the Turnover and Profitability (PAT) of Rs 10176.62 Cr. and Rs 1709.06 respectively. A brief description of the organizational structure and the detailed activities of Bharat Coking Coal Limited can be viewed in the website http://www.bccl.gov.in.

The mission is to produce planned quantity of coal efficiently and economically in an Eco-friendly manner with due regard to Safety, Conservation & Quality. The company strives to meet the growing demand of thermal as well as metallurgical coal in the country in a environmentally and socially sustainable manner.

2.2. Bidder's Credential Requirement:

i) The bidder(s) must have successfully dealt with mine fire in at least two coal mines, one open cast and one underground mine. The annual capacity of opencast and underground mines should be at least 2 Mt and 0.5 Mt respectively during last seven years of last financial year. The documentary proof of successful dealing with fire shall be submitted along with the bid.

ii) The bidders in their name must have achieved a minimum average annual financial turnover of INR One Hundred Million or equivalent USD during last 3 years ending 31st March of previous financial year. The documentary evidence to this effect would be copies of audited Balance Sheet and Profit & Loss A/c duly countersigned by the authorized representative of bidding company and a declaration to the above affect duly signed by the authorized representative of bidding company & counter signed by a Chartered Accountant or equivalent.

iii) The bidder must possess "key personnel" (minimum number) of the following categories with requisite qualification and experience :-

Sl. No	Skill of key personnel	Requisite Qualification	Minimum Experience	Minimum Nos. for eligibility
1.	Technical Expert (Mining/ Fire dealing/ Mine Rescue)	B.E /B.Tech (Mining) or equivalent	10 years.	10
2.	Technical Expert (Geology/Remote Sensing)	M. Sc (Geology) or equivalent	10 years	2
3	Technical expert (Environment)	B. Tech/BE/M.Sc.(Envr) or equivalent	10 years	1
4.	Technical Expert (Infrastructure)	B.E /B.Tech (Mechanical / Electrical / Civil) or equivalent	10 years	3
5.	IT Expert	B.E /B.Tech/ M.Sc (Computer) or equivalent	10 years	1
6.	Financial Expert	MBA(Finance)/Chartered Accountant/ICWA or equivalent	10 years	1

Note :- The bidder shall designate one of the team members as the team leader.

The documentary evidence to this effect would be self-attested CVs including necessary competency certificate for working in Indian mines duly countersigned by the authorized representative of bidding company.

SCT

7.0 OPENING OF THE EOI :

EOI will be opened **on 29.04.2014 at 04.00 PM** in the office of the GM (CMC), BCCL, Level-V, Koyla Bhawan, Dhanbad-826005.

Bidders are requested to go through the details of EOI document & enclose all the required documents along with the proposal. Each page of the proposal shall be signed with seal.

9.0 Prospective parties may note that mere submission of EOI and / or submission of additional information do not automatically entitle them to claim for pre-qualification. BCCL reserves the right to seek for any other information during the process of evaluation, if required.

10.0 BCCL reserves the right to reject any / all the applications to EOI without assigning any reason(s) whatsoever thereof.

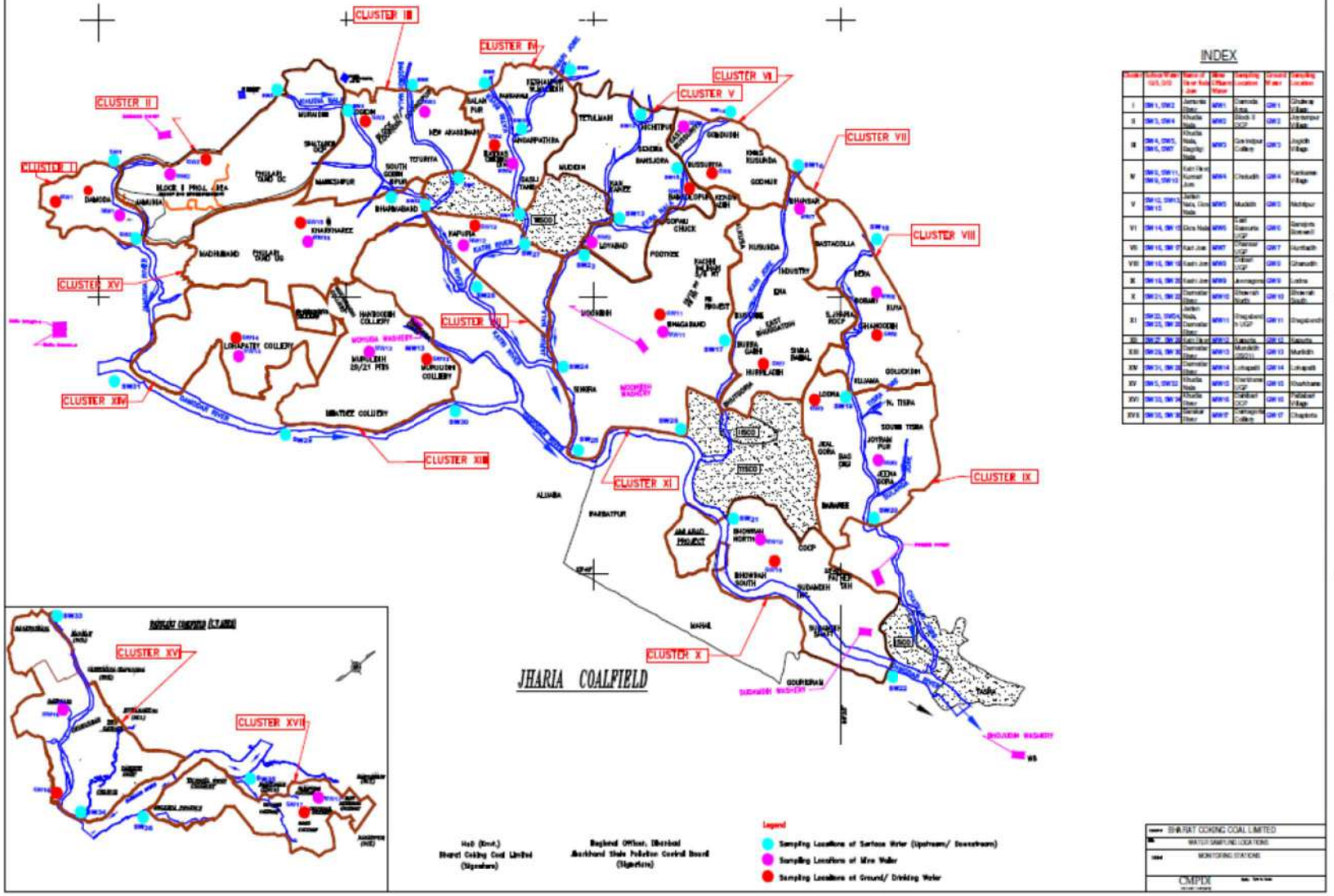
Sd/-
General Manager
(Contract Management Cell)

Distribution :

1. PRO – With a request to publish the abridged EOI as enclosed in local as well as National dailies as per norms of the Company and also arrange to send the paper cutting of publication to the Contract Management Cell.
2. D(T)OP / D(T)P&P / D(F) / D(P) / CVO.
3. GM(Co-ordn) / GM(S&M) / GM(F)I/C / GM(M&M) / GM(E&M) / GM(Excv) / GM(P&P) / GM(IE) / GM(System) / Dy. GM (Envt.), BCCL
4. Sr.ES to CMD - for kind information of CMD.
5. HOD (Admn) with a request to display this EOI in Koyla Bhawan Notice Boards.
6. All CGMs/GMs of the Areas including Washery Zones for wide circulation through display in the Notice Boards.
7. Inspector, CISF- with a request to deploy security personnel at the office of GM (CMC), Level-V, Koyla Bhawan on 28.04.2014 from 9:30A.M to 4:00P.M and on 29.04.2014 from 3:30 PM till completion of the meeting.
8. Desk In-Charge, BCCL, M M Division, 4th floor, 6, Lyons Range, Kolkata.
9. CGM / GM (Contract Management Cell), WCL/SECL/NCL/MCL/ECL/CCL & CIL
10. Sri R.K. Choubey, Sr.DEO / Sri B N Banerjee, DEO, CMC Deptt. - to upload this EOI in BCCL Website and forward soft copy of NIC format to GM (System) for uploading the same at NIC portal website (soft copy of the same is enclosed for needful).

Sd/-
General Manager
(Contract Management Cell)

Water Sampling Locations in BCCL



Lette

From

To,

Sub:

Sir,

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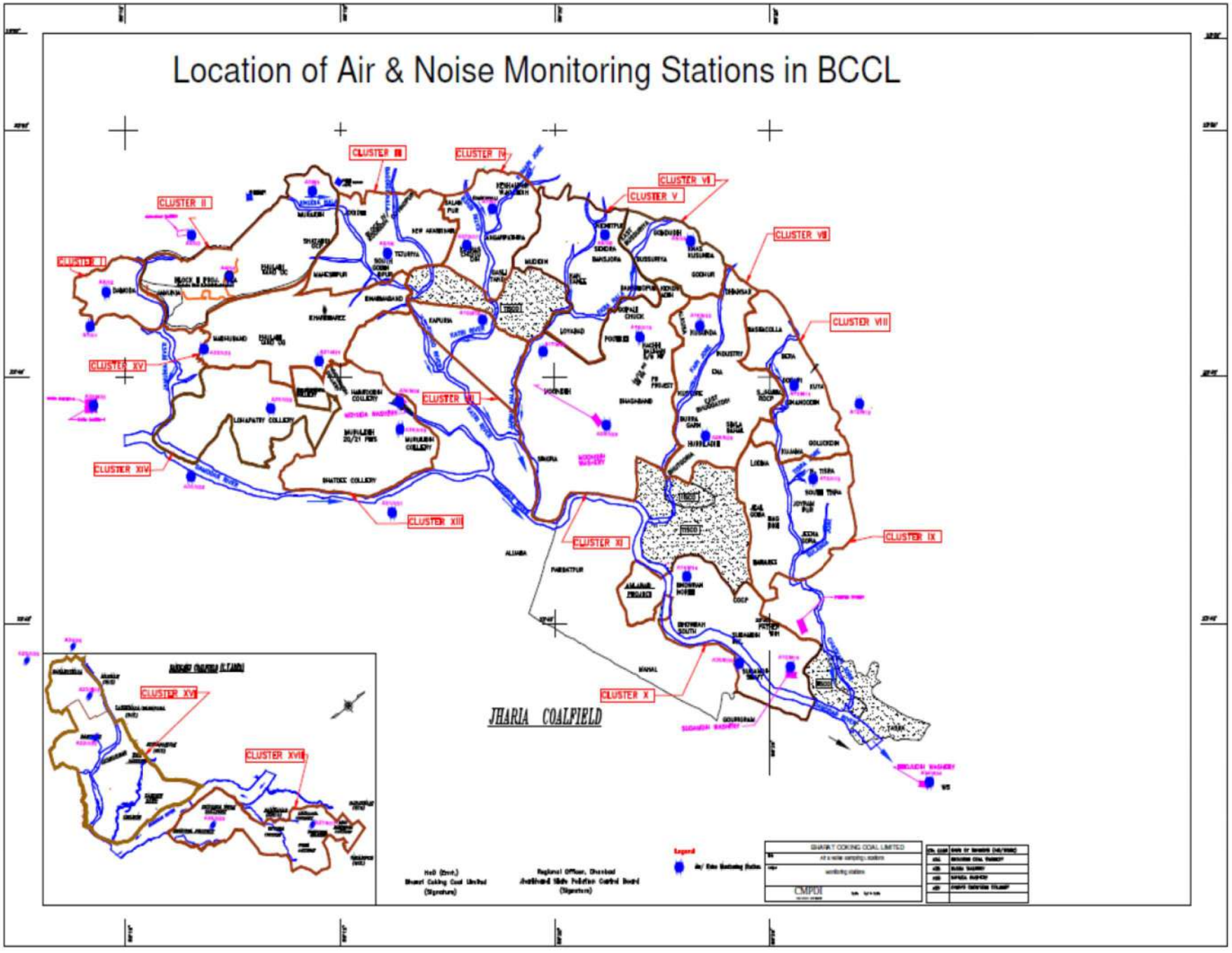
Location of Air & Noise Monitoring Stations in BCCL



COAL INDIA LIMITED
कोल इण्डिया लिमिटेड
ENVIRONMENT DIVISION
पर्यावरण बिभाग
Corporate Identity Number: L23109WB1973GOI028844
COAL BHAWAN, Premises No -04MAR Plot no - AF-III, Action Area- IA
RAJARHAT , NEW TOWN KOLKATA - 700156,
E-mail: cgmenv.cil@gov.in, Web:www.coalindia.in
TEL: 033-23246638 / FAX: 033-23244232

CIL/ENV/2015-16/ 7000

09//12/2015

प्रति,
General Manager(Environment)/ HOD (Environment),
ECL,BCCL,CCL,NCL,SECL,WCL,CMPDIL,NEC, MCL,

Sub: MoU between Coal India Ltd.& NEERI for "Sustainable Coal Mining in Coal India Ltd."

महोदय,

In view of the directive of 321 th CIL Board held on 15 th October 2015 pertaining to enter into a long tern. MoU between CIL and CSIR -NEERI for identification of environmental issues through assessment of monitoring data of CIL and preparing an action plan for implementing the same in coal mining, MoU has been signed between Coal India Ltd and National Environmental Engineering Research Institute Ranchi, on 3/12/2015.
Copy of the MoU is enclosed herewith for your information.

9/11/2015
मुख्यप्रबंधक /पर्यावरण
सी. आई. एल.,

संलग्न : उपर्युक्त

भारत कोकिंग कोल लिमिटेड
एक मिनी रत्न कम्पनी
(कोल इंडिया लिमिटेड का एक अंग)
उप महाप्रबंधक (पर्यावरण) का कार्यालय
कोयला भवन,कोयला नगर, धनबाद–826005

Bharat Coking Coal Limited
A Mini Ratna Company
(A Subsidiary of Coal India Limited)
Office of the Dy. GM (Environment)
Koyla Bhawan, Koyla Nagar, Dhanbad -826005

CIN : U10101JH1972GOI000918

पत्र संख्या :भाकोकोलि/उपमहाप्रबंधक)पर्या/(SOURCE APPORTIONMENT (MoU) /NEERI /2018/
दिनांक:12.05.2018

To,
The Director,
CSIR-NEERI,
Nehru Marg,
Nagpur– 440020
Maharashtra

Sub.: Work Order for the Project "Source Apportionment of ambient air particulate matter in Jharia coalfields region, Jharkhand".

Ref: **(i)Memorandum of Understanding between CIL & NEERI dated 03.12.2015**
(ii)your proposal vide email dated 12.09.2016 and subsequent amendment including GST rates
(iii) "Terms of reference for the Project "Source Apportionment of ambient air particulate matter in Jharia coalfields region, Jharkhand" dated 09.03.2018.
(iv) NEERI's acceptance of "TOR" vide email dated 08.05.2018

Dear Sir,
This has reference to proposal **"Source Apportionment of ambient air particulate matter in Jharia coalfields region, Jharkhand" vide email** dated 12.09.2016. The Competent Authority has approved the award of work to NEERI namely **"Source Apportionment of ambient air particulate matter in Jharia coalfields region, Jharkhand" for One Crore forty one Lakh and sixty thousand only inclusive of GST(Rs. 1,41,60,000/-)** for a period of Twelve(12) months under the MOU dated 03.12.2015 between CIL & NEERI, extended to all subsidiaries of CIL & the terms of reference. The Project-in-charge will be HOD(Environment) or any of his authorized representative.

You are required to comply the scope, objective & terms and conditions in respect of above mentioned work as agreed in the "Terms of Reference" as given below.

1. Scope of the Work:

- To conduct Source Apportionment Study for varying sources of gasses/smoke/dust emission from source to source (fuel wood, coal, fly-ash, TPPs, coke plants, traffic, silica from natural dust etc., but not limited to this) for the entire Jharia Coalfields (within and up to 10 Km from the periphery / boundary of BCCL mines)

- Study of Mineralogical composition of the suspended particulate matter (PM10 and PM2.5) with their characterization and quantification.
- Ascertaining sources(fuel wood, coal, fly-ash, TPPs, coke plants, traffic, silica from natural dust etc., but not limited to this) and extent of the air pollution of Jharia coalfield with suggesting cluster-wise appropriate techno-economically viable, mitigation management plan including action plan for the control of pollution level.
- The Environment Clearance has been granted to mines of BCCL on Cluster Basis, the final report must be submitted to BCCL on Cluster Basis. JCF has been divided into Clusters. The study to include the entire Jharia Coalfield along with area up to 10 Km from the periphery / boundary of BCCL mines (Key Plan showing Clusters in Jharia Coalfield enclosed)
- Two Presentations to be made by NEERI- One to BCCL Management before submission of Final report & another to the various stake holders including regulatory agencies after submission of the report.
- The dispersion Model should be on GIS platform
- The Hotspots/bottleneck points to be identified where there is increased pollution on GIS platform.
- Skill transfer and capacity building training for BCCL personnel.
- Accomodation , travel , local transport, other incidental cost and anciallary expenditures to be borne by NEERI.

2. Objectives of the study:

The major objective of the study is to assess the current ambient air quality, sources of air pollution and propose the priorities for the actions for improvement of air quality. The study to include the entire Jharia Coalfield along with area up to 10 Km from the periphery / boundary of BCCL mines. The detailed objectives are as following;

A) Ambient Air Monitoring related

- Monitoring of ambient air quality at selected receptor locations for pollutants including PM10, PM 2.5(limited), SO2, NOx, PAHs to establish the current status of the air quality in Jharia Coalfields along with area up to 10 K.M from the periphery / boundary of BCCL mines. Also review of the available air quality monitoring data from Central Pollution Control Board(CPCB) /Jharkhand State Pollution Control Board(JSPCB) .
- To calibrate dispersion modelling predictions using measured air quality parameters
- To draw supportive data through specific site related monitoring regarding impact causing sources such as kerbside monitoring.
- To establish the impact of meteorological conditions on a few select indicator pollutants in different micro meteorological conditions of the Jharia Coalfileds.

B) Emission Inventory related of Jharia Coalfields along with area up to 10 Km from the periphery / boundary of BCCL mines

WATER QUALITY MONITORING

3.1 Location of sampling sites

(Refer **Plate No. – II**)

Mine Discharge of East Basseriya (MW6)

A sampling point is fixed to assess the effluent quality of Mine discharge. This location is selected to monitor effluent discharge in to Ekra Nala.

3.2 Methodology of sampling and analysis

Water samples were collected as per standard practice. The effluent samples were collected and analyzed for four parameters on fortnightly basis at the Environmental Laboratory of CMPDI RI-II, Dhanbad.

3.3 Results & Interpretations

The results are given in tabular form along with the applicable standards. Results are compared with Schedule - VI, effluent prescribed by MoEF&CC. Results show that most of the parameters are within the permissible limits.

WATER QUALITY DATA

(EFFLUENT WATER- FOUR PARAMETERS)

Name of the Cluster: **Cluster -VI**		Month: **MARCH 2022**	Name of the Station: **Mine Discharge of East Basseriya**	
Sl. No.	**Parameters**	**MW6** First Fortnight	**MW6** Second Fortnight	**As per MOEF General Standards for schedule VI**
		07.03.2022	28.03.2022	
1	Total Suspended Solids	49	52	*100 (Max)*
2	pH	7.72	7.63	*5.5 - 9.0*
3	Oil & Grease	<2.0	<2.0	*10 (Max)*
4	COD	24	32	*250 (Max)*

All values are expressed in mg/lit except pH.

Analysed By
JSA/SA/SSA

Checked By
Lab In Charge
RI-2, CMPDI, Dhanbad

Approved By
HOD(In-charge) Environment
RI-2, CMPDI, Dhanbad

WATER QUALITY MONITORING

3.1 Location of sampling sites

(Refer Plate No. – II)

Mine Discharge of East Basseriya (MW6)

A sampling point is fixed to assess the effluent quality of Mine discharge. This location is selected to monitor effluent discharge in to Ekra Nala.

3.2 Methodology of sampling and analysis

Water samples were collected as per standard practice. The effluent samples were collected and analyzed for four parameters on fortnightly basis at the Environmental Laboratory of CMPDI RI-II, Dhanbad.

3.3 Results & Interpretations

The results are given in tabular form along with the applicable standards. Results are compared with Schedule - VI, effluent prescribed by MoEF&CC. Results show that most of the parameters are within the permissible limits.

WATER QUALITY DATA

(EFFLUENT WATER- FOUR PARAMETERS)

Name of the Cluster: Cluster -VI		Month: **FEB 2022**	Name of the Station: **Mine Discharge of East Basseriya**	
Sl. No.	**Parameters**	**MW6** First Fortnight	**MW6** Second Fortnight	**As per MOEF General Standards for schedule VI**
		14.02.2022	21.02.2022	
1	Total Suspended Solids	49	35	*100 (Max)*
2	pH	7.65	7.7	*5.5 - 9.0*
3	Oil & Grease	<2.0	<2.0	*10 (Max)*
4	COD	24	20	*250 (Max)*

All values are expressed in mg/lit except pH.

Analysed By
JSA/SA/SSA

Checked By
Lab In Charge
RI-2, CMPDI, Dhanbad

Approved By
HOD(In-charge) Environment
RI-2, CMPDI, Dhanbad

WATER QUALITY MONITORING

3.1 Location of sampling sites

(Refer **Plate No. – II**)

Mine Discharge of East Basseriya (MW6)

A sampling point is fixed to assess the effluent quality of Mine discharge. This location is selected to monitor effluent discharge in to Ekra Nala.

3.2 Methodology of sampling and analysis

Water samples were collected as per standard practice. The effluent samples were collected and analyzed for four parameters on fortnightly basis at the Environmental Laboratory of CMPDI RI-II, Dhanbad.

3.3 Results & Interpretations

The results are given in tabular form along with the applicable standards. Results are compared with Schedule - VI, effluent prescribed by MoEF&CC. Results show that most of the parameters are within the permissible limits.

WATER QUALITY DATA

(EFFLUENT WATER- FOUR PARAMETERS)

Name of the Cluster: **Cluster -VI**		Month: **JAN 2022**	Name of the Station: **Mine Discharge of East Basseriya**	
Sl. No.	**Parameters**	**MW6** First Fortnight	**MW6** Second Fortnight	**As per MOEF General Standards for schedule VI**
		10.01.2022	17.01.2022	
1	Total Suspended Solids	37	36	*100 (Max)*
2	pH	7.56	7.6	*5.5 - 9.0*
3	Oil & Grease	<2.0	<2.0	*10 (Max)*
4	COD	16	28	*250 (Max)*

All values are expressed in mg/lit except pH.

Analysed By
JSA/SA/SSA

Checked By
Lab In Charge
RI-2, CMPDI, Dhanbad

Approved By
HOD(In-charge) Environment
RI-2, CMPDI, Dhanbad

WATER QUALITY MONITORING

3.1 Location of sampling sites

(Refer **Plate No. – II**)

Mine Discharge of East Basseriya (MW6)

A sampling point is fixed to assess the effluent quality of Mine discharge. This location is selected to monitor effluent discharge in to Ekra Nala.

3.2 Methodology of sampling and analysis

Water samples were collected as per standard practice. The effluent samples were collected and analyzed for four parameters on fortnightly basis at the Environmental Laboratory of CMPDI RI-II, Dhanbad.

3.3 Results & Interpretations

The results are given in tabular form along with the applicable standards. Results are compared with Schedule - VI, effluent prescribed by MoEF&CC. Results show that most of the parameters are within the permissible limits.

WATER QUALITY DATA

(EFFLUENT WATER- FOUR PARAMETERS)

Name of the Cluster: **Cluster -VI**		Month: **DEC 2021**	Name of the Station: **Mine Discharge of East Basseriya**	
Sl. No.	**Parameters**	**MW6** First Fortnight	**MW6** Second Fortnight	**As per MOEF General Standards for schedule VI**
		06.12.2021	20.12.2021	
1	Total Suspended Solids	47	38	*100 (Max)*
2	pH	7.92	7.99	*5.5 - 9.0*
3	Oil & Grease	<2.0	<2.0	*10 (Max)*
4	COD	24	16	*250 (Max)*

All values are expressed in mg/lit except pH.

Analysed By JSA/SA/SSA

Checked By Lab In Charge

Approved By HOD(In-charge) Environment

WATER QUALITY MONITORING

3.1 Location of sampling sites

(Refer Plate No. – II)

Mine Discharge of East Basseriya (MW6)

A sampling point is fixed to assess the effluent quality of Mine discharge. This location is selected to monitor effluent discharge in to Ekra Nala.

3.2 Methodology of sampling and analysis

Water samples were collected as per standard practice. The effluent samples were collected and analyzed for four parameters on fortnightly basis at the Environmental Laboratory of CMPDI RI-II, Dhanbad.

3.3 Results & Interpretations

The results are given in tabular form along with the applicable standards. Results are compared with Schedule - VI, effluent prescribed by MoEF&CC. Results show that most of the parameters are within the permissible limits.

WATER QUALITY DATA

(EFFLUENT WATER- FOUR PARAMETERS)

Name of the Cluster: Cluster -VI		Month: NOV 2021	Name of the Station: Mine Discharge of East Basseriya	
Sl. No.	**Parameters**	**MW6** First Fortnight	**MW6** Second Fortnight	**As per MOEF General Standards for schedule VI**
		08.11.2021	22.11.2021	
1	Total Suspended Solids	37	44	*100 (Max)*
2	pH	7.84	7.71	*5.5 - 9.0*
3	Oil & Grease	<2.0	<2.0	*10 (Max)*
4	COD	28	28	*250 (Max)*

All values are expressed in mg/lit except pH.

Analysed By
JSA/SA/SSA

Checked By
Lab In Charge
RI-2, CMPDI, Dhanbad

Approved By
HOD(In-charge) Environment
RI-2, CMPDI, Dhanbad

WATER QUALITY MONITORING

3.1 Location of sampling sites

(Refer **Plate No. – II**)

Mine Discharge of East Basseriya (MW6)

A sampling point is fixed to assess the effluent quality of Mine discharge. This location is selected to monitor effluent discharge in to Ekra Nala.

3.2 Methodology of sampling and analysis

Water samples were collected as per standard practice. The effluent samples were collected and analyzed for four parameters on fortnightly basis at the Environmental Laboratory of CMPDI RI-II, Dhanbad.

3.3 Results & Interpretations

The results are given in tabular form along with the applicable standards. Results are compared with Schedule - VI, effluent prescribed by MoEF&CC. Results show that most of the parameters are within the permissible limits.

WATER QUALITY DATA

(EFFLUENT WATER- FOUR PARAMETERS)

Name of the Cluster: **Cluster -VI**		Month: **OCT 2021**	Name of the Station: **Mine Discharge of East Basseriya**	
Sl. No.	**Parameters**	**MW6** First Fortnight	**MW6** Second Fortnight	**As per MOEF General Standards for schedule VI**
		04.10.2021	25.10.2021	
1	Total Suspended Solids	38	39	*100 (Max)*
2	pH	7.74	7.65	*5.5 - 9.0*
3	Oil & Grease	<2.0	<2.0	*10 (Max)*
4	COD	24	20	*250 (Max)*

All values are expressed in mg/lit except pH.

WATER QUALITY

(SURFACE WATER- ALL PARAMETERS)

Name of the Company: **Bharat Coking Coal Limited** Year : **2021-22**

Name of the Cluster : **Cluster - VI** Month: **Q. E. DEC, 2021**

Stations:

1. Upstream in Ekra Nala SW-14
2. Down stream in Ekra Nala SW-15

Date of Sampling:
06.12.2021
06.12.2021

Sl. No	Parameter	Sampling Stations				IS: 2296	Detection Limit	BIS Standard & Method
		SW14 06.12.2021	SW15 06.12.2021					
1	Arsenic (as As), mg/l, Max	<0.006	<0.006			0.2	0.006	IS-3025,part 37:1988, R-2019/ APHA 23rd Edition AAS-VGA
2	BOD (3 days 27°C), mg/l, Max	<2.0	<2.0			3.00	2.00	IS 3025 (Part 44) : 1993 Reaffirmed 2019 , 3 day incubation at 27°C
3	Colour	2	3			1-100Hazen Units	1	APHA,23RD Edition ,2120-B-:2017
4	Chlorides (as Cl), mg/l, Max	36	36			600	2.00	IS-3025/32:1988, R-2019 Argentometric
5	Copper (as Cu), mg/l, Max	<0.2	<0.2			1.5	0.2	IS 3025/42 : 1992 R : 2019, AAS-Flame
6	Dissolved Oxygen, min.	7.9	8.1			4	0.10	IS 3025 (Part 38) : 1989, Reaffirmed 2019 Modified Winkler Azide Method
7	Fluoride (as F) mg/l, Max	0.86	0.84			1.5	0.02	APHA, 23RD Edition, Page 4-90 to , 4500 –F- D (SPADNS Method)
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01			0.05	0.01	IS 3025 (Part 52) : 2003,Reaffirmed 2019
9	Iron (as Fe), mg/l, Max	0.2	0.2			50	0.2	IS 3025 /53 : 2003,R : 2019 , AAS-Flame Method
10	Lead (as Pb), mg/l, Max	<0.005	<0.005			0.1	0.005	APHA, 23rd Edition, AAS-GTA
11	Nitrate (as NO_3), mg/l, Max	3.19	3.60			50	0.50	APHA, 23rd Edition, P-4-127, 4500 - NO_3^- B , UV-Spectrophotometric Screening Method
12	pH value	7.90	8.30			6.5-8.5	2.5	IS 3025, Part 11 : 1983 R 2017 Electrometric method
13	Phenolic compounds (as C_6H_5OH), mg/l, Max	<0.002	<0.002			0.005	0.002	APHA, 22nd Edition 4-Amino Antipyrine
14	Selenium, mg/l, Max	<0.007	<0.007			0.05	0.007	IS-3025,part 56:2003, R-2019/ APHA 23rd Edition, AAS-VGA
15	Sulphate (as SO_4) mg/l, Max	112	129			400	2.00	APHA –23rd Edition P-4-199, 4500 SO_4^{2-} E
16	Total Dissolved Solids, mg/l, Max	288	303			1500	25.00	IS 3025, Part 16: 1984 R 2017 Gravimetric method
17	Zinc (as Zn), mg/l, Max	<0.1	<0.1			15	0.1	IS 3025/ 49 : 1994, R : 2019, AAS-Flame

All values are expressed in mg/lit unless specified.

Analysed By
JSA/SA/SSA

Checked By
Lab In Charge
RI-2, CMPDI, Dhanbad

Approved By
HOD(In-charge) Environment
RI-2, CMPDI, Dhanbad

Memorandum of Understanding

for

Utilization of mine water by villages situated near mines of CIL in command area of Central Coalfields Limited, Bharat Coking Coal Limited and Eastern Coalfields Limited in the State of Jharkhand

This Memorandum of Understanding "MoU" ("Agreement") is made on **30th day of October 2017** at Ranchi

By and Between

Government of Jharkhand (hereinafter referred to as "GoJ"), represented through Department of Industries, Mines & Geology and Department of Drinking Water & Sanitation, Government of Jharkhand having its office at Ranchi which expression shall, unless the context otherwise requires, includes its successors and assignees of the FIRST PART;

And

Coal India Limited (hereinafter referred to as "CIL"),a Government of India Enterprise having its Registered Office at Coal Bhawan, Premise No-04 MAR, Plot No- AF-III, Action Area- 1A, Newtown, Rajarhat, Kolkata-700156 and represented by General Manager, Corporate Social Responsibility, which expression shall, unless repugnant to the context or meaning thereof, be deemed to include its successors, and permitted assignees of the SECOND PART;

The expressions GoJ and CIL shall hereinafter, as the context may admit or require, be individually referred to as the 'The Party' and collectively as 'the Parties'.

Whereas:

A. The Government of Jharkhand (GoJ) and Coal India Limited (CIL), both parties have agreed in principle to the objective of achieving the common goal of providing surplus water from suitable mines for use by habitations, located in the command area of subsidiaries of CIL in the state of Jharkhand for their various needs. These subsidiaries are Central Coalfields Limited (CCL), Bharat Coking Coal Limited (BCCL) and Eastern Coalfields Limited (ECL).

B. Mine wateravailable in mine voids and from mine discharge in Central Coalfields Limited (CCL), Bharat Coking Coal Limited (BCCL) and Eastern Coalfields Limited (ECL), subsidiaries of CIL, are presently supplied to several colonies of these subsidiary companies of CIL. At some places mine water is drawn by Department of Drinking Water & Sanitation and other agencies/ organizations of Government of Jharkhand.Surplus mine water available at other mines can be used by surrounding habitations for their various needs.

C. Presently, about 25250 million gallon of water is estimated to be available in 88 opencast mine voids of CCL, and about 31million gallon/ day of water is estimated to be available as surplus/excess mine water discharge at 23 mine sites of BCCL and 07mine sites of ECL in State of Jharkhand . The list ofmines where water is available in mine voids in CCL and in mine water discharge in BCCL and ECLare enclosed at **Annexure I, Annexure II, and Annexure III respectively.**

D. The Parties hereby agree, undertake and affirm as under:-

i. That sampling and analysis of quality of water available at variousmine sites(voids ormine discharge), to assess the suitability for potability, agricultural or other uses will be done by a third party having a recognized environmental laboratory andthe party will be selected by mutual consent between CIL(represented by its subsidiaries - CCL, BCCL and ECL) and GoJ.

ii. The report of analysis of quality of water of various mine sites will be submitted by the selected third party to GoJ and CIL (represented by its subsidiaries - CCL, BCCL and ECL).

iii. That cost of sampling and analysis of quality of water of various mine sites will be borne by CIL (represented by its subsidiaries - CCL, BCCL and ECL).

iv. That CIL (represented by its subsidiaries CCL, BCCL and ECL) shall bear all initial cost for construction of civil works like foundation, platform and shed for installation of motor and pumps for drawal of water at identified mine sites.

v. That Government of Jharkhand shall bear the cost of pumps, motors, associated power supply, pipelines and their installation at identified mine sitesfrom where water is to be drawn. The cost of running these facilities would be borne byGovernment of Jharkhand or community benefitted.

vi. The construction, operation and maintenance cost for treatment and distribution facilities of water from identified mine sites will be borne by GoJ.

vii. The list of mine sites where water is available in voids or as mine discharge are placed at **Annexure I, Annexure II, and Annexure III for CCL, BCCL, and ECL** respectively. The number of mine sites may increase / decrease in future. So modalities for pumping water from the additional sites will be same as laid down at serial no D (i) to D (vi).

viii. In case of dispute, the matter shall be mutually resolved and either party will not be held responsible for non discharge of responsibility under this agreement.

ix. In case of force majeure or an Act of God, preventing the parties from fulfilling part or all the obligations, both parties shall be exonerated from carrying out further action as per MoU until the force majeure no longer exists.

x. The MoU will be in force for 30 (thirty) years.The MoU may be renewed as mutually agreed upon by CIL (represented by its subsidiaries CCL, BCCL and ECL) and GoJ beyond the mentioned period of MoU.

Provided further that in case dewatering is required to start coal production in national interest from these mines then the parties will sit together and mutually decide modalities for the same.

xi. The sustainability of mine sites in respect of future availability of water will be assessed/ studied by CIL.

xii. This MoU shall be in accordance with applicable Acts, Rules and Guidelines for coal mining including mine closure guidelines and shall not be in contravention with provisions made therein.

IN WITNESS THEREOF, both parties hereto have signed this MoU in two original copies in English on the date indicated above.

For Coal India Limited

1. Siddh Nath Singh, General Manager, CSR,
   Coal India Limited

(.....)

For Government of Jharkhand

Department of Industries, Mines & Geology

1. Aboobacker Siddique P., I.A.S.
   Mines Commissioner,
   Mines & Geology Department,
   Government of Jharkhand.

(.....)

Drinking Water & Sanitation Department

2. Ramesh Kumar,
   Engineer in Chief,
   Drinking Water & Sanitation Department, Government of Jharkhand.

(.....)

Witness 1 (Soumitra Singh)

Witness 1 30/10/ (Ajay Nath Jha)

Witness 2

Witness 2

cmpdi
A Mini Ratna Company

GROUNDWATER LEVEL & QUALITY REPORT

FOR CLUSTER OF MINES, BCCL

(Assessment year – 2021-22)

[CLUSTER – I, II, III, IV, V, VI, VII, VIII, IX, X, XI, XIII, XIV, XV & XVI of Mines, BCCL]

JHARIA COALFIELD AND RANIGANJ COALFIELD (PART)

For

(BHARAT COKING COAL LIMITED)

(A Subsidiary of Coal India Limited)

KOYLA BHAWAN (DHANBAD)

Prepared by

Hydrogeology Department

Exploration Division

CMPDI (HQ), Ranchi

MARCH – 2022

Job no - 200421008

F. GROUND WATER LEVEL OF CLUSTER-VI

Cluster–VI consists of four coalmines; East Bassuriya opencast (OC), Bassuriya underground (UG), Gondudih Khas-Kusunda OC and Godhur Mixed Mines (OC and UG) of BCCL. This Cluster of mines is located in central part of Jharia Coalfield in Dhanbad district of Jharkhand. The life of the project works out more than 30 years considering annual target production of 7.631 MTPA (Toposheet no – 73 I/6).

The present leasehold area of Cluster-VI is 831.83 Ha. The area has a general undulating topography with general slope towards south. The RL varies from 180 m to 240 m AMSL. Ekra Jore, Kari Jore and their tributaries are controlling the drainage pattern of the area. The area comes under the watershed of Ekra Jore and Kari Jore.

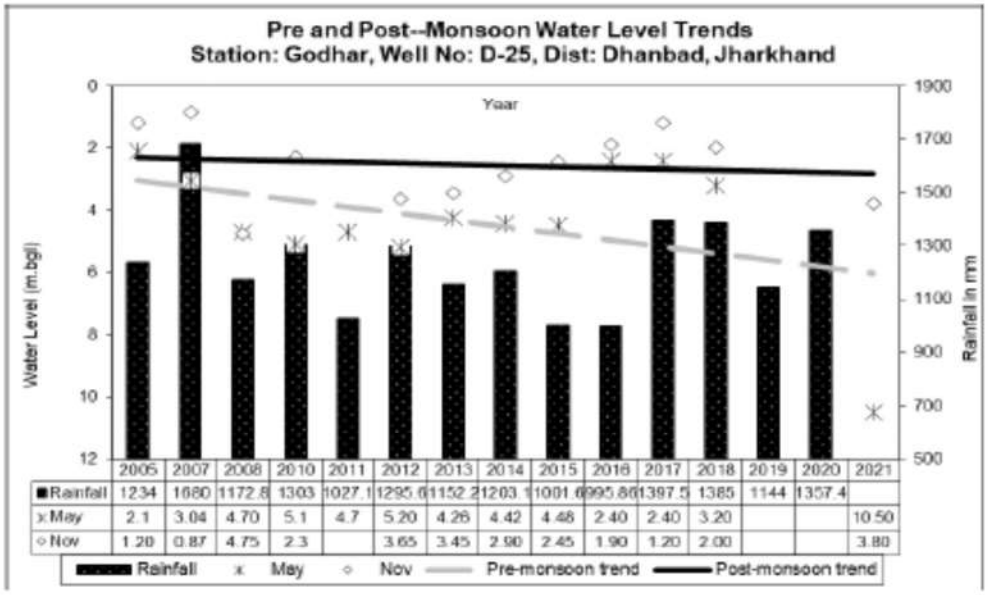
Monitoring stations (**D-25 and D-30**) are located in the core zone of the mine area. Water level monitoring in these monitoring stations has done in the months of May'21, August'21, and Nov'21 and January'22, the Ground water level data enclosed in the table below:

Sl No.	Well No.	Location	Water level (bgl in meters)											
			2021-22				2020-21				2019-20			
			May	Aug	Nov	Jan	May	Aug	Nov	Jan	May	Aug	Nov	Jan
1	D25	Godhur	10.50	2.90	3.80	4.40	10.50	2.28	5.62	6.40	9.90	4.35	5.38	5.50
2	D30	Borkiboa	4.23	0.60	0.84	1.80	4.50	1.65	1.35	2.40	4.60	0.38	0.75	1.95
Average WL (bgl)			7.37	1.75	2.32	3.10	7.50	1.97	3.49	4.40	**7.25**	**2.37**	**3.07**	**3.73**

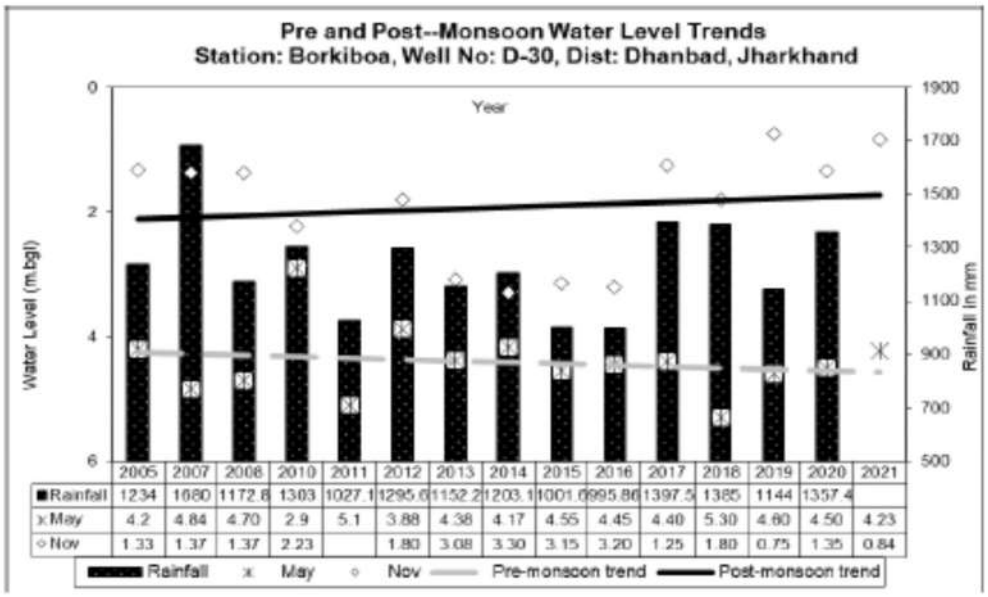
LAST THREE-YEAR ASSESSMENT:

Pre-monsoon GW Level (m): Min – 4.23 m Max – 10.50 m
Post-monsoon GW Level (m): Min – 0.75 m Max – 5.62 m

HYDROGRAPHS OF CLUSTER-VI



	2005	2007	2008	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Rainfall	1234	1680	1172.8	1303	1027.1	1295.6	1152.2	1203.1	1001.6	995.86	1397.5	1385	1144	1357.4	
May	2.1	3.04	4.70	5.1	4.7	5.20	4.26	4.42	4.48	2.40	2.40	3.20			10.50
Nov	1.20	0.87	4.75	2.3		3.65	3.45	2.90	2.45	1.90	1.20	2.00			3.80



	2005	2007	2008	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Rainfall	1234	1680	1172.8	1303	1027.1	1295.6	1152.2	1203.1	1001.6	995.86	1397.5	1385	1144	1357.4	
May	4.2	4.84	4.70	2.9	5.1	3.88	4.38	4.17	4.55	4.45	4.40	5.30	4.60	4.50	4.23
Nov	1.33	1.37	1.37	2.23		1.80	3.08	3.30	3.15	3.20	1.25	1.80	0.75	1.35	0.84

Annexure - 13

भारतकोकिंगकोललिमिटेड
(कोलइंडियालिमिटेडकाएकअंग)
BHARAT COKING COAL LIMITED
(A Subsidiary of Coal India Limited)

Civil Engineering Department, Koyla Nagar, Dhanbad – 826 005 (JH), India
, e-mail: gmcivil.bccl@coalindia.in

NIT Ref. No.: BCCL/CED/TC/eNIT-18/2020-21/968 **Date: 10.03.2021**

E – Tender Notice

Open E-Tender invited vide BCCL/CED/TC/eNIT-18/2020-21/968; Date: 10.03.2021 for the work of "**Drilling and installation of 23 nos of piezometric wells in the command area of BCCL**"

Estimated Value: Rs. 2,16,19,913.33 **Period of Work:175 days**

The tender documents can be downloaded from **11.03.2021to29.03.2021.** All prospective bidders are advised to visit website **https://coalindiatenders.nic.in** for further details and to participate against this tender. Full details of this tender are also available on website "**eprocure.gov.in**".

10/3/21

GM(Civil/Welfare), BCCL

Copy to:-

1) D (T) OP/D(P)/CVO, BCCL
2) GM (Civil/Ind.), BCCL.
3) GM All Area.
4) Chief Manager (Civil), CED HQ, BCCL.
5) GM (Geology)/HOD(Environment)/GM(P&P).
6) Area Manager (Civil), All Area
7) Assistant Manager (Civil), TC, CED.
8) IEMs.

..... for kind information

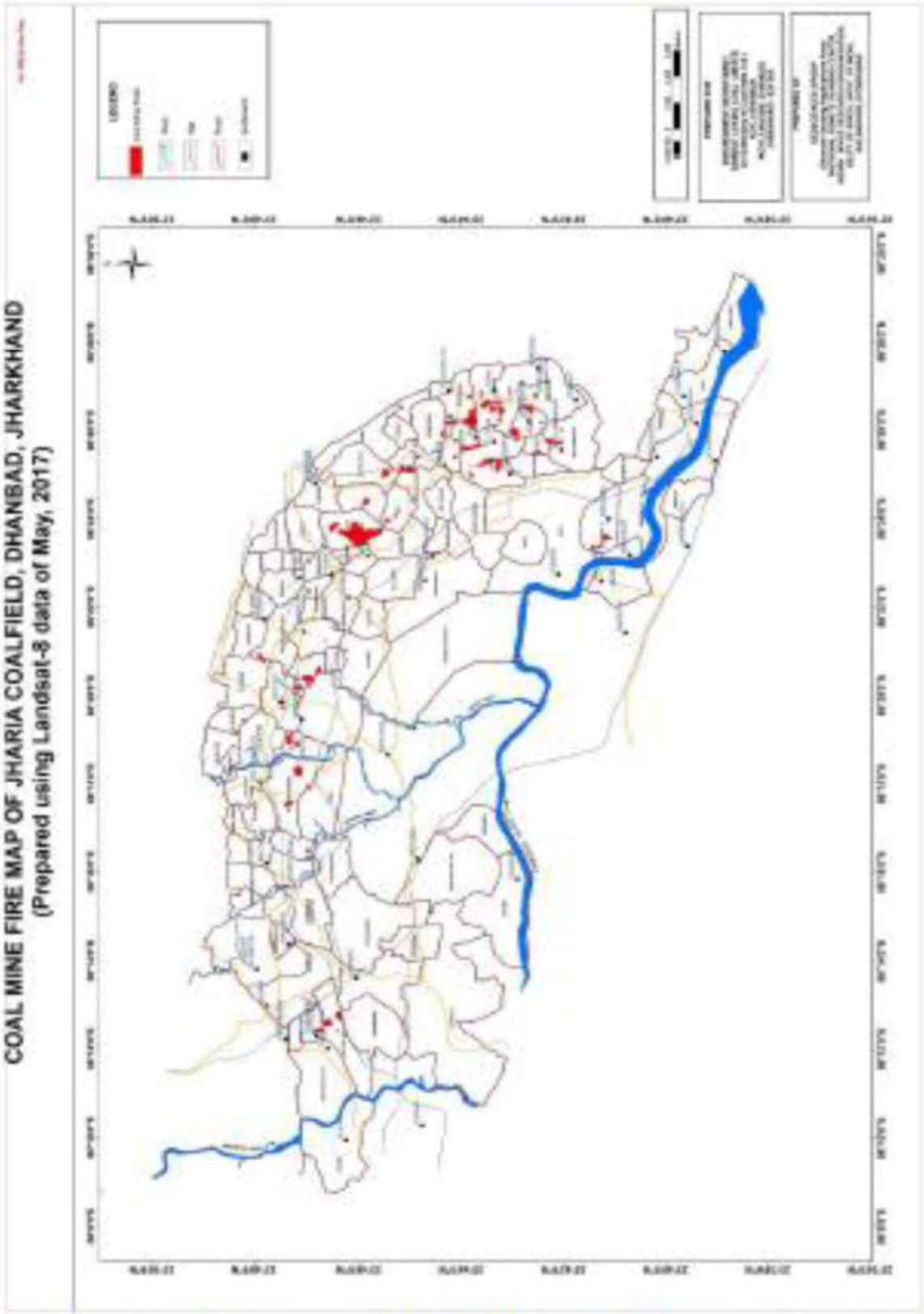


Figure 5: Coal mine fire map (May, 2017) of Jharia coal field, Dhanbad. The fire areas shown in this map have been verified in the field as per field points in figure 13.

Note: Estimations of fire extent (in terms of sq.km.) both in 2012 and in the present 2017 study are pixel based. They do not represent the actual ground area under fire. These estimations are made for comparative purpose only, to indicate the increase or decrease of areal disposition of fire. Hence, they should not be quoted as fire area on the ground.

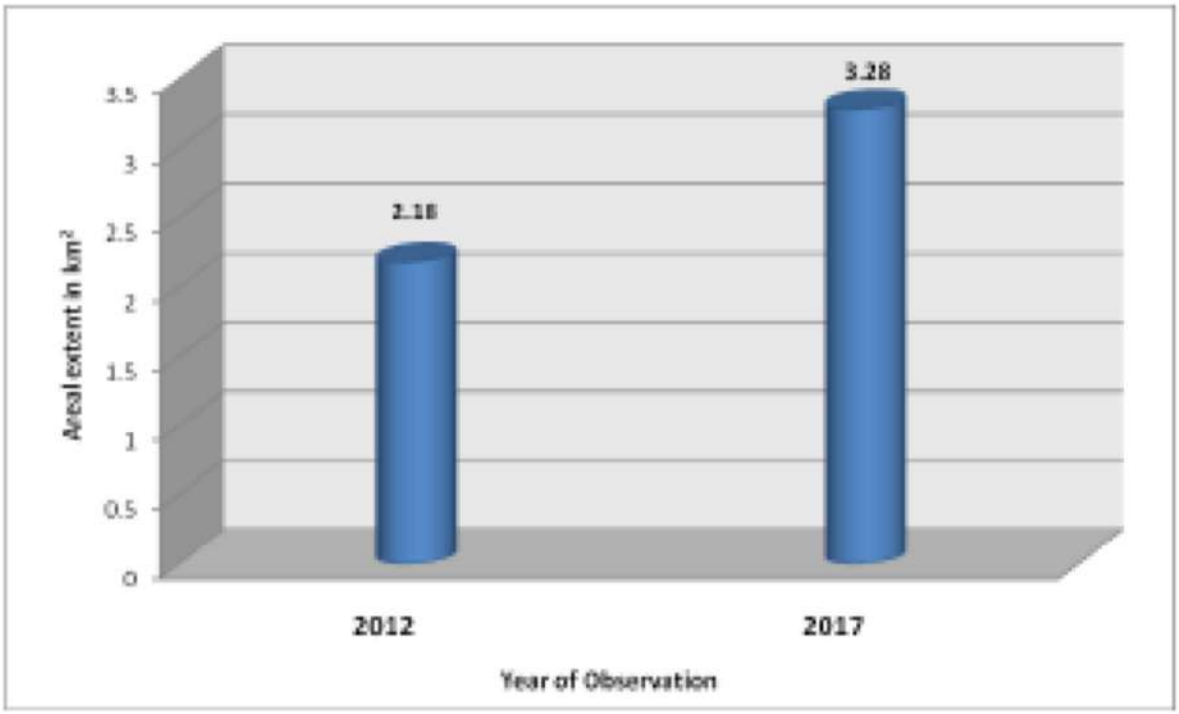


Figure 12: Total fire area statistics

Corporate Environmental Policy (http://www.bcclweb.in/environment/CEP_04.11.2019.pdf)

Item No. 351.3D

Quarterly Review for the Quarter October to December, 2018 & January to March, 2019 on Safety, Environment & Quality as per the directive of MoC letter no. 23/3/2015-ASO/BA dated 26.04.2017.

Board reviewed the quarterly report of **October to December 2018** and **January to March 2019** on Safety, Environment & Quality as per the directive of MoC letter no. 23/3/2015-ASO/BA dated 26.04.2017.

Item No. 351.4G
Corporate Environment Policy (CEP) of Bharat Coking Coal Limited.

Background

Coal India Ltd. had brought out its Corporate Environment Policy (CEP) in 2012 Based on CIL Environment Policy 2012, incorporating the Jharia Master Plan, CEP of BCCL was approved by 285th BCCL board on 21.04.2012 (ANNEXURE C of the agenda note). As per the provisions of the policy, it is to be revised every 05 years as per which the policy would have been revised in 2017. However, there was delay in revising the policy at CIL's end due to which there is a delay in revising BCCL's CEP. CIL has revised its Corporate Environment Policy and approved in its 377th CIL Board Meeting dated 20th Dec., 2018(ANNEXURE D of the agenda note).

The CAG during its exit meeting held on 16.11.2018 also pointed out for the need of revising BCCL's Corporate Environment Policy adopted in 2012(ANNEXURE E of the agenda note). Modifying CIL's CEP to suit BCCL's prevailing conditions, the Corporate Environment Policy of BCCL has been revised.

Two versions of Policy was attached herewith out of which any one may be approved as deemed suitable by the Board.

a. An abridged version of the policy as adopted earlier by BCCL in 2012. (ANNEXURE A of the agenda note)
b. A detailed version of the policy similar to the CEP, 2018 of CIL with modifications suited to BCCL's condition. (ANNEXURE B of the agenda note)

Decision:
After detailed deliberation the Corporate Environment Policy, 2018 of CIL was approved by the Board.

Board further directed that the Policy as adopted above to suit the conditions in BCCL should be modified with information to Coal India.

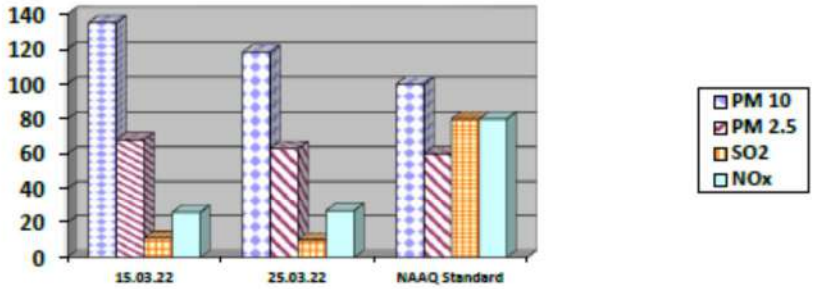
Certified to be True Copy

B. K. Parul
Company Secretary
Bharat Coking Coal Limited
Koyla Bhawan
826005

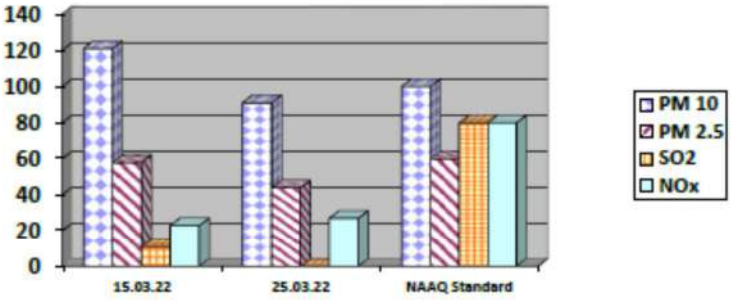
AMBIENT AIR QUALITY DATA

Cluster – VI, Bharat Coking Coal limited Month: MARCH 2022 Year: 2021-22.

Station Name: A9 – Basseriya Managers Office		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO_2	NO_x
1	15.03.22	135	68	11	26
2	25.03.22	118	63	10	27
	NAAQ Standard	100	60	80	80



Station Name: A8 – Nichitpur		Zone: Buffer		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO_2	NO_x
1	15.03.22	121	58	11	23
2	25.03.22	91	44	<10	27
	NAAQ Standard	100	60	80	80



Analysed By
JSA/SA/SSA

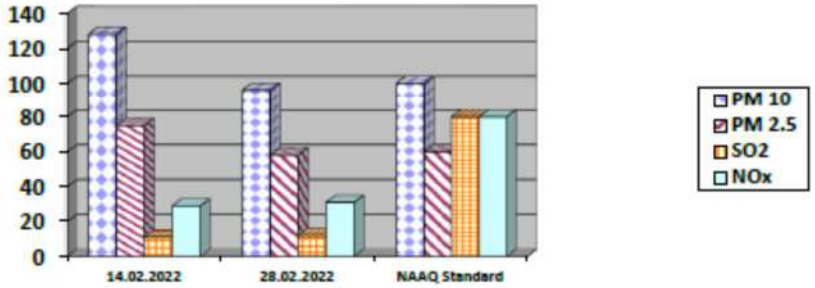
Checked By
Lab In Charge
RI-2, CMPDI, Dhanbad

Approved By
HOD(In-charge) Environment
RI-2, CMPDI, Dhanbad

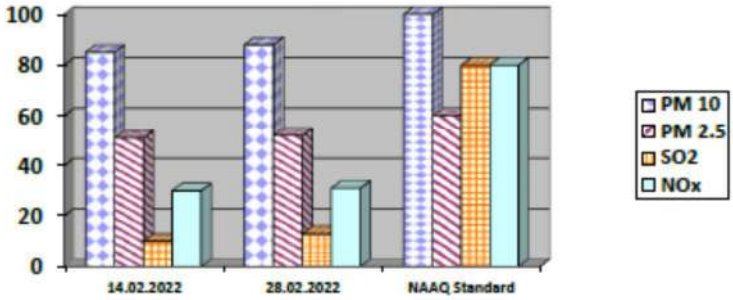
AMBIENT AIR QUALITY DATA

Cluster – VI, Bharat Coking Coal limited Month: FEB 2022 Year: 2021-22.

Station Name: A9 – Basseriya Managers Office		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO_2	NO_x
1	14.02.2022	128	75	11	29
2	28.02.2022	96	58	12	31
	NAAQ Standard	100	60	80	80



Station Name: A8 – Nichitpur		Zone: Buffer		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO_2	NO_x
1	14.02.2022	85	51	10	30
2	28.02.2022	88	52	13	31
	NAAQ Standard	100	60	80	80



Analysed By
JSA/SA/SSA

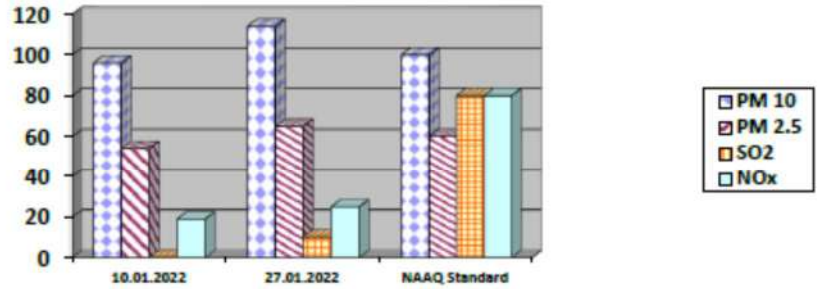
Checked By
Lab In Charge
RI-2, CMPDI, Dhanbad

Approved By
HOD(In-charge) Environment
RI-2, CMPDI, Dhanbad

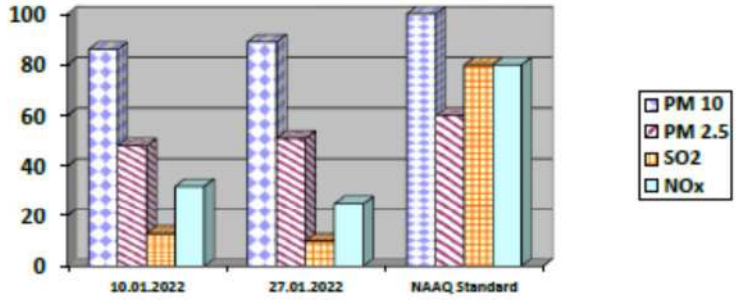
AMBIENT AIR QUALITY DATA

Cluster – VI, Bharat Coking Coal limited Month: JAN 2022 Year: 2021-22.

Station Name: A9 – Basseriya Managers Office		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO_2	NO_x
1	10.01.2022	96	54	<10	19
2	27.01.2022	114	65	10	25
	NAAQ Standard	100	60	80	80



Station Name: A8 – Nichitpur		Zone: Buffer		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO_2	NO_x
1	10.01.2022	86	48	13	32
2	27.01.2022	89	51	10	25
	NAAQ Standard	100	60	80	80



Analysed By
JSA/SA/SSA

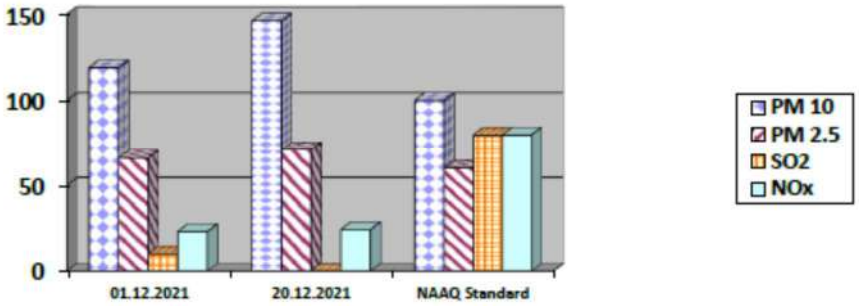
Checked By
Lab In Charge
RI-2, CMPDI, Dhanbad

Approved By
HOD(In-charge) Environment
RI-2, CMPDI, Dhanbad

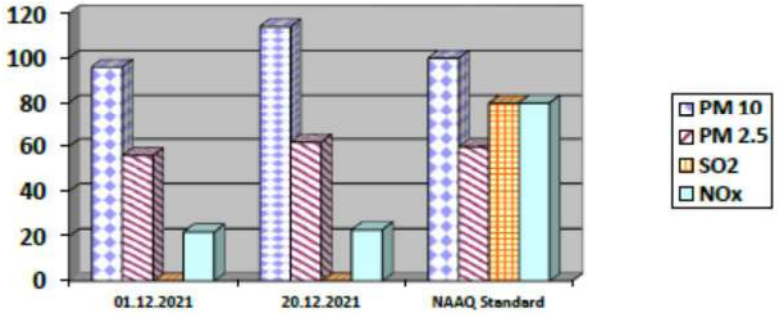
AMBIENT AIR QUALITY DATA

Cluster – VI, Bharat Coking Coal limited Month: DEC 2021 Year: 2021-22.

Station Name: A9 – Basseriya Managers Office		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO_2	NO_x
1	01.12.2021	119	66	10	23
2	20.12.2021	146	71	<10	24
	NAAQ Standard	100	60	80	80



Station Name: A8 – Nichitpur		Zone: Buffer		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO_2	NO_x
1	01.12.2021	96	56	<10	22
2	20.12.2021	114	62	<10	23
	NAAQ Standard	100	60	80	80

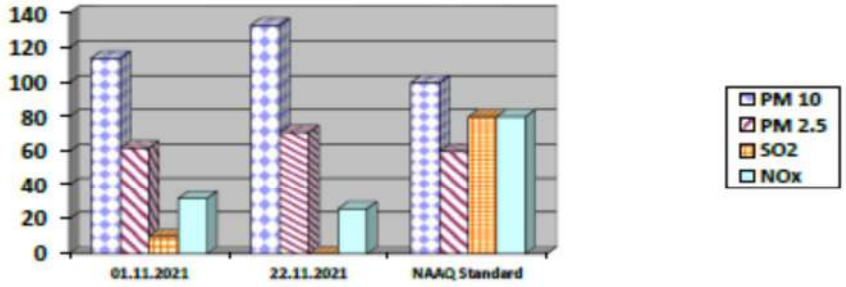


Analysed By Checked By Approved By

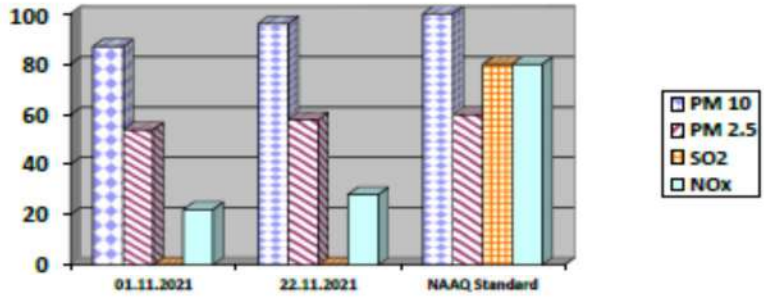
AMBIENT AIR QUALITY DATA

Cluster – VI, Bharat Coking Coal limited Month: **NOV 2021** Year: **2021-22.**

Station Name: A9 – Basseriya Managers Office		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO_2	NO_x
1	01.11.2021	114	62	10	32
2	22.11.2021	133	71	<10	26
	NAAQ Standard	100	60	80	80



Station Name: A8 – Nichitpur		Zone: Buffer		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO_2	NO_x
1	01.11.2021	87	54	<10	22
2	22.11.2021	96	58	<10	28
	NAAQ Standard	100	60	80	80



Analysed By
JSA/SA/SSA

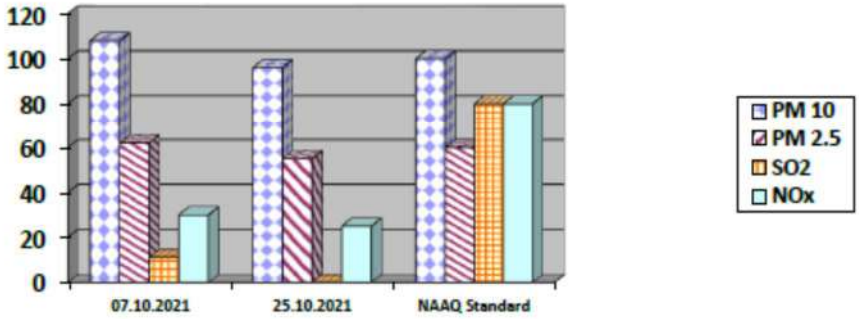
Checked By
Lab In Charge
RI-2, CMPDI, Dhanbad

Approved By
HOD(In-charge) Environment
RI-2, CMPDI, Dhanbad

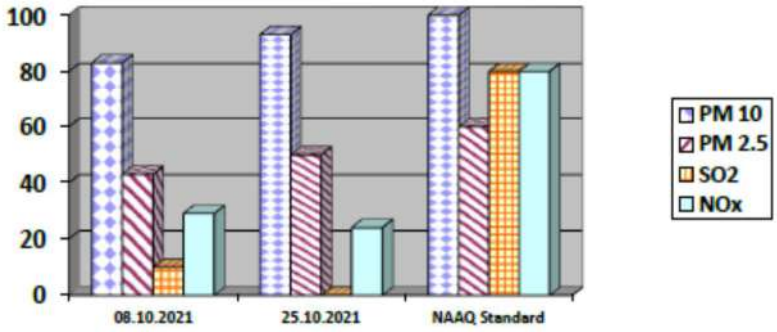
AMBIENT AIR QUALITY DATA

Cluster – VI, Bharat Coking Coal limited Month: OCT 2021 Year: 2021-22.

Station Name: A9 – Basseriya Managers Office		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO_2	NO_x
1	07.10.2021	108	62	11	30
2	25.10.2021	96	55	<10	25
	NAAQ Standard	100	60	80	80



Station Name: A8 – Nichitpur		Zone: Buffer		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO_2	NO_x
1	08.10.2021	83	43	10	29
2	25.10.2021	93	50	<10	24
	NAAQ Standard	100	60	80	80



AMBIENT AIR QUALITY DATA

Name of the Company: **Bharat Coking Coal Limited** Year : **2021-22**

Name of the Cluster : **Cluster -VI** PERIOD: **Q. E. DEC - 2021.**

Heavy Metal Analysis report of Ambient Air Quality

SAMPLE	Cadmium(Cd) (µg/m3)	Mercury(Hg) (µg/m3)	Arsenic(As) (ng/m3)	Chromium(Cr) (µg/m3)	Nickel (Ni) (ng/m3)	Lead (Pb) (µg/m3)
Nichitpur (A8)	<0.001	0.004	<0.005	0.021	1.17	0.020
Basseriya Managers Office (A9)	<0.001	<0.001	<0.005	0.013	0.91	0.147
Kusunda OCP (A10)	<0.001	<0.001	<0.005	0.037	0.12	0.177
Pootki Balihari Office (A16)	<0.001	<0.001	<0.005	0.032	2.38	0.140

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Lab In Charge
RI-2, CMPDI, Dhanbad

Approved By
HOD(In-charge) Environment
RI-2, CMPDI, Dhanbad

Annexure – 17

NOISE LEVEL QUALITY MONITORING

4.1 Location of sampling sites

i) Basseriya Managers Office (N9)
ii) Nichitpur (N8)
iii) Kusunda OCP (N10)
iv) Pootki Balihari Office (N16)

4.2 Methodology of sampling and analysis

Noise level measurements in form of 'L_{EQ}' were taken using Integrated Data Logging Sound Level Meter (NL-52 OF RION CO. Ltd. Make) during day time. Noise levels were measured for about one hour time in day time. Noise levels were measured in Decibels, 'A' weighted average, i.e. dB (A).

4.3 Results & Interpretations

Ambient noise levels were recorded during day time and the observed values were compared with standards prescribed by MoEF&CC. The results of Noise levels recorded during day time on fortnightly basis are presented in tabular form along with the applicable standard permissible limits. The observed values in terms of L_{EQ} are presented. The observed values at all the monitoring locations are found to be within permissible limits.

NOISE LEVEL DATA

Name of the Project: Cluster -VI			Month: MARCH 2022		
Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	*Permissible Limit of Noise level in dB(A)
1	Nichitpur (N8)	Industrial area	12.03.2022	60.2	75
2	Nichitpur (N8)	Industrial area	26.03.2022	56.8	75
3	Basseriya Managers Office (N9)	Industrial area	12.03.2022	61.4	75
4	Basseriya Managers Office (N9)	Industrial area	26.03.2022	57.9	75
5	Kusunda OCP (N10)	Industrial area	12.03.2022	57.6	75
6	Kusunda OCP (N10)	Industrial area	25.03.2022	58.3	75
7	Pootki Balihari Office (N16)	Industrial area	04.03.2022	57.4	75
8	Pootki Balihari Office (N16)	Industrial area	29.03.2022	56.8	75

Permissible limits of Noise Level as per MOEF Gazette Notification No. GSR 742(E) dt. 25.09.2000 Standards for Coal Mines and Noise Pollution (Regulation and Control) Rules, 2000.
* Day Time: 6.00 AM to 10.00 PM,

Analysed By
JSA/SA/SSA

Checked By
Lab In Charge
RI-2, CMPDI, Dhanbad

Approved By
HOD(In-charge) Environment
RI-2, CMPDI, Dhanbad

NOISE LEVEL QUALITY MONITORING

4.1 Location of sampling sites

i) Basseriya Managers Office (N9)
ii) Nichitpur (N8)
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NOISE LEVEL DATA

Name of the Project: Cluster -VI			Month: FEB 2022		
Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	*Permissible Limit of Noise level in dB(A)
1	Nichitpur (N8)	Industrial area	15.02.22	58.2	75
2	Nichitpur (N8)	Industrial area	28.02.22	59.4	75
3	Basseriya Managers Office (N9)	Industrial area	15.02.22	61.4	75
4	Basseriya Managers Office (N9)	Industrial area	28.02.22	60.9	75
5	Kusunda OCP (N10)	Industrial area	12.02.22	56.7	75
6	Kusunda OCP (N10)	Industrial area	26.02.22	57.2	75
7	Pootki Balihari Office (N16)	Industrial area	10.02.22	56.2	75
8	Pootki Balihari Office (N16)	Industrial area	24.02.22	55.2	75

**Permissible limits of Noise Level as per MOEF Gazette Notification No. GSR 742(E) dt. 25.09.2000 Standards for Coal Mines and Noise Pollution (Regulation and Control) Rules, 2000.*
* Day Time: 6.00 AM to 10.00 PM,

Analysed By
JSA/SA/SSA

Checked By
Lab In Charge
RI-2, CMPDI, Dhanbad

Approved By
HOD(In-charge) Environment
RI-2, CMPDI, Dhanbad

NOISE LEVEL QUALITY MONITORING

4.1 Location of sampling sites

i) Basseriya Managers Office (N9)
ii) Nichitpur (N8)
iii) Kusunda OCP (N10)
iv) Pootki Balihari Office (N16)

4.2 Methodology of sampling and analysis

Noise level measurements in form of 'L_{EQ}' were taken using Integrated Data Logging Sound Level Meter (NL-52 OF RION CO. Ltd. Make) during day time. Noise levels were measured for about one hour time in day time. Noise levels were measured in Decibels, 'A' weighted average, i.e. dB (A).

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NOISE LEVEL DATA

Name of the Project: Cluster -VI			Month: JAN 2022		
Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	*Permissible Limit of Noise level in dB(A)
1	Nichitpur (N8)	Industrial area	10.01.22	58.6	75
2	Nichitpur (N8)	Industrial area	24.01.22	59.4	75
3	Basseriya Managers Office (N9)	Industrial area	10.01.22	61.7	75
4	Basseriya Managers Office (N9)	Industrial area	24.01.22	60.3	75
5	Kusunda OCP (N10)	Industrial area	07.01.22	56.4	75
6	Kusunda OCP (N10)	Industrial area	20.01.22	57.1	75
7	Pootki Balihari Office (N16)	Industrial area	14.01.22	56.4	75
8	Pootki Balihari Office (N16)	Industrial area	20.01.22	57.6	75

*Permissible limits of Noise Level as per MOEF Gazette Notification No. GSR 742(E) dt. 25.09.2000 Standards for Coal Mines and Noise Pollution (Regulation and Control) Rules, 2000.
* Day Time: 6.00 AM to 10.00 PM,

Analysed By
JSA/SA/SSA

Checked By
Lab In Charge
RI-2, CMPDI, Dhanbad

Approved By
HOD(In-charge) Environment
RI-2, CMPDI, Dhanbad

NOISE LEVEL QUALITY MONITORING

4.1 Location of sampling sites

i) **Basseriya Managers Office (N9)**
ii) **Nichitpur (N8)**
iii) **Kusunda OCP (N10)**
iv) **Pootki Balihari Office (N16)**

4.2 Methodology of sampling and analysis

Noise level measurements in form of 'L_{EQ}' were taken using Integrated Data Logging Sound Level Meter (NL-52 OF RION CO. Ltd. Make) during day time. Noise levels were measured for about one hour time in day time. Noise levels were measured in Decibels, 'A' weighted average, i.e. dB (A).

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NOISE LEVEL DATA

Name of the Project: **Cluster -VI**			Month: **DECEMBER. 2021**		
Sl. No.	**Station Name/Code**	**Category of area**	**Date**	**Noise level dB(A)LEQ**	***Permissible Limit of Noise level in dB(A)***
1	**Nichitpur (N8)**	**Industrial area**	01.12.2021	57.9	75
2	**Nichitpur (N8)**	**Industrial area**	20.12.2021	59.1	75
3	**Basseriya Managers Office (N9)**	**Industrial area**	01.12.2021	60.8	75
4	**Basseriya Managers Office (N9)**	**Industrial area**	20.12.2021	62.2	75
5	**Kusunda OCP (N10)**	**Industrial area**	15.12.2021	57.2	75
6	**Kusunda OCP (N10)**	**Industrial area**	25.12.2021	58.6	75
7	**Pootki Balihari Office (N16)**	**Industrial area**	11.12.2021	57.4	75
8	**Pootki Balihari Office (N16)**	**Industrial area**	17.12.2021	60.7	75

**Permissible limits of Noise Level as per MOEF Gazette Notification No. GSR 742(E) dt. 25.09.2000 Standards for Coal Mines and Noise Pollution (Regulation and Control) Rules, 2000.*

*** Day Time: 6.00 AM to 10.00 PM,**

Analysed By
JSA/SA/SSA

Checked By
Lab In Charge
RI-2, CMPDI, Dhanbad

Approved By
HOD(In-charge) Environment
RI-2, CMPDI, Dhanbad

NOISE LEVEL QUALITY MONITORING

4.1 Location of sampling sites

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NOISE LEVEL DATA

Name of the Project: Cluster -VI			Month: NOVEMBER. 2021		
Sl. No.	**Station Name/Code**	**Category of area**	**Date**	**Noise level dB(A)LEQ**	***Permissible Limit of Noise level in dB(A)***
1	Nichitpur (N8)	Industrial area	01.11.2021	57.4	75
2	Nichitpur (N8)	Industrial area	22.11.2021	56.2	75
3	Basseriya Managers Office (N9)	Industrial area	01.11.2021	61.5	75
4	Basseriya Managers Office (N9)	Industrial area	22.11.2021	57.4	75
5	Kusunda OCP (N10)	Industrial area	01.11.2021	56.3	75
6	Kusunda OCP (N10)	Industrial area	20.11.2021	57.2	75
7	Pootki Balihari Office (N16)	Industrial area	12.11.2021	60.4	75
8	Pootki Balihari Office (N16)	Industrial area	26.11.2021	61.8	75

Permissible limits of Noise Level as per MOEF Gazette Notification No. GSR 742(E) dt. 25.09.2000 Standards for Coal Mines and Noise Pollution (Regulation and Control) Rules, 2000.
*** Day Time: 6.00 AM to 10.00 PM,**

Analysed By
JSA/SA/SSA

Checked By
Lab In Charge
RI-2, CMPDI, Dhanbad

Approved By
HOD(In-charge) Environment
RI-2, CMPDI, Dhanbad

NOISE LEVEL QUALITY MONITORING

4.1 Location of sampling sites

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NOISE LEVEL DATA

Name of the Project: Cluster -VI			Month: OCTOBER. 2021		
Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	*Permissible Limit of Noise level in dB(A)
1	Nichitpur (N8)	Industrial area	08.10.2021	58.7	75
2	Nichitpur (N8)	Industrial area	25.10.2021	56.3	75
3	Basseriya Managers Office (N9)	Industrial area	07.10.2021	61.6	75
4	Basseriya Managers Office (N9)	Industrial area	25.10.2021	62.8	75
5	Kusunda OCP (N10)	Industrial area	08.10.2021	61.3	75
6	Kusunda OCP (N10)	Industrial area	27.10.2021	60.4	75
7	Pootki Balihari Office (N16)	Industrial area	07.10.2021	63.5	75
8	Pootki Balihari Office (N16)	Industrial area	21.10.2021	63.2	75

Permissible limits of Noise Level as per MOEF Gazette Notification No. GSR 742(E) dt. 25.09.2000 Standards for Coal Mines and Noise Pollution (Regulation and Control) Rules, 2000.
* Day Time: 6.00 AM to 10.00 PM,

Analysed By
JSA/SA/SSA

Checked By
Lab In Charge
RI-2, CMPDI, Dhanbad

Approved By
HOD(In-charge) Environment
RI-2, CMPDI, Dhanbad

Annexure – 18

[See rules 115 (2)]

ution Under Control Certificate

thorised By :
Government of Jharkhand

Date	:	**19/04/2022**
Time	:	**17:08:39 PM**
Validity upto	:	**18/10/2022**

Certificate SL. No.	:	JH01001710008008
Registration No.	:	JH10AM4763
Date of Registration	:	28/Nov/2013
Month & Year of Manufacturing	:	November-2013
Valid Mobile Number	:	******6337
Emission Norms	:	BHARAT STAGE III
Fuel	:	DIESEL
PUC Code	:	JH0100171
GSTIN	:	
Fees	:	Rs.300.00(GST as applicable)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	2.23

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://vahan.parivahan.gov.in

[See rules 115 (2)]

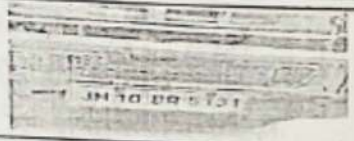
Under Control Certificate

Issued By
Government of Jharkhand

Date	:	12/09/2021
Time	:	11:21:37 AM
Validity upto	:	11/09/2022

Certificate SL No	:	JH01000670000187
Registration No	:	JH10BB5131
Date of Registration	:	04/Dec/2018
Month & Year of Manufacturing	:	October-2018
Valid Mobile Number	:	******1392
Emission Norms	:	BHARAT STAGE IV
Fuel	:	DIESEL
PUC Code	:	JH0100067
GSTIN	:	
Fees	:	Rs.300.0(GST as applicable)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm



Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda		1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	1.62	0.08

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://vahan.parivahan.gov.in

Authorised Signature with stamp of PUC operator
(Optional for State)
60mm x 20 mm

Annexure – 19

Sl. No.	Name of Area/ Mine/ Office	October	November	December	January	February	March
1	**NGKC**	0	0	195	2	0	0
2	**GKKC**	0	0	66	17	0	0
3	**EBC**	0	0	28	1	0	0
Total		**0**	**0**	**289**	**20**	**0**	**0**

Picture 1 – Covered Transportation

Picture 2 – Water Sprinkling on Transportation Road

Picture 3 - Stone Pitching/embankment at Kari Jore

Picture 4 - Eco-restoration at GKKC

Picture 5 – Oil & Grease Trap